

Catalogue

Version 2019

2019 EN

ZCC Cutting Tools Europe GmbH

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Welcome to **ZCC Cutting Tools Europe!**

You now have the 2019 main catalogue of ZCC Cutting Tools in your hands. The entire ZCC-CT team are pleased that you are giving us an opportunity to present our continually growing portfolio of tools, which can make your production more cost-efficient.

Just one year after the previous version of the catalogue, we again have many newly available important and well-engineered products and product upgrades for you to discover.

Added value through partnership is and remains both our standard and our promise to our customers. Our services therefore go far beyond the content of this catalogue and include, in addition to the development and testing of individual special solutions in the new Technical & Development Centre of our European head office in Düsseldorf, a comprehensive range of services such as tool management and provision of tool data, tool reconditioning and customised customer training. Please contact us about these services at any time.

You will find in Part A of this catalogue tools for turning, in Part B tools for milling and in Part C tools for drilling. We have created separate catalogues for tool systems and boring tools. If you need additional catalogues and further information, get in touch with your personal contact or our internal sales team at any time.

We would like to thank you for the confidence you place in us and look forward to a very good working relationship with you.
The team from ZCC Cutting Tools Europe will support you as your partner at any time.

Your ZCC Cutting Tools Europe GmbH



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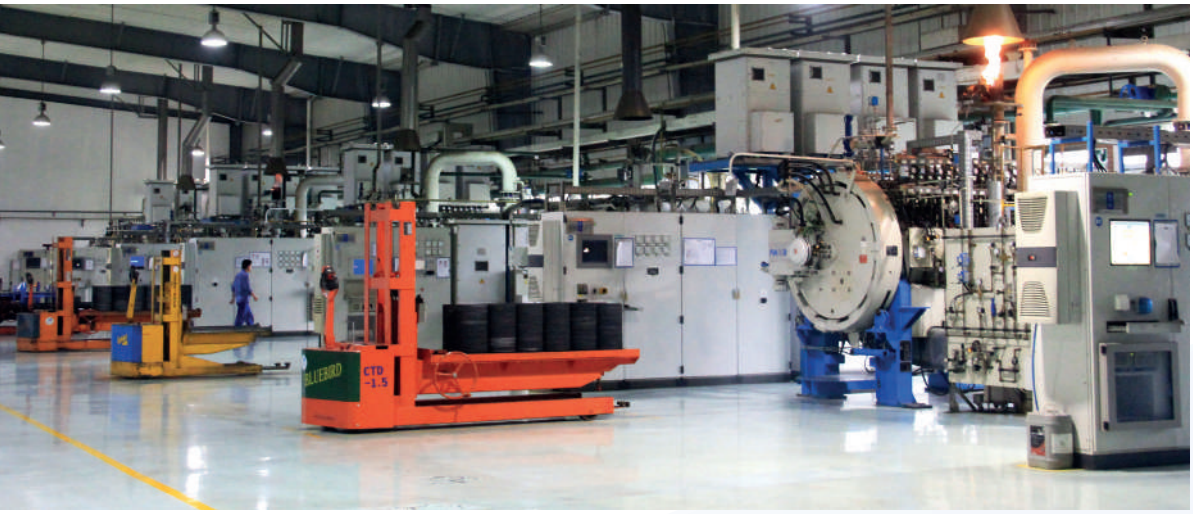
MC 734/MT
SIPAMA


BLUEBIRD
CTD
1.5

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QEGD2020L13
DCLNR2525M12

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Carbide and cermet inserts

Double sided, negative – Finishing



CNEG-NF	CNMG-ADF	CNMG-DF	CNMG-EF	CNMG-SF	
12	12	09 12	09 12	09 12	Edge length
A46	A45	A45	A45	A45	Page



DNEG-NF	DNEG-NGF	DNMG-ADF	DNMG-DF	DNMG-EF	DNMG-FM	DNMG-SF	
15	15	15	11 15	11 15	15	11 15	Edge length
A58	A58	A55	A55	A58	A58	A55	Page



SNMG-ADF	SNMG-DF	SNMG-EF	SNMG-SF	
12	12	09 12 15	09 12	Edge length
A63	A63	A64	A63	Page



TNMG-ADF	TNMG-DF	TNMG-EF	TNMG-FM	TNMG-SF	
16	16 22	11 16 22	16	11 16 22	Edge length
A78	A78	A80	A80	A79	Page



VNEG-NF	VNEG-NGF	VNMG-ADF	VNMG-DF	VNMG-EF	VNMG-SF	
16	16	16	16	16	16	Edge length
A90	A91	A90	A90	A90	A91	Page



WNEG-NF	WNMG-ADF	WNMG-DF	WNMG-EF	WNMG-NF	WNMG-SF	
08	08	06 08	06 08	06	06 08	Edge length
A95	A94	A94	A95	A95	A94	Page

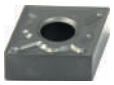
Double sided, negative, Wiper – Finishing

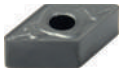


CNMG-WG	DNMX-WG	TNMX-WG	WNMG-WG	
12	11 15	16	08	Edge length
A45	A55	A78	A95	Page

Carbide and cermet inserts

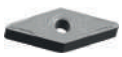
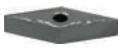
Double sided, negative – Medium machining

								
CNMG	**CNMG-DM**	**CNMG-EG**	**CNMG-EM**	**CNMG-NM**	**CNMG-PM**	**CNMG-TC**	**CNMG-ZM**	
12 16 19	09 12 16 19	12	12 16	12	09 12 16 19	12 16	12	Edge length
A54	A47	A47	A47	A49	A46	A49	A48	Page

							
DNMG-DM	**DNMG-EG**	**DNMG-EM**	**DNMG-NM**	**DNMG-PM**	**DNMG-TC**	**DNMG-ZM**	
11 15	15	11 15	15	11 15	15	15	Edge length
A56	A59	A59	A59	A56	A59	A57	Page

								
RNMG	**SNMG**	**SNMG-DM**	**SNMG-EG**	**SNMG-EM**	**SNMG-NM**	**SNMG-PM**	**SNMG-TC**	
12	12 25	09 12 15 19	12	12 15	12	09 12 15 19	12 15	Edge length
A99	A74	A66	A66	A67	A68	A65	A67	Page

							
TNMG	**TNMG-DM**	**TNMG-EG**	**TNMG-EM**	**TNMG-PM**	**TNMG-TC**	**TNMG-ZM**	
16 22 27 33	11 16 22	16	16 22	11 16 22	16 22	16	Edge length
A88	A81	A83	A83	A81	A83	A82	Page

								
VNMG	**VNMG-DM**	**VNMG-PM**	**VNMG-EM**	**VNMG-NM**	**VNMG-TC**	**VNMG-SNR**	**VNMG-ZM**	
16	16	16	16	16	16	16	16	Edge length
A92	A92	A93	A92	A92	A93	A93	A93	Page

							
WNMG-DM	**WNMG-EG**	**WNMG-EM**	**WNMG-NM**	**WNMG-PM**	**WNMG-TC**	**WNMG-ZM**	
06 08	08	06 08	08	06 08	08	08	Edge length
A96	A96	A96	A98	A97	A98	A97	Page

Double sided, negative – Medium machining to roughing

CNMA	**DNMA**	**SNMA**	**SNUN**	**TNMA**	**WNMA**	
12 16 19	15	12 15 19	12 19 25	16 22	06 08	Edge length
A54	A61	A75	A77	A89	A98	Page

Carbide and cermet inserts

Double sided, negative – Roughing



CNMG-DR	CNMG-ER	CNMG-SNR	DNMG-DR	DNMG-ER	DNMG-SNR	SNMG-DR	SNMG-ER	
12 16 19 25	12 16 19	12 16 19	15	15	15	12 15 19 25	12 15 19	Edge length
A49	A51	A50	A60	A61	A60	A68	A69	Page



TNMG-DR	TNMG-ER	WNMG-DR	
16 22 27	16 22	06 08	Edge length
A84	A85	A98	Page

Single sided, negative – Roughing



CNMM	CNMM-DR	CNMM-ER	CNMM-HDR	CNMM-HPR	CNMM-LR	
12 19	12 16 19 25	25	12 16 19 25	19 25	12 16 19 25	Edge length
A53	A51	A51	A53	A53	A52	Page



DNMM-DR	DNMM-ER	DNMM-HDR	DNMM-LR	
15	15	15	15	Edge length
A62	A62	A62	A62	Page



SNMM	SNMM-DR	SNMM-ER	SNMM-HDR	SNMM-HPR	SNMM-LR	
12 19 25	15 19 25	25	12 15 19 25	19 25	12 15 19 25	Edge length
A74	A70	xxx	A72	A73	A71	Page



TNMM	TNMM-DR	TNMM-HDR	TNMM-LR	
16 22 27	16 22 27	22 27	16	Edge length
A89	A85	A87	A85	Page

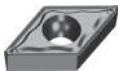
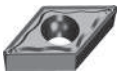
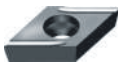
Special form – Roughing



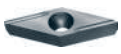
175.32-22 · 227	175.32-24	175.32-25	175.32-28 · 31	KNUX	
				16	Edge length
A101	A101	A101	A101	A100	Page

Carbide and cermet inserts

Positive – Fine-finishing

						
CCGT-SF	**CCGT-USF**	**CPGT-SF**	**DCGT-SF**	**DPGT-SF**	**DCGT-USF**	
06 09	09	06 09	07 11	07 11	07 11	Edge length
A102	A102	A110	A111	A117	A112	Page

					
TBGH	**TCGT-SF**	**TCGT-USF**	**TPGH**	**TPGT-SF**	
06	06 09 11	11	09 11	09 11	Edge length
A125	A126	A126	A132	A133	Page

				
VBGT-SF	**VCGT-SF**	**VCGT-USF**	**VPGT-USF**	
11	11 16	11	11	Edge length
A141	A134	A135	A139	Page

Positive – Finishing

					
CCMT-AHF	**CCMT-EF**	**CCMT-HF**	**CPGT**	**CPMT-HF**	
06 09 12	06 09 12	06 09 12	05	06	Edge length
A103	A105	A103	A104	A110	Page

					
DCMT-AHF	**DCMT-EF**	**DCMT-HF**	**SCMT-AHF**	**SCMT-EF**	**SCMT-HF**
07 11	07 11	07 11	09	09	09
A111	A113	A113	A120	A120	A121

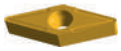
			
TCMT-AHF	**TCMT-EF**	**TCMT-HF**	
11 16	09 11 16	09 11 16	Edge length
A127	A128	A127	Page

					
VBET-NF	**VBET-NGF**	**VBMT-AHF**	**VBMT-EF**	**VBMT-HF**	
16	16	16	11 16	11	Edge length
A140	A142	A140	A140	A140	Page

General turning Product overview

Carbide and cermet inserts

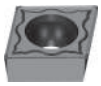
Positive – Finishing






VCGT	VCGT-HF	VCGT-NF	VCMT-EF	
13	11	16	16	Edge length
A135	A134	A134	A138	Page

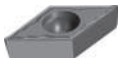
Positive – Medium machining







CCMT-EM	CCMT-HM	CCMW	CPGW	CPMT-HM	
06 09 12	06 09 12	09 12	06	09	Edge length
A105	A106	A107	A110	A110	Page





DCMT-EM	DCMT-HM	DCMW	
07 11	07 11	11	Edge length
A113	A114	A115	Page





SCMT-EM	SCMT-HM	SPMW	
09 12	09 12	09 12	Edge length
A120	A121	A124	Page









TCMT	TCMT-EM	TCMT-HM	TCMW	VBMT-EM	VBMT-HM	VCMT-EM	
22	09 11 16	09 11 16	16	11 16	16	16	Edge length
A130	A128	A129	A129	A142	A142	A138	Page

Positive – Roughing










CCMT-HR	CCMT-TC	DCMT-HR	RCMT · RCGT	RCMX	RCMX-PV	SCMT-HR	TCMT-HR	
06 09 12	06 09 12	11	08 10 12 16 20 25	08 10 12 16 20 25 32	32	09 12	09 11 16 22	Edge length
A107	A107	A115	A118	A119	A119	A122	A129	Page

Carbide and cermet inserts

Positive – Roughing




VBMT-HR	VBMT-SNR	
16	16	Edge length
A143	A143	Page

Positive – Aluminium machining







CCGX-LC	CCGX-LH	DCGX-LC	DCGX-LH	RCGX-LH	
06 09 12	06 09 12	07 11	07 11	08 12	Edge length
A108	A108	A115	A116	A118	Page



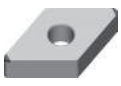





SCGX-LC	SCGX-LH	TCGX-LC	TCGX-LH	VCGX-LC	VCGX-LH	
09 12	09 12	09 11 16	09 11 16	11 16 22	11 16 22	Edge length
A122	A123	A131	A131	A136	A137	Page

PCBN & PCD

Negative





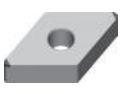
CNGA	DNGA	SNGA	TNGA	VNGA	WNGA	
12	15	12	16	16	08	Edge length
A148	A149	A150	A151	A152	A153	Page






CNGN	RNGN	SNGN	WNGN	
12	12	12 15	08	Edge length
A159	A162	A160	A161	Page

Positive




CCGW	DCGW	TCGW	VBGW	VCGW	
06 09 12	07 11	11 16	16	16	Edge length
A164	A166	A156	A170	A172	Page

PCBN & PCD

Positive

 CCGT	 DCGT	 TCGT	 VCGT	
06 09 12	07 11	11 16	16	Edge length
A163	A165	A167	A171	Page

Ceramic inserts

Negative

 CNGA	 CNGN	 CNGX	 DNGA	 DNGN	 DNGX	
12 16	12 16	12	15	15	15	Edge length
A176	A177	A178	A179	A180	A181	Page

 RNGN	 SNGA	 SNGN	 SNGX	 TNGA	 TNGN	 WNGA	
09 12 15 19 25	12	12 15 19	12	16 22	16 22	08	Edge length
A187	A182	A184	A183	A185	A186	A188	Page

External tool holders

Holder with double clamping

								
DCLNR/L	**DDJNR/L**	**DSBNR/L**	**DTGNR/L**	**DVJNR/L**	**DVVNN**	**DWLNR/L**		
95°	93°	75°	90°	93°	72.5°	95°		Angle
A197	A198	A199	A200	A202	A201	A203		Page

Holder with knee lever clamping

								
PCBNR/L	**PCLNR/L**	**PDJNR/L**	**PDNNR/L**	**PSBNR/L**	**PSDNN**	**PSKNR/L**	**PSSNR/L**	
75°	95°	93°	63°	75°	45°	75°	45°	Angle
A204	A205	A206	A207	A208	A210	A211	A212	Page

								
PTFNR/L	**PTGNR/L**	**PTTNR/L**	**PWLNR/L**					
91°	90°	60°	95°					Angle
A213	A215	A214	A217					Page

Holder with multi clamping

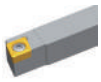
								
MCBNR/L	**MCLNR/L**	**MDJNR/L**	**MDPNN**	**MRDNN**	**MRGNR/L**	**MSBNR/L**	**MSDNN**	
75°	95°	93°	62.5°	45°	90°	75°	45°	Angle
A218	A219	A220	A221	A233	A234	A222	A225	Page

								
MSKNR/L	**MSRNR/L**	**MTFNR/L**	**MTGNR/L**	**MTJNR/L**	**MTJNR/L-Z**	**MVJNR/L**	**MVVNN**	
75°	75°	90°	90°	93°	93°	93°	72.5°	Angle
A224	A223	A229	A226	A227	A228	A231	A230	Page

								
MWLNR/L								
95°								Angle
A232								Page

External tool holders

Holder with screw clamping



SCACR/L	SCLCR/L	SDACR/L	SDJCR/L	SDNCN	SRDCN	SRGCR/L	SSBCR/L	
90°	95°	90°	93°	63°	45°	90°	75°	Angle
A235	A236	A237	A238	A239	A254	A255	A245	Page



SSDCN	SSKCR/L	SSSCR/L	STACR/L	STFCR/L	STGCR/L	STTCR/L	SVABR/L	
45°	75°	45°	90°	90°	90°	60°	90°	Angle
A246	A247	A248	A249	A250	A251	A252	A241	Page



SVJBR/L	SVJCR/L	SVVBN	SVVCN	SWACR/L				
93°	93°	72.5°	72.5°	90°				Angle
A240	A244	A242	A243	A253				Page

Holder with top clamping



CKJNR/L	CKNNR/L							
93°	63°							Angle
A256	A257							Page

Tool holder for ceramic inserts and solid CBN inserts



CCLNR/L	CDJNR/L	CRDNN	CSDNN	CSKNR/L	CSRNR/L	CTJNR/L	CTUNR/L	
95°	93°	45°	45°	75°	75°	93°	93°	Angle
A258	A260	A264	A265	A262	A263	A259	A261	Page



JCLNR/L	JDJNR/L	JSDNN						
95°	93°	45°						Angle
A266	A267	A268						Page

External tool holders

Swiss turning

								
SCACR/L-SC	**SCLCR/L-SC**	**SDACR/L-SC**	**SDHCR/L-SC**	**SDJCR/L-SC**	**SDNCN-SC**	**SVACR/L-SC**	**SVJCR/L-SC**	
90°	95°	90°	107.5°	93°	63°	90°	93°	Angle
A272	A273	A274	A275	A276	A277	A278	A279	Page

Boring bars

Steel boring bars with knee lever clamping

						
PCLNR/L	**PDSNR/L**	**PDUNR/L**	**PSKNR/L**	**PTFNR/L**	**PWLNR/L**	
95°	45°	93°	75°	90°	95°	Angle
A284	A286	A287	A289	A290	A291	Page

Steel boring bars with screw clamping

								
SCFCR/L	**SCLCR/L**	**SCLPR/L**	**SDQCR/L**	**SDQPR/L**	**SDUCR/L**	**SDUPR/L**	**SDZCR/L**	
90°	95°	95°	107.5°	107.5°	93°	93°	95°	Angle
A310	A293	A306	A295	A307	A296	A308	A297	Page

							
SSKCR/L	**STFCR/L**	**STUPR/L**	**SVQBR/L**	**SVQCR/L**	**SVUBR/L**	**SVUCR/L**	
75°	90°	93°	107.5°	107.5°	93°	93°	Angle
A298	A300	A309	A304	A302	A305	A303	Page

Solid carbide boring bars with screw clamping

								
SCLCR/L	**SCLPR/L**	**SDQCR/L**	**SDQPR/L**	**SDUCR/L**	**SDUPR/L**	**STFCR/L**	**STFPR/L**	
95°	95°	107.5°	107.5°	93°	93°	90°	90°	Angle
A313	A312	A315	A314	A317	A316	A319	A320	Page

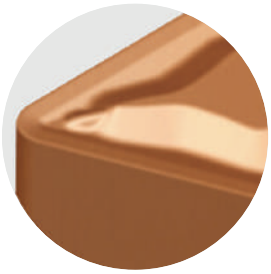
			
STUPR/L	**SVQCR/L**	**SVUCR/L**	
93°	107.5°	93°	Angle
A318	A321	A322	Page

New

ADF & AHF

Chip breaker

Optimised geometry series especially for machining of steel and stainless steel.



-ADF

Negative inserts

e.g. **CNMG ...**

Ground, double sided chip breaker with good chip control. Wide range of application due to excellent balance of sharpness and cutting edge stability.



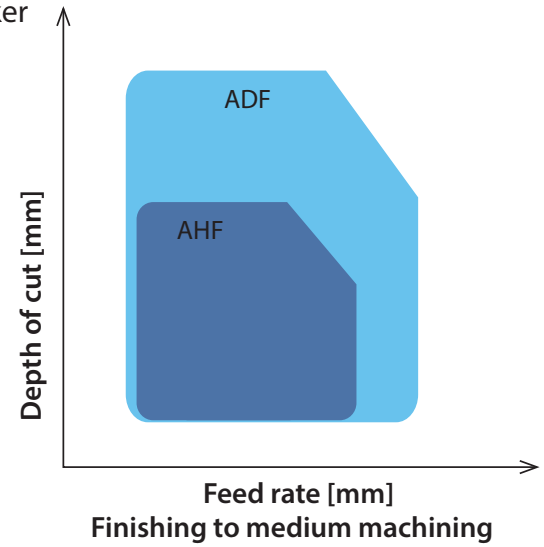
-AHF

Positive inserts

e.g. **CCMT ...**

Ground, single sided chip breaker with good chip control. Wide range of application due to excellent balance of sharpness and cutting edge stability.

Range of chip breaker



New

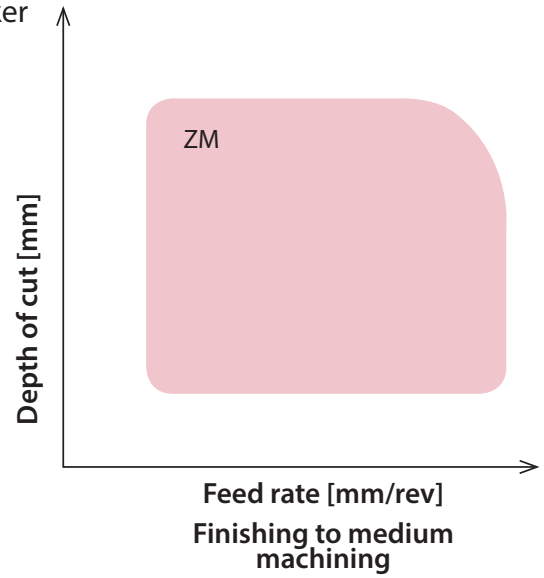
ZM Chip breaker

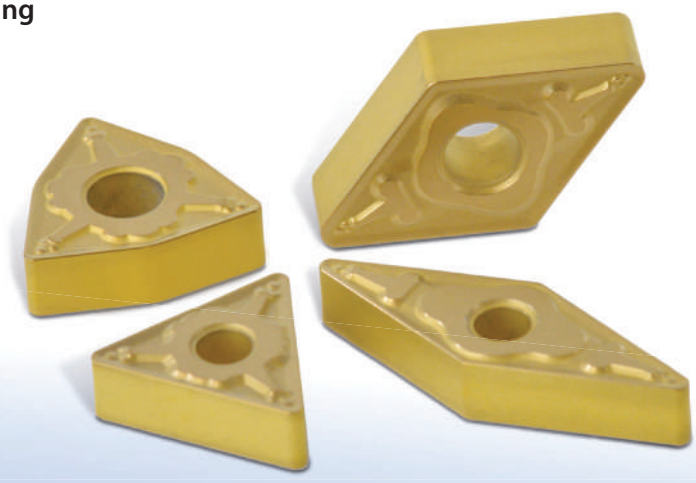


-ZM

Double sided chip breaker for medium machining. Wide range of application due to stable cutting edge and large rake angle. Very suitable for machining of steel.

Range of chip breaker





Simply coloured

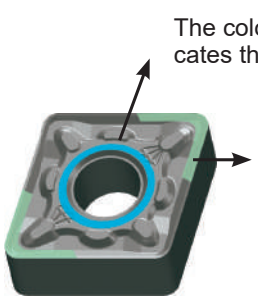
The revolution in wear identification

YBC / YBM F SERIES

Easy choice on the basis of the table without any further knowledge and without looking at the insert box.

	P	M
05	YBC052F	
15	YBC152F	YBM153F
25	YBC252F	YBM253F
35	YBC352F	

Recommended for wet machining



The colour of the inner ring indicates the application range.(P/M)

The colour of the cutting edge indicates the grade, such as P15.

ZCC-CT

New

NGF & SNR

Chip breaker

Special chip breaker series for machining of heat-resistant alloys.



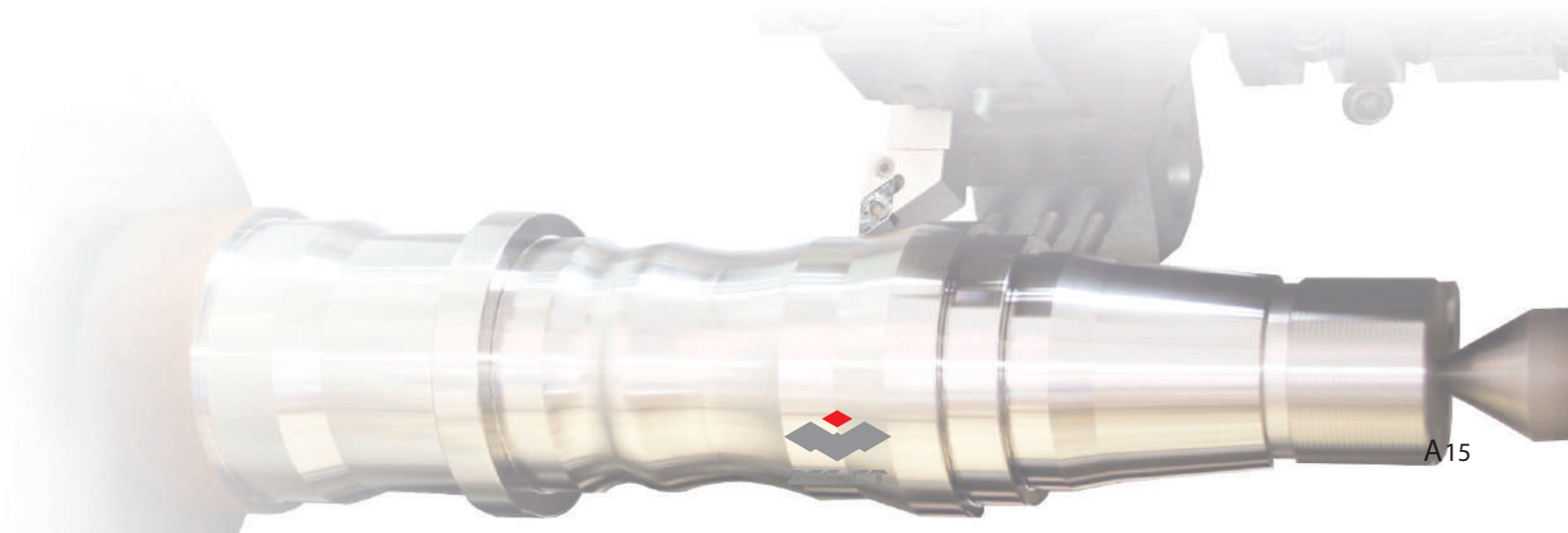
-NGF

Double sided chip breaker with ground cutting edge and large rake angle for finishing. E-tolerance for high repeatability.



-SNR

Double sided chip breaker for roughing. Wide range of application due to excellent balance of sharpness and cutting edge stability.



Negative inserts

Finishing

SF P M K





Double sided chip breaker in combination with cermet grades. Geometry with high sharpness for improved chip control and great surface quality. Ideal for machining with small cutting depths and feed rates.

DF P K





Double sided chip breaker with good chip control. Suitable for finishing and medium machining of steel and cast iron.

ADF P M





Ground, double sided chip breaker with good chip control. Wide range of application due to excellent balance of sharpness and cutting edge stability.

EF M S

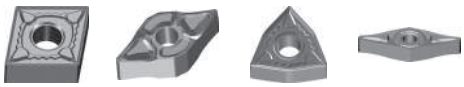




Double sided chip breaker with sharp cutting edge and large rake angle for finishing of stainless steel.

NF S M





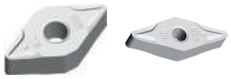
Double sided chip breaker with ground cutting edge and large rake angle for finishing. E-tolerance for high repeatability.

Negative inserts

Finishing

NGF S M





Double sided chip breaker with ground cutting edge and large rake angle for finishing. E-tolerance for high repeatability.

Wiper

WG P M K





Double sided chip breaker with wiper geometry. Allows to double the feed rate and improves the surface quality.

Medium machining

DM P K





Double sided chip breaker for medium machining. Wide range of application due to excellent balance of sharpness and cutting edge stability.

ZM P





Double sided chip breaker for medium machining. Wide range of application due to stable cutting edge and large rake angle. Very suitable for machining of steel.

PM P K





Double sided chip breaker for medium machining. Wide range of application in steel and cast iron.

Negative inserts

Medium machining

TC K P





Double sided chip breaker with surrounding cutting edge. Process reliable machining due to highest cutting edge stability.

NM S M





Double sided chip breaker with ground cutting edge and large rake angle for medium machining of heat-resistant materials.

EM M S





Double sided chip breaker with sharp cutting edge and large rake angle. Process reliable medium machining of stainless steel.

EG M S





Double sided chip breaker with grinded cutting edge and large rake angle. Wide range of application for medium machining of stainless steel.

Basic P K





Double sided chip breaker with surrounding cutting edge for universal machining of steel and cast iron.

Negative inserts

Roughing

DR double sided | P | K





Double sided chip breaker with positive rake angle and stable cutting edge for light to medium roughing of steel and cast iron.

DR single sided | P | K





Single sided chipbreaker with positive rake angle and stable cutting edge for light to medium roughing of steel and cast iron.

LR | P | M





Single sided chip breaker with curved cutting edge and unique bumpy geometry. Low cutting pressure for process reliable machining. Light roughing of steel and stainless steel.

ER double sided | M | S





Double sided chip breaker with large rake angle for low cutting forces. Suitable for roughing of stainless steel.

ER single sided | M | S





Single sided chip breaker with large rake angle for low cutting forces. Suitable for roughing of stainless steel.

Negative inserts

Roughing

HDR P M





Single sided chip breaker with high cutting edge stability and deformation resistance. Excellent for roughing with high cutting depths in steel and stainless steel.

HPR P K





Single sided chip breaker with high cutting edge stability and large chip space. Excellent for heavy roughing in steel and cast iron.

Flat K





Double sided insert without chip breaker. Stable cutting edge design, due to missing microgeometry. Excellent for roughing in cast iron.

SNR S M





Double sided chip breaker for roughing. Wide range of application due to excellent balance of sharpness and cutting edge stability.

PCBN & PCD inserts

Flat N H





With brazed CBN or PCD cutting edge. For machining of hardened steel (CBN) or non-ferrous metals (PCD).

Negative inserts

PCBN & PCD inserts

Flat H K



Solid CBN insert for machining od steel and cast iron.

Ceramic inserts

Flat K H

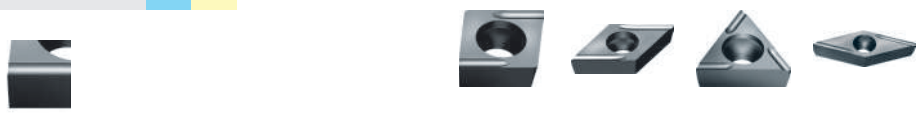


Ceramic inserts for machining of low hardened steel and cast iron.

Positive inserts

Fine-finishing

USF P M



Single sided chip breaker for fine finishing. Sharp cutting edge with large hollow flute, excellently suitable for machining small work pieces. G-tolerance for high repeatability.

R/L P M



Single sided chip breaker for fine finishing. Excellent for high surface quality. G-tolerance for high repeatability.

SF P M



Single sided chip breaker in combination with cermet grades. Geometry with high sharpness for improved chip control and great surface quality. Ideal for machining with small cutting depths and feed rates.

Positive inserts

Finishing

HF P K





Single sided chip breaker with good chip control. Suitable for finishing to medium machining of steel and cast iron.

AHF P M





Ground, single sided chip breaker with good chip control. Wide range of application due to excellent balance of sharpness and cutting edge stability.

EF M S





Single sided chip breaker with sharp cutting edge and large rake angle for finishing of stainless steel.

NF M S





Single sided chip breaker with ground cutting edge and large rake angle for finishing. E-tolerance for high repeatability.

NGF M S





Single sided chip breaker with ground cutting edge and large rake angle for finishing. E-tolerance for high repeatability.

Positive inserts

Medium machining

TC K P





Single sided chip breaker with encircling cutting edge. Process reliable machining due to highest cutting edge stability.

HM P K





Single sided chip breaker for medium machining. Wide range of application due to excellent balance of sharpness and cutting edge stability.

EM M S





Single sided chip breaker with sharp cutting edge and large rake angle. Process reliable medium machining of stainless steel.

Basic P K





Single sided chip breaker with encircling cutting edge for universal machining of steel and cast iron.

Roughing

Flat K





Single sided insert without chip breaker. Stable cutting edge design due to missing microgeometry. Excellent for roughing in cast iron.

Positive inserts

Roughing

HR P K





Single sided chip breaker with positive rake angle and stable cutting edge for light to medium roughing of steel and cast iron.

SNR S M





Single sided chip breaker for roughing. Wide range of application due to excellent balance of sharpness and cutting edge stability.

Basic P K





Single sided chip breaker with encircling cutting edge for universal machining of steel and cast iron.

Aluminium machining

LC N





Single sided chip breaker with excellent cutting edge design. Sharp cutting edge with positive rake angle. G-tolerance for high repeatability.

LH N





Single sided chipbreaker for machining of cast aluminium alloys. Sharp cutting edge with positive rake angle. G-tolerance for high repeatability.

Positive inserts

PCBN & PCD inserts

Flat	N	H





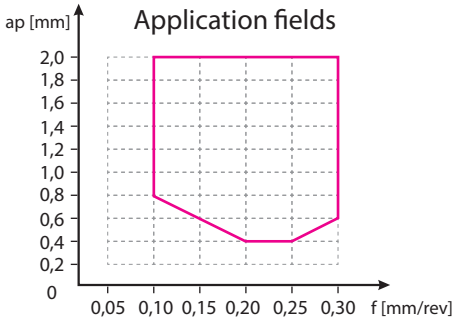
With brazed CBN or PCD cutting edge. For machining of hardened steel (CBN) or non-ferrous metals (PCD).

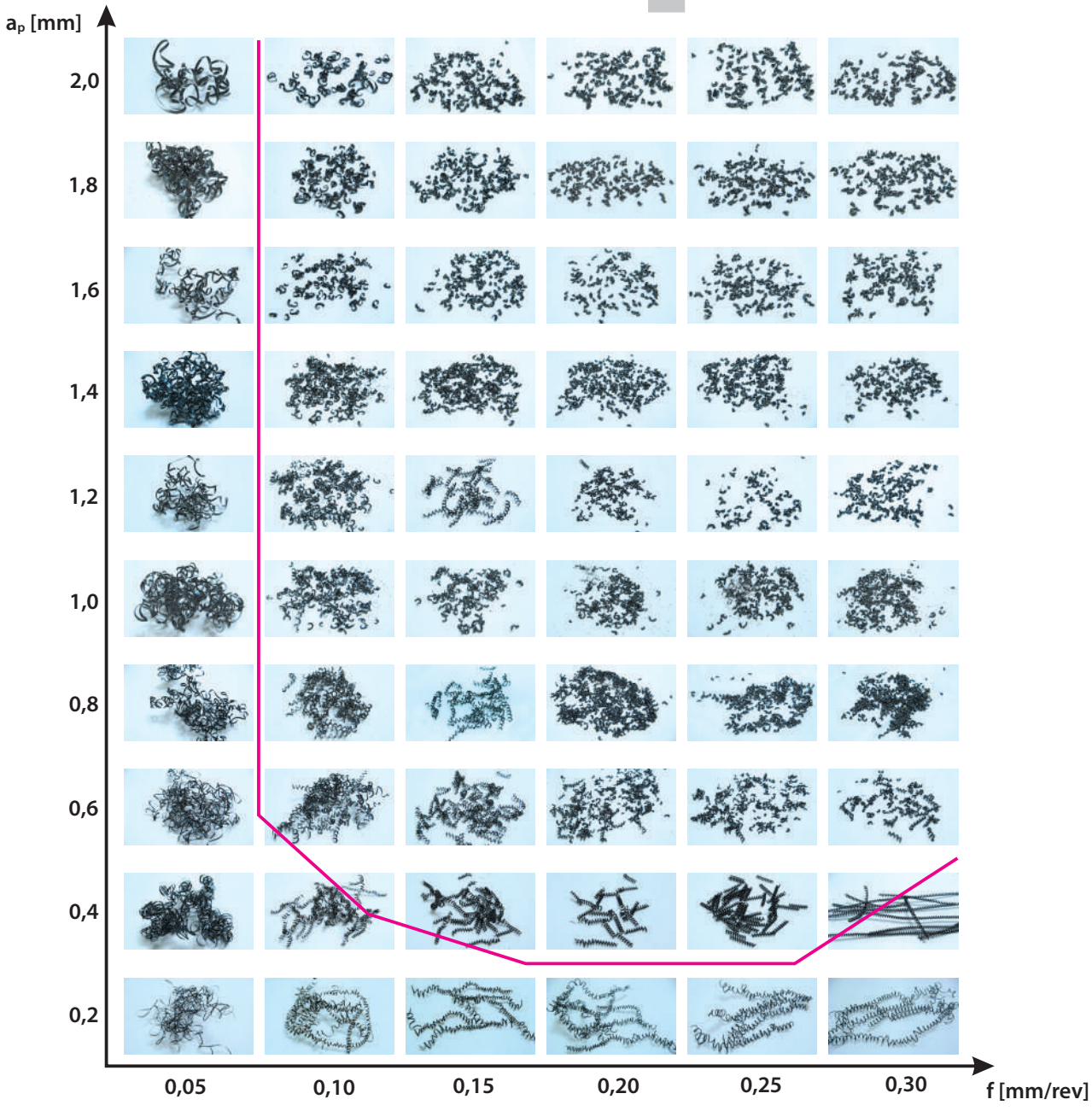
Notes

General turning

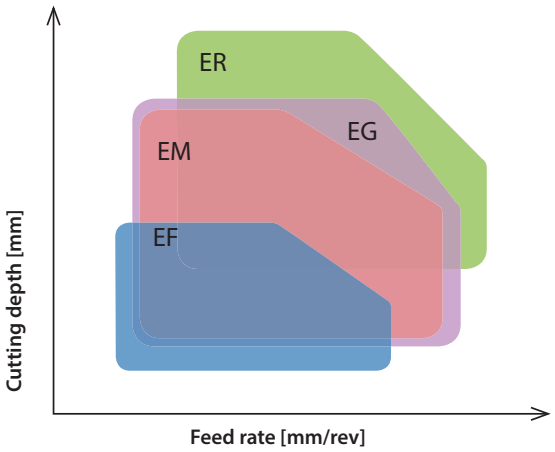
Application fields of chip breakers determination

Example
Insert: CNMG120408-DF
Holder: PCLNL2525M12
Material: Acier C45
V_C : 200 m/min

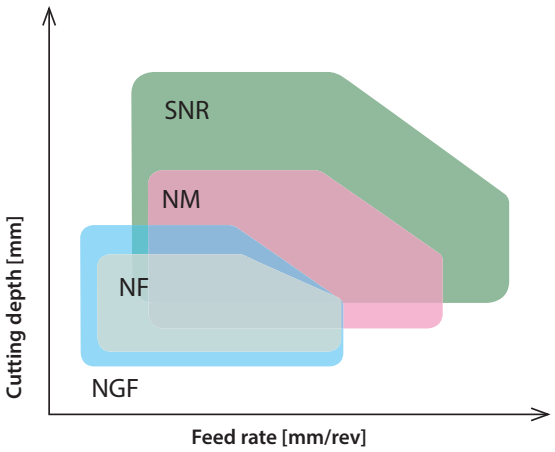




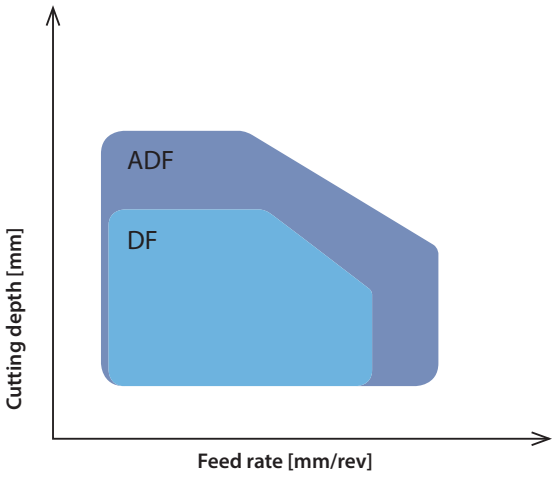
Negative inserts



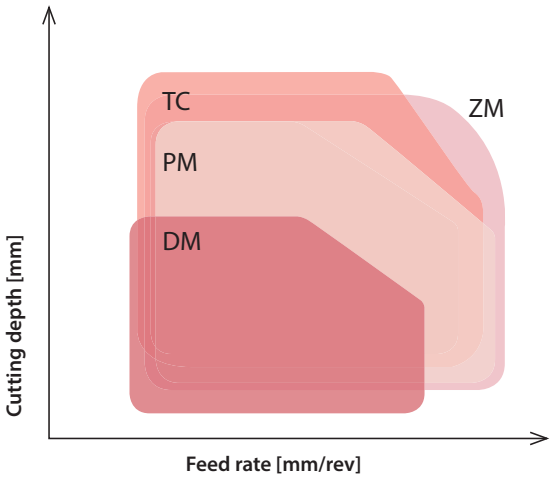
Finishing to medium machining



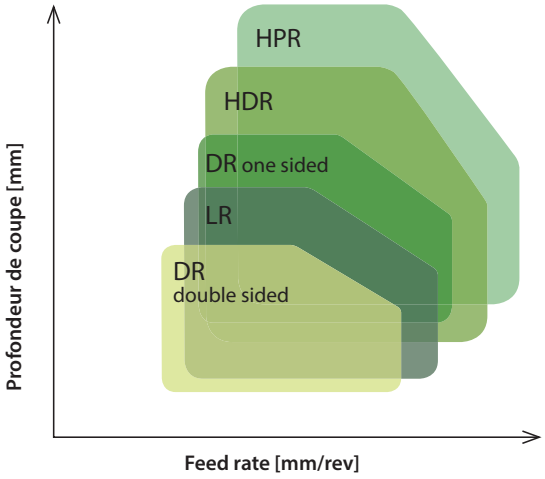
Finishing to roughing



Finishing to roughing

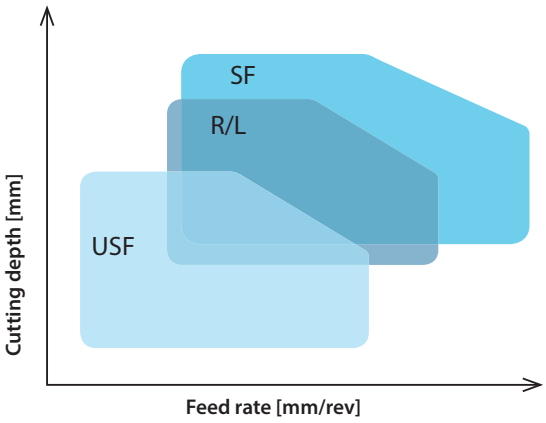


Medium machining

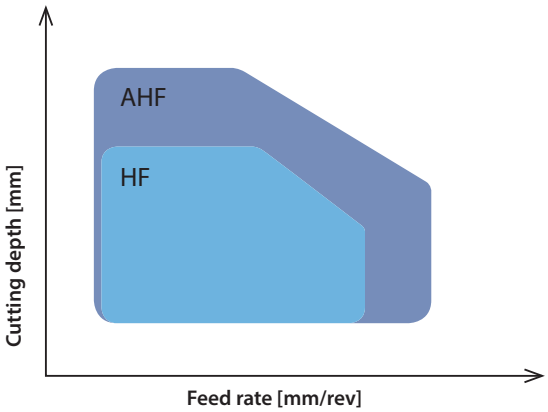


Roughing

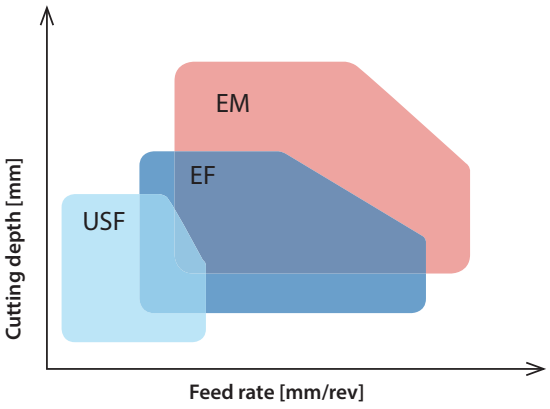
Positive inserts



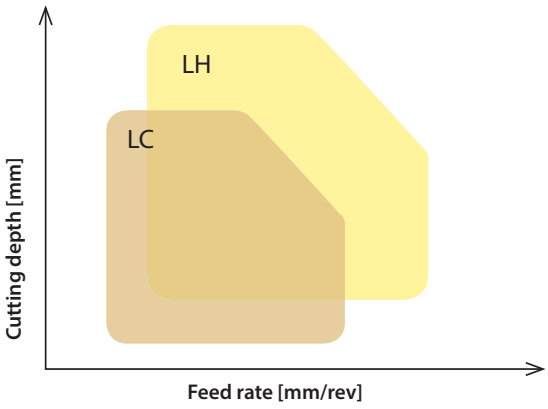
Fine-finishing



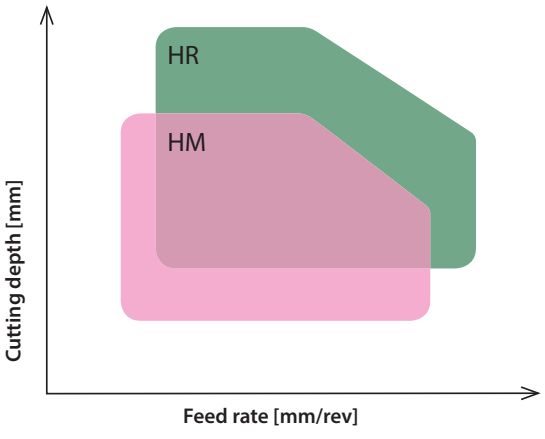
Finishing to medium machining



Finishing to medium machining



Finishing to medium machining

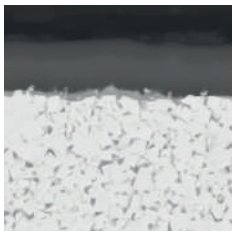


Medium machining to roughing

New

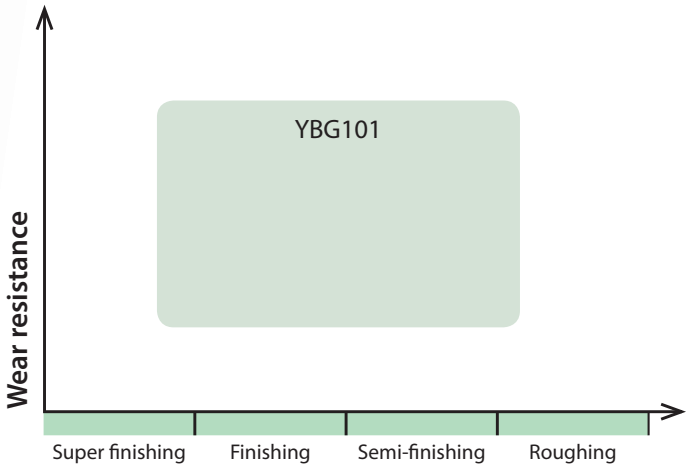
YBG101

Turning grades for aluminum



PVD coated N05–N20 carbide substrate for finishing to medium application in aluminum material. Coating only on the top face, in combination with the aluminum chip breaker, prevents build up edges and gives a smooth cut.

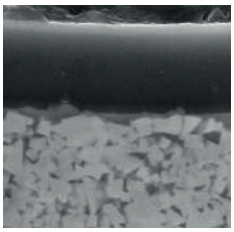






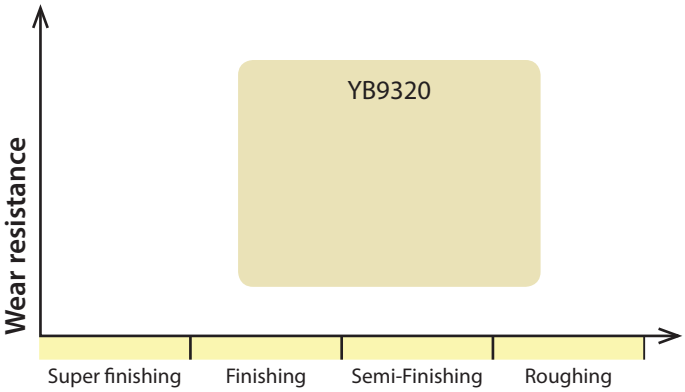
New YB9320

PVD coated cemented carbide



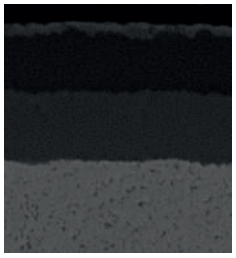
PVD multilayer coated M10–M25/P10–P30 carbide substrate for finishing to medium application of stainless steel, super alloy and steel (grooving/ milling). Optimized coating stability for higher wear resistance and thermal stability in a wide application field.





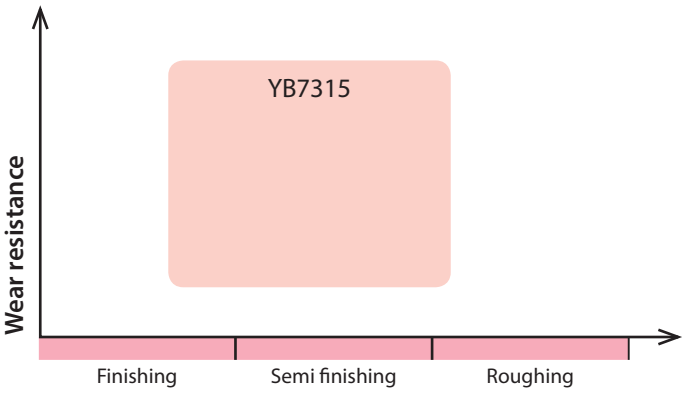
New YB7315

For high efficient machining of cast irons

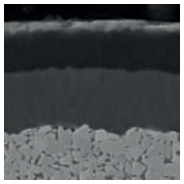
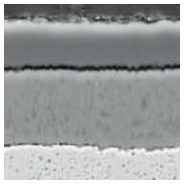
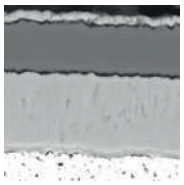
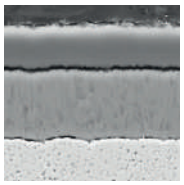
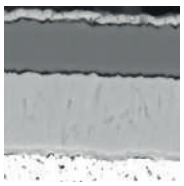
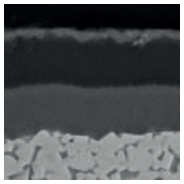
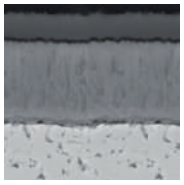
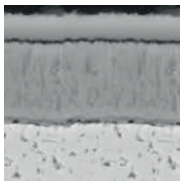


CVD coated K10–K25 carbide substrate. Optimized for medium to roughing operation of cast iron. Improved wear resistance and toughness at high cutting speed.

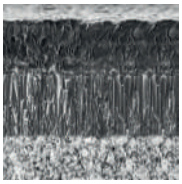
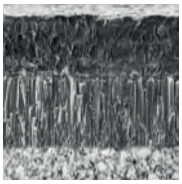
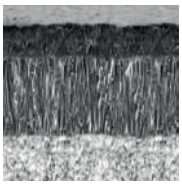
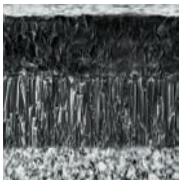




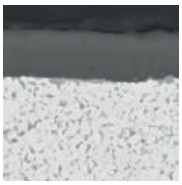
Coated cemented carbide CVD

Grade	ISO	Micro structure	Grade description
YB6315	P10 – 20		CVD coated P10–P20 carbide grade for finishing to medium operation of steel, casting steel and high chrome material. Outstanding performance under high cutting speed and temperature with excellent wear resistance.
YBC152	P10 – 20		CVD coated P10–P20 carbide grade for finishing to medium operation of steel and casting steel. Outstanding performance under higher cutting speed and temperature with excellent wear resistance.
YBC251	P20 - P35		CVD coated P20–P35 carbide grade for medium operation to roughing of steel and casting steel in lower cutting speed.
YBC252	P20 - P35		CVD coated P20–P35 carbide grade for medium operation to roughing of steel and casting steel. Optimal performance of wear resistance and toughness for a wide application field.
YBC351	P20 - P40		CVD coated P20–P40 carbide grade for roughing operation of steel and casting steel in lower cutting speed.
YBC352	P20 - P40		CVD coated P20–P40 carbide grade for roughing operation of steel and casting steel. Optimal performance of wear resistance and toughness for a wide application field.
YBM153	M10 - M25		CVD coated M10–M25 carbide grade for finishing to medium application in stainless steel. High wear resistance and capability against plastic deformation at higher cutting speed.
YBM253	M15 - M35		CVD coated M15–M35 carbide grade for medium to roughing operation in stainless steel with wide application field. High wear resistance and capability against plasctic deformation at higher cutting speed.

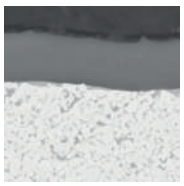
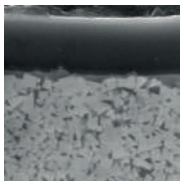
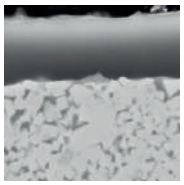
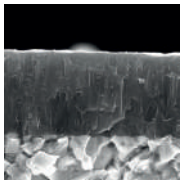
Coated cemented carbide CVD

Grade	ISO	Micro structure	Grade description
YBD052	K05 - K15		CVD coated K05–K15 carbide grade for cast iron material, special grey cast iron. Excellent wear resistance in higher cutting speed and dry machining.
YBD102	K05 - K20		CVD coated K05–K20 carbide substrate. Optimized for medium operation of cast iron, special nodular cast iron and hard steel at high cutting speed.
YB7315	K10 - K25		CVD coated K10–K25 carbide substrate. Optimized for medium to roughing operation of cast iron. Improved wear resistance and toughness at high cutting speed.
YBD152	K10 - K25		CVD coated K10–K25 carbide substrate. Optimized for medium to roughing operation of cast iron. Good wear resistance and toughness at higher cutting speed.
YBD152C	K10 - K25		Thick Al2O3 CVD coated K05–K25 carbide substrate. Optimized for medium to roughing operation of cast iron. Higher wear resistance and toughness at higher cutting speed in combination with TC chip breaker.

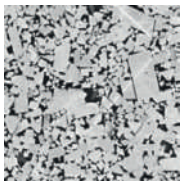
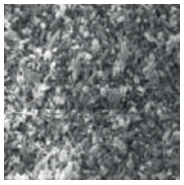
Coated cemented carbide PVD

Grade	ISO	Micro structure	Grade description
YBG102	S05 - S15		PVD coated S05–S15 carbide substrate for finishing to medium application of super alloy material, stainless steel and aluminum. Good wear resistance in a wide application field.
YBG105	S05 - S20		PVD multilayer coated S05–S20 carbide substrate for finishing to medium application of super alloy material but also stainless steel. Good wear resistance and thermal stability in a wide application field.

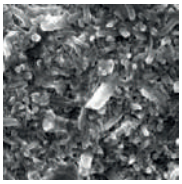
Coated cemented carbide PVD

Grade	ISO	Micro structure	Grade description
YBG202	P10 - P30 M10 - M25		PVD coated M10–M25/P10–P30 carbide substrate for finishing to medium application of stainless steel and steel (milling). Good wear resistance in a wide application field.
YBG205	P10 - P30 M20 - M40 S15-S25		PVD multilayer coated M20–M40/S15–S25/P10–P30 carbide substrate for finishing to medium application of stainless steel, super alloy and steel (milling). Good wear resistance and thermal stability in a wide application field.
YB9320	P10 - P30 M10 - M25		PVD multilayer coated M10–M25/P10–P30 carbide substrate for finishing to medium application of stainless steel, super alloy and steel (grooving/milling). Optimized coating stability for higher wear resistance and thermal stability in a wide application fi
YBG302	P15 - P30 M25 - M40		PVD coated M25–M40/P15–P30 carbide substrate for medium roughing application of stainless steel and steel (milling). Good wear resistance and toughness.
YBG101	N05 - N20		PVD coated N05–N20 carbide substrate for finishing to medium application in aluminum material. Coating only on the top face, in combination with the aluminum chip breaker, prevents build up edges and gives a smooth cut.

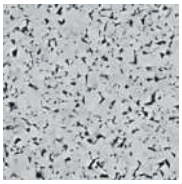
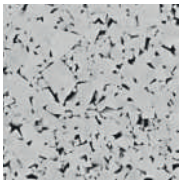
Ceramic

Grade	ISO	Micro structure	Grade description
CA1000	K10 - K25 H10 - H25		Uncoated H10–H25/K10–K25 mixed ceramic grade for finishing to medium operation in hardened steel and nodular cast iron. Good wear resistance and toughness.
CN1000	K05 - K15		Uncoated K05-K15 Si3N4 ceramic grade for finishing to medium operation in grey cast iron. Good wear resistance and thermal stability.

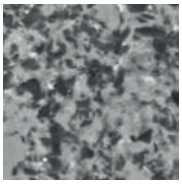
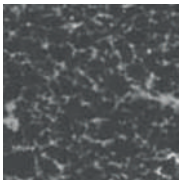
Ceramic

Grade	ISO	Micro structure	Grade description
CN2000	K10 - K30		Uncoated K10–K30 Si3N4 Ceramic grade for medium operation in grey cast iron also with interrupted cut. Good wear resistance, toughness and thermal stability.

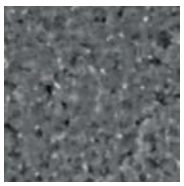
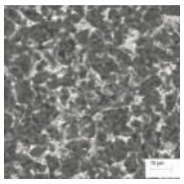
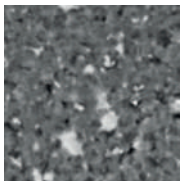
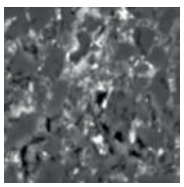
Uncoated cemented carbide

Grade	ISO	Micro structure	Grade description
YD101	N05 - N20 K05 - K20		Uncoated N05–N20/K05–K20 carbide substrate for fine to medium application in aluminum and other material.
YD201	N10 - N30 K10 - K30		Uncoated N10–N30/K10–K30 carbide substrate for medium application in aluminum and other material.

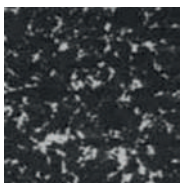
CBN

Grade	ISO	Micro structure	Grade description
YCB111	H01 - H10		Uncoated, brazed H01–H10 CBN grade for fine finishing operation in hardened steel with continuous cut. High wear resistance and productivity at higher cutting speed.
YCB121	H10 - H25		Uncoated, brazed H10–H25 CBN grade for fine to medium application in hardened steel from continuous to light interrupted cut. Good wear resistance and toughness for universal use.
YCB131	H20 - H35		Uncoated, brazed H20–H35 CBN grade for fine to medium application in hardened steel with interrupted cut. Good wear resistance and optimized toughness for safe process.

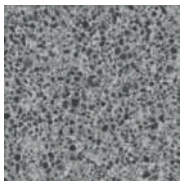
CBN

Grade	ISO	Micro structure	Grade description
YCB211	K10 - K25		Uncoated, brazed K10–K25 CBN grade for fine to medium machining of cast iron. Good wear resistance and thermal conductivity.
YZB121	H10 - H25		Uncoated H10–H25 solid CBN grade for medium application in hardened steel, HSS or bearing steel also in light interrupted cut. Good wear resistance and toughness.
YZB221	K10 - K25		Uncoated K10–K25 solid CBN grade for medium application in grey cast iron, nodular cast iron and Ni/Cr basic alloy., also in light interrupted cut. Good wear resistance and thermal conductivity.
YZB231	K20 - K30		Uncoated K20–K30 solid CBN grade for medium to roughing application in grey cast iron and nodular cast iron in interrupted cut. Good wear resistance, toughness and thermal conductivity.

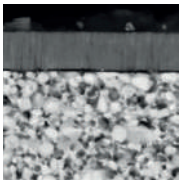
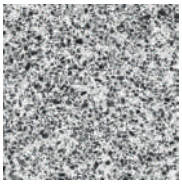
PCD

Grade	ISO	Micro structure	Grade description
YCD421	N01 - N10		Uncoated, brazed N01–N10 PCD grade for fine finishing operation of aluminum alloys less than 12 % Si, composites, copper/magnesium and other alloys. Medium grain size grade with good wear resistance for a wide application field.

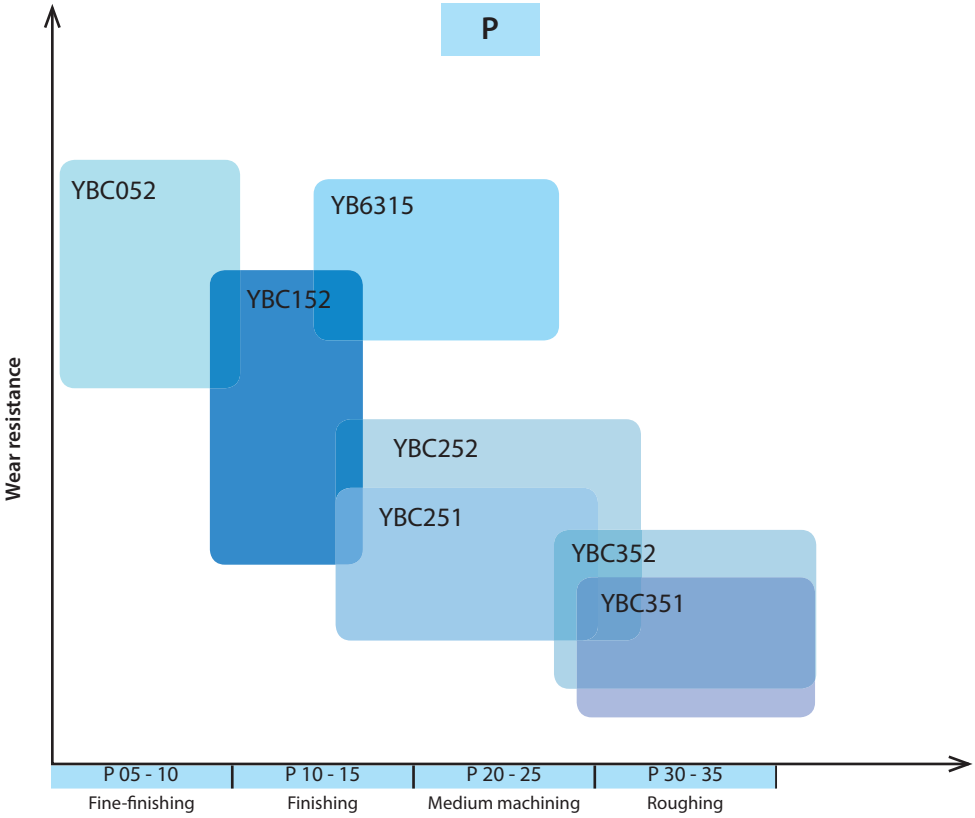
Cermet

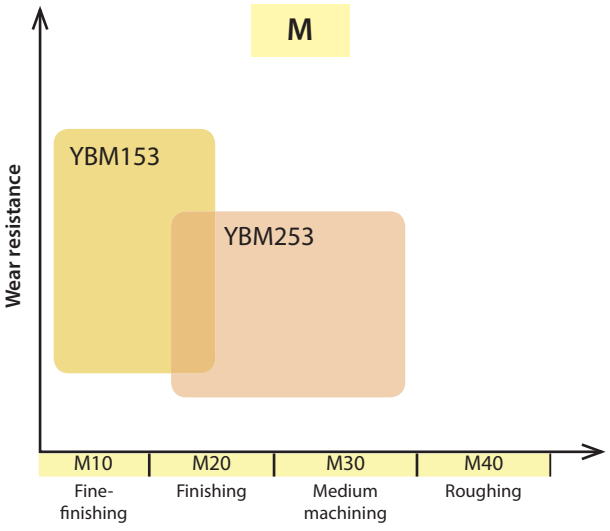
Grade	ISO	Micro structure	Grade description
YNG151	P05 – P15		Uncoated P05–P15 cermet grade for fine finishing operation of steel and stainless steel. Good resistance against plastic deformation for good surface finishing.

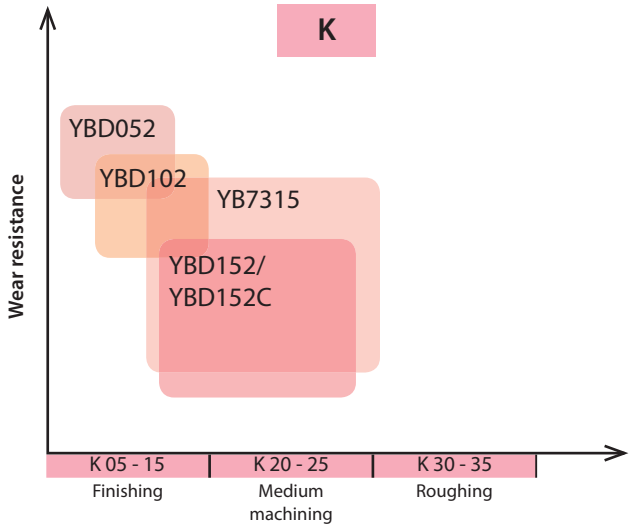
Cermet

Grade	ISO	Micro structure	Grade description
YNG151C	P05 – P15		PVD coated P05–P15 cermet grade for fine finishing operation of steel and stainless steel. Good wear resistance and capability against plastic deformation for good surface roughness.
YNT251	P10 - P25		Uncoated P10–P25 cermet grade for fine finishing to medium operation of steel and stainless steel. Good wear resistance and toughness. Suitable also in light interrupted cut.

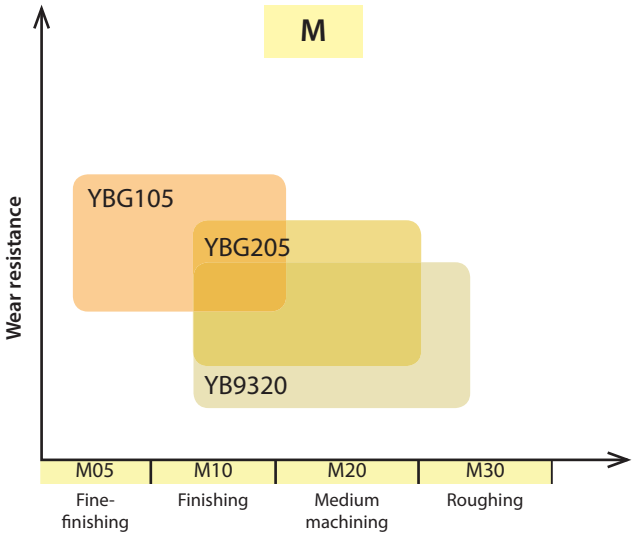
CVD grades for steel, stainless steel and cast iron

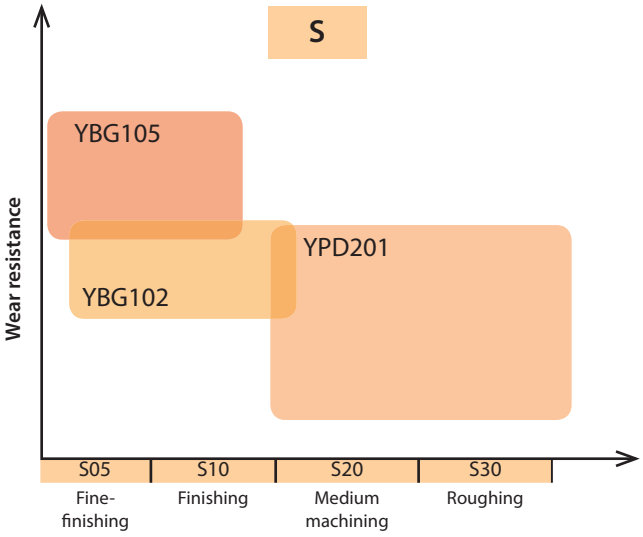




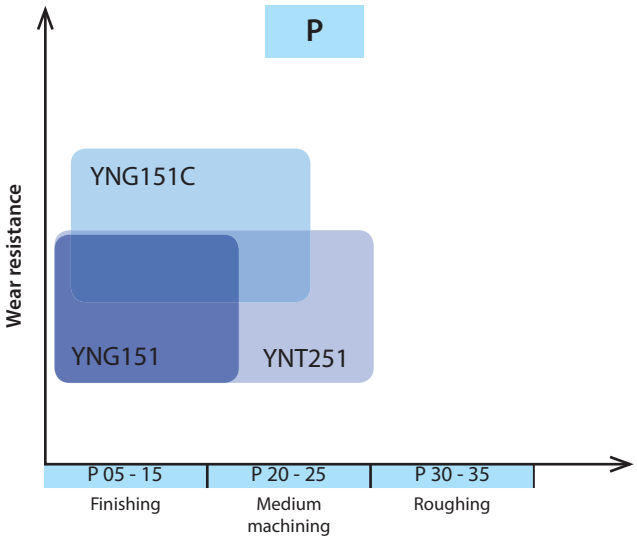


PVD grade for stainless steel and heat-resistant alloys

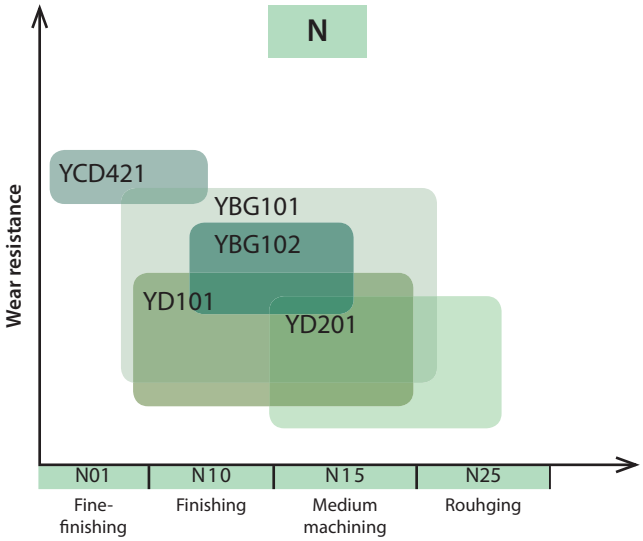




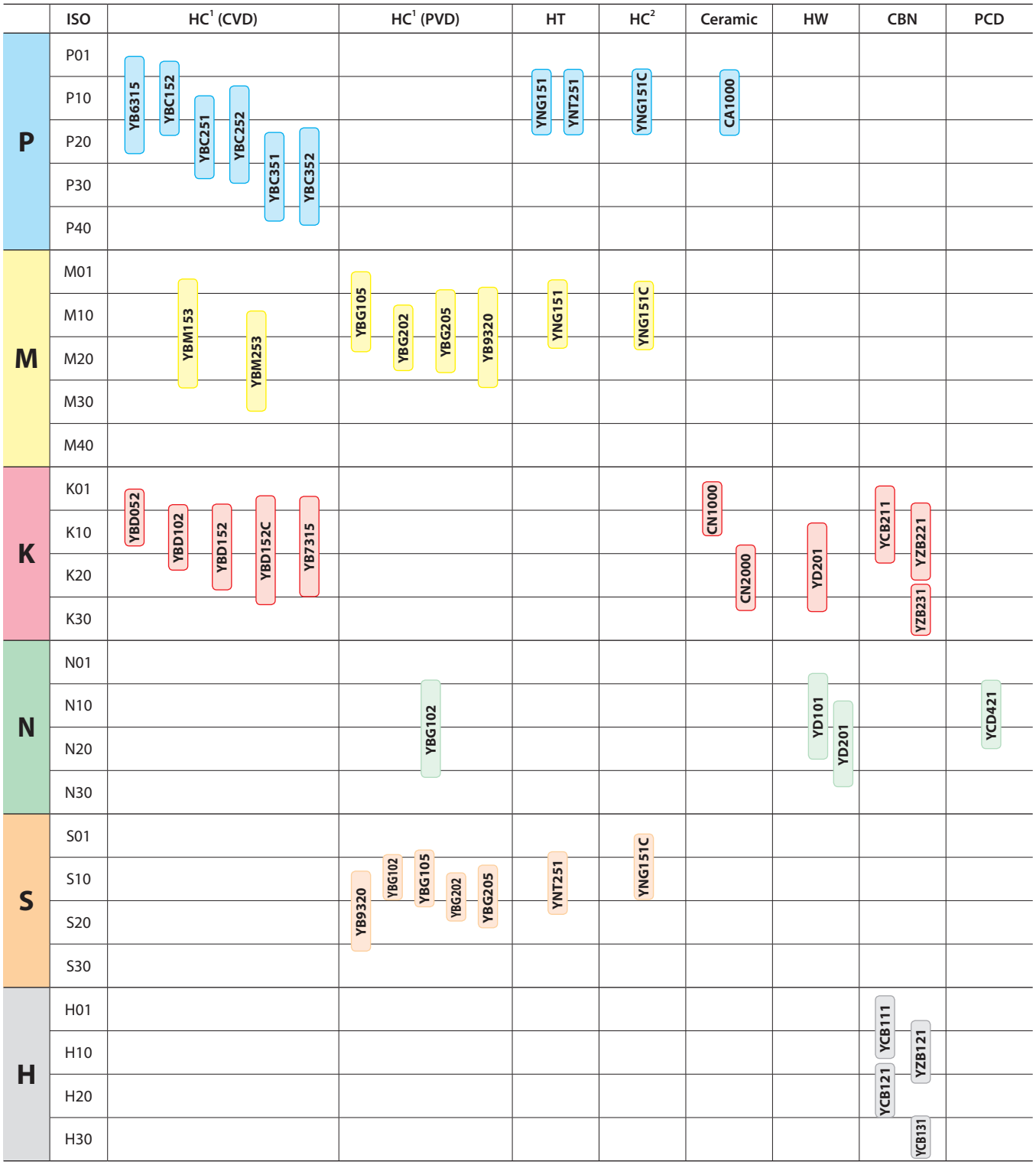
Cermet grades for steel



Turning grades for non-ferrous metals

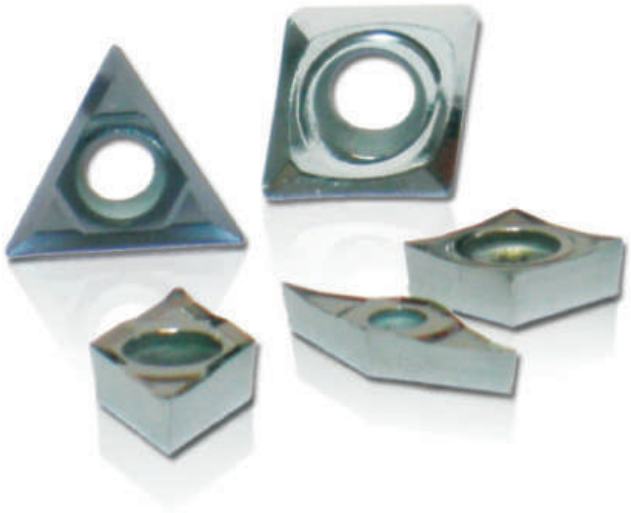


Application fields of grades – general turning

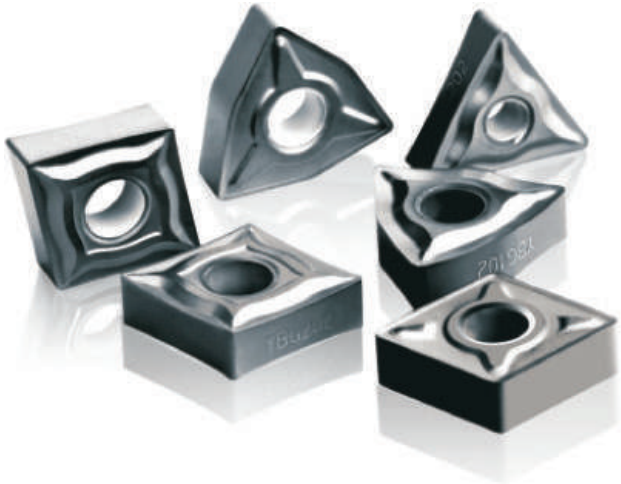


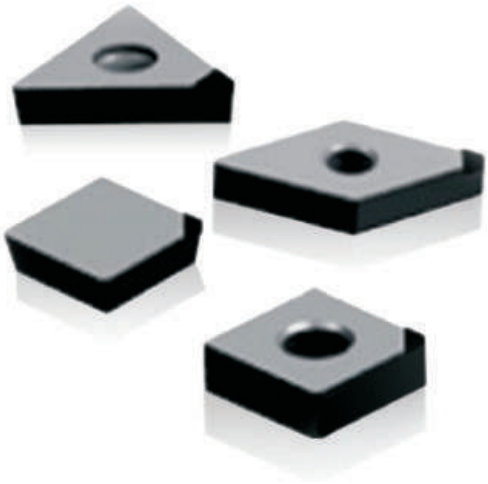
P	Steel	N	Non-ferrous metals
M	Stainless steel	S	Heat-resistant alloys
K	Cast iron	H	Hardened materials

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide









ISO standard

T	N	M	G	22	04	08	(N)	–	DM
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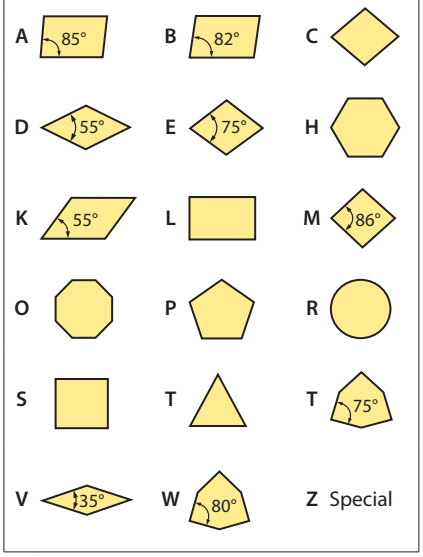
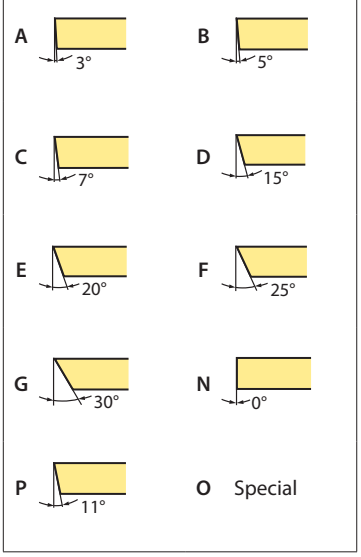
Insert shape



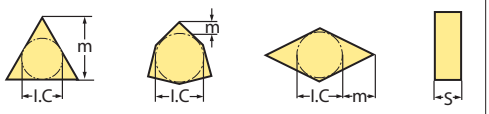
1

Clearance angle



2

Tolerance class

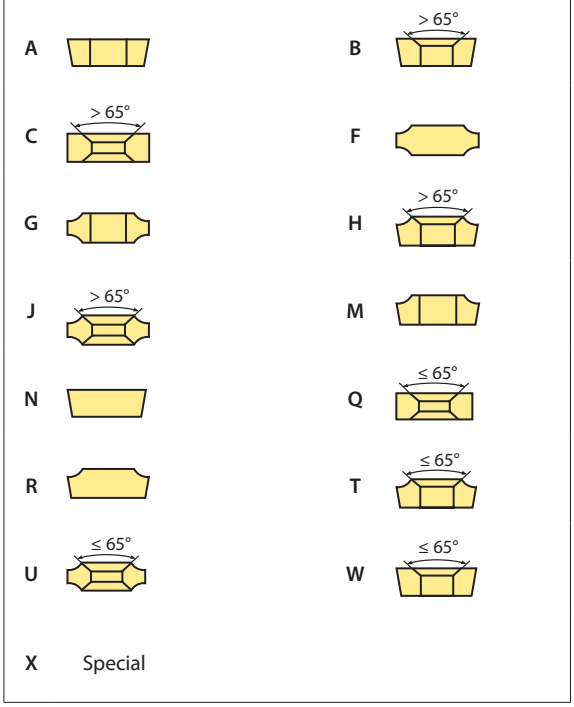


Code	I.C [mm]	m [mm]	S [mm]
A	±0,025	±0,005	±0,025
C	±0,025	±0,013	±0,025
E	±0,025	±0,025	±0,025
F	±0,013	±0,005	±0,025
G	±0,025	±0,025	±0,130
H	±0,013	±0,013	±0,025
J	±0,05–0,15	±0,005	±0,025
K	±0,05–0,15	±0,013	±0,025
L	±0,05–0,15	±0,025	±0,025
M	±0,05–0,15	±0,08–0,20	±0,130
N	±0,05–0,15	±0,08–0,20	±0,025
U	±0,08–0,25	±0,13–0,38	±0,130

3

Fastening features (metric)

Insert shape



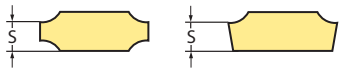
4

Cutting edge length l [mm]

I.C [mm]	Insert shape C	D	R	S	T	V	W	K
3,97					06			
5,0			05					
5,56					09			
6,0			06					
6,35	06	07			11	11		
8,0			08					
9,525	09	11	09	09	16	16	06	16
10,0			10					
12,0			12					
12,7	12	15	12	12	22	22	08	
15,875	16		15	15	27			
16,0		19	16					
19,05	19		19	19	33			
20,0			20					
25,0	25	25	25					
25,4			25	25				
31,75			31					
32			32					

5

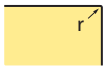
Insert thickness S [mm]



Code	S	Code	S
00	0,79	**T5**	5,95
T0	0,99	**06**	6,35
01	1,59	**T6**	6,75
T1	1,98	**07**	7,94
02	2,38	**09**	9,52
T2	2,58	**T9**	9,72
03	3,18	**11**	11,11
T3	3,97	**12**	12,70
04	4,76		
T4	4,96		
05	5,56		

6

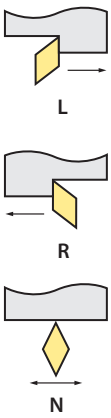
Nose radius r [mm]



Code	r
00	–
02	0,2
04	0,4
08	0,8
12	1,2
16	1,6
20	2,0
24	2,4
32	3,2
X	Special
MO	Round inserts

7

Cutting direction



8

Chip breaker overview
(on page A16)

9

ANSI standard

T	N	M	G	4	3	2	(N)	–	DM
1	2	3	4	**5**	**6**	**7**	8		9

Inner circle

Code	[mm]	Pouce
2	6.35	0.250
3	9.525	0.375
4	12.7	0.500
5	15.875	0.625
6	19.05	0.750
8	25.4	1.000

5

Insert thickness

Code	[mm]	Pouce
2	3.18	0.125
3	4.76	0.187
4	6.35	0.250
5	7.94	0.313
6	9.52	0.375

6

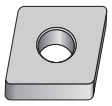
Nose radius

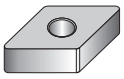
Code	[mm]	Pouce
0	0.2	0.008
1	0.4	0.016
2	0.8	0.031
3	1.2	0.047
4	1.6	0.063
5	2.0	0.079
6	2.4	0.094

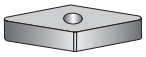
7

Conversion table for general turning inserts (metric/imperial system)

Negative angle/insert

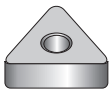
Insert shape C	ISO	Inch
	090304	321
	090308	322
	120404	431
	120408	432
	120412	433
	120416	434
	160608	542
	160612	543
	160616	544
	190608	642
	190612	643
	190616	644
	190624	646
	250724	856
	250732	858
	250924	866
	250932	868

Insert shape D	ISO	Inch
	110404	331
	110408	332
	110412	333
	150404	431
	150408	432
	150412	433
	150604	441
	150608	442
	150612	443
	150616	444
	190608	542
	190612	543

Insert shape V	ISO	Inch
	160404	331
	160408	332
	160412	333

Insert shape R	ISO	Inch
	0903MO	32
	1204MO	43

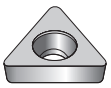
Insert shape W	ISO	Inch
	06T304	3(2.5)1
	06T308	3(2.5)2
	06T312	3(2.5)3
	060404	331
	060408	332
	060412	333
	080404	431
	080408	432
	080412	433

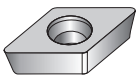
Insert shape T	ISO	Inch
	113304	221
	110308	222
	160404	331
	160408	332
	160412	333
	220404	431
	220408	432
	220412	433
	220416	434
	270608	542
	270612	543
	270616	544

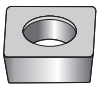
Insert shape S	ISO	Inch
	090304	321
	090308	322
	090312	323
	120404	431
	120408	432
	120412	433
	120416	434
	150608	542
	150612	543
	150616	544
	190412	633
	190424	636
	190612	643
	190616	644
	250724	856
	250732	858
	250924	866
	250932	868

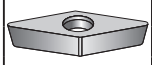
Positive angle/insert

Insert shape C	ISO	Inch
	060202	2(1.5)0
	060204	2(1.5)1
	060208	2(1.5)2
	09T302	3(2.5)0
	09T304	3(2.5)1
	09T308	3(2.5)2
	120404	431
	120408	432
	120412	433

Inserts shape T	ISO	Inch
	06T102	1.2(1.2)0
	06T104	1.2(1.2)1
	06T108	1.2(1.2)2
	090202	1.8(1.5)0
	090204	1.8(1.5)1
	090208	1.8(1.5)2
	110202	2(1.5)0
	110204	2(1.5)1
	110208	2(1.5)2
	110302	220
	110304	221
	110308	222
	16T302	30
	16T304	31
	16T308	32
	16T312	33
	160400	330
	220408	432
	220412	433
	220416	434
	270408	532
	27041 2	533
	330612	643
	330616	644

Insert shape D	ISO	Inch
	070202	2(1.5)0
	070204	2(1.5)1
	070208	2(1.5)2
	11T302	3(2.5)0
	11T304	3(2.5)1
	11T308	3(2.5)2
	11T312	3(2.5)3

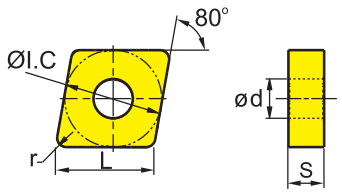
Insert shape S	ISO	Inch
	060204	2(1.5)1
	09T302	3(2.5)0
	09T304	3(2.5)1
	09T308	3(2.5) 2
	120404	431
	120408	432
	120412	433
	150404	531
	150408	532
	150412	533
	190408	632
	190412	633
	190416	634

Inserts shape V	ISO	Inch
	110202	2(1.5)0
	110204	2(1.5)1
	110208	2(1.5)2
	110302	220
	110304	221
	110308	222
	160402	330
	160404	331
	160408	332
	160412	333

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

CNMG	L	I.C	S	d
09 03	9.7	9.525	3.18	3.81
12 04	12.9	12.7	4.76	5.16



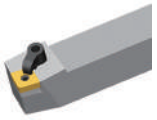
						HC¹ (CVD)											HC¹ (PVD)						HT		HC²	HW		
						YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
		ISO	r	a_p	f																							
WG		**CNMG120404-WG**	0.4	0.25-3.00	0.05-0.25		○																					
		CNMG120408-WG	0.8	0.5-5.0	0.15-0.70		●	●						○		○												
		CNMG120412-WG	1.2	0.8-6.0	0.20-0.75		●																					
Wiper																												
ADF		**CNMG120404-ADF**	0.4	0.5-3.0	0.05-0.30	●																●	●					
		CNMG120408-ADF	0.8	0.5-3.0	0.1-0.4	●																●	○		●			
		CNMG120412-ADF	1.2	0.8-3.0	0.15-0.50	○																●			●			
Finishing																												
DF		**CNMG090304-DF**	0.4	0.25-1.50	0.07-0.30		●	●																				
		CNMG090308-DF	0.8	0.3-1.5	0.1-0.3		●	○																				
		CNMG120404-DF	0.4	0.25-1.50	0.07-0.30		●	●	○																			
		CNMG120408-DF	0.8	0.3-1.5	0.1-0.4		●	●	○																			
Finishing		**CNMG120412-DF**	1.2	0.35-1.50	0.10-0.35		●	●																				
EF		**CNMG090304-EF**	0.4	0.5-2.0	0.05-0.20							○										●	○					
		CNMG090308-EF	0.8	0.5-2.0	0.05-0.25							○										●	○					
		CNMG120404-EF	0.4	0.5-2.5	0.05-0.20				○			●								○		●	○					
		CNMG120408-EF	0.8	0.5-2.5	0.05-0.25				○			●								○		●	○					
Finishing		**CNMG120412-EF**	1.2	0.5-2.5	0.10-0.35							○										○	○					
SF		**CNMG090304-SF**	0.4	0.05-0.50	0.05-0.30																					●		
		CNMG090308-SF	0.8	0.05-0.50	0.10-0.35																					●		
		CNMG120404-SF	0.4	0.1-1.5	0.05-0.30																					●		
		CNMG120408-SF	0.8	0.1-1.5	0.10-0.35																					●		
Finishing																												

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DCLNR/L	PCBNR/L	PCLNR/L	MCBNR/L	MCLNR/L	S***-PCLNR/L
Kr: 95°	Kr: 75°	Kr: 95°	Kr: 75°	Kr: 95°	Kr: 95°
					
A197	A204	A205	A218	A219	A284

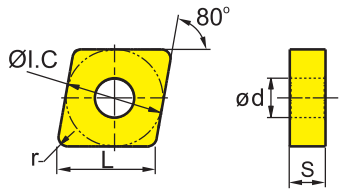
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

CN**	L	I.C	S	d
09 03	9.7	9.525	3.18	3.81
12 04	12.9	12.7	4.76	5.16
16 06	16.1	15.875	6.35	6.35
19 06	19.3	19.05	6.35	7.94

CN** negative insert



	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
					HC¹ (CVD)													HC¹ (PVD)						HT		HC²	HW	
					P																							
					M																							
					K																							
					N																							
					S																							
					H																							
NF	**CNEG120404-NF**	0.4	0.2-2.5	0.05-0.30															○	●							○	
	CNEG120408-NF	0.8	0.2-2.5	0.10-0.35															○	●							○	
	CNEG120412-NF	1.2	0.2-2.5	0.13-0.40															○	○							○	
Finishing																												
PM	**CNMG090304-PM**	0.4	0.4-4.0	0.1-0.3			●	●																				
	CNMG090308-PM	0.8	0.5-4.0	0.15-0.50			●	●																				
	CNMG120404-PM	0.4	0.4-5.5	0.1-0.3		●	●	●		○				●		●												
	CNMG120408-PM	0.8	0.5-5.5	0.15-0.50		●	●	●	●	○			○	●		●												
	CNMG120412-PM	1.2	0.8-5.5	0.18-0.60		●	●	○		○			●	●		●												
	CNMG120416-PM	1.6	1.0-5.5	0.23-0.65		●	●	○					●	●		●												
	CNMG160608-PM	0.8	0.5-7.2	0.15-0.50		●	●	●		●			○	○		○												
	CNMG160612-PM	1.2	0.8-7.2	0.18-0.60		●	●	●		●			○	●		●												
	CNMG160616-PM	1.6	1.0-7.2	0.23-0.65			●	●						●		○												
	CNMG190608-PM	0.8	0.5-8.6	0.15-0.50			●	●		●																		
	CNMG190612-PM	1.2	0.8-8.6	0.18-0.60			●	●		○				○		●												
	CNMG190616-PM	1.6	1.0-8.6	0.23-0.65			○	●						○		○												

Medium Cut

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DCLNR/L	PCBNR/L	PCLNR/L	MCBNR/L	MCLNR/L	S***-PCLNR/L
Kr: 95°	Kr: 75°	Kr: 95°	Kr: 75°	Kr: 95°	Kr: 95°
					
A197	A204	A205	A218	A219	A284

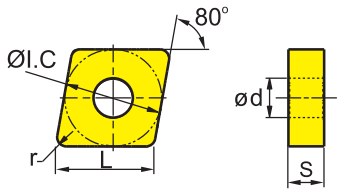
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

CNMG	L	I.C	S	d
09 03	9.7	9.525	3.18	3.81
12 04	12.9	12.7	4.76	5.16
16 06	16.1	15.875	6.35	6.35
19 06	19.3	19.05	6.35	7.94

CN** negative insert



	HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW	
P	○	○	◉	◉	◉	◉										◉	◉	◉	○	◉	○		
M							○	◉						○	○	◉	◉	◉	○	◉	○		
K									●	●	◉	◉	◉										
N													○	○								○	◉
S														○	○	◉	◉	◉	○	◉	○	○	◉
H																							

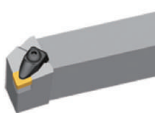
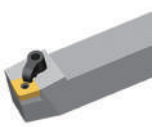
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
DM Medium Cut	**CNMG090304-DM**	0.4	0.4-4.0	0.1-0.3		●	●	●																				
	CNMG090308-DM	0.8	0.5-4.0	0.15-0.50		●	●	●																				
	CNMG090312-DM	1.2	0.5-3.0	0.1-0.4			○																					
	CNMG120404-DM	0.4	0.4-5.5	0.1-0.3		●	●	●		○													○					
	CNMG120408-DM	0.8	0.5-5.5	0.15-0.50	○	●	●	●	●	○	●	●																
	CNMG120412-DM	1.2	0.8-5.5	0.18-0.60	○	●	●	●		○	●	○																
	CNMG120416-DM	1.6	1.0-5.5	0.23-0.65		○	●	○																				
	CNMG160608-DM	0.8	0.5-7.2	0.15-0.50		○	●	○		○																		
	CNMG160612-DM	1.2	0.8-7.2	0.18-0.60		●	●	●		○																		
	CNMG160616-DM	1.6	1.0-7.2	0.23-0.65		●	●	●		●																		
	CNMG190608-DM	0.8	0.5-8.6	0.15-0.50		●	●	●																				
	CNMG190612-DM	1.2	0.8-8.6	0.18-0.60		●	●	●		●																		
	CNMG190616-DM	1.6	1.0-8.6	0.23-0.65		○	●	●		●																		
EG Medium Cut	**CNMG120404-EG**	0.4	0.5-4.0	0.05-0.30							●	●									●	○						
	CNMG120408-EG	0.8	0.5-4.0	0.1-0.4							●	●									●	●						
	CNMG120412-EG	1.2	0.5-4.0	0.2-0.5							○	●									●	●						
EM Medium Cut	**CNMG120404-EM**	0.4	0.5-4.0	0.05-0.30							●	●										●	○					
	CNMG120408-EM	0.8	0.5-5.7	0.15-0.45							●	●										●	○					
	CNMG120412-EM	1.2	0.5-5.7	0.25-0.60							●	●										●						
	CNMG160608-EM	0.8	0.5-7.2	0.15-0.45							●	●										●						
	CNMG160612-EM	1.2	0.5-7.2	0.25-0.60							●	●										●	○					

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

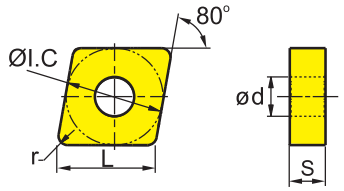
DCLNR/L	PCBNR/L	PCLNR/L	MCBNR/L	MCLNR/L	S***-PCLNR/L
Kr: 95°	Kr: 75°	Kr: 95°	Kr: 75°	Kr: 95°	Kr: 95°
					
A197	A204	A205	A218	A219	A284

System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

CNMG	L	I.C	S	d
12 04	12.9	12.7	4.76	5.16

Turning inserts

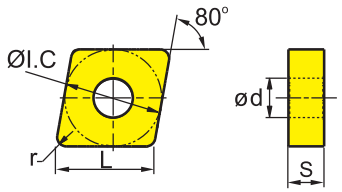


| CN** negative insert | | HC¹ (CVD) | | | | | | | | | | | | HC¹ (PVD) | | | | | | HT | | HC² | HW | | | | | | | | | | | |

CNMG	L	I.C	S	d
12 04	12.9	12.7	4.76	5.16
16 06	16.1	15.875	6.35	6.35
19 06	19.3	19.05	6.35	7.94
25 09	25.79	25.4	9.525	9.12

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions



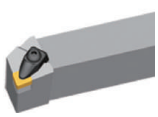
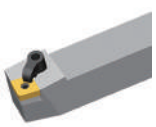
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
	HC¹ (CVD)																	HC¹ (PVD)						HT		HC²	HW	
	P				●	●	◉	◉	◉	◉											◉	◉	◉	●	◉	●		
	M										○	◉							○	○	◉	◉	◉	○	◉	○		
	K												●	●	◉	◉	◉											
	N																	●	●								●	◉
	S																		○	○	◉	◉	◉				●	◉
	H																											
NM	**CNMG120404-NM**	0.4	0.2-3.0	0.05-0.30															○	●								
	CNMG120408-NM	0.8	0.2-4.0	0.1-0.5															○	●	●	○					○	
	CNMG120412-NM	1.2	0.2-4.0	0.2-0.6															○	●								
Medium Cut																												
TC	**CNMG120404-TC**	0.4	0.5-5.0	0.08-0.40											●		●											
	CNMG120408-TC	0.8	0.5-5.0	0.15-0.50											●		●											
	CNMG120412-TC	1.2	0.5-5.0	0.2-0.6											●		●											
	CNMG120416-TC	1.6	0.5-5.0	0.20-0.65											●		○											
	CNMG160608-TC	0.8	1-7	0.15-0.50											●		●											
	CNMG160612-TC	1.2	1-7	0.2-0.6											●		○											
Medium Cut	**CNMG160616-TC**	1.6	1-7	0.20-0.65											●		○											
DR	**CNMG120408-DR**	0.8	0.7-7.0	0.2-0.5	○	●	●	●	●	●			○	●		●												
	CNMG120412-DR	1.2	1-7	0.25-0.70	○	●	●	○	●	○			○	●		●												
	CNMG120416-DR	1.6	1.5-7.0	0.32-0.75		○	●	●		●				●		●												
	CNMG160608-DR	0.8	0.7-8.0	0.2-0.5			●	●		○				●		○												
	CNMG160612-DR	1.2	1-8	0.25-0.70	○	●	●	●	●	○				●		●												
	CNMG160616-DR	1.6	1.5-8.0	0.3-0.8		●	●	●	●	○				○		○												
	CNMG190608-DR	0.8	0.7-10.0	0.2-0.5		●	●	○						○		●												
	CNMG190612-DR	1.2	1-10	0.25-0.70	○	●	●	●	●	●				○		●												
	CNMG190616-DR	1.6	1.5-10.0	0.3-0.8		●	●	●	●	○				○		●												
	CNMG190624-DR	2.4	2-10	0.32-0.90	○		●	●		○						○												
	CNMG250924-DR	2.4	2-15	0.4-1.0			○			○																		
Roughing																												

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DCLNR/L	PCBNR/L	PCLNR/L	MCBNR/L	MCLNR/L	S***-PCLNR/L
Kr: 95°	Kr: 75°	Kr: 95°	Kr: 75°	Kr: 95°	Kr: 95°
					
A197	A204	A205	A218	A219	A284

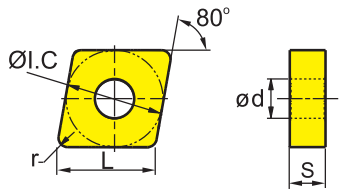
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

CNMG	L	I.C	S	d
12 04	12.9	12.7	4.76	5.16
16 06	16.1	15.875	6.35	6.35
19 06	19.3	19.05	6.35	7.94

CN** negative insert

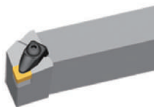
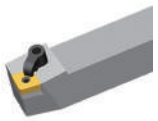


	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
					HC¹ (CVD)													HC¹ (PVD)						HT		HC²	HW	
P					○	○	◎	◎	◎	◎											◎	◎	◎	◎	◎	○		
M											○	◎							○	○	◎	◎	◎	◎	◎	○		
K													○	○	◎	◎	◎											
N																		○	○								○	◎
S																			○	○	◎	◎	◎				○	◎
H																												
SNR	**CNMG120408-SNR**	0.8	1-3	0.1-0.4																●								
	CNMG120412-SNR	1.2	1-3	0.2-0.6																●								
	CNMG160608-SNR	0.8	2-6	0.1-0.4																●								
	CNMG190616-SNR	1.6	2-7	0.2-0.6																○								●
Roughing																												

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

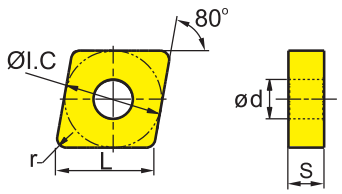
DCLNR/L	PCBNR/L	PCLNR/L	MCBNR/L	MCLNR/L	S***-PCLNR/L
Kr: 95°	Kr: 75°	Kr: 95°	Kr: 75°	Kr: 95°	Kr: 95°
					
A197	A204	A205	A218	A219	A284

System code A42 Grade selection A40 Technical info A447 Cutting data A324

CN**	L	I.C	S	d
12 04	12.9	12.7	4.76	5.16
16 06	16.1	15.875	6.35	6.35
19 06	19.3	19.05	6.35	7.94
25 07	25.79	25.4	7.94	9.12
25 09	25.79	25.4	9.525	9.12

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions



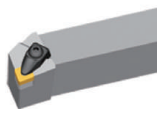
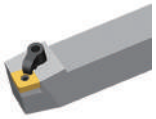
CN** negative insert					HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW	
					P																						
					M																						
					K																						
					N																						
					S																						
					H																						
ISO		r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
DR	**CNMM120412-DR**	1.2	1.0-7.5	0.25-0.70	○	●	●	○	●		○	○																
	CNMM160612-DR	1.2	1.0-9.5	0.25-0.70		●	●	●																				
	CNMM160616-DR	1.6	1.5-9.5	0.32-0.90		●	●		○	●																		
	CNMM190612-DR	1.2	1-12	0.25-0.70	○	●	●	●	●	●		●																
	CNMM190616-DR	1.6	1.5-12.0	0.32-0.90		●	●	●	●	○																		
	CNMM190624-DR	2.4	2-12	0.35-1.20		●	●	●		○																		
	CNMM250924-DR	2.4	2.0-12.5	0.2-1.2		●	●	●	○	○																		
ER	**CNMG120408-ER**	0.8	2.0-7.6	0.15-0.55								●																
	CNMG120412-ER	1.2	2.0-7.6	0.25-0.80								●																
	CNMG160612-ER	1.2	2-10	0.35-0.80								●																
	CNMG160616-ER	1.6	2-10	0.45-1.00								●																
	CNMG190612-ER	1.2	2.0-11.4	0.35-1.00			○					●										●						
	CNMG190616-ER	1.6	2.0-11.4	0.45-1.10								●																
ER	**CNMM250724-ER**	2.4	2.0-12.5	0.3-1.4			●																					
	CNMM250732-ER	3.2	2.0-12.5	0.45-1.80			○					○																
	CNMM250924-ER	2.4	2.0-12.5	0.3-1.4			●					●																
	CNMM250932-ER	3.2	2.0-12.5	0.45-1.80			●					○																

Roughing

● Ex stock ○ On demand
YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DCLNR/L	PCBNR/L	PCLNR/L	MCBNR/L	MCLNR/L	S***-PCLNR/L
Kr: 95°	Kr: 75°	Kr: 95°	Kr: 75°	Kr: 95°	Kr: 95°
					
A197	A204	A205	A218	A219	A284

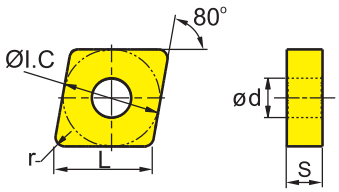
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

CNMM	L	I.C	S	d
12 04	12.9	12.7	4.76	5.16
16 06	16.1	15.875	6.35	6.35
19 06	19.3	19.05	6.35	7.94
25 09	25.79	25.4	9.525	9.12

CN** negative insert



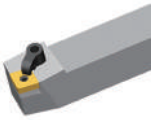
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
					P	P	P	P	P	P	M	M	K	K	K	K	K	N	N	S	S	S	S	S	S	H	N	N
LR	**CNMM120408-LR**	0.8	1-5	0.1-0.5		●	●					●																
	CNMM120412-LR	1.2	2-6	0.2-0.7		●	●					●																
	CNMM120416-LR	1.6	2.0-6.5	0.25-0.80		○	●																					
	CNMM160608-LR	0.8	1-7	0.2-0.6		●	●					○																
	CNMM160612-LR	1.2	1.0-7.5	0.2-0.7		●	●					●																
	CNMM160616-LR	1.6	1.0-8.5	0.25-0.80		●	●																					
	CNMM160624-LR	2.4	2.0-8.5	0.25-0.70		○	○																					
	CNMM190612-LR	1.2	2.0-10.5	0.2-0.7		●	●					●																
	CNMM190616-LR	1.6	2.0-10.5	0.3-1.0		●	●					●																
	CNMM190624-LR	2.4	2.0-10.5	0.3-1.1		●	○		○																			
	CNMM250924-LR	2.4	2.0-12.5	0.3-1.2		○	●																					

Roughing

● Ex stock ○ On demand
YBC152F, YBC252F, YBM153F, YBM253F available

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

Tool holder

DCLNR/L	PCBNR/L	PCLNR/L	MCBNR/L	MCLNR/L	S***-PCLNR/L
Kr: 95°	Kr: 75°	Kr: 95°	Kr: 75°	Kr: 95°	Kr: 95°
					
A197	A204	A205	A218	A219	A284

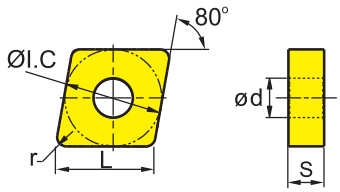
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

CNMM	L	I.C	S	d
12 04	12.9	12.7	4.76	5.16
16 06	16.1	15.875	6.35	6.35
19 06	19.3	19.05	6.35	7.94
25 09	25.79	25.4	9.525	9.12

CN** negative insert



	ISO	r	a_p	f	HC¹ (CVD)											HC¹ (PVD)						HT		HC²	HW	
					YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
Basic	**CNMM120404**	0.4	0.5-7.0	0.1-0.5				○																			
	CNMM190612	1.2	0.5-10.5	0.1-0.8				●																			
	CNMM190616	1.6	0.5-10.5	0.1-1.0				○																			
Medium Cut																											
HDR	**CNMM120408-HDR**	0.8	1-7	0.2-0.6		●	●	●		○																	
	CNMM120412-HDR	1.2	1-7	0.3-0.8		○	●	●		○																	
	CNMM120416-HDR	1.6	1-7	0.4-1.0		●	●			●																	
	CNMM160612-HDR	1.2	1.5-7.5	0.3-0.8		●	●	●		○																	
	CNMM160616-HDR	1.6	1.5-8.5	0.4-1.0		○	●	●		○																	
	CNMM160624-HDR	2.4	1.5-10.5	0.8-1.2		○	●																				
	CNMM190608-HDR	0.8	2.0-12.5	0.3-0.7		○																					
Roughing	**CNMM190612-HDR**	1.2	2.0-12.5	0.35-0.80		○	●	○		●																	
	CNMM190616-HDR	1.6	2.0-12.5	0.5-1.1		○	●	●		○						○	○										
	CNMM190624-HDR	2.4	2.0-12.5	0.8-1.2		●	●	○																			
	CNMM250924-HDR	2.4	2.0-12.5	0.8-1.4		○	●																				
HPR	**CNMM190616-HPR**	1.6	2.0-10.5	0.5-1.0			○																				
	CNMM190624-HPR	2.4	2.0-10.5	0.7-1.4		●	●																				
	CNMM250924-HPR	2.4	2.0-12.5	0.7-1.4			●		●																		
Roughing																											

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DCLNR/L	PCBNR/L	PCLNR/L	MCBNR/L	MCLNR/L	S***-PCLNR/L
Kr: 95°	Kr: 75°	Kr: 95°	Kr: 75°	Kr: 95°	Kr: 95°
					
A197	A204	A205	A218	A219	A284

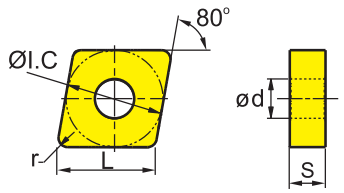
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

CN**	L	I.C	S	d
12 04	12.9	12.7	4.76	5.16
16 06	16.1	15.875	6.35	6.35
19 06	19.3	19.05	6.35	7.94

CN** negative insert



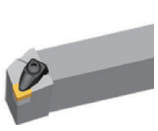
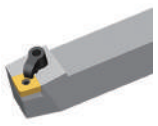
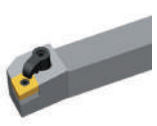
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
					HC¹ (CVD)													HC¹ (PVD)						HT		HC²	HW	
P					○	○	◉	◉	◉	◉								◉	◉	◉	◉	◉	◉	◉		●		
M											○	◉						○	○	◉	◉	◉	◉	○	◉	●		
K													●	●	◉	◉	◉											
N																		●	●								●	◉
S																		●	●	◉	◉	◉	◉				●	◉
H																												
Flat	**CNMA120404**	0.4	0.2-5.0	0.05-0.40									●	○														
	CNMA120408	0.8	0.2-5.0	0.05-0.50									●	●		●	●											
	CNMA120412	1.2	0.2-5.0	0.1-0.6									●	●	●	●	●										○	
	CNMA120416	1.6	0.2-5.0	0.10-0.65									○	●		●												
	CNMA160608	0.8	0.2-7.0	0.1-0.5										○		●												
	CNMA160612	1.2	0.2-7.0	0.1-0.6										●		●												
	CNMA160616	1.6	0.2-7.0	0.15-0.65									○	●		●												
	CNMA190612	1.2	0.2-8.0	0.15-0.70									○	●		●												
	CNMA190616	1.6	0.2-8.0	0.15-0.70									○	●		●												
Basic	**CNMG120404**	0.4	0.1-5.0	0.05-0.50			○	○																				
	CNMG120408	0.8	0.1-5.0	0.1-0.6		○	○	●								●											○	
	CNMG120412	1.2	0.1-5.0	0.1-0.7		○	○	●																			○	
	CNMG160612	1.2	0.1-7.0	0.1-0.7				○																				
	CNMG190608	0.8	0.1-8.0	0.1-0.7				○																				
	CNMG190612	1.2	0.1-8.0	0.1-0.8				○																				
	CNMG190616	1.6	0.1-8.0	0.1-1.0						○																	○	

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DCLNR/L	PCBNR/L	PCLNR/L	MCBNR/L	MCLNR/L	S***-PCLNR/L
Kr: 95°	Kr: 75°	Kr: 95°	Kr: 75°	Kr: 95°	Kr: 95°
					
A197	A204	A205	A218	A219	A284

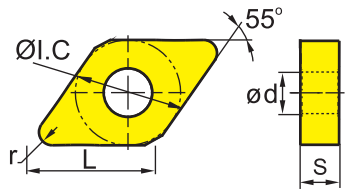
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

● Ideal machining conditions
◐ Normal machining conditions
◌ Unfavourable machining conditions

DN**	L	I.C	S	d
11 04	11.6	9.525	4.76	3.81
15 04	15.5	12.7	4.76	5.16
15 06	15.5	12.7	6.35	5.16

DN** negative insert

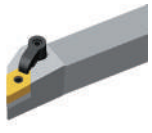


	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
					HC¹ (CVD)													HC¹ (PVD)						HT		HC²	HW	
P					○	○	◐	◐	◐	◐											◐	◐	◐	●	◐	●		
M											○	◐							○	○	◐	◐	◐	○	◐	○		
K													○	○	◐	◐	◐											
N																		○	○								○	◐
S																		○	○	◐	◐	◐	◐				○	◐
H																												
WG	**DNMX110404-WG**	0.4	0.2-1.5	0.08-0.30		○																						
	DNMX110408-WG	0.8	0.5-3.5	0.15-0.50		●	●																					
	DNMX150608-WG	0.8	0.5-5.0	0.15-0.70		○	○																					
	DNMX150612-WG	1.2	0.8-6.0	0.20-0.75		○																						
Wiper																												
ADF	**DNMG150604-ADF**	0.4	0.5-6.0	0.15-0.50	○																●				○			
	DNMG150608-ADF	0.8	0.1-4.0	0.08-0.50	○																●	●			○			
	DNMG150612-ADF	1.2	0.5-4.0	0.15-0.50	○																●							
Finishing																												
DF	**DNMG110404-DF**	0.4	0.15-2.00	0.08-0.25		●	●	○																				
	DNMG110408-DF	0.8	0.15-2.00	0.1-0.3		●	●																					
	DNMG110412-DF	1.2	0.35-1.50	0.15-0.50		○	○																					
	DNMG150404-DF	0.4	0.15-2.00	0.08-0.25		●	●	○																				
	DNMG150408-DF	0.8	0.15-2.00	0.1-0.3		●	●	○																				
	DNMG150412-DF	1.2	0.35-1.50	0.15-0.50			○																					
	DNMG150604-DF	0.4	0.8-6.0	0.18-0.60		●	●	○																				
	DNMG150608-DF	0.8	0.15-2.00	0.1-0.3		●	●	●																				
	DNMG150612-DF	1.2	0.2-2.5	0.10-0.35		●	○																					
Finishing																												
SF	**DNMG110404-SF**	0.4	0.05-0.50	0.05-0.25																						●		
	DNMG150404-SF	0.4	0.05-0.50	0.05-0.25																						●		
	DNMG150408-SF	0.8	0.05-0.50	0.10-0.35																						●		
	DNMG150604-SF	0.4	0.05-0.50	0.05-0.25																						●		
Finishing	**DNMG150608-SF**	0.8	0.05-0.50	0.10-0.35																						●		

● Ex stock ○ On demand
YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DDJNR/L	PDJNR/L	PDNNR/L	MDJNR/L	MDPNN	S***-PDSNR/L	S***-PDUNR/L
Kr: 93°	Kr: 93°	Kr: 63°	Kr: 93°	Kr: 62°30'	Kr: 62°30'	Kr: 93°
						
A198	A206	A207	A220	A221	A286	A287

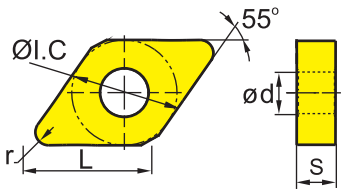
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

DNMG	L	I.C	S	d
11 04	11.6	9.525	4.76	3.81
15 04	15.5	12.7	4.76	5.16
15 06	15.5	12.7	6.35	5.16

DN** negative insert



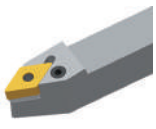
	ISO	r	a_p	f	HC¹ (CVD)											HC¹ (PVD)					HT		HC²	HW	
					YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
DM Medium Cut	**DNMG110404-DM**	0.4	0.4-5.0	0.1-0.3		●	●	●																			
	DNMG110408-DM	0.8	0.5-5.0	0.15-0.50		●	●	●																			
	DNMG110412-DM	1.2	0.8-5.0	0.18-0.50		●	●																				
	DNMG150404-DM	0.4	0.4-6.0	0.1-0.3		●	●	●																			
	DNMG150408-DM	0.8	0.5-6.0	0.15-0.50		●	●	○																			
	DNMG150412-DM	1.2	0.8-6.0	0.18-0.60		○	●																				
	DNMG150604-DM	0.4	1-6	0.23-0.65		●	●	●																			
	DNMG150608-DM	0.8	0.5-6.0	0.15-0.50	○	●	●	●		○		●															
	DNMG150612-DM	1.2	0.8-6.0	0.18-0.60		●	●	●		○																	
	DNMG150616-DM	1.6	1-6	0.23-0.65	○	●	●	●		○																	
PM Medium Cut	**DNMG110404-PM**	0.4	0.4-5.0	0.1-0.3			●	●						○													
	DNMG110408-PM	0.8	0.5-5.0	0.15-0.50		○	○	●		○				●													
	DNMG110412-PM	1.2	0.8-5.0	0.18-0.50			○						○	●													
	DNMG150404-PM	0.4	0.4-6.0	0.1-0.3		○		○																			
	DNMG150408-PM	0.8	0.5-6.0	0.15-0.50		●	●	●					○	●		●											
	DNMG150412-PM	1.2	0.8-6.0	0.18-0.60			●	○						○		○											
	DNMG150416-PM	1.6	1-6	0.23-0.65			○																				
	DNMG150604-PM	0.4	0.4-6.0	0.1-0.3		●	●	●					●	●		○											
	DNMG150608-PM	0.8	0.5-6.0	0.15-0.50		●	●	●	●	○			○	●		●											
	DNMG150612-PM	1.2	0.8-6.0	0.18-0.60		●	●	●					○	●		●											
	DNMG150616-PM	1.6	1-6	0.23-0.65			●	●					○														

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

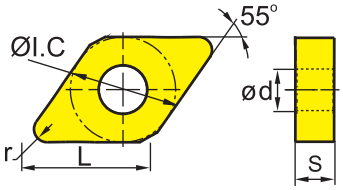
DDJNR/L	PDJNR/L	PDNNR/L	MDJNR/L	MDPNN	S***-PDSNR/L	S***-PDUNR/L
Kr: 93°	Kr: 93°	Kr: 63°	Kr: 93°	Kr: 62°30'	Kr: 62°30'	Kr: 93°
						
A198	A206	A207	A220	A221	A286	A287

System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

DNMG	L	I.C	S	d
15 06	15.5	12.7	6.35	5.16

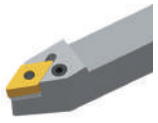
DN** negative insert					HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW		
				P																								
				M																								
				K																								
				N																								
				S																								
				H																								
ISO		r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201	
ZM	**DNMG150612-ZM**	1.2	1.0-5.5	0.15-0.60	○		●																					
																												
Medium Cut																												

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

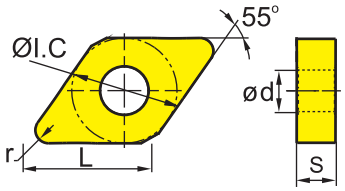
DDJNR/L	PDJNR/L	PDNNR/L	MDJNR/L	MDPNN	S***-PDSNR/L	S***-PDUNR/L
Kr: 93°	Kr: 93°	Kr: 63°	Kr: 93°	Kr: 62°30'	Kr: 62°30'	Kr: 93°
						
A198	A206	A207	A220	A221	A286	A287

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

DN**	L	I.C	S	d
11 04	11.6	9.525	4.76	3.81
15 04	15.5	12.7	4.76	5.16
15 06	15.5	12.7	6.35	5.16

DN** negative insert

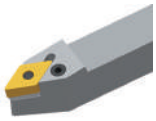
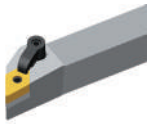


	ISO	r	a_p	f	HC¹ (CVD)											HC¹ (PVD)					HT		HC²	HW	
					YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
EF Finishing	**DNMG110404-EF**	0.4	0.1-1.5	0.05-0.20							○										●	●	○					
	DNMG110408-EF	0.8	0.1-1.5	0.1-0.4							○										●	●	○					
	DNMG150404-EF	0.4	0.1-1.5	0.05-0.30																	●							
	DNMG150408-EF	0.8	0.1-1.5	0.1-0.4																	●							
	DNMG150604-EF	0.4	0.1-1.5	0.05-0.30				○			●											●	○						
	DNMG150608-EF	0.8	0.1-1.5	0.1-0.4				○			●											●							
	DNMG150612-EF	1.2	0.1-1.5	0.15-0.50																	●							
FM Finishing	**DNMG150604L-FM**	0.4	0.5-3.0	0.05-0.30		●	●														●							
	DNMG150604R-FM	0.4	0.5-3.0	0.05-0.30		●	●														●							
	DNMG150608L-FM	0.8	0.5-3.0	0.1-0.5		○	●														●							
	DNMG150608R-FM	0.8	0.5-3.0	0.1-0.5		●	●														●							
NF Finishing	**DNEG150404-NF**	0.4	0.2-3.0	0.05-0.30															○									
	DNEG150408-NF	0.8	0.2-3.0	0.1-0.4															○									
	DNEG150604-NF	0.4	0.2-3.0	0.05-0.30															○	○							○	
	DNEG150608-NF	0.8	0.2-3.0	0.1-0.4															●	○							○	
NGF Finishing	**DNEG150608-NGF**	0.8	0.2-3.0	0.05-0.40																○								
	DNEG150612-NGF	1.2	0.2-3.0	0.1-0.5																●								

● Ex stock ○ On demand
YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DDJNR/L	PDJNR/L	PDNNR/L	MDJNR/L	MDPNN	S***-PDSNR/L	S***-PDUNR/L
Kr: 93°	Kr: 93°	Kr: 63°	Kr: 93°	Kr: 62°30'	Kr: 62°30'	Kr: 93°
						
A198	A206	A207	A220	A221	A286	A287

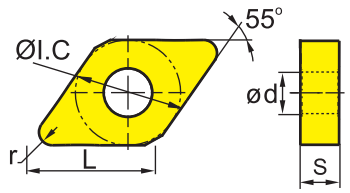
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

DNMG	L	I.C	S	d
11 04	11.6	9.525	4.76	3.81
15 04	15.5	12.7	4.76	5.16
15 06	15.5	12.7	6.35	5.16

DN** negative insert



	HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW	
P	○	○	◉	◉	◉	◉										◉	◉	◉	○	◉	○		
M							○	◉						○	○	◉	◉	◉	○	◉	○		
K									○	○	◉	◉	◉										
N														○	○							○	◉
S														○	○	◉	◉	◉				○	◉
H																							

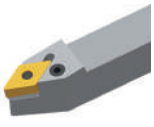
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
EG	**DNMG150604-EG**	0.4	1-3	0.05-0.30							●										●							
	DNMG150608-EG	0.8	1-3	0.1-0.4							●	●									●	●						
	DNMG150612-EG	1.2	1-3	0.2-0.6							●	●									●	●						
Medium Cut																												
EM	**DNMG110404-EM**	0.4	0.5-4.4	0.05-0.30							●											●	○					
	DNMG110408-EM	0.8	0.5-4.4	0.10-0.45							●											●						
	DNMG150404-EM	0.4	0.5-6.4	0.05-0.30							○											○						
	DNMG150408-EM	0.8	0.5-6.4	0.10-0.45							○											●						
	DNMG150412-EM	1.2	0.5-6.4	0.1-0.6							○																	
Medium Cut	**DNMG150604-EM**	0.4	0.2-6.4	0.05-0.30							●	●										●	○					
	DNMG150608-EM	0.8	0.5-6.4	0.10-0.45							●	●										●	○					
	DNMG150612-EM	1.2	0.5-6.4	0.1-0.6							●	●										●						
NM	**DNMG150412-NM**	1.2	0.2-4.0	0.2-0.6															○									
	DNMG150608-NM	0.8	0.2-4.0	0.1-0.4															○	●								
	DNMG150612-NM	1.2	0.2-4.0	0.2-0.6															○	●								
Medium Cut																												
TC	**DNMG150608-TC**	0.8	0.5-5.0	0.15-0.40											●		●											
	DNMG150612-TC	1.2	0.5-5.0	0.2-0.6											●		○											
Medium Cut																												

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

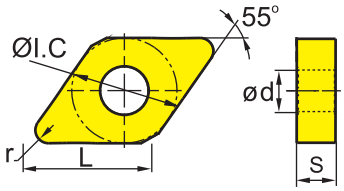
DDJNR/L	PDJNR/L	PDNNR/L	MDJNR/L	MDPNN	S***-PDSNR/L	S***-PDUNR/L
Kr: 93°	Kr: 93°	Kr: 63°	Kr: 93°	Kr: 62°30'	Kr: 62°30'	Kr: 93°
						
A198	A206	A207	A220	A221	A286	A287

System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

DNMG	L	I.C	S	d
15 06	15.5	12.7	6.35	5.16



DN** negative insert		HC¹ (CVD)												HC¹ (PVD)					HT		HC²	HW	
P		○	○	◎	◎	◎	◎									◎	◎	◎	◎	◎	○			
M								○	◎						○	○	◎	◎	◎	◎	○	◎	○	
K										○	○	◎	◎	◎										
N															○	○							○	◎
S															○	○	◎	◎	◎				○	◎
H																								

ISO		r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
DR	**DNMG150608-DR**	0.8	1-6	0.2-0.5		●	●	●		●				●		●											
	DNMG150612-DR	1.2	1-6	0.25-0.70		●	●	●		○				●		●											
	DNMG150616-DR	1.6	1-6	0.32-0.75		●		○		○				●		○											
Roughing																											
SNR	**DNMG150608-SNR**	0.8	0.2-6.0	0.1-0.5																●							
	DNMG150612-SNR	1.2	0.2-6.0	0.2-0.6																○							
Roughing																											

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

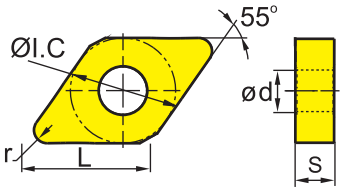
DDJNR/L	PDJNR/L	PDNNR/L	MDJNR/L	MDPNN	S***-PDSNR/L	S***-PDUNR/L
Kr: 93°	Kr: 93°	Kr: 63°	Kr: 93°	Kr: 62°30'	Kr: 62°30'	Kr: 93°
						
A198	A206	A207	A220	A221	A286	A287

System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

DN**	L	I.C	S	d
15 06	15.5	12.7	6.35	5.16



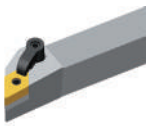
	ISO	r	a_p	f	HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW	
					YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
Flat	**DNMA150604**	0.4	0.2-6.0	0.1-0.3									○	●		○												
	DNMA150608	0.8	0.2-6.0	0.1-0.6									●	●		●												
	DNMA150612	1.2	0.2-6.0	0.15-0.70										●		●	○											
	DNMA150616	1.6	0.2-6.0	0.2-0.8									●	○		○												
Medium Cut																												
ER	**DNMG150608-ER**	0.8	2-6	0.15-0.55								●																
	DNMG150612-ER	1.2	2-6	0.25-0.80								●																
Roughing																												

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

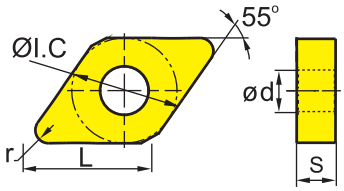
Tool holder

DDJNR/L	PDJNR/L	PDNNR/L	MDJNR/L	MDPNN	S***-PDSNR/L	S***-PDUNR/L
Kr: 93°	Kr: 93°	Kr: 63°	Kr: 93°	Kr: 62°30'	Kr: 62°30'	Kr: 93°
						
A198	A206	A207	A220	A221	A286	A287

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

DNMM	L	I.C	S	d
15 06	15.5	12.7	6.35	5.16

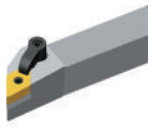


DN** negative insert					HC¹ (CVD)											HC¹ (PVD)					HT		HC²	HW	
					P																				
					M																				
					K																				
					N																				
					S																				
					H																				
ISO		r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
DR	**DNMM150608-DR**	0.8	0.7-6.0	0.20-0.55		●	●	○																			
	DNMM150612-DR	1.2	1-6	0.25-0.70		●	●		●																		
	DNMM150616-DR	1.6	1.5-6.0	0.32-0.90		●	●																				
Roughing																											
ER	**DNMM150608-ER**	0.8	0.7-6.0	0.20-0.55							●																
	DNMM150612-ER	1.2	1-6	0.25-0.70								●															
Roughing																											
HDR	**DNMM150608-HDR**	0.8	1-7	0.25-0.60		●	○	○		○																	
	DNMM150612-HDR	1.2	1-7	0.3-0.8		○				○																	
	DNMM150616-HDR	1.6	1.5-7.0	0.4-1.0		○		○		○																	
Roughing																											
LR	**DNMM150608-LR**	0.8	2-6	0.1-0.6		●	●					●															
	DNMM150612-LR	1.2	2-6	0.2-0.8		●	●					●															
	DNMM150616-LR	1.6	2-6	0.25-1.00		●	●					○															
Roughing																											

● Ex stock ○ On demand
YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

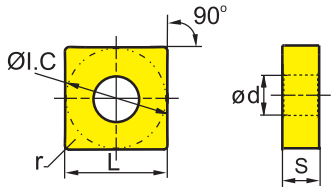
DDJNR/L	PDJNR/L	PDNNR/L	MDJNR/L	MDPNN	S***-PDSNR/L	S***-PDUNR/L
Kr: 93°	Kr: 93°	Kr: 63°	Kr: 93°	Kr: 62°30'	Kr: 62°30'	Kr: 93°
						
A198	A206	A207	A220	A221	A286	A287

System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SNMG	L	I.C	S	d
09 03	9.525	9.525	3.18	3.81
12 04	12.7	12.7	4.76	5.16



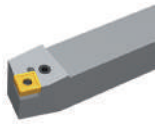
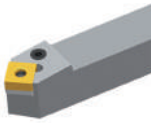
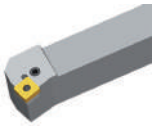
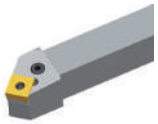
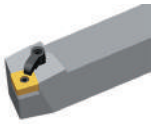
					HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW	
					YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
	ISO		r	a_p	f																							
ADF	**SNMG120404-ADF**		0.4	0.5-5.0	0.1-0.3	●															●							
	SNMG120408-ADF		0.8	0.5-5.0	0.12-0.50	●															●							
	SNMG120412-ADF		1.2	1-5	0.2-0.6	●															●							
Finishing																												
DF	**SNMG120408-DF**		0.8	0.3-1.5	0.1-0.4		●	●	○																			
	SNMG120412-DF		1.2	0.35-1.50	0.15-0.50		●	●	○																			
Finishing																												
SF	**SNMG090304-SF**		0.4	0.05-0.50	0.05-0.20																				●			
	SNMG090308-SF		0.8	0.05-0.50	0.10-0.35																				●			
	SNMG120404-SF		0.4	0.05-0.50	0.05-0.20																				○			
	SNMG120408-SF		0.8	0.05-0.50	0.10-0.35																				○			
Finishing																												

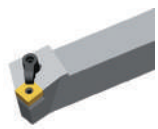
● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DSBNR/L	PSBNR/L	PSDNN	PSKNR/L	PSSNR/L	MSBNR/L	MSRNR/L
Kr: 75°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 75°
						
A199	A208	A210	A211	A212	A222	A223

MSKNR/L	MSDNN	S***-PSKNR/L
Kr: 75°	Kr: 45°	Kr: 75°
		
A224	A225	A289

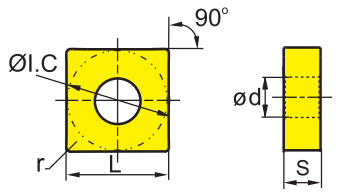
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SNMG	L	I.C	S	d
09 03	9.525	9.525	3.18	3.81
12 04	12.7	12.7	4.76	5.16
15 06	15.875	15.875	6.35	6.35

SN** negative insert



	HC¹ (CVD)												HC¹ (PVD)					HT		HC²	HW	
	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
P	○	○	◉	◉	◉	◉											◉	◉	◉	○	○	○		
M							○	◉							○	○	◉	◉	◉	○	○	○		
K									○	○	◉	◉	◉											
N														○	○								○	◉
S															○	○	◉	◉	◉				○	◉
H																								

	ISO	r	a_p	f
EF	**SNMG090304-EF**	0.4	0.5-2.0	0.05-0.30
	SNMG090308-EF	0.8	0.5-2.0	0.05-0.40
	SNMG090312-EF	1.2	0.5-2.0	0.05-0.45
	SNMG120404-EF	0.4	0.8-3.0	0.05-0.30
	SNMG120408-EF	0.8	0.8-3.0	0.1-0.4
	SNMG120412-EF	1.2	0.8-3.0	0.15-0.45
	SNMG150608-EF	0.8	1-4	0.1-0.4
	SNMG150612-EF	1.2	1-4	0.15-0.45



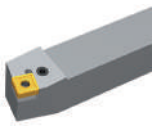
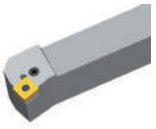
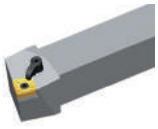
Finishing

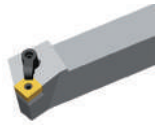
● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DSBNR/L	PSBNR/L	PSDNN	PSKNR/L	PSSNR/L	MSBNR/L	MSRNR/L
Kr: 75°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 75°
						
A199	A208	A210	A211	A212	A222	A223

MSKNR/L	MSDNN	S***-PSKNR/L
Kr: 75°	Kr: 45°	Kr: 75°
		
A224	A225	A289

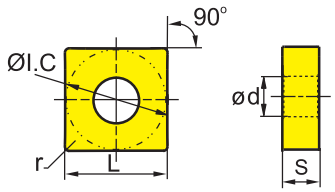
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SNMG	L	I.C	S	d
09 03	9.525	9.525	3.18	3.81
12 04	12.7	12.7	4.76	5.16
15 06	15.875	15.875	6.35	6.35
19 06	19.05	19.05	6.35	7.94

SN** negative insert



	HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW		
P	○	○	◉	◉	◉	◉										◉	◉	◉	○	◉	○			
M							○	◉						○	○	◉	◉	◉	○	◉	○			
K									●	●	◉	◉	◉											
N													○	○									○	◉
S														○	○	◉	◉	◉					○	◉
H																								

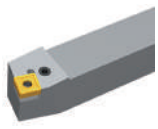
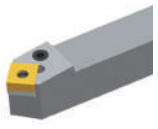
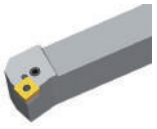
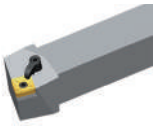
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
PM Medium Cut	**SNMG090304-PM**	0.4	0.4-4.5	0.1-0.3			○	●																				
	SNMG090308-PM	0.8	0.5-4.5	0.15-0.50			○	●		●			○	●		●												
	SNMG090312-PM	1.2	0.6-4.5	0.2-0.6			○																					
	SNMG120404-PM	0.4	0.4-6.0	0.1-0.3		●	○	●						○		○												
	SNMG120408-PM	0.8	0.5-6.0	0.15-0.50		●	●	●		○			○	●		●												
	SNMG120412-PM	1.2	0.8-6.0	0.18-0.60		●	●	●		●				○		●												
	SNMG120416-PM	1.6	1-6	0.23-0.65		○	○	○		○				○		○												
	SNMG150608-PM	0.8	0.7-7.5	0.14-0.50		○	○																					
	SNMG150612-PM	1.2	0.8-7.5	0.18-0.60		○	●	○		○				●		●												
	SNMG190612-PM	1.2	1.0-7.5	0.20-0.65		○	●	●		●			○	●		●												
	SNMG190616-PM	1.6	1.0-7.5	0.23-0.65				○																				

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DSBNR/L	PSBNR/L	PSDNN	PSKNR/L	PSSNR/L	MSBNR/L	MSRNR/L
Kr: 75°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 75°
						
A199	A208	A210	A211	A212	A222	A223

MSKNR/L	MSDNN	S***-PSKNR/L
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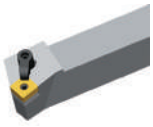
		
A224	A225	A289

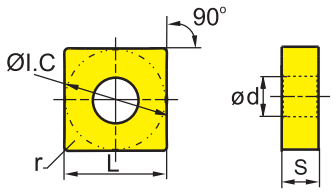
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

SNMG	L	I.C	S	d
09 03	9.525	9.525	3.18	3.81
12 04	12.7	12.7	4.76	5.16
15 06	15.875	15.875	6.35	6.35
19 06	19.05	19.05	6.35	7.94

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SN** negative insert



	HC¹ (CVD)													HC¹ (PVD)						HT		HC²	HW	
	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
P	●	●	✲	✲	✲	✲											✲	✲	✲	●	✲	●		
M							●	✲							●	●	✲	✲	✲	●	✲	●		
K									●	●	✲	✲	✲											
N														●	●								●	✲
S															●	●	✲	✲	✲				●	✲
H																								

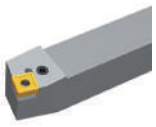
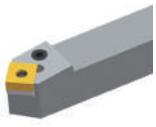
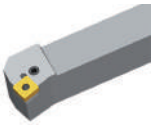
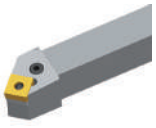
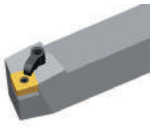
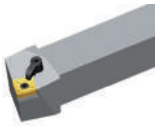
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
DM  Medium Cut	**SNMG090304-DM**	0.4	0.4-4.5	0.1-0.3		●	●																					
	SNMG090308-DM	0.8	0.5-4.5	0.15-0.50		●	●	●		○																		
	SNMG120404-DM	0.4	0.4-6.0	0.1-0.3		●	●	●																				
	SNMG120408-DM	0.8	0.5-6.0	0.15-0.50		●	●	●	●	●																		
	SNMG120412-DM	1.2	0.8-6.0	0.18-0.60		●	●	●		○																		
	SNMG120416-DM	1.6	1-6	0.23-0.65		○	●	○		○																		
	SNMG150608-DM	0.8	0.8-7.5	0.1-0.5		●	●	●																				
	SNMG150612-DM	1.2	0.8-7.5	0.18-0.60		●	●	●																				
	SNMG190612-DM	1.2	1-9	0.18-0.60		●	●	○		○																		
	SNMG190616-DM	1.6	1-9	0.23-0.65		●	●	●		●																		
EG  Medium Cut	**SNMG120408-EG**	0.8	0.5-4.0	0.1-0.5								●									●	●						
	SNMG120412-EG	1.2	0.5-4.0	0.2-0.6								●									●							

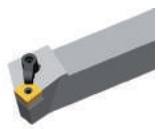
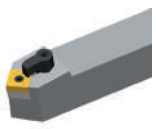
● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DSBNR/L	PSBNR/L	PSDNN	PSKNR/L	PSSNR/L	MSBNR/L	MSRNR/L
Kr: 75°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 75°
						
A199	A208	A210	A211	A212	A222	A223

MSKNR/L	MSDNN	S***-PSKNR/L
Kr: 75°	Kr: 45°	Kr: 75°
		
A224	A225	A289

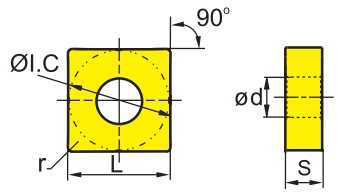
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SNMG	L	I.C	S	d
12 04	12.7	12.7	4.76	5.16
15 06	15.875	15.875	6.35	6.35

SN** negative insert



	HC[1] (CVD)												HC[1] (PVD)						HT		HC[2]	HW		
	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
P	○	○	⊛	⊛	⊛	⊛											⊛	⊛	⊛	○	⊛	○		
M							○	⊛							○	○	⊛	⊛	⊛	○	⊛	○		
K									○	○	⊛	⊛	⊛											
N														○	○								⊛	⊛
S															○	○	⊛	⊛	⊛				⊛	⊛
H																								

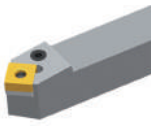
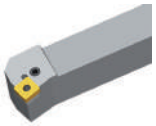
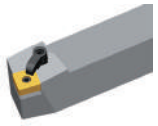
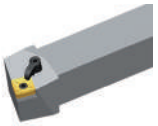
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
EM	**SNMG120404-EM**	0.4	0.50-6.35	0.05-0.30							●	○										●						
	SNMG120408-EM	0.8	0.50-6.35	0.20-0.45							●	●										●	○					
	SNMG120412-EM	1.2	0.50-6.35	0.25-0.60							●	●										●	○					
	SNMG120416-EM	1.6	0.50-6.35	0.30-0.75								○																
	SNMG150612-EM	1.2	0.5-8.0	0.25-0.60							○	●										●						
Medium Cut	**SNMG150616-EM**	1.6	0.5-8.0	0.30-0.75								○										●						
TC	**SNMG120404-TC**	0.4	0.5-5.0	0.08-0.25											●													
	SNMG120408-TC	0.8	0.5-5.0	0.15-0.40											●		●											
	SNMG120412-TC	1.2	0.5-5.0	0.2-0.5											●		●											
Medium Cut	**SNMG150616-TC**	1.6	1-7	0.2-0.7											●													

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

Tool holder

DSBNR/L	PSBNR/L	PSDNN	PSKNR/L	PSSNR/L	MSBNR/L	MSRNR/L
Kr: 75°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 75°
						
A199	A208	A210	A211	A212	A222	A223

MSKNR/L	MSDNN	S***-PSKNR/L
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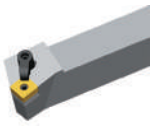
		
A224	A225	A289

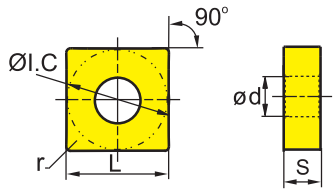
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

SNMG	L	I.C	S	d
12 04	12.7	12.7	4.76	5.16
15 06	15.875	15.875	6.35	6.35
19 06	19.05	19.05	6.35	7.94
25 09	25.4	25.4	9.525	9.12

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SN** negative insert



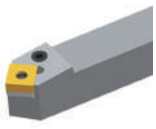
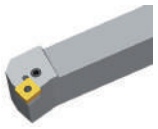
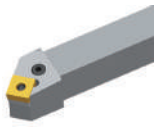
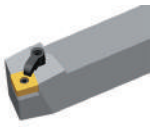
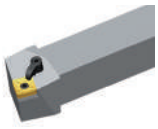
	ISO	r	a_p	f	HC¹ (CVD)												HC¹ (PVD)					HT		HC²	HW	
					YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
NM	**SNMG120408-NM**	0.8	0.5-5.0	0.1-0.4															●	●							○	
	SNMG120412-NM	1.2	0.5-5.0	0.15-0.50																○								
Medium Cut																												
DR	**SNMG120408-DR**	0.8	0.7-7.0	0.2-0.5			○	●	●		○				●		●											
	SNMG120412-DR	1.2	1-7	0.25-0.70			●	●	●	●	○				●		●											
	SNMG120416-DR	1.6	1.5-7.0	0.32-0.75			○	●	●						●		●											
	SNMG150612-DR	1.2	1-8	0.25-0.70			●	●	○		●				●		●											
	SNMG150616-DR	1.6	1.5-8.0	0.3-0.8			○	●	●						○		○											
	SNMG190612-DR	1.2	1-10	0.25-0.70			●	●	●	●	●						●											
Roughing	**SNMG190616-DR**	1.6	1.5-10.0	0.3-0.8			●	●	●	●	●				○		●											
	SNMG190624-DR	2.4	2-10	0.32-0.90				●	●	●	○																	
	SNMG250924-DR	2.4	2-15	0.4-1.2				●		○	○																	

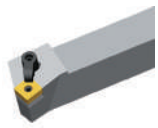
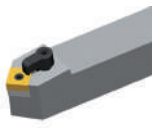
● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DSBNR/L	PSBNR/L	PSDNN	PSKNR/L	PSSNR/L	MSBNR/L	MSRNR/L
Kr: 75°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 75°
						
A199	A208	A210	A211	A212	A222	A223

MSKNR/L	MSDNN	S***-PSKNR/L
Kr: 75°	Kr: 45°	Kr: 75°
		
A224	A225	A289

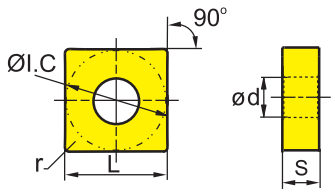
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SNMG	L	I.C	S	d
12 04	12.7	12.7	4.76	5.16
15 06	15.875	15.875	6.35	6.35
19 06	19.05	19.05	6.35	7.94

SN** negative insert



	HC¹ (CVD)											HC¹ (PVD)						HT		HC²	HW	
P	○	○	◔	◔	◔	◔									◔	◔	◔	○	◔	○		
M							○	◔					○	○	◔	◔	◔	○	◔	○		
K									○	○	◔	◔										
N													○	○							○	◔
S													○	○	◔	◔	◔				○	◔
H																						

	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
ER	**SNMG120408-ER**	0.8	2.0-7.6	0.20-0.55							○	●																
	SNMG120412-ER	1.2	2.0-7.6	0.3-0.6							○	○																
	SNMG150612-ER	1.2	2.0-9.6	0.3-0.6							○	○																
	SNMG190612-ER	1.2	2.0-11.4	0.3-0.6							○	●																
Roughing	**SNMG190616-ER**	1.6	2.0-11.4	0.35-0.80							○	●																

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DSBNR/L	PSBNR/L	PSDNN	PSKNR/L	PSSNR/L	MSBNR/L	MSRNR/L
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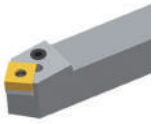
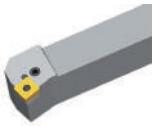
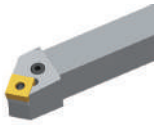
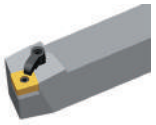
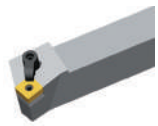
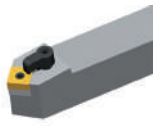
						
A199	A208	A210	A211	A212	A222	A223

MSKNR/L	MSDNN	S***-PSKNR/L
Kr: 75°	Kr: 45°	Kr: 75°
		
A224	A225	A289

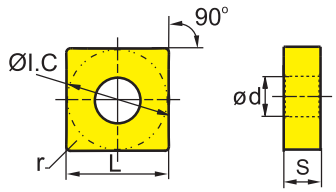
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SNMM	L	I.C	S	d
15 06	15.875	15.875	6.35	6.35
19 06	19.05	19.05	6.35	7.94
25 07	25.4	25.4	7.94	9.12
25 09	25.4	25.4	9.525	9.12

SN** negative insert



	HC[1] (CVD)												HC[1] (PVD)					HT		HC[2]	HW	
P	○	○	❁	❁	❁	❁									❁	❁	❁	○	❁	○		
M							○	❁					○	○	❁	❁	❁	○	❁	○		
K									○	○	❁	❁										
N													○	○							○	❁
S													○	○	❁	❁	❁				○	❁
H																						

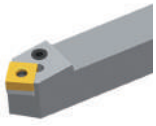
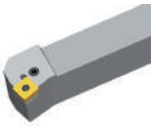
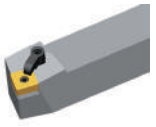
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
DR Roughing	**SNMM150612-DR**	1.2	1-7	0.25-0.60			●																					
	SNMM150616-DR	1.6	1.5-9.0	0.32-0.90		○	●	○	●																			
	SNMM190608-DR	0.8	2.0-10.5	0.25-0.50			○																					
	SNMM190612-DR	1.2	2.0-10.5	0.25-0.60		●	●	○	●	●																		
	SNMM190616-DR	1.6	2.0-10.5	0.35-0.90		●	●	●	●	●																		
	SNMM190624-DR	2.4	2.0-10.5	0.4-1.1		●	●	●		○																		
	SNMM250716-DR	1.6	2.5-12.5	0.4-1.0			●																					
	SNMM250724-DR	2.4	2.5-12.5	0.5-1.2		○	●	●		●																		
	SNMM250924-DR	2.4	2.5-12.5	0.5-1.2			●		●	●																		

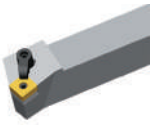
● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

Tool holder

DSBNR/L	PSBNR/L	PSDNN	PSKNR/L	PSSNR/L	MSBNR/L	MSRNR/L
Kr: 75°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 75°
						
A199	A208	A210	A211	A212	A222	A223

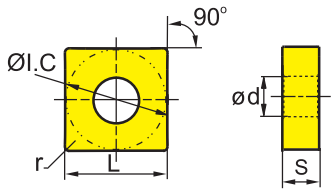
MSKNR/L	MSDNN
Kr: 75°	Kr: 45°
	
A224	A225

System code A42 Grade selection A40 Technical info A447 Cutting data A324

SNMM	L	I.C	S	d
12 04	12.7	12.7	4.76	5.16
15 06	15.875	15.875	6.35	6.35
19 06	19.05	19.05	6.35	7.94
25 09	25.4	25.4	9.525	9.12

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions



SN** negative insert					HC¹ (CVD)											HC¹ (PVD)						HT		HC²	HW	
					P																					
					M																					
					K																					
					N																					
					S																					
					H																					
ISO		r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
LR	**SNMM120408-LR**	0.8	1-6	0.1-0.5		○	●																				
	SNMM120412-LR	1.2	1-6	0.2-0.6		○	●																				
	SNMM120416-LR	1.6	1-6	0.25-0.70			○																				
	SNMM150612-LR	1.2	1.5-7.0	0.1-0.5		○	●																				
	SNMM150616-LR	1.6	1.5-7.0	0.1-0.5		○	○																				
	SNMM190612-LR	1.2	2-10	0.25-0.70		○	●																				
	SNMM190616-LR	1.6	2-10	0.3-1.0		○	●																				
	SNMM190624-LR	2.4	2-10	0.3-1.1		○	●																				
	SNMM250924-LR	2.4	3.0-12.5	0.3-1.2		●	●		○																		

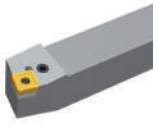
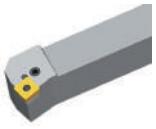
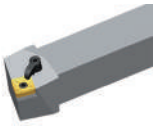
Roughing

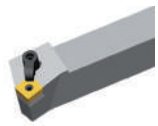
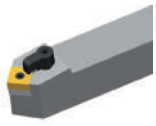
● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DSBNR/L	PSBNR/L	PSDNN	PSKNR/L	PSSNR/L	MSBNR/L	MSRNR/L
Kr: 75°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 75°
						
A199	A208	A210	A211	A212	A222	A223

MSKNR/L	MSDNN	S***-PSKNR/L
Kr: 75°	Kr: 45°	Kr: 75°
		
A224	A225	A289

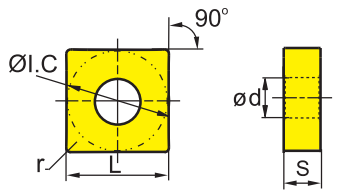
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

SNMM	L	I.C	S	d
12 04	12.7	12.7	4.76	5.16
15 06	15.875	15.875	6.35	6.35
19 06	19.05	19.05	6.35	7.94
25 07	25.4	25.4	7.94	9.12
25 09	25.4	25.4	9.525	9.12

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SN** negative insert



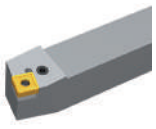
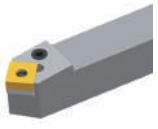
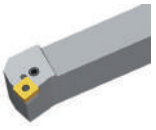
	HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW	
P	●	●	◉	◉	◉	◉										◉	◉	◉	●	◉	●		
M							●	◉					●	●	◉	◉	◉	◉	●	◉	●		
K									●	●	◉	◉											
N													●	●								●	◉
S													●	●	◉	◉	◉	◉				●	◉
H																							

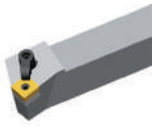
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
HDR Roughing	**SNMM120408-HDR**	0.8	1-6	0.1-0.6			●	●		○																		
	SNMM120412-HDR	1.2	1.5-6.0	0.2-0.7			○	●		○																		
	SNMM150608-HDR	0.8	1-7	0.2-0.6			●																					
	SNMM150612-HDR	1.2	1-7	0.25-0.70		●	●	●		○																		
	SNMM150616-HDR	1.6	1.5-9.0	0.32-1.00			○	●		○																		
	SNMM150624-HDR	2.4	1.5-9.0	0.4-1.2			○																					
	SNMM190612-HDR	1.2	2.0-10.5	0.25-0.70		○	○	●																				
	SNMM190616-HDR	1.6	2.0-10.5	0.35-1.00		●	●	●				●																
	SNMM190624-HDR	2.4	2.0-10.5	0.4-1.2		●	●																					
	SNMM250724-HDR	2.4	2.5-12.5	0.5-1.4			●	○		●																		
	SNMM250924-HDR	2.4	2.5-12.5	0.5-1.4		●	●		●																			

● Ex stock ○ On demand
YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DSBNR/L	PSBNR/L	PSDNN	PSKNR/L	PSSNR/L	MSBNR/L	MSRNR/L
Kr: 75°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 75°
						
A199	A208	A210	A211	A212	A222	A223

MSKNR/L	MSDNN	S***-PSKNR/L
Kr: 75°	Kr: 45°	Kr: 75°
		
A224	A225	A289

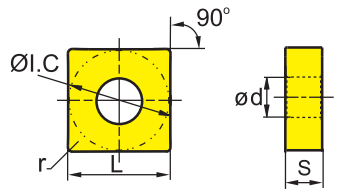
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SNMM	L	I.C	S	d
19 06	19.05	19.05	6.35	7.94
25 09	25.4	25.4	9.525	9.12

SN** negative insert



	HC[1] (CVD)												HC[1] (PVD)						HT		HC[2]	HW		
	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
P	○	○	⊛	⊛	⊛	⊛											⊛	⊛	⊛	○	⊛	○		
M							○	⊛							○	○	⊛	⊛	⊛	○	⊛	○		
K									○	○	⊛	⊛	⊛											
N														○	○								○	⊛
S														○	○	⊛	⊛	⊛	⊛				○	⊛
H																								

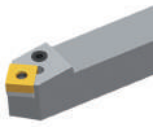
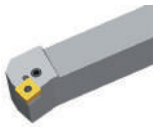
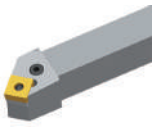
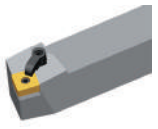
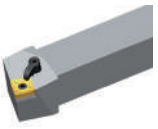
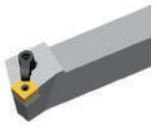
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
HPR	**SNMM190616-HPR**	1.6	2.0-10.5	0.35-1.00			●																					
	SNMM190624-HPR	2.4	2.0-10.5	0.4-1.2		○	●																					
	SNMM250924-HPR	2.4	2.0-12.5	0.5-1.4		○	●		●																			
Roughing																												

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

Tool holder

PSBNR/L	PSDNN	PSKNR/L	PSSNR/L	MSBNR/L	MSRNR/L	MSKNR/L
Kr: 75°	Kr: 45°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 75°	Kr: 75°
						
A208	A210	A211	A212	A222	A223	A224

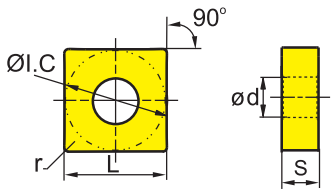
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SN**	L	I.C	S	d
12 04	12.7	12.7	4.76	5.16
25 07	25.4	25.4	7.94	9.12
25 09	25.4	25.4	9.525	9.12

SN** negative insert

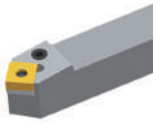
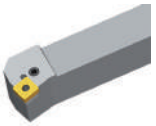
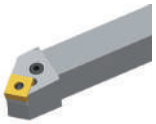
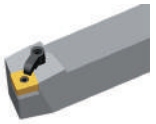


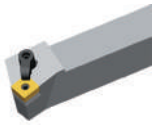
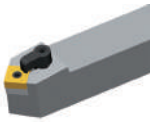
	ISO	r	a_p	f	HC¹ (CVD) YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	HC¹ (PVD) YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	HT YNG151	YNT251	HC² YNG151C	HW YD101	YD201
Basic	**SNMG120408**	0.8	0.5-6.0	0.1-0.6		●	●	●																				
	SNMG120412	1.2	0.5-6.0	0.1-0.7		○	○	○																				
	SNMG250724	2.4	1-9	0.1-1.1						●																		
	SNMG250924	2.4	1-9	0.1-1.1						○																		
Medium Cut																												
Basic	**SNMM120408**	0.8	0.5-5.0	0.1-0.5				●																				
	SNMM120412	1.2	1.5-7.0	0.2-0.6				○																				

● Ex stock ○ On demand
YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DSBNR/L	PSBNR/L	PSDNN	PSKNR/L	PSSNR/L	MSBNR/L	MSRNR/L
Kr: 75°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 75°
						
A199	A208	A210	A211	A212	A222	A223

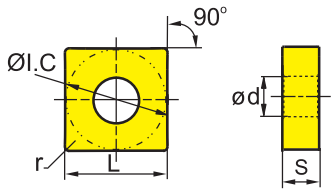
MSKNR/L	MSDNN	S***-PSKNR/L
Kr: 75°	Kr: 45°	Kr: 75°
		
A224	A225	A289

System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SN**	L	I.C	S	d
12 04	12.7	12.7	4.76	5.16
15 06	15.875	15.875	6.35	6.35
19 06	19.05	19.05	6.35	7.94
25 07	25.4	25.4	7.94	9.12



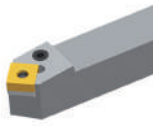
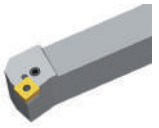
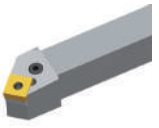
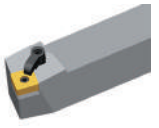
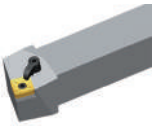
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
					HC¹ (CVD)													HC¹ (PVD)						HT		HC²	HW	
					P																							
					M																							
					K																							
					N																							
					S																							
					H																							
Flat	**SNMA120408**	0.8	0.5-5.0	0.1-0.5									●	●		●												
	SNMA120412	1.2	0.5-5.0	0.2-0.7									●	○		●	○											
	SNMA120416	1.6	0.5-5.0	0.2-1.0									○	○		○												
	SNMA150608	0.8	0.8-7.0	0.1-0.5												○												
	SNMA150612	1.2	0.8-7.0	0.2-0.7												●												
	SNMA190612	1.2	0.8-7.0	0.2-0.7									○	●		●												
	SNMA190616	1.6	0.8-7.0	0.3-0.8										○		●												
Basic	**SNMM250724-1**	2.4	2.0-12.5	0.3-1.2			●	●	●																			

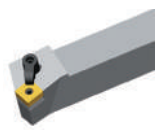
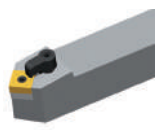
● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DSBNR/L	PSBNR/L	PSDNN	PSKNR/L	PSSNR/L	MSBNR/L	MSRNR/L
Kr: 75°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 75°
						
A199	A208	A210	A211	A212	A222	A223

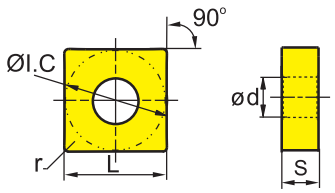
MSKNR/L	MSDNN	S***-PSKNR/L
Kr: 75°	Kr: 45°	Kr: 75°
		
A224	A225	A289

System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SNMM	L	I.C	S	d
19 06	19.05	19.05	6.35	7.94
25 09	25.4	25.4	9.525	9.12



	HC¹ (CVD)												HC¹ (PVD)					HT		HC²	HW	
P	○	○	◉	◉	◉	◉									◉	◉	◉	○	◉	○		
M							○	◉					○	○	◉	◉	◉	○	◉	○		
K									○	○	◉	◉	◉									
N													○	○							○	◉
S													○	○	◉	◉	◉				○	◉
H																						

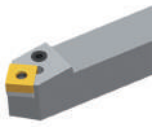
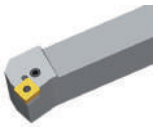
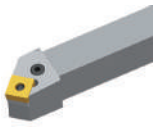
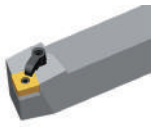
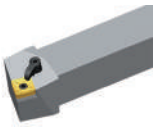
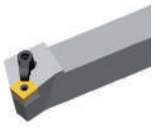
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
Basic	**SNMM190608**	0.8	1.0-10.5	0.15-0.50				○																				
	SNMM190612	1.2	1.5-10.5	0.2-0.7			○	●																				
	SNMM190616	1.6	0.5-10.5	0.2-1.0			○																					
	SNMM250924	2.4	2.0-12.5	0.3-1.2			●	○		●																		

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

PSBNR/L	PSDNN	PSKNR/L	PSSNR/L	MSBNR/L	MSRNR/L	MSKNR/L
Kr: 75°	Kr: 45°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 75°	Kr: 75°
						
A208	A210	A211	A212	A222	A223	A224

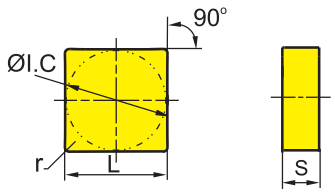
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SNUN	L	I.C	S
12 04	12.7	12.7	4.76
19 04	19.05	19.05	4.76
25 07	25.4	25.4	7.94

SN** negative insert



		ISO	r	a_p	f	HC¹ (CVD)										HC¹ (PVD)						HT		HC²	HW	
						YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
Flat	**SNUN120408**		0.8	0.7-6.0	0.2-0.5												●											
	SNUN120412		1.2	0.7-6.0	0.25-0.60				●		○				○		○										○	○
	SNUN190412		1.2	0.9-6.0	0.25-0.60																						○	
	SNUN190416		1.6	0.9-6.0	0.3-0.7																							○
	SNUN250724		2.4	1-9	0.5-1.0						○																	

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

CSKNR/L	CSRNR/L	CSDNN
Kr: 75°	Kr: 75°	Kr: 45°
		
A262	A263	A265

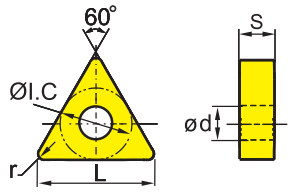
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TN**	L	I.C	S	d
16 04	16.5	9.525	4.76	3.81
22 04	22	12.7	4.76	5.16

TN** negative insert



	HC¹ (CVD)												HC¹ (PVD)					HT		HC²	HW	
P	○	○	◉	◉	◉	◉									◉	◉	◉	○	◉	○		
M							○	◉					○	○	◉	◉	◉	○	◉	○		
K									○	○	◉	◉										
N													○	○							○	◉
S													○	○	◉	◉	◉				○	◉
H																						

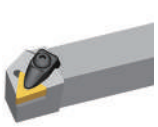
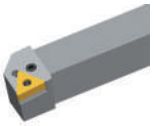
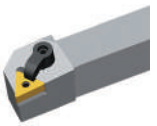
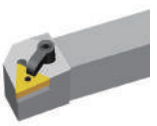
ISO		r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
WG	**TNMX160408-WG**	0.8	0.5-5.0	0.15-0.70		●																						
	**TNMX160412-WG**	1.2	0.8-6.0	0.20-0.75		○																						
Wiper																												
ADF	**TNMG160404-ADF**	0.4	0.5-5.0	0.05-0.30	●																●				●			
	**TNMG160408-ADF**	0.8	0.5-5.0	0.1-0.4	●																●	○			●			
	TNMG160412-ADF	1.2	0.5-5.0	0.2-0.5	●																●							
Finishing																												
DF	**TNMG160404-DF**	0.4	0.15-2.00	0.08-0.25		●	●	○																				
	**TNMG160408-DF**	0.8	0.15-2.00	0.1-0.3		●	●	○																				
	TNMG160412-DF	1.2	0.35-1.50	0.15-0.50		●	●																					
	TNMG220408-DF	0.8	0.3-1.5	0.1-0.4		●	●	○																				
Finishing	**TNMG220412-DF**	1.2	0.35-1.50	0.15-0.50		●		●																				

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DTGNR/L	PTFNR/L	PTTNR/L	PTGNR/L	MTGNR/L	MTJNR/L	MTJNR/L
Kr: 91°	Kr: 91°	Kr: 60°	Kr: 90°	Kr: 90°	Kr: 93°	Kr: 93°
						
A200	A213	A214	A215	A226	A227	A228

MTFNR/L	S***-PTFNR/L
Kr: 91°	Kr: 90°
	
A229	A290

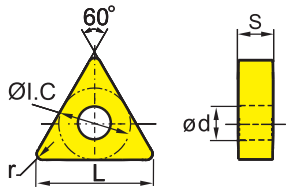
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TNMG	L	I.C	S	d
11 03	11	6.35	3.18	2.26
16 04	16.5	9.525	4.76	3.81
22 04	22	12.7	4.76	5.16

TN** negative insert

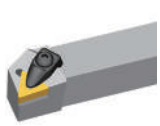
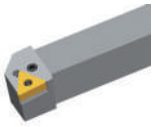
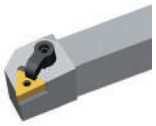
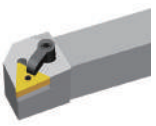
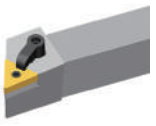


	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
					HC¹ (CVD)													HC¹ (PVD)						HT		HC²	HW	
P					●	●	◐	◐	◐	◐											◐	◐	◐	●	●	●		
M											○	◐						○	○	◐	◐	◐	◐	○	◐	○		
K													●	●	◐	◐	◐											
N																		●	●								◐	◐
S																		○	○	◐	◐	◐	◐				○	◐
H																												
SF	**TNMG110304-SF**	0.4	0.05-0.50	0.05-0.30																						○		
	TNMG160404-SF	0.4	0.05-1.00	0.05-0.30																				○		●		
	TNMG160408-SF	0.8	0.05-1.00	0.05-0.40																						●		
	TNMG220408-SF	0.8	0.05-1.50	0.05-0.40																						○		
Finishing	**TNMG220412-SF**	1.2	0.05-1.50	0.10-0.45																						○		

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DTGNR/L	PTFNR/L	PTTNR/L	PTGNR/L	MTGNR/L	MTJNR/L	MTJNR/L
Kr: 91°	Kr: 91°	Kr: 60°	Kr: 90°	Kr: 90°	Kr: 93°	Kr: 93°
						
A200	A213	A214	A215	A226	A227	A228

MTFNR/L	S***-PTFNR/L
Kr: 91°	Kr: 90°
	
A229	A290

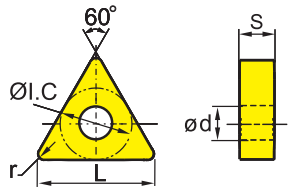
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TNMG	L	I.C	S	d
11 03	11	6.35	3.18	2.26
16 04	16.5	9.525	4.76	3.81
22 04	22	12.7	4.76	5.16

TN** negative insert



	HC¹ (CVD)											HC¹ (PVD)					HT		HC²	HW	
P	○	○	◉	◉	◉	◉									◉	◉	○	◉	○		
M						○	◉						○	○	◉	◉	◉	○	◉		
K								●	●	◉	◉										
N												●	●							◉	◉
S													●	●	◉	◉	◉			◉	◉
H																					

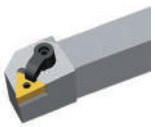
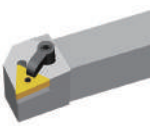
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
EF Finishing	**TNMG110304-EF**	0.4	0.1-1.0	0.05-0.20																	●							
	TNMG110308-EF	0.8	0.1-1.0	0.05-0.40																	●							
	TNMG160404-EF	0.4	0.1-1.5	0.05-0.30							●										●							
	TNMG160408-EF	0.8	0.1-1.5	0.1-0.4							●										●	○						
	TNMG160412-EF	1.2	0.2-2.5	0.15-0.40							○										●							
	TNMG220404-EF	0.4	0.5-2.5	0.05-0.25							○										●							
	TNMG220408-EF	0.8	0.5-2.5	0.1-0.4							○										●	○						
	TNMG220412-EF	1.2	0.5-2.5	0.1-0.5																		○						
FM Finishing	**TNMG160404L-FM**	0.4	0.5-3.0	0.1-0.3			●														●							
	TNMG160404R-FM	0.4	0.5-3.0	0.1-0.3		○	●														●							
	TNMG160408L-FM	0.8	0.5-3.0	0.15-0.50		○	●														●							
	TNMG160408R-FM	0.8	0.5-3.0	0.15-0.50		●	●														●							

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DTGNR/L	PTFNR/L	PTTNR/L	PTGNR/L	MTGNR/L	MTJNR/L	MTJNR/L
Kr: 91°	Kr: 91°	Kr: 60°	Kr: 90°	Kr: 90°	Kr: 93°	Kr: 93°
						
A200	A213	A214	A215	A226	A227	A228

MTFNR/L	S***-PTFNR/L
Kr: 91°	Kr: 90°
	
A229	A290

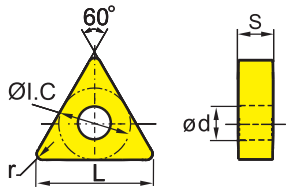
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TNMG	L	I.C	S	d
11 03	11	6.35	3.18	2.26
16 04	16.5	9.525	4.76	3.81
22 04	22	12.7	4.76	5.16

TN** negative insert



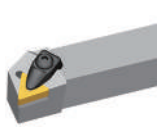
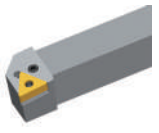
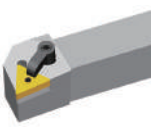
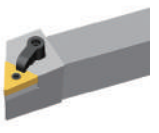
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
					HC¹ (CVD)													HC¹ (PVD)						HT		HC²	HW	
P					●	●	◉	◉	◉	◉											◉	◉	◉	●	◉	●		
M											○	◉						○	○	◉	◉	◉	◉	○	◉	○		
K													●	●	◉	◉	◉											
N																		●	●								●	◉
S																		○	○	◉	◉	◉	◉				○	◉
H																												
DM	**TNMG110308-DM**	0.8	0.3-3.0	0.1-0.4		○	●			○																		
	TNMG160404-DM	0.4	0.4-5.0	0.1-0.3		●	●	●		○		●																
	TNMG160408-DM	0.8	0.5-5.0	0.15-0.50		●	●	●		●		○																
	TNMG160412-DM	1.2	0.8-5.0	0.18-0.60		●	●	○		○																		
	TNMG220404-DM	0.4	0.4-6.6	0.1-0.3		●	●	●		○																		
	TNMG220408-DM	0.8	0.5-6.6	0.15-0.50		●	●	●		●																		
	TNMG220412-DM	1.2	0.8-6.6	0.18-0.60		●	●	●		●																		
	TNMG220416-DM	1.6	1.0-6.6	0.23-0.65		●	●	●		○																		
PM	**TNMG110304-PM**	0.4	0.4-3.0	0.1-0.3			●	●																				
	TNMG110308-PM	0.8	0.4-3.0	0.15-0.40			●	●																				
	TNMG160404-PM	0.4	0.4-5.0	0.1-0.3		●	●	●		●			○	●		●												
	TNMG160408-PM	0.8	0.5-5.0	0.15-0.50		●	●	●		●			○	●		●												
	TNMG160412-PM	1.2	0.8-5.0	0.18-0.60		●	●	○					○	●		●												
	TNMG220408-PM	0.8	0.5-6.6	0.15-0.50		●	●	●		○				●		●												
	TNMG220412-PM	1.2	0.8-6.6	0.18-0.60		○	●	●		○			○	●		●												
	TNMG220416-PM	1.6	1.0-6.6	0.23-0.65			○	●		○				○		○												

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DTGNR/L	PTFNR/L	PTTNR/L	PTGNR/L	MTGNR/L	MTJNR/L	MTJNR/L
Kr: 91°	Kr: 91°	Kr: 60°	Kr: 90°	Kr: 90°	Kr: 93°	Kr: 93°
						
A200	A213	A214	A215	A226	A227	A228

MTFNR/L	S***-PTFNR/L
Kr: 91°	Kr: 90°
	
A229	A290

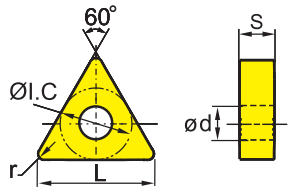
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TNMG	L	I.C	S	d
16 04	16.5	9.525	4.76	3.81

TN** negative insert

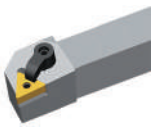
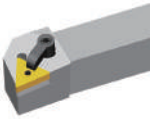


	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
					HC¹ (CVD)													HC¹ (PVD)						HT		HC²	HW	
P					○	○	◉	◉	◉	◉											◉	◉	◉	○	◉	○		
M											○	◉							○	○	◉	◉	◉	○	◉	○		
K													○	○	◉	◉	◉											
N																		○	○								○	◉
S																			○	○	◉	◉	◉				○	◉
H																												
ZM	**TNMG160404-ZM**	0.4	0.5-5.0	0.08-0.30	●																							
	TNMG160408-ZM	0.8	0.5-5.0	0.1-0.4	●																							
	TNMG160412-ZM	1.2	0.5-5.0	0.1-0.6	●																							
Medium Cut																												

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DTGNR/L	PTFNR/L	PTTNR/L	PTGNR/L	MTGNR/L	MTJNR/L	MTJNR/L
Kr: 91°	Kr: 91°	Kr: 60°	Kr: 90°	Kr: 90°	Kr: 93°	Kr: 93°
						
A200	A213	A214	A215	A226	A227	A228

MTFNR/L	S***-PTFNR/L
Kr: 91°	Kr: 90°
	
A229	A290

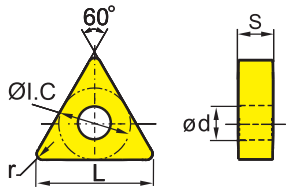
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

TNMG	L	I.C	S	d
16 04	16.5	9.525	4.76	3.81
22 04	22	12.7	4.76	5.16

TN** negative insert



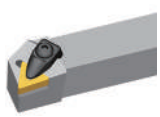
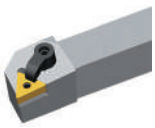
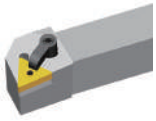
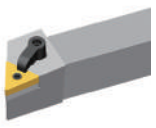
					HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW	
					YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
P					○	○	◉	◉	◉	◉											◉	◉	◉	○	◉	○	◉	◉
M											○	◉						○	○	◉	◉	◉	◉	○	◉	○		
K													○	○	◉	◉	◉											
N																		○	○								○	◉
S																		○	○	◉	◉	◉	◉				○	◉
H																												
ISO		r	a_p	f																								
EG	**TNMG160404-EG**	0.4	0.5-4.0	0.1-0.3							●										●							
	TNMG160408-EG	0.8	0.5-4.0	0.1-0.4							●	●									●	●						
	TNMG160412-EG	1.2	0.5-4.0	0.15-0.50							●	●									●	●						
Medium Cut																												
EM	**TNMG160404-EM**	0.4	0.5-4.8	0.05-0.30							●	○										●	○					
	TNMG160408-EM	0.8	0.5-4.8	0.10-0.45							●	●										●	○					
	TNMG160412-EM	1.2	0.5-4.8	0.1-0.6							●	●										●	○					
	TNMG220408-EM	0.8	0.5-6.6	0.10-0.45							●	●										●	○					
	TNMG220412-EM	1.2	0.5-6.6	0.1-0.6							○	●										●	○					
Medium Cut	**TNMG220416-EM**	1.6	0.5-6.6	0.10-0.65								●										●						
TC	**TNMG160404-TC**	0.4	0.5-3.0	0.05-0.20											●	●												
	TNMG160408-TC	0.8	0.5-3.0	0.08-0.25											●	●												
	TNMG160412-TC	1.2	1-3	0.1-0.3											●	●												
	TNMG220412-TC	1.2	1-6	0.15-0.40											●	●												
Medium Cut	**TNMG220416-TC**	1.6	1-6	0.2-0.5											●													

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DTGNR/L	PTFNR/L	PTTNR/L	PTGNR/L	MTGNR/L	MTJNR/L	MTJNR/L
Kr: 91°	Kr: 91°	Kr: 60°	Kr: 90°	Kr: 90°	Kr: 93°	Kr: 93°
						
A200	A213	A214	A215	A226	A227	A228

MTFNR/L	S***-PTFNR/L
Kr: 91°	Kr: 90°
	
A229	A290

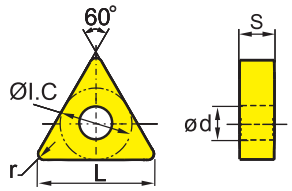
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

TNMG	L	I.C	S	d
16 04	16.5	9.525	4.76	3.81
22 04	22	12.7	4.76	5.16
27 06	27.5	15.875	6.35	6.35

TN** negative insert



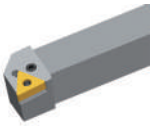
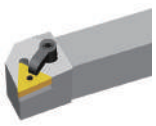
	HC¹ (CVD)											HC¹ (PVD)					HT		HC²	HW	
P	○	○	◉	◉	◉	◉									◉	◉	◉	○	◉	○		
M						○	◉						○	○	◉	◉	◉	○	◉	○		
K								●	●	◉	◉											
N												●	●								●	◉
S													○	○	◉	◉	◉				○	◉
H																						

	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
DR	**TNMG160408-DR**	0.8	0.7-6.0	0.20-0.55		●	●	●						●		●											
	TNMG160412-DR	1.2	1-6	0.25-0.65		●	●	●		○				○		●											
	TNMG220408-DR	0.8	0.7-7.0	0.20-0.55			●	●		○						○											
	TNMG220412-DR	1.2	1-7	0.25-0.65		○	●	●	●	○				○		●											
	TNMG220416-DR	1.6	1.5-7.0	0.32-0.75			●	●		●				○		●											
Roughing	**TNMG270608-DR**	0.8	1.5-12.0	0.35-0.55						○																	
	TNMG270612-DR	1.2	2-12	0.35-0.75						●																	

● Ex stock ○ On demand
YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DTGNR/L	PTFNR/L	PTTNR/L	PTGNR/L	MTGNR/L	MTJNR/L	MTJNR/L
Kr: 91°	Kr: 91°	Kr: 60°	Kr: 90°	Kr: 90°	Kr: 93°	Kr: 93°
						
A200	A213	A214	A215	A226	A227	A228

MTFNR/L	S***-PTFNR/L
Kr: 91°	Kr: 90°
	
A229	A290

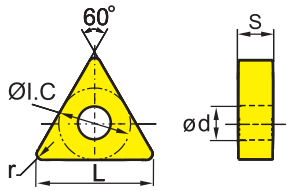
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TN**	L	I.C	S	d
16 04	16.5	9.525	4.76	3.81
22 04	22	12.7	4.76	5.16
27 06	27.5	15.875	6.35	5.16

TN** negative insert



	HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW	
P	○	○	◉	◉	◉	◉										◉	◉	◉	○	◉	○		
M							○	◉					○	○	◉	◉	◉	◉	○	◉	○		
K									○	○	◉	◉											
N													○	○								○	◉
S													○	○	◉	◉	◉	◉				○	◉
H																							

	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
DR	**TNMM160408-DR**	0.8	0.7-6.0	0.20-0.55		○	●	●		○																		
	TNMM160412-DR	1.2	1-6	0.25-0.70		○	○	●																				
	TNMM220408-DR	0.8	0.7-8.0	0.20-0.55		○	○	●		○																		
	TNMM220412-DR	1.2	1-8	0.25-0.70			●	○		○																		
	TNMM220416-DR	1.6	1.5-8.0	0.32-0.90			○	○		○																		
Roughing	**TNMM270612-DR**	1.2	2.5-11.0	0.25-0.70			○																					
	TNMM270616-DR	1.6	2.5-11.0	0.3-0.9			○																					
ER	**TNMG160408-ER**	0.8	2.0-5.6	0.15-0.55								●																
	TNMG160412-ER	1.2	2.0-5.6	0.15-0.60								○																
	TNMG220408-ER	0.8	2.0-7.7	0.15-0.55								○																
Roughing	**TNMG220412-ER**	1.2	2.0-7.7	0.15-0.60								○																
LR	**TNMM160408-LR**	0.8	1-5	0.1-0.5		●	●					●																
	TNMM160412-LR	1.2	1.5-6.0	0.1-0.6		●	●					●																
Roughing																												

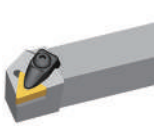
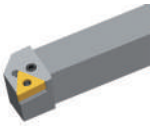
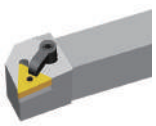
● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Tool holder

DTGNR/L	PTFNR/L	PTTNR/L	PTGNR/L	MTGNR/L	MTJNR/L	MTJNR/L
Kr: 91°	Kr: 91°	Kr: 60°	Kr: 90°	Kr: 90°	Kr: 93°	Kr: 93°
						
A200	A213	A214	A215	A226	A227	A228

MTFNR/L	S***-PTFNR/L
Kr: 91°	Kr: 90°
	
A229	A290

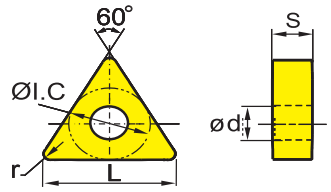
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TNMM	L	I.C	S	d
22 04	22	12.7	4.76	5.16
27 06	27.5	15.875	6.35	6.35

TN** negative insert



	HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW	
P	○	○	◎	◎	◎	◎									◎	◎	◎		○	◎	○		
M							○	◎					○	○	◎	◎	◎		○	◎	○		
K									○	○	◎	◎	◎										
N													○	○								○	◎
S													○	○	◎	◎	◎					○	◎
H																							

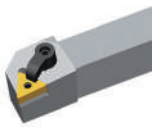
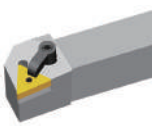
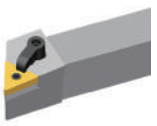
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
HDR	**TNMM220412-HDR**	1.2	2-9	0.25-0.80		○																						
	TNMM220416-HDR	1.6	2-9	0.35-1.00			○																					
	TNMM270616-HDR	1.6	2-6	0.35-1.00			●																					
	TNMM270624-HDR	2.4	2-7	0.4-1.2			●					○																	
Heavy Turning																												

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

PTFNR/L	PTTNR/L	PTGNR/L	MTGNR/L	MTJNR/L	MTJNR/L	MTFNR/L
Kr: 91°	Kr: 60°	Kr: 90°	Kr: 90°	Kr: 93°	Kr: 93°	Kr: 91°
						
A213	A214	A215	A226	A227	A228	A229

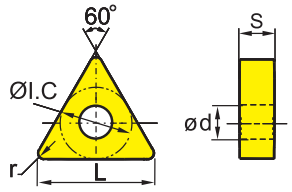
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

TNMG	L	I.C	S	d
16 04	16.5	9.525	4.76	3.81
22 04	22	12.7	4.76	5.16
27 06	27.5	15.875	6.35	6.35
33 09	33	19.05	9.525	7.94

TN** negative insert



	HC¹ (CVD)												HC¹ (PVD)					HT		HC²	HW	
P	○	○	◍	◍	◍	◍										◍	◍	○	◍	○		
M						○	◍						○	○	◍	◍	◍	○	◍	○		
K								○	○	◍	◍	◍										
N													○	○							○	◍
S													○	○	◍	◍	◍				○	◍
H																						

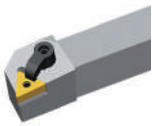
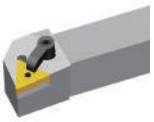
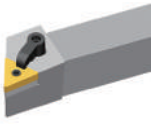
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
Basic	**TNMG160404**	0.4	0.2-4.0	0.05-0.20			○	●																				
	TNMG160408	0.8	0.2-4.0	0.08-0.30		●	●	●		○																		
	TNMG160412	1.2	0.2-4.0	0.1-0.4		●	●	○																				
	TNMG220404	0.4	0.2-6.0	0.05-0.20			○	○																				
	TNMG220408	0.8	0.2-6.0	0.1-0.3			○	●																				
	TNMG220412	1.2	0.2-6.0	0.1-0.4			○																					
	TNMG220416	1.6	0.2-6.0	0.1-0.5			○																					
	TNMG270612	1.2	0.2-9.0	0.1-0.5			○			●																		
	TNMG270616	1.6	0.2-9.0	0.1-0.5			○			●																		
	TNMG330916	1.6	0.2-11.0	0.1-0.5			○			○																		
	TNMG330924	2.4	0.2-11.0	0.1-0.7			○			○																		

Medium Cut

● Ex stock ○ On demand
YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DTGNR/L	PTFNR/L	PTTNR/L	PTGNR/L	MTGNR/L	MTJNR/L	MTJNR/L
Kr: 91°	Kr: 91°	Kr: 60°	Kr: 90°	Kr: 90°	Kr: 93°	Kr: 93°
						
A200	A213	A214	A215	A226	A227	A228

MTFNR/L	S***-PTFNR/L
Kr: 91°	Kr: 90°
	
A229	A290

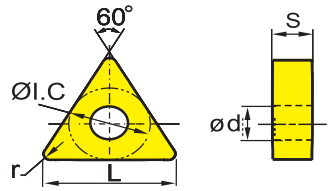
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

TN**	L	I.C	S	d
16 04	16.5	9.525	4.76	3.81
22 04	22	12.7	4.76	5.16
27 06	27.5	15.875	6.35	6.35

TN** negative insert



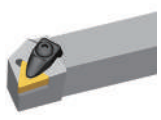
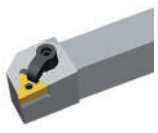
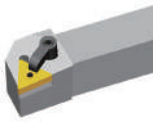
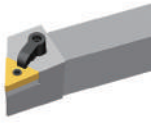
	HC¹ (CVD)											HC¹ (PVD)						HT		HC²	HW	
P	○	○	◉	◉	◉	◉									◉	◉	◉	○	◉	○		
M							○	◉					○	○	◉	◉	◉	○	◉	○		
K									●	●	◉	◉	◉									
N												●	●								○	◉
S												○	○	◉	◉	◉					○	◉
H																						

	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
Flat	**TNMA160404**	0.4	0.2-4.0	0.05-0.20									○	○		●												
	TNMA160408	0.8	0.2-4.0	0.08-0.30									●	●		●												
	TNMA160412	1.2	0.2-4.0	0.1-0.4									○	●		●												
	TNMA160416	1.6	0.5-4.0	0.05-0.50									○	●		○												
	TNMA220404	0.4	0.2-6.0	0.05-0.20												●												
	TNMA220408	0.8	0.2-6.0	0.1-0.3									○	●		●												
	TNMA220412	1.2	0.2-6.0	0.1-0.4									○			●	●											
	TNMA220416	1.6	0.2-6.0	0.1-0.5									○				○											
Basic	**TNMM160404**	0.4	0.2-7.0	0.05-0.60			○	●																				
	TNMM160408	0.8	0.5-7.0	0.05-0.60			○	○																				
	TNMM160412	1.2	0.5-7.0	0.05-0.60			○																					
	TNMM220408	0.8	0.5-7.0	0.05-0.60			○	●		○																		
	TNMM220412	1.2	1-7	0.1-0.6			○	●																				
	TNMM220416	1.6	0.5-7.0	0.05-0.60			○																					
	TNMM270616	1.6	0.5-6.5	0.05-0.70			○			●																		

● Ex stock ○ On demand
YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DTGNR/L	PTFNR/L	PTTNR/L	PTGNR/L	MTGNR/L	MTJNR/L	MTJNR/L
Kr: 91°	Kr: 91°	Kr: 60°	Kr: 90°	Kr: 90°	Kr: 93°	Kr: 93°
						
A200	A213	A214	A215	A226	A227	A228

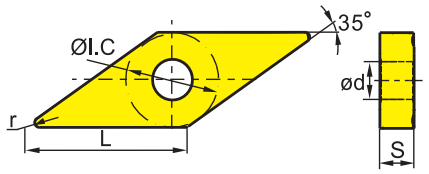
MTFNR/L	S***-PTFNR/L
Kr: 91°	Kr: 90°
	
A229	A290

System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

VN**	L	I.C	S	d
16 04	16.6	9.525	4.76	3.81



	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
					HC¹ (CVD)													HC¹ (PVD)						HT		HC²	HW	
P					○	○	◉	◉	◉	◉											◉	◉	◉	○	◉	○		
M											○	◉							○	○	◉	◉	◉	○	◉	○		
K													○	○	◉	◉	◉											
N																		○	○								○	◉
S																			○	○	◉	◉	◉				○	◉
H																												
ADF	**VNMG160404-ADF**	0.4	0.5-2.5	0.1-0.3	●																●							
	VNMG160408-ADF	0.8	0.5-2.5	0.1-0.5	●																●							
Finishing																												
DF	**VNMG160404-DF**	0.4	0.25-1.50	0.07-0.30		○	●	●																				
	VNMG160408-DF	0.8	0.3-1.5	0.1-0.4		●	●	●																				
Finishing																												
EF	**VNMG160404-EF**	0.4	0.1-1.5	0.05-0.25							●											●						
	VNMG160408-EF	0.8	0.2-2.5	0.08-0.35							●											●	○					
	VNMG160412-EF	1.2	0.2-2.5	0.10-0.45							○																	
Finishing																												
NF	**VNEG160404-NF**	0.4	0.2-4.0	0.05-0.30															○	●							○	
	VNEG160408-NF	0.8	0.2-4.0	0.05-0.50															○	●							○	
Finishing																												

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

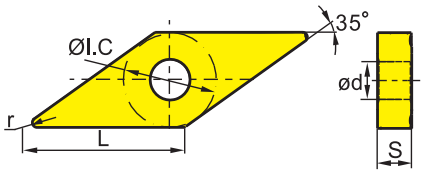
DVVNN	DVJNR/L	MVVNN	MVJNR/L
Kr: 72°30'	Kr: 93°	Kr: 72°30'	Kr: 93°
			
A201	A202	A230	A231

System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

VN**	L	I.C	S	d
16 04	16.6	9.525	4.76	3.81



VN** negative insert					HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW	
					YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
P					○	○	◌	◌	◌	◌											◌	◌	◌	○	○	○		
M											○	◌							○	○	◌	◌	◌	○	○	○		
K													○	○	◌	◌	◌											
N																		○	○								○	◌
S																			○	○	◌	◌	◌				○	◌
H																												
ISO			r	a_p	f																							
NGF	**VNEG160408-NGF**		0.8	0.2-3.0	0.1-0.3															●								
	VNEG160412-NGF		1.2	0.2-3.0	0.1-0.5															○								
Finishing																												
SF	**VNMG160404-SF**		0.4	0.05-3.00	0.05-0.20																					●		
	VNMG160408-SF		0.8	0.05-3.00	0.05-0.35																					○		
Finishing																												

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DVVNN	DVJNR/L	MVVNN	MVJNR/L
Kr: 72°30'	Kr: 93°	Kr: 72°30'	Kr: 93°
			
A201	A202	A230	A231

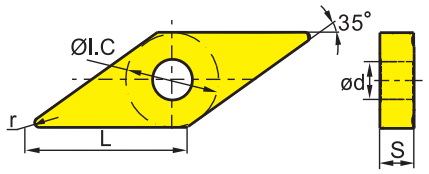
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

VNMG	L	I.C	S	d
16 04	16.6	9.525	4.76	3.81

Turning inserts

VN** negative insert



	HC¹ (CVD)												HC¹ (PVD)					HT		HC²	HW	
P	○	○	❁	❁	❁	❁										❁	❁	❁	❁	○		
M							○	❁						○	○	❁	❁	❁	❁	○		
K									○	○	❁	❁	❁									
N														○	○						○	❁
S														○	○	❁	❁	❁	❁		○	❁
H																						

ISO		r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
Basic	**VNMG160404**	0.4	0.2-6.0	0.05-0.60		○																						
	VNMG160408	0.8	0.2-6.0	0.08-0.60		○																						
Medium Cut																												
DM	**VNMG160408-DM**	0.8	0.5-4.0	0.15-0.50		●	●	●																				
	VNMG160412-DM	1.2	0.8-4.0	0.18-0.60		●	●	●																				
Medium Cut																												
EM	**VNMG160404-EM**	0.4	0.2-3.0	0.05-0.30							●											●	○					
	VNMG160408-EM	0.8	0.5-4.0	0.10-0.45							●											●	○					
Medium Cut																												
NM	**VNMG160412-NM**	1.2	0.2-4.0	0.05-0.40															●									
Medium Cut																												

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

DVVNN	DVJNR/L	MVVNN	MVJNR/L
Kr: 72°30'	Kr: 93°	Kr: 72°30'	Kr: 93°
			
A201	A202	A230	A231

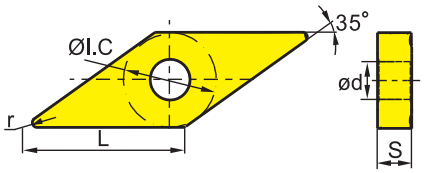
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

VNMG	L	I.C	S	d
16 04	16.6	9.525	4.76	3.81

VN** negative insert



	HC[1] (CVD)												HC[1] (PVD)						HT		HC[2]	HW	
P	○	○	⊛	⊛	⊛	⊛										⊛	⊛	⊛	○	⊛	○		
M							○	⊛					○	○	⊛	⊛	⊛	⊛	○	⊛	○		
K									○	○	⊛	⊛	⊛										
N													○	○								○	⊛
S													○	○	⊛	⊛	⊛	⊛				○	⊛
H																							

	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
PM	**VNMG160404-PM**	0.4	0.4-4.0	0.13-0.40		●	●	●						●		○												
	VNMG160408-PM	0.8	0.5-4.0	0.15-0.50		●	●	●		○			●	●		●												
	VNMG160412-PM	1.2	0.8-4.0	0.18-0.60		●	●	●					○	●														
Medium Cut																												
TC	**VNMG160404-TC**	0.4	0.5-2.0	0.05-0.20											●		●											
	VNMG160408-TC	0.8	0.5-2.0	0.08-0.25											●		●											
	VNMG160412-TC	1.2	0.5-3.0	0.08-0.30											●		●											
Medium Cut																												
ZM	**VNMG160404-ZM**	0.4	0.5-3.0	0.08-0.30	●																							
	VNMG160408-ZM	0.8	0.5-3.0	0.1-0.4	●																							
Medium Cut																												
SNR	**VNMG160408-SNR**	0.8	0.2-2.0	0.1-0.4																●								
	VNMG160412-SNR	1.2	0.2-2.0	0.1-0.5																●								
Roughing																												

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

Tool holder

DVVNN	DVJNR/L	MVVNN	MVJNR/L
Kr: 72°30'	Kr: 93°	Kr: 72°30'	Kr: 93°
			
A201	A202	A230	A231

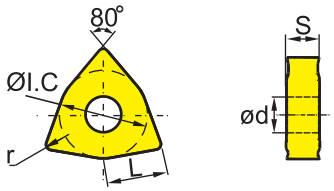
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

WNMG	L	I.C	S	d
06 T3	6.5	9.525	3.97	3.81
06 04	6.5	9.525	4.76	3.81
08 04	8.7	12.7	4.76	5.16

WN** negative insert



	HC[1] (CVD)												HC[1] (PVD)					HT		HC[2]	HW	
P	●	●	◉	◉	◉	◉										◉	◉	◉	◉	●		
M							○	◉						○	○	◉	◉	◉	◉	○		
K									●	●	◉	◉	◉									
N														●	●						●	◉
S														●	●	◉	◉	◉			●	◉
H																						

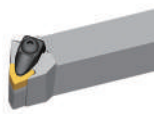
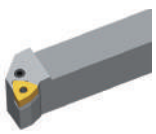
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
ADF	**WNMG080404-ADF**	0.4	0.2-2.5	0.05-0.30	●																●				●			
	WNMG080408-ADF	0.8	0.5-2.5	0.05-0.40	●																●	○			●			
	WNMG080412-ADF	1.2	0.5-2.5	0.05-0.50	●																●							
Finishing																												
DF	**WNMG060404-DF**	0.4	0.15-2.00	0.08-0.25		●	●	●																				
	WNMG060408-DF	0.8	0.15-2.00	0.1-0.3		●	●	●																				
	WNMG080404-DF	0.4	0.15-2.00	0.08-0.25		●	●	○																				
	WNMG080408-DF	0.8	0.15-2.00	0.1-0.3		●	○	●																				
Finishing	**WNMG080412-DF**	1.2	0.2-2.5	0.10-0.35		●	●	○																				
SF	**WNMG060404-SF**	0.4	0.05-0.50	0.05-0.20																					●			
	WNMG060408-SF	0.8	0.05-0.50	0.05-0.35																					●			
	WNMG06T304-SF	0.4	0.05-0.50	0.05-0.20																					●			
	WNMG06T308-SF	0.8	0.05-0.50	0.05-0.35																					●			
	WNMG080404-SF	0.4	0.05-0.50	0.05-0.20																					●			
	WNMG080408-SF	0.8	0.05-0.50	0.05-0.35																					●			
Finishing	**WNMG080412-SF**	1.2	0.05-0.50	0.05-0.40																					○			

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

Tool holder

DWLNR/L	PWLNR/L	MWLNR/L	S***-PWLNR/L
Kr: 95°	Kr: 95°	Kr: 95°	Kr: 95°
			
A203	A217	A232	A291

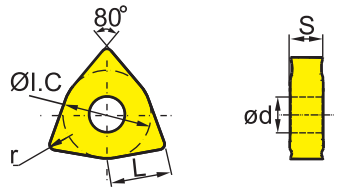
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

WN**	L	I.C	S	d
06 T3	6.5	9.525	3.97	3.81
06 04	6.5	9.525	4.76	3.81
08 04	8.7	12.7	4.76	5.16

WN** negative insert



	HC[1] (CVD)												HC[1] (PVD)						HT		HC[2]	HW		
	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
P	●	●	◉	◉	◉	◉											◉	◉	◉	●	◉	●		
M							○	◉							○	○	◉	◉	◉	○	◉	○		
K									●	●	◉	◉	◉											
N														●	●								●	◉
S															○	○	◉	◉	◉				●	◉
H																								

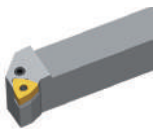
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
WG	**WNMG080408-WG**	0.8	0.5-5.0	0.15-0.70		●	●																					
	**WNMG080412-WG**	1.2	0.8-6.0	0.20-0.75		●	○																					
Wiper																												
EF	**WNMG060404-EF**	0.4	0.1-1.5	0.05-0.30							○											●	○					
	**WNMG060408-EF**	0.8	0.1-1.5	0.1-0.4							○											●	○					
	WNMG06T308-EF	0.8	0.1-1.5	0.1-0.4																		●						
Finishing	**WNMG080404-EF**	0.4	0.1-1.5	0.05-0.30				○			●											●	●					
	WNMG080408-EF	0.8	0.1-1.5	0.1-0.4				○			●								○			●	○					
NF	**WNEG080404-NF**	0.4	0.2-3.0	0.05-0.30															○	●								
	**WNEG080408-NF**	0.8	0.2-2.5	0.05-0.30																○								
Finishing																												
NF	**WNMG060408-NF**	0.8	0.2-2.5	0.05-0.30															○	●								
																												
Finishing																												

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

Tool holder

DWLNR/L	PWLNR/L	MWLNR/L	S***-PWLNR/L
Kr: 95°	Kr: 95°	Kr: 95°	Kr: 95°
			
A203	A217	A232	A291

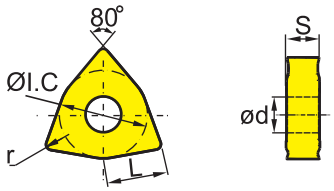
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

WNMG	L	I.C	S	d
06 T3	6.5	9.525	3.97	3.81
06 04	6.5	9.525	4.76	3.81
08 04	8.7	12.7	4.76	5.16

WN** negative insert



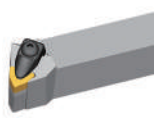
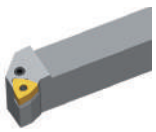
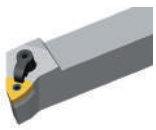
	HC[1] (CVD)												HC[1] (PVD)					HT		HC[2]	HW	
P	○	○	◉	◉	◉	◉										◉	◉	◉	◉	○		
M							○	◉						○	○	◉	◉	◉	◉	○		
K									○	○	◉	◉	◉									
N													○	○							○	◉
S														○	○	◉	◉	◉	◉		○	◉
H																						

	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
DM Medium Cut	**WNMG060408-DM**	0.8	0.5-3.0	0.15-0.50		●	●	●		○																	
	WNMG060412-DM	1.2	0.8-3.0	0.18-0.60	○	●	●	●		○																	
	WNMG06T308-DM	0.8	0.5-3.0	0.15-0.15			○	●																			
	WNMG080404-DM	0.4	0.5-4.0	0.1-0.4		●	●	●		○																	
	WNMG080408-DM	0.8	0.5-4.0	0.15-0.50	○	●	●	●	●	○		●															
	WNMG080412-DM	1.2	0.8-4.0	0.18-0.60	○	●	●	●	●																		
	WNMG080416-DM	1.6	1-4	0.23-0.65		●	●																				
EG Medium Cut	**WNMG080408-EG**	0.8	0.5-4.0	0.05-0.40							●	●									●	●					
	WNMG080412-EG	1.2	0.5-4.0	0.05-0.60							●	●									●	●					
EM Medium Cut	**WNMG060404-EM**	0.4	0.5-3.0	0.05-0.30							○	●										●	○				
	WNMG060408-EM	0.8	0.5-3.0	0.1-0.5							●	●										●	○				
	WNMG06T304-EM	0.4	0.5-3.0	0.05-0.30							●																
	WNMG06T308-EM	0.8	0.5-3.0	0.1-0.5							●																
	WNMG06T312-EM	1.2	0.5-3.0	0.1-0.7							○											○					
	WNMG080404-EM	0.4	1-4	0.05-0.30							●	●										●	●				
	WNMG080408-EM	0.8	1-4	0.1-0.5							●	●										●	○				
	WNMG080412-EM	1.2	1-4	0.1-0.7							●	●										●					

● Ex stock ○ On demand
YBC152F, YBC252F, YBM153F, YBM253F available

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

Tool holder

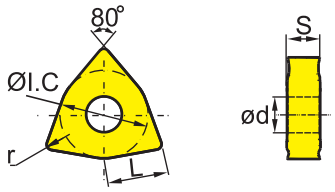
DWLNR/L	PWLNR/L	MWLNR/L	S***-PWLNR/L
Kr: 95°	Kr: 95°	Kr: 95°	Kr: 95°
			
A203	A217	A232	A291

System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

WNMG	L	I.C	S	d
06 04	6.5	9.525	4.76	3.81
08 04	8.7	12.7	4.76	5.16



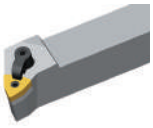
WN** negative insert					HC[1] (CVD)											HC[1] (PVD)						HT		HC[2]	HW	
					YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
	ISO		r	a_p	f																						
PM	**WNMG060408-PM**		0.8	0.5-3.0	0.15-0.50		●	●	●		●			○	●		●										
	WNMG060412-PM		1.2	0.8-3.0	0.18-0.60		●	○	●		○				○		○										
	WNMG080404-PM		0.4	0.4-4.0	0.12-0.40		●	●	●					○	●		●										
	WNMG080408-PM		0.8	0.5-4.0	0.15-0.50		●	●	●	●	●			○	●		●										
	WNMG080412-PM		1.2	0.8-4.0	0.18-0.60		●	●	●		●			○	●		●										
Medium Cut	**WNMG080416-PM**		1.6	1-4	0.23-0.65			●						○	●		●										
ZM	**WNMG080408-ZM**		0.8	0.5-4.0	0.1-0.5	●																					
	WNMG080412-ZM		1.2	1.0-5.5	0.15-0.60	●																					
Medium Cut																											

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

Tool holder

DWLNR/L	PWLNR/L	MWLNR/L	S***-PWLNR/L
Kr: 95°	Kr: 95°	Kr: 95°	Kr: 95°
			
A203	A217	A232	A291

A Turning
B Milling
C Drilling
D Technical Information
E Index

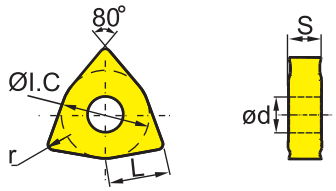
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

WN**	L	I.C	S	d
06 T3	6.5	9.525	3.97	3.81
06 04	6.5	9.525	4.76	3.81
08 04	8.7	12.7	4.76	5.16

WN** negative insert



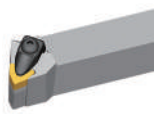
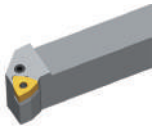
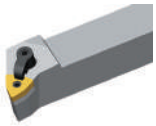
	ISO	r	a_p	f	HC¹ (CVD)											HC¹ (PVD)					HT		HC²	HW	
					YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
NM	**WNMG080404-NM**	0.4	0.2-3.0	0.05-0.30																●							
	WNMG080408-NM	0.8	0.2-3.0	0.1-0.3															●	●		○					
	WNMG080412-NM	1.2	0.2-4.0	0.1-0.4															●	●							
Medium Cut																											
TC	**WNMG080404-TC**	0.4	0.5-3.0	0.08-0.25											●		○										
	WNMG080408-TC	0.8	0.5-4.0	0.15-0.40											●		●										
	WNMG080412-TC	1.2	0.5-4.0	0.2-0.6											●		●										
Medium Cut																											
DR	**WNMG060408-DR**	0.8	0.7-3.5	0.20-0.45		●	●	●		○				●		●											
	WNMG060412-DR	1.2	0.8-3.5	0.25-0.55		●	●	●		○				○		○											
	WNMG080408-DR	0.8	0.7-5.0	0.20-0.55		●	●	●	●	●				●		●											
	WNMG080412-DR	1.2	1-5	0.25-0.70	○	●	●	●	●	○				●		●											
Roughing	**WNMG080416-DR**	1.6	1.5-5.0	0.32-0.75		○	●	●						●		○											
Flat	**WNMA060408**	0.8	0.5-3.0	0.1-0.3									●	●		●											
	WNMA060412	1.2	0.5-3.0	0.15-0.30												●											
	WNMA06T308	0.8	0.5-3.0	0.1-0.3									○														
	WNMA080404	0.4	0.5-4.0	0.08-0.25										○		●	○										
	WNMA080408	0.8	0.5-4.0	0.15-0.30									●	●		●	●										
	WNMA080412	1.2	0.5-5.0	0.15-0.30									●	●		●	●										
	WNMA080416	1.6	0.5-5.0	0.2-0.5									○	○			○										

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

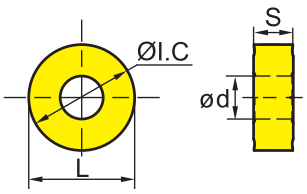
DWLNR/L	PWLNR/L	MWLNR/L	S***-PWLNR/L
Kr: 95°	Kr: 95°	Kr: 95°	Kr: 95°
			
A203	A217	A232	A291

System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

RNMG	L	I.C	S	d
12 04	12.7	12.7	4.76	5.16



RN** negative insert				HC¹ (CVD)											HC¹ (PVD)						HT		HC²	HW	
				P																					
				M																					
				K																					
				N																					
				S																					
				H																					
ISO		a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
Basic	**RNMG120400**	0.5-7.0	0.1-1.8				●								○	○										
Medium Cut																										

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

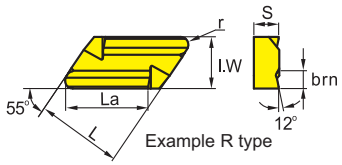
MRDNN	MRGNR/L
	
A233	A234

System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

KNUX	L	I.W	S
16 04	16.15	9.525	4.76



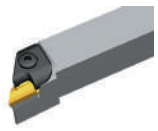
	ISO	La	brn	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
							HC¹ (CVD)													HC¹ (PVD)						HT		HC²	HW	
KNUX	**KNUX160405L11**	16	2.2	0.5	0.2-6.0	0.05-0.70			●	●		○																	○	
	KNUX160405L12	16	2.2	0.5	0.2-6.0	0.05-0.70				●																				
	KNUX160405R11	16	2.2	0.5	0.2-6.0	0.05-0.70			●	●		○																	○	
	KNUX160405R12	16	2.2	0.5	0.2-6.0	0.05-0.70				●																				
	KNUX160410L11	16	2.2	1	0.2-6.0	0.05-0.70				●																				
Finishing	**KNUX160410L12**	16	2.2	1	0.2-6.0	0.05-0,70		○		●																				
	KNUX160410R11	16	2.2	1	0.2-6.0	0.05-0.70			●	●																				
	KNUX160410R12	16	2.2	1	0.2-6.0	0.05-0.70		○		●																				

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

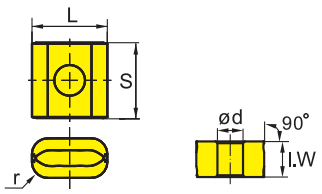
CKJNR/L	CKNNR/L
Kr: 93°	Kr: 63°
	
A256	A257

System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

175	L	l.C	S	d
32 -3	30	10	19.05	6.35
32 -1	19.05	10	19.05	6.35



Railway wheel machining			HC[1] (CVD)												HC[1] (PVD)						HT		HC[2]	HW	
		P	○	○	✲	✲	✲	✲										✲	✲	✲	○	✲	○		
		M							○	✲						○	○	✲	✲	✲	○	✲	○		
		K									○	○	✲	✲	✲										
		N														○	○							✲	✲
		S														○	○	✲	✲	✲				✲	✲
		H																							
ISO		r	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
	**175.32-191940-22**	4				○																			
	**175.32-191940-24**	4				●																			
	175.32-301940-24	4		○		●																			
	**175.32-191940-25**	4				○																			
	**175.32-191940-28**	4		●	●	●																			
	**175.32-301940-31**	4				○																			

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

A Turning
B Milling
C Drilling
D Technical Information
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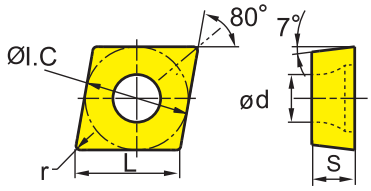
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

CCGT	L	I.C	S	d
06 02	6.4	6.35	2.38	2.8
09 T3	9.7	9.525	3.97	4.4

CC** positive insert



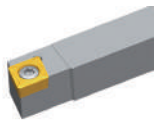
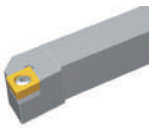
	HC¹ (CVD)												HC¹ (PVD)					HT		HC²		HW	
P	●	●	◉	◉	◉	◉										◉	◉	◉	●	◉	●		
M							●	◉						●	●	◉	◉	◉	●	◉	●		
K									●	●	◉	◉	◉										
N														●	●							●	◉
S														●	●	◉	◉	◉				●	◉
H																							

	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
SF	**CCGT060202-SF**	0.2	0.05-2.00	0.05-0.18																				●		●		
	CCGT060204-SF	0.4	0.05-2.00	0.05-0.35																				●	●	●		
	CCGT09T304-SF	0.4	0.05-2.00	0.05-0.35																				●	●	●		
Finishing																												
USF	**CCGT09T301L-USF**	0.1	0.2-2.0	0.01-0.08																	○		○					
	CCGT09T302L-USF	0.2	0.2-2.0	0.05-0.18																		○	●					
	CCGT09T304L-USF	0.4	0.2-2.0	0.05-0.20																		○	○					
Finishing																												
USF	**CCGT09T301R-USF**	0.1	0.2-2.0	0.01-0.08																			○					
	CCGT09T302R-USF	0.2	0.2-2.0	0.05-0.18																			●					
	CCGT09T304R-USF	0.4	0.2-2.0	0.05-0.20																		○						
Finishing																												

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SCACR/L	SCLCR/L	SCACR/L-SC	SCLCR/L-SC	S***-SCLCR/L	S***-SCFCR/L	S***-SCLCR
Kr: 90°	Kr: 95°	Kr: 90°	Kr: 95°	Kr: 95°	Kr: 90°	Kr: 95°
						
A235	A236	A272	A273	A293	A310	A311

E***-SCLCR/L
Kr: 95°

A313

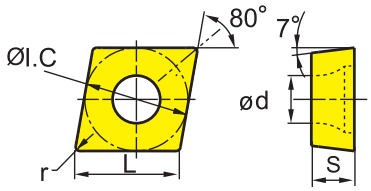
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

CCMT	L	I.C	S	d
06 02	6.4	6.35	2.38	2.8
09 T3	9.7	9.525	3.97	4.4
12 04	12.9	12.7	4.76	5.56

CC** positive insert



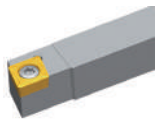
	HC¹ (CVD)											HC¹ (PVD)						HT		HC²	HW	
	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
P	○	○	◉	◉	◉	◉											◉	◉	◉	○	○	○		
M							○	◉							○	○	◉	◉	◉	○	◉	○		
K									○	○	◉	◉	◉											
N														○	○								○	◉
S															○	○	◉	◉	◉				○	◉
H																								

	ISO	r	a_p	f																				
AHF	**CCMT060204-AHF**	0.4	0.2-2.5	0.05-0.20	○												●				●			
	CCMT060208-AHF	0.8	0.3-2.5	0.05-0.30	○												●							
	CCMT09T304-AHF	0.4	0.2-3.0	0.05-0.30	○												●	○			●			
	CCMT09T308-AHF	0.8	0.3-3.0	0.05-0.40	●												●	○			●			
Finishing	**CCMT120404-AHF**	0.4	0.5-4.0	0.05-0.30	○												●	○						
	CCMT120408-AHF	0.8	0.8-4.0	0.08-0.40	●												●							
HF	**CCMT060202-HF**	0.2	0.06-1.70	0.03-0.11		●	●	●											○				○	
	CCMT060204-HF	0.4	0.1-1.7	0.05-0.17		●	●	●		○				○					●					
	CCMT060208-HF	0.8	0.1-1.7	0.05-0.30		○	●	●											○			●		
	CCMT09T302-HF	0.2	0.08-2.00	0.04-0.15		●	●	●											●	○				
	CCMT09T304-HF	0.4	0.11-2.00	0.06-0.23		●	●	●		●		○		●					●					
Finishing	**CCMT09T308-HF**	0.8	0.15-2.00	0.08-0.30		●	●	●		○		○		●					●					
	CCMT120404-HF	0.4	0.14-2.40	0.07-0.27		●	●	○																
	CCMT120408-HF	0.8	0.2-3.0	0.08-0.30		●	○																	

● Ex stock ○ On demand
YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SCACR/L	SCLCR/L	SCACR/L-SC	SCLCR/L-SC	S***-SCLCR/L	S***-SCFCR/L	S***-SCLCR
Kr: 90°	Kr: 95°	Kr: 90°	Kr: 95°	Kr: 95°	Kr: 90°	Kr: 95°
						
A235	A236	A272	A273	A293	A310	A311

E***-SCLCR/L
Kr: 95°

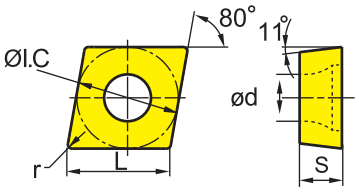
A313

System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

CPGT	L	I.C	S	d
05 02	5.6	5.56	2.38	2.8



CP** positive insert					HC¹ (CVD)											HC¹ (PVD)					HT		HC²		HW	
				P																						
				M																						
				K																						
				N																						
				S																						
				H																						
ISO		r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
	**CPGT050204**	0.4	0.5-2.0	0.08-0.40				○																			

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

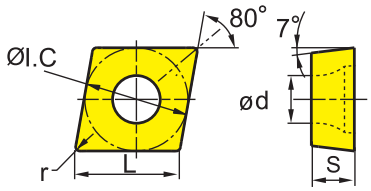
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

CCMT	L	I.C	S	d
06 02	6.4	6.35	2.38	2.8
09 T3	9.7	9.525	3.97	4.4
12 04	12.9	12.7	4.76	5.56

CC** positive insert



	HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW	
P	●	●	◉	◉	◉	◉										◉	◉	◉	●	◉	●		
M							●	◉						●	●	◉	◉	◉	●	◉	●		
K									●	●	◉	◉	◉										
N													●	●								●	◉
S														●	●	◉	◉	◉				●	◉
H																							

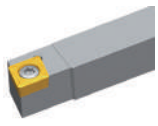
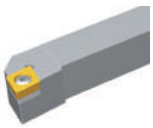
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
EF Finishing	**CCMT060202-EF**	0.2	0.06-1.70	0.03-0.11							○											●	○					
	CCMT060204-EF	0.4	0.1-1.7	0.05-0.17							●											●	○					
	CCMT09T302-EF	0.2	0.08-2.00	0.04-0.15							○											●	○					
	CCMT09T304-EF	0.4	0.11-2.00	0.06-0.23							●									○		●	○					
	CCMT09T308-EF	0.8	0.15-2.00	0.08-0.30							●									○		●						
	CCMT120404-EF	0.4	0.14-2.40	0.07-0.27							●											●	○					
	CCMT120408-EF	0.8	0.2-3.0	0.1-0.3							●											●	○					
EM Medium Cut	**CCMT060204-EM**	0.4	0.2-2.4	0.06-0.17							●	●										●	○					
	CCMT060208-EM	0.8	0.4-2.4	0.08-0.23							●	○										●						
	CCMT09T304-EM	0.4	0.25-3.00	0.08-0.23							●	●										●	○					
	CCMT09T308-EM	0.8	0.5-3.0	0.1-0.3							●	●										●	○					
	CCMT120404-EM	0.4	0.3-3.6	0.09-0.27							●	●										●	○					
	CCMT120408-EM	0.8	0.6-3.6	0.12-0.36							●	●										●						
	CCMT120412-EM	1.2	0.72-3.60	0.14-0.43								○																

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SCACR/L	SCLCR/L	SCACR/L-SC	SCLCR/L-SC	S***-SCLCR/L	S***-SCFCR/L	S***-SCLCR
Kr: 90°	Kr: 95°	Kr: 90°	Kr: 95°	Kr: 95°	Kr: 90°	Kr: 95°
						
A235	A236	A272	A273	A293	A310	A311

E***-SCLCR/L
Kr: 95°

A313

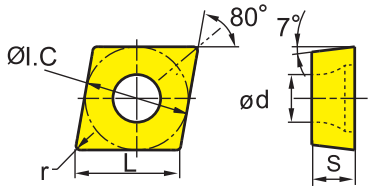
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

CCMT	L	I.C	S	d
06 02	6.4	6.35	2.38	2.8
09 T3	9.7	9.525	3.97	4.4
12 04	12.9	12.7	4.76	5.56

CC** positive insert



	HC¹ (CVD)											HC¹ (PVD)					HT		HC²	HW	
P	○	○	◉	◉	◉	◉									◉	◉	◉	◉	◉	○		
M						○	◉						○	○	◉	◉	◉	◉	◉	○		
K								●	●	◉	◉	◉										
N												●	●								●	◉
S													○	○	◉	◉	◉				○	◉
H																						

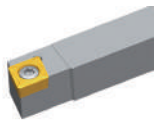
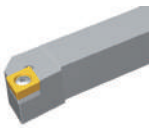
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
HM  Medium Cut	**CCMT060204-HM**	0.4	0.2-2.4	0.06-0.17		●	●	●		○		●		●		●							●					
	CCMT060208-HM	0.8	0.2-3.0	0.08-0.20		●	●	●		○				●		●							●					
	CCMT09T304-HM	0.4	0.25-3.00	0.08-0.23		●	●	●		●		●		●		●							●					
	CCMT09T308-HM	0.8	0.5-3.0	0.1-0.3		●	●	●		●		●		●		●							●					
	CCMT120404-HM	0.4	0.3-3.6	0.09-0.27		●	●	●		●				○		●							●					
	CCMT120408-HM	0.8	0.6-3.6	0.12-0.36		●	●	●		●				●		●							●					
	CCMT120412-HM	1.2	0.72-3.60	0.14-0.43		●	○	●		○				○														

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SCACR/L	SCLCR/L	SCACR/L-SC	SCLCR/L-SC	S***-SCLCR/L	S***-SCFCR/L	S***-SCLCR
Kr: 90°	Kr: 95°	Kr: 90°	Kr: 95°	Kr: 95°	Kr: 90°	Kr: 95°
						
A235	A236	A272	A273	A293	A310	A311

E***-SCLCR/L
Kr: 95°

A313

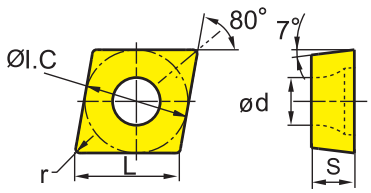
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

CC**	L	I.C	S	d
06 02	6.4	6.35	2.38	2.8
09 T3	9.7	9.525	3.97	4.4
12 04	12.9	12.7	4.76	5.56

CC** positive insert



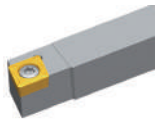
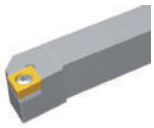
	ISO	r	a_p	f	HC¹ (CVD)											HC¹ (PVD)						HT		HC²	HW	
					YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
Basic	**CCMW09T304**	0.4	0.1-5.0	0.05-0.50																						○	
	CCMW120404	0.4	0.2-5.0	0.05-0.50																						○	○
	CCMW120408	0.8	0.5-5.0	0.08-0.50											○												
Medium Cut																											
TC	**CCMT060204-TC**	0.4	0.5-3.0	0.1-0.3											○		●										
	CCMT09T304-TC	0.4	0.5-3.0	0.1-0.3											○		●										
	CCMT09T308-TC	0.8	0.5-3.0	0.1-0.4											●		●										
	CCMT120404-TC	0.4	1-4	0.1-0.3											●		●										
Medium Cut	**CCMT120408-TC**	0.8	1-4	0.1-0.4											●		●										
HR	**CCMT060204-HR**	0.4	0.5-3.0	0.05-0.24	●	●	●		○																		
	CCMT060208-HR	0.8	0.8-3.2	0.09-0.26	●	○	●									●											
	CCMT09T304-HR	0.4	0.2-4.0	0.05-0.30	●	●	●		○							●											
	CCMT09T308-HR	0.8	1-4	0.12-0.35	●	●	●		●				●	●		●											
Roughing	**CCMT120408-HR**	0.8	1.2-4.8	0.14-0.42	●	●	●		○				○	●		●											
	CCMT120412-HR	1.2	1.44-4.80	0.17-0.50	●	●	●							○		○											

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SCACR/L	SCLCR/L	SCACR/L-SC	SCLCR/L-SC	S***-SCLCR/L	S***-SCFCR/L	S***-SCLCR
Kr: 90°	Kr: 95°	Kr: 90°	Kr: 95°	Kr: 95°	Kr: 90°	Kr: 95°
						
A235	A236	A272	A273	A293	A310	A311

E***-SCLCR/L
Kr: 95°

A313

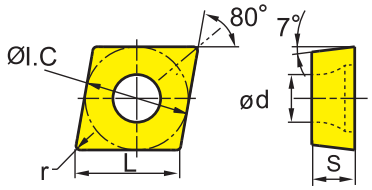
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

CCGX	L	I.C	S	d
06 02	6.4	6.35	2.38	2.8
09 T3	9.7	9.525	3.97	4.4
12 04	12.9	12.7	4.76	5.56

CC** positive insert



	HC¹ (CVD)												HC¹ (PVD)					HT		HC²	HW	
P	○	○	◎	◎	◉	◉										◎	◎	◎	◎	○		
M							○	◎						○	○	◎	◎	◎	○	◎	○	
K									○	○	◎	◎	◉									
N														○	○						○	◎
S														○	○	◎	◎	◎			○	◎
H																						

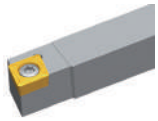
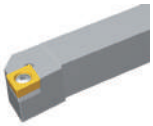
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
LC Aluminium Machining	**CCGX060202-LC**	0.2	0.3-3.0	0.05-0.15														●									●	
	CCGX060204-LC	0.4	0.5-3.0	0.1-0.3														●									●	
	CCGX09T302-LC	0.2	0.5-4.0	0.1-0.2														●									●	
	CCGX09T304-LC	0.4	0.5-5.0	0.1-0.3														●									●	
	CCGX09T308-LC	0.8	0.5-5.0	0.15-0.60														●									●	
	CCGX120404-LC	0.4	0.5-7.0	0.1-0.3														●									●	
	CCGX120408-LC	0.8	0.5-7.0	0.15-0.60														●									●	
LH Aluminium Machining	**CCGX060202-LH**	0.2	0.3-3.0	0.05-0.15															●								●	
	CCGX060204-LH	0.4	0.5-3.0	0.1-0.3															●								●	
	CCGX060208-LH	0.8	0.6-3.0	0.15-0.40																							●	
	CCGX09T302-LH	0.2	0.4-5.0	0.05-0.15															●								●	
	CCGX09T304-LH	0.4	0.5-5.0	0.1-0.3															●								●	
	CCGX09T308-LH	0.8	0.5-5.0	0.15-0.60															●								●	
	CCGX120402-LH	0.2	0.4-7.0	0.05-0.15															○								○	
	CCGX120404-LH	0.4	0.5-7.0	0.1-0.3															●								●	
	CCGX120408-LH	0.8	0.5-7.0	0.15-0.60															●				○				●	
	CCGX120412-LH	1.2	0.5-7.0	0.15-0.80															○								●	

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code A42 Grade selection A40 Technical info A447 Cutting data A324

Tool holder

SCACR/L	SCLCR/L	SCACR/L-SC	SCLCR/L-SC	S***-SCLCR/L	S***-SCFCR/L	S***-SCLCR
Kr: 90°	Kr: 95°	Kr: 90°	Kr: 95°	Kr: 95°	Kr: 90°	Kr: 95°
						
A235	A236	A272	A273	A293	A310	A311

E***-SCLCR/L
Kr: 95°

A313

A Turning
B Milling
C Drilling
D Technical Information
E Index

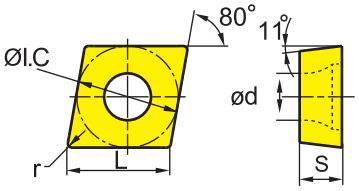
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

CP**	L	I.C	S	d
06 02	6.4	6.35	2.38	2.8
09 T3	9.7	9.525	3.97	4.4

CP** positive insert



	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
					HC¹ (CVD)													HC¹ (PVD)						HT		HC²	HW	
P					○	○	◉	◉	◉	◉											◉	◉	◉	○	◉	○		
M											○	◉							○	○	◉	◉	◉	○	◉	○		
K													○	○	◉	◉	◉											
N																		○	○								○	◉
S																			○	○	◉	◉	◉				○	◉
H																												
HF	**CPMT060204-HF**	0.4	0.1-1.5	0.04-0.18		●										○					○							
	CPMT060208-HF	0.8	0.1-1.5	0.05-0.25												○					●							
Finishing																												
SF	**CPGT060202-SF**	0.2	0.05-2.00	0.05-0.25																				○		○		
	CPGT060204-SF	0.4	0.05-2.00	0.05-0.35																				●		●		
	CPGT09T304-SF	0.4	0.05-2.00	0.05-0.35																				●		●		
Finishing																												
Flat	**CPGW060204**	0.4	0.5-1.5	0.05-0.40																							○	
Medium Cut																												
HM	**CPMT09T304-HM**	0.4	0.2-3.5	0.05-0.35			○							●						○		●						
	CPMT09T308-HM	0.8	0.2-3.5	0.10-0.55			○	●						●								●						
Medium Cut																												

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder	
S*-SCLPR/L**	**C***-SCLPR/L**
Kr: 95°	Kr: 95°
	
A306	A312

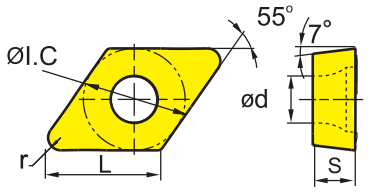
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

DC**	L	I.C	S	d
07 02	7.8	6.35	2.38	2.8
11 T3	11.6	9.525	3.97	4.4

DC** positive insert



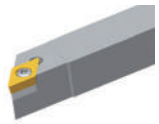
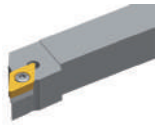
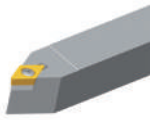
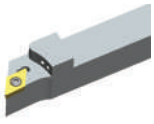
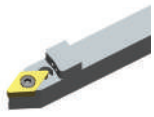
		ISO	r	a_p	f	HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW	
						YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
AHF		**DCMT070204-AHF**	0.4	0.2-2.5	0.05-0.20	○															●	○			●			
		DCMT11T302-AHF	0.2	0.5-3.0	0.05-0.15	○															●	●			●			
		DCMT11T304-AHF	0.4	0.5-3.0	0.05-0.30	●															●	●			●			
		DCMT11T308-AHF	0.8	0.5-3.0	0.05-0.40	●															●							
Finishing																												
SF		**DCGT070202-SF**	0.2	0.05-1.50	0.05-0.15																			●	●	○		
		DCGT070204-SF	0.4	0.05-1.50	0.05-0.20																			○		●		
		DCGT070208-SF	0.8	0.05-1.50	0.05-0.30																					●		
		DCGT11T302-SF	0.2	0.05-2.00	0.05-0.15															○				○	●	●		
Finishing		**DCGT11T304-SF**	0.4	0.05-2.00	0.05-0.20																			●	●	●		
		DCGT11T308-SF	0.8	0.05-2.00	0.05-0.30																			●		●		

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SDACR/L	SDJCR/L	SDNCN	SDACR/L-SC	SDHCR/L-SC	SDJCR/L-SC	SDNCN-SC
Kr: 90°	Kr: 93°	Kr: 62°30'	Kr: 90°	Kr: 107°30'	Kr: 93°	Kr: 62°30'
						
A237	A238	A239	A274	A275	A276	A277

S***-SDQCR/L	S***-SDUCR/L	S***-SDZCR/L	E***-SDQCR/L
Kr: 107°30'	Kr: 93°	Kr: 85°	Kr: 107°30'
			
A295	A296	A297	A315

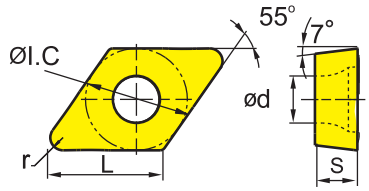
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

DCGT	L	I.C	S	d
07 02	7.8	6.35	2.38	2.8
11 T3	11.6	9.525	3.97	4.4

DC** positive insert



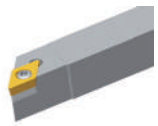
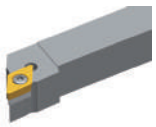
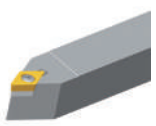
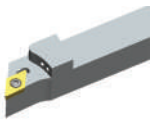
	HC¹ (CVD)												HC¹ (PVD)					HT		HC²	HW	
P	○	○	◉	◉	◉	◉									◉	◉	◉	○	◉	○		
M							○	◉					○	○	◉	◉	◉	○	◉	○		
K									○	○	◉	◉	◉									
N														○	○						○	◉
S													○	○	◉	◉	◉				○	◉
H																						

	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
USF	**DCGT070201L-USF**	0.1	0.1-2.0	0.03-0.08																			●					
	DCGT070202L-USF	0.2	0.1-2.0	0.05-0.18																			●					
	DCGT11T302L-USF	0.2	0.2-2.0	0.05-0.18																			○					
Finishing																												
USF	**DCGT0702005R-USF**	0.05	0.1-2.0	0.01-0.04																			●					
	DCGT070201R-USF	0.1	0.1-2.0	0.03-0.08																			●					
	DCGT070202R-USF	0.2	0.1-2.0	0.05-0.18																			●					
	DCGT11T302R-USF	0.2	0.2-2.0	0.05-0.18																			●					
Finishing																												

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SDACR/L	SDJCR/L	SDNCN	SDACR/L-SC	SDHCR/L-SC	SDJCR/L-SC	SDNCN-SC
Kr: 90°	Kr: 93°	Kr: 62°30'	Kr: 90°	Kr: 107°30'	Kr: 93°	Kr: 62°30'
						
A237	A238	A239	A274	A275	A276	A277

S***-SDQCR/L	S***-SDUCR/L	S***-SDZCR/L	E***-SDQCR/L
Kr: 107°30'	Kr: 93°	Kr: 85°	Kr: 107°30'
			
A295	A296	A297	A315

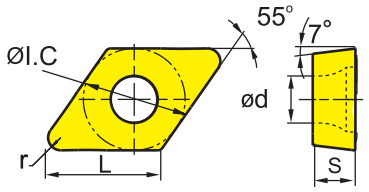
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

DCMT	L	I.C	S	d
07 02	7.8	6.35	2.38	2.8
11 T3	11.6	9.525	3.97	4.4

DC** positive insert

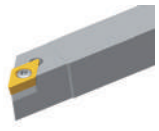
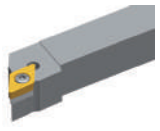
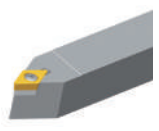
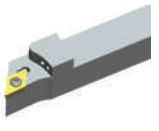


		HC¹ (CVD)											HC¹ (PVD)						HT		HC²	HW	
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
EF	**DCMT070202-EF**	0.2	0.06-1.50	0.03-0.11							○											○	●					
	DCMT070204-EF	0.4	0.08-1.50	0.05-0.17							●											●	○					
	DCMT11T302-EF	0.2	0.08-2.00	0.04-0.15							○											●	○					
	DCMT11T304-EF	0.4	0.11-2.00	0.06-0.23							●											●	○					
Finishing	**DCMT11T308-EF**	0.8	0.15-2.00	0.08-0.30							●											●	○					
HF	**DCMT070202-HF**	0.2	0.06-1.50	0.03-0.11		○	●	●															●					
	DCMT070204-HF	0.4	0.08-1.50	0.05-0.17		●	●	●															●					
	DCMT070208-HF	0.8	0.08-1.50	0.05-0.30		●	○	●																				
	DCMT11T302-HF	0.2	0.08-2.00	0.04-0.15		○	●	●														○	●					
Finishing	**DCMT11T304-HF**	0.4	0.11-2.00	0.06-0.23		●	●	●		○				○		●							●					
	DCMT11T308-HF	0.8	0.15-2.00	0.08-0.30		●	●	●						●									●					
EM	**DCMT070204-EM**	0.4	0.19-2.25	0.06-0.17							●	●										●	○					
	DCMT070208-EM	0.8	0.38-2.25	0.08-0.23							●	○										●						
	DCMT11T304-EM	0.4	0.25-3.00	0.08-0.23							●	●										●	○					
Medium Cut	**DCMT11T308-EM**	0.8	0.5-3.0	0.1-0.3							●	●										●	○					

● Ex stock ○ On demand
YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SDACR/L	SDJCR/L	SDNCN	SDACR/L-SC	SDHCR/L-SC	SDJCR/L-SC	SDNCN-SC
Kr: 90°	Kr: 93°	Kr: 62°30'	Kr: 90°	Kr: 107°30'	Kr: 93°	Kr: 62°30'
						
A237	A238	A239	A274	A275	A276	A277

S***-SDQCR/L	S***-SDUCR/L	S***-SDZCR/L	E***-SDQCR/L
Kr: 107°30'	Kr: 93°	Kr: 85°	Kr: 107°30'
			
A295	A296	A297	A315

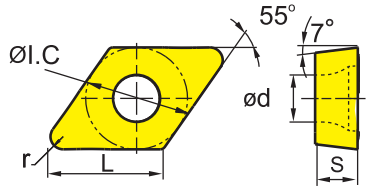
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

DCMT	L	I.C	S	d
07 02	7.8	6.35	2.38	2.8
11 T3	11.6	9.525	3.97	4.4

DC** positive insert



	HC¹ (CVD)													HC¹ (PVD)						HT		HC²	HW	
	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
P	●	●	❁	❁	❁	❁											❁	❁	❁	●	❁	●		
M							●	❁							●	●	❁	❁	❁	●	❁	●		
K									●	●	❁	❁	❁											
N														●	●								●	❁
S															●	●	❁	❁	❁				●	❁
H																								

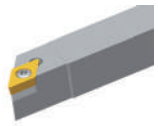
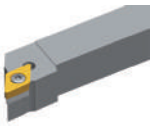
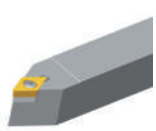
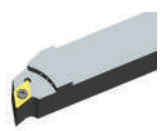
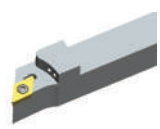
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
HM  Medium Cut	**DCMT070204-HM**	0.4	0.19-2.25	0.06-0.17		●	●	●		○				●		●						●	●					
	DCMT070208-HM	0.8	0.38-2.25	0.08-0.23		●	●	●		○				●		●							●					
	DCMT11T304-HM	0.4	0.25-3.00	0.08-0.23		●	●	●		○				●		●					●		●					
	DCMT11T308-HM	0.8	0.5-3.0	0.1-0.3		●	●	●		○				●		●					●		●					
	DCMT11T312-HM	1.2	0.6-3.0	0.12-0.36		○	○	●		○				○		○												

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SDACR/L	SDJCR/L	SDNCN	SDACR/L-SC	SDHCR/L-SC	SDJCR/L-SC	SDNCN-SC
Kr: 90°	Kr: 93°	Kr: 62°30'	Kr: 90°	Kr: 107°30'	Kr: 93°	Kr: 62°30'
						
A237	A238	A239	A274	A275	A276	A277

S***-SDQCR/L	S***-SDUCR/L	S***-SDZCR/L	E***-SDQCR/L
Kr: 107°30'	Kr: 93°	Kr: 85°	Kr: 107°30'
			
A295	A296	A297	A315

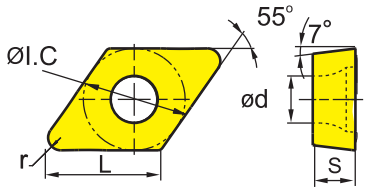
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

DC**	L	I.C	S	d
07 02	7.8	6.35	2.38	2.8
11 T3	11.6	9.525	3.97	4.4

DC** positive insert



	HC¹ (CVD)											HC¹ (PVD)						HT		HC²	HW	
	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
P	○	○	⊛	⊛	⊛	⊛											⊛	⊛	⊛	○	⊛	○		
M							○	⊛							○	○	⊛	⊛	⊛	○	⊛	○		
K									○	○	⊛	⊛	⊛											
N														○	○								○	⊛
S															○	○	⊛	⊛	⊛				○	⊛
H																								

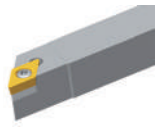
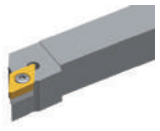
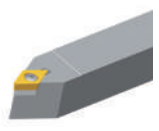
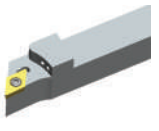
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
Flat	**DCMW11T304**	0.4	0.5-5.0	0.05-0.20										○														
	DCMW11T308	0.8	0.4-5.0	0.1-0.4										○														
Medium Cut																												
HR	**DCMT11T304-HR**	0.4	1-4	0.1-0.3		○	●	○		○				●		●												
	DCMT11T308-HR	0.8	1-4	0.12-0.35		●	●	●		●			○	●		●												
	DCMT11T312-HR	1.2	1.2-4.0	0.14-0.42		○	●	○						○														
Roughing																												
LC	**DCGX070201-LC**	0.1	0.3-4.0	0.05-0.10																							●	
	DCGX070202-LC	0.2	0.3-4.0	0.05-0.15														●									●	
	DCGX070204-LC	0.4	0.5-4.0	0.1-0.3														●									●	
	DCGX11T302-LC	0.2	0.3-5.5	0.05-0.15														●									●	
Aluminium Machining	**DCGX11T304-LC**	0.4	0.5-5.5	0.1-0.3														●									●	
	DCGX11T308-LC	0.8	0.5-5.5	0.15-0.60														●									●	

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SDACR/L	SDJCR/L	SDNCN	SDACR/L-SC	SDHCR/L-SC	SDJCR/L-SC	SDNCN-SC
Kr: 90°	Kr: 93°	Kr: 62°30'	Kr: 90°	Kr: 107°30'	Kr: 93°	Kr: 62°30'
						
A237	A238	A239	A274	A275	A276	A277

S***-SDQCR/L	S***-SDUCR/L	S***-SDZCR/L	E***-SDQCR/L
Kr: 107°30'	Kr: 93°	Kr: 85°	Kr: 107°30'
			
A295	A296	A297	A315

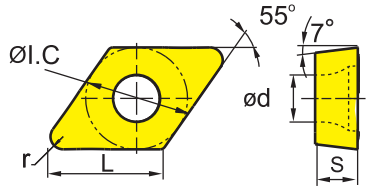
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

DCGX	L	I.C	S	d
07 02	7.8	6.35	2.38	2.8
11 T3	11.6	9.525	3.97	4.4

DC** positive insert



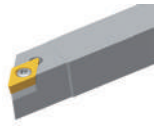
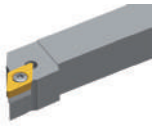
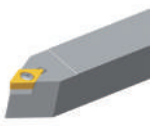
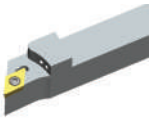
	HC¹ (CVD)												HC¹ (PVD)					HT		HC²	HW	
P	○	○	❁	❁	❁	❁										❁	❁	❁	○	❁	○			
M							○	❁						○	○	❁	❁	❁	○	❁	○			
K									○	○	❁	❁	❁											
N													○	○								○	❁	
S														○	○	❁	❁	❁				○	❁	
H																								

ISO		r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
LH	**DCGX070202-LH**	0.2	0.3-4.0	0.05-0.15															●				○				●	
	DCGX070204-LH	0.4	0.5-4.0	0.1-0.3															●				○				●	
	DCGX070208-LH	0.8	0.5-4.0	0.15-0.60															○								●	
Aluminium Machining	**DCGX11T302-LH**	0.2	0.3-5.5	0.05-0.15															●				●				●	
	DCGX11T304-LH	0.4	0.5-5.5	0.1-0.3															●				●				●	
	DCGX11T308-LH	0.8	0.5-5.5	0.15-0.60															●				○				●	

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SDACR/L	SDJCR/L	SDNCN	SDACR/L-SC	SDHCR/L-SC	SDJCR/L-SC	SDNCN-SC
Kr: 90°	Kr: 93°	Kr: 62°30'	Kr: 90°	Kr: 107°30'	Kr: 93°	Kr: 62°30'
						
A237	A238	A239	A274	A275	A276	A277

S***-SDQCR/L	S***-SDUCR/L	S***-SDZCR/L	E***-SDQCR/L
Kr: 107°30'	Kr: 93°	Kr: 85°	Kr: 107°30'
			
A295	A296	A297	A315

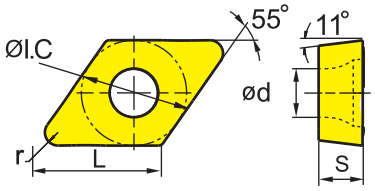
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

DPGT	L	I.C	S	d
07 02	7.8	6.35	2.38	2.8
11 T3	11.6	9.525	3.97	4.4

DP** positive insert



	HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW	
P	○	○	⊛	⊛	⊛	⊛										⊛	⊛	⊛	○	⊛	○		
M							○	⊛						○	○	⊛	⊛	⊛	○	⊛	○		
K									○	○	⊛	⊛	⊛										
N														○	○							○	⊛
S														○	○	⊛	⊛	⊛				○	⊛
H																							

	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
SF	**DPGT070202-SF**	0.2	0.05-2.00	0.05-0.15																				○		●		
	DPGT070204-SF	0.4	0.05-2.00	0.05-0.30																				●		●		
	DPGT11T304-SF	0.4	0.05-2.00	0.1-0.3																				●		●		
Finishing	**DPGT11T308-SF**	0.8	0.05-2.00	0.1-0.4																				○		○		

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

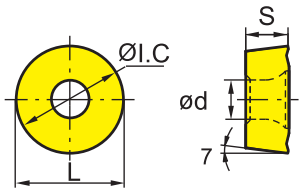
S***-SDQPR/L	S***-SDUPR/L	C***-SDQPR/L
Kr: 107°30'	Kr: 93°	Kr: 107°30'
		
A307	A308	A314

System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

RC**	L	I.C	S	d
08 03	8	8	3.18	3.36
10 T3	10	10	3.97	3.6
12 04	12	12	4.76	44.4
16 06	16	16	6.35	5.5
20 06	20	20	6.35	6.5
25 07	25	25	7.94	7.7

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Turning inserts

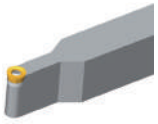


RC** positive insert				HC¹ (CVD)												HC¹ (PVD)					HT		HC²	HW	
			P	○	○	✲	✲	✲	✲									✲	✲	✲	○	✲	○			
			M							○	✲					○	○	✲	✲	✲	○	✲	○			
			K									○	○	✲	✲											
			N													○	○								○	✲
			S													○	○	✲	✲	✲					○	✲
			H																							
	ISO		a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
Basic	**RCGT1204MO**		0.5-5.0	0.1-0.4				○																			
Medium Cut																											
Basic	**RCMT0803MO**		0.5-3.0	0.1-0.4			●							●													
	RCMT10T3MO		0.5-4.0	0.1-0.5			○	●						●								○					
	RCMT1204MO		0.8-5.0	0.1-0.6		●	●	●						●		●						○					
	RCMT1606MO		1-6	0.1-0.8		●	●	●		●		○	○	●													
Medium Cut	**RCMT2006MO**		1.2-8.0	0.1-1.0		●	●	●																			
	RCMT2507MO		1.4-10.0	0.1-1.2		○	●	●																			
LH	**RCGX0803MO-LH**		1-4	0.2-0.5																						●	
	RCGX1204MO-LH		1.2-5.0	0.2-0.6																						●	
Aluminium Machining																											

● Ex stock ○ On demand
YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

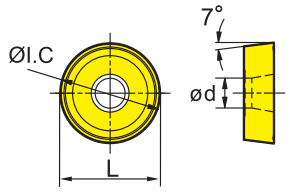
SRDCN	SRGCR/L
	
A254	A255

System code A42 Grade selection A40 Technical info A447 Cutting data A324

RCMX	L	I.C	S	d
08 03	8	8	3.18	3.36
10 03	10	10	3.18	4.4
12 04	12	12	4.76	4.4
16 06	16	16	6.35	5.5
20 06	20	20	6.35	6.5
25 07	25	25	7.94	7.2
32 09	32	32	9.52	10.2

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions



RC** positive insert		HC[1] (CVD)												HC[1] (PVD)						HT		HC[2]	HW	
	P	●	●	◉	◉	◉	◉										◉	◉	◉	●	◉	●		
	M							○	◉								○	○	◉	◉	◉	○	◉	○	
	K									●	●	◉	◉	◉										
	N													●	●								◉	
	S														○	○	◉	◉	◉				◉	
	H																							

	ISO	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
Basic	**RCMX0803MO**	0.5-4.0	0.1-0.5			●	●																				
	RCMX1003MO	0.5-5.0	0.1-0.6			○	●		●																		
	RCMX1204MO	1-6	0.1-0.8		○	●	●		○																		
	RCMX1606MO	1-7	0.2-0.9		○	●	○		●		○										○						
	RCMX2006MO	1-9	0.2-1.0		●	●	●		●						●												
	RCMX2507MO	2-10	0.25-1.20		○	●			●																		
Light Roughing	**RCMX3209MO**	2-13	0.25-1.40		○	●	●		○																		
Basic	**RCMX2507MO-1**	2-9	0.1-0.4		○		○																				
Light Roughing																											
Basic	**RCMX3209MO-PV**	3-12	0.1-0.4		○	●	●																				
Light Roughing																											

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

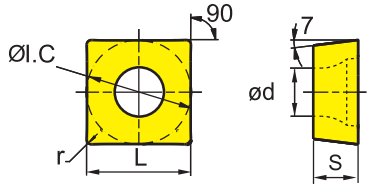
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SCMT	L	I.C	S	d
09 T3	9.525	9.525	3.97	4.4
12 04	12.7	12.7	4.76	5.56

SC** positive insert



	HC¹ (CVD)												HC¹ (PVD)					HT		HC²	HW	
P	○	○	◉	◉	◉	◉										◉	◉	◉	○	◉	○			
M							○	◉						○	○	◉	◉	◉	○	◉	○			
K									○	○	◉	◉	◉											
N														○	○							○	◉	
S														○	○	◉	◉	◉				○	◉	
H																								

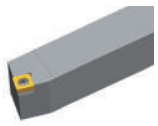
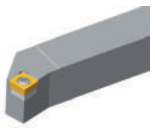
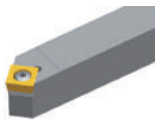
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
AHF	**SCMT09T304-AHF**	0.4	0.5-3.0	0.05-0.30	●																●							
	SCMT09T308-AHF	0.8	0.5-3.0	0.05-0.40	●																●				●			
Finishing																												
EF	**SCMT09T302-EF**	0.2	0.07-2.00	0.05-0.15																	●	○						
	SCMT09T304-EF	0.4	0.11-2.00	0.06-0.23																	●							
	SCMT09T308-EF	0.8	0.15-2.00	0.08-0.30																	●							
Finishing																												
EM	**SCMT09T304-EM**	0.4	0.25-3.00	0.08-0.23							○	○									●							
	SCMT09T308-EM	0.8	0.5-3.0	0.1-0.3							●	●									●							
	SCMT120404-EM	0.4	0.3-3.6	0.09-0.27							○	○									●							
	SCMT120408-EM	0.8	0.6-3.6	0.12-0.36							○	○									●							
Finishing	**SCMT120412-EM**	1.2	0.72-3.60	0.14-0.43								○									●							

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SSBCR/L	SSDCN	SSKCR/L	SSSCR/L	S***-SSKCR/L
Kr: 75°	Kr: 45°	Kr: 75°	Kr: 45°	Kr: 75°
				
A245	A246	A247	A248	A298

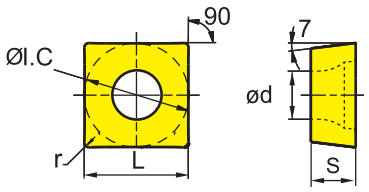
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SCMT	L	I.C	S	d
09 T3	9.525	9.525	3.97	4.4
12 04	12.7	12.7	4.76	5.56

SC** positive insert



	HC[1] (CVD)												HC[1] (PVD)						HT		HC[2]	HW		
P	○	○	✲	✲	✲	✲										✲	✲	✲	○	✲	○			
M							○	✲					○	○	✲	✲	✲		○	✲	○			
K									○	○	✲	✲	✲											
N													○	○								○	✲	
S													○	○	✲	✲	✲					○	✲	
H																								

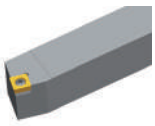
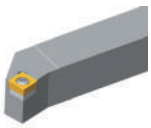
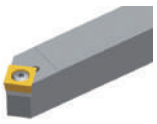
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
HF	**SCMT09T302-HF**	0.2	0.15-2.00	0.05-0.15				●																				
	SCMT09T304-HF	0.4	0.11-2.00	0.05-0.23			●	●															●					
	SCMT09T308-HF	0.8	0.15-2.00	0.05-0.30		●	●	○															●					
Finishing																												
HM	**SCMT09T304-HM**	0.4	0.25-3.00	0.08-0.23		●	●	●		○				●		●												
	SCMT09T308-HM	0.8	0.5-3.0	0.1-0.3		●	●	●		●				●		●							●				○	
	SCMT120404-HM	0.4	0.3-3.6	0.09-0.27		●	○	●																				
	SCMT120408-HM	0.8	0.6-3.6	0.12-0.36		○	●	●		●				●		●							○					
Medium Cut	**SCMT120412-HM**	1.2	0.72-3.60	0.14-0.43			●	●																				

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

Tool holder

SSBCR/L	SSDCN	SSKCR/L	SSSCR/L	S***-SSKCR/L
Kr: 75°	Kr: 45°	Kr: 75°	Kr: 45°	Kr: 75°
				
A245	A246	A247	A248	A298

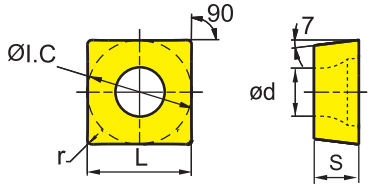
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SC**	L	I.C	S	d
09 T3	9.525	9.525	3.97	4.4
12 04	12.7	12.7	4.76	5.565.5

SC** positive insert



	HC¹ (CVD)												HC¹ (PVD)					HT		HC²	HW	
P	○	○	❁	❁	❁	❁										❁	❁	❁	❁	○		
M							○	❁						○	○	❁	❁	❁	❁	○		
K									○	○	❁	❁	❁									
N													○	○							○	❁
S														○	○	❁	❁	❁	❁		○	❁
H																						

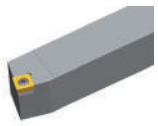
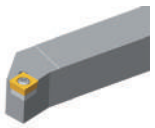
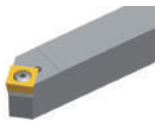
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
HR	**SCMT09T304-HR**	0.4	0.2-4.0	0.05-0.40		○	●	●		○						○							○					
	SCMT09T308-HR	0.8	1-4	0.12-0.35		●	●	●		●				●		●												
	SCMT09T312-HR	1.2	1.2-4.0	0.14-0.42			○																					
	SCMT120404-HR	0.4	0.5-4.0	0.05-0.50		○	○	●		○																		
	SCMT120408-HR	0.8	1.2-4.8	0.14-0.42		●	●	●		●			○	●		●												
Roughing	**SCMT120412-HR**	1.2	1.44-4.80	0.17-0.50		●	●	●					○	●		○												
LC	**SCGX09T304-LC**	0.4	0.5-5.0	0.1-0.5																							●	
	SCGX09T308-LC	0.8	0.5-5.0	0.15-0.60																							●	
	SCGX120408-LC	0.8	1-7	0.15-0.60														●									●	
Aluminium Machining																												

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SSBCR/L	SSDCN	SSKCR/L	SSSCR/L	S***-SSKCR/L
Kr: 75°	Kr: 45°	Kr: 75°	Kr: 45°	Kr: 75°
				
A245	A246	A247	A248	A298

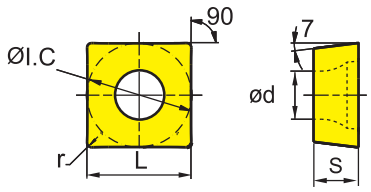
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SCGX	L	I.C	S	d
09 T3	9.525	9.525	3.97	4.4
12 04	12.7	12.7	4.76	5.56

SC** positive insert



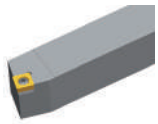
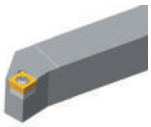
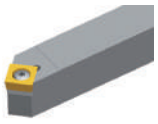
	HC¹ (CVD)	HC¹ (PVD)	HT	HC²	HW
P	○ ○ ◎ ◎ ◎ ◎	◎ ◎ ◎	○ ◎	○	
M	○ ◎	○ ○ ◎ ◎ ◎	○ ◎	○	
K	○ ○ ◎ ◎ ◎				
N		○ ○			○ ◎
S		○ ○ ◎ ◎ ◎			○ ◎
H					

ISO		r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
LH	**SCGX09T302-LH**	0.2	0.5-4.0	0.05-0.15															○								●	
	**SCGX09T304-LH**	0.4	0.5-4.0	0.1-0.3															○								●	
	SCGX09T308-LH	0.8	0.5-4.0	0.15-0.60																							●	
	SCGX120408-LH	0.8	0.5-5.0	0.15-0.60															○								●	
Aluminium Machining																												

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SSBCR/L	SSDCN	SSKCR/L	SSSCR/L	S***-SSKCR/L
Kr: 75°	Kr: 45°	Kr: 75°	Kr: 45°	Kr: 75°
				
A245	A246	A247	A248	A298

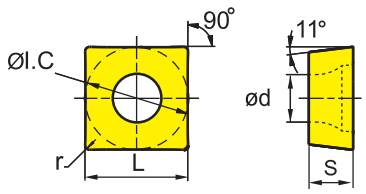
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPMW	L	I.C	S	d
09 T3	9.525	9.525	3.97	4.4
12 04	12.7	12.7	4.76	5.56

SP** positive insert



	HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW	
P	○	○	◎	◎	◎	◎									◎	◎	◎	◎	○	◎	○		
M							○	◎						○	○	◎	◎	◎	○	◎	○		
K									○	○	◎	◎	◎										
N														○	○							○	◎
S														○	○	◎	◎	◎				○	◎
H																							

ISO		r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
Flat	**SPMW09T304**	0.4	0.5-4.0	0.1-0.4				○								○												
	SPMW09T308	0.8	0.5-4.0	0.2-0.4				○								○												
	SPMW120408	0.8	1-6	0.3-0.6												○												

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

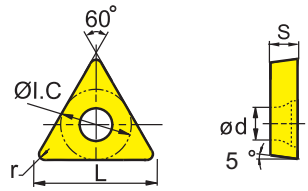
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TBGH	L	I.C	S	d
06 01	6.87	3.97	1.59	2.2

TB** positive insert



	HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW	
	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
P	○	○	✲	✲	✲	✲											✲	✲	✲	○	✲	○		
M							○	✲							○	○	✲	✲	✲	○	✲	○		
K									○	○	✲	✲	✲											
N														○	○								○	✲
S															○	○	✲	✲	✲				○	✲
H																								

ISO		r	a_p	f
	TBGH060102L	0.2	0.5-3.5	0.05-0.40
	TBGH060104L	0.4	0.5-3.5	0.05-0.40



● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

A Turning
B Milling
C Drilling
D Technical Information
E Index

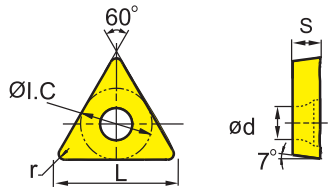
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

TCGT	L	I.C	S	d
06 T1	6.87	3.97	1.98	2.2
09 02	9.63	5.56	2.38	2.5
11 03	11	6.35	3.18	2.8

TC** positive insert



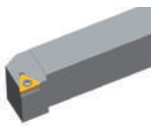
	HC[1] (CVD)												HC[1] (PVD)					HT		HC[2]	HW	
P	○	○	◉	◉	◉	◉										◉	◉	◉	◉	○		
M							○	◉						○	○	◉	◉	◉	◉	○		
K									○	○	◉	◉	◉									
N														○	○						○	◉
S														○	○	◉	◉	◉	◉	○	○	◉
H																						

	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
SF Finishing	**TCGT06T102-SF**	0.2	0.05-2.00	0.05-0.15																					●		
	TCGT090202-SF	0.2	0.05-2.00	0.05-0.15																				○	○		
	TCGT090204-SF	0.4	0.05-2.00	0.1-0.3																					●		
	TCGT090208-SF	0.8	0.05-2.00	0.10-0.35																					●		
	TCGT110302-SF	0.2	0.05-2.00	0.05-0.15																					○		
	TCGT110304-SF	0.4	0.05-2.00	0.1-0.3																				●	●		
	TCGT110308-SF	0.8	0.05-2.00	0.10-0.35																					○		
USF Finishing	**TCGT110301L-USF**	0.1	0.2-2.0	0.03-0.08																			○				
	TCGT110302L-USF	0.2	0.2-2.0	0.05-0.18																			●				
USF Finishing	**TCGT110301R-USF**	0.1	0.2-2.0	0.03-0.08																			●				
	TCGT110302R-USF	0.2	0.2-2.0	0.05-0.18																			●				

● Ex stock ○ On demand

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

Tool holder

STGCR/L	E***-STFCR/L
Kr: 91°	Kr: 90°
	
A251	A319

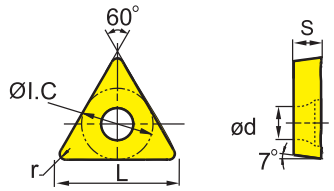
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TCMT	L	I.C	S	d
09 02	9.63	5.56	2.38	2.5
11 02	11	6.35	2.38	2.8
16 T3	16.5	9.525	3.97	4.4

TC** positive insert



	HC¹ (CVD)											HC¹ (PVD)						HT		HC²	HW	
	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
P	○	○	◉	◉	◉	◉											◉	◉	◉	○	◉	○	○	◉
M							○	◉									○	◉	◉	○	◉	○		
K									◉	◉	◉	◉	◉											
N														○	○								○	◉
S															○	○	◉	◉	◉				○	◉
H																								

	ISO	r	a_p	f
AHF	**TCMT110204-AHF**	0.4	0.2-2.5	0.05-0.30
	TCMT110208-AHF	0.8	0.2-2.5	0.1-0.4
	TCMT16T304-AHF	0.4	0.5-3.0	0.05-0.30
	TCMT16T308-AHF	0.8	0.5-3.5	0.1-0.4
Finishing				
HF	**TCMT090202-HF**	0.2	0.06-1.70	0.03-0.13
	TCMT090204-HF	0.4	0.1-1.7	0.05-0.19
	TCMT090208-HF	0.8	0.15-1.70	0.10-0.25
	TCMT110202-HF	0.2	0.08-2.00	0.05-0.20
	TCMT110204-HF	0.4	0.1-2.0	0.05-0.30
	TCMT110208-HF	0.8	0.1-2.0	0.05-0.35
	TCMT16T304-HF	0.4	0.11-2.00	0.05-0.23
	TCMT16T308-HF	0.8	0.2-3.5	0.05-0.30
Finishing				

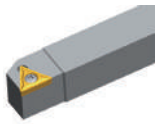
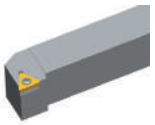
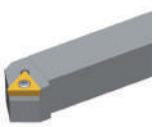
AHF	**TCMT110204-AHF**	0.4	0.2-2.5	0.05-0.30	●													●						
	TCMT110208-AHF	0.8	0.2-2.5	0.1-0.4	●													●						
	TCMT16T304-AHF	0.4	0.5-3.0	0.05-0.30	●													●						
	TCMT16T308-AHF	0.8	0.5-3.5	0.1-0.4	●													●						
HF	**TCMT090202-HF**	0.2	0.06-1.70	0.03-0.13		○	●	●													○			
	TCMT090204-HF	0.4	0.1-1.7	0.05-0.19		○	●														○			
	TCMT090208-HF	0.8	0.15-1.70	0.10-0.25			○	●																
	TCMT110202-HF	0.2	0.08-2.00	0.05-0.20			●	●												●				
	TCMT110204-HF	0.4	0.1-2.0	0.05-0.30		●	●	●		○				●										
	TCMT110208-HF	0.8	0.1-2.0	0.05-0.35		●	●	○		○			●											
	TCMT16T304-HF	0.4	0.11-2.00	0.05-0.23		○	●	●												○				
	TCMT16T308-HF	0.8	0.2-3.5	0.05-0.30		●		●																

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

STACR/L	STFCR/L	STGCR/L	STTCR/L	S***-STFCR/L	E***-STFCR/L
Kr: 90°	Kr: 91°	Kr: 91°	Kr: 60°	Kr: 91°	Kr: 90°
					
A249	A250	A251	A252	A300	A319

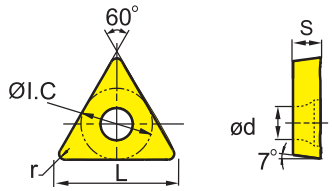
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TCMT	L	I.C	S	d
09 02	9.63	5.56	2.38	2.5
11 02	11	6.35	2.38	2.8
16 T3	16.5	9.525	3.97	4.4

TC** positive insert



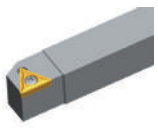
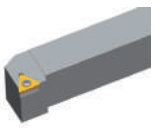
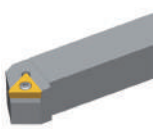
		ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
						HC¹ (CVD)													HC¹ (PVD)						HT		HC²	HW	
P						○	○	◉	◉	◉	◉											◉	◉	◉	◉	◉	○			
M												○	◉							○	○	◉	◉	◉	○	◉	○			
K														○	○	◉	◉	◉												
N																			○	○								○	◉
S																			○	○	◉	◉	◉	◉				○	◉
H																													
EF Finishing		**TCMT090202-EF**	0.2	0.06-1.70	0.03-0.13																			●					
		TCMT090204-EF	0.4	0.1-1.7	0.05-0.19																		●	○					
		TCMT110202-EF	0.2	0.2-2.0	0.05-0.13																		○	○					
		TCMT110204-EF	0.4	0.2-2.0	0.05-0.20																		●	○					
		TCMT110208-EF	0.8	0.2-2.0	0.05-0.30																			○					
		TCMT16T304-EF	0.4	0.3-3.0	0.05-0.23																		●	○					
		TCMT16T308-EF	0.8	0.3-3.0	0.1-0.4							●											●						
EM Medium Cut		**TCMT090204-EM**	0.4	0.19-2.25	0.06-0.17							●											○	○					
		TCMT090208-EM	0.8	0.38-2.25	0.08-0.23							●																	
		TCMT110204-EM	0.4	0.2-2.7	0.05-0.30							○											●	○					
		TCMT110208-EM	0.8	0.8-2.7	0.08-0.30							●											○						
		TCMT16T304-EM	0.4	0.25-3.00	0.08-0.23							●											●						
		TCMT16T308-EM	0.8	0.5-3.0	0.1-0.3							●	●										●						

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

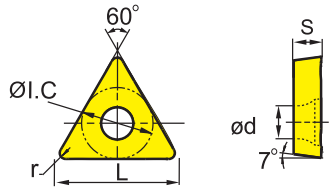
STACR/L	STFCR/L	STGCR/L	STTCR/L	S***-STFCR/L	E***-STFCR/L
Kr: 90°	Kr: 91°	Kr: 91°	Kr: 60°	Kr: 91°	Kr: 90°
					
A249	A250	A251	A252	A300	A319

System code A42 Grade selection A40 Technical info A447 Cutting data A324

TC**	L	I.C	S	d
09 02	9.63	5.56	2.38	2.5
11 02	11	6.35	2.38	2.8
16 T3	16.5	9.525	3.97	4.4
22 04	22	12.7	4.76	5.5

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

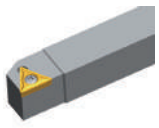
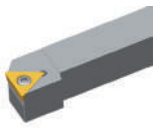
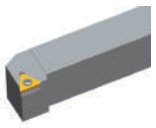
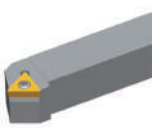


TC** positive insert					HC¹ (CVD)											HC¹ (PVD)						HT		HC²	HW	
				P																						
				M																						
				K																						
				N																						
				S																						
				H																						
ISO		r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
Flat	**TCMW16T308**	0.8	0.5-5.0	0.05-0.60												○											
Medium Cut																												
HM	**TCMT090204-HM**	0.4	0.19-2.25	0.06-0.17		●	●	●						●		●											
	TCMT090208-HM	0.8	0.38-2.25	0.08-0.23		○	○	●								○											
	TCMT110204-HM	0.4	0.2-2.7	0.07-0.20		●	●	●		○				●		●						○					
	TCMT110208-HM	0.8	0.5-2.7	0.1-0.3		●	○	●								●											
	TCMT16T304-HM	0.4	0.25-3.00	0.08-0.23		●	●	●		●				●		●						●					
Medium Cut	**TCMT16T308-HM**	0.8	0.5-3.0	0.1-0.3		●	●	●		●				●		●						●					
	TCMT16T312-HM	1.2	0.6-3.0	0.12-0.36		○	●	●		○																	
HR	**TCMT090204-HR**	0.4	0.5-3.0	0.1-0.3			○	●																			
	TCMT090208-HR	0.8	0.5-3.5	0.08-0.50			○	○								○											
	TCMT110204-HR	0.4	0.5-3.0	0.1-0.4			●	●																			
	TCMT110208-HR	0.8	1-4	0.1-0.5			●	●																			
	TCMT16T304-HR	0.4	0.5-4.0	0.1-0.4			●	●						●													
Roughing	**TCMT16T308-HR**	0.8	1-4	0.12-0.35			●	●	●	●				●		●											
	TCMT16T312-HR	1.2	1.2-4.0	0.14-0.42		○		●					○	○		●											
	TCMT220408-HR	0.8	1.2-4.8	0.14-0.42		●	●	●		●						●											

● Ex stock ○ On demand
YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

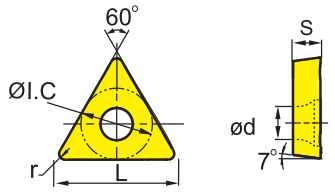
STACR/L	STFCR/L	STGCR/L	STTCR/L	S***-STFCR/L	E***-STFCR/L
Kr: 90°	Kr: 91°	Kr: 91°	Kr: 60°	Kr: 91°	Kr: 90°
					
A249	A250	A251	A252	A300	A319

System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TCMT	L	I.C	S	d
22 04	22	12.7	4.76	5.5

Turning inserts

TC** positive insert					HC¹ (CVD)										HC¹ (PVD)					HT		HC²	HW	
				P	○	○	◉	◉	◉	◉								◉	◉	◉	○	◉	○		
				M							○	◉						○	○	◉	◉	◉	○	◉	○		
				K									○	○	◉	◉	◉										
				N														○	○						○	◉	
				S														○	○	◉	◉	◉	○		○	◉	
				H																							
ISO		r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
Basic 	**TCMT220408**	0.8	1.2-4.8	0.14-0.42				●						●													

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

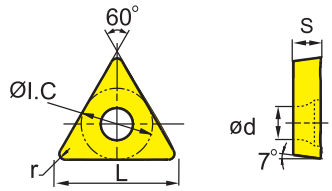
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TCGX	L	I.C	S	d
09 02	9.63	5.56	2.38	2.5
11 02	11	6.35	2.38	2.8
16 T3	16.5	9.525	3.97	4.4

TC** positive insert

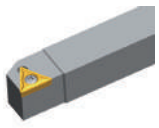
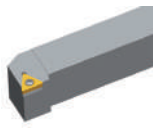
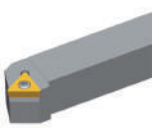


	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
					HC¹ (CVD)													HC¹ (PVD)						HT		HC²	HW	
P					○	○	◉	◉	◉	◉											◉	◉	◉	○	◉	○		
M											○	◉							○	○	◉	◉	◉	○	◉	○		
K													●	●	◉	◉	◉											
N																		●	●								●	◉
S																			○	○	◉	◉	◉				○	◉
H																												
LC	**TCGX090202-LC**	0.2	0.3-4.0	0.05-0.15														●									●	
	TCGX090204-LC	0.4	0.5-4.0	0.1-0.3														●									●	
	TCGX110202-LC	0.2	0.3-5.0	0.05-0.15														●									●	
	TCGX110204-LC	0.4	0.5-5.0	0.1-0.3														●									●	
	TCGX110208-LC	0.8	0.5-5.0	0.15-0.60														●									●	
Aluminium Machining	**TCGX16T304-LC**	0.4	0.5-7.0	0.1-0.3														●									●	
	TCGX16T308-LC	0.8	0.5-7.0	0.15-0.60														●									●	
LH	**TCGX090202-LH**	0.2	0.3-4.0	0.05-0.15															○								●	
	TCGX090204-LH	0.4	0.5-4.0	0.1-0.3																							●	
	TCGX110202-LH	0.2	0.3-5.0	0.05-0.15															○								●	
	TCGX110204-LH	0.4	0.5-5.0	0.1-0.3															●								●	
	TCGX110208-LH	0.8	0.5-5.0	0.15-0.60																							●	
Aluminium Machining	**TCGX16T302-LH**	0.2	0.5-7.0	0.05-0.15																							●	
	TCGX16T304-LH	0.4	0.5-7.0	0.1-0.3															○								●	
	TCGX16T308-LH	0.8	0.5-7.0	0.15-0.60															○								●	

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

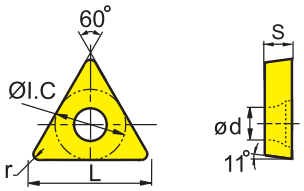
STACR/L	STFCR/L	STGCR/L	STTCR/L	S***-STFCR/L	E***-STFCR/L
Kr: 90°	Kr: 91°	Kr: 91°	Kr: 60°	Kr: 91°	Kr: 90°
					
A249	A250	A251	A252	A300	A319

System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TPGH	L	I.C	S	d
09 02	9.63	5.56	2.38	2.8
11 03	11	6.35	3.18	3.18



TP** positive insert					HC¹ (CVD)											HC¹ (PVD)					HT		HC²	HW	
					P																				
					M																				
					K																				
					N																				
					S																				
					H																				
ISO		r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
 Super Finishing	**TPGH090202L**	0.2	0.2-3.0	0.05-0.15														●					●	●			
	TPGH090204L	0.4	0.2-3.0	0.05-0.30														●					●	●			
	TPGH110302L	0.2	0.2-3.5	0.05-0.15														●					●	●			
	TPGH110304L	0.4	0.2-3.5	0.05-0.30														●					●	●			

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

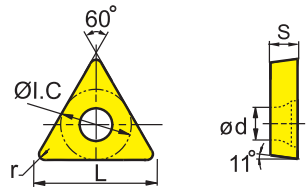
System code > A42 Grade selection > A40 Technical info > A447 Cutting data > A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TPGT	L	I.C	S	d
09 02	9.63	5.56	2.38	2.5
11 03	11	6.35	3.18	2.8

TP** positive insert



	HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW	
P	○	○	⊛	⊛	⊛	⊛									⊛	⊛	⊛		○	⊛	○		
M							○	⊛					○	○	⊛	⊛	⊛		○	⊛	○		
K									○	○	⊛	⊛	⊛										
N													○	○								○	⊛
S													○	○	⊛	⊛	⊛					○	⊛
H																							

	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
SF	**TPGT090202-SF**	0.2	0.05-2.00	0.05-0.15																						●		
	TPGT090204-SF	0.4	0.05-2.00	0.05-0.25															○					●		●		
	TPGT090208-SF	0.8	0.05-2.00	0.05-0.35																				●				
	TPGT110302-SF	0.2	0.05-2.00	0.05-0.15																				●		●		
Finishing	**TPGT110304-SF**	0.4	0.05-2.00	0.05-0.25																				○		●		
	TPGT110308-SF	0.8	0.05-2.00	0.05-0.35																				○		●		

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

S***-STUPR/L	C***-STUPR/L	E***-STFPR/L
Kr: 93°	Kr: 93°	Kr: 90°
		
A309	A318	A320

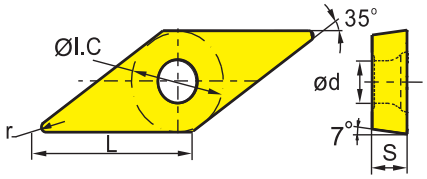
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

VCGT	L	I.C	S	d
11 03	11	6.35	3.18	2.8
16 04	16.5	9.525	4.76	4.4

VC** positive insert



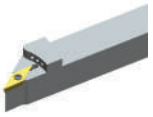
	HC¹ (CVD)												HC¹ (PVD)					HT		HC²	HW	
	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
P	○	○	◉	◉	◉	◉											◉	◉	◉	○	○	○		
M							○	◉							○	○	◉	◉	◉	○	○	○		
K									○	○	◉	◉	◉											
N														○	○								○	◉
S															○	○	◉	◉	◉				○	◉
H																								

	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
HF	**VCGT110304-HF**	0.4	0.2-2.0	0.05-0.30			●														○							
Finishing																												
NF	**VCGT160408-NF**	0.8	0.2-2.0	0.1-0.4															○	●								
Finishing																												
SF	**VCGT110302-SF**	0.2	0.05-1.00	0.05-0.15																				●	●	●		
	VCGT110304-SF	0.4	0.05-1.00	0.05-0.25															○			●		●	○	●		
	VCGT160404-SF	0.4	0.05-1.50	0.05-0.25																						●		
Finishing																												

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SVVCN	SVJCR/L	SVACR/L-SC	SVJCR/L-SC	S***-SVQCR/L	S***-SVUCR/L	C***-SVQCR/L
Kr: 72°30'	Kr: 93°	Kr: 90°	Kr: 93°	Kr: 107°30'	Kr: 93°	Kr: 107°30'
						
A243	A244	A278	A279	A302	A303	A321

C***-SVUCR/L
Kr: 93°

A322

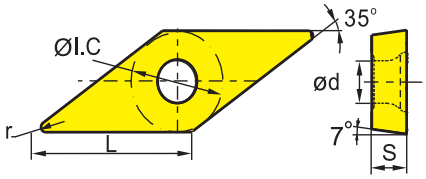
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

VCGT	L	I.C	S	d
11 03	11	6.35	3.18	2.8
13 03	13.8	7.94	3.175	3.4

VC** positive insert



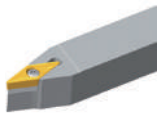
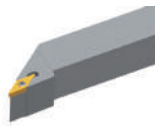
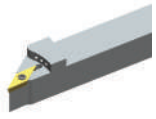
	HC¹ (CVD)	HC¹ (PVD)	HT	HC²	HW
P	○ ○ ❁ ❁ ❁ ❁	❁ ❁ ❁	○ ❁	○	
M	○ ❁	○ ○ ❁ ❁ ❁	○ ❁	○	
K	● ● ❁ ❁ ❁				
N		● ●			● ❁
S		○ ○ ❁ ❁ ❁			○ ❁
H					

	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
USF	**VCGT110301L-USF**	0.1	0.05-2.00	0.03-0.08																			●						
	VCGT110302L-USF	0.2	0.05-2.00	0.05-0.18																			●						
Finishing																													
USF	**VCGT110301R-USF**	0.1	0.05-2.00	0.03-0.08																			●						
	VCGT110302R-USF	0.2	0.05-2.00	0.05-0.18																			●						
Finishing																													
	VCGT130304	0.4	1-5	0.1-0.3				●																					

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SVVCN	SVJCR/L	SVACR/L-SC	SVJCR/L-SC	S***-SVQCR/L	S***-SVUCR/L	C***-SVQCR/L
Kr: 72°30'	Kr: 93°	Kr: 90°	Kr: 93°	Kr: 107°30'	Kr: 93°	Kr: 107°30'
						
A243	A244	A278	A279	A302	A303	A321

C***-SVUCR/L
Kr: 93°

A322

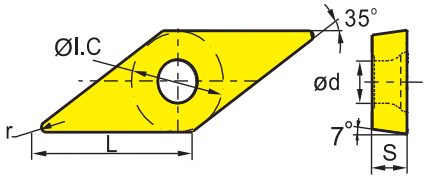
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning/Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

VCGX	L	I.C	S	d
11 03	11	6.35	3.18	2.8
16 04	16.6	9.525	4.76	4.4
22 05	22	12.7	5.56	5.5

VC** turning/milling insert



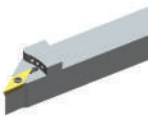
	HC¹ (CVD)												HC¹ (PVD)					HT		HC²	HW	
P	○	○	◍	◍	◍	◍										◍	◍	◍	◍	○		
M							○	◍						○	○	◍	◍	◍	◍	○		
K									●	●	◍	◍	◍									
N														●	●						●	◍
S														○	○	◍	◍	◍			○	◍
H																						

ISO		r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
LC	**VCGX110301-LC**	0.1	0.3-3.0	0.05-0.10														●				●					●	
	VCGX110302-LC	0.2	0.3-3.0	0.05-0.15														●				○					●	
	VCGX110304-LC	0.4	0.5-3.0	0.1-0.3														●									●	
	VCGX110308-LC	0.8	1-3	0.1-0.5														●									●	
	VCGX160404-LC	0.4	0.5-5.0	0.1-0.3														●									●	
Aluminium Machining	**VCGX160408-LC**	0.8	0.5-5.0	0.15-0.60														●									●	
	VCGX160412-LC	1.2	0.5-5.0	0.15-0.80														○									●	
	VCGX220530-LC	3	0.5-7.0	0.25-1.00														●									○	●

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SVVCN	SVJCR/L	SVACR/L-SC	SVJCR/L-SC	S***-SVQCR/L	S***-SVUCR/L	C***-SVQCR/L
Kr: 72°30'	Kr: 93°	Kr: 90°	Kr: 93°	Kr: 107°30'	Kr: 93°	Kr: 107°30'
						
A243	A244	A278	A279	A302	A303	A321

C***-SVUCR/L
Kr: 93°

A322

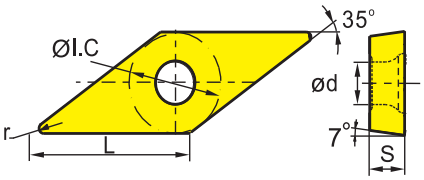
System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning/Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

VCGX	L	I.C	S	d
11 02	11	6.35	2.38	2.8
11 03	11	6.35	3.18	2.8
16 04	16.6	9.525	4.76	4.4
22 05	22	12.7	5.56	5.5

VC** turning/milling insert



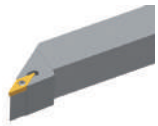
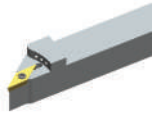
	HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW	
	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
P	○	○	◉	◉	◉	◉											◉	◉	◉	○	◉	○		
M							○	◉							○	○	◉	◉	○	○	◉	○		
K									●	●	◉	◉	◉											
N														●	●								●	◉
S															○	○	◉	◉	◉				●	◉
H																								

	ISO	r	a_p	f																				
LH	**VCGX110204-LH**	0.4	0.5-3.0	0.1-0.3											●								●	
	VCGX110301-LH	0.1	0.5-3.0	0.05-0.10															○				●	●
	VCGX110302-LH	0.2	0.3-3.0	0.05-0.15											●				●				●	●
	VCGX110304-LH	0.4	0.5-3.0	0.1-0.3											●				○				●	●
	VCGX110308-LH	0.8	0.5-3.0	0.15-0.60											○								●	
	VCGX160402-LH	0.2	0.5-5.0	0.05-0.10											●				●				●	
Aluminium Machining	**VCGX160404-LH**	0.4	0.5-5.0	0.1-0.3											●				●				●	
	VCGX160408-LH	0.8	0.5-5.0	0.15-0.60											●								●	
	VCGX160412-LH	1.2	0.5-5.0	0.15-0.80											○								●	
	VCGX220530-LH	3	0.5-7.0	0.25-1.00											○								●	○

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SVVCN	**SVJCR/L**	**SVACR/L-SC**	**SVJCR/L-SC**	**S***-SVQCR/L**	**S***-SVUCR/L**	**C***-SVQCR/L**
Kr: 72°30'	Kr: 93°	Kr: 90°	Kr: 93°	Kr: 107°30'	Kr: 93°	Kr: 107°30'
						
A243	A244	A278	A279	A302	A303	A321

C*-SVUCR/L**
Kr: 93°

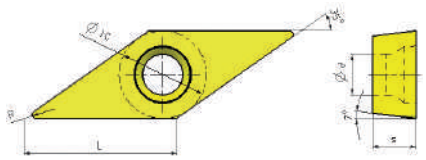
A322

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

VCMT	L	I.C	S	d
16 04	16	9.525	4.76	4.4

Turning inserts

VC** positive insert



	HC¹ (CVD)												HC¹ (PVD)					HT		HC²	HW	
P	○	○	◉	◉	◉	◉										◉	◉	◉	◉	○	◉			
M							○	◉						○	○	◉	◉	◉	○	◉	○			
K									●	●	◉	◉	◉											
N														●	●							●	◉	
S														○	○	◉	◉	◉				○	◉	
H																								

ISO		r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
EF	**VCMT160404-EF**	0.4	0.5-2.5	0.05-0.20																		●						
Medium Cut																												
EM	**VCMT160404-EM**	0.4	0.5-2.5	0.05-0.35							○											●						
	VCMT160408-EM	0.8	0.5-2.5	0.10-0.45							○											●						
Medium Cut																												

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

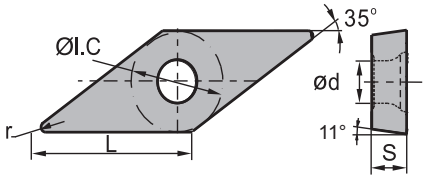
SVVCN	SVJCR/L	E***-SVUCR/L
Kr: 72°30'	Kr: 93°	Kr: 93°
		
A243	A244	A322

System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

VPGT	L	I.C	S	d
11 03	11	6.35	3.18	2.8



VP** positive insert		HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW		
P		○	○	✲	✲	✲	✲										✲	✲	✲	○	✲	○			
M								○	✲						○	○	✲	✲	✲	○	✲	○			
K										○	○	✲	✲	✲											
N															○	○								○	✲
S															○	○	✲	✲	✲					○	✲
H																									

	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
USF	**VPGT110301R-USF**	0.1	0.2-2.5	0.03-0.08																			●					
Finishing																												

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

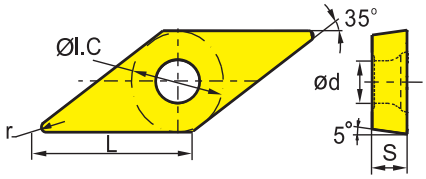
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

VB**	L	I.C	S	d
11 02	11	6.35	2.38	2.8
11 03	11	6.35	3.18	2.8
16 04	16.5	9.525	4.76	4.4

VB** positive insert



	HC¹ (CVD)												HC¹ (PVD)					HT		HC²	HW	
	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
P	○	○	◎	◎	◎	◎											◎	◎	◎	○	◎	○		
M							○	◎							○	○	◎	◎	◎	○	◎	○		
K									●	●	◎	◎	◎											
N														●	●								●	◎
S															●	●	◎	◎	◎				●	◎
H																								

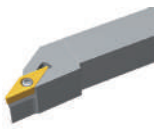
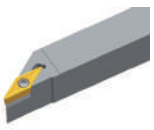
	ISO	r	a_p	f																				
AHF	**VBMT160404-AHF**	0.4	0.2-3.0	0.05-0.30	●													●						
	VBMT160408-AHF	0.8	0.8-3.5	0.08-0.40	●													●						
Finishing																								
EF	**VBMT110302-EF**	0.2	0.06-1.70	0.03-0.13														●	○					
	VBMT110304-EF	0.4	0.1-1.7	0.05-0.19							●							●	○					
	VBMT110308-EF	0.8	0.13-1.70	0.07-0.26							●							○	●					
	VBMT160404-EF	0.4	0.1-1.8	0.05-0.20							●							●						
Finishing	**VBMT160408-EF**	0.8	0.14-1.80	0.07-0.27							●							●						
HF	**VBMT110202-HF**	0.2	0.2-2.0	0.05-0.15			●												●					
	VBMT110204-HF	0.4	0.2-2.0	0.05-0.35			●												●			○		
	VBMT110208-HF	0.8	0.2-2.0	0.05-0.40			●												●					
Finishing																								
NF	**VBET160404-NF**	0.4	0.2-3.0	0.05-0.30											○	●								
	VBET160408-NF	0.8	0.2-3.0	0.08-0.40											○	●								
Finishing																								

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

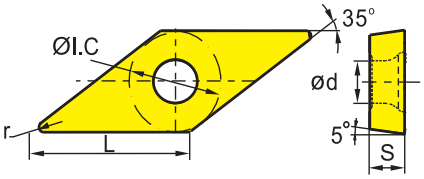
SVJBR/L	SVABR/L	SVVBN	S***-SVQBR/L	S***-SVUBR/L
Kr: 93°	Kr: 90°	Kr: 72°30'	Kr: 107°30'	Kr: 93°
				
A240	A241	A242	A304	A305

System code A42 Grade selection A40 Technical info A447 Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

VBGT	L	I.C	S	d
11 03	11	6.35	3.18	2.8



VB** positive insert		HC¹ (CVD)											HC¹ (PVD)						HT		HC²	HW	
P		●	●	◍	◍	◍	◍									◍	◍	◍	●	◍	●		
M							●	◍						●	●	◍	◍	◍	●	◍	●		
K									●	●	◍	◍	◍										
N														●	●							●	◍
S														●	●	◍	◍	◍				●	◍
H																							
ISO		r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
SF	**VBGT110302-SF**	0.2	0.05-2.00	0.05-0.15																		○	●	●		
	VBGT110304-SF	0.4	0.05-2.00	0.05-0.20																			○	●		
Finishing																										

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

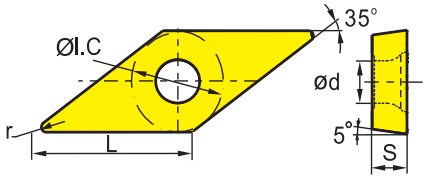
System code A42 | Grade selection A40 | Technical info A447 | Cutting data A324

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

VB**	L	I.C	S	d
11 03	11	6.35	3.18	2.8
16 04	16.5	9.525	4.76	4.4

VB** positive insert



	HC¹ (CVD)												HC¹ (PVD)					HT		HC²	HW	
P	○	○	◉	◉	◉	◉									◉	◉	◉	◉	◉	○		
M						○	◉						○	○	◉	◉	◉	◉	◉	○		
K								○	○	◉	◉	◉										
N													○	○							○	◉
S														○	○	◉	◉	◉			○	◉
H																						

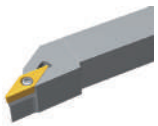
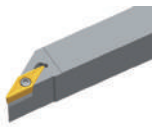
ISO		r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
NGF	**VBET160408-NGF**	0.8	0.2-3.0	0.08-0.30																●								
	VBET160412-NGF	1.2	0.2-3.0	0.1-0.4																●								
Finishing																												
EM	**VBMT110304-EM**	0.4	0.15-2.00	0.07-0.20							●											●						
	VBMT110308-EM	0.8	0.2-2.0	0.09-0.27		○					●											●						
	VBMT160404-EM	0.4	0.23-2.70	0.07-0.20							●											●						
	VBMT160408-EM	0.8	0.45-2.70	0.09-0.27							●											●						
Medium Cut																												
HM	**VBMT160404-HM**	0.4	0.23-2.70	0.07-0.20		●	●	●		●	●			●									●					
	VBMT160408-HM	0.8	0.45-2.70	0.09-0.27		●	●	●			●	●		●		●							●				○	
	VBMT160412-HM	1.2	0.54-2.70	0.11-0.32		●	●	●		○																		
Medium Cut																												

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SVJBR/L	SVABR/L	SVVBN	S***-SVQBR/L	S***-SVUBR/L
Kr: 93°	Kr: 90°	Kr: 72°30'	Kr: 107°30'	Kr: 93°
				
A240	A241	A242	A304	A305

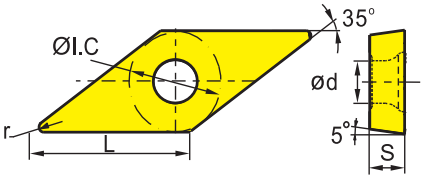
System code A42 Grade selection A40 Technical info A447 Cutting data A324

VBMT	L	I.C	S	d
16 04	16.5	9.525	4.76	4.4

Turning inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

VB** positive insert



	HC¹ (CVD)												HC¹ (PVD)						HT		HC²	HW	
	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
P	○	○	✲	✲	✲	✲											✲	✲	✲	○	✲	○		
M							○	✲							○	○	✲	✲	✲	○	✲	○		
K									○	○	✲	✲	✲											
N														○	○								○	✲
S															○	○	✲	✲	✲				○	✲
H																								

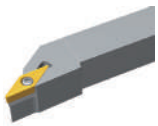
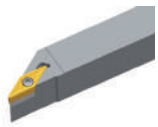
	ISO	r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YBG202	YNG151	YNT251	YNG151C	YD101	YD201
HR  Roughing	**VBMT160404-HR**	0.4	0.5-3.0	0.1-0.3		●	●																					
	VBMT160408-HR	0.8	0.9-3.6	0.11-0.32		○	●	●		○																		
	VBMT160412-HR	1.2	1.08-3.60	0.13-0.38		○	●	○					○															
SNR  Roughing	**VBMT160408-SNR**	0.8	0.5-4.0	0.1-0.3																○								
	VBMT160412-SNR	1.2	0.5-4.0	0.3-0.6																●								

● Ex stock ○ On demand

YBC152F, YBC252F, YBM153F, YBM253F available

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Tool holder

SVJBR/L	SVABR/L	SVVBN	S***-SVQBR/L	S***-SVUBR/L
Kr: 93°	Kr: 90°	Kr: 72°30'	Kr: 107°30'	Kr: 93°
				
A240	A241	A242	A304	A305

System code A42 Grade selection A40 Technical info A447 Cutting data A324

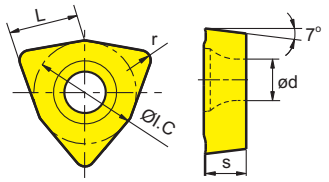
A Turning B Milling C Drilling D Technical Information E Index

Turning inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

WCMX	L	I.C	S	d
04 02	4.3	6.35	2.38	3.1
06 T3	6.5	9.525	3.97	3.7
08 04	8.7	12.7	4.76	4.3

WC** drilling insert

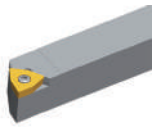


	HC¹ (CVD)												HC¹ (PVD)					HT		HC²	HW	
P	○	○	⊛	⊛	⊛	⊛										⊛	⊛	○	⊛	○		
M							○	⊛						○	○	⊛	⊛	○	⊛	○		
K									○	○	⊛	⊛	⊛									
N														○	○						○	
S														○	○	⊛	⊛				○	
H																						

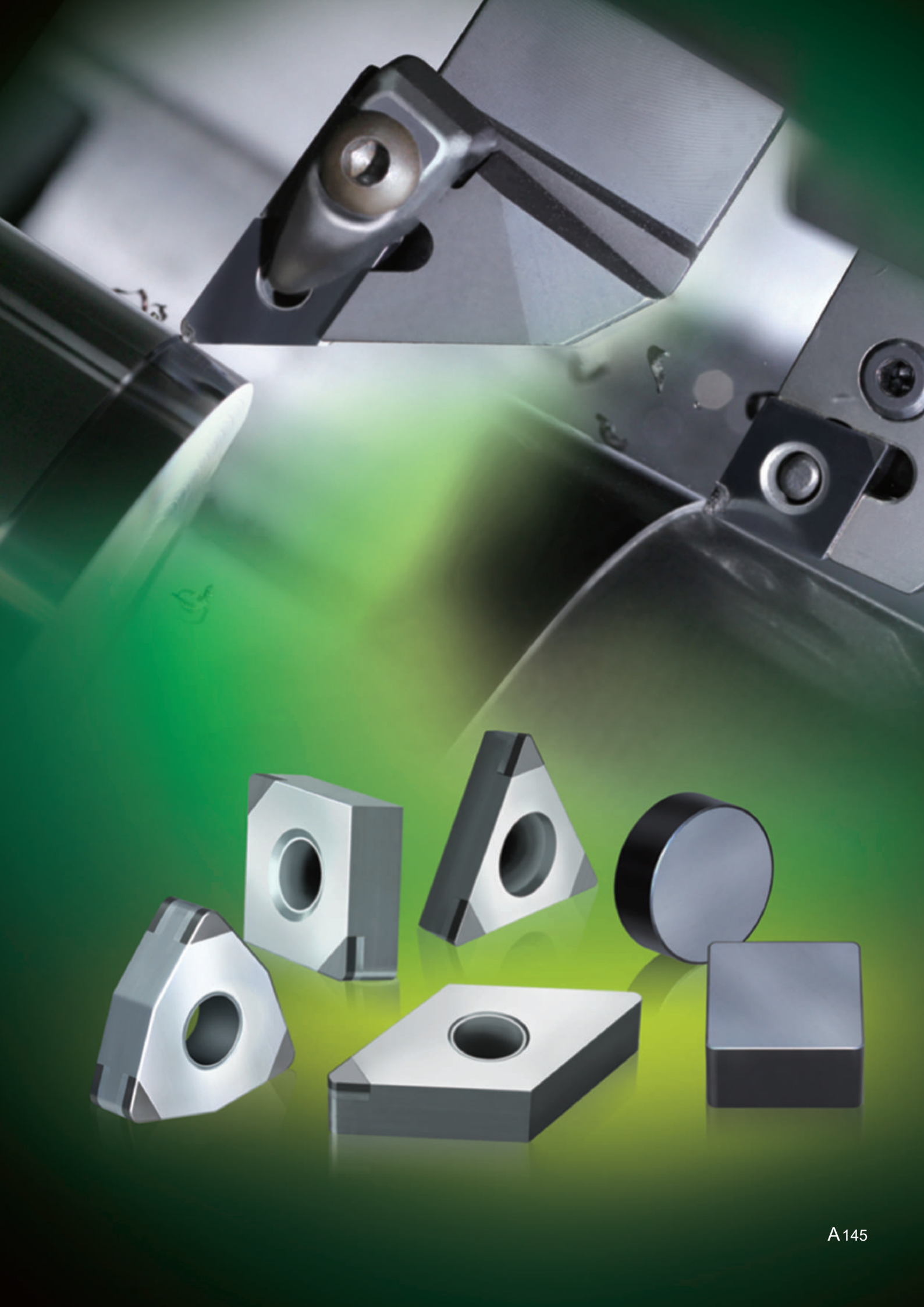
ISO		r	a_p	f	YB6315	YBC152	YBC252	YBC251	YBC352	YBC351	YBM153	YBM253	YBD052	YBD102	YB7315	YBD152	YBD152C	YBG101	YBG102	YBG105	YB9320	YBG205	YNG151	YNT251	YNG151C	YD101
 Medium Cut	**WCMX040208R-53**	0.8	0.05-2.00	0.05-0.60																						
	WCMX06T308R-53	0.8	0.1-3.0	0.05-0.60																						
	WCMX080412R-53	1.2	0.2-4.0	0.05-0.80																						

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

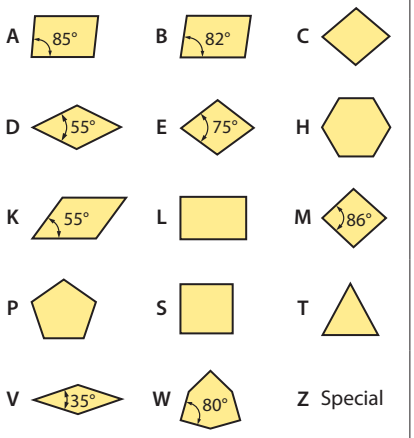
Tool holder
SWACR/L
Kr: 90°

A253

System code A42 Grade selection A40 Technical info A447 Cutting data A324



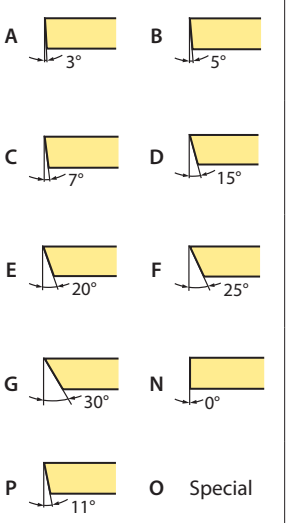
C	N	G	A	12	04	08	T	020	20	–	2	(W)
1	2	3	4	5	6	7	8	9	10		11	12

Insert shape



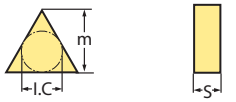
1

Clearance angle



2

Tolerance class

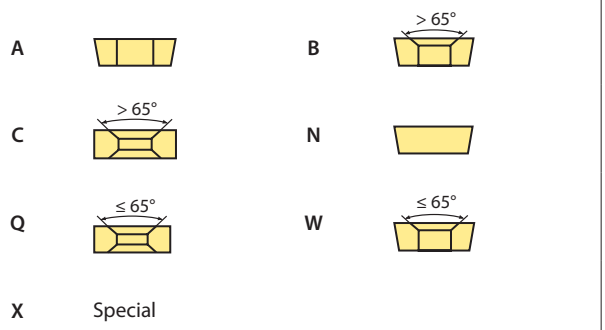


Code	I.C [mm]	m [mm]	S [mm]
A	±0,025	±0,005	±0,025
C	±0,025	±0,013	±0,025
E	±0,025	±0,025	±0,025
F	±0,013	±0,005	±0,025
G	±0,025	±0,025	±0,130
H	±0,013	±0,013	±0,025
J	±0,05–0,15	±0,005	±0,025
K	±0,05–0,15	±0,013	±0,025
L	±0,05–0,15	±0,025	±0,025
M	±0,05–0,15	±0,08–0,20	±0,130
N	±0,05–0,15	±0,08–0,20	±0,025
U	±0,08–0,25	±0,13–0,38	±0,130

3

Fastening features (metric)

Insert shape



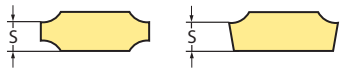
4

Cutting edge length l [mm]

I.C [mm]	Insert shape C	D	S	T	V	W
3,97				06		
5,0						
5,56				09		
6,0						
6,35	06	07		11	11	
8,0						
9,525	09	11	09	16	16	06
10,0						
12,0						
12,7	12	15	12	22	22	08
15,875	16		15	27		
16,0		19				
19,05	19		19	33		
20,0						
25,0	25	25				
25,4			25			
31,75						
32						

5

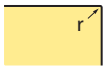
Insert thickness S [mm]



Code	S	Code	S
02	2,38	**06**	6,35
T2	2,58	**T6**	6,75
03	3,18	**07**	7,94
T3	3,97	**09**	9,52
04	4,76	**T9**	9,72
T4	4,96	**11**	11,11
05	5,56	**12**	12,70
T5	5,95		

6

Nose radius r [mm]



Code	r
00	–
02	0,2
04	0,4
08	0,8
12	1,2
16	1,6
20	2,0
24	2,4
32	3,2
X	Special
MO	Round inserts

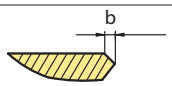
7

Cutting edge profile

Code	Cutting edge	Insert shape
E	Rounding	
F	Sharp edge	
T	Chamfer	
S	Chamfer + Rounding	

8

Chamfer width b [mm]



Code	b
010	0,10
015	0,15
020	0,20
025	0,25
030	0,30
035	0,35
040	0,40
045	0,45
050	0,50
100	1,00
200	2,00

9

Chamfer angle α



Code	α
05	5°
10	10°
15	15°
20	20°
25	25°
30	30°

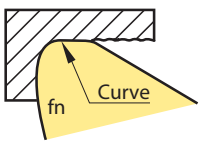
10

Cutting edges

Code	Form
1	
2	
3	
4	

11

Extra

Code	Description
W	Wiper 

12

Standard edge preparation

	CBN				Solid CBN			PCD
	YCB111	YCB121	YCB131	YCB211	YZB121	YZB221	YZB231	YCD421
Rayon = 0,4 mm	S01525	S01520	S01525	S01020	S01020	T02020	T02025	F
Rayon ≥ 0,8 mm	S01525	S02020	S02025	S01020	S01020	T02020	T02025	F

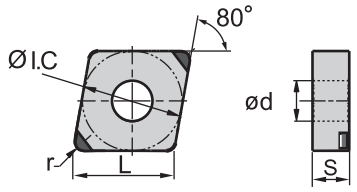
Other edge preparation on demand.

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

CNGA	L	I.C	S	d
12 04	12.9	12.7	4.76	5.16

Turning CBN inserts

CN** negative insert



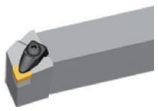
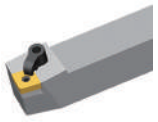
	BL (CBN)	BH (CBN)
P		
K		○
N		
H	○ ✲ ✲	

	ISO	r	a_p	f	YCB111	YCB121	YCB131	YCB211
	**CNGA120404-2**	0.4	0.08-0.50	0.05-0.20	○	●	○	○
	CNGA120408-2	0.8	0.08-0.50	0.05-0.25	●	●	●	●
	CNGA120412-2	1.2	0.08-0.50	0.05-0.30	○	●	●	●
	**CNGA120408-2W**	0.8	0.08-0.50	0.05-0.25	○	○		
	CNGA120412-2W	1.2	0.08-0.50	0.05-0.30	○	○		

● Ex stock ○ On demand

BL CBN with a low CBN content
BH CBN with a high CBN content

Tool holder

DCLNR/L	PCBNR/L	PCLNR/L	MCBNR/L	MCLNR/L	PCLNR/L
Kr: 95°	Kr: 75°	Kr: 95°	Kr: 75°	Kr: 95°	Kr: 95°
					
A197	A204	A205	A218	A219	A284

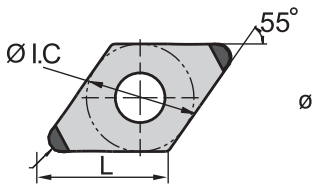
System code A40 Grade selection A146 Technical info A447 Cutting data A324

Turning CBN inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

DNGA	L	I.C	S	d
15 06	15.5	12.7	6.35	5.16

DN** negative insert



	ISO	r	a_p	f	BL (CBN) YCB111	BL (CBN) YCB121	BL (CBN) YCB131	BH (CBN) YCB211
P								
K								○
N								
H					○	⊛	⊛	
	DNGA150604-2	0.4	0.08-0.50	0.05-0.20	○	○	○	○
	DNGA150608-2	0.8	0.08-0.50	0.05-0.25	●	●	○	●
	DNGA150612-2	1.2	0.08-0.50	0.05-0.15	○	●	●	○



● Ex stock ○ On demand

BL CBN with a low CBN content
BH CBN with a high CBN content

Tool holder

DDJNR/L	PDJNR/L	PDNNR/L	MDJNR/L	MDPNN	PDSNR/L	PDUNR/L
Kr: 93°	Kr: 93°	Kr: 63°	Kr: 93°	Kr: 62°30'	Kr: 62°30'	Kr: 93°
						
A198	A206	A207	A220	A221	A286	A287

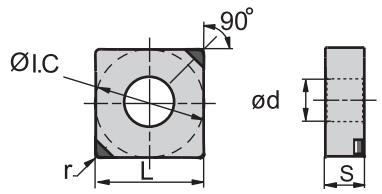
System code A40 | Grade selection A146 | Technical info A447 | Cutting data A324

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SNGA	L	I.C	S	d
12 04	12.7	12.7	4.76	5.16

Turning CBN inserts

SN** negative insert

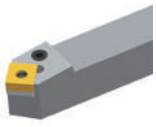
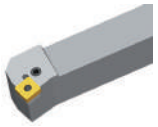
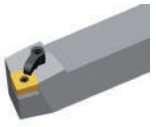


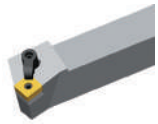
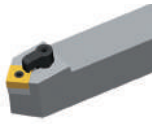
					BL (CBN)			BH (CBN)
	ISO	r	a_p	f	YCB111	YCB121	YCB131	YCB211
P								
K								●
N								
H					○	○	○	
	SNGA120408-2	0.8	0.08-0.50	0.05-0.25	○	○	○	○
	SNGA120412-2	1.2	0.08-0.50	0.05-0.30	○	○	○	○

● Ex stock ○ On demand

BL CBN with a low CBN content
BH CBN with a high CBN content

Tool holder

DSBNR/L	PSBNR/L	PSDNN	PSKNR/L	PSSNR/L	MSBNR/L	MSRNR/L
Kr: 75°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 45°	Kr: 75°	Kr: 75°
						
A199	A208	A210	A211	A212	A222	A223

MSKNR/L	MSDNN	PSKNR/L
Kr: 75°	Kr: 45°	Kr: 75°
		
A224	A225	A289

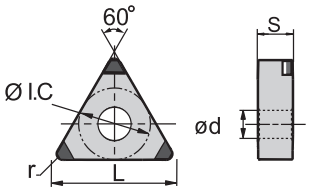
System code A40 | Grade selection A146 | Technical info A447 | Cutting data A324

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TNGA	L	I.C	S	d
16 04	16.5	9.525	4.76	3.81

Turning CBN inserts

TN** negative insert



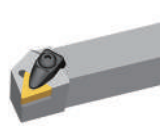
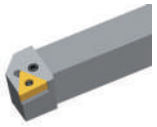
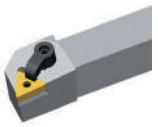
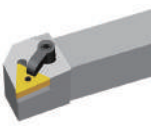
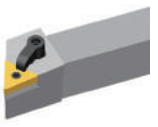
	BL (CBN)	BH (CBN)
P		
K		○
N		
H	○ ⊛ ⊛	

	ISO	r	a_p	f	YCB111	YCB121	YCB131	YCB211
	**TNGA160404-3**	0.4	0.08-0.50	0.05-0.20	○	○		
	TNGA160408-3	0.8	0.08-0.50	0.05-0.25	○	●	○	○
	TNGA160412-3	1.2	0.08-0.50	0.05-0.30	○	○	○	○

● Ex stock ○ On demand

BL CBN with a low CBN content
BH CBN with a high CBN content

Tool holder

DTGNR/L	PTFNR/L	PTTNR/L	PTGNR/L	MTGNR/L	MTJNR/L	MTJNR/L-Z
Kr: 91°	Kr: 91°	Kr: 60°	Kr: 90°	Kr: 90°	Kr: 93°	Kr: 93°
						
A200	A213	A214	A215	A226	A227	A228

MTFNR/L	PTFNR/L
Kr: 91°	Kr: 90°
	
A229	A290

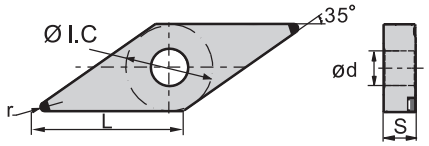
System code A40 | Grade selection A146 | Technical info A447 | Cutting data A324

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

VNGA	L	I.C	S	d
16 04	16.6	9.525	4.76	3.81

Turning CBN inserts

VN** negative insert



		ISO	r	a_p	f	BL (CBN) YCB111	BL (CBN) YCB121	BL (CBN) YCB131	BH (CBN) YCB211
P									
K									●
N									
H						○	◉	◉	
		VNGA160404-2	0.4	0.08-0.50	0.05-0.20	○	○		
		VNGA160408-2	0.8	0.08-0.50	0.05-0.25	○	●		

● Ex stock ○ On demand

BL CBN with a low CBN content
BH CBN with a high CBN content

Tool holder

DVVNN	DVJNR/L	MVVNN	MVJNR/L
Kr: 72°30'	Kr: 93°	Kr: 72°30'	Kr: 93°
			
A201	A202	A230	A231

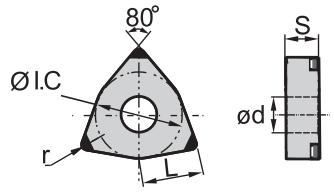
System code A40 Grade selection A146 Technical info A447 Cutting data A324

Turning CBN inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

WNGA	L	I.C	S	d
08 04	8.69	12.7	4.76	5.16

WN** negative insert



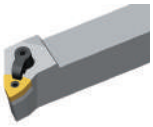
	ISO	r	a_p	f	BL (CBN) YCB111	BL (CBN) YCB121	BL (CBN) YCB131	BH (CBN) YCB211
P								
K								●
N								
H					○	✲	✲	
	WNGA080404-3	0.4	0.08-0.50	0.05-0.20			○	
	WNGA080408-3	0.8	0.08-0.50	0.05-0.25		●	○	



● Ex stock ○ On demand

BL CBN with a low CBN content
BH CBN with a high CBN content

Tool holder

DWLNR/L	PWLNR/L	MWLNR/L	PWLNR/L
Kr: 95°	Kr: 95°	Kr: 95°	Kr: 95°
			
A203	A217	A232	A291

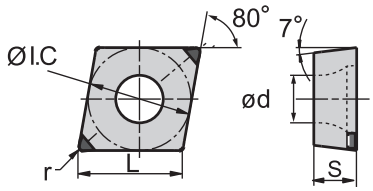
System code A40 | Grade selection A146 | Technical info A447 | Cutting data A324

Turning CBN inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

CCGW	L	I.C	S	d
06 02	6.4	6.35	2.38	2.8
09 T3	9.7	9.525	3.97	4.4
12 04	12.9	12.7	4.76	5.5

CC** positive insert



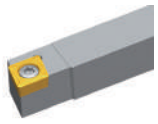
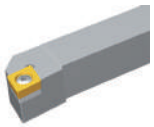
	BL (CBN)	BH (CBN)
P		
K		○
N		
H	○ ○ ○	

ISO	r	a_p	f	YCB111	YCB121	YCB131	YCB211
CCGW060204-1	0.4	0.08-0.50	0.05-0.20	○	○		
CCGW060208-1	0.8	0.08-0.50	0.05-0.25	○	○		
CCGW09T304-2	0.4	0.08-0.50	0.05-0.20	○	●	○	○
CCGW09T308-2	0.8	0.08-0.50	0.05-0.25	●	●	○	○
CCGW120404-2	0.4	0.08-0.50	0.05-0.20	○	●	○	○
CCGW120408-2	0.8	0.08-0.50	0.05-0.25	○	●	○	●

● Ex stock ○ On demand

BL CBN with a low CBN content
BH CBN with a high CBN content

Tool holder

SCACR/L	SCLCR/L	SCACR/L-SC	SCLCR/L-SC	SCLCR/L	SCFCR/L	SCLCR/L
Kr: 90°	Kr: 95°	Kr: 90°	Kr: 95°	Kr: 95°	Kr: 90°	Kr: 95°
						
A235	A236	A272	A273	A293	A310	A311

SCLCR/L
Kr: 95°

A313

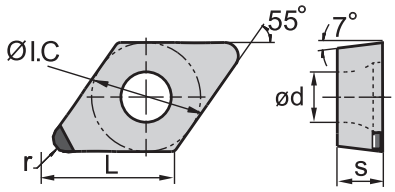
System code A40 | Grade selection A146 | Technical info A447 | Cutting data A324

Turning CBN inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

DCGW	L	I.C	S	d
07 02	7.8	6.35	2.38	2.8
11 T3	11.6	9.525	3.97	4.4

DC** positive insert



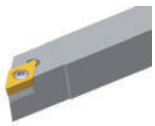
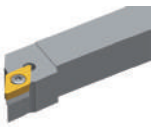
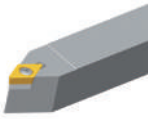
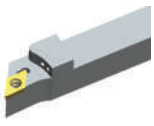
	BL (CBN)	BH (CBN)
P		
K		○
N		
H	○ ⊛ ⊛	

	ISO	r	a_p	f	YCB111	YCB121	YCB131	YCB211
	**DCGW070204-1**	0.4	0.08-0.50	0.05-0.20	○	○		
	DCGW070208-1	0.8	0.08-0.50	0.05-0.25	○	○		
	DCGW11T304-2	0.4	0.08-0.50	0.05-0.20	●	○	○	○
	DCGW11T308-2	0.8	0.08-0.50	0.05-0.25	●	●	●	●

● Ex stock ○ On demand

BL CBN with a low CBN content
BH CBN with a high CBN content

Tool holder

SDACR/L	SDJCR/L	SDNCN	SDACR/L-SC	SDHCR/L-SC	SDJCR/L-SC	SDNCN-SC
Kr: 90°	Kr: 93°	Kr: 62°30'	Kr: 90°	Kr: 107°30'	Kr: 93°	Kr: 62°30'
						
A237	A238	A239	A274	A275	A276	A277

SDQCR/L	SDUCR/L	SDZCR/L	SDQCR/L
Kr: 107°30'	Kr: 93°	Kr: 85°	Kr: 107°30'
			
A295	A296	A297	A315

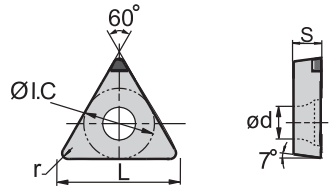
System code A40 | Grade selection A146 | Technical info A447 | Cutting data A324

Turning CBN inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

TCGW	L	I.C	S	d
11 02	11	6.35	2.38	2.5
16 T3	16.5	9.525	3.97	4.4

TC** positive insert



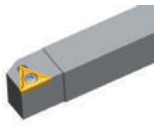
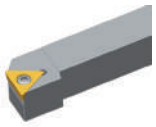
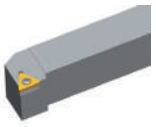
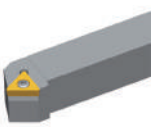
	BL (CBN)	BH (CBN)
P		
K		●
N		
H	○ ⊛ ⊛	

	ISO	r	a_p	f	YCB111	YCB121	YCB131	YCB211
	**TCGW110204-1**	0.4	0.08-0.50	0.05-0.20	○	○	○	○
	TCGW110208-1	0.8	0.08-0.50	0.05-0.25	○	○	○	
	**TCGW16T304-3**	0.4	0.08-0.50	0.05-0.20	○	○	○	○
	TCGW16T308-3	0.8	0.08-0.50	0.05-0.25	○	○	○	○

● Ex stock ○ On demand

BL CBN with a low CBN content
BH CBN with a high CBN content

Tool holder

STACR/L	STFCR/L	STGCR/L	STTCR/L	STFCR/L	STFCR/L
Kr: 90°	Kr: 91°	Kr: 91°	Kr: 60°	Kr: 91°	Kr: 90°
					
A249	A250	A251	A252	A300	A319

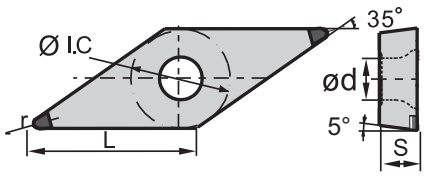
System code A40 Grade selection A146 Technical info A447 Cutting data A324

Turning CBN inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

VBGW	L	I.C	S	d
16 04	16.6	9.525	4.76	4.4

VB** positive insert



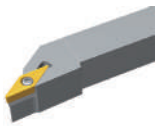
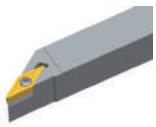
	ISO	r	a_p	f	BL (CBN) YCB111	BL (CBN) YCB121	BL (CBN) YCB131	BH (CBN) YCB211
P								
K								●
N								
H					○	✲	✲	
	VBGW160404-2	0.4	0.08-0.50	0.05-0.20	○	○		
	VBGW160408-2	0.8	0.08-0.50	0.05-0.25	○	○		○



● Ex stock ○ On demand

BL CBN with a low CBN content
BH CBN with a high CBN content

Tool holder

SVJBR/L	SVABR/L	SVVBN	SVQBR/L	SVUBR/L
Kr: 93°	Kr: 90°	Kr: 72°30'	Kr: 107°30'	Kr: 93°
				
A240	A241	A242	A304	A305

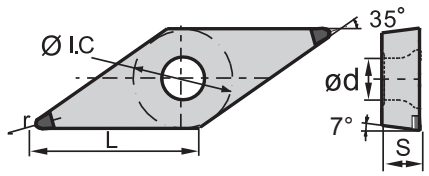
System code A40 | Grade selection A146 | Technical info A447 | Cutting data A324

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

VCGW	L	I.C	S	d
16 04	16.6	9.525	4.76	4.4

Turning CBN inserts

VC** positive insert



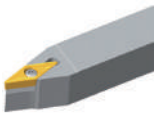
	ISO	r	a_p	f	BL (CBN) YCB111	BL (CBN) YCB121	BL (CBN) YCB131	BH (CBN) YCB211
P								
K								●
N								
H					○	○	○	
	VCGW160404-2	0.4	0.08-0.50	0.05-0.20	○	○		○
	VCGW160408-2	0.8	0.08-0.50	0.05-0.25	○	○		○



● Ex stock ○ On demand

BL CBN with a low CBN content
BH CBN with a high CBN content

Tool holder

SVVCN	SVJCR/L	SVUCR/L
Kr: 72°30'	Kr: 93°	Kr: 93°
		
A243	A244	A322

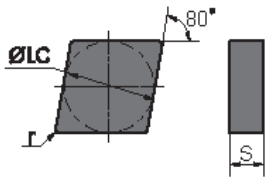
System code A40 Grade selection A146 Technical info A447 Cutting data A324

Turning CBN inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

CNGN	L	I.C	S
12 04	12.9	12.7	4.76

CN** negative insert



	ISO	r	a_p	f	BL (CBN) YZB121	BH (CBN) YZB221	BH (CBN) YZB231
					P		
					K	◉	◉
					N		
					H ◉		
 Medium Cut	**CNGN120404**	0.4	0.5-2.0	0.3-0.5		○	
	CNGN120408	0.8	0.5-2.0	0.3-0.5	○	○	○
	CNGN120412	1.2	0.5-2.0	0.3-0.5	○	○	○
	CNGN120416	1.6	0.5-2.0	0.3-0.5	○	○	○

● Ex stock ○ On demand

BL CBN with a low CBN content
BH CBN with a high CBN content

Tool holder
CCLNR/L
Kr: 95°

A258

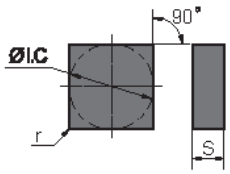
System code A40 | Grade selection A146 | Technical info A447 | Cutting data A324

Turning CBN inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SNGN	L	I.C	S
12 04	12.7	12.7	4.76
15 07	15.875	15.875	7.94

SN** negative insert



	BL (CBN)	BH (CBN)
P		
K		⊛ ⊛
N		
H	⊛	

	ISO	r	a_p	f	BL (CBN) YZB121	BH (CBN) YZB221	BH (CBN) YZB231
	**SNGN120404**	0.4	0.5-2.0	0.3-0.5		○	
	SNGN120408	0.8	0.5-2.0	0.3-0.5	○	○	○
	SNGN120412	1.2	0.5-2.0	0.3-0.5	○	○	○
	SNGN120416	1.6	0.5-2.0	0.3-0.5	○	○	○
	SNGN150716	1.6	0.5-2.0	0.3-0.5			○
	SNGN150720	2	0.5-2.0	0.3-0.5			○

● Ex stock ○ On demand

BL CBN with a low CBN content
BH CBN with a high CBN content

Tool holder

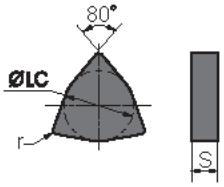
CSKNR/L	CSRNR/L	CSDNN
Kr: 75°	Kr: 75°	Kr: 45°
		
A262	A263	A265

System code A40 Grade selection A146 Technical info A447 Cutting data A324

Turning CBN inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

WNGN	L	I.C	S
08 04	8.69	12.7	4.76

WN** negative insert					BL (CBN)		BH (CBN)	
				P				
				K			⊛	⊛
				N				
				H	⊛			
ISO		r	a_p	f	YZB121		YZB221	YZB231
	**WNGN080408**	0.8	0.5-2.0	0.3-0.5	○		○	○
	WNGN080412	1.2	0.5-2.0	0.3-0.5	○		○	○

● Ex stock ○ On demand

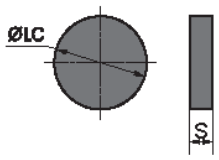
BL CBN with a low CBN content
BH CBN with a high CBN content

System code > A40 | Grade selection > A146 | Technical info > A447 | Cutting data > A324

Turning CBN inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

RNGN	L	I.C	S
12 04	12.7	12.7	4.76
12 07	12.7	12.7	7.94

RN** negative insert					BL (CBN)	BH (CBN)	
				P			
				K		○	○
				N			
				H	○		
ISO		a_p	f		YZB121	YZB221	YZB231
 Medium Cut	**RNGN120400**	0.5-2.0	0.3-0.5			○	○
	RNGN120700	0.5-2.0	0.3-0.5		○	○	○

● Ex stock ○ On demand

BL CBN with a low CBN content
BH CBN with a high CBN content

Tool holder
CRDNN

A264

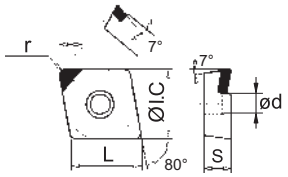
System code A40 | Grade selection A146 | Technical info A447 | Cutting data A324

CCGT	L	I.C	S	d
06 02	6.4	6.35	2.38	2.8
09 T3	9.7	9.525	3.97	4.4
12 04	12.9	12.7	4.76	5.56

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

Turning PKD inserts

CC** positive insert

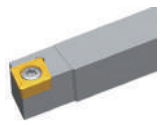


	ISO	r	a_p	f	YCD421
	**CCGT060202****	0.2	0.05-0.50	0.05-0.15	○
	CCGT060204**	0.4	0.08-0.50	0.05-0.20	●
	CCGT09T304**	0.4	0.08-0.50	0.05-0.20	○
	CCGT09T308**	0.8	0.08-0.50	0.05-0.25	○
	CCGT120404**	0.4	0.08-0.50	0.05-0.20	○
	CCGT120408**	0.8	0.08-0.50	0.05-0.25	○

● Ex stock ○ On demand

DP Polycrystalline diamond

Tool holder

SCACR/L	SCLCR/L	SCACR/L-SC	SCLCR/L-SC	SCLCR/L	SCFCR/L	SCLCR/L
Kr: 90°	Kr: 95°	Kr: 90°	Kr: 95°	Kr: 95°	Kr: 90°	Kr: 95°
						
A235	A236	A272	A273	A293	A310	A311

SCLCR/L
Kr: 95°

A313

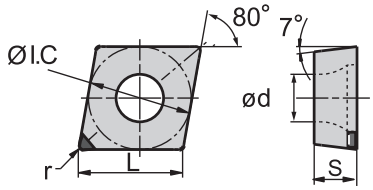
System code A40 | Grade selection A146 | Technical info A447 | Cutting data A324

CCGW	L	I.C	S	d
06 02	6.4	6.35	2.38	2.8
09 T3	9.7	9.525	3.97	4.4
12 04	12.9	12.7	4.76	5.56

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Turning PKD inserts

CC** positive insert



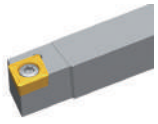
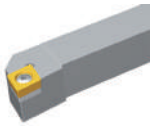
	ISO	r	a_p	f	YCD421
	**CCGW060202****	0.2	0.08-0.50	0.05-0.15	○
	CCGW060204**	0.4	0.08-0.50	0.05-0.20	○
	CCGW09T304**	0.4	0.08-0.50	0.05-0.20	○
	CCGW09T308**	0.8	0.08-0.50	0.05-0.25	○
	CCGW120404**	0.4	0.08-0.50	0.05-0.20	○
	CCGW120408**	0.8	0.08-0.50	0.05-0.25	○

P K N H — DP

● Ex stock ○ On demand

DP Polycrystalline diamond

Tool holder

SCACR/L	SCLCR/L	SCACR/L-SC	SCLCR/L-SC	SCLCR/L	SCFCR/L	SCLCR/L
Kr: 90°	Kr: 95°	Kr: 90°	Kr: 95°	Kr: 95°	Kr: 90°	Kr: 95°
						
A235	A236	A272	A273	A293	A310	A311

SCLCR/L
Kr: 95°

A313

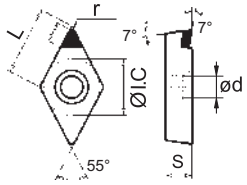
System code A40 | Grade selection A146 | Technical info A447 | Cutting data A324

Turning PKD inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

DCGT	L	I.C	S	d
07 02	7.8	6.35	2.38	2.8
11 T3	11.6	9.525	3.97	4.4

DC** positive insert

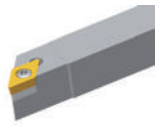
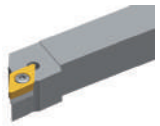
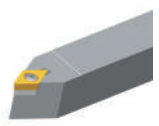
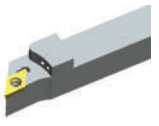


					DP
					YCD421
P					
K					
N					○
H					
ISO		r	a_p	f	
	**DCGT070202****	0.2	0.08-0.50	0.05-0.15	○
	DCGT070204**	0.4	0.08-0.50	0.05-0.20	○
	DCGT11T304**	0.4	0.08-0.50	0.05-0.20	○
	DCGT11T308**	0.8	0.08-0.50	0.05-0.25	●

● Ex stock ○ On demand

DP Polycrystalline diamond

Tool holder

SDACR/L	SDJCR/L	SDNCN	SDACR/L-SC	SDHCR/L-SC	SDJCR/L-SC	SDNCN-SC
Kr: 90°	Kr: 93°	Kr: 62°30'	Kr: 90°	Kr: 107°30'	Kr: 93°	Kr: 62°30'
						
A237	A238	A239	A274	A275	A276	A277

SDQCR/L	SDUCR/L	SDZCR/L	SDQCR/L
Kr: 107°30'	Kr: 93°	Kr: 85°	Kr: 107°30'
			
A295	A296	A297	A315

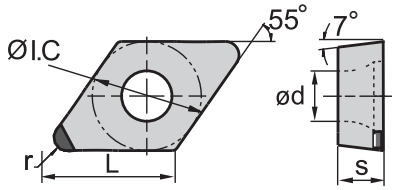
System code A40 | Grade selection A146 | Technical info A447 | Cutting data A324

Turning PKD inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

DCGW	L	I.C	S	d
07 02	7.8	6.35	2.38	2.8
11 T3	11.6	9.525	3.97	4.4

DC** positive insert



	DP
P	
K	
N	●
H	

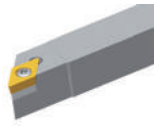
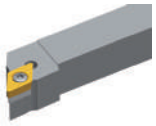
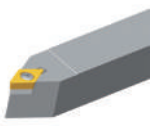
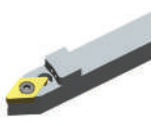


ISO	r	a_p	f	YCD421
DCGW070202**	0.2	0.08-0.50	0.05-0.15	○
DCGW070204**	0.4	0.08-0.50	0.05-0.20	○
DCGW070208**	0.8	0.08-0.50	0.05-0.25	○
DCGW11T302**	0.2	0.08-0.50	0.05-0.15	○
DCGW11T304**	0.4	0.08-0.50	0.05-0.20	○
DCGW11T308**	0.8	0.08-0.50	0.05-0.25	○

● Ex stock ○ On demand

DP Polycrystalline diamond

Tool holder

SDACR/L	SDJCR/L	SDNCN	SDACR/L-SC	SDHCR/L-SC	SDJCR/L-SC	SDNCN-SC
Kr: 90°	Kr: 93°	Kr: 62°30'	Kr: 90°	Kr: 107°30'	Kr: 93°	Kr: 62°30'
						
A237	A238	A239	A274	A275	A276	A277

SDQCR/L	SDUCR/L	SDZCR/L	SDQCR/L
Kr: 107°30'	Kr: 93°	Kr: 85°	Kr: 107°30'
			
A295	A296	A297	A315

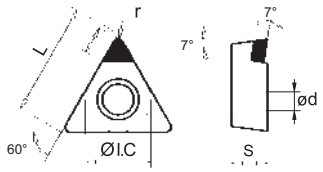
System code A40 Grade selection A146 Technical info A447 Cutting data A324

Turning PKD inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TCGT	L	I.C	S	d
11 02	11	6.35	2.38	2.8
16 T3	16.5	9.525	3.97	4.4

TC** positive insert

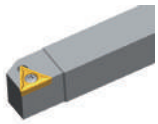
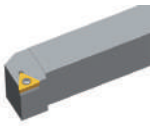
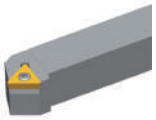


		ISO	r	a_p	f	YCD421
P						DP
K						
N						○
H						
		**TCGT110202****	0.2	0.08-0.50	0.05-0.15	○
		TCGT110204**	0.4	0.08-0.50	0.05-0.20	○
		TCGT110208**	0.8	0.08-0.50	0.05-0.25	○
		TCGT16T304**	0.4	0.08-0.50	0.05-0.20	○
		TCGT16T308**	0.8	0.08-0.50	0.05-0.25	○

● Ex stock ○ On demand

DP Polycrystalline diamond

Tool holder

STACR/L	STFCR/L	STGCR/L	STTCR/L	STFCR/L	STFCR/L
Kr: 90°	Kr: 91°	Kr: 91°	Kr: 60°	Kr: 91°	Kr: 90°
					
A249	A250	A251	A252	A300	A319

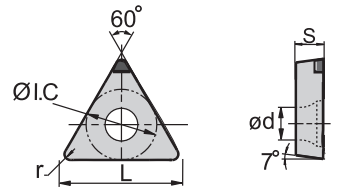
System code A40 | Grade selection A146 | Technical info A447 | Cutting data A324

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

TCGW	L	I.C	S	d
11 02	11	6.35	2.38	2.8
16 T3	16.5	9.525	3.97	4.4

Turning PKD inserts

TC** positive insert



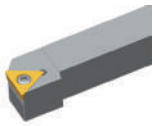
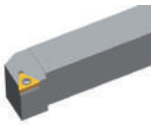
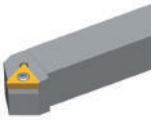
	ISO	r	a_p	f	YCD421
	**TCGW110208****	0.8	0.08-0.50	0.05-0.25	○
	TCGW16T302**	0.2	0.08-0.50	0.05-0.15	○
	TCGW16T304**	0.4	0.08-0.50	0.05-0.20	○

P K N H — DP — ○

● Ex stock ○ On demand

DP Polycrystalline diamond

Tool holder

STACR/L	STFCR/L	STGCR/L	STTCR/L	STFCR/L	STFCR/L
Kr: 90°	Kr: 91°	Kr: 91°	Kr: 60°	Kr: 91°	Kr: 90°
					
A249	A250	A251	A252	A300	A319

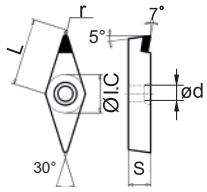
System code A40 Grade selection A146 Technical info A447 Cutting data A324

Turning PKD inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

VBGT	L	I.C	S	d
16 04	16.6	9.525	4.76	4.4

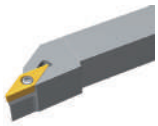
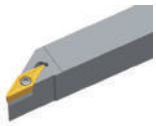
VB** positive insert



					DP
	ISO	r	a_p	f	YCD421
	P				
	K				
	N				○
	H				
	**VBGT160402****	0.2	0.08-0.50	0.05-0.15	○
	VBGT160404**	0.4	0.08-0.50	0.05-0.20	○
	VBGT160408**	0.8	0.08-0.50	0.05-0.25	○

● Ex stock ○ On demand DP Polycrystalline diamond

Tool holder

SVJBR/L	SVABR/L	SVVBN	SVQBR/L	SVUBR/L
Kr: 93°	Kr: 90°	Kr: 72°30'	Kr: 107°30'	Kr: 93°
				
A240	A241	A242	A304	A305

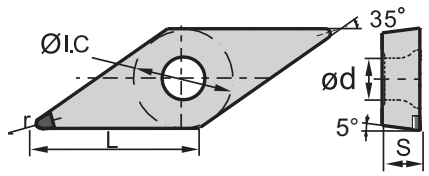
System code A40 Grade selection A146 Technical info A447 Cutting data A324

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

VBGW	L	I.C	S	d
16 04	16.6	9.525	4.76	4.4

Turning PKD inserts

VB** positive insert



	ISO	r	a_p	f	YCD421
	**VBGW160404****	0.4	0.08-0.50	0.05-0.20	○
	VBGW160408**	0.8	0.08-0.50	0.05-0.25	○

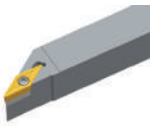
P
K
N ●
H

DP

● Ex stock ○ On demand

DP Polycrystalline diamond

Tool holder

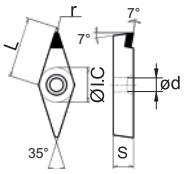
SVJBR/L	SVABR/L	SVVBN	SVQBR/L	SVUBR/L
Kr: 93°	Kr: 90°	Kr: 72°30'	Kr: 107°30'	Kr: 93°
				
A240	A241	A242	A304	A305

System code A40 | Grade selection A146 | Technical info A447 | Cutting data A324

Turning PKD inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

VCGT	L	I.C	S	d
16 04	16.6	9.525	4.76	4.4

VC** positive insert					
					
	ISO	r	a_p	f	YCD421
	**VCGT160402****	0.2	0.08-0.50	0.05-0.15	○
	VCGT160404**	0.4	0.08-0.50	0.05-0.20	○
	VCGT160408**	0.8	0.08-0.50	0.05-0.25	○

	DP
P	
K	
N	○
H	

● Ex stock ○ On demand DP Polycrystalline diamond

Tool holder

SVVCN	SVJCR/L	SVUCR/L
Kr: 72°30'	Kr: 93°	Kr: 93°
		
A243	A244	A322

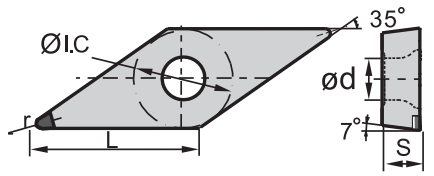
System code A40 Grade selection A146 Technical info A447 Cutting data A324

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

VCGW	L	I.C	S	d
16 04	16.6	9.525	4.76	4.4

Turning PKD inserts

VC** positive insert



		ISO	r	a_p	f	YCD421
P						
K						
N						○
H						
		**VCGW160404****	0.4	0.08-0.50	0.05-0.20	○
		VCGW160408**	0.8	0.08-0.50	0.05-0.25	○

● Ex stock ○ On demand

DP Polycrystalline diamond

Tool holder

SVVCN	SVJCR/L	SVUCR/L
Kr: 72°30'	Kr: 93°	Kr: 93°
		
A243	A244	A322

System code A40 Grade selection A146 Technical info A447 Cutting data A324

Trouble shooting – PCBN & PCD

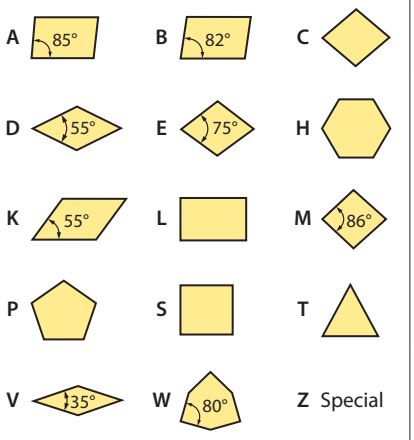
Type of wear	Countermeasure	
	Geometry	Cutting condition
Flank wear	– Sharper cutting edge for reduced cutting force – Smaller negative chamfer – Use positive inserts	– Reduce cutting speed – Increase feed rate to reduce operation time
Notch wear	– Bigger radius	– Use "method of altering feed rate"
Crater wear/breakage due to crater wear	– Sharper cutting edge for reduced cutting force	– Reduce cutting speed – Increase feed rate to minimise operation time and to increase distance between cutting edge and crater
Chipping due to rough condition or vibration	– Bigger negative chamfer angle and/or honed chamfer	– Increase feed rate to reduce number of hits
Flaking	– Sharper cutting edge to reduce cutting force – Smaller negative chamfer – Use positive inserts	– Increase feed rate to reduce operation time
Thermal crack/breakage	– Sharper cutting edge for reduced cutting force – Smaller negative chamfer – Use positive inserts	– Reduce cutting speed, feed rate and depth of cut – Dry machining
Chipping	– Bigger negative chamfer	– Increase cutting speed to reduce cutting force

For investigation please send us the used inserts. If breakage is the problem please use inserts only 80–90 % of expected tool life because broken inserts almost have no information.

General turning ISO code – ceramic inserts

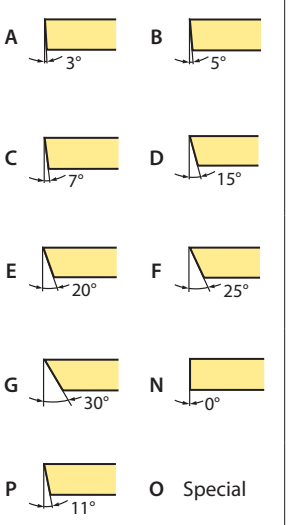
T	N	G	A	12	04	08	T	020	20
1	2	3	4	5	6	7	8	9	10

Insert shape



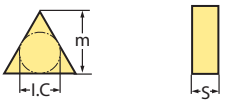
1

Clearance angle



2

Tolerance class

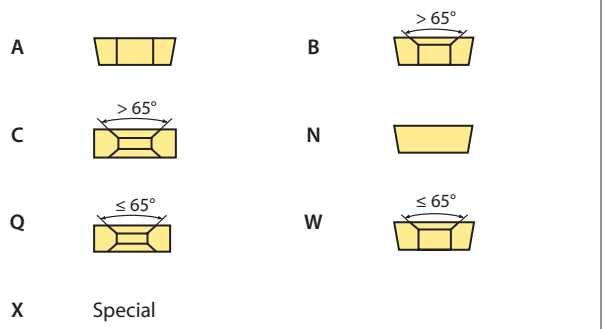


Code	I.C [mm]	m [mm]	S [mm]
A	±0,025	±0,005	±0,025
C	±0,025	±0,013	±0,025
E	±0,025	±0,025	±0,025
F	±0,013	±0,005	±0,025
G	±0,025	±0,025	±0,130
H	±0,013	±0,013	±0,025
J	±0,05–0,15	±0,005	±0,025
K	±0,05–0,15	±0,013	±0,025
L	±0,05–0,15	±0,025	±0,025
M	±0,05–0,15	±0,08–0,20	±0,130
N	±0,05–0,15	±0,08–0,20	±0,025
U	±0,08–0,25	±0,13–0,38	±0,130

3

Fastening features (metric)

Insert shape



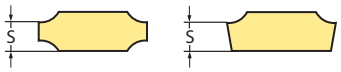
4

Cutting edge length l [mm]

I.C [mm]	Insert shape C	D	S	T	V	W
3,97				06		
5,0						
5,56				09		
6,0						
6,35	06	07		11	11	
8,0						
9,525	09	11	09	16	16	06
10,0						
12,0						
12,7	12	15	12	22	22	08
15,875	16		15	27		
16,0		19				
19,05	19		19	33		
20,0						
25,0	25	25				
25,4			25			
31,75						
32						

5

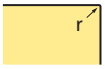
Insert thickness S [mm]



Code	S	Code	S
02	2,38	**06**	6,35
T2	2,58	**T6**	6,75
03	3,18	**07**	7,94
T3	3,97	**09**	9,52
04	4,76	**T9**	9,72
T4	4,96	**11**	11,11
05	5,56	**12**	12,70
T5	5,95		

6

Nose radius r [mm]



Code	r
00	–
02	0,2
04	0,4
08	0,8
12	1,2
16	1,6
20	2,0
24	2,4
32	3,2
X	Special
MO	Plaquettes rondes

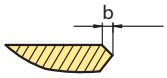
7

Cutting edge profile

Code	Cutting edge	Insert shape
E	Rounding	
F	Sharp edge	
T	Chamfer	
S	Chamfer + Rounding	

8

Chamfer width b [mm]



Code	b
010	0,10
015	0,15
020	0,20
025	0,25
030	0,30
035	0,35
040	0,40
045	0,45
050	0,50
100	1,00
200	2,00

9

Angle du chanfrein α



Code	α
05	5°
10	10°
15	15°
20	20°
25	25°
30	30°

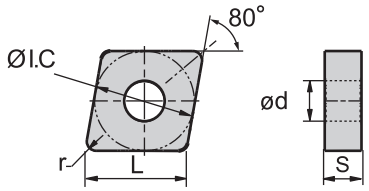
10

Turning ceramic inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

CNGA	L	I.C	S	d
12 04	12.9	12.7	4.76	5.16
16 06	16.1	15.875	6.35	6.35

CN** negative insert



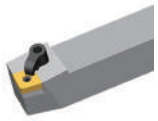
	CM	CN
P	○	
K	○	○ ✲
N		
H		

	ISO	r	a_p	f	CA1000	CN1000	CN2000
	**CNGA120404T02020**	0.4	0.5-2.0	0.15-0.40		●	
	CNGA120408T02020	0.8	0.5-5.0	0.2-0.6	●	○	
	CNGA120412T02020	1.2	1-4	0.2-0.6		●	
	CNGA120412T03020	1.2	0.5-2.0	0.15-0.40		○	
	CNGA160612T02020	1.2	2-5	0.15-0.40		●	
	CNGA160616T02020	1.6	2-5	0.15-0.40		●	

● Ex stock ○ On demand

CM Mixed ceramic
CN Si3N4 Ceramic

Tool holder

MCBNR/L	MCLNR/L
Kr: 75°	Kr: 95°
	
A218	A219

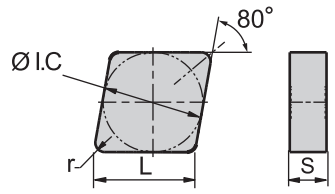
System code A40 | Grade selection A174 | Technical info A447 | Cutting data A324

CNGN	L	I.C	S
12 04	12.9	12.7	4.76
12 07	12.9	12.7	7.94
16 04	16.1	15.875	4.76
16 06	16.1	15.875	6.35

Turning ceramic inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

CN** negative insert



	CM	CN
P	○	
K	○	○ ◉
N		
H		

	ISO	r	a_p	f	CA1000	CN1000	CN2000
	**CNGN120404T02020**	0.4	0.5-4.0	0.15-0.50	○		
	CNGN120408T02020	0.8	1-5	0.2-0.6	●	●	●
	CNGN120412T02020	1.2	1-4	0.2-0.6	○	●	●
	CNGN120708T02020	0.8	0.5-2.0	0.2-0.5	○	●	●
	CNGN120712T02020	1.2	1-4	0.2-0.6	●	○	○
	CNGN120716T02020	1.6	0.5-2.0	0.2-0.6	○	○	○
	CNGN160408T02020	0.8	0.5-2.0	0.2-0.5	○		
	CNGN160612T02020	1.2	0.5-4.0	0.15-0.60	○	○	
	CNGN160616T02020	1.6	2-5	0.2-0.6	○	○	

● Ex stock ○ On demand

CM Mixed ceramic
CN Si3N4 Ceramic

Tool holder
CCLNR/L
Kr: 95°

A258

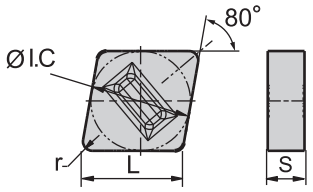
System code A40 | Grade selection A174 | Technical info A447 | Cutting data A324

Turning ceramic inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

CNGX	L	I.C	S
12 07	12.9	12.7	7.94

CN** negative insert



		ISO	r	a_p	f	CM CA1000	CN CN1000	CN CN2000
P								
K								
N								
H								
Medium Cut	**CNGX120712T02020**		1.2	1-4	0.2-0.6		●	
	CNGX120716T02020		1.6	0.5-2.0	0.2-0.6		○	

● Ex stock ○ On demand

CM Mixed ceramic
CN Si3N4 Ceramic

Tool holder
JCLNR/L
Kr: 95°



A266

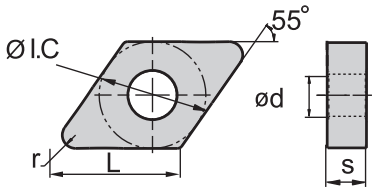
System code A40 Grade selection A174 Technical info A447 Cutting data A324

Turning ceramic inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

DNGA	L	I.C	S	d
15 06	15.5	12.7	6.35	5.16

DN** negative insert



	CM	CN
P	○	
K	○	○ ✳
N		
H		

	ISO	r	a_p	f	CA1000	CN1000	CN2000
	**DNGA150604T02020**	0.4	0.5-2.0	0.15-0.40		○	
	DNGA150608T02020	0.8	0.5-2.0	0.2-0.5		●	
	DNGA150612T02020	1.2	1-4	0.2-0.6		○	
	DNGA150616T02020	1.6	2-5	0.2-0.6		○	

● Ex stock ○ On demand

CM Mixed ceramic
CN Si3N4 Ceramic

Tool holder

MDJNR/L	MDPNN
Kr: 93°	Kr: 62°30'
	
A220	A221

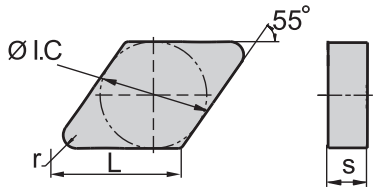
System code A40 | Grade selection A174 | Technical info A447 | Cutting data A324

Turning ceramic inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

DNGN	L	I.C	S
15 04	15.5	12.7	4.76
15 07	15.5	12.7	7.94

DN** negative insert



	CM	CN
P	○	
K	○	○ ✲
N		
H		

	ISO	r	a_p	f	CA1000	CN1000	CN2000
 Medium Cut	**DNGN150408T02020**	0.8	0.5-2.0	0.2-0.5	○		
	DNGN150412T02020	1.2	1-4	0.2-0.6	○		
	DNGN150704T02020	0.4	0.5-2.0	0.15-0.40	○	○	○
	DNGN150708T02020	0.8	0.5-2.0	0.2-0.5	●	○	○
	DNGN150712T02020	1.2	0.5-4.0	0.15-0.60	○	○	○
	DNGN150716T02020	1.6	2-5	0.2-0.6	○		

● Ex stock ○ On demand

CM Mixed ceramic
CN Si3N4 Ceramic

Tool holder
CDJNR/L
Kr: 93°

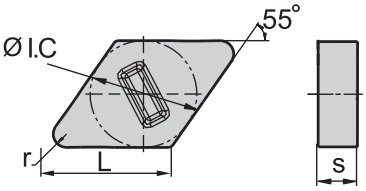
A260

System code A40 | Grade selection A174 | Technical info A447 | Cutting data A324

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

DNGX	L	I.C	S
15 07	15.5	12.7	7.94

Turning ceramic inserts

DN** negative insert					CM	CN	
				P	○		
				K	●	● ◉	
				N			
				H			
ISO		r	a_p	f	CA1000	CN1000	CN2000
 Medium Cut	**DNGX150712T02020**	1.2	1-4	0.2-0.6		○	
	DNGX150716T02020	1.6	2-5	0.2-0.6		○	

● Ex stock ○ On demand

CM Mixed ceramic
CN Si3N4 Ceramic

Tool holder
JDJNR/L
Kr: 93°

A267

A Turning
B Milling
C Drilling
D Technical Information
E Index

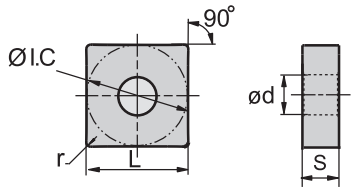
System code A40 | Grade selection A174 | Technical info A447 | Cutting data A324

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SNGA	L	I.C	S	d
12 04	12.7	12.7	4.76	5.16

Turning ceramic inserts

SN** negative insert



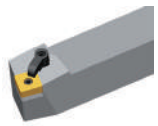
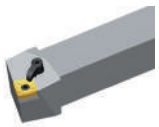
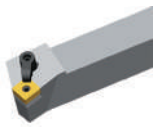
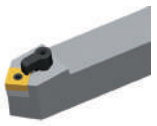
					CM	CN	
						CN1000	CN2000
P					○		
K					○	○	●
N							
H							
ISO		r	a_p	f	CA1000		
	SNGA120408T02020	0.8	0.5-2.0	0.2-0.5		○	
	SNGA120412T02020	1.2	1-4	0.2-0.6		○	



● Ex stock ○ On demand

CM Mixed ceramic
CN Si3N4 Ceramic

Tool holder

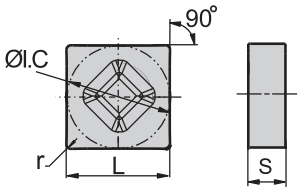
MSBNR/L	MSRNR/L	MSKNR/L	MSDNN
Kr: 75°	Kr: 75°	Kr: 75°	Kr: 45°
			
A222	A223	A224	A225

System code A40 Grade selection A174 Technical info A447 Cutting data A324

Turning ceramic inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SNGX	L	I.C	S
12 07	12.7	12.7	7.94

SN** negative insert						CM	CN		
					P	○			
					K	○	○	○	
					N				
					H				
	ISO		r	a_p	f	CA1000	CN1000	CN2000	
 Medium Cut	**SNGX120712T02020**		1.2	1-4	0.2-0.6		○		
	SNGX120716T02020		1.6	0.5-2.0	0.2-0.6		○		

● Ex stock ○ On demand

CM Mixed ceramic
CN Si3N4 Ceramic

Tool holder
JSDNN
Kr: 45°



A268

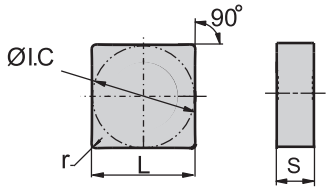
System code A40 | Grade selection A174 | Technical info A447 | Cutting data A324

SNGN	L	I.C	S
12 04	12.7	12.7	4.76
12 07	12.7	12.7	7.94
15 07	15.875	15.875	7.94
19 07	19.05	19.05	7.94

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

Turning ceramic inserts

SN** negative insert



	CM	CN
P	○	
K	○	○ ●
N		
H		

ISO	r	a_p	f	CA1000	CN1000	CN2000
SNGN120404T02020	0.4	0.5-2.0	0.15-0.40	○		
SNGN120408T02020	0.8	0.5-2.0	0.2-0.5	○	●	
SNGN120412T02020	1.2	1-4	0.2-0.6	○	○	○
SNGN120416T02020	1.6	0.5-5.0	0.2-0.6	○	○	○
SNGN120704T02020	0.4	0.5-2.0	0.15-0.40	●		
SNGN120708T02020	0.8	0.5-4.0	0.2-0.6	○	○	
SNGN120712T02020	1.2	1-5	0.2-0.6	○	●	
SNGN120716T02020	1.6	1-5	0.2-0.6	○		○
SNGN150708T02020	0.8	0.5-2.0	0.2-0.5	○		
SNGN150712T02020	1.2	1-4	0.2-0.6	●	○	○
SNGN150716T02020	1.6	0.5-2.0	0.2-0.6	●	○	○
SNGN190716T03020	1.6	2-5	0.2-0.6	○		

● Ex stock ○ On demand

CM Mixed ceramic
CN Si3N4 Ceramic

Tool holder

CSKNR/L	CSRNR/L	CSDNN
Kr: 75°	Kr: 75°	Kr: 45°
		
A262	A263	A265

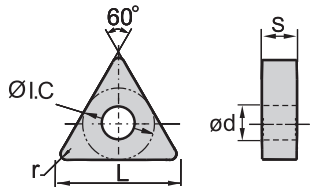
System code A40 Grade selection A174 Technical info A447 Cutting data A324

Turning ceramic inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TNGA	L	I.C	S	d
16 04	16.5	9.525	4.76	3.86
22 04	22	12.7	4.76	5.16

TN** negative insert



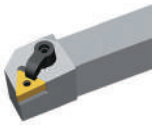
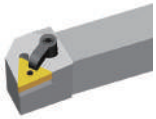
	CM	CN
P	○	
K	○	○ ✳
N		
H		

	ISO	r	a_p	f	CA1000	CN1000	CN2000
	**TNGA160404T01020**	0.4	2-5	0.15-0.40		●	
	TNGA160408T02020	0.8	2-5	0.2-0.5		●	
	TNGA160412T02020	1.2	1-4	0.2-0.6		●	
	TNGA220408T02020	0.8	2-5	0.2-0.5		○	
	TNGA220412T02020	1.2	2-5	0.2-0.6		○	
	TNGA220416T02020	1.6	2-5	0.2-0.6		○	

● Ex stock ○ On demand

CM Mixed ceramic
CN Si3N4 Ceramic

Tool holder

MTGNR/L	MTJNR/L	MTJNR/L-Z	MTFNR/L
Kr: 90°	Kr: 93°	Kr: 93°	Kr: 91°
			
A226	A227	A228	A229

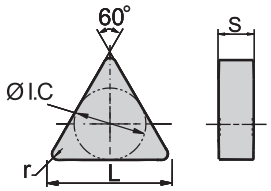
System code A40 | Grade selection A174 | Technical info A447 | Cutting data A324

TNGN	L	I.C	S
16 04	16.5	9.525	4.76
16 07	16.5	9.525	7.94
22 04	22	12.7	4.76

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Turning ceramic inserts

TN** negative insert



	ISO	r	a_p	f	CM CA1000	CN CN1000	CN CN2000
Medium Cut	**TNGN160404T02020**	0.4	0.5-4.0	0.15-0.50	○		
	TNGN160408T02020	0.8	0.5-5.0	0.2-0.6	○	○	
	TNGN160412T02020	1.2	1-5	0.2-0.6	○	○	○
	TNGN160708T02020	0.8	0.5-2.0	0.2-0.5		○	○
	TNGN160712T02020	1.2	1-4	0.2-0.6	○		
	TNGN220408T02020	0.8	0.5-2.0	0.2-0.5	○	○	
	TNGN220412T02020	1.2	1-4	0.2-0.6	○	○	
	TNGN220416T02020	1.6	2-5	0.2-0.6	○	○	

● Ex stock ○ On demand

CM Mixed ceramic
CN Si3N4 Ceramic

Tool holder

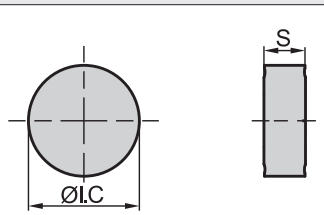
CTJNR/L	CTUNR/L
Kr: 93°	Kr: 93°
	
A259	A261

System code A40 Grade selection A174 Technical info A447 Cutting data A324

RNGN	I.C	S
09 04	9.53	4.76
12 04	12.7	4.76
12 07	12.7	7.94
15 07	15.875	7.94
19 07	19.05	7.94
25 10	25.4	10.05

Turning ceramic inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

RN** negative insert				CM	CN		
			P	○			
			K	○	○	⊛	
			N				
			H				
ISO		a_p	f	CA1000	CN1000	CN2000	
	**RNGN090400T02020**	0.5-2.0	0.2-0.5	○			
	RNGN120400T02020	0.5-2.0	0.2-0.5	○	○	●	
	RNGN120700T02020	0.5-2.0	0.2-0.5	●	●	●	
	RNGN150700T02020	0.5-2.0	0.2-0.5	○			
	RNGN190700T03020	0.5-2.0	0.2-0.5	○		●	
	RNGN251000T05020	0.5-2.0	0.2-0.5	○			

● Ex stock ○ On demand

CM Mixed ceramic
CN Si3N4 Ceramic

Tool holder
CRDNN



A264

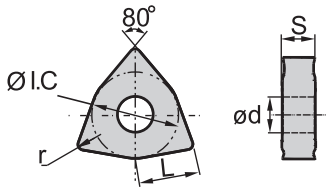
System code A40 | Grade selection A174 | Technical info A447 | Cutting data A324

Turning ceramic inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

WNGA	L	I.C	S	d
08 04	8.69	12.7	4.76	5.16

WN** negative insert



	CM	CN
P	○	
K	○	● ✲
N		
H		

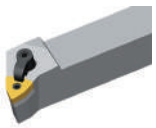
ISO	r	a_p	f	CA1000	CN1000	CN2000
WNGA080408T02020	0.8	0.5-2.0	0.2-0.5		●	
WNGA080412T02020	1.2	2-5	0.2-0.6		●	
WNGA080416T02020	1.6	2-5	0.2-0.6		●	



● Ex stock ○ On demand

CM Mixed ceramic
CN Si3N4 Ceramic

Tool holder
MWLNR/L
Kr: 95°



A232

System code A40 | Grade selection A174 | Technical info A447 | Cutting data A324

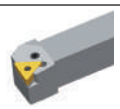
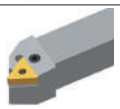
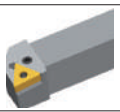
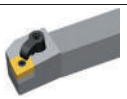
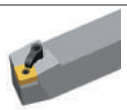
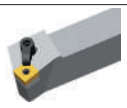
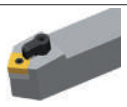
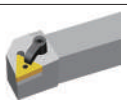
Notes

External turning tool holders

	Tool holder	Application: External machining	Facing	Profiling	Profiling	Profiling	Workpiece: Stable	Unstable	Page
D	DCLNR/L 95°	●	●				●		A197
	DDJNR/L 93°			●	●	●	●	●	A198
	DSBNR/L 75°	●					●		A199
	DTGNR/L 91°	●					●		A200
	DVVNN 72.5°					●	●		A201
	DVJNR/L 93°			●	●		●	●	A202
	DWLNR/L 95°	●	●				●		A203
P	PCBNR/ L 75°	●					●		A204
	PCLNR/ L 95°	●	●				●		A205
	PDJNR/ L 93°			●	●	●	●	●	A206
	PDNNR/ L 63°					●	●		A207
	PSBNR/ L 75°	●					●		A208
	PSDNN 45°	●				●	●		A210
	PSKNR/ L 75°		●				●		A211
	PSSNR/ L 45°	●	●				●		A212

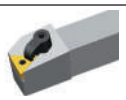
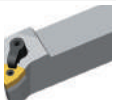
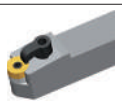
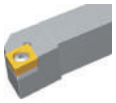
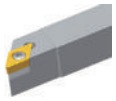
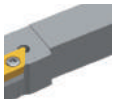
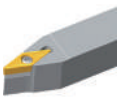
● Recommended

External turning tool holders

	Tool holder		Application					Workpiece		Page
			External machining	Facing	Profiling	Profiling	Profiling	Stable	Unstable	
P	PTFNR/L 91°			●				●		A213
P	PTTNR/L 60°		●					●		A214
P	PTGNR/L 90°		●					●		A215
P	PWLNR/L 95°		●	●				●		A217
M	MCBNR/L 75°		●					●		A218
M	MCLNR/L 95°		●	●				●		A219
M	MDJNR/L 93°				●	●	●	●	●	A220
M	MDPNN 62.5°						●	●		A221
M	MSBNR/L 75°		●					●		A222
M	MSRNR/L 75°		●					●		A223
M	MSKNR/L 75°			●				●		A224
M	MSDNN 45°						●	●		A225
M	MTGNR/L 90°		●					●		A226
M	MTJNR/L 93°		●					●		A227
M	MTJNR/L-Z 93°			●		●		●		A228

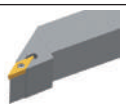
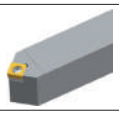
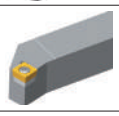
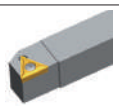
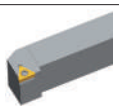
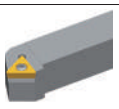
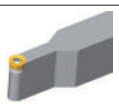
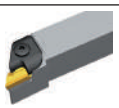
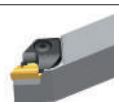
● Recommended

External turning tool holders

	Tool holder		Application					Workpiece		Page
			External machining	Facing	Profiling	Profiling	Profiling	Stable	Unstable	
M	MTFNR/L 91°			●				●		A229
M	MVVNN 72,5°						●	●		A230
M	MVJNR/L 93°				●	●		●	●	A231
M	MWLNR/L 95°		●	●				●		A232
M	MRGNR/L -				●			●		A234
M	MRDNN -						●	●		A233
S	SCACR/L 90°		●					●	●	A235
S	SCLCR/L 95°		●	●				●	●	A236
S	SDACR/L 90°					●		●	●	A237
S	SDJCR/L 93°		●			●		●	●	A238
S	SDNCN 63°						●	●	●	A239
S	SVJBR/L 93°		●			●		●	●	A240
S	SVABR/L 90°		●			●		●	●	A241
S	SVVBN 72,5°						●	●	●	A242
S	SVVCN 72,5°						●	●	●	A243

● Recommended

External turning tool holders

	Tool holder		Application					Workpiece		Page
			External machining	Facing	Profiling	Profiling	Profiling	Stable	Unstable	
S	SVJCR/L 93°		●			●		●	●	A244
	SSBCR/L 75°		●					●		A245
	SSDCN 45°						●	●		A246
	SSKCR/L 75°			●				●		A247
	SSSCR/L 45°		●					●		A248
	STACR/L 90°		●					●	●	A249
	STFCR/L 91°			●				●		A250
	STGCR/L 91°		●					●	●	A251
	STTCR/L 60°		●					●		A252
	SWACR/L 90°		●					●	●	A253
	SRDCN -						●	●		A254
	SRGCR/L -				●			●		A255
C	CKJNR/L 93°		●			●		●		A256
	CKNNR/L 63°						●	●		A257

● Recommended

General turning ISO code – external tool holders

P	C	L	N	L	25	25	M	12
1	2	3	4	5	6	7	8	9

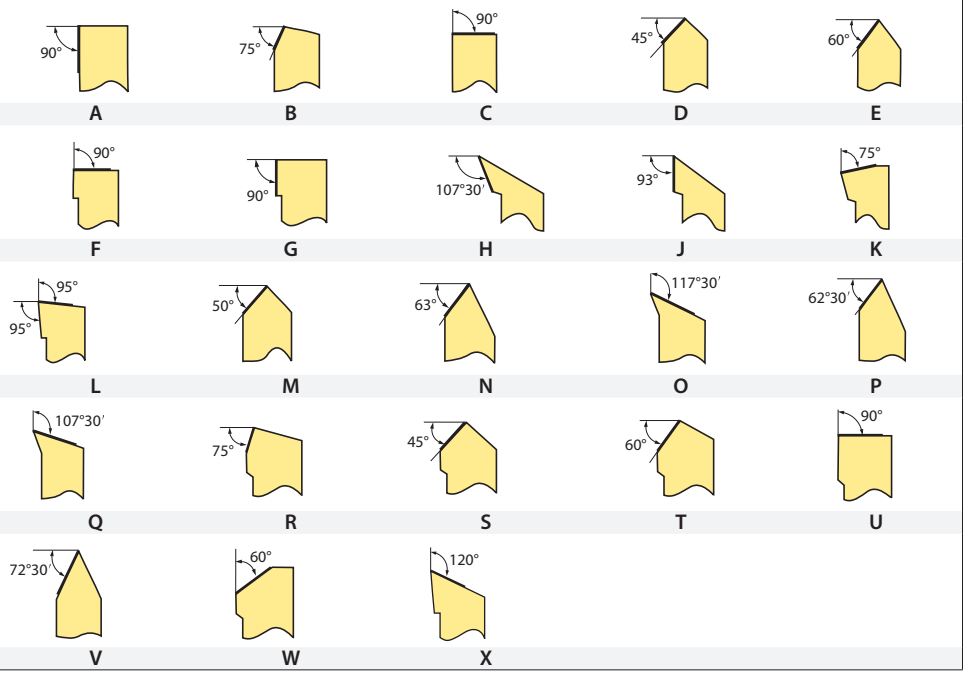
1 Clamping system

Code	Description	
P	Système de serrage à levier	
M	Serrage à bride et levier	
S	Système de serrage à vis	
C/J	Serrage par bride	
D	Serrage double	

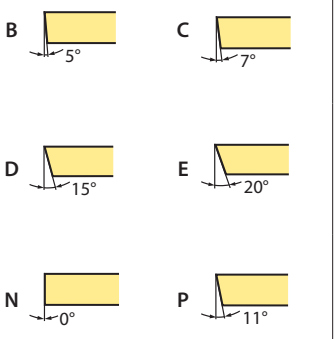
2 Insert shape

C	
D	
R	
S	
T	
V	
W	

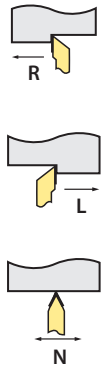
3 Tool holder type and entering angle



4 Clearance angle

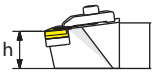


Cutting direction



5

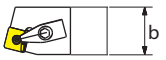
Shank height h [mm]



Code	h
12	12
16	16
20	20
25	25
32	32
40	40
50	50

6

Shank width b [mm]



Code	b
12	12
16	16
20	20
25	25
32	32
40	40
50	50

7

Holder length L [mm]



Code	L
H	100
K	125
M	150
P	170
Q	180
R	200
S	250
T	300

8

Cutting edge length l [mm]

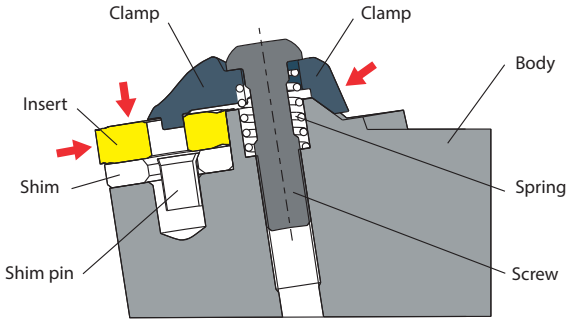
I.C [mm]	Insert shape						
	C	D	R	S	T	V	W
5,56					**09**		
6,35	**06**	**07**			**11**		
9,525	**09**	**11**	**09**	**09**	**16**	**16**	**06**
12,7	**12**	**15**	**12**	**12**	**22**	**22**	**08**
15,875	**16**	**19**	**15**	**15**	**27**		
19,05	**19**		**19**	**19**	**33**		
25,4	**25**		**25**	**25**	**44**		
32			**32**				

9

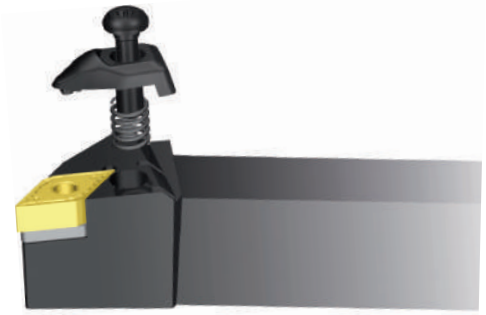
Double clamping tool holder

D-Type clamp tool holder

Double clamping system in one operation. The special designed clamping finger enables a stable holding of the inserts, with high accuracy and clamping force for better tool life and higher machining accuracy.

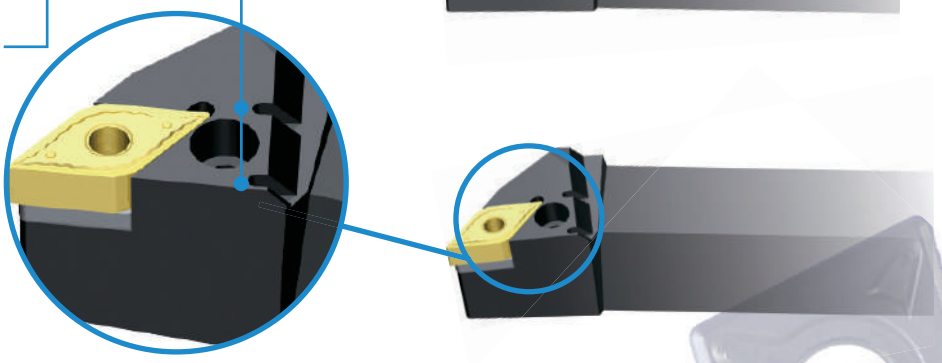


Best indexing accuracy, high clamping force



Stable tool life by secure clamping

Good anti-corrosive and wear-resistance



Special clamp nose design for more stability and high clamping accuracy

Special design

Double guiding surface

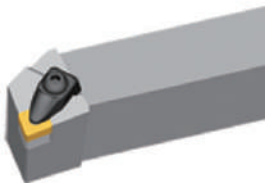


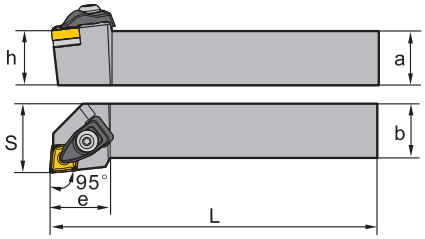


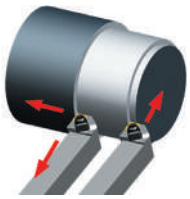


CN** holder (external) D-Clamping

DCLNR/L Kr: 95°







Article	✲	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
DCLNR/L1616H09		●	○	16	16	100	16	20	24	CN**0903**
DCLNR/L2020K09		●	●	20	20	125	20	25	24	CN**0903**
DCLNR/L2525M09		●	●	25	25	150	25	32	24	CN**0903**
DCLNR/L2020K12		●	●	20	20	125	20	25	28	CN**1204**
DCLNR/L2525M12		●	●	25	25	150	25	32	28	CN**1204**
DCLNR/L3225P12		●	●	32	25	170	32	32	28	CN**1204**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	CN**0903**	CN**1204**
	h	16-25	20-32
	Clamp	C1RA	C2RA
	Screw (clamp)	CM5x22C (4.0 Nm)	CM6x25C (7.0 Nm)
	Screw (shim)	SM5x8.65XA1	SM6×10XA1
	Shim	C09BM	C12BM
	Spring	SPR6	SPR4
	Wrench (shim)	WH30L	WH40L
	Wrench (clamp)	WH30L	WH40L

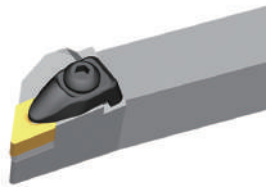
Insert

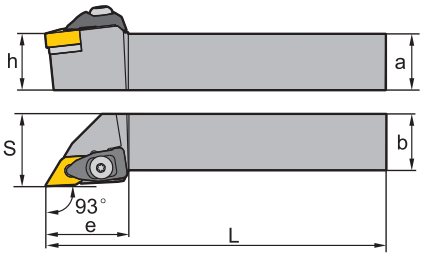
Wiper	Finishing	Medium Cut	Roughing	Cast Iron	PCBN/PCD
A45	A45	A46	A53	A53	A148

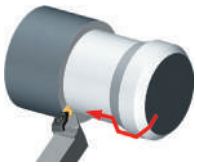
System code A194 Grade selection A40 Technical info A447 Cutting data A324

DN** holder (external) D-Clamping

DDJNR/L Kr: 93°







Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
DDJNR/L1616H11		●	●	16	16	100	16	20	30	DN**1104**
DDJNR/L2020K11		●	●	20	20	125	20	25	30	DN**1104**
DDJNR/L2525M11		●	●	25	25	150	25	32	30	DN**1104**
DDJNR/L3225P11		○	○	32	25	170	32	32	30	DN**1104**
DDJNR/L2020K15		●	●	20	20	125	20	25	35	DN**1506**
DDJNR/L2525M15		●	●	25	25	150	25	32	35	DN**1506**
DDJNR/L3232P15		●	●	32	32	170	32	40	35	DN**1506**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	DN**1104**	DN**1506**
	h	16-32	20-32
	Clamp	C1RA	C2RA
	Screw (clamp)	CM5x22C (4.0 Nm)	CM6x25C (7.0 Nm)
	Screw (shim)	SM5x8.65XA1	SM6×10XA1
	Shim	D11BM	D15BM
	Spring	SPR6	SPR4
	Wrench (shim)	WH30L	WH40L
	Wrench (clamp)	WH30L	WH40L

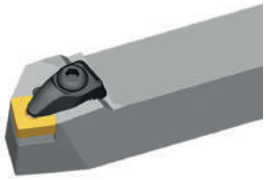
Insert

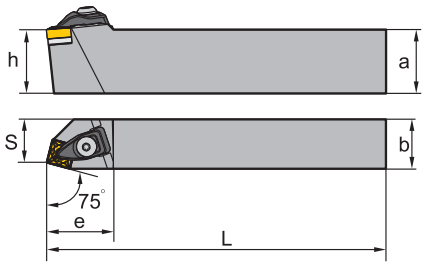
Wiper	Finishing	Medium Cut	Roughing	Cast Iron	PCBN/PCD
A55	A55	A56	A60	A61	A149

System code > A194 Grade selection > A40 Technical info > A447 Cutting data > A324

SN** holder (external) D-Clamping

DSBNR/L Kr: 75°







Article	✲	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
DSBNR/L1616H09		○	○	16	16	100	16	13	26	SN**0903**
DSBNR/L2020K12		●	●	20	20	125	20	17	34	SN**1204**
DSBNR/L2525M12		●	●	25	25	150	25	22	34	SN**1204**
DSBNR/L3225P12		●	●	32	25	170	32	22	34	SN**1204**
DSBNR/L3232P15		●	●	32	32	170	32	27	41	SN**1506**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	SN**0903**	SN**1204**	SN**1506**
	h	16	20-32	32
	Clamp	C1RA	C2RA	C3RA
	Screw (clamp)	CM5x22C (4.0 Nm)	CM6x25C (7.0 Nm)	CM6x25C (7.0 Nm)
	Screw (shim)	SM5x8.65XA1	SM6×10XA1	SM6×10XA2
	Shim	S09BM	S12BM	S15BM
	Spring	SPR6	SPR4	SPR4
	Wrench (shim)	WH30L	WH40L	WH40L
	Wrench (clamp)	WH30L	WH40L	WH40L

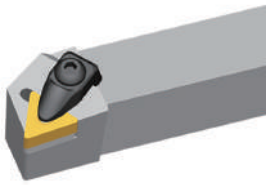
Insert

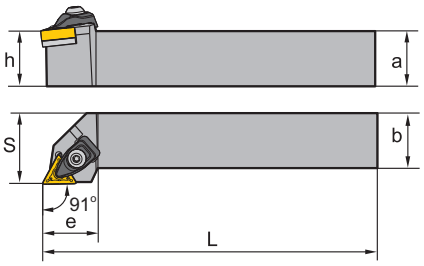
Finishing	Medium Cut	Roughing	Cast Iron	PCBN/PCD
A63	A65	A68	A74	A150

System code A194 Grade selection A40 Technical info A447 Cutting data A324

TN** holder (external) D-Clamping

DTGNR/L Kr: 91°







Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
DTGNR/L1616H16		●	●	16	16	100	16	20	25	TN**1604**
DTGNR/L2020K16		●	●	20	20	125	20	25	25	TN**1604**
DTGNR/L2525M16		●	●	25	25	150	25	32	25	TN**1604**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	TN**1604**
	h	**16-25**
	Clamp	C1RA
	Screw (clamp)	CM5x22C (4.0 Nm)
	Screw (shim)	SM5x8.65XA1
	Shim	T16BM
	Spring	SPR6
	Wrench (shim)	WH30L
	Wrench (clamp)	WH30L

Insert

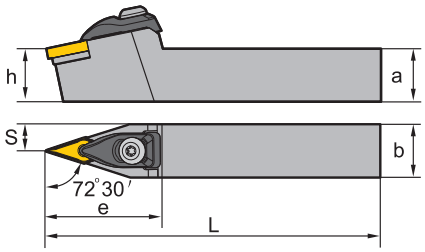
					
Wiper	**Finishing**	**Medium Cut**	**Roughing**	**Cast Iron**	**PCBN/PCD**
A78	A79	A81	A84	A88	A151

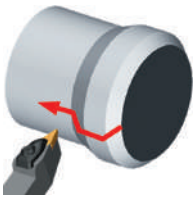
System code A194 Grade selection A40 Technical info A447 Cutting data A324

VN** holder (external) D-Clamping

DVVNN Kr: 72°30'







Article	✻	Stock	Dimensions [mm]						Inserts
			a	b	L	h	s	e	
DVVNN2020K16		●	20	20	125	20	10	44	VN**1604**
DVVNN2525M16		●	25	25	150	25	12.5	44	VN**1604**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	VN**1604**
	h	20-25
	Clamp	C6RA
	Screw (clamp)	CM5×22C (4.0 Nm)
	Screw (shim)	SM5x8.65XA1
	Shim	V16BM
	Spring	SPR6
	Wrench (shim)	WH30L
	Wrench (clamp)	WH30L

Insert

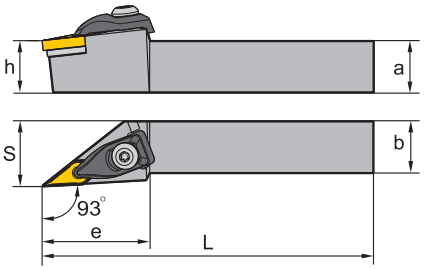
Finishing	Medium Cut	Roughing	Cast Iron	PCBN/PCD
A91	A93	A93	A92	A152

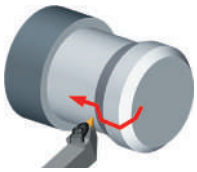
System code A194 Grade selection A40 Technical info A447 Cutting data A324

VN** holder (external) D-Clamping

DVJNR/L Kr: 93°







Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
DVJNR/L2020K16		●	●	20	20	125	20	25	41	VN**1604**
DVJNR/L2525M16		●	●	25	25	150	25	32	41	VN**1604**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	VN**1604**
	h	20-25
	Clamp	C6RA
	Screw (clamp)	CM5x22C (4.0 Nm)
	Screw (shim)	SM5x8.65XA1
	Shim	V16BM
	Spring	SPR6
	Wrench (clamp)	WH30L
	Wrench (shim)	WH30L

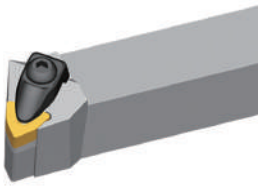
Insert

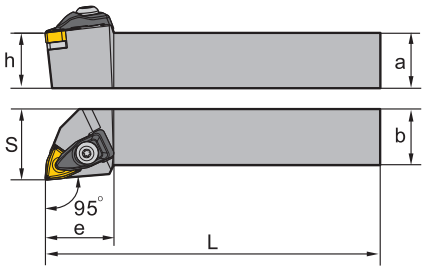
Finishing	Medium Cut	Roughing	Cast Iron	PCBN/PCD
A91	A93	A93	A92	A152

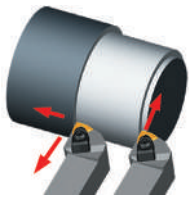
System code A194 Grade selection A40 Technical info A447 Cutting data A324

WN** holder (external) D-Clamping

DWLNR/L Kr: 95°







Article	✲	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
DWLNR/L1616H06		●	●	16	16	100	16	25	24	WN**0604**
DWLNR/L2020K06		●	●	20	20	125	20	25	24	WN**0604**
DWLNR/L2525M06		●	●	25	25	150	25	32	24	WN**0604**
DWLNR/L2020K08		●	●	20	20	125	20	25	31	WN**0804**
DWLNR/L2525M08		●	●	25	25	150	25	32	31	WN**0804**
DWLNR/L3225P08		●	●	32	25	170	32	32	31	WN**0804**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	WN**0604**	WN**0804**
	h	**16-25**	**20-32**
	Clamp	C1RA	C2RA
	Screw (clamp)	CM5×22C (4.0 Nm)	CM6×25C (7.0 Nm)
	Screw (shim)	SM5x8.65XA1	SM6×10XA1
	Shim	W06BM	W08BM
	Spring	SPR6	SPR4
	Wrench (shim)	WH30L	WH40L
	Wrench (clamp)	WH30L	WH40L

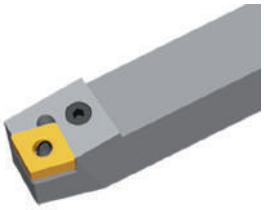
Insert

Wiper	Finishing	Medium Cut	Roughing	Cast Iron	PCBN/PCD
A95	A94	A97	A98	A98	A153

System code A194 Grade selection A40 Technical info A447 Cutting data A324

CN** holder (external) P-Clamping

PCBNR/L Kr: 75°



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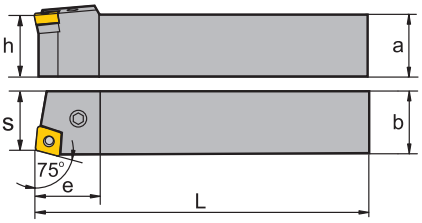




Article	✲	Stock R	Stock L	Dimensions [mm] a	b	L	h	s	e	Inserts
PCBNR/L2020K12		●	●	20	20	125	20	17	27	CN**1204**
PCBNR/L2525M12		●	●	25	25	150	25	22	27	CN**1204**
PCBNR/L3232P12		●	●	32	32	170	32	27	27	CN**1204**
PCBNR/L2525M16		●	●	25	25	150	25	22	33	CN**1606**
PCBNR/L3232P16		●	●	32	32	170	32	27	33	CN**1606**
PCBNR/L3232P19		●	●	32	32	170	32	27	38	CN**1906**
PCBNR/L4040S19		●	●	40	40	250	40	35	38	CN**1906**
PCBNR/L4040S2507		●	●	40	40	250	40	35	50	CN**2507**
PCBNR/L4040S2509		●	●	40	40	250	40	35	50	CN**2509**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	CN**1204**	CN**1606**	CN**1906**	CN**2507**	CN**2509**
	h	20-32	25-32	32-40	40	40
	Knee lever	L4	L5	L6	L8	L8
	Screw	LEM8×21 (10.2 Nm)	LEM8×25 (10.2 Nm)	LEM10×27 (16.6 Nm)		
	Screw				LEM12x36A (25.2 Nm)	LEM12x36A (25.2 Nm)
	Shim	C12AP	C16AP	C19AP	C25AP-07	C25AP
	Shim pin (shim)	SP4	SP5	SP6	SP8	SP8
	Wrench	WH30L	WH30L	WH40L	WH50L	WH50L

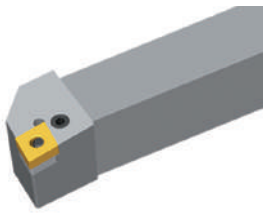
Insert

Wiper	Finishing	Medium Cut	Roughing	Cast Iron	PCBN/PCD
A45	A45	A46	A51	A53	A148

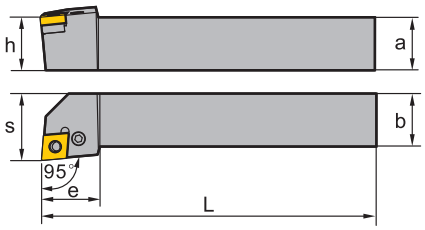
System code A194 Grade selection A40 Technical info A447 Cutting data A324

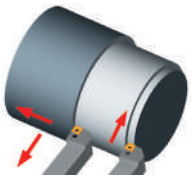
CN** holder (external) P-Clamping

PCLNR/L Kr: 95°



Right hand style





Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
PCLNR/L1616H09		●	●	16	16	100	16	20	20	CN**0903**
PCLNR/L2020K09		●	●	20	20	125	20	25	22	CN**0903**
PCLNR/L2525M09		○	●	25	25	150	25	32	22	CN**0903**
PCLNR/L2020K12		●	●	20	20	125	20	25	28	CN**1204**
PCLNR/L2525M12		●	●	25	25	150	25	32	28	CN**1204**
PCLNR/L3232P12		●	●	32	32	170	32	40	28	CN**1204**
PCLNR/L2525M16		●	●	25	25	150	25	32	33	CN**1606**
PCLNR/L3232P16		●	●	32	32	170	32	40	33	CN**1606**
PCLNR/L3232P19		●	●	32	32	170	32	40	38	CN**1906**
PCLNR/L4040S19		●	●	40	40	250	40	50	38	CN**1906**
PCLNR/L4040S2507		●	●	40	40	250	40	50	49	CN**2507**
PCLNR/L4040S2509		●	●	40	40	250	40	50	49	CN**2509**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	CN**0903**	CN**1204**	CN**1606**	CN**1906**	CN**2507**	CN**2509**
	h	16-25	20-32	25-32	32-40	40	40
	Knee lever	L3	L4	L5	L6	L8	L8
	Screw		LEM8×21 (10.2 Nm)	LEM8×25 (10.2 Nm)	LEM10×27 (16.6 Nm)		
	Screw	LEM6×13.4A (7.0 Nm)				LEM12×36A (25.2 Nm)	LEM12×36A (25.2 Nm)
	Shim	C09AP	C12AP	C16AP	C19AP	C25AP-07	C25AP
	Shim pin (shim)	SP10	SP4	SP5	SP6	SP8	SP8
	Wrench	WH25L	WH30L	WH30L	WH40L	WH50L	WH50L

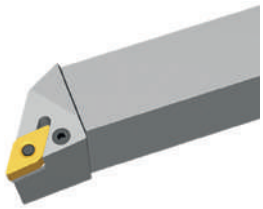
Insert

Wiper	Finishing	Medium Cut	Roughing	Cast Iron	PCBN/PCD
A45	A45	A46	A51	A53	A148

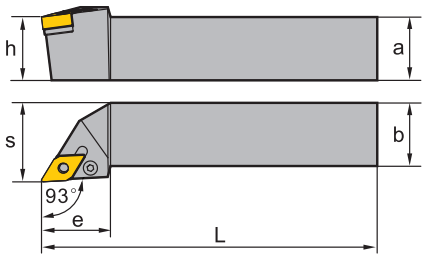
System code A194 Grade selection A40 Technical info A447 Cutting data A324

DN** holder (external) P-Clamping

PDJNR/L Kr: 93°



Right hand style





Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
PDJNR/L1616H11		●	●	16	16	100	16	20	25	DN**1104**
PDJNR/L2020K11		●	●	20	20	125	20	25	25	DN**1104**
PDJNR/L2525M11		●	●	25	25	150	25	32	30	DN**1104**
PDJNR/L2020K15-3		●	○	20	20	125	20	25	35	DN**1504**
PDJNR/L2525M15-3		●	●	25	25	150	25	32	35	DN**1504**
PDJNR/L3232P15-3		●	●	32	32	170	32	40	35	DN**1504**
PDJNR/L2020K15		●	●	20	20	125	20	25	35	DN**1506**
PDJNR/L2525M15		●	●	25	25	150	25	32	35	DN**1506**
PDJNR/L3232P15		●	●	32	32	170	32	40	35	DN**1506**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	DN**1104**	DN**1504**	DN**1506**
	h	16-32	20-32	20-32
	Knee lever	L3	L4	L4B
	Screw		LEM8×21 (10.2 Nm)	LEM8×21 (10.2 Nm)
	Screw	LEM6×13.4A (7.0 Nm)		
	Shim	D11AP	D15AP	D15AP
	Shim pin (shim)	SP3	SP4	SP4
	Wrench	WH25L	WH30L	WH30L

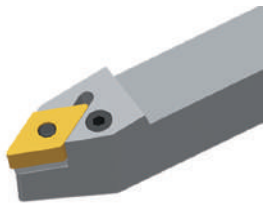
Insert

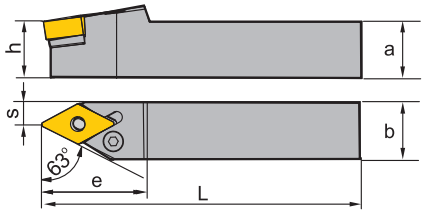
					
Wiper	**Finishing**	**Medium Cut**	**Roughing**	**Cast Iron**	**PCBN/PCD**
A55	A55	A56	A60	A61	A149

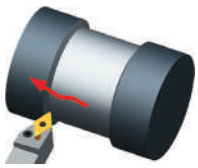
System code A194 Grade selection A40 Technical info A447 Cutting data A324

DN** holder (external) P-Clamping

PDNNR/L Kr: 63°







Left hand style

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
PDNNR/L2020K15-3		●	○	20	20	125	20	8	37	DN**1504**
PDNNR/L2525M15-3		●	○	25	25	150	25	12.5	37	DN**1504**
PDNNR/L3232P15-3		●	●	32	32	170	32	16	37	DN**1504**
PDNNR/L2020K15		●	●	20	20	125	20	8	37	DN**1506**
PDNNR/L2525M15		●	●	25	25	150	25	12.5	37	DN**1506**
PDNNR/L3232P15		●	●	32	32	170	32	16	37	DN**1506**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**DN**1504****	**DN**1506****
	h	**20-32**	**20-32**
	Knee lever	L4	L4B
	Screw	LEM8×21 (10.2 Nm)	LEM8×21 (10.2 Nm)
	Shim	D15AP	D15AP
	Shim pin (shim)	SP4	SP4
	Wrench	WH30L	WH30L

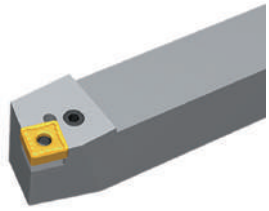
Insert

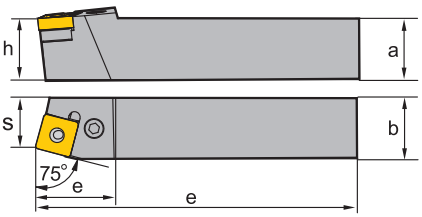
					
Wiper	**Finishing**	**Medium Cut**	**Roughing**	**Cast Iron**	**PCBN/PCD**
A55	A55	A56	A60	A61	A149

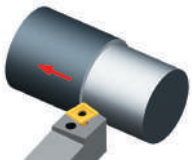
System code A194 Grade selection A40 Technical info A447 Cutting data A324

SN** holder (external) P-Clamping

PSBNR/L Kr: 75°







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] a	b	L	h	s	e	Inserts
PSBNR/L1616H09		●	○	16	16	100	16	13	21	SN**0903**
PSBNR/L2020K09		●	○	20	20	125	20	17	23	SN**0903**
PSBNR/L2020K12		●	●	20	20	125	20	17	28	SN**1204**
PSBNR/L2525M12		●	●	25	25	125	25	22	28	SN**1204**
PSBNR/L3225P12		●	○	32	25	170	32	22	28	SN**1204**
PSBNR/L3232P12		●	○	32	32	170	32	27	28	SN**1204**
PSBNR/L2525M15		●	○	25	25	150	25	22	35	SN**1506**
PSBNR/L3232P15		●	●	32	32	170	32	27	35	SN**1506**
PSBNR/L3232P19		●	●	32	32	170	32	27	40	SN**1906**
PSBNR/L4040S19		●	●	40	40	250	40	35	40	SN**1906**
PSBNR/L4040S2507		○	○	40	40	250	40	35	48	SN**2507**
PSBNR/L4040S2509		○	○	40	40	250	40	35	48	SN**2509**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	SN**0903**	SN**1204**	SN**1506**	SN**1906**	SN**2507**	SN**2509**
	h	16-20	20-32	25-32	32-40	40	40
	Knee lever	L3	L4	L5	L6	L8	L8
	Screw		LEM8×21 (10.2 Nm)	LEM8×25 (10.2 Nm)	LEM10×27 (16.6 Nm)		
	Screw	LEM6×13.4A (7.0 Nm)				LEM12×36A (25.2 Nm)	LEM12×36A (25.2 Nm)
	Shim	S09AP	S12AP	S15AP	S19AP	S25AP	
	Shim						S25AP-09
	Shim pin (shim)	SP10	SP4	SP5	SP6	SP8	SP8
	Wrench	WH25L	WH30L	WH30L	WH40L	WH50L	WH50L

System code A194 Grade selection A40 Technical info A447 Cutting data A324

SN** holder (external)

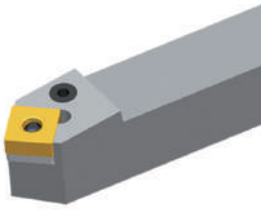
Insert

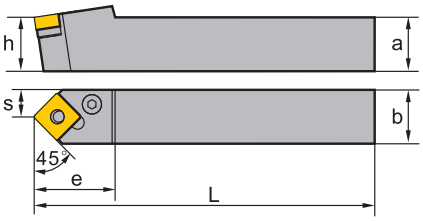
				
Finishing	**Medium Cut**	**Roughing**	**Cast Iron**	**PCBN/PCD**
A63	A65	A68	A74	A150

System code A194 Grade selection A40 Technical info A447 Cutting data A324

SN** holder (external) P-Clamping

PSDNN Kr: 45°







Article	✻	Stock	Dimensions [mm]						Inserts
			a	b	L	h	s	e	
PSDNN1212F09		○	12	12	80	12	6	21	SN**0903**
PSDNN1616H09		●	16	16	100	16	8	23	SN**0903**
PSDNN2020K12		●	20	20	125	20	10	30	SN**1204**
PSDNN2525M12		●	20	20	150	20	12.5	30	SN**1204**
PSDNN3232P12		●	32	32	170	32	16	40	SN**1204**
PSDNN2525M15		●	25	25	150	25	12.5	40	SN**1506**
PSDNN3232P15		●	32	32	170	32	16	40	SN**1506**
PSDNN3232P19		●	32	32	170	32	16	40	SN**1906**
PSDNN4040S19		●	40	40	250	40	20	40	SN**1906**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	SN**0903**	SN**0903**	SN**1204**	SN**1506**	SN**1906**
	h	12	16	20-32	25-32	32-40
	Knee lever	L3B	L3	L3	L5	L6
	Screw	LEM5×12B (4.0 Nm)				
	Screw				LEM8×25 (10.2 Nm)	LEM10×27 (16.6 Nm)
	Screw		LEM6×13.4A (7.0 Nm)	LEM6×13.4A (7.0 Nm)		
	Shim		S09AP	S09AP	S15AP	S19AP
	Shim pin (shim)		SP10	SP10	SP5	SP6
	Wrench	WH20L	WH25L	WH25L	WH30L	WH40L

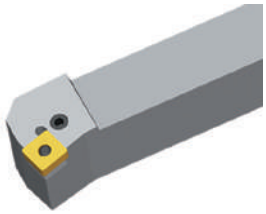
Insert

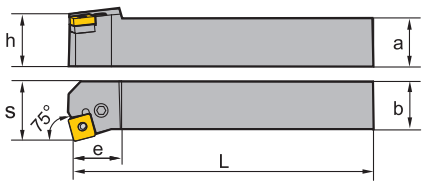
Finishing	Medium Cut	Roughing	Cast Iron	PCBN/PCD
A63	A65	A68	A74	A150

System code A194 Grade selection A40 Technical info A447 Cutting data A324

SN** holder (external) P-Clamping

PSKNR/L Kr: 75°







Right hand style

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
PSKNR/L1616H09		○	○	16	16	100	16	20	17	SN**0903**
PSKNR/L2020K09		●	○	20	20	125	20	25	20	SN**0903**
PSKNR/L2020K12		●	●	20	20	125	20	25	26	SN**1204**
PSKNR/L2525M12		●	●	25	25	150	25	32	26	SN**1204**
PSKNR/L3232P12		●	●	32	32	170	32	40	26	SN**1204**
PSKNR/L2525M15		●	○	25	25	150	25	32	32	SN**1506**
PSKNR/L3232P15		●	●	32	32	170	32	40	32	SN**1506**
PSKNR/L3232P19		●	●	32	32	170	32	40	36	SN**1906**
PSKNR/L4040S19		○	○	40	40	250	40	50	40	SN**1906**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	SN**0903**	SN**1204**	SN**1506**	SN**1906**
	h	16-20	20-32	25-32	32-40
	Knee lever	L3	L4	L5	L6
	Screw		LEM8×21 (10.2 Nm)	LEM8×25 (10.2 Nm)	LEM10×27 (16.6 Nm)
	Screw	LEM6×13.4A (7.0 Nm)			
	Shim	S09AP	S12AP	S15AP	S19AP
	Shim pin (shim)	SP10	SP4	SP5	SP6
	Wrench	WH25L	WH30L	WH30L	WH40L

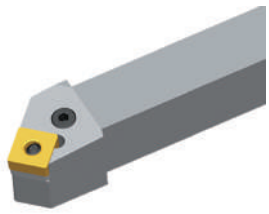
Insert

				
Finishing	**Medium Cut**	**Roughing**	**Cast Iron**	**PCBN/PCD**
A63	A65	A68	A74	A150

System code A194 Grade selection A40 Technical info A447 Cutting data A324

SN** holder (external) P-Clamping

PSSNR/L Kr: 45°



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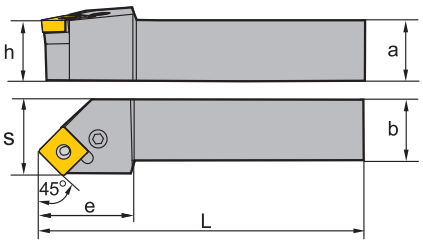




Article	*	Stock R	Stock L	Dimensions [mm] a	b	L	h	s	e	Inserts
PSSNR/L1616H09		●	●	16	16	100	16	20	25	SN**0903**
PSSNR/L2020K12		●	●	20	20	125	20	25	30	SN**1204**
PSSNR/L2525M12		●	●	25	25	150	25	32	30	SN**1204**
PSSNR/L3232P12		●	●	32	32	170	32	40	40	SN**1204**
PSSNR/L2525M15		●	●	25	25	150	25	32	30	SN**1506**
PSSNR/L3232P15		●	●	32	32	170	32	40	40	SN**1506**
PSSNR/L3232P19		●	●	32	32	170	32	40	40	SN**1906**
PSSNR/L4040S19		●	●	40	40	250	40	50	50	SN**1906**
PSSNR/L4040S2507		●	●	40	40	250	40	50	50	SN**2507**
PSSNR/L4040S2509		●	●	40	40	250	40	50	50	SN**2509**

● Ex stock ○ On demand

* With internal cooling

Spare parts

	Insert	SN**0903**	SN**1204**	SN**1506**	SN**1906**	SN**2507**	SN**2509**
	h	**16**	**20-32**	**25-32**	**32-40**	**40**	**40**
	Knee lever	L3	L4	L5	L6	L8	L8
	Screw		LEM8×21 (10.2 Nm)	LEM8×25 (10.2 Nm)	LEM10×27 (16.6 Nm)		
	Screw	LEM6×13.4A (7.0 Nm)				LEM12×36A (25.2 Nm)	LEM12×36A (25.2 Nm)
	Shim	S09AP	S12AP	S15AP	S19AP	S25AP	
	Shim						S25AP-09
	Shim pin (shim)	SP10	SP4	SP5	SP6	SP8	SP8
	Wrench	WH25L	WH30L	WH30L	WH40L	WH50L	WH50L

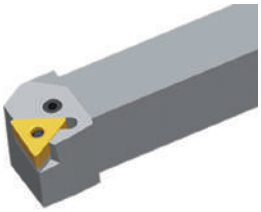
Insert

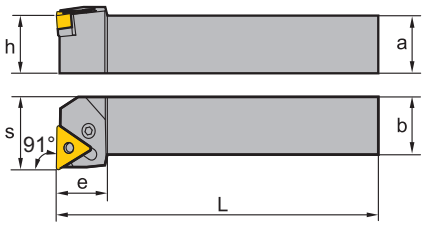
				
Finishing	**Medium Cut**	**Roughing**	**Cast Iron**	**PCBN/PCD**
A63	A65	A68	A74	A150

System code > A194 Grade selection > A40 Technical info > A447 Cutting data > A324

TN** holder (external) P-Clamping

PTFNR/L Kr: 91°







Right hand style

Article	✲	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
PTFNR/L1616H16		●	●	16	16	100	16	20	20	TN**1604**
PTFNR/L2020K16		●	●	20	20	125	20	25	20	TN**1604**
PTFNR/L2525M16		●	●	25	25	150	25	32	20	TN**1604**
PTFNR/L2525M22		●	●	25	25	150	25	32	25	TN**2204**
PTFNR/L3232P22		●	●	32	32	170	32	40	25	TN**2204**
PTFNR/L3232P27		●	○	32	32	170	32	40	34	TN**2706**
PTFNR/L4040S27		○	○	40	40	250	40	50	34	TN**2706**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	TN**1604**	TN**2204**	TN**2706**
	h	16-25	25-32	32-40
	Knee lever	L3	L4	L5
	Screw		LEM8×21 (10.2 Nm)	LEM8×25 (10.2 Nm)
	Screw	LEM6×13.4A (7.0 Nm)		
	Shim	T16AP	T22AP	T27AP
	Shim pin (shim)	SP3	SP4	SP5
	Wrench	WH25L	WH30L	WH30L

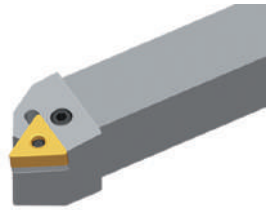
Insert

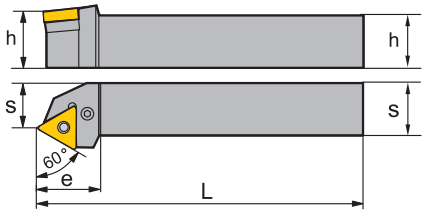
Wiper	Finishing	Medium Cut	Roughing	Heavy Turning	Cast Iron	PCBN/PCD
A78	A79	A81	A84	A87	A88	A151

System code A194 Grade selection A40 Technical info A447 Cutting data A324

TN** holder (external) P-Clamping

PTTNR/L Kr: 60°







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] a	b	L	h	s	e	Inserts
PTTNR/L1616H16		●	●	16	16	100	16	13	25	TN**1604**
PTTNR/L2020K16		●	○	20	20	125	20	17	25	TN**1604**
PTTNR/L2525M22		●	●	25	25	150	20	22	32	TN**2204**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	TN**1604**	TN**2204**
	h	**16-25**	**20**
	Knee lever	L3	L4
	Screw		LEM8×21 (10.2 Nm)
	Screw	LEM6×13.4A (7.0 Nm)	
	Shim	T16AP	T22AP
	Shim pin (shim)	SP3	SP4
	Wrench	WH25L	WH30L

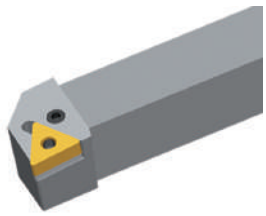
Insert

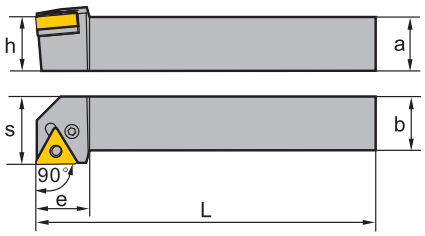
						
Wiper	**Finishing**	**Medium Cut**	**Roughing**	**Heavy Turning**	**Cast Iron**	**PCBN/PCD**
A78	A79	A81	A84	A87	A88	A151

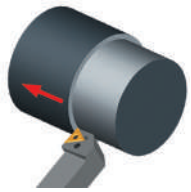
System code A194 Grade selection A40 Technical info A447 Cutting data A324

TN** holder (external) P-Clamping

PTGNR/L Kr: 90°







Right hand style

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
PTGNR/L1010E11		●		10	10	70	10	14	16	TN**1103**
PTGNR/L1212F11		●	●	12	12	80	12	16	14	TN**1103**
PTGNR/L1616H11		●	●	16	16	100	16	20	18	TN**1103**
PTGNR/L2020K11		●	○	20	20	125	20	25	19	TN**1103**
PTGNR/L2525M11		○	○	25	25	150	25	32	20	TN**1103**
PTGNR/L1616H16		●	●	16	16	100	16	20	20	TN**1604**
PTGNR/L2020K16		●	●	20	20	125	20	25	20	TN**1604**
PTGNR/L2525M16		●	●	25	25	150	25	32	20	TN**1604**
PTGNR/L3232P16		●	○	32	32	170	32	40	20	TN**1604**
PTGNR/L2525M22		●	●	25	25	150	25	32	28	TN**2204**
PTGNR/L3232P22		●	●	32	32	170	32	40	28	TN**2204**
PTGNR/L3232P27		●	○	32	32	170	32	40	33	TN**2706**
PTGNR/L4040S27		○	○	40	40	250	40	50	33	TN**2706**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**TN**1103****	**TN**1604****	**TN**2204****	**TN**2706****
	h	**10-25**	**16-32**	**25-32**	**32-40**
	Knee lever	L2	L3	L4	L5
	Screw	LEM5×9B (4.0 Nm)			
	Screw			LEM8×21 (10.2 Nm)	LEM8×25 (10.2 Nm)
	Screw		LEM6×13.4A (7.0 Nm)		
	Shim		T16AP	T22AP	T27AP
	Shim pin (shim)		SP3	SP4	SP5
	Wrench	WH20L	WH25L	WH30L	WH30L

System code A194 Grade selection A40 Technical info A447 Cutting data A324

TN** holder (external)

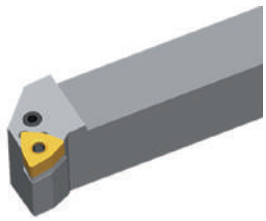
Insert

						
Wiper	**Finishing**	**Medium Cut**	**Roughing**	**Heavy Turning**	**Cast Iron**	**PCBN/PCD**
A78	A79	A81	A84	A87	A88	A151

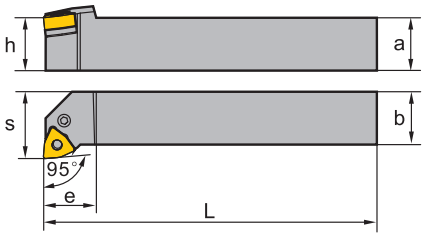
System code > A194 Grade selection > A40 Technical info > A447 Cutting data > A324

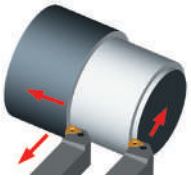
WN** holder (external) P-Clamping

PWLNR/L Kr: 95°



Right hand style





Article	✲	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
PWLNR/L1616H06		●	●	16	16	100	16	20	20	WN**0604**
PWLNR/L2020K06		●	●	20	20	125	20	25	20	WN**0604**
PWLNR/L2525M06		●	●	25	25	150	25	32	20	WN**0604**
PWLNR/L2020K08		●	●	20	20	125	20	25	26	WN**0804**
PWLNR/L2525M08		●	●	25	25	150	25	32	26	WN**0804**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	WN**0604**	WN**0804**
	h	**16-25**	**20-25**
	Knee lever	L3	L4
	Screw		LEM8×21 (10.2 Nm)
	Screw	LEM6×13.4A (7.0 Nm)	
	Shim	W06AP	W08AP
	Shim pin (shim)	SP3	SP4
	Wrench	WH25L	WH30L

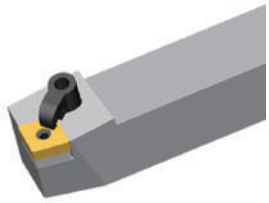
Insert

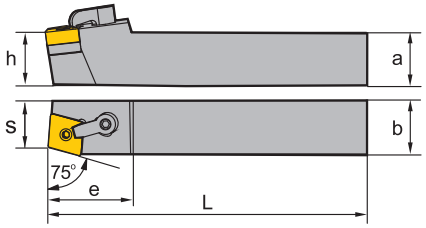
					
Wiper	**Finishing**	**Medium Cut**	**Roughing**	**Cast Iron**	**PCBN/PCD**
A95	A94	A97	A98	A98	A153

System code A194 Grade selection A40 Technical info A447 Cutting data A324

CN** holder (external) M-Clamping

MCBNR/L Kr: 75°







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] a	b	L	h	s	e	Inserts
MCBNR/L2020K12		●	○	20	20	125	20	17	32	CN**1204**
MCBNR/L2525M12		●	●	25	25	150	20	22	32	CN**1204**
MCBNR/L3225P12		●	●	32	25	170	32	22	32	CN**1204**
MCBNR/L2525M16		○	○	25	25	150	25	22	40	CN**1606**
MCBNR/L3232P16		●	●	32	32	170	32	27	40	CN**1606**
MCBNR/L3232P19		○	○	32	32	170	32	27	45	CN**1906**
MCBNR/L4040R19		○	●	40	40	200	40	35	45	CN**1906**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	CN**1204**	CN**1204**	CN**1606**	CN**1906**
	h	**20**	**25-32**	**25-32**	**32-40**
	Clamp	C1RD	C1RD	C2RD	C5RD
	Dowel pin	TM6×17	TM6×17	TM8×21	TM10×21
	Screw (clamp)	DM6×25 (7.0 Nm)	DM6×30 (7.0 Nm)	DM6×30 (7.0 Nm)	
	Screw (clamp)				DM8×30X (10.2 Nm)
	Shim	C12BM	C12BM	C16BM	C19BM
	Wrench (dowel pin)	WH30L	WH30L	WH30L	WH40L
	Wrench (clamp)	WH30L	WH30L	WH30L	WH40L

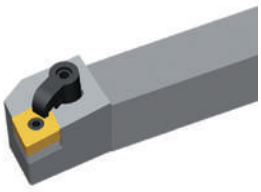
Insert

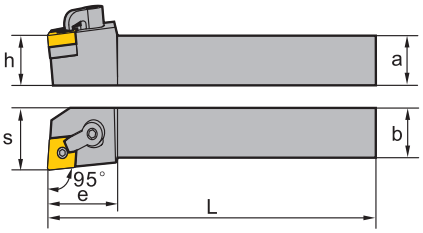
					
Wiper	**Finishing**	**Medium Cut**	**Roughing**	**Cast Iron**	**PCBN/PCD**
A45	A45	A46	A53	A53	A148

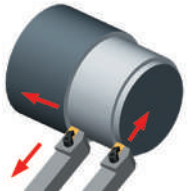
System code A194 Grade selection A40 Technical info A447 Cutting data A324

CN** holder (external) M-Clamping

MCLNR/L Kr: 95°







Right hand style

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
MCLNR/L2020K12		●	●	20	20	125	20	25	32	CN**1204**
MCLNR/L2525M12		●	●	25	25	150	25	32	32	CN**1204**
MCLNR/L3225P12		●	●	32	25	170	32	32	32	CN**1204**
MCLNR/L2525M16		●	●	25	25	150	25	32	38	CN**1606**
MCLNR/L3232P16		●	●	32	32	170	32	40	38	CN**1606**
MCLNR/L3232P19		●	●	32	32	170	32	40	45	CN**1906**
MCLNR/L4040R19		●	○	40	40	200	40	50	45	CN**1906**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	CN**1204**	CN**1204**	CN**1606**	CN**1906**
	h	20	25-32	25-32	32-40
	Clamp	C1RD	C1RD	C2RD	C5RD
	Dowel pin	TM6×17	TM6×17	TM8×21	TM10×21
	Screw (clamp)	DM6×25 (7.0 Nm)	DM6×30 (7.0 Nm)	DM6×30 (7.0 Nm)	
	Screw (clamp)				DM8×30X (10.2 Nm)
	Shim	C12BM	C12BM	C16BM	C19BM
	Wrench (dowel pin)	WH30L	WH30L	WH30L	WH40L
	Wrench (clamp)	WH30L	WH30L	WH30L	WH40L

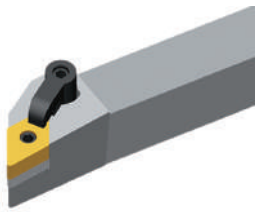
Insert

Wiper	Finishing	Medium Cut	Roughing	Cast Iron	PCBN/PCD
A45	A45	A46	A53	A53	A148

System code A194 Grade selection A40 Technical info A447 Cutting data A324

DN** holder (external) M-Clamping

MDJNR/L Kr: 93°



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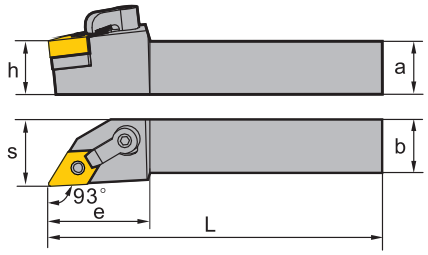
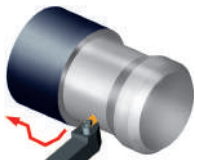




Article	*	Stock R	Stock L	Dimensions [mm] a	b	L	h	s	e	Inserts
MDJNR/L2020K11		●	●	20	20	125	20	25	32	DN**1104**
MDJNR/L2525M11		●	●	25	25	150	25	32	32	DN**1104**
MDJNR/L3225P11		●	○	32	25	170	32	32	32	DN**1104**
MDJNR/L2020K15		●	●	20	20	125	20	25	38	DN**1506**
MDJNR/L2525M15		●	●	25	25	150	25	32	38	DN**1506**
MDJNR/L3225P15		●	●	32	25	170	32	32	38	DN**1506**

● Ex stock ○ On demand

* With internal cooling

Spare parts

	Insert	DN**1104**	DN**1104**	DN**1506**	DN**1506**
	h	**20**	**25-32**	**20**	**25-32**
	Clamp	C1RD	C1RD	C2RD	C2RD
	Dowel pin	TM5x13	TM5x13	TM6x19	TM6x19
	Screw (clamp)	DM6x25 (7.0 Nm)	DM6x30 (7.0 Nm)	DM6x25 (7.0 Nm)	DM6x30 (7.0 Nm)
	Shim	D11BM	D11BM	D15BM	D15BM
	Wrench (clamp)	WH30L	WH30L	WH30L	WH30L
	Wrench (dowel pin)	WH20L	WH20L	WH30L	WH30L

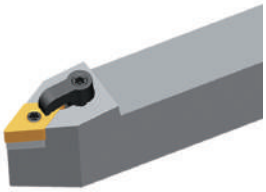
Insert

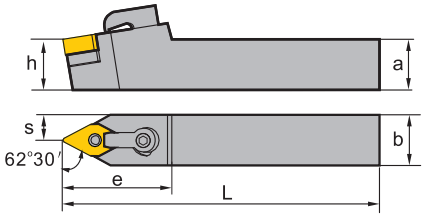
					
Wiper	**Finishing**	**Medium Cut**	**Roughing**	**Cast Iron**	**PCBN/PCD**
A55	A55	A56	A60	A61	A149

System code > A194 Grade selection > A40 Technical info > A447 Cutting data > A324

DN** holder (external) M-Clamping

MDPNN Kr: 62°30'







Article	✲	Stock	Dimensions [mm]						Inserts
			a	b	L	h	s	e	
MDPNN2020K11		●	20	20	125	20	10	35	DN**1104**
MDPNN2525M11		●	25	25	150	25	12.5	35	DN**1104**
MDPNN3225P11		●	32	25	170	32	12.5	35	DN**1104**
MDPNN2020K15		●	20	20	125	20	10	40	DN**1506**
MDPNN2525M15		●	25	25	150	25	12.5	40	DN**1506**
MDPNN3225P15		●	32	25	170	32	12.5	40	DN**1506**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	DN**1104**	DN**1104**	DN**1506**	DN**1506**
	h	20	25-32	20	25-32
	Clamp	C1RD	C1RD	C2RD	C2RD
	Dowel pin	TM5x13	TM5x13	TM6x19	TM6x19
	Screw (clamp)	DM6x25 (7.0 Nm)	DM6x30 (7.0 Nm)	DM6x25 (7.0 Nm)	DM6x30 (7.0 Nm)
	Shim	D11BM	D11BM	D15BM	D15BM
	Wrench (clamp)	WH30L	WH30L	WH30L	WH30L
	Wrench (dowel pin)	WH20L	WH20L	WH30L	WH30L

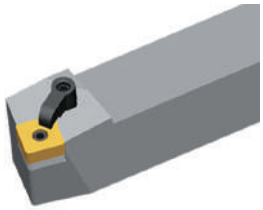
Insert

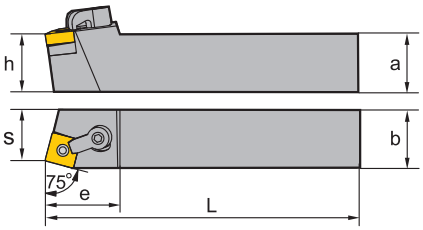
					
Wiper	**Finishing**	**Medium Cut**	**Roughing**	**Cast Iron**	**PCBN/PCD**
A55	A55	A56	A60	A61	A149

System code A194 Grade selection A40 Technical info A447 Cutting data A324

SN** holder (external) M-Clamping

MSBNR/L Kr: 75°







Right hand style

Article	*	Stock R	Stock L	Dimensions [mm] a	b	L	h	s	e	Inserts
MSBNR/L2020K12		●	●	20	20	125	20	17	32	SN**1204**
MSBNR/L2525M12		●	○	25	25	150	25	22	32	SN**1204**
MSBNR/L3225P12		●	●	32	25	170	32	22	32	SN**1204**
MSBNR/L2525M15		●	○	25	25	150	25	22	38	SN**1506**
MSBNR/L3232P15		●	●	32	32	170	32	29	38	SN**1506**
MSBNR/L4032R15		○		40	32	200	40	27	38	SN**1506**
MSBNR/L3232P19		●	●	32	32	170	32	27	45	SN**1906**
MSBNR/L4040R19		○	●	40	40	200	40	35	45	SN**1906**
MSBNR/L4040R25		●	○	40	40	200	40	35	50	SN**2507**
MSBNR/L4040S2509		○	○	40	40	250	40	35	50	SN**2509**

● Ex stock ○ On demand

* With internal cooling

Spare parts

	Insert	SN**1204**	SN**1204**	SN**1506**	SN**1906**	SN**2507**	SN**2509**
	h	20	25-32	25-40	32-40	40	40
	Clamp	C1RD	C1RD	C2RD	C5RD	C6RD	C6RD
	Dowel pin	TM6×17	TM6×17	TM8×21	TM10×21	TM12×29	TM12×29
	Screw (clamp)	DM6×25 (7.0 Nm)	DM6×30 (7.0 Nm)	DM6×30 (7.0 Nm)			
	Screw (clamp)				DM8×30X (10.2 Nm)	DM10×35X (16.6 Nm)	DM10×35X (16.6 Nm)
	Shim	S12BM	S12BM	S15BM	S19BM	S25BM	S25BM
	Wrench (clamp)	WH30L	WH30L	WH30L	WH40L	WH40L	WH40L
	Wrench (dowel pin)	WH31L	WH31L	WH30L	WH40L	WH50L	WH50L

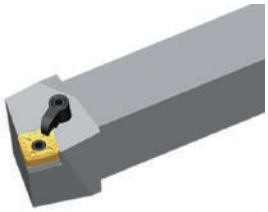
Insert

Finishing	Medium Cut	Roughing	Cast Iron	PCBN/PCD
A63	A65	A68	A74	A150

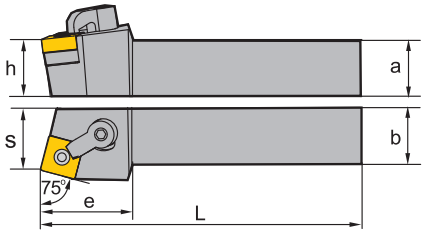
System code A194 Grade selection A40 Technical info A447 Cutting data A324

SN** holder (external) M-Clamping

MSRNR/L Kr: 75°



Right hand style





Article	✲	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
MSRNR/L2020K12		●	●	20	20	125	20	22	36	SN**1204**
MSRNR/L2525M12		●	●	25	25	150	25	27	36	SN**1204**
MSRNR/L3225P12		●	○	32	25	170	32	27	36	SN**1204**
MSRNR/L2525M15		●	○	25	25	150	25	27	40	SN**1506**
MSRNR/L3232P15		●	●	32	32	170	32	35	40	SN**1506**
MSRNR/L4032R15		○		40	32	200	40	35	40	SN**1506**
MSRNR/L3232P19		○	○	32	32	170	32	35	45	SN**1906**
MSRNR/L4040R19		○		40	40	200	40	43	45	SN**1906**
MSRNR/L4040R2509		○	○	40	40	200	40	43	50	SN**2509**
MSRNR/L4040S2509		○	○	40	40	250	40	43	50	SN**2509**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	SN**1204**	SN**1204**	SN**1506**	SN**1906**	SN**2509**
	h	20	25-32	25-40	32-40	40
	Clamp	C1RD	C1RD	C2RD	C5RD	C6RD
	Dowel pin	TM6×17	TM6×17	TM8×21	TM10×21	TM12×29
	Screw (clamp)	DM6×25 (7.0 Nm)	DM6×30 (7.0 Nm)	DM6×30 (7.0 Nm)		
	Screw (clamp)				DM8×30X (10.2 Nm)	DM10×35X (16.6 Nm)
	Shim	S12BM	S12BM	S15BM	S19BM	S25BM
	Wrench (clamp)	WH30L	WH30L	WH30L	WH40L	WH40L
	Wrench (dowel pin)	WH31L	WH31L	WH30L	WH40L	WH50L

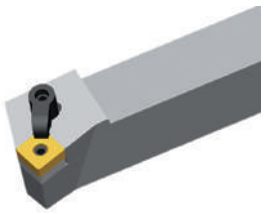
Insert

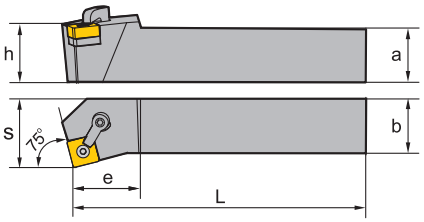
Finishing	Medium Cut	Roughing	Cast Iron	PCBN/PCD
A63	A65	A68	A74	A150

System code A194 Grade selection A40 Technical info A447 Cutting data A324

SN** holder (external) M-Clamping

MSKNR/L Kr: 75°







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] a	b	L	h	s	e	Inserts
MSKNR/L2020K12		●	●	20	20	125	20	25	32	SN**1204**
MSKNR/L2525M12		●	●	25	25	150	25	32	32	SN**1204**
MSKNR/L3225P12		●	○	32	25	170	32	32	32	SN**1204**
MSKNR/L2525M15		●	○	25	25	150	25	32	28	SN**1506**
MSKNR/L3232P15		●	○	32	32	170	32	40	38	SN**1506**
MSKNR/L4032R15			○	40	32	200	40	40	38	SN**1506**
MSKNR/L3232P19		●	●	32	32	170	32	40	45	SN**1906**
MSKNR/L4040R19		○	○	40	40	200	40	50	45	SN**1906**
MSKNR/L4040S2509		○	●	40	40	250	40	50	50	SN**2509**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	SN**1204**	SN**1204**	SN**1506**	SN**1906**	SN**2509**
	h	20	25-32	25-40	32-40	40
	Clamp	C1RD	C1RD	C2RD	C5RD	C6RD
	Dowel pin	TM6×17	TM6×17	TM8×21	TM10×21	TM12×29
	Screw (clamp)	DM6×25 (7.0 Nm)	DM6×30 (7.0 Nm)	DM6×30 (7.0 Nm)		
	Screw (clamp)				DM8×30X (10.2 Nm)	DM10×35X (16.6 Nm)
	Shim	S12BM	S12BM	S15BM	S19BM	S25BM
	Wrench (clamp)	WH30L	WH30L	WH30L	WH40L	WH40L
	Wrench (dowel pin)	WH30L	WH30L	WH30L	WH40L	WH50L

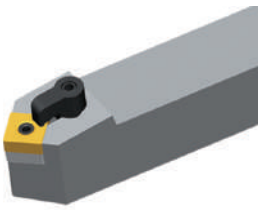
Insert

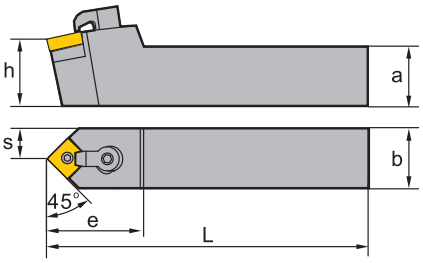
 Finishing	 Medium Cut	 Roughing	 Cast Iron	 PCBN/PCD
A63	A65	A68	A74	A150

System code A194 Grade selection A40 Technical info A447 Cutting data A324

SN** holder (external) M-Clamping

MSDNN Kr: 45°







Article	✲	Stock	Dimensions [mm]						Inserts
			a	b	L	h	s	e	
MSDNN2020K12		●	20	20	125	20	10	35	SN**1204**
MSDNN2525M12		●	25	25	150	25	12.5	35	SN**1204**
MSDNN3225P12		●	32	25	170	32	12.5	35	SN**1204**
MSDNN2525M15		●	25	25	150	25	12.5	42	SN**1506**
MSDNN3232P15		○	32	32	170	32	16	42	SN**1506**
MSDNN4032R15		○	40	32	200	40	16	42	SN**1506**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	SN**1204**	SN**1204**	SN**1506**
	h	**20**	**25-32**	**25-40**
	Clamp	C1RD	C1RD	C2RD
	Dowel pin	TM6×17	TM6×17	TM8×21
	Screw (clamp)	DM6×25 (7.0 Nm)	DM6×30 (7.0 Nm)	DM6×30 (7.0 Nm)
	Shim	S12BM	S12BM	S15BM
	Wrench (clamp)	WH30L	WH30L	WH30L
	Wrench (dowel pin)	WH30L	WH30L	WH30L

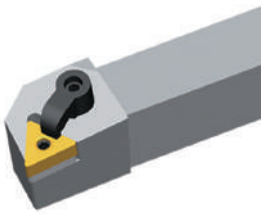
Insert

				
Finishing	**Medium Cut**	**Roughing**	**Cast Iron**	**PCBN/PCD**
A63	A65	A68	A74	A150

System code A194 Grade selection A40 Technical info A447 Cutting data A324

TN** holder (external) M-Clamping

MTGNR/L Kr: 90°



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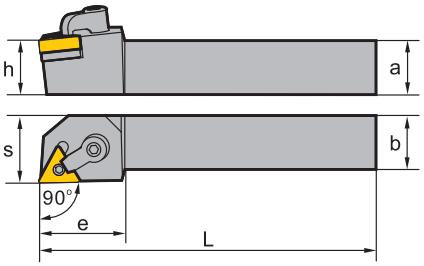
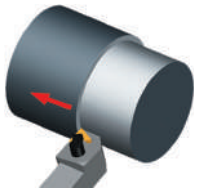




Article	✻	Stock R	Stock L	Dimensions [mm] a	b	L	h	s	e	Inserts
MTGNR/L2020K16		●	○	20	20	125	20	25	33	TN**1604**
MTGNR/L2525M16		●	●	25	25	150	25	32	33	TN**1604**
MTGNR/L3225P16		●	○	32	25	170	32	32	33	TN**1604**
MTGNR/L2525M22		●	○	25	25	150	25	32	35	TN**2204**
MTGNR/L3225P22		○	○	32	25	170	32	32	35	TN**2204**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	TN**1604**	TN**1604**	TN**2204**
	h	20	25-32	25-32
	Clamp	C1RD	C1RD	C2RD
	Dowel pin	TM5x13	TM5x13	TM6×17
	Screw (clamp)	DM6×25 (7.0 Nm)	DM6×30 (7.0 Nm)	DM6×30 (7.0 Nm)
	Shim	T16BM	T16BM	T22BM
	Wrench (clamp)	WH30L	WH30L	WH30L
	Wrench (dowel pin)	WH20L	WH20L	WH30L

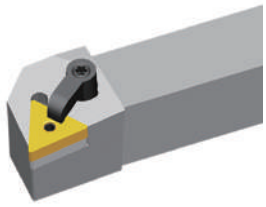
Insert

Wiper	Finishing	Medium Cut	Roughing	Heavy Turning	Cast Iron	PCBN/PCD
A78	A79	A81	A84	A87	A88	A151

System code > A194 Grade selection > A40 Technical info > A447 Cutting data > A324

TN** holder (external) M-Clamping

MTJNR/L Kr: 93°



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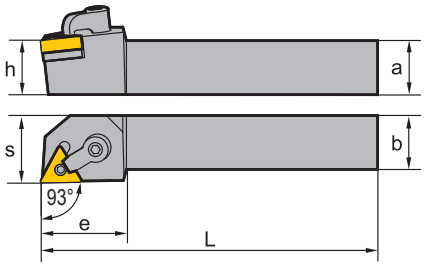




Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
MTJNR/L2020K16		●		20	20	125	20	25	32	TN**1604**
MTJNR/L2525M16		○	○	25	25	150	25	32	32	TN**1604**
MTJNR/L3225P16		○		32	25	170	32	32	32	TN**1604**
MTJNR/L2525M22		○		25	25	150	25	32	36	TN**2204**
MTJNR/L3225P22		○	●	32	25	170	32	32	36	TN**2204**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	TN**1604**	TN**1604**	TN**2204**
	h	20	25-32	25-32
	Clamp	C1RD	C1RD	C2RD
	Dowel pin	TM5x13	TM5x13	TM6×17
	Screw (clamp)	DM6×25 (7.0 Nm)	DM6×30 (7.0 Nm)	DM6×30 (7.0 Nm)
	Shim	T16BM	T16BM	T22BM
	Wrench (clamp)	WH30L	WH30L	WH30L
	Wrench (dowel pin)	WH20L	WH20L	WH30L

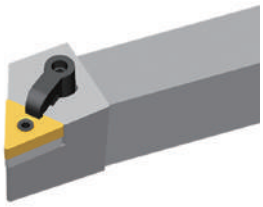
Insert

Wiper	Finishing	Medium Cut	Roughing	Heavy Turning	Cast Iron	PCBN/PCD
A78	A79	A81	A84	A87	A88	A151

System code A194 Grade selection A40 Technical info A447 Cutting data A324

TN** holder (external) M-Clamping

MTJNR/L-Z Kr: 93°



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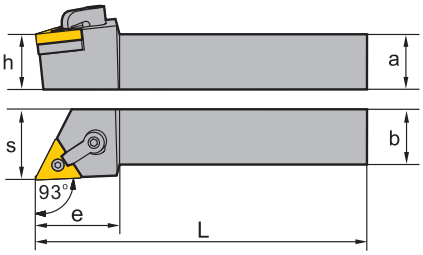




Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
MTJNR/L2020K16-Z		●	●	20	20	125	20	25	32	TN**1604**
MTJNR/L2525M16-Z		●	●	25	25	150	25	32	32	TN**1604**
MTJNR/L3225P16-Z		●	○	32	25	170	32	32	32	TN**1604**
MTJNR/L2525M22-Z		●	●	25	25	150	25	32	36	TN**2204**
MTJNR/L3225P22-Z		●	○	32	25	170	32	32	36	TN**2204**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	TN**1604**	TN**1604**	TN**2204**
	h	20	25-32	25-32
	Clamp	C1RD	C1RD	C2RD
	Dowel pin	TM5x13	TM5x13	TM6×17
	Screw (clamp)	DM6×25 (7.0 Nm)	DM6×30 (7.0 Nm)	DM6×30 (7.0 Nm)
	Shim	T16BM	T16BM	T22BM
	Wrench (clamp)	WH30L	WH30L	WH30L
	Wrench (dowel pin)	WH20L	WH20L	WH30L

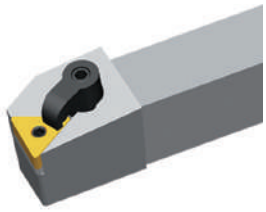
Insert

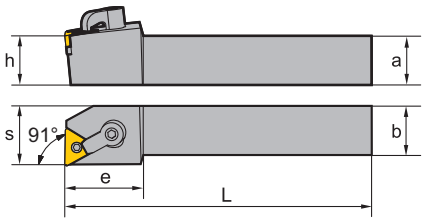
Wiper	Finishing	Medium Cut	Roughing	Heavy Turning	Cast Iron	PCBN/PCD
A78	A79	A81	A84	A87	A88	A151

System code A194 Grade selection A40 Technical info A447 Cutting data A324

TN** holder (external) M-Clamping

MTFNR/L Kr: 91°







Right hand style

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
MTFNR/L2020K16		●	○	20	20	125	20	25	32	TN**1604**
MTFNR/L2525M16		●	●	25	25	150	25	32	32	TN**1604**
MTFNR/L3225P16		●		32	25	170	32	32	32	TN**1604**
MTFNR/L2525M22		●	○	25	25	150	25	32	36	TN**2204**
MTFNR/L3225P22		●	○	32	25	170	32	32	36	TN**2204**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	TN**1604**	TN**1604**	TN**2204**
	h	20	25-32	25-32
	Clamp	C1RD	C1RD	C2RD
	Dowel pin	TM5x13	TM5x13	TM6×17
	Screw (clamp)	DM6×25 (7.0 Nm)	DM6×30 (7.0 Nm)	DM6×30 (7.0 Nm)
	Shim	T16BM	T16BM	T22BM
	Wrench (clamp)	WH30L	WH30L	WH30L
	Wrench (dowel pin)	WH20L	WH20L	WH30L

Insert

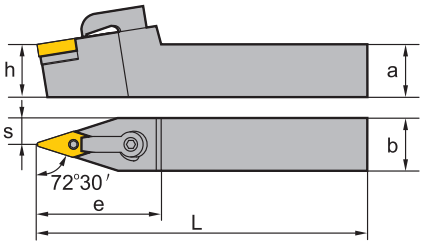
Wiper	Finishing	Medium Cut	Roughing	Heavy Turning	Cast Iron	PCBN/PCD
A78	A79	A81	A84	A87	A88	A151

System code A194 Grade selection A40 Technical info A447 Cutting data A324

VN** holder (external) M-Clamping

MVVNN Kr: 72°30'







Article	✻	Stock	Dimensions [mm]						Inserts
			a	b	L	h	s	e	
MVVNN2020K16		●	20	20	125	20	10	45	VN**1604**
MVVNN2525M16		●	25	25	150	25	12.5	45	VN**1604**
MVVNN3225P16		○	32	25	170	32	12.5	45	VN**1604**
MVVNN3232P16		●	32	32	170	32	16	45	VN**1604**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	VN**1604**	VN**1604**
	h	**20**	**25-32**
	Clamp	C3RD	C3RD
	Dowel pin	TM5x13	TM5x13
	Screw (clamp)	DM6×25 (7.0 Nm)	DM6×30 (7.0 Nm)
	Shim	V16BM	V16BM
	Wrench (clamp)	WH30L	WH30L
	Wrench (dowel pin)	WH20L	WH20L

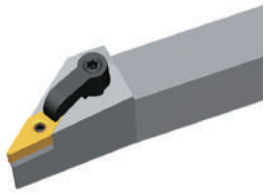
Insert

Finishing	Medium Cut	Roughing	Cast Iron	PCBN/PCD
A91	A93	A93	A92	A152

System code A194 Grade selection A40 Technical info A447 Cutting data A324

VN** holder (external) M-Clamping

MVJNR/L Kr: 93°



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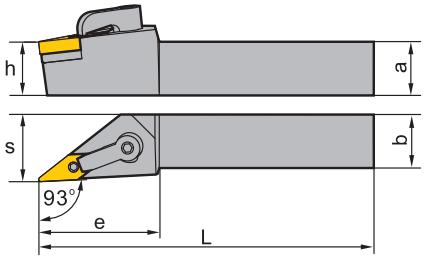




Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
MVJNR/L2020K16		●	●	20	20	125	20	25	45	VN**1604**
MVJNR/L2525M16		●	●	25	25	150	25	32	45	VN**1604**
MVJNR/L3225P16		●	●	32	25	170	32	32	45	VN**1604**
MVJNR/L3232P16		●	●	32	32	170	32	40	45	VN**1604**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	VN**1604**	VN**1604**
	h	20	25-32
	Clamp	C3RD	C3RD
	Dowel pin	TM5x13	TM5x13
	Screw (clamp)	DM6×25 (7.0 Nm)	DM6×30 (7.0 Nm)
	Shim	V16BM	V16BM
	Wrench (clamp)	WH30L	WH30L
	Wrench (dowel pin)	WH20L	WH20L

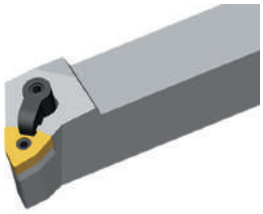
Insert

				
Finishing	**Medium Cut**	**Roughing**	**Cast Iron**	**PCBN/PCD**
A91	A93	A93	A92	A152

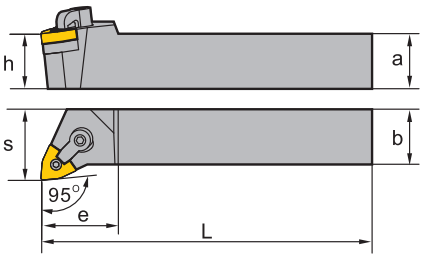
System code A194 Grade selection A40 Technical info A447 Cutting data A324

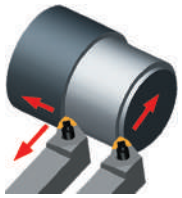
WN** holder (external) M-Clamping

MWLNR/L Kr: 95°



Right hand style





Article	✻	Stock R	Stock L	Dimensions [mm] a	b	L	h	s	e	Inserts
MWLNR/L2020K06		●	●	20	20	125	20	25	30	WN**0604**
MWLNR/L2525M06		●	●	25	25	150	25	32	30	WN**0604**
MWLNR/L2020K08		●	●	20	20	125	20	25	30	WN**0804**
MWLNR/L2525M08		●	●	25	25	150	25	32	35	WN**0804**
MWLNR/L3232P08		●	●	32	32	170	32	40	35	WN**0804**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	WN**0604**	WN**0604**	WN**0804**	WN**0804**
	h	20	25	20	25-32
	Clamp	C1RD	C1RD	C1RD	C1RD
	Dowel pin	TM5x13	TM5x13	TM6×17	TM6×17
	Screw (clamp)	DM6×25 (7.0 Nm)	DM6×30 (7.0 Nm)	DM6×25 (7.0 Nm)	DM6×30 (7.0 Nm)
	Shim	W06BM	W06BM	W08BM	W08BM
	Wrench (clamp)	WH30L	WH30L	WH30L	WH30L
	Wrench (dowel pin)	WH20L	WH20L	WH30L	WH30L

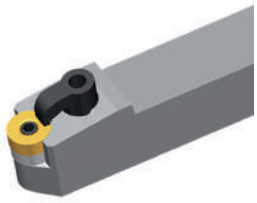
Insert

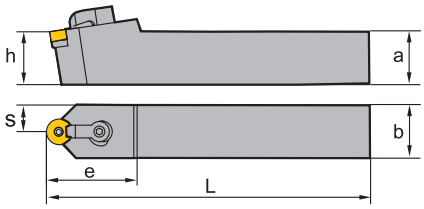
					
Wiper	**Finishing**	**Medium Cut**	**Roughing**	**Cast Iron**	**PCBN/PCD**
A95	A94	A97	A98	A98	A153

System code A194 Grade selection A40 Technical info A447 Cutting data A324

RN** holder (external) M-Clamping

MRDNN







Right hand style

Article	✻	Stock	Dimensions [mm]						Inserts
			a	b	L	h	s	e	
MRDNN2020K12		○	20	20	125	20	10	35	RN**1204**
MRDNN2525M12		○	25	25	150	25	12.5	35	RN**1204**
MRDNN3225P12		○	32	25	170	32	12.5	35	RN**1204**
MRDNN3232P12		○	32	32	170	32	16	35	RN**1204**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	RN**1204**	RN**1204**
	h	**20**	**25-32**
	Clamp	C1RD	C1RD
	Dowel pin	TM6×17	TM6×17
	Screw (clamp)	DM6×25 (7.0 Nm)	DM6×30 (7.0 Nm)
	Shim	R12BM	R12BM
	Wrench (clamp)	WH30L	WH30L
	Wrench (dowel pin)	WH30L	WH30L

Insert



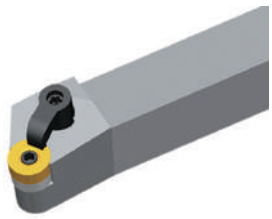
Cast Iron

A99

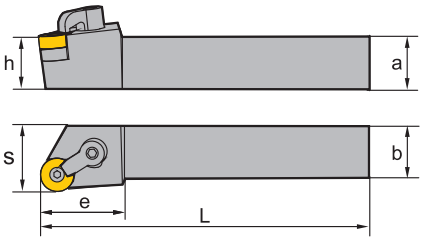
System code A194 Grade selection A40 Technical info A447 Cutting data A324

RN** holder (external) M-Clamping

MRGNR/L



Right hand style





Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
MRGNR/L2020K12		○	○	20	20	125	20	25	32	RN**1204**
MRGNR/L2525M12		○	●	25	25	150	25	32	32	RN**1204**
MRGNR/L3225P12		○	○	32	25	170	32	32	32	RN**1204**
MRGNR/L3232P12		○	○	32	32	170	32	40	32	RN**1204**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	RN**1204**	RN**1204**
	h	20	25-32
	Clamp	C1RD	C1RD
	Dowel pin	TM6×17	TM6×17
	Screw (clamp)	DM6×25 (7.0 Nm)	DM6×30 (7.0 Nm)
	Shim	R12BM	R12BM
	Wrench (clamp)	WH30L	WH30L
	Wrench (dowel pin)	WH30L	WH30L

Insert



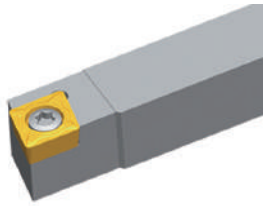
Cast Iron

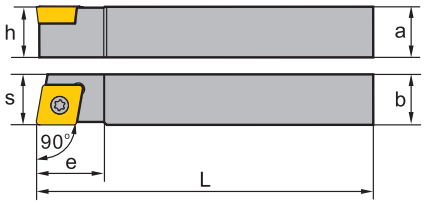
A99

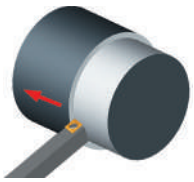
System code A194 Grade selection A40 Technical info A447 Cutting data A324

CC** holder (external) S-Clamping

SCACR/L Kr: 90°







Right hand style

Article	✲	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
SCACR/L1010E06		●	●	10	10	70	10	10.5	10	CC**0602**
SCACR/L1212F09		●	●	12	12	80	12	12.7	16	CC**09T3**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	CC**0602**	CC**09T3**
	h	**10**	**12**
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M3.5×8 (2.7 Nm)
	Wrench (screw)	WT07IP	WT15IP

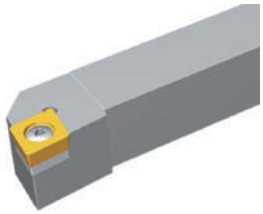
Insert

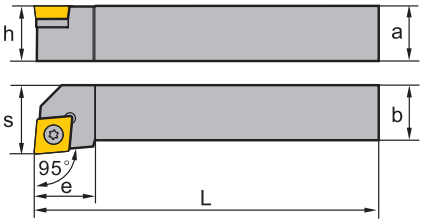
Finishing	Medium Cut	Roughing	Alum Machining	Cast Iron	PCBN/PCD
A102	A106	A107	A108	A107	A154

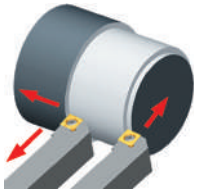
System code A194 Grade selection A40 Technical info A447 Cutting data A324

CC** holder (external) S-Clamping

SCLCR/L Kr: 95°







Right hand style

Article	*	Stock R	Stock L	Dimensions [mm] a	b	L	h	s	L_2	e	Inserts
SCLCR/L0808D06		●	●	8	8	60	8	10	10	10	CC**0602**
SCLCR/L1010E06		●	●	10	10	70	10	12	10	10	CC**0602**
SCLCR/L1212F09		●	●	12	12	80	12	16	16	16	CC**09T3**
SCLCR/L1616H09		●	●	16	16	100	16	20	16	16	CC**09T3**
SCLCR/L2020K09		●	●	20	20	125	20	25	25	25	CC**09T3**
SCLCR/L1616H12		●	●	16	16	100	16	20	18	18	CC**1204**
SCLCR/L2020K12		●	●	20	20	125	20	25	25	25	CC**1204**
SCLCR/L2525M12		●	●	25	25	150	25	32	26	26	CC**1204**
SCLCR/L3225P12		○	○	32	25	170	32	32	26	26	CC**1204**
SCLCR/L3232P12		●	●	32	32	170	32	40	28	28	CC**1204**

● Ex stock ○ On demand

* With internal cooling

Spare parts

	Insert	CC**0602**	CC**09T3**	CC**1204**
	h	8-10	12-20	16-32
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M3.5x8 (2.7 Nm)	
	Screw			I60M4×11X (3.4 Nm)
	Screw (shim)			SM6×10XA
	Shim			C12BS
	Wrench (screw)	WT07IP	WT15IP	WT15IP
	Wrench (shim)			WH40L

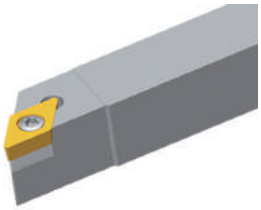
Insert

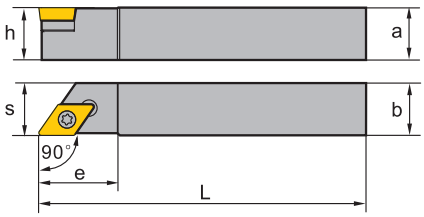
Finishing	Medium Cut	Roughing	Alum Machining	Cast Iron	PCBN/PCD
A102	A106	A107	A108	A107	A154

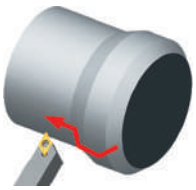
System code > A194 Grade selection > A40 Technical info > A447 Cutting data > A324

DC** holder (external) S-Clamping

SDACR/L Kr: 90°







Right hand style

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
SDACR/L1010E07		●	●	10	10	70	10	10.5	15	DC**0702**
SDACR/L1212F11		●	●	12	12	80	12	12.5	15	DC**11T3**
SDACR/L1616H11		●	●	16	16	100	16	16.7	24	DC**11T3**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	DC**0702**	DC**11T3**	DC**11T3**
	h	10	12	16
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M3.5×8 (2.7 Nm)	I60M3.5×12 (2.7 Nm)
	Screw (shim)			SM5×8.65XA
	Shim			D11BS
	Wrench (screw)	WT07IP	WT15IP	WT15IP
	Wrench (shim)			WH35L

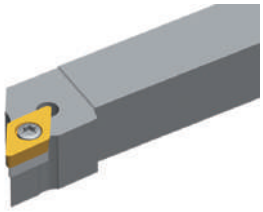
Insert

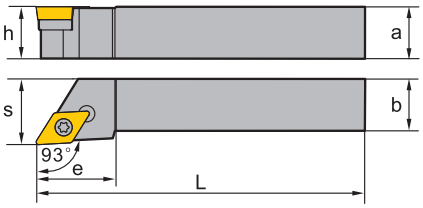
Finishing	Medium Cut	Roughing	Alum Machining	Cast Iron	PCBN/PCD
A112	A114	A115	A115	A115	A155

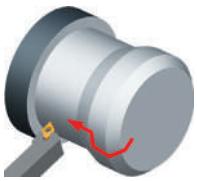
System code A194 Grade selection A40 Technical info A447 Cutting data A324

DC** holder (external) S-Clamping

SDJCR/L Kr: 93°







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] a	b	L	h	s	e	Inserts
SDJCR/L1010E07		●	●	10	10	70	10	12	15	DC**0702**
SDJCR/L1212F07		●	●	12	12	80	12	16	15	DC**0702**
SDJCR/L1616H07		●	●	16	16	100	16	20	18	DC**0702**
SDJCR/L1616H11		●	●	16	16	100	16	20	24	DC**11T3**
SDJCR/L2020K11		●	●	20	20	125	20	25	24	DC**11T3**
SDJCR/L2525M11		●	●	25	25	150	25	32	29	DC**11T3**
SDJCR/L3225P11		●	●	32	25	170	32	32	29	DC**11T3**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	DC**0702**	DC**11T3**
	h	**10-16**	**16-32**
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M3.5×12 (2.7 Nm)
	Screw (shim)		SM5×8.65XA
	Shim		D11BS
	Wrench (screw)	WT07IP	WT15IP
	Wrench (shim)		WH35L

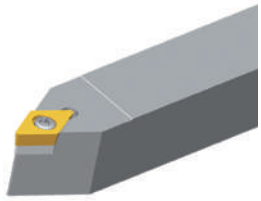
Insert

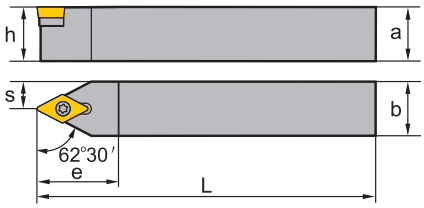
Finishing	Medium Cut	Roughing	Alum Machining	Cast Iron	PCBN/PCD
A112	A114	A115	A115	A115	A155

System code A194 Grade selection A40 Technical info A447 Cutting data A324

DC** holder (external) S-Clamping

SDNCN Kr: 62°30'







Article	✲	Stock	Dimensions [mm]						Inserts
			a	b	L	h	s	e	
SDNCN1010E07		●	10	10	70	10	5	20	DC**0702**
SDNCN1212F07		●	12	12	80	12	6	20	DC**0702**
SDNCN1212H11		●	12	12	100	12	6	30	DC**11T3**
SDNCN1616H11		●	16	16	100	16	8	30	DC**11T3**
SDNCN2020K11		●	20	20	125	20	10	30	DC**11T3**
SDNCN2525M11		●	25	25	150	25	12.5	30	DC**11T3**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	DC**0702**	DC**11T3**	DC**11T3**
	h	10-12	12	16-25
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M3.5×8 (2.7 Nm)	I60M3.5×12 (2.7 Nm)
	Screw (shim)			SM5×8.65XA
	Shim			D11BS
	Wrench (screw)	WT07IP	WT15IP	WT15IP
	Wrench (shim)			WH35L

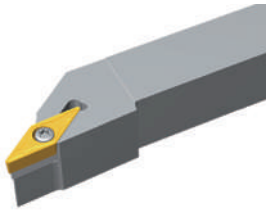
Insert

Finishing	Medium Cut	Roughing	Alum Machining	Cast Iron	PCBN/PCD
A112	A114	A115	A115	A115	A155

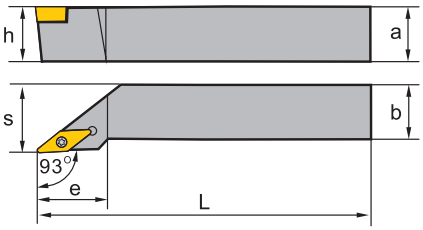
System code A194 Grade selection A40 Technical info A447 Cutting data A324

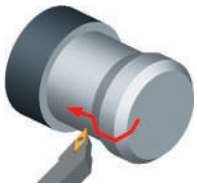
VB** holder (external) S-Clamping

SVJBR/L Kr: 93°



Right hand style





Article	✻	Stock R	Stock L	Dimensions [mm] a	b	L	h	s	e	Inserts
SVJBR/L1212F11		●	●	12	12	80	12	16	27	VB**1102**
SVJBR/L1616H11		●	●	16	16	100	16	20	27	VB**1102**
SVJBR/L2020K11		●	●	20	20	125	20	25	27	VB**1102**
SVJBR/L2525M11		●	●	25	25	150	25	32	27	VB**1102**
SVJBR/L1616H16		●	●	16	16	100	16	20	36	VB**1604**
SVJBR/L2020K16		●	●	20	20	125	20	25	41	VB**1604**
SVJBR/L2525M16		●	●	25	25	150	25	32	41	VB**1604**
SVJBR/L3225P16		●	●	32	25	170	32	32	41	VB**1604**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	VB**1102**	VB**1604**
	h	12-25	16-32
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M3.5×12 (2.7 Nm)
	Screw (shim)		SM5×8.65XA
	Shim		V16BS
	Wrench (screw)	WT07IP	WT15IP
	Wrench (shim)		WH35L

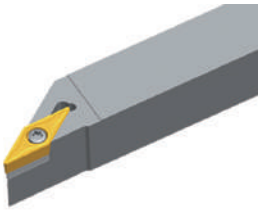
Insert

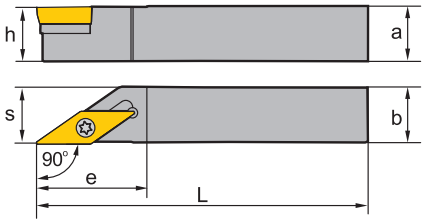
			
Finishing	**Medium Cut**	**Roughing**	**PCBN/PCD**
A140	A142	A143	A157

System code A194 Grade selection A40 Technical info A447 Cutting data A324

VB** holder (external) S-Clamping

SVABR/L Kr: 90°







Right hand style

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
SVABR/L1010F11		●	●	10	10	80	10			VB**1102**
SVABR/L1616H16		●	○	16	16	100	16	16.5	28	VB**1604**
SVABR/L2020K16		●	○	20	20	125	20	20.5	28	VB**1604**
SVABR/L2525M16		●	●	25	25	150	25	25.5	28	VB**1604**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	VB**1102**	VB**1604**
	h	**10**	**16-32**
	Screw	I60M2.5x6.5 (1.0 Nm)	I60M3.5×12 (2.7 Nm)
	Screw (shim)		SM5×8.65XA
	Shim		V16BS
	Wrench (screw)	WT07IP	WT15IP
	Wrench (shim)		WH35L

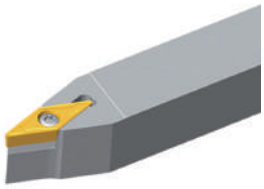
Insert

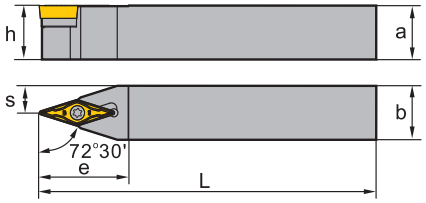
Finishing	Medium Cut	Roughing	PCBN/PCD
A140	A142	A143	A157

System code A194 Grade selection A40 Technical info A447 Cutting data A324

VB** holder (external) S-Clamping

SVVBN Kr: 72°30'







Article	*	Stock	Dimensions [mm]						Inserts
			a	b	L	h	s	e	
SVVBN1212F11		●	12	12	80	12	6	27	VB**1102**
SVVBN1616H11		●	16	16	100	16	8	27	VB**1102**
SVVBN2020K11		●	20	20	125	20	10	30	VB**1102**
SVVBN1616H16		●	16	16	100	16	8	33	VB**1604**
SVVBN2020K16		●	20	20	125	20	10	33	VB**1604**
SVVBN2525M16		●	25	25	150	25	12.5	38	VB**1604**

● Ex stock ○ On demand

* With internal cooling

Spare parts

	Insert	VB**1102**	VB**1604**
	h	12-25	16-32
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M3.5×12 (2.7 Nm)
	Screw (shim)		SM5×8.65XA
	Shim		V16BS
	Wrench (screw)	WT07IP	WT15IP
	Wrench (shim)		WH35L

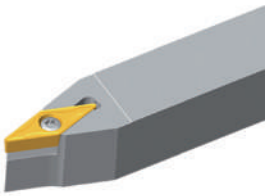
Insert

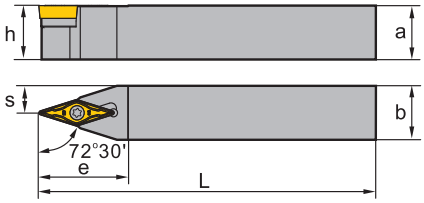
Finishing	Medium Cut	Roughing	PCBN/PCD
A140	A142	A143	A157

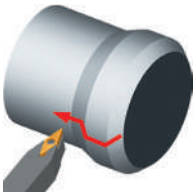
System code A194 Grade selection A40 Technical info A447 Cutting data A324

VC** holder (external) S-Clamping

SVVCN Kr: 72°30'







Article	✲	Stock	Dimensions [mm]						Inserts
			a	b	L	h	s	e	
SVVCN1212F11		●	12	12	80	12	6	27	VC**1103**
SVVCN1616H11		●	16	16	100	16	8	27	VC**1103**
SVVCN2020K11		●	20	20	125	20	10	30	VC**1103**
SVVCN1212M11		●	12	12	150	12	6	27	VC**1103**
SVVCN2525M11		●	25	25	150	25	12.5	38	VC**1103**
SVVCN1616H16		●	16	16	100	16	8	33	VC**1604**
SVVCN2020K16		●	20	20	125	20	10	33	VC**1604**
SVVCN2525M16		●	25	25	150	25	12.5	38	VC**1604**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	VC**1103**	VC**1604**
	h	12-25	16-32
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M3.5×12 (2.7 Nm)
	Screw (shim)		SM5×8.65XA
	Shim		V16BSC
	Wrench (screw)	WT07IP	WT15IP
	Wrench (shim)		WH35L

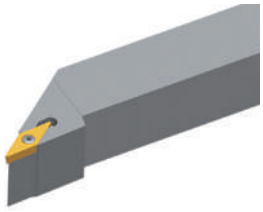
Insert

Finishing	Medium Cut	Alum Machining	PCBN/PCD
A135	A138	A136	A158

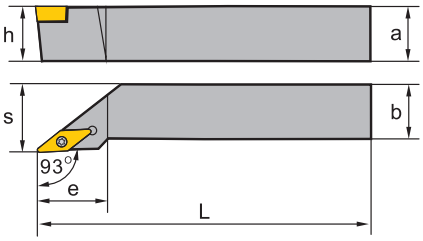
System code A194 Grade selection A40 Technical info A447 Cutting data A324

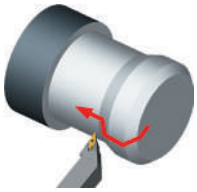
VC** holder (external) S-Clamping

SVJCR/L Kr: 93°



Right hand style





Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
SVJCR/L1010E11		●		10	10	70	10	12	22	VC**1103**
SVJCR/L1212F11		●	●	12	12	80	12	16	27	VC**1103**
SVJCR/L1616H11		●	●	16	16	100	16	20	27	VC**1103**
SVJCR/L2020K11		●	●	20	20	125	20	25	27	VC**1103**
SVJCR/L2525M11		●	●	25	25	150	25	32	27	VC**1103**
SVJCR/L1616H16		●	●	16	16	100	16	20	36	VC**1604**
SVJCR/L2020K16		●	●	20	20	125	20	25	41	VC**1604**
SVJCR/L2020M16		●	●	20	20	150	20	25	41	VC**1604**
SVJCR/L2525M16		●	●	25	25	150	20	32	41	VC**1604**
SVJCR/L3225P16		○	○	32	25	170	32	32	41	VC**1604**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	VC**1103**	VC**1604**
	h	**10-25**	**16-32**
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M3.5×12 (2.7 Nm)
	Screw (shim)		SM5×8.65XA
	Shim		V16BSC
	Wrench (screw)	WT07IP	WT15IP
	Wrench (shim)		WH35L

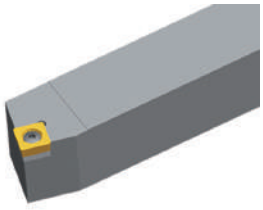
Insert

			
Finishing	**Medium Cut**	**Alum Machining**	**PCBN/PCD**
A135	A138	A136	A158

System code A194 Grade selection A40 Technical info A447 Cutting data A324

SC** steel boring bar S-Clamping

SSBCR/L Kr: 75°







Right hand style

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
SSBCR/L1212F09		●	●	12	12	80	12	11	16	SC**09T3**
SSBCR/L1616H09		●	●	16	16	100	16	13	16	SC**09T3**
SSBCR/L2020K12		●	●	20	20	125	20	17	25	SC**1204**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	SC**09T3**	SC**09T3**	SC**1204**
	h	12	16	20
	Screw	I60M3.5×8 (2.7 Nm)	I60M3.5×8 (2.7 Nm)	
	Screw			I60M4×11X (3.4 Nm)
	Screw (shim)		SM5×8.65XA	SM6×10XA
	Shim		S09BS	S12BS
	Wrench (screw)	WT15IP	WT15IP	WT15IP
	Wrench (shim)		WH35L	WH40L

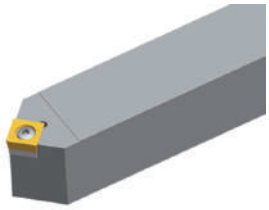
Insert

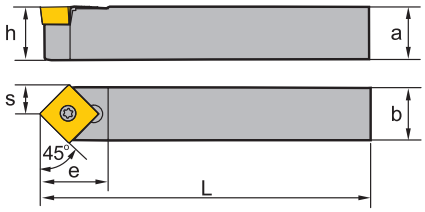
Finishing	Medium Cut	Roughing	Alum Machining
A120	A121	A122	A122

System code A194 Grade selection A40 Technical info A447 Cutting data A324

SC** steel boring bar S-Clamping

SSDCN Kr: 45°







Right hand style

Article	✻	Stock	Dimensions [mm]						Inserts
			a	b	L	h	s	e	
SSDCN1212F09		●	12	12	80	12	6	15.5	SC**09T3**
SSDCN1616H09		●	16	16	100	16	8	15.5	SC**09T3**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	SC**09T3**	SC**09T3**
	h	12	16
	Screw	I60M3.5×8 (2.7 Nm)	I60M3.5×8 (2.7 Nm)
	Screw (shim)		SM5×8.65XA
	Shim		S09BS
	Wrench (screw)	WT15IP	WT15IP
	Wrench (shim)		WH35L

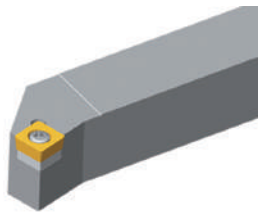
Insert

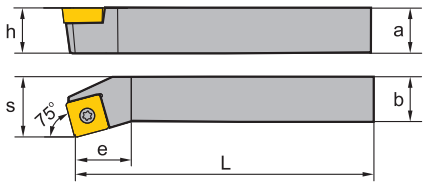
Finishing	Medium Cut	Roughing	Alum Machining
A120	A121	A122	A122

System code A194 Grade selection A40 Technical info A447 Cutting data A324

SC** steel boring bar S-Clamping

SSKCR/L Kr: 75°







Right hand style

Article	✲	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
SSKCR/L1616H09		●	●	16	16	100	16	20	13	SC**09T3**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	SC**09T3**
	h	16
	Screw	I60M3.5×8 (2.7 Nm)
	Screw (shim)	SM5×8.65XA
	Shim	S09BS
	Wrench (screw)	WT15IP
	Wrench (shim)	WH35L

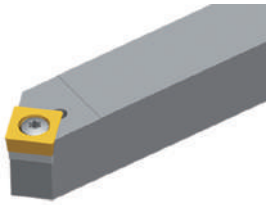
Insert

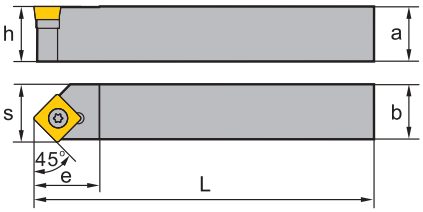
Finishing	Medium Cut	Roughing	Alum Machining
A120	A121	A122	A122

System code A194 Grade selection A40 Technical info A447 Cutting data A324

SC** steel boring bar S-Clamping

SSSCR/L Kr: 45°







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] a	b	L	h	s	e	Inserts
SSSCR/L1616H09		●	●	16	16	100	16	17	17	SC**09T3**
SSSCR/L2020K12		●	●	20	20	125	20	21	21	SC**1204**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	SC**09T3**	SC**1204**
	h	16	20
	Screw	I60M3.5×12 (2.7 Nm)	
	Screw		I60M4×11X (3.4 Nm)
	Screw (shim)		SM6×10XA
	Shim		S12BS
	Wrench (screw)	WT15IP	WT15IP
	Wrench (shim)		WH40L

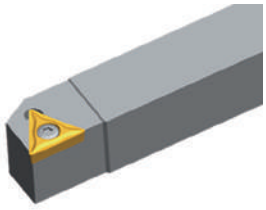
Insert

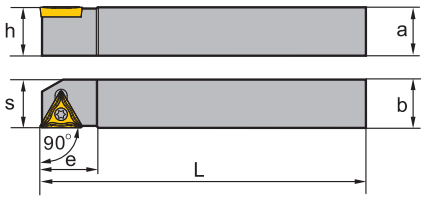
			
Finishing	**Medium Cut**	**Roughing**	**Alum Machining**
A120	A121	A122	A122

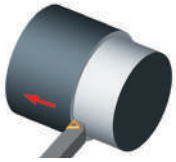
System code A194 Grade selection A40 Technical info A447 Cutting data A324

TC** holder (external) S-Clamping

STACR/L Kr: 90°







Right hand style

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
STACR/L1212F11		●	●	12	12	80	12	12.5	14	TC**1102**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	TC**1102**
	h	**12**
	Screw	I60M2.5×6.5 (1.0 Nm)
	Wrench (screw)	WT07IP

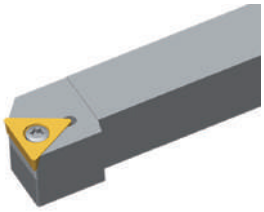
Insert

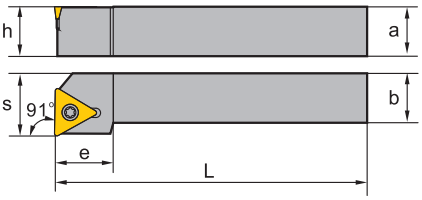
				
Finishing	**Medium Cut**	**Roughing**	**Alum Machining**	**PCBN/PCD**
A127	A128	A129	A131	A156

System code A194 Grade selection A40 Technical info A447 Cutting data A324

TC** holder (external) S-Clamping

STFCR/L Kr: 91°







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] a	b	L	h	s	e	Inserts
STFCR/L1212F11		●	○	12	12	80	12	16	14	TC**1102**
STFCR/L1616H11		●	○	16	16	100	16	20	14	TC**1102**
STFCR/L1616H16		●	○	16	16	100	16	20	19	TC**16T3**
STFCR/L2020K16		●	●	20	20	125	20	25	19	TC**16T3**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	TC**1102**	TC**16T3**
	h	**12-16**	**16-20**
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M3.5×12 (2.7 Nm)
	Screw (shim)		SM5×8.65XA
	Shim		T16BS
	Wrench (screw)	WT07IP	WT15IP
	Wrench (shim)		WH35L

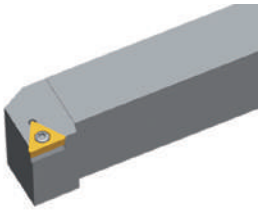
Insert

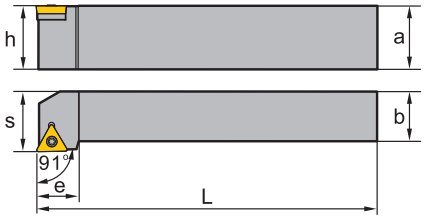
					
Finishing	**Medium Cut**	**Roughing**	**Alum Machining**	**Cast Iron**	**PCBN/PCD**
A127	A128	A129	A131	A129	A156

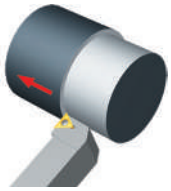
System code A194 Grade selection A40 Technical info A447 Cutting data A324

TC** holder (external) S-Clamping

STGCR/L Kr: 91°







Right hand style

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
STGCR/L0808D09		○	○	8	8	60	8	10	11	TC**0902**
STGCR/L1010E09		●	○	10	10	70	10	12	11	TC**0902**
STGCR/L1212F11		●	●	12	12	80	12	16	14	TC**1102**
STGCR/L1616H11		●	●	16	16	100	16	20	16	TC**1102**
STGCR/L2020K16		●	●	20	20	125	20	25	21	TC**16T3**
STGCR/L2525M16		●	●	25	25	150	25	25	21	TC**16T3**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	TC**0902**	TC**1102**	TC**16T3**
	h	8-10	12-16	20-25
	Screw	I60M2.2×5.5 (0.8 Nm)	I60M2.5×6.5 (1.0 Nm)	I60M3.5×12 (2.7 Nm)
	Screw (shim)			SM5×8.65XA
	Shim			T16BS
	Wrench (screw)	WT06IP	WT07IP	WT15IP
	Wrench (shim)			WH35L

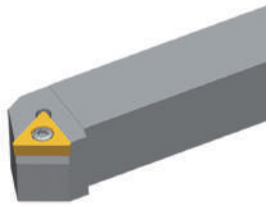
Insert

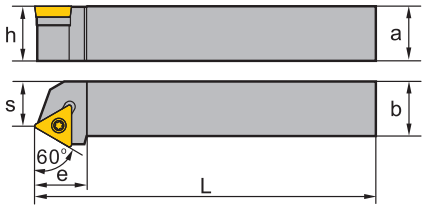
Finishing	Medium Cut	Roughing	Alum Machining	Cast Iron	PCBN/PCD
A126	A128	A129	A131	A129	A156

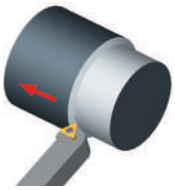
System code A194 Grade selection A40 Technical info A447 Cutting data A324

TC** holder (external) S-Clamping

STTCR/L Kr: 60°







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] a	b	L	h	s	e	Inserts
STTCR/L1616H11		●	○	16	16	100	16	13	14	TC**1102**
STTCR/L1616H16		●	●	16	16	100	16	13	19	TC**16T3**
STTCR/L2020K16		●	●	20	20	125	20	17	19	TC**16T3**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	TC**1102**	TC**16T3**
	h	**16**	**16-20**
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M3.5×12 (2.7 Nm)
	Screw (shim)		SM5×8.65XA
	Shim		T16BS
	Wrench (screw)	WT07IP	WT15IP
	Wrench (shim)		WH35L

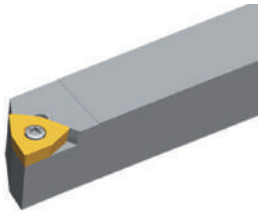
Insert

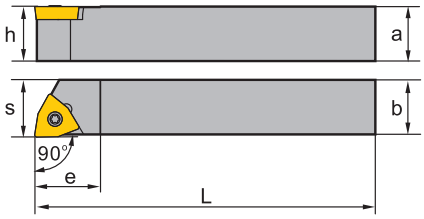
Finishing	Medium Cut	Roughing	Alum Machining	Cast Iron	PCBN/PCD
A127	A128	A129	A131	A129	A156

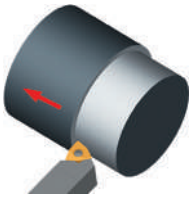
System code A194 Grade selection A40 Technical info A447 Cutting data A324

WC** holder (external) S-Clamping

SWACR/L Kr: 90°







Right hand style

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
SWACR/L1010E04		●	○	10	10	70	10	10.5	10	WC**0402**
SWACR/L1212F04		●	○	12	12	80	12	12	14	WC**0402**
SWACR/L1616H06		●	●	16	16	100	16	16.5	20	WC**06T3**
SWACR/L2020K08		●	●	20	20	125	20	20.5	24	WC**0804**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	WC**0402**	WC**06T3**	WC**0804**
	h	**10-12**	**16**	**20**
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M3×7 (1.8 Nm)	I60M3.5×12 (2.7 Nm)
	Wrench (screw)	WT07IP	WT10IP	WT15IP

Insert



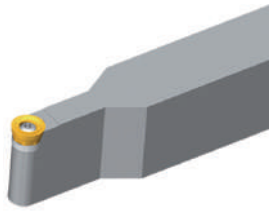
Medium Cut

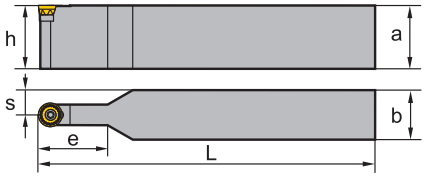
A144

System code A194 Grade selection A40 Technical info A447 Cutting data A324

RC** holder (external) S-Clamping

SRDCN







Article	✻	Stock	Dimensions [mm]						Inserts	
			a	b	L	h	s	e		
SRDCN1616H08		○	16	16	100	16	8	16	RCGX0803MO	RCMT0803MO
SRDCN2020K08		●	20	20	125	20	10	16	RCGX0803MO	RCMT0803MO
SRDCN2020K12		●	20	20	125	20	10	35	RCGX1204MO	RCMT1204MO
SRDCN2525M12		●	25	25	150	25	12.5	35	RCGX1204MO	RCMT1204MO
SRDCN3225P12		●	32	25	170	32	12.5	35	RCGX1204MO	RCMT1204MO
SRDCN2020K10		●	20	20	125	20	10	25	RCMT10T3MO	
SRDCN2525M10		●	25	25	150	25	12.5	25	RCMT10T3MO	
SRDCN3225P16		●	32	25	170	32	12.5	35	RCMT1606MO	
SRDCN3232P16		●	32	32	170	32	16	40	RCMT1606MO	
SRDCN4040S16		●	40	40	250	40	20	50	RCMT1606MO	
SRDCN4040S20		●	40	40	250	40	20	50	RCMT2006MO	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	RCGX0803MO	RCGX1204MO	RCMT10T3MO	RCMT1606MO	RCMT2006MO
	h	16-20	20-32	20-25	32-40	40
	Screw	I60M3×7 (1.8 Nm)	I60M3.5×12 (2.7 Nm)	I60M3.5×10 (2.7 Nm)		I43M6*16 (9.1 Nm)
	Screw				I60M4×15X (3.4 Nm)	
	Screw (shim)		SM5×8.65XA		SM6×10XA	
	Shim		R12BS		R16BS	
	Wrench (screw)	WT10IP	WT15IP	WT15IP	WT15IP	
	Wrench (screw)					WT25IT
	Wrench (shim)		WH35L		WH40L	

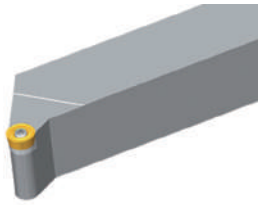
Insert

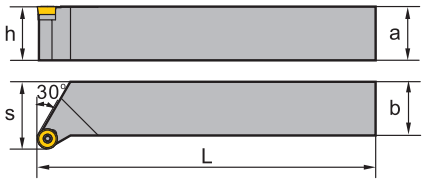
	
Alum Machining	**Cast Iron**
A118	A118

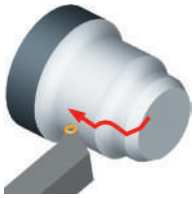
System code A194 Grade selection A40 Technical info A447 Cutting data A324

RC** holder (external) S-Clamping

SRGCR/L







Right hand style

Article	✻	Stock		Dimensions [mm]					Inserts	
		R	L	a	b	L	h	s		
SRGCR/L1616H08		●	●	16	16	100	16	20	RCGX0803MO-LH	RCMT0803MO
SRGCR/L2020K12		●	○	20	20	125	20	27	RCGX1204MO	RCMT1204MO
SRGCR/L2525M12		●	○	25	25	150	25	32	RCGX1204MO	RCMT1204MO
SRGCR/L2525M10		●	○	25	25	100	25	32	RCMT10T3MO	
SRGCR/L2020K10		●	○	20	20	125	20	25	RCMT10T3MO	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	RCGX0803MO-LH	RCGX1204MO	RCMT10T3MO
	h	**16**	**20-25**	**16-25**
	Screw	I60M3.5×10 (2.7 Nm)	I60M3.5×12 (2.7 Nm)	I60M3.5×10 (2.7 Nm)
	Screw (shim)		SM5×8.65XA	
	Shim		R12BS	
	Wrench (screw)	WT15IP	WT15IP	WT15IP
	Wrench (shim)		WH35L	

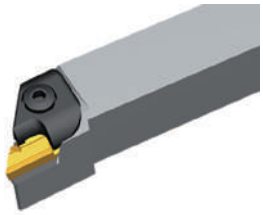
Insert

	
Alum Machining	**Cast Iron**
A118	A118

System code A194 Grade selection A40 Technical info A447 Cutting data A324

KNUX** holder C-Clamping

CKJNR/L Kr: 93°



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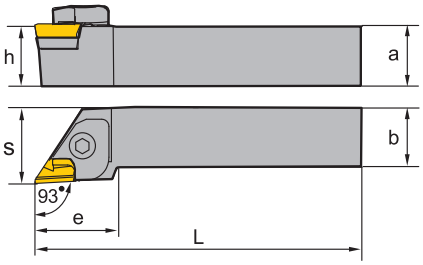




Article	*	Stock R	Stock L	Dimensions [mm] a	b	L	h	s	e	Inserts
CKJNL2525M16			●	25	25	150	25	32	32	KNUX1604**L
CKJNL3232P16			●	32	32	170	32	40	32	KNUX1604**L
CKJNL4040R16			●	40	40	200	40	50	32	KNUX1604**L
CKJNR2525M16		●		25	25	150	25	32	32	KNUX1604**R
CKJNR3232P16		●		32	32	170	32	40	32	KNUX1604**R
CKJNR4040R16		○		40	40	200	40	50	32	KNUX1604**R

● Ex stock ○ On demand

* With internal cooling

Spare parts

	Insert	KNUX1604**L	KNUX1604**R
	h	**25-40**	**25-40**
	Clamp	C6L1T	C6R1T
	Dowel pin	P0515	P0515
	Screw (clamp)	CM6×25A (7.0 Nm)	CM6×25A (7.0 Nm)
	Screw (shim)	SM3×10B	SM3×10B
	Shim		K16CC
	Shim	K16CCL	
	Spring (clamp)	SPR1	SPR1
	Spring (dowel pin)	SPR2	SPR2
	Wrench (clamp)	WH40L	WH40L
	Wrench (shim)	WH20L	WH20L

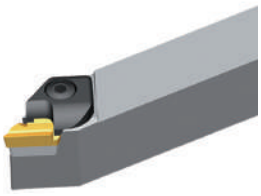
Insert

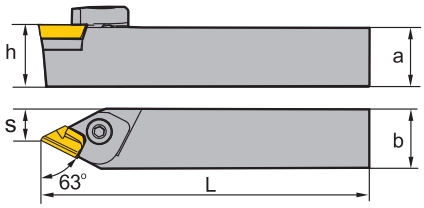
Finishing
A100

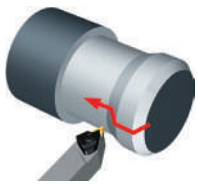
System code A194 Grade selection A40 Technical info A447 Cutting data A324

KNUX** holder C-Clamping

CKNNR/L Kr: 63°







Right hand style

Article	✻	Stock		Dimensions [mm]					Inserts
		R	L	a	b	L	h	s	
CKNNL2525M16			●	25	25	150	25	14.3	KNUX1604**L
CKNNL3232P16			○	32	32	170	32	16.8	KNUX1604**L
CKNNR2525M16		●		25	25	150	25	14.3	KNUX1604**R

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	KNUX1604**L	KNUX1604**R
	h	**25-32**	**25-32**
	Clamp	C6L1T	C6R1T
	Dowel pin	P0515	P0515
	Screw (clamp)	CM6×25A (7.0 Nm)	CM6×25A (7.0 Nm)
	Screw (shim)	SM3×10B	SM3×10B
	Shim		K16CC
	Shim	K16CCL	
	Spring (clamp)	SPR1	SPR1
	Spring (dowel pin)	SPR2	SPR2
	Wrench (clamp)	WH40L	WH40L
	Wrench (shim)	WH20L	WH20L

Insert



Finishing
A100

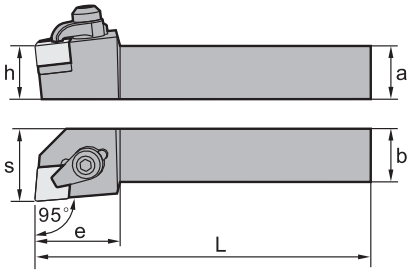
System code A194 Grade selection A40 Technical info A447 Cutting data A324

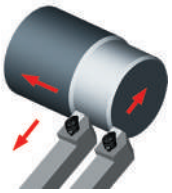
CN** holder (external) C-Clamping

CCLNR/L Kr: 95°



Right hand style





Article	✻	Stock		Dimensions [mm]						Inserts	
		R	L	a	b	L	h	s	e		
CCLNR/L2020K12		○	○	20	20	125	20	27	32	CNGN1204**	CNGN1207**
CCLNR/L2525M12		○	●	25	20	100	25	27	36	CNGN1204**	CNGN1207**
CCLNR/L2525M16		○	○	25	25	150	25	32	36	CNGN1604**	CNGN1606**
CCLNR/L3225P16		○	○	32	25	170	32	32	36	CNGN1604**	CNGN1606**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	CNGN1204**	CNGN1207**	CNGN1604**	CNGN1606**
	h	20-25	20-25	25-32	25-32
	Clamp	C1RC	C1RC	C2RC	C2RC
	Screw (clamp)	CM6×30B (7.0 Nm)	CM6×30B (7.0 Nm)	CM8×30B (10.2 Nm)	CM8×30B (10.2 Nm)
	Screw (shim)	SM3×10B	SM3×10B	SM4×12B	SM4×12B
	Shim	C12CC-04	C12CC-07	C16CC-04	C16CC-06
	Spring	SPR1	SPR1	SPR3	SPR3
	Wrench (clamp)	WH40L	WH40L	WH50L	WH50L
	Wrench (shim)	WH20L	WH20L	WH30L	WH30L

Insert



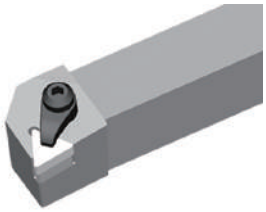
PCBN/PCD

A159

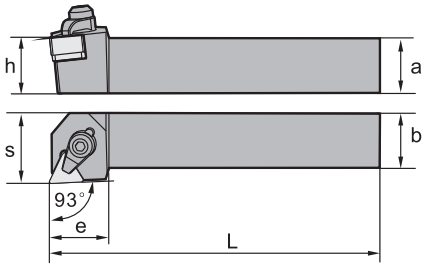
System code A194 Grade selection A40 Technical info A447 Cutting data A324

TN** holder (external) C-Clamping

CTJNR/L Kr: 93°



Right hand style





Article	✲	Stock		Dimensions [mm]						Inserts	
		R	L	a	b	L	h	s	e		
CTJNR/L2020K16		○	○	20	20	125	20	25	30	TNGN1604**	TNGN1607**
CTJNR/L2525M16		○	○	25	25	150	25	32	30	TNGN1604**	TNGN1607**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	TNGN1604**	TNGN1607**
	h	20-25	20-25
	Clamp	C1RC	C1RC
	Screw (clamp)	CM6×30B (7.0 Nm)	CM6×30B (7.0 Nm)
	Screw (shim)	SM3×10B	SM3×10B
	Shim	T16CC-04	T16CC-07
	Spring	SPR1	SPR1
	Wrench (clamp)	WH40L	WH40L
	Wrench (shim)	WH20L	WH20L

Insert



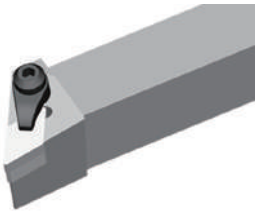
Medium Cut

A186

System code A194 Grade selection A40 Technical info A447 Cutting data A324

DN** holder (external) C-Clamping

CDJNR/L Kr: 93°



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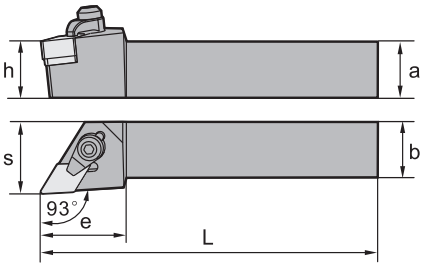
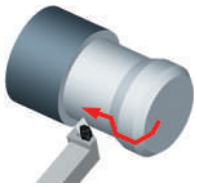




Article	✻	Stock R	Stock L	Dimensions [mm] a	b	L	h	s	e	Inserts	
CDJNR/L2525M15		●	●	25	25	150	25	32	32	DNGN1504**	DNGN1507**
CDJNR/L3225P15		○	○	32	25	170	32	32	32	DNGN1504**	DNGN1507**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	DNGN1504**	DNGN1507**
	h	25-32	25-32
	Clamp	C1RC	C1RC
	Screw (clamp)	CM6×30B (7.0 Nm)	CM6×30B (7.0 Nm)
	Screw (shim)	SM3×10B	SM3×10B
	Shim	D15CC-04	D15CC-07
	Spring	SPR1	SPR1
	Wrench (clamp)	WH40L	WH40L
	Wrench (shim)	WH20L	WH20L

Insert



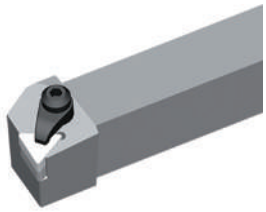
Medium Cut

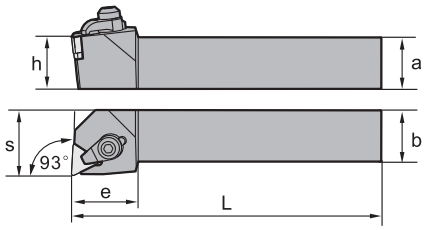
A180

System code A194 Grade selection A40 Technical info A447 Cutting data A324

TN** holder (external) C-Clamping

CTUNR/L Kr: 93°







Right hand style

Article	✲	Stock		Dimensions [mm]						Inserts	
		R	L	a	b	L	h	s	e		
CTUNR/L2525M16		○	○	25	25	150	25	32	27	TNGN1604**	TNGN1607**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	TNGN1604**	TNGN1607**
	h	**20-25**	**20-25**
	Clamp	C1RC	C1RC
	Screw (clamp)	CM6×30B (7.0 Nm)	CM6×30B (7.0 Nm)
	Screw (shim)	SM3×10B	SM3×10B
	Shim	T16CC-04	T16CC-07
	Spring	SPR1	SPR1
	Wrench (clamp)	WH40L	WH40L
	Wrench (shim)	WH20L	WH20L

Insert



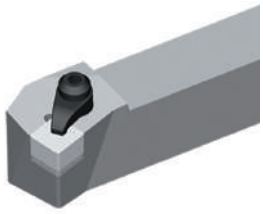
Medium Cut

A186

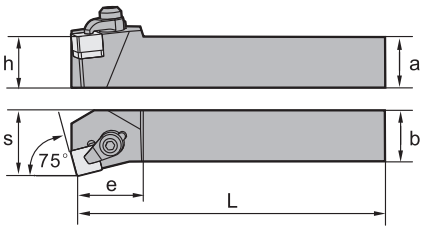
System code A194 | Grade selection A40 | Technical info A447 | Cutting data A324

SN** holder (external) C-Clamping

CSKNR/L Kr: 75°



Right hand style





Article	✻	Stock R	Stock L	Dimensions [mm] a	b	L	h	s	e	Inserts	
CSKNR/L2020K12		○	○	20	20	125	20	25	25	SNGN1204**	SNGN1207**
CSKNR/L2525M12		○	○	25	25	170	25	32	25	SNGN1204**	SNGN1207**
CSKNR/L3225P12		○	○	32	25	170	32	32	25	SNGN1204**	SNGN1207**
CSKNR/L3225P15		○	○	32	25	170	32	32	30	SNGN1507**	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	SNGN1204**	SNGN1207**	SNGN1507**
	h	20-32	20-32	32
	Clamp	C1RC	C1RC	C2RC
	Screw (clamp)	CM6×30B (7.0 Nm)	CM6×30B (7.0 Nm)	CM8×30B (10.2 Nm)
	Screw (shim)	SM3×10B	SM3×10B	SM4×12B
	Shim	S12CC-04	S12CC-07	S15CC-07
	Spring	SPR1	SPR1	SPR3
	Wrench (clamp)	WH40L	WH40L	WH50L
	Wrench (shim)	WH20L	WH20L	WH30L

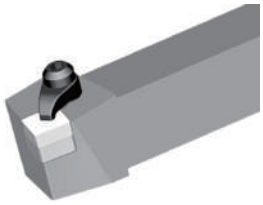
Insert

	
Cast Iron	**PCBN/PCD**
A77	A160

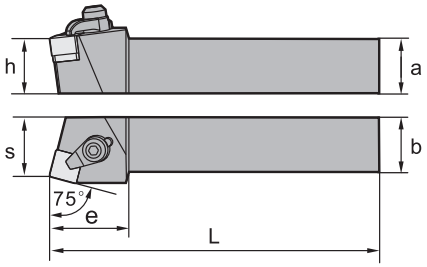
System code A194 Grade selection A40 Technical info A447 Cutting data A324

SN** holder (external) C-Clamping

CSRNR/L Kr: 75°



Right hand style





Article	✻	Stock		Dimensions [mm]						Inserts	
		R	L	a	b	L	h	s	e		
CSRNR/L2020K12		○	○	20	20	125	20	22	32	SNGN1204**	SNGN1207**
CSRNR/L2525M12		○	○	25	20	100	25	27	32	SNGN1204**	SNGN1207**
CSRNR/L3225P12		○	○	32	25	170	32	27	32	SNGN1204**	SNGN1207**
CSRNR/L3225P15		○	○	32	25	170	32	32	40	SNGN1507**	
CSRNR/L4040R15		○	○	40	40	200	40	43	40	SNGN1507**	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	SNGN1204**	SNGN1207**	SNGN1507**
	h	20-32	20-32	32-40
	Clamp	C1RC	C1RC	C2RC
	Screw (clamp)	CM6×30B (7.0 Nm)	CM6×30B (7.0 Nm)	CM8×30B (10.2 Nm)
	Screw (shim)	SM3×10B	SM3×10B	SM4×12B
	Shim	S12CC-04	S12CC-07	S15CC-07
	Spring	SPR1	SPR1	SPR3
	Wrench (clamp)	WH40L	WH40L	WH50L
	Wrench (shim)	WH20L	WH20L	WH30L

Insert

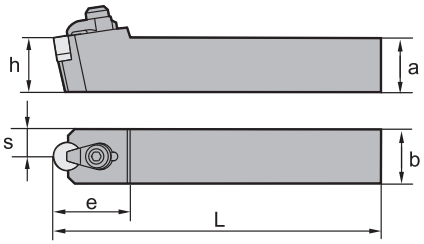
Cast Iron	PCBN/PCD
A77	A160

System code A194 Grade selection A40 Technical info A447 Cutting data A324

RN** holder (external) C-Clamping

CRDNN







Article	✻	Stock	Dimensions [mm]						Inserts	
			a	b	L	h	s	e		
CRDNN2020K12		○	20	20	125	20	10	32	RNGN1204**	RNGN1207**
CRDNN2525M12		○	25	25	150	25	12.5	32	RNGN1204**	RNGN1207**
CRDNN3225P12		○	32	25	170	32	12.5	32	RNGN1204**	RNGN1207**
CRDNN3232P15		○	32	32	170	32	17.5	40	RNGN1507**	
CRDNN4040R15		○	40	40	200	40	20	40	RNGN1507**	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	RNGN1204**	RNGN1207**	RNGN1507**
	h	**20-32**	**20-32**	**32-40**
	Clamp	C1RC	C1RC	C2RC
	Screw (clamp)	CM6×30B (7.0 Nm)	CM6×30B (7.0 Nm)	CM8×30B (10.2 Nm)
	Screw (shim)	SM3×10B	SM3×10B	SM4×12B
	Shim	R12CC-04	R12CC-07	R15CC-07
	Spring	SPR1	SPR1	SPR3
	Wrench (clamp)	WH40L	WH40L	WH50L
	Wrench (shim)	WH20L	WH20L	WH30L

Insert



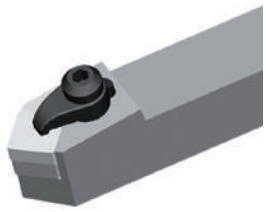
PCBN/PCD

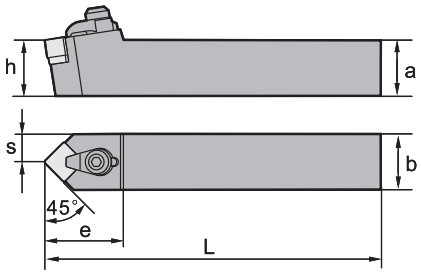
A162

System code A194 Grade selection A40 Technical info A447 Cutting data A324

SN** holder (external) C-Clamping

CSDNN Kr: 45°







Article	✻	Stock	Dimensions [mm]						Inserts	
			a	b	L	h	s	e		
CSDNN2020K12		○	20	20	125	20	10	35	SNGN1204**	SNGN1207**
CSDNN2525M12		●	25	25	150	25	12.5	30	SNGN1204**	SNGN1207**
CSDNN3225P12		○	32	25	170	32	12.5	35	SNGN1204**	SNGN1207**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	SNGN1204**	SNGN1207**
	h	20-32	20-32
	Clamp	C1RC	C1RC
	Screw (clamp)	CM6×30B (7.0 Nm)	CM6×30B (7.0 Nm)
	Screw (shim)	SM3×10B	SM3×10B
	Shim	S12CC-04	S12CC-07
	Spring	SPR1	SPR1
	Wrench (clamp)	WH40L	WH40L
	Wrench (shim)	WH20L	WH20L

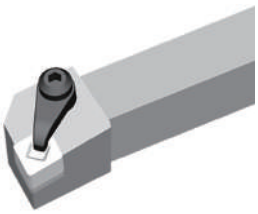
Insert

Cast Iron	PCBN/PCD
A77	A160

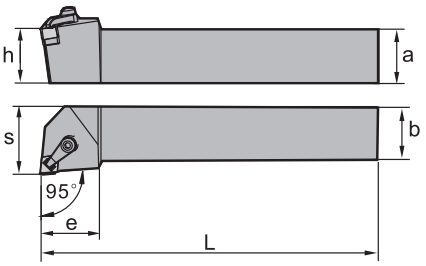
System code A194 Grade selection A40 Technical info A447 Cutting data A324

CN** holder (external) J-Clamping

JCLNR/L Kr: 95°



Right hand style





Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
JCLNR/L2020K12		○	○	20	20	125	20	29	32	CNGX1207**
JCLNR/L2525M12		○	○	25	25	150	25	32	32	CNGX1207**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	CNGX1207**
	h	20-25
	Clamp	C1RJ
	Screw (clamp)	CM6×30B (7.0 Nm)
	Screw (shim)	SM3×10B
	Shim	C12CC-07
	Spring	SPR1
	Wrench (clamp)	WH40L
	Wrench (shim)	WH20L

Insert

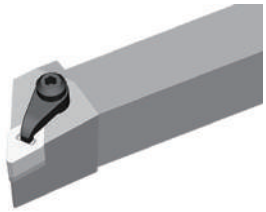
Medium Cut

A178

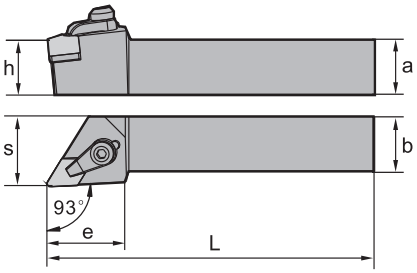
System code A194 Grade selection A40 Technical info A447 Cutting data A324

DN** holder (external) J-Clamping

JDJNR/L Kr: 93°



Right hand style





Article	✲	Stock		Dimensions [mm]						Inserts
		R	L	a	b	L	h	s	e	
JDJNR/L2525M15		●	○	25	25	150	25	32	38	DNGX1507**
JDJNR/L3225P15		○	○	32	25	170	32	32	38	DNGX1507**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	DNGX1507**
	h	25-32
	Clamp	C1RJ
	Screw (clamp)	CM6×30B (7.0 Nm)
	Screw (shim)	SM3×10B
	Shim	D15CC-07
	Spring	SPR1
	Wrench (clamp)	WH40L
	Wrench (shim)	WH20L

Insert



Medium Cut

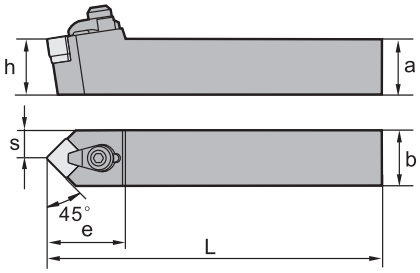
A181

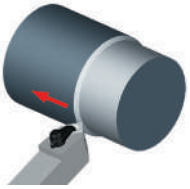
System code A194 Grade selection A40 Technical info A447 Cutting data A324

SN** holder (external) J-Clamping

JSDNN Kr: 45°







Article	*	Stock	Dimensions [mm]						Inserts
			a	b	L	h	s	e	
JSDNN2020K12		○	20	20	125	20	10	40	SNGX1207**
JSDNN2525M12		○	25	25	150	25	12.5	40	SNGX1207**
JSDNN3225P12		○	32	25	170	32	12.5	40	SNGX1207**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	SNGX1207**
	h	**20-32**
	Clamp	C1RJ
	Screw (clamp)	CM6×30B (7.0 Nm)
	Screw (shim)	SM3×10B
	Shim	S12CC-07
	Spring	SPR1
	Wrench (clamp)	WH40L
	Wrench (shim)	WH20L

Insert

Medium Cut

A183

System code A194 Grade selection A40 Technical info A447 Cutting data A324

Notes

S	C	L	N	L	25	25	M	12	–	S	C
1	2	3	4	5	6	7	8	9		10	11

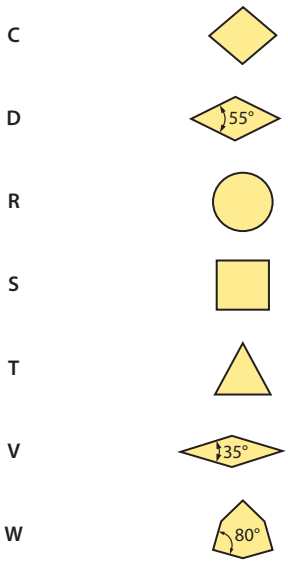
Clamping system

Code	Description
S	Knee lever clamping



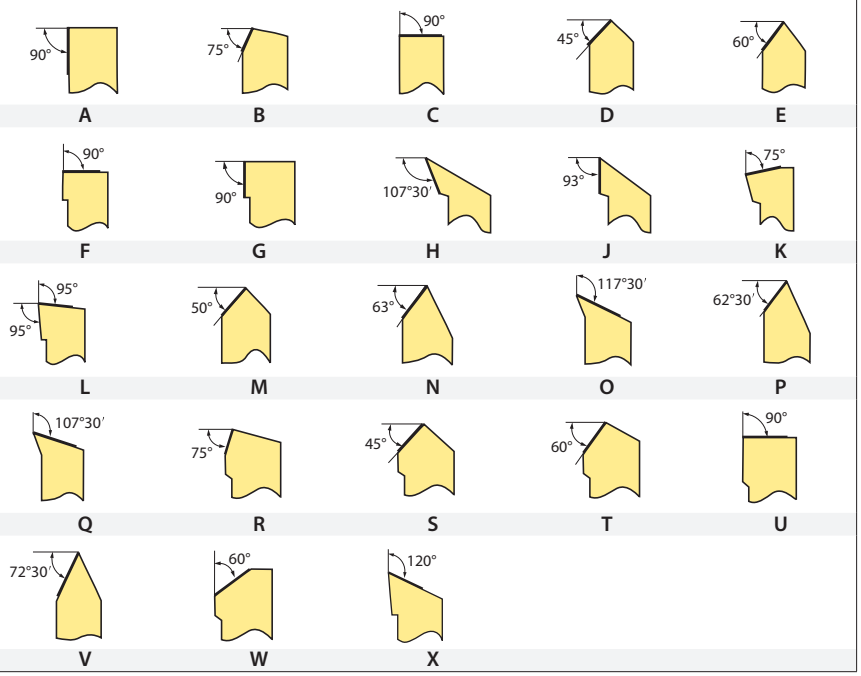
1

Insert shape



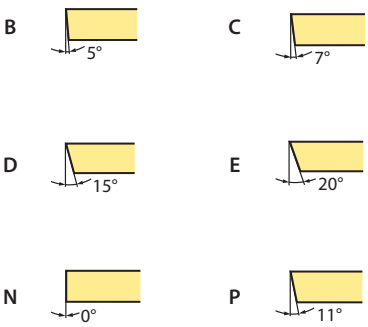
2

Tool holder type and entering angle



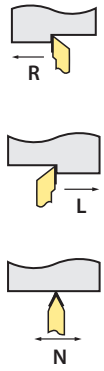
3

Clearance angle



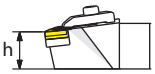
4

Cutting direction



5

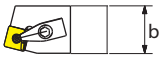
Shank height h [mm]



Code	h
12	12
16	16
20	20
25	25
32	32
40	40
50	50

6

Shank width b [mm]



Code	b
12	12
16	16
20	20
25	25
32	32
40	40
50	50

7

Holder length L [mm]



Code	L
H	100
K	125
M	150
P	170
Q	180
R	200
S	250
T	300

8

Cutting edge length l [mm]

I.C [mm]	Insert shape						
	C	D	R	S	T	V	W
5,56					**09**		
6,35	**06**	**07**			**11**		
9,525	**09**	**11**	**09**	**09**	**16**	**16**	**06**
12,7	**12**	**15**	**12**	**12**	**22**	**22**	**08**
15,875	**16**	**19**	**15**	**15**	**27**		
19,05	**19**		**19**	**19**	**33**		
25,4	**25**		**25**	**25**	**44**		
32			**32**				

9

Swissturning

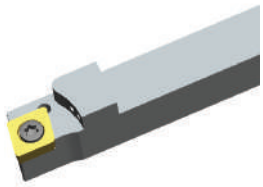
10

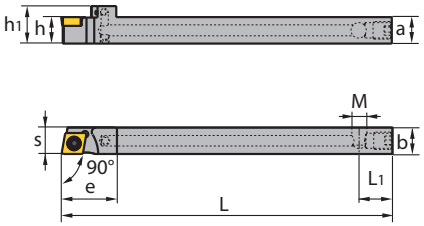
With inner cooling

11

CC** holder S-Clamping

SCACR/L-SC Kr: 90°





Article	✻	Stock R	Stock L	a	b	L	h	h_1	s	L_1	e	M	kg	Inserts
SCACR/L1212M09-SC	✻	●	●	12	12	150	12	17	12	15	25	M8X1	0.14	CC**09T3**
SCACR/L1616H09-SC	✻	●	●	16	16	100	16	21	16	15	28	M8X1	0.21	CC**09T3**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	CC**09T3**
	h	12-16
	Screw	I60M3.5×8 (2.7 Nm)
	Wrench	WT15IP

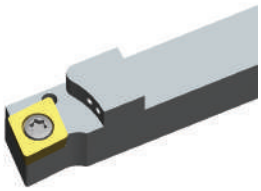
Insert

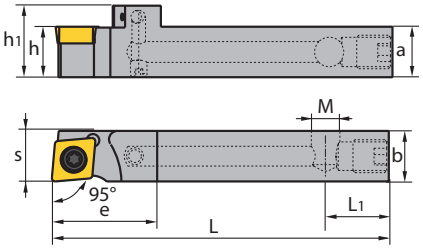
Finishing	Medium Cut	Roughing	Alum Machining	Cast Iron	PCBN/PCD
A102	A106	A107	A108	A107	A154

System code > A270 Grade selection > A40 Technical info > A447 Cutting data > A324

CC** holder S-Clamping

SCLCR/L-SC Kr: 95°





Article	✲	Stock R	Stock L	a	b	L	h	h_1	s	L_1	e	M	kg	Inserts
SCLCR/L1010F06-S		●	●	10	10	80	10		10		10		0.06	CC**0602**
SCLCR/L1212F09-SC	✲	●	●	12	12	80	12	17	12	15	25	M8X1	0.07	CC**09T3**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	CC**0602**	CC**09T3**
	h	**10**	**12**
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M3.5×8 (2.7 Nm)
	Wrench	WT07IP	WT15IP

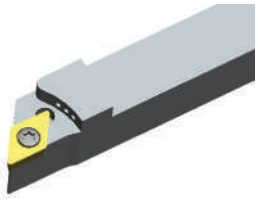
Insert

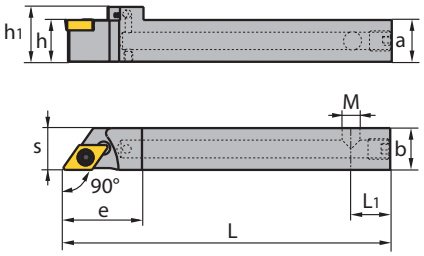
Finishing	Medium Cut	Roughing	Alum Machining	Cast Iron	PCBN/PCD
A102	A106	A107	A108	A107	A154

System code A270 Grade selection A40 Technical info A447 Cutting data A324

DC** holder S-Clamping

SDACR/L-SC Kr: 90°





Article	✻	Stock R	Stock L	a	b	L	h	h_1	s	L_1	e	M	kg	Inserts
SDACR/L1212M07-SC	✻	●	●	12	12	150	12	17	12	15	25	M8X1	0.15	DC**0702**
SDACR/L1616K11-SC	✻	●	●	16	16	125	16	21	16	15	30	M8X1	0.21	DC**11T3**
SDACR/L1212M11-SC	✻	●	●	12	12	150	12	17	12	15	30	M8X1	0.14	DC**11T3**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	DC**0702**	DC**11T3**
	h	**12**	**12-16**
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M3.5×8 (2.7 Nm)
	Wrench	WT07IP	WT15IP

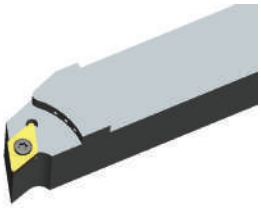
Insert

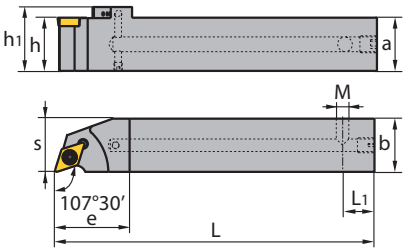
 Finishing	 Medium Cut	 Roughing	 Alum Machining	 Cast Iron	 PCBN/PCD
A112	A114	A115	A115	A115	A155

System code A270 Grade selection A40 Technical info A447 Cutting data A324

DC** holder S-Clamping

SDHCR/L-SC Kr: 107°30'





Article	✻	Stock	Dimensions [mm]									kg	Inserts
			a	b	L	h	h_1	s	L_1	e	M		
SDHCR/L2020K11-SC	✻	○	20	20	125	20	25	20	15	30	M8X1	0.35	DC**11T3**
SDHCR/L2525M11-SC	✻	●	25	25	150	25	30	25	15	35	M8X1	0.66	DC**11T3**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	DC**11T3**
	h	**20-25**
	Screw	I60M3.5×8 (2.7 Nm)
	Wrench	WT15IP

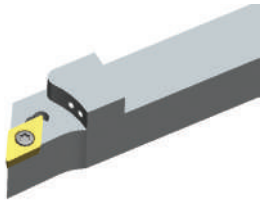
Insert

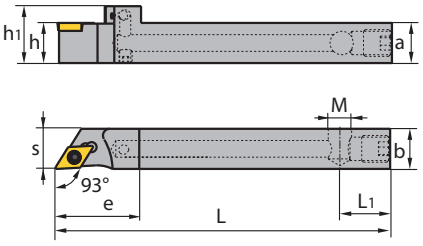
Finishing	Medium Cut	Roughing	Alum Machining	Cast Iron	PCBN/PCD
A112	A114	A115	A115	A115	A155

System code A270 Grade selection A40 Technical info A447 Cutting data A324

DC** holder S-Clamping

SDJCR/L-SC Kr: 93°





Article	*	Stock R	Stock L	a	b	L	h	h_1	s	L_1	e	M	kg	Inserts
SDJCR/L1212H07-SC	*	●	●	12	12	100	12	17	12	15	25	M8X1	0.1	DC**0702**
SDJCR/L1212H11-SC	*	●	●	12	12	100	12	17	12	15	30	M8X1	0.1	DC**11T3**
SDJCR/L1616K11-SC	*	●	●	16	16	125	16	21	16	15	30	M8X1	0.21	DC**11T3**

● Ex stock ○ On demand

* With internal cooling

Spare parts

	Insert	DC**0702**	DC**11T3**
	h	**12**	**12-16**
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M3.5×8 (2.7 Nm)
	Wrench	WT07IP	WT15IP

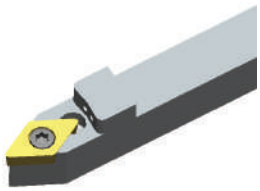
Insert

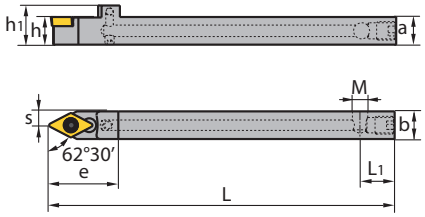
 Finishing	 Medium Cut	 Roughing	 Alum Machining	 Cast Iron	 PCBN/PCD
A112	A114	A115	A115	A115	A155

System code A270 Grade selection A40 Technical info A447 Cutting data A324

DC** holder S-Clamping

SDNCN-SC Kr: 62°30'





Article	✻	Stock	Dimensions [mm]									kg	Inserts
			a	b	L	h	h_1	s	L_1	e	M		
SDNCN1212M11-SC	✻	●	12	12	150	12	17	6	15	30	M8X1	0.14	DC**11T3**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	DC**11T3**
	h	**12**
	Screw	I60M3,5x8 (2.7 Nm)
	Wrench	WT15IP

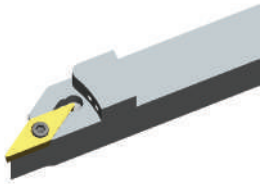
Insert

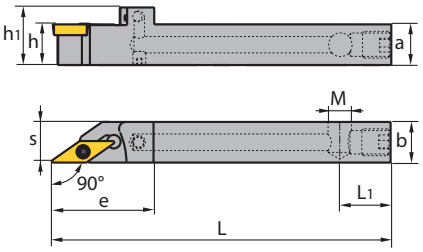
Finishing	Medium Cut	Roughing	Alum Machining	Cast Iron	PCBN/PCD
A112	A114	A115	A115	A115	A155

System code A270 Grade selection A40 Technical info A447 Cutting data A324

VC** holder S-Clamping

SVACR/L-SC Kr: 90°





Article	✻	Stock R	Stock L	a	b	L	h	h_1	s	L_1	e	M	kg	Inserts
SVACR/L1212H11-SC	✻	●	●	12	12	100	12	17	12	15	30	M8X1	0.1	VC**1103**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	VC**1103**
	h	12
	Screw	I60M2.5×6.5 (1.0 Nm)
	Wrench	WT07IP

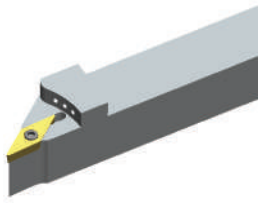
Insert

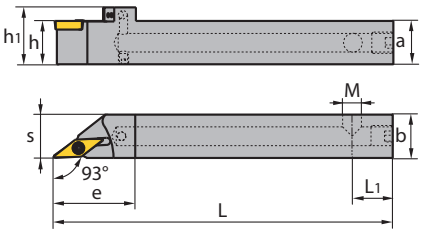
 Finishing	 Alum Machining
A135	A136

System code A270 Grade selection A40 Technical info A447 Cutting data A324

VC** holder S-Clamping

SVJCR/L-SC Kr: 93°





Article	✲	Stock R	Stock L	a	b	L	h	h_1	s	L_1	e	M	kg	Inserts
SVJCR/L0808H11-S		●	●	8	8	100	8		8		22		0.044	VC**1103**
SVJCR/L1212H11-SC	✲	●	●	12	12	100	12	17	12	15	30	M8X1	0.095	VC**1103**
SVJCR/L1616K11-SC	✲	●	●	16	16	125	16	21	16	15	30	M8X1	0.2	VC**1103**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

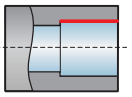
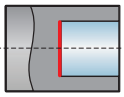
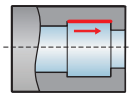
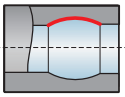
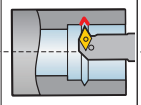
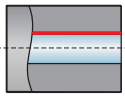
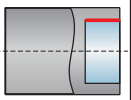
	Insert	VC**1103**
	h	**8-16**
	Screw	I60M2.5×6.5 (1.0 Nm)
	Wrench	WT07IP

Insert

 **Finishing**	 **Alum Machining**
A135	A136

System code A270 Grade selection A40 Technical info A447 Cutting data A324

Boring bars

	Boring bar	Application					Workpiece		Page
		Longitudinal turning	Facing	Undercut	Contouring	Profiling	Stable	Unstable	
									
P	PDSNR/L 62°30' 	●		●	●	●	●		A286
P	PCLNR/L 95° 	●	●				●	●	A284
P	PDUNR/L 93° 	●			●	●	●	●	A287
P	PSKNR/L 75° 	●					●		A289
P	PTFNR/L 91° 	●					●		A290
P	PWLNR/L 95° 	●	●				●		A291
S	SCFCR/L 90° 	●					●	●	A310
S	SCLCR/L 95° 	●	●				●		A293
S	SCLPR/L 95° 	●	●				●	●	A306
S	SDQCR/L 107°30' 	●			●	●	●	●	A295
S	SDQPR/L 107°30' 	●			●	●	●	●	A307
S	SDUCR/L 93° 	●			●	●	●	●	A296
S	SDUPR/L 93° 	●			●		●	●	A308
S	SDZCR/L 95° 			●			●		A297
S	SSKCR/L 75° 	●					●		A298

● Recommended

Boring bars

	Boring bar		Application					Workpiece		Page
			Longitudinal turning	Facing	Undercut	Contouring	Profiling	Stable	Unstable	
S	STFCR/L 91°		●							A300
S	STUPR/L 93°		●							A309
S	SVQBR/L 107°30'		●			●	●			A304
S	SVQCR/L 107°30'		●							A302
S	SVUBR/L 93°		●			●	●			A305
S	SVUCR/L 93°		●			●	●			A303
Anti-vibratoire	SCLPR/L 95°		●	●						A312
Anti-vibratoire	SDQPR/L 107°30'		●			●	●			A314
Anti-vibratoire	SDUPR/L 93°		●							A316
Anti-vibratoire	STUPR/L 93°		●							A318
Anti-vibratoire	SVQCR/L 107°30'		●			●	●			A321
Anti-vibratoire	SVUCR/L 93°		●			●	●			A322

● Recommended

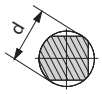
General turning ISO-Code – boring bars

S	16	R	–	S	D	U	C	R	07
1	2	3		4	5	6	7	8	9

1 Shank type

Code	Description
A	Steel shank (IC)
C	Solid carbide shank
E	Solid carbide shank (IC)
S	Steel shank
X	Special application

2 Shank diameter d [mm]



Code	d
16	16
20	20
25	25
32	32
40	40
50	50

3 Clamping system

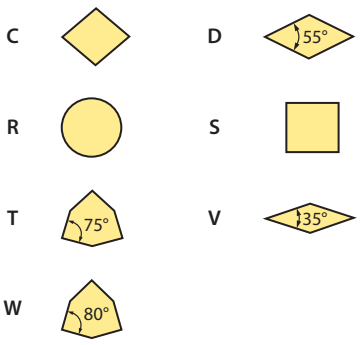


Code	L
H	100
K	125
M	150
N	160
Q	180
R	200
S	250
T	300
U	350
V	400

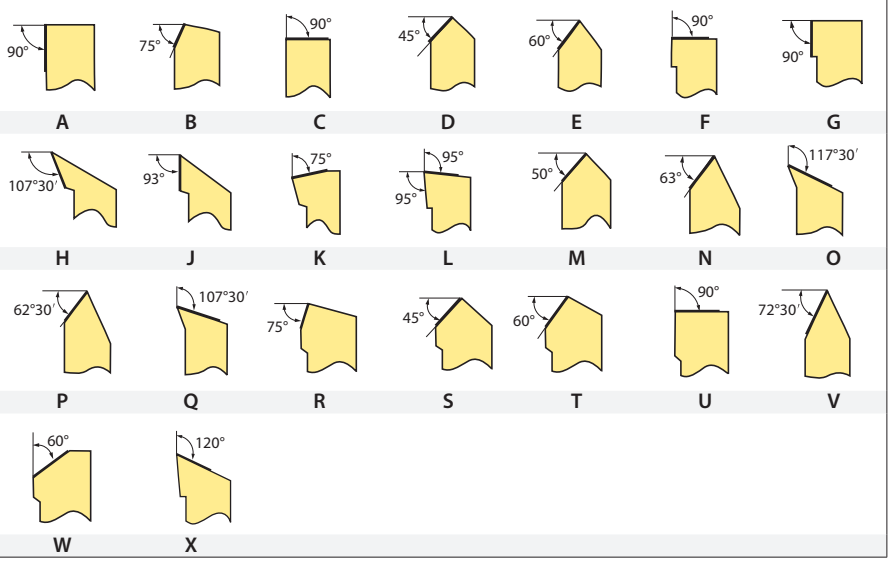
4 Clamping system

Code	Description	
P	Knee lever clamping	
S	Screw clamping	

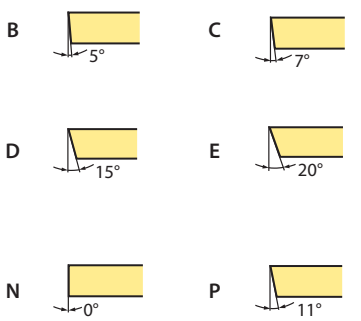
5 Insert shape

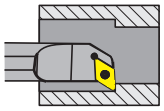
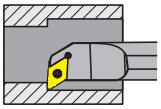


6 Tool holder type and entering angle



7 Clearance angle



Cutting direction
 L
 R

8

Cutting edge length l [mm]							
I.C [mm]	Insert shape						
	C	D	R	S	T	V	W
5,56					**09**		
6,35	**06**	**07**			**11**		
9,525	**09**	**11**	**09**	**09**	**16**	**16**	**06**
12,7	**12**	**15**	**12**	**12**	**22**	**22**	**08**
15,875	**16**	**19**	**15**	**15**	**27**		
19,05	**19**		**19**	**19**	**33**		
25,4	**25**		**25**	**25**	**44**		
32			**32**				

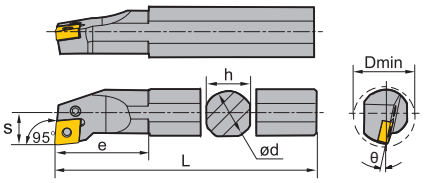
9

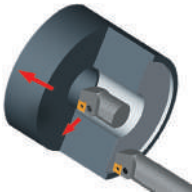
CN** steel boring bar P-Clamping

PCLNR/L Kr: 95°



Right hand style





Article	✻	Stock		Dimensions [mm]							Inserts
		R	L	ød	L	h	S	e	D_{min}	θ	
S16M-PCLNR/L09		●	●	16	150	15	11	28	20	-12	CN**0903**
S16R-PCLNR/L09		●	●	16	200	15	11	28	20	-12	CN**0903**
S20Q-PCLNR/L09		●	●	20	180	18	13	31	25	-11	CN**0903**
S20S-PCLNR/L09		●	●	20	250	18	13	31	25	-11	CN**0903**
S25Q-PCLNR/L09		○	○	25	180	23	17	35	32	-10	CN**0903**
S25T-PCLNR/L09		●	○	25	300	23	17	35	32	-10	CN**0903**
S25Q-PCLNR/L12		○	○	25	180	23	17	40	32	-12	CN**1204**
S25T-PCLNR/L12		●	●	25	300	23	17	40	32	-12	CN**1204**
S32R-PCLNR/L12		●	●	32	200	30	22	50	44	-10	CN**1204**
S32U-PCLNR/L12		●	●	32	350	30	22	50	44	-10	CN**1204**
S40S-PCLNR/L12		○	●	40	250	37	27	55	54	-10	CN**1204**
S40V-PCLNR/L12		●	●	40	400	37	27	55	54	-10	CN**1204**
S50S-PCLNR/L12		○	○	50	250	47	35	56	63	-10	CN**1204**
S50W-PCLNR/L12		●	●	50	450	47	35	56	63	-10	CN**1204**
A25R-PCLNR/L12	✻	●	●	25	200	24	17	40	32	-12	CN**1204**
A32S-PCLNR/L12	✻	●	●	32	250	31	22	50	44	-10	CN**1204**
S50S-PCLNR/L19		○	○	50	250	47	35	63	63	-10	CN**1906**
S50W-PCLNR/L19		●	○	50	450	47	35	63	63	-10	CN**1906**

● Ex stock ○ On demand

✻ With internal cooling

System code A282 Grade selection A40 Technical info A447 Cutting data A324

CN** steel boring bar

Spare parts

	Insert	CN**0903**	CN**1204**	CN**1204**	CN**1906**
	ød	16-25	25	32-50	50
	Knee lever	L3C	L4A	L4	L6
	Screw	LEM5×12B (4.0 Nm)			
	Screw		LEM8×21 (10.2 Nm)	LEM8×21 (10.2 Nm)	LEM10×27 (16.6 Nm)
	Shim pin (shim)			SP4	SP6
	Shim				C19AP
	Shim			C12APB	
	Wrench	WH20L	WH25L	WH30L	WH40L

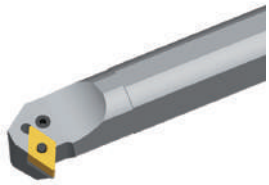
Insert

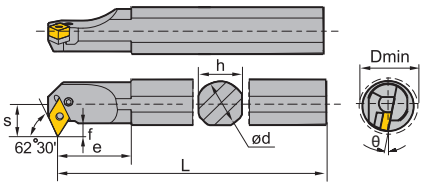
					
Wiper	**Finishing**	**Medium Cut**	**Roughing**	**Cast Iron**	**PCBN/PCD**
A45	A45	A46	A53	A53	A148

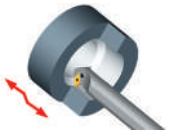
System code A282 | Grade selection A40 | Technical info A447 | Cutting data A324

DN** steel boring bar P-Clamping

PDSNR/L Kr: 62°30'







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] ød	L	h	s	e	f	D_{min}	θ	Inserts
S32R-PDSNR/L15-3		○	○	32	200	30	22	45	8.5	40	-11	DN**1504**
S40V-PDSNR/L15-3		●		40	400	37	27	43	9.4	50	-11	DN**1504**
A32S-PDSNR/L15-3	✻	○	○	32	250	31	22	45	8.5	40	-11	DN**1504**
S32R-PDSNR/L15		●	●	32	200	30	22	45	8.5	40	-11	DN**1506**
S32U-PDSNR/L15		●	●	32	350	30	22	45	8.5	40	-11	DN**1506**
S40S-PDSNR/L15		○	○	40	250	37	27	43	9.4	50	-11	DN**1506**
S40V-PDSNR/L15		○	○	40	400	37	27	43	9.4	50	-11	DN**1506**
A32S-PDSNR/L15	✻	●	●	32	250	31	22	45	8.5	40	-11	DN**1506**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	DN**1504**	DN**1506**
	ød	**32-40**	**32-40**
	Knee lever	L4	L4B
	Screw	LEM8×21 (10.2 Nm)	LEM8×21 (10.2 Nm)
	Shim pin (shim)	SP4	SP4
	Shim	D15AP	D15AP
	Wrench	WH30L	WH30L

Insert

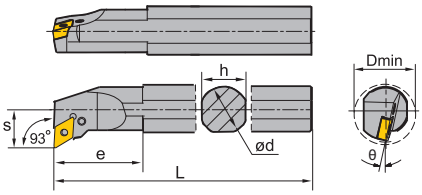
Wiper	Finishing	Medium Cut	Roughing	Cast Iron	PCBN/PCD
A55	A55	A56	A60	A61	A149

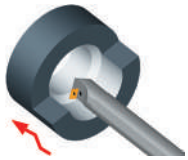
System code A282 Grade selection A40 Technical info A447 Cutting data A324

DN** steel boring bar P-Clamping

PDUNR/L Kr: 93°







Right hand style

Article	✲	Stock R	Stock L	Dimensions [mm] ød	L	h	s	e	D_{min}	θ	Inserts
S20Q-PDUNR/L11		●	○	20	180	18	13	30	25	-16	DN**1104**
S20S-PDUNR/L11		●	●	20	250	18	13	30	25	-16	DN**1104**
S25Q-PDUNR/L11		●	●	25	180	23	17	35	32	-13	DN**1104**
S25T-PDUNR/L11		●	●	25	300	23	17	35	32	-13	DN**1104**
S32R-PDUNR/L11		○	○	32	200	30	22	40	40	-16	DN**1104**
S32U-PDUNR/L11		●	●	32	350	30	22	40	40	-16	DN**1104**
S32R-PDUNR/L15-3		○	○	32	200	30	22	50	40	-16	DN**1504**
S32U-PDUNR/L15-3		●	●	32	350	30	22	50	40	-16	DN**1504**
S40S-PDUNR/L15-3		○	○	40	250	37	27	50	50	-11	DN**1504**
S40V-PDUNR/L15-3		●	●	40	400	37	27	50	50	-11	DN**1504**
A32S-PDUNR/L15-3	✲	●	●	32	250	31	22	50	40	-16	DN**1504**
S32R-PDUNR/L15		○	○	32	200	30	22	50	40	-16	DN**1506**
S32U-PDUNR/L15		●	●	32	350	30	22	50	40	-16	DN**1506**
S40S-PDUNR/L15		○	○	40	250	37	27	50	50	-11	DN**1506**
S40V-PDUNR/L15		●	●	40	400	37	27	50	50	-11	DN**1506**
A32S-PDUNR/L15	✲	●	●	32	250	31	22	50	40	-16	DN**1506**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	DN**1104**	DN**1104**	DN**1504**	DN**1506**
	ød	**20-25**	**32**	**32-40**	**32-40**
	Knee lever	L3D	L3	L4	L4B
	Screw	LEM5×12B (4.0 Nm)	LEM6×17 (7.0 Nm)		
	Screw			LEM8×21 (10.2 Nm)	LEM8×21 (10.2 Nm)
	Shim pin (shim)		SP3	SP4	SP4
	Shim		D11AP	D15AP	D15AP
	Wrench	WH20L	WH25L	WH30L	WH30L

System code A282 Grade selection A40 Technical info A447 Cutting data A324

DN** steel boring bar

Insert

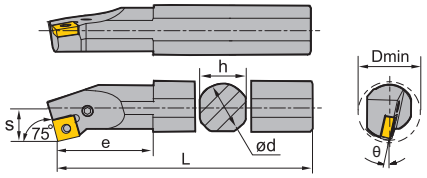
					
Wiper	**Finishing**	**Medium Cut**	**Roughing**	**Cast Iron**	**PCBN/PCD**
A55	A55	A56	A60	A61	A149

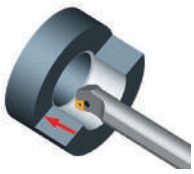
System code > A282 Grade selection > A40 Technical info > A447 Cutting data > A324

SN** steel boring bar P-Clamping

PSKNR/L Kr: 75°







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] ød	L	h	s	e	D_{min}	θ	Inserts
S25Q-PSKNR/L12		○	●	25	180	23	17	42	32	-12	SN**1204**
S25T-PSKNR/L12		●	○	25	300	23	17	42	32	-12	SN**1204**
S32R-PSKNR/L12		○	○	32	200	30	22	45	44	-10	SN**1204**
S32U-PSKNR/L12		●	●	32	350	30	22	45	44	-10	SN**1204**
S40S-PSKNR/L12		○	○	40	250	37	27	50	54	-10	SN**1204**
S40V-PSKNR/L12		●	○	40	400	37	27	50	54	-10	SN**1204**
A25R-PSKNR/L12	✻	●	●	25	200	24	17	42	32	-12	SN**1204**
A32S-PSKNR/L12	✻	●	●	32	250	31	22	50	44	-12	SN**1204**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	SN**1204**	SN**1204**
	ød	**25**	**32-40**
	Knee lever	L4A	L4
	Screw		LEM8×21 (10.2 Nm)
	Screw	LEM6×13.4A (7.0 Nm)	
	Shim pin (shim)		SP4
	Shim		S12APB
	Wrench	WH25L	WH30L

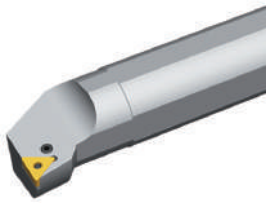
Insert

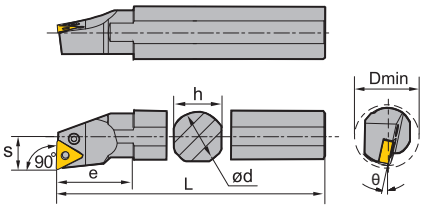
				
Finishing	**Medium Cut**	**Roughing**	**Cast Iron**	**PCBN/PCD**
A63	A65	A68	A74	A150

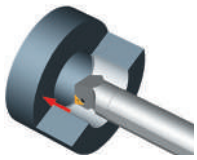
System code A282 Grade selection A40 Technical info A447 Cutting data A324

TN** steel boring bar P-Clamping

PTFNR/L Kr: 90°







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] ød	L	h	s	e	D_{min}	θ	Inserts
S16M-PTFNR/L11		○	○	16	150	15	11	28	20	-14	TN**1103**
S16R-PTFNR/L11		●	●	16	200	15	11	28	20	-14	TN**1103**
S20Q-PTFNR/L11		●	●	20	180	18	13	31	25	-12	TN**1103**
S20S-PTFNR/L11		●	●	20	250	18	13	31	25	-12	TN**1103**
S25Q-PTFNR/L11		○	○	25	180	23	17	35	32	-10	TN**1103**
S25T-PTFNR/L11		○	○	25	300	23	17	35	32	-10	TN**1103**
S25Q-PTFNR/L16		○	○	25	180	23	17	42	32	-12	TN**1604**
S25T-PTFNR/L16		●	●	25	300	23	17	42	32	-12	TN**1604**
S32R-PTFNR/L16		○	○	32	200	30	22	50	44	-10	TN**1604**
S32U-PTFNR/L16		●	●	32	350	30	22	50	44	-10	TN**1604**
S40S-PTFNR/L16		○	○	40	250	37	27	55	54	-10	TN**1604**
S40V-PTFNR/L16		●	●	40	400	37	27	55	54	-10	TN**1604**
A25R-PTFNR/L16	✻	●	○	25	200	24	17	40	32	-12	TN**1604**
A32S-PTFNR/L16	✻	●	●	32	250	31	22	50	44	-10	TN**1604**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	TN**1103**	TN**1604**	TN**1604**
	ød	16-25	25	32-40
	Knee lever	L2	L3B	L3
	Screw	LEM5×9B (4.0 Nm)	LEM5×12B (4.0 Nm)	LEM6×17 (7.0 Nm)
	Shim pin (shim)			SP3
	Shim			T16APB
	Wrench	WH20L	WH20L	WH25L

Insert

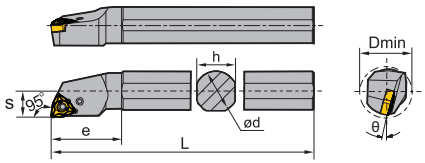
					
Wiper	**Finishing**	**Medium Cut**	**Roughing**	**Cast Iron**	**PCBN/PCD**
A78	A79	A81	A84	A88	A151

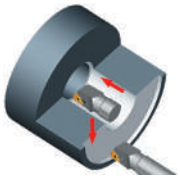
System code > A282 Grade selection > A40 Technical info > A447 Cutting data > A324

WN** steel boring bar P-Clamping

PWLNR/L Kr: 95°







Right hand style

Article	✻	Stock		Dimensions [mm]							Inserts
		R	L	ød	L	h	s	e	D_{min}	θ	
S16M-PWLNR/L06		●	●	16	150	15	11	25	20	-13	WN**0604**
S16R-PWLNR/L06		○		16	200	15	11	25	20	-13	WN**0604**
S20Q-PWLNR/L06		●	●	20	180	18	13	35	25	-13	WN**0604**
S20S-PWLNR/L06		●	○	20	250	18	13	35	25	-13	WN**0604**
S25Q-PWLNR/L06		○	○	25	180	23	17	35	32	-13	WN**0604**
S25T-PWLNR/L06		○		25	300	23	17	35	32	-13	WN**0604**
S20Q-PWLNR/L08		●	●	20	180	18	13	32	25	-13	WN**0804**
S20S-PWLNR/L08		●		20	250	18	13	32	25	-13	WN**0804**
S25Q-PWLNR/L08		●	○	25	180	23	17	45	32	-13	WN**0804**
S25T-PWLNR/L08		●	●	25	300	23	17	45	32	-13	WN**0804**
S32R-PWLNR/L08		●	●	32	200	30	22	50	40	-15	WN**0804**
S32U-PWLNR/L08		●	●	32	350	30	22	50	40	-15	WN**0804**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	WN**0604**	WN**0804**	WN**0804**
	ød	16-25	20-25	32
	Knee lever	L3B	L4A	L4
	Screw	LEM5×12B (4.0 Nm)		
	Screw			LEM8×21 (10.2 Nm)
	Screw		LEM6×13.4A (7.0 Nm)	
	Shim pin (shim)			SP4
	Shim			W08AP
	Wrench	WH20L	WH25L	WH30L

System code A282 Grade selection A40 Technical info A447 Cutting data A324

WN** steel boring bar

Insert

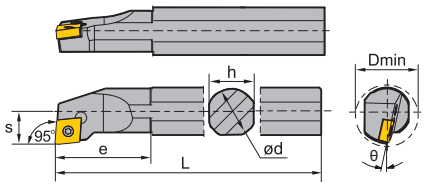
					
Wiper	**Finishing**	**Medium Cut**	**Roughing**	**Cast Iron**	**PCBN/PCD**
A95	A94	A97	A98	A98	A153

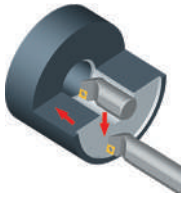
System code > A282 Grade selection > A40 Technical info > A447 Cutting data > A324

CC** steel boring bar S-Clamping

SCLCR/L Kr: 95°







Right hand style

Article	✲	Stock		Dimensions [mm]								Inserts
		R	L	ød	L	h	s	L_2	e	D_{min}	θ	
S08K-SCLCR/L06		●	●	8	125	7	5	14	14	10	-15	CC**0602**
S10K-SCLCR/L06		●	●	10	125	7	5	14	14	10	-15	CC**0602**
S10M-SCLCR/L06		●	●	10	150	9	6	14	14	12	-13	CC**0602**
S12M-SCLCR/L06		●	●	12	150	11	9	25	25	16	-10	CC**0602**
A08F-SCLCR/L06	✲	●	●	8	80	7.5	5	14	14	10	-15	CC**0602**
A10H-SCLCR/L06	✲	●	●	10	100	9.5	6	14	14	12	-13	CC**0602**
A12K-SCLCR/L06	✲	●	●	12	125	11.5	9	25	25	16	-10	CC**0602**
S12M-SCLCR/L09		●	●	12	150	11	9	25	25	16	-10	CC**09T3**
S16M-SCLCR/L09		●	○	16	150	15	11	32.5	32.5	20	-12	CC**09T3**
S16R-SCLCR/L09		●	●	16	200	15	11	32.5	32.5	20	-12	CC**09T3**
S20Q-SCLCR/L09		●	●	20	180	18	13	38	38	25	-8	CC**09T3**
S20S-SCLCR/L09		●	●	20	250	18	13	38	38	25	-8	CC**09T3**
S25Q-SCLCR/L09		●	○	25	180	23	17	45	45	32	-6	CC**09T3**
S25T-SCLCR/L09		●	●	25	300	23	17	45	45	32	-6	CC**09T3**
A12K-SCLCR/L09	✲	●	●	12	125	11.5	9	25	25	16	-10	CC**09T3**
A16M-SCLCR/L09	✲	●	●	16	150	15.5	11	32.5	32.5	20	-12	CC**09T3**
A20Q-SCLCR/L09	✲	●	●	20	180	19	13	38	38	25	-8	CC**09T3**
A25R-SCLCR/L09	✲	●	●	25	200	24	17	45	45	32	-6	CC**09T3**
S25Q-SCLCR/L12		●	○	25	180	23	17	45	45	32	-6	CC**1204**
S25T-SCLCR/L12		●	●	25	300	23	17	45	45	32	-6	CC**1204**
S32R-SCLCR/L12		●	●	32	200	30	22	50	50	40	-10	CC**1204**
S32U-SCLCR/L12		●	●	32	350	30	22	50	50	40	-10	CC**1204**
S40S-SCLCR/L12		○		40	250	37	27	60	60	50	-8	CC**1204**
S40V-SCLCR/L12		●	●	40	400	37	27	60	60	50	-8	CC**1204**
A25R-SCLCR/L12	✲	●	●	25	200	24	17	45	45	32	-6	CC**1204**
A32S-SCLCR/L12	✲	●	●	32	250	31	22	50	50	40	-10	CC**1204**

● Ex stock ○ On demand

✲ With internal cooling

System code A282 Grade selection A40 Technical info A447 Cutting data A324

CC** steel boring bar

Spare parts

	Insert	CC**0602**	CC**09T3**	CC**09T3**	CC**1204**	CC**1204**
	ød	8-12	12-20	25	25	32-40
	Screw	I60M2.5×5.5 (1.0 Nm)	I60M3.5×8 (2.7 Nm)	I60M3.5×10 (2.7 Nm)		
	Screw				I60M4×11X (3.4 Nm)	I60M4×11X (3.4 Nm)
	Screw (shim)					SM6×10XA
	Shim					C12BS
	Wrench (screw)	WT07IP	WT15IP	WT15IP	WT15IP	WT15IP
	Wrench (shim)					WH40L

Insert

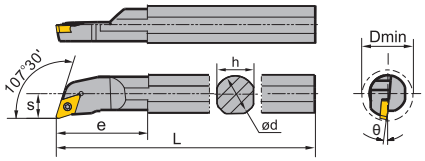
					
Finishing	**Medium Cut**	**Roughing**	**Alum Machining**	**Cast Iron**	**PCBN/PCD**
A102	A106	A107	A108	A107	A154

System code > A282 | Grade selection > A40 | Technical info > A447 | Cutting data > A324

DC** steel boring bar S-Clamping

SDQCR/L Kr: 107°30'







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] ød	L	h	s	L_2	e	D_{min}	θ	Inserts
S10M-SDQCR/L07		●	●	10	150	9	7	20	20	13	-8	DC**0702**
S12M-SDQCR/L07		●	●	12	150	11	9	22	22	16	-8	DC**0702**
S16M-SDQCR/L07		○	●	16	150	15	11	27	27	20	-6	DC**0702**
S16Q-SDQCR/L07		●	●	16	180	15	11	27	27	20	-6	DC**0702**
S16R-SDQCR/L07		●	●	16	200	15	11	27	27	20	-6	DC**0702**
A10H-SDQCR/L07	✻	●	●	10	100	9.5	7	20	20	13	-8	DC**0702**
A12K-SDQCR/L07	✻	●	●	12	125	11.5	9	22	22	16	-8	DC**0702**
S20Q-SDQCR/L11		●	○	20	180	18	13	32	32	25	-6	DC**11T3**
S20S-SDQCR/L11		●	●	20	250	18	13	32	32	25	-6	DC**11T3**
S25Q-SDQCR/L11		●	○	25	180	23	17	32	32	32	-6	DC**11T3**
S25T-SDQCR/L11		●	●	25	300	23	17	32	32	32	-6	DC**11T3**
A16M-SDQCR/L11	✻	●	●	16	150	15.5	11	27	27	20	-6	DC**11T3**
A20Q-SDQCR/L11	✻	●	●	20	180	19	13	32	32	25	-6	DC**11T3**
A25R-SDQCR/L11	✻	●	●	25	200	24	17	32	32	32	-6	DC**11T3**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	DC**0702**	DC**0702**	DC**11T3**	DC**11T3**	DC**11T3**
	ød	**10**	**12-16**	**16-20**	**20**	**25**
	Screw	I60M2.5×5.5 (1.0 Nm)	I60M2.5×6.5 (1.0 Nm)	I60M3.5x8 (2.7 Nm)	I60M3.5×8 (2.7 Nm)	I60M3.5×10 (2.7 Nm)
	Wrench (screw)	WT07IP	WT07IP	WT15IP	WT15IP	WT15IP

Insert

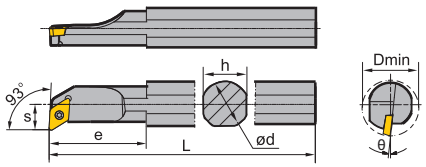
Finishing	Medium Cut	Roughing	Alum Machining	Cast Iron	PCBN/PCD
A112	A114	A115	A115	A115	A155

System code A282 Grade selection A40 Technical info A447 Cutting data A324

DC** steel boring bar S-Clamping

SDUCR/L Kr: 93°







Right hand style

Article	*	Stock R	Stock L	Dimensions [mm] ød	L	h	s	L_2	e	D_{min}	θ	Inserts
S10M-SDUCR/L07		●	●	10	150	9	7	-	0	13	-8	DC**0702**
S12M-SDUCR/L07		●	●	12	150	11	9	22	22	16	-8	DC**0702**
S16M-SDUCR/L07		●	●	16	150	15	11	27	27	20	-6	DC**0702**
S16R-SDUCR/L07		●	●	16	200	15	11	27	27	20	-6	DC**0702**
A10H-SDUCR/L07	*	●	●	10	100	9.5	7	-	0	13	-8	DC**0702**
A12K-SDUCR/L07	*	●	●	12	125	11.5	9	22	22	16	-8	DC**0702**
A16M-SDUCR/L07	*	●	●	16	150	15.5	11	27	27	20	-6	DC**0702**
S20Q-SDUCR/L11		●	●	20	180	18	13	40	40	25	-6	DC**11T3**
S20S-SDUCR/L11		●	●	20	250	18	13	40	40	25	-6	DC**11T3**
S25Q-SDUCR/L11		●	○	25	180	23	17	46	46	32	-6	DC**11T3**
S25T-SDUCR/L11		●	●	25	300	23	17	46	46	32	-6	DC**11T3**
A20Q-SDUCR/L11	*	●	●	20	180	19	13	40	40	25	-6	DC**11T3**
A25R-SDUCR/L11	*	●	●	25	200	24	17	46	46	32	-6	DC**11T3**

● Ex stock ○ On demand

* With internal cooling

Spare parts

	Insert	DC**0702**	DC**11T3**
	ød	**10-16**	**20-25**
	Screw	I60M2.5x5.5 (1.0 Nm)	I60M3.5x8 (2.7 Nm)
	Wrench	WT07IP	WT15IP

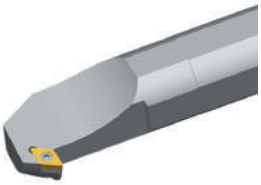
Insert

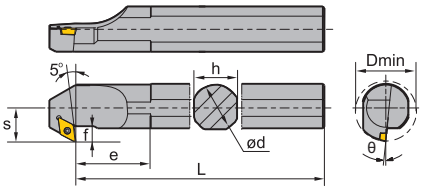
					
Finishing	**Medium Cut**	**Roughing**	**Alum Machining**	**Cast Iron**	**PCBN/PCD**
A112	A114	A115	A115	A115	A155

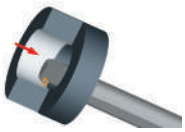
System code > A282 Grade selection > A40 Technical info > A447 Cutting data > A324

DC** steel boring bar S-Clamping

SDZCR/L Kr: 85°







Right hand style

Article	✻	Stock		Dimensions [mm]								Inserts
		R	L	ød	L	h	s	e	f	D_{min}	θ	
S25Q-SDZCR/L11		●	●	25	180	23	17	30	6.9	32	-6	DC**11T3**
S25T-SDZCR/L11		●	●	25	300	23	17	30	6.9	32	-6	DC**11T3**
S32R-SDZCR/L11		○		32	200	30	22	39	8.4	40	-6	DC**11T3**
S32U-SDZCR/L11		●	●	32	350	30	22	39	8.4	40	-6	DC**11T3**
S40S-SDZCR/L11		○	●	40	250	37	27	47	9.4	50	-4	DC**11T3**
S40V-SDZCR/L11		●	●	40	400	37	27	47	9.4	50	-4	DC**11T3**
A25R-SDZCR/L11	✻	●	●	25	200	24	17	30	4.5	32	-6	DC**11T3**
A32S-SDZCR/L11	✻	●	●	32	250	31	22	39	6	40	-6	DC**11T3**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	DC**11T3**	DC**11T3**
	ød	**25**	**32-40**
	Screw	I60M3.5×10 (2.7 Nm)	I60M3.5×12 (2.7 Nm)
	Screw (shim)		SM5×8.65XA
	Shim		D11BS
	Wrench (screw)	WT15IP	WT15IP
	Wrench (shim)		WH35L

Insert

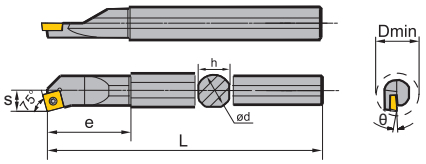
Finishing	Medium Cut	Roughing	Alum Machining	Cast Iron	PCBN/PCD
A112	A114	A115	A115	A115	A155

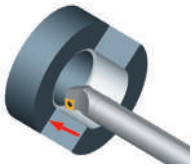
System code A282 Grade selection A40 Technical info A447 Cutting data A324

SC** steel boring bar S-Clamping

SSKCR/L Kr: 75°







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] ød	L	h	s	e	D_{min}	θ	Inserts
S12M-SSKCR/L09		●	●	12	150	11	9	26	16	-10	SC**09T3**
S16M-SSKCR/L09		○	○	16	150	15	11	32.5	20	-11	SC**09T3**
S16R-SSKCR/L09		○	○	16	200	15	11	32.5	20	-11	SC**09T3**
S20Q-SSKCR/L09		○	○	20	180	18	13	34.5	25	-6	SC**09T3**
S20S-SSKCR/L09		●	○	20	250	18	13	34.5	25	-6	SC**09T3**
A12K-SSKCR/L09	✻	●	○	12	125	11	9	26	16	-10	SC**09T3**
A16M-SSKCR/L09	✻	●	○	16	150	15	11	32.5	20	-11	SC**09T3**
A20Q-SSKCR/L09	✻	●	○	20	180	19	13	34.5	25	-6	SC**09T3**
S25Q-SSKCR/L12		○	○	25	180	23	17	36.3	32	-8	SC**1204**
S25T-SSKCR/L12		●	○	25	300	23	17	36.3	32	-8	SC**1204**
S32R-SSKCR/L12		○	○	32	200	30	22	43.5	40	-10	SC**1204**
S32U-SSKCR/L12		●		32	350	30	22	43.5	40	-10	SC**1204**
A25R-SSKCR/L12	✻	●	○	25	200	24	17	41.3	32	-8	SC**1204**
A32S-SSKCR/L12	✻	●		32	250	31	22	42.8	40	-10	SC**1204**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	SC**09T3**	SC**1204**	SC**1204**
	ød	12-20	25	32
	Screw	I60M3.5×8 (2.7 Nm)		
	Screw		I60M4×11X (3.4 Nm)	I60M4×11X (3.4 Nm)
	Screw (shim)			SM6×10XA
	Shim			S12BS
	Wrench (screw)	WT15IP	WT15IP	WT15IP
	Wrench (shim)			WH40L

System code A282 Grade selection A40 Technical info A447 Cutting data A324

SC** steel boring bar

Insert

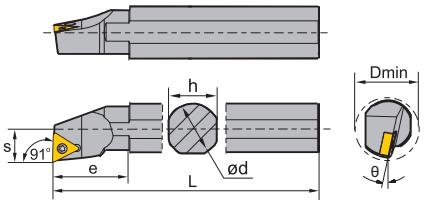
			
Finishing	**Medium Cut**	**Roughing**	**Alum Machining**
A120	A121	A122	A122

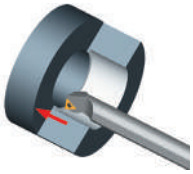
System code A282 Grade selection A40 Technical info A447 Cutting data A324

TC** steel boring bar S-Clamping

STFCR/L Kr: 91°







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] ød	L	h	s	e	D_{min}	θ	Inserts
S12M-STFCR/L11		●	●	12	150	11	9	30	16	-10	TC**1102**
S16M-STFCR/L11		○	●	16	150	15	11	35	20	-6	TC**1102**
S16R-STFCR/L11		●	●	16	200	15	11	35	20	-6	TC**1102**
S20Q-STFCR/L11		○	○	20	180	18	13	36	25	-3	TC**1102**
S20S-STFCR/L11		●	●	20	250	18	13	36	25	-3	TC**1102**
A12K-STFCR/L11	✻	●	●	12	125	11.5	9	26	16	-10	TC**1102**
A16M-STFCR/L11	✻	●	●	16	150	15.5	11	30	20	-6	TC**1102**
A20Q-STFCR/L11	✻	●	●	20	180	19	13	36	25	-3	TC**1102**
S25Q-STFCR/L16		●	○	25	180	23	17	49	32	-6	TC**16T3**
S25T-STFCR/L16		●	●	25	300	23	17	49	32	-6	TC**16T3**
S32R-STFCR/L16		●	●	32	200	30	22	50	40	-10	TC**16T3**
S32U-STFCR/L16		●	●	32	350	30	22	50	40	-10	TC**16T3**
S40S-STFCR/L16		○	○	40	250	37	27	60	50	-8	TC**16T3**
S40V-STFCR/L16		●	●	40	400	37	27	60	50	-8	TC**16T3**
A25R-STFCR/L16	✻	●	●	25	200	24	17	45	32	-6	TC**16T3**
A32S-STFCR/L16	✻	●	○	32	250	31	22	49	40	-10	TC**16T3**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	TC**1102**	TC**16T3**	TC**16T3**
	ød	12-20	25	32-40
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M3.5×10 (2.7 Nm)	I60M3.5×12 (2.7 Nm)
	Screw (shim)			SM5×8.65XA
	Shim			T16BS
	Wrench (screw)	WT07IP	WT15IP	WT15IP
	Wrench (shim)			WH35L

System code A282 Grade selection A40 Technical info A447 Cutting data A324

TC** steel boring bar

Insert

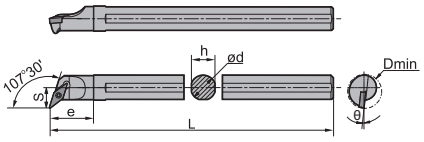
					
Finishing	**Medium Cut**	**Roughing**	**Alum Machining**	**Cast Iron**	**PCBN/PCD**
A127	A128	A129	A131	A129	A156

System code > A282 Grade selection > A40 Technical info > A447 Cutting data > A324

VC** steel boring bar S-Clamping

SVQCR/L Kr: 107°30'







Right hand style

Article	✻	Stock		Dimensions [mm]							Inserts
		R	L	ød	L	h	s	e	D_{min}	θ	
S16Q-SVQCR/L11		●	●	16	180	15	13	28	22	-6	VC**1103**
S20R-SVQCR/L11		●	○	20	200	18	15	32	26	-4	VC**1103**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**VC**1103****
	ød	**16-20**
	Screw	I60M2.5×6.5 (1.0 Nm)
	Wrench (screw)	WT07IP

Insert

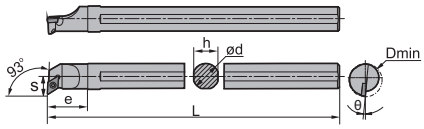
 **Finishing**	 **Alum Machining**
A135	A136

System code A282 Grade selection A40 Technical info A447 Cutting data A324

VC** steel boring bar S-Clamping

SVUCR/L Kr: 93°







Right hand style

Article	✻	Stock		Dimensions [mm]								Inserts
		R	L	ød	L	h	s	L_2	e	D_{min}	θ	
S16Q-SVUCR/L11		●	○	16	180	15	15	25	25	24	-6	VC**1103**
S20R-SVUCR/L11		●	●	20	200	18	17	30	30	28	-4	VC**1103**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**VC**1103****
	ød	**16-20**
	Screw	I60M2.5×6.5 (1.0 Nm)
	Wrench (screw)	WT07IP

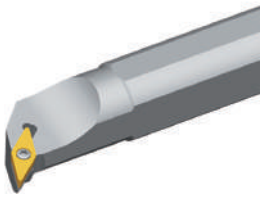
Insert

	
Finishing	**Alum Machining**
A135	A136

System code A282 Grade selection A40 Technical info A447 Cutting data A324

VB** steel boring bar S-Clamping

SVQBR/L Kr: 107°30'



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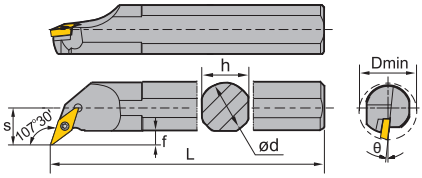




Article	✻	Stock		Dimensions [mm]								Inserts
		R	L	ød	L	h	s	e	f	D_{min}	θ	
S32R-SVQBR/L16		●	●	32	200	30	22	56	8.4	40	-8	VB**1604**
S32U-SVQBR/L16		●	●	32	350	30	22	56	8.4	40	-8	VB**1604**
S40V-SVQBR/L16		●	●	40	400	37	27	64	9.4	50	-8	VB**1604**
A32S-SVQBR/L16	✻	○	○	32	250	31	22	56	8.4	40	-8	VB**1604**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	VB**1604**
	ød	**32-40**
	Screw	I60M3.5×12 (2.7 Nm)
	Screw (shim)	SM5×8.65XA
	Shim	V16BS
	Wrench (screw)	WT15IP
	Wrench (shim)	WH35L

Insert

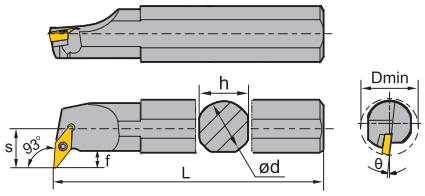
			
Finishing	**Medium Cut**	**Roughing**	**PCBN/PCD**
A140	A142	A143	A157

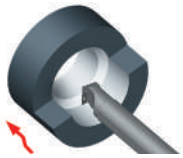
System code A282 Grade selection A40 Technical info A447 Cutting data A324

VB** steel boring bar S-Clamping

SVUBR/L Kr: 93°







Right hand style

Article	✻	Stock		Dimensions [mm]								Inserts
		R	L	ød	L	h	s	e	f	D_{min}	θ	
S32R-SVUBR/L16		●	○	32	200	30	22	49	8.4	40	-8	VB**1604**
S32U-SVUBR/L16		●	●	32	350	30	22	49	8.4	40	-8	VB**1604**
S40S-SVUBR/L16		●	○	40	250	37	27	56.5	9.4	50	-8	VB**1604**
S40V-SVUBR/L16		●	●	40	400	37	27	56.5	9.4	50	-8	VB**1604**
A32S-SVUBR/L16	✻	●	●	32	250	31	22	49	8.4	40	-8	VB**1604**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	VB**1604**
	ød	32-40
	Screw	I60M3.5×12 (2.7 Nm)
	Screw (shim)	SM5×8.65XA
	Shim	V16BS
	Wrench (screw)	WT15IP
	Wrench (shim)	WH35L

Insert

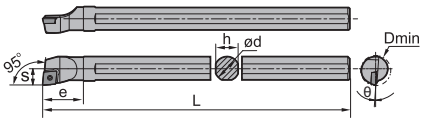
Finishing	Medium Cut	Roughing	PCBN/PCD
A140	A142	A143	A157

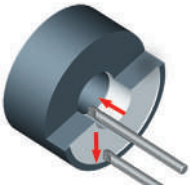
System code A282 Grade selection A40 Technical info A447 Cutting data A324

CP** steel boring bar S-Clamping

SCLPR/L Kr: 95°







Right hand style

Article	*	Stock R	Stock L	Dimensions [mm] ød	L	h	s	e	D_{min}	θ	Inserts
S10K-SCLPR/L06		●	●	10	125	9	6	17	12	-7	CP**0602**
S12M-SCLPR/L06		●	●	12	150	11	8	20	16	-4	CP**0602**
S16Q-SCLPR/L09		●	●	16	180	15	10	29	20	-4	CP**09T3**
S20R-SCLPR/L09		○	○	20	200	18	13	35	25	-4	CP**09T3**

● Ex stock ○ On demand

* With internal cooling

Spare parts

	Insert	CP**0602**	CP**09T3**
	ød	**10-12**	**20-25**
	Screw	I60M2.5×5.5 (1.0 Nm)	I60M3.5×8 (2.7 Nm)
	Wrench (screw)	WT07IP	WT15IP

Insert

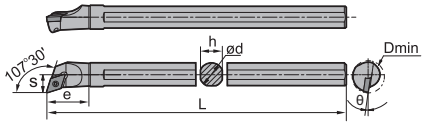
		
Finishing	**Medium Cut**	**Cast Iron**
A110	A110	A110

System code A282 Grade selection A40 Technical info A447 Cutting data A324

DP** steel boring bar S-Clamping

SDQPR/L Kr: 107°30'







Right hand style

Article	✲	Stock		Dimensions [mm]							Inserts
		R	L	ød	L	h	s	e	D_{min}	θ	
S10K-SDQPR/L07		●	●	10	125	9	7	20	13	-8	DP**0702**
S12M-SDQPR/L07		●	●	12	150	11	9	22	16	-8	DP**0702**
S16Q-SDQPR/L07		●	●	16	180	15	11	27	20	-6	DP**0702**
S16Q-SDQPR/L11		●	●	16	180	15	11	32	20	-6	DP**11T3**
S20R-SDQPR/L11		○	○	20	200	18	13	33	25	-6	DP**11T3**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	DP**0702**	DP**0702**	DP**11T3**
	ød	**10-12**	**16**	**16-20**
	Screw	l60M2.5×5.5 (1.0 Nm)	l60M2.5×6.5 (1.0 Nm)	l60M3.5×8 (2.7 Nm)
	Wrench (screw)	WT07IP	WT07IP	WT15IP

Insert



Finishing

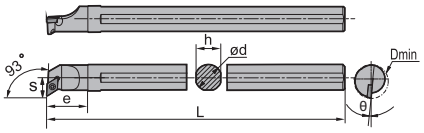
A117

System code A282 Grade selection A40 Technical info A447 Cutting data A324

DP** steel boring bar S-Clamping

SDUPR/L Kr: 93°







Right hand style

Article	*	Stock		Dimensions [mm]							Inserts
		R	L	ød	L	h	s	e	D_{min}	θ	
S10K-SDUPR/L07		●	●	10	125	9	9	18	15	-8	DP**0702**
S12M-SDUPR/L07		●	●	12	150	11	9	19	16	-8	DP**0702**
S16Q-SDUPR/L07		●	●	16	180	15	11	25	20	-6	DP**0702**

● Ex stock ○ On demand

* With internal cooling

Spare parts

	Insert	DP**0702**	DP**0702**
	ød	**10-12**	**16**
	Screw	I60M2.5×5.5 (1.0 Nm)	I60M2.5×6.5 (1.0 Nm)
	Wrench (screw)	WT07IP	WT07IP

Insert



Finishing

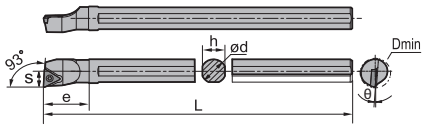
A117

System code A282 Grade selection A40 Technical info A447 Cutting data A324

TP** steel boring bar S-Clamping

STUPR/L Kr: 93°







Right hand style

Article	✲	Stock		Dimensions [mm]							Inserts
		R	L	ød	L	h	s	e	D_{min}	θ	
S10K-STUPR/L09		●	●	10	125	9	6	20	12	-6	TP**0902**
S12M-STUPR/L09		●	●	12	150	11	8	22	16	-4	TP**0902**
S12M-STUPR/L11		●	●	12	150	11	8	25	16	-4	TP**1103**
S16Q-STUPR/L11		●	●	16	180	15	10	27	20	-3	TP**1103**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	**TP**0902****	**TP**1103****
	ød	**10-12**	**12-16**
	Screw	I60M2.2x5.5 (0.8 Nm)	I60M2.5x6.5 (1.0 Nm)
	Wrench	WT07IP	WT07IP

Insert



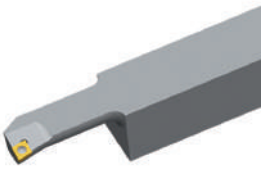
Finishing

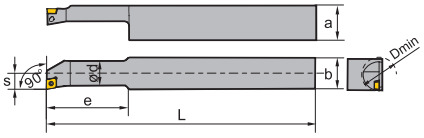
A133

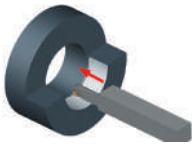
System code A282 | Grade selection A40 | Technical info A447 | Cutting data A324

CC** steel boring bar S-Clamping

SCFCR/L Kr: 90°







Article	✻	Stock		Dimensions [mm]							Inserts
		R	L	ød	a	b	L	s	e	D_{min}	
S10M-SCFCR/L06S25		●	○	10	27	25	150	7	30	13	CC**0602**
S12P-SCFCR/L06S25		●		12	27	25	170	9	35	16	CC**0602**
S16Q-SCFCR/L09S25		●	○	16	27	25	180	11	40	20	CC**09T3**
S20R-SCFCR/L09S25		●		20	27	25	200	13	45	25	CC**09T3**
S25R-SCFCR/L12S25		●	●	25	27	25	200	17	50	32	CC**1204**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	CC**0602**	CC**09T3**	CC**1204**
	ød	**10-12**	**16-20**	**25**
	Screw	I60M2.5x5.5 (1.0 Nm)	I60M3.5x8 (2.7 Nm)	I60M5x13 (6.7 Nm)
	Wrench	WT07IP	WT15IP	WT20IP

Insert

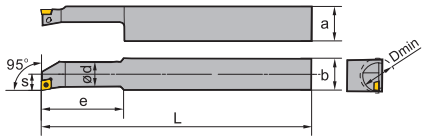
					
Finishing	**Medium Cut**	**Roughing**	**Alum Machining**	**Cast Iron**	**PCBN/PCD**
A102	A106	A107	A108	A107	A154

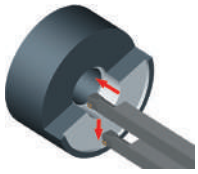
System code A282 Grade selection A40 Technical info A447 Cutting data A324

CC** steel boring bar S-Clamping

SCLCR/L Kr: 95°







Article	✲	Stock	Dimensions [mm]							Inserts
			ød	a	b	L	s	e	D_{min}	
S10M-SCLCR06S20		○	10	22	20	150	7	30	13	CC**0602**
S12P-SCLCR06S20		○	12	22	20	170	9	35	16	CC**0602**
S16Q-SCLCR09S20		●	16	22	20	180	11	40	20	CC**09T3**
S20R-SCLCR09S20		●	20	22	20	200	13	60	25	CC**09T3**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	**CC**0602****	**CC**09T3****
	ød	**10-12**	**16-20**
	Screw	I60M2.5x5.5 (1.0 Nm)	I60M3.5x8 (2.7 Nm)
	Wrench	WT07IP	WT15IP

Insert

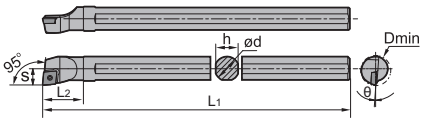
					
Finishing	**Medium Cut**	**Roughing**	**Alum Machining**	**Cast Iron**	**PCBN/PCD**
A102	A106	A107	A108	A107	A154

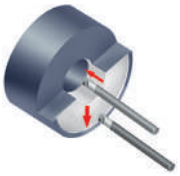
System code A282 Grade selection A40 Technical info A447 Cutting data A324

CP** solid carbide boring bar S-Clamping

SCLPR/L Kr: 95°







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] ØD	ød	h	s	L_1	L_2	θ	Inserts
C10M-SCLPR/L06		●	●	12	10	9	6	150	17	7	CP**0602**
C12Q-SCLPR/L06		●	○	16	12	11	8	180	20	4	CP**0602**
C16R-SCLPR/L09		●	●	20	16	15	10	200	29	4	CP**09T3**
E16R-SCLPR/L09	✻	○	○	19	16	15.5	10	200	-	-2	CP**09T3**
C20S-SCLPR/L09		●	○	25	20	18	13	250	35	4	CP**09T3**
E20S-SCLPR/L09	✻	○	●	24	20	19.5	13	250	-	-2	CP**09T3**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	CP**0602**	CP**09T3**
	ød	**10-12**	**16-20**
	Screw	I60M2.5×5.5 (1.0 Nm)	I60M3.5×10 (2.7 Nm)
	Wrench (screw)	WT07IP	WT15IP

Insert

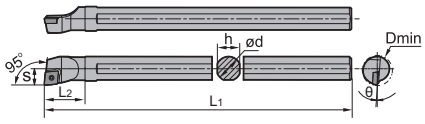
		
Finishing	**Medium Cut**	**Cast Iron**
A110	A110	A110

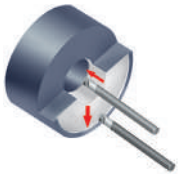
System code A282 Grade selection A40 Technical info A447 Cutting data A324

CC** solid carbide boring bar S-Clamping

SCLCR/L Kr: 95°







Right hand style

Article	✲	Stock		Dimensions [mm]							Inserts
		R	L	ØD	ød	h	s	L_1	L_2	θ	
E08K-SCLCR/L06-09	✲	●	●	9	8	7.5	5	125	-	-12	CC**0602**
E08K-SCLCR/L06-10	✲	●	●	10	8	7.5	6	125	-	-12	CC**0602**
E10M-SCLCR/L06	✲	●	●	12	10	9.5	7	150	-	-10	CC**0602**
E12Q-SCLCR/L06	✲	●	●	15	12	11.5	9	180	-	-10	CC**0602**
E16R-SCLCR/L06	✲	●	●	18	16	15.5	10	200	-	-8	CC**0602**
E12Q-SCLCR/L09	✲	●	●	15	12	11.5	9	180	-	-9	CC**09T3**
E16R-SCLCR/L09	✲	●	●	18	16	15.5	10	200	-	-10	CC**09T3**
E20S-SCLCR/L09	✲	●	●	24	20	19.5	13	250	-	-8	CC**09T3**
E25T-SCLCR/L09	✲	●	●	31	25	24	17	300	-	-6	CC**09T3**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	CC**0602**	CC**09T3**	CC**09T3**
	ød	8-16	12	16-25
	Screw	I60M2.5×5.5 (1.0 Nm)	I60M3.5×8 (2.7 Nm)	I60M3.5×10 (2.7 Nm)
	Wrench (screw)	WT07IP	WT15IP	WT15IP

Insert

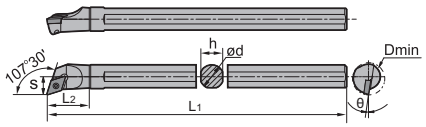
					
Finishing	**Medium Cut**	**Roughing**	**Alum Machining**	**Cast Iron**	**PCBN/PCD**
A102	A106	A107	A108	A107	A154

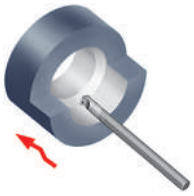
System code A282 Grade selection A40 Technical info A447 Cutting data A324

DP** solid carbide boring bar S-Clamping

SDQPR/L Kr: 107°30'







Right hand style

Article	*	Stock R	Stock L	Dimensions [mm] ØD	ød	h	s	L_1	L_2	θ	Inserts
C10M-SDQPR/L07		●	●	13	10	9	7	150	20	8	DP**0702
C12Q-SDQPR/L07		○	●	16	12	11	9	180	22	8	DP**0702
C16R-SDQPR/L07		○	○	20	16	15	11	200	27	6	DP**0702
C16R-SDQPR/L11		○	○	20	16	15	11	200	32	6	DP**11T3**
C20S-SDQPR/L11		●	○	25	20	18	13	250	33	6	DP**11T3**

● Ex stock ○ On demand

* With internal cooling

Spare parts

	Insert	DP**0702	DP**0702	DP**11T3**
	ød	**10-12**	**16**	**16-20**
	Screw	I60M2.5×5.5 (1.0 Nm)	I60M2.5×6.5 (1.0 Nm)	I60M3.5×8 (2.7 Nm)
	Wrench (screw)	WT07IP	WT07IP	WT15IP

Insert



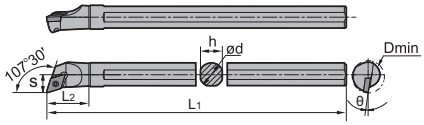
Finishing
A117

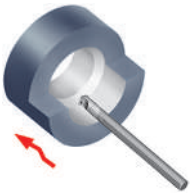
System code A282 Grade selection A40 Technical info A447 Cutting data A324

DC** solid carbide boring bar S-Clamping

SDQCR/L Kr: 107°30'







Right hand style

Article	✻	Stock		Dimensions [mm]							Inserts
		R	L	ØD	ød	h	s	L_1	L_2	θ	
E08K-SDQCR/L07	✻	●	●	11	8	7.5	6.5	140	-	-12	DC**0702**
E10M-SDQCR/L07	✻	●	●	12	10	9.5	7	150	-	-10	DC**0702**
E12Q-SDQCR/L07	✻	●	●	15	12	11.5	9	180	-	-10	DC**0702**
E16R-SDQCR/L07	✻	●	○	18	16	15.5	10	200	-	-6	DC**0702**
E20S-SDQCR/L07	✻	●	○	24	20	19.5	13	250	-	-4	DC**0702**
E16R-SDQCR/L11	✻	●	●	18	16	15.5	10	200	-	-8	DC**11T3**
E20S-SDQCR/L11	✻	●	○	24	20	19.5	13	250	-	-8	DC**11T3**
E25T-SDQCR/L11	✻	●	○	31	25	24	17	300	-	-6	DC**11T3**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**DC**0702****	**DC**11T3****
	ød	**8-20**	**16-25**
	Screw	I60M2.5×5.5 (1.0 Nm)	I60M3.5×10 (2.7 Nm)
	Wrench (screw)	WT07IP	WT15IP

Insert

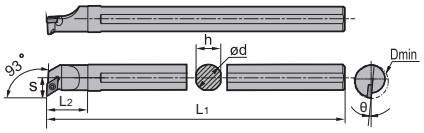
Finishing	**Medium Cut**	**Roughing**	**Alum Machining**	**Cast Iron**	**PCBN/PCD**
A112	A114	A115	A115	A115	A155

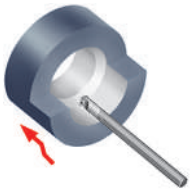
System code A282 Grade selection A40 Technical info A447 Cutting data A324

DP** solid carbide boring bar S-Clamping

SDUPR/L Kr: 93°







Right hand style

Article	*	Stock R	Stock L	Dimensions [mm] ØD	ød	h	s	L_1	L_2	θ	Inserts
C10M-SDUPR/L07		●	●	15	10	9	9	150	18	8	DP**0702**
C12Q-SDUPR/L07		●	○	16	12	11	9	180	19	8	DP**0702**
C16R-SDUPR/L07		○	○	20	16	15	11	200	25	6	DP**0702**

● Ex stock ○ On demand

* With internal cooling

Spare parts

	Insert	**DP**0702****
	ød	**15-20**
	Screw	I60M2.5x5.5 (1.0 Nm)
	Wrench	WT07IP

Insert



Finishing

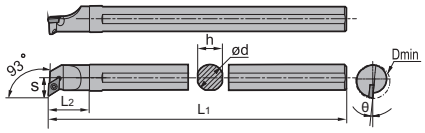
A117

System code A282 Grade selection A40 Technical info A447 Cutting data A324

DC** solid carbide boring bar S-Clamping

SDUCR/L Kr: 93°







Right hand style

Article	✲	Stock		Dimensions [mm]							Inserts
		R	L	ØD	ød	h	s	L_1	L_2	θ	
E10M-SDUCR/L07	✲	●	○	12	10	9.5	7	150	-	-10	DC**0702**
E12Q-SDUCR/L07	✲	●	●	15	12	11.5	9	180	-	-10	DC**0702**
E16R-SDUCR/L07	✲	●	○	18	16	15.5	10	200	-	-6	DC**0702**
E20S-SDUCR/L07	✲	○	○	24	20	19.5	13	250	-	-4	DC**0702**
E16R-SDUCR/L11	✲	●	○	18	16	15.5	10	200	-	-8	DC**11T3**
E20S-SDUCR/L11	✲	●	●	24	20	19.5	13	250	-	-8	DC**11T3**
E25T-SDUCR/L11	✲	○	○	31	25	24	17	300	-	-6	DC**11T3**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	**DC**0702****	**DC**11T3****
	ød	**10-20**	**16-25**
	Screw	I60M2.5×5.5 (1.0 Nm)	I60M3.5×10 (2.7 Nm)
	Wrench (screw)	WT07IP	WT15IP

Insert

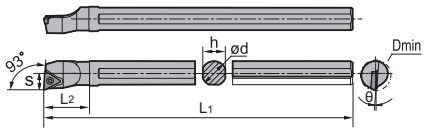
					
Finishing	**Medium Cut**	**Roughing**	**Alum Machining**	**Cast Iron**	**PCBN/PCD**
A112	A114	A115	A115	A115	A155

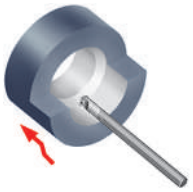
System code A282 Grade selection A40 Technical info A447 Cutting data A324

TP** solid carbide boring bar S-Clamping

STUPR/L Kr: 93°







Right hand style

Article	*	Stock R	Stock L	Dimensions [mm] ØD	ød	h	s	L_1	L_2	θ	Inserts
C10M-STUPR/L09		○	○	12	10	9	6	150	20	6	TP**0902**
C12Q-STUPR/L09		●	●	16	12	11	8	180	22	4	TP**0902**
C12Q-STUPR/L11		●		16	12	11	8	180	25	4	TP**1103**
C16R-STUPR/L11		○	○	20	16	15	10	200	27	3	TP**1103**

● Ex stock ○ On demand

* With internal cooling

Spare parts

	Insert	TP**0902**	TP**1103**
	ød	**10-12**	**12-16**
	Screw	I60M2.2×5.5 (0.8 Nm)	I60M2.5×6.5 (1.0 Nm)
	Wrench (screw)	WT07IP	WT07IP

Insert



Finishing

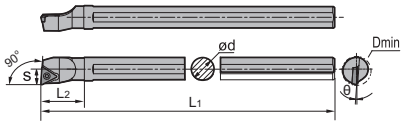
A133

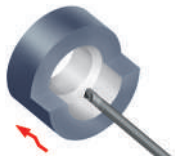
System code A282 Grade selection A40 Technical info A447 Cutting data A324

TC** solid carbide boring bar S-Clamping

STFCR/L Kr: 90°







Right hand style

Article	✲	Stock		Dimensions [mm]							Inserts
		R	L	ØD	ød	h	s	L_1	L_2	θ	
E08K-STFCR/L09	✲	○	●	11	8	7.5	6	125	-	-12	TC**0902**
E10M-STFCR/L09	✲	○	○	12	10	9.5	7	150	-	-10	TC**0902**
E12Q-STFCR/L11	✲	○	○	15	12	11.5	9	180	-	-10	TC**1102**
E16R-STFCR/L11	✲	○	○	18	16	15.5	10	200	-	-8	TC**1102**
E20S-STFCR/L11	✲	○	○	24	20	19.5	13	250	-	-8	TC**1102**
E20S-STFCR/L16	✲	○	○	24	20	19.5	13	250	-	-8	TC**16T3**
E25T-STFCR/L16	✲	○	○	31	25	24	17	300	-	-6	TC**16T3**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	TC**0902**	TC**1102**	TC**16T3**
	ød	**8-10**	**12-20**	**20-25**
	Screw	I60M2.2×5.5 (0.8 Nm)	I60M2.5×5.5 (1.0 Nm)	I60M3.5×10 (2.7 Nm)
	Wrench (screw)	WT07IP	WT07IP	WT15IP

Insert

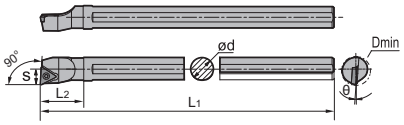
					
Finishing	**Medium Cut**	**Roughing**	**Alum Machining**	**Cast Iron**	**PCBN/PCD**
A126	A128	A129	A131	A129	A156

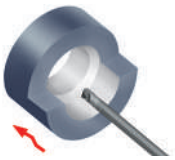
System code A282 Grade selection A40 Technical info A447 Cutting data A324

TC** solid carbide boring bar S-Clamping

STFPR/L Kr: 90°







Right hand style

Article	✻	Stock		Dimensions [mm]							Inserts
		R	L	ØD	ød	h	s	L_1	L_2	θ	
E10M-STFPR/L11	✻	○	○	12	10	9.5	6	150	-	-5	TP**1103**
E12Q-STFPR/L11	✻	○	○	15	12	11.5	8	180	-	-4	TP**1103**
E16R-STFPR/L11	✻	○	○	19	16	15.5	10	200	-	-2	TP**1103**
E20S-STFPR/L11	✻	○	○	24	20	19	13	250	-	-2	TP**1103**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**TP**1103****
	ød	**10-20**
	Screw	I60M3.0×7.0 (1.8 Nm)
	Wrench (screw)	WT08IP

Insert



Finishing

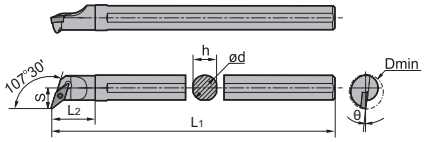
A133

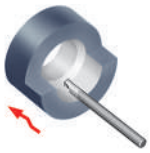
System code A282 Grade selection A40 Technical info A447 Cutting data A324

VC** solid carbide boring bar S-Clamping

SVQCR/L Kr: 107°30'







Right hand style

Article	✻	Stock		Dimensions [mm]							Inserts
		R	L	ØD	ød	h	s	L_1	L_2	θ	
C16R-SVQCR/L11		○	○	22	16	15	13	200	28	-6	VC**1103**
C20S-SVQCR/L11		○	○	26	20	18	15	250	32	-4	VC**1103**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**VC**1103****
	ød	**16-20**
	Screw	I60M2.5×6.5 (1.0 Nm)
	Wrench (screw)	WT07IP

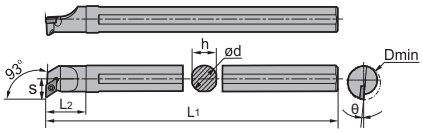
Insert

	
Finishing	**Alum Machining**
A135	A136

VC** solid carbide boring bar S-Clamping

SVUCR/L Kr: 93°







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] ØD	ød	h	s	L_1	L_2	θ	Inserts
C16R-SVUCR/L11		○	○	24	16	15	15	200	25	6	VC**1103**
E16R-SVUCR/L11	✻	○	○	22	16	15	13	200	-	-6.5	VC**1103**
C20S-SVUCR/L11		●	●	28	20	18	17	250	30	4	VC**1103**
E20S-SVUCR/L11	✻	○	○	27	20	18	13	250	-	-6.5	VC**1103**
E25T-SVUCR/L16	✻	○	○	35	25	23	20.5	300	-	-6.5	VC**1604**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	VC**1103**	VC**1604**
	ød	**16-20**	**25**
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M3.5×10 (2.7 Nm)
	Wrench (screw)	WT07IP	WT15IP

Insert

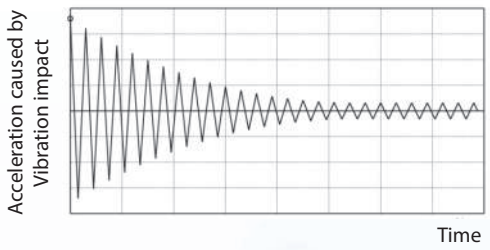
 Finishing	 Medium Cut	 Alum Machining	 PCBN/PCD
A135	A138	A136	A158

System code A282 Grade selection A40 Technical info A447 Cutting data A324

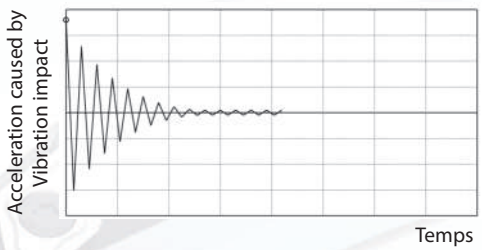
Anti Vibration Boring Bar

By increasing the rigidity of the tool materials the vibration will be reduced. The carbide tool holder performs much better than steel tool holders (steel tool holder approx. L≤3xD, carbide tool holder is approx. L≤6xD). The cutting data can be increased and the shank overhang extended. Therefore you achieve better surface and higher workpiece precision.

Vibration amplitude (under same machining conditions)



Steel tool holder



Cemented carbide tool holder



General turning Recommended cutting data

Turning insert, negative

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]								
						HC (CVD)								
						YB6315			YBC152			YBC252		
						Feed rate [mm]			Feed rate [mm]			Feed rate [mm]		
						0,1	0,2	0,6	0,1	0,2	0,6	0,1	0,4	0,8
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	500	400	270	500	400	270	480	370	230
		approx. 0,45 % C	annealed	190	2	420	340	230	420	340	230	400	310	190
		approx. 0,45 % C	tempered	250	3	330	280	200	330	280	200	310	250	160
		approx. 0,75 % C	annealed	270	4	320	270	190	320	270	190	300	240	150
		approx. 0,75 % C	tempered	300	5	280	240	170	280	240	170	260	210	130
	Low-alloyed steel		annealed	180	6	400	300	180	400	300	180	380	290	170
			tempered	275	7	280	230	150	280	230	150	260	210	140
			tempered	300	8	260	220	150	260	220	150	240	200	140
			tempered	350	9	230	190	120	230	190	120	220	180	110
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	360	290	190	360	290	190	310	250	170
			hardened and tempered	325	11	190	160	130	190	160	130	150	130	100
M	Stainless steel	ferritic/martensitic	annealed	200	12									
		martensitic	tempered	240	13									
		austenitic	quench hardened	180	14									
		austenitic-ferritic		230	15									
K	Grey cast iron	perlitic/ferritic		180	16									
		perlitic (martensitic)		260	17									
	Cast iron with spheroidal graphite	ferritic		160	18									
		perlitic		250	19									
	Malleable cast iron	ferritic		130	20									
		perlitic		230	21									
N	Aluminium wrought alloys	cannot be hardened		60	22									
		hardenable	hardened	100	23									
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24									
		≤ 12 % Si, hardenable	hardened	90	25									
		> 12 % Si, cannot be hardened		130	26									
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27									
		CuZn, CuSnZn		90	28									
		CuSn, Pb-free copper, electrolytic copper		100	29									
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30									
			hardened	280	31									
		Ni or Co bass	annealed	250	32									
			hardened	350	33									
			cast	320	34									
	Titanium alloys	pure titanium		R_m 400	35									
		α and β alloys	hardened	R_m 1050	36									
H	Hardened steel		hardened and tempered	55 HRC	37									
			hardened and tempered	60 HRC	38									
	Hard cast iron		cast	400	39									
	Hardened cast iron		hardened and tempered	55 HRC	40									
X	Non-metallic materials	Thermoplasts			41									
		Thermosetting plastics			42									
		Plastic, glass-fibre reinforced GFRP			43									
		Plastic, carbon fibre reinforced CFRP			44									
		Graphite			45									
		Wood			46									

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
For examples of material for cutting tool groups view page D22.

Starting values for cutting speed v_c [m/min]																							
HC (CVD)																							
YBC251			YBC352			YBM153			YBM253			YBD052			YBD102			YB7315			YBD152		
Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]		
0,1	0,4	0,8	0,2	0,5	1	0,2	0,4	0,6	0,2	0,4	0,6	0,1	0,3	0,4	0,1	0,3	0,4	0,1	0,3	0,5	0,1	0,3	0,5
430	320	180	430	330	220																		
350	260	140	350	270	180																		
260	190	110	260	210	150																		
250	180	100	250	200	140																		
210	160	80	210	170	120																		
330	230	120	320	240	150																		
210	170	110	200	170	120																		
190	150	100	180	160	120																		
170	140	90	150	130	90																		
260	190	120	220	180	130																		
100	75	50	-	-	-																		
						380	295	210	350	265	180												
						190	155	120	150	110	65												
						250	200	150	200	140	80												
						200	160	130	160	115	70												
												620	420	230	530	380	220	600	410	220	540	375	210
												300	220	150	240	200	150	330	240	150	280	210	140
												310	220	150	300	210	145	340	250	160	290	215	140
												230	160	110	220	150	105	260	190	120	210	155	100
												350	275	230	330	265	220	370	300	230	320	265	210
												250	160	105	230	155	100	280	200	120	230	165	100

General turning Recommended cutting data

Turning insert, negative

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]								
						HC (CVD)			HC (PVD)					
						YBD152C			YBG101			YBG105		
						Feed rate [mm]			Feed rate [mm]			Feed rate [mm]		
						0,1	0,3	0,5	0,1	0,3	0,6	0,1	0,3	0,6
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1									
		approx. 0,45 % C	annealed	190	2									
		approx. 0,45 % C	tempered	250	3									
		approx. 0,75 % C	annealed	270	4									
		approx. 0,75 % C	tempered	300	5									
	Low-alloyed steel		annealed	180	6									
			tempered	275	7									
			tempered	300	8									
			tempered	350	9									
	High-alloyed steel and high-alloyed tool steel		annealed	200	10									
			hardened and tempered	325	11									
M	Stainless steel	ferritic/martensitic	annealed	200	12							360	290	200
		martensitic	tempered	240	13							180	150	110
		austenitic	quench hardened	180	14							240	190	140
		austenitic-ferritic		230	15							190	150	110
K	Grey cast iron	perlitic/ferritic		180	16	570	395	220						
		perlitic (martensitic)		260	17	310	230	150						
	Cast iron with spheroidal graphite	ferritic		160	18	310	230	150						
		perlitic		250	19	230	170	110						
	Malleable cast iron	ferritic		130	20	340	280	220						
		perlitic		230	21	250	180	110						
N	Aluminium wrought alloys	cannot be hardened		60	22				2000	1200	-			
		hardenable	hardened	100	23				610	420	-			
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24				550	300	-			
		≤ 12 % Si, hardenable	hardened	90	25				360	190	-			
		> 12 % Si, cannot be hardened		130	26				320	170	-			
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27				730	350	-			
		CuZn, CuSnZn		90	28				370	330	-			
		CuSn, Pb-free copper, electrolytic copper		100	29				270	200	-			
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30							65	45	-
			hardened	280	31							60	40	-
		Ni or Co bass	annealed	250	32							60	40	-
			hardened	350	33							55	35	-
			cast	320	34							55	35	-
	Titanium alloys	pure titanium		R_m 400	35							100	60	-
		α and β alloys	hardened	R_m 1050	36							80	40	-
H	Hardened steel		hardened and tempered	55 HRC	37									
			hardened and tempered	60 HRC	38									
	Hard cast iron		cast	400	39									
	Hardened cast iron		hardened and tempered	55 HRC	40									
X	Non-metallic materials	Thermoplasts			41									
		Thermosetting plastics			42									
		Plastic, glass-fibre reinforced GFRP			43									
		Plastic, carbon fibre reinforced CFRP			44									
		Graphite			45									
		Wood			46									

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
For examples of material for cutting tool groups view page D22.

	Starting values for cutting speed v_c [m/min]																							
	HC (PVD)						HC_1			HT						HW						BL		
	YB9320			YBG205			YNG151C			YNG151			YNT251			YD101			YD201			YCB111		
	Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]		
	0,1	0,3	0,6	0,1	0,3	0,6	0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4	0,05	0,2	0,35	0,1	0,2	0,3	0,1	0,2	0,3
							510	350	-	510	350	-	510	350	-									
							430	270	-	430	270	-	430	270	-									
							330	220	-	330	220	-	330	220	-									
							320	200	-	320	200	-	320	200	-									
							280	170	-	280	170	-	280	170	-									
							400	240	-	400	240	-	400	240	-									
							290	180	-	290	180	-	290	180	-									
							240	170	-	240	170	-	240	170	-									
							220	150	-	220	150	-	220	150	-									
							340	220	-	340	220	-	340	220	-									
							180	110	-	180	110	-	180	110	-									
	360	290	200	320	250	160																		
	190	155	110	170	150	110																		
	250	210	150	230	190	140																		
	200	165	120	180	150	110																		
							430	365	280	430	365	280	430	365	280									
							390	340	270	390	340	270	390	340	270									
							360	300	220	360	300	220	360	300	220									
							340	295	230	340	295	230	340	295	230									
							310	260	190	310	260	190	310	260	190									
							250	210	150	250	210	150	250	210	150									
																1750	1200	800	1750	1200	800			
																510	380	250	510	380	250			
																460	320	175	460	320	175			
																300	205	110	300	205	110			
																270	185	100	270	185	100			
																610	410	205	610	410	205			
																310	250	195	310	250	195			
																225	170	115	225	170	115			
	55	35	-	55	-	-	65	45	-	65	45	-	65	45	-									
	50	30	-	50	-	-	60	40	-	60	40	-	60	40	-									
	50	30	-	50	-	-	60	40	-	60	40	-	60	40	-									
	45	25	-	45	-	-	55	35	-	55	35	-	55	35	-									
	45	25	-	45	-	-	55	35	-	55	35	-	55	35	-									
	80	60	-	70	-	-	90	60	-	90	60	-	90	60	-									
	60	40	-	50	-	-	80	40	-	80	40	-	80	40	-									
																						240	180	140
																						220	180	140
																						250	150	100
																						200	150	100

Turning insert, negative

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]								
						BL						BH		
						YCB121			YCB131			YCB211		
						Feed rate [mm]			Feed rate [mm]			Feed rate [mm]		
						0,1	0,2	0,3	0,1	0,3	0,5	0,1	0,3	0,5
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1									
		approx. 0,45 % C	annealed	190	2									
		approx. 0,45 % C	tempered	250	3									
		approx. 0,75 % C	annealed	270	4									
		approx. 0,75 % C	tempered	300	5									
	Low-alloyed steel		annealed	180	6									
			tempered	275	7									
			tempered	300	8									
			tempered	350	9									
	High-alloyed steel and high-alloyed tool steel		annealed	200	10									
			hardened and tempered	325	11									
M	Stainless steel	ferritic/martensitic	annealed	200	12									
		martensitic	tempered	240	13									
		austenitic	quench hardened	180	14									
		austenitic-ferritic		230	15									
K	Grey cast iron	perlitic/ferritic		180	16							1500	980	400
		perlitic (martensitic)		260	17							1250	800	320
	Cast iron with spheroidal graphite	ferritic		160	18							-	-	-
		perlitic		250	19							300	200	100
	Malleable cast iron	ferritic		130	20							-	-	-
		perlitic		230	21							300	200	100
N	Aluminium wrought alloys	cannot be hardened		60	22									
		hardenable	hardened	100	23									
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24									
		≤ 12 % Si, hardenable	hardened	90	25									
		> 12 % Si, cannot be hardened		130	26									
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27									
		CuZn, CuSnZn		90	28									
		CuSn, Pb-free copper, electrolytic copper		100	29									
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30									
			hardened	280	31									
		Ni or Co bass	annealed	250	32									
			hardened	350	33									
			cast	320	34									
	Titanium alloys	pure titanium		R_m 400	35									
		α and β alloys	hardened	R_m 1050	36									
H	Hardened steel		hardened and tempered	55 HRC	37	220	170	130	160	120	100			
			hardened and tempered	60 HRC	38	200	160	120	150	120	100			
	Hard cast iron		cast	400	39	200	150	100	180	120	100			
	Hardened cast iron		hardened and tempered	55 HRC	40	200	150	100	150	120	100			
X	Non-metallic materials	Thermoplasts			41									
		Thermosetting plastics			42									
		Plastic, glass-fibre reinforced GFRP			43									
		Plastic, carbon fibre reinforced CFRP			44									
		Graphite			45									
		Wood			46									

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
For examples of material for cutting tool groups view page D22.

	Starting values for cutting speed v_c [m/min]																		
	BL			BH						CM			CN						
	YZB121			YZB221			YZB231			CA1000			CN1000			CN2000			
	Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			
	0,3	0,9	1,5	0,3	0,9	1,5	0,1	0,6	1,5	0,1	0,6	1,5	0,1	0,6	1,5	0,1	0,6	1,5	
				1500	950	400	1200	800	400	1200	800	200	800	700	600	700	600	500	
				1250	780	320	980	650	320	1000	650	200	750	625	500	800	700	600	
				-	-	-	-	-	-	800	550	200	600	530	450	600	530	450	
				500	300	100	400	250	100	700	500	200	500	420	350	500	420	350	
				-	-	-	-	-	-	1200	750	200	800	700	600	800	700	600	
				500	300	100	400	250	100	1000	650	200	700	600	500	700	600	500	
	200	160	120																
	200	160	120																
	200	155	100																
	200	155	100																

General turning Recommended cutting data

Turning insert, positive

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]								
						HC (CVD)								
						YB6315			YBC152			YBC252		
						Feed rate [mm]			Feed rate [mm]			Feed rate [mm]		
						0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,3	0,6
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	450	390	270	450	390	270	430	350	230
		approx. 0,45 % C	annealed	190	2	380	330	230	380	330	230	360	295	190
		approx. 0,45 % C	tempered	250	3	300	265	200	300	265	200	280	235	160
		approx. 0,75 % C	annealed	270	4	290	255	190	290	255	190	270	225	150
		approx. 0,75 % C	tempered	300	5	250	225	170	250	225	170	235	195	130
	Low-alloyed steel		annealed	180	6	360	300	180	360	300	180	340	270	170
			tempered	275	7	250	210	150	250	210	150	235	195	140
			tempered	300	8	230	200	150	230	200	150	220	180	140
			tempered	350	9	200	170	120	200	170	120	190	155	110
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	320	275	190	320	275	190	280	230	170
			hardened and tempered	325	11	160	150	130	160	150	130	130	115	100
M	Stainless steel	ferritic/martensitic	annealed	200	12									
		martensitic	tempered	240	13									
		austenitic	quench hardened	180	14									
		austenitic-ferritic		230	15									
K	Grey cast iron	perlitic/ferritic		180	16									
		perlitic (martensitic)		260	17									
	Cast iron with spheroidal graphite	ferritic		160	18									
		perlitic		250	19									
	Malleable cast iron	ferritic		130	20									
		perlitic		230	21									
N	Aluminium wrought alloys	cannot be hardened		60	22									
		hardenable	hardened	100	23									
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24									
		≤ 12 % Si, hardenable	hardened	90	25									
		> 12 % Si, cannot be hardened		130	26									
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27									
		CuZn, CuSnZn		90	28									
		CuSn, Pb-free copper, electrolytic copper		100	29									
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30									
			hardened	280	31									
		Ni or Co bass	annealed	250	32									
			hardened	350	33									
			cast	320	34									
	Titanium alloys	pure titanium		R_m 400	35									
		α and β alloys	hardened	R_m 1050	36									
H	Hardened steel		hardened and tempered	55 HRC	37									
			hardened and tempered	60 HRC	38									
	Hard cast iron		cast	400	39									
	Hardened cast iron		hardened and tempered	55 HRC	40									
X	Non-metallic materials	Thermoplasts			41									
		Thermosetting plastics			42									
		Plastic, glass-fibre reinforced GFRP			43									
		Plastic, carbon fibre reinforced CFRP			44									
		Graphite			45									
		Wood			46									

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
For examples of material for cutting tool groups view page D22.

Starting values for cutting speed v_c [m/min]																								
HC (CVD)																								
YBC251			YBC352			YBM153			YBM253			YBD052			YBD102			YB7315			YBD152		
Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]		
0,1	0,3	0,6	0,2	0,4	0,6	0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4
390	310	180	390	310	230																		
315	245	140	315	250	190																		
235	185	110	230	195	160																		
225	175	100	220	185	150																		
190	150	80	185	155	120																		
300	230	120	290	225	150																		
190	160	110	170	150	130																		
170	140	100	150	140	130																		
145	120	90	130	110	90																		
230	185	120	180	160	140																		
90	75	50	-	-	-																		
						360	340	260	330	300	230												
						180	170	140	150	130	95												
						240	220	170	195	170	115												
						190	175	140	160	140	100												
												560	380	210	480	345	200	540	370	200	490	340	190
												270	200	140	220	180	135	300	220	135	250	190	130
												280	220	135	270	210	130	300	230	145	260	200	125
												210	160	100	200	150	95	230	180	110	190	140	90
												290	250	190	275	240	180	310	260	190	265	230	170
												210	160	90	190	145	85	230	170	100	190	140	90

Turning insert, positive

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]								
						HC (CVD)			HC (PVD)					
						YBD152C			YBG101			YBG105		
						Feed rate [mm]			Feed rate [mm]			Feed rate [mm]		
						0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1									
		approx. 0,45 % C	annealed	190	2									
		approx. 0,45 % C	tempered	250	3									
		approx. 0,75 % C	annealed	270	4									
		approx. 0,75 % C	tempered	300	5									
	Low-alloyed steel		annealed	180	6									
			tempered	275	7									
			tempered	300	8									
			tempered	350	9									
	High-alloyed steel and high-alloyed tool steel		annealed	200	10									
			hardened and tempered	325	11									
M	Stainless steel	ferritic/martensitic	annealed	200	12							305	245	205
		martensitic	tempered	240	13							150	125	100
		austenitic	quench hardened	180	14							200	165	145
		austenitic-ferritic		230	15							160	130	115
K	Grey cast iron	perlitic/ferritic		180	16	520	360	200						
		perlitic (martensitic)		260	17	280	210	135						
	Cast iron with spheroidal graphite	ferritic		160	18	280	220	135						
		perlitic		250	19	210	160	100						
	Malleable cast iron	ferritic		130	20	280	245	180						
		perlitic		230	21	210	160	100						
N	Aluminium wrought alloys	cannot be hardened		60	22				1800	880	-			
		hardenable	hardened	100	23				540	380	-			
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24				500	270	-			
		≤ 12 % Si, hardenable	hardened	90	25				320	170	-			
		> 12 % Si, cannot be hardened		130	26				290	150	-			
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27				660	320	-			
		CuZn, CuSnZn		90	28				330	300	-			
		CuSn, Pb-free copper, electrolytic copper		100	29				220	175	-			
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30				50	35	-	60	45	-
			hardened	280	31				45	30	-	55	40	-
		Ni or Co bass	annealed	250	32				45	30	-	55	40	-
			hardened	350	33				40	-	-	50	35	-
			cast	320	34				40	-	-	50	35	-
	Titanium alloys	pure titanium		R_m 400	35				85	60	-	95	60	-
		α and β alloys	hardened	R_m 1050	36				65	40	-	75	40	-
H	Hardened steel		hardened and tempered	55 HRC	37									
			hardened and tempered	60 HRC	38									
	Hard cast iron		cast	400	39									
	Hardened cast iron		hardened and tempered	55 HRC	40									
X	Non-metallic materials	Thermoplasts			41									
		Thermosetting plastics			42									
		Plastic, glass-fibre reinforced GFRP			43									
		Plastic, carbon fibre reinforced CFRP			44									
		Graphite			45									
		Wood			46									

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
For examples of material for cutting tool groups view page D22.

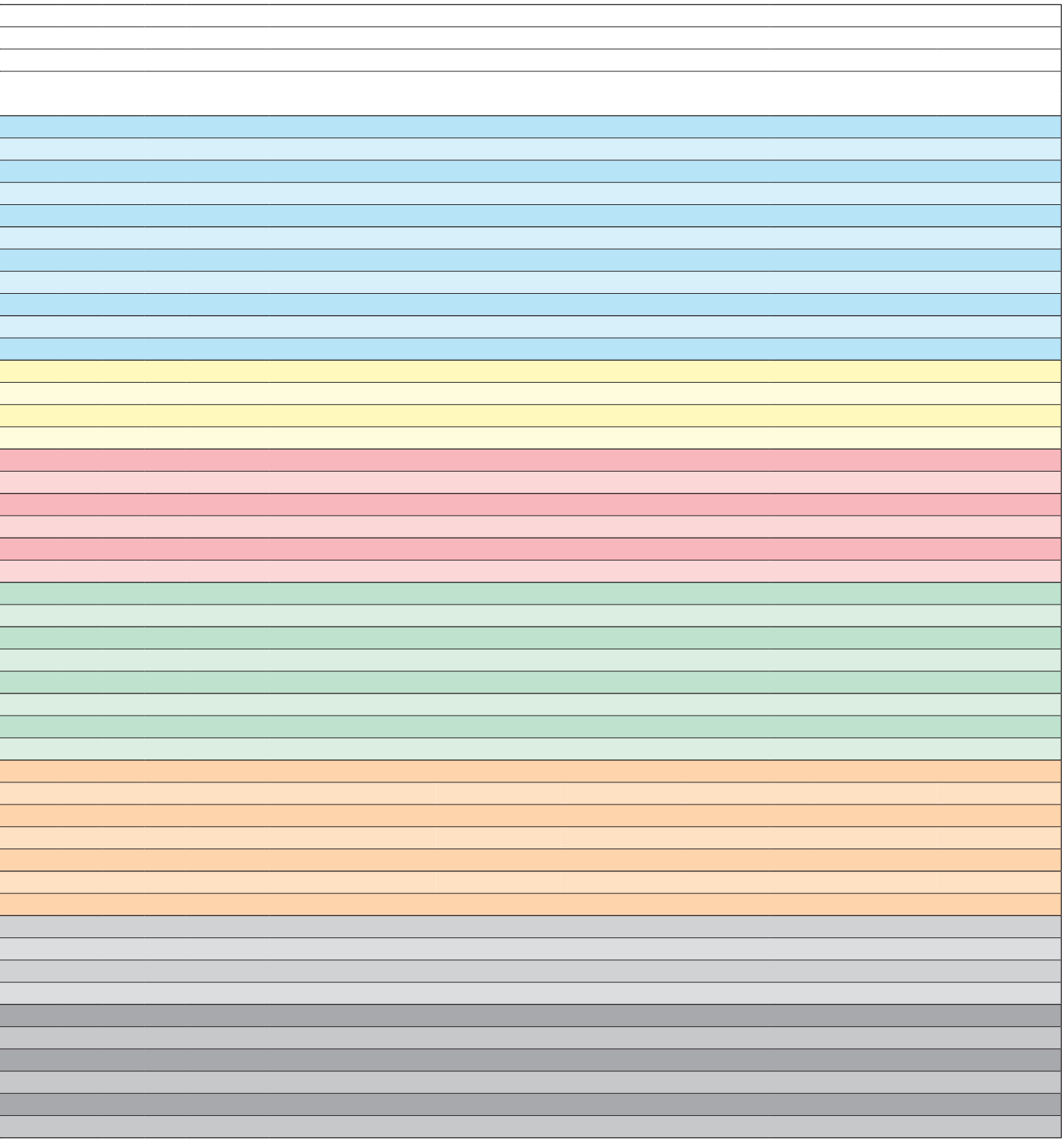
	Starting values for cutting speed v_c [m/min]																							
	HC (PVD)						HC_1			HT						HW						BL		
	YB9320			YBG205			YNG151C			YNG151			YNT251			YD101			YD201			YCB111		
	Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]			Feed rate [mm]		
	0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4	0,1	0,2	0,4	0,05	0,2	0,35	0,1	0,3	0,6	0,1	0,2	0,3
							470	320	-	470	320	-	470	320	-									
							400	250	-	400	250	-	400	250	-									
							300	200	-	300	200	-	300	200	-									
							290	180	-	290	180	-	290	180	-									
							245	150	-	245	150	-	245	150	-									
							370	220	-	370	220	-	370	220	-									
							255	160	-	255	160	-	255	160	-									
							200	140	-	200	140	-	200	140	-									
							185	130	-	185	130	-	185	130	-									
							285	180	-	285	180	-	285	180	-									
							150	90	-	150	90	-	150	90	-									
	305	245	206	270	205	165																		
	160	130	110	145	125	100																		
	210	180	155	195	165	145																		
	170	140	120	155	130	115																		
							390	330	255	390	330	255	390	330	255									
							355	310	245	355	310	245	355	310	245									
							330	270	200	330	270	200	330	270	200									
							310	270	210	310	270	210	310	270	210									
							260	220	160	260	220	160	260	220	160									
							210	170	120	210	170	120	210	170	120									
																1550	1050	700	1550	1050	700			
																450	320	200	450	320	200			
																400	270	150	400	270	150			
																250	170	95	250	170	95			
																230	150	85	230	150	85			
																550	370	170	550	370	170			
																260	210	160	260	210	160			
																190	145	95	190	145	95			
	50	35	-	50	-	-	60	40	-	60	40	-	60	40	-	55	30	-	55	30	-			
	45	30	-	45	-	-	55	35	-	55	35	-	55	35	-	55	25	-	55	25	-			
	45	30	-	45	-	-	55	35	-	55	35	-	55	35	-	45	25	-	45	25	-			
	40	-	-	40	-	-	50	30	-	50	30	-	50	30	-	35	20	-	35	20	-			
	40	-	-	40	-	-	50	30	-	50	30	-	50	30	-	40	20	-	40	20	-			
	75	60	-	70	-	-	85	55	-	85	55	-	85	55	-	60	40	-	60	40	-			
	55	40	-	45	-	-	75	35	-	75	35	-	75	35	-	30	-	-	30	-	-			
																						240	180	140
																						220	180	140
																						250	150	100
																						200	150	100

General turning Recommended cutting data

Turning insert, positive

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]								
						BL						BH		
						YCB121			YCB131			YCB211		
						Feed rate [mm]			Feed rate [mm]			Feed rate [mm]		
						0,1	0,2	0,3	0,1	0,2	0,3	0,1	0,2	0,4
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1									
		approx. 0,45 % C	annealed	190	2									
		approx. 0,45 % C	tempered	250	3									
		approx. 0,75 % C	annealed	270	4									
		approx. 0,75 % C	tempered	300	5									
	Low-alloyed steel		annealed	180	6									
			tempered	275	7									
			tempered	300	8									
			tempered	350	9									
	High-alloyed steel and high-alloyed tool steel		annealed	200	10									
			hardened and tempered	325	11									
M	Stainless steel	ferritic/martensitic	annealed	200	12									
		martensitic	tempered	240	13									
		austenitic	quench hardened	180	14									
		austenitic-ferritic		230	15									
K	Grey cast iron	perlitic/ferritic		180	16							1330	905	410
		perlitic (martensitic)		260	17							1100	740	330
	Cast iron with spheroidal graphite	ferritic		160	18							-	-	-
		perlitic		250	19							240	180	100
	Malleable cast iron	ferritic		130	20							-	-	-
		perlitic		230	21							240	180	100
N	Aluminium wrought alloys	cannot be hardened		60	22									
		hardenable	hardened	100	23									
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24									
		≤ 12 % Si, hardenable	hardened	90	25									
		> 12 % Si, cannot be hardened		130	26									
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27									
		CuZn, CuSnZn		90	28									
		CuSn, Pb-free copper, electrolytic copper		100	29									
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30									
			hardened	280	31									
		Ni or Co bass	annealed	250	32									
			hardened	350	33									
			cast	320	34									
	Titanium alloys	pure titanium		R_m 400	35									
		α and β alloys	hardened	R_m 1050	36									
H	Hardened steel		hardened and tempered	55 HRC	37	220	170	130	160	120	100			
			hardened and tempered	60 HRC	38	200	160	120	150	120	100			
	Hard cast iron		cast	400	39	200	150	100	180	120	100			
	Hardened cast iron		hardened and tempered	55 HRC	40	200	150	100	150	120	100			
X	Non-metallic materials	Thermoplasts			41									
		Thermosetting plastics			42									
		Plastic, glass-fibre reinforced GFRP			43									
		Plastic, carbon fibre reinforced CFRP			44									
		Graphite			45									
		Wood			46									

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
For examples of material for cutting tool groups view page D22.



Notes

Parting & grooving

Product overview	**A338-A339**
System overview	**A340-A343**
Chip breaker overview	**A344-A345**
Grade overview	**A346-A347**
Application fields of grades	**A348-A350**
System code – inserts	**A352**
Inserts	**A353-A367**
System code – inserts – QC series	**A368**
Inserts – QC series	**A369-A373**
System code – tool holders	**A374-A376**
Tool holders	**A377-A397**
System code – tool holders – QC series	**A398**
Tool holders – QC series	**A399-A401**
Recommended cutting data	**A402-A404**
Technical Information	**A455**

Parting & grooving inserts

Double sided



ZT*D-MM	ZT*D-MG	ZT**-EG	ZP*D-MG	ZP*D-MG-R/L	
2-8	2.5-6	1-6.5	2.5-6	2.35-2.85	Width
A353	A357	A359	A354	A356	Page



ZR*D-MG	ZR*D-EG	ZR*D-LH	ZILD-LC		
2.5-6	3-6	6-8	8		Width
A362	A363	A366	A367		Page

Single sided



ZT*S-MG	ZP*S-MG	ZIMF-NM	ZIGQ-NM		
5-6	2.5-6	3-6	3-6		Width
A358	A355	A364	A365		Page

Three cutting edges



QC**R/L	QC**R/L***R				
0.75-4.8	1-4				Width
A369	A372				Page

External tool holders



GQCR/L**

A399



QER/L**

A377



QE*SN**

A383



QE*SR/L

A382



QECDR/L

A380

Page



QFR/L**

A385



QFRR/LL**

A387



QF*DR/L

A390



QF*SRR/LL

A389



QFHSDR/L

A392



QX*DR/L

A381



QZS*

A384

Page

Boring bars



C*-Q*DR/L**

A395



C40X-Q*DR/L

A394

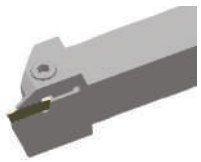
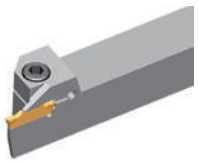


S-QC**R/L**

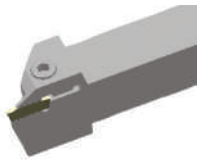
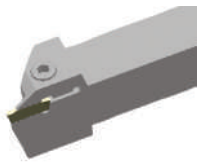
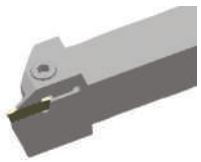
A400

Page

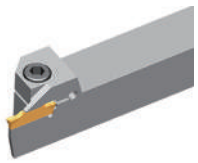
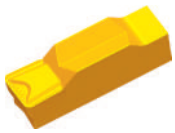
External machining - Parting

Product	Tool holders	Inserts	Tool features an parameters	Page
QE*D*R/L		 ZP**D*	– Inserts with 3D chip breakers for low cutting forces and good chip control. – Max. parting diameter 60.0 mm – Double edged	A377
QE*S*R/L		 ZP*S*	– Inserts with three different chip breakers for low cutting forces and good chip control. – Max. parting diameter 60.0 mm – Double edged	A382
QZ**+QE**		 ZP*S**	– Variable overhang, also for in greater grooving depths. – Max. parting diameter 120.0 mm – Single edge	A384

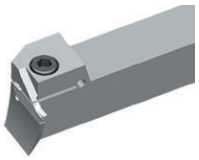
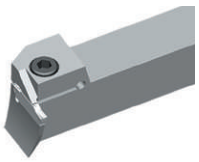
External machining - Grooving an precise grooving

Product	Tool holders	Inserts	Tool features an parameters	Page
QE*D*R/L		 ZT*D**	– With this universal tooling system, using the different inserts, applications like parting, grooving, profiling and turning are possible – Max. groove depth 30.0 mm – Double edged	A377
QE*D*R/L		 ZR*D*	– With this universal tooling system, using the different inserts, applications like parting, grooving, profiling and turning are possible – Max. groove depth 30.0 mm – Double edged	A377
QE*D*R/L		 ZT*D**-EG	– Ground inserts for precision grooving. – Cutting edge width can be any size between 1.0–6.5 mm according to customers requirements.	A377

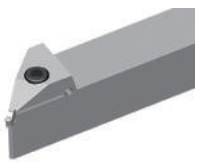
External machining - Grooving an precise grooving

Product	Tool holders	Inserts	Tool features an parameters	Page
QE*S*R/L		 ZT*S*	– With this universal tooling system, and by using the different inserts, applications like parting, grooving, profiling and turning are possible – Max. groove depth 30.0 mm – Single edged	A382

External machining - Axial grooving

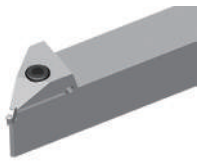
Product	Tool holders	Inserts	Tool features an parameters	Page
QF*D*LL-H		 ZT*D**	– Tooling system for groove turning and profiling. – Parting diameter 48.0–400.0 mm – Groove depth 10.0–30.0 mm – Double edged	A385
QF*D*LL-H		 ZR*D**	– Tooling system for groove turning and profiling. – Parting diameter 48.0–400.0 mm – Groove depth 10.0–30.0 mm – Double edged	A385
QF*D*R/L-L		 ZT*D**	– Tooling system for groove turning and profiling. – Parting diameter 48.0–400.0 mm – Groove depth 10.0–30.0 mm – 90° tool holder, top clamping – Double edged"	A390
QF*D*R/L-L		 ZR*D**	– Tooling system for groove turning and profiling. – Parting diameter 48.0–400.0 mm – Groove depth 10.0–30.0 mm – 90° tool holder, top clamping – Double edged"	A390

External machining - Undercutting

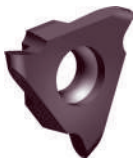
Product	Tool holders	Inserts	Tool features an parameters	Page
QX*D*		 ZT*D**	– Monoblock tool holder positioned at an angle (45°). – Tooling system for undercutting and turning. – Different turning operations like recesses, undercuts and copy turning. – Double edged	A381

Parting & grooving System overview

External machining - Undercutting

Product	Tool holders	Inserts	Tool features an parameters	Page
QX*D*		 ZR*D**	– Monoblock tool holder positioned at an angle (45°). – Tooling system for undercutting and turning. – Different turning operations like recesses, undercuts and copy turning. – Double edged	A381

External machining - Grooving

Product	Tool holders	Inserts	Tool features an parameters	Page
GQCR/L		 QC16/22****	– Precision ground with high tolerances. – Sharp cutting edge for precise machining. – High efficiency with three cutting edges. – Finishing for groove width between 0.5 mm–4.8 mm – Max. groove depth 5.0 mm – Triple edged	A399

Internal machining - Grooving & turning

Product	Tool holders	Inserts	Tool features an parameters	Page
C*-Q*R/L*		 ZT*D**	– Tooling system for groove turning and profiling. – Max. groove depth 13.0 mm – Min. diameter 27.0 mm – Double edged	A395
C*-Q*R/L*		 ZR*D*	– Tooling system for groove turning and profiling. – Max. groove depth 13.0 mm – Min. diameter 27.0 mm – Double edged	A395

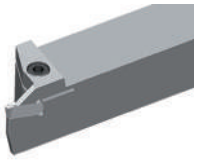
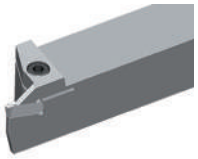
Internal machining - Grooving

Product	Tool holders	Inserts	Tool features an parameters	Page
S***-QC**R/L*		 QC11/16/22****	– Fine ground insert for high precision. – Groove width 0.5–4.8 mm – Min. diameter 16.0 mm – Max. groove depth 4.0 mm (Right holder + left insert Left holder + right insert) – Double edged	A400

Aluminium machining - Facing & longitudinal profile turning

Product	Tool holders	Inserts	Tool features an parameters	Page
C*X-Q*DR/L		 ZR**-LH	– Special chip breakers for machining of aluminium. – Sharp and stable cutting edge for continuous and interrupted cut. – Profiling of aluminium rims. – Double edged	A394

Machining of Heat resistant alloy materials - External machining

Product	Tool holders	Inserts	Tool features an parameters	Page
QE*S*N		 ZIGQ**	– Precision insert with optimised seat and safe clamping. – Insert for heat-resistant alloys and special materials.	A382
QE*S*N		 ZIMF**	– Precision insert with optimised seat and safe clamping. – Insert for heat-resistant alloys and special materials.	A382

Parting & grooving Chip breaker overview

Grooving

MM P M K S




Ground chip breaker with straight cutting edge for general machining of steel, stainless steel and heat-resistant alloys. Suitable for grooving, turning and parting.

MG P M K S




Universal chip breaker for general machining of steel, stainless steel and cast iron. Suitable for grooving, turning and parting.

MG P M K S




Universal chip breaker with round profile for general machining of steel, stainless steel and cast iron. Suitable for grooving and profiling.

EG M P S




Ground precision chip breaker for grooving and turning applications. Suitable for machining of stainless steel. E-tolerance for high repeatability.

EG M P S




Ground precision chip breaker with round profile for grooving and turning applications. Suitable for machining of stainless steel. E-tolerance for high repeatability.

NM S




Special chip breaker for machining of heat-resistant materials.

Grooving

LC N





Ground chip breaker for profile and turning applications of non-ferrous metals.

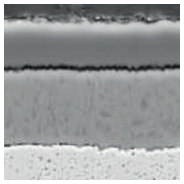
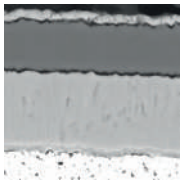
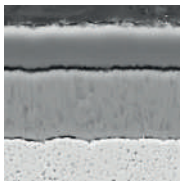
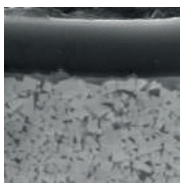
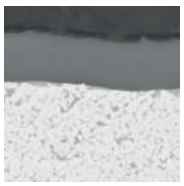
LH N



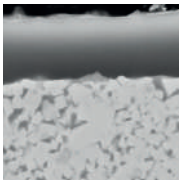
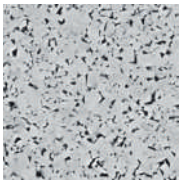
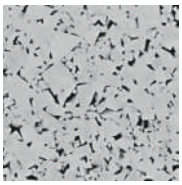


Ground chip breaker for profile and turning applications of non-ferrous metals.

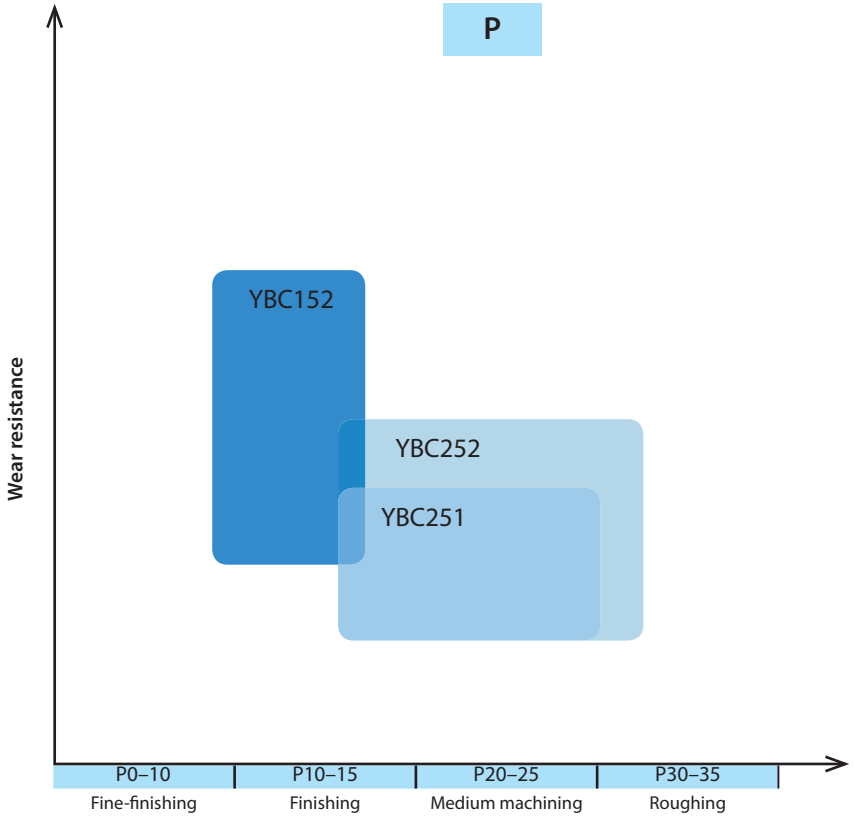
Parting & grooving

Grade	ISO	Micro structure	Grade description
YBC152	P10 - P20		CVD coated P10–P20 carbide grade for finishing to medium operation of steel and casting steel. Outstanding performance under higher cutting speed and temperature with excellent wear resistance.
YBC251	P20 - P35		CVD coated P20–P35 carbide grade for medium operation to roughing of steel and casting steel in lower cutting speed.
YBC252	P20 - P35		CVD coated P20–P35 carbide grade for medium operation to roughing of steel and casting steel. Optimal performance of wear resistance and toughness for a wide application field.
YBG102	S05 - S15		PVD coated S05–S15 carbide substrate for finishing to medium application of super alloy material, stainless steel and aluminum. Good wear resistance in a wide application field.
YBG105	S05 - S20		PVD multilayer coated S05–S20 carbide substrate for finishing to medium application of super alloy material but also stainless steel. Good wear resistance and thermal stability in a wide application field.
YB9320	P10 - P30 M10 - M25		PVD multilayer coated P10–P30/M10–M25 carbide substrate for finishing to medium application of stainless steel, super alloy and steel (grooving/milling). Optimized coating stability for higher wear resistance and thermal stability in a wide application fi
YBG202	P10 - P30 M10 - M25		PVD coated P10–P30/M10–M25 carbide substrate for finishing to medium application of stainless steel and steel (milling). Good wear resistance in a wide application field.
YBG205	P10 - P30 M20 - M40 S15-S25		PVD multilayer coated P10–P30/M20–M40/S15–S25 carbide substrate for finishing to medium application of stainless steel, super alloy and steel (milling). Good wear resistance and thermal stability in a wide application field.

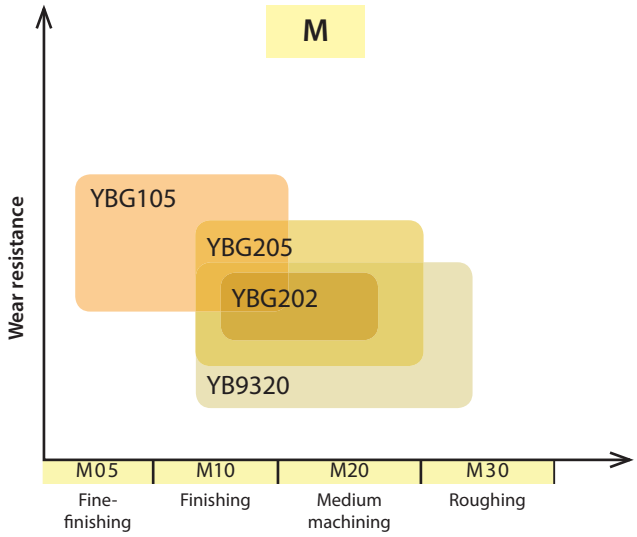
Parting & grooving

Grade	ISO	Micro structure	Grade description
YBG302	P15 - P30 M25 - M40		PVD coated P15–P30/M25–M40 carbide substrate for medium roughing application of stainless steel and steel (milling). Good wear resistance and toughness.
YD101	K05 - K20 N05 - N20		Uncoated K05–K20/N05–N20 carbide substrate for fine to medium application in aluminum and other material.
YD201	K10 - K30 N10 - N30		Uncoated K10–K30/N10–N30 carbide substrate for medium application in aluminum and other material.

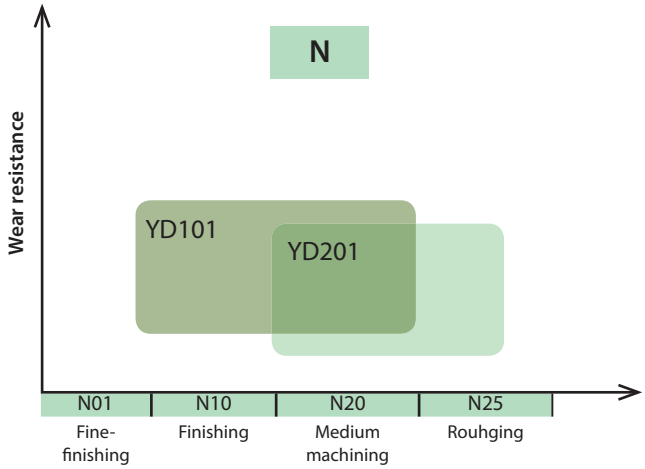
CVD grades for steel, stainless steel and cast iron



PVD grade for stainless steel and heat-resistant alloys



Turning grades for non-ferrous metals



Application fields of grades – parting & grooving

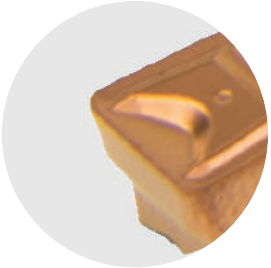
	ISO	HC[1] (CVD)	HC[1] (PVD)	HT	HC[2]	Ceramic	HW	CBN	PCD
P	P01								
	P10	YBC152, YBC251, YBC252	YBG202, YB9320, YBG302						
	P20								
	P30								
	P40								
M	M01								
	M10		YBG202, YB9320, YBG302						
	M20								
	M30								
	M40								
K	K01								
	K10								
	K20								
	K30								
N	N01								
	N10						YD101, YD102		
	N20								
	N30								
S	S01								
	S10		YBG102						
	S20								
	S30								
H	H01								
	H10								
	H20								
	H30								

P	Steel	N	Non-ferrous metals
M	Stainless steel	S	Heat-resistant alloys
K	Cast iron	H	Hardened materials

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

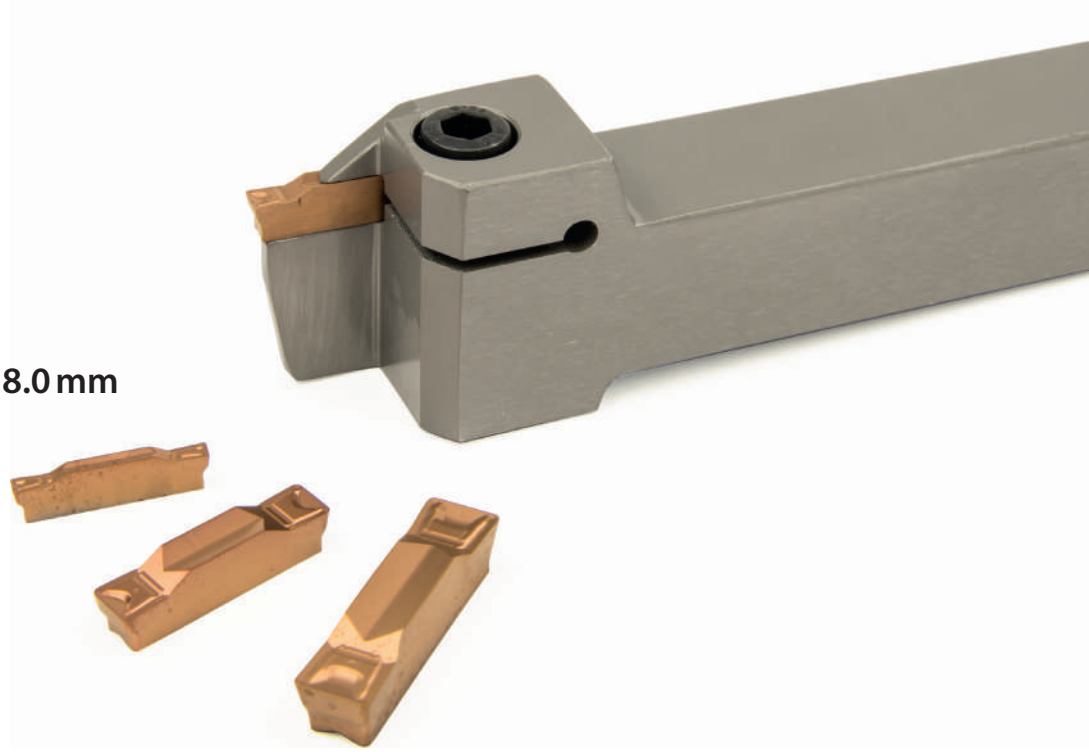
New

MM
chip breaker



Ground chip breaker in combination with grade YB9320 for general machining of steel, stainless steel and heat-resistant alloys. Suitable for grooving, groove turning and parting.

Width 2.0 mm bis 8.0 mm



Parting & grooving System code – inserts

ZP	G	D	04	04	–	M	G
1	2	3	4	5		6	7

Application	
Code	Description
ZP	Parting
ZT	Grooving & turning
ZR	Form turning

1

Insert seat size [mm]	
Groove width	
Code	Description
B	2,0
E	2,5
F	3,0
G	4,0
H	5,0
K	6,0
L	8,0

2

No. of cutting edges	
Code	Description
S	Single
D	Double

3

Insert thickness S [mm]	
	
Code	S
02	2,0
025	2,5
03	3,0
04	4,0
05	5,0
06	6,0
08	8,0

4

Nose radius r [mm]	
	
Code	r
02	0,2
03	0,3
04	0,4
08	0,8

5

Tolerance class [mm]	
Code	Description
M	±0,13
E	±0,025

6

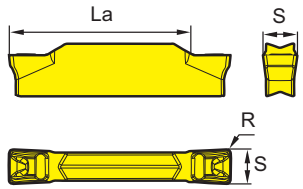
Chip breaker	
Code	Description
G	General chip breaker
F	Special chip breaker
M	Straight edge

7

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts

ZT** parting & grooving insert (double sided)



Double cutting edge

		ISO	R±0.1	La *max*	S	f	HC¹ (CVD) YBC252	HC¹ (CVD) YBC251	HC¹ (PVD) YBG105	HC¹ (PVD) YBG102	HC¹ (PVD) YB9320	HC¹ (PVD) YBG205	HC¹ (PVD) YBG202	HC¹ (PVD) YBG302	HW YD101	HW YD201
P							⊛	⊛			⊛	⊛	⊛	⊛		
M											⊛	⊛	⊛	⊛		
K																
N															◉	⊛
S									●	●	⊛	⊛	⊛			
H																
		ZTBD02002-MM	0.2	13	2	0,02-0,07					●	●	○	○		
		ZTED02503-MM	0.3	17	2.5	0,03-0,1					●					
		ZTFD0303-MM	0.3	17	3	0,04-0,13					●					
		ZTGD0404-MM	0.4	22	4	0,06-0,18					●					
		ZTHD0504-MM	0.4	22	5	0,08-0,23					●					
		ZTKD0608-MM	0.8	22	6	0,12-0,27					●					
		ZTLD0808-MM	0.8	28	8	0,13-0,29					●	○				

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

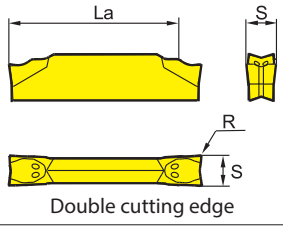
Tool holders

*-QBDR/L	QE*D*R/L	QF*D*R/L-H	QF*D*LL-H	QF*D*RR-H	QF*D*R/L-L	C***-Q*DR/L
						
A395	A377	A385	A387	A387	A390	A395

System code A352 | Grade selection A350 | Technical info A447 | Cutting data A402

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

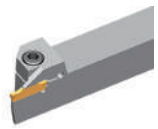
Parting inserts

Parting & grooving insert (double sided)						HC¹ (CVD)						HC¹ (PVD)						HW	
 Double cutting edge					P	⊛	⊛						⊛	⊛	⊛	⊛			
					M								⊛	⊛	⊛	⊛			
					K														
					N													●	⊛
					S							●	●	⊛	⊛	⊛			
					H														
ISO		R±0.1	La *max*	S±0.10	f	YBC252	YBC251					YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**ZPED02502-MG**	0.2	17	2.5	0,03-0,1		●							●		●	●		
	ZPFD0302-MG	0.2	17	3	0,04-0,13		●							●		●	●		
	ZPGD0402-MG	0.2	22	4	0,07-0,18		●							●		●	●		○
	ZPHD0503-MG	0.3	22	5	0,1-0,24											●	●		
	ZPKD0604-MG	0.4	22	6	0,12-0,29	○										●	●		

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

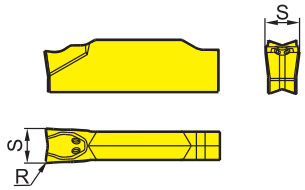
Tool holders

QE*D*R/L	QF*D*R/L-H	QF*D*LL-H	QF*D*RR-H	QF*D*R/L-L	C***-Q*DR/L
					
A377	A385	A387	A387	A390	A395

System code A352 Grade selection A350 Technical info A447 Cutting data A402

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

Parting inserts



Single cutting edge

Parting & grooving insert (single sided)					HC¹ (CVD)						HC¹ (PVD)						HW	
					P													
					M													
					K													
					N													
					S													
					H													
	ISO	R±0.1	S±0.10	f	YBC252	YBC251					YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**ZPES02502-MG**	0.2	2.5	0,03-0,1											●	●		
	ZPFS0302-MG	0.2	3	0,04-0,13	●										●	●		
	ZPGS0402-MG	0.2	4	0,07-0,18	○										●	●		○
	ZPHS0503-MG	0.3	5	0,1-0,24											○	●		
	ZPKS0604-MG	0.4	6	0,12-0,29											●	●		

● Ex stock ○ On demand

Single sided inserts only for parting blades

HC¹ Coated carbide
HW Uncoated carbide

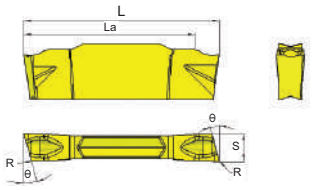
Tool holders

QE*S*R/L	QZ**+QE**	QF*S*LL-H	QF*S*RR-H	QF*S*R/L-L	QF*S*R/L-H
					
A379	A383	A389	A389	A392	A393

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts

ZT** parting & grooving insert (double sided)



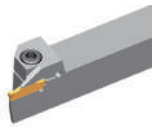
		ISO	La *max*	L	S	θ	R	f	HC¹ (CVD) YBC252	HC¹ (CVD) YBC251	HC¹ (PVD) YBG105	HC¹ (PVD) YBG102	HC¹ (PVD) YB9320	HC¹ (PVD) YBG205	HC¹ (PVD) YBG202	HC¹ (PVD) YBG302	HW YD101	HW YD201
P									⊛	⊛			⊛	⊛	⊛	⊛		
M													⊛	⊛	⊛	⊛		
K																		
N																	●	⊛
S											●	●	⊛	⊛	⊛			
H																		
		ZPED02502-MG-6L	17	20	2.35	6°	0.2	0,03-0,08								●		
		ZPED02502-MG-6R	17	20	2.35	6°	0.2	0,03-0,08					●			●		
		ZPED02502-MG-15L	17	20	2.35	15°	0.2	0,03-0,05								○		
		ZPED02502-MG-15R	17	20	2.35	15°	0.2	0,03-0,05							○	○		
		ZPFD0302-MG-6L	17	20	2.85	6°	0.2	0,04-0,1					●		●	●		
		ZPFD0302-MG-6R	17	20	2.85	6°	0.2	0,04-0,1					●		●	○		
		ZPFD0302-MG-15L	17	20	2.85	15°	0.2	0,04-0,08							○	○		
		ZPFD0302-MG-15R	17	20	2.85	15°	0.3	0,04-0,08					●		●	○		

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

Tool holders

QE*D*R/L



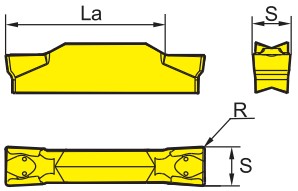
A377

System code A352 | Grade selection A350 | Technical info A447 | Cutting data A402

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts

Parting & grooving insert (double sided)



Double cutting edge

		ISO	R±0.1	La *max*	S±0.10	f	HC¹ (CVD) YBC252	HC¹ (CVD) YBC251	HC¹ (PVD) YBG105	HC¹ (PVD) YBG102	HC¹ (PVD) YB9320	HC¹ (PVD) YBG205	HC¹ (PVD) YBG202	HC¹ (PVD) YBG302	HW YD101	HW YD201
P																
M																
K																
N																
S																
H																
		**ZTED02503-MG**	0.3	17	2.5	0,03-0,11							●	●		
		ZTFD0303-MG	0.3	17	3	0,04-0,14				○		●	●	●		
		ZTGD0404-MG	0.4	22	4	0,07-0,2	●					●	●	●		●
		ZTHD0504-MG	0.4	22	5	0,10-0,25						●	●	●		
		ZTKD0608-MG	0.8	22	6	0,13-0,30				○			●	●		

● Ex stock ○ On demand

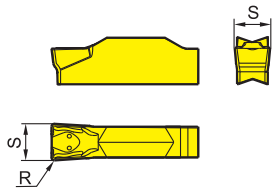
HC¹ Coated carbide
HW Uncoated carbide

Tool holders

QE*D*R/L	QF*D*R/L-H	QF*D*LL-H	QF*D*RR-H	QF*D*R/L-L	C***-Q*DR/L
					
A377	A385	A387	A387	A390	A395

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

Parting inserts



Single cutting edge

Parting & grooving insert (single sided)					HC¹ (CVD)						HC¹ (PVD)						HW	
				P														
				M														
				K														
				N														
				S														
				H														
ISO	R±0.1	S±0.10	f		YBC252	YBC251					YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
 **ZTHS0504-MG**	0.4	5	0,10-0,25												●	●		
 **ZTKS0608-MG**	0.8	6	0,13-0,30												○	●		

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

Tool holders

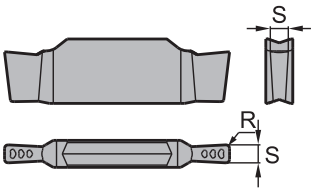
QE*S*R/L	QZ**+QE**	QF*S*LL-H	QF*S*RR-H	QF*S*R/L-L	QF*S*R/L-H
					
A379	A383	A389	A389	A392	A393

System code A352 Grade selection A350 Technical info A447 Cutting data A402

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts

Parting & grooving insert (double sided)



	HC[1] (CVD)				HC[1] (PVD)						HW	
P	◐	◐				◐	◐	◐	◐			
M						◐	◐	◐	◐			
K												
N											●	◐
S					●	●	◐	◐	◐			
H												

	ISO	La *max*	S±0.025	R±0.05	f	YBC252	YBC251	YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	ZTCD01002-EG	2.6	1	0.2	0,02-0,04								○		
	ZTCD010500-EG	2.6	1.05	0	0,02-0,04								○		
	ZTCD011502-EG	2.6	1.15	0.2	0,02-0,04								○		
	ZTCD01202-EG	2.6	1.2	0.2	0,02-0,04								○		
	ZTCD01302-EG	2.6	1.3	0.2	0,02-0,04								○		
	ZTCD013802-EG	2.6	1.38	0.2	0,02-0,04								○		
	ZTCD01402-EG	2.6	1.4	0.2	0,02-0,04								○		
	ZTCD01500-EG	2.6	1.5	0	0,02-0,04								○		
	ZTCD01502-EG	2.6	1.5	0.2	0,02-0,04								○		
	ZTCD01503-EG	2.6	1.5	0.3	0,02-0,04							○			
	ZTCD015503-EG	2.6	1.55	0.3	0,02-0,04								○		
	ZTCD01602-EG	2.6	1.6	0.2	0,02-0,04								●		
	**ZTCD01702-EG**	3.4	1.7	0.2	0,02-0,08								○		
	ZTCD017503-EG	3.4	1.75	0.3	0,02-0,08								○		
	ZTCD017602-EG	3.4	1.76	0.2	0,02-0,08							○			
	ZTCD01802-EG	3.4	1.8	0.2	0,02-0,08								○		
	ZTCD018502-EG	3.4	1.85	0.2	0,02-0,08								○		
	ZTCD02000-EG	3.4	2	0	0,02-0,08								○		
	ZTCD02002-EG	3.4	2	0.2	0,02-0,08								●		
	ZTCD02003-EG	3.4	2	0.3	0,02-0,08							○			
	ZTCD020503-EG	3.4	2.05	0.3	0,02-0,08								○		
	ZTCD021502-EG	3.4	2.15	0.2	0,02-0,08								○		
	ZTCD022503-EG	3.4	2.25	0.3	0,02-0,08								○		
	ZTCD02302-EG	3.4	2.3	0.2	0,03-0,11								○		
	ZTCD02303-EG	3.4	2.3	0.3	0,03-0,11								○		
	ZTCD02402-EG	3.4	2.4	0.2	0,03-0,11								○		

● Ex stock ○ On demand

HC[1] Coated carbide
HW Uncoated carbide

Tool holders

QECD



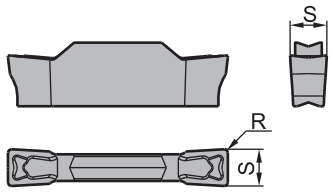
A380

System code > A352 Grade selection > A350 Technical info > A447 Cutting data > A402

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts

Parting & grooving insert (double sided)



	HC[1] (CVD)						HC[1] (PVD)						HW	
P	◐	◐						◐	◐	◐	◐			
M								◐	◐	◐	◐			
K														
N													●	◐
S							●	●	◐	◐	◐			
H														

	ISO	La *max*	S±0.025	R±0.05	f	YBC252	YBC251					YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	ZTED0247020-EG	17	2.47	0.2	0,03-0,11												○		
	ZTED02502-EG	17	2.5	0.2	0,03-0,11												○		
	ZTED026502-EG	17	2.65	0.2	0,03-0,11												○		
	ZTED02702-EG	17	2.7	0.2	0,03-0,11												○		
	ZTED02703-EG	17	2.7	0.3	0,03-0,11												○		
	ZTED02802-EG	17	2.8	0.2	0,04-0,13												○		
	ZTED02803-EG	17	2.8	0.3	0,04-0,13												○		
	ZTED02804-EG	17	2.8	0.4	0,04-0,13												○		
	ZTED02903-EG	17	2.9	0.3	0,04-0,13												○		
	ZTFD03001-EG	17	3	0.1	0,04-0,13											○			
	ZTFD03002-EG	17	3	0.2	0,04-0,13												○		
	ZTFD03003-EG	17	3	0.3	0,04-0,13												○		
	ZTFD03005-EG	17	3	0.5	0,04-0,13												○		
	ZTFD031802-EG	17	3.18	0.2	0,04-0,13												○		
	ZTFD03203-EG	17	3.2	0.3	0,04-0,13												○		
	ZTFD0325024-EG	17	3.25	0.24	0,04-0,13												○		
	**ZTFD03302-EG**	17	3.3	0.2	0,04-0,13											○	○		
	ZTFD03303-EG	17	3.3	0.3	0,04-0,13												○		
	ZTFD03403-EG	17	3.4	0.3	0,04-0,13												○		
	ZTFD035-EG	17	3.5	0	0,04-0,13												○		
	ZTFD03602-EG	17	3.6	0.2	0,04-0,13												○		
	ZTGD039602-EG	22	3.96	0.2	0,07-0,18												○		
	ZTGD04002-EG	22	4	0.2	0,07-0,18		○									○	○		
	ZTGD04003-EG	22	4	0.3	0,07-0,18												○		
	ZTGD04004-EG	22	4	0.4	0,07-0,18												○		
	ZTGD04008-EG	22	4	0.8	0,07-0,18											○			
	ZTGD0423010-EG	22	4.23	0.1	0,07-0,18												○		
	ZTGD04503-EG	22	4.5	0.3	0,07-0,18												○		
	ZTGD04505-EG	22	4.8	0.5	0,07-0,18												○		
	ZTGD04803-EG	22	4.8	0.3	0,1-0,24												○		
	ZTGD04805-EG	22	4.8	0.5	0,1-0,24												○		
	ZTHD05003-EG	22	5	0.3	0,1-0,24												○		
	ZTHD05004-EG	22	5	0.4	0,1-0,24											○			
	ZTHD05008-EG	22	5	0.8	0,1-0,24												○		

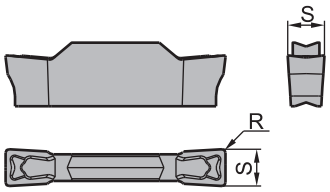
● Ex stock ○ On demand

HC[1] Coated carbide
HW Uncoated carbide

System code > A352 Grade selection > A350 Technical info > A447 Cutting data > A402

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts



Parting & grooving insert (double sided)							HC[1] (CVD)				HC[1] (PVD)						HW	
						P												
						M												
						K												
						N												
						S												
						H												
ISO		La *max*	S±0.025	R±0.05	f		YBC252	YBC251			YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**ZTHD05003-EG**	22	5	0.3	0,1-0,24													
	ZTHD05004-EG	22	5	0.4	0,1-0,24													
	ZTHD05008-EG	22	5	0.8	0,1-0,24													
	ZTHD05012-EG	22	5	0.12	0,1-0,24										○			
	ZTHD05202-EG	22	5.2	0.2	0,1-0,24											○		
	ZTHD052503-EG	22	5.25	0.3	0,1-0,24											○		
	ZTHD05403-EG	22	5.4	0.3	0,1-0,24											○		
	ZTHD05508-EG	22	5.5	0.8	0,1-0,24											○		
	ZTHD055603-EG	22	5.56	0.3	0,1-0,24											○		
	ZTKD06004-EG	22	6	0.4	0,12-0,29											○		
	ZTKD06504-EG	22	6.5	0.4	0,12-0,29											○		

● Ex stock ○ On demand

HC[1] Coated carbide
HW Uncoated carbide

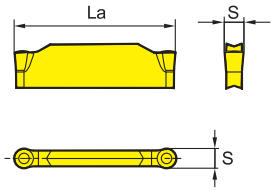
Tool holders

QE*D*R/L	QF*D*R/L-H	QF*D*LL-H	QF*D*RR-H	QF*D*R/L-L	C***-Q*DR/L
					
A377	A385	A387	A387	A390	A395

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts

Parting & grooving insert (double sided)



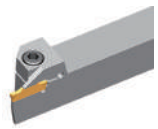
Double cutting edge

		ISO	La *max*	S±0.10	f	HC¹ (CVD) YBC252	HC¹ (CVD) YBC251	HC¹ (PVD) YBG105	HC¹ (PVD) YBG102	HC¹ (PVD) YB9320	HC¹ (PVD) YBG205	HC¹ (PVD) YBG202	HC¹ (PVD) YBG302	HW YD101	HW YD201
P															
M															
K															
N														○	○
S								○	○	○	○	○			
H															
		**ZRED025-MG**	17.5	2.5	0,03-0,11							●	●		
		ZRFD03-MG	17	3	0,04-0,14					●		●	●		
		ZRGD04-MG	21	4	0,07-0,2	○						●	●		
		ZRHD05-MG	20	5	0,1-0,24							●	●		
		ZRKD06-MG	19	6	0,12-0,29							●	●		

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

Tool holders

QE*D*R/L	QX*D*	QF*D*R/L-H	QF*D*LL-H	QF*D*RR-H	QF*D*R/L-L	C*X-Q*DR/L
						
A377	A381	A385	A387	A387	A390	A394

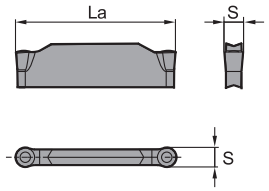
C***-Q*DR/L

A395

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts

Parting & grooving insert (double sided)



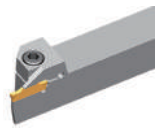
Double cutting edge

	ISO	La *max*	S±0.025	f	HC¹ (CVD) YBC252	HC¹ (CVD) YBC251	HC¹ (PVD) YBG105	HC¹ (PVD) YBG102	HC¹ (PVD) YB9320	HC¹ (PVD) YBG205	HC¹ (PVD) YBG202	HC¹ (PVD) YBG302	HW YD101	HW YD201
P														
M														
K														
N													○	○
S							○	○	○	○	○			
H														
	**ZRFD03-EG**	17	3	0,04-0,14					●			○		
	ZRGD04-EG	21	4	0,07-0,2					●					
	ZRHD05-EG	20	5	0,1-0,24					●			○		
	ZRKD06-EG	19	6	0,12-0,29					○					

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

Tool holders

QE*D*R/L	QX*D*	QF*D*R/L-H	QF*D*LL-H	QF*D*RR-H	QF*D*R/L-L	C*X-Q*DR/L
						
A377	A381	A385	A387	A387	A390	A394

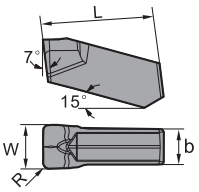
C***-Q*DR/L

A395

System code A352 | Grade selection A350 | Technical info A447 | Cutting data A402

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts

Parting & grooving insert (single sided)							HC¹ (CVD)						HC¹ (PVD)						HW	
						P														
						M														
						K														
						N														
						S														
						H														
	ISO	R±0.1	W±0.05	b	L	f	YBC252	YBC251					YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**ZIMF304N-NM**	0.4	3	2.4	15.3	0,04-0,11							●							
	ZIMF406N-NM	0.6	4	3.2	15.3	0,07-0,16							●	○						
	ZIMF506N-NM	0.6	5	4	15.3	0,1-0,2							●	○						
	ZIMF608N-NM	0.8	6	4	15.3	0,12-0,23							●	○						

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

Tool holders

QE*S*R/L-N



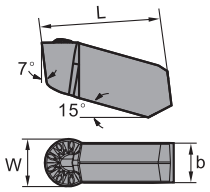
A382

System code A352 | Grade selection A350 | Technical info A447 | Cutting data A402

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

Parting inserts

Parting & grooving insert (single sided)



		ISO	W±0.05	b	L	f	HC¹ (CVD) YBC252	YBC251	HC¹ (PVD) YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	HW YD101	YD201
P							⊛	⊛			⊛	⊛	⊛	✹		
M											⊛	⊛	⊛	✹		
K																
N															●	⊛
S									●	●	⊛	⊛	⊛			
H																
		**ZIGQ3N-NM**	3	2.4	15.3	0,04-0,11			●	○						
		ZIGQ4N-NM	4	3.2	15.3	0,07-0,16			●	○						
		ZIGQ5N-NM	5	4	15.3	0,1-0,2			●	○						
		ZIGQ6N-NM	6	5	15.3	0,13-0,24			●	○						

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

Tool holders

QE*S*R/L-N

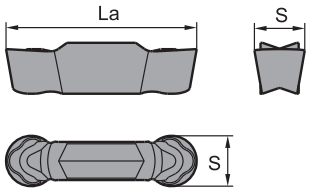


A382

System code A352 Grade selection A350 Technical info A447 Cutting data A402

Parting inserts

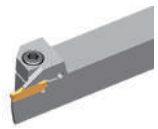
Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting & grooving insert (double sided)						HC¹ (CVD)						HC¹ (PVD)						HW	
					P	⊛	⊛					⊛	⊛	⊛	⊛				
					M							⊛	⊛	⊛	⊛				
					K														
					N													●	⊛
					S							●	●	⊛	⊛	⊛			
					H														
ISO		La *max*	S±0.025	f		YBC252	YBC251					YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**ZRKD06-LH**	19	6	0,12-0,23														○	
	ZRLD08-LH	22	8	0,14-0,26														●	

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

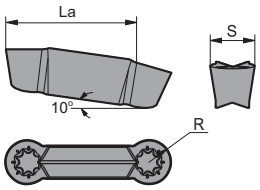
Tool holders

QE*D*R/L	C*X-Q*DR/L	C***-Q*DR/L
		
A377	A394	A395

System code A352 | Grade selection A350 | Technical info A447 | Cutting data A402

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts



Parting & grooving insert (double sided)					HC[1] (CVD)				HC[1] (PVD)						HW	
				P												
				M												
				K												
				N											●	●
				S					●	●	●	●	●	●		
				H												
ISO		La *max*	S±0.025	f	YBC252	YBC251			YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	ZILD08-LC	22	8	0,14-0,26											○	○

● Ex stock ○ On demand

HC[1] Coated carbide
HW Uncoated carbide

System code A352 Grade selection A350 Technical info A447 Cutting data A402

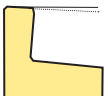
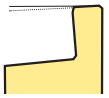
QC 22 R 300 – R 03

1	2	3	4		5	6

Series — 1

Cutting edge length [mm]	
Code	I.C
11	6,35
16	9,525
22	12,70

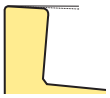
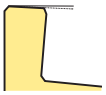
2

Cutting direction	
Code	Description
R	 Right
L	 Left

3

Groove width [mm]	
Code	Description
050	0,50
100	1,00
…	…
480	4,80

4

Edge shape	
Code	Description
R	 Radius
C	 Chamfer

5

Radius/Chamfer [mm]	
Code	Description
005	0,05
02	0,2
03	0,3
04	0,4

6

Triangular inserts (round edge)

QC 22 R 300 – R

1	2	3	4		5

Series — 1

Cutting edge length [mm]	
Code	I.C
11	6,35
16	9,525
22	12,70

2

Cutting direction	
Code	Description
R	 Right
L	 Left

3

Groove width [mm]	
Code	Description
050	0,50
100	1,00
…	…
480	4,80

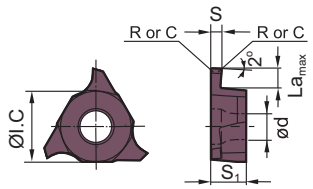
4

Round — 5

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts

QC** turning/milling insert



Right hand style

	P	M	K	N	S	H
HC[1] (CVD)	●●					
HC[1] (PVD)	●●●●	●●●●			●●●●●	
HW				●●		

	ISO	La *max*	S±0.025	R/C	ØI.C	S1	ød	f	YBC252	YBC251	YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	QC11R120-R02	1.5	1.2	0.2	6.35	3.18	2.8	0,02-0,03						●				
	QC11L120-R02	1.5	1.2	0.2	6.35	3.18	2.8	0,02-0,03						●				
	QC11R125-R02	1.5	1.25	0.2	6.35	3.18	2.8	0,02-0,03						●				
	QC11L125-R02	1.5	1.25	0.2	6.35	3.18	2.8	0,02-0,03						●				
	QC11R145-R02	1.5	1.45	0.2	6.35	3.18	2.8	0,02-0,05						●				
	QC11L145-R02	1.5	1.45	0.2	6.35	3.18	2.8	0,02-0,05						●				
	QC11R150-R02	1.5	1.5	0.2	6.35	3.18	2.8	0,02-0,05						●				
	QC11L150-R02	1.5	1.5	0.2	6.35	3.18	2.8	0,02-0,05						●				
	QC11R200-R02	2	2	0.2	6.35	3.18	2.8	0,02-0,06						●				
	QC11L200-R02	2	2	0.2	6.35	3.18	2.8	0,02-0,06						●				
	QC11R225-R02	2	2.25	0.2	6.35	3.18	2.8	0,02-0,06						○				
	QC11L225-R02	2	2.25	0.2	6.35	3.18	2.8	0,02-0,06						○				
	QC16R075-R01	2	0.75	0.1	9.525	3.18	4.4	0,02-0,03						○				
	QC16L075-R01	2	0.75	0.1	9.525	3.18	4.4	0,02-0,03						○				
	QC16R080-R01	2	0.8	0.1	9.525	3.18	4.4	0,02-0,03						○				
	QC16R095-R01	2	0.95	0.1	9.525	3.18	4.4	0,02-0,03						○				
	**QC16L095-R01**	2	0.95	0.1	9.525	3.18	4.4	0,02-0,03						○				
	QC16L100-R01	2	1	0.1	9.525	3.18	4.4	0,02-0,03						○				
	QC16R110-R01	2	1.1	0.1	9.525	3.18	4.4	0,02-0,03						○	○			
	QC16L110-R01	2	1.1	0.1	9.525	3.18	4.4	0,02-0,03						●	○			
	QC16R115-R04	2	1.15	0.4	9.525	3.18	4.4	0,02-0,03						○				
	QC16R120-R01	2	1.2	0.1	9.525	3.18	4.4	0,02-0,03						○				
	QC16L120-R01	2	1.2	0.1	9.525	3.18	4.4	0,02-0,03						○				
	QC16R125-R02	2	1.25	0.2	9.525	3.18	4.4	0,02-0,03						○	○			
	QC16L125-R02	2	1.25	0.2	9.525	3.18	4.4	0,02-0,03						●				
	QC16R130-R02	2	1.3	0.2	9.525	3.18	4.4	0,02-0,06						○				
	QC16L130-R02	2	1.3	0.2	9.525	3.18	4.4	0,02-0,06						○				
	QC16R140-R02	2	1.4	0.2	9.525	3.18	4.4	0,02-0,06						○				
	QC16R145-R02	2	1.45	0.2	9.525	3.18	4.4	0,02-0,06						●				
	QC16L145-R02	2	1.45	0.2	9.525	3.18	4.4	0,02-0,06						●				
	QC16R150-R02	2	1.5	0.2	9.525	3.18	4.4	0,02-0,06						●				
	QC16L150-R02	2	1.5	0.2	9.525	3.18	4.4	0,02-0,06						○				
	QC16R160-R02	2	1.6	0.2	9.525	3.18	4.4	0,02-0,06						●				
	QC16L160-R02	2	1.6	0.2	9.525	3.18	4.4	0,02-0,06						●				

● Ex stock ○ On demand

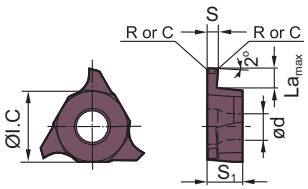
HC[1] Coated carbide
HW Uncoated carbide

System code A352 Grade selection A350 Technical info A447 Cutting data A402

Parting inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

QC** turning/milling insert



Right hand style

	HC¹ (CVD)	HC¹ (PVD)	HW
P	◉ ◉	◉ ◉ ◉ ◉	
M		◉ ◉ ◉ ◉	
K			
N			● ◉
S		● ● ◉ ◉ ◉	
H			

	ISO	La *max*	S±0.025	R/C	ØI.C	S1	ød	f	YBC252	YBC251	YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	QC16R165-R02	2	1.65	0.2	9.525	3.18	4.4	0,02-0,06						○				
	QC16L165-R02	2	1.65	0.2	9.525	3.18	4.4	0,02-0,06						○				
	QC16R170-R02	2	1.7	0.2	9.525	3.18	4.4	0,02-0,06						○				
	QC16L170-R02	2	1.7	0.2	9.525	3.18	4.4	0,02-0,06						○				
	QC16R175-R02	2	1.75	0.2	9.525	3.18	4.4	0,02-0,07						●				
	QC16L175-R02	2	1.75	0.2	9.525	3.18	4.4	0,02-0,06						○				
	QC16R180-R02	2	1.8	0.2	9.525	3.18	4.4	0,02-0,07						○				
	QC16R185-R02	2.5	1.85	0.2	9.525	3.18	4.4	0,02-0,07						●				
	QC16L185-R02	2.5	1.85	0.2	9.525	3.18	4.4	0,02-0,07						○				
	QC16R200-R02	2.5	2	0.2	9.525	3.18	4.4	0,02-0,07						●				
	QC16L200-R02	2.5	2	0.2	9.525	3.18	4.4	0,02-0,07						●				
	QC16L210-R02	2.5	2.1	0.2	9.525	3.18	4.4	0,02-0,07						○				
	QC16L210-R05	2.5	2.1	0.5	9.525	3.18	4.4	0,02-0,07						○				
	QC16R220-R02	2.5	2.2	0.2	9.525	3.18	4.4	0,02-0,07						○				
	QC16L220-R02	2.5	2.2	0.2	9.525	3.18	4.4	0,02-0,07						○				
	QC16R250-R02	2.5	2.5	0.2	9.525	3.18	4.4	0,02-0,08						●	○			
	**QC16L250-R02**	2.5	2.5	0.2	9.525	3.18	4.4	0,02-0,08						●				
	QC16R300-R02	3	3	0.2	9.525	3.18	4.4	0,03-0,11						●				
	QC16L300-R02	3	3	0.2	9.525	3.18	4.4	0,03-0,11						●				
	QC22L100-R02	2	1	0.2	12.7	4.76	5.5	0,02-0,03						○				
	QC22R125-R02	2	1.25	0.2	12.7	4.76	5.5	0,02-0,03						●				
	QC22L125-R02	2	1.25	0.2	12.7	4.76	5.5	0,02-0,03						○				
	QC22R145-R02	2	1.45	0.2	12.7	4.76	5.5	0,02-0,06						○				
	QC22L145-R02	2	1.45	0.2	12.7	4.76	5.5	0,02-0,06						○				
	QC22R150-R02	3.5	1.5	0.2	12.7	4.76	5.5	0,02-0,06						○				
	QC22L150-R02	3.5	1.5	0.2	12.7	4.76	5.5	0,02-0,06						○				
	QC22R175-R02	3.5	1.75	0.2	12.7	4.76	5.5	0,02-0,06						●				
	QC22L175-R02	3.5	1.75	0.2	12.7	4.76	5.5	0,02-0,06						○				
	QC22R185-R02	3.5	1.85	0.2	12.7	4.76	5.5	0,02-0,07						●				
	QC22L185-R02	3.5	1.85	0.2	12.7	4.76	5.5	0,02-0,07						○				
	QC22R195-R02	3.5	1.95	0.2	12.7	4.76	5.5	0,02-0,07						○				
	QC22R200-R02	3.5	2	0.2	12.7	4.76	5.5	0,02-0,07						○				
	QC22L200-R02	3.5	2	0.2	12.7	4.76	5.5	0,02-0,07						○				
	QC22R225-R02	3.5	2.25	0.2	12.7	4.76	5.5	0,02-0,07						○				

● Ex stock ○ On demand

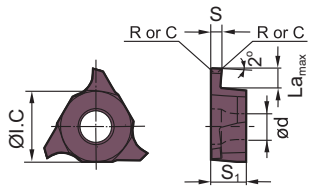
HC¹ Coated carbide
HW Uncoated carbide

System code > A352 Grade selection > A350 Technical info > A447 Cutting data > A402

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Parting inserts

QC** turning/milling insert



Right hand style

	HC¹ (CVD)		HC¹ (PVD)						HW	
P										
M										
K										
N										
S										
H										

	ISO	La *max*	S±0.025	R/C	ØI.C	S1	ød	f	YBC252	YBC251	YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	**QC22R230-R02**	3.5	2.3	0.2	12.7	4.76	5.5	0,02-0,07						●				
	QC22L230-R02	3.5	2.3	0.2	12.7	4.76	5.5	0,02-0,07						○				
	QC22R250-R03	4	2.5	0.3	12.7	4.76	5.5	0,02-0,08						●				
	QC22L250-R03	4	2.5	0.3	12.7	4.76	5.5	0,02-0,08						○				
	QC22R265-R03	4	2.65	0.3	12.7	4.76	5.5	0,02-0,08						●				
	QC22L265-R03	4	2.65	0.3	12.7	4.76	5.5	0,02-0,08						●				
	QC22R280-R03	4	2.8	0.3	12.7	4.76	5.5	0,02-0,08						●				
	QC22L280-R03	4	2.8	0.3	12.7	4.76	5.5	0,02-0,08						○				
	QC22R300-R03	4	3	0.3	12.7	4.76	5.5	0,03-0,11						○				
	QC22L300-R03	4	3	0.3	12.7	4.76	5.5	0,03-0,11						○				
	QC22R320-R03	4	3.2	0.3	12.7	4.76	5.5	0,03-0,11						○				
	QC22L320-R03	4	3.2	0.3	12.7	4.76	5.5	0,03-0,11						○				
	QC22R330-R03	4	3.3	0.3	12.7	4.76	5.5	0,03-0,11						○				
	QC22L330-R03	4	3.3	0.3	12.7	4.76	5.5	0,03-0,11						○				
	QC22R350-R03	5	3.5	0.3	12.7	4.76	5.5	0,05-0,13						○				
	QC22L350-R03	5	3.5	0.3	12.7	4.76	5.5	0,05-0,13						○				
	QC22R400-R04	5	4	0.4	12.7	4.76	5.5	0,05-0,14						○				
	QC22L400-R04	5	4	0.4	12.7	4.76	5.5	0,05-0,14						●				
	QC22R430-R04	5	4.3	0.4	12.7	4.76	5.5	0,05-0,14						○				
	QC22L430-R04	5	4.3	0.4	12.7	4.76	5.5	0,05-0,14						○	○			
	QC22R450-R04	5	4.5	0.4	12.7	4.76	5.5	0,06-0,18						○				
	QC22L450-R04	5	4.5	0.4	12.7	4.76	5.5	0,06-0,18						○				○
	QC22R480-R04	5	4.8	0.4	12.7	5.06	5.5	0,06-0,18						○				
	QC22L480-R04	5	4.8	0.4	12.7	5.06	5.5	0,08-0,2						○				

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

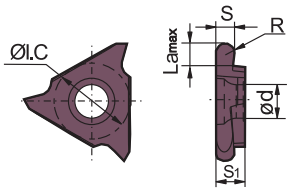
Tool holders

GQCR/L	S***-QC**R/L
	
A399	A400

System code A352 Grade selection A350 Technical info A447 Cutting data A402

Parting inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions



Right hand style

QC** turning/milling insert									HC¹ (CVD)						HC¹ (PVD)						HW	
								P														
								M														
								K														
								N														
								S														
								H														
	ISO	La *max*	S±0.025	R/C	ØI.C	S1	ød	f	YBC252	YBC251					YBG105	YBG102	YB9320	YBG205	YBG202	YBG302	YD101	YD201
	QC16R100R	2	1	0.5	12.7	3.18	4.4	0,02-0,03										○				
	QC16R120R	2	1.2	0.6	12.7	3.18	4.4	0,02-0,03										○				
	QC16R150R	2	1.5	0.75	12.7	3.18	4.4	0,02-0,06										○				
	QC16R200R	2.5	2	1	12.7	3.18	4.4	0,02-0,07										●				
	QC16L200R	2.5	2	1	12.7	3.18	4.4	0,02-0,07										○				
	QC16R250R	2.5	2.5	1.25	12.7	3.18	4.4	0,02-0,08										○				
	QC16L280R	2.5	2.8	1.4	12.7	3.18	4.4	0,02-0,08										○				
	QC16R300R	2.5	3	1.5	12.7	3.18	4.4	0,03-0,11										●				
	QC16L300R	2.5	3	1.5	12.7	3.18	4.4	0,03-0,11										●	○			
	QC22R100R	2	1	0.5	12.7	4.76	5.5	0,02-0,03										●				
	**QC22L100R**	2	1	0.5	12.7	4.76	5.5	0,02-0,03										○	●			
	QC22R150R	3.5	1.5	0.75	12.7	4.76	5.5	0,02-0,06										●				
	QC22L150R	3.5	1.5	0.75	12.7	4.76	5.5	0,02-0,06										●	○			
	QC22R170R	3.5	1.7	0.85	12.7	4.76	5.5	0,02-0,06										○				
	QC22R200R	3.5	2	1	12.7	4.76	5.5	0,02-0,07										○				
	QC22L200R	3.5	2	1	12.7	4.76	5.5	0,02-0,07										○				
	QC22R250R	4	2.5	1.25	12.7	4.76	5.5	0,02-0,08										●				
	QC22L250R	4	2.5	1.25	12.7	4.76	5.5	0,02-0,08										●				
	QC22R300R	4	3	1.5	12.7	4.76	5.5	0,03-0,11										●				
	QC22L300R	4	3	1.5	12.7	4.76	5.5	0,03-0,11										●				
	QC22R320R	4	3.2	1.6	12.7	4.76	5.5	0,03-0,11										○				
	QC22R400R	5	4	2	12.7	4.76	5.5	0,05-0,14										●				
	QC22L400R	5	4	2	12.7	4.76	5.5	0,05-0,14										●				

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

Tool holders

GQCR/L	S***-QC**R/L
	
A399	A400

System code A352 Grade selection A350 Technical info A447 Cutting data A402

Notes

External tool holders

Q	F	G	D	2525	R	22	(S)	– (130)	(H)
1	2	3	4	5	6	7	8	9	10

1 Holder for parting & grooving

2 Application

Code	Description
E	External machining
F	Axial machining

3 Insert seat size [mm]

Holder/cutting width

Code	Description
B	2,0
E	2,5
F	3,0
G	4,0
H	5,0
K	6,0
L	8,0

4 No. of cutting edges

Code	Description
S	Single
D	Double

5 Cross section of holder [mm] x [mm]

6 Type

Code	Description
R	Right
L	Left
N	Right and left

7 Max. cutting depth [mm]

8 Extra

Code	Description
S	Strengthened holder for deep cuts

9 Min. diameter of work piece for first axial grooving [mm]

10 Cutting head

Code	Description
H	0°
L	90°

Boring bars

C	32	S	–	Q	G	D	R	11	–	44
1	2	3		4	5	6	7	8		9

1 Clamping system

2 Diameter [mm]

3 Length [mm]

Code	Description
Q	180
R	200
S	250
X	320

4 Holder for grooving

5 Insert seat size [mm]

Holder/Cutting width

Code	Description
B	2.0
E	2.5
F	3.0
G	4.0
H	5.0
K	6.0
L	8.0

6 No. of cutting edges

Code	Description
S	Single
D	Double

7 Type

Code	Description
R	Right
L	Left
N	Right and left

8 Max. cutting depth [mm]

9 Min. internal diameter of work piece [mm]

Parting & grooving System code – tool holders

Blade

Q	E	G	D	32	N
1	2	3	4	5	6

1

Blade for parting & grooving

2

Application	
Code	Description
E	External machining

3

Insert seat size [mm]	
Holder/ cutting width	
Code	Description
B	2,0
E	2,5
F	3,0
G	4,0
H	5,0
K	6,0
L	8,0

4

No. of cutting edges	
Code	Description
S	Single
D	Double

5

Blade height [mm]

6

Type	
Code	Description
R	Right
L	Left
N	Right and left

Clamping block

QZ	S	32	32
1	2	3	4

1

Parting & grooving tool

2

No. of cutting edges	
Code	Description
S	Single
D	Double

3

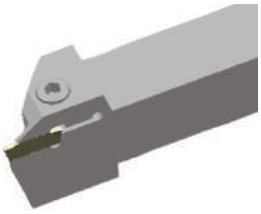
Clamping surface height [mm]

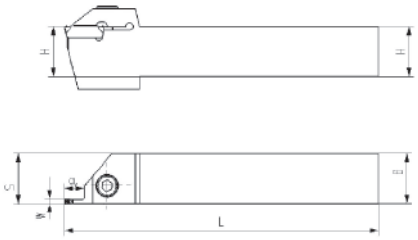
4

Blade height [mm]

Parting & grooving tool holder (external)

QE**R/L





Article	✻	Stock		Dimensions [mm]					Inserts
		R	L	HxB	L	S	W	ar_{max}	
QEBD1616R/L04		○	○	16x16	150	16.17	2	4	Z*BD**
QEBD2020R/L07		○	○	20x20	150	20.17	2	7	Z*BD**
QEED1616R/L10		●	●	16x16	125	15	2.5	10	Z*ED**
QEED1616R/L17		●	●	16x16	125	15	2.5	17	Z*ED**
QEED2020R/L17		●	●	20x20	125	19	2.5	17	Z*ED**
QEED2020R/L10		●	●	20x20	150	10	2.5	10	Z*ED**
QEED2525R/L10		●	●	25x25	150	19	2.5	10	Z*ED**
QEED2525R/L17		●	●	25x25	150	19	2.5	17	Z*ED**
QEFD1616R/L10		●	●	16x16	125	14.8	3	10	Z*FD**
QEFD1616R/L17		●	●	16x16	125	14.8	3	17	Z*FD**
QEFD2020R/L10		●	●	20x20	125	18.8	3	10	Z*FD**
QEFD2020R/L17		●	●	20x20	125	18.8	3	17	Z*FD**
QEFD2525R/L10		●	●	25x25	150	23.8	3	10	Z*FD**
QEFD2525R/L17		●	●	25x25	150	23.8	3	17	Z*FD**
QEGD2020R/L13		●	●	20x20	140	18.5	4	13	Z*GD**
QEGD2020R/L22		●	●	20x20	140	18.5	4	22	Z*GD**
QEGD2525R/L13		●	●	25x25	150	23.5	4	13	Z*GD**
QEGD2525R/L22		●	●	25x25	150	23.5	4	22	Z*GD**
QEGD3232R/L13		●	●	32x32	170	30.5	4	13	Z*GD**
QEGD3232R/L22		●	●	32x32	170	30.5	4	22	Z*GD**
QEHD2525R/L13		●	●	25x25	150	23	5	13	Z*HD**
QEHD2525R/L22		●	●	25x25	150	23	5	22	Z*HD**
QEHD3232R/L13		●	●	32x32	170	30	5	13	Z*HD**
QEHD3232R/L22		●	●	32x32	170	30	5	22	Z*HD**
QEKD2525R/L13		●	●	25x25	150	22.6	6	13	Z*KD**
QEKD2525R/L22		●	●	25x25	150	22.6	6	22	Z*KD**
QEKD3232R/L13		●	●	32x32	170	29.6	6	13	Z*KD**
QEKD3232R/L22		●	●	32x32	170	29.6	6	22	Z*KD**

● Ex stock ○ On demand

✻ With internal cooling

System code > A376 Grade selection > A350 Technical info > A447 Cutting data > A402

Parting & grooving tool holder (external)

Spare parts

	Insert	Z*BD**	Z*ED**	Z*ED**	Z*FD**	Z*FD**	Z*GD**	Z*HD**	Z*KD**
	H	16-20	16	20-32	16	20-32	20-32	20-32	20-32
	Screw	GB70-85-M5x16 (4.0 Nm)	GB70-85-M5x20 (4.0 Nm)	GB70-85-M6x20 (7.0 Nm)	GB70-85-M5x20 (4.0 Nm)	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)
	Wrench	WH40L	WH40L	WH50L	WH40L	WH50L	WH50L	WH50L	WH50L

Insert

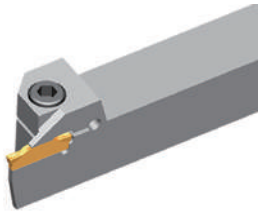
						
A353	A354	A356	A357	A359	A362	A363

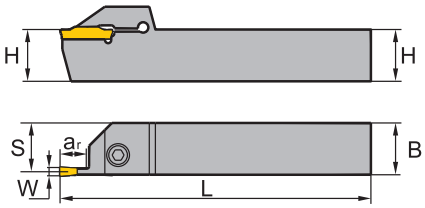

A366

System code A376 | Grade selection A350 | Technical info A447 | Cutting data A402

Parting & grooving tool holder (external)

QE*SN30







Article	✻	Stock	Dimensions [mm]					Inserts
			HxB	L	S	W	ar_{max}	
QEHS2525N30		●	25x25	150	12.5	5	30	Z*HS**
QEHS3232N30		●	32x32	170	16	5	30	Z*HS**
QEKS2525N30		○	25x25	150	12.5	6	30	Z*KS**
QEKS3232N30		○	32x32	170	16	6	30	Z*KS**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	Z*HS**	Z*KS**
	H	**25-32**	**25-32**
	Screw	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)
	Wrench	WH50L	WH50L

Insert

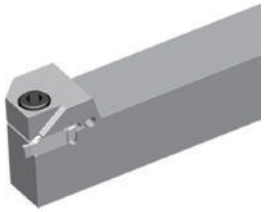
	
A355	A358

A Turning
B Milling
C Drilling
D Technical Information
E Index

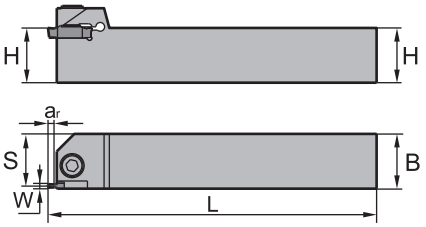
System code A376 Grade selection A350 Technical info A447 Cutting data A402

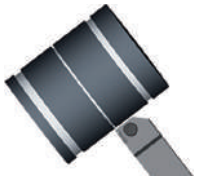
Parting & grooving tool holder (external)

QECDR/L



Right hand style





Article	*	Stock		Dimensions [mm]					Inserts
		R	L	HxB	L	S	W	ar_{max}	
QECD1616R/L025		○	○	16x16	125	14.75		2.5	Z*CD**
QECD2020R/L025		○	○	20x20	125	18.75		2.5	Z*CD**
QECD2525R/L025		○	○	25x25	150	23.75		2.5	Z*CD**

● Ex stock ○ On demand

* With internal cooling

Spare parts

	Insert	Z*CD**	Z*CD**
	H	16	20-32
	Screw	GB70-85-M5x20 (4.0 Nm)	GB70-85-M6x20 (7.0 Nm)
	Wrench	WH40L	WH50L

Insert

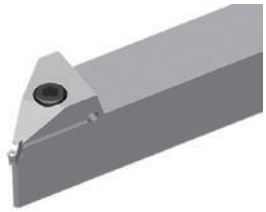


A359

System code A376 Grade selection A350 Technical info A447 Cutting data A402

Parting & grooving tool holder (external)

QX*DR/L



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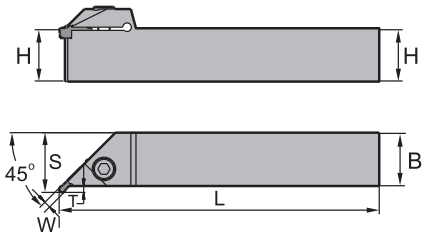
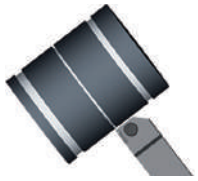




Article	✻	Stock		Dimensions [mm]					Inserts
		R	L	HxB	L	S	W	ar_{max}	
QXFD2020R/L03-45		○	○	20x20	125	23	3	3	Z*FD**
QXFD2525R/L03-45		●	●	25x25	150	28	3	3	Z*FD**
QXFD3232R/L03-45		○	○	32x32	170	35	3	3	Z*FD**
QXGD2020R/L03-45		○	○	20x20	125	23	4	3	Z*GD**
QXGD2525R/L03-45		○	○	25x25	150	28	4	3	Z*GD**
QXGD3232R/L03-45		○	○	32x32	170	35	4	3	Z*GD**
QXHD2020R/L04-45		○	○	20x20	125	24	5	4	Z*HD**
QXHD2525R/L04-45		○	○	25x25	150	29	5	4	Z*HD**
QXHD3232R/L04-45		○	○	32x32	170	36	5	4	Z*HD**
QXKD2020R/L04-45		○	○	20x20	125	24	6	4	Z*KD**
QXKD2525R/L04-45		○	○	25x25	150	29	6	4	Z*KD**
QXKD3232R/L04-45		○	○	32x32	170	36	6	4	Z*KD**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**Z*FD****	**Z*GD****	**Z*HD****	**Z*KD****
	H	**20-32**	**20-32**	**20-32**	**20-32**
	Screw	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)
	Wrench	WH50L	WH50L	WH50L	WH50L

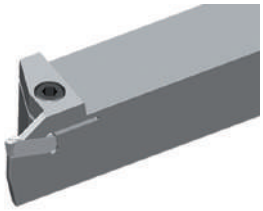
Insert

	
A362	A363

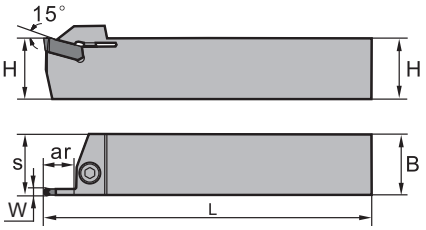
System code A376 Grade selection A350 Technical info A447 Cutting data A402

Parting & grooving tool holder (external)

QE*SR/L



Right hand style





Article	✻	Stock		Dimensions [mm]					Inserts
		R	L	HxB	L	S	W	ar_{max}	
QEFS2525R/L12-3N		○	○	25x25	150	25.3	3	12	ZI**
QEGS2525R/L12-4N		○	○	25x25	150	25.3	4	12	ZI**
QEHS2525R/L12-5N		○	○	25x25	150	25.4	5	12	ZI**
QEKS2525R/L12-6N		○	○	25x25	150	25.4	6	12	ZI**
QEFS3232R/L22-3N		○	○	32x32	170	32.3	3	22	ZI**
QEGS3232R/L22-4N		○	○	32x32	170	32.3	4	22	ZI**
QEHS3232R/L22-5N		○	○	32x32	170	32.4	5	22	ZI**
QEKS3232R/L22-6N		○	○	32x32	170	32.4	6	22	ZI**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	ZI**
	H	**25-32**
	Screw	GB70-85-M6x20 (7.0 Nm)
	Wrench	WH50L

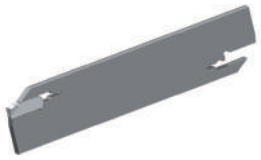
Insert

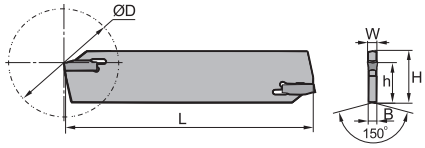
	
A364	A365

System code A376 | Grade selection A350 | Technical info A447 | Cutting data A402

Parting blade for external machining

QE*S**N







Article	✻	Stock	Dimensions [mm]						Inserts
			H	L	h	B	W	ØDmax	
QEES26N		●	26	110	19	2	2.5	60	ZPES**
QEES32N		●	32	150	24.6	2	2.5	100	ZPES**
QEFS26N		●	26	110	19	2.4	3	60	ZPFS**
QEFS32N		●	32	150	24.6	2.4	3	100	ZPFS**
QEGS26N		●	26	110	19	3.2	4	70	ZPGS**
QEGS32N		●	32	150	24.6	3.2	4	120	ZPGS**
QEHS26N		●	26	110	19	4	5	70	ZPHS**
QEHS32N		●	32	150	24.6	4	5	120	ZPHS**
QEKS26N		●	26	110	19	5	6	70	ZPKS**
QEKS32N		●	32	150	24.6	5	6	120	ZPKS**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	ZPES**	ZPFS**	ZPGS**	ZPHS**	ZPKS**
	H	**26-32**	**26-32**	**26-32**	**26-32**	**26-32**
	Wrench	W50RL	W50RL	W50RL	W50RL	W50RL

Insert

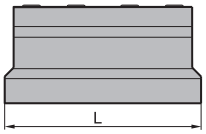
	
A355	A358

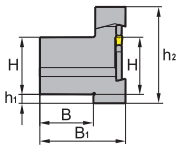
System code A376 | Grade selection A350 | Technical info A447 | Cutting data A402

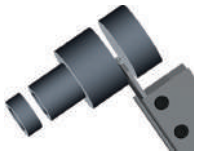
Clamping block (external)

QZS*









Article	✻	Stock	Dimensions [mm]						Inserts
			H	L	h_1	h_2	B	B1	
QZS2026		●	20	86	10	46.6	19	38	QE**26
QZS2526		●	25	86	5	46.6	23	42	QE**26
QZS3226		○	32	86	3	51.6	30	48	QE**26
QZS2032		●	20	110	13	50	19	38	QE**32
QZS2532		●	25	110	8	50	23	42	QE**32
QZS3232		●	32	110	5	54	30	48	QE**32

● Ex stock ○ On demand

✻ With internal cooling

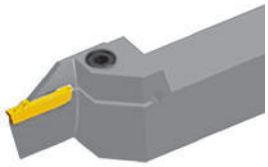
Spare parts

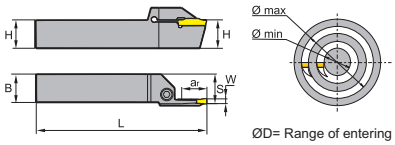
	Insert	**QE**26**	**QE**32**
	H	**20-32**	**20-32**
	Clamp	QZC26	QZC32
	Screw	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)
	Wrench	W50RL	W50RL

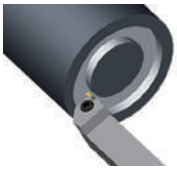
System code A376 Grade selection A350 Technical info A447 Cutting data A402

Parting & grooving tool holder (axial)

QF**R/L







Left hand style

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	HxB	L	S	W	ar_{max}	ØD (min-max)	
QFFD2020R/L7-48H		○	○	20x20	150	21	3	7	48-66	Z*FD**
QFFD2020R/L7-60H		○	○	20x20	150	21	3	7	60-80	Z*FD**
QFFD2020R/L7-74H		○	○	20x20	150	21	3	7	74-110	Z*FD**
QFFD2020R/L7-100H		○	○	20x20	150	21	3	7	100-150	Z*FD**
QFFD2020R/L10-48H		○	○	20x20	150	21	3	10	48-66	Z*FD**
QFFD2020R/L10-60H		○	○	20x20	150	21	3	10	60-80	Z*FD**
QFFD2020R/L10-74H		○	○	20x20	150	21	3	10	74-110	Z*FD**
QFFD2020R/L10-100H		○	○	20x20	150	21	3	10	100-150	Z*FD**
QFFD2525R/L10-48H		●	●	25x25	150	26	3	10	48-66	Z*FD**
QFFD2525R/L10-60H		●	●	25x25	150	26	3	10	60-80	Z*FD**
QFFD2525R/L10-74H		●	●	25x25	150	26	3	10	74-110	Z*FD**
QFFD2525R/L10-100H		●	●	25x25	150	26	3	10	100-150	Z*FD**
QFFD2525R/L17-48H		●	●	25x25	150	26	3	17	48-66	Z*FD**
QFFD2525R/L17-60H		●	●	25x25	150	26	3	17	60-80	Z*FD**
QFFD2525R/L17-74H		●	●	25x25	150	26	3	17	74-110	Z*FD**
QFFD2525R/L17-100H		●	●	25x25	150	26	3	17	100-150	Z*FD**
QFGD2020R/L10-52H		○	○	20x20	150	19	4	10	52-72	Z*GD**
QFGD2020R/L10-64H		○	○	20x20	150	19	4	10	64-100	Z*GD**
QFGD2020R/L10-90H		○	○	20x20	150	19	4	10	90-140	Z*GD**
QFGD2020R/L10-130H		○	○	20x20	150	19	4	10	130-230	Z*GD**
QFGD2020R/L15-52H		○	○	20x20	150	19	4	15	52-72	Z*GD**
QFGD2020R/L15-64H		○	○	20x20	150	19	4	15	64-100	Z*GD**
QFGD2020R/L15-90H		○	○	20x20	150	19	4	15	90-140	Z*GD**
QFGD2020R/L15-130H		○	○	20x20	150	19	4	15	130-230	Z*GD**
QFGD2525R/L13-52H		●	●	25x25	150	24	4	13	52-72	Z*GD**
QFGD2525R/L13-64H		●	●	25x25	150	24	4	13	64-100	Z*GD**
QFGD2525R/L13-90H		●	●	25x25	150	24	4	13	90-140	Z*GD**
QFGD2525R/L13-130H		●	●	25x25	150	24	4	13	130-230	Z*GD**
QFGD2525R/L22-52H		●	●	25x25	150	24	4	22	52-72	Z*GD**
QFGD2525R/L22-64H		●	●	25x25	150	24	4	22	64-100	Z*GD**
QFGD2525R/L22-90H		●	●	25x25	150	24	4	22	90-140	Z*GD**
QFGD2525R/L22-130H		●	●	25x25	150	24	4	22	130-230	Z*GD**
QFHD2525R/L13-58H		●	●	25x25	150	23.5	5	13	58-96	Z*HD**
QFHD2525R/L13-86H		●	●	25x25	150	23.5	5	13	86-140	Z*HD**
QFHD2525R/L13-130H		●	●	25x25	150	23.5	5	13	130-200	Z*HD**
QFHD2525R/L13-185H		●	●	25x25	150	23.5	5	13	185-400	Z*HD**

System code A376 | Grade selection A350 | Technical info A447 | Cutting data A402

Parting & grooving Tool holders

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	HxB	L	S	W	ar_{max}	ØD (min-max)	
QFHD2525R/L22-58H		●	●	25x25	150	23.5	5	22	58-96	Z*HD**
QFHD2525R/L22-86H		●	●	25x25	150	23.5	5	22	86-140	Z*HD**
QFHD2525R/L22-130H		●	●	25x25	150	23.5	5	22	130-200	Z*HD**
QFHD2525R/L22-185H		●	●	25x25	150	23.5	5	22	185-400	Z*HD**
QFKD2525R/L13-60H		●	●	25x25	150	23	6	13	60-100	Z*KD**
QFKD2525R/L13-88H		○	●	25x25	150	23	6	13	88-180	Z*KD**
QFKD2525R/L13-160H		●	●	25x25	150	23	6	13	160-400	Z*KD**
QFKD2525R/L22-60H		●	●	25x25	150	23	6	22	60-100	Z*KD**
QFKD2525R/L22-88H		●	●	25x25	150	23	6	22	88-180	Z*KD**
QFKD2525R/L22-160H		●	●	25x25	150	23	6	22	160-400	Z*KD**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**Z*FD****	**Z*GD****	**Z*HD****	**Z*KD****
	H	**20-25**	**20-25**	**20-25**	**20-25**
	Screw	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)
	Wrench	W50RL	W50RL	W50RL	W50RL

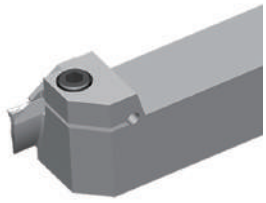
Insert

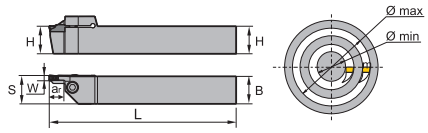
					
A353	A354	A357	A359	A362	A363

System code A376 | Grade selection A350 | Technical info A447 | Cutting data A402

Parting & grooving tool holder (axial)

QF**RR/LL







LL Version

Article	*	Stock		Dimensions [mm]						Inserts
		R	L	HxB	L	S	W	ar_{max}	ØD (min-max)	
QFFD2020LL10-48H			○	20x20	150	21	3	10	48-66	Z*FD**
QFFD2020RR10-48H		○		20x20	150	21	3	10	48-66	Z*FD**
QFFD2020RR10-60H		○		20x20	150	21	3	10	60-80	Z*FD**
QFFD2020RR10-74H		○		20x20	150	21	3	10	74-110	Z*FD**
QFFD2525LL10-48H			●	25x25	150	26	3	10	48-66	Z*FD**
QFFD2525RR10-48H		○		25x25	150	26	3	10	48-66	Z*FD**
QFFD2525LL10-60H			○	25x25	150	26	3	10	60-80	Z*FD**
QFFD2525RR10-60H		○		25x25	150	26	3	10	60-80	Z*FD**
QFFD2525LL10-74H			○	25x25	150	26	3	10	74-110	Z*FD**
QFFD2525RR10-74H		○		25x25	150	26	3	10	74-110	Z*FD**
QFFD2525LL10-100H			○	25x25	150	26	3	10	100-150	Z*FD**
QFFD2525RR10-100H		○		25x25	150	26	3	10	100-150	Z*FD**
QFFD2525LL17-48H			●	25x25	150	26	3	17	48-66	Z*FD**
QFFD2525RR17-48H		○		25x25	150	26	3	17	48-66	Z*FD**
QFFD2525LL17-60H			○	25x25	150	26	3	17	60-80	Z*FD**
QFFD2525RR17-60H		○		25x25	150	26	3	17	60-80	Z*FD**
QFFD2525LL17-74H			○	25x25	150	26	3	17	74-110	Z*FD**
QFFD2525RR17-74H		○		25x25	150	26	3	17	74-110	Z*FD**
QFFD2525LL17-100H			○	25x25	150	26	3	17	100-150	Z*FD**
QFFD2525RR17-100H		○		25x25	150	26	3	17	100-150	Z*FD**
QFGD2020LL10-52H			○	20x20	150	21	4	10	52-72	Z*GD**
QFGD2020RR10-52H		○		20x20	150	21	4	10	52-72	Z*GD**
QFGD2020LL15-52H			○	20x20	150	26	4	15	52-72	Z*GD**
QFGD2020LL15-90H			○	20x20	150	26	4	15	90-140	Z*GD**
QFGD2020RR15-90H		○		20x20	150	26	4	15	90-140	Z*GD**
QFGD2020RR15-130H		○		20x20	150	26	4	15	130-230	Z*GD**
QFGD2525RR13-52H		●		25x25	150	21	4	13	52-72	Z*GD**
QFGD2525LL13-64H			●	25x25	150	21	4	13	64-100	Z*GD**
QFGD2525RR13-64H		○		25x25	150	21	4	13	64-100	Z*GD**
QFGD2525LL13-130H			●	25x25	150	26	4	13	130-230	Z*GD**
QFGD2525RR13-130H		○		25x25	150	21	4	13	130-230	Z*GD**
QFGD2525LL22-52H			○	25x25	150	26	4	22	52-72	Z*GD**
QFGD2525RR22-52H		○		25x25	150	26	4	22	52-72	Z*GD**
QFGD2525LL22-64H			○	25x25	150	26	4	22	64-100	Z*GD**
QFGD2525RR22-64H		○		25x25	150	26	4	22	64-100	Z*GD**

System code > A376 Grade selection > A350 Technical info > A447 Cutting data > A402

Parting & grooving Tool holders

Article	✲	Stock		Dimensions [mm]						Inserts
		R	L	HxB	L	S	W	ar_{max}	ØD (min-max)	
QFGD2525LL22-90H			○	25x25	150	26	4	22	90-140	Z*GD**
QFGD2525RR22-90H		○		25x25	150	26	4	22	90-140	Z*GD**
QFGD2525LL22-130H			○	25x25	150	26	4	22	130-230	Z*GD**
QFGD2525RR22-130H		●		25x25	150	26	4	22	130-230	Z*GD**
QFHD2525LL13-130H			○	25x25	150	26	5	13	130-200	Z*HD**
QFHD2525RR13-130H		○		25x25	150	26	5	13	130-200	Z*HD**
QFHD2525RR13-185H		○		25x25	150	26	5	13	185-400	Z*HD**
QFHD2525LL22-58H			●	25x25	150	26	5	22	58-96	Z*HD**
QFHD2525RR22-58H		●		25x25	150	26	5	22	58-96	Z*HD**
QFHD2525RR22-86H		○		25x25	150	26	5	22	86-140	Z*HD**
QFHD2525LL22-130H			○	25x25	150	26	5	22	130-200	Z*HD**
QFHD2525RR22-130H		●		25x25	150	26	5	22	130-200	Z*HD**
QFHD2525LL22-185H			○	25x25	150	26	5	22	185-400	Z*HD**
QFHD2525RR22-185H		○		25x25	150	26	5	22	185-400	Z*HD**
QFKD2525RR13-60H		○		25x25	150	26	6	13	60-100	Z*KD**
QFKD2525RR13-88H		○		25x25	150	26	6	13	88-180	Z*KD**
QFKD2525LL22-88H			○	25x25	150	26	6	22	88-180	Z*KD**
QFKD2525RR22-88H		○		25x25	150	26	6	22	88-180	Z*KD**
QFKD2525LL22-160H			●	25x25	150	26	6	22	160-400	Z*KD**
QFKD2525RR22-160H		○		25x25	150	26	6	22	160-400	Z*KD**

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	**Z*FD****	**Z*GD****	**Z*HD****	**Z*KD****
	H	**20-25**	**20-25**	**20-25**	**20-25**
	Screw	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)
	Wrench	W50RL	W50RL	W50RL	W50RL

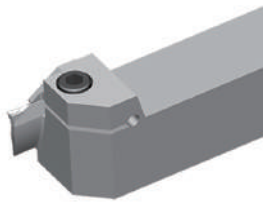
Insert

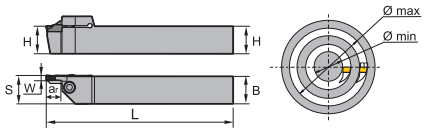
					
A353	A354	A357	A359	A362	A363

System code A376 Grade selection A350 Technical info A447 Cutting data A402

Parting & grooving tool holder (axial)

QF*SRR/LL







LL Version

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	HxB	L	S	W	ar_{max}	ØD (min-max)	
QFHS2525LL30-185H			●	25x25	150	26	5	30	185-400	Z*HS**
QFHS2525RR30-185H		○		25x25	150	26	5	30	185-400	Z*HS**
QFKS2525RR30-160H		○		25x25	150	26	6	30	160-400	Z*KS**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	Z*HS**	Z*KS**
	H	**25**	**25**
	Screw	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)
	Wrench	W50RL	W50RL

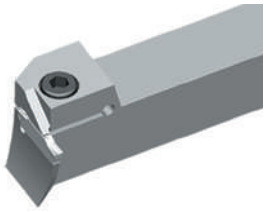
Insert

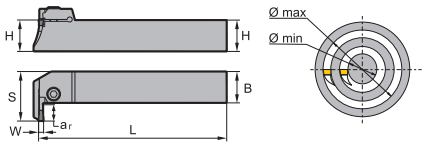
	
A355	A358

System code A376 Grade selection A350 Technical info A447 Cutting data A402

Parting & grooving tool holder (axial)

QF*DR/L







Right hand style

Article	*	Stock R	Stock L	Dimensions [mm] HxB	L	S	W	ar_{max}	ØD (min-max)	Inserts
QFFD2020R/L7-74L		○		20x20	150	28.5	3	7	74-110	
QFFD2020R/L10-48L		○	○	20x20	150	31.5	3	10	48-66	Z*FD**
QFGD2020R/L10-52L		○	○	20x20	150	31.5	4	10	52-72	Z*GD**
QFFD2020R/L10-60L		●	○	20x20	150	31.5	3	10	60-80	Z*FD**
QFFD2020R/L10-74L		●	○	20x20	150	31.5	3	10	74-110	Z*FD**
QFGD2020R/L10-90L		●	○	20x20	150	31.5	4	10	90-140	Z*GD**
QFFD2020R/L10-100L		○	○	20x20	150	31.5	3	10	100-150	Z*FD**
QFGD2020R/L10-130L		●		20x20	150	31.5	4	10	130-230	
QFGD2020R/L15-52L		○	○	20x20	150	36.5	4	15	52-72	Z*GD**
QFGD2020R/L15-64L		○		20x20	150	36.5	4	15	64-100	
QFGD2020R/L15-90L		○		20x20	150	36.5	4	15	90-140	
QFGD2020R/L15-130L		○		20x20	150	36.5	4	15	130-230	
QFFD2525R/L10-48L		●	●	25x25	150	36.5	3	10	48-66	Z*FD**
QFFD2525R/L10-60L		●	○	25x25	150	36.5	3	10	60-80	Z*FD**
QFFD2525R/L10-74L		○	○	25x25	150	36.5	3	10	74-110	Z*FD**
QFFD2525R/L10-100L		○	○	25x25	150	36.5	3	10	100-150	Z*FD**
QFGD2525R/L13-52L		○	○	25x25	150	39.5	4	13	52-72	Z*GD**
QFKD2525R/L13-60L		○	○	25x25	150	39.5	6	13	60-100	Z*KD**
QFGD2525R/L13-64L		○	●	25x25	150	39.5	4	13	64-100	Z*GD**
QFGD2525R/L13-90L		○	○	25x25	150	39.5	4	13	90-140	Z*GD**
QFGD2525R/L13-130L		○	○	25x25	150	39.5	4	13	130-230	Z*GD**
QFFD2525R/L17-48L		○	○	25x25	150	43.5	3	17	48-66	Z*FD**
QFFD2525R/L17-60L		○	○	25x25	150	43.5	3	17	60-80	Z*FD**
QFFD2525R/L17-74L		○	○	25x25	150	43.5	3	17	74-110	Z*FD**
QFFD2525R/L17-100L		●	○	25x25	150	43.5	3	17	100-150	Z*FD**
QFGD2525R/L22-52L		○	○	25x25	150	48.5	4	22	52-72	Z*GD**
QFKD2525R/L22-60L		○	●	25x25	150	48.5	6	22	60-100	Z*KD**
QFGD2525R/L22-64L		○	○	25x25	150	48.5	4	22	64-100	Z*GD**
QFKD2525R/L22-88L		○	●	25x25	150	48.5	6	22	88-180	Z*KD**
QFGD2525R/L22-90L		○	○	25x25	150	48.5	4	22	90-140	Z*GD**
QFGD2525R/L22-130L		●	○	25x25	150	48.5	4	22	130-230	Z*GD**
QFHD2525R/L13-58L		○		25x25	150	39.5	5	13	58-96	Z*HD**
QFHD2525R/L13-86L		●		25x25	150	39.5	5	13	86-140	Z*HD**
QFHD2525R/L13-130L		○	○	25x25	150	39.5	5	13	130-200	Z*HD**
QFHD2525R/L13-185L		○		25x25	150	39.5	5	13	185-400	Z*HD**
QFHD2525R/L22-58L		○	○	25x25	150	48.5	5	22	58-96	Z*HD**

System code > A376 | Grade selection > A350 | Technical info > A447 | Cutting data > A402

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	HxB	L	S	W	ar_{max}	ØD (min-max)	
QFHD2525R/L22-86L		○	○	25x25	150	48.5	5	22	86-140	Z*HD**
QFHD2525R/L22-130L		○	○	25x25	150	48.5	5	22	130-200	Z*HD**
QFHD2525R/L22-185L		○	○	25x25	150	48.5	5	22	185-400	Z*HD**
QFKD2525R/L13-88L			○	25x25	150	39.5	6	13	88-180	Z*KD**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**Z*FD****	**Z*GD****	**Z*HD****	**Z*KD****
	H	**20-25**	**20-25**	**20-25**	**20-25**
	Screw	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)
	Wrench	W50RL	W50RL	W50RL	W50RL

Insert

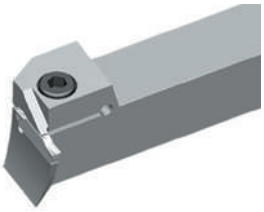
					
A353	A354	A357	A359	A362	A363

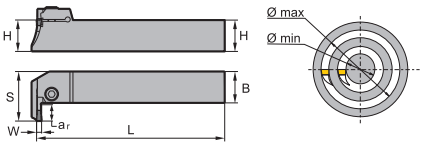
A Turning
B Milling
C Drilling
D Technical Information
E Index

System code A376 Grade selection A350 Technical info A447 Cutting data A402

Parting & grooving tool holder (axial)

QFHSDR/L







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] HxB	L	S	W	ar_{max}	ØD (min-max)	Inserts
QFHS2525R/L30-185L		○	○	25x25	150	56.5	5	30	185-400	Z*HS**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	Z*HS**
	H	**25**
	Screw	GB70-85-M6x20 (7.0 Nm)
	Wrench	W50RL

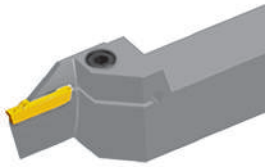
Insert

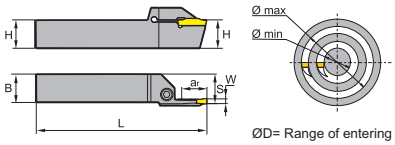
	
A355	A358

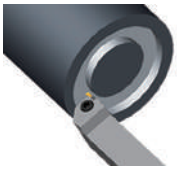
System code A376 Grade selection A350 Technical info A447 Cutting data A402

Parting & grooving tool holder (axial)

QF**R/L







Left hand style

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	HxB	L	S	W	ar_{max}	ØD (min-max)	
QFHS2525R/L30-185H		●	●	25x25	150	23.5	5	30	185-400	Z*HS**
QFKS2525R/L30-160H		●	●	25x25	150	23	6	30	160-400	Z*KS**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	Z*HS**	Z*KS**
	H	**25**	**25**
	Screw	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)
	Wrench	W50RL	W50RL

Insert

	
A355	A358

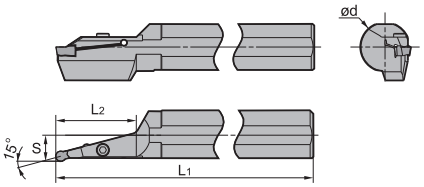
A Turning
B Milling
C Drilling
D Technical Information
E Index

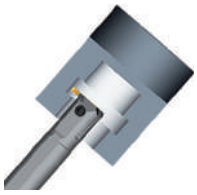
System code A376 | Grade selection A350 | Technical info A447 | Cutting data A402

Parting & grooving tool holder (external)

C40X-Q*DR/L







Right hand style

Article	✻	Stock		Dimensions [mm]					Inserts
		R	L	ØD	ød	S	L_1	L_2	
C40X-QKDR/L60-15A		○	○	160	40	20	320	60	Z*KD**
C40X-QKDR/L75-15A		●		160	40	20	320	75	Z*KD**
C40X-QLDR/L65-15A		○	○	160	40	21	320	65	Z*LD**
C40X-QLDR/L80-15A		○	○	160	40	21	320	80	Z*LD**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	Z*KD**	Z*LD**
	ød	**32-40**	**32-40**
	Screw	GB70-85-M6x20 (7.0 Nm)	GB70-85-M6x20 (7.0 Nm)
	Wrench	WH50L	WH50L

Insert

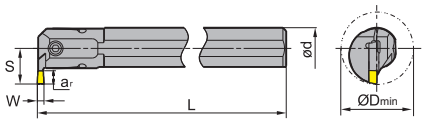
A362	A363	A366

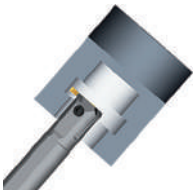
System code A376 | Grade selection A350 | Technical info A447 | Cutting data A402

Parting & grooving tool holder (internal)

C***-Q*DR/L







Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	ØDmin	ød	L	S	W	ar_{max}	
C16M-QBDR/L04-20		●	○	20	16	150	12	2	4	Z*BD**
C20Q-QEDR/L05-27		●	●	27	20	180	15.2	2.5	5	Z*ED**
C25R-QEDR/L07-33		●	●	33	25	200	20.3	2.5	7	Z*ED**
C32S-QEDR/L09-42		●	●	42	32	250	25.3	2.5	9	Z*ED**
C20Q-QFDR/L05-27		●	●	27	20	0	15.2	3	5	Z*FD**
C25R-QFDR/L07-33		●	●	33	25	200	20.3	3	7	Z*FD**
C32S-QFDR/L09-42		●	●	42	32	250	25.3	3	9	Z*FD**
C25R-QGDR/L08-35		●	●	35	25	200	21.5	4	8	Z*GD**
C32S-QGDR/L11-44		●	●	44	32	250	27.5	4	11	Z*GD**
C40T-QGDR/L13-54		●	●	5	40	300	33.5	4	13	Z*GD**
C25R-QHDR/L08-35		●	●	35	25	200	21.5	5	8	Z*HD**
C32S-QHDR/L11-44		●	●	44	32	250	27.5	5	11	Z*HD**
C40T-QHDR/L13-54		●	●	54	40	300	33.5	5	13	Z*HD**
C25R-QKDR/L08-35		○	●	35	25	200	21.5	6	8	Z*KD**
C32S-QKDR/L11-44		●	●	44	32	250	27.5	6	11	Z*KD**
C40T-QKDR/L13-54		●	●	54	40	300	33.5	6	13	Z*KD**

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	Z*BD**	Z*ED**	Z*ED**	Z*ED**	Z*FD**	Z*FD**	Z*FD**	Z*GD**	Z*GD**	Z*HD**	Z*HD**	Z*KD**	Z*KD**
	ød	16	20	25	32-40	20	25	32-40	25	32-40	25	32-40	25	32-40
	Screw	GB70-85-M5x10 (4,0 Nm)	GB70-85-M4x12 (2.6 Nm)	GB70-85-M5x16 (4.0 Nm)	GB70-85-M6x20 (7.0 Nm)	GB70-85-M4x12 (2.6 Nm)	GB70-85-M5x16 (4.0 Nm)	GB70-85-M6x20 (7.0 Nm)	GB70-85-M5x16 (4.0 Nm)	GB70-85-M6x20 (7.0 Nm)	GB70-85-M5x16 (4.0 Nm)	GB70-85-M6x20 (7.0 Nm)	GB70-85-M5x16 (4.0 Nm)	GB70-85-M6x20 (7.0 Nm)
	Wrench	WH40L	WH30L	WH40L	WH50L	WH30L	WH40L	WH50L	WH40L	WH50L	WH40L	WH50L	WH40L	WH50L

System code A376 | Grade selection A350 | Technical info A447 | Cutting data A402

Parting & grooving tool holder (internal)

Insert						
						
A353	A354	A357	A359	A362	A363	A366

System code A376 | Grade selection A350 | Technical info A447 | Cutting data A402

Notes

External tool holders – QC series

GQC	R	20	20	K	22	–	15
1	2	3	4	5	6		7

Series — 1

Type	
Code	Description
R	Right
L	Left

2

Height [mm]	
Code	Description
16	16
20	20
25	25

3

Width [mm]	
Code	Description
16	16
20	20
25	25

4

Length [mm]	
Code	Description
K	125
M	150

5

Cutting edge length [mm]	
Code	I.C
11	6,35
16	9,252
22	12,70

6

Cutting width range [mm]		
Code	Insert size	
15	0,5≤S<1,8 (QC16***)	1,0≤S<2,3 (QC22***)
25	1,8≤S<3,0 (QC16***)	2,3≤S<3,3 (QC22***)
35	–	3,3≤S≤4,8 (QC22***)

7

Boring bars – QC series

S	20	K	–	QC	16	15	R	25
1	2	3		4	5	6	7	8

Shank type	
Code	Material
S	Steel shank
C	Solid carbide shank
A	Solid carbide shank (IC)

1

Diameter [mm]	
Code	Description
16	16
20	20
25	25

2

Length [mm]	
Code	Description
H	100
K	125
M	150

3

Series — 4

Cutting edge length [mm]	
Code	I.C
11	6,35
16	9,252
22	12,70

5

Cutting width range [mm]			
Code	Insert size		
15	0,5≤S<1,8 (QC11***)	0,5≤S<1,8 (QC16***)	1,0≤S<2,3 (QC22***)
25	1,8≤S<3,0 (QC11***)	1,8≤S<3,0 (QC16***)	2,3≤S<3,3 (QC22***)
35	–	–	3,3≤S≤4,8 (QC22***)

6

Cutting direction	
Code	Description
R	Right
L	Left

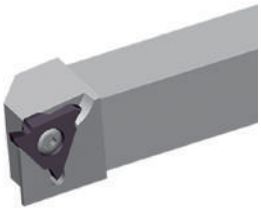
7

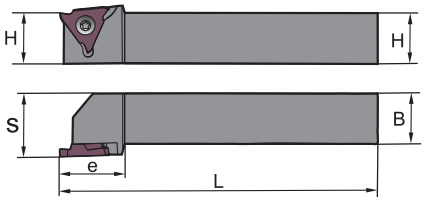
Starting diameter [mm]			
Code	Ø	Code	Ø
16	16	25	25
20	20	35	35

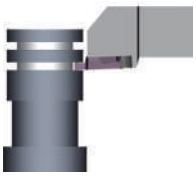
8

Grooving (external)

GQC**R/L







Right hand style

Article	✻	Stock		Dimensions [mm]						Inserts
		R	L	H	L	S	e	B	Width	
GQCR/L1616K16-15		●	●	16	125	21	25.5	16	0.5-1.80	QC16R/L 050-180
GQCR/L2020K16-15		○	●	20	125	25	25.5	20	0.5-1.80	QC16R/L 050-180
GQCR/L2525M16-15		○	●	25	150	30	25.5	25	0.5-1.80	QC16R/L 050-180
GQCR/L1616K16-25		●	●	16	125	21	25.5	16	1.8-3.0	QC16R/L 180-300
GQCR/L2020K16-25		○	●	20	125	25	25.5	20	1.8-3.0	QC16R/L 180-300
GQCR/L2525M16-25		○	●	25	150	30	25.5	25	1.8-3.0	QC16R/L 180-300
GQCR/L2020K22-15		○	●	20	125	25	25.5	20	1.0-2.3	QC22R/L 100-230
GQCR/L2525M22-15		○	●	25	150	30	25.5	25	1.0-2.3	QC22R/L 100-230
GQCR/L2020K22-25		○	●	20	125	25	25.5	20	2.3-3.3	QC22R/L 230-330
GQCR/L2525M22-25		○	●	25	150	30	25.5	25	2.3-3.3	QC22R/L 230-330
GQCR/L2020K22-35		●	●	20	125	25	25.5	20	3.3-4.8	QC22R/L 330-480
GQCR/L2525M22-35		●	●	25	150	30	25.5	25	3.3-4.8	QC22R/L 330-480

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	QC16R/L 050-180	QC16R/L 180-300	QC22R/L 100-230	QC22R/L 230-330	QC22R/L 330-480
	H	16-32	16-32	16-32	16-32	16-32
	Screw	I60M3.5×10 (2.7 Nm)	I60M3.5×10 (2.7 Nm)	I60M5x13 (6.7 Nm)	I60M5x13 (6.7 Nm)	I60M5x13 (6.7 Nm)
	Wrench (shim)	WT15IP	WT15IP	WT20IP	WT20IP	WT20IP

Insert



Medium Cut

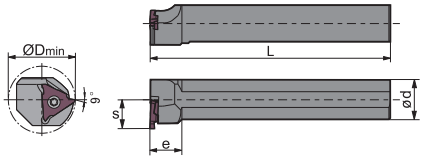
A369

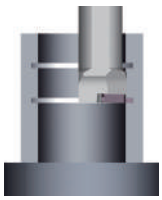
System code A376 Grade selection A350 Technical info A447 Cutting data A402

Grooving (internal)

S**-QC**R/L







Right hand style

Article	✻	Stock R	Stock L	Dimensions [mm] ØDmin	ød	L	S	e	Width	Inserts
S16H-QC1115R/L20		●	●	21	16	100	11.5	12	0.5-1.80	QC11R/L 050-180
S20K-QC1115R/L16		●	●	16	20	125	11.1	40	0.5-1.80	QC11R/L 050-180
S16H-QC1125R/L20		●	●	21	16	100	11.5	12	1.8-3.0	QC11R/L 180-300
S20K-QC1125R/L16		○	○	16	20	125	11.1	40	1.8-3.0	QC11R/L 180-300
S20M-QC1615R/L25		○	●	26	20	150	12.5	15	0.5-1.80	QC16R/L 050-180
S20M-QC1625R/L25		●	●	26	20	150	12.5	15	1.8-3.0	QC16R/L 180-300
S25M-QC2215R/L35		●	●	35	25	150	18.2	15	1.0-2.3	QC22R/L 100-230
S25M-QC2225R/L35		●	●	35	25	150	18.2	20	2.3-3.3	QC22R/L 230-330
S25M-QC2235R/L35		○	●	35	25	150	18.2	20	3.3-4.8	QC22R/L 330-480

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	QC11R/L 050-180	QC11R/L 180-300	QC16R/L 050-180	QC16R/L 180-300	QC22R/L 100-230	QC22R/L 230-330	QC22R/L 330-480
	ød	**16-20**	**16-20**	**20**	**20**	**25**	**25**	**25**
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M2.5×6.5 (1.0 Nm)	I60M3.5×10 (2.7 Nm)	I60M3.5×10 (2.7 Nm)	I60M5x13 (6.7 Nm)	I60M5x13 (6.7 Nm)	I60M5x13 (6.7 Nm)
	Wrench (shim)	WT07IP	WT07IP	WT15IP	WT15IP	WT20IP	WT20IP	WT20IP

Insert



Medium Cut

A369

System code A376 Grade selection A350 Technical info A447 Cutting data A402

Notes

Parting & grooving inserts

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed vc [m/min]			
						HC (CVD)	HC (PVD)		
						YBC252	YBG105	YB9320	
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	190	200	190	
		approx. 0,45 % C	annealed	190	2	175	180	175	
		approx. 0,45 % C	tempered	250	3	145	150	145	
		approx. 0,75 % C	annealed	270	4	140	145	140	
		approx. 0,75 % C	tempered	300	5	135	140	135	
	Low-alloyed steel		annealed	180	6	170	180	170	
			tempered	275	7	125	130	125	
			tempered	300	8	115	120	115	
			tempered	350	9	105	110	105	
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	125	130	125	
			hardened and tempered	325	11	95	100	95	
M	Stainless steel	ferritic/martensitic	annealed	200	12	165	170	165	
		martensitic	tempered	240	13	135	140	135	
		austenitic	quench hardened	180	14	155	160	155	
		austenitic-ferritic		230	15	135	140	135	
K	Grey cast iron	perlitic/ferritic		180	16	240	250	240	
		perlitic (martensitic)		260	17	185	190	185	
	Cast iron with spheroidal graphite	ferritic		160	18	220	230	220	
		perlitic		250	19	165	170	165	
	Malleable cast iron	ferritic		130	20	175	180	175	
		perlitic		230	21	165	170	165	
N	Aluminium wrought alloys	cannot be hardened		60	22				
		hardenable	hardened	100	23				
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24				
		≤ 12 % Si, hardenable	hardened	90	25				
		> 12 % Si, cannot be hardened		130	26				
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27				
		CuZn, CuSnZn		90	28				
		CuSn, Pb-free copper, electrolytic copper		100	29				
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30		100	95	
			hardened	280	31		50	50	
		Ni or Co bass	annealed	250	32		80	80	
			hardened	350	33		70	70	
			cast	320	34		70	70	
	Titanium alloys	pure titanium		R_m 400	35		150	145	
		α and β alloys	hardened	R_m 1050	36		50	50	
H	Hardened steel		hardened and tempered	55 HRC	37				
			hardened and tempered	60 HRC	38				
	Hard cast iron		cast	400	39				
	Hardened cast iron		hardened and tempered	55 HRC	40				
X	Non-metallic materials	Thermoplasts			41				
		Thermosetting plastics			42				
		Plastic, glass-fibre reinforced GFRP			43				
		Plastic, carbon fibre reinforced CFRP			44				
		Graphite			45				
		Wood			46				

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
For examples of material for cutting tool groups view page D22.

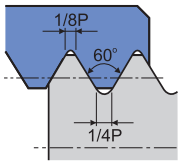
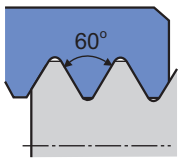
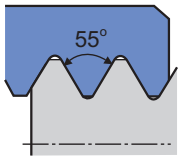
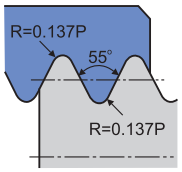
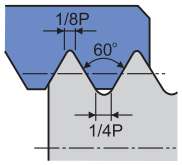
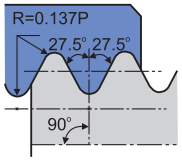
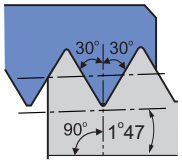
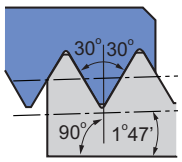
	Starting values for cutting speed vc [m/min]					
	HC (PVD)			HW		
	YBG202	YBG205	YBG302	YD101	YD201	
	190	190	185			
	175	175	170			
	145	145	140			
	140	140	135			
	135	135	130			
	170	170	165			
	125	125	125			
	115	115	115			
	105	105	105			
	125	125	125			
	95	95	95			
	165	165	160			
	135	135	130			
	155	155	150			
	135	135	130			
	240	240	235			
	185	185	180			
	220	220	215			
	165	165	160			
	175	175	170			
	165	165	160			
				800	760	
				600	570	
				320	305	
				240	230	
				160	155	
				160	155	
				600	570	
				200	190	
	95	95	95	70	65	
	50	50	50	35	35	
	80	80	75	60	60	
	70	70	65	50	50	
	70	70	65	50	50	
	145	145	140	105	100	
	50	50	50	35	35	

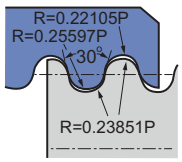
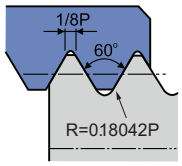
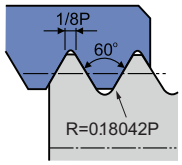
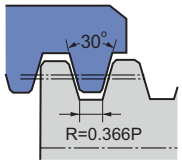
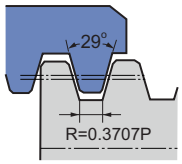
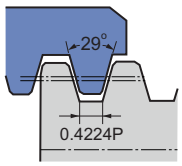
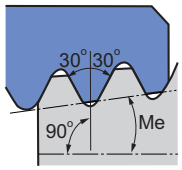
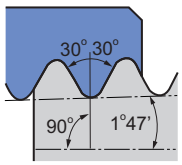
HC Coated carbide
HW Uncoated carbide, main component (WC)

Notes

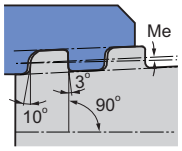
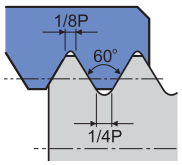
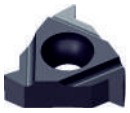
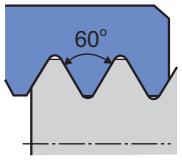
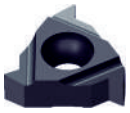
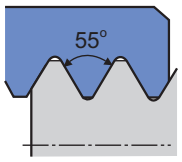
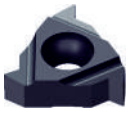
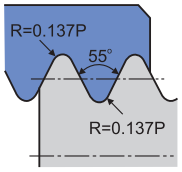
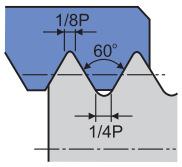
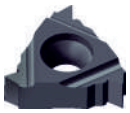
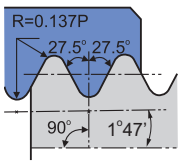
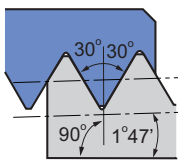
Threading

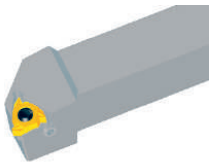
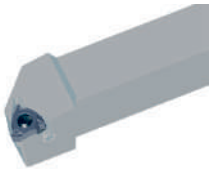
System overview	**A406-A409**
Grade overview	**A410**
Application fields of grades	**A411**
System code - inserts	**A412**
Inserts	**A413-A437**
System code - threading tool holders	**A438**
Threading tool holders	**A439-A445**
Recommended cutting data	**A446**
Trouble shooting	**A449**
Technical Information	**A456-A457**

Thread types	Profile	Sectional drawing	Insert	Internal thread pitch [mm]	External thread pitch [mm]	Page
ISO metric coarse thread 60° full profile	**GM**			0,5-6,0	0,5-6,0	A413
ISO metric coarse thread 60° partial profile	**60°**			0,5-5,0 (5-48)	0,5-5,0 (5-48)	A415
ISO metric coarse thread 55° partial profile	**55°**			0,5-5,0 (5-48)	0,5-5,0 (5-48)	A416
Whitworth	**W**			8-16	8-16	A417
UN unified conventional thread 60° full profile	**UN**			8-20	8-20	A418
BSPT Whitworth taper pipe thread	**BSPT**			11-28	11-28	A419
NPT American taper pipe thread	**NPT**			8-27	8-27	A420
NPTF dryseal American taper pipe thread 60°	**NPTF**			8-27	8-27	A421

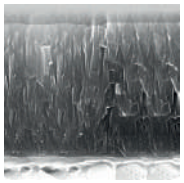
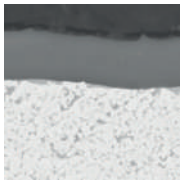
Thread types	Profile	Sectional drawing	Insert	Internal thread pitch [mm]	External thread pitch [mm]	Page
R knuckle thread 30°	**R**			6-10	6-10	A422
MJ thread for aerospace	**MJ**			---	1,5-2,0	A423
UNJ unified screw thread	**UNJ**			---	8-32	A424
TR metrical ISO trapezoidal thread 30°	**Tr**			1,5-3,0	1,5-3,0	A425
ACME American national thread 29°	**AC**			8-16	8-16	A426
STUB-ACME thread	**STAC**			8-16	8-16	A427
API 60° thread	**AP**			4-5	4-5	A428
API round thread	**RD**			8-10	8-10	A429

Threading System overview

Thread types	Profile	Sectional drawing	Insert	Internal thread pitch [mm]	External thread pitch [mm]	Page
API American buttress thread	**BUT**			5	5	A430
ISO metric coarse thread 60° full profile (thin type)	**GM**			0,5-3,0	0,5-3,0	A431
ISO metric coarse thread 60° partial profile (thin type)	**60°**			0,5-3,0 (8-48)	0,5-3,0 (8-48)	A432
ISO metric coarse thread 55° partial profile (thin type)	**55°**			0,5-3,0 (8-48)	0,5-3,0 (8-48)	A433
Whitworth (thin type)	**W**			8-16	8-16	A434
UN unified conventional thread 60° full profile (thin type)	**UN**			8-24	8-20	A435
BSPT Whitworth taper pipe thread (thin type)	**BSPT**			11-28	11-28	A436
NPT American taper pipe thread (thin type)	**NPT**			8-27	8-27	A437

Type	Tool holder	Dimensions [mm]	Page
External thread holder		16×16×100 20×20×125 25×25×150 32×25×170 32×32×170 40×40×250	A439
Internal thread holder		16×125×12 16×150×16 16×150×20 20×150×25 20×180×25 25×150×32 32×200×40 32×250×40 40×300×50 50×350×63	A441
External thread holder (Thin Type)		16×16×100 32×25×170 20×20×125 32×32×170 25×25×150	A443
Internal thread holder (Thin Type)		16×150×20 32×200×40 20×180×25 32×250×40 25×150×32	A444

Threading

Grade	ISO	Micro structure	Grade description
YBG201	P10 - P30 M10 - M30		PVD coated P10–P30/M10–M30 carbide substrate for finishing to medium application of steel and stainless steel. Good wear resistance in a wide application field.
YBG202	P10 - P30 M10 - M25		PVD coated P10–P30/M10–M25 carbide substrate for finishing to medium application of stainless steel and steel (milling). Good wear resistance in a wide application field.
YBG205	P10 - P30 M20 - M40 S15-S25		PVD multilayer coated P10–P30/M20–M40/S15–S25 carbide substrate for finishing to medium application of stainless steel, super alloy and steel (milling). Good wear resistance and thermal stability in a wide application field.

Application fields of grades – Threading

	ISO	HC[1] (CVD)	HC[1] (PVD)	HT	HC[2]	Ceramic	HW	CBN	PCD
P	P01								
	P10		YBG205 YBG201 YBG202						
	P20								
	P30								
	P40								
M	M01								
	M10		YBG205 YBG201 YBG202						
	M20								
	M30								
	M40								
K	K01								
	K10								
	K20								
	K30								
N	N01								
	N10								
	N20								
	N30								
S	S01								
	S10		YBG205 YBG201 YBG202						
	S20								
	S30								
H	H01								
	H10								
	H20								
	H30								

P	Steel	N	Non-ferrous metals
M	Stainless steel	S	Heat-resistant alloys
K	Cast iron	H	Hardened materials

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

Threading System code – inserts

R	T	22.	01	W	–	3.50	GM	(P)	(B)
1	2	3	4	5		6	7	8	9

1 Type

Code	Description
R	Right
L	Left

2 Insert shape

T  Z Special

3 Insert size [mm]

Code	I.C
11	6,35
16	9,252
22	12,70

4 Teeth per cutting edge

Code	Description
01	1
02	2

5 Application

Code	Description
W	External thread
N	Internal thread

6 Pitch

Code	Pitch range (part profile)	
A	0,5 – 1,5 mm	48 – 16 (TPI)
AG	0,5 – 3,0 mm	48 – 8 (TPI)
G	1,75 – 3,0 mm	14 – 8 (TPI)
N	3,5 – 5,0 mm	7 – 5 (TPI)

Pitch range [mm] (full profile)
0,50 0,75 1,00 1,25 1,50
1,75 2,00 2,50 3,00 3,50
4,00 4,50 5,00 5,50 6,00

Pitch range (TPI) (full profile)
4 5 6 8
10 11 11,5 12
14 16 18 19
20 24 27 28

7 Thread profile

Code	Description
GM	ISO metric coarse thread 60°
60	Partial profile 60°
55	Partial profile 55°
W	Whitworth
UN	Unified conventional thread
BSPT	Whitworth taper pipe thread
NPT	American taper pipe thread
NPTF	Dryseal American taper pipe thread
R	Knuckle thread 30°
MJ	Thread for aerospace
UNJ	Unified screw thread
TR	Metrical ISO trapezoidal thread
AC	American national thread
STAC	STUB-ACME thread
AP	API 60° thread
RD	API round thread
BUT	American buttress thread

8 Chip breaker

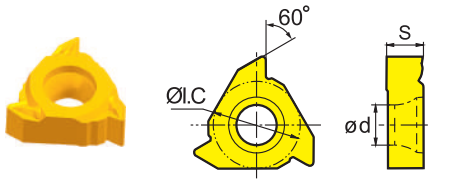
9 Insert thickness [mm]

Code	Description
B	Thin type

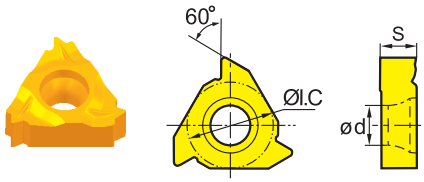
R/LT**N/W	I.C	S	d
11	6.35	3.18	2.8
16	9.525	3.97	4.4
22	12.7	5.56	5.5

Threading inserts

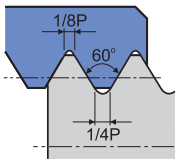
ISO metric coarse thread 60° full profile



External right hand
Internal left hand



Internal right hand
External left hand



ISO 965-1980 DIN 13
GB·T 197-2003 Tolerance: 6g·6H

ISO	Pitch (T.P.i)	External	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205	Internal	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205
11	0.50	-			RT11.01N-0.50GM	○	
11		-			LT11.01N-0.50GM	○	
11	0.75	-			RT11.01N-0.75GM	●	
11		-			LT11.01N-0.75GM	○	
11	1.00	-			RT11.01N-1.00GM	○	●
11		-			LT11.01N-1.00GM	●	
11	1.25	-			RT11.01N-1.25GM	●	
11		-			LT11.01N-1.25GM	●	
11	1.50	-			RT11.01N-1.50GM	○	●
11		-			LT11.01N-1.50GM	●	
11	1.75	-			RT11.01N-1.75GM	○	
11		-			LT11.01N-1.75GM	●	
11	2.00	-			RT11.01N-2.00GM	○	○
11		-			LT11.01N-2.00GM	●	
16	0.50	-			RT16.01N-0.50GM	○	
16		-			LT16.01N-0.50GM	○	
16	0.75	-			RT16.01N-0.75GM	○	
16		-			LT16.01N-0.75GM	○	
16	1.00	RT16.01W-1.00GM	○	●	RT16.01N-1.00GM	○	
16		LT16.01W-1.00GM	●		LT16.01N-1.00GM	●	
16	1.25	RT16.01W-1.25GM	○	●	RT16.01N-1.25GM	○	
16		LT16.01W-1.25GM	●		LT16.01N-1.25GM	●	
16	1.50	RT16.01W-1.50GM	○	●	RT16.01N-1.50GM	○	●
16		LT16.01W-1.50GM	●		LT16.01N-1.50GM	●	
16	1.75	RT16.01W-1.75GM	○	●	RT16.01N-1.75GM	○	
16		LT16.01W-1.75GM	●		LT16.01N-1.75GM	●	
16	2.00	RT16.01W-2.00GM	○	●	RT16.01N-2.00GM	○	●

● Ex stock ○ On demand

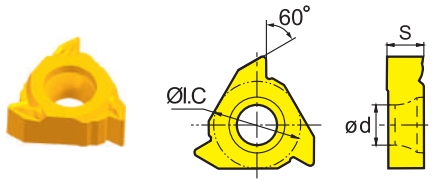
HC[1] Coated carbide

System code A412 Grade selection A411 Technical info A447 Cutting data A446

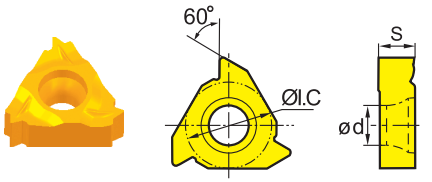
R/LT**N/W	I.C	S	d
11	6.35	3.18	2.8
16	9.525	3.97	4.4
22	12.7	5.56	5.5

Threading inserts

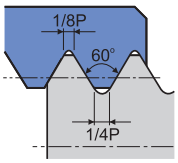
ISO metric coarse thread 60° full profile



External right hand
Internal left hand



Internal right hand
External left hand



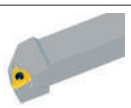
ISO 965-1980 DIN 13
GB·T 197-2003 Tolerance: 6g·6H

ISO	Pitch (T.P.i)	External	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205	Internal	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205
16	2.00	**LT16.01W-2.00GM**	●		**LT16.01N-2.00GM**	●	
16	2.50	**RT16.01W-2.50GM**	○	●	**RT16.01N-2.50GM**	○	●
16		**LT16.01W-2.50GM**	●		**LT16.01N-2.50GM**	●	
16	3.00	**RT16.01W-3.00GM**	○	●	**RT16.01N-3.00GM**	○	●
16		**LT16.01W-3.00GM**	●		**LT16.01N-3.00GM**	●	
22	3.50	**RT22.01W-3.50GM**	○		**RT22.01N-3.50GM**	○	●
22		**LT22.01W-3.50GM**	●		**LT22.01N-3.50GM**	●	
22	4.00	**RT22.01W-4.00GM**	○	●	**RT22.01N-4.00GM**	○	●
22		**LT22.01W-4.00GM**	●		**LT22.01N-4.00GM**	●	
22	4.50	**RT22.01W-4.50GM**	○		**RT22.01N-4.50GM**	○	●
22		**LT22.01W-4.50GM**	○		**LT22.01N-4.50GM**	●	
22	5.00	**RT22.01W-5.00GM**	○		**RT22.01N-5.00GM**	○	
22		**LT22.01W-5.00GM**	●		**LT22.01N-5.00GM**	●	
22	5.50	**RT22.01W-5.50GM**	○		**RT22.01N-5.50GM**	○	
22		**LT22.01W-5.50GM**	○		**LT22.01N-5.50GM**	●	
22	6.00	**RT22.01W-6.00GM**	○	●	**RT22.01N-6.00GM**	○	●
22		**LT22.01W-6.00GM**	●		**LT22.01N-6.00GM**	●	

● Ex stock ○ On demand

HC[1] Coated carbide

Tool holders

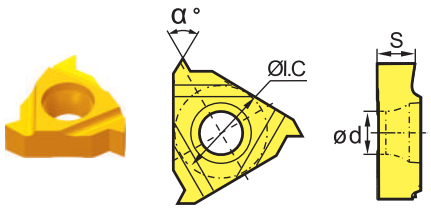
SWR/L	SNR/L
	
A439-A440	A441-A442

System code A412 Grade selection A411 Technical info A447 Cutting data A446

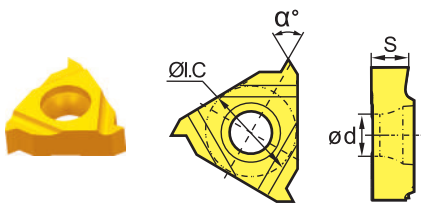
R/LT**N/W	I.C	S	d
16	9.525	3.97	4.4
22	12.7	5.56	5.5

Threading inserts

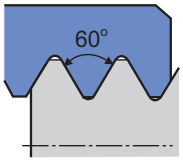
ISO metric coarse thread 60° partial profile



External right hand
Internal left hand



Internal right hand
External left hand



ISO	Pitch (T.P.i)	External	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205	Internal	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205
16	0.50 - 1.50	**RT16.01W-A60**	○	●	**RT16.01N-A60**	○	
16		**LT16.01W-A60**	●		**LT16.01N-A60**	●	
16	0.50 - 3.00	**RT16.01W-AG60**	○	●	**RT16.01N-AG60**	○	
16		**LT16.01W-AG60**	●		**LT16.01N-AG60**	●	○
16	1.75 - 3.00	**RT16.01W-G60**	○		**RT16.01N-G60**	○	
16		**LT16.01W-G60**	●		**LT16.01N-G60**	○	
16		**RT16.01W-G60P***	○	○	**RT16.01N-G60P***	○	
16		**LT16.01W-G60P***	●		**LT16.01N-G60P***	○	
22	3.50 - 5.00	**RT22.01W-N60P***	○	●	**RT22.01N-N60P***	○	●
22		**LT22.01W-N60P***	○		**LT22.01N-N60P***	○	

● Ex stock ○ On demand
P*: Inserts with chip-breakers

HC[1] Coated carbide

Tool holders

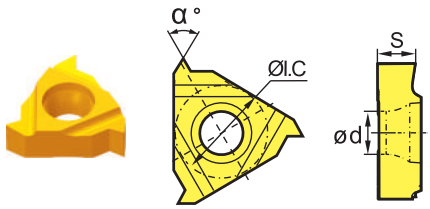
SWR/L	SNR/L
	
A439-A440	A441-A442

System code A412 | Grade selection A411 | Technical info A447 | Cutting data A446

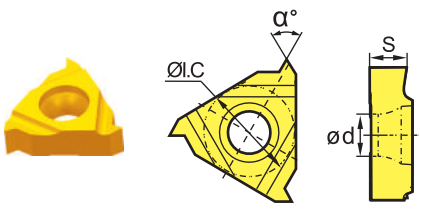
Threading inserts

R/LT**N/W	I.C	S	d
16	9.525	3.97	4.4
22	12.7	5.56	5.5

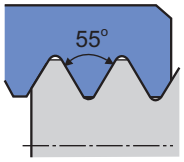
ISO metric coarse thread 55° partial profile



External right hand
Internal left hand



Internal right hand
External left hand



ISO	Pitch (T.P.i)	External	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205	Internal	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205
16	0.50 - 1.50	**RT16.01W-A55**	○		**RT16.01N-A55**	○	
16		**LT16.01W-A55**	●		**LT16.01N-A55**	○	
16	0.50 - 3.00	**RT16.01W-AG55**	○	●	**RT16.01N-AG55**	○	●
16		**LT16.01W-AG55**	○		**LT16.01N-AG55**	●	
16	1.75 - 3.00	**RT16.01W-G55**	○		**RT16.01N-G55**	○	
16		**LT16.01W-G55**	●		**LT16.01N-G55**	○	
16		**RT16.01W-G55P***	○		**RT16.01N-G55P***	○	
16		**LT16.01W-G55P***	●		**LT16.01N-G55P***	●	
22	3.50 - 5.00	**RT22.01W-N55P***	○		**RT22.01N-N55P***	○	

● Ex stock ○ On demand
P*: Inserts with chip-breakers

HC[1] Coated carbide

Tool holders

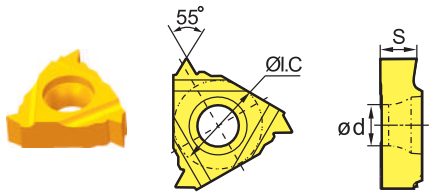
SWR/L	SNR/L
	
A439-A440	A441-A442

System code A412 | Grade selection A411 | Technical info A447 | Cutting data A446

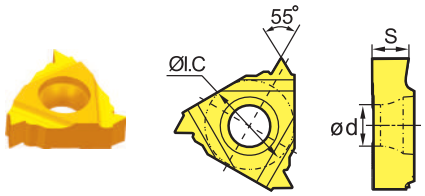
Threading inserts

R/LT**N/W	I.C	S	d
16	9.525	3.97	4.4

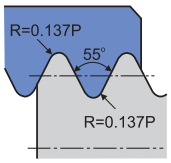
Whitworth



External right hand
Internal left hand



Internal right hand
External left hand



ISO 228·1:1982 DIN 259
B.S.84: 1956 Tolerance: Medium Class 1

ISO	Pitch (T.P.i)	External	HC[1] (PVD)		Internal	HC[1] (PVD)	
			YBG201	YBG205		YBG201	YBG205
16	8.00	**RT16.01W-8W**	○		**RT16.01N-8W**	○	
16		**LT16.01W-8W**	●		**LT16.01N-8W**	●	
16	9.00	-			**RT16.01N-9W**	○	
16		**LT16.01W-9W**	○		**LT16.01N-9W**	○	
16	10.00	**RT16.01W-10W**	○		**RT16.01N-10W**	○	
16		**LT16.01W-10W**	○		**LT16.01N-10W**	○	
16	11.00	**RT16.01W-11W**	○	●	**RT16.01N-11W**	○	●
16		**LT16.01W-11W**	●		**LT16.01N-11W**	○	
16	12.00	**RT16.01W-12W**	○		**RT16.01N-12W**	○	
16		**LT16.01W-12W**	○		**LT16.01N-12W**	○	
16	14.00	**RT16.01W-14W**	○	●	**RT16.01N-14W**	○	●
16		-			**LT16.01N-14W**	○	
16	16.00	**RT16.01W-16W**	○	●	**RT16.01N-16W**	○	●
16		**LT16.01W-16W**	○		**LT16.01N-16W**	○	

● Ex stock ○ On demand

HC[1] Coated carbide

Tool holders

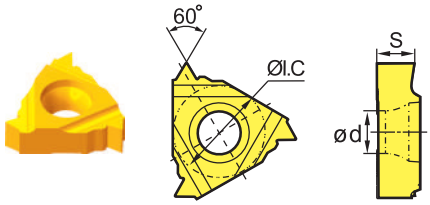
SWR/L	SNR/L
	
A439-A440	A441-A442

System code A412 | Grade selection A411 | Technical info A447 | Cutting data A446

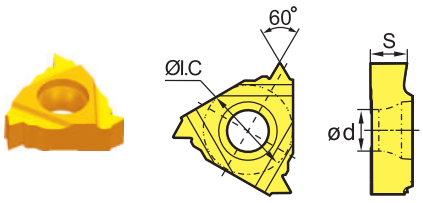
Threading inserts

R/LT**N/W	I.C	S	d
16	9.525	3.97	4.4

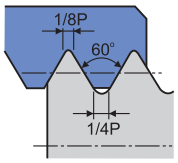
UN unified conventional thread 60° full profile



External right hand
Internal left hand



Internal right hand
External left hand



AS;E B1.1-1989
Tolerance: 2A·2B

ISO	Pitch (T.P.i)	External	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205	Internal	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205
16	8.00	**RT16.01W-8UN**	○		**RT16.01N-8UN**	○	
16		**LT16.01W-8UN**	○		**LT16.01N-8UN**	○	
16	10.00	**RT16.01W-10UN**	○		**RT16.01N-10UN**	○	
16		**LT16.01W-10UN**	○		**LT16.01N-10UN**	○	
16	12.00	**RT16.01W-12UN**	○		**RT16.01N-12UN**	○	
16		**LT16.01W-12UN**	○		**LT16.01N-12UN**	○	
16	14.00	**RT16.01W-14UN**	○		**RT16.01N-14UN**	○	
16		**LT16.01W-14UN**	○		**LT16.01N-14UN**	○	
16	16.00	**RT16.01W-16UN**	○		**RT16.01N-16UN**	○	
16		**LT16.01W-16UN**	○		**LT16.01N-16UN**	○	
16	18.00	**RT16.01W-18UN**	○		**RT16.01N-18UN**	○	
16		**LT16.01W-18UN**	○		**LT16.01N-18UN**	○	
16	20.00	**RT16.01W-20UN**	○		**RT16.01N-20UN**	○	
16		**LT16.01W-20UN**	○		**LT16.01N-20UN**	○	
16	24.00	-			**RT16.01N-24UN**	○	
16		-			**LT16.01N-24UN**	○	

● Ex stock ○ On demand

HC[1] Coated carbide

Tool holders

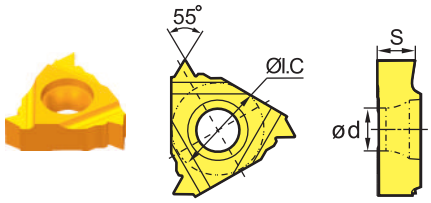
SWR/L	SNR/L
	
A439-A440	A441-A442

System code A412 | Grade selection A411 | Technical info A447 | Cutting data A446

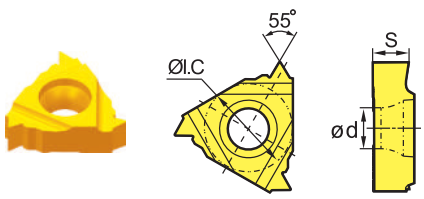
Threading inserts

R/LT**N/W	I.C	S	d
16	9.525	3.97	4.4

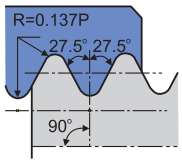
BSPT Whitworth taper pipe thread



External right hand
Internal left hand



Internal right hand
External left hand



ISO 7-1: 1984 B.S.21:1985
Standard BSPT

ISO	Pitch (T.P.i)	External	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205	Internal	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205
16	11.00	**RT16.01W-11BSPT**	○		**RT16.01N-11BSPT**	○	
16		**LT16.01W-11BSPT**	●		**LT16.01N-11BSPT**	○	
16	14.00	**RT16.01W-14BSPT**	○		**RT16.01N-14BSPT**	○	
16		**LT16.01W-14BSPT**	○		**LT16.01N-14BSPT**	○	
16	19.00	**RT16.01W-19BSPT**	○		**RT16.01N-19BSPT**	○	
16		**LT16.01W-19BSPT**	○		**LT16.01N-19BSPT**	○	
16	28.00	**RT16.01W-28BSPT**	○		**RT16.01N-28BSPT**	○	
16		**LT16.01W-28BSPT**	○		**LT16.01N-28BSPT**	○	

● Ex stock ○ On demand

HC[1] Coated carbide

Tool holders

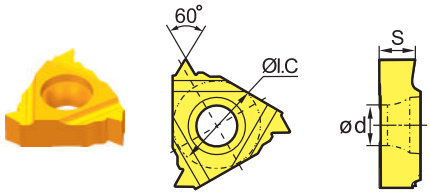
SWR/L	SNR/L
	
A439-A440	A441-A442

System code A412 Grade selection A411 Technical info A447 Cutting data A446

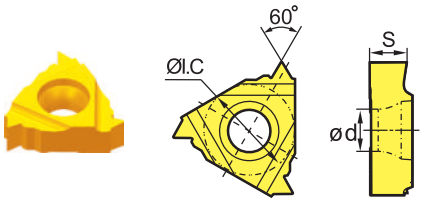
Threading inserts

R/LT**N/W	I.C	S	d
16	9.525	3.97	4.4

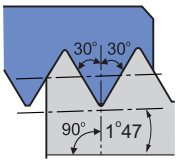
NPT American taper pipe thread



External right hand
Internal left hand



Internal right hand
External left hand



ASME B1.20.1-1983
Standard NPT

ISO	Pitch (T.P.i)	External	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205	Internal	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205
16	8.00	**RT16.01W-8NPT**	○		**RT16.01N-8NPT**	○	
16		**LT16.01W-8NPT**	○		**LT16.01N-8NPT**	○	
16	11.50	**RT16.01W-11.5NPT**	○		**RT16.01N-11.5NPT**	○	
16		**LT16.01W-11.5NPT**	○		**LT16.01N-11.5NPT**	○	
16	14.00	**RT16.01W-14NPT**	○	○	**RT16.01N-14NPT**	○	
16		**LT16.01W-14NPT**	○		**LT16.01N-14NPT**	○	
16	18.00	**RT16.01W-18NPT**	○		**RT16.01N-18NPT**	○	
16		**LT16.01W-18NPT**	○		**LT16.01N-18NPT**	○	
16	27.00	**RT16.01W-27NPT**	○		**RT16.01N-27NPT**	○	
16		**LT16.01W-27NPT**	○		**LT16.01N-27NPT**	○	

● Ex stock ○ On demand

HC[1] Coated carbide

Tool holders

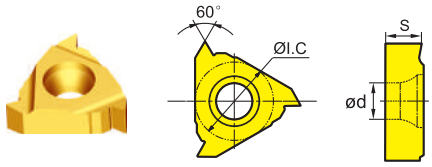
SWR/L	SNR/L
	
A439-A440	A441-A442

System code A412 | Grade selection A411 | Technical info A447 | Cutting data A446

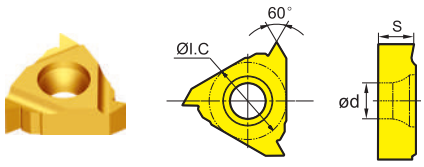
Threading inserts

R/LT**N/W	I.C	S	d
16	9.525	3.97	4.4

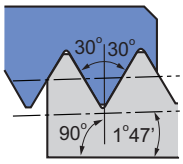
NPTF dryseal American taper pipe thread 60°



External right hand
Internal left hand



Internal right hand
External left hand



ASME B1.20.1-1983
Tolerance: 2

ISO	Pitch (T.P.i)	External	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205	Internal	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205
16	8.00	-			**RT16.01N-8NPTF**	○	
16	11.50	**RT16.01W-11.5NPTF**	○		**RT16.01N-11.5NPTF**	○	
16	14.00	**RT16.01W-14NPTF**	○		**RT16.01N-14NPTF**	○	
16	18.00	**RT16.01W-18NPTF**	○		**RT16.01N-18NPTF**	○	
16	27.00	-			**RT16.01N-27NPTF**	○	

● Ex stock ○ On demand

HC[1] Coated carbide

Tool holders

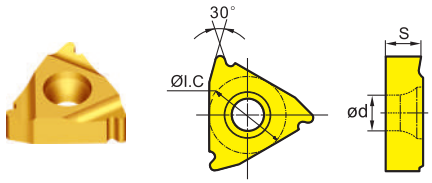
SWR/L	SNR/L
	
A439	A441

System code A412 | Grade selection A411 | Technical info A447 | Cutting data A446

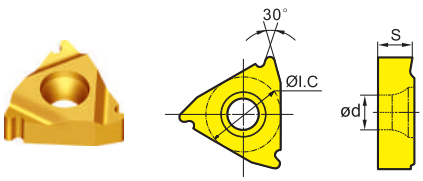
Threading inserts

R/LT**N/W	I.C	S	d
16	9.525	3.97	4.4

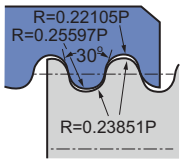
R knuckle thread 30°



External right hand
Internal left hand



Internal right hand
External left hand



DIN 405
Tolerance: 7

ISO	Pitch (T.P.i)	External	HC[1] (PVD)		Internal	HC[1] (PVD)	
			YBG201	YBG205		YBG201	YBG205
16	6.00	**RT16.01W-6R**	○		**RT16.01N-6R**	○	○
16	8.00	**RT16.01W-8R**	○		**RT16.01N-8R**	○	○
16	10.00	**RT16.01W-10R**	○		**RT16.01N-10R**	○	○

● Ex stock ○ On demand

HC[1] Coated carbide

Tool holders

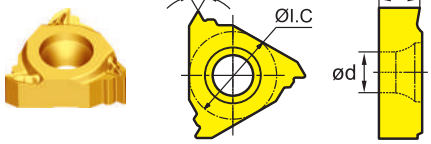
SWR/L	SNR/L
	
A439	A441

System code A412 | Grade selection A411 | Technical info A447 | Cutting data A446

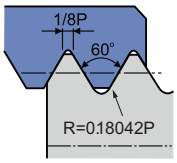
Threading inserts

R/LT**N/W	I.C	S	d
16	9.525	3.97	4.4

MJ thread for aerospace



External right hand
Internal left hand



ISO 5855-1999
Tolerance: 4

ISO	Pitch (T.P.i)	External	HC[1] (PVD)								Internal	HC[1] (PVD)							
			YBG201	YBG205								YBG201	YBG205						
16	1.50	**RT16.01W-1.50MJ**	○								-								

● Ex stock ○ On demand

HC[1] Coated carbide

Tool holders

SWR/L



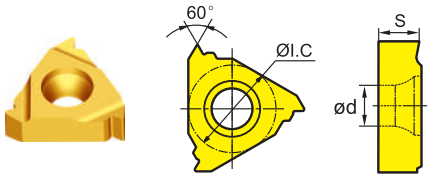
A439

System code A412 Grade selection A411 Technical info A447 Cutting data A446

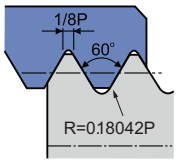
Threading inserts

R/LT**N/W	I.C	S	d
16	9.525	3.97	4.4

UNJ unified screw thread



External right hand
Internal left hand



ISO 3161-1999
Tolerance: 3A

ISO	Pitch (T.P.i)	External	HC[1] (PVD)		Internal	HC[1] (PVD)	
			YBG201	YBG205		YBG201	YBG205
16	10.00	**RT16.01W-10UNJ**	○		-		
16	12.00	**RT16.01W-12UNJ**	○		-		
16	14.00	**RT16.01W-14UNJ**	○		-		
16	16.00	**RT16.01W-16UNJ**	○		-		
16	18.00	**RT16.01W-18UNJ**	○		-		
16	20.00	**RT16.01W-20UNJ**	○		-		
16	24.00	**RT16.01W-24UNJ**	○		-		
16	28.00	**RT16.01W-28UNJ**	○		-		
16	32.00	**RT16.01W-32UNJ**	○		-		

● Ex stock ○ On demand

HC[1] Coated carbide

Tool holders

SWR/L



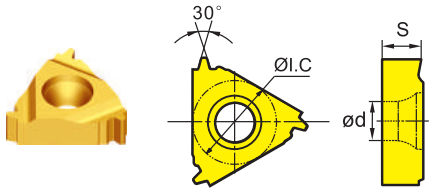
A439

System code A412 | Grade selection A411 | Technical info A447 | Cutting data A446

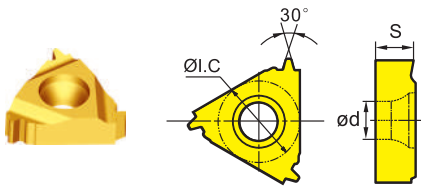
Threading inserts

R/LT**N/W	I.C	S	d
16	9.525	3.97	4.4

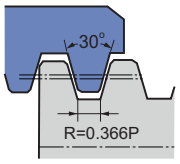
TR metrical ISO trapezoidal thread 30°



External right hand
Internal left hand



Internal right hand
External left hand



ISO 2901-2904
Tolerance: 7

ISO	Pitch (T.P.i)	External	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205	Internal	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205
16	1.50	**RT16.01W-1.50TR**	○		**RT16.01N-1.50TR**	●	
16	2.00	**RT16.01W-2.00TR**	○	○	**RT16.01N-2.00TR**	○	○
16	3.00	**RT16.01W-3.00TR**	○	○	**RT16.01N-3.00TR**	○	●

● Ex stock ○ On demand

HC[1] Coated carbide

Tool holders

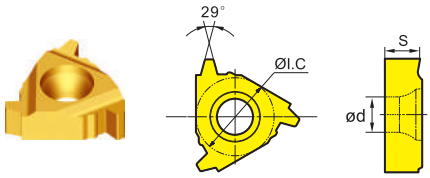
SWR/L	SNR/L
	
A439	A441

System code A412 Grade selection A411 Technical info A447 Cutting data A446

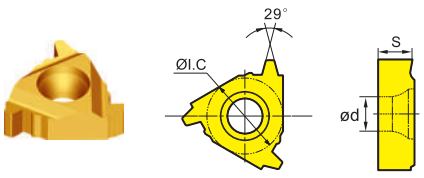
Threading inserts

R/LT**N/W	I.C	S	d
16	9.525	3.97	4.4

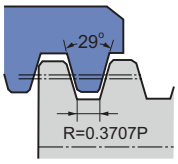
ACME American national thread 29°



External right hand
Internal left hand



Internal right hand
External left hand



ANSI B1.5-1988
Tolerance: 2G

ISO	Pitch (T.P.i)	External	HC[1] (PVD)		Internal	HC[1] (PVD)	
			YBG201	YBG205		YBG201	YBG205
16	8.00	**RT16.01W-8AC**	○		**RT16.01N-8AC**	○	
16	10.00	**RT16.01W-10AC**	○		**RT16.01N-10AC**	○	
16	12.00	**RT16.01W-12AC**	○		**RT16.01N-12AC**	○	
16	14.00	**RT16.01W-14AC**	○		**RT16.01N-14AC**	○	
16	16.00	**RT16.01W-16AC**	○		**RT16.01N-16AC**	○	

● Ex stock ○ On demand

HC[1] Coated carbide

Tool holders

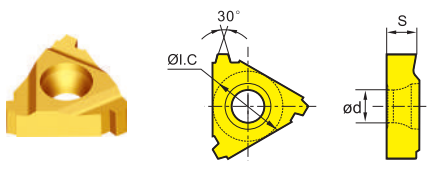
SWR/L	SNR/L
	
A439	A441

System code A412 | Grade selection A411 | Technical info A447 | Cutting data A446

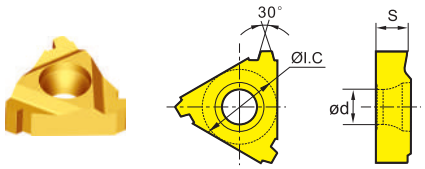
Threading inserts

R/LT**N/W	I.C	S	d
16	9.525	3.97	4.4

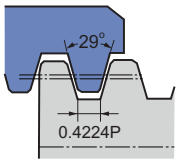
STUB-ACME thread



External right hand
Internal left hand



Internal right hand
External left hand



ANSI B1.8-1988
Tolerance: API Standard

ISO	Pitch (T.P.i)	External	HC[1] (PVD)		Internal	HC[1] (PVD)	
			YBG201	YBG205		YBG201	YBG205
16	8.00	**RT16.01W-8STAC**	○		**RT16.01N-8STAC**	○	
16	10.00	**RT16.01W-10STAC**	○		**RT16.01N-10STAC**	○	
16	12.00	**RT16.01W-12STAC**	○		**RT16.01N-12STAC**	○	
16	14.00	**RT16.01W-14STAC**	○		**RT16.01N-14STAC**	○	
16	16.00	**RT16.01W-16STAC**	○		**RT16.01N-16STAC**	○	

● Ex stock ○ On demand

HC[1] Coated carbide

Tool holders

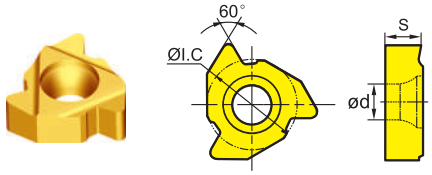
SWR/L	SNR/L
	
A439	A441

System code A412 | Grade selection A411 | Technical info A447 | Cutting data A446

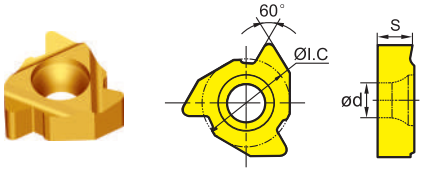
Threading inserts

R/LT**N/W	I.C	S	d
22	12.7	5.56	5.5

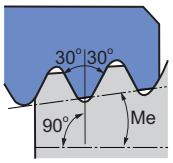
API 60° thread



External right hand
Internal left hand



Internal right hand
External left hand



Me = taper, 2i.p.f-4°46', 3i.p.f-7°01'
API SPEC7:1990 Tolerance: API Standard

ISO	Pitch (T.P.i)	External	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205	Internal	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205
22	4.00	**RT22.01W-4AP382**	○		**RT22.01N-4AP382**	○	
22		**RT22.01W-4AP383**	○		**RT22.01N-4AP383**	○	
22		**RT22.01W-4AP502**	○		**RT22.01N-4AP502**	○	
22		**RT22.01W-4AP503**	○		**RT22.01N-4AP503**	○	
22	5.00	**RT22.01W-5AP403**	○		**RT22.01N-5AP403**	○	

● Ex stock ○ On demand

HC[1] Coated carbide

Tool holders

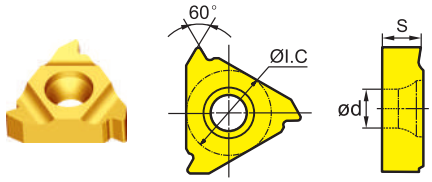
SWR/L	SNR/L
	
A439	A441

System code A412 | Grade selection A411 | Technical info A447 | Cutting data A446

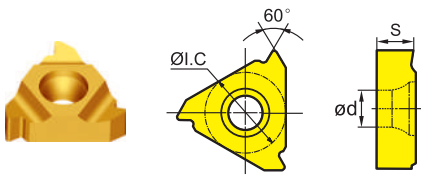
R/LT**N/W	I.C	S	d
16	9.525	3.97	4.4
22	12.7	5.56	5.5

Threading inserts

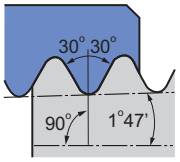
API round thread



External right hand
Internal left hand



Internal right hand
External left hand



API spec.5B
Tolerance: API RD

ISO	Pitch (T.P.i)	External	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205	Internal	HC[1] (PVD) YBG201	HC[1] (PVD) YBG205
16	8.00	**RT16.01W-8RD**	○		**RT16.01N-8RD**	○	
16	10.00	**RT16.01W-10RD**	○		**RT16.01N-10RD**	○	
22	8.00	**RT22.01W-8RD**	○		**RT22.01N-8RD**	○	
22	10.00	**RT22.01W-10RD**	○		**RT22.01N-10RD**	○	

● Ex stock ○ On demand

HC[1] Coated carbide

Tool holders

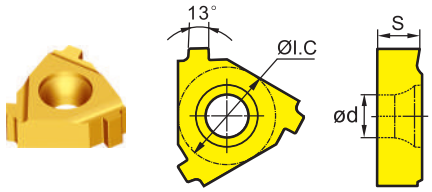
SWR/L	SNR/L
	
A439	A441

System code A412 | Grade selection A411 | Technical info A447 | Cutting data A446

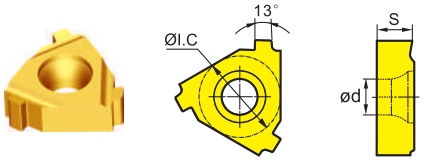
Threading inserts

R/LT**N/W	I.C	S	d
22	12.7	5.56	5.5

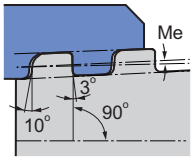
API American buttress thread



External right hand
Internal left hand



Internal right hand
External left hand



Me=taper 3/4i.p.f-1°47'-1°47' for Ø 4 1/2-13 3/8"
1 i.p.f--2°23' for Ø16" SEPC.5B.1979 Tol.: API Std.

ISO	Pitch (T.P.i)	External	HC[1] (PVD)		Internal	HC[1] (PVD)	
			YBG201	YBG205		YBG201	YBG205
22	5.00	**RT22.01W-5BUT**	○		**RT22.01N-5BUT**	○	

● Ex stock ○ On demand

HC[1] Coated carbide

Tool holders

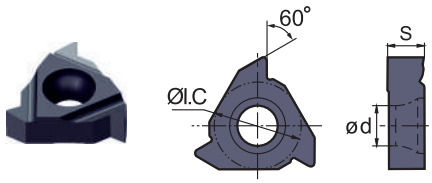
SWR/L	SNR/L
	
A439	A441

System code A412 Grade selection A411 Technical info A447 Cutting data A446

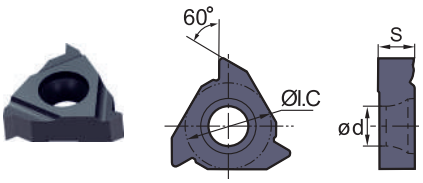
Threading inserts (thin type)

R/LT**N/W	I.C	S	d
16	9.525	3.52	4

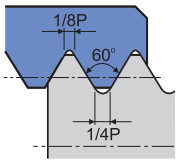
ISO metric coarse thread 60° full profile (thin type)



External right hand
Internal left hand



Internal right hand
External left hand



ISO 965-1980 DIN 13
GB·T 197-2003 Tolerance: 6g/6H

ISO	Pitch (T.P.i)	External	HC[1] (PVD) YBG202	HC[1] (PVD) YBG205	Internal	HC[1] (PVD) YBG202	HC[1] (PVD) YBG205
16	0,50	**RT16.01W-0.50GMB**	●		**RT16.01N-0.50GMB**	●	
16	0,75	**RT16.01W-0.75GMB**	●		**RT16.01N-0.75GMB**	●	
16	1,00	**RT16.01W-1.00GMB**	●	○	**RT16.01N-1.00GMB**	●	●
16		**RT16.01W-1.00GMPB***	●	●	**RT16.01N-1.00GMPB***		●
16	1,25	**RT16.01W-1.25GMB**	●	●	**RT16.01N-1.25GMB**	●	●
		RT16.01W-1.25GMPB*		●	**RT16.01N-1.25GMPB***		●
16	1,50	**RT16.01W-1.50GMB**	●	○	**RT16.01N-1.50GMB**	●	●
16		**RT16.01W-1.50GMPB***	●	●	**RT16.01N-1.50GMPB***		●
16	1,75	**RT16.01W-1.75GMB**	●	●	**RT16.01N-1.75GMB**	●	●
		RT16.01W-1.75GMPB*		●	**RT16.01N-1.75GMPB***		●
16	2,00	**RT16.01W-2.00GMB**	●	○	**RT16.01N-2.00GMB**	●	●
16		**RT16.01W-2.00GMPB***	●	●	**RT16.01N-2.00GMPB***	●	●
16	2,50	**RT16.01W-2.50GMB**	●	○	**RT16.01N-2.50GMB**	●	●
		RT16.01W-2.50GMPB*	●	●	**RT16.01W-2.50GMPB***		●
16	3,00	**RT16.01W-3.00GMB**	●	○	**RT16.01N-3.00GMB**	●	○
16		**RT16.01W-3.00GMPB***	●	●	**RT16.01N-3.00GMPB***		●

● Ex stock ○ On demand
PB*: Inserts with chip-breakers

HC[1] Coated carbide

Tool holders

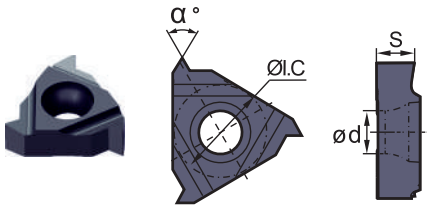
SWR	SNR
	
A443	A444

System code A412 Grade selection A411 Technical info A447 Cutting data A446

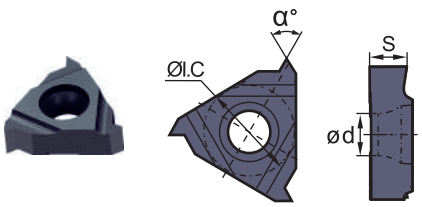
Threading inserts (thin type)

R/LT**N/W	I.C	S	d
16	9.525	3.52	4

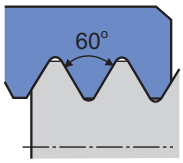
ISO metric coarse thread 60° partial profile (thin type)



External right hand
Internal left hand



Internal right hand
External left hand



ISO	Pitch (T.P.i)	External	HC[1] (PVD) YBG202	HC[1] (PVD) YBG205	Internal	HC[1] (PVD) YBG202	HC[1] (PVD) YBG205
16	0.50 - 1.50	**RT16.01W-A60B**	●		**RT16.01N-A60B**	●	
16	0.50 - 3.00	**RT16.01W-AG60B**	●		**RT16.01N-AG60B**	●	
16		**RT16.01W-AG60PB***	●	●	-		
16	1.75 - 3.00	**RT16.01W-G60B**	●	○	**RT16.01N-G60B**	●	

● Ex stock ○ On demand
HC[1] Coated carbide
PB*: Inserts with chip-breakers

Tool holders

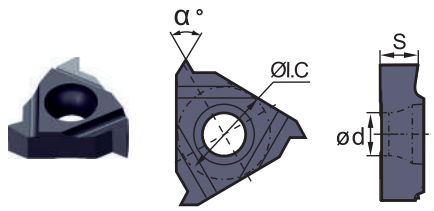
SWR	SNR
	
A443	A444

System code A412 | Grade selection A411 | Technical info A447 | Cutting data A446

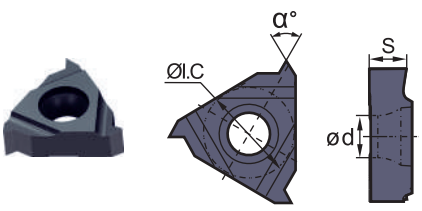
Threading inserts (thin type)

R/LT**N/W	I.C	S	d
16	9.525	3.52	4

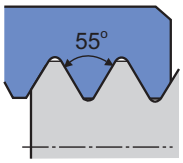
ISO metric coarse thread 55° partial profile (thin type)



External right hand
Internal left hand



Internal right hand
External left hand



ISO	Pitch (T.P.i)	External	HC[1] (PVD) YBG202	HC[1] (PVD) YBG205	Internal	HC[1] (PVD) YBG202	HC[1] (PVD) YBG205
16	0.50 - 1.50	**RT16.01W-A55B**	●		**RT16.01N-A55B**	○	
16	0.50 - 3.00	**RT16.01W-AG55B**	●		**RT16.01N-AG55B**	○	
16		**RT16.01W-AG55PB***	●	○	-		
16	1.75 - 3.00	**RT16.01W-G55B**	●		**RT16.01N-G55B**	●	

● Ex stock ○ On demand
PB*: Inserts with chip-breakers

HC[1] Coated carbide

Tool holders

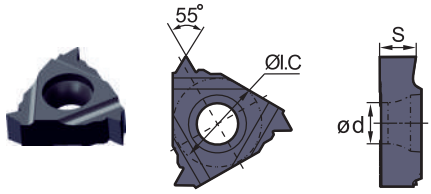
SWR	SNR
	
A443	A444

System code A412 | Grade selection A411 | Technical info A447 | Cutting data A446

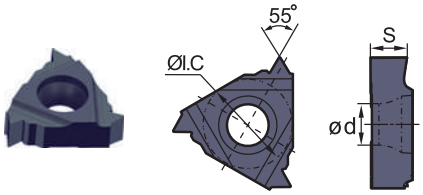
Threading inserts (thin type)

R/LT**N/W	I.C	S	d
16	9.525	3.52	4

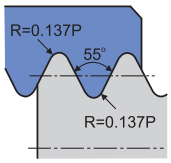
Whitworth (thin type)



External right hand
Internal left hand



Internal right hand
External left hand



ISO 965-1980 DIN 13
GB·T 197-2003 Tolerance: Medium Class A

ISO	Pitch (T.P.i)	External	HC[1] (PVD)		Internal	HC[1] (PVD)	
			YBG202	YBG205		YBG202	YBG205
16	8.00	**RT16.01W-8WB**	○		**RT16.01N-8WB**	○	
16	9.00	**RT16.01W-9WB**	●		**RT16.01N-9WB**	○	
16	10.00	**RT16.01W-10WB**	○		**RT16.01N-10WB**	●	
16	11.00	**RT16.01W-11WB**	●	○	**RT16.01N-11WB**	●	
16		-			**RT16.01N-11WPB***	●	●
16	12.00	**RT16.01W-12WB**	●		**RT16.01N-12WB**	●	
16	14.00	**RT16.01W-14WB**	●		**RT16.01N-14WB**	○	
16		-			**RT16.01N-14WPB***	●	●
16	16.00	**RT16.01W-16WB**	○		**RT16.01N-16WB**	○	○

● Ex stock ○ On demand
HC[1] Coated carbide
PB*: Inserts with chip-breakers

Tool holders

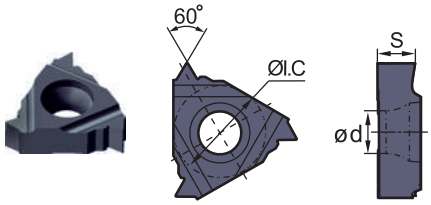
SWR	SNR
	
A443	A444

System code A412 Grade selection A411 Technical info A447 Cutting data A446

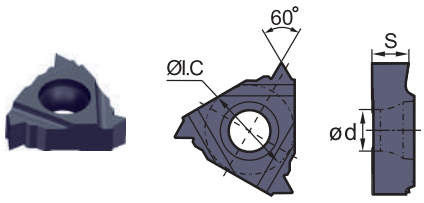
Threading inserts (thin type)

R/LT**N/W	I.C	S	d
16	9.525	3.52	4

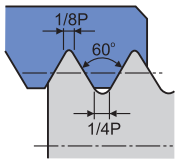
UN unified conventional thread 60° full profile (thin type)



External right hand
Internal left hand



Internal right hand
External left hand



ASME B1.1-1989
Tolerance: 2A/2B

ISO	Pitch (T.P.i)	External	HC[1] (PVD) YBG202	HC[1] (PVD) YBG205	Internal	HC[1] (PVD) YBG202	HC[1] (PVD) YBG205
16	8.00	**RT16.01W-8UNB**	●		**RT16.01N-8UNB**	●	
16	10.00	**RT16.01W-10UNB**	●		**RT16.01N-10UNB**	●	
16	12.00	**RT16.01W-12UNB**	●		**RT16.01N-12UNB**	●	
16	14.00	**RT16.01W-14UNB**	●		**RT16.01N-14UNB**	○	
16	16.00	**RT16.01W-16UNB**	●		**RT16.01N-16UNB**	●	
16	18.00	**RT16.01W-18UNB**	○		**RT16.01N-18UNB**	○	
16	20.00	**RT16.01W-20UNB**	●		**RT16.01N-20UNB**	●	
16	24.00	-			**RT16.01N-24UNB**	○	

● Ex stock ○ On demand

HC[1] Coated carbide

Tool holders

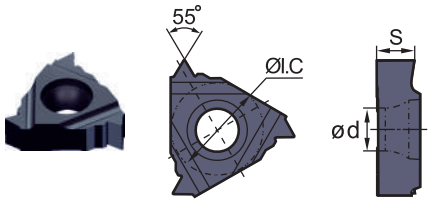
SWR	SNR
	
A443	A444

System code A412 | Grade selection A411 | Technical info A447 | Cutting data A446

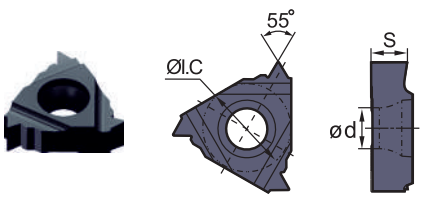
Threading inserts (thin type)

R/LT**N/W	I.C	S	d
16	9.525	3.52	4

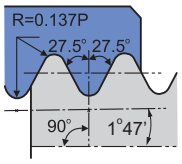
BSPT Whitworth taper pipe thread (thin type)



External right hand
Internal left hand



Internal right hand
External left hand



ASME B1.1-1989
Standard BSPT

ISO	Pitch (T.P.i)	External	HC[1] (PVD) YBG202	HC[1] (PVD) YBG205	Internal	HC[1] (PVD) YBG202	HC[1] (PVD) YBG205
16	11.00	**RT16.01W-11BSPTB**	●	○	**RT16.01N-11BSPTB**	○	○
16	14.00	**RT16.01W-14BSPTB**	●		**RT16.01N-14BSPTB**	○	
16		**RT16.01W-14BSPTPB***	●		**RT16.01N-14BSPTPB***	○	●
16	19.00	**RT16.01W-19BSPTB**	●		**RT16.01N-19BSPTB**	○	
16	28.00	**RT16.01W-28BSPTB**	○		**RT16.01N-28BSPTB**	○	

● Ex stock ○ On demand
PB*: Inserts with chip-breakers

HC[1] Coated carbide

Tool holders

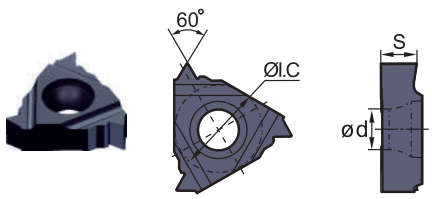
SWR	SNR
	
A443	A444

System code A412 | Grade selection A411 | Technical info A447 | Cutting data A446

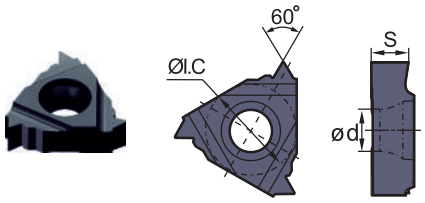
Threading inserts (thin type)

R/LT**N/W	I.C	S	d
16	9.525	3.52	4

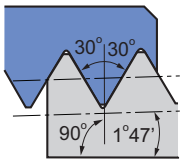
NPT American taper pipe thread (thin type)



External right hand
Internal left hand



Internal right hand
External left hand



ASME B1.20.1-1983
Standard NPT

ISO	Pitch (T.P.i)	External	HC[1] (PVD) YBG202	HC[1] (PVD) YBG205	Internal	HC[1] (PVD) YBG202	HC[1] (PVD) YBG205
16	8.00	**RT16.01W-8NPTB**	○		**RT16.01N-8NPTB**	○	
16	11.50	**RT16.01W-11.5NPTB**	○		**RT16.01N-11.5NPTB**	●	
16		-			**RT16.01N-11.5NPTPB***	○	●
16	14.00	**RT16.01W-14NPTB**	○	●	**RT16.01N-14NPTB**	○	
16		-			**RT16.01N-14NPTPB***	○	●
16	18.00	**RT16.01W-18NPTB**	●		**RT16.01N-18NPTB**	○	
16	27.00	**RT16.01W-27NPTB**	○		**RT16.01N-27NPTB**	○	

● Ex stock ○ On demand
PB*: Inserts with chip-breakers

HC[1] Coated carbide

Tool holders

SWR	SNR
	
A443	A444

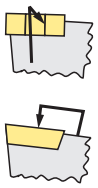
System code A412 | Grade selection A411 | Technical info A447 | Cutting data A446

Threading System code – tool holders

S	W	R	20	20	K	16	(B)
1	2	3	4	5	6	7	8

1 Clamping system

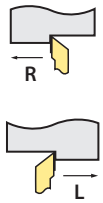
Code	Description
S	Screw clamping
C	Top clamping



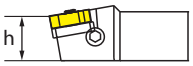
2 Application

Code	Description
W	External thread tool holder
N	Internal thread tool holder

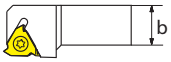
3 Cutting direction



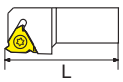
4 Shank height h [mm]



5 Shank width b [mm]



6 Shank length L [mm]



Code	L
H	100
K	125
M	150
P	170
Q	180
R	200
S	250
T	300

7 Insert size [mm]

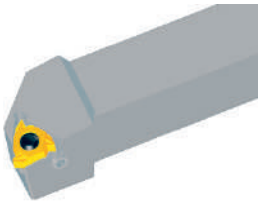
Code	Height
11	6,35
16	9,525
22	12,7

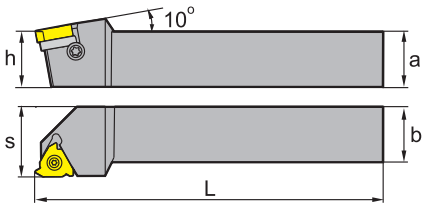
8

Holder for thin thread inserts (B type)

Threading tool holder (external)

SWR/L





Article	✻	Stock	Dimensions [mm]					Inserts
			a	b	L	h	s	
SWR1616H16		●	16	16	100	16	20	RT16.01W-****
SWR2020K16		●	20	20	125	20	25	RT16.01W-****
SWR2525M16		●	25	25	150	25	32	RT16.01W-****
SWR3225P16		●	32	25	170	32	32	RT16.01W-****
SWR3232P16		●	32	32	170	32	40	RT16.01W-****
SWR2525M22		●	25	25	150	25	32	RT22.01W-****
SWR3225P22		●	32	25	170	32	32	RT22.01W-****
SWR3232P22		●	32	32	170	32	40	RT22.01W-****
SWR4040S22		○	40	40	250	40	50	RT22.01W-****

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	RT16.01W-****	RT22.01W-****
	h	**16-32**	**25-40**
	Screw	I60M3.5×12 (2.7 Nm)	I60M5x17 (6.7 Nm)
	Screw (shim)	SM4x8C	SM5x8.5C
	Shim	MT16-__M	MT22-__M
	Wrench (screw)	WT15IP	WT20IP

Insert



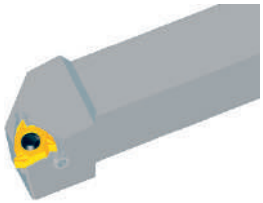
Medium Cut

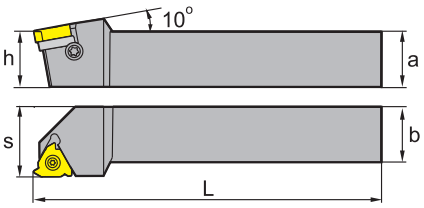
A413

System code A438 Grade selection A411 Technical info A447 Cutting data A446

Threading tool holder (external)

SWR/L





Article	✻	Stock	Dimensions [mm]					Inserts
			a	b	L	h	s	
SWL1616H16		●	16	16	100	16	20	LT16.01W-****
SWL2020K16		●	20	20	125	20	25	LT16.01W-****
SWL2525M16		●	25	25	150	25	32	LT16.01W-****
SWL3225P16		●	32	25	170	32	32	LT16.01W-****
SWL3232P16		○	32	32	170	32	40	LT16.01W-****
SWL2525M22		●	25	25	150	25	32	LT22.01W-****
SWL3225P22		○	32	25	170	32	32	LT22.01W-****
SWL3232P22		●	32	32	170	32	40	LT22.01W-****
SWL4040S22		○	40	40	250	40	50	LT22.01W-****

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	LT16.01W-****	LT22.01W-****
	h	**16-32**	**25-40**
	Screw	I60M3.5×12 (2.7 Nm)	I60M5x17 (6.7 Nm)
	Screw (shim)	SM4x8C	SM5x8.5C
	Shim	MT16-__M	MT22-__M
	Wrench (screw)	WT15IP	WT20IP

Insert



Medium Cut

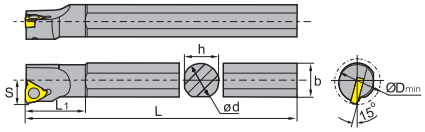
A413

System code A438 Grade selection A411 Technical info A447 Cutting data A446

Threading tool holder (internal)

SNR/L





Article	✲	Stock	Dimensions [mm]							Inserts
			ød	b	L	h	s	L_1	D_{min}	
SNR0016K11		●	16	16	125	15	10	20.9	12	RT11.01N-****
SNR0016M11		●	16	15.5	150	15	10.5	25.9	16	RT11.01N-****
SNR0016M16		●	16	15.5	150	15	12	27	20	RT16.01N-****
SNR0020M16		●	20	19	150	18	14	28.7	25	RT16.01N-****
SNR0020Q16		●	20	19	180	18	14	34	25	RT16.01N-****
SNR0025M16		●	25	24	150	23	17	28.8	32	RT16.01N-****
SNR0032R16		●	32	31	200	30	22	30.9	40	RT16.01N-****
SNR0032S16		●	32	31	250	30	22	30.9	40	RT16.01N-****
SNR0040T16		●	40	38.5	300	37	27	31.5	50	RT16.01N-****
SNR0050U16		○	50	49.5	350	49	35	40.2	63	RT16.01N-****
SNR0020Q22		●	20	21.5	180	18	15	35	25	RT22.01N-****
SNR0025R22		●	25	24	200	23	19	39	32	RT22.01N-****
SNR0032S22		●	32	31	250	30	22	36.4	40	RT22.01N-****
SNR0040T22		●	40	38.5	300	37	27	37.2	50	RT22.01N-****
SNR0050U22		●	50	48.5	350	47	35	42.6	63	RT22.01N-****

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	RT11.01N-****	RT16.01N-****	RT16.01N-****	RT22.01N-****	RT22.01N-****
	ød	**16**	**16**	**20-50**	**20**	**25-50**
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M3.5×8 (2.7 Nm)	I60M3.5×12 (2.7 Nm)	I60M5*10 (6.7 Nm)	I60M5x17 (6.7 Nm)
	Screw (shim)			SM4x8C		SM5x8.5C
	Shim			MT16-__M		MT22-__M
	Wrench (screw)	WT07IP	WT15IP	WT15IP	WT20IP	WT20IP

Insert

Medium Cut

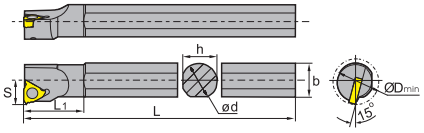
A413

System code A438 Grade selection A411 Technical info A447 Cutting data A446

Threading tool holder (internal)

SNR/L





Article	✻	Stock	Dimensions [mm]							Inserts
			ød	b	L	h	s	L_1	D_{min}	
SNL0016K11		●	16	16	125	15	10	20.9	12	LT11.01N-****
SNL0016M11		●	16	15.5	150	15	10.5	25.9	16	LT11.01N-****
SNL0016M16		●	16	15.5	150	15	12	27	20	LT16.01N-****
SNL0020M16		○	20	19	150	18	14	28.7	25	LT16.01N-****
SNL0020Q16		●	20	19	180	18	14	34	25	LT16.01N-****
SNL0025M16		●	25	24	150	23	17	28.8	32	LT16.01N-****
SNL0032R16		●	32	31	200	30	22	30.9	40	LT16.01N-****
SNL0032S16		○	32	31	250	30	22	30.9	40	LT16.01N-****
SNL0040T16		●	40	38.5	300	37	27	31.5	50	LT16.01N-****
SNL0050U16		○	50	49.5	350	49	35	40.2	63	LT16.01N-****
SNL0020Q22		●	20	21.5	180	18	15	35	25	LT22.01N-****
SNL0025R22		○	25	24	200	23	19	39	32	LT22.01N-****
SNL0032S22		●	32	31	250	30	22	36.4	40	LT22.01N-****
SNL0040T22		●	40	38.5	300	37	27	37.2	50	LT22.01N-****
SNL0050U22		●	50	48.5	350	47	35	42.6	63	LT22.01N-****

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	LT11.01N-****	LT16.01N-****	LT16.01N-****	LT22.01N-****	LT22.01N-****
	ød	**16**	**16**	**20-50**	**20**	**25-50**
	Screw	I60M2.5×6.5 (1.0 Nm)	I60M3.5×8 (2.7 Nm)	I60M3.5×12 (2.7 Nm)	I60M5*10 (6.7 Nm)	I60M5x17 (6.7 Nm)
	Screw (shim)			SM4x8C		SM5x8.5C
	Shim			MT16-__M		MT16-__M
	Wrench (screw)	WT07IP	WT15IP	WT15IP	WT20IP	WT20IP

Insert



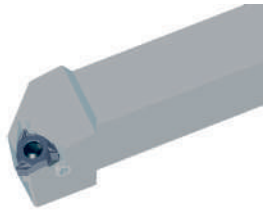
Medium Cut

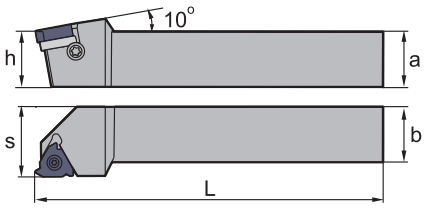
A413

System code A438 Grade selection A411 Technical info A447 Cutting data A446

Threading tool holder (external)

SWR-B Thin Type





Article	✲	Stock	Dimensions [mm]					Inserts
			a	b	L	h	s	
SWR1616H16B		●	16	16	100	16	20	RT16.01W-****B
SWR2020K16B		●	20	20	125	20	25	RT16.01W-****B
SWR2525M16B		●	25	25	150	25	32	RT16.01W-****B
SWR3225P16B		●	32	25	170	32	32	RT16.01W-****B
SWR3232P16B		●	32	32	170	32	40	RT16.01W-****B

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	**RT16.01W-****B**
	h	**16-32**
	Screw	I60M3.5x12TT (2.7 Nm)
	Screw (shim)	SM4x8C
	Shim	MT16-__M
	Wrench (screw)	WT15IP

Insert



Medium Cut

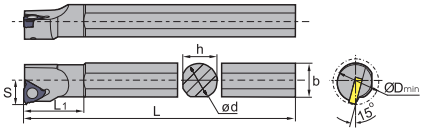
A432

System code A438 | Grade selection A411 | Technical info A447 | Cutting data A446

Threading tool holder (internal)

SNR-B Thin Type





Article	✻	Stock	Dimensions [mm]							Inserts
			ød	b	L	h	s	L_1	D_{min}	
SNR0016M16B		●	16	15.5	150	15	12	27	20	RT16.01W-****B
SNR0020Q16B		●	20	19	180	18	14	34	25	RT16.01W-****B
SNR0025M16B		●	25	24	150	23	17	28.8	32	RT16.01W-****B
SNR0032R16B		●	32	31	200	30	22	30.9	40	RT16.01W-****B
SNR0032S16B		●	32	31	250	30	22	30.9	40	RT16.01W-****B

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**RT16.01W-****B**	**RT16.01W-****B**
	ød	**16**	**20-32**
	Screw	I60M3.5x08TT (2.7 Nm)	I60M3.5x12TT (2.7 Nm)
	Screw (shim)		SM4x8C
	Shim		MT16-__M
	Wrench (screw)	WT15IP	WT15IP

System code A438 | Grade selection A411 | Technical info A447 | Cutting data A446

Notes

Threading inserts

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min] HC YBG202	YBG205		
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	190	190		
		approx. 0,45 % C	annealed	190	2	175	175		
		approx. 0,45 % C	tempered	250	3	145	145		
		approx. 0,75 % C	annealed	270	4	140	140		
		approx. 0,75 % C	tempered	300	5	135	135		
	Low-alloyed steel		annealed	180	6	170	170		
			tempered	275	7	125	125		
			tempered	300	8	115	115		
			tempered	350	9	105	105		
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	125	125		
			hardened and tempered	325	11	95	95		
M	Stainless steel	ferritic/martensitic	annealed	200	12	165	165		
		martensitic	tempered	240	13	135	135		
		austenitic	quench hardened	180	14	155	155		
		austenitic-ferritic		230	15	135	135		
K	Grey cast iron	perlitic/ferritic		180	16	240	240		
		perlitic (martensitic)		260	17	185	185		
	Cast iron with spheroidal graphite	ferritic		160	18	220	220		
		perlitic		250	19	165	165		
	Malleable cast iron	ferritic		130	20	175	175		
		perlitic		230	21	165	165		
N	Aluminium wrought alloys	cannot be hardened		60	22	800	800		
		hardenable	hardened	100	23	600	600		
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24	320	320		
		≤ 12 % Si, hardenable	hardened	90	25	240	240		
		> 12 % Si, cannot be hardened		130	26	160	160		
	Copper and copper alloys (bronze/ brass)	machining steel, PB> 1%		110	27	160	160		
		CuZn, CuSnZn		90	28	600	600		
		CuSn, Pb-free copper, electrolytic copper		100	29	200	200		
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30	95	95		
			hardened	280	31	50	50		
		Ni or Co bass	annealed	250	32	80	80		
			hardened	350	33	70	70		
			cast	320	34	70	70		
	Titanium alloys	pure titanium		R_m 400	35	145	145		
		α and β alloys	hardened	R_m 1050	36	50	50		
H	Hardened steel		hardened and tempered	55 HRC	37				
			hardened and tempered	60 HRC	38				
	Hard cast iron		cast	400	39				
	Hardened cast iron		hardened and tempered	55 HRC	40				
X	Non-metallic materials	Thermoplasts			41				
		Thermosetting plastics			42				
		Plastic, glass-fibre reinforced GFRP			43				
		Plastic, carbon fibre reinforced CFRP			44				
		Graphite			45				
		Wood			46				

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
For examples of material for cutting tool groups view page D22.

HC Coated carbide

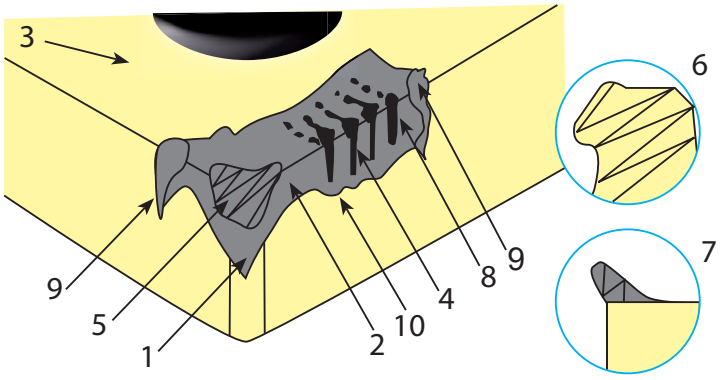
Technical information

Trouble shooting - turning **A448-A449**

Technical Information - turning **A450-A457**

Trouble shooting – general turning

Fig.	Type of wear	Effects	Reason	Countermeasure
1+2	Flank wear	– Bad surface quality and dimensional stability – Increase of cutting force	– Grade not wear-resistant enough – Cutting speed too high – Clearance angle too small – Feed rate too low	– Grade with higher wear-resistance – Reduce cutting speed – Increase clearance angle – Reduce feed rate
3	Crater wear	– Bad surface quality and chip control	– Grade not wear-resistant enough – Cutting speed too high – Feed rate too low	– Grade with higher wear-resistance – Reduce cutting speed – Reduce feed rate
4	Chipping	– Unstable tool life – Sudden breakage of cutting edge	– Grade too hard – Feed rate too high – Cutting edge not stable enough – Stability of the holder or tension insufficient	– Grade with higher toughness – Reduce feed rate – Change honing of cutting edge – Use a more stable tool holder
5	Breakage	– Increase of cutting force – Bad surface quality and dimensional stability	– Grade too hard – Feed rate too high – Cutting edge not stable enough – Stability of the holder or tension insufficient	– Grade with higher toughness – Reduce feed rate – Change honing of cutting edge – Use a more stable tool holder
6	Plastic deformation	– Bad dimensional stability – Damage to cutting edge	– Grade not wear-resistant enough – Cutting speed too high – Cutting depth and/or feed rate too high – Temperature on the cutting edge too high	– Grade with higher toughness – Reduce cutting speed – Reduce cutting depth and feed rate – Grade with higher heat-resistance
7	Welding	– Increase of cutting force – Bad surface quality	– Cutting speed too low – Cutting edge not sharp enough – Grade not suitable	– Increase cutting speed – Increase rake angle – Use a more suitable grade
8	Thermal cracks	– Breakage due to thermal interaction, often caused when cutting is interrupted (milling)	– Temperature fluctuation when machining – Grade too hard	– Dry machining – Grade with higher toughness
9	Notch wear	– Burr formation – Increase of cutting force	– Damage through chips (jagged edges) – Feed rate and cutting speed too high	– Grade with higher wear-resistance – Increase rake angle to get a sharper cutting edge – Reduce cutting speed
10	Flaking (coating)	– Often appears when machining hardened materials or caused by vibration	– Cutting edge adhesion and chipping – Bad chip removal	– Increase rake angle to get a sharper cutting edge – Chip breaker with bigger chip space

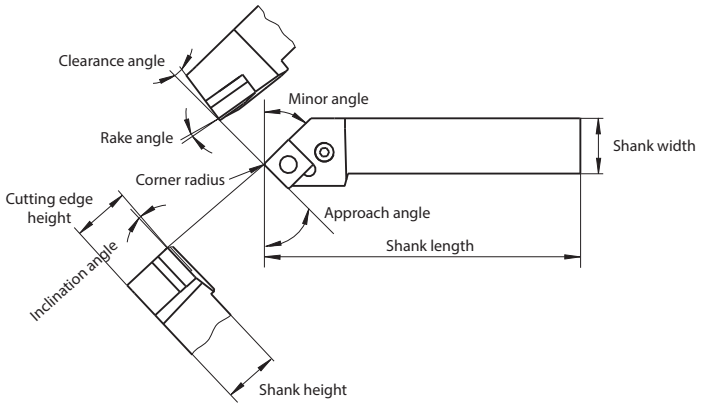


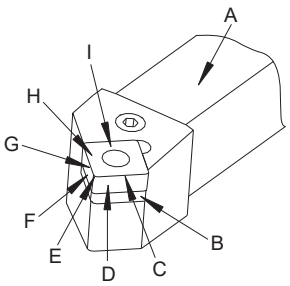
Trouble shooting – threading

Problème	Cause	Solution
Big flank wear	– Cutting speed too high	– Reduce cutting speed
	– Width of cut too small	– Reduce number of width of cut
	– Insert over/under centre line	– Adjust insert height
Asymmetric wear on left and right cutting edge	– Width of cut not optimal	– Adjust width of cut
	– Inclination angle and lead angle are not optimally aligned	– Change the shim to get the correct angle
Breakage	– Cutting speed too low	– Increase cutting speed
	– Cutting force too high	– Increase number of width of cut – Reduce width of cut
	– Unstable conditions	– Improve clamping and overhang to avoid vibrations
	– Bad chip control	– Increase coolant pressure for better chip removal
Déformation plastique	– Cutting speed and temperature too high	– Reduce cutting speed – Increase number of width of cut – Reduce width of cut
	– Insufficient coolant supply	– Improve coolant supply
Mauvais état de surface du filet	– Cutting speed too low	– Increase cutting speed
	– Insert over/under centre line	– Adjust insert height
	– Bad chip control	– Change feed rate and/or width of cut
Profil de filet incorrect	– Wrong insert height	– Change insert height
	– Tool holder doesn't form a 90° angle	– Adjust tool holder
	– Pitch error in machine	– Adjust machine
Profil de filetage de profondeur insuffisante	– Wrong insert height	– Change insert height
	– Breakage of cutting edge	– Change insert
	– Excessive wear	– Change insert
Formation d'arêtes rapportées	– Temperature on cutting edge is too low	– Increase cutting speed
	– Often occurs when machining of carbon steel and stainless steel	– Use grade with sufficient toughness (PVD coated)
Vibrations	– Wrong cutting data	– Increase or highly decrease cutting speed
	– Wrong insert height	– Change insert height
	– Insufficient clamping	– Improve clamping system and minimise overhang

Turning tools

Cutting tool geometry





A Holder
B Shim
C Main cutting edge
D Flank face
E Nose radius
G Minor cutting edge
H Rake face
I Insert

Rake angle

The rake angle is a cutting edge angle that has large effects on cutting resistance, chip disposal, cutting temperature and tool life. Increasing the rake angle in positive direction improves the sharpness of the cutting edge and the cutting force decreases but at the same time it lowers the strength. To increase the cutting resistance the rake angle must be increased in negative direction.

Rake angle	Applications
Small	Machining of fragile and hard materials, roughing and interrupted cut
Large	Machining of plastic materials and soft materials, precision machining

Clearance angle

The flank angle prevents friction between the flank face and work piece resulting in smooth feed. Increasing the flank angle decreases the cutting force and the surface roughness becomes better but on the other hand this lowers the cutting edge strength and decreases the flank wear occurrence.

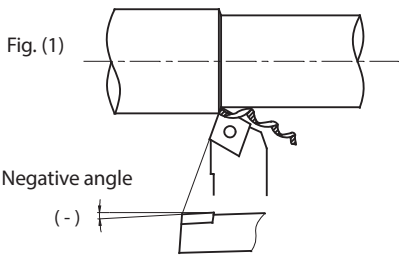
Clearance angle	Applications
Small	Machining of hard and demure materials, for roughing operation with stable cutting edge
Large	Precision machining with low cutting force, work pieces suffer from work hardening easily

Inclination angle

The positive and negative edge inclination angle determines the discharging direction of chips. In heavy cutting, the cutting edge receives extremely large shocks at the beginning of cutting. Cutting edge inclination keeps the cutting edge from receiving this shock and prevents fracturing. On the other hand the back force increases and occurs vibration. For a finishing operation a positive angle is more suitable.

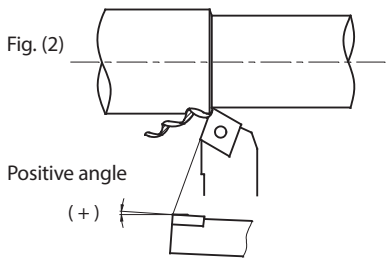
When the edge inclination angle is negative, i.e. the cutting edge is located at the lowest point relative to the bottom plane of the tool holder, the chips flow to the machined surface of workpiece.

Fig. (1)



As shown in Fig. (2), when the edge inclination angle is positive, i.e. the cutting edge is located at the highest point relative to the bottom plane of the tool holder, the chips flow to the un-machined surface of workpiece.

Fig. (2)

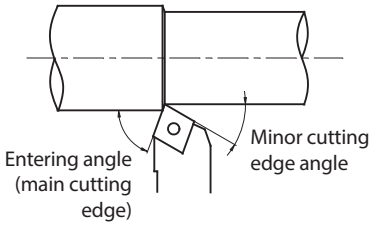


Turning tools

Entering angle (main cutting edge)

Reducing the lead angle increases the strength of the cutting edge. Because the lead angle is small, the cutting width is long, the force on the unit cutting edge length is small. At the same time, reducing the lead angle can increase the tool life. Normally, when turning thin long shaft and ladder shaft, the lead angle adapts 90°. The lead angle is increased, radial force is reduced, cutting is stable, cutting thickness is increased and chip breaking performance is good.

Entering angle	Applications
Small	For material with high tensile strength, high hardness or hardened layer on surface
Large	For machining with low rigidity



Minor cutting edge

The minor cutting edge angle is the main angle on influence surface roughness; its size is also influence strength of cutter. When the minor cutting edge angle is too small, the cutting force increases and results in chattering and vibration.
The selection principle for the minor cutting edge angle is under the condition of rough machining, or un-influencing friction and producing vibration, the smaller angle should be chosen; the bigger angle can be used for precision machining.

Nose radius

The nose radius effects the cutting edge strength and the finished surface. By increasing the nose radius the surface finish becomes better and the cutting edge strength improves. Flank and rake wear decreases. If the radius becomes too big, the cutting force increases and causes vibration which effects the chip control negative.

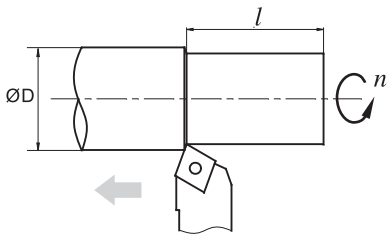
Radius	Applications
Small	Finishing with small cutting depth, machining thin long shaft, rigidity of machine is insufficient
Large	Rough machining, high cutting edge strength is required, rigidity of machine is good, machining hardened materials and interrupted cut

Technical information

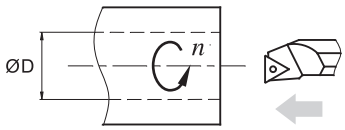
Turning tools

Cutting speed V_c

$$V_C = \frac{\pi \times D \times n}{1000} \text{ [m/min]}$$



External machining



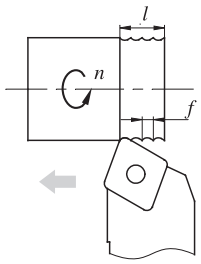
Internal machining

Vc: Cutting speed [m/min]
n: Revolution [1/min]
f: Feed rate [mm]

Example: n = 250 1/min, f = 0,2 mm, l = 150 mm
Result: [insert values in formula Vc]

Feed rate F

$$f = \frac{l}{n} \text{ [mm/rev]}$$



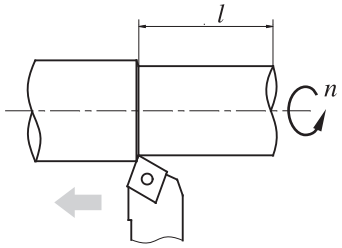
f: Feed rate [mm]
l: Cutting length [mm/min]
n: Revolution [1/min]

Example: n = 500 1/min, l = 100 mm/min
Result: [insert values in formula f]

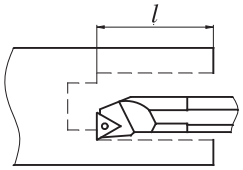
$$f = \frac{l}{n} = \frac{100}{500} = 0{,}2 \text{ mm}$$

Cutting time T_c

$$T_C = \frac{l}{f \times n} \text{ [min]}$$



External machining



Internal machining

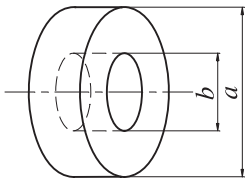
T_c: Cutting time [min]
l: Cutting length [mm/min]
f: Feed rate [mm]
n: Revolution [1/min]

Example: n = 250 1/min, f = 0,2 mm, l = 150 mm
Result: [insert values in formula T_c]

Turning tools

Cutting time T_c for face milling

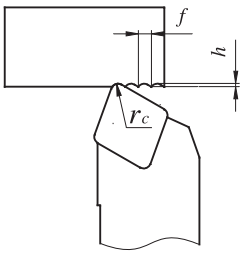
$$T_C = \frac{\pi \times (a^2 - b^2)}{4000 \times V_c \times f} \text{ [min]}$$



T_C: Cutting time [min]
V_C: Cutting speed [m/min]
f: Feed rate [mm]

Theoretical surface roughness R

$$R = \frac{f^2}{8r_c} \times 1000 \text{ [µm]}$$



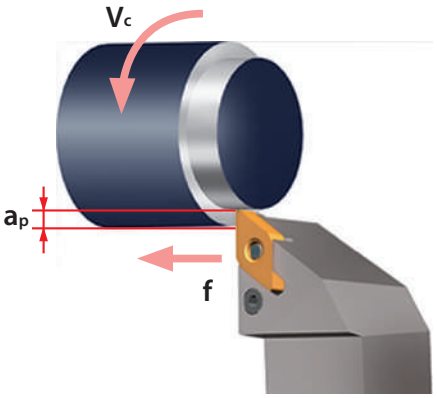
R: Surface roughness [µm]
f: Feed rate [mm]
r_C: Radius of insert [mm]

Example: f = 0,2 mm,
r_C = 0,4 mm

Turning tools

Three effects of cutting condition for turning

Today short machining time, long tool life and high machining accuracy is expected from modern tools. Based on the machine performance, material shape and hardness of the components the right choice of tool and cutting conditions are the premise for a successful machining process. Cutting speed, feed rate and depth of cut are what we call the "Three effects of cutting".



1. Cutting speed (V_c)

Cutting speed is defined as the rate (or speed) that the material moves past the cutting edge of the tool. The unit for V_c is meter per minute [m/min].

Cutting speed influence: Cutting speed is one of the three important effects of turning and has influence on tool life. Increasing the cutting speed also increases the cutting temperature and that decreases the tool life. Depending on the hardness and type of material the cutting speed varies. Therefore to choose a suitable grade for the cutting speed is necessary.
In general situation, when cutting speed is increased by 20 % the tool life will be reduced ½; when the cutting speed is increased by 50 % the tool life decreases ⅕. Lower cutting speed results in vibration which will shorten tool life.

2. Feed rate (f)

In turning application feed rate is the distance the tool holder moves per work piece revolution. That has influence to the surface quality. The unit for feed rate is millimetre per revolution [mm/rev]

Feed rate influence: Decreasing the feed rate will increase flank wear and tool life will be shortened. Increasing the feed rate increases the cutting temperature and also flank wear. On the other hand the efficiency will be improved.

3. Depth of cut (a_p)

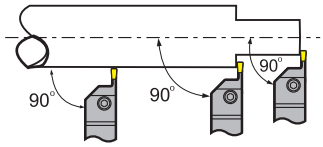
The depth of cut refers to the half different value between the diameter of the unmachined and machined work piece. The unit is millimetre [mm].

Depth of cut influence: Changing depth of cut has no big influence to the tool life. Machining hardened layer with small depth of cut results in friction and short tool life. Machining uncut surface or cast iron material, choose maximum depth of cut according to the machine power so that the cutting edge and corner radius is out of the hardened layer. That helps to prevent chipping and abnormal wear.

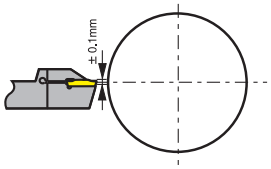
Parting & grooving

Adjusting the cutting edge height

– Mount the tool holder in a 90° angle to the central axis of the workpiece. This improves the surface quality and decreases the risk of vibrations.



– Height tolerance between the cutting edge of the insert and the centre of the work piece should be kept ± 0.1 mm, especially for parting of rods and grooving of materials with a small diameter. This extends the tool life and reduces the cutting forces as well as the formation of burrs.

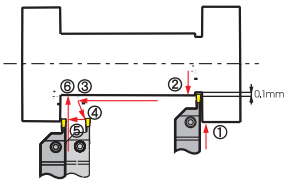


Parting off

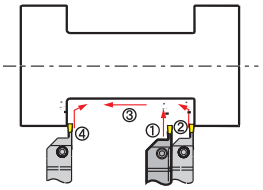
– When the cutting edge nears the central axis of the work piece, reducing the feed rate by 30 % can extend the tool life of the insert.
– Pick a tool holder with the smallest possible overhang to avoid vibrations and tool deflection.

Longitudinal turning and profile turning

– Machining sequence 0.5 mm:
1. Bring radial feed rate to required cutting depth (ap max. 0.75 × cutting edge width)
2. Radial relocating by 0.1 mm
3. Longitudinal turning to opposite shoulder
4. Diagonal relocating by 0.5 mm outward axial feed rate to the starting point
5. Radial feed rate to required cutting depth, etc.

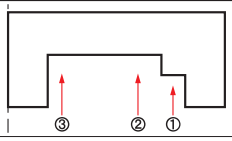


– When machining the chamfer or the base of the slot follow the steps as shown in figure. This reduces tool deflection and avoids cutting edge chipping.

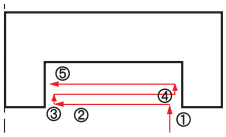


Surface grooving and turning

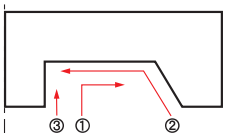
– Roughing:
Processing from largest diameter to the axis. When returning it's recommended to bend the tool slightly.



– Flute turning:
Depth of axial turning less than 0.75 × S (width of insert). When the pocket width is bigger than the depth follow the working steps as shown. When the pocket depth is bigger than the width, we recommend to go to the required diameter step by step.

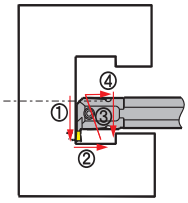


– Finishing:
When finishing begin with the outer diameter and the bottom. Then go on with the inner diameter to the required size.



Internal machining

– Procedure according to figure. For better chip removal in blind holes machine from the inside out.



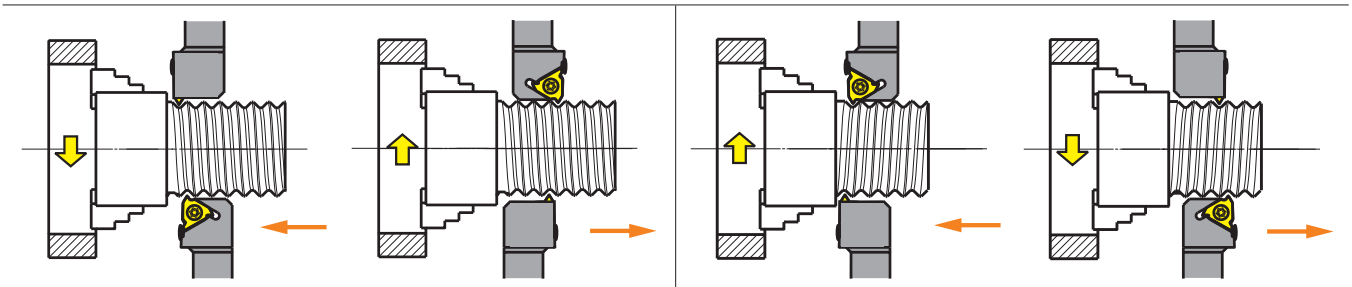
Threading

Steps for best results when thread-cutting

1. Choice of threading method
2. Choice of angle and shim
3. Choice of tool holder and inserts
4. Choice of cutting data
5. Choice of cutting direction

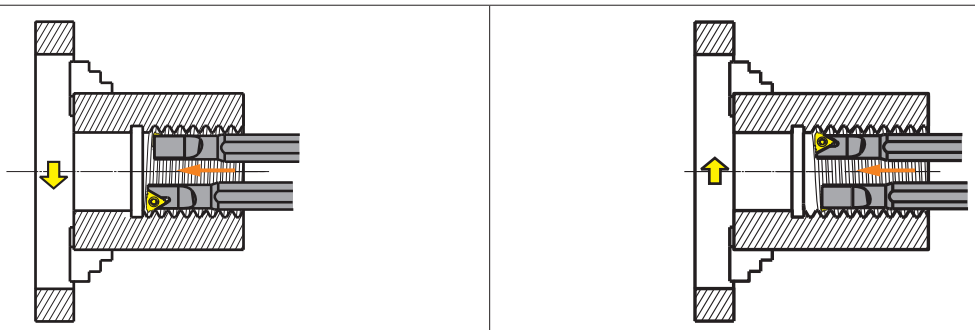
Thread turning method

External machining



Right hand type | Left hand type

Internal machining



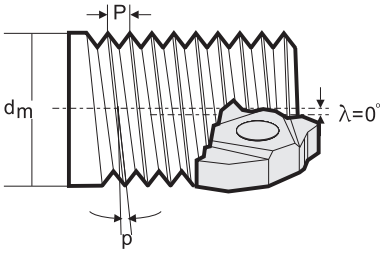
Right hand type | Left hand type

Choice of angle and shim

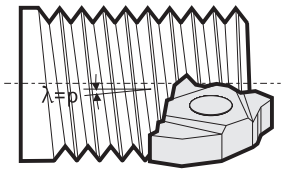
Choice of angle

The flank clearance angles of the thread profile depend on the helical angle of the thread. The helical angle of the thread must coincide with the insert's angle of inclination angle as far as possible to get the ideal profile, to avoid longer unfavourable wear on one of the flanks and thus to ensure tool life.

$$\lambda = \arctan \frac{p}{d_2 \times \pi}$$



Helix angle (p)



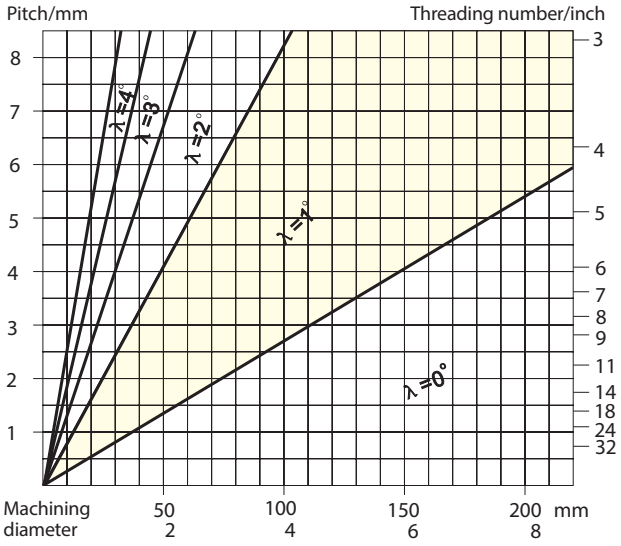
Pitch angle (λ)

p Pitch
d_2 Flank diameter
λ Pitch angle

Choice of shim

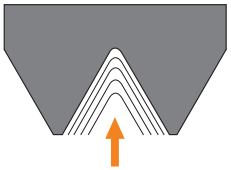
Pitch range	Dimension	Pitch angle	Shim
0,5–0,3	16	0	MT16-00M
		1	MT16-01M
		2	MT16-02M
		3	MT16-03M
3,5–6,0	22	0	MT22-00M
		1	MT22-01M
		2	MT22-02M
		3	MT22-03M

The shim λ = 1° is delivered with the tool holder.



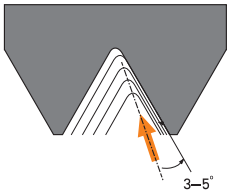
Infeed way of threading

The number of passes and widths of cut are the key points of threading operation. Please choose the cutting parameters with the recommended form according to experience data. In case of breakages or too much wear please have a look at page A447 (trouble shooting).



Radial width of cut

Radial width of cut requires low cutting depth, sharp cutting edge and tough grade. It is recommended when the pitch is smaller than 2 mm, not ideal for material with long chips.



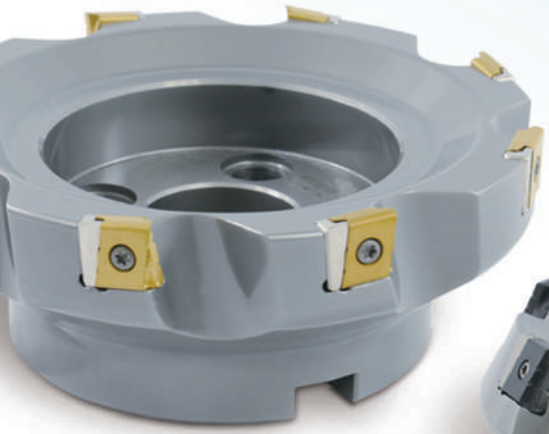
Modified flank width of cut

Infeed at an angle of 3–5° to the flank of the teeth. It is easy for chips flow. Suitable for long chip material and internal threading.

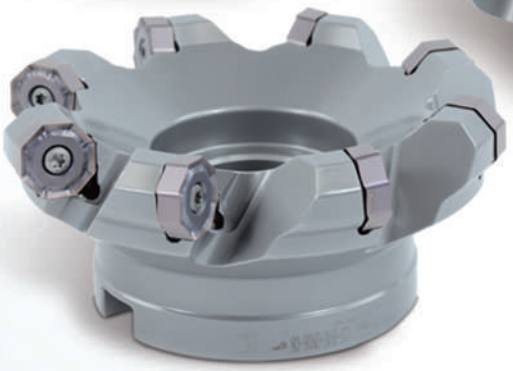


Alternating width of cut

Alternating width of cut is mainly used for large pitches and long chip materials. To get equal insert wear on both edges.



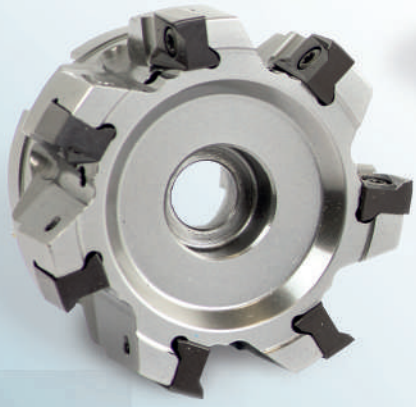




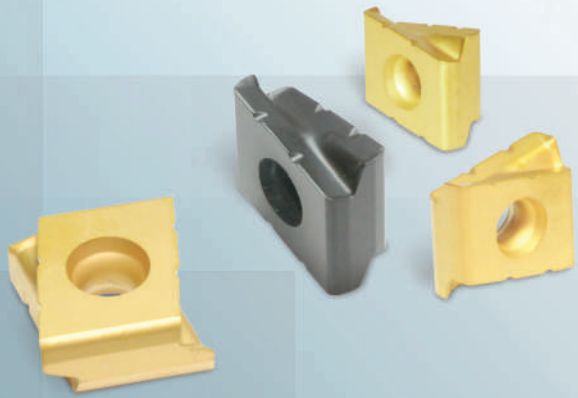












Indexable milling

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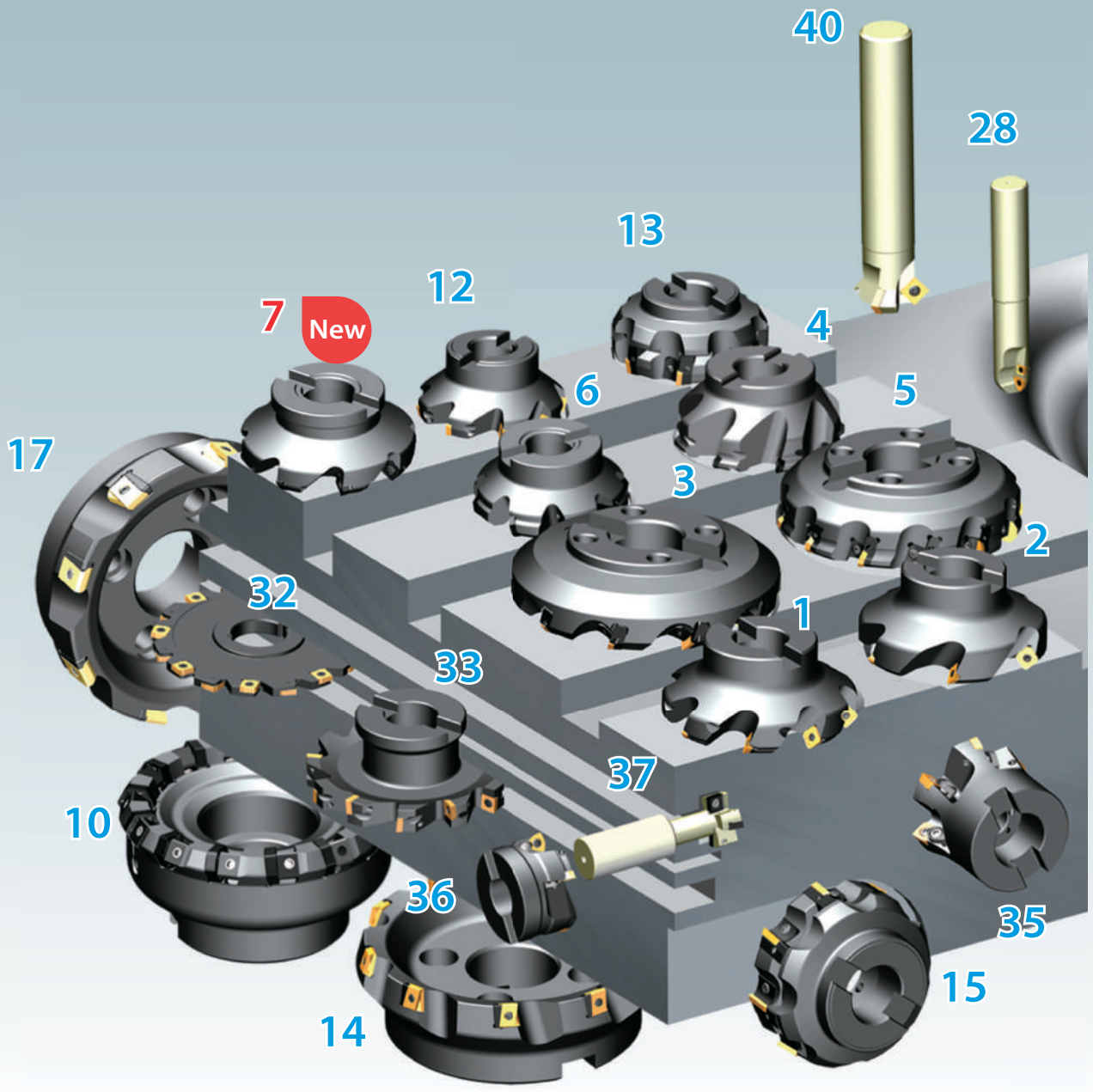
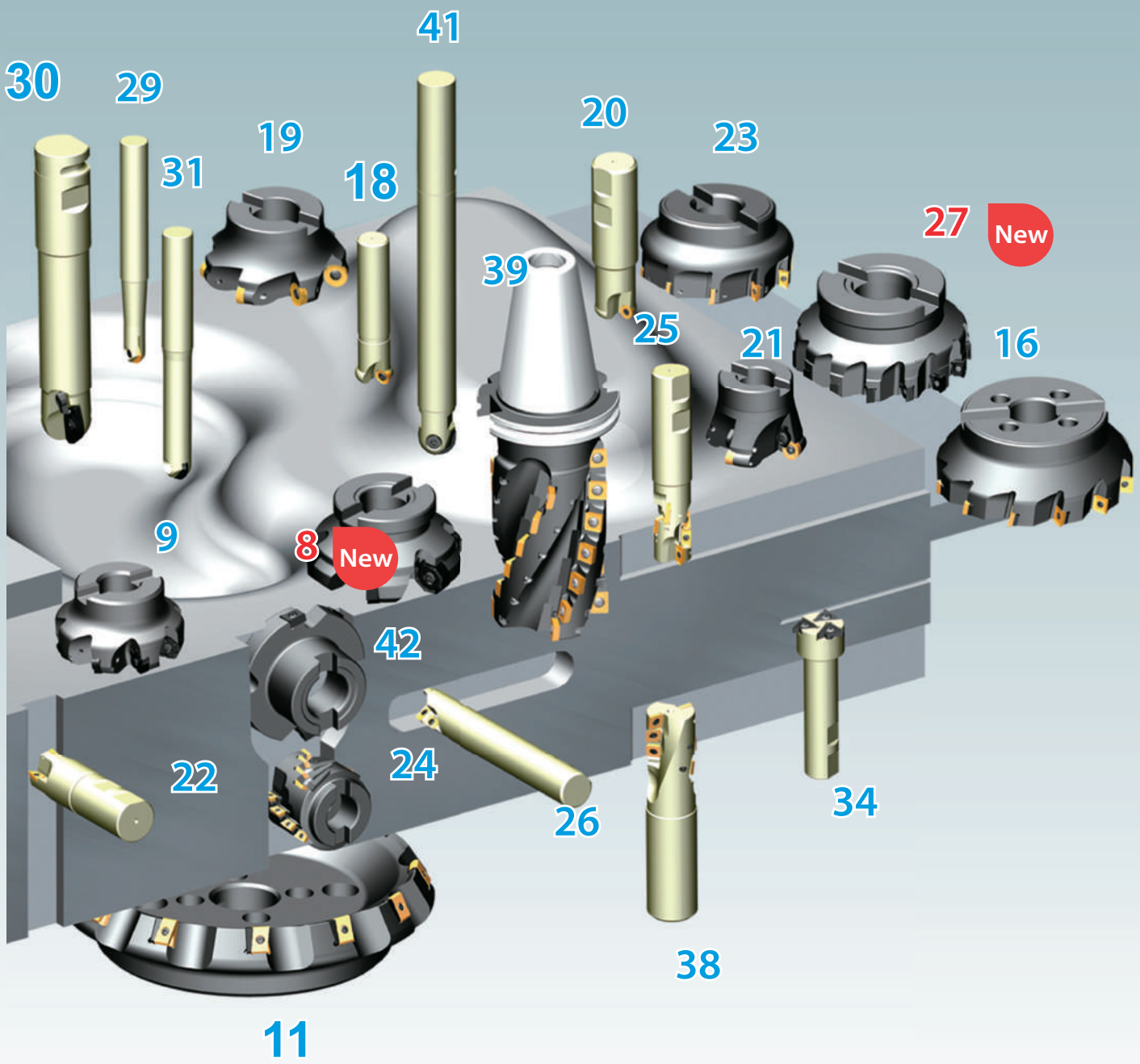
B

Indexable inserts milling tool program



No.	Tool category	Page	No.	Tool category	Page	No.	Tool category	Page
1	FMA01	B31	9	FMD02 (PN11)	B60	17	FMP03	B82
2	FMA02	B34	10	FMD02 (HN09)	B66	-	FMP12	B86
3	FMA03	B37	11	FMD03	B68	18	FMR01	B90
4	FMA04 (OFKT05**)	B40	12	FME02	B70	19	FMR02	B93
5	FMA04 (OFKR07**)	B40	13	FME03	B72	20	FMR03	B96
6	FMA07	B46	14	FME04	B75	21	FMR04	B100
7	FMA11	B52	15	FMP01	B77	22	EMP01	B104
8	FMA12	B56	16	FMP02	B79	23	EMP02	B110



No.	Tool category	Page	No.	Tool category	Page	No.	Tool category	Page
24	EMP03	B113	31	BMR04	B149	39	HMP01-EC	B182
25	EMP04	B115	32	SMP01	B153	40	CM*01	B184
26	EMP05	B117	33	SMP03	B157	41	QCH	B198
-	EMP09	B120	34	SMP05	B161	42	XMP01	B174
27	EMP13	B126	35	XMR01 (SDMT**)	B166			
28	BMR01	B136	36	XMR01 (WPGT**)	B170			
29	BMR02	B139	37	TMP01	B176			
30	BMR03	B141	38	HMP01	B178			

Milling inserts

								
ANGX-GM	**ANGX-LH**	**APKT-ALH**	**APKT-APF**	**APKT-APM**	**APKT-KM**	**APKT-LH**	**APKT-PF**	
11 15	11 15	11 16	11 16	07 11 16	15	11 16	11 16	Edge length
B127, B129, B131, B133, B135	B127, B129, B131, B133, B135	B105, B108, B111, B114, B116, B205	B105, B108, B111, B114, B116, B205	B105, B108, B111, B114, B116, B205	B179, B181, B183	B105, B108, B111, B114, B116, B205	B105, B108, B111, B114, B116, B205	Page

								
APKT-PM	**APKT-PR**	**APMT**	**CNE-A/B**	**HNEX-DM**	**HNEX-DR**	**HNGX-HDR**	**HNGX-MR**	
11 15 16	11	11 16	12	09	09	09	09	Edge length
B105, B108, B111, B114, B116, B205	B105, B108, B111, B114, B116, B205	B118	B175	B67	B67	B212	B212	Page

								
LNCX	**LNE32.534**	**LNKT-GM**	**LNKT-ZR**	**MPHT-DM**	**OFKR-DF**	**OFKR-DM**	**OFKT-DF**	
18		08 12 16	12 15 20 25	06 08 12	07	07	05	Edge length
B214	B213	B121, B123	B69, B76, B83	B158, B160, B177	B43	B43	B41	Page

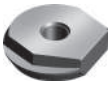
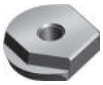
								
OFKT-DM	**OFKT-LH**	**ONHU-GM**	**ONHU-PF**	**ONHU-PM**	**PNEG-CF**	**PNEG-CM**	**PNEG-CR**	
05	05	08	06 08	06 08	11	11	11	Edge length
B41	B41	B57	B47, B49	B47, B49	B61, B64	B61, B64	B61, B64	Page

								
PNEG-PF	**PNEG-PM**	**PNEG-PR**	**RCKT-DM**	**RCKT-DR**	**RCKT-ER**	**RCKT-NM**	**RDKW**	
11	11	11	10 12 16 20	12 16 20	12 16 20	12 16 20	07 08 10 12 16 20	Edge length
B62, B64	B62, B64	B62, B64	B91, B95	B91, B95	B91, B95	B91, B95	B99, B103, B207, B209	Page

ROHX	**SDMT**	**SDMT-DM**	**SDMT-PM**	**SEEN**	**SEET-APF**	**SEET-APM**	**SEET-APR**	
12 16 20	09	06 09 12 15	06 09 12 15	12	09 12	09 12	09 12	Edge length
B140	B138	B167, B169, B201	B167, B169, B201	B38	B80	B80	B80	Page

SEET-CF	**SEET-CM**	**SEET-CR**	**SEET-DF**	**SEET-DM**	**SEET-DR**	**SEET-EF**	**SEET-EM**	
12	12	12	12	12 18	12	12	12	Edge length
B32, B35	B32, B35	B32, B35	B32, B35	B32, B35	B32, B35	B32, B35	B32, B35	Page

Milling inserts

								
SEET-LH	**SEET-PF**	**SEET-PM**	**SEET-PR**	**SEET-W**	**SEKN**	**SEKR**	**SNEG-E**	
12	09 12	09 12	09 12	12	12 15	12	15	Edge length
B80	B80	B80	B80	B33, B36	B39	B39	B53	Page
								
SNEG-GM	**SNEG-GR**	**SNEG-W**	**SNKN**	**SPCN**	**SPGN**	**SPKN**	**SPKR**	
12 15	12 15 19	12	12 15	12 15	12	12 15	12	Edge length
B53	B53	B54	B215	B216	B219	B73	B74	Page
								
SPKR-GM	**SPKT**	**SPKW**	**SPMR**	**SPMT**	**SPMT-HT**	**SPMT-KM**	**SPMT-KT**	
12 15	12	12	09 12	06 09 12	09 12	12	06	Edge length
B74	B71	B71	B217	B138, B185, B187, B189, B191, B193, B195	B218	B179, B181, B183	B138, B218	Page
								
SPMT-PM	**SPUN**	**TPCN**	**TPKN**	**TPMR**	**TPUN**	**WNHU-GM**	**WPGT**	
12	12 15	22	16 22	09 11 16 22	11 16 22	06 08	05 06 08 09	Edge length
B179, B181, B183	B219	B220	B78, B221	B222	B222	B87, B89	B171, B173, B203	Page
								
WPGT-PM	**XSEQ**	**XPHT-GM**	**ZDET**	**ZDET-PM**	**ZOHX-GF**	**ZOHX-GM**	**ZPNT**	
05 06 08 09	12	16 20 25 30 32 40 50	08 11 13	13	12 16 20 25 30 32	12 16 20 25 30 32	22	Edge length
B171, B173, B203	B154, B156	B142, B144, B146, B148, B199	B137	B137	B150, B152, B211	B150, B152, B211	B137	Page

Face milling

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
FMA01		 SEET12T3 SEET18T6	45°	✔	✔	✔	✔	✔		• Diameter range Ø50 – 315 mm • For steel, stainless steel, cast iron, non-ferrous metals and heatresistant alloys • Milling cutter with positive, soft cutting geometry • Wiper inserts for good surface quality	B31
FMA02		 SEET12T3	45°	✔	✔	✔	✔	✔		• Diameter range Ø50 – 125 mm • For steel, stainless steel, cast iron, non-ferrous metals and heatresistant alloys • Milling cutter with positive, soft cutting geometry • Wide pitch	B34
FMA03		 SEEN1203 SEKN1203 SEKR1203 SEKN1504 SEKR1504	45°	✔	✔	✔	✔			• Diameter range Ø80 – 315 mm • For steel, stainless steel and cast iron • Milling cutter with positive, soft cutting geometry • Wedge clamping	B37
FMA04		 OFKT05T3	45°	✔	✔	✔	✔			• Diameter range Ø50 – 160 mm • For steel, stainless steel, cast iron and non-ferrous metals • Inserts with eight cutting edges • Screw clamping	B40
FMA04		 OFKR0704	45°	✔	✔	✔	✔			• Diameter range Ø125 – 315 mm • For steel, stainless steel, cast iron and non-ferrous metals • Inserts with eight cutting edges • Wedge clamping	B42
FMA07		 ONHU0604 ONHU08T5	45°	✔		✔			✔	• Diameter range Ø25 – 50 mm • For steel and cast iron • Inserts with 16 cutting edges	B46

✔ Very suitable ✔ Suitable

Face milling

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
FMA07		 ONHU0604 ONHU08T5	45°	✔		✔			✔	• Diameter range Ø40 – 315 mm • For steel and cast iron • Inserts with 16 cutting edges	B48
FMA11		 SNEG1205 SNEG1506 SNEG1907	45°	✔	✔	✔		✔		• Diameter range Ø63 – 315 mm • For steel, stainless steel and cast iron • Inserts with eight cutting edges • Double sided, thicker inserts for high stability and deeper cutting depths • Wiper geometry for good surface quality • Normal and fine pitch	B52
FMA12		 ONHU08T6	45°	✔	✔	✔		✔		• Diameter range Ø63 – 315 mm • For steel, stainless steel and cast iron • Inserts with 16 cutting edges	B56
FMD02		 PNEG1105	67°	✔	✔	✔				• Diameter range Ø50 – 315 mm • For steel, stainless steel and cast iron • Inserts with ten cutting edges • Wedge clamping or screw clamping • Normal and fine pitch	B60 B63
FMD02		 HNEX0905	55°			✔				• Diameter range Ø80 – 315 mm • For cast iron • Wedge clamping • Inserts with twelve cutting edges	B66
FMD03		 LNKT2007-ZR LNKT2510-ZR	60°	✔		✔				• Diameter range Ø100 – 400 mm • For steel, stainless steel and cast iron • Tangential insert with four cutting edges • Heavy duty machining for high cutting depths• Screw clamping	B68

✔ Very suitable ✔ Suitable

Face milling

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
FME02		 SPKT1204 SPKW1204	75°	✔	✔	✔				• Diameter range Ø50 – 125 mm • For steel and cast iron • Screw clamping	B70
FME03		 SPKN1203 SPKR1203 SPEX1203 SPKN1504 SPKR1504 SPEX1504	75°	✔	✔	✔				• Diameter range Ø80 – 400 mm • For steel and cast iron • Wedge clamping	B72
FME04		 LNKT1506-ZR	75°	✔		✔				• Diameter range Ø125 – 315 mm • For steel, stainless steel and cast iron • Tangential insert with four cutting edges • Heavy duty machining for high cutting depths • Screw clamping	B75
FMP01		 TPKN2204	90°	✔	✔	✔		✔		• Diameter range Ø80 – 315 mm • For steel, stainless steel and cast iron • Milling cutter with positive, soft cutting geometry • Wedge clamping	B77
FMP02		 SEET09T3 SEET1203	90°	✔	✔	✔	✔	✔		• Diameter range Ø50 – 315 mm • For steel, stainless steel, cast iron an non-ferrous metals • Screw clamping	B79
FMP03		 LNKT120608-ZR LNKT1506EN-ZR LNKT2007DN-ZR LNKT2510-ZR	89°	✔		✔				• Diameter range Ø50 – 315 mm • For steel, stainless steel and cast iron • Tangential insert with four cutting edges • Heavy duty machining for high cutting depths • Screw clamping	B82

✔ Very suitable ✔ Suitable

Face milling

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
FMP12		 WNHU0604 WNHU0806	90°	✔		✔				• Diameter range Ø50 – 315 mm • For steel, stainless steel and cast iron • Tangential insert with four cutting edges • Heavy duty machining for high cutting depths • Screw clamping	B86
FMP12		 WNHU0604	90°	✔		✔				• Diameter range Ø50 – 315 mm • For steel, stainless steel and cast iron • Tangential insert with four cutting edges • Heavy duty machining for high cutting depths • Screw clamping	B88
FMR01		 RCKT10T3 RCKT1204 RCGX1204		✔	✔	✔	✔	✔		• Diameter range Ø25 – 63 mm • For steel, stainless steel, cast iron, non-ferrous metals and heatresistant alloys • Screw clamping	B90
FMR02		 RCGX1204 RCKT1204 RCMW1204 RCKT1606 RCKT2006		✔	✔	✔	✔	✔		• Diameter range Ø50 – 250 mm • For steel, stainless steel, cast iron, non-ferrous metals and heatresistant alloys • Screw clamping	B93
FMR03		 RDKW0803 RDKW10T3 RDKW1204		✔	✔	✔			✔	• Diameter range Ø15 – 50 mm • For steel, stainless steel and cast iron • Screw clamping • Mould and die industry	B96
FMR03		 RDKW0702 RDKW1003		✔	✔	✔			✔	• Diameter range Ø15 – 50 mm • For steel, stainless steel and cast iron • Screw clamping • Mould and die industry	B98

✔ Very suitable ✔ Suitable

Face milling

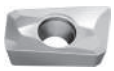
Series	Milling body	Inserts	Kr	Application P	M	K	N	S	H	Features	Page
FMR04		 RDKW1204 RDKW1605 RDKW2006		✔	✔	✔			✔	• Diameter range Ø50 – 200 mm • For steel, stainless steel and cast iron • Screw clamping • Mould and die industry	B100
FMR04		 RDKW1003 RDKW12T3 RDKW1604		✔	✔	✔			✔	• Diameter range Ø42 – 200 mm • For steel, stainless steel and cast iron • Screw clamping • Mould and die industry	B102

Square shoulder milling

EMP01		 APKT0702 APKT11T3 APKT1604	90°	✔	✔	✔	✔	✔		• Diameter range Ø12 – 63 mm • For steel, stainless steel, cast iron, non-ferrous metals and heatresistant alloys • Weldon shank • For square shoulder milling, slot milling and ramping • Milling cutter with positive, soft cutting geometry • Inserts with two cutting edges	B104
EMP01		 APKT11T3 APKT0702 APKT1604	90°	✔	✔	✔	✔	✔		• Diameter range Ø12 – 63 mm • For steel, stainless steel, cast iron, non-ferrous metals and heatresistant alloys • Weldon shank • For square shoulder milling, slot milling and ramping • Milling cutter with positive, soft cutting geometry • Inserts with two cutting edges	B107
EMP02		 APKT0702 APKT11T3 APKT1604	90°	✔	✔	✔	✔	✔		• Diameter range Ø40 – 250 mm • For steel, stainless steel, cast iron, non-ferrous metals and heatresistant alloys • For square shoulder milling, slot milling and ramping • Milling cutter with positive, soft cutting geometry • Inserts with two cutting edges	B110

✔ Very suitable ✔ Suitable

Square shoulder milling

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
EMP03		 APKT11T3	90°	✔	✔	✔	✔			• Diameter range Ø50 – 100 mm • For steel, stainless steel, cast iron, non-ferrous metals and heatresistant alloys • For square shoulder milling, slot milling and ramping • Milling cutter with a positive, soft cutting geometry • Inserts with two cutting edges	B113
EMP04		 APKT11T3	90°	✔	✔	✔	✔			• Diameter range Ø20 – 40 mm • For steel, stainless steel, cast iron, non-ferrous metals and heatresistant alloys • For square shoulder milling, slot milling and ramping • Milling cutter with positive, soft cutting geometry • Inserts with two cutting edges	B115
EMP05		 APMT1135 APMT1604	90°	✔	✔	✔				• Diameter range Ø25 – 40 mm • For steel, stainless steel and cast iron • Straight shank • For square shoulder milling, slot milling and ramping • Milling cutter with positive, soft cutting geometry • Inserts with two cutting edges • Machining in z-direction possible	B117
EMP09		 LNKT0804PNR-GM LNKT1206PNR-GM LNKT1607PNR-GM	90°	✔	✔	✔				• Diameter range Ø40 – 125 mm • Sharp cutting edge geometry combined with robust tangential inserts • First choice for large cutting depths with high feed rates. • Specially designed cutting edge with high precision control for high quality 90 degree square shoulder milling	B120
EMP13		 ANGX1105 ANGX1506	90°	✔	✔	✔	✔			• Diameter range Ø40 – 250 mm • For steel, cast iron and non-ferrous metals • Double sided, thicker inserts for high stability and deeper cutting depths • Inserts with four cutting edges	B126
EMP13		 ANGX1105 ANGX1506	90°	✔	✔	✔	✔			• Diameter range Ø25 – 40 mm • For steel, cast iron and non-ferrous metals • Double sided, thicker inserts for high stability and deeper cutting depths • Inserts with four cutting edges	B128

✔ Very suitable ✔ Suitable

Indexable milling System overview

Square shoulder milling

Series	Milling body	Inserts	Kr	Application P	M	K	N	S	H	Features	Page
EMP13		 ANGX1105 ANGX1506	90°	✔	✔	✔	✔			• Diameter range Ø50 – 80 mm • For steel, cast iron and non-ferrous metals • Double sided, thicker inserts for high stability and deeper cutting depths • Inserts with four cutting edges	B132
EMP13		 ANGX1105 ANGX1506	90°	✔	✔	✔	✔			• Diameter range Ø25 – 40 mm • For steel, cast iron and non-ferrous metals • Double sided, thicker inserts for high stability and deeper cutting depths • Inserts with four cutting edges	B134

Profile milling

BMR01		 ZDET08T2 & SPMT0603 ZDET1103 & SPMT0603 ZDET13T2 & SDMT0903 ZPNT2204 & SPMT1204		✔	✔	✔				• Diameter range Ø20 – 63 mm • For steel, stainless steel and cast iron • Very suitable for roughing of big moulds • Inserts with three cutting edges	B136
BMR02		 ROHX1203 ROHX1604 ROHX2005		✔	✔	✔				• Diameter range Ø12 – 20 mm • For steel, stainless steel and cast iron • Very suitable for finishing in mould and die industry • Inserts with two cutting edges	B139
BMR03		 XPHT16 XPHT20 XPHT25 XPHT30 XPHT32 XPHT40		✔	✔	✔				• Diameter range Ø16 – 40 mm • For steel and cast iron • Very suitable for roughing in mould and die industry • Tool with high stability	B141

✔ Very suitable ✔ Suitable

Profile milling

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
BMR03		 XPHT20 XPHT25 XPHT30 XPHT32 XPHT40 XPHT50		✔	✔	✔				• Diameter range Ø16 – 40 mm • For steel and cast iron • Very suitable for roughing in mould and die industry • Tool with high stability	B145
BMR03		 XPHT16 XPHT20 XPHT25 XPHT30 XPHT32 XPHT40 XPHT50		✔	✔	✔				• Diameter range Ø16 – 40 mm • For steel and cast iron • Very suitable for roughing in mould and die industry • Tool with high stability	B143
BMR03		 XPHT40 XPHT50		✔	✔	✔				• Diameter range Ø16 – 40 mm • For steel and cast iron • Very suitable for roughing in mould and die industry • Tool with high stability	B147
BMR04		 ZOHX12 ZOHX16 ZOHX20 ZOHX25 ZOHX30 ZOHX32		✔	✔	✔				• Diameter range Ø12 – 32 mm • For steel, stainless steel and cast iron • Very suitable for finishing in mould and die industry • Inserts with two cutting edges	B149
BMR04		 ZOHX12 ZOHX16 ZOHX20 ZOHX25 ZOHX30 ZOHX32		✔	✔	✔				• Diameter range Ø12 – 32 mm • For steel, stainless steel and cast iron • Very suitable for finishing in mould and die industry • Inserts with two cutting edges	B151

✔ Very suitable ✔ Suitable

Slot milling

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
SMP01		 XSEQ1202 XSEQ1203 XSEQ12T3 XSEQ1204 XSEQ12T4	90°	✔	✔	✔				• Diameter range Ø100 – 250 mm • For steel, stainless steel and cast iron • Bore with keyway • Groove widths 4, 5, 6, 7, 8 mm	B153
SMP01		 XSEQ1202 XSEQ1203 XSEQ12T3 XSEQ1204 XSEQ12T4	90°	✔	✔	✔				• Diameter range Ø63 – 160 mm • For steel, stainless steel and cast iron • Groove widths 4, 5, 6, 7, 8 mm	B155
SMP03		 MPHT0603 MPHT0803 MPHT1204	90°	✔	✔	✔				• Diameter range Ø80 – 200 mm • For steel, stainless steel and cast iron • Bore with keyway • Groove widths 8, 10, 12, 16, 18, 20 mm	B157
SMP03		 MPHT0603 MPHT0803 MPHT1204	90°	✔	✔	✔				• Diameter range Ø80 – 200 mm • For steel, stainless steel and cast iron • Groove widths 8, 10, 12, 16, 18, 20 mm	B159
SMP05		 QC16L QC22L	90°	✔	✔	✔				• Diameter range Ø25 – 44 mm • For steel, stainless steel and cast iron • Groove widths range 1,1 – 4,8 mm	B161

✔ Very suitable ✔ Suitable

High-feed milling

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
XMR01		 SDMT06T2 SDMT09T3 SDMT1204 SDMT1505	15°	✔	✔	✔				• Diameter range Ø20 – 40 mm • For steel, stainless steel and cast iron • Inserts with four cutting edges • Ramping possible • Double clamping system for inserts	B166
XMR01		 SDMT09T3 SDMT06T2 SDMT1204 SDMT1505	15°	✔	✔	✔				• Diameter range Ø40 – 125 mm • For steel, stainless steel and cast iron • Inserts with four cutting edges • Ramping possible • Double clamping system for inserts	B168
XMR01		 WPGT0503 WPGT0604	11°- 22°	✔	✔	✔				• Diameter range Ø20 – 40 mm • For steel, stainless steel and cast iron • Inserts with three cutting edges • Ramping possible • Double clamping system for inserts	B170
XMR01		 WPGT0604 WPGT0806 WPGT0907	11°- 22°	✔	✔	✔				• Diameter range Ø42 – 160 mm • For steel, stainless steel and cast iron • Inserts with three cutting edges • Ramping possible • Double clamping system for inserts	B172

Bore milling

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
XMP01		 CNE12	90°	✔	✔	✔				• Diameter range Ø80 – 400 mm • For steel, stainless steel and cast iron • Also for face and square shoulder milling	B174

✔ Very suitable ✔ Suitable

Indexable milling System overview

T-slot milling

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
TMP01		 MPHT0603 MPHT0803 MPHT1204	90°	✔	✔	✔				• Diameter range Ø21 – 60 mm • For cast iron • Groove widths 9, 11, 14, 18, 22, 28 mm	B176

Helical milling

HMP01		 APKT1504 & SPMT1204	90°	✔	✔	✔				• Diameter range Ø40 – 50 mm • For steel and cast iron • Weldon shank	B178
HMP01		 APKT1504 & SPMT1204	90°	✔	✔	✔				• Diameter range Ø50 – 80 mm • For steel and cast iron • With JT coupling	B180
HMP01-EC		 APKT1504 & SPMT1204	90°	✔	✔	✔				• Diameter range Ø50 – 80 mm • For steel and cast iron • With JT coupling • With indexable head	B182

✔ Very suitable ✔ Suitable

Chamfer milling

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
CMZ01		 SPMT1204	30°	✔	✔	✔				• Diameter range Ø12 – 32 mm • For steel, stainless steel and cast iron • Chamfer milling cutter 30°	B184 B186
CMA01		 SPMT1204	45°	✔	✔	✔				• Diameter range Ø12 – 32 mm • For steel, stainless steel and cast iron • Chamfer milling cutter 45° • Weldon shank	B188
CMA01		 SPMT1204	45°	✔	✔	✔				• Diameter range Ø12 – 32 mm • For steel, stainless steel and cast iron • Chamfer milling cutter 45° • Weldon shank	B190
CMD01		 SPMT1204	60°	✔	✔	✔				• Diameter range Ø12 – 32 mm • For steel, stainless steel and cast iron • Chamfer milling cutter 60° • Weldon shank	B192
CMD01		 SPMT1204	60°	✔	✔	✔				• Diameter range Ø12 – 32 mm • For steel, stainless steel and cast iron • Chamfer milling cutter 60° • Weldon shank	B194

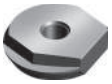
✔ Very suitable ✔ Suitable

Indexable heads - QCH series

Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
QCH-XPHT		 XPHT16 XPHT20 XPHT25 XPHT30 XPHT32		✔	✔	✔				• Diameter range Ø16 – 32 mm • For steel and cast iron • Very suitable for roughing in mould and die industry	B198
QCH-SDMT		 SDMT06T2 SDMT09T3 SDMT1204	15°	✔	✔	✔				• Diameter range Ø20 – 40 mm • For steel, stainless steel and cast iron • Inserts with four cutting edges • Ramping possible • Double clamping system for inserts	B200
QCH-WPGT		 WPGT0503 WPGT0604 WPGT0806	11°-22°	✔	✔	✔				• Diameter range Ø16 – 42 mm • For steel, stainless steel and cast iron • Inserts with three cutting edges • Ramping possible • Double clamping system for inserts	B202
QCH-APKT		 APKT11T3 APKT1604	90°	✔	✔	✔	✔	✔		• Diameter range Ø16 – 40 mm • For steel, stainless steel, cast iron, non-ferrous metals and heatresistant alloys • For square shoulder milling, slot milling and ramping • Milling cutter with positive, soft cutting geometry • Inserts with two cutting edges	B204
QCH-RD		 RDKW0702 RDKW10T3 RDKW1605		✔	✔	✔			✔	• Diameter range Ø15 – 42 mm • For steel, stainless steel and cast iron • Screw clamping • Mould and die industry • For two different thicknesses of inserts	B206

✔ Very suitable ✔ Suitable

Indexable heads - QCH series

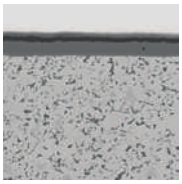
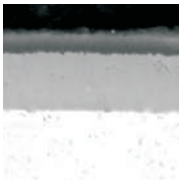
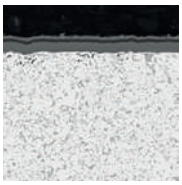
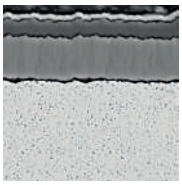
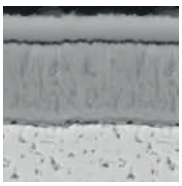
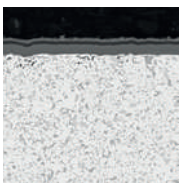
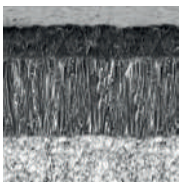
Series	Milling body	Inserts	Kr	Application						Features	Page
				P	M	K	N	S	H		
QCH-RD		 RDKW0702 RDKW1003 RDKW12T3 RDKW1604		✔	✔	✔			✔	• Diameter range Ø15 – 42 mm • For steel, stainless steel and cast iron • Screw clamping • Mould and die industry • For two different thicknesses of inserts	B208
QCH-ZOHX		 ZOHX16 ZOHX20 ZOHX25 ZOHX30 ZOHX32		✔	✔	✔				• Diameter range Ø16 – 32 mm • For steel, stainless steel and cast iron • Very suitable for finishing in mould and die industry • Inserts with two cutting edges	B210

✔ Very suitable ✔ Suitable

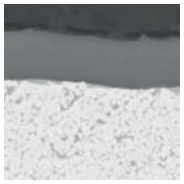
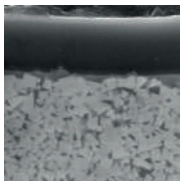
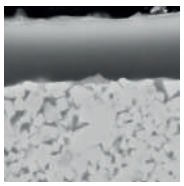
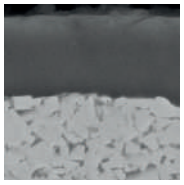
Chip breakers overview

	Finishing	Medium machining	Roughing
P	DF	DM	DR
	APF	APM	–
	PF	PM	PR
	GF	GM	GR
	–	–	ZR
	MO-2	MO-1	MO-3
M	EF	EM	–
	APF	APM	–
	DF	DM	–
	PF	PM	PR
	GF	GM	GR
	E	E	–
	–	–	ZR
K	CF	CM	CR
	DF	DM	DR
	EDFR	DER	DER
	PF	PM	PR
	GF	GM	GR
	–	–	ZR
	MO-2	MO-1	MO-3
S	EF	EM	–
	NM	NM	–
N	LH	LH	LH
	ALH	ALH	ALH

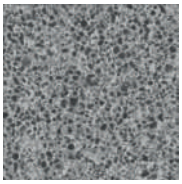
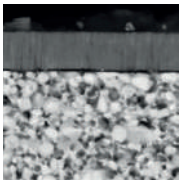
Coated cemented carbide CVD

Grade	ISO	Micro structure	Grade description
YBC301	P20 - P35		CVD coated P20–P35 carbide grade for medium operation to roughing of steel at lower cutting speed.
YBC302	P20 - P35		CVD coated P20–P35 carbide grade for medium operation to roughing of steel at higher cutting speed. Optimal performance of wear resistance and toughness for a wide application field.
YBC401	P30 - P50 M30 - M40		CVD coated P30–P50/M30–M40 carbide grade for roughing operation of steel at lower cutting speed and unstable condition.
YBM251	P20 - P30 M15 - M35		CVD coated P20–P30/M15–M35 carbide grade for medium to roughing operation in stainless steel and steel with wide application field. Good wear resistance and capability against plastic deformation at normal cutting speed.
YBM253	M15 - M35		CVD coated M15–M35 carbide grade for medium to roughing operation in stainless steel with wide application field. High wear resistance and capability against plasctic deformation at higher cutting speed.
YBM351	P25 - P40 M20 - M40		CVD coated P25–P40/M25–M40 carbide grade for roughing operation in stainless steel and steel. Good wear resistance and edge stability at normal cutting speed.
YBD152	K10 - K25		CVD coated K10–K25 carbide substrate. Optimized for medium to roughing operation of cast iron. Good wear resistance and toughness at higher cutting speed.
YBD252	K20 - K35		CVD coated K20–K35 carbide substrate. Optimized for medium to roughing operation of cast iron and Steel. Good wear resistance and toughness at higher cutting speed.

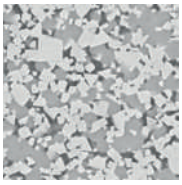
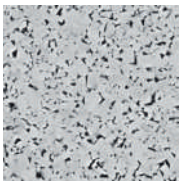
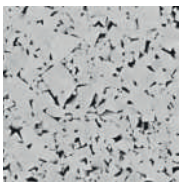
Coated cemented carbide PVD

Grade	ISO	Micro structure	Grade description
YBG102	S05 - S15		PVD coated S05–S15 carbide substrate for finishing to medium application of super alloy material, stainless steel and aluminum. Good wear resistance in a wide application field.
YBG202	P10 - P30 M10-M25		PVD coated P10–P30/M10–M25 carbide substrate for finishing to medium application of stainless steel and steel (milling). Good wear resistance in a wide application field.
YB9320	P10 - P30 M10-M25		PVD multilayer coated P10–P30/M20–M40 carbide substrate for finishing to medium application of stainless steel, super alloy and steel (grooving/milling). Optimized coating stability for higher wear resistance and thermal stability in a wide application fi
YBG205	P10 - P30 M20 - M40 S15-S25		PVD multilayer coated P10–P30/M20–M40/S15–S25 carbide substrate for finishing to medium application of stainless steel, super alloy and steel (milling). Good wear resistance and thermal stability in a wide application field.
YBG302	P15 - P30 M25 - M40		PVD coated P15–P30/M25–M40 carbide substrate for medium roughing application of stainless steel and steel (milling). Good wear resistance and toughness.
YBG152	K20 - K35		PVD coated K20–K35 carbide substrate for medium roughing application of cast iron. Good wear resistance and toughness.
YBG252	P10 - P20 M10 - M20 K10 - K20		PVD coated P10–P20/M10–M20/K10–K20 carbide grade for finishing to medium operation of steel, stainless steel and cast iron. Good wear resistance and toughness for a wide application field.

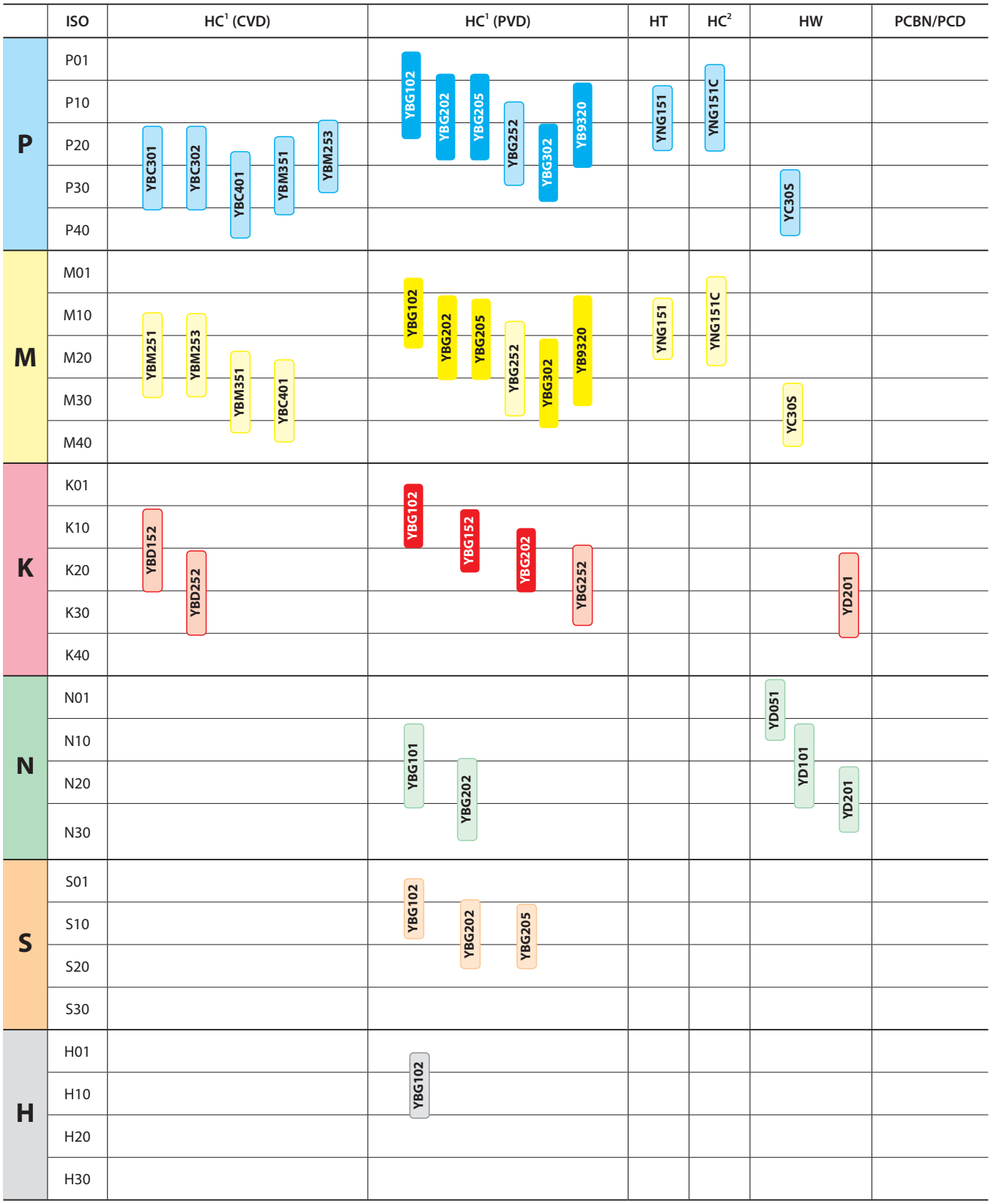
Cermet

Grade	ISO	Micro structure	Grade description
YNG151	P05 - P15		Uncoated P05–P15 cermet grade for fine finishing operation of steel and stainless steel. Good resistance against plastic deformation for good surface finishing.
YNG151C	P05 - P15		PVD coated P05–P15 cermet grade for fine finishing operation of steel and stainless steel. Good wear resistance and capability against plastic deformation for good surface roughness.

Uncoated cemented carbide

Grade	ISO	Micro structure	Grade description
YC30S	P25 - P40 M25 - M40		Uncoated P25–P40/M25–M40 carbide substrate for roughing operation of steel and stainless steel.
YD101	N05 - N25 K05 - K20		Uncoated K05–K20/N05–N20 carbide substrate for fine to medium application in aluminum and other material.
YD201	K10 - K30 N10 - N30		Uncoated K10–K30/N10–N30 carbide substrate for medium application in aluminum and other material.

Application fields of grades – Indexable milling



P	Steel	N	Non-ferrous metals
M	Stainless steel	S	Heat-resistant alloys
K	Cast iron	H	Hardened materials

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated carbide
HW Uncoated carbide


New
EMP13

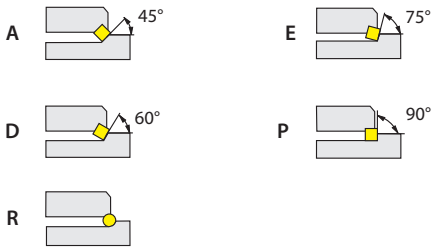
Indexable milling System code – milling bodies

FM	E	03	100	–	B32	S	–	P	12	–	06	(L)	(C)
1	2	3	4		5	6		7	8		9	10	11

Type	
Code	Description
BM	Profile milling
CM	Chamfer milling
EM	Square shoulder milling
FM	Face milling
HM	Helical milling
SM	Slot milling
TM	T-slot milling
XM	Special

1

Entering angle



2

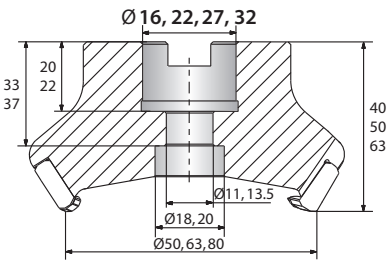
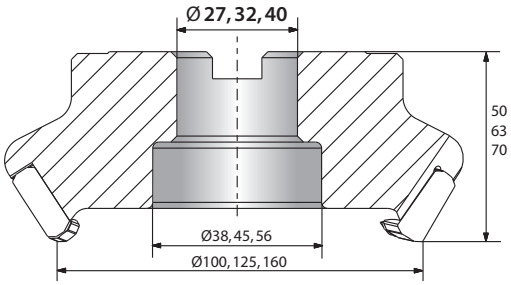
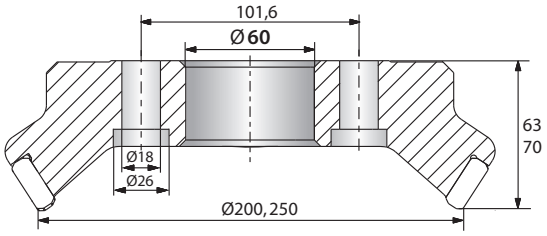
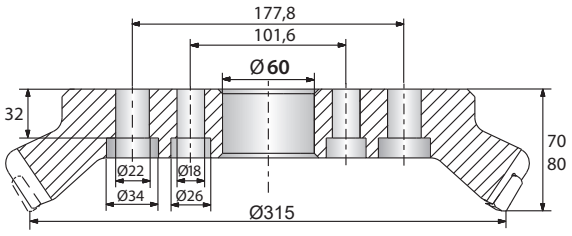
Nominal diameter [mm]	
Code	Description
025	25
050	50
160	160
315	315
...	

4

Serial number

3

Type and size of tool holders

Code	Type	Code	Type
A	Nominal diameter Ø50 – 80 mm 	**B**	Nominal diameter Ø100 – 160 mm 
C	Nominal diameter Ø200 – 250 mm 	**D**	Nominal diameter Ø315 mm 
G	Straight shank	**XP**	Weldon shank
K	Bore with keyway		

5

With respect to mounting please adhere to the information provided by the tool holder manufacturer.

Insert shape			
A		C	
H		L	
M		O	
P		R	
S		T	
W		X	Special
Z	Special		

6

Clearance angle			
B	5°	C	7°
D	15°	E	20°
F	25°	N	0°
P	11°		

7

Cutting edge length l [mm]	
Insert shape	
	
A	C, M
	
H, O, P	L
	
R	S
	
T	W

8

Number of teeth

9

Cutting direction	
Code	Description
L	Left

10

With inner cooling

11

Tools with B coupling and inner coolant supply require the following spare parts:



Coolant clamp screw



Coolant shower plate



Spare parts (B coupling with inner coolant supply)

		B27	B32	B40	B40
	Ø	**80**	**100**	**125**	**160**
	**Coolant clamp screw**	LDB27C	LDB32C	LDB40C	LDB40C
	**Coolant shower plate**	B27-002-CP	B32-002-CP	B40-002-CP	B40-003-CP

When purchasing tools with inner coolant supply and B coupling these spare parts are included in delivery.

Indexable milling ISO code – inserts

S	P	K	N	12	04	ED	T21K	R	–	DM
1	2	3	4	5	6	7	8	9		10

Insert shape

A		C	
H		L	
M		O	
P		R	
S		T	
W		X	Special
Z	Special		

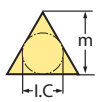
1

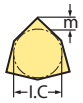
Clearance angle

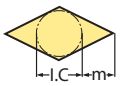
B		C	
D		E	
F		N	
P			

2

Tolerance class









Code	I.C [mm]	m [mm]	S [mm]
A	±0,025	±0,005	±0,025
C	±0,025	±0,013	±0,025
E	±0,025	±0,025	±0,025
F	±0,013	±0,005	±0,025
G	±0,025	±0,025	±0,130
H	±0,013	±0,013	±0,025
J	±0,05–0,13	±0,005	±0,025
K	±0,05–0,13	±0,013	±0,025
L	±0,05–0,13	±0,025	±0,025
M	±0,05–0,13	±0,08–0,18	±0,130
N	±0,05–0,13	±0,08–0,18	±0,025
U	±0,08–0,25	±0,13–0,38	±0,130

3

Fastening features (metric)

Insert shape

A		B	
C		F	
G		H	
J		M	
N		Q	
R		T	
U		W	
X	Special		

4

Cutting edge length l [mm]

Insert shape

	
A	C, M
	
H, O, P	L
R	S
T	W

5

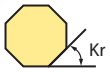
Insert thickness S [mm]



Code	S	Code	S
00	0,79	**05**	5,56
T0	0,99	**T5**	5,95
01	1,59	**06**	6,35
T1	1,98	**T6**	6,75
02	2,38	**07**	7,94
T2	2,58	**09**	9,52
03	3,18	**T9**	9,72
T3	3,97	**11**	11,11
04	4,76	**12**	12,70
T4	4,96		

6

Angle





Code	Kr	Code	αn
A	45°	**A**	3°
D	60°	**B**	5°
E	75°	**C**	7°
F	85°	**D**	15°
P	90°	**E**	20°
Z	Special	**F**	25°
		G	30°
		N	0°
		P	11°
		Z	Special

7

Chamfer

Code	Type	Code	Angle	Code	Width [mm]	Code	Position
F		**0**	5°	**0**	0,10	**K**	
E		**1**	10°	**1**	0,15		
T		**2**	15°	**2**	0,20	**P**	
S		**3**	20°	**3**	0,25		
		4	25°	**4**	0,30	**W**	
		5	30°	**5**	0,35		
				6	0,40	**–**	
				7	0,45		

8

Cutting direction

Code	Description
R	Right
L	Left
N	Right and left

9

Chip breaker overview
(on page B20)

10

Indexable milling System code – slot milling

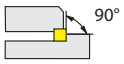
SM	P	03	–	160 × 16	–	K	40	–	M	P	12	–	12	L
1	2	3		4		5	6	7	8	9	10		11	12

Type

Code	Description
SM	Slot milling cutter

1

Entering angle

P 

2

Serial number

3

Nominal diameter [mm]

4

Cutting width [mm]

5

Tool holder type

Code	Description	Code	Description
A	A type	B	B type
C	C type	D	D type
K	With feather key		

6

Diameter of mounting hole [mm]

7

Insert shape

M 

S 

8

Clearance angle

N 

P 

9

Insert size [mm]

10

Number of teeth

11

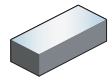
Cutting direction

Code	Description
R	Right
L	Left

12

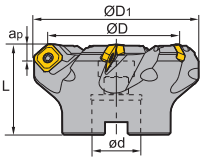
Face milling

FMA01 Kr: 45°

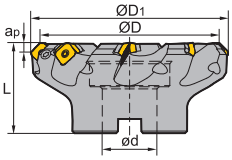




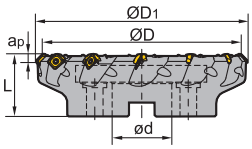
Fine pitch



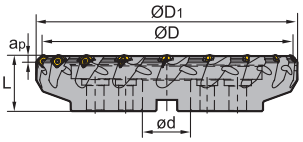
A



B



C



D

Article	✲	Stock R	Stock L	Dimensions [mm] ØD	ØD1	ød	L	ap max	Teeth	Coupling	kg	Inserts
FMA01-050-A22-SE12-04		●	○	50	61	22	40	6	4	A	0.3	
FMA01-050-A22-SE12-04C	✲	●	○	50	61	22	40	6	4	A	0.3	
FMA01-063-A22-SE12-05		●		63	74	22	40	6	5	A	0.5	
FMA01-063-A22-SE12-05C	✲	●	○	63	74	22	40	6	6	A	1.2	
FMA01-080-A27-SE12-06		●	●	80	91	27	50	6	6	A	1.2	
FMA01-080-A27-SE12-06C	✲	●	○	80	91	27	50	6	6	A	1.2	
FMA01-100-B32-SE12-07		●	○	100	107	32	50	6	7	B	1.2	
FMA01-100-B32-SE12-07C	✲	○	○	100	107	32	50	6	7	B	1.2	SEET12T3
FMA01-125-B40-SE12-08		●	●	125	136	40	63	6	8	B	2.6	
FMA01-125-B40-SE12-08C	✲	○		125	136	40	63	6	8	B	2.6	
FMA01-160-B40-SE12-10		●	●	160	170	40	63	6	10	B	4.3	
FMA01-160-B40-SE12-10C	✲	○		160	170	40	63	6	10	B	4.3	
FMA01-200-C60-SE12-12		●	○	200	210	60	63	6	12	C	7.6	
FMA01-250-C60-SE12-14		●	○	250	260	60	63	6	14	C	13.5	
FMA01-315-D60-SE12-18		●	○	315	325	60	70	6	18	D	20.8	
FMA01-100-B32-SE18-04		○	○	100	120	32	63	10	4	B	1.2	
FMA01-125-B40-SE18-05		○	○	125	145	40	63	10	5	B	2.6	
FMA01-160-C40-SE18-06		○	○	160	180	40	63	10	6	C	4.3	
FMA01-200-C60-SE18-08		●	○	200	220	60	63	10	8	C	7.6	SEET18T6
FMA01-250-C60-SE18-10		●		250	270	60	63	10	10	C	13.5	
FMA01-315-D60-SE18-12		○	○	315	335	60	80	10	12	D	20.8	

● Ex stock ○ On demand

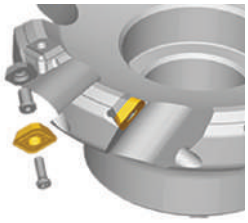
✲ With internal cooling

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Indexable milling Face milling

Spare parts

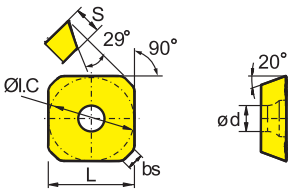
	Insert	SEET12T3	SEET12T3	SEET18T6
	ØD	50-100	125 - 315	100- 315
	Screw (insert)	I60M3.5*10 (2.7 Nm)	I60M3.5*12 (2.7 Nm)	I60M5*17 (6.7 Nm)
	Screw (shim)		SM5*7XA	SM8*9XA
	Shim		S13BS	S18BS
	Wrench (insert)	WT15IS	WT15IS	
	Wrench (insert)			WT20IT
	Wrench (shim)		WH35L	WH50L



Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SEET	L	I.C	S	d
12 T3	13.4	13.4	3.97	4.1
18 T6	18	18	6.1	5.5



SE** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
P																					
M																					
K																					
N																					
S																					
H																					
ISO		bs	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	SEET12T3-CF	2.55							●			●											
	SEET12T3-CM	2.55							●			●											
	SEET12T3-CR	2.55							●	●		○											
	SEET12T3-DF	2.55	●	●			●	●							●		○			○	○		
	SEET12T3-DM	2.55	●	●	●	●	●	●					●		●		●						
	SEET18T6-DM	2.29	●			●																	

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SEET	L	I.C	S	d
12 T3	13.4	13.4	3.97	4.1
18 T6	18	18	6.1	5.5

SE** milling insert			HC¹ (CVD)								HC¹ (PVD)								HT	HC²	HW	
		P																				
		M																				
		K																				
		N																				
		S																				
		H																				
ISO		bs	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	SEET12T3-DR	2.55	●	●			●		○						○		○						
	SEET12T3-EF	2.55													○		●						
	SEET12T3-EM	2.55					●	●							○		●						
	SEET12T3-LH	2.55									○											●	●

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SEET	L	I.C	S	d
12 T3	17.82	13.4	3.97	4.1

Milling inserts

SE** milling insert			HC¹ (CVD)								HC¹ (PVD)								HT	HC²	HW	
		P																				
		M																				
		K																				
		N																				
		S																				
		H																				
ISO	R	bs	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	SEET12T3-W	500	9.46						○						●					○	○		

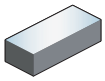
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224

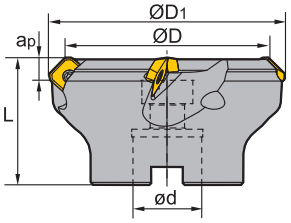
Face milling

FMA02 Kr: 45°





Coarse and differential pitch



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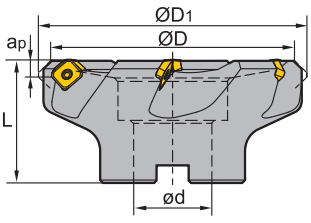


B

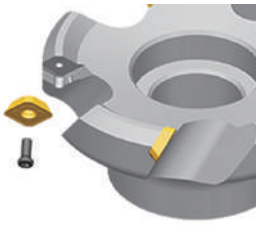
Article	✻	Stock	Dimensions [mm]					Teeth	Coupling	kg	Inserts
			ØD	$ØD_1$	ød	L	$a_{p\,max}$				
FMA02-050-A22-SE12-03		●	50	61	22	40	6	3	A	0.4	SEET12T3
FMA02-063-A22-SE12-04		●	63	74	22	40	6	4	A	0.6	
FMA02-080-A27-SE12-04		●	80	91	27	50	6	4	A	1.3	
FMA02-100-B32-SE12-05		●	100	107	32	50	6	5	B	1.3	
FMA02-125-B40-SE12-06		○	125	131	40	63	6	6	B	2.6	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	SEET12T3
	ØD	50-125
	Screw (insert)	I60M3.5*10 (2.7 Nm)
	Wrench (insert)	WT15IS

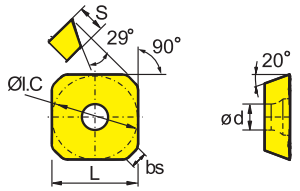


System code B26 Grade selection B24 Technical info B463 Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SEET	L	I.C	S	d
12 T3	13.4	13.4	3.97	4.1

Milling inserts



SE** milling insert			HC[1] (CVD)							HC[1] (PVD)								HT	HC[2]	HW	
		P																			
		M																			
		K																			
		N																			
		S																			
		H																			
ISO		bs	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**SEET12T3-CF**	2.55							●		●												
	**SEET12T3-CM**	2.55							●		●												
	**SEET12T3-CR**	2.55							●	●	○												
	**SEET12T3-DF**	2.55	●	●		●	●								●		○			○	○		
	**SEET12T3-DM**	2.55	●	●	●	●	●	●					●		●		●						
	**SEET12T3-DR**	2.55		●	●			●		○					○		○						
	**SEET12T3-EF**	2.55													○		●						
	**SEET12T3-EM**	2.55					●	●							○		●						
	**SEET12T3-LH**	2.55									○											●	●

● Ex stock ○ On demand

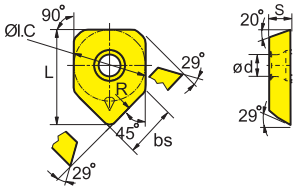
HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SEET	L	l.C	S	d
12 T3	17.82	13.4	3.97	4.1

Milling inserts



SE** milling insert				HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
				YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
P				◉	◉	◉	◉	◉	◉	◉	◉		◉	◉	◉	◉	◉	◉	◉	◉	◉	◉		
M					◉	◉	◉	◉	◉				◉	◉	◉	◉	◉	◉	◉	◉	◉	◉		
K										◉	◉	●							◉	●			◉	
N												◉											◉	◉
S							◉		◉				●	◉	◉	◉								
H																								
ISO		R	bs																					
	**SEET12T3-W**	500	9.46							○						●					○	○		

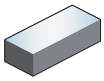
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

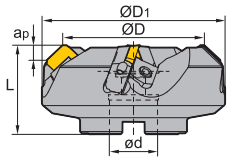
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Face milling

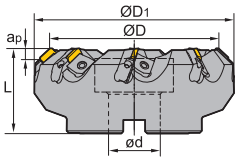
FMA03 Kr: 45°



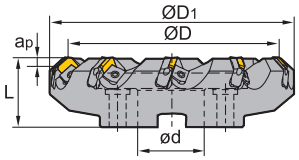




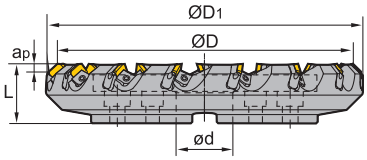
A



B



C



D

Article	*	Stock R	Stock L	Dimensions [mm] ØD	ØD1	ød	L	ap max	Teeth	Coupling	kg	Inserts
FMA03-080-A27-SE12-04		○	○	80	103	27	50	5.5	4	A	1.8	SEEN1203 SEKN1203 SEKR1203
FMA03-100-B32-SE12-05		○	○	100	122	32	50	5.5	5	B	2.4	
FMA03-125-B40-SE12-06		○	○	125	147	40	63	5.5	6	B	4.4	
FMA03-160-B40-SE12-08		○	○	160	181	40	63	5.5	8	B	6.4	
FMA03-200-C60-SE12-10		○	○	200	221	60	63	5.5	10	C	8.5	
FMA03-250-C60-SE12-12		○	○	250	270	60	63	5.5	12	C	14.1	
FMA03-315-D60-SE12-15		○	○	315	353	60	63	5.5	15	D	22.2	
FMA03-080-A27-SE15-04		○		80	103	27	50	7.5	4	A	1.7	SEKN1504 SEKR1504
FMA03-100-B32-SE15-05		○		100	122	32	50	7.5	5	B	2.3	
FMA03-125-B40-SE15-06		○		125	147	40	63	7.5	6	B	4.2	
FMA03-160-B40-SE15-08		○		160	181	40	63	7.5	8	B	6.1	
FMA03-200-C60-SE15-10		○		200	221	60	63	7.5	10	C	8.3	
FMA03-250-C60-SE15-12		○		250	270	60	63	7.5	12	C	13.6	
FMA03-315-D60-SE15-15		○	○	315	353	60	63	7.5	15	D	21.8	

● Ex stock ○ On demand

* With internal cooling

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Spare parts

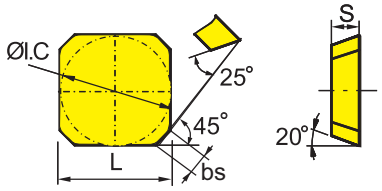
	Insert	SEEN1203 SEKN1203 SEKR1203	SEKN1504 SEKR1504
	ØD	80- 315	80- 315
	Adjustable screw	LOM5*15.1	LOM5*15.1
	Cassette (left)	LSE12L	LSE15L
	Cassette (right)	LSE12R	LSE15R
	Screw (wedge)	DM8*21X (10.2 Nm)	DM8*21X (10.2 Nm)
	Wedge (left)	W01L	W01L
	Wedge (right)	W01R	W01R
	Wrench (locator)	WT20T	WT20T
	Wrench (wedge)	WH40T	WH40T



● Ideal machining conditions
◐ Normal machining conditions
◔ Unfavourable machining conditions

SEEN	L	I.C	S
12 03	12.7	12.7	3.18

Milling inserts

SE** milling insert		HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
	P	◐	◐	◔	◐	◐	◐		◐	◐	◐	◐	◔		◐		●	◐		
	M		◐	◔	◐	◐	◐			◐	◐	◐	◔		◐		◐	◐		
	K						◔	◔	●						◔	●			◔	
	N								◔										◔	◔
	S			◔		◔			●	◐	◐	◐								
	H																			
ISO	bs	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
 SEEN1203AFTN	1.8																●			

● Ex stock ○ On demand

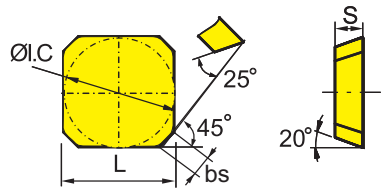
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SEKN	L	I.C	S
12 03	12.7	12.7	3.18
15 04	15.875	15.875	4.76



SE** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
		P																			
		M																			
		K																			
		N																			
		S																			
		H																			
ISO		bs	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	SEKN1203AFN	1.8		○																			
	SEKN1203AFTN	1.8		●			●	●	●						○					●	●		○
	SEKN1504AFTN	1.6		●	○			●	●				●										
	SEKN1504AZ	1.6		●																			○

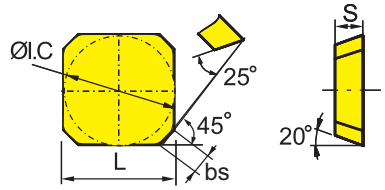
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Milling inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SEKR	L	I.C	S
12 03	12.7	12.7	3.18



SE** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
		P																			
		M																			
		K																			
		N																			
		S																			
		H																			
ISO		bs	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	SEKR1203AFN	1.8		●											○								

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

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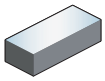
System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

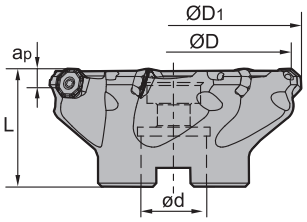
Face milling

FMA04 Kr: 45°





Screw Clamping



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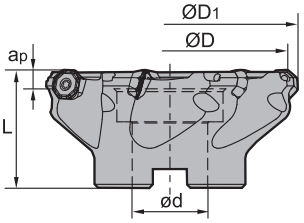


B

Article	*	Stock R	Stock L	Dimensions [mm] ØD	ØD1	ød	L	ap max	Teeth	Coupling	kg	Inserts
FMA04-050-A22-OF05-04		●		50	56	22	40	3.5	4	A	0.3	OFKT05T3
FMA04-050-A22-OF05-05		●		50	56	22	40	3.5	5	A	0.4	
FMA04-050-A22-OF05-05C	*	○		50	56	22	40	3.5	5	A	0.4	
FMA04-063-A22-OF05-05		●		63	69	22	40	3.5	5	A	0.5	
FMA04-063-A22-OF05-05C	*	○		63	69	22	40	3.5	5	A	0.5	
FMA04-080-A27-OF05-06		●	○	80	86	27	50	3.5	6	A	0.8	
FMA04-080-A27-OF05-06C	*	●		80	86	27	50	3.5	6	A	0.8	
FMA04-100-B32-OF05-07		●	○	100	106	32	50	3.5	7	B	1.2	
FMA04-100-B32-OF05-07C	*	○		100	106	32	50	3.5	7	B	1.2	
FMA04-125-B40-OF05-08		●		125	130	40	63	3.5	8	B	2.7	
FMA04-125-B40-OF05-08C	*	○		125	130	40	63	3.5	8	B	2.7	
FMA04-160-B40-OF05-10		●		160	165	40	63	3.5	10	B	5.1	

● Ex stock ○ On demand

* With internal cooling

Spare parts

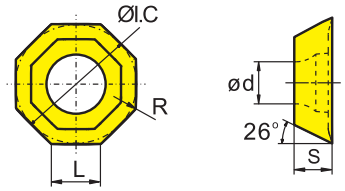
	Insert	OFKT05T3	OFKT05T3	
	ØD	50-63	80-160	
	Screw (insert)	I60M4*8.4 (3.4 Nm)	I60M4*10 (3.4 Nm)	
	Wrench (insert)	WT15IS	WT15IS	

System code B26 Grade selection B24 Technical info B463 Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

OFKT	L	I.C	S	d
05 T3	5.26	12.7	3.97	4.4

Milling inserts



OF** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
		P																			
		M																			
		K																			
		N																			
		S																			
		H																			
ISO		R	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**OFKT05T3-DF**	0.5									●			●									
	**OFKT05T3-DM**	0.5					○	●			●			●		●							
	**OFKT05T3-LH**	0.5																				●	

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

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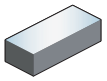
System code B26 Grade selection B24 Technical info B463 Cutting data B224

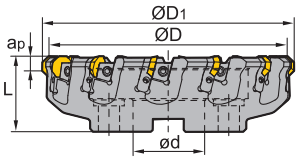
Face milling

FMA04 Kr: 45°

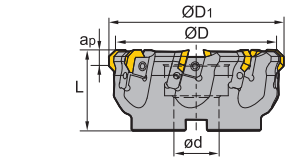




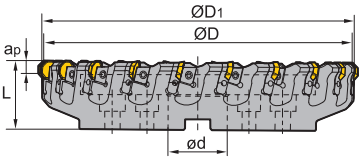
Wedge



C



B



D

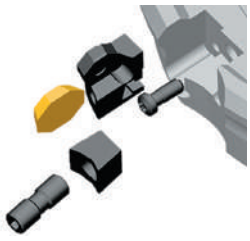
Article	✻	Stock R	Stock L	Dimensions [mm] ØD	ØD1	ød	L	ap max	Teeth	Coupling	kg	Inserts
FMA04-125-B40-OF07-08		●		125	136	40	63	5	8	B	3.9	
FMA04-160-B40-OF07-10		●		160	171	40	63	5	10	B	5.9	
FMA04-200-C60-OF07-12		●		200	211	60	63	5	12	C	7.6	OFKR0704
FMA04-250-C60-OF07-16		●		250	261	60	63	5	16	C	13.3	
FMA04-315-D60-OF07-20		○	○	315	321	60	63	5	20	D	20.3	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	OFKR0704
	ØD	125 - 315
	Adjustable screw	LOM5*15.1
	Cassette (left)	LOF07L
	Cassette (right)	LOF07R
	Screw (wedge)	DM8*21X (10.2 Nm)
	Wedge (left)	W02L
	Wedge (right)	W02R
	Wrench (locator)	WT20T
	Wrench (wedge)	WH40T

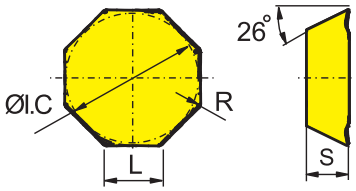


System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

OFKR	L	I.C	S
07 04	7.45	17.94	4.76



OF** milling insert			HC[1] (CVD)							HC[1] (PVD)								HT	HC[2]	HW	
		P																			
		M																			
		K																			
		N																			
		S																			
		H																			
ISO		R	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**OFKR0704-DF**	0.8					○								●								
	**OFKR0704-DM**	0.8	●	●		●	●		●						○		●						
	OFKR0704W-DM	0.8	○						○					●									

● Ex stock ○ On demand

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Notes



FMA07 Kr: 45°

Face mill

- High cost-benefit factor due to 16 cutting edges.
- Thick insert for best stability and break resistance.
- Different chip breakers for best chip breaking.
- Two insert sizes available.

Insert grades

YBC302	YBG202	YBM253	YBM351
CVD	*PVD*	*CVD*	*CVD*
P15 – P35	*P10 – P30*	*P20 – P40*	*P25 – P40*

YBG205	YB9320	YBD152
PVD	*PVD*	*CVD*
P10 – P30	*P15 – P25*	*K05 – K25*
M20 – M30	*M20 – M30*	

Chip breakers

-PF

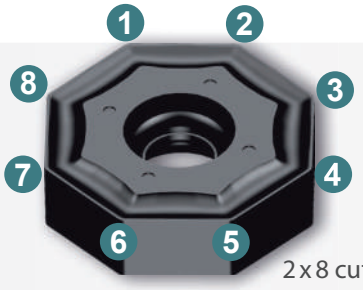


- Low cutting forces
- Very sharp

-PM



- General application
- Good balance between stability and sharpness

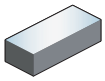


2 x 8 cutting edges

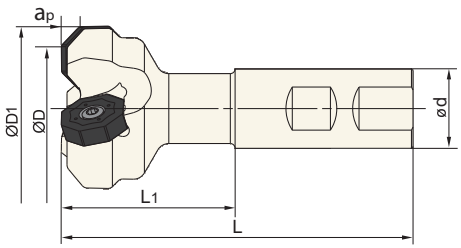


Face milling

FMA07 Kr: 45°







Weldon shank

Article	✲	Stock	Dimensions [mm] ØD	ØD1	ød	L1	L	ap max	Teeth	kg	Inserts
FMA07-025-XP20-ON06-02		○	25	37	20	45	95	4	2	0.2	ONHU0604
FMA07-025-XP20-ON06-02C	✲	○	25	37	20	45	95	4	2	0.2	
FMA07-032-XP25-ON06-02C	✲	●	32	44	25	55	111	4	2	0.4	
FMA07-040-XP25-ON06-03		○	40	52	25	50	106	4	3	0.4	
FMA07-032-XP25-ON08-02		●	32	47	25	55	111	5	2	0.4	ONHU08T5
FMA07-040-XP25-ON08-03		●	40	55	25	55	111	5	3	0.5	
FMA07-040-XP25-ON08-03C	✲	●	40	55	25	55	111	5	3	0.5	
FMA07-050-XP25-ON08-04		●	50	65	25	55	111	5	4	0.6	

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	ONHU0604	ONHU08T5
	ØD	25-40	32-50
	Screw (insert)	I60M4*10 (3.4 Nm)	I60M5*13 (6.7 Nm)
	Wrench (insert)	WT15IS	
	Wrench (insert)		WT20IT

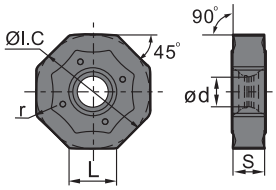


System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

ONHU	L	I.C	S	d
06 04	6.58	15.875	4.76	4.4
08 T5	8.39	20.2	5.77	5.3



ON** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
		P																			
		M																			
		K																			
		N																			
		S																			
		H																			
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**ONHU060408-PF**	0.8	○			○			●						●								
	ONHU08T508-PF	0.8	●			●			○				●		●								
	**ONHU060408-PM**	0.8	●			●		●	●					●									
	ONHU08T508-PM	0.8	●			●		●	●														

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

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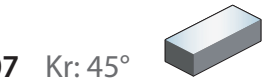
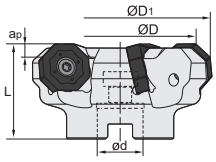
Face milling

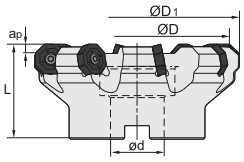
FMA07 Kr: 45°







A



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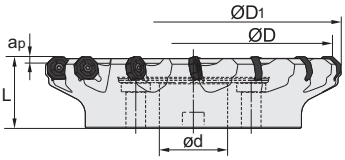

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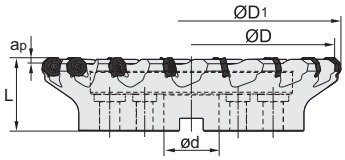


D

Article	✻	Stock R	Stock L	Dimensions [mm] ØD	ØD1	ød	L	ap max	Teeth	Coupling	kg	Inserts
FMA07-050-A22-ON06-05		●	○	50	62	22	40	4	5	A	0.3	ONHU0604
FMA07-050-A22-ON06-05C	✻	●		50	62	22	40	4	5	A	0.3	
FMA07-063-A22-ON06-06		○		63	75	22	40	4	6	A	0.5	
FMA07-063-A22-ON06-06C	✻	●		63	75	22	40	4	6	A	0.5	
FMA07-080-A27-ON06-07C	✻	●		80	92	27	50	4	7	A	1	
FMA07-080-B27-ON06-07		●		80	92	27	50	4	7	B	1	
FMA07-100-B32-ON06-08		●		100	112	32	63	4	8	B	1.9	
FMA07-100-B32-ON06-08C	✻	●		100	112	32	63	4	8	B	1.9	
FMA07-125-B40-ON06-09		●		125	137	40	63	4	9	B	3.5	
FMA07-125-B40-ON06-09C	✻	●		125	137	40	63	4	9	B	3.5	
FMA07-160-C40-ON06-11		○	○	160	172	40	63	4	11	C	4.3	
FMA07-200-C60-ON06-13		○		200	212	60	63	4	13	C	6.4	
FMA07-250-C60-ON06-15		○		250	262	60	63	4	15	C	13.4	
FMA07-315-D60-ON06-17		○		315	327	60	80	4	17	D	21.9	
FMA07-063-A22-ON08-05		●		63	78	22	40	5	5	A	0.5	ONHU08T5
FMA07-063-A22-ON08-05C	✻	●		63	78	22	40	5	5	A	0.5	
FMA07-080-A27-ON08-06C	✻	●		80	95	27	50	5	6	A	0.9	
FMA07-080-B27-ON08-06		●	○	80	95	27	50	5	6	B	0.9	
FMA07-100-B32-ON08-07		●		100	115	32	63	5	7	B	1.8	
FMA07-100-B32-ON08-07C	✻	●		100	115	32	63	5	8	B	3.1	
FMA07-125-B40-ON08-08		●	○	125	140	40	63	5	8	B	3.1	
FMA07-125-B40-ON08-08C	✻	●		125	140	40	63	5	8	B	3.1	
FMA07-160-C40-ON08-10		●	○	160	175	40	63	5	10	C	4.1	
FMA07-200-C60-ON08-12		●	○	200	215	60	63	5	12	C	6.1	
FMA07-250-C60-ON08-14		●	○	250	265	60	63	5	14	C	12	
FMA07-315-D60-ON08-16		●	○	315	330	60	80	5	16	D	21	

● Ex stock ○ On demand

✻ With internal cooling

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Spare parts

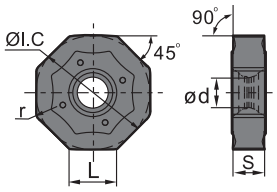
	Insert	ONHU0604	ONHU08T5
	ØD	50- 315	63- 315
	Screw (insert)	l60M4*10 (3.4 Nm)	l60M5*13 (6.7 Nm)
	Wrench (insert)	WT15IS	
	Wrench (insert)		WT20IT



Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

ONHU	L	I.C	S	d
06 04	6.58	15.875	4.76	4.4
08 T5	8.39	20.2	5.77	5.3



ON** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW		
		P																				
		M																				
		K																				
		N																				
		S																				
		H																				
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	ONHU060408-PF	0.8	○			○			●						●								
	ONHU08T508-PF	0.8	●			●			○				●		●								
	ONHU060408-PM	0.8	●			●		●	●					●									
	ONHU08T508-PM	0.8	●			●		●	●														

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Notes



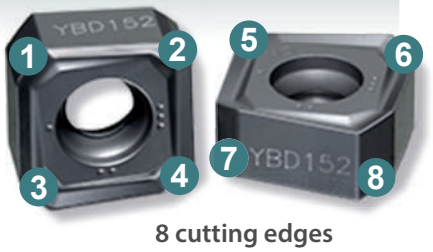
FMA11 Kr: 45°

New face mill generation

- Double sided, extra thick insert with 8 cutting edges.
- Large rake angle reduces cutting forces.
- More stability for larger cutting depths.
- Wiper geometry for better surface quality.

Insert grades

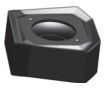
YBC302	**YBM253**	**YBD152**
CVD	*CVD*	*CVD*
P15 – P35	*P20 – P40*	*K05 – K25*
YBD252	**YBG205**	**YB9320**
CVD	*PVD*	*PVD*
K15 – K35	*P10 – P30*	*P15 – P25*
	M20 – M30	*M20 – M30*



8 cutting edges

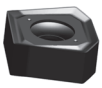
Chip breakers

-GM



- General machining

-GR



- Stable cutting edge

-E



- Sharp cutting edge
- First choice for stainless steel

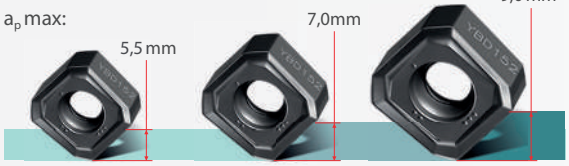
-W



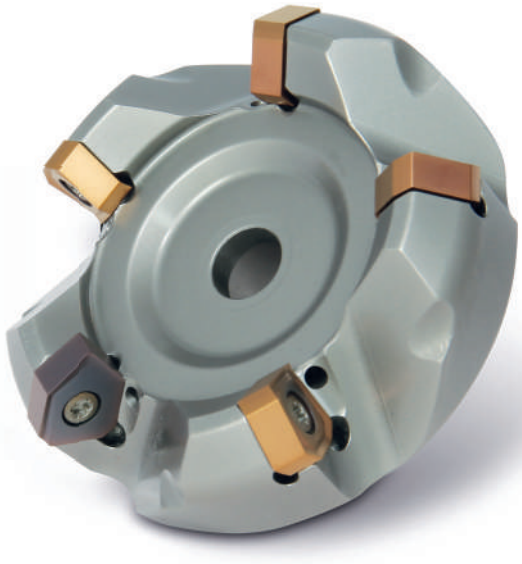
- Wiper geometry for best surface quality

Insert sizes

a_p max:

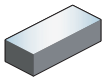


SNEG1205ANR-GM/GR | SNEG1506ANR-GM/GR | SNEG1907ANR-GR

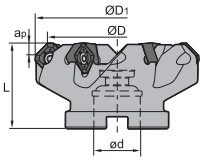


Face milling

FMA11 Kr: 45°







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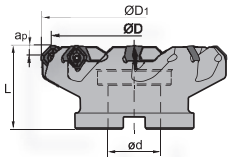

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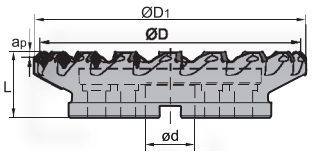
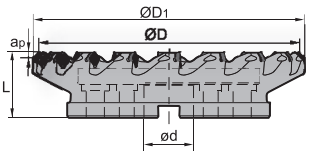


C



D

Article	✻	Stock	Dimensions [mm] ØD	ØD$_1$	ød	L	$a_{p\,max}$	Teeth	Coupling	kg	Inserts
FMA11-063-A22-SN12-05		●	63	74.47	22	40	5.5	5	A	0.55	SNEG1205
FMA11-063-A22-SN12-06		●	63	74.47	22	40	5.5	6	A	0.58	
FMA11-080-A27-SN12-06		●	80	91.47	27	50	5.5	6	A	1.14	
FMA11-100-B32-SN12-07		●	100	111.47	32	50	5.5	7	B	1.42	
FMA11-100-B32-SN12-07C	✻	○	100	111.47	32	50	5.5	7	B	1.42	
FMA11-100-B32-SN12-10C	✻	●	100	111.47	32	50	5.5	10	B	1.42	
FMA11-125-B40-SN12-08		●	125	136.47	40	63	5.5	8	B	2.86	
FMA11-125-B40-SN12-08C	✻	○	125	136.47	40	63	5.5	8	B	2.86	
FMA11-125-B40-SN12-12C	✻	●	125	136.47	40	63	5.5	12	B	2.86	
FMA11-160-C40-SN12-10		●	160	171.47	40	63	5.5	10	C	4.06	
FMA11-160-C40-SN12-15		●	160	171.47	40	63	5.5	15	C	4.06	
FMA11-200-C60-SN12-14		●	200	212.08	60	63	5.5	14	C	6.89	
FMA11-063-A22-SN15-05		●	63	77.4	22	40	7	5	A	0.56	SNEG1506
FMA11-080-A27-SN15-06		●	80	94.4	27	50	7	6	A	1.06	
FMA11-100-B32-SN15-07		●	100	114.4	32	50	7	7	B	1.47	
FMA11-100-B32-SN15-07C	✻	○	100	114.4	32	50	7	7	B	1.47	
FMA11-100-B32-SN15-09C	✻	●	100	114.4	32	50	7	9	B	1.47	
FMA11-125-B40-SN15-08		●	125	139.4	40	63	7	8	B	2.7	
FMA11-125-B40-SN15-08C	✻	○	125	139.4	40	63	7	8	B	2.7	
FMA11-125-B40-SN15-10C	✻	●	125	140.25	40	63	7	10	B	3.1	
FMA11-160-C40-SN15-10		●	160	174.4	40	63	7	10	C	3.92	
FMA11-160-C40-SN15-13		●	160	175.25	40	63	7	13	C	4.14	
FMA11-200-C60-SN15-12		●	200	214.4	60	63	7	12	C	5.46	
FMA11-250-C60-SN15-14		●	250	264.4	60	63	7	14	C	11.26	
FMA11-315-D60-SN15-18		○	315	329.4	60	80	7	18	D	20	
FMA11-125-B40-SN19-07		●	125	142.63	40	63	9	7	B	3	SNEG1907
FMA11-125-B40-SN19-07C	✻	●	125	142.63	40	63	9	7	B	3	
FMA11-160-C40-SN19-09		●	160	167.63	40	63	9	9	C	4.25	
FMA11-200-C60-SN19-11		●	200	217.63	60	63	9	11	C	6.18	

● Ex stock ○ On demand

✻ With internal cooling

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Article	✻	Stock	Dimensions [mm] ØD	ØD$_1$	ød	L	$a_{p\,max}$	Teeth	Coupling	kg	Inserts
FMA11-250-C60-SN19-13		●	250	267.63	60	63	9	13	C	11.55	SNEG1907
FMA11-315-D60-SN19-16		○	315	332.63	60	80	9	16	D	20.9	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	SNEG1205	SNEG1506	SNEG1907
	ØD	63-200	63-315	125-315
	Screw (insert)	I60M3.5*10 (2.7 Nm)	I60M5*13 (6.7 Nm)	I43M6*16 (9.1 Nm)
	Wrench (insert)	WT15IS		
	Wrench (insert)		WT20IT	WT25IT

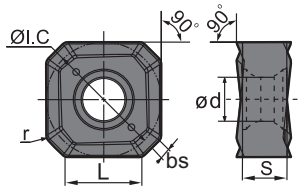


Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SNEG	L	I.C	S	d
12 05	7.6	12	4.76	4.6
15 06	9.4	15	5.6	5.5
19 07	12.1	19	7	7.2

SN** negative insert



	ISO	r	bs	HC[1] (CVD) YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	HC[1] (PVD) YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	HT YNG151	HC[2] YNG151C	HW YD101	YD201
	SNEG1506ANR-E	0.9	1.3												●									
	SNEG1205ANR-GM	0.8	1.05	●			●			●				●										
	SNEG1506ANR-GM	0.9	1.3	●			●			●					●									
	SNEG1205ANR-GR	0.8	1.05	●			●			●														
	SNEG1506ANR-GR	0.9	1.3	●			●			●														
	SNEG1907ANR-GR	1	1.67	●			●			●	●													

● Ex stock ○ On demand

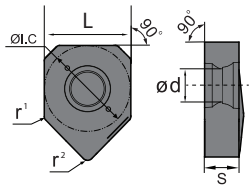
HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SNEG	L	I.C	S	d
12 05	12	12	4.76	4.6

Milling inserts



SN** negative insert				HC¹ (CVD)								HC¹ (PVD)								HT		HC²		HW	
			P																						
			M																						
			K																						
			N																						
			S																						
			H																						
ISO		r1	r2	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201	
	**SNEG1205ANR-W**	0.6	0.8												●										

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code > B26 Grade selection > B24 Technical info > B463 Cutting data > B224



FMA12 Kr: 45°

Face mill

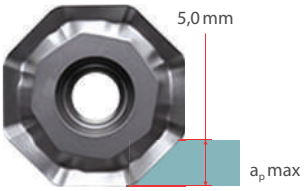
- High cost-benefit factor due to 16 cutting edges.
- Three-dimensional chip breaker for tough materials.
- Smooth cut due to positive and sharp cutting edge.

Insert grades

YBM253	YBG205	YBD152	YBD252
CVD	*PVD*	*CVD*	*CVD*
P20 – P40	*P10 – P30*	*K05 – K25*	*K15 – K35*
M10 – M30	*M10 – M30*		

Chip breakers

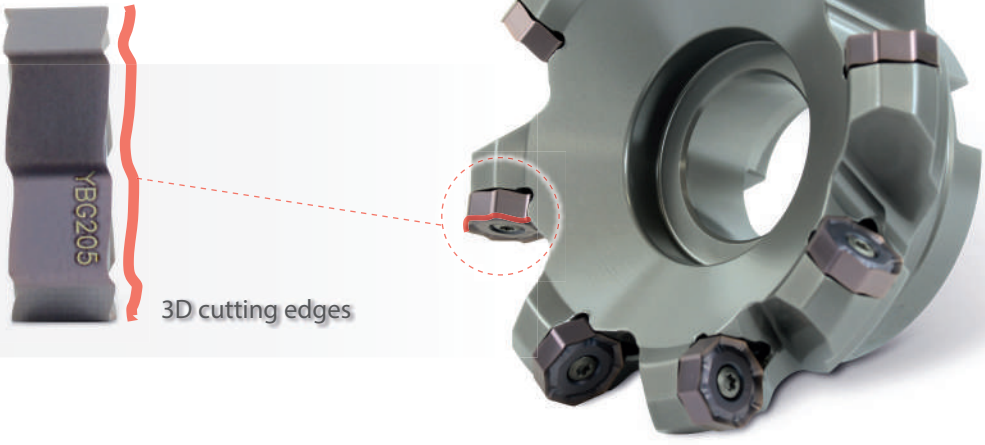
-GM



ONHU08T624R-GM

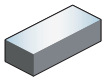


16 cutting edges

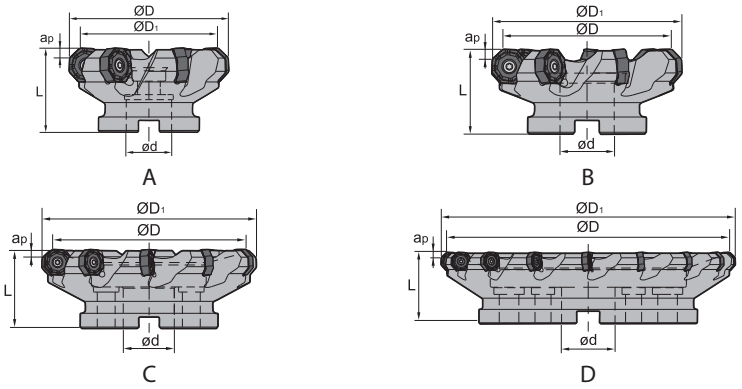


Face milling

FMA12 Kr: 45°







Article	✻	Stock	Dimensions [mm] ØD	ØD1	ød	L	ap max	Teeth	Coupling	kg	Inserts
FMA12-063-A22-ON08-05		●	63	78	22	50	5	5	A	0.6	ONHU08T6
FMA12-080-A27-ON08-06		○	80	95	27	50	5	6	A	0.97	
FMA12-100-B32-ON08-07		●	100	115	32	50	5	7	B	1.28	
FMA12-100-B32-ON08-07C	✻	●	100	115	32	50	5	7	B	1.28	
FMA12-125-B40-ON08-08		●	125	140	40	63	5	8	B	2.59	
FMA12-125-B40-ON08-08C	✻	●	125	140	40	63	5	8	B	2.59	
FMA12-160-C40-ON08-10		●	160	175	40	63	5	10	C	4.1	
FMA12-200-C60-ON08-12		●	200	215	60	63	5	12	C	5.68	
FMA12-250-C60-ON08-14		○	250	265	60	63	5	14	C	11.9	
FMA12-315-D60-ON08-18		○	315	330	60	80	5	18	D	20.41	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	ONHU08T6
	ØD	63- 315
	Screw (insert)	I60M5*13 (6.7 Nm)
	Wrench (insert)	WT20IT

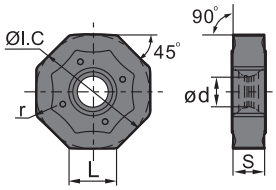


System code B26 Grade selection B24 Technical info B463 Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

ONHU	L	I.C	S	d
08 T6	6.38	20.2	6.3	5.3

Milling inserts



ON** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
		P																			
		M																			
		K																			
		N																			
		S																			
		H																			
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**ONHU08T624R-GM**	2.4				●			○				○										

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Notes



FMD02 Kr: 67°

Face mill

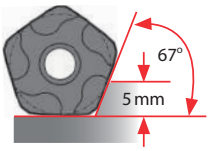
- Smooth-cutting inserts due to trough-shaped chip breaker.
- Chamfer with wiper for best surface quality.
- Wide selection of inserts with 6 different chip breakers.
- Milling body available in wide, normal and close pitch (wedge clamping).

Insert grades

YBC302	YBM253	YBD152	YBD252
CVD	*CVD*	*CVD*	*CVD*
P15 – P35	*P10 – P40*	*K05 – K25*	*K15 – K35*

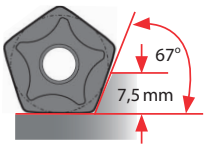
Chip breakers

-CF -CM -CR



- Cast iron machining
  $a_p$max = 5 mm

-PF -PM -PR



- Steel
  $a_p$max = 7.5 mm



2 x 5 cutting edges



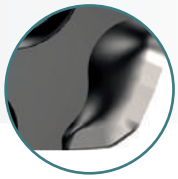
- Entry angle Kr = 67°



- Screw clamping



- Wedge clamping



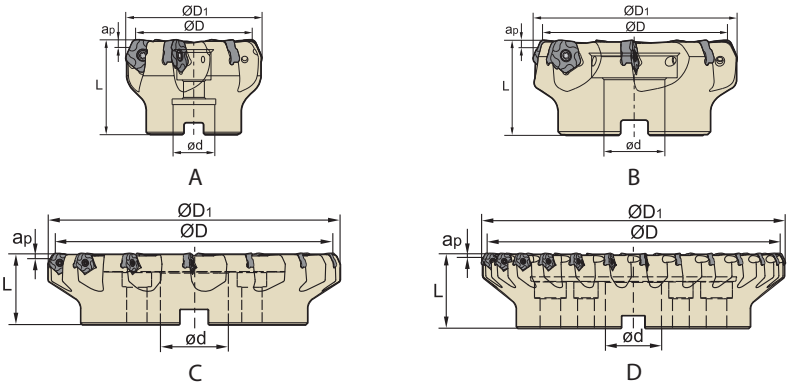
- Wiper



Face milling

FMD02 Kr: 67°





Article	✻	Stock R	Stock L	Dimensions [mm] ØD	ØD1	ød	L	ap max	Teeth	Coupling	kg	Inserts
FMD02-050-A22-PN11-04		●	○	50	60.1	22	50	5	4	A	0.6	
FMD02-050-A22-PN11-04C	✻	○		50	60.1	22	50	5	4	A	0.6	
FMD02-050-A22-PN11-05		●		50	60.1	22	50	5	5	A	0.6	
FMD02-050-A22-PN11-05C	✻	●		50	60.1	22	50	5	5	A	0.6	
FMD02-063-A22-PN11-05		●	○	63	73.1	22	50	5	5	A	0.8	
FMD02-063-A22-PN11-05C	✻	○		63	73.1	22	50	5	5	A	0.8	
FMD02-063-A22-PN11-06		●		63	73.1	22	50	5	6	A	0.9	
FMD02-063-A22-PN11-06C	✻	●		63	73.1	22	50	5	6	A	0.9	
FMD02-080-A27-PN11-06		●		80	90.1	27	50	5	6	A	1.1	
FMD02-080-A27-PN11-08		●		80	90.1	27	50	5	8	A	1.2	
FMD02-080-A27-PN11-08C	✻	●		80	90.1	27	50	5	8	A	1.2	
FMD02-100-B32-PN11-07		●		100	110.1	32	50	5	7	B	1.8	
FMD02-100-B32-PN11-07C	✻	○		100	110.1	32	50	5	7	B	1.8	
FMD02-100-B32-PN11-10		●		100	110.1	32	50	5	10	B	1.9	
FMD02-100-B32-PN11-10C	✻	○		100	110.1	32	50	5	10	B	1.9	PNEG1105
FMD02-125-B40-PN11-08		●	●	125	135.1	40	63	5	8	B	2.9	
FMD02-125-B40-PN11-08C	✻	○		125	135.1	40	63	5	8	B	2.9	
FMD02-125-B40-PN11-12		●	○	125	135.1	40	63	5	12	B	3.2	
FMD02-125-B40-PN11-12C	✻	○		125	135.1	40	63	5	12	B	3.2	
FMD02-160-B40-PN11-10		●	○	160	170.1	40	63	5	10	B	5.6	
FMD02-160-B40-PN11-14		●	○	160	170.1	40	63	5	14	B	6.4	
FMD02-200-C60-PN11-12		○	○	200	210.1	60	63	5	12	C	7.9	
FMD02-200-C60-PN11-16		●		200	210.1	60	63	5	16	C	8.5	
FMD02-200-C60-PN11-20		○		200	210.1	60	63	5	20	C	8.5	
FMD02-200-C60-PN11-24		●		200	210.1	60	63	5	24	C	8.6	
FMD02-250-C60-PN11-14		○		250	260.1	60	63	5	14	C	13.4	
FMD02-250-C60-PN11-18		●	○	250	260.1	60	63	5	18	C	18	
FMD02-250-C60-PN11-30		○		250	260.1	60	63	5	30	C	13.5	
FMD02-315-D60-PN11-26		○	○	315	325.1	60	80	5	26	D	24.5	

● Ex stock ○ On demand

✻ With internal cooling

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Spare parts

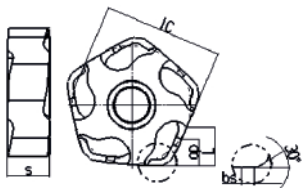
	Insert	PNEG1105
	ØD	50- 315
	Screw (insert)	I60M4*10 (3.4 Nm)
	Wrench (insert)	WT15IS



Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

PNEG	L	I.C	S	d
11 05	5.4	15.875	5.56	4.64



		HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
P		◉	◉	◉	◉	◉	◉	◉	◉		◉	◉	◉	◉	◉	◉	●	◉	◉	◉		
M			◉	◉	◉	◉	◉	◉			◉	◉	◉	◉	◉	◉	●	◉	●	◉		
K								◉	◉	●							◉	●			◉	
N										◉											◉	◉
S					◉		◉				●	◉	◉	◉								
H																						

ISO		bs	a_p max
	**PNEG110512L-CF**	1.6	5
	PNEG110512R-CF	1.6	5
	**PNEG110512L-CM**	1.6	5
	PNEG110512R-CM	1.6	5
	**PNEG110512L-CR**	1.6	5
	PNEG110512R-CR	1.6	5

● Ex stock ○ On demand

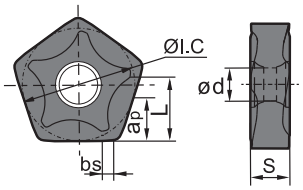
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

PNEG	L	I.C	S	d
11 05	7.5	15.875	5.56	4.64

Milling inserts



PN** milling insert				HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
				P																		
				M																		
				K																		
				N																		
				S																		
				H																		
ISO		bs	$a_{p\,max}$	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**PNEG110512L-PF**	1.6	7.5	○																				
	PNEG110512R-PF	1.6	7.5	○			○																	
	**PNEG110512L-PM**	1.6	7.5	○			○																	
	PNEG110512R-PM	1.6	7.5	●			●																	
	**PNEG110512L-PR**	1.6	7.5	○			●																	
	PNEG110512R-PR	1.6	7.5	○			●																	

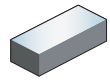
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

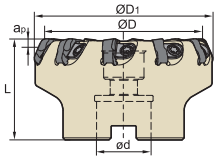
System code > B26 Grade selection > B24 Technical info > B463 Cutting data > B224

Face milling

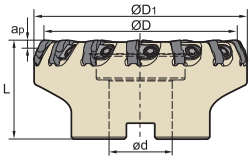
FMD02 Kr: 67°



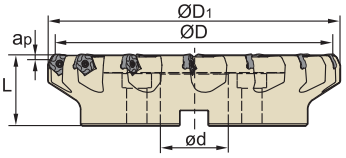




A



B



C

Article	✻	Stock		Dimensions [mm]					Teeth	Coupling	kg	Inserts
		R	L	ØD	$ØD_1$	ød	L	$a_{p\,max}$				
FMD02-080-A27-PN11-10		●		80	90.1	27	50	5	10	A	1.3	PNEG1105
FMD02-100-B32-PN11-14		●	○	100	110.1	32	50	5	14	B	1.6	
FMD02-125-B40-PN11-18		●		125	135.1	40	63	5	18	B	3.2	
FMD02-160-B40-PN11-22		●		160	170.1	40	63	5	22	B	5.8	
FMD02-200-C60-PN11-28		○	○	200	210.1	60	63	5	28	C	8.5	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**PNEG1105**
	ØD	**80-200**
	Screw (wedge)	DM6*20A (7.0 Nm)
	Wedge	W18N
	Wrench (wedge)	WT15IT

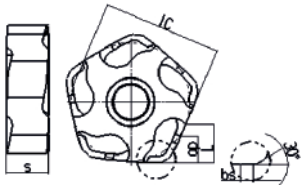


System code B26 Grade selection B24 Technical info B463 Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

PNEG	L	I.C	S	d
11 05	5.4	15.875	5.56	4.64

Milling inserts

PN** milling insert				HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
			P	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●		
			M		●	●	●	●	●	●			●	●	●	●	●	●	●	●		
			K							●	●		●					●	●			●
			N								●											●
			S			●		●				●	●	●	●							
			H																			
ISO		bs	$a_{p\ max}$	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**PNEG110512L-CF**	1.6	5							○														
	PNEG110512R-CF	1.6	5							●														
	**PNEG110512L-CM**	1.6	5							○														
	PNEG110512R-CM	1.6	5							●														
	**PNEG110512L-CR**	1.6	5							○	○													
	PNEG110512R-CR	1.6	5							●	●													

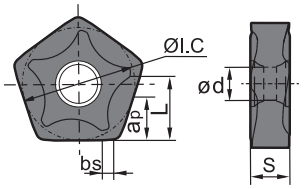
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

PNEG	L	I.C	S	d
11 05	7.5	15.875	5.56	4.64

Milling inserts

PN** milling insert				HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
			P	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●		
			M		●	●	●	●	●	●			●	●	●	●	●	●	●	●		
			K							●	●		●					●	●			●
			N								●											●
			S			●		●				●	●	●	●							
			H																			
ISO		bs	$a_{p\ max}$	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**PNEG110512L-PF**	1.6	7.5	○																				
	PNEG110512R-PF	1.6	7.5	○			○																	

● Ex stock ○ On demand

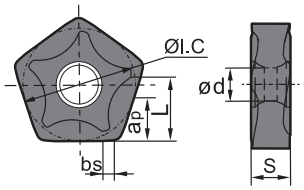
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

PNEG	L	I.C	S	d
11 05	7.5	15.875	5.56	4.64



PN** milling insert				HC[1] (CVD)							HC[1] (PVD)									HT	HC[2]	HW	
				P																			
				M																			
				K																			
				N																			
				S																			
				H																			
	ISO	bs	$a_{p\,max}$	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**PNEG110512L-PM**	1.6	7.5	○			○																	
	PNEG110512R-PM	1.6	7.5	●			●																	
	**PNEG110512L-PR**	1.6	7.5	○			●																	
	PNEG110512R-PR	1.6	7.5	○			●																	

● Ex stock ○ On demand

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

A Turning
B Milling
C Drilling
D Technical Information
E Index

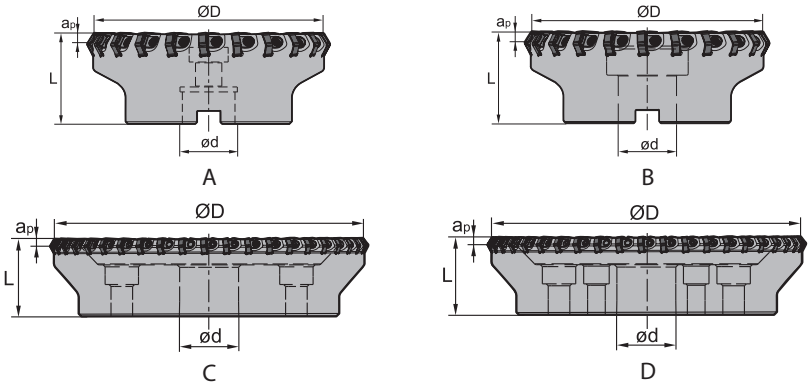
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Face milling

FMD02 Kr: 55°







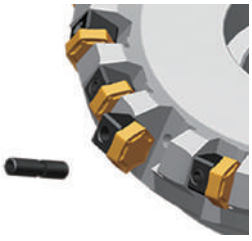
Article	✻	Stock R	Stock L	Dimensions [mm] ØD	ød	L	$a_{p\,max}$	Teeth	Coupling	kg	Inserts
FMD02-080-A27-HN09-08		○		80	27	50	6	8	A	1.19	
FMD02-100-B32-HN09-10		○		100	32	50	6	10	B	1.77	
FMD02-125-B40-HN09-14		○		125	40	63	6	14	B	3.55	
FMD02-125-B40-HN09-18		○		125	40	63	6	18	B	3.7	
FMD02-160-B40-HN09-18		●		160	40	63	6	18	B	5.62	HNEX0905
FMD02-160-B40-HN09-22		○		160	40	63	6	22	B	5.6	
FMD02-200-C60-HN09-22		○		200	60	63	6	22	C	6.7	
FMD02-250-C60-HN09-28		○	○	250	60	63	6	28	C	13	
FMD02-315-D60-HN09-44		○		315	60	63	6	44	D	21.7	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	HNEX0905
	ØD	80- 315
	Screw (wedge)	DM6*20A (7.0 Nm)
	Wedge	W18N
	Wrench (wedge)	WT15IT



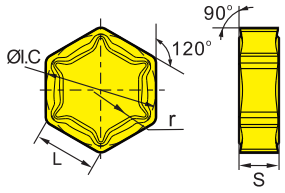
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

HNEX	L	I.C	S
09 05	9.16	15.875	5.56

Milling inserts

HN** milling insert			HC[1] (CVD)							HC[1] (PVD)								HT	HC[2]	HW	
		P	●	●	●	●	●	●	●		●	●	●	●	●		●	●	●		
		M		●	●	●	●	●			●	●	●	●	●		●	●	●		
		K							●	●	●					●	●				●	
		N								●											●	●
		S				●		●			●	●	●	●								
		H																				
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**HNEX090512-DM**	1.2							○	○													
	**HNEX090512-DR**	1.2							●	●													



● Ex stock ○ On demand

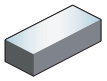
HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

A Turning
B Milling
C Drilling
D Technical Information
E Index

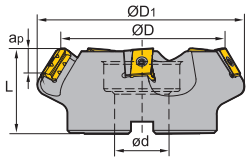
System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Face milling

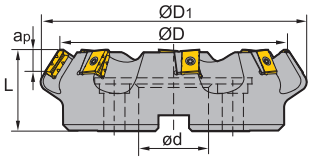
FMD03 Kr: 60°







B



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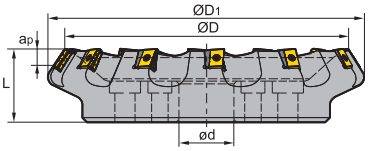


D

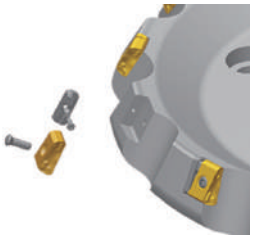
Article	✻	Stock R	Stock L	Dimensions [mm] ØD	ØD1	ød	L	ap max	Teeth	Coupling	kg	Inserts
FMD03-100-B32-LN20-05		○		100	129	32	63	12	5	B	3.02	
FMD03-125-B40-LN20-06		●		125	153	40	63	12	6	B	4.5	
FMD03-160-C40-LN20-08		●		160	187	40	63	12	8	C	6.9	
FMD03-160-C40-LN20-09		○		160	187	40	63	12	9	C	6.7	LNKT2007-ZR
FMD03-200-C60-LN20-10		●		200	227	60	70	12	10	C	10.5	
FMD03-250-C60-LN20-12		●		250	276	60	70	12	12	C	13.4	
FMD03-315-D60-LN20-15		○		315	339	60	80	12	15	D	26.2	
FMD03-125-B40-LN25-05		○		125	154	40	63	16	5	B	4.5	
FMD03-160-C40-LN25-06		●		160	189	40	63	16	6	C	6.9	
FMD03-200-C60-LN25-08		●		200	229	60	70	16	8	C	10.5	
FMD03-250-C60-LN25-10		●		250	278	60	70	16	10	C	16.7	LNKT2510-ZR
FMD03-315-D60-LN25-12		○	○	315	346	60	80	16	12	D	27.3	
FMD03-400-D60-LN25-16		○	○	400	427	60	80	16	16	D	47.1	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	LNKT2007-ZR	LNKT2510-ZR
	ØD	100- 315	125 -400
	Screw (insert)	I60M4*15 (3.4 Nm)	I60M5*17 (6.7 Nm)
	Screw (shim)	I60M3*7	I60M3.5*10.4
	Shim	LLN20R-ZR	LLN25R-ZR
	Wrench (insert)	WT15IS	
	Wrench (insert)		WT20IT
	Wrench (shim)	WT09IS	WT15IS

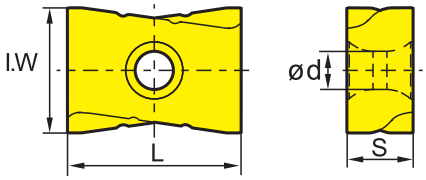


System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

LNKT	L	S	d
20 07	20	7.94	4.6
25 10	25	9.525	5.5



LN** milling insert			HC[1] (CVD)							HC[1] (PVD)								HT	HC[2]	HW		
		P																				
		M																				
		K																				
		N																				
		S																				
		H																				
ISO		I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	LNKT2007DN-ZR	17				●	●		○								●						
	LNKT2510-ZR	18						●	●								●						

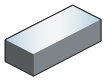
● Ex stock ○ On demand

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

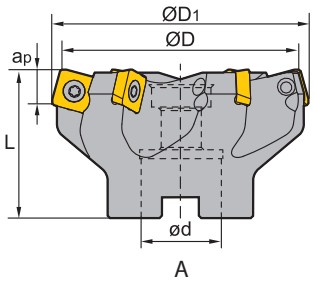
System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

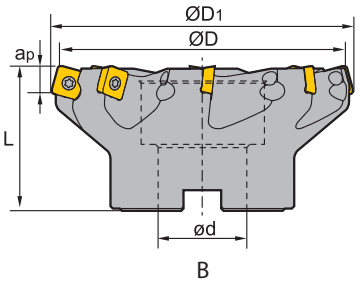
Face milling

FME02 Kr: 75°









Article	✻	Stock	Dimensions [mm]					Teeth	Coupling	kg	Inserts
			ØD	$ØD_1$	ød	L	$a_{p\,max}$				
FME02-050-A22-SP12-04		●	50	54	22	40	6	4	A	0.3	SPKT1204 SPKW1204
FME02-063-A22-SP12-05		●	63	66	22	50	6	5	A	0.6	
FME02-080-A27-SP12-06		●	80	83	27	50	6	6	A	0.9	
FME02-100-B32-SP12-07		●	100	103	32	50	6	7	B	1.4	
FME02-125-B40-SP12-08		●	125	128	40	63	6	8	B	2.5	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**SPKT1204 SPKW1204**
	ØD	**50-125**
	Screw (insert)	I60M5*13.2 (6.7 Nm)
	Wrench (insert)	WT20IS

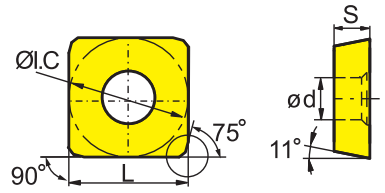


System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPKW	L	I.C	S	d
12 04	12.7	12.7	4.76	5.56

Milling inserts

SP** milling insert		HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
	P																			
	M																			
	K																			
	N																			
	S																			
	H																			
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**SPKW1204EDFR**													○								
	SPKW1204EDSR													●								

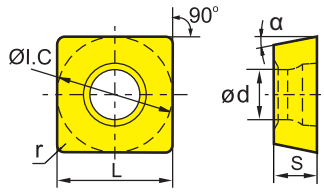
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPKT	L	I.C	S	d
12 04	12.7	12.7	4.76	5.56

Milling inserts

SP** milling insert		HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
	P																			
	M																			
	K																			
	N																			
	S																			
	H																			
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**SPKT1204EDR**													●								

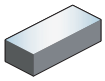
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

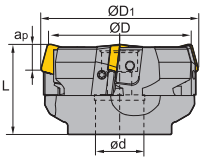
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Face milling

FME03 Kr: 75°







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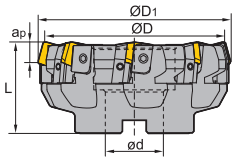

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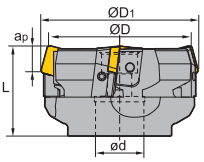

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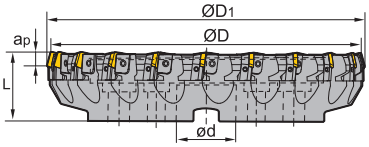


D

Article	✻	Stock R	Stock L	Dimensions [mm] ØD	ØD1	ød	L	ap max	Teeth	Coupling	kg	Inserts
FME03-080-A27-SP12-04		○		80	84	27	50	6	4	A	1.1	SPKN1203 SPKR1203 SPEX1203
FME03-100-B32-SP12-06		●		100	104	32	50	6	6	B	1.9	
FME03-125-B40-SP12-08		○	○	125	129	40	63	6	8	B	3.5	
FME03-160-B40-SP12-10		●	○	160	164	40	63	6	10	B	5.7	
FME03-200-C60-SP12-12		○	○	200	203	60	63	6	12	C	8.2	
FME03-250-C60-SP12-16		○	○	250	253	60	63	6	16	C	13.8	
FME03-315-D60-SP12-20		○		315	318	60	70	6	20	D	23.5	
FME03-080-A27-SP15-04		○	○	80	84	27	50	8	4	A	1	SPKN1504 SPKR1504 SPEX1504
FME03-100-B27-SP15-06		○		100	104	27	50	8	6	B	1.8	
FME03-125-B40-SP15-08		●	○	125	129	40	63	8	8	B	3.3	
FME03-160-B40-SP15-10		○	○	160	164	40	63	8	10	B	5.4	
FME03-200-C60-SP15-12		○	○	200	204	60	63	8	12	C	7.9	
FME03-250-C60-SP15-16		○	○	250	253	60	63	8	16	C	13.6	
FME03-315-D60-SP15-20		○	○	315	318	60	70	8	20	D	23.1	

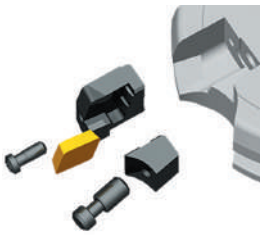
● Ex stock ○ On demand

✻ With internal cooling

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Spare parts

	Insert	SPKN1203 SPKR1203 SPEX1203	SPKN1203 SPKR1203 SPEX1203	SPKN1504 SPKR1504 SPEX1504
	ØD	80-100	125 - 315	80- 315
	Adjustable screw	LOM5*15.1	LOM5*15.1	LOM5*15.1
	Cassette (left)	LSP12L	LSP12L	LSP15L
	Cassette (right)	LSP12R	LSP12R	LSP15R
	Screw (wedge)	WM8*17	WM8*22	WM8*22
	Wedge (left)	W04L	W04L	W04L
	Wedge (right)	W04R	W04R	W04R
	Wrench (locator)	WT20T	WT20T	WT20T
	Wrench (wedge)	WT25T	WT25T	WT25T

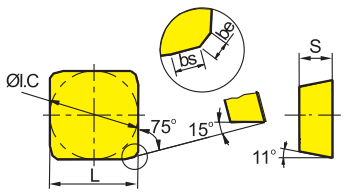


Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPKN	L	I.C	S
12 03	12.7	12.7	3.18
15 04	15.875	15.875	4.76

SP** milling insert



	HC[1] (CVD)							HC[1] (PVD)								HT	HC[2]	HW	
P																			
M																			
K																			
N																			
S																			
H																			

ISO	be	bs	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
SPKN1203EDFL	1	1.4																				●	
SPKN1203EDFR	1	1.4		○								○										●	
SPKN1203EDSKL	1	1.4		●																			
SPKN1203EDSKR	1	1.4		●	●					○					●		●						
SPKN1203EDTKR	1	1.4						○									○						
SPKN1504EDFL	1	1.4																				○	
SPKN1504EDFR	1	1.4																				○	
SPKN1504EDS32PR	1	1.4		○												○							
SPKN1504EDSKL	1	1.4															○						
SPKN1504EDSKR	1	1.4		●						●					●		●						
SPKN1504EDTKR	1	1.4													○								

● Ex stock ○ On demand

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

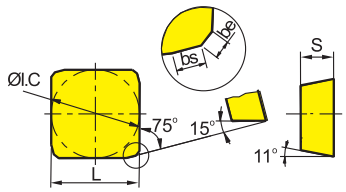
System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPKR	L	I.C	S
12 03	12.7	12.7	3.18
15 04	15.875	15.875	4.76

SP** milling insert



	HC¹ (CVD)								HC¹ (PVD)								HT	HC²	HW	
P	◐	◐	◑	◐	◐	◑		◑		◑	◐	◐	◑	◑		●	●	●		
M		◐	◑	◐	◐	◑				◐	◐	◐	◑	◑		●	●	●		
K							◑	◑	●						◑	●				◑
N									◑										◑	◑
S				◑		◑			●	◐	◐	◐								
H																				

ISO	be	bs	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
SPKR1203EDL-GM	1	1.4					○																
SPKR1203EDR-GM	1	1.4					●																
SPKR1504EDR-GM	1	1.4				○									○								
SPKR1203EDR	1	1.4		○																			

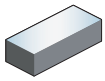
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

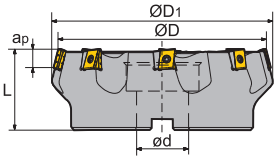
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Face milling

FME04 Kr: 75°







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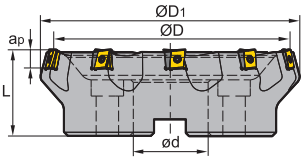

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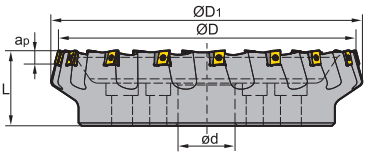


D

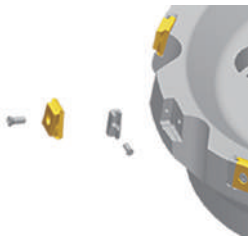
Article	✻	Stock	Dimensions [mm]					Teeth	Coupling	kg	Inserts
			ØD	$ØD_1$	ød	L	$a_{p\ max}$				
FME04-125-B40-LN15-06		●	125	137	40	63	10	6	B	3.8	LNKT1506-ZR
FME04-160-B40-LN15-08		●	160	170	40	63	10	8	C	6.6	
FME04-200-C60-LN15-10		●	200	208	60	70	10	10	C	9.6	
FME04-250-C60-LN15-12		○	250	257	60	70	10	12	C	13.4	
FME04-315-D60-LN15-16		○	315	328	60	80	10	16	D	25.2	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**LNKT1506-ZR**
	ØD	**125 - 315**
	Screw (insert)	I60M4*12 (3.4 Nm)
	Screw (shim)	I60M3*7
	Shim	LLN15-ZR
	Wrench (insert)	WT15IS
	Wrench (shim)	WT09IS

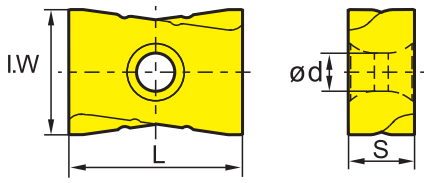


System code B26 Grade selection B24 Technical info B463 Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

LNKT	L	S	d
15 06	15.875	6.35	4.6

Milling inserts



LN** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT		HC²		HW	
		P																					
		M																					
		K																					
		N																					
		S																					
		H																					
ISO		I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**LNKT1506EN-ZR**	14	●				○	●	●	●							○						

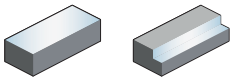
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

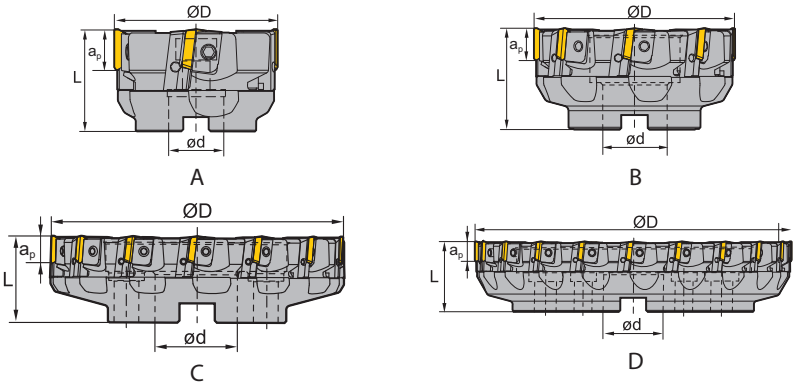
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Face milling

FMP01 Kr: 90°







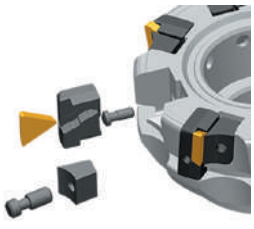
Article	✻	Stock R	Stock L	Dimensions [mm] ØD	Dimensions [mm] ød	Dimensions [mm] L	Dimensions [mm] $a_{p\,max}$	Teeth	Coupling	kg	Inserts
FMP01-080-A27-TP22-04		●		80	27	50	18	4	A	1.2	
FMP01-100-B32-TP22-06		●		100	32	50	18	6	B	1.7	
FMP01-125-B40-TP22-08		●	○	125	40	63	18	8	B	3.2	
FMP01-160-B40-TP22-10		●	○	160	40	63	18	10	B	5.1	TPKN2204
FMP01-200-C60-TP22-12		●	○	200	60	63	18	12	C	7.4	
FMP01-250-C60-TP22-16		○	○	250	60	63	18	16	C	12.3	
FMP01-315-D60-TP22-20		○	○	315	60	70	18	20	D	21.9	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	TPKN2204	TPKN2204
	ØD	80-100	125 - 315
	Adjustable screw	LOM5*15.1	LOM5*15.1
	Cassette (left)	LTP4L1	LTP4L
	Cassette (right)	LTP4R1	LTP4R
	Screw (wedge)	WM8*12	WM8*22
	Wedge (left)	W04L	W04L
	Wedge (right)	W04R	W04R
	Wrench (locator)	WT20T	WT20T
	Wrench (wedge)	WT25T	WT25T

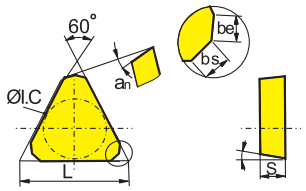


System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TPKN	L	I.C	S
22 04	22	12.7	4.76



TP** milling insert					HC¹ (CVD)								HC¹ (PVD)								HT		HC²		HW			
				P																								
				M																								
				K																								
				N																								
				S																								
				H																								
ISO		be	bs	an	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201				
	TPKN2204PDFR	1.4	0.7	11°										○											●				
	TPKN2204PDS32PR	1.4	0.7	11°												○		○											
	TPKN2204PDSKL	1.4	0.7	11°		○																							
	TPKN2204PDSKR	1.4	0.7	11°		●	●			●		●				●	●		●										
	TPKN2204PDTKR	1.4	0.7	11°										●															

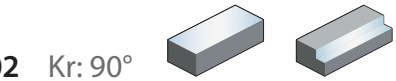
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

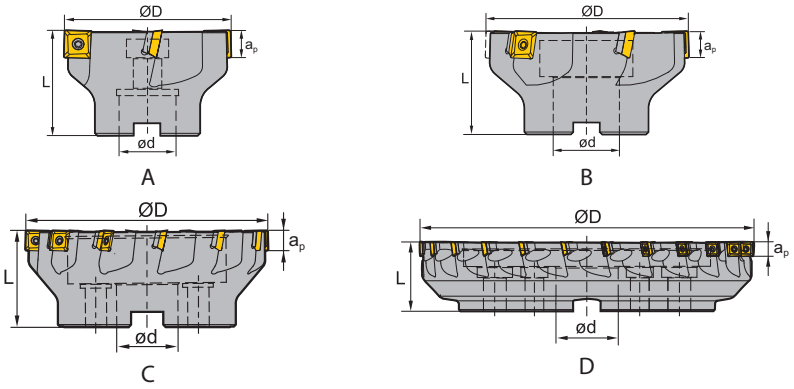
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Face milling

FMP02 Kr: 90°







Article	✻	Stock	Dimensions [mm] ØD	ød	L	$a_{p\,max}$	Teeth	Coupling	kg	Inserts
FMP02-050-A22-SE09-05		●	50	22	40	6.7	5	A	0.3	SEET09T3
FMP02-050-A22-SE09-05C	✻	●	50	22	40	6.7	5	A	0.3	
FMP02-063-A22-SE09-06		●	63	22	40	6.7	6	A	0.5	
FMP02-063-A22-SE09-06C	✻	●	63	22	40	6.7	6	A	0.5	
FMP02-080-A27-SE09-08		●	80	27	50	6.7	8	A	0.9	
FMP02-100-B32-SE09-08		○	100	32	50	6.7	8	B	1.7	
FMP02-100-B32-SE09-10		○	100	32	50	6.7	10	B	1.7	
FMP02-100-B32-SE09-10C	✻	○	100	32	50	6.7	10	B	1.7	
FMP02-125-B40-SE09-12		●	125	40	63	6.7	12	B	2.6	
FMP02-125-B40-SE09-12C	✻	○	125	40	63	6.7	12	B	2.6	
FMP02-050-A22-SE12-03		○	50	22	40	10.8	3	A	0.3	SEET1203
FMP02-050-A22-SE12-04		●	50	22	40	10.8	4	A	0.3	
FMP02-050-A22-SE12-04C	✻	●	50	22	40	10.8	4	A	0.3	
FMP02-050-A22-SE12-05		●	50	22	40	10.8	5	A	0.2	
FMP02-050-A22-SE12-05C	✻	○	50	22	40	10.8	5	A	0.2	
FMP02-063-A22-SE12-04		○	63	22	40	10.8	4	A	0.4	
FMP02-063-A22-SE12-05		●	63	22	40	10.8	5	A	0.4	
FMP02-063-A22-SE12-05C	✻	●	63	22	40	10.8	5	A	0.4	
FMP02-063-A22-SE12-06		●	63	22	40	10.8	6	A	0.4	
FMP02-063-A22-SE12-06C	✻	○	63	22	40	10.8	6	A	0.4	
FMP02-080-A27-SE12-04		○	80	27	50	10.8	4	A	0.9	
FMP02-080-A27-SE12-06		●	80	27	50	10.8	6	A	0.8	
FMP02-080-A27-SE12-06C	✻	●	80	27	50	10.8	6	A	0.8	
FMP02-080-A27-SE12-08		●	80	27	50	10.8	8	A	0.8	
FMP02-080-A27-SE12-08C	✻	○	80	27	50	10.8	8	A	0.8	
FMP02-100-B32-SE12-05		●	100	32	50	10.8	5	B	1.2	
FMP02-100-B32-SE12-07		●	100	32	50	10.8	7	B	1.2	
FMP02-100-B32-SE12-10		●	100	32	50	10.8	10	B	1.2	
FMP02-100-B32-SE12-10C	✻	○	100	32	50	10.8	10	B	1.2	

● Ex stock ○ On demand

✻ With internal cooling

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Indexable milling Face milling

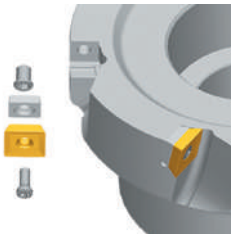
Article	✻	Stock	Dimensions [mm] ØD	ød	L	$a_{p\,max}$	Teeth	Coupling	kg	Inserts
FMP02-125-B40-SE12-06		○	125	40	63	10.8	6	B	3.1	SEET1203
FMP02-125-B40-SE12-08		●	125	40	63	10.8	8	B	3	
FMP02-125-B40-SE12-08C	✻	○	125	40	63	10.8	8	B	3	
FMP02-125-B40-SE12-12		●	125	40	63	10.8	12	B	2.9	
FMP02-160-C40-SE12-08		●	160	40	63	10.8	8	C	4.1	
FMP02-160-C40-SE12-12		●	160	40	63	10.8	12	C	3.9	
FMP02-200-C60-SE12-16		●	200	60	63	10.8	16	C	6.1	
FMP02-250-C60-SE12-12		○	250	60	63	10.8	12	C	11.1	
FMP02-250-C60-SE12-18		●	250	60	63	10.8	18	C	10.9	
FMP02-315-D60-SE12-24		○	315	60	63	10.8	24	D	21.6	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	SEET09T3	SEET1203	SEET1203
	ØD	50-125	50	63- 315
	Screw (insert)	I60M3*7 (1.8 Nm)	I60M3.5*10 (2.7 Nm)	I60M3.5*12 (2.7 Nm)
	Screw (shim)			SM5*7XA
	Shim			S12BSX
	Wrench (insert)	WT09IS	WT15IS	WT15IS
	Wrench (shim)			WH35L

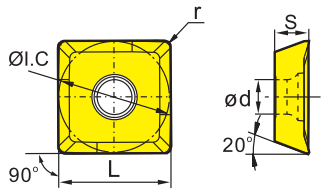


Milling inserts

● Ideal machining conditions
● Normal machining conditions
● Unfavourable machining conditions

SEET	L	I.C	S	d
09 T3	9.525	9.525	4.01	3.3
12 03	13.308	13.308	4.04	4.1

SE** milling insert



		HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
P		✻	✻	✻	✻	✻	✻	●		✻	✻	✻	✻	✻	●	●	●	●		
M		✻	✻	✻	✻	✻	✻			✻	✻	✻	✻	✻	●	●	●	●		
K							●	●	●						●	●				✻
N									✻										✻	✻
S				✻		✻			●	✻	✻	✻	✻							
H																				
ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
SEET09T308PER-APF	0.8						●				○	○										
SEET120308PER-APF	0.8						●				○	○										

● Ex stock ○ On demand

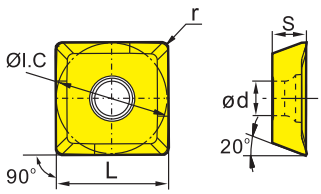
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Milling inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SEET	L	I.C	S	d
09 T3	9.525	9.525	4.01	3.3
12 03	13.308	13.308	4.04	4.1



SE** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
		P																			
		M																			
		K																			
		N																			
		S																			
		H																			
ISO	r		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	SEET09T308PER-APM	0.8						●				○	○										
	SEET120308PER-APM	0.8						●				○	●										
	SEET09T308PER-APR	0.8						●				○	○										
	SEET120308PER-APR	0.8						●				○	○										
	SEET120308-LH	0.8									○	○										●	
	SEET09T308PER-PF	0.8													●								
	SEET120308PER-PF	0.8	●	●				○							●								
	SEET09T308PER-PM	0.8							○						●								
	SEET120308PER-PM	0.8	●				●	●	●	●		●			●		●						
	SEET09T308PER-PR	0.8							●								○						
	SEET120308PER-PR	0.8	●				●	●	●	●		○			○		○						

● Ex stock ○ On demand

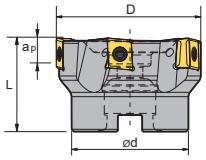
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Face milling

FMP03 Kr: 89°





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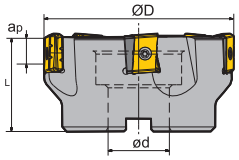

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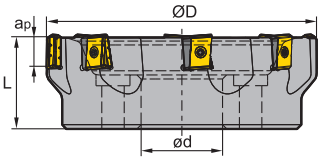
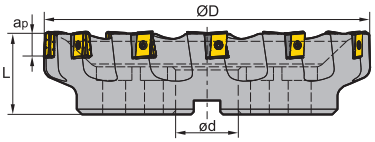


C



D

Article	✻	Stock R	Stock L	Dimensions [mm] ØD	ød	L	$a_{p\,max}$	Teeth	Coupling	kg	Inserts
FMP03-050-A22-LN12-04C	✻	●		50	22	40	7	4	A	0.3	
FMP03-050-A22-LN12-05C	✻	○		50	22	40	7	5	A	0.3	
FMP03-063-A22-LN12-05C	✻	●		63	22	40	7	5	A	0.5	
FMP03-063-A27-LN12-05C	✻	○		63	27	50	7	5	A	0.64	
FMP03-063-A22-LN12-06C	✻	○		63	22	40	7	6	A	0.5	LNKT120608-ZR
FMP03-063-A27-LN12-06C	✻	●		63	27	50	7	6	A	0.65	
FMP03-063-A27-LN12-07C	✻	○		63	27	50	7	7	A	0.64	
FMP03-080-A27-LN12-06C	✻	●		80	27	50	7	6	A	1	
FMP03-080-A27-LN12-07C	✻	○		80	27	50	7	7	A	1	
FMP03-100-B32-LN12-06		○		100	32	50	7	6	B	1.47	
FMP03-125-B40-LN15-06		●		125	40	63	12	6	B	3.2	
FMP03-160-C40-LN15-08		●		160	40	63	12	8	C	5.1	
FMP03-160-C40-LN15-09		○		160	40	63	12	9	C		
FMP03-200-C60-LN15-10		●		200	60	70	12	10	C	7.5	LNKT1506EN-ZR
FMP03-250-C60-LN15-12		○		250	60	70	12	12	C	12.2	
FMP03-250-C60-LN15-13		○		250	60	70	12	13	C		
FMP03-315-D60-LN15-16		○		315	60	80	12	16	D	23.7	
FMP03-125-B40-LN20-06		○		125	40	63	16	6	B	3.3	
FMP03-160-C40-LN20-08		●		160	40	63	16	8	C	5.3	
FMP03-160-C40-LN20-09		○		160	40	63	16	9	C		
FMP03-200-C60-LN20-10		●		200	60	70	16	10	C	8.8	LNKT2007DN-ZR
FMP03-200-C60-LN20-11		○		200	60	70	16	11	C		
FMP03-250-C60-LN20-12		●		250	60	70	16	12	C	14	
FMP03-315-D60-LN20-15		○		315	60	80	16	15	D	23.9	
FMP03-125-B40-LN25-05		○		125	40	63	20	5	B	3.3	
FMP03-160-C40-LN25-06		○	○	160	40	63	20	6	C	5.1	
FMP03-200-C60-LN25-08		○		200	60	70	20	8	C	8.9	LNKT2510-ZR
FMP03-250-C60-LN25-10		●	○	250	60	70	20	10	C	12	
FMP03-315-D60-LN25-12		○	○	315	60	80	20	12	D	21.9	

● Ex stock ○ On demand

✻ With internal cooling

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Spare parts

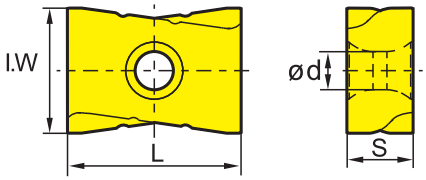
	Insert	LNKT120608-ZR	LNKT1506EN-ZR	LNKT2007DN-ZR	LNKT2510-ZR
	ØD	50-100	125 - 315	125 - 315	125 - 315
	Screw (insert)	I60M4*12 (3.4 Nm)	I60M4*12 (3.4 Nm)	I60M4*15 (3.4 Nm)	I60M5*17 (6.7 Nm)
	Screw (shim)		I60M3*7	I60M3*7	I60M3.5*10.4
	Shim		LLN15-ZR	LLN20R-ZR	LLN25R-ZR
	Wrench (insert)	WT15IS	WT15IS	WT15IS	
	Wrench (insert)				WT20IT
	Wrench (shim)		WT09IS	WT09IS	WT15IS



LNKT	L	S	d
12 06	12.7	6.65	4.4
15 06	15.875	6.35	4.6
20 07	20	7.94	4.6
25 10	25	9.525	5.5

Milling inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions



LN** milling insert		I.W	HC¹ (CVD)							HC¹ (PVD)								HT		HC²		HW	
		P																						
		M																						
		K																						
		N																						
		S																						
		H																						
ISO		I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201	
	LNKT120608-ZR	12	●			●							●											
	LNKT1506EN-ZR	14		●			○	●	●	●							○							
	LNKT2007DN-ZR	17				●		●		○							●							
	LNKT2510-ZR	18						●		●							●							

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Notes



FMP12 Kr: 90°

Square shoulder mill

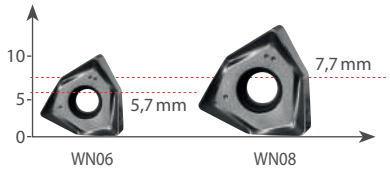
- For steel, stainless steel and cast iron
- Insert with six cutting edges
- Two different insert sizes
- Radii from 0.4–1.6 mm available

Insert grades

YBM253	YBG205	YBD152	YBD252
CVD	*PVD*	*CVD*	*CVD*
P20 – P40	*P10 – P30*	*K05 – K25*	*K15 – K35*
M10 – M30	*M20 – M30*		

Chip breaker

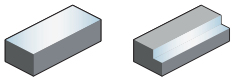
-GM



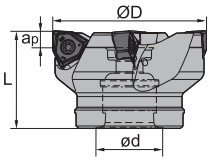


Face milling

FMP12 Kr: 90°







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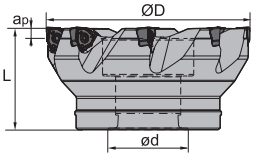

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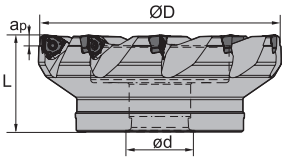

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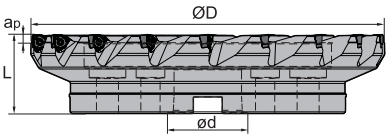


D

Article	✻	Stock	Dimensions [mm] ØD	ød	$a_{p\,max}$	Teeth	Coupling	kg	Inserts
FMP12-050-A22-WN06-05C	✻	○	50	22		5	A	55	WNHU0604
FMP12-063-A22-WN06-06C	✻	●	63	22		6	A	45	
FMP12-080-A27-WN06-07C	✻	●	80	27		7	A	10	
FMP12-100-B32-WN06-09		●	100	32		9	A	1.4	
FMP12-100-B32-WN06-09C	✻	●	100	32		9	A	1.4	
FMP12-125-B40-WN06-11C	✻	○	125	40		11	B	3.4	
FMP12-160-C40-WN06-14		○	160	40		14	C	5.4	
FMP12-063-A22-WN08-04C	✻	●	63	22		4	A	39	WNHU0806
FMP12-063-A22-WN08-05C	✻	●	63	22		5	A	45	
FMP12-080-A27-WN08-05C	✻	●	80	27		5	A	95	
FMP12-100-B32-WN08-06		●	100	32		6	B	1.32	
FMP12-100-B32-WN08-06C	✻	●	100	32		6	B	1.32	
FMP12-125-B40-WN08-08C	✻	○	125	40		8	B	3.3	
FMP12-160-C40-WN08-10		○	160	40		10	C	5.2	
FMP12-200-C60-WN08-12		○	200	60		12	C		
FMP12-250-C60-WN08-14		○	250	60		14	C		
FMP12-315-D60-WN08-18		○	315	60		18	D		

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

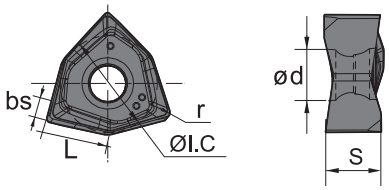
	Insert	WNHU0604	WNHU0806
	ØD	50-315	50-315
	Screw (insert)	I60M3*9 (1.8 Nm)	I60M4*10 (3.4 Nm)
	Wrench (insert)	WT09IS	
	Wrench (insert)		WT20IT

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

WNHU	L	I.C	S	d
06 04	5.73	9.525	4.704	3.5
08 06	7.76	12.7	6.32	4.4



WN** negative insert		HC[1] (CVD)							HC[1] (PVD)								HT		HC[2]	HW	
P		●	●	●	●	●	●	●			●	●	●	●	●	●	●	●	●		
M			●	●	●	●	●	●			●	●	●	●	●	●	●	●	●		
K									●	●	●						●	●			●
N																					● ●
S					●		●			●	●	●	●								
H																					
ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
WNHU060404PNR-GM	0.4				○			○					○									
WNHU060408PNR-GM	0.8				●			○	○				○									
WNHU080608PNR-GM	0.8				○			●	●				●									
WNHU080616PNR-GM	1.6				○			●	○													

● Ex stock ○ On demand

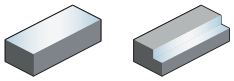
HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

A Turning
B Milling
C Drilling
D Technical Information
E Index

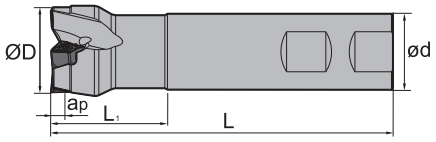
System code > B26 Grade selection > B24 Technical info > B463 Cutting data > B224

Face milling

FMP12 Kr: 90°







Article	✻	Stock	Dimensions [mm] ØD	ød	$a_{p\,max}$	Teeth	Coupling	kg	Inserts
FMP12-025-XP25-WN06-02C	✻	○	25	25		2		0.38	WNHU0604
FMP12-032-XP25-WN06-03C	✻	○	32	25		3		0.47	
FMP12-040-XP32-WN06-04C	✻	○	40	32		4		0.85	
FMP12-050-XP40-WN06-05C	✻	○	50	40		5		1.59	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**WNHU0604**
	ØD	**25-50**
	Screw (insert)	l60M3x9 (1.8 Nm)
	Wrench (insert)	WT09IS

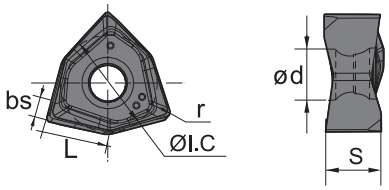


System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

WNHU	L	I.C	S	d
06 04	5.73	9.525	4.704	3.5



WN** negative insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
		P																			
		M																			
		K																			
		N																			
		S																			
		H																			
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**WNHU060404PNR-GM**	0.4				○			○					○									
	WNHU060408PNR-GM	0.8				●			○	○				○									

● Ex stock ○ On demand

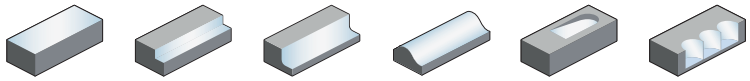
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

A Turning
B Milling
C Drilling
D Technical Information
E Index

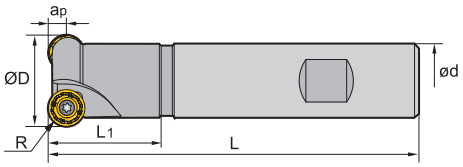
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Face milling

FMR01





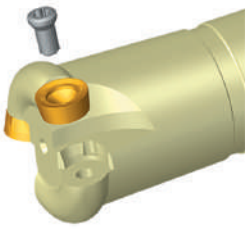


Article	✻	Stock	Dimensions [mm]						Teeth	kg	Inserts
			R	ØD	ød	L_1	L	$a_{p\,max}$			
FMR01-025-XP20-RC10-02		○	5	25	20	30	100	5	2	0.2	RCKT10T3
FMR01-025-XP20-RC10-02C	✻	○	5	25	20	30	100	5	2	0.2	
FMR01-032-XP25-RC10-02		●	5	32	25	35	120	5	2	0.5	
FMR01-032-XP25-RC10-02C	✻	●	5	32	25	35	120	5	2	0.5	
FMR01-040-XP32-RC12-03		●	6	40	32	40	120	6	3	0.7	RCKT1204 RCGX1204
FMR01-040-XP32-RC12-03C	✻	●	6	40	32	40	120	6	3	0.7	
FMR01-050-XP32-RC12-03		●	6	50	32	40	120	6	3	0.8	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**RCKT10T3**	**RCKT1204 RCGX1204**	
	ØD	**25-32**	**40-50**	
	Screw (insert)	I60M4*8.4 (3.4 Nm)	I60M3.5*10 (2.7 Nm)	
	Wrench (insert)	WT15S	WT15S	

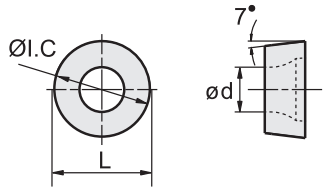
System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

RCGX	I.C	S	d
12 04	12	4.76	4

Milling inserts

RC** positive insert



		HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
	ISO	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
P		◉	◉	◉	◉	◉	◉		◉		◉	◉	◉	◉	◉		●	●	◉	◉		
M			◉	◉	◉	◉	◉				◉	◉	◉	◉	◉		○	○		○		
K								◉	◉	●							◉	●				◉
N										◉											◉	◉
S					◉		◉				●	◉	◉	◉	◉							
H																						
	RCGX1204MO-LH																				●	

● Ex stock ○ On demand

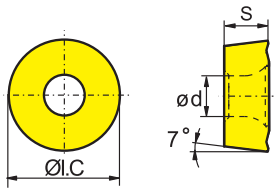
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

RCKT	I.C	S	d
10 T3	10	3.97	4.4
12 04	12	4.76	4

Milling inserts

RC** milling insert



		HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
	ISO	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
P		◉	◉	◉	◉	◉	◉		◉		◉	◉	◉	◉	◉		●	●	◉	◉		
M			◉	◉	◉	◉	◉				◉	◉	◉	◉	◉		○	○		○		
K								◉	◉	●							◉	●				◉
N										◉											◉	◉
S					◉		◉				●	◉	◉	◉	◉							
H																						
	RCKT10T3MO-DM		●	●										●		○						
	RCKT1204MO-DM		●	●		●	●	○						●		○						
	RCKT1204MO-DR		●	●		●	●						○	○								
	RCKT1204MO-ER				●																	
	RCKT1204MO-NM				●		●					●			○	○						

● Ex stock ○ On demand

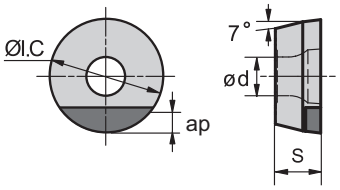
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

RCMW	I.C	S	d
12 04	12	4.76	4.1

Milling inserts

RN** negative insert			BL (CBN)		BH (CBN)
		P			
		M			
		K			●
		N			
		S	◔		
		H	◔ ✺		
ISO		$a_{p\,max}$	YCB121	YCB131	YCB211
	**RCMW1204MO-PCBN**	2.7			○

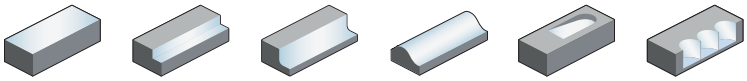
● Ex stock ○ On demand

BL (CBN) CBN with a low CBN content
BH (CBN) CBN with a high CBN content

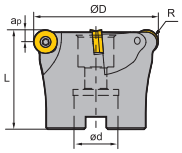
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Face milling

FMR02







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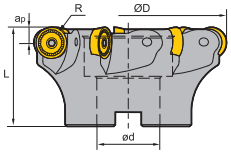

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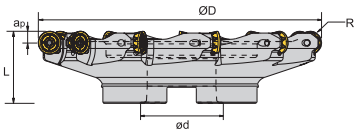


C

Article	✻	Stock	Dimensions [mm]					Teeth	Coupling	kg	Inserts
			R	ØD	ød	L	$a_{p\ max}$				
FMR02-050-A22-RC12-05C	✻	●	6	50	22	40	6	5	A	0.7	RCGX1204 RCKT1204 RCMW1204
FMR02-052-A22-RC12-05C	✻	●	6	52	22	40	6	5	A	0.7	
FMR02-063-A22-RC12-04		●	6	63	22	40	6	4	A	0.7	
FMR02-063-A22-RC12-06		●	6	63	22	40	6	6	A	0.7	
FMR02-063-A22-RC12-06C	✻	●	6	63	22	40	6	6	A	0.7	
FMR02-080-A27-RC12-07C	✻	●	6	80	27	50	6	7	B	0.7	
FMR02-100-B32-RC12-08C	✻	●	6	100	32	50	6	8	B	0.89	
FMR02-063-A22-RC16-04		●	8	63	22	40	8	4	A	0.7	RCKT1606
FMR02-063-A22-RC16-04C	✻	○	8	63	22	40	8	4	A	0.7	
FMR02-066-A27-RC16-05C	✻	●	8	66	27	50	8	4	A	0.5	
FMR02-080-B27-RC16-05		●	8	80	27	50	8	5	B	0.7	
FMR02-080-B27-RC16-07		●	8	80	27	50	8	7	B	0.7	
FMR02-100-B32-RC16-06		●	8	100	32	63	8	6	B	1.2	
FMR02-100-A32-RC16-06C	✻	○	8	100	32	63	8	6	B	1.2	
FMR02-125-B40-RC16-07		●	8	125	40	63	8	7	B	2.5	
FMR02-160-B40-RC16-10(FB)		○	8	160	40	63	8	10	B	3.94	
FMR02-200-C60-RC16-12FB		●	8	200	60	63	8	12	C	5.4	
FMR02-080-A27-RC20-04		●	10	80	27	50	10	4	A	0.7	RCKT2006
FMR02-080-A27-RC20-04C	✻	●	10	80	27	50	10	4	A	0.7	
FMR02-100-B32-RC20-05		●	10	100	32	63	10	5	B	1.2	
FMR02-100-B32-RC20-06		●	10	100	32	63	10	6	B	1.2	
FMR02-100-B32-RC20-06C	✻	○	10	100	32	63	10	6	B	1.2	
FMR02-125-B40-RC20-06		●	10	125	40	63	10	6	B	1.2	
FMR02-125-B40-RC20-07		●	10	125	40	63	10	7	B	2.2	
FMR02-125-B40-RC20-07C	✻	○	10	125	40	63	10	7	B	2.2	
FMR02-160-B40-RC20-08		●	10	160	40	63	10	8	B	4.2	
FMR02-160-B40-RC20-08C	✻	○	10	160	40	63	10	8	B	4.2	
FMR02-250-C60-RC20-10		●	10	250	60	63	10	10	C	8.49	
FMR02-250-C60-RC20-11		○	10	250	60	63	10	11	C	8.37	

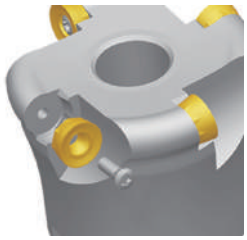
● Ex stock ○ On demand

✻ With internal cooling

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Spare parts

	Insert	RCGX1204 RCKT1204 RCMW1204	RCKT1606	RCKT2006
	ØD	50-100	63-200	80-250
	Screw (insert)	I60M3.5*10 (2.7 Nm)	I60M5*13 (6.7 Nm)	I43M6*16 (9.1 Nm)
	Wrench (insert)	WT15IS		
	Wrench (insert)		WT20IT	WT25IT

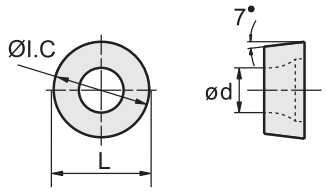


- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

RCGX	I.C	S	d
12 04	12	4.76	4

Milling inserts

RC** positive insert



	HC¹ (CVD)								HC¹ (PVD)								HT	HC²	HW	
ISO	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
P	◉	◉	◉	◉	◉	◉	◉	◉		◉	◉	◉	◉	◉	◉	●	●	●	●		
M		◉	◉	◉	◉	◉	◉			◉	◉	◉	◉	◉	◉	○	○		○		
K							◉	◉		●						◉	●			◉	
N									◉											◉	◉
S				◉		◉				●	◉	◉	◉								
H																					
RCGX1204MO-LH																				●	

● Ex stock ○ On demand

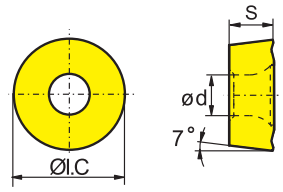
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

RCKT	I.C	S	d
12 04	12	4.76	4
16 06	16	6.35	5.56
20 06	20	6.35	6.55

Milling inserts

RC** milling insert		HC[1] (CVD)							HC[1] (PVD)								HT	HC[2]	HW	
	P																			
	M																			
	K																			
	N																			
	S																			
	H																			
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	RCKT1204MO-DM		●	●		●	●	○						●		○						
	RCKT1606MO-DM		●	●		○							○			●						
	RCKT2006MO-DM		○	○		○																
	RCKT1204MO-DR		●	●		●	●						○	○								
	RCKT1606MO-DR	●	●	●			●		●			○		○								
	RCKT2006MO-DR	●	●	●			○		●					○		○						
	RCKT1204MO-ER				●																	
	RCKT1606MO-ER				●																	
	RCKT2006MO-ER				●																	
	RCKT1204MO-NM				●		●					●			○	○						
	RCKT1606MO-NM				○		○					●			○	○						

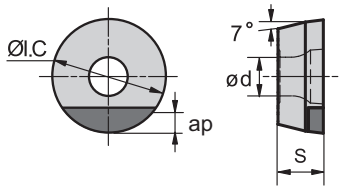
● Ex stock ○ On demand

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

RCMW	I.C	S	d
12 04	12	4.76	4.1

Milling inserts

RN** negative insert			BL (CBN)		BH (CBN)
		P			
		M			
		K			●
		N			
		S	●		
		H	●	●	
ISO		$a_{p\,max}$	YCB121	YCB131	YCB211
	RCMW1204MO-PCBN	2.7			○

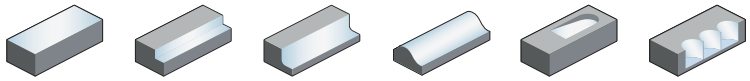
● Ex stock ○ On demand

BL (CBN) CBN with a low CBN content
BH (CBN) CBN with a high CBN content

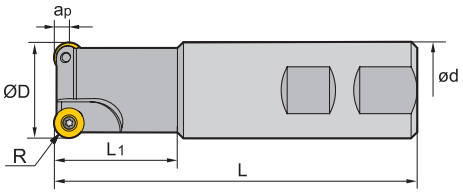
System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Face milling

FMR03







Article	✻	Stock	Dimensions [mm]						Teeth	kg	Inserts
			R	ØD	ød	L_1	L	$a_{p\,max}$			
FMR03-016-XP16-RD08-02		○	4	16	16	25	100	4	2	0.1	RDKW0803
FMR03-016-XP16-RD08-02C	✻	○	4	16	16	25	100	4	2	0.1	
FMR03-025-XP25-RD08-02		●	4	25	25	30	100	4	2	0.3	
FMR03-025-XP25-RD08-02C	✻	○	4	25	25	30	100	4	2	0.3	
FMR03-032-XP32-RD10-02		●	5	32	32	40	120	5	2	0.7	RDKW10T3
FMR03-032-XP32-RD10-02C	✻	○	5	32	32	40	120	5	2	0.7	
FMR03-040-XP32-RD12-03		●	6	40	32	40	120	6	3	0.7	RDKW1204
FMR03-040-XP32-RD12-03C	✻	○	6	40	32	40	120	6	3	0.7	
FMR03-050-XP32-RD12-04		●	6	50	32	40	120	6	4	0.8	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	RDKW0803	RDKW10T3	RDKW1204
	ØD	16-25	32	40-50
	Screw (insert)	I60M3*7 (1.8 Nm)	I60M4*10 (3.4 Nm)	I60M4*10 (3.4 Nm)
	Wrench (insert)	WT09IP	WT15IP	WT15IP

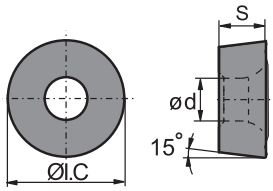


System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

RDKW	I.C	S	d
08 03	8	3.18	3.4
10 T3	10	3.97	4.4
12 04	12	4.76	4.4



RD** milling insert		HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
	P	●	●	●	●	●	●			●	●	●	●	●		●	●	●		
	M		●	●	●	●	●			●	●	●	●	●		●	●	●		
	K							●	●	●					●	●				●		
	N									●										●	●	
	S				●		●			●	●	●	●									
	H																					
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**RDKW0803MO**						●							●								
	RDKW10T3MO	●	○				○				●			●		○						
	RDKW1204MO	●				●	●				●	●	●	●		○						

● Ex stock ○ On demand

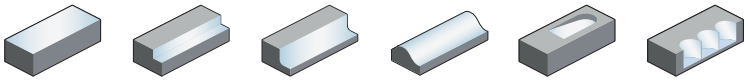
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

A Turning
B Milling
C Drilling
D Technical Information
E Index

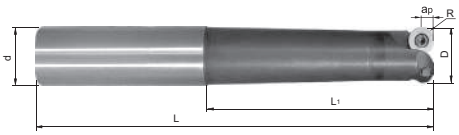
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Face milling

FMR03





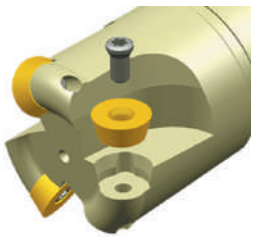


Article	✲	Stock	Dimensions [mm]						Teeth	Inserts
			R	ØD	ød	L_1	L	$a_{p\,max}$		
FMR03-015-G16-XS-RD0702-02		○	3.5	15	16	40	88	3.5	2	
FMR03-015-G16-XS-RD0702-02C	✲	○	3.5	15	16	40	88	3.5	2	
FMR03-015-G16-S-RD0702-02C	✲	○	3.5	15	16	60	108	3.5	2	RDKW0702
FMR03-015-G20-M-RD0702-02C	✲	○	3.5	15	20	80	130	3.5	2	
FMR03-015-G25-XL-RD0702-02C	✲	○	3.5	15	25	120	176	3.5	2	
FMR03-020-G20-XS-RD1003-02C	✲	○	5	20	20	40	90	5	2	
FMR03-020-G20-S-RD1003-02C	✲	○	5	20	20	60	110	5	2	
FMR03-020-G25-M-RD1003-02C	✲	○	5	20	25	80	136	5	2	RDKW1003
FMR03-020-G25-L-RD1003-02C	✲	○	5	20	25	100	156	5	2	
FMR03-020-G25-XL-RD1003-02C	✲	○	5	20	25	120	176	5	2	

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

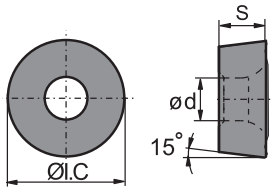
	Insert	RDKW0702	RDKW1003	
	ØD	15	20	
	Screw (insert)	I60M2.5*5.0 (1.0 Nm)	I60M3.5*7.7 (2.7 Nm)	
	Wrench (insert)	WT07P	WT15P	

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

RDKW	l.C	S	d
07 02	7	2.38	2.7
10 03	10	3.18	3.9



RD** milling insert		HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
	P	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●		
	M		●	●	●	●	●				●	●	●	●	●	●	○	○	○	
	K							●	●	○						●	○			●
	N									●										●
	S				●		●			○	●	●	●							
	H																			
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	RDKW0702MO-1						●							●								
	RDKW0702MO-2										●											
	RDKW1003MO-1					●	●					●	●	●								
	RDKW1003MO-2										●											
	RDKW1003MO-3				●								●									

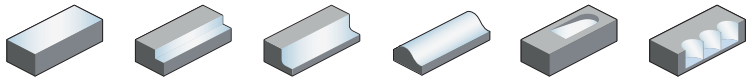
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

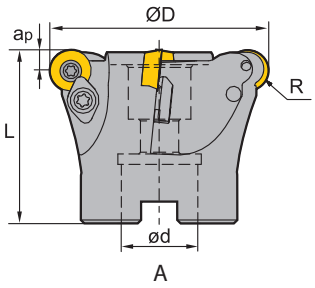
System code B26 Grade selection B24 Technical info B463 Cutting data B224

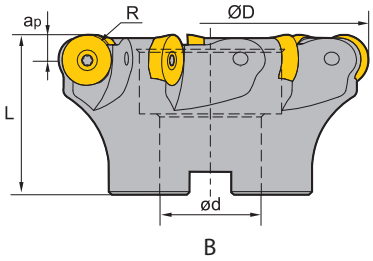
Face milling

FMR04









Article	✲	Stock	Dimensions [mm] R	ØD	ød	L	$a_{p\,max}$	Teeth	Coupling	kg	Inserts
FMR04-050-A22-RD12-03		●	6	50	22	40	6	3	A	0.3	RDKW1204
FMR04-063-A22-RD12-04		●	6	63	22	50	6	4	A	0.5	
FMR04-080-B27-RD16-05		●	8	80	27	50	8	5	B	1.2	RDKW1605
FMR04-100-B32-RD16-06		●	8	100	32	50	8	6	B	1	
FMR04-125-B40-RD20-06		○	10	125	40	63	10	6	B	1.9	RDKW2006
FMR04-125-B40-RD20-06C	✲	○	10	125	40	63	10	6	B	1.9	
FMR04-160-B40-RD20-07		○	10	160	40	63	10	7	B	3.7	

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	RDKW1204	RDKW1605	RDKW2006
	ØD	50-63	80-100	125 -160
	Clamp	WD-204	WD-207	
	Screw (clamp)	I60M4*10 (3.4 Nm)	I60M5*13 (6.7 Nm)	
	Screw (insert)	I60M3.5*10 (2.7 Nm)	I60M5*13 (6.7 Nm)	I43M6*16 (9.1 Nm)
	Wrench (clamp)	WT15IP		
	Wrench (clamp)		WT20IT	
	Wrench (insert)	WT15IP		
	Wrench (insert)		WT20IT	WT25IT

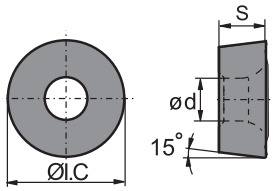


System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

RDKW	I.C	S	d
12 04	12	4.76	4.4
16 05	16	5.56	5.5
20 06	20	6.35	6.5



RD** milling insert		HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
P		⊛	⊛	⊛	⊛	⊛	⊛	⊛		⊛	⊛	⊛	⊛	⊛	●	●	●			
M			⊛	⊛	⊛	⊛	⊛			⊛	⊛	⊛	⊛	⊛	○	○	○			
K							⊛	⊛	●						⊛	●			⊛	
N									⊛										⊛	⊛
S				⊛		⊛				○	⊛	⊛	⊛							
H																				
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	RDKW1204MO	●				●	●				●	●	●	●		○						
	RDKW1605MO						○							●	○	○						
	RDKW2006MO		○				●		○													
	RDKW2006MO-3												●									

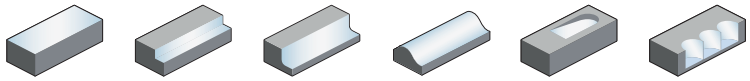
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

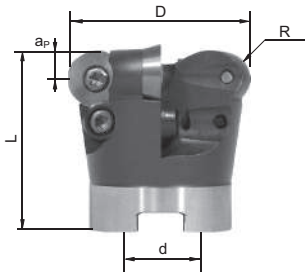
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Face milling

FMR04







Article	✲	Stock	Dimensions [mm]					Teeth	Inserts
			R	ØD	ød	L	$a_{p\,max}$		
FMR04-042-A16-RD1003-06		●	5	42	16	44	5	6	RDKW1003
FMR04-042-A16-RD1003-06C	✲	○	5	42	16	44	5	6	
FMR04-052-A22-RD1003-07		●	5	52	22	50	5	7	
FMR04-052-A22-RD1003-07C	✲	○	5	52	22	50	5	7	
FMR04-042-A16-RD12T3-05		●	6	42	16	42	6	5	RDKW12T3
FMR04-042-A16-RD12T3-05C	✲	○	6	42	16	42	6	5	
FMR04-052-A22-RD12T3-05		●	6	52	22	50	6	5	
FMR04-052-A22-RD12T3-05C	✲	○	6	52	22	50	6	5	
FMR04-066-A27-RD12T3-06		●	6	66	27	50	6	6	
FMR04-066-A27-RD12T3-06C	✲	○	6	66	27	50	6	6	
FMR04-080-A27-RD12T3-07		●	6	80	27	50	6	7	
FMR04-080-A27-RD12T3-07C	✲	○	6	80	27	50	6	7	
FMR04-052-A22-RD1604-04		●	8	52	22	50	8	4	RDKW1604
FMR04-052-A22-RD1604-04C	✲	○	8	52	22	50	8	4	
FMR04-066-A27-RD1604-05		●	8	66	27	50	8	5	
FMR04-066-A27-RD1604-05C	✲	○	8	66	27	50	8	5	
FMR04-080-A27-RD1604-06		●	8	80	27	52	8	6	
FMR04-080-A27-RD1604-06C	✲	○	8	80	27	52	8	6	
FMR04-100-B32-RD1604-07		●	8	100	32	52	8	7	
FMR04-100-B32-RD1604-07C	✲	○	8	100	32	52	8	7	
FMR04-125-B40-RD1604-08		●	8	125	40	52	8	8	
FMR04-160-B40-RD1604-09		●	8	160	40	52	8	9	
FMR04-160-B40-RD1604-09C	✲	○	8	160	40	52	8	9	

● Ex stock ○ On demand

✲ With internal cooling

System code > B26 Grade selection > B24 Technical info > B463 Cutting data > B224

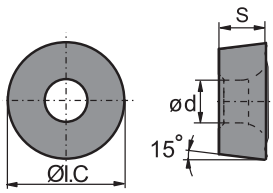
Spare parts

	Insert	RDKW1003	RDKW12T3	RDKW12T3	RDKW1604	RDKW1604
	ØD	42-52	42	52-80	52	66-160
	Clamp					WX16N
	Clamp			LOM3.5*7.1		
	Screw (clamp)					I60M4.5*10 (5.0 Nm)
	Screw (insert)	I60M3.5*7.7 (2.7 Nm)	I60M3.5*7.7 (2.7 Nm)	I60M3.5*7.7 (2.7 Nm)	I60M4.5*10 (5.0 Nm)	I60M4.5*10 (5.0 Nm)
	Wrench (clamp)			WT15P		
	Wrench (clamp)					WT20T
	Wrench (insert)	WT15P	WT15P	WT15P		
	Wrench (insert)				WT20T	WT20T

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

RDKW	I.C	S	d
10 03	10	3.18	3.9
12 T3	12	3.97	3.9
16 04	16	4.76	5.2



RD** milling insert		HC[1] (CVD)							HC[1] (PVD)								HT	HC[2]	HW	
	P																			
	M																			
	K																			
	N																			
	S																			
	H																			
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	RDKW1003MO-1					●	●					●	●	●								
	RDKW1003MO-2										●											
	RDKW1003MO-3				●								●									
	RDKW12T3MO-1					●	●					●	●	●								
	RDKW12T3MO-2										●		○									
	RDKW12T3MO-3				●								●									
	RDKW1604MO-1						●					●	●	●		●						
	RDKW1604MO-2										○											
	RDKW1604MO-3	○	○		●				●		○		●			●						

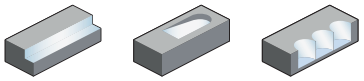
● Ex stock ○ On demand

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

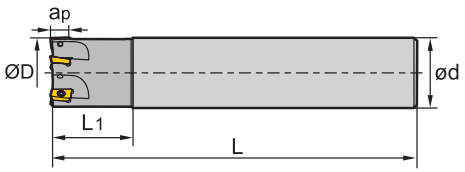
System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Square shoulder milling

EMP01 Kr: 90°







Straight shank

Article	✻	Stock	Dimensions [mm]					Teeth	kg	Inserts
			ØD	ød	L_1	L	$a_{p\,max}$			
EMP01-012-G12-AP07-02C	✻	●	12	12	25	75	6.4	2	0.31	
EMP01-014-G16-AP07-03C	✻	●	14	16	25	85	6.4	3	0.61	APKT0702
EMP01-016-G16-AP07-04C	✻	●	16	16	30	90	6.4	4	0.75	
EMP01-012-G16-AP11-01		●	12	16	25	85	10.5	1	0.1	
EMP01-016-G16-AP11-02		●	16	16	25	90	10.5	2	0.1	
EMP01-016-G16-AP11-02C	✻	○	16	16	25	90	10.5	2	0.1	
EMP01-020-G20-AP11-02		●	20	20	30	100	10.5	2	0.2	
EMP01-020-G20-AP11-02C	✻	●	20	20	30	100	10.5	2	0.2	
EMP01-020-G20-AP11-03		○	20	20	30	100	10.5	3	0.2	
EMP01-020-G20-AP11-03C	✻	●	20	20	30	100	10.5	3	0.2	APKT11T3
EMP01-025-G25-AP11-03		●	25	25	35	115	10.5	3	0.4	
EMP01-025-G25-AP11-03C	✻	○	25	25	35	115	10.5	3	0.4	
EMP01-025-G25-AP11-04		●	25	25	35	115	10.5	4	0.4	
EMP01-025-G25-AP11-04C	✻	●	25	25	35	115	10.5	4	0.4	
EMP01-032-G32-AP11-04		●	32	32	40	125	10.5	4	0.7	
EMP01-032-G32-AP11-04C	✻	●	32	32	40	125	10.5	4	0.7	
EMP01-025-G25-AP16-02		●	25	25	35	115	15.5	2	0.4	
EMP01-025-G25-AP16-02C	✻	●	25	25	35	115	15.5	2	0.4	
EMP01-032-G32-AP16-03		●	32	32	40	125	15.5	3	0.7	
EMP01-032-G32-AP16-03C	✻	●	32	32	40	125	15.5	3	0.7	
EMP01-040-G32-AP16-03		●	40	32	42	130	15.5	3	0.7	
EMP01-040-G32-AP16-03C	✻	●	40	32	42	130	15.5	3	0.7	APKT1604
EMP01-040-G32-AP16-04		●	40	32	42	130	15.5	4	0.8	
EMP01-040-G32-AP16-04C	✻	○	40	32	42	130	15.5	4	0.8	
EMP01-050-G32-AP16-05		●	50	32	45	135	15.5	5	1	
EMP01-063-G32-AP16-06		●	63	32	45	135	15.5	6	1.4	

● Ex stock ○ On demand

✻ With internal cooling

System code > B26 Grade selection > B24 Technical info > B463 Cutting data > B224

Spare parts

	Insert	APKT0702	APKT11T3	APKT1604
	ØD	12-25	12-32	25-63
	Screw (insert)	I60M1,8x4 (0.3 Nm)		I60M4*8.4 (3.4 Nm)
	Screw (insert)		I60M2.5*6.5T (1.0 Nm)	
	Wrench (insert)	WT05IP	WT08IP	
	Wrench (insert)			WT15S

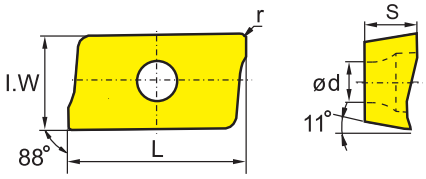


APKT	L	S	d
07 02	4.26	2.38	2
11 T3	12.24	3.6	2.8
16 04	17.877	5.76	4.4

Milling inserts

● Ideal machining conditions
◉ Normal machining conditions
◉ Unfavourable machining conditions

AP** milling insert



	ISO	r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
				HC¹ (CVD)								HC¹ (PVD)									HT	HC²	HW	
	P			◉	◉	◉	◉	◉	◉	◉	◉			◉	◉	◉	◉	◉	●	●	●	●		
	M				◉	◉	◉	◉	◉	◉				◉	◉	◉	◉	◉	●	●	●	●		
	K									◉	◉	●							◉	●			◉	
	N											◉											◉	◉
	S						◉		◉				●	◉	◉	◉								
	H																							
	APKT11T304-ALH	0.4	6.5									●											●	●
	APKT11T308-ALH	0.8	6.5									●											●	●
	APKT160408-ALH	0.8	9.33									●											●	●
	APKT11T304-APF	0.4	6.5											●										
	APKT11T308-APF	0.8	6.5											●										
	APKT160408-APF	0.8	9.33											●		○		○						
	APKT070204-APM	0.4	6.91								●			●										
	APKT11T304-APM	0.4	6.5				●			●				●										
	APKT11T308-APM	0.8	6.5				●			●				●										
	APKT11T312-APM	1.2	6.5				●			●				●										
	APKT11T316-APM	1.6	6.5				●			●				●										
	APKT11T320-APM	2	6.5				●			●				●										
	APKT160408-APM	0.8	9.33				●			●	●			●										
	APKT160416-APM	1.6	9.33				●			●				●										
	APKT160420-APM	2	9.33				●			●				●										
	APKT160424-APM	2.4	9.33				●			●				●										
	APKT160430-APM	3	9.33				●			●				●										
	APKT11T304-LH	0.4	6.5																				●	●
	APKT11T308-LH	0.8	6.5																				●	●
	APKT160408-LH	0.8	9.33																				●	●

● Ex stock ○ On demand

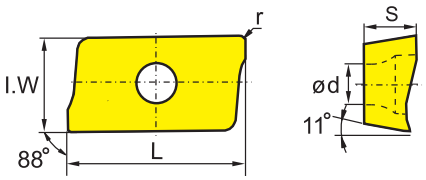
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

APKT	L	S	d
07 02	4.26	2.38	2
11 T3	12.24	3.6	2.8
16 04	17.877	5.76	4.4



AP** milling insert				HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
				YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
P				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
M				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
K				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
N				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
S				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
H				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
ISO		r	I.W																					
	APKT11T304-PF	0.4	6.5		○			●					●			●		●						
	APKT11T308-PF	0.8	6.5					○					○			●								
	APKT11T312-PF	1.2	6.5													○								
	APKT11T316-PF	1.6	6.5													○								
	APKT160408-PF	0.8	9.33		●			○	●							●		●						
	APKT160430-PF	3	9.33	○																				
	APKT11T304-PM	0.4	6.5	●	●	○		●	●				○			●		●						
	APKT11T308-PM	0.8	6.5	●	●		●	●	●	●	●		●		●	●		●						
	APKT11T312-PM	1.2	6.5					○					○			●		○						
	APKT11T316-PM	1.6	6.5					●					○			●		○						
	APKT160408-PM	0.8	9.33	●	●	●	●	●	●	●	●		●		●	●		●						
	APKT160416-PM	1.6	9.33	○												●								
	APKT11T304-PR	0.4	6.5						○							○		○						
	APKT11T316-PR	1.6	6.5															○						

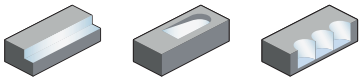
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

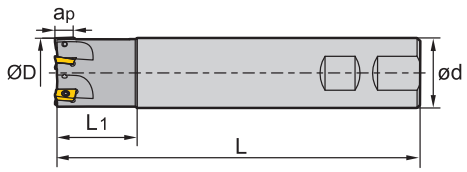
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Square shoulder milling

EMP01 Kr: 90°







Weldon shank

Article	✻	Stock	Dimensions [mm] ØD	ød	L_1	L	$a_{p\,max}$	Teeth	kg	Inserts
EMP01-020-XP20-AP07-05C	✻	●	20	20	30	100	6.4	5	0.31	APKT0702
EMP01-025-XP25-AP07-07C	✻	●	25	25	35	115	6.4	7	0.61	
EMP01-012-XP16-AP11-01		●	12	16	25	85	10.5	1	0.1	APKT11T3
EMP01-012-XP16-AP11-01C	✻	○	12	16	25	85	10.5	1	0.1	
EMP01-016-XP16-AP11-02		●	16	16	25	90	10.5	2	0.1	
EMP01-016-XP16-AP11-02C	✻	○	16	16	25	90	10.5	2	0.1	
EMP01-020-XP20-AP11-02		●	20	20	30	100	10.5	2	0.2	
EMP01-020-XP20-AP11-02C	✻	○	20	20	30	100	10.5	2	0.2	
EMP01-020-XP20-AP11-03		●	20	20	30	100	10.5	3	0.2	
EMP01-020-XP20-AP11-03C	✻	●	20	20	30	100	10.5	3	0.2	
EMP01-025-XP25-AP11-03		●	25	25	35	115	10.5	3	0.4	
EMP01-025-XP25-AP11-03C	✻	●	25	25	35	115	10.5	3	0.4	
EMP01-025-XP25-AP11-04		●	25	25	35	115	10.5	4	0.4	
EMP01-025-XP25-AP11-04C	✻	○	25	25	35	115	10.5	4	0.4	
EMP01-032-XP32-AP11-04		●	32	32	40	125	10.5	4	0.7	
EMP01-032-XP32-AP11-04C	✻	○	32	32	40	125	10.5	4	0.7	
EMP01-025-XP25-AP16-02		●	25	25	35	115	15.5	2	0.4	APKT1604
EMP01-025-XP25-AP16-02C	✻	○	25	25	35	115	15.5	2	0.4	
EMP01-032-XP32-AP16-03		●	32	32	40	125	15.5	3	0.7	
EMP01-032-XP32-AP16-03C	✻	○	32	32	40	125	15.5	3	0.7	
EMP01-040-XP32-AP16-04		●	40	32	42	130	15.5	4	0.8	
EMP01-040-XP32-AP16-04C	✻	○	40	32	42	130	15.5	4	0.8	
EMP01-050-XP32-AP16-05		●	50	32	45	135	15.5	5	1	
EMP01-063-XP32-AP16-06		○	63	32	45	135	15.5	6	1.4	

● Ex stock ○ On demand

✻ With internal cooling

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Indexable milling Square shoulder milling

Spare parts

	Insert	APKT0702	APKT11T3	APKT1604
	ØD	12-25	12-32	25-63
	Screw (insert)	I60M1,8x4 (0.3 Nm)		I60M4*8.4 (3.4 Nm)
	Screw (insert)		I60M2.5*6.5T (1.0 Nm)	
	Wrench (insert)	WT05IP	WT08IP	
	Wrench (insert)			WT15S

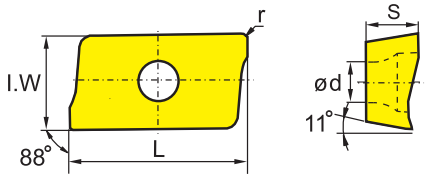


APKT	L	S	d
07 02	4.26	2.38	2
11 T3	12.24	3.6	2.8
16 04	17.877	5.76	4.4

Milling inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

AP** milling insert



	ISO	r	I.W	HC¹ (CVD)							HC¹ (PVD)								HT		HC²	HW	
				YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	APKT11T304-ALH	0.4	6.5									●											●	●
	APKT11T308-ALH	0.8	6.5									●											●	●
	APKT160408-ALH	0.8	9.33									●											●	●
	APKT11T304-APF	0.4	6.5											●										
	APKT11T308-APF	0.8	6.5											●										
	APKT160408-APF	0.8	9.33											●		○		○						
	APKT070204-APM	0.4	6.91								●			●										
	APKT11T304-APM	0.4	6.5				●			●				●										
	APKT11T308-APM	0.8	6.5				●			●				●										
	APKT11T312-APM	1.2	6.5				●			●				●										
	APKT11T316-APM	1.6	6.5				●			●				●										
	APKT11T320-APM	2	6.5				●			●				●										
	APKT160408-APM	0.8	9.33				●			●	●			●										
	APKT160416-APM	1.6	9.33				●			●				●										
	APKT160420-APM	2	9.33				●			●				●										
	APKT160424-APM	2.4	9.33				●			●				●										
	APKT160430-APM	3	9.33				●			●				●										
	APKT11T304-LH	0.4	6.5																				●	●
	APKT11T308-LH	0.8	6.5																				●	●
	APKT160408-LH	0.8	9.33																				●	●

● Ex stock ○ On demand

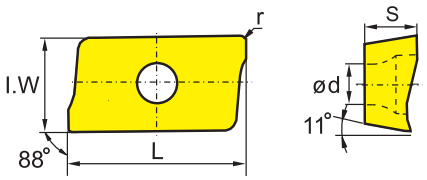
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

APKT	L	S	d
07 02	4.26	2.38	2
11 T3	12.24	3.6	2.8
16 04	17.877	5.76	4.4



AP** milling insert				HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
			P																			
			M																			
			K																			
			N																			
			S																			
			H																			
ISO		r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	APKT11T304-PF	0.4	6.5		○			●					●			●		●						
	APKT11T308-PF	0.8	6.5					○					○			●								
	APKT11T312-PF	1.2	6.5													○								
	APKT11T316-PF	1.6	6.5													○								
	APKT160408-PF	0.8	9.33		●			○	●							●		●						
	APKT160430-PF	3	9.33	○																				
	APKT11T304-PM	0.4	6.5	●	●	○		●	●				○			●		●						
	APKT11T308-PM	0.8	6.5	●	●		●	●	●	●	●		●		●	●		●						
	APKT11T312-PM	1.2	6.5					○					○			●		○						
	APKT11T316-PM	1.6	6.5					●					○			●		○						
	APKT160408-PM	0.8	9.33	●	●	●	●	●	●	●	●		●		●	●		●						
	APKT160416-PM	1.6	9.33	○												●								
	APKT11T304-PR	0.4	6.5						○							○		○						
	APKT11T316-PR	1.6	6.5															○						

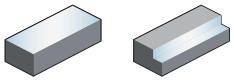
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

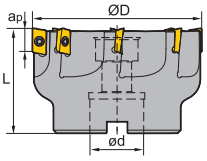
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Square shoulder milling

EMP02 Kr: 90°







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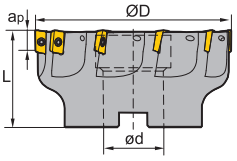
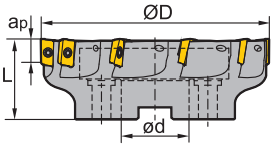


B



C

Article	✻	Stock	Dimensions [mm] ØD	ød	L	$a_{p\,max}$	Teeth	Coupling	kg	Inserts
EMP02-032-A16-AP07-08C	✻	●	32	16	35	6.4	8	A	34	
EMP02-040-A16-AP07-10C	✻	●	40	16	40	6.4	10	A	40	APKT0702
EMP02-050-A22-AP07-12C	✻	●	50	22	40	6.4	12	A	0.6	
EMP02-040-A16-AP11-04C	✻	●	40	16	40	11	4	A	0.237	
EMP02-040-A16-AP11-05C	✻	●	40	16	40	11	5	A	0.177	
EMP02-040-A16-AP11-06C	✻	●	40	16	40	11	6	A	0.234	
EMP02-050-A22-AP11-06		●	50	22	40	11	6	A	0.3	
EMP02-050-A22-AP11-06C	✻	●	50	22	40	11	6	A	0.3	
EMP02-050-A22-AP11-07C	✻	●	50	22	40	11	7	A	0.39	
EMP02-063-A22-AP11-08		●	63	22	40	11	8	A	0.6	
EMP02-063-A22-AP11-08C	✻	●	63	22	40	11	8	A	0.6	APKT11T3
EMP02-063-A22-AP11-09C	✻	●	63	22	40	11	9	A	0.54	
EMP02-080-A27-AP11-08		●	80	27	50	11	8	A	1.2	
EMP02-080-A27-AP11-08C	✻	●	80	27	50	11	8	A	1.2	
EMP02-080-A27-AP11-10C	✻	●	80	27	50	11	10	A	1.13	
EMP02-100-B32-AP11-10		●	100	32	50	11	10	B	1.7	
EMP02-100-B32-AP11-10C	✻	○	100	32	50	11	10	B	1.7	
EMP02-125-B40-AP11-10		○	125	40	63	11	10	B	3.42	
EMP02-040-A16-AP16-03		○	40	16	40	15.5	3	A	0.17	
EMP02-040-A16-AP16-04C	✻	●	40	16	40	15.5	4	A	0.17	
EMP02-050-A22-AP16-05		●	50	22	40	15.5	5	A	0.3	
EMP02-050-A22-AP16-05C	✻	●	50	22	40	15.5	5	A	0.3	
EMP02-063-A22-AP16-06		●	63	22	40	15.5	6	A	0.5	
EMP02-063-A22-AP16-06C	✻	●	63	22	40	15.5	6	A	0.5	APKT1604
EMP02-080-A27-AP16-06C	✻	○	80	27	50	15.5	6	A	1.08	
EMP02-080-A27-AP16-07		●	80	27	50	15.5	7	A	1.1	
EMP02-080-A27-AP16-07C	✻	●	80	27	50	15.5	7	A	1.1	
EMP02-100-B32-AP16-08		●	100	32	50	15.5	8	B	1.6	

● Ex stock ○ On demand

✻ With internal cooling

System code > B26 Grade selection > B24 Technical info > B463 Cutting data > B224

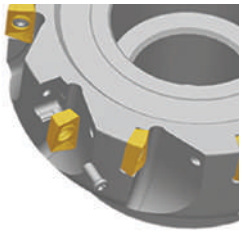
Article	✻	Stock	Dimensions [mm] ØD	ød	L	$a_{p\,max}$	Teeth	Coupling	kg	Inserts
EMP02-100-B32-AP16-08C	✻	●	100	32	50	15.5	8	B	1.6	
EMP02-125-B40-AP16-06C	✻	○	125	40	63	15.5	6	B	3.18	
EMP02-125-B40-AP16-10		○	125	40	63	15.5	10	B	3.2	
EMP02-125-B40-AP16-10C	✻	○	125	40	63	15.5	10	B	3.2	
EMP02-160-B40-AP16-07C	✻	○	160	40	63	15.5	7	B	4.3	APKT1604
EMP02-160-B40-AP16-10		○	160	40	63	15.5	10	B	6.3	
EMP02-160-B40-AP16-10C	✻	○	160	40	63	15.5	10	B	6.3	
EMP02-200-C60-AP16-12		○	200	60	63	15.5	12	C	8.1	
EMP02-250-C60-AP16-12		○	250	60	63	15.5	12	C	11.2	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	APKT0702	APKT11T3	APKT1604
	ØD	32-50	40-125	40-250
	Screw (insert)	I60M1,8x4 (0.3 Nm)		I60M4*10 (3.4 Nm)
	Screw (insert)		I60M2.5*6.5T (1.0 Nm)	
	Wrench (insert)	WT05IP		
	Wrench (insert)		WT08IS	WT15IS

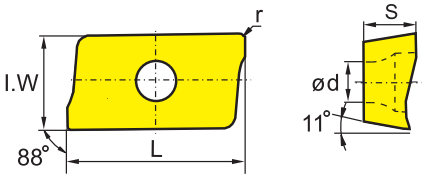


Milling inserts

● Ideal machining conditions
● Normal machining conditions
● Unfavourable machining conditions

APKT	L	S	d
07 02	4.26	2.38	2
11 T3	12.24	3.6	2.8
16 04	17.877	5.76	4.4

AP** milling insert



	HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
P	●	●	●	●	●	●	●		●	●	●	●	●		●	●	●		
M		●	●	●	●	●			●	●	●	●	●		●	●	●		
K						●	●	●						●	●				●
N								●											●
S				●		●			●	●	●	●							
H																			

ISO	r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
 **APKT11T304-ALH**	0.4	6.5									●											●	●
APKT11T308-ALH	0.8	6.5									●											●	●
APKT160408-ALH	0.8	9.33									●											●	●

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

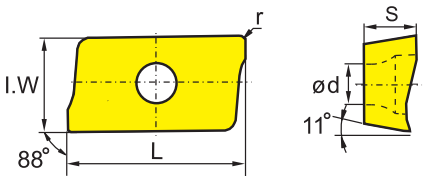
System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

APKT	L	S	d
07 02	4.26	2.38	2
11 T3	12.24	3.6	2.8
16 04	17.877	5.76	4.4

AP** milling insert



	HC¹ (CVD)								HC¹ (PVD)								HT	HC²	HW	
P	◉	◉	◉	◉	◉	◉		◉		◉	◉	◉	◉	◉		●	●	●		
M		◉	◉	◉	◉	◉				◉	◉	◉	◉	◉		●	●	●		
K							◉	◉	●						◉	●				◉
N									◉											◉ ◉
S				◉		◉			●	◉	◉	◉	◉							
H																				

	ISO	r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	APKT11T304-APF	0.4	6.5											●										
	APKT11T308-APF	0.8	6.5											●										
	APKT160408-APF	0.8	9.33											●		○		○						
	APKT070204-APM	0.4	6.91								●			●										
	APKT11T304-APM	0.4	6.5				●			●				●										
	APKT11T308-APM	0.8	6.5				●			●				●										
	APKT11T312-APM	1.2	6.5				●			●				●										
	APKT11T316-APM	1.6	6.5				●			●				●										
	APKT11T320-APM	2	6.5				●			●				●										
	APKT160408-APM	0.8	9.33				●			●	●			●										
	APKT160416-APM	1.6	9.33				●			●				●										
	APKT160420-APM	2	9.33				●			●				●										
	APKT160424-APM	2.4	9.33				●			●				●										
	APKT160430-APM	3	9.33				●			●				●										
	APKT11T304-LH	0.4	6.5																				●	●
	APKT11T308-LH	0.8	6.5																				●	●
	APKT160408-LH	0.8	9.33																				●	●
	APKT11T304-PF	0.4	6.5		○			●					●			●		●						
	APKT11T308-PF	0.8	6.5					○					○			●								
	APKT11T312-PF	1.2	6.5													○								
	APKT11T316-PF	1.6	6.5													○								
	APKT160408-PF	0.8	9.33		●			○	●							●		●						
	APKT160430-PF	3	9.33	○																				
	APKT11T304-PM	0.4	6.5	●	●	○		●	●				○			●		●						
	APKT11T308-PM	0.8	6.5	●	●		●	●	●	●	●		●		●	●		●						
	APKT11T312-PM	1.2	6.5					○					○			●		○						
	APKT11T316-PM	1.6	6.5					●					○			●		○						
	APKT160408-PM	0.8	9.33	●	●	●	●	●	●	●	●		●		●	●		●						
	APKT160416-PM	1.6	9.33	○												●								
	APKT11T304-PR	0.4	6.5						○							○		○						
	APKT11T316-PR	1.6	6.5															○						

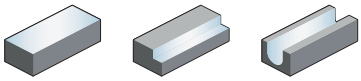
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

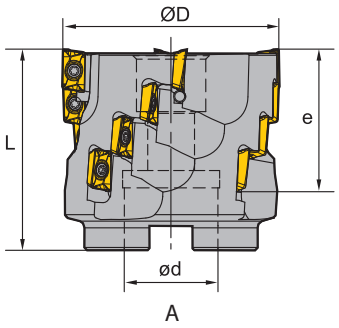
System code B26 Grade selection B24 Technical info B463 Cutting data B224

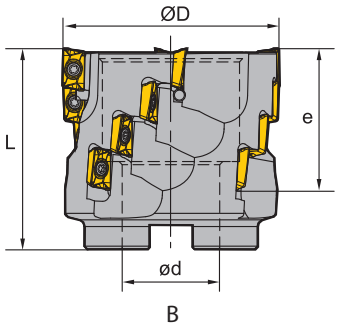
Square shoulder milling

EMP03 Kr: 90°









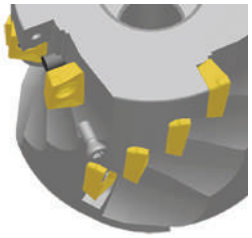
Article	✻	Stock	Dimensions [mm]				Teeth	Coupling	No. of inserts	kg	Inserts
			ØD	e	ød	L					
EMP03-050-A22-AP11-04		●	50	39	22	58	4	A	16	0.5	APKT11T3
EMP03-050-A22-AP11-04C	✻	○	50	39	22	58	4	A	16	0.5	
EMP03-063-A27-AP11-04		●	63	39	27	58	4	A	16	0.9	
EMP03-063-A27-AP11-04C	✻	○	63	39	27	58	4	A	16	0.9	
EMP03-080-B32-AP11-05		●	80	39	32	63	5	B	20	1.3	
EMP03-080-B32-AP11-05C	✻	○	80	39	32	63	5	B	20	1.3	
EMP03-100-B40-AP11-06		●	100	39	40	63	6	B	24	2	
EMP03-100-B40-AP11-06C	✻	○	100	39	40	63	6	B	24	2	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**APKT11T3**
	ØD	**50-100**
	Screw (insert)	l60M2.5*6.5T (1.0 Nm)
	Wrench (insert)	WT08IS

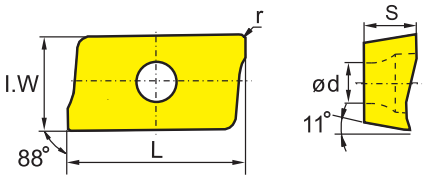


System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

APKT	L	S	d
11 T3	12.24	3.6	2.8

Milling inserts



ISO	r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
P																							
M																							
K																							
N																							
S																							
H																							
APKT11T304-ALH	0.4	6.5									●											●	●
APKT11T308-ALH	0.8	6.5									●											●	●
APKT11T304-APF	0.4	6.5											●										
APKT11T308-APF	0.8	6.5											●										
APKT11T304-APM	0.4	6.5				●			●				●										
APKT11T308-APM	0.8	6.5				●			●				●										
APKT11T312-APM	1.2	6.5				●			●				●										
APKT11T316-APM	1.6	6.5				●			●				●										
APKT11T320-APM	2	6.5				●			●				●										
APKT11T304-LH	0.4	6.5																				●	●
APKT11T308-LH	0.8	6.5																				●	●
APKT11T304-PF	0.4	6.5		○			●					●			●		●						
APKT11T308-PF	0.8	6.5					○					○			●								
APKT11T312-PF	1.2	6.5													○								
APKT11T316-PF	1.6	6.5													○								
APKT11T304-PM	0.4	6.5	●	●	○		●	●				○			●		●						
APKT11T308-PM	0.8	6.5	●	●		●	●	●	●	●		●		●	●		●						
APKT11T312-PM	1.2	6.5					○					○			●		○						
APKT11T316-PM	1.6	6.5					●					○			●		○						
APKT11T304-PR	0.4	6.5						○							○		○						
APKT11T316-PR	1.6	6.5															○						

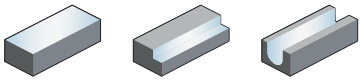
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

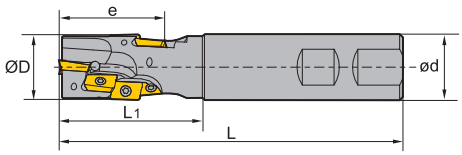
System code > B26 Grade selection > B24 Technical info > B463 Cutting data > B224

Square shoulder milling

EMP04 Kr: 90°







Weldon shank

Article	✻	Stock	Dimensions [mm]					Teeth	No. of inserts	kg	Inserts
			ØD	e	ød	L_1	L				
EMP04-020-XP20-AP11-01		●	20	29.4	20	45	120	1	3	0.3	APKT11T3
EMP04-025-XP25-AP11-02		●	25	38.9	25	55	130	2	8	0.4	
EMP04-032-XP32-AP11-02		●	32	48.5	32	65	140	2	10	0.7	
EMP04-040-XP40-AP11-02		●	40	58	40	75	150	2	14	1.3	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**APKT11T3**
	ØD	**20-40**
	Screw (insert)	I60M2.5*6.5T (1.0 Nm)
	Wrench (insert)	WT08IS



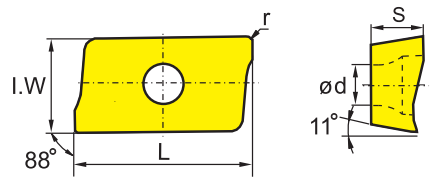
System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

APKT	L	S	d
11 T3	12.24	3.6	2.8

AP** milling insert



	HC¹ (CVD)								HC¹ (PVD)									HT	HC²	HW	
	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
P	⊛	⊛	⊛	⊛	⊛	⊛		⊛			⊛	⊛	⊛	⊛	⊛		○	○	○		
M		⊛	⊛	⊛	⊛	⊛					⊛	⊛	⊛	⊛	⊛		○	○	○		
K							⊛	⊛		○						⊛	○				⊛
N									⊛											⊛	⊛
S				⊛		⊛				○	⊛	⊛	⊛								
H																					

	ISO	r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	APKT11T304-ALH	0.4	6.5									●											●	●
	APKT11T308-ALH	0.8	6.5									●											●	●
	APKT11T304-APF	0.4	6.5											●										
	APKT11T308-APF	0.8	6.5											●										
	APKT11T304-APM	0.4	6.5				●			●				●										
	APKT11T308-APM	0.8	6.5				●			●				●										
	APKT11T312-APM	1.2	6.5				●			●				●										
	APKT11T316-APM	1.6	6.5				●			●				●										
	APKT11T320-APM	2	6.5				●			●				●										
	APKT11T304-LH	0.4	6.5																				●	●
	APKT11T308-LH	0.8	6.5																				●	●
	APKT11T304-PF	0.4	6.5		○			●					●			●		●						
	APKT11T308-PF	0.8	6.5					○					○			●								
	APKT11T312-PF	1.2	6.5													○								
	APKT11T316-PF	1.6	6.5													○								
	APKT11T304-PM	0.4	6.5	●	●	○		●	●				○			●		●						
	APKT11T308-PM	0.8	6.5	●	●		●	●	●	●	●		●		●	●		●						
	APKT11T312-PM	1.2	6.5					○					○			●		○						
	APKT11T316-PM	1.6	6.5					●					○			●		○						
	APKT11T304-PR	0.4	6.5						○							○		○						
	APKT11T316-PR	1.6	6.5															○						

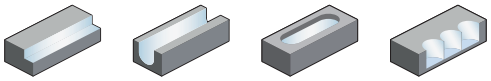
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

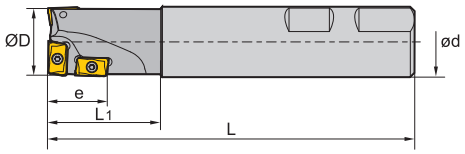
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Square shoulder milling

EMP05 Kr: 90°







Weldon shank

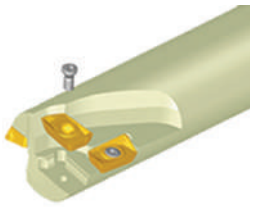
Article	✻	Stock	Dimensions [mm]					Teeth	kg	Inserts
			ØD	e	ød	L_1	L			
EMP05-025-XP25		○	25	20	25	40	130	3	0.5	APMT1135
EMP05-025-XP25C	✻	●	25	20	25	40	130	3	0.5	
EMP05-032-XP32C	✻	○	32	30	32	50	140	3	0.8	APMT1604
EMP05-040-XP32C	✻	○	40	40	32	60	150	4	1	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	APMT1135	APMT1604
	ØD	25	32-40
	Screw (insert)		I60M4*10 (3.4 Nm)
	Screw (insert)	I60M2.5*6.5T (1.0 Nm)	
	Wrench (insert)	WT08IP	WT15IP



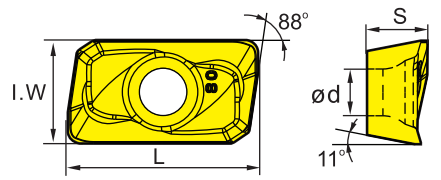
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

APMT	L	S	d
11 35	11.25	3.5	2.8
16 04	17.25	4.76	4.4

AN** milling insert



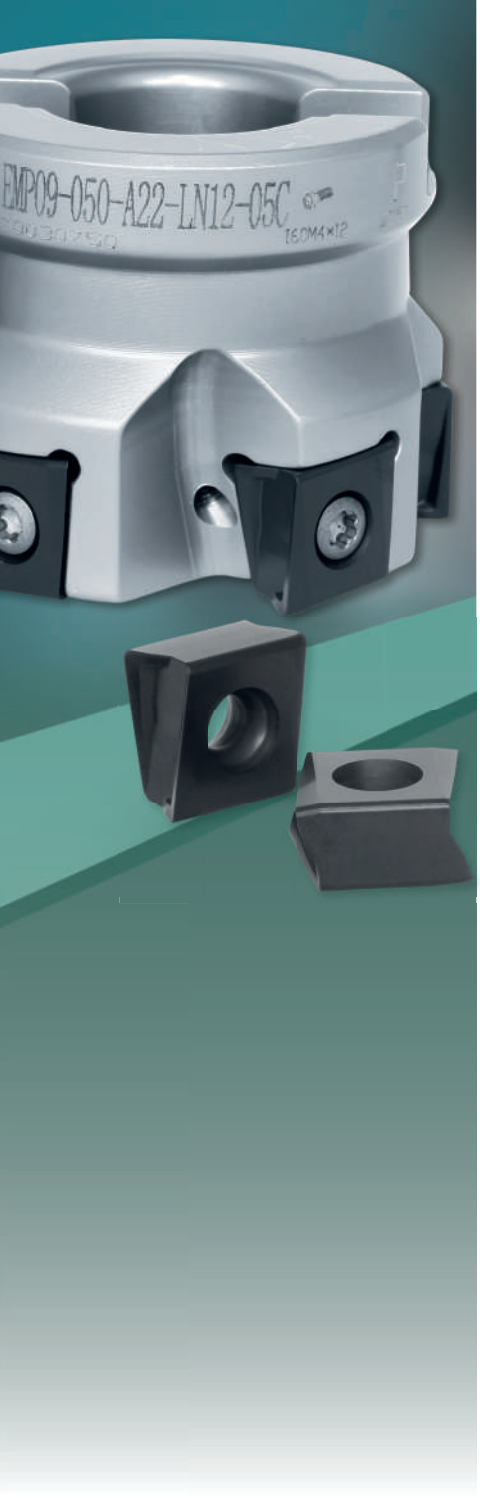
	HC¹ (CVD)								HC¹ (PVD)									HT	HC²	HW	
	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
P	Normal	Normal	Unfavourable	Normal	Normal	Unfavourable		Normal			Normal	Normal	Normal	Unfavourable	Unfavourable		Ideal	Ideal	Ideal		
M		Normal	Unfavourable	Normal	Normal	Unfavourable					Normal	Normal	Normal	Unfavourable	Unfavourable		Ideal	Ideal	Ideal		
K							Normal	Unfavourable		Ideal						Normal	Ideal				Unfavourable
N									Normal											Normal	Unfavourable
S				Unfavourable		Unfavourable				Ideal	Normal	Normal	Normal								
H																					

	ISO	r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**APMT1135PDR**	0.8	6.2					○							●	○		○						
	APMT160408PDER	0.8	9.25						○						●	○		○						

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224



EMP09 *Kr: 90°*

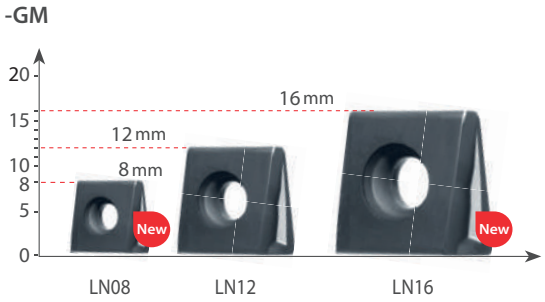
Square shoulder mill with tangential inserts

- Sharp cutting edge geometry combined with robust tangential inserts.
- First choice for large cutting depths with high feed rates.
- Very good competitiveness.

Insert grades

YBM253	YB9320	YBD252
CVD	*PVD*	*CVD*
P20 – P40	*P10 – P30*	*K15 – K35*
M10 – M30	*M20 – M30*	

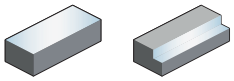
Chip breaker



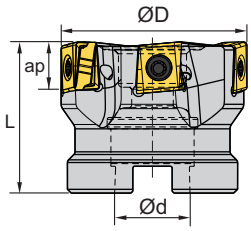


Square shoulder milling

EMP09 Kr: 90°







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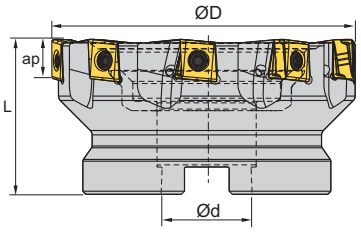


B

Article	✻	Stock	Dimensions [mm] ØD	ød	L	$a_{p\,max}$	Teeth	Coupling	kg	Inserts
EMP09-040-A16-LN08-05C	✻	●	40	16	40	8	5	A		LNKT0804PNR-GM
EMP09-050-A22-LN08-06C	✻	●	50	22	40	8	6	A		
EMP09-063-A22-LN08-08C	✻	●	63	22	40	8	8	A		
EMP09-080-A27-LN08-10C	✻	○	80	27	50	8	10	A		
EMP09-040-A16-LN12-04C	✻	●	40	16	40	11.5	4	A	0.19	LNKT1206PNR-GM
EMP09-050-A22-LN12-05C	✻	●	50	22	40	11.5	5	A	0.33	
EMP09-063-A22-LN12-06C	✻	●	63	22	40	11.5	6	A	0.53	
EMP09-080-A27-LN12-07C	✻	●	80	27	50	11.5	7	A	1.18	
EMP09-100-B32-LN12-09C	✻	●	100	32	50	11.5	9	B	1.62	
EMP09-125-B40-LN12-11C	✻	●	125	40	63	11.5	11	B	3.25	
EMP09-080-A27-LN16-06C	✻	●	80	27	50	15	6	A		LNKT1607PNR-GM
EMP09-100-B32-LN16-08C	✻	●	100	32	50	15	8	B		
EMP09-125-B40-LN16-10C	✻	●	125	40	63	15	10	B		
EMP09-160-B40-LN16-12C	✻	●	160	40	63	15	12	B		

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

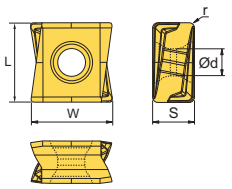
	Insert	LNKT0804PNR-GM	LNKT1206PNR-GM	LNKT1607PNR-GM
	ØD	40-80	40-125	80-160
	Screw (clamp)	I60M3*7 (1.8 Nm)	I60M4*12 (3.4 Nm)	I60M5*17 (6.7 Nm)
	Wrench	WT10IS	WT15IS	WT20IS

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

LNKT	L	S
08 04	8.75	4.45
12 06	12.7	6.75
16 07	16.05	7.35



LN** milling insert				HC¹ (CVD)							HC¹ (PVD)									HT	HC²	HW	
			P																				
			M																				
			K																				
			N																				
			S																				
			H																				
ISO		W	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**LNKT080404PNR-GM**	8.75	0.4				●							●										
	LNKT120608PNR-GM	12.7	0.8				●				●			●										
	LNKT160708PNR-GM	16.05	0.8				●			○				●										

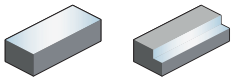
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

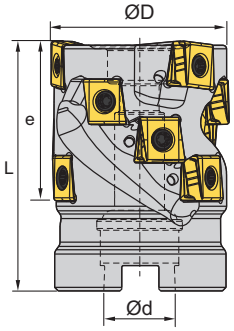
System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Square shoulder milling

EMP09 Kr: 90°







Article	✲	Stock	Dimensions [mm] ØD	e	ød	L	Teeth row	Teeth	Coupling	kg	Inserts
EMP09-040x43-A16-LN12-02C	✲	○	40	43	16	70	2	8	A	0.4	LNKT1206PNR-GM
EMP09-050x43-A22-LN12-03C	✲	●	50	43	22	70	3	12	A	0.64	
EMP09-063x53-A27-LN12-04C	✲	●	63	53	27	80	4	20	A	1.31	
EMP09-080x53-A27-LN12-05C	✲	○	80	53	27	80	5	25	A	2.33	

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

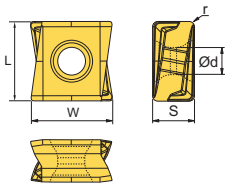
	Insert	**LNKT1206PNR-GM**
	ØD	**40-80**
	Screw (clamp)	I60M4*12 (3.4 Nm)
	Wrench	WT15IS

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

LNKT	L	S
12 06	12.7	6.75



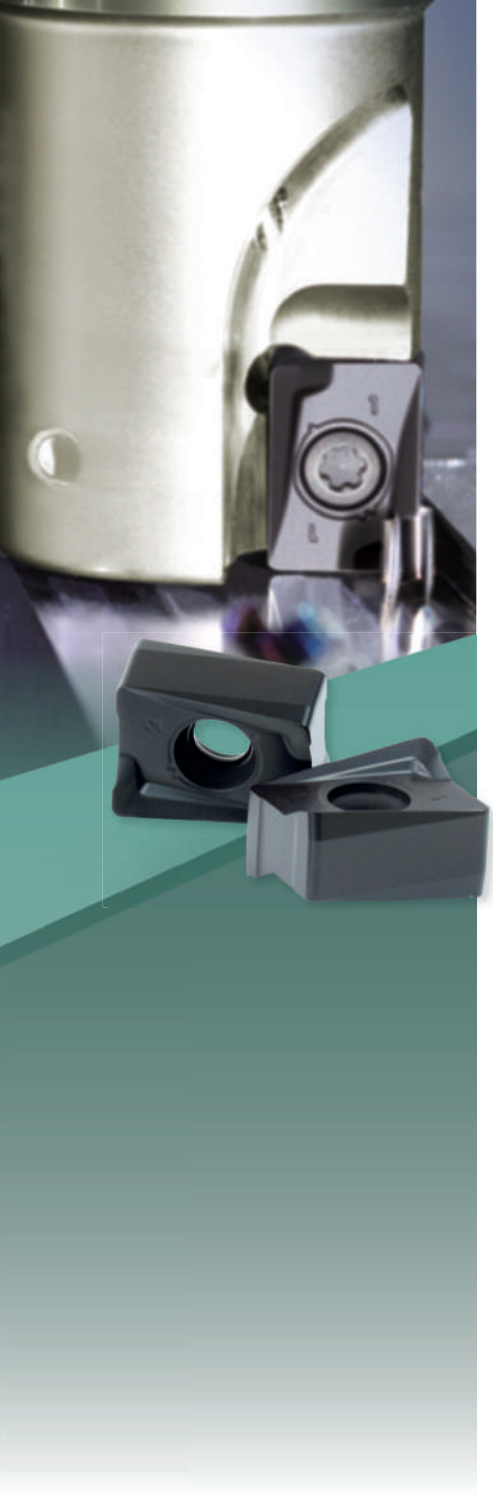
				HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
			P																			
			M																			
			K																			
			N																			
			S																			
			H																			
ISO		W	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**LNKT120608PNR-GM**	12.7	0.8				●				●			●										

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Notes



EMP13 Kr: 90°

New square shoulder mill generation

- Specially developed cutting edges for high-quality 90° square shoulder milling.
- Extra thick inserts for better stability.
- Positive, smooth cutting geometry for reduced cutting forces.
- Polished, high-precision geometry for aluminum alloys, steel and cast iron.

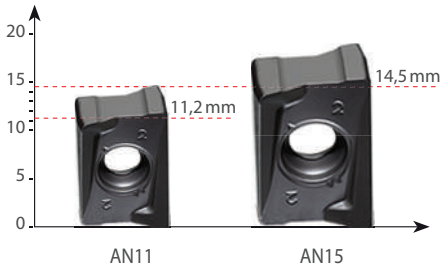
Insert grades

YBC302	YBM253	YB9320	YBG205
CVD	*CVD*	*PVD*	*PVD*
P15 – P35	*P20 – P40*	*P10 – P30*	*P10 – P30*
	M10 – M30	*M20 – M30*	*M20 – M30*

YBD152	YBD252	YD101
CVD	*CVD*	–
K05 – K25	*K15 – K35*	*N05 – N25*

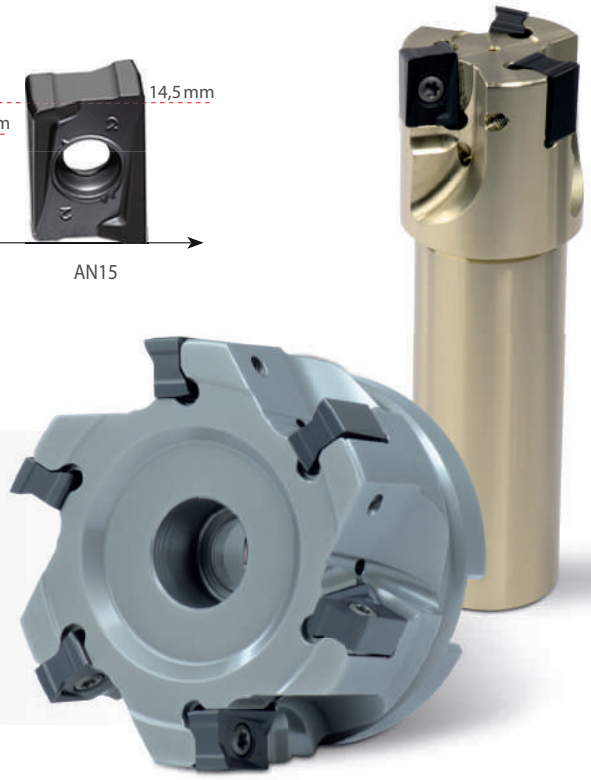
Chip breakers

-GM -LH



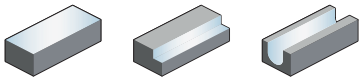


Chip breaker -LH for aluminium

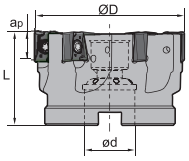


Square shoulder milling

EMP13 Kr: 90°







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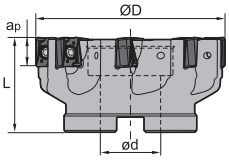

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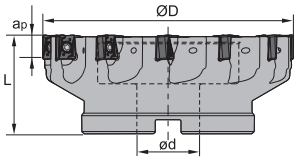


C

Article	✲	Stock	Dimensions [mm] ØD	ød	L	$a_{p\ max}$	Teeth	Coupling	kg	Inserts
EMP13-040-A16-AN11-04C	✲	○	40	16	40	11.2	4	A	0.45	
EMP13-050-A22-AN11-06		●	50	22	40	11.2	6	A	0.3	
EMP13-063-A22-AN11-06	✲	○	63	22	40	11.2	6	A	0.49	
EMP13-063-A22-AN11-07		●	63	22	40	11.2	7	A	0.49	
EMP13-080-A27-AN11-07	✲	○	80	27	50	11.2	7	A	1.18	
EMP13-080-A27-AN11-09		●	80	27	50	11.2	9	A	1.18	ANGX1105
EMP13-100-B32-AN11-12		●	100	32	50	11.2	12	B	1.46	
EMP13-100-B32-AN11-12C	✲	○	100	32	50	11.2	12	B	1.46	
EMP13-125-B40-AN11-14		●	125	40	63	11.2	14	B	2.92	
EMP13-125-B40-AN11-14C	✲	○	125	40	63	11.2	14	B	2.92	
EMP13-160-C40-AN11-16		●	160	40	63	11.2	16	C	4.3	
EMP13-050-A22-AN15-04		●	50	22	40	14.5	4	A	0.26	
EMP13-063-A22-AN15-05		●	63	22	40	14.5	5	A	0.53	
EMP13-080-A27-AN15-06		●	80	27	50	14.5	6	A	1.23	
EMP13-100-B32-AN15-08		●	100	32	50	14.5	8	B	1.52	
EMP13-100-B32-AN15-08C	✲	○	100	32	50	14.5	8	B	1.52	ANGX1506
EMP13-125-B40-AN15-10		●	125	40	63	14.5	10	B	3.05	
EMP13-125-B40-AN15-10C	✲	○	125	40	63	14.5	10	B	3.05	
EMP13-160-C40-AN15-12		●	160	40	63	14.5	12	C	4.46	
EMP13-200-C60-AN15-16		○	200	60	63	14.5	16	C	6.26	

● Ex stock ○ On demand

✲ With internal cooling

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Spare parts

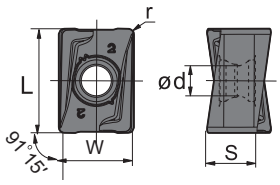
	Insert	ANGX1105	ANGX1506
	ØD	40-160	50-200
	Screw (insert)	I60M3*9 (1.8 Nm)	I60M4*12 (3.4 Nm)
	Wrench (insert)	WT09IS	WT15IS



Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

ANGX	L	S	d
11 05	11.85	5.7	3.5
15 06	15.43	7.3	4.4



AN** milling insert				HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
			P																			
			M																			
			K																			
			N																			
			S																			
			H																			
ISO		W	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	ANGX110504PNR-GM	8.4	0.4				●			●				●	●									
	ANGX110508PNR-GM	8.4	0.8	●			●			●	●			●	●									
	ANGX150608PNR-GM	11	0.8	○			●			●	●			●	●									
	ANGX150616PNR-GM	11	1.6				●			●					●									
	ANGX150620PNR-GM	11	2							●	●				●									
	ANGX110504PNR-LH	8.4	0.4																				●	
	ANGX150608PNR-LH	11	0.8																				●	

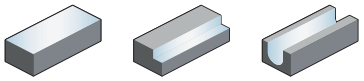
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

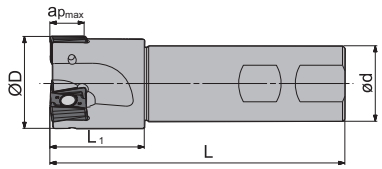
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Square shoulder milling

EMP13 Kr: 90°







Weldon shank

Article	✻	Stock	Dimensions [mm]					Teeth	kg	Inserts
			ØD	ød	L_1	L	$a_{p\,max}$			
EMP13-025-XP25-AN11-02		●	25	25	32	100	11.2	2	0.31	ANGX1105
EMP13-032-XP32-AN11-03		●	32	32	40	115	11.2	3	0.61	
EMP13-040-XP32-AN11-04		●	40	32	40	125	11.2	4	0.75	
EMP13-032-XP32-AN15-02		●	32	32	40	125	11.2	2	0.66	ANGX1506
EMP13-040-XP32-AN15-03		●	40	32	40	125	11.2	3	0.76	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

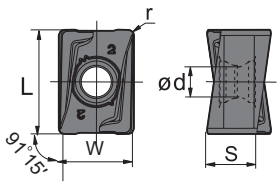
	Insert	**ANGX1105**	**ANGX1506**	
	ØD	**25-40**	**25-40**	
	Screw (insert)	I60M3*9 (1.8 Nm)	I60M4*12 (3.4 Nm)	
	Wrench (insert)	WT09IS	WT15IS	

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

ANGX	L	S	d
11 05	11.85	5.7	3.5
15 06	15.43	7.3	4.4



AN** milling insert				HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
				P																		
				M																		
				K																		
				N																		
				S																		
				H																		
	ISO	W	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**ANGX110504PNR-GM**	8.4	0.4				●			●				●	●									
	ANGX110508PNR-GM	8.4	0.8	●			●			●	●			●	●									
	ANGX150608PNR-GM	11	0.8	○			●			●	●			●	●									
	ANGX150616PNR-GM	11	1.6				●			●					●									
	ANGX150620PNR-GM	11	2							●	●				●									
	**ANGX110504PNR-LH**	8.4	0.4																				●	
	ANGX150608PNR-LH	11	0.8																				●	

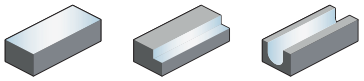
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

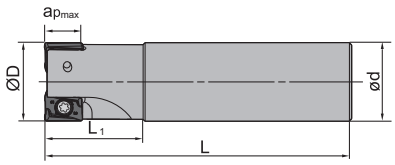
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Square shoulder milling

EMP13 Kr: 90°







Straight shank

Article	✻	Stock	Dimensions [mm]						Teeth	kg	Inserts
			ØD	e	ød	L_1	L	$a_{p\,max}$			
EMP13-025-G25-AN11-02		●	25	11.2	25	32	100	11.2	2	0.31	ANGX1105
EMP13-032-G32-AN11-03		●	32	11.2	32	40	115	11.2	3	0.61	
EMP13-040-G32-AN11-04		●	40	11.2	32	40	125	11.2	4	0.75	
EMP13-032-G32-AN15-02		●	32	14.5	32	40	125	14.5	2	0.66	ANGX1506
EMP13-040-G32-AN15-03		●	40	14.5	32	40	125	14.5	3	0.76	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	ANGX1105	ANGX1506
	ØD	25-40	25-40
	Screw (insert)	I60M3*9 (1.8 Nm)	I60M4*12 (3.4 Nm)
	Wrench (insert)	WT09IS	WT15IS

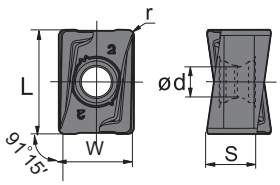


System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

ANGX	L	S	d
11 05	11.85	5.7	3.5
15 06	15.43	7.3	4.4



AN** milling insert				HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
				P																		
				M																		
				K																		
				N																		
				S																		
				H																		
	ISO	W	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**ANGX110504PNR-GM**	8.4	0.4				●			●				●	●									
	ANGX110508PNR-GM	8.4	0.8	●			●			●	●			●	●									
	ANGX150608PNR-GM	11	0.8	○			●			●	●			●	●									
	ANGX150616PNR-GM	11	1.6				●			●					●									
	ANGX150620PNR-GM	11	2							●	●				●									
	**ANGX110504PNR-LH**	8.4	0.4																				●	
	ANGX150608PNR-LH	11	0.8																				●	

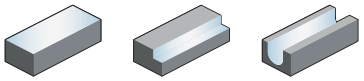
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

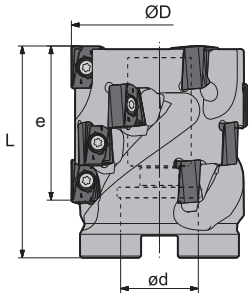
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Square shoulder milling

EMP13 Kr: 90°







Article	✻	Stock	Dimensions [mm]				Teeth	No. of inserts	kg	Inserts
			ØD	e	ød	L				
EMP13-050x43-A22-AN11-03		●	50	43	22	60	3	12	0.52	ANGX1105
EMP13-063x64-A27-AN11-04		○	63	64	27	80	4	24	1.15	
EMP13-063x53-A27-AN15-03		○	63	53	27	75	3	12	1.14	ANGX1506
EMP13-080x53-A32-AN15-04		●	80	53	32	75	4	16	1.82	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**ANGX1105**	**ANGX1506**
	ØD	**50-63**	**63-80**
	Screw (insert)	I60M3*9 (1.8 Nm)	I60M4*12 (3.4 Nm)
	Wrench (insert)	WT09IS	WT15IS

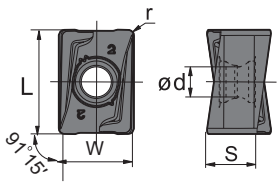


System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

ANGX	L	S	d
11 05	11.85	5.7	3.5
15 06	15.43	7.3	4.4



AN** milling insert				HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
				P																		
				M																		
				K																		
				N																		
				S																		
				H																		
	ISO	W	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**ANGX110504PNR-GM**	8.4	0.4				●			●				●	●									
	ANGX110508PNR-GM	8.4	0.8	●			●			●	●			●	●									
	ANGX150608PNR-GM	11	0.8	○			●			●	●			●	●									
	ANGX150616PNR-GM	11	1.6				●			●					●									
	ANGX150620PNR-GM	11	2							●	●				●									
	**ANGX110504PNR-LH**	8.4	0.4																				●	
	ANGX150608PNR-LH	11	0.8																				●	

● Ex stock ○ On demand

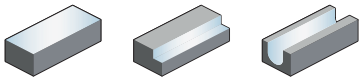
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

A Turning
B Milling
C Drilling
D Technical Information
E Index

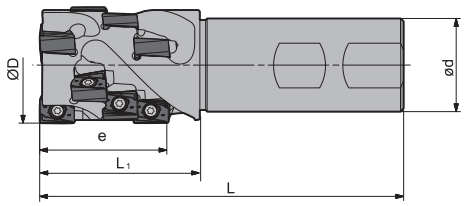
System code > B26 Grade selection > B24 Technical info > B463 Cutting data > B224

Square shoulder milling

EMP13 Kr: 90°







Weldon shank

Article	✻	Stock	Dimensions [mm] ØD	e	ød	L_1	L	Teeth	No. of inserts	kg	Inserts
EMP13-032x43-XP32-AN11-02		○	32	43	32	48	115	2	8	0.61	ANGX1105
EMP13-040x43-XP32-AN11-03		○	40	43	32	55	125	3	12	0.79	
EMP13-040x40-XP32-AN15-02		○	40	40	32	55	115	2	6	0.79	ANGX1506
EMP13-050x53-XP40-AN15-02		○	50	53	40	70	145	2	8	1.53	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

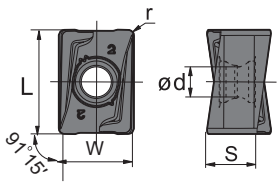
	Insert	ANGX1105	ANGX1506	
	ØD	32-40	40-50	
	Screw (insert)	I60M3*9 (1.8 Nm)	I60M4*12 (3.4 Nm)	
	Wrench (insert)	WT09IS	WT15IS	

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

ANGX	L	S	d
11 05	11.85	5.7	3.5
15 06	15.43	7.3	4.4



AN** milling insert				HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
				P																		
				M																		
				K																		
				N																		
				S																		
				H																		
	ISO	W	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**ANGX110504PNR-GM**	8.4	0.4				●			●				●	●									
	ANGX110508PNR-GM	8.4	0.8	●			●			●	●			●	●									
	ANGX150608PNR-GM	11	0.8	○			●			●	●			●	●									
	ANGX150616PNR-GM	11	1.6				●			●					●									
	ANGX150620PNR-GM	11	2							●	●				●									
	**ANGX110504PNR-LH**	8.4	0.4																				●	
	ANGX150608PNR-LH	11	0.8																				●	

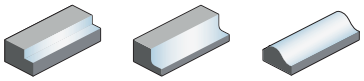
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

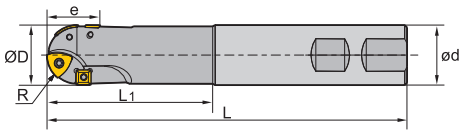
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Profile milling

BMR01







Weldon shank

Article	✻	Stock	Dimensions [mm]						Teeth		kg	Inserts
			R	ØD	e	ød	L_1	L	ZDET	SPMT		
BMR01-020-XP20-S		○	10	20	20	20	50	125	2	2	0.3	ZDET08T2 & SPMT0603
BMR01-020-XP20-M		○	10	20	20	20	75	150	2	2	0.3	
BMR01-020-XP20-L		○	10	20	20	20	100	200	2	2	0.4	
BMR01-025-XP25-S		○	12.5	25	23	25	70	150	2	2	0.5	ZDET1103 & SPMT0603
BMR01-025-XP25-M		○	12.5	25	23	25	95	175	2	2	0.6	
BMR01-025-XP25-L		○	12.5	25	23	25	100	200	2	2	0.7	
BMR01-032-XP32-S		○	16	32	31	32	85	175	2	2	0.9	ZDET13T2 & SDMT0903
BMR01-032-XP32-M		○	16	32	31	32	100	200	2	2	1.1	
BMR01-032-XP32-L		○	16	32	31	32	150	250	2	2	1.4	
BMR01-040-XP40-S		○	20	40	41	40	85	175	3	2	1.4	ZPNT2204 & SPMT1204
BMR01-040-XP40-M		○	20	40	41	40	100	200	3	2	1.7	
BMR01-040-XP40-L		○	20	40	41	40	150	250	3	2	2.1	
BMR01-050-XP40-S		○	25	50	45	40	100	200	3	2	1.8	
BMR01-050-XP40-M		○	25	50	45	40	100	300	3	2	2.8	
BMR01-063-XP40-S		○	31.5	63	52	40	100	200	4	2	3	
BMR01-063-XP40-M		○	31.5	63	52	40	100	300	4	2	3.5	

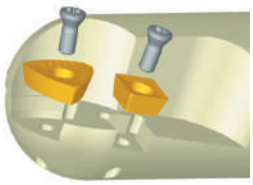
● Ex stock ○ On demand

✻ With internal cooling

System code > B26 Grade selection > B24 Technical info > B463 Cutting data > B224

Spare parts

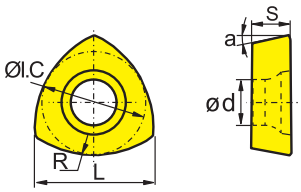
	Insert	ZDET08T2 & SPMT0603	ZDET1103 & SPMT0603	ZDET13T2 & SDMT0903	ZPNT2204 & SPMT1204
	ØD	20	25	32	40-63
	Screw (insert)	I43M2.5*5.7 (1.0 Nm)	I43M2.5*5.7 (1.0 Nm)	I43M4*8 (3.4 Nm)	I43M5*11 (6.7 Nm)
	Wrench (insert)	WT07IP	WT07IP		
	Wrench (insert)			WT15IS	WT20IS



ZDET	L	I.C	S	d
08 T2	8.4	6.75	2.78	2.8
11 03	10.6	8.5	3.18	2.8
13 T3	13.2	10.5	3.97	4.4
22 04	16.1	12.7	4.76	5.56

Milling inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions



ZD** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW		
		P																				
		M																				
		K																				
		N																				
		S																				
		H																				
ISO		R	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	ZDET13T3CYR16-PM	16					○								○								
	ZDET08T2CYR10	10					○																
	ZDET1103CYR12.5	12.5					○																
	ZDET13T3CYR16	16					○																
	ZPNT2204CY(R20)	20					○																
	ZPNT2204CY(R25)	25					●																
	ZPNT2204CY(R31)	31.5					○																

● Ex stock ○ On demand

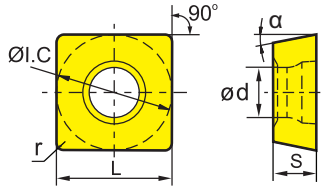
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPMT	L	I.C	S	d
06 03	6.35	6.35	3.18	2.8
12 04	12.7	12.7	4.76	5.5

SP** milling insert		HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
	P	●	●	◉	●	●	◉		●	◉	◉	◉	◉	◉		●	●	●		
	M		◉	◉	◉	◉	◉			◉	◉	◉	◉	◉		●	●	●		
	K						◉	◉	●						◉	●			◉	
	N								◉										◉	◉
	S			◉		◉			●	◉	◉	◉	◉							
	H																			
ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
 **SPMT060304-KT**		○																				
 **SPMT060304**	0.4					●										○						
SPMT120408	0.8	○	●	○		●	○									○						

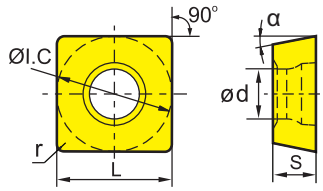
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SDMT	L	I.C	S	d
09 03	9.525	9.525	3.18	4.4

SD** milling insert		HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
	P	●	●	◉	●	●	◉		●	◉	◉	◉	◉	◉		●	●	●		
	M		◉	◉	◉	◉	◉			◉	◉	◉	◉	◉		●	●	●		
	K						◉	◉	●						◉	●			◉	
	N								◉										◉	◉
	S			◉		◉			●	◉	◉	◉	◉							
	H																			
ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
 **SDMT090308**	0.8					●	○															

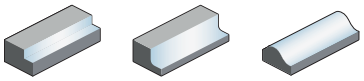
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

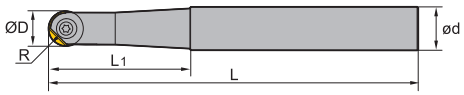
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Profile milling

BMR02







Article	✻	Stock	Dimensions [mm]					kg	Inserts
			R	ØD	ød	L_1	L		
BMR02-012-G16-S		●	6	12	16	40	110	0.1	ROHX1203
BMR02-012-G16-M		●	6	12	16	50	130	0.2	
BMR02-012-G16-L		●	6	12	16	50	160	0.2	
BMR02-016-G20-S		●	8	16	20	45	140	0.3	ROHX1604
BMR02-016-G20-M		●	8	16	20	65	170	0.3	
BMR02-016-G20-L		●	8	16	20	65	200	0.4	
BMR02-020-G25-S		●	10	20	25	60	160	0.5	ROHX2005
BMR02-020-G25-M		●	10	20	25	80	200	0.6	
BMR02-020-G25-L		●	10	20	25	80	240	0.8	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	ROHX1203	ROHX1604	ROHX2005	
	ØD	12	16	20	
	Screw (insert)	I70M4*10TT (3.4 Nm)	I70M5*12TT (6.7 Nm)	I70M5*16TT (6.7 Nm)	
	Wrench (insert)	WT15IS	WT20IS	WT20IS	

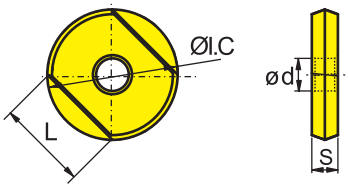
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

ROHX	L	I.C	S	d
12 03	8.5	12	3	4
16 04	11.3	16	4	5
20 05	14.1	20	5	5

RO** positive insert



	HC¹ (CVD)								HC¹ (PVD)								HT	HC²	HW	
P	●	●	●	●	●	●		●			●	●	●	●	●	●	●	●		
M		●	●	●	●	●					●	●	●	●	●	●	●	●		
K							●	●	●							●	●			●
N									●										●	●
S				●		●				●	●	●	●							
H																				
ISO	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
ROHX1203										○			●				●				
ROHX1604													●				●				
ROHX2005													●				●				

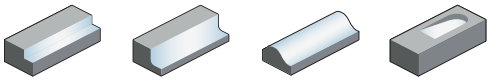
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

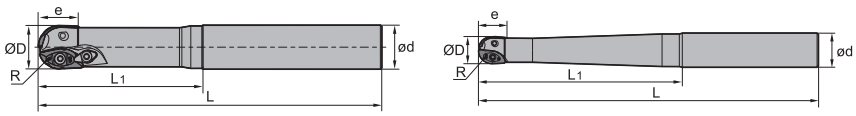
System code > B26 Grade selection > B24 Technical info > B463 Cutting data > B224

Profile milling

BMR03







Straight shank

Article	✻	Stock	Dimensions [mm]						Teeth	Coupling	kg	Inserts
			R	ØD	e	ød	L_1	L				
BMR03-016-G20-S		●	8	16	16	20	70	150	2	B	0.3	XPHT16
BMR03-016-G20-M		●	8	16	16	20	80	180	2	B	0.4	
BMR03-020-G25-S		●	10	20	20	25	80	180	2	B	0.5	XPHT20
BMR03-020-G25-M		●	10	20	20	25	100	200	2	B	0.6	
BMR03-020-G25-L		●	10	20	20	25	150	250	2	B	0.7	
BMR03-020-G25-XL		○	10	20	20	25	110	300	2	B	1	
BMR03-025-G25-S		●	12.5	25	25	25	80	180	2	B	0.6	XPHT25
BMR03-025-G25-M		●	12.5	25	25	25	100	200	2	B	0.7	
BMR03-025-G25-L		○	12.5	25	25	25	110	250	2	B	0.8	
BMR03-025-G25-XL		○	12.5	25	25	25	120	300	2	B	1	
BMR03-030-G32-S		○	15	30	30	32	120	200	2	A	1	XPHT30
BMR03-030-G32-M		●	15	30	30	32	150	250	2	A	1.3	
BMR03-030-G32-L		○	15	30	30	32	200	300	2	A	1.6	
BMR03-032-G32-S		●	16	32	32	32	120	200	2	A	1.1	XPHT32
BMR03-032-G32-M		●	16	32	32	32	150	250	2	A	1.4	
BMR03-032-G32-L		●	16	32	32	32	200	300	2	A	1.6	
BMR03-032-G32-XL		○	16	32	32	32	200	350	2	A	2	
BMR03-040-G40-S		○	20	40	40	40	120	200	2	A	1.6	XPHT40
BMR03-040-G40-M		○	20	40	40	40	150	250	2	A	2	
BMR03-040-G40-L		●	20	40	40	40	200	300	2	A	2.5	

● Ex stock ○ On demand

✻ With internal cooling

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Spare parts

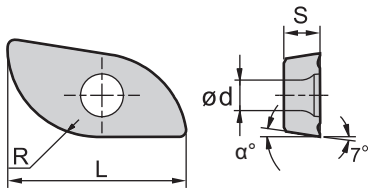
	Insert	XPHT16	XPHT20	XPHT25	XPHT30	XPHT32	XPHT40
	ØD	16	20	25	30	32	40
	Clamp						CBH5R1
	Clamp				WD-208	WD-208	
	Screw (clamp)				I60M5*13 (6.7 Nm)	I60M5*13 (6.7 Nm)	I43M6*16 (9.1 Nm)
	Screw (insert)	I60M2.5*6.5 (1.0 Nm)		I60M4*10 (3.4 Nm)	I60M5*13 (6.7 Nm)	I60M5*13 (6.7 Nm)	I43M6*16 (9.1 Nm)
	Screw (insert)		I60M3.5*08TT (2.7 Nm)				
	Wrench (clamp)				WT20IT	WT20IT	WT25IT
	Wrench (insert)		WT10IP				
	Wrench (insert)				WT20IT	WT20IT	WT25IT
	Wrench (insert)	WT07P					
	Wrench (insert)			WT15S			



XPHT	L	S	d
16	16	3.18	3.1
20	20	3.97	4
25	25	4.76	4.7
30	30	6.35	5.8
32	32	6.35	5.8
40	40	7.94	6.8

Milling inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions



XP** milling insert		R	α	HC¹ (CVD)							HC¹ (PVD)							HT		HC²	HW	
	ISO			YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
P																								
M																								
K																								
N																								
S																								
H																								
	XPHT16R0803-GM	8	9														●							
	XPHT20R10T3-GM	10	9														●							
	XPHT25R1204-GM	12.5	9														●							
	XPHT30R1506-GM	15	11														●							
	XPHT32R1606-GM	16	9														●							
	XPHT40R2007-GM	20	9														●							

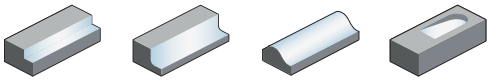
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

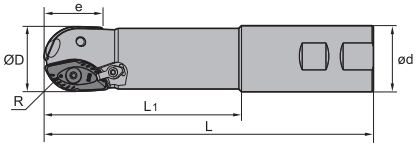
System code > B26 Grade selection > B24 Technical info > B463 Cutting data > B224

Profile milling

BMR03

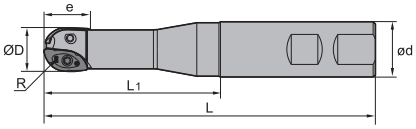






A

Weldon shank



B

Article	✻	Stock	Dimensions [mm]						Teeth	Coupling	kg	Inserts
			R	ØD	e	ød	L_1	L				
BMR03-016-XP20-M		●	8	16	16	20	60	111	2	B	0.2	XPHT16
BMR03-020-XP25-M		●	10	20	20	25	70	127	2	B	0.3	XPHT20
BMR03-020-XP25-L		●	10	20	20	25	80	150	2	B	0.4	
BMR03-025-XP25-M		●	12.5	25	25	25	80	137	2	B	0.4	XPHT25
BMR03-025-XP25-L		●	12.5	25	25	25	100	200	2	B	0.6	
BMR03-030-XP32-M		●	15	30	30	32	100	161	2	A	0.8	XPHT30
BMR03-030-XP32-L		●	15	30	30	32	150	250	2	A	1.3	
BMR03-032-XP32-M		●	16	32	32	32	100	161	2	A	0.8	XPHT32
BMR03-032-XP32-L		○	16	32	32	32	120	250	2	A	1.3	
BMR03-040-XP40-M		○	20	40	40	40	100	175	2	A	1.3	XPHT40
BMR03-040-XP40-L		●	20	40	40	40	120	250	2	A	2	
BMR03-050-XP50-M		○	25	50	50	50	100	200	2	A	2.5	XPHT50
BMR03-050-XP50-L		○	25	50	50	50	150	250	2	A	3.1	

● Ex stock ○ On demand

✻ With internal cooling

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Spare parts

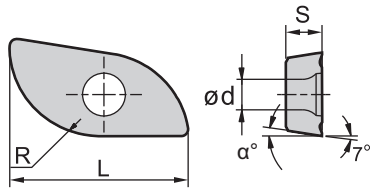
	Insert	XPHT16	XPHT20	XPHT25	XPHT30	XPHT32	XPHT40	XPHT50
	ØD	16	20	25	30	32	40	50
	Clamp						CBH5R1	CBH5R1
	Clamp				WD-208	WD-208		
	Screw (clamp)				I60M5*13 (6.7 Nm)	I60M5*13 (6.7 Nm)	I43M6*16 (9.1 Nm)	I43M6*16 (9.1 Nm)
	Screw (insert)	I60M2.5*6.5 (1.0 Nm)		I60M4*10 (3.4 Nm)	I60M5*13 (6.7 Nm)	I60M5*13 (6.7 Nm)	I43M6*16 (9.1 Nm)	I43M8*21 (16.2 Nm)
	Screw (insert)		I60M3.5*08TT (2.7 Nm)					
	Wrench (clamp)				WT20IT	WT20IT	WT25IT	WT25IT
	Wrench (insert)		WT10IP					
	Wrench (insert)				WT20IT	WT20IT	WT25IT	WT30IT
	Wrench (insert)	WT07P						
	Wrench (insert)			WT15S				



XPHT	L	S	d
16	16	3.18	3.1
20	20	3.97	4
25	25	4.76	4.7
30	30	6.35	5.8
32	32	6.35	5.8
40	40	7.94	6.8
50	50	7.94	9.2

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Milling inserts



	ISO	R	α	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
				P																	HT	HC²	HW	
				M																				
				K																				
				N																				
				S																				
				H																				
	XPHT16R0803-GM	8	9															●						
	XPHT20R10T3-GM	10	9															●						
	XPHT25R1204-GM	12.5	9															●						
	XPHT30R1506-GM	15	11															●						
	XPHT32R1606-GM	16	9															●						
	XPHT40R2007-GM	20	9															●						
	XPHT50R2507-GM	25	9															●						

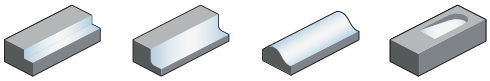
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

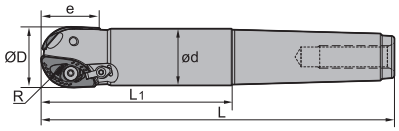
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Profile milling

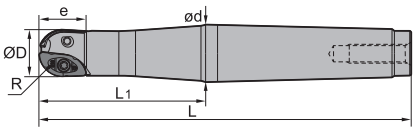
BMR03







A



B

Morse taper shank

Article	✻	Stock	Dimensions [mm]						Teeth	Coupling	kg	Inserts
			R	ØD	e	ød	L_1	L				
BMR03-020-MT3-M		○	10	20	20	18.7	70	156	2	B	0.4	XPHT20
BMR03-020-MT3-L		○	10	20	20	18.7	100	186	2	B	0.4	
BMR03-025-MT3-M		○	12.5	25	25	23.5	70	156	2	B	0.4	XPHT25
BMR03-025-MT3-L		○	12.5	25	25	23.5	100	186	2	B	0.4	
BMR03-030-MT4-M		○	15	30	30	28.2	70	189	2	A	0.8	XPHT30
BMR03-030-MT4-L		○	15	30	30	28.2	120	229	2	A	1	
BMR03-032-MT4-M		○	16	32	32	29.2	70	179	2	A	0.9	XPHT32
BMR03-032-MT4-L		●	16	32	32	29.2	100	209	2	A	0.9	
BMR03-040-MT5-L		○	20	40	40	36.9	90	226	2	A	1.8	XPHT40
BMR03-050-MT5-M		●	25	50	50	46.8	100	236	2	A	2.2	XPHT50
BMR03-050-MT5-L		○	25	50	50	46.8	150	286	2	A	2.9	

● Ex stock ○ On demand

✻ With internal cooling

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Spare parts

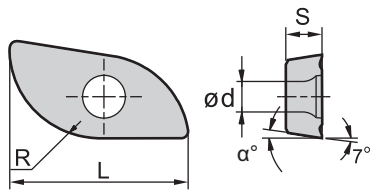
	Insert	XPHT20	XPHT25	XPHT30	XPHT32	XPHT40	XPHT50
	ØD	20	25	30	32	40	50
	Clamp					CBH5R1	CBH5R1
	Clamp			WD-208	WD-208		
	Screw (clamp)			I60M5*13 (6.7 Nm)	I60M5*13 (6.7 Nm)	I43M6*16 (9.1 Nm)	I43M6*16 (9.1 Nm)
	Screw (insert)		I60M4*10 (3.4 Nm)	I60M5*13 (6.7 Nm)	I60M5*13 (6.7 Nm)	I43M6*16 (9.1 Nm)	I43M8*21 (16.2 Nm)
	Screw (insert)	I60M3.5*08TT (2.7 Nm)					
	Wrench (clamp)			WT20IT	WT20IT	WT25IT	WT25IT
	Wrench (insert)	WT10IP					
	Wrench (insert)			WT20IT	WT20IT	WT25IT	WT30IT
	Wrench (insert)		WT15S				



XPHT	L	S	d
20	20	3.97	4
25	25	4.76	4.7
30	30	6.35	5.8
32	32	6.35	5.8
40	40	7.94	6.8
50	50	7.94	9.2

Milling inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions



XP** milling insert				HC¹ (CVD)								HC¹ (PVD)								HT		HC²		HW	
				P																					
				M																					
				K																					
				N																					
				S																					
				H																					
ISO		R	α	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201	
	XPHT20R10T3-GM	10	9															●							
	XPHT25R1204-GM	12.5	9															●							
	XPHT30R1506-GM	15	11															●							
	XPHT32R1606-GM	16	9															●							
	XPHT40R2007-GM	20	9															●							
	XPHT50R2507-GM	25	9															●							

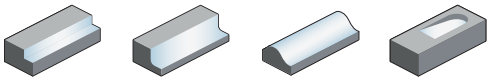
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

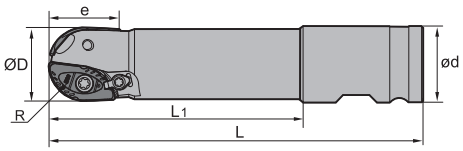
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Profile milling

BMR03







Compound shank

Article	✻	Stock	Dimensions [mm]						Teeth	kg	Inserts
			R	ØD	e	ød	L_1	L			
BMR03-040-XPX-M		○	20	40	40	50.8	170	250	2	1.3	XPHT40
BMR03-040-XPX-L		○	20	40	40	50.8	220	300	2	3.1	
BMR03-040-XPX-XL		○	20	40	40	50.8	270	350	2	3.5	
BMR03-050-XPX-M		○	25	50	50	50.8	170	250	2	3.1	XPHT50
BMR03-050-XPX-L		○	25	50	50	50.8	200	300	2	3.8	
BMR03-050-XPX-XL		○	25	50	50	50.8	270	350	2	4.4	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**XPHT40**	**XPHT50**
	ØD	**40**	**50**
	Clamp	CBH5R1	CBH5R1
	Screw (clamp)	I43M6*16 (9.1 Nm)	I43M6*16 (9.1 Nm)
	Screw (insert)	I43M6*16 (9.1 Nm)	I43M8*21 (16.2 Nm)
	Wrench (clamp)	WT25IT	WT25IT
	Wrench (insert)	WT25IT	WT30IT



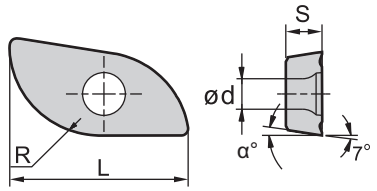
System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

XPHT	L	S	d
40	40	7.94	6.8
50	50	7.94	9.2

XP** milling insert



	HC¹ (CVD)								HC¹ (PVD)									HT	HC²	HW	
	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
P	Normal	Normal	Unfavourable	Normal	Normal	Unfavourable		Normal			Normal	Normal	Normal	Unfavourable	Unfavourable		Ideal	Ideal	Ideal		
M		Normal	Unfavourable	Normal	Normal	Unfavourable					Normal	Normal	Normal	Unfavourable	Unfavourable		Ideal	Ideal	Ideal		
K							Normal	Unfavourable		Ideal						Normal	Ideal				Unfavourable
N									Normal											Normal	Unfavourable
S				Unfavourable		Unfavourable				Ideal	Normal	Normal	Normal								
H																					

	ISO	R	α	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**XPHT40R2007-GM**	20	9															●						
	XPHT50R2507-GM	25	9															●						

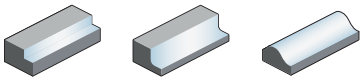
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

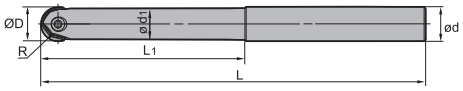
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Profile milling

BMR04







Straight shank

Article	✲	Stock	Dimensions [mm]						kg	Inserts
			R	ØD	ød	Ød1	L_1	L		
BMR04-012-G12-M		●	6	12	12	11	35	125	0.1	ZOHX12
BMR04-012-G12-L		●	6	12	12	11	45	150	0.1	
BMR04-016-G16-M		●	8	16	16	14	40	150	0.2	ZOHX16
BMR04-016-G16-L		●	8	16	16	14	55	180	0.3	
BMR04-020-G20-M		●	10	20	20	18	65	180	0.4	ZOHX20
BMR04-020-G20-L		●	10	20	20	18	100	250	0.6	
BMR04-025-G25-M		●	12.5	25	25	23	70	200	0.7	ZOHX25
BMR04-025-G25-L		●	12.5	25	25	23	100	250	0.9	
BMR04-030-G32-M		●	15	30	32	27	80	250	1.2	ZOHX30
BMR04-030-G32-L		●	15	30	32	27	110	300	1.5	
BMR04-032-G32-M		●	16	32	32	29	80	250	1.4	ZOHX32
BMR04-032-G32-L		●	16	32	32	29	110	300	1.7	

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

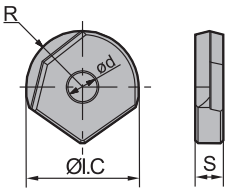
	Insert	**ZOHX12**	**ZOHX16**	**ZOHX20**	**ZOHX25**	**ZOHX30**	**ZOHX32**	
	ØD	**12**	**16**	**20**	**25**	**30**	**32**	
	Screw (insert)	I70M4*10TT (3.4 Nm)	I70M5*12TT (6.7 Nm)	I70M5*16TT (6.7 Nm)	I70M6*20TT (9.1 Nm)	I70M8*25TT (16.2 Nm)	I70M8*25TT (16.2 Nm)	
	Wrench (insert)	WT15IP	WT20IP	WT20IP	WT20IP			
	Wrench (insert)					WT30IT	WT30IT	

System code B26 Grade selection B24 Technical info B463 Cutting data B224

ZOHX	I.C	S	d
12	12	1.5	4
16	16	4	5
20	20	5	5
25	25	6	6
30	30	7	8
32	32	7	8

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Milling inserts



ZO** milling insert			HC¹ (CVD)								HC¹ (PVD)								HT		HC²		HW	
		P																						
		M																						
		K																						
		N																						
		S																						
		H																						
ISO		R	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201	
	**ZOHX1203-GF**	6																	●					
	ZOHX1604-GF	8																	●					
	ZOHX2005-GF	10																	●					
	ZOHX2506-GF	12.5																	○					
	ZOHX3007-GF	15																	●					
	ZOHX3207-GF	16																	●					
	**ZOHX1203-GM**	6																	●					
	ZOHX1604-GM	8																	●					
	ZOHX2005-GM	10																	●					
	ZOHX2506-GM	12.5																	○					
	ZOHX3007-GM	15																	●					
	ZOHX3207-GM	16																	●					

● Ex stock ○ On demand

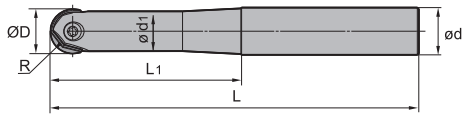
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Profile milling

BMR04





Straight shank

Article	✲	Stock	Dimensions [mm]							Inserts
			R	ØD	ød	Ød1	L_1	L	kg	
BMR04-012-G16-M		●	6	12	16	11	50	125	0.2	ZOHX12
BMR04-012-G16-L		●	6	12	16	11	70	150	0.2	
BMR04-016-G20-M		●	8	16	20	14	60	150	0.3	ZOHX16
BMR04-016-G20-L		●	8	16	20	14	80	180	0.3	
BMR04-020-G25-M		●	10	20	25	18	75	180	0.6	ZOHX20
BMR04-020-G25-L		●	10	20	25	18	95	200	0.6	
BMR04-025-G32-M		●	12.5	25	32	23	90	200	1	ZOHX25
BMR04-025-G32-L		●	12.5	25	32	23	110	250	1.3	
BMR04-030-G40-M		●	15	30	40	27	110	250	2	ZOHX30
BMR04-030-G40-L		●	15	30	40	27	125	300	2.4	
BMR04-032-G40-M		●	16	32	40	29	110	250	2	ZOHX32
BMR04-032-G40-L		●	16	32	40	29	125	300	2.4	

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	ZOHX12	ZOHX16	ZOHX20	ZOHX25	ZOHX30	ZOHX32
	ØD	12	16	20	25	30	32
	Screw (insert)	I70M4*10TT (3.4 Nm)	I70M5*12TT (6.7 Nm)	I70M5*16TT (6.7 Nm)	I70M6*20TT (9.1 Nm)	I70M8*25TT (16.2 Nm)	I70M8*25TT (16.2 Nm)
	Wrench (insert)	WT15IP	WT20IP	WT20IP	WT20IP		
	Wrench (insert)					WT30IT	WT30IT

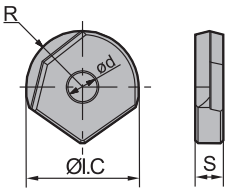


System code B26 Grade selection B24 Technical info B463 Cutting data B224

ZOHX	I.C	S	d
12	12	1.5	4
16	16	4	5
20	20	5	5
25	25	6	6
30	30	7	8
32	32	7	8

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Milling inserts



ZO** milling insert			HC¹ (CVD)								HC¹ (PVD)									HT		HC²		HW			
		P																									
		M																									
		K																									
		N																									
		S																									
		H																									
ISO		R	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201					
	**ZOHX1203-GF**	6																	●								
	ZOHX1604-GF	8																	●								
	ZOHX2005-GF	10																	●								
	ZOHX2506-GF	12.5																	○								
	ZOHX3007-GF	15																	●								
	ZOHX3207-GF	16																	●								
	**ZOHX1203-GM**	6																	●								
	ZOHX1604-GM	8																	●								
	ZOHX2005-GM	10																	●								
	ZOHX2506-GM	12.5																	○								
	ZOHX3007-GM	15																	●								
	ZOHX3207-GM	16																	●								

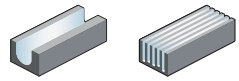
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

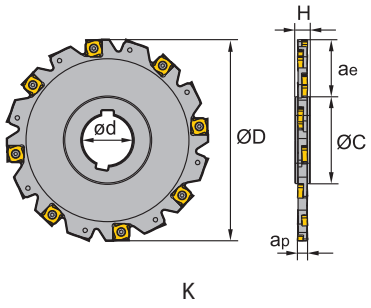
System code > B26 Grade selection > B24 Technical info > B463 Cutting data > B224

Slot milling

SMP01 Kr: 90°







K

Article	✻	Stock	Dimensions [mm]						Coupling	kg	Inserts
			ØD	ød	Øc	H	a_p	$a_{e\ max}$			
SMP01-100x4-K27-SN12-10		○	100	27	45	12	4	25	K	0.2	
SMP01-125x4-K40-SN12-12		○	125	40	56	12	4	32	K	0.3	XSEQ1202
SMP01-160x4-K40-SN12-16		●	160	40	67	12	4	44	K	0.5	
SMP01-100x5-K27-SN12-10		○	100	27	45	12	5	25	K	0.2	
SMP01-125x5-K40-SN12-12		○	125	40	56	12	5	32	K	0.3	XSEQ1203
SMP01-160x5-K40-SN12-16		○	160	40	67	12	5	44	K	0.6	
SMP01-100x7-K27-SN12-10		○	100	27	45	12	7	25	K	0.3	
SMP01-125x7-K40-SN12-12		○	125	40	56	12	7	32	K	0.4	
SMP01-160x7-K40-SN12-16		○	160	40	67	12	7	44	K	0.8	XSEQ1204
SMP01-200x7-K50-SN12-18		○	200	50	71	12	7	62	K	1.2	
SMP01-250x7-K50-SN12-24		○	250	50	71	12	7	87	K	1.9	
SMP01-100x6-K27-SN12-10		○	100	27	45	12	6	25	K	0.3	
SMP01-125x6-K40-SN12-12		○	125	40	56	12	6	32	K	0.4	
SMP01-160x6-K40-SN12-16		○	160	40	67	12	6	44	K	0.7	XSEQ12T3
SMP01-200x6-K50-SN12-18		○	200	50	71	12	6	62	K	1.1	
SMP01-250x6-K50-SN12-24		○	250	50	71	12	6	87	K	1.7	
SMP01-100x8-K27-SN12-10		○	100	27	45	12	8	25	K	0.3	
SMP01-125x8-K40-SN12-12		○	125	40	56	12	8	32	K	0.5	
SMP01-160x8-K40-SN12-16		○	160	40	67	12	8	44	K	0.9	XSEQ12T4
SMP01-200x8-K50-SN12-18		○	200	50	71	12	8	62	K	1.4	
SMP01-250x8-K50-SN12-24		○	250	50	71	12	8	87	K	2.2	

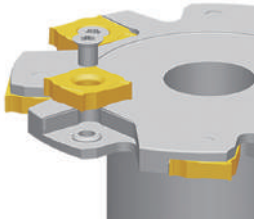
● Ex stock ○ On demand

✻ With internal cooling

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Spare parts

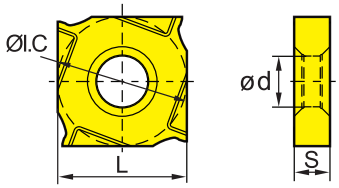
	Insert	XSEQ1202	XSEQ1203	XSEQ1204	XSEQ12T3	XSEQ12T4
	ØD	63-160	63-160	63-250	63-250	63-250
	Screw (insert)	I91M4*3.2X (3.4 Nm)	I91M4*3.2X (3.4 Nm)	I91M4*6.1X (3.4 Nm)	I91M4*5.1X (3.4 Nm)	I91M4*7.1X (3.4 Nm)
	Wrench (insert)	WT08IP	WT08IP	WT08IP	WT08IP	WT08IP



XSEQ	L	I.C	S	d
12 02	12.7	12.7	2.3	5
12 03	12.7	12.7	3	5
12 T3	12.7	12.7	3.5	5
12 04	12.7	12.7	4	5
12 T4	12.7	12.7	4.5	5

Milling inserts

● Ideal machining conditions
● Normal machining conditions
● Unfavourable machining conditions



XS** milling insert		HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
	P	●	●	●	●	●	●		●	●	●	●	●	●		●	●	●		
	M		●	●	●	●	●			●	●	●	●	●		●	●	●		
	K							●	●						●	●				●	
	N									●										●	●
	S				●		●			●	●	●	●								
	H																				
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**XSEQ1202**															○						
	XSEQ1203	○			●											●						
	XSEQ1204															●						
	XSEQ12T3		●													●					○	
	XSEQ12T4															●						

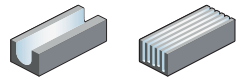
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

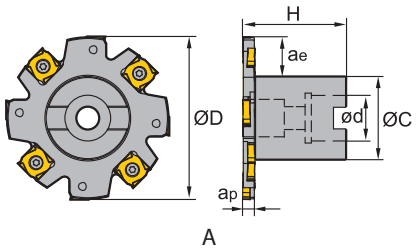
System code > B26 Grade selection > B24 Technical info > B463 Cutting data > B224

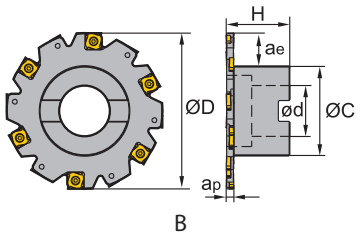
Slot milling

SMP01 Kr: 90°









Article	✻	Stock	Dimensions [mm]						Teeth	Coupling	kg	Inserts
			ØD	ød	Øc	H	a_p	$a_{e\,max}$				
SMP01-063x4-A22-SN12-06		○	63	22	32	40	4	14	6	A	0.2	
SMP01-080x4-A22-SN12-08		○	80	22	40	40	4	18	8	A	0.4	XSEQ1202
SMP01-100x4-A27-SN12-10		○	100	27	48	50	4	23	10	A	0.6	
SMP01-063x5-A22-SN12-06		○	63	22	32	40	5	14	6	A	0.2	
SMP01-080x5-A22-SN12-08		○	80	22	40	40	5	18	8	A	0.4	XSEQ1203
SMP01-100x5-A27-SN12-10		○	100	27	48	50	5	23	10	A	0.7	
SMP01-063x7-A22-SN12-06		○	63	22	32	40	7	14	6	A	0.2	
SMP01-080x7-A22-SN12-08		○	80	22	40	40	7	18	8	A	0.5	
SMP01-100x7-A27-SN12-10		○	100	27	48	50	7	23	10	A	0.7	XSEQ1204
SMP01-125x7-B40-SN12-12		○	125	40	72	50	7	23	12	B	1.1	
SMP01-160x7-B40-SN12-16		○	160	40	70	60	7	41	16	B	1.4	
SMP01-063x6-A22-SN12-06		○	63	22	32	40	6	14	6	A	0.2	
SMP01-080x6-A22-SN12-08		○	80	22	40	40	6	18	8	A	0.5	
SMP01-100x6-A27-SN12-10		○	100	27	48	50	6	23	10	A	0.7	XSEQ12T3
SMP01-125x6-B40-SN12-12		○	125	40	72	50	6	23	12	B	1	
SMP01-160x6-B40-SN12-16		○	160	40	70	60	6	41	16	B	1.3	
SMP01-063x8-A22-SN12-06		○	63	22	32	40	8	14	6	A	0.2	
SMP01-080x8-A22-SN12-08		○	80	22	40	40	8	18	8	A	0.5	
SMP01-100x8-A27-SN12-10		○	100	27	48	50	8	23	10	A	0.8	XSEQ12T4
SMP01-125x8-B40-SN12-12		○	125	40	72	50	8	23	12	B	1.1	
SMP01-160x8-B40-SN12-16		○	160	40	70	60	8	41	16	B	1.5	

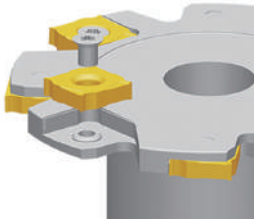
● Ex stock ○ On demand

✻ With internal cooling

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Spare parts

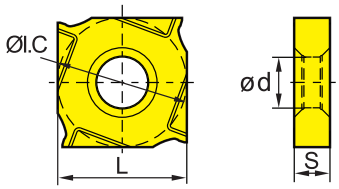
	Insert	XSEQ1202	XSEQ1203	XSEQ1204	XSEQ12T3	XSEQ12T4
	ØD	63-160	63-160	63-250	63-250	63-250
	Screw (insert)	I91M4*3.2X (3.4 Nm)	I91M4*3.2X (3.4 Nm)	I91M4*6.1X (3.4 Nm)	I91M4*5.1X (3.4 Nm)	I91M4*7.1X (3.4 Nm)
	Wrench (insert)	WT08IP	WT08IP	WT08IP	WT08IP	WT08IP



XSEQ	L	I.C	S	d
12 02	12.7	12.7	2.3	5
12 03	12.7	12.7	3	5
12 T3	12.7	12.7	3.5	5
12 04	12.7	12.7	4	5
12 T4	12.7	12.7	4.5	5

Milling inserts

● Ideal machining conditions
● Normal machining conditions
● Unfavourable machining conditions



XS** milling insert		HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
	P	●	●	●	●	●	●		●	●	●	●	●	●		●	●	●		
	M		●	●	●	●	●			●	●	●	●	●		●	●	●		
	K							●	●						●	●				●	
	N									●										●	●
	S				●		●			●	●	●	●								
	H																				
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**XSEQ1202**															○						
	XSEQ12T3		●													●					○	
	XSEQ1203	○			●											●						
	XSEQ1204															●						
	XSEQ12T4															●						

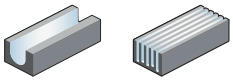
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

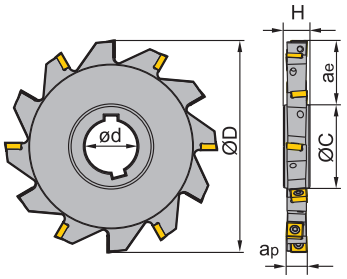
System code > B26 Grade selection > B24 Technical info > B463 Cutting data > B224

Slot milling

SMP03 Kr: 90°







K

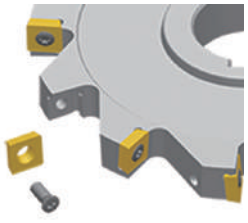
Article	✻	Stock	Dimensions [mm]						Teeth	Coupling	kg	Inserts
			ØD	ød	Øc	H	a_p	$a_{e\,max}$				
SMP03-080x8-K27-MP06-10		○	80	27	44	12	8	17.6	10	K	0.2	MPHT0603
SMP03-100x8-K32-MP06-14		○	100	32	49	12	8	25.1	14	K	0.3	
SMP03-100x10-K32-MP06-14		○	100	32	49	14	10	25.1	14	K	0.4	
SMP03-125x10-K40-MP06-16		○	125	40	57	14	10	33.6	16	K	0.6	
SMP03-125x12-K40-MP08-12		○	125	40	58.3	16	12	32.6	12	K	0.7	MPHT0803
SMP03-160x12-K40-MP08-14		○	160	40	64.3	16	12	31.5	14	K	1.3	
SMP03-160x16-K40-MP12-12		○	160	40	64.6	20	16	47.6	12	K	1.6	MPHT1204
SMP03-160x18-K40-MP12-12		○	160	40	65.3	24	18	47.3	12	K	1.9	
SMP03-160x20-K40-MP12-12		○	160	40	65.3	26	20	47.3	12	K	2.1	
SMP03-200x16-K50-MP12-14		○	200	50	74.6	20	16	62.6	14	K	2.5	
SMP03-200x18-K50-MP12-14		○	200	50	75.3	24	18	62.3	14	K	2.9	
SMP03-200x20-K50-MP12-14		○	200	50	75.3	26	20	62.3	14	K	3.3	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**MPHT0603**	**MPHT0803**	**MPHT1204**
	ØD	**80-125**	**125 -160**	**160-200**
	Screw (insert)	I60M2.5*6.5 (1.0 Nm)	I60M3*7 (1.8 Nm)	I60M5*13 (6.7 Nm)
	Wrench (insert)	WT07IP	WT09IP	
	Wrench (insert)			WT20IS

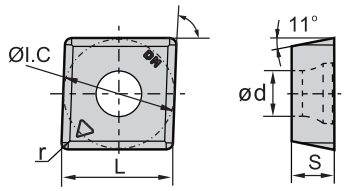


System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

MPHT	L	I.C	S	d
06 03	6.35	6.35	3.18	2.8
08 03	8.3	8.3	3.18	3.4
12 04	12.7	12.7	4.76	5.56



MP** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
		P	❁	❁	❁	❁	❁	❁		❁		❁	❁	❁	❁	❁		●	●	●	
		M		❁	❁	❁	❁	❁				❁	❁	❁	❁	❁		●	●	●	
		K							❁	❁	●						❁	●			❁	
		N										❁									❁	❁
		S				❁		❁			●	❁	❁	❁	❁							
		H																				
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**MPHT060304-DM**	0.4	●				●										●						
	MPHT080305-DM	0.5	●				●										●						
	MPHT120408-DM	0.8	●				○		●								●						

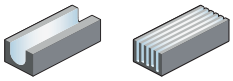
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

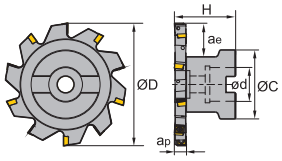
System code > B26 Grade selection > B24 Technical info > B463 Cutting data > B224

Slot milling

SMP03 Kr: 90°







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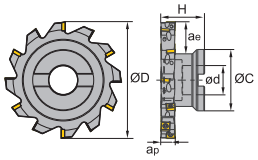

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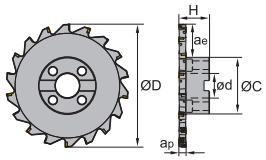


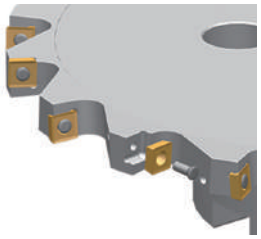
C

Article	✻	Stock	Dimensions [mm]						Teeth	Coupling	kg	Inserts
			ØD	ød	Øc	H	a_p	$a_{e\,max}$				
SMP03-080x8-A22-MP06-10		○	80	22	45	40	8	21	10	A	0.4	MPHT0603
SMP03-100x8-B27-MP06-14		○	100	27	55	40	8	24.5	14	B	0.6	
SMP03-100x10-B27-MP06-14		●	100	27	55	40	10	24.5	14	B	0.7	
SMP03-125x10-B32-MP06-16		○	125	32	65	45	10	33.3	16	B	1.1	
SMP03-125x12-B32-MP08-12		○	125	32	65	45	12	33	12	B	1.4	MPHT0803
SMP03-160x12-B40-MP08-14		○	160	40	80	50	12	44	14	B	1.9	
SMP03-200x12-C40-MP08-18		○	200	40	92	50	12	52	18	C	3.2	
SMP03-125x16-B32-MP12-10		○	125	32	65	50	16	33	10	B	2.3	MPHT1204
SMP03-160x16-B40-MP12-12		○	160	40	80	60	16	45	12	B	2.3	
SMP03-160x18-B40-MP12-12		○	160	40	80	60	18	45	12	B	2.4	
SMP03-200x16-C40-MP12-14		○	200	40	92	50	16	52	14	C	3.6	
SMP03-200x18-C40-MP12-14		○	200	40	92	50	18	52	14	C	3.9	
SMP03-200x20-C40-MP12-14		○	200	40	92	50	20	52	14	C	4.2	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

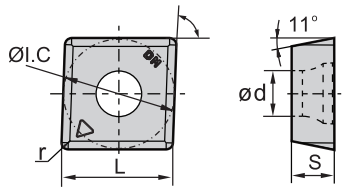
	Insert	**MPHT0603**	**MPHT0803**	**MPHT1204**	
	ØD	**80-125**	**125 -200**	**125 -200**	
	Screw (insert)	I60M2.5*6.5 (1.0 Nm)	I60M3*7 (1.8 Nm)	I60M5*13 (6.7 Nm)	
	Wrench (insert)	WT07IP	WT09IP		
	Wrench (insert)			WT20IS	

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

MPHT	L	I.C	S	d
06 03	6.35	6.35	3.18	2.8
08 03	8.3	8.3	3.18	3.4
12 04	12.7	12.7	4.76	5.56



MP** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
		P																			
		M																			
		K																			
		N																			
		S																			
		H																			
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**MPHT060304-DM**	0.4	●				●										●						
	MPHT080305-DM	0.5	●				●										●						
	MPHT120408-DM	0.8	●				○		●								●						

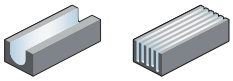
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

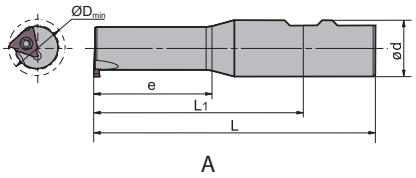
System code > B26 Grade selection > B24 Technical info > B463 Cutting data > B224

Slot milling

SMP05 Kr: 90°







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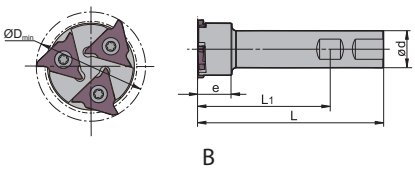


B

Article	✻	Stock	Dimensions [mm]					Teeth	Coupling	Inserts
			e	ØDmin	ød	L_1	L			
SMP05-025x3.0-XP25-QC16-01		●	40	25	25	89	125	1	A	QC16L
SMP05-039x3.0-XP25-QC16-03		●	23	39	25	89	125	3	B	
SMP05-044x4.8-XP25-QC22-03		●	23	44	25	89	125	3	B	QC22L

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**QC16L**	**QC16L**	**QC22L**
	ØD	**25**	**39**	**44**
	Screw (insert)	I60M3.5*10 (2.7 Nm)	I60M3.5*10 (2.7 Nm)	I60M5*13 (6.7 Nm)
	Wrench (insert)	WT15IP	WT15IP	WT20IP

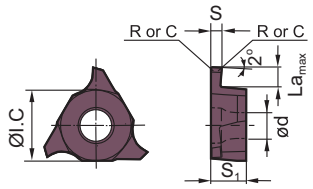


System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

QC	I.C	d
16	9.525	4.4
22	12.7	5.5



QC** turning/milling insert		HC¹ (CVD)								HC¹ (PVD)								HT	HC²	HW	
P		◉	◉	◉	◉	◉	◉		◉			◉	◉	◉	◉	◉	◉	◉	◉	◉		
M			◉	◉	◉	◉	◉					◉	◉	◉	◉	◉	◉	◉	◉	◉		
K								◉	◉		◉							◉	◉			◉
N										◉											◉	◉
S					◉		◉				◉	◉	◉	◉								
H																						

ISO		S±0.025	La_{max}	R/C	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	QC16L075-R01	0.75	2	0.1												○									
	QC16L095-R01	0.95	2	0.1												○									
	QC16L100-R01	1	2	0.1												○									
	QC16L110-R01	1.1	2	0.1												●	○								
	QC16L120-R01	1.2	2	0.1												○									
	QC16L125-R02	1.25	2	0.2												●									
	QC16L130-R02	1.3	2	0.2												○									
	QC16L145-R02	1.45	2	0.2												●									
	QC16L150-R02	1.5	2	0.2												○									
	QC16L160-R02	1.6	2	0.2												●									
	QC16L165-R02	1.65	2	0.2												○									
	QC16L170-R02	1.7	2	0.2												○									
	QC16L175-R02	1.75	2	0.2												○									
	QC16L185-R02	1.85	2.5	0.2												○									
	QC16L200-R02	2	2.5	0.2												●									
	QC16L210-R02	2.1	2.5	0.2												○									
	QC16L210-R05	2.1	2.5	0.5												○									
	QC16L220-R02	2.2	2.5	0.2												○									
	QC16L250-R02	2.5	2.5	0.2												●									
	QC16L300-R02	3	3	0.2												●									

● Ex stock ○ On demand

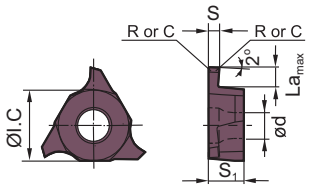
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

QC	I.C	d
16	9.525	4.4
22	12.7	5.5



QC** turning/milling insert					HC[1] (CVD)							HC[1] (PVD)								HT		HC[2]	HW	
				P																				
				M																				
				K																				
				N																				
				S																				
				H																				
ISO		S±0.025	La_{max}	R/C	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	QC22L100-R02	1	2	0.2												○									
	QC22L125-R02	1.25	2	0.2												○									
	QC22L145-R02	1.45	2	0.2												○									
	QC22L150-R02	1.5	3.5	0.2												○									
	QC22L175-R02	1.75	3.5	0.2												○									
	QC22L185-R02	1.85	3.5	0.2												○									
	QC22L200-R02	2	3.5	0.2												○									
	QC22L230-R02	2.3	3.5	0.2												○									
	QC22L250-R03	2.5	4	0.3												○									
	QC22L265-R03	2.65	4	0.3												●									
	QC22L280-R03	2.8	4	0.3												○									
	QC22L300-R03	3	4	0.3												○									
	QC22L320-R03	3.2	4	0.3												○									
	QC22L330-R03	3.3	4	0.3												○									
	QC22L350-R03	3.5	5	0.3												○									
	QC22L400-R04	4	5	0.4												●									
	QC22L430-R04	4.3	5	0.4												○	○								
	QC22L450-R04	4.5	5	0.4												○								○	
	QC22L480-R04	4.8	5	0.4												○									

● Ex stock ○ On demand

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Notes



XMR01 Kr: 11/16/22°

High-feed mill

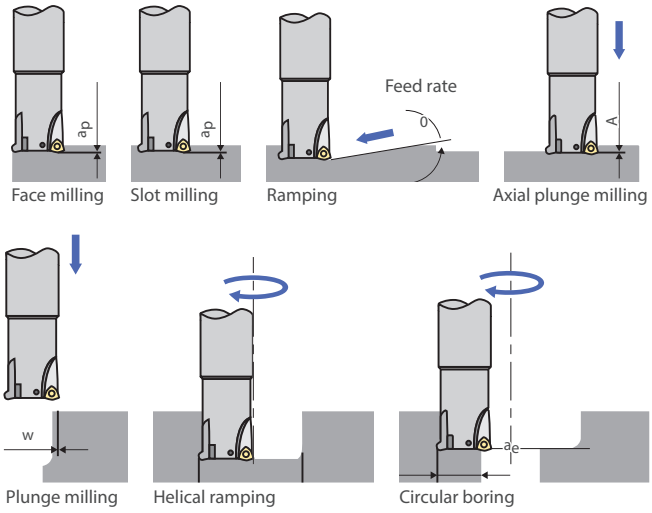
- Wide range of inserts and grades.
- High-feed mill for high chip removal rates.
- Low cutting forces even with large projecting lengths.

Insert grades

YBC302	YBM253	YBG205	YBG202
CVD P15 – P35	CVD P20 – P40 M10 – M30	PVD P10 – P30 M20 – M30	PVD P10 – P30

YBG302	YBG212	YBM351	YBD252
CVD P15 – P35	PVD M10 – M25	CVD P25 – P40	CVD K15 – K35

Machining operations



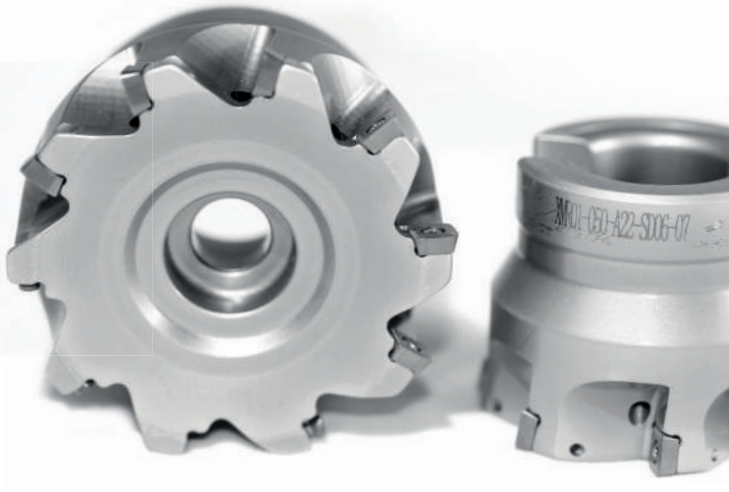
Face milling | Slot milling | Ramping | Axial plunge milling

Plunge milling | Helical ramping | Circular boring

Chip breakers

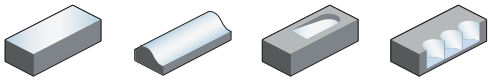
-ZSR -PM -DM -PM



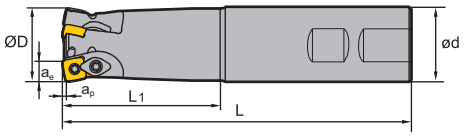


High feed milling

XMR01 Kr: 15°







S type insert, Weldon shank

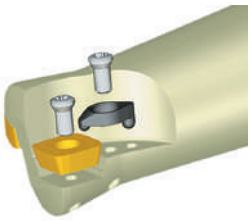
Article	✻	Stock	Dimensions [mm] ØD	ød	a_p	ae	L_1	L	Teeth	kg	Inserts
XMR01-025-XP25-SD06-03		○	25	25	0.8	5.8	60	140	3	0.46	SDMT06T2
XMR01-025-XP25-SD09-02		○	25	25	1.4	8.8	60	140	2	0.5	
XMR01-032-XP32-SD09-03		○	32	32	1.4	8.8	70	150	3	0.8	SDMT09T3
XMR01-035-XP32-SD09-03		○	35	32	1.4	8.8	70	150	3	0.8	
XMR01-040-XP40-SD12-03		○	40	40	1.8	11.7	70	150	3	1.3	SDMT1204
XMR01-040-XP40-SD15-02		○	40	40	2.2	14	70	200	2	1.6	SDMT1505

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	SDMT06T2	SDMT09T3	SDMT1204	SDMT1505
	ØD	20-63	25-63	32-100	40-160
	Clamp		WD-204	WD-204	WD-208
	Screw (clamp)		I60M4*8.4 (3.4 Nm)	I60M4*8.4 (3.4 Nm)	I60M5*13 (6.7 Nm)
	Screw (insert)	I60M2.2*5.5 (0.8 Nm)		I60M4*8.4 (3.4 Nm)	I60M5*13 (6.7 Nm)
	Screw (insert)		I60M3.5*08TT (2.7 Nm)		
	Wrench (clamp)		WT15IP	WT15IP	WT20IP
	Wrench (insert)	WT07IP	WT10IP	WT15IP	WT20IP

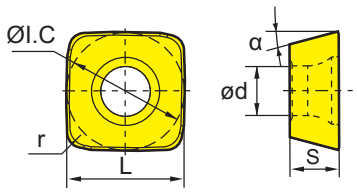


System code B26 Grade selection B24 Technical info B463 Cutting data B224

SDMT	L	I.C	S	d
06 T2	6.35	6.35	2.58	2.5
09 T3	9.525	9.525	3.97	4
12 04	12.7	12.7	4.76	4.4
15 05	15.875	15.875	5.56	5.5

Milling inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions



SD** milling insert				HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW		
			P																				
			M																				
			K																				
			N																				
			S																				
			H																				
ISO		r	α	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**SDMT06T208-DM**	0.8	15						○							○								
	SDMT09T312-DM	1.2	15	●					●		○					●		●						
	SDMT120412-DM	1.2	15	●					●		○					●	○							
	SDMT150520-DM	2	15													○								
	**SDMT06T208-PM**	0.8	15	●			●								●									
	SDMT09T312-PM	1.2	15				●								●	●								
	SDMT120412-PM	1.2	15				●								●	●								
	SDMT150520-PM	2	15				○								○									

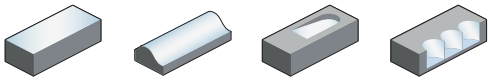
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

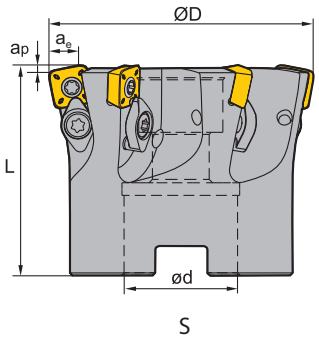
System code B26 Grade selection B24 Technical info B463 Cutting data B224

High feed milling

XMR01 Kr: 15°







Article	✲	Stock	Dimensions [mm] ØD	ød	a_p	ae	L	Teeth	Coupling	kg	Inserts
XMR01-050-A22-SD06-07		○	50	22	0.8	5.8	40	7	A	0.36	
XMR01-063-A22-SD06-10		○	63	22	0.8	5.8	40	10	A	0.53	SDMT06T2
XMR01-063-A27-SD06-10		○	63	27	0.8	5.8	50	10	A	0.57	
XMR01-040-A16-SD09-04		○	40	16	1.4	8.8	40	4	A	0.182	
XMR01-050-A22-SD09-04		●	50	22	1.4	8.8	40	4	A	0.3	
XMR01-050-A22-SD09-04C	✲	●	50	22	1.4	8.8	40	4	A	0.3	
XMR01-063-A22-SD09-06		●	63	22	1.4	8.8	40	6	A	0.5	
XMR01-063-A22-SD09-06C	✲	●	63	22	1.4	8.8	40	6	A	0.5	SDMT09T3
XMR01-063-A27-SD09-06		○	63	27	1.4	8.8	50	6	A	0.6	
XMR01-063-A27-SD09-06C	✲	○	63	27	1.4	8.8	50	6	A	0.6	
XMR01-063-A22-SD09-07		●	63	22	1.4	8.8	40	7	A	0.44	
XMR01-063-A22-SD12-05		●	63	22	1.8	11.7	40	5	A	0.5	
XMR01-063-A22-SD12-05C	✲	●	63	22	1.8	11.7	40	5	A	0.5	
XMR01-063-A27-SD12-05		●	63	27	1.8	11.7	50	5	A	0.6	
XMR01-063-A27-SD12-05C	✲	●	63	27	1.8	11.7	50	5	A	0.6	
XMR01-063-A22-SD12-06		●	63	22	1.8	11.7	50	6	A	0.55	
XMR01-066-A27-SD12-05C	✲	○	66	27	1.8	11.7	50	5	A	0.56	
XMR01-080-A27-SD12-05		●	80	27	1.8	11.7	63	5	A	0.9	
XMR01-080-A27-SD12-05C	✲	●	80	27	1.8	11.7	63	5	A	0.9	
XMR01-080-A27-SD12-06C	✲	●	80	27	1.8	11.7	50	6	A	0.9	
XMR01-080-A27-SD12-07		●	80	27	1.8	11.7	50	7	A	0.93	
XMR01-080-A27-SD12-08		●	80	27	1.8	11.7	50	8	A	0.92	
XMR01-100-B32-SD12-06		●	100	32	1.8	11.7	50	6	B	1.8	
XMR01-100-B32-SD12-06C	✲	●	100	32	1.8	11.7	50	6	B	1.8	
XMR01-100-B32-SD15-07		○	100	32	2.2	14	50	7	B	1.2	
XMR01-125-B40-SD15-09		○	125	40	2.2	14	63	9	B	2.9	SDMT1505

● Ex stock ○ On demand

✲ With internal cooling

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Spare parts

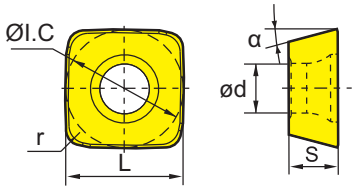
	Insert	SDMT06T2	SDMT09T3	SDMT1204	SDMT1505
	ØD	20-63	25-63	32-100	40-160
	Clamp		WD-204	WD-204	WD-208
	Screw (clamp)		I60M4*8.4 (3.4 Nm)	I60M4*8.4 (3.4 Nm)	I60M5*13 (6.7 Nm)
	Screw (insert)	I60M2.2*5.5 (0.8 Nm)		I60M4*8.4 (3.4 Nm)	I60M5*13 (6.7 Nm)
	Screw (insert)		I60M3.5*08TT (2.7 Nm)		
	Wrench (clamp)		WT15IP	WT15IP	WT20IP
	Wrench (insert)	WT07IP	WT10IP	WT15IP	WT20IP



SDMT	L	I.C	S	d
06 T2	6.35	6.35	2.58	2.5
09 T3	9.525	9.525	3.97	4
12 04	12.7	12.7	4.76	4.4
15 05	15.875	15.875	5.56	5.5

Milling inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions



SD** milling insert				HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
				P																		
				M																		
				K																		
				N																		
				S																		
				H																		
	ISO	r	α	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	SDMT06T208-DM	0.8	15						○							○								
	SDMT09T312-DM	1.2	15	●					●		○					●		●						
	SDMT120412-DM	1.2	15	●					●		○					●	○							
	SDMT150520-DM	2	15													○								
	SDMT06T208-PM	0.8	15	●			●								●									
	SDMT09T312-PM	1.2	15				●								●	●								
	SDMT120412-PM	1.2	15				●								●	●								
	SDMT150520-PM	2	15				○								○									

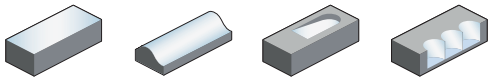
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

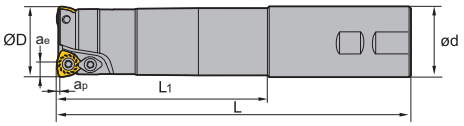
System code B26 Grade selection B24 Technical info B463 Cutting data B224

High feed milling

XMR01 Kr: 11°-22°







W type insert, Weldon shank

Article	✻	Stock	Dimensions [mm]						Teeth	kg	Inserts
			ØD	ød	a_p	ae	L_1	L			
XMR01-020-XP20-WP05-02-M		○	20	20	1.5	3.8	50	130	2	0.2	
XMR01-020-XP20-WP05-02-L		○	20	20	1.5	3.8	100	180	2	0.3	WPGT0503
XMR01-020-XP20-WP05-02-XL		○	20	20	1.5	3.8	130	250	2	0.8	
XMR01-025-XP25-WP06-02-M		○	25	25	1.5	4.35	60	140	2	0.4	
XMR01-025-XP25-WP06-02-L		○	25	25	1.5	4.35	120	200	2	0.6	
XMR01-025-XP25-WP06-02-XL		○	25	25	1.5	4.35	180	300	2	1	
XMR01-032-XP32-WP06-03-M		○	32	32	1.5	4.35	70	150	3	0.8	WPGT0604
XMR01-032-XP32-WP06-03-L		○	32	32	1.5	4.35	120	200	3	1	
XMR01-032-XP32-WP06-03-XL		○	32	32	1.5	4.35	180	300	3	1.6	
XMR01-040-XP32-WP06-03-M		○	40	32	1.5	4.35	50	150	3	0.9	
XMR01-040-XP32-WP06-03-XL		○	40	32	1.5	4.35	50	300	3	1.8	

● Ex stock ○ On demand

✻ With internal cooling

variabler Einstellwinkel (Einstellwinkel ist hier plattengrößenabhängig)- lead angle:
WPGT05 insert: 16°; WPGT06 insert: 22°; WPGT08 insert: 11°; WPGT09 insert: 21°

Spare parts

	Insert	WPGT0503	WPGT0604
	ØD	20	25-40
	Clamp		
	Screw (clamp)		
	Screw (insert)		I60M4*8.4 (3.4 Nm)
	Screw (insert)	I60M3.5*08TT (2.7 Nm)	
	Wrench (clamp)		
	Wrench (insert)	WT10IP	WT15IP

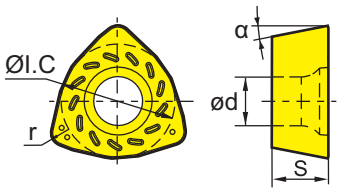


System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

WPGT	I.C	S	d
05 03	7.94	3.5	4
06 04	9.525	4.2	4.4
08 06	12.85	6.35	5.5



WP** positive insert			HC¹ (CVD)							HC¹ (PVD)									HT	HC²	HW		
		P	❁	❁	❁	❁	❁	❁	❁			❁	❁	❁	❁	❁	○	○	○	○			
		M		❁	❁	❁	❁	❁				❁	❁	❁	❁	❁	○	○		○			
		K						❁	❁	●						●	●					❁	
		N								❁												❁	❁
		S				❁		❁			○	❁	❁	❁	❁								
		H																					
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**WPGT050315ZSR-PM**	1.5												●									
	WPGT060415ZSR-PM	1.5	●											●									
	WPGT080615ZSR-PM	1.5	●											●									
	**WPGT050315ZSR**	1.5	●					●								●							
	WPGT060415ZSR	1.5	●					●						●		●							
	WPGT080615ZSR	1.5	●					●						●		●							

● Ex stock ○ On demand

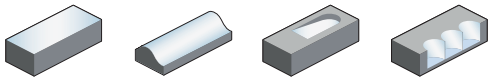
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

A Turning
B Milling
C Drilling
D Technical Information
E Index

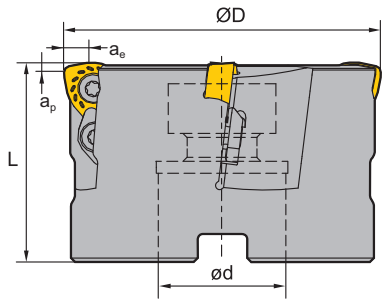
System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

High feed milling

XMR01 Kr: 11°-22°







W type insert, Arbor mounting

Article	✲	Stock	Dimensions [mm] ØD	ød	a_p	ae	L	Teeth	Coupling	kg	Inserts
XMR01-050-A22-WP06-04		●	50	22	1.5	4.35	50	4	A	0.4	WPGT0604
XMR01-050-A22-WP06-04C	✲	●	50	22	1.5	4.35	50	4	A	0.4	
XMR01-050-A22-WP08-03		○	50	22	1.5	5.66	50	3	A	0.4	WPGT0806
XMR01-063-A22-WP08-04		●	63	22	1.5	5.66	50	4	A	0.7	
XMR01-063-A27-WP08-04		●	63	27	1.5	5.66	50	4	A	0.7	
XMR01-063-A22-WP08-04C	✲	●	63	22	1.5	5.66	50	4	A	0.7	
XMR01-063-A27-WP08-04C	✲	○	63	27	1.5	5.66	50	4	A	0.7	
XMR01-080-A27-WP08-05		●	80	27	1.5	5.66	63	5	A	1.5	
XMR01-080-A27-WP08-05C	✲	●	80	27	1.5	5.66	63	5	A	1.5	
XMR01-100-B32-WP08-06		●	100	32	1.5	5.66	63	6	B	2.2	
XMR01-125-B40-WP08-07		●	125	40	1.5	5.66	63	7	B	3.5	
XMR01-160-B40-WP08-08		○	160	40	1.5	5.66	63	8	B	6	
XMR01-063-A22-WP09-03C	✲	○	63	22	3	6.8	50	3	A	0.7	WPGT0907
XMR01-080-A27-WP09-04C	✲	○	80	27	3	6.8	63	4	A	1.4	
XMR01-100-B32-WP09-05		○	100	32	3	6.8	63	5	B	2.1	
XMR01-125-B40-WP09-06		○	125	40	3	6.8	63	6	B	3.7	
XMR01-160-B40-WP09-07		○	160	40	3	6.8	63	7	B	6.3	

● Ex stock ○ On demand

✲ With internal cooling

variabler Einstellwinkel (Einstellwinkel ist hier plattengrößenabhängig)- lead angle:
WPGT05 insert: 16°; WPGT06 insert: 22°; WPGT08 insert: 11°; WPGT09 insert: 21°

System code > B26 Grade selection > B24 Technical info > B463 Cutting data > B224

Spare parts

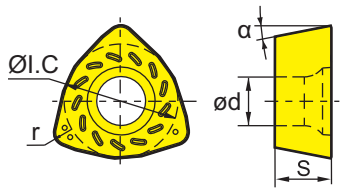
	Insert	WPGT0604	WPGT0806	WPGT0907
	ØD	50	50-160	3-160
	Clamp		WD-208	WD-208
	Screw (clamp)		I60M5*13 (6.7 Nm)	I60M5*13 (6.7 Nm)
	Screw (insert)	I60M4*8.4 (3.4 Nm)	I60M5*13 (6.7 Nm)	I60M5*13 (6.7 Nm)
	Wrench (clamp)		WT20IT	WT20IT
	Wrench (insert)	WT15IS		
	Wrench (insert)		WT20IT	WT20IT



Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

WPGT	I.C	S	d
06 04	9.525	4.2	4.4
08 06	12.85	6.35	5.5
09 07	15	7	5.5



WP** positive insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
P			●	●	●	●	●	●	●			●	●	●	●	●	●	●	●			
M				●	●	●	●	●	●			●	●	●	●	●	●	○	○			
K								●	●		●							●	●			●
N										●												●
S					●		●				●	●	●	●								
H																						
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	WPGT060415ZSR-PM	1.5	●											●									
	WPGT080615ZSR-PM	1.5	●											●									
	WPGT090725ZSR-PM	2.5												●									
	WPGT060415ZSR	1.5	●					●						●		●							
	WPGT080615ZSR	1.5	●					●						●		●							
	WPGT090725ZSR	2.5						●						●		○							

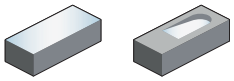
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

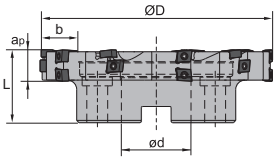
System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Bore milling

XMP01 Kr: 90°







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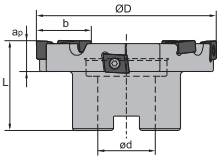
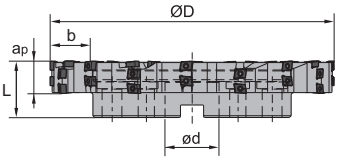


B



D

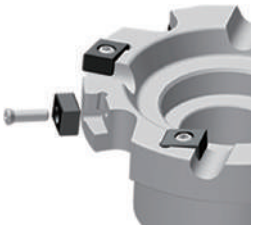
Article	✻	Stock	Dimensions [mm]					Teeth	Coupling	kg	Inserts
			ØD	ød	b	a_p	L				
XMP01-080*18-B27-CNE1210-08		●	80	27	18	15	50	8	B	0.67	CNE12
XMP01-100*18-B32-CNE1210-08		●	100	32	18	20	50	8	B	0.99	
XMP01-125*27-B40-CNE1210-15		●	125	40	27	22.5	63	15	B	2.46	
XMP01-160*27-C40-CNE1210-18		●	160	40	27	25	63	18	C	3.7	
XMP01-200*27-C60-CNE1210-21		●	200	60	27	31.5	63	21	C	5.46	
XMP01-250*36-C60-CNE1210-32		●	250	40	36	56.5	63	32	C	9.79	
XMP01-315*36-D60-CNE1210-42		●	315	60	36	47.5	63	42	D	17.65	
XMP01-400*36-D60-CNE1210-52		●	400	60	36	36	63	52	D	27.36	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**CNE12**
	ØD	**80-400**
	Screw (insert)	l60M4*12 (3.4 Nm)
	Wrench (insert)	WT15IP

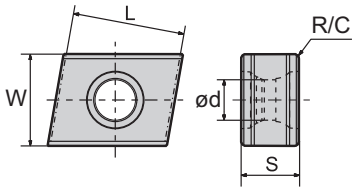


System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

CNE	L	S	d
12	12.8	6.35	4.4

Milling inserts



CN** milling insert				HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
			P																			
			M																			
			K																			
			N																			
			S																			
			H																			
ISO		R/C	W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**CNE121006A**	0.4	10				●																	
	**CNE121006B**	0.6	10				○			●														

● Ex stock ○ On demand

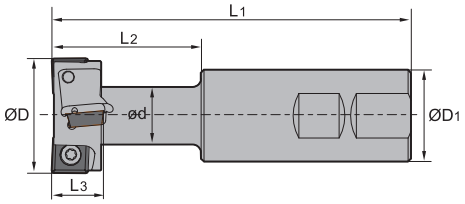
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224

T-slot milling

TMP01 Kr: 90°





Weldon shank

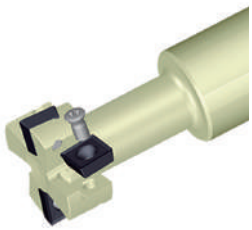
Article	✻	Stock	Dimensions [mm] ØD	ØD1	ød	L1	L2	L3	Teeth	No. of inserts	T-slot specification	Inserts
TMP01-021-XP25-MP06-01		●	21	25	10	100	32	9	1	2	12	MPHT0603
TMP01-025-XP25-MP06-01		●	25	25	12	100	35	11	1	2	14	
TMP01-032-XP32-MP08-02		●	32	32	15	110	45	14	2	4	18	MPHT0803
TMP01-040-XP32-MP12-02		●	40	32	19	125	55	18	2	4	22	MPHT1204
TMP01-050-XP40-MP12-02		●	50	40	25	140	65	22	2	4	28	
TMP01-060-XP50-MP12-02		●	60	50	32	160	80	28	2	6	36	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	MPHT0603	MPHT0803	MPHT1204
	ØD	21-25	32	40-60
	Screw (insert)	I60M2.5*5.5 (1.0 Nm)	I60M3*7 (1.8 Nm)	I60M5*10 (6.7 Nm)
	Wrench (insert)	WT07IP	WT09IP	
	Wrench (insert)			WT20IT

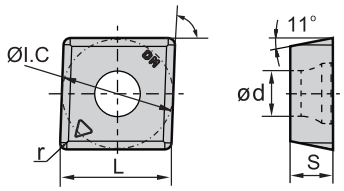


System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

MPHT	L	I.C	S	d
06 03	6.35	6.35	3.18	2.8
08 03	8.3	8.3	3.18	3.4
12 04	12.7	12.7	4.76	5.56



MP** milling insert			HC¹ (CVD)							HC¹ (PVD)									HT	HC²	HW	
		P																				
		M																				
		K																				
		N																				
		S																				
		H																				
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**MPHT060304-DM**	0.4	●				●										●						
	MPHT080305-DM	0.5	●				●										●						
	MPHT120408-DM	0.8	●				○		●								●						

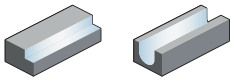
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

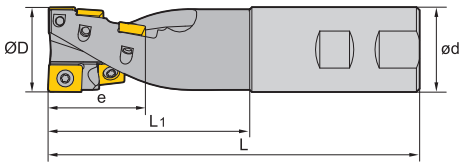
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Helical milling

HMP01 Kr: 90°







Weldon shank

Article	✲	Stock	Dimensions [mm]					Teeth row	Teeth		Shank type	Inserts
			ØD	e	ød	L_1	L		APKT	SPMT		
HMP01-040x55-XP40-SP12-02		●	40	55	40	95	175	2	1	5	Weldon	APKT1504 & SPMT1204
HMP01-050x55-XP40-SP12-04		●	50	55	40	95	175	4	2	10	Weldon	

● Ex stock ○ On demand

✲ With internal cooling

Spare parts

	Insert	APKT1504 & SPMT1204	APKT1504 & SPMT1204	
	ØD	40	50	
	Screw (insert)	I60M5*10 (6.7 Nm)	I60M5*13 (6.7 Nm)	
	Wrench (insert)	WT20T	WT20T	

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

APKT	L	S	d
15 04	16.33	4.76	5.4

Milling inserts

AP** milling insert				HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
			P																			
			M																			
			K																			
			N																			
			S																			
			H																			
ISO		r	l.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	APKT150412-KM	1.2	12.7																●					
	APKT150412-PM	1.2	12.7				●											●						

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SPMT	L	l.C	S	d
12 04	12.7	12.7	4.76	5.5

Milling inserts

SP** milling insert				HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
			P																			
			M																			
			K																			
			N																			
			S																			
			H																			
ISO		r		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	SPMT120408-KM	0.8																	●					
	SPMT120408-PM	0.8					●											●						

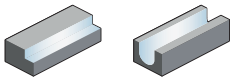
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

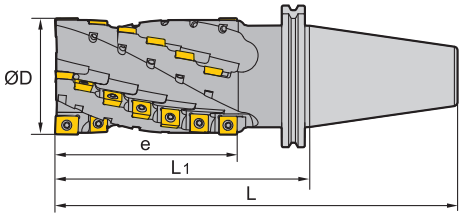
System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Helical milling

HMP01 Kr: 90°







Article	✻	Stock	Dimensions [mm]				Teeth row	Teeth		Shank type	Inserts
			ØD	e	L_1	L		APKT	SPMT		
HMP01-050x84-BT50-SP12-04		○	50	84	145	246.8	4	2	16	BT	
HMP01-050x84-JT50-SP12-04		○	50	84	145	246.75	4	2	16	JT	
HMP01-063x74-BT50-SP12-04		○	63	74	135	236.8	4	2	14	BT	
HMP01-063x74-JT50-SP12-04		○	63	74	135	236.75	4	2	14	JT	
HMP01-063x104-BT50-SP12-04		○	63	104	165	266.8	4	2	20	BT	
HMP01-063x104-JT50-SP12-04		●	63	104	165	266.75	4	2	20	JT	APKT1504 & SPMT1204
HMP01-063x134-BT50-SP12-04		○	63	134	195	296.8	4	2	26	BT	
HMP01-063x134-JT50-SP12-04		○	63	134	195	296.75	4	2	26	JT	
HMP01-080x104-BT50-SP12-04		○	80	104	165	266.8	4	2	20	BT	
HMP01-080x104-JT50-SP12-04		○	80	104	165	266.75	4	2	20	JT	
HMP01-080x144-BT50-SP12-04		○	80	144	205	306.8	4	2	28	BT	
HMP01-080x144-JT50-SP12-04		○	80	144	205	306.75	4	2	28	JT	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**APKT1504 & SPMT1204**
	ØD	**50-80**
	Screw (insert)	l60M5*10 (6.7 Nm)
	Wrench (insert)	WT20IS



System code B26 Grade selection B24 Technical info B463 Cutting data B224

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

APKT	L	S	d
15 04	16.33	4.76	5.4

Milling inserts

AP** milling insert				HC[1] (CVD)							HC[1] (PVD)								HT	HC[2]	HW	
			P																			
			M																			
			K																			
			N																			
			S																			
			H																			
ISO		r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**APKT150412-KM**	1.2	12.7																●					
	**APKT150412-PM**	1.2	12.7				●											●						

● Ex stock ○ On demand

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SPMT	L	I.C	S	d
12 04	12.7	12.7	4.76	5.5

Milling inserts

SP** milling insert				HC[1] (CVD)							HC[1] (PVD)								HT	HC[2]	HW	
			P																			
			M																			
			K																			
			N																			
			S																			
			H																			
ISO		r		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**SPMT120408-KM**	0.8																	●					
	**SPMT120408-PM**	0.8					●											●						

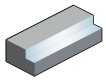
● Ex stock ○ On demand

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

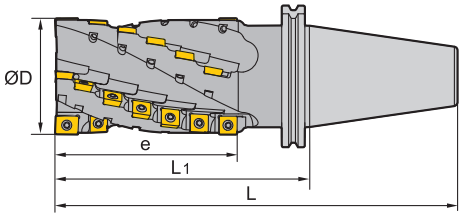
System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Helical milling

HMP01 EC Kr: 90°







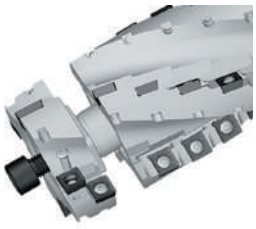
Article	✻	Stock	Dimensions [mm]				Teeth row	Teeth		Shank type	Inserts
			ØD	e	L_1	L		APKT	SPMT		
HMP01-050x84EC-BT50-SP12-04		○	50	84	145	246.8	4	2	16	BT	
HMP01-050x84EC-JT50-SP12-04		●	50	84	145	246.75	4	2	16	JT	
HMP01-063x74EC-BT50-SP12-04		○	63	74	135	236.8	4	2	14	BT	
HMP01-063x74EC-JT50-SP12-04		○	63	74	135	236.75	4	2	14	JT	
HMP01-063x104EC-BT50-SP12-04		○	63	104	165	266.8	4	2	20	BT	
HMP01-063x104EC-JT50-SP12-04		○	63	104	165	266.75	4	2	20	JT	APKT1504 & SPMT1204
HMP01-063x134EC-BT50-SP12-04		○	63	134	195	296.8	4	2	26	BT	
HMP01-063x134EC-JT50-SP12-04		●	63	134	195	296.75	4	2	26	JT	
HMP01-080x104EC-BT50-SP12-04		○	80	104	165	266.8	4	2	20	BT	
HMP01-080x104EC-JT50-SP12-04		○	80	104	165	266.75	4	2	20	JT	
HMP01-080x144EC-BT50-SP12-04		○	80	144	205	306.8	4	2	28	BT	
HMP01-080x144EC-JT50-SP12-04		○	80	144	205	306.75	4	2	28	JT	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	APKT1504 & SPMT1204	APKT1504 & SPMT1204	APKT1504 & SPMT1204
	ØD	**50**	**63**	**80**
	Indexable head	050EC	063EC	080EC
	Screw (head)	M10*50 (16.6 Nm)	M10*50 (16.6 Nm)	M12*55 (25.2 Nm)
	Screw (insert)	I60M5*13 (6.7 Nm)	I60M5*13 (6.7 Nm)	I60M5*13 (6.7 Nm)
	Wrench (head)	WH80L	WH80L	WH100L
	Wrench (insert)	WT20IS	WT20IS	WT20IS



System code B26 Grade selection B24 Technical info B463 Cutting data B224

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

APKT	L	S	d
15 04	16.33	4.76	5.4

Milling inserts

AP** milling insert				HC[1] (CVD)							HC[1] (PVD)								HT	HC[2]	HW	
			P																			
			M																			
			K																			
			N																			
			S																			
			H																			
ISO		r	l.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	APKT150412-KM	1.2	12.7																●					
	APKT150412-PM	1.2	12.7				●											●						

● Ex stock ○ On demand

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SPMT	L	l.C	S	d
12 04	12.7	12.7	4.76	5.5

Milling inserts

SP** milling insert				HC[1] (CVD)							HC[1] (PVD)								HT	HC[2]	HW	
			P																			
			M																			
			K																			
			N																			
			S																			
			H																			
ISO		r		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	SPMT120408-KM	0.8																	●					
	SPMT120408-PM	0.8					●											●						

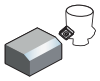
● Ex stock ○ On demand

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Chamfer milling

CMZ01 Kr: 30°







Straight shank

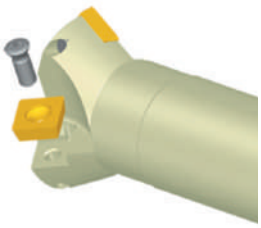
Article	✻	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ød	L_1	L			
CMZ01-012-G20-SP12-01		●	12	20	40	100	1	0.2	SPMT1204
CMZ01-025-G25-SP12-02		●	25	25	40	120	2	0.8	
CMZ01-032-G32-SP12-03		●	32	32	40	180	3	1.1	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**SPMT1204**
	ØD	**12-32**
	Screw (insert)	I43M5*11 (6.7 Nm)
	Wrench (insert)	WT20IS

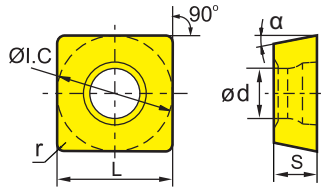


System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPMT	L	I.C	S	d
12 04	12.7	12.7	4.76	5.5

Milling inserts



SP** milling insert			HC[1] (CVD)							HC[1] (PVD)								HT	HC[2]	HW	
		P																			
		M																			
		K																			
		N																			
		S																			
		H																			
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	SPMT120408-HT-1	0.8														○							
	SPMT120408	0.8	○	●	○		●	○									○						

● Ex stock ○ On demand

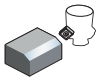
HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

A Turning
B Milling
C Drilling
D Technical Information
E Index

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Chamfer milling

CMZ01 Kr: 30°







Weldon shank

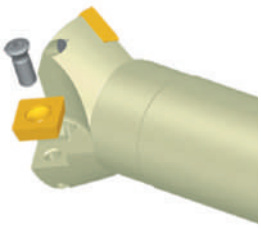
Article	✻	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ød	L_1	L			
CMZ01-012-XP20-SP12-01		●	12	20	40	100	1	0.2	SPMT1204
CMZ01-025-XP25-SP12-02		●	25	25	40	120	2	0.6	
CMZ01-032-XP32-SP12-03		●	32	32	40	180	3	1	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**SPMT1204**
	ØD	**12-32**
	Screw (insert)	I43M5*11 (6.7 Nm)
	Wrench (insert)	WT20IS

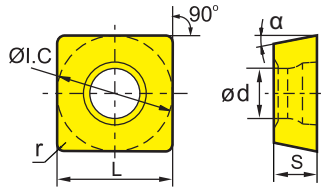


System code B26 Grade selection B24 Technical info B463 Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPMT	L	I.C	S	d
12 04	12.7	12.7	4.76	5.5

Milling inserts



SP** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
		P																			
		M																			
		K																			
		N																			
		S																			
		H																			
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**SPMT120408-HT-1**	0.8														○							
	**SPMT120408**	0.8	○	●	○		●	○									○						

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

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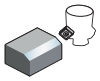
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Chamfer milling

CMA01 Kr: 45°







Straight shank

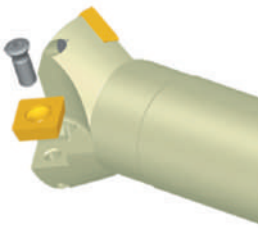
Article	✻	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ød	L_1	L			
CMA01-012-G20-SP12-01		●	12	20	40	100	1	0.2	SPMT1204
CMA01-025-G25-SP12-02		●	25	25	40	120	2	0.8	
CMA01-032-G32-SP12-03		●	32	32	40	180	3	1.1	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**SPMT1204**
	ØD	**12-32**
	Screw (insert)	I43M5*11 (6.7 Nm)
	Wrench (insert)	WT20IS

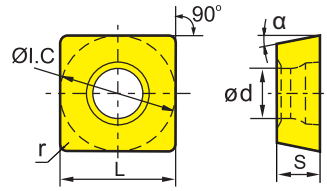


System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPMT	L	I.C	S	d
12 04	12.7	12.7	4.76	5.5

Milling inserts

SP** milling insert			HC[1] (CVD)							HC[1] (PVD)								HT	HC[2]	HW	
	P		❁	❁	❁	❁	❁	❁	❁		❁	❁	❁	❁	❁	●	❁	●	●		
	M			❁	❁	❁	❁	❁	❁			❁	❁	❁	❁	❁	●	●	●		
	K							❁	❁	●						❁	●			❁	
	N									❁										❁	❁
	S				❁		❁				●	❁	❁	❁							
	H																				
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**SPMT120408-HT-1**	0.8													○								
	**SPMT120408**	0.8	○	●	○		●	○								○							

● Ex stock ○ On demand

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

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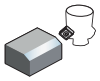
System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Chamfer milling

CMA01 Kr: 45°







Weldon shank

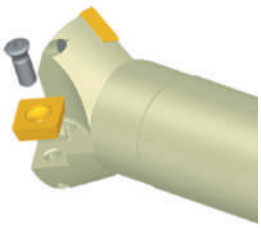
Article	✻	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ød	L_1	L			
CMA01-012-XP20-SP12-01		●	12	20	40	100	1	0.2	SPMT1204
CMA01-025-XP25-SP12-02		●	25	25	40	120	2	0.6	
CMA01-032-XP32-SP12-03		●	32	32	40	100	3	1	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**SPMT1204**
	ØD	**12-32**
	Screw (insert)	I43M5*11 (6.7 Nm)
	Wrench (insert)	WT20IS

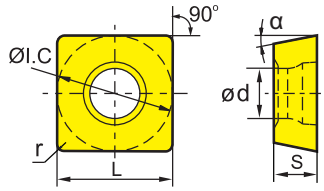


System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPMT	L	I.C	S	d
12 04	12.7	12.7	4.76	5.5

Milling inserts



SP** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
		P																			
		M																			
		K																			
		N																			
		S																			
		H																			
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	SPMT120408-HT-1	0.8														○							
	SPMT120408	0.8	○	●	○		●	○									○						

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

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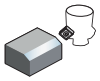
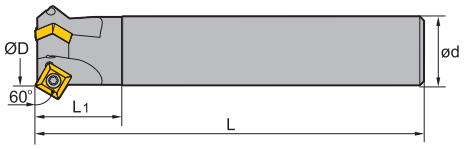
Chamfer milling

CMD01 Kr: 60°







Straight shank

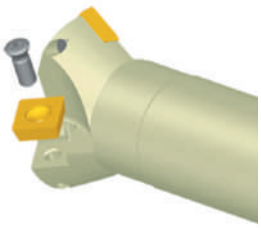
Article	✻	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ød	L_1	L			
CMD01-012-G20-SP12-01		●	12	20	40	100	1	0.2	SPMT1204
CMD01-025-G25-SP12-02		●	25	25	40	120	2	0.8	
CMD01-036-G32-SP12-03		●	36	32	40	180	3	1	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**SPMT1204**
	ØD	**12-36**
	Screw (insert)	I43M5*11 (6.7 Nm)
	Wrench (insert)	WT20IS



System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPMT	L	I.C	S	d
12 04	12.7	12.7	4.76	5.5

Milling inserts

SP** milling insert		HC[1] (CVD)							HC[1] (PVD)								HT	HC[2]	HW	
	P																			
	M																			
	K																			
	N																			
	S																			
	H																			
ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
SPMT120408-HT-1	0.8														○							
SPMT120408	0.8	○	●	○		●	○									○						

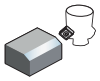
● Ex stock ○ On demand

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

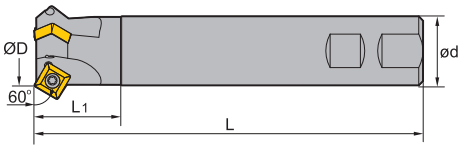
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Chamfer milling

CMD01 Kr: 60°







Weldon shank

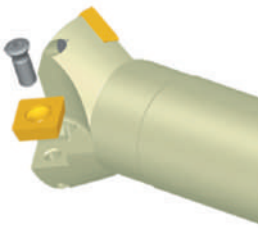
Article	✻	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ød	L_1	L			
CMD01-012-XP20-SP12-01		●	12	20	40	100	1	0.2	SPMT1204
CMD01-025-XP25-SP12-02		●	25	25	40	120	2	0.6	
CMD01-036-XP32-SP12-03		●	36	32	40	180	3	1	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	**SPMT1204**
	ØD	**12-36**
	Screw (insert)	I43M5*11 (6.7 Nm)
	Wrench (insert)	WT20IS

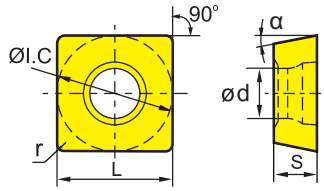


System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPMT	L	I.C	S	d
12 04	12.7	12.7	4.76	5.5

Milling inserts



SP** milling insert			HC[1] (CVD)							HC[1] (PVD)								HT	HC[2]	HW	
		P																			
		M																			
		K																			
		N																			
		S																			
		H																			
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**SPMT120408-HT-1**	0.8														○							
	**SPMT120408**	0.8	○	●	○		●	○									○						

● Ex stock ○ On demand

HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

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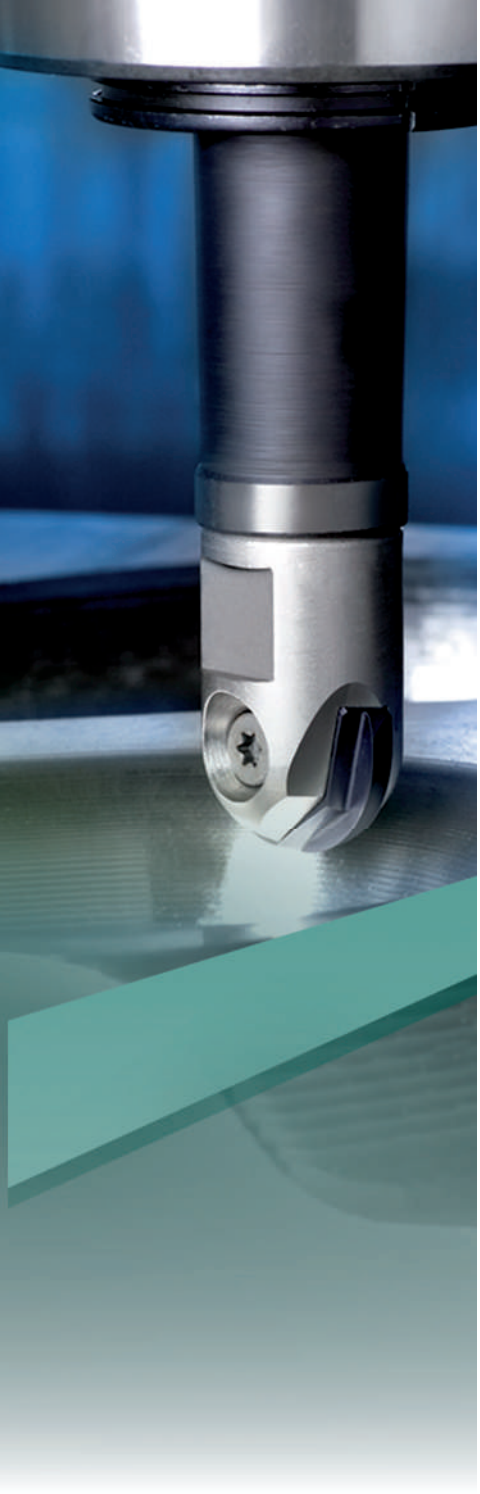
Notes

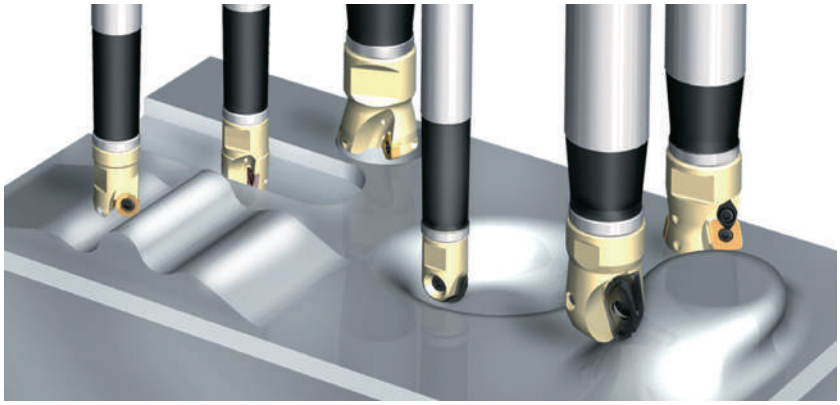


QCH series

Indexable heads

- Quick tool change reduces the set-up time and therefore the machine breakdown.
- Stable force-locking connection.
- Increased flexibility in production.
- All indexable heads are designed for the application with inner cooling (except QCH-ZOHX).

Machining operations



Force-locking connection

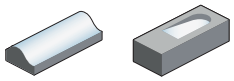


- Extensions available in steel and solid carbide.

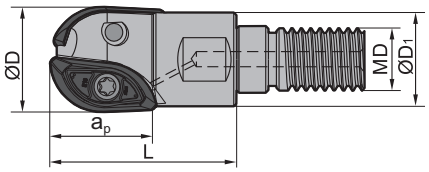


Profile milling

QCH - XPHT







Article	✻	Stock	Dimensions [mm]					Teeth	kg	Inserts
			ØD	$ØD_1$	a_p	L	MD			
QCH-16-XPHT16-M10		●	16	17	16	28	10	2	0.036	XPHT16
QCH-20-XPHT20-M12		○	20	19	20	30	12	2	0.051	XPHT20
QCH-25-XPHT25-M12		●	25	24	25	35	12	2	0.071	XPHT25
QCH-30-XPHT30-M16		●	30	29	30	45	16	2	0.14	XPHT30
QCH-32-XPHT32-M16		●	32	30	32	45	16	2	0.162	XPHT32

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	XPHT16	XPHT20	XPHT25	XPHT30	XPHT32
	ØD	16	20	25	30	32
	Screw (insert)	I60M2.5*6.5 (1.0 Nm)		I60M4*10 (3.4 Nm)	I60M5*13.2 (6.7 Nm)	I60M5*13.2 (6.7 Nm)
	Screw (insert)		I60M3.5*08TT (2.7 Nm)			
	Wrench (insert)		WT10IP			
	Wrench (insert)				WT20IT	WT20IT
	Wrench (insert)	WT07P				
	Wrench (insert)			WT15S		



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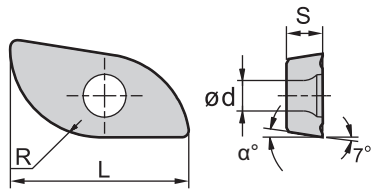
XPHT	L	S	d
16	16	3.18	3.1
20	20	3.97	4
25	25	4.76	4.7
30	30	6.35	5.8
32	32	6.35	5.8

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Milling inserts



XP** milling insert				HC¹ (CVD)								HC¹ (PVD)								HT	HC²	HW	
				YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
P				●	●	●	●	●	●		●			●	●	●	●	●		●	●	●		
M					●	●	●	●	●					●	●	●	●	●		●	●	●		
K										●	●		●						●	●			●	
N												●											●	●
S							●		●				●	●	●	●								
H																								
ISO		R	α																					
	XPHT16R0803-GM	8	9															●						
	XPHT20R10T3-GM	10	9															●						
	XPHT25R1204-GM	12.5	9															●						
	XPHT30R1506-GM	15	11															●						
	XPHT32R1606-GM	16	9															●						

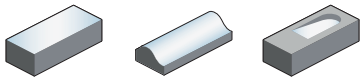
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

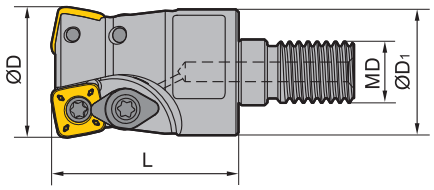
System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

High-feed mills

QCH - SDMT Kr: 15°







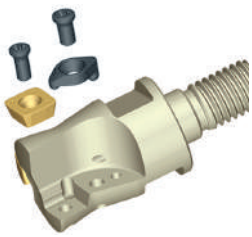
Article	✻	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ØD1	L	MD			
QCH-20-SDMT06-M10-03		●	20	19	30	10	3	0.058	SDMT06T2
QCH-25-SDMT06-M12-04		●	25	24	35	12	4	0.097	
QCH-32-SDMT06-M16-05		○	32	30	45	16	5	0.183	
QCH-25-SDMT09-M12-02		○	25	24	35	12	2	0.088	SDMT09T3
QCH-30-SDMT09-M16-03		●	30	29	45	16	3	0.176	
QCH-35-SDMT09-M16-03		○	35	30	45	16	3	0.216	
QCH-32-SDMT12-M16-02		●	32	30	45	16	2	0.175	SDMT1204
QCH-35-SDMT12-M16-02		○	35	30	45	16	2	0.2	
QCH-40-SDMT12-M16-03		○	40	30	45	16	3	0.3	

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	SDMT06T2	SDMT09T3	SDMT1204
	ØD	20-35	25-35	32-40
	Clamp		WD-204	WD-204
	Screw (clamp)			I60M4*8.4 (3.4 Nm)
	Screw (clamp)		I60M3.5*08TT (2.7 Nm)	
	Screw (insert)	I60M2.2*5.5 (0.8 Nm)	I60M4*8.4 (3.4 Nm)	I60M4*8.4 (3.4 Nm)
	Wrench (clamp)		WT10IP	WT15IP
	Wrench (insert)	WT07IP	WT15IP	WT15IP

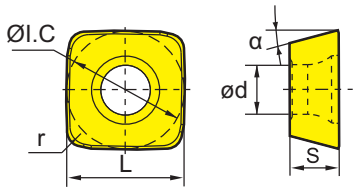


System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SDMT	L	I.C	S	d
06 T2	6.35	6.35	2.58	2.5
09 T3	9.525	9.525	3.97	4
12 04	12.7	12.7	4.76	4.4



SD** milling insert				HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
			P																			
			M																			
			K																			
			N																			
			S																			
			H																			
	ISO	r	α	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**SDMT06T208-DM**	0.8	15						○							○								
	SDMT09T312-DM	1.2	15	●					●		○					●		●						
	SDMT120412-DM	1.2	15	●					●		○					●	○							
	**SDMT06T208-PM**	0.8	15	●			●								●									
	SDMT09T312-PM	1.2	15				●								●	●								
	SDMT120412-PM	1.2	15				●								●	●								

● Ex stock ○ On demand

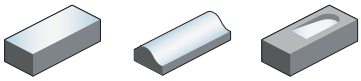
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

A Turning
B Milling
C Drilling
D Technical Information
E Index

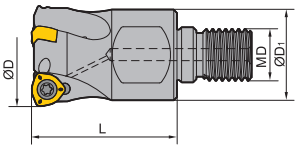
System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

High-feed mills

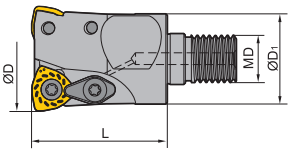
QCH - WPGT Kr: 11°-22°











Article	✻	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	$ØD_1$	L	MD			
QCH-20-WPGT05-M10-02		○	20	18	30	10	2	0.056	WPGT0503
QCH-25-WPGT06-M12-02		○	25	21	35	12	2	0.097	WPGT0604
QCH-32-WPGT06-M16-03		●	32	29	43	16	3	0.185	
QCH-35-WPGT06-M16-03		●	35	30	45	16	3	0.201	
QCH-42-WPGT06-M16-04		○	42	29	43	16	4		
QCH-35-WPGT08-M16-02		●	35	30	45	16	2	0.196	WPGT0806

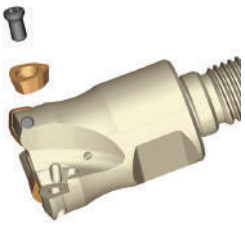
● Ex stock ○ On demand

✻ With internal cooling

variabler Einstellwinkel (Einstellwinkel ist hier plattengrößenabhängig)- lead angle:
WPGT05 insert: 16°; WPGT06 insert: 22°; WPGT08 insert: 11°; WPGT09 insert: 21°

Spare parts

	Insert	WPGT0503	WPGT0604	WPGT0806
	ØD	20	25-42	35
	Clamp			WD-208
	Screw (clamp)			I60M5*13 (6.7 Nm)
	Screw (insert)		I60M4*8.4 (3.4 Nm)	I60M5*13 (6.7 Nm)
	Screw (insert)	I60M3.5*08TT (2.7 Nm)		
	Wrench (clamp)			WT20IT
	Wrench (insert)			WT20IT
	Wrench (insert)	WT10P	WT15P	

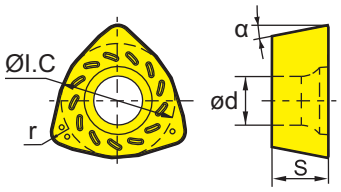


System code B26 Grade selection B24 Technical info B463 Cutting data B224

WPGT	I.C	S	d
05 03	7.94	3.5	4
06 04	9.525	4.2	4.4
08 06	12.85	6.35	5.5

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions



WP** positive insert		HC¹ (CVD)								HC¹ (PVD)									HT	HC²	HW	
	P	Normal	Normal	Unfavourable	Normal	Normal	Unfavourable		Normal			Normal	Normal	Normal	Unfavourable	Unfavourable		Ideal	Ideal	Ideal		
	M		Normal	Unfavourable	Normal	Normal	Unfavourable					Normal	Normal	Normal	Unfavourable	Unfavourable		Ideal	Ideal	Ideal		
	K							Normal	Unfavourable		Ideal						Normal	Ideal				Unfavourable
	N									Normal											Normal	Unfavourable
	S				Unfavourable		Unfavourable				Ideal	Normal	Normal	Normal								
	H																					
ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
 **WPGT050315ZSR-PM**	1.5												●									
WPGT060415ZSR-PM	1.5	●											●									
WPGT080615ZSR-PM	1.5	●											●									
 **WPGT050315ZSR**	1.5	●					●								●							
WPGT060415ZSR	1.5	●					●						●		●							
WPGT080615ZSR	1.5	●					●						●		●							

● Ex stock ○ On demand

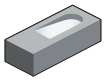
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224

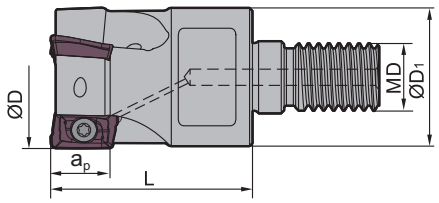
A Turning B Milling C Drilling D Technical Information E Index

Indexable heads – QCH series

QCH - APKT Kr: 90°







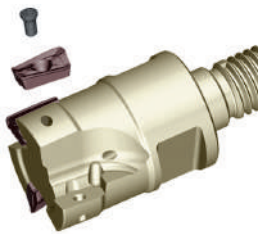
Article	✻	Stock	Dimensions [mm] ØD	ØD1	ap	L	MD	Teeth	kg	Inserts
QCH-16-APKT11-M8-02		●	16	12.5	10.5	25	8	2	0.028	
QCH-20-APKT11-M10-03		●	20	18	10.5	30	10	3	0.059	
QCH-25-APKT11-M12-04		●	25	21	10.5	35	12	4	0.104	APKT11T3
QCH-32-APKT11-M16-05		●	32	29	10.5	43	16	5		
QCH-40-APKT11-M16-06		●	40	29	10.5	43	16	6		
QCH-25-APKT16-M12-02		○	25	21	10.5	38	12	2	0.09	
QCH-32-APKT16-M16-03		●	32	29	10.5	46	16	3		APKT1604
QCH-40-APKT16-M16-04		○	40	29	10.5	46	16	4		

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	APKT11T3	APKT1604
	ØD	16-40	25-40
	Screw (insert)		I60M4*8.4 (3.4 Nm)
	Screw (insert)	I60M2.5*6.5T (1.0 Nm)	
	Wrench (insert)	WT08IP	WT15IP

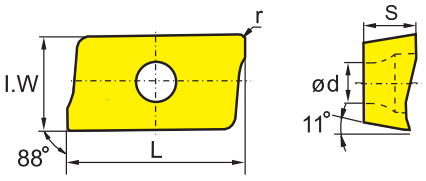


System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

APKT	L	S	d
11 T3	12.24	3.6	2.8
16 04	17.877	5.76	4.4



AP** milling insert				HC¹ (CVD)								HC¹ (PVD)								HT		HC²	HW	
				P																				
				M																				
				K																				
				N																				
				S																				
				H																				
ISO		r	I.W	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	APKT11T304-ALH	0.4	6.5									●											●	●
	APKT11T308-ALH	0.8	6.5									●											●	●
	APKT160408-ALH	0.8	9.33									●											●	●
	APKT11T304-APF	0.4	6.5											●										
	APKT11T308-APF	0.8	6.5											●										
	APKT160408-APF	0.8	9.33											●		○		○						
	APKT11T304-APM	0.4	6.5				●			●				●										
	APKT11T308-APM	0.8	6.5				●			●				●										
	APKT11T312-APM	1.2	6.5				●			●				●										
	APKT11T316-APM	1.6	6.5				●			●				●										
	APKT11T320-APM	2	6.5				●			●				●										
	APKT160408-APM	0.8	9.33				●			●	●			●										
	APKT160416-APM	1.6	9.33				●			●				●										
	APKT160420-APM	2	9.33				●			●				●										
	APKT160424-APM	2.4	9.33				●			●				●										
	APKT160430-APM	3	9.33				●			●				●										
	APKT11T304-LH	0.4	6.5																				●	●
	APKT11T308-LH	0.8	6.5																				●	●
	APKT160408-LH	0.8	9.33																				●	●
	APKT11T304-PF	0.4	6.5		○			●					●				●		●					
	APKT11T308-PF	0.8	6.5					○					○				●							
	APKT11T312-PF	1.2	6.5														○							
	APKT11T316-PF	1.6	6.5														○							
	APKT160408-PF	0.8	9.33		●			○	●								●		●					
	APKT160430-PF	3	9.33	○																				
	APKT11T304-PM	0.4	6.5	●	●	○		●	●				○				●		●					
	APKT11T308-PM	0.8	6.5	●	●		●	●	●	●	●		●		●		●		●					
	APKT11T312-PM	1.2	6.5					○					○				●		○					
	APKT11T316-PM	1.6	6.5					●					○				●		○					
	APKT160408-PM	0.8	9.33	●	●	●	●	●	●	●	●		●		●		●		●					
	APKT160416-PM	1.6	9.33	○													●							
	APKT11T304-PR	0.4	6.5						○								○		○					
	APKT11T316-PR	1.6	6.5																○					

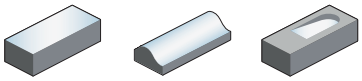
● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

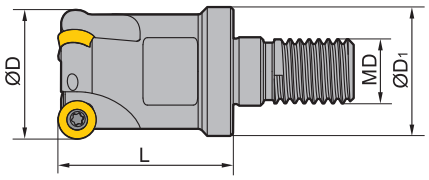
System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Indexable heads – QCH series

QCH - RD







Article	✻	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ØD1	L	MD			
QCH-16-RD07-M8-02		●	16	15	25	8	2	0.027	RDKW0702
QCH-20-RD07-M10-03		○	20	18	30	10	3	0.058	
QCH-25-RD07-M12-03		○	25	21	35	12	3	0.093	
QCH-20-RD10-M10-02		○	20	19	30	10	2	0.054	RDKW10T3
QCH-25-RD10-M12-02		○	25	24	35	12	2	0.097	
QCH-32-RD10-M16-03		○	32	30	45	16	3	0.183	
QCH-32-RD16-M16-02		○	32	30	45	16	2	0.156	RDKW1605

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	RDKW0702	RDKW10T3	RDKW1605
	ØD	16-25	20-32	32
	Screw (insert)	I60M2.5*5.0 (1.0 Nm)	I60M4*8 (3.4 Nm)	I60M5*13 (6.7 Nm)
	Wrench (insert)	WT08IP	WT15IP	
	Wrench (insert)			WT20IT

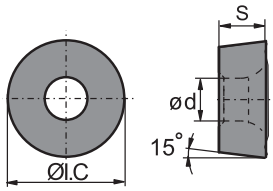


System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

RDKW	I.C	S	d
07 02	7	2.38	2.7
10 T3	10	3.97	4.4
16 05	16	5.56	5.5



RD** milling insert		HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
P		◉	◉	◉	◉	◉	◉	◉		◉	◉	◉	◉	◉	◉	●	●	●		
M			◉	◉	◉	◉	◉	◉			◉	◉	◉	◉	◉	●	●	●		
K							◉	◉	●						◉	●				◉
N									◉										◉	◉
S				◉		◉				●	◉	◉	◉							
H																				
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	RDKW10T3MO	●	○				○			●			●		○							
	RDKW1605MO						○						●	○	○							
	RDKW0702MO-1						●						●									
	RDKW0702MO-2										●											

● Ex stock ○ On demand

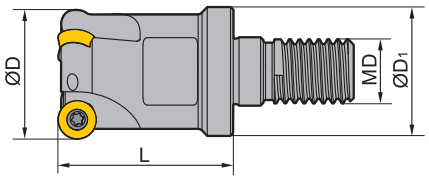
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 | Grade selection B24 | Technical info B463 | Cutting data B224

Indexable heads – QCH series

QCH - RD





Article	✻	Stock	Dimensions [mm]				Teeth	kg	Inserts
			ØD	ØD1	L	MD			
QCH-15-RDKW0702-M8-02		●	8	12.5	23	8	2		RDKW0702
QCH-15-RDKW0702-M8-03		●	8	12.5	23	8	3		
QCH-20-RDKW0702-M10-04		●	13	18	30	10	4		
QCH-25-RDKW0702-M12-05		●	18	21	35	12	5		
QCH-20-RDKW1003-M10-02		●	10	18	30	10	2		RDKW1003
QCH-25-RDKW1003-M12-02		●	15	21	35	12	2		
QCH-25-RDKW1003-M12-03		●	15	21	35	12	3		
QCH-30-RDKW1003-M16-04		●	20	29	43	16	4		
QCH-35-RDKW1003-M16-04		●	25	29	43	16	4		
QCH-42-RDKW1003-M16-05		●	32	29	43	16	5		
QCH-24-RDKW12T3-M12-02		●	12	21	35	12	2		RDKW12T3
QCH-35-RDKW12T3-M16-03		●	23	29	43	16	3		
QCH-42-RDKW12T3-M16-04		●	30	29	43	16	4		
QCH-32-RDKW1604-M16-02		●	16	29	43	16	2		RDKW1604

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

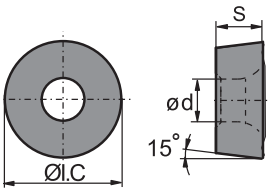
	Insert	RDKW0702	RDKW1003	RDKW12T3	RDKW1604
	ØD	15-25	20-42	24-42	32
	Clamp				WX16N
	Screw (clamp)				I60M4.5*10 (5.0 Nm)
	Screw (clamp)			LOM3.5*7.1	
	Screw (insert)	I60M2.5*5.0 (1.0 Nm)	I60M3.5*7.7 (2.7 Nm)	I60M3.5*7.7 (2.7 Nm)	I60M4.5*10 (5.0 Nm)
	Wrench (insert)	WT07P	WT15P	WT15P	
	Wrench (insert)				WT20T

System code B26 Grade selection B24 Technical info B463 Cutting data B224

RDKW	I.C	S	d
07 02	7	2.38	2.7
10 03	10	3.18	3.9
12 T3	12	3.97	3.9
16 04	16	4.76	5.2

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Milling inserts



RD** milling insert		HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
P		●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●		
M			●	●	●	●	●			●	●	●	●	●	●	●	●	●		
K								●	●	●						●	●			●
N									●											●
S					●		●			●	●	●	●							
H																				
ISO		YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	RDKW0702MO-1						●							●								
	RDKW0702MO-2										●											
	RDKW1003MO-1					●	●					●	●	●								
	RDKW1003MO-2										●											
	RDKW1003MO-3				●								●									
	RDKW12T3MO-1					●	●					●	●	●								
	RDKW12T3MO-2										●		○									
	RDKW12T3MO-3				●								●									
	RDKW1604MO-1						●					●	●	●		●						
	RDKW1604MO-2										○											
	RDKW1604MO-3	○	○		●				●		○		●			●						

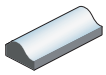
● Ex stock ○ On demand

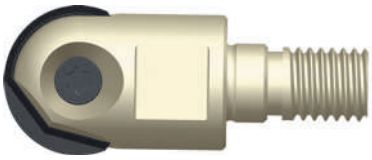
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

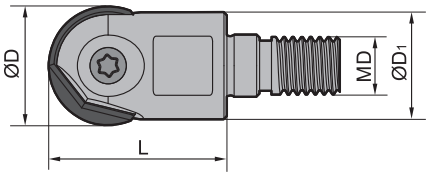
System code B26 Grade selection B24 Technical info B463 Cutting data B224

Indexable heads – QCH series

QCH - ZOHX







Article	✻	Stock	Dimensions [mm]				kg	Inserts
			ØD	ØD1	L	MD		
QCH-16-ZOHX16-M8		●	16	15	28	8	0.029	ZOHX16
QCH-20-ZOHX20-M10		●	20	19	30	10	0.048	ZOHX20
QCH-25-ZOHX25-M12		●	25	24	35	12	0.087	ZOHX25
QCH-30-ZOHX30-M16		●	30	29	45	16	0.17	ZOHX30
QCH-32-ZOHX32-M16		●	32	30	45	16	0.18	ZOHX32

● Ex stock ○ On demand

✻ With internal cooling

Spare parts

	Insert	ZOHX16	ZOHX20	ZOHX25	ZOHX30	ZOHX32	
	ØD	16	20	25	30	32	
	Screw (insert)	I70M5*12TT (6.7 Nm)	I70M5*16TT (6.7 Nm)	I70M6*20TT (9.1 Nm)	I70M8*25TT (16.2 Nm)	I70M8*25TT (16.2 Nm)	
	Wrench (insert)	WT20IP	WT20IP	WT20IP			
	Wrench (insert)				WT30IT	WT30IT	

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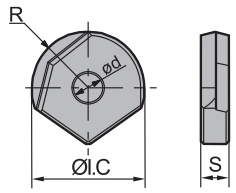
ZOHX	l.C	S	d
16	16	4	5
20	20	5	5
25	25	6	6
30	30	7	8
32	32	7	8

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Milling inserts

ZO** milling insert			HC[1] (CVD)								HC[1] (PVD)									HT	HC[2]	HW		
		P																						
		M																						
		K																						
		N																						
		S																						
		H																						
ISO		R	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201	
	**ZOHX1604-GF**	8																	●					
	ZOHX2005-GF	10																	●					
	ZOHX2506-GF	12.5																	○					
	ZOHX3007-GF	15																	●					
	ZOHX3207-GF	16																	●					
	**ZOHX1604-GM**	8																	●					
	ZOHX2005-GM	10																	●					
	ZOHX2506-GM	12.5																	○					
	ZOHX3007-GM	15																	●					
	ZOHX3207-GM	16																	●					

● Ex stock ○ On demand

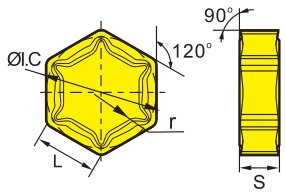
HC[1] Coated carbide
HT Uncoated cermet
HC[2] Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

HNGX	L	I.C	S
09 05	9.16	15.875	5.56

Milling inserts

HN** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
		P																			
		M																			
		K																			
		N																			
		S																			
		H																			
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
HDR	**HNGX090530-HDR**	3							○	○													
MR	**HNGX090516-MR**	1.6							●														
	HNGX090520-MR	2							●														

● Ex stock ○ On demand

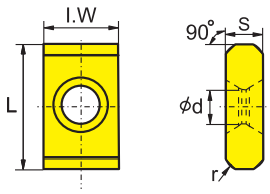
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code > B26 Grade selection > B24 Technical info > B463 Cutting data > B224

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

LNE3	L	I.W	S
2. 53	15.875	4.76	9.525

LN** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
		P																				
		M																				
		K																				
		N																				
		S																				
		H																				
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**LNE32.534**	1.6						○	○	○													

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

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- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

LNCX	I.W	L	S
18 06	10	24	6.4

Milling inserts

LN** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
		P																			
		M																			
		K																			
		N																			
		S																			
		H																			
ISO		bs	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**LNCX1806AZR**	2.0	●																				
	LNCX1806AZT11L	2.0							○														
	LNCX1806AZT11R	2.0							○														

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

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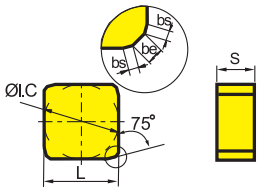
Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SNKN	L	I.C	S
12 04	12.7	12.7	4.76
15 04	15.875	15.875	4.76



SN** milling insert				HC¹ (CVD)							HC¹ (PVD)									HT		HC²	HW	
P				❁	❁	❁	❁	❁	❁	❁			❁	❁	❁	❁	❁	●	●	●		●			
M					❁	❁	❁	❁	❁	❁			❁	❁	❁	❁	❁	○	○	○		○			
K									❁	❁	●							❁	●					❁	
N											❁													❁	❁
S						❁		❁				●	❁	❁	❁	❁									
H																									
ISO		bs	be	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201	
	SNKN1204ENN	1.5	0.9		●				○	●															
	SNKN1504ENN	1.5	0.9		●				○															○	

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

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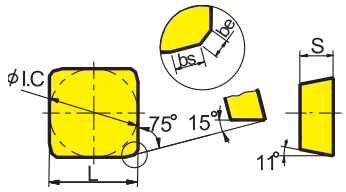
Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPCN	L	I.C	S
12 03	12.7	12.7	1.4
15 04	15.875	15.875	1.4



SP** milling insert		HC¹ (CVD)								HC¹ (PVD)								HT		HC²		HW	
P		◉	◉	◉	◉	◉	◉		◉			◉	◉	◉	◉	◉	◉	○	○	○			
M			◉	◉	◉	◉	◉					◉	◉	◉	◉	◉	◉	○	○	○			
K							◉	◉		○							◉	○	○				◉
N										◉												◉	◉
S					◉		◉				○	◉	◉	◉	◉								
H																							

ISO		bs	be	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	SPCN1203EDSKR	3.2	1.0	●																				
	SPCN1504EDSKR	4.8	1.0	●																				

● Ex stock ○ On demand

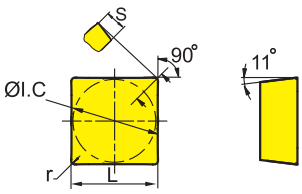
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SPMR	L	I.C	S
09 03	9.525	9.525	3.18
12 03	12.7	12.7	3.18



SP** milling insert			HC¹ (CVD)							HC¹ (PVD)									HT	HC²	HW		
		P																					
		M																					
		K																					
		N																					
		S																					
		H																					
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	SPMR090304	0.4					○																
	SPMR090308	0.8					○																
	SPMR120304	0.4					●																
	SPMR120308	0.8					●	○															
	SPMR120312	1.2						○															

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

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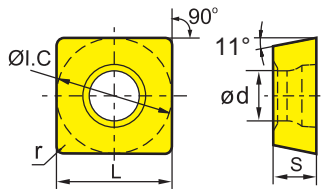
Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

SPMT	L	I.C	S	d
06 03	6.35	6.35	3.18	2.8
09 T3	9.525	9.525	3.97	4.4
12 04	12.7	12.7	4.76	5.5

SP** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW		
		P																				
		M																				
		K																				
		N																				
		S																				
		H																				
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
HT-1 	**SPMT120408-HT-1**	0.8														○							
HT 	**SPMT09T308-HT**	0.8					●		●						●								
KT 	**SPMT060304-KT**	0.4		○																			

● Ex stock ○ On demand

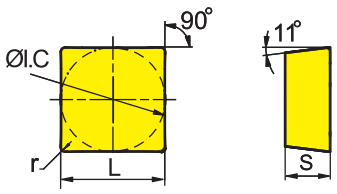
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224

Milling inserts

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

SP**	L	I.C	S
12 03	12.7	12.7	3.18
15 04	15.875	15.875	4.76



SP** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT		HC²	HW	
		P																				
		M																				
		K																				
		N																				
		S																				
		H																				
	ISO	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	**SPGN120304**	0.4													●								
	SPGN120308	0.8													●								
	**SPUN120308**	0.8					●	○														○	
	SPUN120312	1.2					●																
	SPUN150408	0.8																				○	
	SPUN150412	1.2																				○	

● Ex stock ○ On demand

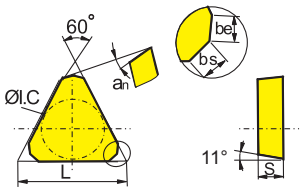
HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

System code B26 Grade selection B24 Technical info B463 Cutting data B224

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TPCN	L	I.C	S
22 04	22	12.7	4.76

Milling inserts



TP** milling insert					HC¹ (CVD)								HC¹ (PVD)								HT		HC²		HW			
					YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C		YD101	YD201		
P					◉	◉	◉	◉	◉	◉	◉	◉		◉	◉	◉	◉	◉	◉	◉	●	●	●					
M						◉	◉	◉	◉	◉	◉			◉	◉	◉	◉	◉	◉	●	●	●	●					
K											◉	◉	●							◉	●				◉			
N													◉												◉	◉		
S								◉		◉				●	◉	◉	◉	◉										
H																												
ISO			bs	be	an																							
	TPCN2204PDFR		1.4	1.4	15																				○			

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

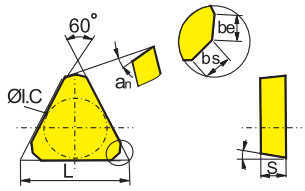
System code B26 Grade selection B24 Technical info B463 Cutting data B224

TPKN	L	I.C	S
16 03	16.5	9.525	3.18

Milling inserts

- Ideal machining conditions
- Normal machining conditions
- Unfavourable machining conditions

TP** milling insert



	HC¹ (CVD)								HC¹ (PVD)									HT	HC²	HW	
	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
P	Normal	Normal	Unfavourable	Normal	Normal	Unfavourable		Normal			Normal	Normal	Normal	Unfavourable	Unfavourable		Ideal	Ideal	Ideal		
M		Normal	Unfavourable	Normal	Normal	Unfavourable					Normal	Normal	Normal	Unfavourable	Unfavourable		Ideal	Ideal	Ideal		
K							Normal	Unfavourable		Ideal						Normal	Ideal				Unfavourable
N									Normal											Normal	Unfavourable
S				Unfavourable		Unfavourable				Ideal	Normal	Normal	Normal								
H																					

ISO	bs	be	an	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
TPKN1603PDTKR	1.0	1.2	11																					○
TPKN1603PPER	1.0	1.2	11		●																			
TPKN1603PPFR	1.0	1.2	11																					○

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

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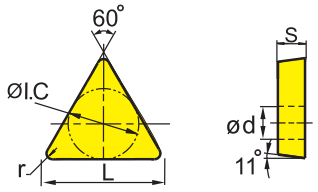
TP**	L	I.C	S
09 02	9.63	5.56	2.38
11 03	11	6.35	3.18
16 03	16.5	9.525	3.18
22 04	22	12.7	4.76

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Milling inserts



TP** milling insert			HC¹ (CVD)							HC¹ (PVD)								HT	HC²	HW	
		P																				
		M																				
		K																				
		N																				
		S																				
		H																				
ISO		r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBG101	YBG102	YB9320	YBG205	YBG202	YBG212	YBG302	YBG152	YBG252	YNG151	YNG151C	YD101	YD201
	TPMR090204	0.4					●																
	TPMR110304	0.4					●																
	TPMR110308	0.8					●																
	TPMR160304	0.4					●																
	TPMR160308	0.8					●	●	○														
	TPMR160312	1.2					○	○															
	TPMR220412	1.2					●																
	TPUN110304	0.4					●																
	TPUN110308	0.8					●																
	TPUN160304	0.4					●															○	
	TPUN160308	0.8					●	○														○	
	TPUN160312	1.2					●																
	TPUN220408	0.8					●																
	TPUN220412	1.2						○															
	TPUN220416	1.6																				○	

● Ex stock ○ On demand

HC¹ Coated carbide
HT Uncoated cermet
HC² Coated cermet
HW Uncoated carbide

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Notes

Guide for recommended cutting data – indexable milling

Indexable milling – group 1 (FMA07/11/12, FMD02, EMP09/13)

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min] HC (CVD) YBC302 a_e / D 1/1 | 3/4	YBC302 a_e / D 1/5	YBC401 a_e / D 1/1 | 3/4	YBC401 a_e / D 1/5	YBD152 a_e / D 1/1 | 3/4	YBD152 a_e / D 1/5	YBD252 a_e / D 1/1 | 3/4	YBD252 a_e / D 1/5
P	Unalloyed steel	ca. 0,15 % C	annealed	125	1	260	300	225	260				
		ca. 0,45 % C	annealed	190	2	225	255	195	225				
		ca. 0,45 % C	tempered	250	3	210	240	180	210				
		ca. 0,75 % C	annealed	270	4	185	210	160	185				
		ca. 0,75 % C	tempered	300	5	170	195	150	170				
	Low-alloyed steel		annealed	180	6	225	255	195	225				
			tempered	275	7	185	210	160	185				
			tempered	300	8	170	195	150	170				
			tempered	350	9	145	165	125	145				
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	130	150	115	130				
			hardened ard tempered	325	11	95	105	80	95				
M	Stainless steel	ferritic/martensitic	annealed	200	12								
		martensitic	tempered	240	13								
		austenitic	quench harcened	180	14								
		austenitic-ferritic		230	15								
K	Grey cast iron	perlitic/ferritic		180	16					370	430	320	370
		perlitic (martensitic)		260	17					220	255	190	220
	Cast iron with spheroidal graphite	ferritic		160	18					255	295	220	255
		perlitic		250	19					170	200	145	170
	Malleable cast iron	ferritic		130	20					305	355	265	305
		perlitic		230	21					205	240	175	205
N	Aluminium wrought alloys	cannot be hardened		60	22								
		hardenable	hardened	100	23								
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24								
		≤ 12 % Si, hardenable	hardened	90	25								
		> 12 % Si, cannot be hardened		130	26								
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27								
		CuZn, CuSnZn		90	28								
		CuSn, Pb-free copper, electrolytic copper		100	29								
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37								
			hardened and tempered	60 HRC	38								
	Hard cast iron		cast	400	39								
	Hardened cast iron		hardened and tempered	55 HRC	40								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B248
For examples of material for cutting tool groups view page D22.

Recommend feed rate

Indexable milling – group1 (FMA07/11/12, FMD02, EMP09/13)

5

6

	Material group	Feed rate per cutting edge [mm]																	
		EMP09			EMP13			EMP13			FMA07			FMA07			FMA11		
		LNKT12			ANGX11			ANGX15			ONHU06			ONHU08			SNEG12		
		Application																	
		F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R
P	Unalloyed steel		0,25	0,50		0,23			0,25		0,19	0,23		0,19	0,23			0,20	0,23
P	Low-alloyed steel		0,23	0,47		0,22			0,23		0,17	0,22		0,17	0,22			0,19	0,21
P	High-alloyed steel and high-alloyed tool steel		0,22	0,44		0,20			0,22		0,16	0,20		0,16	0,20			0,18	0,20
M	Stainless steel		0,18	0,35														0,14	0,16
K	Grey cast iron		0,28	0,55		0,26			0,28		0,20	0,26		0,20	0,26			0,22	0,25
K	Cast iron with spheroidal graphite		0,25	0,50		0,23			0,25		0,19	0,23		0,19	0,23			0,20	0,23
K	Malleable cast iron		0,25	0,50		0,23			0,25		0,19	0,23		0,19	0,23			0,20	0,23
N	Aluminium wrought alloys					0,20			0,21										
N	Aluminium-Gusslegierungen					0,20			0,21										
N	Copper and copper alloys(bronze/brass)					0,18			0,19										
S	Heat-resistant alloys																		
S	Titanium alloys																		
H	Hardened steel																		
H	Hard cast iron																		
H	Hardened cast iron																		
X	Non-metallic materials																		

1. Select the appropriate product family/cutting data group.
2. Select the used grade.
3. Determine the immersion.
4. Select the used material and read the cutting speed.
5. Please have a look at the detached feed rate recommendations.
6. Select the used tool, the machining mode and the used material.

Indexable milling – group 1 (FMA07/11/12, FMD02, EMP09/13)

Material group		Composition / structure / heat treatment		HB	Machining group	Starting values for cutting speed v_c [m/min]							
						HC (CVD)							
						YBC302		YBC401		YBD152		YBD252	
						a_e / D		a_e / D		a_e / D		a_e / D	
						1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	260	300	225	260				
		approx. 0,45 % C	annealed	190	2	225	255	195	225				
		approx. 0,45 % C	tempered	250	3	210	240	180	210				
		approx. 0,75 % C	annealed	270	4	185	210	160	185				
		approx. 0,75 % C	tempered	300	5	170	195	150	170				
	Low-alloyed steel		annealed	180	6	225	255	195	225				
			tempered	275	7	185	210	160	185				
			tempered	300	8	170	195	150	170				
			tempered	350	9	145	165	125	145				
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	130	150	115	130				
			hardened and tempered	325	11	95	105	80	95				
M	Stainless steel	ferritic/martensitic	annealed	200	12								
		martensitic	tempered	240	13								
		austenitic	quench hardened	180	14								
		austenitic-ferritic		230	15								
K	Grey cast iron	perlitic/ferritic		180	16					370	430	320	370
		perlitic (martensitic)		260	17					220	255	190	220
	Cast iron with spheroidal graphite	ferritic		160	18					255	295	220	255
		perlitic		250	19					170	200	145	170
	Malleable cast iron	ferritic		130	20					305	355	265	305
		perlitic		230	21					205	240	175	205
N	Aluminium wrought alloys	cannot be hardened		60	22								
		hardenable	hardened	100	23								
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24								
		≤ 12 % Si, hardenable	hardened	90	25								
		> 12 % Si, cannot be hardened		130	26								
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27								
		CuZn, CuSnZn		90	28								
		CuSn, Pb-free copper, electrolytic copper		100	29								
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37								
			hardened and tempered	60 HRC	38								
	Hard cast iron		cast	400	39								
	Hardened cast iron		hardened and tempered	55 HRC	40								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B248.
For examples of material for cutting tool groups view page D22.

Starting values for cutting speed v_c [m/min]																	
HC (CVD)			HC (PVD)										HW				
YBM253			YBG102		YB9320		YBG205		YBG252		YBG302		YD101		YD201		
a_e / D			a_e / D		a_e / D		a_e / D		a_e / D		a_e / D		a_e / D		a_e / D		
1/1 | 3/4	1/5		1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	
260	300		270	315	245	285	235	275	230	265	225	260					
225	255		230	270	210	245	200	235	200	230	195	225					
210	240		220	255	200	230	190	220	185	215	180	210					
185	210		190	225	175	200	165	195	165	190	160	185					
170	195		180	205	160	190	155	180	150	175	150	170					
225	255		230	270	210	245	200	235	200	230	195	225					
185	210		190	225	175	200	165	195	165	190	160	185					
170	195		180	205	160	190	155	180	150	175	150	170					
145	165		150	175	135	160	130	155	130	150	125	145					
130	150		135	160	125	145	120	140	115	135	115	130					
95	105		95	115	90	100	85	100	85	95	80	95					
130	150		135	160	125	145	120	140	115	135	115	130					
110	130		115	135	105	120	100	120	100	115	95	110					
140	160		145	170	130	155	125	150	125	145	120	140					
110	130		115	135	105	120	100	120	100	115	95	110					
			300	345	270	315	260	300	255	295	250	290					
			180	205	160	190	155	180	150	175	150	170					
			205	240	185	215	180	210	175	200	170	195					
			135	160	125	145	120	140	115	135	115	130					
			245	285	225	260	215	250	210	240	205	235					
			165	190	150	175	145	165	140	160	135	160					
													1505	1735	1450	1670	
													1225	1420	1180	1370	
													540	620	515	600	
													435	505	420	485	
													220	255	215	250	
													170	195	160	190	
													210	245	205	235	
													385	445	370	430	

HC Coated carbide
HT Uncoated carbide, main component (TiC) o. (TiN), cermet
HC_1 Coated cermet
HW Uncoated carbide, main component (WC)

Indexable milling – group 2 (FMA01/02/03/04, FME01/02, EMP01/02/03/04)

Material group		Composition / structure / heat treatment		HB	Machining group	Starting values for cutting speed v_c [m/min]							
						HC (CVD)							
						YBC302		YBC401		YBD152		YBD252	
						a_e / D		a_e / D		a_e / D		a_e / D	
						1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	245	285	210	245				
		approx. 0,45 % C	annealed	190	2	210	245	180	210				
		approx. 0,45 % C	tempered	250	3	200	230	170	200				
		approx. 0,75 % C	annealed	270	4	175	200	150	175				
		approx. 0,75 % C	tempered	300	5	160	190	140	160				
	Low-alloyed steel		annealed	180	6	210	245	180	210				
			tempered	275	7	175	200	150	175				
			tempered	300	8	160	190	140	160				
			tempered	350	9	135	160	120	135				
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	125	145	105	125				
			hardened and tempered	325	11	90	100	75	90				
M	Stainless steel	ferritic/martensitic	annealed	200	12								
		martensitic	tempered	240	13								
		austenitic	quench hardened	180	14								
		austenitic-ferritic		230	15								
K	Grey cast iron	perlitic/ferritic		180	16					315	365	270	315
		perlitic (martensitic)		260	17					185	215	160	190
	Cast iron with spheroidal graphite	ferritic		160	18					215	250	185	215
		perlitic		250	19					145	170	125	145
	Malleable cast iron	ferritic		130	20					260	300	225	260
		perlitic		230	21					175	205	150	175
N	Aluminium wrought alloys	cannot be hardened		60	22								
		hardenable	hardened	100	23								
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24								
		≤ 12 % Si, hardenable	hardened	90	25								
		> 12 % Si, cannot be hardened		130	26								
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27								
		CuZn, CuSnZn		90	28								
		CuSn, Pb-free copper, electrolytic copper		100	29								
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37								
			hardened and tempered	60 HRC	38								
	Hard cast iron		cast	400	39								
	Hardened cast iron		hardened and tempered	55 HRC	40								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B248.
For examples of material for cutting tool groups view page D22.

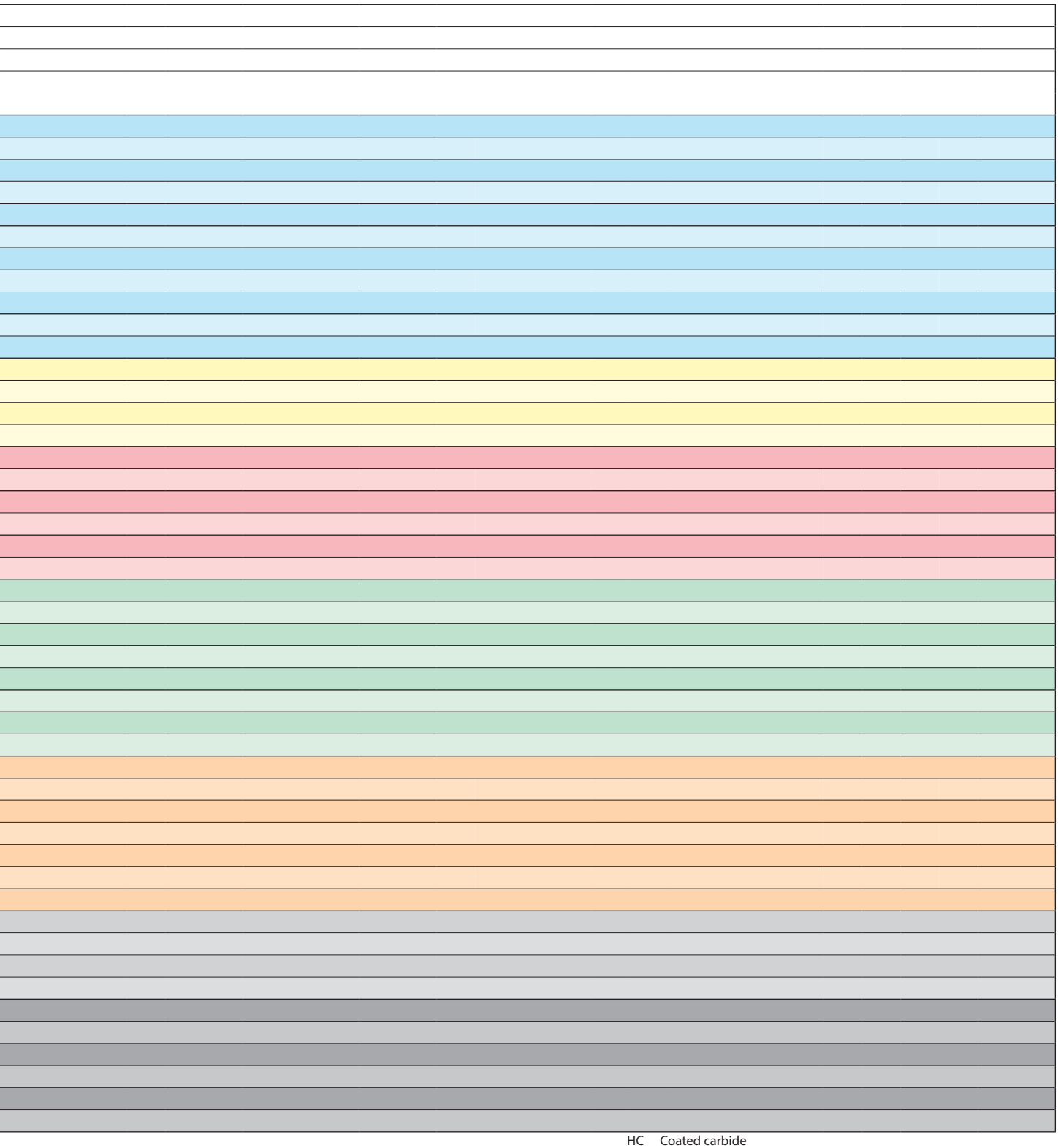
	Starting values for cutting speed v_c [m/min]																					
	HC (CVD)		HC (PVD)														HW				HT	
	YBM253		YBG101		YBG102		YBG152		YB9320		YBG205		YBG252		YBG302		YD101		YD201		YNG151	
	a_e / D		a_e / D		a_e / D		a_e / D		a_e / D		a_e / D		a_e / D		a_e / D		a_e / D		a_e / D		a_e / D	
	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5
	245	285			255	295	240	280	230	265	220	255	215	250	210	245					270	315
	210	245			220	255	205	240	200	230	190	220	185	215	180	210					235	270
	200	230			205	240	195	225	185	215	180	205	175	200	170	200					220	255
	175	200			180	210	170	200	165	190	155	180	155	175	150	175					195	220
	160	190			170	195	160	185	150	175	145	170	140	165	140	160					180	210
	210	245			220	255	205	240	200	230	190	220	185	215	180	210					235	270
	175	200			180	210	170	200	165	190	155	180	155	175	150	175					195	220
	160	190			170	195	160	185	150	175	145	170	140	165	140	160					180	210
	135	160			145	165	135	155	130	150	125	145	120	140	120	135					150	180
	125	145			130	150	120	140	115	135	110	130	110	125	105	125					140	160
	90	100			90	105	85	100	85	95	80	90	80	90	75	90					100	110
	125	145			130	150	120	140	115	135	110	130	110	125	105	125					135	160
	105	120			110	125	105	120	100	115	95	110	95	105	90	105					115	135
	130	155			140	160	130	150	125	145	120	140	115	135	115	130					145	170
	105	120			110	125	105	120	100	115	95	110	95	105	90	105					115	135
					285	330	265	305	255	295	245	285	240	280	235	275						
					170	195	160	185	150	175	145	170	140	165	140	160						
					195	225	180	210	175	200	165	195	165	190	160	185						
					130	150	120	140	115	135	110	130	110	125	105	125						
					230	270	220	255	210	240	200	230	195	225	190	225						
					155	180	145	170	140	160	135	155	130	150	130	150						
			1505	1735													1205	1390	1040	1200		
			1225	1420													980	1140	850	980		
			540	620													435	500	375	435		
			435	505													350	405	300	350		
			220	255													180	205	155	180		
			170	195													140	160	120	140		
			210	245													170	200	150	170		
			385	445													310	360	265	310		
					75	85	70	80	65	75	65	75	65	75	60	70						
					50	55	50	55	45	50	45	50	45	50	40	45						
					60	70	55	65	55	65	50	55	50	55	50	55						
					35	40	35	40	30	35	30	35	30	35	30	35						
					45	50	45	50	40	45	40	45	40	45	40	45						
					75	85	70	80	65	75	65	75	65	75	60	70						
					75	85	70	80	65	75	65	75	65	75	60	70						

HC Coated carbide
HT Uncoated carbide, main component (TiC) o. (TiN), cermet
HC_1 Coated cermet
HW Uncoated carbide, main component (WC)

Indexable milling – group 2 (FMA01/02/03/04, FME01/02, EMP01/02/03/04)

Material group		Composition / structure / heat treatment		HB	Machining group	Starting values for cutting speed vc [m/min]			
						HC_1			
						YNG151C			
						a_e / D			
						1/1 | 3/4	1/5		
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	285	335		
		approx. 0,45 % C	annealed	190	2	250	285		
		approx. 0,45 % C	tempered	250	3	235	270		
		approx. 0,75 % C	annealed	270	4	205	235		
		approx. 0,75 % C	tempered	300	5	190	225		
	Low-alloyed steel		annealed	180	6	250	285		
			tempered	275	7	205	235		
			tempered	300	8	190	225		
			tempered	350	9	160	190		
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	150	170		
			hardened and tempered	325	11	105	120		
M	Stainless steel	ferritic/martensitic	annealed	200	12	145	170		
		martensitic	tempered	240	13	120	145		
		austenitic	quench hardened	180	14	155	180		
		austenitic-ferritic		230	15	120	145		
K	Grey cast iron	perlitic/ferritic		180	16				
		perlitic (martensitic)		260	17				
	Cast iron with spheroidal graphite	ferritic		160	18				
		perlitic		250	19				
	Malleable cast iron	ferritic		130	20				
		perlitic		230	21				
N	Aluminium wrought alloys	cannot be hardened		60	22				
		hardenable	hardened	100	23				
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24				
		≤ 12 % Si, hardenable	hardened	90	25				
		> 12 % Si, cannot be hardened		130	26				
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27				
		CuZn, CuSnZn		90	28				
		CuSn, Pb-free copper, electrolytic copper		100	29				
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30				
			hardened	280	31				
		Ni or Co bass	annealed	250	32				
			hardened	350	33				
			cast	320	34				
	Titanium alloys	pure titanium		R_m 400	35				
		α and β alloys	hardened	R_m 1050	36				
H	Hardened steel		hardened and tempered	55 HRC	37				
			hardened and tempered	60 HRC	38				
	Hard cast iron		cast	400	39				
	Hardened cast iron		hardened and tempered	55 HRC	40				
X	Non-metallic materials	Thermoplasts			41				
		Thermosetting plastics			42				
		Plastic, glass-fibre reinforced GFRP			43				
		Plastic, carbon fibre reinforced CFRP			44				
		Graphite			45				
		Wood			46				

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B248.
For examples of material for cutting tool groups view page D22.



HC Coated carbide
HT Uncoated carbide, main component (TiC) o. (TiN), cermet
HC_1 Coated cermet
HW Uncoated carbide, main component (WC)

Indexable milling – group 3 (FMR01/02/03/04)

Material group		Composition / structure / heat treatment		HB	Machining group	Starting values for cutting speed v_c [m/min] HC (CVD) YBC302 a_e / D 1/1 | 3/4	YBC302 a_e / D 1/5	YBC302 a_e / D 1/20	YBC401 a_e / D 1/1 | 3/4	YBC401 a_e / D 1/5	YBC401 a_e / D 1/20
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	260	300	390	225	260	340
		approx. 0,45 % C	annealed	190	2	225	255	335	195	225	295
		approx. 0,45 % C	tempered	250	3	210	240	315	180	210	275
		approx. 0,75 % C	annealed	270	4	185	210	275	160	185	245
		approx. 0,75 % C	tempered	300	5	170	195	255	150	170	225
	Low-alloyed steel		annealed	180	6	225	255	335	195	225	295
			tempered	275	7	185	210	275	160	185	245
			tempered	300	8	170	195	255	150	170	225
			tempered	350	9	145	165	215	125	145	190
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	130	150	195	115	130	170
			hardened and tempered	325	11	95	105	140	80	95	125
M	Stainless steel	ferritic/martensitic	annealed	200	12						
		martensitic	tempered	240	13						
		austenitic	quench hardened	180	14						
		austenitic-ferritic		230	15						
K	Grey cast iron	perlitic/ferritic		180	16						
		perlitic (martensitic)		260	17						
	Cast iron with spheroidal graphite	ferritic		160	18						
		perlitic		250	19						
	Malleable cast iron	ferritic		130	20						
		perlitic		230	21						
N	Aluminium wrought alloys	cannot be hardened		60	22						
		hardenable	hardened	100	23						
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24						
		≤ 12 % Si, hardenable	hardened	90	25						
		> 12 % Si, cannot be hardened		130	26						
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27						
		CuZn, CuSnZn		90	28						
		CuSn, Pb-free copper, electrolytic copper		100	29						
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30						
			hardened	280	31						
		Ni or Co bass	annealed	250	32						
			hardened	350	33						
			cast	320	34						
	Titanium alloys	pure titanium		R_m 400	35						
		α and β alloys	hardened	R_m 1050	36						
H	Hardened steel		hardened and tempered	55 HRC	37						
			hardened and tempered	60 HRC	38						
	Hard cast iron		cast	400	39						
	Hardened cast iron		hardened and tempered	55 HRC	40						
X	Non-metallic materials	Thermoplasts			41						
		Thermosetting plastics			42						
		Plastic, glass-fibre reinforced GFRP			43						
		Plastic, carbon fibre reinforced CFRP			44						
		Graphite			45						
		Wood			46						

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B248.
For examples of material for cutting tool groups view page D22.

	Starting values for cutting speed v_c [m/min]																				
	HC (CVD)									HC (PVD)											
	YBD152			YBD252			YBM253			YBG102			YBG152			YB9320			YBG205		
	a_e / D			a_e / D			a_e / D			a_e / D			a_e / D			a_e / D			a_e / D		
	1/1 | 3/4	1/5	1/20	1/1 | 3/4	1/5	1/20	1/1 | 3/4	1/5	1/20	1/1 | 3/4	1/5	1/20	1/1 | 3/4	1/5	1/20	1/1 | 3/4	1/5	1/20	1/1 | 3/4	1/5	1/20
							260	300	390	270	315	410	255	295	385	245	285	375	235	275	360
							225	255	335	230	270	355	220	255	335	210	245	320	200	235	310
							210	240	315	220	255	335	205	240	315	200	230	300	190	220	290
							185	210	275	190	225	295	180	210	275	175	200	260	165	195	255
							170	195	255	180	205	270	170	195	255	160	190	250	155	180	235
							225	255	335	230	270	355	220	255	335	210	245	320	200	235	310
							185	210	275	190	225	295	180	210	275	175	200	260	165	195	255
							170	195	255	180	205	270	170	195	255	160	190	250	155	180	235
							145	165	215	150	175	230	145	165	215	135	160	210	130	155	205
							130	150	195	135	160	210	130	150	195	125	145	190	120	140	185
							95	105	140	95	115	150	90	105	140	90	100	130	85	100	130
							130	150	195	135	160	205	130	150	195	125	145	190	120	140	180
							110	130	165	115	135	175	110	125	165	105	120	160	100	120	155
							140	160	210	145	170	220	140	160	205	130	155	200	125	150	195
							110	130	165	115	135	175	110	125	165	105	120	160	100	120	155
	345	400	520	300	345	450				300	345	450	285	330	430	270	315	410	260	300	390
	210	245	320	180	205	270				180	205	270	170	195	255	160	190	250	155	180	235
	240	280	365	205	240	315				205	240	315	195	225	295	185	215	280	180	210	275
	160	185	245	135	160	210				135	160	210	130	150	195	125	145	190	120	140	185
	285	330	430	245	285	375				245	285	375	230	270	355	225	260	340	215	250	325
	190	220	290	165	190	250				165	190	250	155	180	235	150	175	230	145	165	215

HC Coated carbide
HT Uncoated carbide, main component (TiC) o. (TiN), cermet
HC_1 Coated cermet
HW Uncoated carbide, main component (WC)

Indexable milling – group 3 (FMR01/02/03/04)

Material group		Composition / structure / heat treatment		HB	Machining group	Starting values for cutting speed v_c [m/min] HC (PVD) YBG212 a_e / D 1/1 | 3/4	YBG212 a_e / D 1/5	YBG212 a_e / D 1/20	YBG252 a_e / D 1/1 | 3/4	YBG252 a_e / D 1/5	YBG252 a_e / D 1/20
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	240	280	365	230	265	345
		approx. 0,45 % C	annealed	190	2	205	240	315	200	230	300
		approx. 0,45 % C	tempered	250	3	195	225	295	185	215	280
		approx. 0,75 % C	annealed	270	4	170	200	260	165	190	250
		approx. 0,75 % C	tempered	300	5	160	185	245	150	175	230
	Low-alloyed steel		annealed	180	6	205	240	315	200	230	300
			tempered	275	7	170	200	260	165	190	250
			tempered	300	8	160	185	245	150	175	230
			tempered	350	9	135	155	205	130	150	195
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	120	140	185	115	135	180
			hardened and tempered	325	11	85	100	130	85	95	125
M	Stainless steel	ferritic/martensitic	annealed	200	12	120	140	185	115	135	175
		martensitic	tempered	240	13	105	120	155	100	115	145
		austenitic	quench hardened	180	14	130	150	195	125	145	185
		austenitic-ferritic		230	15	105	120	155	100	115	145
K	Grey cast iron	perlitic/ferritic		180	16	265	305	400	255	295	385
		perlitic (martensitic)		260	17	160	185	245	150	175	230
	Cast iron with spheroidal graphite	ferritic		160	18	180	210	275	175	200	260
		perlitic		250	19	120	140	185	115	135	180
	Malleable cast iron	ferritic		130	20	220	255	335	210	240	315
		perlitic		230	21	145	170	225	140	160	210
N	Aluminium wrought alloys	cannot be hardened		60	22						
		hardenable	hardened	100	23						
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24						
		≤ 12 % Si, hardenable	hardened	90	25						
		> 12 % Si, cannot be hardened		130	26						
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27						
		CuZn, CuSnZn		90	28						
		CuSn, Pb-free copper, electrolytic copper		100	29						
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30						
			hardened	280	31						
		Ni or Co bass	annealed	250	32						
			hardened	350	33						
			cast	320	34						
	Titanium alloys	pure titanium		R_m 400	35						
		α and β alloys	hardened	R_m 1050	36						
H	Hardened steel		hardened and tempered	55 HRC	37						
			hardened and tempered	60 HRC	38						
	Hard cast iron		cast	400	39						
	Hardened cast iron		hardened and tempered	55 HRC	40						
X	Non-metallic materials	Thermoplasts			41						
		Thermosetting plastics			42						
		Plastic, glass-fibre reinforced GFRP			43						
		Plastic, carbon fibre reinforced CFRP			44						
		Graphite			45						
		Wood			46						

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B248.
For examples of material for cutting tool groups view page D22.

	Starting values for cutting speed v_c [m/min]							
	HC (PVD)			HW				
	YBG302			YD101		YD201		
	a_e / D			a_e / D		a_e / D		
	1/1 | 3/4	1/5	1/20	1/1 | 3/4	1/5	1/1 | 3/4	1/5	
	225	260	340					
	195	225	295					
	180	210	275					
	160	185	245					
	150	170	225					
	195	225	295					
	160	185	245					
	150	170	225					
	125	145	190					
	115	130	170					
	80	95	125					
	115	130	170					
	95	110	145					
	120	140	185					
	95	110	145					
	250	290	380					
	150	170	225					
	170	195	255					
	115	130	170					
	205	235	310					
	135	160	210					
				1505	1735	1450	1670	
				1225	1420	1180	1370	
				540	620	515	600	
				435	505	420	485	
				220	255	215	250	
				170	195	160	190	
				210	245	205	235	
				385	445	370	430	

HC Coated carbide
HT Uncoated carbide, main component (TiC) o. (TiN), cermet
HC_1 Coated cermet
HW Uncoated carbide, main component (WC)

Indexable milling – group 4 (BMR01/02/03/04, TMP01,CMZ01,CMA01,CMD01)

Material group		Composition / structure / heat treatment		HB	Machining group	Starting values for cutting speed v_c [m/min] HC (CVD) YBC302 a_e / D 1/1 | 3/4	YBC302 a_e / D 1/5	YBC302 a_e / D 1/20	YBC401 a_e / D 1/1 | 3/4	YBC401 a_e / D 1/5	YBC401 a_e / D 1/20
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	235	275	360	200	230	300
		approx. 0,45 % C	annealed	190	2	200	235	310	170	200	260
		approx. 0,45 % C	tempered	250	3	190	220	290	160	185	245
		approx. 0,75 % C	annealed	270	4	165	195	255	140	165	215
		approx. 0,75 % C	tempered	300	5	155	180	235	130	150	195
	Low-alloyed steel		annealed	180	6	200	235	310	170	200	260
			tempered	275	7	165	195	255	140	165	215
			tempered	300	8	155	180	235	130	150	195
			tempered	350	9	130	155	205	110	130	170
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	120	140	185	100	115	150
			hardened and tempered	325	11	85	100	130	70	85	115
M	Stainless steel	ferritic/martensitic	annealed	200	12						
		martensitic	tempered	240	13						
		austenitic	quench hardened	180	14						
		austenitic-ferritic		230	15						
K	Grey cast iron	perlitic/ferritic		180	16						
		perlitic (martensitic)		260	17						
	Cast iron with spheroidal graphite	ferritic		160	18						
		perlitic		250	19						
	Malleable cast iron	ferritic		130	20						
		perlitic		230	21						
N	Aluminium wrought alloys	cannot be hardened		60	22						
		hardenable	hardened	100	23						
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24						
		≤ 12 % Si, hardenable	hardened	90	25						
		> 12 % Si, cannot be hardened		130	26						
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27						
		CuZn, CuSnZn		90	28						
		CuSn, Pb-free copper, electrolytic copper		100	29						
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30						
			hardened	280	31						
		Ni or Co bass	annealed	250	32						
			hardened	350	33						
			cast	320	34						
	Titanium alloys	pure titanium		R_m 400	35						
		α and β alloys	hardened	R_m 1050	36						
H	Hardened steel		hardened and tempered	55 HRC	37						
			hardened and tempered	60 HRC	38						
	Hard cast iron		cast	400	39						
	Hardened cast iron		hardened and tempered	55 HRC	40						
X	Non-metallic materials	Thermoplasts			41						
		Thermosetting plastics			42						
		Plastic, glass-fibre reinforced GFRP			43						
		Plastic, carbon fibre reinforced CFRP			44						
		Graphite			45						
		Wood			46						

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B248.
For examples of material for cutting tool groups view page D22.

	Starting values for cutting speed v_c [m/min]																					
	HC (CVD)									HC (PVD)												
	YBD152			YBD252			YBM253			YBG102			YBG152			YB9320			YBG205		
	a_e / D			a_e / D			a_e / D			a_e / D			a_e / D			a_e / D			a_e / D		
	1/1 | 3/4	1/5	1/20	1/1 | 3/4	1/5	1/20	1/1 | 3/4	1/5	1/20	1/1 | 3/4	1/5	1/20	1/1 | 3/4	1/5	1/20	1/1 | 3/4	1/5	1/20	1/1 | 3/4	1/5	1/20
							235	275	360	245	285	375	230	265	345	220	255	335	210	245	320
							200	235	310	210	245	320	200	230	300	190	220	290	180	210	275
							190	220	290	200	230	300	185	215	280	180	205	270	170	200	260
							165	195	255	175	200	260	165	190	250	155	180	235	150	175	230
							155	180	235	160	190	250	150	175	230	145	170	225	140	160	210
							200	235	310	210	245	320	200	230	300	190	220	290	180	210	275
							165	195	255	175	200	260	165	190	250	155	180	235	150	175	230
							155	180	235	160	190	250	150	175	230	145	170	225	140	160	210
							130	155	205	135	160	210	130	150	195	125	145	190	120	135	180
							120	140	185	125	145	190	115	135	180	110	130	170	105	125	165
							85	100	130	90	100	130	85	95	125	80	90	120	75	90	120
							120	140	180	125	145	190	115	135	175	110	130	170	105	125	160
							100	120	155	105	120	160	100	115	145	95	110	145	90	105	135
							125	150	195	130	155	200	125	145	185	120	140	180	115	130	170
							100	120	155	105	120	160	100	115	145	95	110	145	90	105	135
	300	345	450	260	300	390				270	315	410	255	295	385	245	285	375	235	275	360
	180	210	275	155	180	235				160	190	250	150	175	230	145	170	225	140	160	210
	210	245	320	180	210	275				185	215	280	175	200	260	165	195	255	160	185	245
	140	165	215	120	140	185				125	145	190	115	135	180	110	130	170	105	125	165
	250	290	380	215	250	325				225	260	340	210	240	315	200	230	300	190	225	295
	170	200	260	145	165	215				150	175	230	140	160	210	135	155	205	130	150	195

HC Coated carbide
HT Uncoated carbide, main component (TiC) o. (TiN), cermet
HC_1 Coated cermet
HW Uncoated carbide, main component (WC)

Indexable milling – group 4 (BMR01/02/03/04, TMP01,CMZ01,CMA01,CMD01)

Material group		Composition / structure / heat treatment		HB	Machining group	Starting values for cutting speed v_c [m/min] HC (PVD) YBG212 a_e / D 1/1 | 3/4	YBG212 a_e / D 1/5	YBG212 a_e / D 1/20	YBG252 a_e / D 1/1 | 3/4	YBG252 a_e / D 1/5	YBG252 a_e / D 1/20
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	215	250	325	205	240	315
		approx. 0,45 % C	annealed	190	2	185	215	280	175	205	270
		approx. 0,45 % C	tempered	250	3	175	200	260	165	195	255
		approx. 0,75 % C	annealed	270	4	155	175	230	145	170	225
		approx. 0,75 % C	tempered	300	5	140	165	215	135	160	210
	Low-alloyed steel		annealed	180	6	185	215	280	175	205	270
			tempered	275	7	155	175	230	145	170	225
			tempered	300	8	140	165	215	135	160	210
			tempered	350	9	120	140	185	115	135	180
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	110	125	165	105	120	160
			hardened and tempered	325	11	80	90	120	75	85	115
M	Stainless steel	ferritic/martensitic	annealed	200	12	110	125	165	105	120	160
		martensitic	tempered	240	13	95	105	140	90	105	135
		austenitic	quench hardened	180	14	115	135	175	110	130	170
		austenitic-ferritic		230	15	95	105	140	90	105	135
K	Grey cast iron	perlitic/ferritic		180	16	240	280	365	230	265	345
		perlitic (martensitic)		260	17	140	165	215	135	160	210
	Cast iron with spheroidal graphite	ferritic		160	18	165	190	250	155	180	235
		perlitic		250	19	110	125	165	105	120	160
	Malleable cast iron	ferritic		130	20	195	225	295	185	220	290
		perlitic		230	21	130	150	195	125	145	190
N	Aluminium wrought alloys	cannot be hardened		60	22						
		hardenable	hardened	100	23						
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24						
		≤ 12 % Si, hardenable	hardened	90	25						
		> 12 % Si, cannot be hardened		130	26						
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27						
		CuZn, CuSnZn		90	28						
		CuSn, Pb-free copper, electrolytic copper		100	29						
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30						
			hardened	280	31						
		Ni or Co bass	annealed	250	32						
			hardened	350	33						
			cast	320	34						
	Titanium alloys	pure titanium		R_m 400	35						
		α and β alloys	hardened	R_m 1050	36						
H	Hardened steel		hardened and tempered	55 HRC	37						
			hardened and tempered	60 HRC	38						
	Hard cast iron		cast	400	39						
	Hardened cast iron		hardened and tempered	55 HRC	40						
X	Non-metallic materials	Thermoplasts			41						
		Thermosetting plastics			42						
		Plastic, glass-fibre reinforced GFRP			43						
		Plastic, carbon fibre reinforced CFRP			44						
		Graphite			45						
		Wood			46						

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B248.
For examples of material for cutting tool groups view page D22.

	Starting values for cutting speed v_c [m/min]			
	HC (PVD)			
	YBG302			
	a_e / D			
	1/1 | 3/4	1/5	1/20	
	200	230	300	
	170	200	260	
	160	185	245	
	140	165	215	
	130	150	195	
	170	200	260	
	140	165	215	
	130	150	195	
	110	130	170	
	100	115	150	
	70	85	115	
	100	115	150	
	85	100	130	
	110	125	160	
	85	100	130	
	220	255	335	
	130	150	195	
	150	175	230	
	100	115	150	
	180	210	275	
	120	140	185	

HC Coated carbide
HT Uncoated carbide, main component (TiC) o. (TiN), cermet
HC_1 Coated cermet
HW Uncoated carbide, main component (WC)

Indexable milling – group 5 (SMP01/03/05)

Material group		Composition / structure / heat treatment		HB	Machining group	Starting values for cutting speed v_c [m/min]			
						HC (CVD)		HC (PVD)	
						YBC302	YBM253	YBG101	YB9320
						a_e / D 1/4	a_e / D 1/4	a_e / D 1/4	a_e / D 1/4
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	165	180	190	175
		approx. 0,45 % C	annealed	190	2	145	155	165	150
		approx. 0,45 % C	tempered	250	3	135	145	155	140
		approx. 0,75 % C	annealed	270	4	120	130	135	125
		approx. 0,75 % C	tempered	300	5	110	120	125	115
	Low-alloyed steel		annealed	180	6	145	155	165	150
			tempered	275	7	120	130	135	125
			tempered	300	8	110	120	125	115
			tempered	350	9	95	100	105	100
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	85	90	95	90
			hardened and tempered	325	11	60	65	70	65
M	Stainless steel	ferritic/martensitic	annealed	200	12		90	95	90
		martensitic	tempered	240	13		80	80	75
		austenitic	quench hardened	180	14		100	105	95
		austenitic-ferritic		230	15		80	80	75
K	Grey cast iron	perlitic/ferritic		180	16			215	190
		perlitic (martensitic)		260	17			125	115
	Cast iron with spheroidal graphite	ferritic		160	18			145	135
		perlitic		250	19			95	90
	Malleable cast iron	ferritic		130	20			175	160
		perlitic		230	21			115	105
N	Aluminium wrought alloys	cannot be hardened		60	22				
		hardenable	hardened	100	23				
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24				
		≤ 12 % Si, hardenable	hardened	90	25				
		> 12 % Si, cannot be hardened		130	26				
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27				
		CuZn, CuSnZn		90	28				
		CuSn, Pb-free copper, electrolytic copper		100	29				
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30				
			hardened	280	31				
		Ni or Co bass	annealed	250	32				
			hardened	350	33				
			cast	320	34				
	Titanium alloys	pure titanium		R_m 400	35				
		α and β alloys	hardened	R_m 1050	36				
H	Hardened steel		hardened and tempered	55 HRC	37				
			hardened and tempered	60 HRC	38				
	Hard cast iron		cast	400	39				
	Hardened cast iron		hardened and tempered	55 HRC	40				
X	Non-metallic materials	Thermoplasts			41				
		Thermosetting plastics			42				
		Plastic, glass-fibre reinforced GFRP			43				
		Plastic, carbon fibre reinforced CFRP			44				
		Graphite			45				
		Wood			46				

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B248.
For examples of material for cutting tool groups view page D22.

	Starting values for cutting speed v_c [m/min]		
	HC (PVD)		
	YBG205	YBG302	
	a_e / D	a_e / D	
	1/4	1/4	
	170	160	
	145	140	
	140	130	
	120	115	
	115	105	
	145	140	
	120	115	
	115	105	
	95	90	
	85	80	
	60	60	
	85	80	
	75	70	
	95	85	
	75	70	
	185	175	
	115	105	
	130	120	
	85	80	
	155	145	
	105	100	

Indexable milling – group 6 (FMD03, FME04, FMP03, HMP01)

Material group		Composition / structure / heat treatment		HB	Machining group	Starting values for cutting speed v_c [m/min]							
						HC (CVD)							
						YBC302		YBC401		YBD152		YBD252	
						a_e / D		a_e / D		a_e / D		a_e / D	
						1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	200	230	170	200				
		approx. 0,45 % C	annealed	190	2	170	200	145	170				
		approx. 0,45 % C	tempered	250	3	160	185	140	160				
		approx. 0,75 % C	annealed	270	4	140	165	120	140				
		approx. 0,75 % C	tempered	300	5	130	150	115	130				
	Low-alloyed steel		annealed	180	6	170	200	145	170				
			tempered	275	7	140	165	120	140				
			tempered	300	8	130	150	115	130				
			tempered	350	9	110	130	95	110				
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	100	115	85	100				
			hardened and tempered	325	11	70	85	60	70				
M	Stainless steel	ferritic/martensitic	annealed	200	12								
		martensitic	tempered	240	13								
		austenitic	quench hardened	180	14								
		austenitic-ferritic		230	15								
K	Grey cast iron	perlitic/ferritic		180	16					255	295	220	255
		perlitic (martensitic)		260	17					150	175	130	150
	Cast iron with spheroidal graphite	ferritic		160	18					175	205	150	175
		perlitic		250	19					115	135	100	115
	Malleable cast iron	ferritic		130	20					210	245	180	210
		perlitic		230	21					140	165	120	140
N	Aluminium wrought alloys	cannot be hardened		60	22								
		hardenable	hardened	100	23								
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24								
		≤ 12 % Si, hardenable	hardened	90	25								
		> 12 % Si, cannot be hardened		130	26								
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27								
		CuZn, CuSnZn		90	28								
		CuSn, Pb-free copper, electrolytic copper		100	29								
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37								
			hardened and tempered	60 HRC	38								
	Hard cast iron		cast	400	39								
	Hardened cast iron		hardened and tempered	55 HRC	40								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B248.
For examples of material for cutting tool groups view page D22.

	Starting values for cutting speed v_c [m/min]																
	HC (CVD)		HC (PVD)														
	YBM253		YBG102		YBG152		YB9320		YBG205		YBG212		YBG252		YBG302		
	a_e / D		a_e / D		a_e / D		a_e / D		a_e / D		a_e / D		a_e / D		a_e / D		
	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	1/1 | 3/4	1/5	
	200	230	205	240	195	225	190	220	185	215	185	215	180	210	175	205	
	170	200	175	205	170	195	165	190	160	185	160	185	155	180	150	175	
	160	185	165	195	160	180	155	180	150	175	150	175	145	170	140	165	
	140	165	145	170	140	160	135	155	130	155	130	155	130	150	125	145	
	130	150	135	160	130	150	125	145	125	140	125	140	120	140	115	135	
	170	200	175	205	170	195	165	190	160	185	160	185	155	180	150	175	
	140	165	145	170	140	160	135	155	130	155	130	155	130	150	125	145	
	130	150	135	160	130	150	125	145	125	140	125	140	120	140	115	135	
	110	130	115	135	110	125	105	125	105	120	105	120	100	120	100	115	
	100	115	105	120	100	115	95	110	95	110	95	110	90	105	90	105	
	70	85	75	85	70	80	70	80	65	80	65	80	65	75	65	75	
	100	115	105	120	100	115	95	110	95	110	95	110	90	105	90	105	
	85	100	90	105	85	95	80	95	80	95	80	95	80	90	75	90	
	110	125	110	130	105	120	105	120	100	115	100	115	100	115	95	110	
	85	100	90	105	85	95	80	95	80	95	80	95	80	90	75	90	
			230	265	215	250	210	245	205	240	205	240	200	230	195	225	
			135	160	130	150	125	145	125	140	125	140	120	140	115	135	
			155	180	150	170	145	165	140	165	140	165	135	160	135	155	
			105	120	100	115	95	110	95	110	95	110	90	105	90	105	
			185	220	180	205	175	200	170	195	170	195	165	190	160	185	
			125	145	120	135	115	135	115	130	115	130	110	130	105	125	

HC Coated carbide
HT Uncoated carbide, main component (TiC) o. (TiN), cermet
HC_1 Coated cermet
HW Uncoated carbide, main component (WC)

Indexable milling – group 7 (XMR01, XMP01)

Material group		Composition / structure / heat treatment		HB	Machining group	Starting values for cutting speed v_c [m/min] HC (CVD) YBC302 a_e / D 1/1 | 3/4	YBC302 a_e / D 1/5	YBC302 a_e / D 1/20	YBD152 a_e / D 1/1 | 3/4	YBD152 a_e / D 1/5	YBD152 a_e / D 1/20
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	260	300	390			
		approx. 0,45 % C	annealed	190	2	225	255	335			
		approx. 0,45 % C	tempered	250	3	210	240	315			
		approx. 0,75 % C	annealed	270	4	185	210	275			
		approx. 0,75 % C	tempered	300	5	170	195	255			
	Low-alloyed steel		annealed	180	6	225	255	335			
			tempered	275	7	185	210	275			
			tempered	300	8	170	195	255			
			tempered	350	9	145	165	215			
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	130	150	195			
			hardened and tempered	325	11	95	105	140			
M	Stainless steel	ferritic/martensitic	annealed	200	12						
		martensitic	tempered	240	13						
		austenitic	quench hardened	180	14						
		austenitic-ferritic		230	15						
K	Grey cast iron	perlitic/ferritic		180	16				335	390	510
		perlitic (martensitic)		260	17				200	230	300
	Cast iron with spheroidal graphite	ferritic		160	18				225	260	340
		perlitic		250	19				150	175	230
	Malleable cast iron	ferritic		130	20				275	320	420
		perlitic		230	21				185	215	280
N	Aluminium wrought alloys	cannot be hardened		60	22						
		hardenable	hardened	100	23						
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24						
		≤ 12 % Si, hardenable	hardened	90	25						
		> 12 % Si, cannot be hardened		130	26						
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27						
		CuZn, CuSnZn		90	28						
		CuSn, Pb-free copper, electrolytic copper		100	29						
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30						
			hardened	280	31						
		Ni or Co bass	annealed	250	32						
			hardened	350	33						
			cast	320	34						
	Titanium alloys	pure titanium		R_m 400	35						
		α and β alloys	hardened	R_m 1050	36						
H	Hardened steel		hardened and tempered	55 HRC	37						
			hardened and tempered	60 HRC	38						
	Hard cast iron		cast	400	39						
	Hardened cast iron		hardened and tempered	55 HRC	40						
X	Non-metallic materials	Thermoplasts			41						
		Thermosetting plastics			42						
		Plastic, glass-fibre reinforced GFRP			43						
		Plastic, carbon fibre reinforced CFRP			44						
		Graphite			45						
		Wood			46						

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B248.
For examples of material for cutting tool groups view page D22.

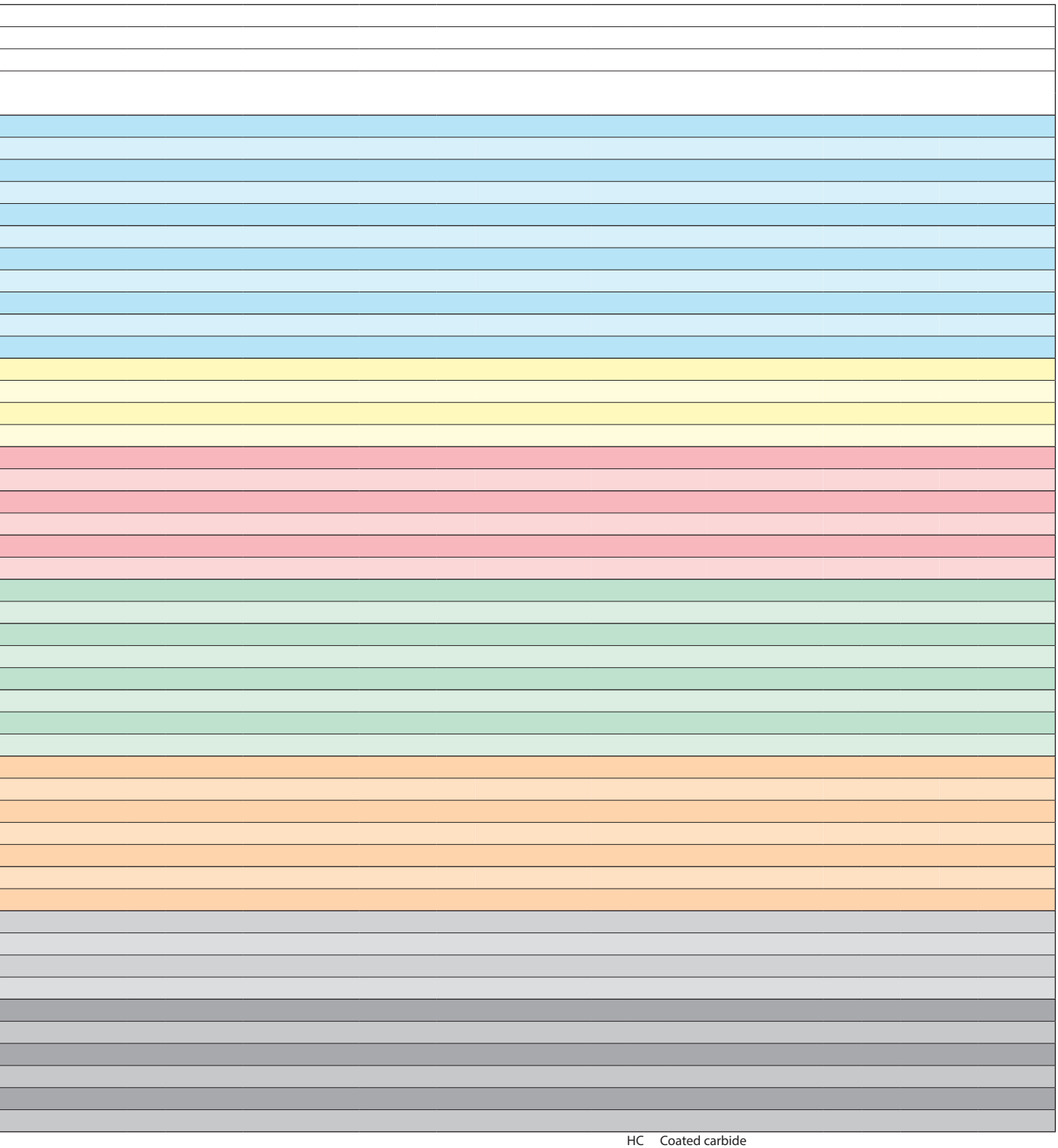
	Starting values for cutting speed v_c [m/min]																				
	HC (CVD)						HC (PVD)														
	YBD252			YBM253			YBG102			YBG152			YB9320			YBG205			YBG212		
	a_e / D			a_e / D			a_e / D			a_e / D			a_e / D			a_e / D			a_e / D		
	1/1 | 3/4	1/5	1/20	1/1 | 3/4	1/5	1/20	1/1 | 3/4	1/5	1/20	1/1 | 3/4	1/5	1/20	1/1 | 3/4	1/5	1/20	1/1 | 3/4	1/5	1/20	1/1 | 3/4	1/5	1/20
				260	300	390	270	315	410	255	295	385	245	285	375	235	275	360	240	280	365
				225	255	335	230	270	355	220	255	335	210	245	320	200	235	310	205	240	315
				210	240	315	220	255	335	205	240	315	200	230	300	190	220	290	195	225	295
				185	210	275	190	225	295	180	210	275	175	200	260	165	195	255	170	200	260
				170	195	255	180	205	270	170	195	255	160	190	250	155	180	235	160	185	245
				225	255	335	230	270	355	220	255	335	210	245	320	200	235	310	205	240	315
				185	210	275	190	225	295	180	210	275	175	200	260	165	195	255	170	200	260
				170	195	255	180	205	270	170	195	255	160	190	250	155	180	235	160	185	245
				145	165	215	150	175	230	145	165	215	135	160	210	130	155	205	135	155	205
				130	150	195	135	160	210	130	150	195	125	145	190	120	140	185	120	140	185
				95	105	140	95	115	150	90	105	140	90	100	130	85	100	130	85	100	130
				130	150	195	135	160	205	130	150	195	125	145	190	120	140	180	120	140	185
				110	130	165	115	135	175	110	125	165	105	120	160	100	120	155	105	120	155
				140	160	210	145	170	220	140	160	205	130	155	200	125	150	195	130	150	195
				110	130	165	115	135	175	110	125	165	105	120	160	100	120	155	105	120	155
	290	335	440				300	345	450	285	330	430	270	315	410	260	300	390	265	305	400
	170	195	255				180	205	270	170	195	255	160	190	250	155	180	235	160	185	245
	195	225	295				205	240	315	195	225	295	185	215	280	180	210	275	180	210	275
	130	150	195				135	160	210	130	150	195	125	145	190	120	140	185	120	140	185
	235	270	355				245	285	375	230	270	355	225	260	340	215	250	325	220	255	335
	160	180	235				165	190	250	155	180	235	150	175	230	145	165	215	145	170	225

HC Coated carbide
HT Uncoated carbide, main component (TiC) o. (TiN), cermet
HC_1 Coated cermet
HW Uncoated carbide, main component (WC)

Indexable milling – group 7 (XMR01, XMP01)

Material group		Composition / structure / heat treatment		HB	Machining group	Starting values for cutting speed v_c [m/min] HC (PVD) YBG252 a_e / D 1/1 | 3/4	YBG252 a_e / D 1/5	YBG252 a_e / D 1/20	YBG302 a_e / D 1/1 | 3/4	YBG302 a_e / D 1/5	YBG302 a_e / D 1/20
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	230	265	345	225	260	340
		approx. 0,45 % C	annealed	190	2	200	230	300	195	225	295
		approx. 0,45 % C	tempered	250	3	185	215	280	180	210	275
		approx. 0,75 % C	annealed	270	4	165	190	250	160	185	245
		approx. 0,75 % C	tempered	300	5	150	175	230	150	170	225
	Low-alloyed steel		annealed	180	6	200	230	300	195	225	295
			tempered	275	7	165	190	250	160	185	245
			tempered	300	8	150	175	230	150	170	225
			tempered	350	9	130	150	195	125	145	190
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	115	135	180	115	130	170
			hardened and tempered	325	11	85	95	125	80	95	125
M	Stainless steel	ferritic/martensitic	annealed	200	12	115	135	175	115	130	170
		martensitic	tempered	240	13	100	115	145	95	110	145
		austenitic	quench hardened	180	14	125	145	185	120	140	185
		austenitic-ferritic		230	15	100	115	145	95	110	145
K	Grey cast iron	perlitic/ferritic		180	16	255	295	385	250	290	380
		perlitic (martensitic)		260	17	150	175	230	150	170	225
	Cast iron with spheroidal graphite	ferritic		160	18	175	200	260	170	195	255
		perlitic		250	19	115	135	180	115	130	170
	Malleable cast iron	ferritic		130	20	210	240	315	205	235	310
		perlitic		230	21	140	160	210	135	160	210
N	Aluminium wrought alloys	cannot be hardened		60	22						
		hardenable	hardened	100	23						
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24						
		≤ 12 % Si, hardenable	hardened	90	25						
		> 12 % Si, cannot be hardened		130	26						
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27						
		CuZn, CuSnZn		90	28						
		CuSn, Pb-free copper, electrolytic copper		100	29						
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30						
			hardened	280	31						
		Ni or Co bass	annealed	250	32						
			hardened	350	33						
			cast	320	34						
	Titanium alloys	pure titanium		R_m 400	35						
		α and β alloys	hardened	R_m 1050	36						
H	Hardened steel		hardened and tempered	55 HRC	37						
			hardened and tempered	60 HRC	38						
	Hard cast iron		cast	400	39						
	Hardened cast iron		hardened and tempered	55 HRC	40						
X	Non-metallic materials	Thermoplasts			41						
		Thermosetting plastics			42						
		Plastic, glass-fibre reinforced GFRP			43						
		Plastic, carbon fibre reinforced CFRP			44						
		Graphite			45						
		Wood			46						

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B248.
For examples of material for cutting tool groups view page D22.



HC Coated carbide
HT Uncoated carbide, main component (TiC) o. (TiN), cermet
HC_1 Coated cermet
HW Uncoated carbide, main component (WC)

Recommended feed rate

Indexable milling – group1 (FMA07/11/12, FMD02, EMP09/13)

Material group		Feed rate per cutting edge [mm]																	
		EMP09			EMP09			EMP13			EMP13			FMA07			FMA07		
		LNKT08/12			LNKT16			ANGX11			ANGX15			ONHU06			ONHU08		
		Application																	
		F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R
P	Unalloyed steel		0,25	0,50		0,28	0,55		0,23			0,25		0,19	0,23		0,19	0,23	
	Low-alloyed steel		0,23	0,47		0,26	0,51		0,22			0,23		0,17	0,22		0,17	0,22	
	High-alloyed steel and high-alloyed tool steel		0,22	0,44		0,24	0,48		0,20			0,22		0,16	0,20		0,16	0,20	
M	Stainless steel		0,18	0,35		0,19	0,39		0,16			0,18							
K	Grey cast iron		0,28	0,55		0,30	0,61		0,26			0,28		0,20	0,26		0,20	0,26	
	Cast iron with spheroidal graphite		0,25	0,50		0,28	0,55		0,23			0,25		0,19	0,23		0,19	0,23	
	Malleable cast iron		0,25	0,50		0,28	0,55		0,23			0,25		0,19	0,23		0,19	0,23	
N	Aluminum wrought alloys								0,20			0,21							
	Aluminum cast alloys								0,20			0,21							
	Copper and copper alloys (bronze/brass)								0,18			0,19							
S	Heat-resistant alloys																		
	Titanium alloys																		
H	Hardened steel																		
	Hard cast iron																		
	Hardened cast iron																		
X	Non-metallic materials																		

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

Indexable milling – group 2 (FMA01/02/03/04, FME01/02, EMP01/02/03/04)

Material group		Feed rate per cutting edge [mm]																	
		FMA01 | FMA02			FMA03			FMA03			FMA04			FMA04			FME02		
		SEET12			SEKN12			SEKN15			OFKT05			OFKR07			SPK*12		
		Application																	
		F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R
P	Unalloyed steel	0,15	0,20	0,25		0,18			0,20		0,20	0,25		0,20	0,25			0,20	
	Low-alloyed steel	0,14	0,19	0,23		0,17			0,19		0,19	0,23		0,19	0,23			0,19	
	High-alloyed steel and high-alloyed tool steel	0,13	0,18	0,22		0,16			0,18		0,18	0,22		0,18	0,22			0,18	
M	Stainless steel	0,11	0,14	0,18		0,13			0,14		0,14	0,18		0,14	0,18			0,14	
K	Grey cast iron	0,17	0,22	0,28		0,20			0,22		0,22	0,28		0,22	0,28			0,22	
	Cast iron with spheroidal graphite	0,15	0,20	0,25		0,18			0,20		0,20	0,25		0,20	0,25			0,20	
	Malleable cast iron	0,15	0,20	0,25		0,18			0,20		0,20	0,25		0,20	0,25			0,20	
N	Aluminium wrought alloys	0,13	0,17	0,21							0,17	0,21		0,17	0,21				
	Aluminum cast alloys	0,13	0,17	0,21							0,17	0,21		0,17	0,21				
	Copper and copper alloys (bronze/brass)	0,11	0,15	0,19							0,15	0,19		0,15	0,19				
S	Heat-resistant alloys	0,11	0,14	0,18							0,14	0,18		0,14	0,18				
	Titanium alloys	0,11	0,14	0,18							0,14	0,18		0,14	0,18				
H	Hardened steel																		
	Hard cast iron																		
	Hardened cast iron																		
X	Non-metallic materials																		

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

	Feed rate per cutting edge [mm]																							
	FMA11			FMA11			FMA11			FMA12			FMD02			FMD02			FMP12			FMP12		
	SNEG12			SNEG15			SNEG19			ONHU08			PNEG11			HNEX09			WNHU06			WNHU08		
	Application																							
	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R
		0,20	0,23		0,22	0,25			0,29		0,23		0,15	0,20	0,30					0,23			0,25	
		0,19	0,21		0,20	0,24			0,27		0,22		0,14	0,19	0,28					0,22			0,23	
		0,18	0,20		0,19	0,22			0,26		0,20		0,13	0,18	0,26					0,20			0,22	
		0,14	0,16		0,15	0,18			0,20		0,16									0,16			0,18	
		0,22	0,25		0,24	0,28			0,32		0,26		0,17	0,22	0,33	0,17	0,22	0,33		0,26			0,28	
		0,20	0,23		0,22	0,25			0,29		0,23		0,15	0,20	0,30	0,15	0,20	0,30		0,23			0,25	
		0,20	0,23		0,22	0,25			0,29		0,23		0,15	0,20	0,30	0,15	0,20	0,30		0,23			0,25	

F Finishing
M Medium machining
R Roughing

	Feed rate per cutting edge [mm]																					
	FME03			FME03			FMP01			FMP02			EMP01 | EMP02			EMP01 | EMP02			EMP03 | EMP04			
	SPK*12			SPK*15			TPKN22			SEET12			APKT11			APKT16			APKT11			
	Application																					
	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	
		0,19			0,20			0,20		0,15	0,20	0,25	0,10	0,15	0,20	0,12	0,17	0,23	0,10	0,20	0,25	
		0,17			0,19			0,19		0,14	0,19	0,23	0,09	0,14	0,19	0,11	0,16	0,21	0,09	0,19	0,23	
		0,16			0,18			0,18		0,13	0,18	0,22	0,09	0,13	0,18	0,10	0,15	0,20	0,09	0,18	0,22	
		0,13			0,14			0,14		0,11	0,14	0,18	0,07	0,11	0,14	0,08	0,12	0,16	0,07	0,14	0,18	
		0,20			0,22			0,22		0,17	0,22	0,28	0,11	0,17	0,22	0,13	0,19	0,25	0,11	0,22	0,28	
		0,19			0,20			0,20		0,15	0,20	0,25	0,10	0,15	0,20	0,12	0,17	0,23	0,10	0,20	0,25	
		0,19			0,20			0,20		0,15	0,20	0,25	0,10	0,15	0,20	0,12	0,17	0,23	0,10	0,20	0,25	
										0,13	0,17	0,21	0,09	0,13	0,17	0,10	0,15	0,20	0,09	0,17	0,21	
										0,13	0,17	0,21	0,09	0,13	0,17	0,10	0,15	0,20	0,09	0,17	0,21	
										0,11	0,15	0,19	0,08	0,11	0,15	0,09	0,13	0,18	0,08	0,15	0,19	

F Finishing
M Medium machining
R Roughing

Recommended feed rate

Indexable milling – group 3 (FMR01/02/03/04) Face milling

Material group		Feed rate per cutting edge [mm]																	
		FMR01			FMR01			FMR02			FMR02			FMR02			FMR03		
		RCKT10			RC*12			RC*12			RCKT16			RCKT20			RDKW07		
		Application																	
		F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R
P	Unalloyed steel		0,20	0,25		0,20	0,25		0,20	0,25		0,23	0,29		0,26	0,33		0,17	
	Low-alloyed steel		0,19	0,23		0,19	0,23		0,19	0,23		0,21	0,27		0,25	0,31		0,16	
	High-alloyed steel and high-alloyed tool steel		0,18	0,22		0,18	0,22		0,18	0,22		0,20	0,25		0,23	0,29		0,15	
M	Stainless steel		0,14	0,18		0,14	0,18		0,14	0,18		0,16	0,20		0,19	0,23		0,12	
K	Grey cast iron		0,22	0,28		0,22	0,28		0,22	0,28		0,25	0,32		0,29	0,36		0,19	
	Cast iron with spheroidal graphite		0,20	0,25		0,20	0,25		0,20	0,25		0,23	0,29		0,26	0,33		0,17	
	Malleable cast iron		0,20	0,25		0,20	0,25		0,20	0,25		0,23	0,29		0,26	0,33		0,17	
N	Aluminum wrought alloys					0,17	0,21		0,17	0,21									
	Aluminum cast alloys					0,17	0,21		0,17	0,21									
	Copper and copper alloys (bronze/brass)					0,15	0,19		0,15	0,19									
S	Heat-resistant alloys																		
	Titanium alloys																		
H	Hardened steel																		
	Hard cast iron																		
	Hardened cast iron																		
X	Non-metallic materials																		

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

Indexable milling – group 3 (FMR01/02/03/04) Circular milling

Material group		Feed rate per cutting edge [mm]							
		FMR01	FMR01	FMR02	FMR02		FMR02		FMR03
		RCKT10	RC*12	RC*12	RCKT16		RCKT20		RDKW07
		Tool diameter [mm]							
		25-32	40-50	50-100	63-125	160-200	80-125	160-250	15
P	Unalloyed steel	0,12	0,16	0,18	0,24	0,32	0,26	0,35	0,07
	Low-alloyed steel	0,11	0,14	0,16	0,21	0,28	0,23	0,31	0,06
	High-alloyed steel and high-alloyed tool steel	0,10	0,13	0,14	0,19	0,26	0,21	0,28	0,06
M	Stainless steel	0,07	0,09	0,10	0,14	0,18	0,15	0,20	0,04
K	Grey cast iron	0,11	0,14	0,16	0,22	0,29	0,23	0,32	0,06
	Cast iron with spheroidal graphite	0,10	0,13	0,14	0,19	0,26	0,21	0,28	0,06
	Malleable cast iron	0,10	0,13	0,14	0,19	0,26	0,21	0,28	0,06
N	Aluminium wrought alloys								
	Aluminum cast alloys								
	Copper and copper alloys (bronze/brass)								
S	Heat-resistant alloys								
	Titanium alloys								
H	Hardened steel								
	Hard cast iron								
	Hardened cast iron								
X	Non-metallic materials								

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

	Feed rate per cutting edge [mm]															
	FMR03			FMR03			FMR04			FMR04			FMR04			
	RDKW08			RD*10			RD*12			RDKW16			RDKW20			
	Application															
	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	
		0,17			0,20		0,15	0,20	0,25	0,17	0,23	0,29	0,2	0,26	0,33	
		0,16			0,19		0,14	0,19	0,23	0,16	0,21	0,27	0,19	0,25	0,31	
		0,15			0,18		0,13	0,18	0,22	0,15	0,20	0,25	0,18	0,23	0,29	
		0,12			0,14		0,11	0,14	0,18	0,12	0,16	0,20	0,14	0,19	0,23	
		0,19			0,22		0,17	0,22	0,28	0,19	0,25	0,32	0,22	0,29	0,36	
		0,17			0,20		0,15	0,20	0,25	0,17	0,23	0,29	0,20	0,26	0,33	
		0,17			0,20		0,15	0,20	0,25	0,17	0,23	0,29	0,20	0,26	0,33	
					0,17		0,13	0,17	0,21							
					0,17		0,13	0,17	0,21							
					0,15		0,11	0,15	0,19							

F Finishing
M Medium machining
R Roughing

	Feed rate per cutting edge [mm]					
	FMR03	FMR03	FMR04	FMR04	FMR04	
	RDKW08	RD*10	RD*12	RDKW16	RDKW20	
	Tool diameter [mm]					
	16-25	32	50-63	80-100	125-160	
	0,07	0,12	0,17	0,24	0,30	
	0,06	0,11	0,15	0,21	0,26	
	0,06	0,10	0,14	0,19	0,24	
	0,04	0,07	0,10	0,14	0,17	
	0,06	0,11	0,15	0,22	0,27	
	0,06	0,10	0,14	0,19	0,24	
	0,06	0,10	0,14	0,19	0,24	
		0,10	0,11			
		0,10	0,11			
		0,10	0,11			

Recommended feed rate

Indexable milling – group 4 (BMR01/02/03/04, TMP01, CMZ01, CMA01, CMD01)

Material group		Feed rate per cutting edge [mm]								
		BMR01	BMR01	BMR01	BMR01	BMR02	BMR02	BMR02	BMR03	BMR03
		ZD*08 / SP*06	ZD*11 / SP*06	ZD*13 / SP*09	ZP*22 / SP*12	ROHX12	ROHX16	ROHX20	-	-
		Tool diameter [mm]								
		20	25	32	40-63	12	16	20	16	20
P	Unalloyed steel	0,14	0,21	0,26	0,32	0,10	0,13	0,14	0,13	0,14
P	Low-alloyed steel	0,10	0,15	0,18	0,22	0,07	0,09	0,10	0,09	0,10
P	High-alloyed steel and high-alloyed tool steel	0,09	0,14	0,17	0,21	0,07	0,08	0,09	0,08	0,09
M	Stainless steel	0,08	0,12	0,14	0,18	0,06	0,07	0,08	0,07	0,08
K	Grey cast iron	0,18	0,27	0,34	0,42	0,13	0,17	0,18	0,17	0,18
K	Cast iron with spheroidal graphite	0,13	0,20	0,25	0,30	0,10	0,12	0,13	0,12	0,13
K	Malleable cast iron	0,14	0,21	0,26	0,32	0,10	0,13	0,14	0,13	0,14
N	Aluminum wrought alloys									
N	Aluminum cast alloys									
N	Copper and copper alloys (bronze/brass)									
S	Heat-resistant alloys									
S	Titanium alloys									
H	Hardened steel									
H	Hard cast iron									
H	Hardened cast iron									
X	Non-metallic materials									

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

Indexable milling – group 5 (SMP01/03/05)

Material group		Feed rate per cutting edge [mm]								
		SMP01	SMP01	SMP01	SMP01	SMP01	SMP03	SMP03	SMP03	SMP05
		XSEQ1202	XSEQ1203	XSEQ12T3	XSEQ1204	XSEQ12T4	MPHT06	MPHT08	MPHT12	QC16
		Tool diameter [mm]								
		63-100	63-100	63-160	63-160	63-160	80-125	125-200	120-200	25-39
P	Unalloyed steel	0,12	0,12	0,13	0,13	0,14	0,14	0,15	0,16	0,08
P	Low-alloyed steel	0,11	0,11	0,12	0,12	0,13	0,13	0,14	0,15	0,08
P	High-alloyed steel and high-alloyed tool steel	0,10	0,10	0,11	0,11	0,12	0,12	0,13	0,14	0,07
M	Stainless steel	0,10	0,10	0,11	0,11	0,12	0,12	0,13	0,14	0,07
K	Grey cast iron	0,11	0,11	0,12	0,12	0,13	0,13	0,14	0,15	0,08
K	Cast iron with spheroidal graphite	0,11	0,11	0,12	0,12	0,13	0,13	0,14	0,15	0,07
K	Malleable cast iron	0,11	0,11	0,12	0,12	0,13	0,13	0,14	0,15	0,07
N	Aluminium wrought alloys									
N	Aluminum cast alloys									
N	Copper and copper alloys (bronze/brass)									
S	Heat-resistant alloys									
S	Titanium alloys									
H	Hardened steel									
H	Hard cast iron									
H	Hardened cast iron									
X	Non-metallic materials									

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

	Feed rate per cutting edge [mm]											
	BMR03	BMR03	BMR03	BMR04	BMR04	BMR04	BMR04	BMR04	CMZ01	CMA01	CMD01	
	-	-	-	ZOHX12	ZOHX16	ZOHX20	ZOHX25	ZOHX30	SPMT12	SPMT12	SPMT12	
	Tool diameter [mm]											
	25	30-32	40-50	12	16	20	25	30	12-32	12-32	12-36	
	0,21	0,26	0,30	0,10	0,13	0,14	0,16	0,17	0,23	0,23	0,23	
	0,15	0,18	0,21	0,07	0,09	0,10	0,11	0,12	0,16	0,16	0,16	
	0,14	0,17	0,20	0,07	0,08	0,09	0,10	0,11	0,15	0,15	0,15	
	0,12	0,14	0,17	0,06	0,07	0,08	0,09	0,09	0,13	0,13	0,13	
	0,27	0,34	0,39	0,13	0,17	0,18	0,21	0,22	0,30	0,30	0,30	
	0,20	0,25	0,29	0,10	0,12	0,13	0,15	0,16	0,22	0,22	0,22	
	0,21	0,26	0,30	0,10	0,13	0,14	0,16	0,17	0,23	0,23	0,23	

	Feed rate per cutting edge [mm]	
	SMP05	
	QC22	
	Tool diameter [mm]	
	44	
	0,08	
	0,08	
	0,07	
	0,07	
	0,08	
	0,07	
	0,07	

Recommended feed rate

Indexable milling – group 6 (FMD03, FME04, FMP03, HMP01)

Material group		Feed rate per cutting edge [mm]																	
		FMD03			FMD03			FME04			FMP03			FMP03			FMP03		
		LNKT20			LNKT25			LNKT15			LNKT12			LNKT15			LNKT20		
		Application																	
		F	M	R	F	M	R	F	M	R	F	M	R	F	M	R	F	M	R
P	Unalloyed steel			0,50			0,50			0,45			0,45			0,45			0,50
P	Low-alloyed steel			0,47			0,47			0,42			0,42			0,42			0,47
P	High-alloyed steel and high-alloyed tool steel			0,44			0,44			0,40			0,40			0,40			0,44
M	Stainless steel			0,45			0,45			0,40			0,40			0,40			0,45
K	Grey cast iron			0,55			0,55			0,50			0,50			0,50			0,55
K	Cast iron with spheroidal graphite			0,50			0,50			0,45			0,45			0,45			0,50
K	Malleable cast iron			0,50			0,50			0,45			0,45			0,45			0,50
N	Aluminum wrought alloys																		
N	Aluminum cast alloys																		
N	Copper and copper alloys (bronze/brass)																		
S	Heat-resistant alloys																		
S	Titanium alloys																		
H	Hardened steel																		
H	Hard cast iron																		
H	Hardened cast iron																		
X	Non-metallic materials																		

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

Indexable milling – group7 (XMR01, XMP01)

Material group		Feed rate per cutting edge [mm]								
		XMR01 face milling			XMR01 plunge milling			XMR01 circular milling		
		SDMT/WPGT			SDMT/WPGT			SDMT/WPGT		
		Tool diameter [mm]								
		20-25	30-50	63-160	20-25	30-50	63-160	20-25	30-50	63-160
P	Unalloyed steel	1,00	1,20	2,00	0,20	0,25	0,30	0,80	0,96	1,40
P	Low-alloyed steel	0,93	1,12	1,86	0,19	0,23	0,28	0,74	0,89	1,30
P	High-alloyed steel and high-alloyed tool steel	0,70	0,84	1,40	0,18	0,22	0,26	0,70	0,84	1,23
M	Stainless steel	0,50	0,60	1,00	0,14	0,18	0,21	0,56	0,67	0,98
K	Grey cast iron	0,90	1,08	1,80	0,22	0,28	0,33	0,88	1,06	1,54
K	Cast iron with spheroidal graphite	0,90	1,08	1,80	0,20	0,25	0,30	0,80	0,96	1,40
K	Malleable cast iron	1,00	1,20	2,00	0,20	0,25	0,30	0,80	0,96	1,40
N	Aluminium wrought alloys									
N	Aluminum cast alloys									
N	Copper and copper alloys (bronze/brass)									
S	Heat-resistant alloys									
S	Titanium alloys									
H	Hardened steel									
H	Hard cast iron									
H	Hardened cast iron									
X	Non-metallic materials									

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

	Feed rate per cutting edge [mm]						
	FMP03			HMP01			
	LNKT25			SPMT-APKT			
	Application						
	F	M	R	F	M	R	
			0,55		0,25		
			0,51		0,23		
			0,48		0,22		
			0,47		0,15		
			0,61		0,28		
			0,55		0,25		
			0,55		0,25		

F Finishing
M Medium machining
R Roughing

	Feed rate per cutting edge [mm]							
	XMP01	QCH	QCH	QCH	QCH	QCH	QCH	
	CNE	ZOHX	RD*	APKT	WPGT	SDMT	XPHT	
	Tool diameter [mm]							
	80-400	16-32	15-32	16-40	20-42	20-40	16-32	
	0,20	0,20	0,20	0,15	1,00	1,00	0,20	
	0,20	0,19	0,19	0,14	0,93	0,93	0,19	
	0,20	0,18	0,18	0,13	0,70	0,70	0,18	
	0,20	0,14	0,14	0,11	0,50	0,50	0,14	
	0,20	0,22	0,22	0,17	0,90	0,90	0,22	
	0,20	0,20	0,20	0,15	0,90	0,90	0,20	
	0,20	0,20	0,20	0,15	1,00	1,00	0,20	
				0,13				
				0,13				
				0,11				

Notes

Solid carbide milling

Product overview	**B258-B265**
Grade overview	**B266**
System code – DIN-ISO series	**B268**
System code – JIS series	**B269**
GM series	**B271-B328**
PM series	**B329-B352**
HM series	**B353-B376**
NM series	**B377-B384**
AL series	**B385-B406**
HPC series	**B407-B414**
UM series	**B415-B424**
VSM series	**B425-B430**
Deburring cutters – FM series	**B431-B435**
Recommended cutting data	**B436-B462**
Technical information	**B473-B476**
Form nonstandard order	**B477**

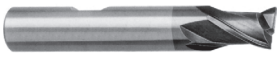
B

High performance milling

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
PM-2E		2	1.0-20.0	✓	✓	✓			✓	End mills	B330
PM-2EL		2	3.0-20.0	✓	✓	✓			✓	End mills	B331
PM-4E-G		4	1.0-20.0	✓	✓	✓			✓	End mills	B332
PM-4EL-G		4	3.0-20.0	✓	✓	✓			✓	End mills	B333
PM-4EX-G		4	3.0-20.0	✓	✓	✓			✓	End mills	B334
PM-4E		4	1.0-20.0	✓	✓	✓			✓	End mills	B335
PM-4EL		4	3.0-20.0	✓	✓	✓			✓	End mills	B336
PM-6E		6	6.0-20.0	✓	✓	✓			✓	End mills	B337
PM-6EL		6	6.0-20.0	✓	✓	✓			✓	End mills	B338
PM-2B		2	1.0-20.0	✓	✓	✓			✓	Ball nose cutters	B339
PM-2BL		2	2.0-20.0	✓	✓	✓			✓	Ball nose cutters	B340
PM-2BFP		2	1.0-20.0	✓	✓	✓			✓	Ball nose cutters	B341
PM-2BC		2	0.5-4.0	✓	✓	✓			✓	Ball nose cutter with conical neck	B342
PM-4B		4	3.0-20.0	✓	✓	✓			✓	Ball nose cutters	B345
PM-4BL		4	3.0-20.0	✓	✓	✓			✓	Ball nose cutters	B346
PM-2R		2	1.0-12.0	✓	✓	✓			✓	Torus mills	B347
PM-4R		4	3.0-12.0	✓	✓	✓			✓	Torus mills	B350
PM-4RL		4	6.0-16.0	✓	✓	✓			✓	Torus mills	B351
PM-4H		4	3.0-12.0	✓	✓	✓			✓	High-feed mills	B348
PM-4HL		4	4.0-12.0	✓	✓	✓			✓	High-feed mills	B349

✓ Very suitable ✓ Suitable

General machining

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
5501R302GM		2	3.0-20.0	✓	✓	✓				End mills	B272
5601R302GM		2	3.0-20.0	✓	✓	✓				End mills	B273
5502R302GM		2	1.0-20.0	✓	✓	✓				End mills	B274
5602R302GM		2	2.0-20.0	✓	✓	✓				End mills	B275
GM-2E		2	1.0-20.0	✓	✓	✓				End mills	B276
GM-2EL		2	3.0-20.0	✓	✓	✓				End mills	B277
GM-2EX		2	3.0-20.0	✓	✓	✓				End mills	B278
GM-2EFP		2	6.0-16.0	✓	✓	✓				End mills	B279
GM-2F		2	1.0-20.0	✓	✓	✓				End mills	B280
GM-2FL		2	3.0-20.0	✓	✓	✓				End mills	B281
GM-2EP		2	0.5-5.0	✓	✓	✓				Mini end mills	B282
GM-2ES		2	0.3-3.0	✓	✓	✓				Mini end mills	B284
GM-3E		3	1.0-20.0	✓	✓	✓				End mills	B285
GM-3EL		3	3.0-20.0	✓	✓	✓				End mills	B286
5501R303GM		3	3.0-20.0	✓	✓	✓				End mills	B287
5601R303GM		3	3.0-20.0	✓	✓	✓				End mills	B288
5502R303GM		3	3.0-20.0	✓	✓	✓				End mills	B289
5602R303GM		3	3.0-20.0	✓	✓	✓				End mills	B290
5502R453GM		3	3.0-20.0	✓	✓	✓				End mills	B291
5602R453GM		3	3.0-20.0	✓	✓	✓				End mills	B292
GM-4E-G		4	1.0-20.0	✓	✓	✓				End mills	B298

✓ Very suitable ✓ Suitable

General machining

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
GM-4F-G		4	1.0-20.0	✓	✓	✓				End mills	B293
GM-4EL-G		4	3.0-20.0	✓	✓	✓				End mills	B294
GM-4FL-G		4	3.0-16.0	✓	✓	✓				End mills	B295
GM-4EX-G		4	3.0-20.0	✓	✓	✓				End mills	B296
GM-4E		4	1.0-20.0	✓	✓	✓				End mills	B297
GM-4EL		4	3.0-20.0	✓	✓	✓				End mills	B299
GM-4EFP		4	6.0-20.0	✓	✓	✓				End mills	B300
5501R304GF		4	3.0-20.0	✓	✓	✓				End mills	B301
5601R304GF		4	3.0-20.0	✓	✓	✓				End mills	B302
5502R304GF		4	3.0-20.0	✓	✓	✓				End mills	B303
5602R304GF		4	3.0-20.0	✓	✓	✓				End mills	B304
5508R454GM		4	3.0-20.0	✓	✓	✓				End mills	B305
5602R454GM		4	3.0-20.0	✓	✓	✓				End mills	B306
5589R45MGF		6-10	6.0-20.0	✓	✓	✓				End mills	B307
GM-6E		6	6.0-20.0	✓	✓	✓				End mills	B308
GM-6EL		6	6.0-20.0	✓	✓	✓				End mills	B309
5565R302GF		2	3.0-20.0	✓	✓	✓				Ball nose cutters	B310
5665R202GM		2	3.0-20.0	✓	✓	✓				Ball nose cutters	B311
5566R302GF		2	3.0-12.0	✓	✓	✓				Ball nose cutters	B312
GM-2B		2	1.0-20.0	✓	✓	✓				Ball nose cutters	B313
GM-2BL		2	2.0-20.0	✓	✓	✓				Ball nose cutters	B314

✓ Very suitable ✓ Suitable

General machining

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
GM-2BFP		2	1.0-20.0	✔	✔	✔				Ball nose cutters	B315
GM-2BS		2	0.3-3.0	✔	✔	✔				Mini ball nose cutters	B316
GM-2BP		2	0.5-5.0	✔	✔	✔				Mini ball nose cutters	B317
GM-4B		4	3.0-20.0	✔	✔	✔				Ball nose cutters	B319
GM-4BL		4	3.0-20.0	✔	✔	✔				Ball nose cutters	B320
GM-2R		2	1.0-12.0	✔	✔	✔				Torus mills	B321
GM-4R		4	3.0-12.0	✔	✔	✔				Torus mills	B322
GM-4RL		4	6.0-16.0	✔	✔	✔				Torus mills	B323
5602R303GR		3	6.0-8.0	✔	✔	✔				Rippers	B324
5602R304GR		4	10.0-20.0	✔	✔	✔				Rippers	B325
5602R305GR		5	25.0	✔	✔	✔				Rippers	B326
GM-4W		4	6.0-20.0	✔	✔	✔				Rippers	B327

✔ Very suitable ✔ Suitable

Machining high hardness steel

HM-2E		2	1.0-20.0						✔	End mills	B354
HM-2EFP		2	6.0-20.0						✔	End mills	B355
HM-2EP		2	0.5-5.0						✔	Mini end mills	B356
HM-2ES		2	0.3-3.0						✔	Mini end mills	B358
HM-4E		4	1.0-20.0						✔	End mills	B359
HM-4EL		4	3.0-20.0						✔	End mills	B360
HM-4EFP		4	6.0-20.0						✔	End mills	B361
5502R55MHH		4-8	3.0-20.0						✔	End mills	B362

✔ Very suitable ✔ Suitable

Machining high hardness steel

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
HM-6E		6	6.0-20.0						✔	End mills	B363
HM-6EL		6	6.0-20.0						✔	End mills	B364
HM-2B		2	1.0-20.0						✔	Ball nose cutters	B365
HM-2BL		2	2.0-20.0						✔	Ball nose cutters	B366
HM-2BFP		2	1.0-20.0						✔	Ball nose cutters	B367
HM-2BS		2	0.3-3.0						✔	Mini ball nose cutters	B368
HM-2BP		2	0.5-5.0						✔	Mini ball nose cutters	B369
HM-4B		4	3.0-20.0						✔	Ball nose cutters	B371
HM-4BL		4	3.0-20.0						✔	Ball nose cutters	B372
HM-4R		4	3.0-12.0						✔	Torus mills	B373
HM-4RF		4	6.0-12.0						✔	Torus mills	B374
HM-4RP		4	6.0-16.0						✔	Torus mills	B375

✔ Very suitable ✔ Suitable

Copper and copper alloys

5502R402NM		2	3.0-20.0				✔			End mills	B378
NM-2E		2	1.0-12.0				✔			End mills	B379
NM-2EP		2	0.5-5.0				✔			Mini end mills	B380
NM-4E		4	3.0-12.0				✔			End mills	B381
NM-2B		2	1.0-12.0				✔			Ball nose cutters	B382
NM-2BP		2	0.5-5.0				✔			Mini ball nose cutters	B383

✔ Very suitable ✔ Suitable

Aluminium and aluminium alloys

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
AL-2E		2	1.0-20.0				✔			End mills	B386
AL-2EL		2	3.0-20.0				✔			End mills	B387
ALG-2E		2	1.0-20.0				✔			End mills	B388
ALG-2R		2	6.0-25.0				✔			Torus mills	B403
ALG-2R-W		2	6.0-25.0				✔			Torus mills	B404
AL-3E		3	1.0-20.0				✔			End mills	B389
AL-3EL		3	3.0-20.0				✔			End mills	B390
ALG-3E		3	1.0-20.0				✔			End mills	B391
ALG-3E-W		3	3.0-20.0				✔			End mills	B392
ALP-3E		3	1.0-20.0				✔			End mills	B393
ALP-3E-W		3	3.0-20.0				✔			End mills	B394
ALP-4E		4	3.0-20.0				✔			End mills	B395
ALP-4E-W		4	3.0-20.0				✔			End mills	B396
AL-3W		3	6.0-20.0				✔			Rippers	B397
5565R302NH		2	3.0-16.0				✔			Ball nose cutters	B398
5566R302NH		2	3.0-16.0				✔			Ball nose cutters	B399
AL-2B		2	2.0-12.0				✔			Ball nose cutters	B400
AL-2R-AIR		2	6.0-20.0				✔			High performance torus mills	B401
AL-2RL-AIR		2	6.0-20.0				✔			High performance torus mills	B402
AL-3R-AIR		3	12.0-20.0				✔			High performance torus mills	B405
AL-3RL-AIR		3	12.0-20.0				✔			High performance torus mills	B406

✔ Very suitable ✔ Suitable

HPC with unequal helix angle

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
5501R38414GM		4	4.0-20.0	✓	✓	✓			✓	End mills	B408
5502R38414GM		4	4.0-20.0	✓	✓	✓			✓	End mills	B409
5601R38414GM		4	4.0-20.0	✓	✓	✓			✓	End mills	B410
5602R38414GM		4	3.0-20.0	✓	✓	✓			✓	End mills	B411
5502R38414GM-R		4	4.0-20.0	✓	✓	✓			✓	Torus mills	B412
5602R38414GM-R		4	4.0-20.0	✓	✓	✓			✓	Torus mills	B413
UM-4E		4	4.0-20.0	✓	✓	✓			✓	End mills	B416
UM-4E-W		4	4.0-20.0	✓	✓	✓			✓	End mills	B417
UM-4EL		4	4.0-20.0	✓	✓	✓			✓	End mills	B418
UM-4EL-W		4	4.0-20.0	✓	✓	✓			✓	End mills	B419
UM-4ELP-W		4	4.0-20.0	✓	✓	✓			✓	End mills	B420
UM-4EFP		4	6.0-20.0	✓	✓	✓			✓	End mills	B421
UM-4R		4	4.0-20.0	✓	✓	✓			✓	Torus mills	B422
UM-4RL		4	6.0-16.0	✓	✓	✓			✓	Torus mills	B423
UM-4RFP		4	6.0-16.0	✓	✓	✓			✓	Torus mills	B424
VSM-4E		4	4.0-20.0	✓	✓			✓		End mills	B426
VSM-4E-C		4	10.0-20.0	✓	✓			✓		End mills	B427
VSM-4R		4	4.0-20.0	✓	✓			✓		Torus mills	B428

✓ Very suitable ✓ Suitable

Deburring cutter

Products	Solid carbide cutters	Teeth	Ø	Application						Type	Page
				P	M	K	N	S	H		
5501/5601		3-4	0.2-0.7	✔	✔	✔	✔			Deburring cutters	B432
5501/5601		3-4	0.2-0.7	✔	✔	✔	✔			Deburring cutters	B433
5601		4	5.2-10.0	✔	✔	✔	✔			Deburring cutters	B434

✔ Very suitable ✔ Suitable

Coated cemented carbide PVD

Grade	Grade description
KMD401	PVD coated carbide substrate for high performance milling application of non-ferrous metals, CFRP and GFRP and organic materials. The DLC layer has very good wear protection and high thermal stability.
KMG303	PVD coated carbide substrate for universal milling application of steel (up to HRC<=48), stainless steel and cast iron.
KMG405	PVD coated carbide substrate for high performance milling application of steel (up to HRC <55), stainless steel, super alloy material and cast iron. High wear resistance and toughness for a wide application field.
KMG555	PVD coated carbide substrate for hard milling application of steel (HRC 55–68), highest wear resistance and toughness for best cutting result.
KMG309	PVD coated carbide substrate for non ferrous materials. High wear resistance even in abrasive materials.

Uncoated cemented carbide

Grade	Grade description
YK30F	Uncoated K30 carbide substrate for steel, stainless steel, cast iron and non ferrous materials.
YK40F	Uncoated K20–K30/N20–N30 carbide substrate for cast iron and non ferrous materials.

Notes

Solid carbide milling

System code – DIN-ISO series

5	5	0	1	R	30	2	GM	R05	0800
1	2	3	4	5	6	7	8	9	10

1 Type

Code	Description
5	Milling cutter

2 Shank type

Code	Description
1	Shank
5	DIN 6535 HA
6	Weldon shank DIN 6535 HB
7	Whistle Notch DIN 6535 HE
9	Morse taper shank

3 Cutting edge type

Code	Description
0	Square shoulder mill
6	Ball nose cutter
8	Torus mill

4 Tool length

Code	Description
1	DIN 6527 K
2	DIN 6527 L
5	Factory standard ZCC-A
6	Factory standard ZCC-B
8	DIN 6528
9	Factory standard ZCC-D

5 Rotation direction

Code	Description
R	Right
L	Left

6 Helix angle

Code	Description
20	20°
30	30°
3841	38°/41°
45	45°
55	55°
60	60°

7 Number of teeth

Code	Description
2	2
...	
M	Indicated when different diameters have a different number of teeth

8 Application

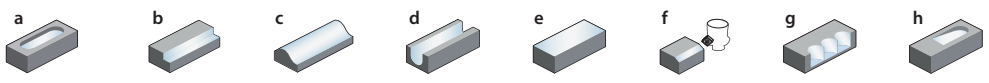
Code	Description
GM	Semi-finishing
GF	Finishing
HM	Hard machining
MHH	High-speed hard machining
NH	High-performance machining of heat-resistant alloys

9 Radius [mm]

Code	Description
R03	0,3
R15	1,5
R30	3,0
...	

10 Diameter [mm]

Code	Description
0100	1,0
0800	8,0
2000	20,0
...	



a Groove milling
b Square shoulder milling
c Profile milling
d Slot milling
e Face milling
f Chamfer milling
g Plunge milling
h Circular milling/Ramping

GM – 2 E L P – D12 R0.5 – M08 – W

1	2	3	4	5	6	7	8	9

Application	
Code	Description
GR	General roughing
GM	Semi-finishing
GF	Finishing
PM	High-performance machining
HM	Hard machining
HH	High-speed hard machining
NM	General machining of non-ferrous metals
AL	General machining of Al and Al alloys
ALP	High-performance machining of Al and Al alloys
ALG	General machining of Al and Al alloys
UM	HSC/HPC machining
VSM	General machining of heat-resistant alloys

1

Number of teeth

2

Cutting edge type	
Code	Description
E	Square shoulder mill with protective chamfer
F	Square shoulder mill with sharp cutting edges
B	Ball nose cutter
R	Torus mill
W	Ripper
H	High-feed mill

3

Cutting edge length	
Code	Description
L	Long
X	Extra long
F	Short

4

Type	
Code	Description
S	Mini diameter
P	Ground neck
C	Conical neck

5

Diameter [mm]	
Code	Description
D3.0	3,0
D8.0	8,0
D20.0	20,0
...	

6

Radius [mm]	
Code	Description
R0.5	0,5
R1.0	1,5
R3.0	3,0
...	

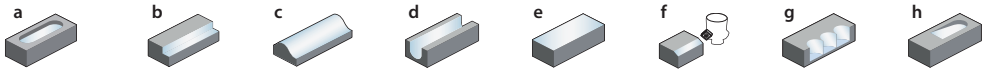
7

Features	
Code	Description
G	Spiral angle 30°
M	Neck length [mm]
S	Thin shank
AIR	For aerospace industry

8

Weldon shank

9



a Groove milling **b** Square shoulder milling **c** Profile milling **d** Slot milling **e** Face milling **f** Chamfer milling **g** Plunge milling **h** Circular milling/Ramping

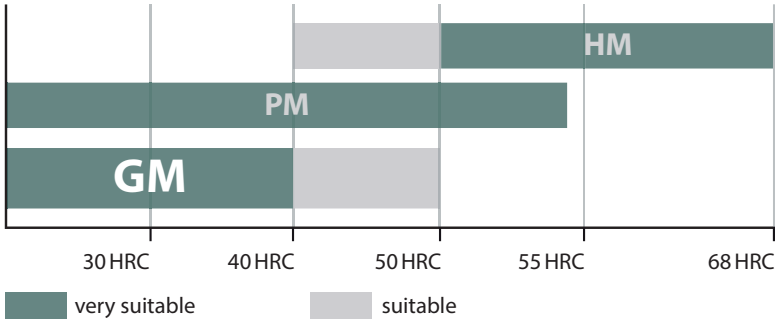


GM series

For general applications

- For machining of steel to max. 50 HRC and cast iron to heat-resistant alloys.
- Sharp cutting edge with high edge stability. Roughing to finishing with long tool life.
- End mills, ball nose cutters, torus mills, rippers and mini cutters.
- Diameter range 0.3–20.0 mm

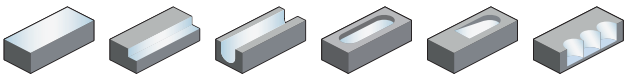
Application fields for machining of steel



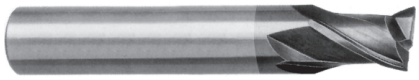


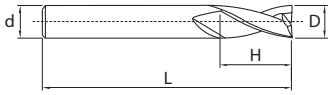
End mill Semi-finishing

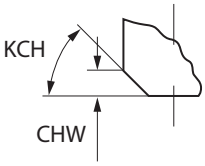
5501R302GM



– Type of shank DIN 6535HA
– Centre cutting
– Helix angle 30°







Article	✻	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5501R302GM-0300		3	6	4	50	0	0	2	●	○
5501R302GM-0400		4	6	5	54	0	0	2	●	○
5501R302GM-0500		5	6	6	54	0	0	2	●	○
5501R302GM-0600		6	6	7	54	45	0.1	2	●	○
5501R302GM-0800		8	8	9	58	45	0.1	2	●	○
5501R302GM-1000		10	10	11	66	45	0.1	2	●	○
5501R302GM-1200		12	12	12	73	45	0.1	2	●	○
5501R302GM-1400		14	14	14	75	45	0.15	2	●	○
5501R302GM-1600		16	16	16	82	45	0.15	2	●	○
5501R302GM-1800		18	18	18	84	45	0.15	2	●	○
5501R302GM-2000		20	20	20	92	45	0.15	2	●	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

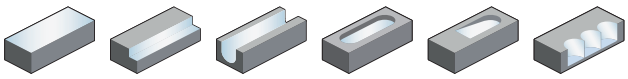
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

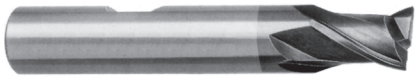
System code > B268 Cutting data > B436 Nonstandard order > B477

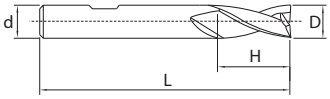
End mill Semi-finishing

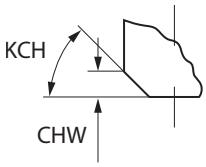
5601R302GM



– Type of shank: DIN 6535HB
– Centre cutting
– Helix angle 30°







Article	✻	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5601R302GM-0300		3	6	4	50	0	0	2	●	○
5601R302GM-0400		4	6	5	54	0	0	2	●	○
5601R302GM-0500		5	6	6	54	0	0	2	●	○
5601R302GM-0600		6	6	7	54	45	0.1	2	●	○
5601R302GM-0800		8	8	9	58	45	0.1	2	●	○
5601R302GM-1000		10	10	11	66	45	0.1	2	●	○
5601R302GM-1200		12	12	12	73	45	0.1	2	●	○
5601R302GM-1400		14	14	14	75	45	0.15	2	●	○
5601R302GM-1600		16	16	16	82	45	0.15	2	●	○
5601R302GM-1800		18	18	18	84	45	0.15	2	●	○
5601R302GM-2000		20	20	20	92	45	0.15	2	●	○

● Ex stock ○ On demand

✻ With internal cooling

Application field

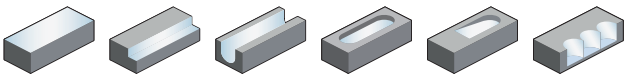
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

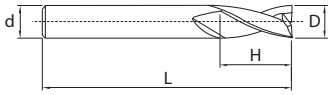
End mill long cutting edge Semi-finishing

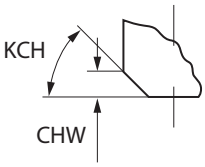
5502R302GM



– Type of shank DIN 6535HA
– Centre cutting
– Helix angle 30°







Article	✲	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5502R302GM-0100		1	3	2	38	0	0	2	●	○
5502R302GM-0150		1.5	3	3	38	0	0	2	●	○
5502R302GM-0200		2	6	6	57	0	0	2	●	○
5502R302GM-0250		2.5	6	7	57	0	0	2	●	○
5502R302GM-0280		2.8	6	7	57	0	0	2	●	○
5502R302GM-0300		3	6	7	57	0	0	2	●	○
5502R302GM-0350		3.5	6	7	57	0	0	2	●	○
5502R302GM-0380		3.8	6	8	57	0	0	2	●	○
5502R302GM-0400		4	6	8	57	0	0	2	●	○
5502R302GM-0450		4.5	6	8	57	0	0	2	●	○
5502R302GM-0480		4.8	6	8	57	0	0	2	●	○
5502R302GM-0500		5	6	10	57	0	0	2	●	○
5502R302GM-0550		5.5	6	10	57	0	0	2	●	○
5502R302GM-0575		5.75	6	10	57	0	0	2	●	○
5502R302GM-0600		6	6	10	57	45	0.1	2	●	○
5502R302GM-0675		6.75	8	13	63	45	0.1	2	○	○
5502R302GM-0700		7	8	13	63	45	0.1	2	●	○
5502R302GM-0750		7.5	8	16	63	45	0.1	2	●	○
5502R302GM-0775		7.75	8	16	63	45	0.1	2	●	○
5502R302GM-0800		8	8	16	63	45	0.1	2	●	○
5502R302GM-0870		8.7	10	16	72	45	0.1	2	●	○
5502R302GM-0900		9	10	16	72	45	0.1	2	●	○
5502R302GM-0950		9.5	10	16	72	45	0.1	2	○	○
5502R302GM-1000		10	10	19	72	45	0.1	2	●	○
5502R302GM-1100		11	12	22	83	45	0.1	2	●	○
5502R302GM-1170		11.7	12	22	83	45	0.1	2	●	○
5502R302GM-1200		12	12	22	83	45	0.1	2	●	○
5502R302GM-1370		13.7	14	22	83	45	0.1	2	●	○
5502R302GM-1400		14	14	22	83	45	0.15	2	●	○
5502R302GM-1500		15	16	26	92	45	0.15	2	●	○
5502R302GM-1570		15.7	16	26	92	45	0.15	2	●	○
5502R302GM-1600		16	16	26	92	45	0.15	2	●	○
5502R302GM-1700		17	18	26	92	45	0.15	2	○	○
5502R302GM-1800		18	18	26	92	45	0.15	2	●	○
5502R302GM-2000		20	20	32	104	45	0.15	2	●	○

● Ex stock ○ On demand
✲ With internal cooling

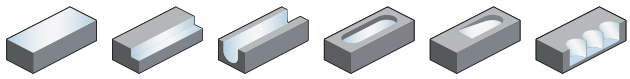
Application field

P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

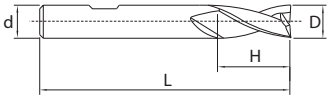
End mill long cutting edge — Semi-finishing

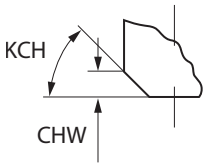


5602R302GM

– Type of shank: DIN 6535HB
– Centre cutting
– Helix angle 30°







Article	✻	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5602R302GM-0200		2	6	6	57	0	0	2	●	○
5602R302GM-0250		2.5	6	7	57	0	0	2	●	○
5602R302GM-0280		2.8	6	7	57	0	0	2	●	○
5602R302GM-0300		3	6	7	57	0	0	2	●	○
5602R302GM-0350		3.5	6	7	57	0	0	2	●	○
5602R302GM-0380		3.8	6	8	57	0	0	2	●	○
5602R302GM-0400		4	6	8	57	0	0	2	●	○
5602R302GM-0450		4.5	6	8	57	0	0	2	●	○
5602R302GM-0480		4.8	6	8	57	0	0	2	●	○
5602R302GM-0500		5	6	10	57	0	0	2	●	○
5602R302GM-0550		5.5	6	10	57	0	0	2	●	○
5602R302GM-0575		5.75	6	10	57	0	0	2	●	○
5602R302GM-0600		6	6	10	57	45	0.1	2	●	○
5602R302GM-0675		6.75	8	13	63	45	0.1	2	○	○
5602R302GM-0700		7	8	13	63	45	0.1	2	●	○
5602R302GM-0750		7.5	8	16	63	45	0.1	2	●	○
5602R302GM-0775		7.75	8	16	63	45	0.1	2	●	○
5602R302GM-0800		8	8	16	63	45	0.1	2	●	○
5602R302GM-0870		8.7	10	16	72	45	0.1	2	●	○
5602R302GM-0900		9	10	16	72	45	0.1	2	●	○
5602R302GM-1000		10	10	19	72	45	0.1	2	●	○
5602R302GM-1170		11.7	12	22	83	45	0.1	2	●	○
5602R302GM-1200		12	12	22	83	45	0.1	2	●	○
5602R302GM-1370		13.7	14	22	83	45	0.1	2	●	○
5602R302GM-1400		14	14	22	83	45	0.15	2	●	○
5602R302GM-1570		15.7	16	26	92	45	0.15	2	●	○
5602R302GM-1600		16	16	26	92	45	0.15	2	●	○
5602R302GM-1800		18	18	26	92	45	0.15	2	●	○
5602R302GM-2000		20	20	32	104	45	0.15	2	●	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

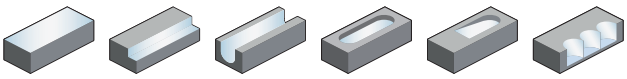
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

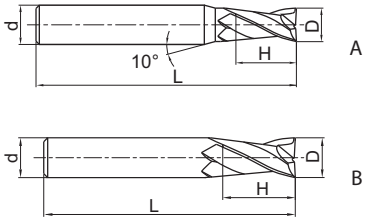
End mill Semi-finishing

GM-2E



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✲	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-2E-D1.0S		1	4	3	50	2	A	●
GM-2E-D1.5S		1.5	4	4	50	2	A	●
GM-2E-D2.0S		2	4	6	50	2	A	●
GM-2E-D2.5S		2.5	4	8	50	2	A	●
GM-2E-D3.0S		3	4	8	50	2	A	●
GM-2E-D4.0S		4	4	11	50	2	B	●
GM-2E-D1.0		1	6	3	50	2	A	●
GM-2E-D1.5		1.5	6	4	50	2	A	●
GM-2E-D2.0		2	6	6	50	2	A	●
GM-2E-D2.5		2.5	6	8	50	2	A	●
GM-2E-D3.0		3	6	8	50	2	A	●
GM-2E-D3.5		3.5	6	10	50	2	A	●
GM-2E-D4.0		4	6	11	50	2	A	●
GM-2E-D4.5		4.5	6	11	50	2	A	●
GM-2E-D5.0		5	6	13	50	2	A	●
GM-2E-D5.5		5.5	6	16	50	2	A	●
GM-2E-D6.0		6	6	16	50	2	B	●
GM-2E-D7.0		7	8	20	60	2	A	●
GM-2E-D8.0		8	8	20	60	2	B	●
GM-2E-D9.0		9	10	22	75	2	A	●
GM-2E-D10.0		10	10	25	75	2	B	●
GM-2E-D11.0		11	12	26	75	2	A	●
GM-2E-D12.0		12	12	30	75	2	B	●
GM-2E-D14.0		14	14	32	75	2	B	●
GM-2E-D16.0		16	16	45	100	2	B	●
GM-2E-D18.0		18	18	45	100	2	B	●
GM-2E-D20.0		20	20	45	100	2	B	●

● Ex stock ○ On demand
✲ With internal cooling

Application field

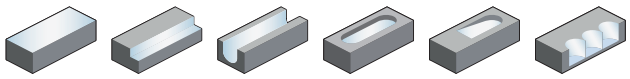
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

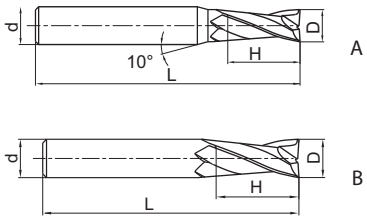
End mill long cutting edge | Semi-finishing

GM-2EL



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-2EL-D3.0		3	6	12	75	2	A	●
GM-2EL-D4.0		4	6	15	75	2	A	●
GM-2EL-D5.0		5	6	20	75	2	A	●
GM-2EL-D6.0		6	6	20	75	2	B	●
GM-2EL-D8.0		8	8	25	100	2	B	●
GM-2EL-D10.0		10	10	30	100	2	B	●
GM-2EL-D12.0		12	12	35	100	2	B	●
GM-2EL-D14.0		14	14	40	100	2	B	●
GM-2EL-D16.0		16	16	50	150	2	B	●
GM-2EL-D20.0		20	20	55	150	2	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

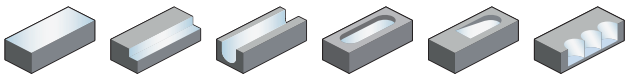
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 | Cutting data B436 | Nonstandard order B477

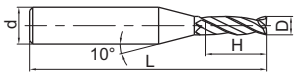
End mill extra long cutting edge Semi-finishing

GM-2EX

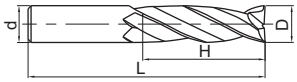


– Factory standard
– Centre cutting
– Helix angle 35°





A



B

Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-2EX-D3.0		3	6	20	75	2	A	●
GM-2EX-D4.0		4	6	25	75	2	A	●
GM-2EX-D5.0		5	6	30	75	2	A	●
GM-2EX-D6.0		6	6	30	75	2	B	○
GM-2EX-D8.0		8	8	40	100	2	B	○
GM-2EX-D10.0		10	10	50	110	2	B	○
GM-2EX-D12.0		12	12	50	110	2	B	○
GM-2EX-D16.0		16	16	70	150	2	B	○
GM-2EX-D20.0		20	20	75	150	2	B	○

● Ex stock ○ On demand

✻ With internal cooling

Application field

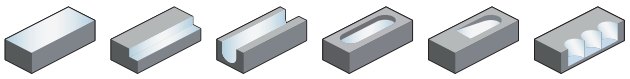
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

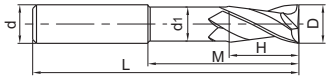
End mill short cutting edge — Semi-finishing

GM-2EFP



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d_1	H	M	L		KMG303
GM-2EFP-D6.0		6	6	5.8	9	30	30	2	○
GM-2EFP-D8.0		8	8	7.8	12	40	40	2	○
GM-2EFP-D10.0		10	10	9.6	15	50	50	2	○
GM-2EFP-D12.0		12	12	11.5	18	50	50	2	○
GM-2EFP-D16.0		16	16	15.5	24	50	50	2	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

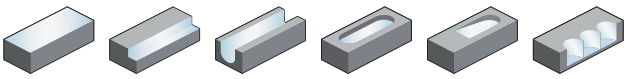
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

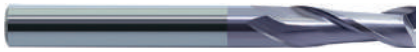
System code > B268 Cutting data > B436 Nonstandard order > B477

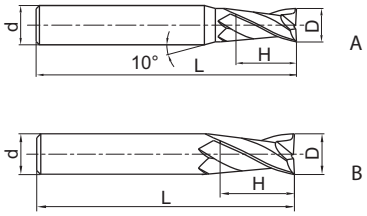
End mill Semi-finishing

GM-2F



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-2F-D1.0		1	6	3	50	2	A	○
GM-2F-D1.5		1.5	6	4	50	2	A	○
GM-2F-D2.0		2	6	6	50	2	A	○
GM-2F-D2.5		2.5	6	8	50	2	A	○
GM-2F-D3.0		3	6	8	50	2	A	●
GM-2F-D3.5		3.5	6	10	50	2	A	○
GM-2F-D4.0		4	6	11	50	2	A	●
GM-2F-D4.5		4.5	6	11	50	2	A	●
GM-2F-D5.0		5	6	13	50	2	A	●
GM-2F-D5.5		5.5	6	16	50	2	A	○
GM-2F-D6.0		6	6	16	50	2	B	●
GM-2F-D7.0		7	8	20	60	2	A	●
GM-2F-D8.0		8	8	20	60	2	B	●
GM-2F-D9.0		9	10	22	75	2	A	○
GM-2F-D10.0		10	10	25	75	2	B	○
GM-2F-D11.0		11	12	26	75	2	A	○
GM-2F-D12.0		12	12	30	75	2	B	●
GM-2F-D14.0		14	14	32	75	2	B	○
GM-2F-D16.0		16	16	45	100	2	B	○
GM-2F-D18.0		18	18	45	100	2	B	○
GM-2F-D20.0		20	20	45	100	2	B	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

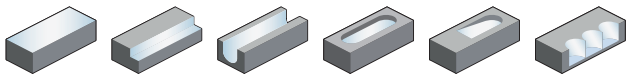
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

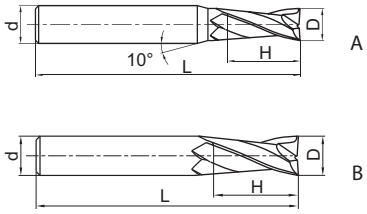
End mill long cutting edge — Semi-finishing

GM-2FL



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm] D	d (h6)	H	L	Teeth	Geometry	Grade KMG303
GM-2FL-D3.0		3	6	12	75	2	A	○
GM-2FL-D4.0		4	6	15	75	2	A	○
GM-2FL-D5.0		5	6	20	75	2	A	○
GM-2FL-D6.0		6	6	20	75	2	B	○
GM-2FL-D8.0		8	8	25	100	2	B	○
GM-2FL-D10.0		10	10	30	100	2	B	○
GM-2FL-D12.0		12	12	35	100	2	B	○
GM-2FL-D14.0		14	14	40	100	2	B	○
GM-2FL-D16.0		16	16	50	150	2	B	○
GM-2FL-D20.0		20	20	55	150	2	B	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔	✔			

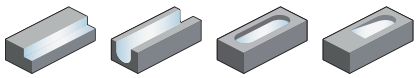
✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

Solid carbide milling GM series

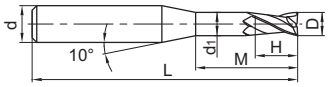
End mill Semi-finishing

GM-2EP



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d_1	H	M	L		KMG303
GM-2EP-D0.5-M04		0.5	4	0.45	0.7	4	50	2	●
GM-2EP-D0.5-M06		0.5	4	0.45	0.7	6	50	2	●
GM-2EP-D0.5-M08		0.5	4	0.45	0.7	8	50	2	●
GM-2EP-D0.8-M04		0.8	4	0.75	1.2	4	50	2	●
GM-2EP-D0.8-M06		0.8	4	0.75	1.2	6	50	2	●
GM-2EP-D0.8-M08		0.8	4	0.75	1.2	8	50	2	●
GM-2EP-D0.8-M10		0.8	4	0.75	1.2	10	50	2	●
GM-2EP-D1.0-M04		1	4	0.95	1.5	4	50	2	●
GM-2EP-D1.0-M06		1	4	0.95	1.5	6	50	2	●
GM-2EP-D1.0-M08		1	4	0.95	1.5	8	50	2	●
GM-2EP-D1.0-M10		1	4	0.95	1.5	10	50	2	●
GM-2EP-D1.0-M12		1	4	0.95	1.5	12	50	2	●
GM-2EP-D1.0-M14		1	4	0.95	1.5	14	50	2	●
GM-2EP-D1.2-M06		1.2	4	1.15	1.8	6	50	2	●
GM-2EP-D1.2-M08		1.2	4	1.15	1.8	8	50	2	●
GM-2EP-D1.2-M10		1.2	4	1.15	1.8	10	50	2	●
GM-2EP-D1.2-M12		1.2	4	1.15	1.8	12	50	2	○
GM-2EP-D1.5-M06		1.5	4	1.45	2.3	6	50	2	●
GM-2EP-D1.5-M08		1.5	4	1.45	2.3	8	50	2	●
GM-2EP-D1.5-M10		1.5	4	1.45	2.3	10	50	2	●
GM-2EP-D1.5-M12		1.5	4	1.45	2.3	12	50	2	●
GM-2EP-D1.5-M14		1.5	4	1.45	2.3	14	50	2	●
GM-2EP-D2.0-M06		2	4	1.95	3	6	50	2	●
GM-2EP-D2.0-M08		2	4	1.95	3	8	50	2	●
GM-2EP-D2.0-M10		2	4	1.95	3	10	50	2	●
GM-2EP-D2.0-M12		2	4	1.95	3	12	50	2	●
GM-2EP-D2.0-M14		2	4	1.95	3	14	50	2	●
GM-2EP-D2.0-M16		2	4	1.95	3	16	50	2	●
GM-2EP-D2.5-M08		2.5	4	2.4	3.7	8	50	2	●
GM-2EP-D2.5-M10		2.5	4	2.4	3.7	10	50	2	●
GM-2EP-D2.5-M12		2.5	4	2.4	3.7	12	50	2	●
GM-2EP-D2.5-M14		2.5	4	2.4	3.7	14	50	2	●
GM-2EP-D2.5-M16		2.5	4	2.4	3.7	16	60	2	●
GM-2EP-D2.5-M18		2.5	4	2.4	3.7	18	60	2	●
GM-2EP-D2.5-M20		2.5	4	2.4	3.7	20	60	2	●
GM-2EP-D3.0-M06		3	6	2.85	4.5	6	50	2	●
GM-2EP-D3.0-M08		3	6	2.85	4.5	8	50	2	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

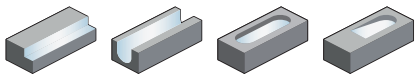
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

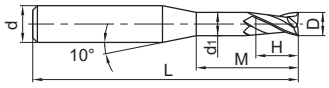
End mill Semi-finishing

GM-2EP



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d_1	H	M	L		KMG303
GM-2EP-D3.0-M10		3	6	2.85	4.5	10	50	2	●
GM-2EP-D3.0-M12		3	6	2.85	4.5	12	50	2	●
GM-2EP-D3.0-M14		3	6	2.85	4.5	14	60	2	●
GM-2EP-D3.0-M16		3	6	2.85	4.5	16	60	2	●
GM-2EP-D3.0-M18		3	6	2.85	4.5	18	60	2	●
GM-2EP-D3.0-M20		3	6	2.85	4.5	20	60	2	●
GM-2EP-D4.0-M12		4	6	3.85	6	12	50	2	●
GM-2EP-D4.0-M14		4	6	3.85	6	14	60	2	●
GM-2EP-D4.0-M16		4	6	3.85	6	16	60	2	●
GM-2EP-D4.0-M20		4	6	3.85	6	20	60	2	●
GM-2EP-D4.0-M25		4	6	3.85	6	25	60	2	●
GM-2EP-D5.0-M16		5	6	4.85	7.5	16	60	2	●
GM-2EP-D5.0-M25		5	6	4.85	7.5	25	70	2	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

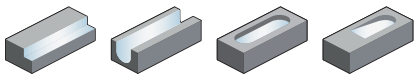
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

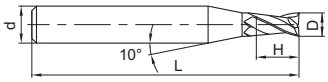
End mill Semi-finishing

GM-2ES



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		KMG303
GM-2ES-D0.3		0.3	4	0.6	50	2	●
GM-2ES-D0.4		0.4	4	0.8	50	2	●
GM-2ES-D0.5		0.5	4	1	50	2	●
GM-2ES-D0.6		0.6	4	1.2	50	2	●
GM-2ES-D0.7		0.7	4	1.4	50	2	●
GM-2ES-D0.8		0.8	4	1.6	50	2	●
GM-2ES-D0.9		0.9	4	1.8	50	2	●
GM-2ES-D1.0		1	4	2	50	2	●
GM-2ES-D1.1		1.1	4	2	50	2	●
GM-2ES-D1.2		1.2	4	2.5	50	2	●
GM-2ES-D1.3		1.3	4	2.5	50	2	●
GM-2ES-D1.4		1.4	4	3	50	2	●
GM-2ES-D1.5		1.5	4	3	50	2	●
GM-2ES-D1.6		1.6	4	3.5	50	2	●
GM-2ES-D1.7		1.7	4	3.5	50	2	●
GM-2ES-D1.8		1.8	4	4	50	2	●
GM-2ES-D1.9		1.9	4	4	50	2	●
GM-2ES-D2.0		2	4	4	50	2	●
GM-2ES-D2.1		2.1	4	4	50	2	●
GM-2ES-D2.2		2.2	4	4.5	50	2	●
GM-2ES-D2.3		2.3	4	4.5	50	2	●
GM-2ES-D2.4		2.4	4	5	50	2	●
GM-2ES-D2.5		2.5	4	5	50	2	●
GM-2ES-D2.6		2.6	4	5	50	2	●
GM-2ES-D2.7		2.7	4	5.5	50	2	●
GM-2ES-D2.8		2.8	4	5.5	50	2	●
GM-2ES-D2.9		2.9	4	6	50	2	●
GM-2ES-D3.0		3	4	6	50	2	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

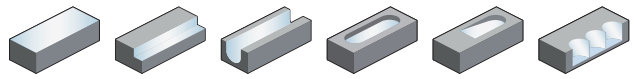
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

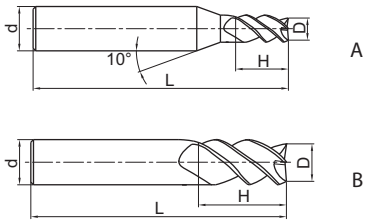
End mill Semi-finishing

GM-3E



– Factory standard
– Centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-3E-D1.0S		1	4	3	50	3	A	○
GM-3E-D1.5S		1.5	4	4	50	3	A	○
GM-3E-D2.0S		2	4	6	50	3	A	○
GM-3E-D2.5S		2.5	4	8	50	3	A	○
GM-3E-D3.0S		3	4	8	50	3	A	○
GM-3E-D4.0S		4	4	11	50	3	B	○
GM-3E-D1.0		1	6	3	50	3	A	○
GM-3E-D1.5		1.5	6	4	50	3	A	○
GM-3E-D2.0		2	6	6	50	3	A	○
GM-3E-D2.5		2.5	6	8	50	3	A	○
GM-3E-D3.0		3	6	8	50	3	A	○
GM-3E-D3.5		3.5	6	10	50	3	A	○
GM-3E-D4.0		4	6	11	50	3	A	○
GM-3E-D4.5		4.5	6	11	50	3	A	○
GM-3E-D5.0		5	6	13	50	3	A	○
GM-3E-D5.5		5.5	6	16	50	3	A	○
GM-3E-D6.0		6	6	16	50	3	B	○
GM-3E-D7.0		7	8	20	60	3	A	○
GM-3E-D8.0		8	8	20	60	3	B	○
GM-3E-D9.0		9	10	22	75	3	A	○
GM-3E-D10.0		10	10	25	75	3	B	○
GM-3E-D11.0		11	12	26	75	3	A	○
GM-3E-D12.0		12	12	30	75	3	B	○
GM-3E-D14.0		14	14	32	75	3	B	○
GM-3E-D16.0		16	16	45	100	3	B	○
GM-3E-D18.0		18	18	45	100	3	B	○
GM-3E-D20.0		20	20	45	100	3	B	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

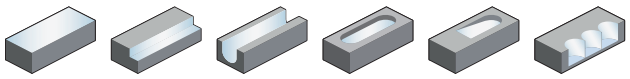
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

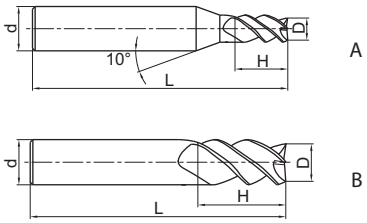
End mill long cutting edge Semi-finishing

GM-3EL



– Factory standard
– Centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-3EL-D3.0		3	6	12	75	3	A	●
GM-3EL-D4.0		4	6	15	75	3	A	●
GM-3EL-D5.0		5	6	20	75	3	A	●
GM-3EL-D6.0		6	6	20	75	3	B	●
GM-3EL-D8.0		8	8	25	100	3	B	●
GM-3EL-D10.0		10	10	30	100	3	B	●
GM-3EL-D12.0		12	12	35	100	3	B	●
GM-3EL-D14.0		14	14	40	100	3	B	●
GM-3EL-D16.0		16	16	50	150	3	B	●
GM-3EL-D20.0		20	20	55	150	3	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

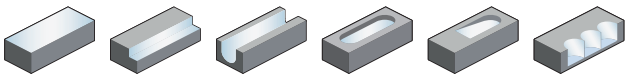
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

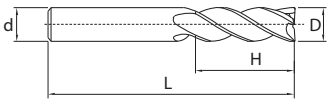
End mill Semi-finishing

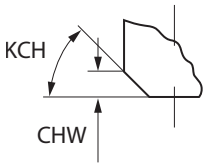
5501R303GM



– Type of shank DIN 6535HA
– Centre cutting
– Helix angle 30°







Article	✻	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5501R303GM-0300		3	6	4	50	0	0	3	●	○
5501R303GM-0400		4	6	5	54	0	0	3	●	○
5501R303GM-0500		5	6	6	54	0	0	3	●	○
5501R303GM-0600		6	6	7	54	45	0.1	3	●	○
5501R303GM-0800		8	8	9	58	45	0.1	3	●	○
5501R303GM-1000		10	10	11	66	45	0.1	3	●	○
5501R303GM-1200		12	12	12	73	45	0.1	3	●	○
5501R303GM-1400		14	14	14	75	45	0.15	3	●	○
5501R303GM-1600		16	16	16	82	45	0.15	3	●	○
5501R303GM-1800		18	18	18	84	45	0.15	3	●	○
5501R303GM-2000		20	20	20	92	45	0.15	3	●	○

● Ex stock ○ On demand

✻ With internal cooling

Application field

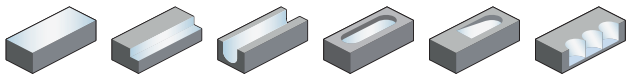
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

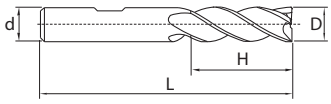
End mill Semi-finishing

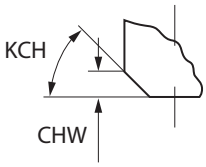
5601R303GM



– Type of shank: DIN 6535HB
– Centre cutting
– Helix angle 30°







Article	✻	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5601R303GM-0300		3	6	4	50	0	0	3	●	○
5601R303GM-0400		4	6	5	54	0	0	3	●	○
5601R303GM-0500		5	6	6	54	0	0	3	●	○
5601R303GM-0600		6	6	7	54	45	0.1	3	●	○
5601R303GM-0800		8	8	9	58	45	0.1	3	●	○
5601R303GM-1000		10	10	11	66	45	0.1	3	●	○
5601R303GM-1200		12	12	12	73	45	0.1	3	●	○
5601R303GM-1400		14	14	14	75	45	0.15	3	●	○
5601R303GM-1600		16	16	16	82	45	0.15	3	●	○
5601R303GM-1800		18	18	18	84	45	0.15	3	●	○
5601R303GM-2000		20	20	20	92	45	0.15	3	●	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

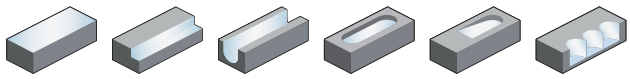
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

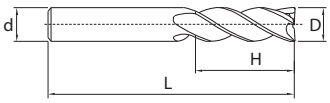
End mill long cutting edge — Semi-finishing

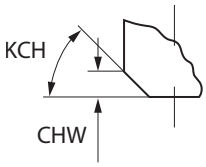
5502R303GM



– Type of shank DIN 6535HA
– Centre cutting
– Helix angle 30°







Article	✻	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5502R303GM-0300		3	6	7	57	0	0	3	●	○
5502R303GM-0400		4	6	8	57	0	0	3	●	○
5502R303GM-0500		5	6	10	57	0	0	3	●	○
5502R303GM-0600		6	6	10	57	45	0.1	3	●	○
5502R303GM-0800		8	8	16	63	45	0.1	3	●	○
5502R303GM-1000		10	10	19	72	45	0.1	3	●	○
5502R303GM-1200		12	12	22	83	45	0.1	3	●	○
5502R303GM-1400		14	14	22	83	45	0.15	3	●	○
5502R303GM-1600		16	16	26	92	45	0.15	3	●	○
5502R303GM-1800		18	18	26	92	45	0.15	3	●	○
5502R303GM-2000		20	20	32	104	45	0.15	3	●	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

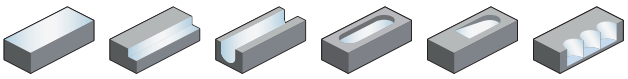
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

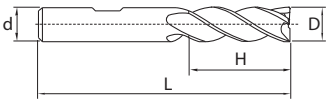
End mill long cutting edge — Semi-finishing

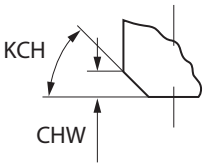
5602R303GM



– Type of shank: DIN 6535HB
– Centre cutting
– Helix angle 30°







Article	✻	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5602R303GM-0300		3	6	7	57	0	0	3	●	○
5602R303GM-0400		4	6	8	57	0	0	3	●	○
5602R303GM-0500		5	6	10	57	0	0	3	●	○
5602R303GM-0600		6	6	10	57	45	0.1	3	●	○
5602R303GM-0800		8	8	16	63	45	0.1	3	●	○
5602R303GM-1000		10	10	19	72	45	0.1	3	●	○
5602R303GM-1200		12	12	22	83	45	0.1	3	●	○
5602R303GM-1400		14	14	22	83	45	0.15	3	●	○
5602R303GM-1600		16	16	26	92	45	0.15	3	●	○
5602R303GM-1800		18	18	26	92	45	0.15	3	●	○
5602R303GM-2000		20	20	32	104	45	0.15	3	●	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

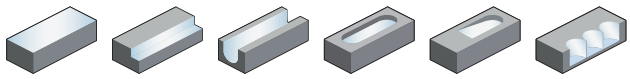
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

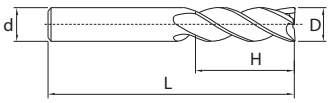
End mill long cutting edge — Semi-finishing

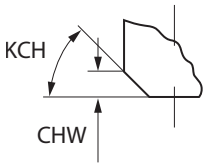
5502R453GM



– Type of shank DIN 6535HA
– Centre cutting
– Helix angle 45°







Article	✻	Dimensions [mm]						Teeth	Grade
		D	d (h6)	H	L	KCH	CHW		KMG405
5502R453GM-0300		3	6	7	57	0	0	3	●
5502R453GM-0400		4	6	8	57	0	0	3	●
5502R453GM-0500		5	6	10	57	0	0	3	●
5502R453GM-0600		6	6	10	57	45	0.1	3	●
5502R453GM-0800		8	8	16	63	45	0.1	3	●
5502R453GM-1000		10	10	19	72	45	0.1	3	●
5502R453GM-1200		12	12	22	83	45	0.1	3	●
5502R453GM-1400		14	14	22	83	45	0.15	3	●
5502R453GM-1600		16	16	26	92	45	0.15	3	●
5502R453GM-1800		18	18	26	92	45	0.15	3	●
5502R453GM-2000		20	20	32	104	45	0.15	3	●

● Ex stock ○ On demand

✻ With internal cooling

Application field

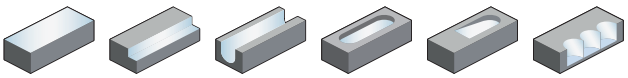
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

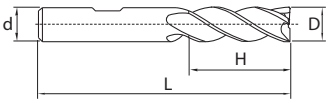
End mill long cutting edge Semi-finishing

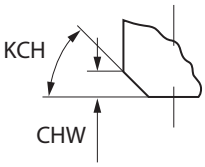
5602R453GM



– Type of shank: DIN 6535HB
– Centre cutting
– Helix angle 45°







Article	✻	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	KMG405
5602R453GM-0300		3	6	7	57	0	0	3	●	●
5602R453GM-0400		4	6	8	57	0	0	3	●	●
5602R453GM-0500		5	6	10	57	0	0	3	●	●
5602R453GM-0600		6	6	10	57	45	0.1	3	●	●
5602R453GM-0800		8	8	16	63	45	0.1	3	●	●
5602R453GM-1000		10	10	19	72	45	0.1	3	●	●
5602R453GM-1200		12	12	22	83	45	0.1	3	●	●
5602R453GM-1400		14	14	22	83	45	0.15	3	●	●
5602R453GM-1600		16	16	26	92	45	0.15	3	●	●
5602R453GM-1800		18	18	26	92	45	0.15	3	●	●
5602R453GM-2000		20	20	32	104	45	0.15	3	●	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

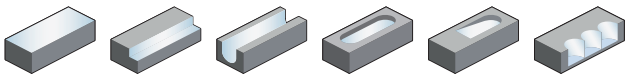
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

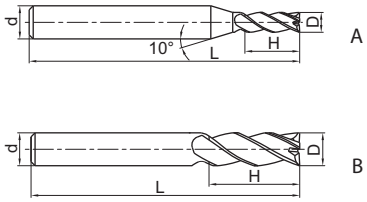
End mill Semi-finishing

GM-4F-G



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-4F-D2.0S-G		2	4	6	50	4	A	○
GM-4F-D4.0S-G		4	4	11	50	4	B	○
GM-4F-D1.0-G		1	6	3	50	4	A	○
GM-4F-D1.5-G		1.5	6	4	50	4	A	○
GM-4F-D2.0-G		2	6	6	50	4	A	○
GM-4F-D2.5-G		2.5	6	8	50	4	A	○
GM-4F-D3.0-G		3	6	8	50	4	A	○
GM-4F-D3.5-G		3.5	6	10	50	4	A	○
GM-4F-D4.0-G		4	6	11	50	4	A	○
GM-4F-D4.5-G		4.5	6	11	50	4	A	○
GM-4F-D5.0-G		5	6	13	50	4	A	○
GM-4F-D5.5-G		5.5	6	16	50	4	A	○
GM-4F-D6.0-G		6	6	16	50	4	B	○
GM-4F-D7.0-G		7	8	20	60	4	A	○
GM-4F-D8.0-G		8	8	20	60	4	B	○
GM-4F-D9.0-G		9	10	22	75	4	A	○
GM-4F-D10.0-G		10	10	25	75	4	B	○
GM-4F-D11.0-G		11	12	26	75	4	A	○
GM-4F-D12.0-G		12	12	30	75	4	B	○
GM-4F-D14.0-G		14	14	32	75	4	B	○
GM-4F-D16.0-G		16	16	45	100	4	B	○
GM-4F-D18.0-G		18	18	45	100	4	B	○
GM-4F-D20.0-G		20	20	45	100	4	B	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

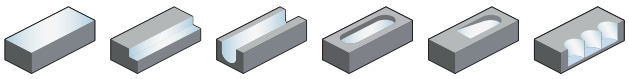
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

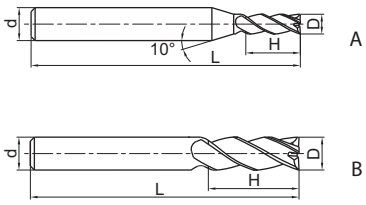
End mill long cutting edge Semi-finishing

GM-4EL-G



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-4EL-D3.0-G		3	6	12	75	4	A	○
GM-4EL-D4.0-G		4	6	15	75	4	A	○
GM-4EL-D5.0-G		5	6	20	75	4	A	○
GM-4EL-D6.0-G		6	6	20	75	4	B	○
GM-4EL-D8.0-G		8	8	25	100	4	B	○
GM-4EL-D10.0-G		10	10	30	100	4	B	○
GM-4EL-D12.0-G		12	12	35	100	4	B	○
GM-4EL-D14.0-G		14	14	40	100	4	B	○
GM-4EL-D16.0-G		16	16	50	150	4	B	○
GM-4EL-D20.0-G		20	20	55	150	4	B	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

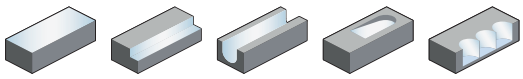
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

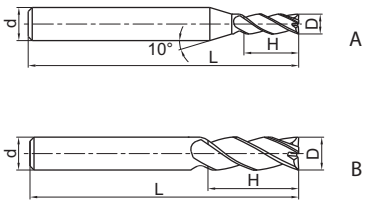
End mill long cutting edge | Semi-finishing

GM-4FL-G



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-4FL-D3.0-G		3	6	12	75	4	A	○
GM-4FL-D4.0-G		4	6	15	75	4	A	○
GM-4FL-D5.0-G		5	6	20	75	4	A	●
GM-4FL-D6.0-G		6	6	20	75	4	B	●
GM-4FL-D8.0-G		8	8	25	100	4	B	●
GM-4FL-D10.0-G		10	10	30	100	4	B	●
GM-4FL-D12.0-G		12	12	35	100	4	B	●
GM-4FL-D14.0-G		14	14	40	100	4	B	○
GM-4FL-D16.0-G		16	16	50	150	4	B	○
GM-4FL-D20.0-G		20	20	55	150	4	B	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

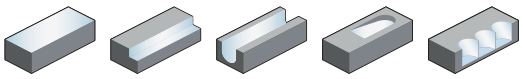
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

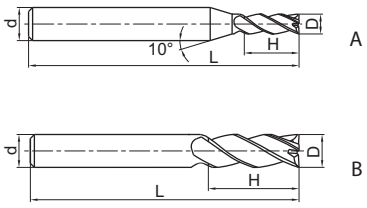
End mill extra long cutting edge Semi-finishing

GM-4EX-G



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-4EX-D3.0-G		3	6	20	75	4	A	●
GM-4EX-D4.0-G		4	6	25	75	4	A	●
GM-4EX-D5.0-G		5	6	30	75	4	A	●
GM-4EX-D6.0-G		6	6	30	75	4	B	●
GM-4EX-D8.0-G		8	8	40	100	4	B	●
GM-4EX-D10.0-G		10	10	50	110	4	B	●
GM-4EX-D12.0-G		12	12	50	110	4	B	●
GM-4EX-D16.0-G		16	16	70	150	4	B	●
GM-4EX-D20.0-G		20	20	75	150	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

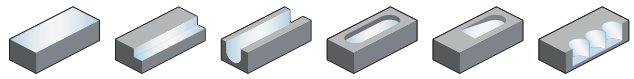
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

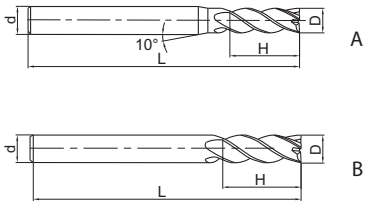
End mill Semi-finishing

GM-4E



– Factory standard
– Centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-4E-D1.0S		1	4	3	50	4	A	●
GM-4E-D1.5S		1.5	4	4	50	4	A	●
GM-4E-D2.0S		2	4	6	50	4	A	●
GM-4E-D2.5S		2.5	4	8	50	4	A	●
GM-4E-D3.0S		3	4	8	50	4	A	●
GM-4E-D4.0S		4	4	11	50	4	B	●
GM-4E-D1.0		1	6	3	50	4	A	●
GM-4E-D1.5		1.5	6	4	50	4	A	●
GM-4E-D2.0		2	6	6	50	4	A	●
GM-4E-D2.5		2.5	6	8	50	4	A	●
GM-4E-D3.0		3	6	8	50	4	A	●
GM-4E-D3.5		3.5	6	10	50	4	A	●
GM-4E-D4.0		4	6	11	50	4	A	●
GM-4E-D4.5		4.5	6	11	50	4	A	●
GM-4E-D5.0		5	6	13	50	4	A	●
GM-4E-D5.5		5.5	6	16	50	4	A	●
GM-4E-D6.0		6	6	16	50	4	B	●
GM-4E-D7.0		7	8	20	60	4	A	●
GM-4E-D8.0		8	8	20	60	4	B	●
GM-4E-D9.0		9	10	22	75	4	A	●
GM-4E-D10.0		10	10	25	75	4	B	●
GM-4E-D11.0		11	12	26	75	4	A	●
GM-4E-D12.0		12	12	30	75	4	B	●
GM-4E-D14.0		14	14	32	75	4	B	●
GM-4E-D16.0		16	16	45	100	4	B	●
GM-4E-D18.0		18	18	45	100	4	B	●
GM-4E-D20.0		20	20	45	100	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔	✔			

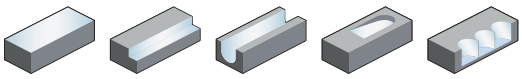
✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

Solid carbide milling GM series

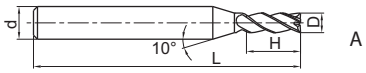
End mill Semi-finishing

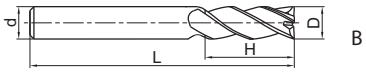
GM-4E-G



– Factory standard
– Centre cutting
– Helix angle 30°







Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-4E-D1.0S-G		1	4	3	50	4	A	●
GM-4E-D1.5S-G		1.5	4	4	50	4	A	●
GM-4E-D2.0S-G		2	4	6	50	4	A	●
GM-4E-D2.5S-G		2.5	4	8	50	4	A	●
GM-4E-D3.0S-G		3	4	8	50	4	A	●
GM-4E-D4.0S-G		4	4	11	50	4	B	●
GM-4E-D1.0-G		1	6	3	50	4	A	●
GM-4E-D1.5-G		1.5	6	4	50	4	A	●
GM-4E-D2.0-G		2	6	6	50	4	A	●
GM-4E-D2.5-G		2.5	6	8	50	4	A	●
GM-4E-D3.0-G		3	6	8	50	4	A	●
GM-4E-D3.5-G		3.5	6	10	50	4	A	●
GM-4E-D4.0-G		4	6	11	50	4	A	●
GM-4E-D4.5-G		4.5	6	11	50	4	A	○
GM-4E-D5.0-G		5	6	13	50	4	A	●
GM-4E-D5.5-G		5.5	6	16	50	4	A	●
GM-4E-D6.0-G		6	6	16	50	4	B	●
GM-4E-D7.0-G		7	8	20	60	4	A	●
GM-4E-D8.0-G		8	8	20	60	4	B	●
GM-4E-D9.0-G		9	10	22	75	4	A	●
GM-4E-D10.0-G		10	10	25	75	4	B	●
GM-4E-D11.0-G		11	12	26	75	4	A	●
GM-4E-D12.0-G		12	12	30	75	4	B	●
GM-4E-D14.0-G		14	14	32	75	4	B	●
GM-4E-D16.0-G		16	16	45	100	4	B	●
GM-4E-D18.0-G		18	18	45	100	4	B	●
GM-4E-D20.0-G		20	20	45	100	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

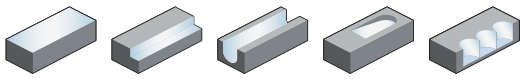
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

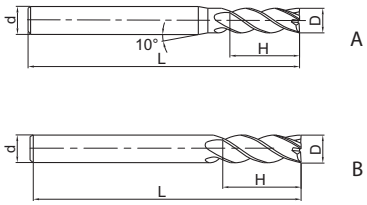
End mill long cutting edge | Semi-finishing

GM-4EL



– Factory standard
– Centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG303
GM-4EL-D3.0		3	6	12	75	4	A	●
GM-4EL-D4.0		4	6	15	75	4	A	●
GM-4EL-D5.0		5	6	20	75	4	A	●
GM-4EL-D6.0		6	6	20	75	4	B	●
GM-4EL-D8.0		8	8	25	100	4	B	●
GM-4EL-D10.0		10	10	30	100	4	B	●
GM-4EL-D12.0		12	12	35	100	4	B	●
GM-4EL-D14.0		14	14	40	100	4	B	●
GM-4EL-D16.0		16	16	50	150	4	B	●
GM-4EL-D20.0		20	20	55	150	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

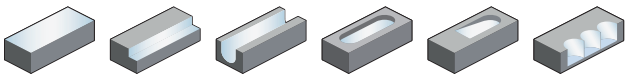
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

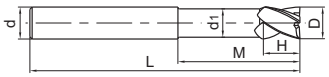
End mill short cutting edge Semi-finishing

GM-4EFP



– Factory standard
– Centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d_1	H	M	L		KMG303
GM-4EFP-D6.0		6	6	5.8	9	30	75	4	○
GM-4EFP-D8.0		8	8	7.8	12	40	100	4	○
GM-4EFP-D10.0		10	10	9.6	15	50	100	4	○
GM-4EFP-D12.0		12	12	11.5	18	50	100	4	○
GM-4EFP-D16.0		16	16	15.5	24	50	150	4	○
GM-4EFP-D20.0		20	20	19.5	30	60	150	4	○

● Ex stock ○ On demand
✻ With internal cooling

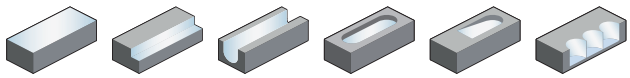
Application field

P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

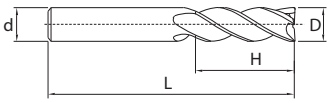
End mill Finishing

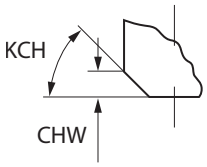


5501R304GF

– Type of shank DIN 6535HA
– Centre cutting
– Helix angle 30°







Article	✻	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5501R304GF-0300		3	6	5	50	0	0	4	●	○
5501R304GF-0400		4	6	8	54	0	0	4	●	○
5501R304GF-0500		5	6	9	54	0	0	4	●	○
5501R304GF-0600		6	6	10	54	45	0.1	4	●	○
5501R304GF-0800		8	8	12	58	45	0.1	4	●	○
5501R304GF-1000		10	10	14	66	45	0.1	4	●	○
5501R304GF-1200		12	12	16	73	45	0.1	4	●	○
5501R304GF-1400		14	14	18	75	45	0.15	4	●	○
5501R304GF-1600		16	16	22	82	45	0.15	4	●	○
5501R304GF-1800		18	18	24	84	45	0.15	4	●	○
5501R304GF-2000		20	20	26	92	45	0.15	4	●	○

● Ex stock ○ On demand
✻ With internal cooling

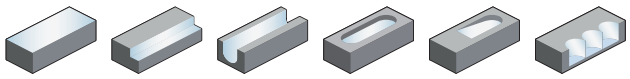
Application field

P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

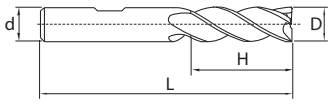
End mill Finishing

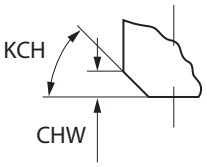


5601R304GF

– Type of shank: DIN 6535HB
– Centre cutting
– Helix angle 30°







Article	✻	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5601R304GF-0300		3	6	5	50	0	0	4	●	○
5601R304GF-0400		4	6	8	54	0	0	4	●	○
5601R304GF-0500		5	6	9	54	0	0	4	●	○
5601R304GF-0600		6	6	10	54	45	0.1	4	●	○
5601R304GF-0800		8	8	12	58	45	0.1	4	●	○
5601R304GF-1000		10	10	14	66	45	0.1	4	●	○
5601R304GF-1200		12	12	16	73	45	0.1	4	●	●
5601R304GF-1400		14	14	18	75	45	0.15	4	●	○
5601R304GF-1600		16	16	22	82	45	0.15	4	●	○
5601R304GF-1800		18	18	24	84	45	0.15	4	●	○
5601R304GF-2000		20	20	26	92	45	0.15	4	●	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

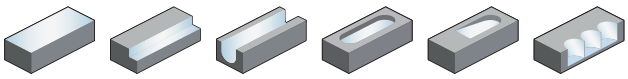
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

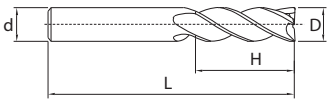
End mill long cutting edge **Finishing**

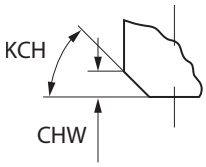
5502R304GF



– Type of shank DIN 6535HA
– Centre cutting
– Helix angle 30°







Article	✻	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5502R304GF-0300		3	6	8	57	0	0	4	●	○
5502R304GF-0400		4	6	11	57	0	0	4	●	○
5502R304GF-0500		5	6	13	57	0	0	4	●	○
5502R304GF-0600		6	6	13	57	45	0.1	4	●	○
5502R304GF-0800		8	8	19	63	45	0.1	4	●	○
5502R304GF-1000		10	10	22	72	45	0.1	4	●	○
5502R304GF-1200		12	12	26	83	45	0.1	4	●	○
5502R304GF-1400		14	14	26	83	45	0.15	4	●	○
5502R304GF-1600		16	16	32	92	45	0.15	4	●	○
5502R304GF-1800		18	18	32	92	45	0.15	4	●	○
5502R304GF-2000		20	20	38	104	45	0.15	4	●	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

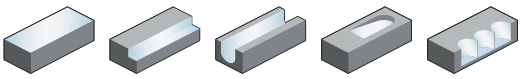
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

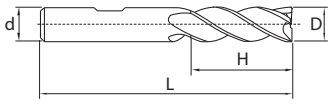
End mill long cutting edge Finishing

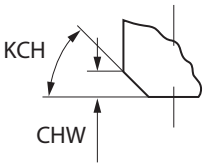
5602R304GF



– Type of shank: DIN 6535HB
– Centre cutting
– Helix angle 30°







Article	✻	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5602R304GF-0300		3	6	8	57	0	0	4	●	○
5602R304GF-0400		4	6	11	57	0	0	4	●	○
5602R304GF-0500		5	6	13	57	0	0	4	●	○
5602R304GF-0600		6	6	13	57	45	0.1	4	●	○
5602R304GF-0800		8	8	19	63	45	0.1	4	●	○
5602R304GF-1000		10	10	22	72	45	0.1	4	●	○
5602R304GF-1200		12	12	26	83	45	0.1	4	●	○
5602R304GF-1400		14	14	26	83	45	0.15	4	●	○
5602R304GF-1600		16	16	32	92	45	0.15	4	●	○
5602R304GF-1800		18	18	32	92	45	0.15	4	●	○
5602R304GF-2000		20	20	38	104	45	0.15	4	●	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

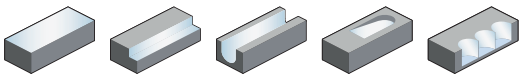
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

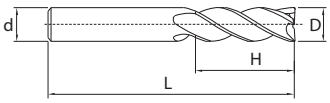
End mill long cutting edge — Semi-finishing

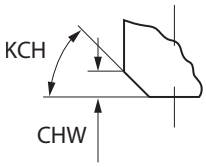
5508R454GM



– Type of shank DIN 6535HA
– Centre cutting
– Helix angle 45°







Article	✻	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG303	YK30F
5508R454GM-0300		3	3	8	45	0	0	4	●	○
5508R454GM-0400		4	4	11	50	0	0	4	●	○
5508R454GM-0500		5	5	13	50	0	0	4	●	○
5508R454GM-0600		6	6	13	57	45	0.1	4	●	○
5508R454GM-0800		8	8	19	63	45	0.1	4	●	○
5508R454GM-1000		10	10	22	72	45	0.1	4	●	○
5508R454GM-1200		12	12	26	83	45	0.1	4	●	○
5508R454GM-1400		14	14	26	83	45	0.15	4	●	○
5508R454GM-1600		16	16	32	92	45	0.15	4	●	○
5508R454GM-1800		18	18	32	92	45	0.15	4	●	○
5508R454GM-2000		20	20	38	104	45	0.15	4	●	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

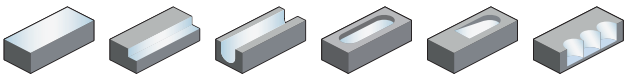
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

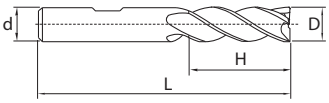
End mill long cutting edge Semi-finishing

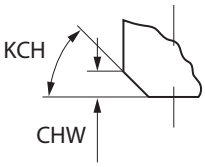
5602R454GM



– Type of shank: DIN 6535HB
– Centre cutting
– Helix angle 45°







Article	✻	Dimensions [mm]						Teeth	Grade
		D	d (h6)	H	L	KCH	CHW		KMG303
5602R454GM-0300		3	6	8	57	0	0	4	●
5602R454GM-0400		4	6	11	57	0	0	4	●
5602R454GM-0500		5	6	13	57	0	0	4	●
5602R454GM-0600		6	6	13	57	45	0.1	4	●
5602R454GM-0800		8	8	19	63	45	0.1	4	●
5602R454GM-1000		10	10	22	72	45	0.1	4	●
5602R454GM-1200		12	12	26	83	45	0.1	4	●
5602R454GM-1400		14	14	26	83	45	0.15	4	●
5602R454GM-1600		16	16	32	92	45	0.15	4	●
5602R454GM-1800		18	18	32	92	45	0.15	4	●
5602R454GM-2000		20	20	38	104	45	0.15	4	●

● Ex stock ○ On demand
✻ With internal cooling

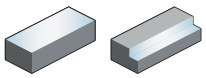
Application field

P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

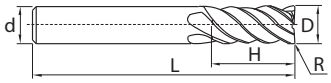
Torus mill long cutting edge Finishing



5589R45MGF

– Type of shank DIN 6535HA
– Helix angle 45°





Article	✻	Dimensions [mm]					Teeth	Grade
		D	R	d (h6)	H	L		KMG405
5589R45MGFR02-0600		6	0.2	6	19	63	6	●
5589R45MGFR02-0800		8	0.2	8	28	72	6	●
5589R45MGFR02-1000		10	0.2	10	34	84	6	●
5589R45MGFR02-1200		12	0.2	12	40	97	6	●
5589R45MGFR03-1600		16	0.3	16	48	108	8	○
5589R45MGFR03-2000		20	0.3	20	56	122	10	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

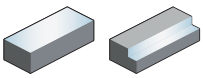
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

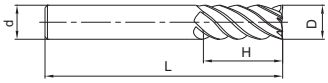
End mill Semi-finishing

GM-6E



– Factory standard
– Non-centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm] D	d (h6)	H	L	Teeth	Grade KMG303
GM-6E-D6.0		6	6	18	60	6	●
GM-6E-D8.0		8	8	20	60	6	●
GM-6E-D10.0		10	10	30	75	6	●
GM-6E-D12.0		12	12	32	75	6	●
GM-6E-D16.0		16	16	40	100	6	●
GM-6E-D20.0		20	20	45	100	6	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

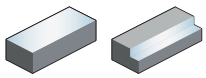
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

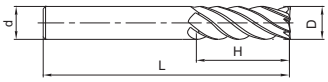
End mill long cutting edge — Semi-finishing

GM-6EL



– Factory standard
– Non-centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		KMG303
GM-6EL-D6.0		6	6	24	75	6	●
GM-6EL-D8.0		8	8	32	75	6	●
GM-6EL-D10.0		10	10	40	100	6	●
GM-6EL-D12.0		12	12	45	100	6	●
GM-6EL-D16.0		16	16	64	150	6	●
GM-6EL-D20.0		20	20	75	150	6	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

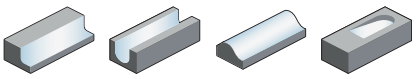
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

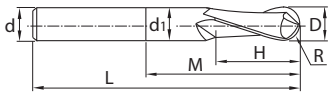
Ball nose cutter Finishing

5565R302GF



– Type of shank DIN 6535HA
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]							Teeth	Grade
		D	R	d (h6)	d_1	H	M	L		KMG303
5565R302GF-0300		3	1.5	6	2.8	4	9	57	2	●
5565R302GF-0400		4	2	6	3.7	5	12	57	2	●
5565R302GF-0500		5	2.5	6	4.6	6	15	57	2	●
5565R302GF-0600		6	3	6	5.5	7	20	57	2	●
5565R302GF-0800		8	4	8	7.4	9	26	63	2	●
5565R302GF-1000		10	5	10	9.2	11	31	72	2	●
5565R302GF-1200		12	6	12	11	12	37	83	2	●
5565R302GF-1600		16	8	16	15	16	43	92	2	●
5565R302GF-2000		20	10	20	19	20	50	104	2	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

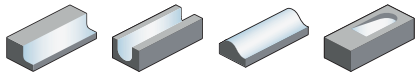
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

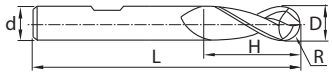
Ball nose cutter Semi-finishing

5665R202GM



– Type of shank: DIN 6535HB
– Centre cutting
– Helix angle 20°





Article	✻	Dimensions [mm]						Teeth	Grade
		D	R	d (h6)	d_1	H	L		KMG303
5665R202GM-0300		3	1.5	6	2.8	4	57	2	●
5665R202GM-0400		4	2	6	3.7	5	57	2	●
5665R202GM-0500		5	2.5	6	4.6	6	57	2	●
5665R202GM-0600		6	3	6	5.5	7	57	2	●
5665R202GM-0800		8	4	8	7.4	9	63	2	●
5665R202GM-1000		10	5	10	9.2	11	72	2	●
5665R202GM-1200		12	6	12	11	12	83	2	●
5665R202GM-1600		16	8	16	15	16	92	2	●
5665R202GM-2000		20	10	20	19	20	104	2	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

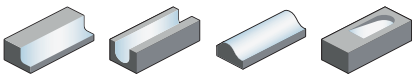
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

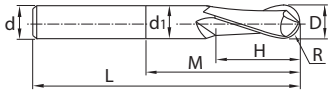
Ball nose cutter long shank Finishing

5566R302GF



– Type of shank DIN 6535HA
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]							Teeth	Grade
		D	R	d (h6)	d_1	H	M	L		KMG303
5566R302GF-0300		3	1.5	6	2.8	4	15	75	2	●
5566R302GF-0400		4	2	6	3.7	5	20	75	2	●
5566R302GF-0500		5	2.5	6	4.6	6	25	80	2	●
5566R302GF-0600		6	3	6	5.5	7	30	80	2	●
5566R302GF-0800		8	4	8	7.4	9	35	90	2	●
5566R302GF-1000		10	5	10	9.2	11	40	100	2	●
5566R302GF-1200		12	6	12	11	12	50	120	2	●

● Ex stock ○ On demand
✻ With internal cooling

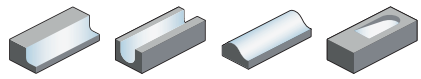
Application field

P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

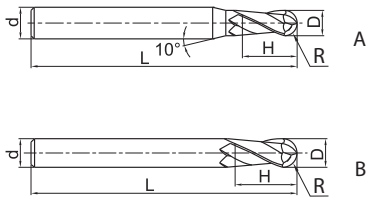
Ball nose cutter Semi-finishing



GM-2B

– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm] R	D	d (h6)	H	L	Teeth	Geometry	Grade KMG303
GM-2B-R0.5S		0.5	1	4	2	50	2	A	●
GM-2B-R0.75S		0.75	1.5	4	3	50	2	A	●
GM-2B-R1.0S		1	2	4	4	50	2	A	●
GM-2B-R1.25S		1.25	2.5	4	5	50	2	A	●
GM-2B-R1.5S		1.5	3	4	6	50	2	A	●
GM-2B-R2.0S		2	4	4	8	50	2	B	●
GM-2B-R0.5		0.5	1	6	2	50	2	A	○
GM-2B-R0.75		0.75	1.5	6	3	50	2	A	○
GM-2B-R1.0		1	2	6	4	50	2	A	●
GM-2B-R1.25		1.25	2.5	6	5	50	2	A	○
GM-2B-R1.5		1.5	3	6	6	50	2	A	●
GM-2B-R1.75		1.75	3.5	6	8	50	2	A	○
GM-2B-R2.0		2	4	6	8	50	2	A	●
GM-2B-R2.5		2.5	5	6	10	50	2	A	●
GM-2B-R2.75		2.75	5.5	6	12	50	2	A	○
GM-2B-R3.0		3	6	6	12	50	2	B	●
GM-2B-R3.5		3.5	7	8	14	60	2	A	○
GM-2B-R4.0		4	8	8	16	60	2	B	●
GM-2B-R4.5		4.5	9	10	18	75	2	A	○
GM-2B-R5.0		5	10	10	20	75	2	B	●
GM-2B-R6.0		6	12	12	24	75	2	B	●
GM-2B-R7.0		7	14	14	28	75	2	B	●
GM-2B-R8.0		8	16	16	32	100	2	B	●
GM-2B-R10.0		10	20	20	40	100	2	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

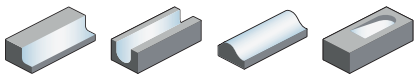
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

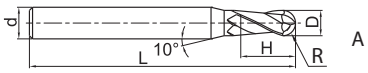
Ball nose cutter long shank Semi-finishing

GM-2BL

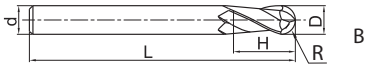


– Factory standard
– Centre cutting
– Helix angle 35°





A



B

Article	✲	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG303
GM-2BL-R1.0		1	2	6	4	75	2	A	●
GM-2BL-R1.25		1.25	2.5	6	5	75	2	A	●
GM-2BL-R1.5		1.5	3	6	6	75	2	A	●
GM-2BL-R1.75		1.75	3.5	6	8	75	2	A	●
GM-2BL-R2.0		2	4	6	8	75	2	A	●
GM-2BL-R2.5		2.5	5	6	10	75	2	A	●
GM-2BL-R2.75		2.75	5.5	6	12	75	2	A	●
GM-2BL-R3.0		3	6	6	12	75	2	B	●
GM-2BL-R3.5		3.5	7	8	14	75	2	A	●
GM-2BL-R4.0		4	8	8	16	100	2	B	●
GM-2BL-R4.5		4.5	9	10	18	100	2	A	●
GM-2BL-R5.0		5	10	10	20	100	2	B	●
GM-2BL-R6.0		6	12	12	24	100	2	B	●
GM-2BL-R7.0		7	14	14	28	100	2	B	●
GM-2BL-R8.0		8	16	16	32	150	2	B	●
GM-2BL-R10.0		10	20	20	40	150	2	B	●

● Ex stock ○ On demand
✲ With internal cooling

Application field

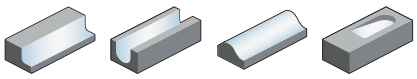
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

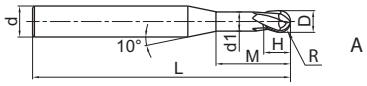
Ball nose cutter short cutting edge **Semi-finishing**

GM-2BFP

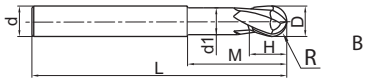


– Factory standard
– Centre cutting
– Helix angle 35°





A



B

Article	✻	Dimensions [mm]							Teeth	Geometry	Grade
		R	D	d (h6)	d_1	H	M	L			KMG303
GM-2BFP-R0.5		0.5	1	6	0.95	1	2.5	75	2	A	○
GM-2BFP-R0.75		0.75	1.5	6	1.45	1	3	75	2	A	○
GM-2BFP-R1.0		1	2	6	1.95	2	4	75	2	A	●
GM-2BFP-R1.5		1.5	3	6	2.85	3	6	75	2	A	○
GM-2BFP-R2.0		2	4	6	3.85	4	8	75	2	A	○
GM-2BFP-R2.5		2.5	5	6	4.85	5	10	75	2	A	○
GM-2BFP-R3.0		3	6	6	5.8	6	12	75	2	B	○
GM-2BFP-R4.0		4	8	8	7.8	8	16	100	2	B	○
GM-2BFP-R5.0		5	10	10	9.6	10	20	100	2	B	○
GM-2BFP-R6.0		6	12	12	11.5	12	24	100	2	B	○
GM-2BFP-R8.0		8	16	16	15.5	16	32	150	2	B	○
GM-2BFP-R10.0		10	20	20	19.5	20	40	150	2	B	○

● Ex stock ○ On demand
✻ With internal cooling

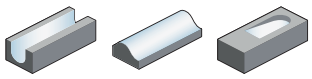
Application field

P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

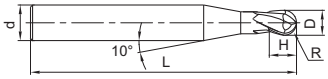
Ball nose cutter Semi-finishing



GM-2BS

– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMG303
GM-2BS-R0.15		0.15	0.3	4	0.5	50	2	●
GM-2BS-R0.20		0.2	0.4	4	0.6	50	2	●
GM-2BS-R0.25		0.25	0.5	4	0.8	50	2	●
GM-2BS-R0.30		0.3	0.6	4	0.9	50	2	●
GM-2BS-R0.35		0.35	0.7	4	1	50	2	●
GM-2BS-R0.40		0.4	0.8	4	1.2	50	2	●
GM-2BS-R0.45		0.45	0.9	4	1.3	50	2	●
GM-2BS-R0.50		0.5	1	4	1.5	50	2	●
GM-2BS-R0.60		0.6	1.2	4	1.8	50	2	●
GM-2BS-R0.70		0.7	1.4	4	2	50	2	●
GM-2BS-R0.75		0.75	1.5	4	2.3	50	2	●
GM-2BS-R0.80		0.8	1.6	4	2.5	50	2	●
GM-2BS-R0.90		0.9	1.8	4	2.7	50	2	●
GM-2BS-R1.00		1	2	4	3	50	2	●
GM-2BS-R1.25		1.25	2.5	4	3.7	50	2	●
GM-2BS-R1.50		1.5	3	4	4.5	50	2	●

● Ex stock ○ On demand
✻ With internal cooling

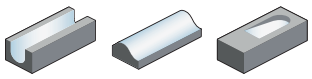
Application field

P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

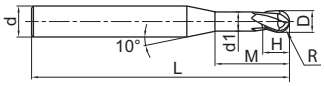
Ball nose cutter Semi-finishing



GM-2BP

– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d_1	H	M	L		KMG303
GM-2BP-R0.25-M04		0.25	0.5	4	0.45	0.7	4	50	2	●
GM-2BP-R0.25-M06		0.25	0.5	4	0.45	0.7	6	50	2	●
GM-2BP-R0.3-M04		0.3	0.6	4	0.55	0.9	4	50	2	●
GM-2BP-R0.3-M06		0.3	0.6	4	0.55	0.9	6	50	2	●
GM-2BP-R0.3-M08		0.3	0.6	4	0.55	0.9	8	50	2	●
GM-2BP-R0.4-M04		0.4	0.8	4	0.75	1.2	4	50	2	●
GM-2BP-R0.4-M06		0.4	0.8	4	0.75	1.2	6	50	2	●
GM-2BP-R0.4-M08		0.4	0.8	4	0.75	1.2	8	50	2	●
GM-2BP-R0.4-M10		0.4	0.8	4	0.75	1.2	10	50	2	●
GM-2BP-R0.5-M04		0.5	1	4	0.95	1.5	4	50	2	●
GM-2BP-R0.5-M06		0.5	1	4	0.95	1.5	6	50	2	●
GM-2BP-R0.5-M08		0.5	1	4	0.95	1.5	8	50	2	●
GM-2BP-R0.5-M10		0.5	1	4	0.95	1.5	10	50	2	●
GM-2BP-R0.5-M12		0.5	1	4	0.95	1.5	12	50	2	●
GM-2BP-R0.6-M06		0.6	1.2	4	1.15	1.8	6	50	2	●
GM-2BP-R0.6-M08		0.6	1.2	4	1.15	1.8	8	50	2	●
GM-2BP-R0.6-M12		0.6	1.2	4	1.15	1.8	12	50	2	●
GM-2BP-R0.6-M16		0.6	1.2	4	1.15	1.8	16	50	2	●
GM-2BP-R0.75-M08		0.75	1.5	4	1.45	2.3	8	50	2	●
GM-2BP-R0.75-M12		0.75	1.5	4	1.45	2.3	12	50	2	●
GM-2BP-R0.75-M16		0.75	1.5	4	1.45	2.3	16	50	2	●
GM-2BP-R1.0-M06		1	2	4	1.95	3	6	50	2	●
GM-2BP-R1.0-M08		1	2	4	1.95	3	8	50	2	●
GM-2BP-R1.0-M10		1	2	4	1.95	3	10	50	2	●
GM-2BP-R1.0-M12		1	2	4	1.95	3	12	50	2	●
GM-2BP-R1.0-M16		1	2	4	1.95	3	16	50	2	●
GM-2BP-R1.0-M20		1	2	4	1.95	3	20	50	2	●
GM-2BP-R1.25-M08		1.25	2.5	4	2.4	3.7	8	50	2	●
GM-2BP-R1.25-M12		1.25	2.5	4	2.4	3.7	12	50	2	●
GM-2BP-R1.25-M16		1.25	2.5	4	2.4	3.7	16	60	2	●
GM-2BP-R1.25-M20		1.25	2.5	4	2.4	3.7	20	60	2	●
GM-2BP-R1.5-M08		1.5	3	6	2.85	4.5	8	50	2	●
GM-2BP-R1.5-M10		1.5	3	6	2.85	4.5	10	50	2	●
GM-2BP-R1.5-M12		1.5	3	6	2.85	4.5	12	50	2	●
GM-2BP-R1.5-M16		1.5	3	6	2.85	4.5	16	60	2	●
GM-2BP-R1.5-M20		1.5	3	6	2.85	4.5	20	60	2	●
GM-2BP-R2.0-M10		2	4	6	3.85	6	10	60	2	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

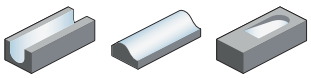
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

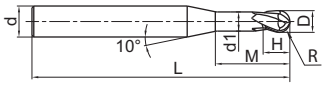
Ball nose cutter Semi-finishing

GM-2BP



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d_1	H	M	L		KMG303
GM-2BP-R2.0-M16		2	4	6	3.85	6	16	60	2	●
GM-2BP-R2.0-M20		2	4	6	3.85	6	20	60	2	●
GM-2BP-R2.0-M25		2	4	6	3.85	6	25	60	2	●
GM-2BP-R2.5-M16		2.5	5	6	4.85	7.5	16	60	2	●
GM-2BP-R2.5-M25		2.5	5	6	4.85	7.5	25	70	2	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

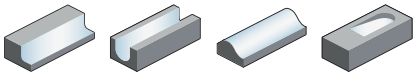
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

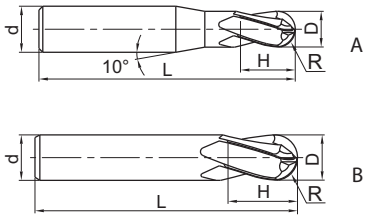
Ball nose cutter Semi-finishing

GM-4B



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm] R	D	d (h6)	H	L	Teeth	Geometry	Grade KMG303
GM-4B-R1.5		1.5	3	6	6	50	4	A	●
GM-4B-R2.0		2	4	6	8	50	4	A	●
GM-4B-R2.5		2.5	5	6	10	50	4	A	●
GM-4B-R3.0		3	6	6	12	50	4	B	●
GM-4B-R4.0		4	8	8	16	60	4	B	●
GM-4B-R5.0		5	10	10	20	75	4	B	●
GM-4B-R6.0		6	12	12	24	75	4	B	●
GM-4B-R7.0		7	14	14	28	75	4	B	●
GM-4B-R8.0		8	16	16	32	100	4	B	●
GM-4B-R9.0		9	18	18	36	100	4	B	●
GM-4B-R10.0		10	20	20	40	100	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

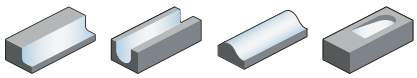
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

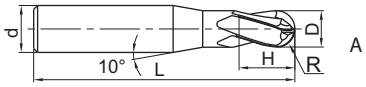
Ball nose cutter long shank Semi-finishing

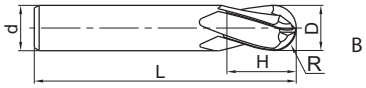
GM-4BL



– Factory standard
– Centre cutting
– Helix angle 35°







Article	✲	Dimensions [mm] R	D	d (h6)	H	L	Teeth	Geometry	Grade KMG303
GM-4BL-R1.5		1.5	3	6	6	75	4	A	○
GM-4BL-R2.0		2	4	6	8	75	4	A	○
GM-4BL-R2.5		2.5	5	6	10	75	4	A	○
GM-4BL-R3.0		3	6	6	12	75	4	B	○
GM-4BL-R4.0		4	8	8	16	100	4	B	○
GM-4BL-R5.0		5	10	10	20	100	4	B	○
GM-4BL-R6.0		6	12	12	24	100	4	B	○
GM-4BL-R7.0		7	14	14	28	100	4	B	○
GM-4BL-R8.0		8	16	16	32	150	4	B	○
GM-4BL-R9.0		9	18	18	36	150	4	B	○
GM-4BL-R10.0		10	20	20	40	150	4	B	○

● Ex stock ○ On demand
✲ With internal cooling

Application field

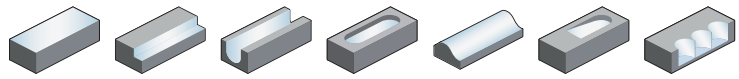
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

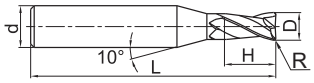
Torus mill Semi-finishing

GM-2R



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMG303
GM-2R-D1.0R0.2		0.2	1	4	3	50	2	○
GM-2R-D1.5R0.2		0.2	1.5	4	4	50	2	○
GM-2R-D2.0R0.2		0.2	2	4	6	50	2	○
GM-2R-D2.0R0.5		0.5	2	4	6	50	2	○
GM-2R-D2.5R0.2		0.2	2.5	4	8	50	2	○
GM-2R-D2.5R0.5		0.5	2.5	4	8	50	2	○
GM-2R-D3.0R0.2		0.2	3	4	8	50	2	○
GM-2R-D3.0R0.3		0.3	3	4	8	50	2	○
GM-2R-D3.0R0.5		0.5	3	4	8	50	2	○
GM-2R-D4.0R0.2		0.2	4	4	11	50	2	○
GM-2R-D4.0R0.3		0.3	4	4	11	50	2	○
GM-2R-D4.0R0.5		0.5	4	4	11	50	2	○
GM-2R-D4.0R1.0		1	4	4	11	50	2	○
GM-2R-D5.0R0.3		0.3	5	6	13	50	2	○
GM-2R-D5.0R0.5		0.5	5	6	13	50	2	○
GM-2R-D5.0R1.0		1	5	6	13	50	2	○
GM-2R-D6.0R0.3		0.3	6	6	16	50	2	○
GM-2R-D6.0R0.5		0.5	6	6	16	50	2	○
GM-2R-D6.0R1.0		1	6	6	16	50	2	○
GM-2R-D8.0R0.3		0.3	8	8	20	60	2	○
GM-2R-D8.0R0.5		0.5	8	8	20	60	2	○
GM-2R-D8.0R1.0		1	8	8	20	60	2	○
GM-2R-D10.0R0.5		0.5	10	10	25	75	2	○
GM-2R-D10.0R1.0		1	10	10	25	75	2	○
GM-2R-D10.0R1.5		1.5	10	10	25	75	2	●
GM-2R-D10.0R2.0		2	10	10	25	75	2	○
GM-2R-D12.0R0.5		0.5	12	12	30	75	2	○
GM-2R-D12.0R1.0		1	12	12	30	75	2	○
GM-2R-D12.0R1.5		1.5	12	12	30	75	2	○
GM-2R-D12.0R2.0		2	12	12	30	75	2	●

● Ex stock ○ On demand
✻ With internal cooling

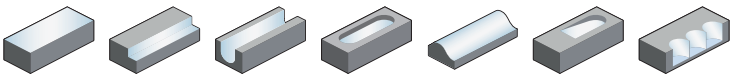
Application field

P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

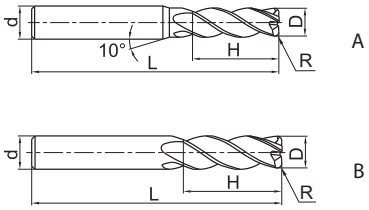
Torus mill Semi-finishing



GM-4R

– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG303
GM-4R-D3.0R0.2		0.2	3	4	8	50	4	A	●
GM-4R-D4.0R0.3		0.3	4	4	10	50	4	B	○
GM-4R-D4.0R0.5		0.5	4	4	10	50	4	B	●
GM-4R-D5.0R0.5		0.5	5	6	13	50	4	A	●
GM-4R-D5.0R1.0		1	5	6	13	50	4	A	●
GM-4R-D6.0R0.5		0.5	6	6	16	50	4	B	●
GM-4R-D6.0R1.0		1	6	6	16	50	4	B	●
GM-4R-D8.0R0.5		0.5	8	8	20	60	4	B	●
GM-4R-D8.0R1.0		1	8	8	20	60	4	B	●
GM-4R-D10.0R0.5		0.5	10	10	25	75	4	B	●
GM-4R-D10.0R1.0		1	10	10	25	75	4	B	●
GM-4R-D10.0R2.0		2	10	10	25	75	4	B	●
GM-4R-D10.0R3.0		3	10	10	25	75	4	B	●
GM-4R-D12.0R0.5		0.5	12	12	30	75	4	B	●
GM-4R-D12.0R1.0		1	12	12	30	75	4	B	●
GM-4R-D12.0R2.0		2	12	12	30	75	4	B	●
GM-4R-D12.0R3.0		3	12	12	30	75	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

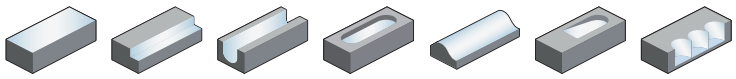
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

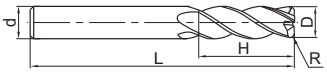
Torus mill long shank Semi-finishing

GM-4RL



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMG303
GM-4RL-D6.0R0.5		0.5	6	6	16	75	4	●
GM-4RL-D6.0R1.0		1	6	6	16	75	4	●
GM-4RL-D8.0R0.5		0.5	8	8	20	100	4	●
GM-4RL-D8.0R1.0		1	8	8	20	100	4	●
GM-4RL-D10.0R0.5		0.5	10	10	25	100	4	●
GM-4RL-D10.0R1.0		1	10	10	25	100	4	●
GM-4RL-D10.0R2.0		2	10	10	25	100	4	●
GM-4RL-D12.0R0.5		0.5	12	12	30	100	4	○
GM-4RL-D12.0R1.0		1	12	12	30	100	4	●
GM-4RL-D12.0R2.0		2	12	12	30	100	4	●
GM-4RL-D16.0R1.0		1	16	16	45	150	4	●
GM-4RL-D16.0R2.0		2	16	16	45	150	4	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

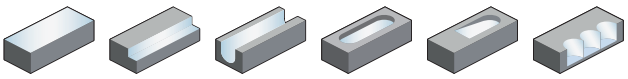
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

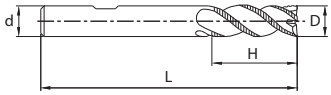
End mill long cutting edge | General roughing

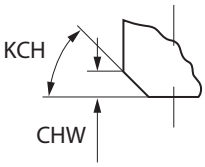
5602R303GR



– Type of shank: DIN 6535HB
– Centre cutting
– Helix angle 30°







Article	✻	Dimensions [mm] D	d (h6)	H	L	KCH	CHW	Teeth	Grade KMG303
5602R303GR-0600		6	6	13	57	45	0.25	3	●
5602R303GR-0800		8	8	19	63	45	0.25	3	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

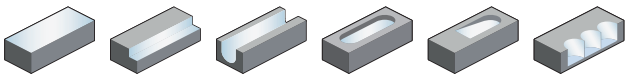
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

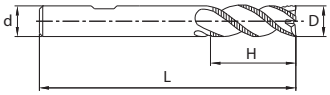
End mill long cutting edge | General roughing

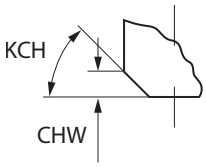
5602R304GR



– Type of shank: DIN 6535HB
– Centre cutting
– Helix angle 30°







Article	✻	Dimensions [mm]						Teeth	Grade
		D	d (h6)	H	L	KCH	CHW		KMG303
5602R304GR-1000		10	10	22	72	45	0.5	4	●
5602R304GR-1200		12	12	26	83	45	0.5	4	●
5602R304GR-1400		14	14	30	90	45	0.5	4	○
5602R304GR-1600		16	16	32	92	45	0.5	4	●
5602R304GR-2000		20	20	38	104	45	0.5	4	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

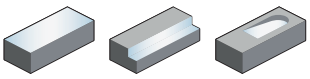
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 | Cutting data B436 | Nonstandard order B477

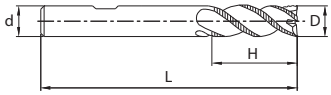
End mill long cutting edge | General roughing

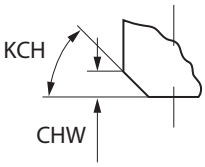
5602R305GR



– Type of shank: DIN 6535HB
– Centre cutting
– Helix angle 30°







Article	✻	Dimensions [mm] D	d (h6)	H	L	KCH	CHW	Teeth	Grade KMG303
5602R305GR-2500		25	25	45	121	45	0.5	5	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

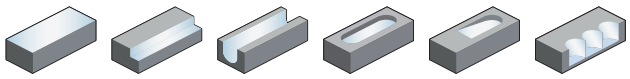
P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

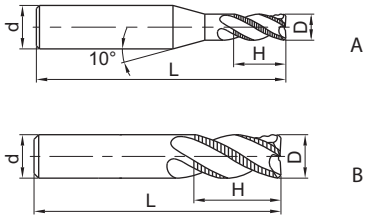
End mill serrated teeth | Semi-finishing

GM-4W



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG405
GM-4W-D6.0		6	6	16	50	4	B	●
GM-4W-D7.0		7	8	20	60	4	A	●
GM-4W-D8.0		8	8	20	60	4	B	●
GM-4W-D9.0		9	10	22	75	4	A	●
GM-4W-D10.0		10	10	25	75	4	B	●
GM-4W-D11.0		11	12	26	75	4	A	●
GM-4W-D12.0		12	12	30	75	4	B	●
GM-4W-D16.0		16	16	45	100	4	B	●
GM-4W-D20.0		20	20	45	100	4	B	●

● Ex stock ○ On demand

✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

Notes

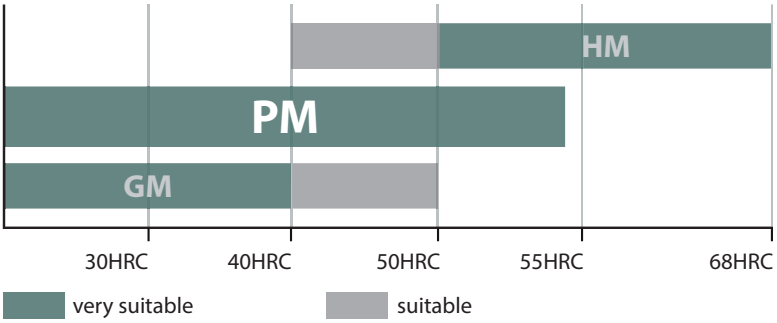


PM series

For demanding applications

- For machining of steel to max. 55 HRC and cast iron to heat-resistant alloys.
- Very solid cutting edge with high stiffness for higher cutting speeds and feed rates.
- End mills, ball nose cutters, torus mills and high feed mills
- Diameter range 3.0–20.0 mm

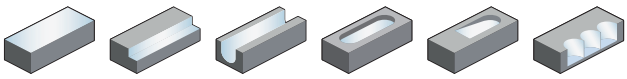
Application fields for machining of steel





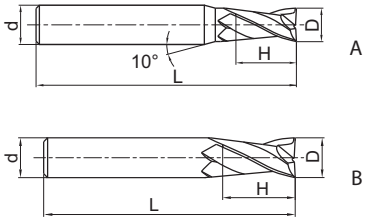
End mill High-performance machining

PM-2E



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm] D	d (h6)	H	L	Teeth	Geometry	Grade KMG405
PM-2E-D1.0S		1	4	3	50	2	A	●
PM-2E-D1.5S		1.5	4	4	50	2	A	●
PM-2E-D2.0S		2	4	6	50	2	A	●
PM-2E-D2.5S		2.5	4	8	50	2	A	●
PM-2E-D3.0S		3	4	8	50	2	A	●
PM-2E-D4.0S		4	4	11	50	2	B	●
PM-2E-D1.0		1	6	3	50	2	A	●
PM-2E-D1.5		1.5	6	4	50	2	A	●
PM-2E-D2.0		2	6	6	50	2	A	●
PM-2E-D2.5		2.5	6	8	50	2	A	●
PM-2E-D3.0		3	6	8	50	2	A	●
PM-2E-D3.5		3.5	6	10	50	2	A	●
PM-2E-D4.0		4	6	11	50	2	A	●
PM-2E-D4.5		4.5	6	11	50	2	A	●
PM-2E-D5.0		5	6	13	50	2	A	●
PM-2E-D5.5		5.5	6	16	50	2	A	●
PM-2E-D6.0		6	6	16	50	2	B	●
PM-2E-D7.0		7	8	20	60	2	A	●
PM-2E-D8.0		8	8	20	60	2	B	●
PM-2E-D9.0		9	10	22	75	2	A	●
PM-2E-D10.0		10	10	25	75	2	B	●
PM-2E-D11.0		11	12	26	75	2	A	○
PM-2E-D12.0		12	12	30	75	2	B	●
PM-2E-D14.0		14	14	32	75	2	B	●
PM-2E-D16.0		16	16	45	100	2	B	●
PM-2E-D18.0		18	18	45	100	2	B	○
PM-2E-D20.0		20	20	45	100	2	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

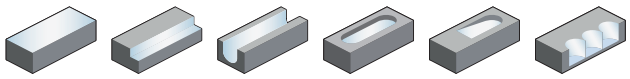
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

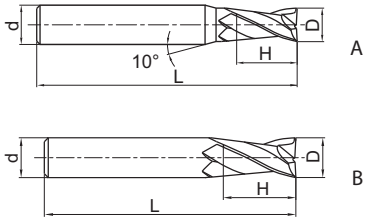
End mill long cutting edge | High-performance machining

PM-2EL



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG405
PM-2EL-D3.0		3	6	12	75	2	A	●
PM-2EL-D4.0		4	6	15	75	2	A	●
PM-2EL-D5.0		5	6	20	75	2	A	●
PM-2EL-D6.0		6	6	20	75	2	B	●
PM-2EL-D8.0		8	8	25	100	2	B	●
PM-2EL-D10.0		10	10	30	100	2	B	●
PM-2EL-D12.0		12	12	35	100	2	B	●
PM-2EL-D14.0		14	14	40	100	2	B	○
PM-2EL-D16.0		16	16	50	150	2	B	●
PM-2EL-D20.0		20	20	55	150	2	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

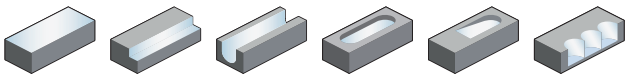
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 | Cutting data B436 | Nonstandard order B477

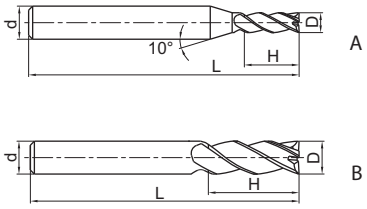
End mill High-performance machining

PM-4E-G



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG405
PM-4E-D1.0S-G		1	4	3	50	4	A	●
PM-4E-D1.5S-G		1.5	4	4	50	4	A	●
PM-4E-D2.0S-G		2	4	6	50	4	A	●
PM-4E-D2.5S-G		2.5	4	8	50	4	A	●
PM-4E-D3.0S-G		3	4	8	50	4	A	●
PM-4E-D4.0S-G		4	4	11	50	4	B	●
PM-4E-D1.0-G		1	6	3	50	4	A	●
PM-4E-D1.5-G		1.5	6	4	50	4	A	●
PM-4E-D2.0-G		2	6	6	50	4	A	●
PM-4E-D2.5-G		2.5	6	8	50	4	A	●
PM-4E-D3.0-G		3	6	8	50	4	A	●
PM-4E-D3.5-G		3.5	6	10	50	4	A	●
PM-4E-D4.0-G		4	6	11	50	4	A	●
PM-4E-D4.5-G		4.5	6	11	50	4	A	●
PM-4E-D5.0-G		5	6	13	50	4	A	●
PM-4E-D5.5-G		5.5	6	16	50	4	A	●
PM-4E-D6.0-G		6	6	16	50	4	B	●
PM-4E-D7.0-G		7	8	20	60	4	A	●
PM-4E-D8.0-G		8	8	20	60	4	B	●
PM-4E-D9.0-G		9	10	22	75	4	A	●
PM-4E-D10.0-G		10	10	25	75	4	B	●
PM-4E-D11.0-G		11	12	26	75	4	A	●
PM-4E-D12.0-G		12	12	30	75	4	B	●
PM-4E-D14.0-G		14	14	32	75	4	B	●
PM-4E-D16.0-G		16	16	45	100	4	B	●
PM-4E-D18.0-G		18	18	45	100	4	B	●
PM-4E-D20.0-G		20	20	45	100	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

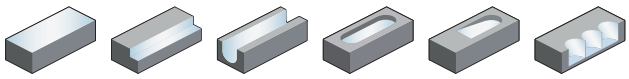
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

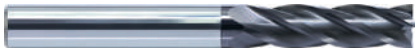
System code B268 Cutting data B436 Nonstandard order B477

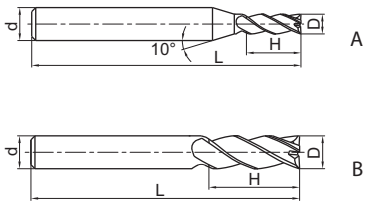
End mill long cutting edge | High-performance machining

PM-4EL-G



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG405
PM-4EL-D3.0-G		3	6	12	75	4	A	○
PM-4EL-D4.0-G		4	6	15	75	4	A	○
PM-4EL-D5.0-G		5	6	20	75	4	A	○
PM-4EL-D6.0-G		6	6	20	75	4	B	○
PM-4EL-D8.0-G		8	8	25	100	4	B	○
PM-4EL-D10.0-G		10	10	30	100	4	B	○
PM-4EL-D12.0-G		12	12	35	100	4	B	○
PM-4EL-D14.0-G		14	14	40	100	4	B	○
PM-4EL-D16.0-G		16	16	50	150	4	B	○
PM-4EL-D20.0-G		20	20	55	150	4	B	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

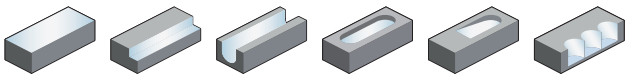
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

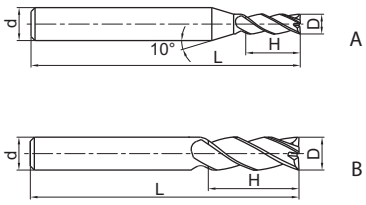
End mill extra long cutting edge | High-performance machining

PM-4EX-G



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm] D	d (h6)	H	L	Teeth	Geometry	Grade KMG405
PM-4EX-D3.0-G		3	6	20	75	4	A	●
PM-4EX-D4.0-G		4	6	25	75	4	A	●
PM-4EX-D5.0-G		5	6	30	75	4	A	●
PM-4EX-D6.0-G		6	6	30	75	4	B	●
PM-4EX-D8.0-G		8	8	40	100	4	B	●
PM-4EX-D10.0-G		10	10	50	110	4	B	●
PM-4EX-D12.0-G		12	12	50	110	4	B	●
PM-4EX-D16.0-G		16	16	70	150	4	B	●
PM-4EX-D20.0-G		20	20	75	150	4	B	●

● Ex stock ○ On demand

✻ With internal cooling

Application field

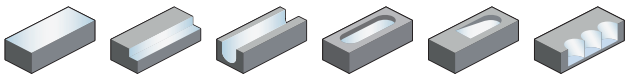
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 | Cutting data B436 | Nonstandard order B477

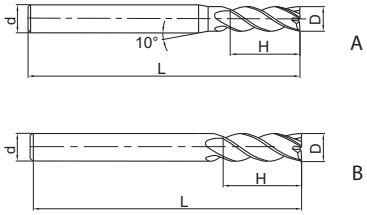
End mill High-performance machining

PM-4E



– Factory standard
– Centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG405
PM-4E-D1.0S		1	4	3	50	4	A	●
PM-4E-D1.5S		1.5	4	4	50	4	A	●
PM-4E-D2.0S		2	4	6	50	4	A	●
PM-4E-D2.5S		2.5	4	8	50	4	A	●
PM-4E-D3.0S		3	4	8	50	4	A	●
PM-4E-D4.0S		4	4	11	50	4	B	●
PM-4E-D1.0		1	6	3	50	4	A	●
PM-4E-D1.5		1.5	6	4	50	4	A	●
PM-4E-D2.0		2	6	6	50	4	A	●
PM-4E-D2.5		2.5	6	8	50	4	A	●
PM-4E-D3.0		3	6	8	50	4	A	●
PM-4E-D3.5		3.5	6	10	50	4	A	●
PM-4E-D4.0		4	6	11	50	4	A	●
PM-4E-D4.5		4.5	6	11	50	4	A	●
PM-4E-D5.0		5	6	13	50	4	A	●
PM-4E-D5.5		5.5	6	16	50	4	A	●
PM-4E-D6.0		6	6	16	50	4	B	●
PM-4E-D7.0		7	8	20	60	4	A	●
PM-4E-D8.0		8	8	20	60	4	B	●
PM-4E-D9.0		9	10	22	75	4	A	●
PM-4E-D10.0		10	10	25	75	4	B	●
PM-4E-D11.0		11	12	26	75	4	A	●
PM-4E-D12.0		12	12	30	75	4	B	●
PM-4E-D14.0		14	14	32	75	4	B	●
PM-4E-D16.0		16	16	45	100	4	B	●
PM-4E-D18.0		18	18	45	100	4	B	●
PM-4E-D20.0		20	20	45	100	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

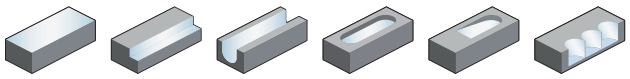
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

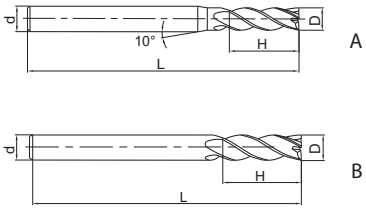
End mill long cutting edge | High-performance machining

PM-4EL



– Factory standard
– Centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG405
PM-4EL-D3.0		3	6	12	75	4	A	●
PM-4EL-D4.0		4	6	15	75	4	A	●
PM-4EL-D5.0		5	6	20	75	4	A	●
PM-4EL-D6.0		6	6	20	75	4	B	●
PM-4EL-D8.0		8	8	25	100	4	B	●
PM-4EL-D10.0		10	10	30	100	4	B	●
PM-4EL-D12.0		12	12	35	100	4	B	●
PM-4EL-D14.0		14	14	40	100	4	B	●
PM-4EL-D16.0		16	16	50	150	4	B	●
PM-4EL-D20.0		20	20	55	150	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

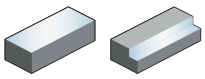
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

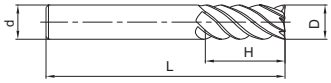
End mill High-performance machining

PM-6E



– Factory standard
– Non-centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		KMG405
PM-6E-D6.0		6	6	18	60	6	●
PM-6E-D8.0		8	8	20	60	6	●
PM-6E-D10.0		10	10	30	75	6	●
PM-6E-D12.0		12	12	32	75	6	●
PM-6E-D16.0		16	16	40	100	6	●
PM-6E-D20.0		20	20	45	100	6	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔	✔			✔

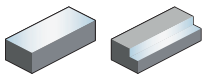
✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

End mill long cutting edge

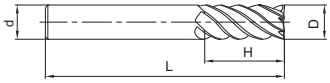
High-performance machining

PM-6EL



– Factory standard
– Non-centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		KMG405
PM-6EL-D6.0		6	6	24	75	6	●
PM-6EL-D8.0		8	8	32	75	6	●
PM-6EL-D10.0		10	10	40	100	6	●
PM-6EL-D12.0		12	12	45	100	6	●
PM-6EL-D16.0		16	16	64	150	6	●
PM-6EL-D20.0		20	20	75	150	6	●

● Ex stock ○ On demand

✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔	✔			✔

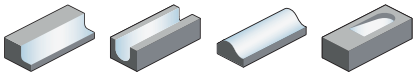
✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

Ball nose cutter

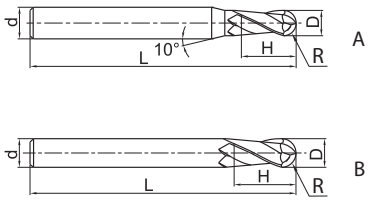
High-performance machining

PM-2B



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm] R	D	d (h6)	H	L	Teeth	Geometry	Grade KMG405
PM-2B-R0.5S		0.5	1	4	2	50	2	A	●
PM-2B-R0.75S		0.75	1.5	4	3	50	2	A	●
PM-2B-R1.0S		1	2	4	4	50	2	A	●
PM-2B-R1.25S		1.25	2.5	4	5	50	2	A	●
PM-2B-R1.5S		1.5	3	4	6	50	2	A	●
PM-2B-R2.0S		2	4	4	8	50	2	B	●
PM-2B-R0.5		0.5	1	6	2	50	2	A	●
PM-2B-R0.75		0.75	1.5	6	3	50	2	A	●
PM-2B-R1.0		1	2	6	4	50	2	A	●
PM-2B-R1.25		1.25	2.5	6	5	50	2	A	●
PM-2B-R1.5		1.5	3	6	6	50	2	A	●
PM-2B-R1.75		1.75	3.5	6	8	50	2	A	●
PM-2B-R2.0		2	4	6	8	50	2	A	●
PM-2B-R2.5		2.5	5	6	10	50	2	A	●
PM-2B-R2.75		2.75	5.5	6	12	50	2	A	●
PM-2B-R3.0		3	6	6	12	50	2	B	●
PM-2B-R3.5		3.5	7	8	14	60	2	A	●
PM-2B-R4.0		4	8	8	16	60	2	B	●
PM-2B-R4.5		4.5	9	10	18	75	2	A	●
PM-2B-R5.0		5	10	10	20	75	2	B	●
PM-2B-R6.0		6	12	12	24	75	2	B	●
PM-2B-R7.0		7	14	14	28	75	2	B	●
PM-2B-R8.0		8	16	16	32	100	2	B	●
PM-2B-R10.0		10	20	20	40	100	2	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

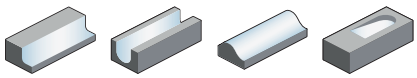
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

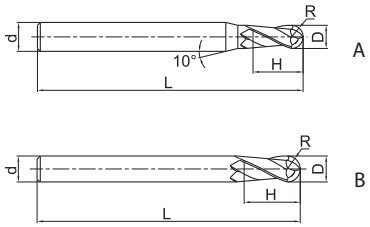
Ball nose cutter long shank — High-performance machining

PM-2BL



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm] R	D	d (h6)	H	L	Teeth	Geometry	Grade KMG405
PM-2BL-R1.0		1	2	6	4	75	2	A	●
PM-2BL-R1.25		1.25	2.5	6	5	75	2	A	●
PM-2BL-R1.5		1.5	3	6	6	75	2	A	●
PM-2BL-R1.75		1.75	3.5	6	8	75	2	A	●
PM-2BL-R2.0		2	4	6	8	75	2	A	●
PM-2BL-R2.5		2.5	5	6	10	75	2	A	●
PM-2BL-R2.75		2.75	5.5	6	12	75	2	A	●
PM-2BL-R3.0		3	6	6	12	75	2	B	●
PM-2BL-R3.5		3.5	7	8	14	75	2	A	●
PM-2BL-R4.0		4	8	8	16	100	2	B	●
PM-2BL-R4.5		4.5	9	10	18	100	2	A	●
PM-2BL-R5.0		5	10	10	20	100	2	B	●
PM-2BL-R6.0		6	12	12	24	100	2	B	●
PM-2BL-R7.0		7	14	14	28	100	2	B	●
PM-2BL-R8.0		8	16	16	32	150	2	B	●
PM-2BL-R10.0		10	20	20	40	150	2	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

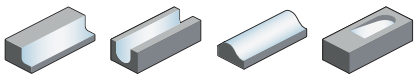
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

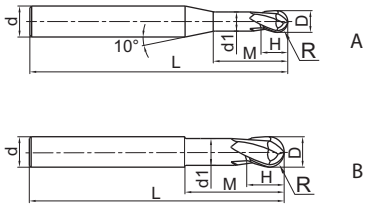
Ball nose cutter short cutting edge | High-performance machining

PM-2BFP



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]							Teeth	Geometry	Grade
		R	D	d (h6)	d_1	H	M	L			KMG405
PM-2BFP-R0.5		0.5	1	6	0.95	1	2.5	75	2	A	●
PM-2BFP-R0.75		0.75	1.5	6	1.45	1.5	3	75	2	A	●
PM-2BFP-R1.0		1	2	6	1.95	2	4	75	2	A	●
PM-2BFP-R1.5		1.5	3	6	2.85	3	6	75	2	A	●
PM-2BFP-R2.0		2	4	6	3.85	4	8	75	2	A	●
PM-2BFP-R2.5		2.5	5	6	4.85	5	10	75	2	A	●
PM-2BFP-R3.0		3	6	6	5.8	6	12	75	2	B	●
PM-2BFP-R4.0		4	8	8	7.8	8	16	100	2	B	●
PM-2BFP-R5.0		5	10	10	9.6	10	20	100	2	B	●
PM-2BFP-R6.0		6	12	12	11.5	12	24	100	2	B	●
PM-2BFP-R8.0		8	16	16	15.5	16	32	150	2	B	●
PM-2BFP-R10.0		10	20	20	19.5	20	40	150	2	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

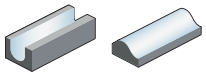
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

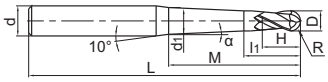
Ball nose cutter conical neck — High-performance machining

PM-2BC



– Straight shank
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]									Teeth	Grade
		R	D	d (h6)	d_1	M	H	L	α	l_1		KMG405
PM-2BC05-R0.25-M03		0.25	0.5	4	0.49	3	0.5	50	0.5	1.5	2	○
PM-2BC05-R0.25-M05		0.25	0.5	4	0.53	5	0.5	50	0.5	1.5	2	○
PM-2BC10-R0.25-M03		0.25	0.5	4	0.52	3	0.5	50	1	1.5	2	○
PM-2BC10-R0.25-M05		0.25	0.5	4	0.59	5	0.5	50	1	1.5	2	○
PM-2BC15-R0.25-M03		0.25	0.5	4	0.54	3	0.5	50	1.5	1.5	2	○
PM-2BC15-R0.25-M05		0.25	0.5	4	0.65	5	0.5	50	1.5	1.5	2	○
PM-2BC05-R0.30-M05		0.3	0.6	4	0.62	5	0.6	50	0.5	1.6	2	○
PM-2BC05-R0.30-M08		0.3	0.6	4	0.68	8	0.6	50	0.5	1.6	2	○
PM-2BC10-R0.30-M05		0.3	0.6	4	0.68	5	0.6	50	1	1.6	2	○
PM-2BC10-R0.30-M08		0.3	0.6	4	0.79	8	0.6	50	1	1.6	2	○
PM-2BC10-R0.30-M10		0.3	0.6	4	0.86	10	0.6	50	1	1.6	2	○
PM-2BC10-R0.30-M12		0.3	0.6	4	0.93	12	0.6	50	1	1.6	2	○
PM-2BC10-R0.30-M15		0.3	0.6	4	1.03	15	0.6	50	1	1.6	2	○
PM-2BC15-R0.30-M05		0.3	0.6	4	0.74	5	0.6	50	1.5	1.6	2	○
PM-2BC15-R0.30-M08		0.3	0.6	4	0.9	8	0.6	50	1.5	1.6	2	○
PM-2BC05-R0.40-M08		0.4	0.8	4	0.87	8	0.8	50	0.5	1.8	2	○
PM-2BC10-R0.40-M08		0.4	0.8	4	0.98	8	0.8	50	1	1.8	2	○
PM-2BC15-R0.40-M08		0.4	0.8	4	1.09	8	0.8	50	1.5	1.8	2	○
PM-2BC05-R0.40-M12		0.4	0.8	4	0.94	12	0.8	60	0.5	1.8	2	○
PM-2BC10-R0.40-M12		0.4	0.8	4	1.12	12	0.8	60	1	1.8	2	○
PM-2BC15-R0.40-M12		0.4	0.8	4	1.3	12	0.8	60	1.5	1.8	2	○
PM-2BC05-R0.50-M10		0.5	1	6	1.08	10	1	60	0.5	2.5	2	○
PM-2BC05-R0.50-M15		0.5	1	6	1.16	15	1	60	0.5	2.5	2	○
PM-2BC10-R0.50-M10		0.5	1	6	1.21	10	1	60	1	2.5	2	○
PM-2BC10-R0.50-M15		0.5	1	6	1.38	15	1	60	1	2.5	2	○
PM-2BC15-R0.50-M10		0.5	1	6	1.34	10	1	60	1.5	2.5	2	○
PM-2BC15-R0.50-M15		0.5	1	6	1.6	15	1	60	1.5	2.5	2	○
PM-2BC20-R0.50-M15		0.5	1	6	1.82	15	1	60	2	2.5	2	○
PM-2BC05-R0.50-M20		0.5	1	6	1.25	20	1	70	0.5	2.5	2	○
PM-2BC05-R0.50-M25		0.5	1	6	1.34	25	1	70	0.5	2.5	2	○
PM-2BC05-R0.50-M30		0.5	1	6	1.42	30	1	70	0.5	2.5	2	○
PM-2BC10-R0.50-M20		0.5	1	6	1.56	20	1	70	1	2.5	2	○
PM-2BC10-R0.50-M25		0.5	1	6	1.73	25	1	70	1	2.5	2	○
PM-2BC10-R0.50-M30		0.5	1	6	1.91	30	1	70	1	2.5	2	○
PM-2BC15-R0.50-M20		0.5	1	6	1.86	20	1	70	1.5	2.5	2	○
PM-2BC20-R0.50-M20		0.5	1	6	2.17	20	1	70	2	2.5	2	○
PM-2BC30-R0.50-M20		0.5	1	6	2.78	20	1	70	3	2.5	2	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

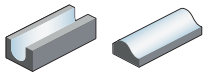
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

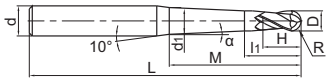
Ball nose cutter conical neck | High-performance machining

PM-2BC



– Straight shank
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]									Teeth	Grade
		R	D	d (h6)	d_1	M	H	L	α	l_1		KMG405
PM-2BC50-R0.50-M20		0.5	1	6	4.01	20	1	70	5	2.5	2	○
PM-2BC10-R0.50-M35		0.5	1	6	2.08	35	1	80	1	2.5	2	○
PM-2BC05-R0.60-M12		0.6	1.2	6	1.31	12	1.2	60	0.5	2.7	2	○
PM-2BC10-R0.60-M12		0.6	1.2	6	1.47	12	1.2	60	1	2.7	2	○
PM-2BC15-R0.60-M12		0.6	1.2	6	1.63	12	1.2	60	1.5	2.7	2	○
PM-2BC05-R0.60-M24		0.6	1.2	6	1.52	24	1.2	70	0.5	2.7	2	○
PM-2BC10-R0.60-M24		0.6	1.2	6	1.89	24	1.2	70	1	2.7	2	○
PM-2BC15-R0.60-M24		0.6	1.2	6	2.26	24	1.2	70	1.5	2.7	2	○
PM-2BC05-R0.75-M10		0.75	1.5	6	1.57	10	1.5	60	0.5	3	2	○
PM-2BC05-R0.75-M15		0.75	1.5	6	1.65	15	1.5	60	0.5	3	2	○
PM-2BC10-R0.75-M10		0.75	1.5	6	1.69	10	1.5	60	1	3	2	○
PM-2BC10-R0.75-M15		0.75	1.5	6	1.86	15	1.5	60	1	3	2	○
PM-2BC15-R0.75-M10		0.75	1.5	6	1.81	10	1.5	60	1.5	3	2	○
PM-2BC15-R0.75-M15		0.75	1.5	6	2.07	15	1.5	60	1.5	3	2	○
PM-2BC05-R0.75-M30		0.75	1.5	6	1.92	30	1.5	70	0.5	3	2	○
PM-2BC10-R0.75-M20		0.75	1.5	6	2.04	20	1.5	70	1	3	2	○
PM-2BC10-R0.75-M30		0.75	1.5	6	2.39	30	1.5	70	1	3	2	○
PM-2BC15-R0.75-M30		0.75	1.5	6	2.86	30	1.5	70	1.5	3	2	○
PM-2BC05-R1.0-M20		1	2	6	2.18	20	2	60	0.5	4	2	○
PM-2BC10-R1.0-M20		1	2	6	2.46	20	2	60	1	4	2	○
PM-2BC10-R1.0-M25		1	2	6	2.64	25	2	60	1	4	2	○
PM-2BC15-R1.0-M20		1	2	6	2.74	20	2	60	1.5	4	2	○
PM-2BC05-R1.0-M30		1	2	6	2.36	30	2	70	0.5	4	2	○
PM-2BC10-R1.0-M30		1	2	6	2.81	30	2	70	1	4	2	○
PM-2BC15-R1.0-M30		1	2	6	3.27	30	2	70	1.5	4	2	○
PM-2BC20-R1.0-M30		1	2	6	3.72	30	2	70	2	4	2	○
PM-2BC30-R1.0-M30		1	2	6	4.63	30	2	70	3	4	2	○
PM-2BC05-R1.0-M40		1	2	6	2.53	40	2	80	0.5	4	2	○
PM-2BC10-R1.0-M35		1	2	6	2.99	35	2	80	1	4	2	○
PM-2BC10-R1.0-M40		1	2	6	3.16	40	2	80	1	4	2	○
PM-2BC15-R1.0-M40		1	2	6	3.79	40	2	80	1.5	4	2	○
PM-2BC20-R1.0-M40		1	2	6	4.42	40	2	80	2	4	2	○
PM-2BC30-R1.0-M40		1	2	6	5.68	40	2	80	3	4	2	○
PM-2BC10-R1.0-M50		1	2	6	3.51	50	2	90	1	4	2	○
PM-2BC05-R1.5-M30		1.5	3	6	3.32	30	3	70	0.5	6	2	○
PM-2BC10-R1.5-M30		1.5	3	6	3.74	30	3	70	1	6	2	○
PM-2BC15-R1.5-M30		1.5	3	6	4.16	30	3	70	1.5	6	2	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

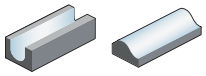
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 | Cutting data B436 | Nonstandard order B477

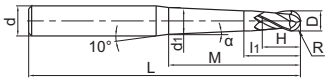
Ball nose cutter conical neck | High-performance machining

PM-2BC



– Straight shank
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]									Teeth	Grade
		R	D	d (h6)	d_1	M	H	L	α	l_1		KMG405
PM-2BC05-R1.5-M40		1.5	3	6	3.5	40	3	80	0.5	6	2	○
PM-2BC10-R1.5-M40		1.5	3	6	4.09	40	3	80	1	6	2	○
PM-2BC15-R1.5-M40		1.5	3	6	4.69	40	3	80	1.5	6	2	○
PM-2BC05-R1.5-M50		1.5	3	6	3.67	50	3	90	0.5	6	2	○
PM-2BC10-R1.5-M50		1.5	3	6	4.44	50	3	90	1	6	2	○
PM-2BC15-R1.5-M50		1.5	3	6	5.21	50	3	90	1.5	6	2	○
PM-2BC05-R2.0-M60		2	4	6	4.83	60	4	110	0.5	7	2	○
PM-2BC10-R2.0-M60		2	4	6	5.76	60	4	110	1	7	2	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔	✔			✔

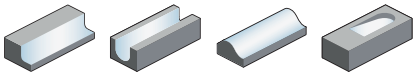
✔ Very suitable
✔ Suitable

System code B268 | Cutting data B436 | Nonstandard order B477

Ball nose cutter

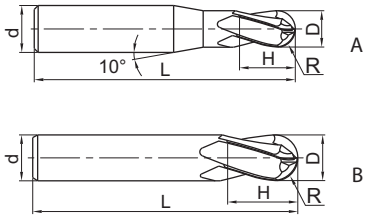
High-performance machining

PM-4B



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG405
PM-4B-R1.5		1.5	3	6	6	50	4	A	●
PM-4B-R2.0		2	4	6	8	50	4	A	●
PM-4B-R2.5		2.5	5	6	10	50	4	A	●
PM-4B-R3.0		3	6	6	12	50	4	B	●
PM-4B-R4.0		4	8	8	16	60	4	B	●
PM-4B-R5.0		5	10	10	20	75	4	B	●
PM-4B-R6.0		6	12	12	24	75	4	B	●
PM-4B-R7.0		7	14	14	28	75	4	B	●
PM-4B-R8.0		8	16	16	32	100	4	B	●
PM-4B-R9.0		9	18	18	36	100	4	B	●
PM-4B-R10.0		10	20	20	40	100	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

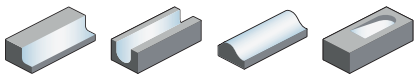
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

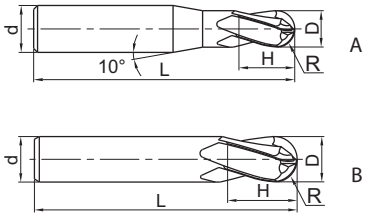
Ball nose cutter long shank High-performance machining

PM-4BL



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm] R	D	d (h6)	H	L	Teeth	Geometry	Grade KMG405
PM-4BL-R1.5		1.5	3	6	6	75	4	A	●
PM-4BL-R2.0		2	4	6	8	75	4	A	●
PM-4BL-R2.5		2.5	5	6	10	75	4	A	●
PM-4BL-R3.0		3	6	6	12	75	4	B	●
PM-4BL-R4.0		4	8	8	16	100	4	B	●
PM-4BL-R5.0		5	10	10	20	100	4	B	●
PM-4BL-R6.0		6	12	12	24	100	4	B	●
PM-4BL-R7.0		7	14	14	28	100	4	B	●
PM-4BL-R8.0		8	16	16	32	150	4	B	●
PM-4BL-R9.0		9	18	18	36	150	4	B	●
PM-4BL-R10.0		10	20	20	40	150	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

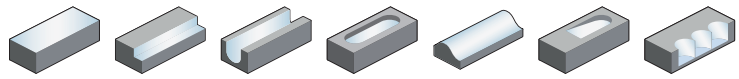
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

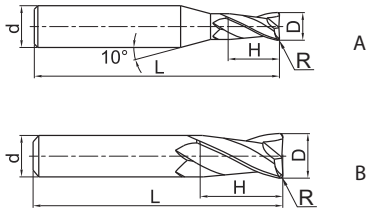
Torus mill | High-performance machining

PM-2R



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm] R	D	d (h6)	H	L	Teeth	Geometry	Grade KMG405
PM-2R-D1.0R0.2		0.2	1	4	3	50	2	A	●
PM-2R-D1.5R0.2		0.2	1.5	4	4	50	2	A	●
PM-2R-D2.0R0.2		0.2	2	4	6	50	2	A	●
PM-2R-D2.0R0.5		0.5	2	4	6	50	2	A	●
PM-2R-D2.5R0.2		0.2	2.5	4	8	50	2	A	●
PM-2R-D2.5R0.5		0.5	2.5	4	8	50	2	A	●
PM-2R-D3.0R0.2		0.2	3	4	8	50	2	A	●
PM-2R-D3.0R0.3		0.3	3	4	8	50	2	A	○
PM-2R-D3.0R0.5		0.5	3	4	8	50	2	A	●
PM-2R-D4.0R0.2		0.2	4	4	11	50	2	B	●
PM-2R-D4.0R0.3		0.3	4	4	11	50	2	B	●
PM-2R-D4.0R0.5		0.5	4	4	11	50	2	B	●
PM-2R-D4.0R1.0		1	4	4	11	50	2	B	●
PM-2R-D5.0R0.3		0.3	5	6	13	50	2	A	○
PM-2R-D5.0R0.5		0.5	5	6	13	50	2	A	●
PM-2R-D5.0R1.0		1	5	6	13	50	2	A	●
PM-2R-D6.0R0.3		0.3	6	6	16	50	2	B	●
PM-2R-D6.0R0.5		0.5	6	6	16	50	2	B	●
PM-2R-D6.0R1.0		1	6	6	16	50	2	B	●
PM-2R-D8.0R0.3		0.3	8	8	20	60	2	B	○
PM-2R-D8.0R0.5		0.5	8	8	20	60	2	B	●
PM-2R-D8.0R1.0		1	8	8	20	60	2	B	●
PM-2R-D10.0R0.5		0.5	10	10	25	75	2	B	●
PM-2R-D10.0R1.0		1	10	10	25	75	2	B	●
PM-2R-D10.0R1.5		1.5	10	10	25	75	2	B	●
PM-2R-D10.0R2.0		2	10	10	25	75	2	B	●
PM-2R-D12.0R0.5		0.5	12	12	30	75	2	B	●
PM-2R-D12.0R1.0		1	12	12	30	75	2	B	●
PM-2R-D12.0R1.5		1.5	12	12	30	75	2	B	●
PM-2R-D12.0R2.0		2	12	12	30	75	2	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

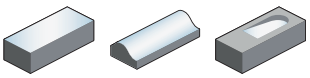
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 | Cutting data B436 | Nonstandard order B477

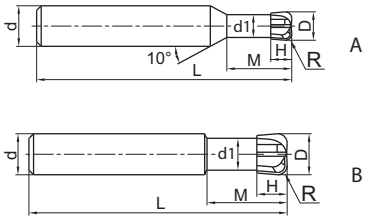
End mill High-performance machining

PM-4H



– Factory standard
– Centre cutting
– Helix angle 0°





Article	✻	Dimensions [mm]							Teeth	Geometry	Grade
		R	D	d (h6)	d_1	H	M	L			KMG405
PM-4H-D3.0R0.8		0.8	3	6	2.7	1.2	8	50	4	A	●
PM-4H-D4.0R1.0		1	4	6	3.6	1.6	10	50	4	A	●
PM-4H-D5.0R1.2		1.2	5	6	4.5	2	12.5	50	4	A	●
PM-4H-D6.0R1.0		1	6	6	5.4	2.5	12	50	4	B	●
PM-4H-D6.0R1.5		1.5	6	6	5.4	2.5	12	50	4	B	●
PM-4H-D6.0R2.0		2	6	6	5.4	2.5	12	50	4	B	●
PM-4H-D8.0R1.0		1	8	8	7	3.5	16	60	4	B	●
PM-4H-D8.0R2.0		2	8	8	7	3.5	16	60	4	B	●
PM-4H-D10.0R1.0		1	10	10	9	4	20	75	4	B	●
PM-4H-D10.0R2.0		2	10	10	9	4	20	75	4	B	●
PM-4H-D10.0R3.0		3	10	10	9	4	20	75	4	B	●
PM-4H-D12.0R2.0		2	12	12	11	5	24	75	4	B	●
PM-4H-D12.0R3.0		3	12	12	11	5	24	75	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

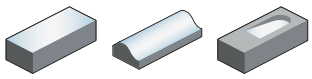
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

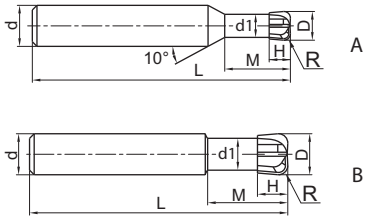
End mill long shank | High-performance machining

PM-4HL



– Factory standard
– Centre cutting
– Helix angle 0°





Article	✻	Dimensions [mm]							Teeth	Geometry	Grade
		R	D	d (h6)	d_1	H	M	L			KMG405
PM-4HL-D4.0R1.0		1	4	6	3.6	1.6	10	75	4	A	●
PM-4HL-D5.0R1.2		1.2	5	6	4.5	2	12.5	75	4	A	●
PM-4HL-D6.0R1.0		1	6	6	5.4	2.5	12	75	4	B	●
PM-4HL-D6.0R1.5		1.5	6	6	5.4	2.5	12	75	4	B	●
PM-4HL-D6.0R2.0		2	6	6	5.4	2.5	12	75	4	B	●
PM-4HL-D8.0R1.0		1	8	8	7	3.5	16	100	4	B	●
PM-4HL-D8.0R2.0		2	8	8	7	3.5	16	100	4	B	●
PM-4HL-D10.0R1.0		1	10	10	9	4	20	100	4	B	●
PM-4HL-D10.0R2.0		2	10	10	9	4	20	100	4	B	●
PM-4HL-D10.0R3.0		3	10	10	9	4	20	100	4	B	●
PM-4HL-D12.0R2.0		2	12	12	11	5	24	100	4	B	●
PM-4HL-D12.0R3.0		3	12	12	11	5	24	100	4	B	●

● Ex stock ○ On demand

✻ With internal cooling

Application field

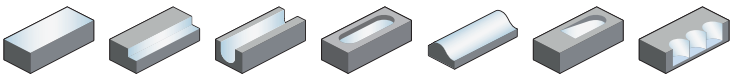
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 | Cutting data B436 | Nonstandard order B477

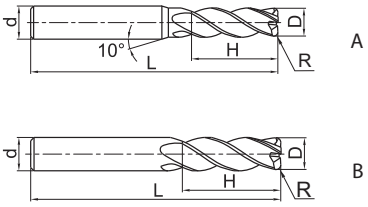
Torus mill High-performance machining

PM-4R



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm] R	D	d (h6)	H	L	Teeth	Geometry	Grade KMG405
PM-4R-D3.0R0.2		0.2	3	6	8	50	4	A	●
PM-4R-D4.0R0.3		0.3	4	6	10	50	4	A	●
PM-4R-D4.0R0.5		0.5	4	6	10	50	4	A	●
PM-4R-D5.0R0.5		0.5	5	6	13	50	4	A	●
PM-4R-D5.0R1.0		1	5	6	13	50	4	A	●
PM-4R-D6.0R0.5		0.5	6	6	16	50	4	B	●
PM-4R-D6.0R1.0		1	6	6	16	50	4	B	●
PM-4R-D8.0R0.5		0.5	8	8	20	60	4	B	●
PM-4R-D8.0R1.0		1	8	8	20	60	4	B	●
PM-4R-D10.0R0.5		0.5	10	10	25	75	4	B	●
PM-4R-D10.0R1.0		1	10	10	25	75	4	B	●
PM-4R-D10.0R2.0		2	10	10	25	75	4	B	●
PM-4R-D10.0R3.0		3	10	10	25	75	4	B	●
PM-4R-D12.0R0.5		0.5	12	12	30	75	4	B	●
PM-4R-D12.0R1.0		1	12	12	30	75	4	B	●
PM-4R-D12.0R2.0		2	12	12	30	75	4	B	●
PM-4R-D12.0R3.0		3	12	12	30	75	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

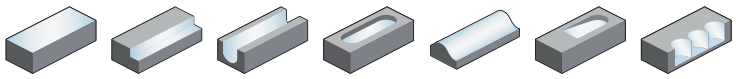
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

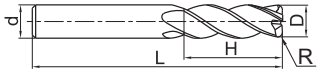
Torus mill long shank | High-performance machining

PM-4RL



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMG405
PM-4RL-D6.0R0.5		0.5	6	6	16	75	4	●
PM-4RL-D6.0R1.0		1	6	6	16	75	4	●
PM-4RL-D8.0R0.5		0.5	8	8	20	100	4	●
PM-4RL-D8.0R1.0		1	8	8	20	100	4	○
PM-4RL-D10.0R0.5		0.5	10	10	25	100	4	○
PM-4RL-D10.0R1.0		1	10	10	25	100	4	●
PM-4RL-D10.0R2.0		2	10	10	25	100	4	●
PM-4RL-D12.0R0.5		0.5	12	12	30	100	4	●
PM-4RL-D12.0R1.0		1	12	12	30	100	4	●
PM-4RL-D12.0R2.0		2	12	12	30	100	4	●
PM-4RL-D16.0R1.0		1	16	16	45	150	4	●
PM-4RL-D16.0R2.0		2	16	16	45	150	4	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

Notes

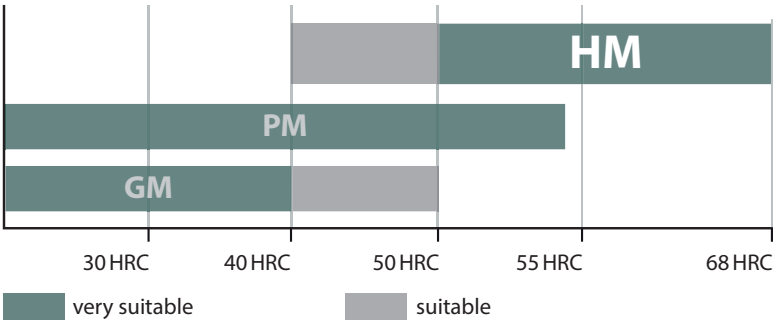


HM series

For machining of hardened materials

- For machining of steel up to 68 HRC.
- Very stable cutting edge with high stiffness and newest coating technology for high cutting speeds and feed rates.
- End mills, ball nose cutters, torus mills and mini cutters
- Diameter range 0.3–20.0 mm

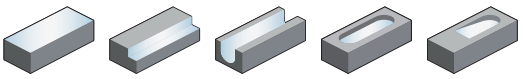
Application fields for machining of steel





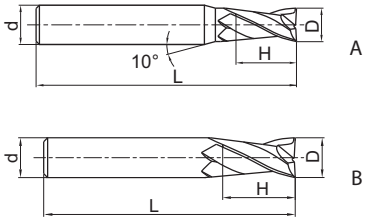
End mill | Hard machining

HM-2E



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✲	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG555
HM-2E-D1.0S		1	4	3	50	2	A	●
HM-2E-D1.5S		1.5	4	4	50	2	A	●
HM-2E-D2.0S		2	4	6	50	2	A	●
HM-2E-D2.5S		2.5	4	8	50	2	A	●
HM-2E-D3.0S		3	4	8	50	2	A	●
HM-2E-D4.0S		4	4	11	50	2	B	●
HM-2E-D1.0		1	6	3	50	2	A	●
HM-2E-D1.5		1.5	6	4	50	2	A	●
HM-2E-D2.0		2	6	6	50	2	A	●
HM-2E-D2.5		2.5	6	8	50	2	A	●
HM-2E-D3.0		3	6	8	50	2	A	●
HM-2E-D3.5		3.5	6	10	50	2	A	●
HM-2E-D4.0		4	6	11	50	2	A	●
HM-2E-D4.5		4.5	6	11	50	2	A	●
HM-2E-D5.0		5	6	13	50	2	A	●
HM-2E-D5.5		5.5	6	16	50	2	A	●
HM-2E-D6.0		6	6	16	50	2	B	●
HM-2E-D7.0		7	8	20	60	2	A	●
HM-2E-D8.0		8	8	20	60	2	B	●
HM-2E-D9.0		9	10	22	75	2	A	●
HM-2E-D10.0		10	10	25	75	2	B	●
HM-2E-D11.0		11	12	26	75	2	A	○
HM-2E-D12.0		12	12	30	75	2	B	●
HM-2E-D14.0		14	14	32	100	2	B	●
HM-2E-D16.0		16	16	45	100	2	B	●
HM-2E-D18.0		18	18	45	100	2	B	○
HM-2E-D20.0		20	20	45	100	2	B	●

● Ex stock ○ On demand
✲ With internal cooling

Application field

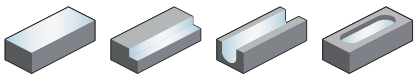
P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

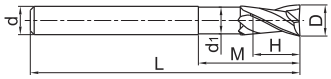
End mill short cutting edge | Hard machining

HM-2EFP



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d_1	H	M	L		KMG555
HM-2EFP-D6.0		6	6	5.8	9	30	75	2	○
HM-2EFP-D8.0		8	8	7.8	12	40	100	2	○
HM-2EFP-D10.0		10	10	9.6	15	50	100	2	○
HM-2EFP-D12.0		12	12	11.5	18	50	100	2	○
HM-2EFP-D16.0		16	16	15.5	24	50	150	2	○
HM-2EFP-D20.0		20	20	19.5	30	60	150	2	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

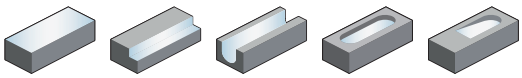
P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

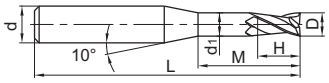
End mill Hard machining

HM-2EP



– Straight shank
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d_1	H	M	L		KMG555
HM-2EP-D0.5-M04		0.5	4	0.45	0.7	4	50	2	●
HM-2EP-D0.5-M06		0.5	4	0.45	0.7	6	50	2	●
HM-2EP-D0.5-M08		0.5	4	0.45	0.7	8	50	2	●
HM-2EP-D0.8-M04		0.8	4	0.75	1.2	4	50	2	●
HM-2EP-D0.8-M06		0.8	4	0.75	1.2	6	50	2	●
HM-2EP-D0.8-M08		0.8	4	0.75	1.2	8	50	2	●
HM-2EP-D0.8-M10		0.8	4	0.75	1.2	10	50	2	●
HM-2EP-D1.0-M04		1	4	0.95	1.5	4	50	2	●
HM-2EP-D1.0-M06		1	4	0.95	1.5	6	50	2	●
HM-2EP-D1.0-M08		1	4	0.95	1.5	8	50	2	●
HM-2EP-D1.0-M10		1	4	0.95	1.5	10	50	2	●
HM-2EP-D1.0-M12		1	4	0.95	1.5	12	50	2	●
HM-2EP-D1.0-M14		1	4	0.95	1.5	14	50	2	●
HM-2EP-D1.2-M06		1.2	4	1.15	1.8	6	50	2	●
HM-2EP-D1.2-M08		1.2	4	1.15	1.8	8	50	2	●
HM-2EP-D1.2-M10		1.2	4	1.15	1.8	10	50	2	●
HM-2EP-D1.2-M12		1.2	4	1.15	1.8	12	50	2	●
HM-2EP-D1.5-M06		1.5	4	1.45	2.3	6	50	2	●
HM-2EP-D1.5-M08		1.5	4	1.45	2.3	8	50	2	●
HM-2EP-D1.5-M10		1.5	4	1.45	2.3	10	50	2	●
HM-2EP-D1.5-M12		1.5	4	1.45	2.3	12	50	2	●
HM-2EP-D1.5-M14		1.5	4	1.45	2.3	14	50	2	●
HM-2EP-D2.0-M06		2	4	1.95	3	6	50	2	●
HM-2EP-D2.0-M08		2	4	1.95	3	8	50	2	●
HM-2EP-D2.0-M10		2	4	1.95	3	10	50	2	●
HM-2EP-D2.0-M12		2	4	1.95	3	12	50	2	●
HM-2EP-D2.0-M14		2	4	1.95	3	14	50	2	●
HM-2EP-D2.0-M16		2	4	1.95	3	16	50	2	●
HM-2EP-D2.5-M08		2.5	4	2.4	3.7	8	50	2	●
HM-2EP-D2.5-M10		2.5	4	2.4	3.7	10	50	2	●
HM-2EP-D2.5-M12		2.5	4	2.4	3.7	12	50	2	●
HM-2EP-D2.5-M14		2.5	4	2.4	3.7	14	50	2	●
HM-2EP-D2.5-M16		2.5	4	2.4	3.7	16	60	2	●
HM-2EP-D2.5-M18		2.5	4	2.4	3.7	18	60	2	●
HM-2EP-D2.5-M20		2.5	4	2.4	3.7	20	60	2	●
HM-2EP-D3.0-M06		3	6	2.85	4.5	6	50	2	●
HM-2EP-D3.0-M08		3	6	2.85	4.5	8	50	2	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

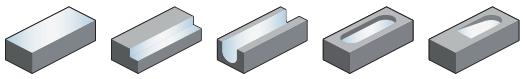
P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

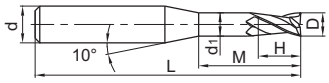
End mill Hard machining

HM-2EP



– Straight shank
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d_1	H	M	L		KMG555
HM-2EP-D3.0-M10		3	6	2.85	4.5	10	50	2	●
HM-2EP-D3.0-M12		3	6	2.85	4.5	12	50	2	●
HM-2EP-D3.0-M14		3	6	2.85	4.5	14	60	2	●
HM-2EP-D3.0-M16		3	6	2.85	4.5	16	60	2	●
HM-2EP-D3.0-M18		3	6	2.85	4.5	18	60	2	●
HM-2EP-D3.0-M20		3	6	2.85	4.5	20	60	2	●
HM-2EP-D4.0-M12		4	6	3.85	6	12	60	2	●
HM-2EP-D4.0-M16		4	6	3.85	6	16	60	2	●
HM-2EP-D4.0-M20		4	6	3.85	6	20	60	2	●
HM-2EP-D4.0-M25		4	6	3.85	6	25	60	2	●
HM-2EP-D5.0-M16		5	6	4.85	7.5	16	60	2	●
HM-2EP-D5.0-M25		5	6	4.85	7.5	25	70	2	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

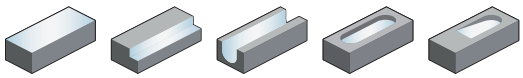
P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

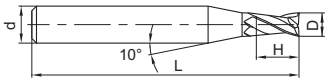
End mill Hard machining

HM-2ES



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm] D	d (h6)	H	L	Teeth	Grade KMG555
HM-2ES-D0.3		0.3	4	0.6	50	2	●
HM-2ES-D0.4		0.4	4	0.8	50	2	●
HM-2ES-D0.5		0.5	4	1	50	2	●
HM-2ES-D0.6		0.6	4	1.2	50	2	●
HM-2ES-D0.7		0.7	4	1.4	50	2	●
HM-2ES-D0.8		0.8	4	1.6	50	2	●
HM-2ES-D0.9		0.9	4	1.8	50	2	●
HM-2ES-D1.0		1	4	2	50	2	●
HM-2ES-D1.1		1.1	4	2	50	2	●
HM-2ES-D1.2		1.2	4	2.5	50	2	●
HM-2ES-D1.3		1.3	4	2.5	50	2	●
HM-2ES-D1.4		1.4	4	3	50	2	●
HM-2ES-D1.5		1.5	4	3	50	2	●
HM-2ES-D1.6		1.6	4	3.5	50	2	●
HM-2ES-D1.7		1.7	4	3.5	50	2	●
HM-2ES-D1.8		1.8	4	4	50	2	●
HM-2ES-D1.9		1.9	4	4	50	2	●
HM-2ES-D2.0		2	4	4	50	2	●
HM-2ES-D2.1		2.1	4	4	50	2	●
HM-2ES-D2.2		2.2	4	4.5	50	2	●
HM-2ES-D2.3		2.3	4	4.5	50	2	●
HM-2ES-D2.4		2.4	4	5	50	2	●
HM-2ES-D2.5		2.5	4	5	50	2	●
HM-2ES-D2.6		2.6	4	5	50	2	●
HM-2ES-D2.7		2.7	4	5.5	50	2	●
HM-2ES-D2.8		2.8	4	5.5	50	2	●
HM-2ES-D2.9		2.9	4	6	50	2	●
HM-2ES-D3.0		3	4	6	50	2	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

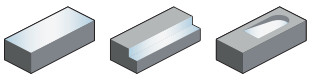
P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

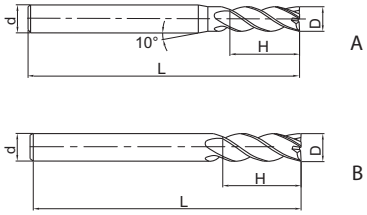
End mill | Hard machining

HM-4E



– Factory standard
– Centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG555
HM-4E-D1.0S		1	4	3	50	4	A	●
HM-4E-D1.5S		1.5	4	4	50	4	A	●
HM-4E-D2.0S		2	4	6	50	4	A	●
HM-4E-D2.5S		2.5	4	8	50	4	A	●
HM-4E-D3.0S		3	4	8	50	4	A	●
HM-4E-D4.0S		4	4	11	50	4	B	●
HM-4E-D1.0		1	6	3	50	4	A	●
HM-4E-D1.5		1.5	6	4	50	4	A	●
HM-4E-D2.0		2	6	6	50	4	A	●
HM-4E-D2.5		2.5	6	8	50	4	A	●
HM-4E-D3.0		3	6	8	50	4	A	●
HM-4E-D3.5		3.5	6	10	50	4	A	●
HM-4E-D4.0		4	6	11	50	4	A	●
HM-4E-D4.5		4.5	6	11	50	4	A	●
HM-4E-D5.0		5	6	13	50	4	A	●
HM-4E-D5.5		5.5	6	16	50	4	A	●
HM-4E-D6.0		6	6	16	50	4	B	●
HM-4E-D7.0		7	8	20	60	4	A	●
HM-4E-D8.0		8	8	20	60	4	B	●
HM-4E-D9.0		9	10	22	75	4	A	●
HM-4E-D10.0		10	10	25	75	4	B	●
HM-4E-D11.0		11	12	26	75	4	A	●
HM-4E-D12.0		12	12	30	75	4	B	●
HM-4E-D14.0		14	14	32	75	4	B	●
HM-4E-D16.0		16	16	45	100	4	B	●
HM-4E-D18.0		18	18	45	100	4	B	●
HM-4E-D20.0		20	20	45	100	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

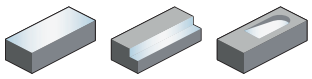
P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

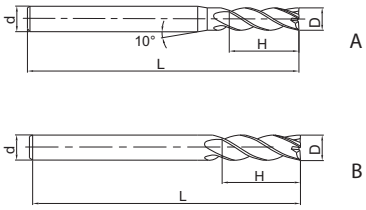
End mill long shank | Hard machining

HM-4EL



– Factory standard
– Centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG555
HM-4EL-D3.0		3	6	12	75	4	A	●
HM-4EL-D4.0		4	6	15	75	4	A	●
HM-4EL-D5.0		5	6	20	75	4	A	●
HM-4EL-D6.0		6	6	20	75	4	B	●
HM-4EL-D8.0		8	8	25	100	4	B	●
HM-4EL-D10.0		10	10	30	100	4	B	●
HM-4EL-D12.0		12	12	35	100	4	B	●
HM-4EL-D14.0		14	14	40	100	4	B	●
HM-4EL-D16.0		16	16	50	150	4	B	●
HM-4EL-D20.0		20	20	55	150	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

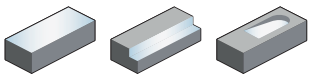
P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

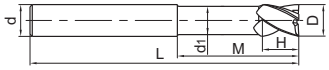
End mill short cutting edge | Hard machining

HM-4EFP



– Factory standard
– Centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d_1	H	M	L		KMG555
HM-4EFP-D6.0		6	6	5.8	9	30	75	4	●
HM-4EFP-D8.0		8	8	7.8	12	40	100	4	●
HM-4EFP-D10.0		10	10	9.6	15	50	100	4	●
HM-4EFP-D12.0		12	12	11.5	18	50	100	4	●
HM-4EFP-D16.0		16	16	15.5	24	50	150	4	●
HM-4EFP-D20.0		20	20	19.5	30	60	150	4	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

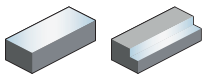
P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

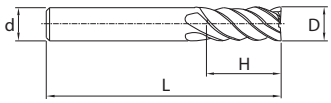
End mill long cutting edge | High-speed hard machining

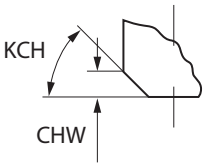
5502R55MHH



– Type of shank DIN 6535HA
– Non-centre cutting
– Helix angle 55°







Article	✲	Dimensions [mm]						Teeth	Grade	
		D	d (h6)	H	L	KCH	CHW		KMG405	KMG555
5502R55MHH-0300		3	6	8	57	0	0	4	●	●
5502R55MHH-0400		4	6	11	57	0	0	4	●	●
5502R55MHH-0500		5	6	13	57	0	0	5	●	●
5502R55MHH-0600		6	6	13	57	45	0.1	6	●	●
5502R55MHH-0800		8	8	19	63	45	0.1	6	●	●
5502R55MHH-1000		10	10	22	72	45	0.1	6	●	●
5502R55MHH-1200		12	12	26	83	45	0.1	6	●	●
5502R55MHH-1600		16	16	32	92	45	0.1	6	●	●
5502R55MHH-2000		20	20	38	104	45	0.1	8	●	●

● Ex stock ○ On demand
✲ With internal cooling

Application field

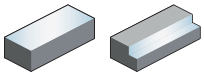
P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

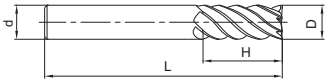
End mill | Hard machining

HM-6E



– Factory standard
– Non-centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		KMG555
HM-6E-D6.0		6	6	18	60	6	○
HM-6E-D8.0		8	8	20	60	6	○
HM-6E-D10.0		10	10	30	75	6	○
HM-6E-D12.0		12	12	32	75	6	○
HM-6E-D16.0		16	16	40	100	6	○
HM-6E-D20.0		20	20	45	100	6	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

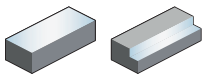
P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

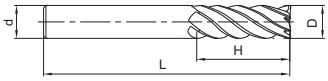
End mill long shank | Hard machining

HM-6EL



– Factory standard
– Non-centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm] D	d (h6)	H	L	Teeth	Grade KMG555
HM-6EL-D6.0		6	6	24	75	6	●
HM-6EL-D8.0		8	8	32	75	6	●
HM-6EL-D10.0		10	10	40	100	6	●
HM-6EL-D12.0		12	12	45	100	6	●
HM-6EL-D16.0		16	16	64	150	6	●
HM-6EL-D20.0		20	20	75	150	6	●

● Ex stock ○ On demand
✻ With internal cooling

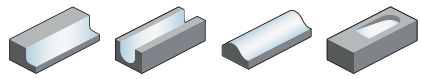
Application field

P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code B268 | Cutting data B436 | Nonstandard order B477

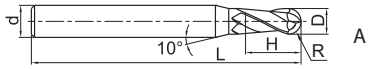
Ball nose cutter | Hard machining



HM-2B

– Factory standard
– Centre cutting
– Helix angle 35°





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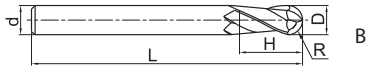


B

Article	✻	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG555
HM-2B-R0.5S		0.5	1	4	2	50	2	A	●
HM-2B-R0.75S		0.75	1.5	4	3	50	2	A	●
HM-2B-R1.0S		1	2	4	4	50	2	A	●
HM-2B-R1.25S		1.25	2.5	4	5	50	2	A	●
HM-2B-R1.5S		1.5	3	4	6	50	2	A	●
HM-2B-R2.0S		2	4	4	8	50	2	B	●
HM-2B-R0.5		0.5	1	6	2	50	2	A	●
HM-2B-R0.75		0.75	1.5	6	3	50	2	A	●
HM-2B-R1.0		1	2	6	4	50	2	A	●
HM-2B-R1.25		1.25	2.5	6	5	50	2	A	●
HM-2B-R1.5		1.5	3	6	6	50	2	A	●
HM-2B-R1.75		1.75	3.5	6	8	50	2	A	●
HM-2B-R2.0		2	4	6	8	50	2	A	●
HM-2B-R2.5		2.5	5	6	10	50	2	A	●
HM-2B-R2.75		2.75	5.5	6	12	50	2	A	●
HM-2B-R3.0		3	6	6	12	50	2	B	●
HM-2B-R3.5		3.5	7	8	14	60	2	A	●
HM-2B-R4.0		4	8	8	16	60	2	B	●
HM-2B-R4.5		4.5	9	10	18	75	2	A	●
HM-2B-R5.0		5	10	10	20	75	2	B	●
HM-2B-R6.0		6	12	12	24	75	2	B	●
HM-2B-R7.0		7	14	14	28	75	2	B	●
HM-2B-R8.0		8	16	16	32	100	2	B	●
HM-2B-R10.0		10	20	20	40	100	2	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

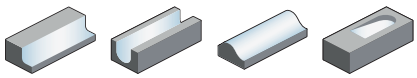
P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

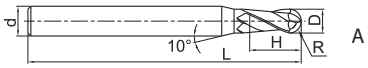
Ball nose cutter long shank **Hard machining**

HM-2BL

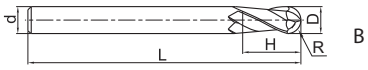


– Factory standard
– Centre cutting
– Helix angle 35°





A



B

Article	✻	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG555
HM-2BL-R1.0		1	2	6	4	75	2	A	●
HM-2BL-R1.25		1.25	2.5	6	6	75	2	A	●
HM-2BL-R1.5		1.5	3	6	6	75	2	A	●
HM-2BL-R1.75		1.75	3.5	6	8	75	2	A	●
HM-2BL-R2.0		2	4	6	8	75	2	A	●
HM-2BL-R2.5		2.5	5	6	10	75	2	A	●
HM-2BL-R2.75		2.75	5.5	6	12	75	2	A	●
HM-2BL-R3.0		3	6	6	12	75	2	B	●
HM-2BL-R3.5		3.5	7	8	14	75	2	A	●
HM-2BL-R4.0		4	8	8	16	100	2	B	●
HM-2BL-R4.5		4.5	9	10	18	100	2	A	●
HM-2BL-R5.0		5	10	10	20	100	2	B	●
HM-2BL-R6.0		6	12	12	24	100	2	B	●
HM-2BL-R7.0		7	14	14	28	100	2	B	●
HM-2BL-R8.0		8	16	16	32	150	2	B	●
HM-2BL-R10.0		10	20	20	40	150	2	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

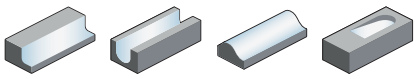
P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

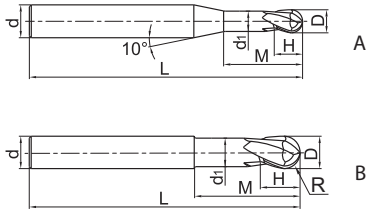
Ball nose cutter short cutting edge | Hard machining

HM-2BFP



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]							Teeth	Geometry	Grade
		R	D	d (h6)	d_1	H	M	L			KMG555
HM-2BFP-R0.5		0.5	1	6	0.95	1	2.5	75	2	A	●
HM-2BFP-R0.75		0.75	1.5	6	1.45	1.5	3	75	2	A	●
HM-2BFP-R1.0		1	2	6	1.95	2	4	75	2	A	●
HM-2BFP-R1.5		1.5	3	6	2.85	3	6	75	2	A	●
HM-2BFP-R2.0		2	4	6	3.85	4	8	75	2	A	●
HM-2BFP-R2.5		2.5	5	6	4.85	5	10	75	2	A	●
HM-2BFP-R3.0		3	6	6	5.8	6	12	75	2	B	●
HM-2BFP-R4.0		4	8	8	7.8	8	16	100	2	B	●
HM-2BFP-R5.0		5	10	10	9.6	10	20	100	2	B	●
HM-2BFP-R6.0		6	12	12	11.5	12	24	100	2	B	●
HM-2BFP-R8.0		8	16	16	15.5	16	32	150	2	B	●
HM-2BFP-R10.0		10	20	20	19.5	20	40	150	2	B	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

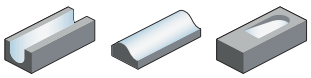
P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

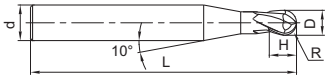
Ball nose cutter Hard machining

HM-2BS



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMG555
HM-2BS-R0.15		0.15	0.3	4	0.5	50	2	●
HM-2BS-R0.20		0.2	0.4	4	0.6	50	2	●
HM-2BS-R0.25		0.25	0.5	4	0.8	50	2	●
HM-2BS-R0.30		0.3	0.6	4	0.9	50	2	●
HM-2BS-R0.35		0.35	0.7	4	1	50	2	●
HM-2BS-R0.40		0.4	0.8	4	1.2	50	2	●
HM-2BS-R0.45		0.45	0.9	4	1.3	50	2	●
HM-2BS-R0.50		0.5	1	4	1.5	50	2	●
HM-2BS-R0.60		0.6	1.2	4	1.8	50	2	●
HM-2BS-R0.70		0.7	1.4	4	2	50	2	●
HM-2BS-R0.75		0.75	1.5	4	2.3	50	2	●
HM-2BS-R0.80		0.8	1.6	4	2.5	50	2	●
HM-2BS-R0.90		0.9	1.8	4	2.7	50	2	●
HM-2BS-R1.00		1	2	4	3	50	2	●
HM-2BS-R1.25		1.25	2.5	4	3.7	50	2	●
HM-2BS-R1.50		1.5	3	4	4.5	50	2	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

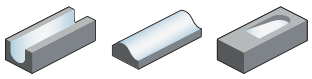
P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

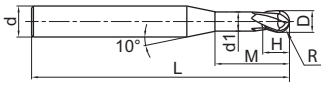
End mill | Hard machining

HM-2BP



– Straight shank
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d_1	H	M	L		KMG555
HM-2BP-R0.25-M04		0.25	0.5	4	0.45	0.7	4	50	2	●
HM-2BP-R0.25-M06		0.25	0.5	4	0.45	0.7	6	50	2	●
HM-2BP-R0.3-M04		0.3	0.6	4	0.55	0.9	4	50	2	●
HM-2BP-R0.3-M06		0.3	0.6	4	0.55	0.9	6	50	2	●
HM-2BP-R0.3-M08		0.3	0.6	4	0.55	0.9	8	50	2	●
HM-2BP-R0.4-M04		0.4	0.8	4	0.75	1.2	4	50	2	●
HM-2BP-R0.4-M06		0.4	0.8	4	0.75	1.2	6	50	2	●
HM-2BP-R0.4-M08		0.4	0.8	4	0.75	1.2	8	50	2	●
HM-2BP-R0.4-M10		0.4	0.8	4	0.75	1.2	10	50	2	●
HM-2BP-R0.5-M04		0.5	1	4	0.95	1.5	4	50	2	●
HM-2BP-R0.5-M06		0.5	1	4	0.95	1.5	6	50	2	●
HM-2BP-R0.5-M08		0.5	1	4	0.95	1.5	8	50	2	●
HM-2BP-R0.5-M10		0.5	1	4	0.95	1.5	10	50	2	●
HM-2BP-R0.5-M12		0.5	1	4	0.95	1.5	12	50	2	●
HM-2BP-R0.6-M06		0.6	1.2	4	1.15	1.8	6	50	2	●
HM-2BP-R0.6-M08		0.6	1.2	4	1.15	1.8	8	50	2	●
HM-2BP-R0.6-M12		0.6	1.2	4	1.15	1.8	12	50	2	●
HM-2BP-R0.6-M16		0.6	1.2	4	1.15	1.8	16	50	2	●
HM-2BP-R0.75-M08		0.75	1.5	4	1.45	2.3	8	50	2	●
HM-2BP-R0.75-M12		0.75	1.5	4	1.45	2.3	12	50	2	●
HM-2BP-R0.75-M16		0.75	1.5	4	1.45	2.3	16	50	2	●
HM-2BP-R1.0-M06		1	2	4	1.95	3	6	50	2	●
HM-2BP-R1.0-M08		1	2	4	1.95	3	8	50	2	●
HM-2BP-R1.0-M10		1	2	4	1.95	3	10	50	2	●
HM-2BP-R1.0-M12		1	2	4	1.95	3	12	50	2	●
HM-2BP-R1.0-M16		1	2	4	1.95	3	16	50	2	●
HM-2BP-R1.0-M20		1	2	4	1.95	3	20	50	2	●
HM-2BP-R1.25-M08		1.25	2.5	4	2.4	3.7	8	50	2	●
HM-2BP-R1.25-M12		1.25	2.5	4	2.4	3.7	12	50	2	●
HM-2BP-R1.25-M16		1.25	2.5	4	2.4	3.7	16	60	2	●
HM-2BP-R1.25-M20		1.25	2.5	4	2.4	3.7	20	60	2	●
HM-2BP-R1.5-M08		1.5	3	6	2.85	4.5	8	50	2	●
HM-2BP-R1.5-M10		1.5	3	6	2.85	4.5	10	50	2	●
HM-2BP-R1.5-M12		1.5	3	6	2.85	4.5	12	50	2	●
HM-2BP-R1.5-M16		1.5	3	6	2.85	4.5	16	60	2	●
HM-2BP-R1.5-M20		1.5	3	6	2.85	4.5	20	60	2	●
HM-2BP-R2.0-M10		2	4	6	3.85	6	10	60	2	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

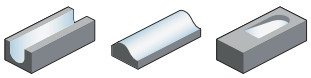
P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code B268 | Cutting data B436 | Nonstandard order B477

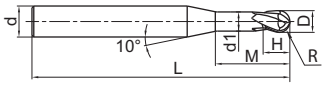
End mill Hard machining

HM-2BP



– Straight shank
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm] R	D	d (h6)	d_1	H	M	L	Teeth	Grade KMG555
HM-2BP-R2.0-M16		2	4	6	3.85	6	16	60	2	●
HM-2BP-R2.0-M20		2	4	6	3.85	6	20	60	2	●
HM-2BP-R2.0-M25		2	4	6	3.85	6	25	60	2	●
HM-2BP-R2.5-M16		2.5	5	6	4.85	7.5	16	60	2	●
HM-2BP-R2.5-M25		2.5	5	6	4.85	7.5	25	70	2	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
					✔

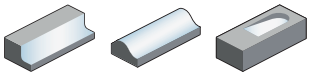
✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

Ball nose cutter

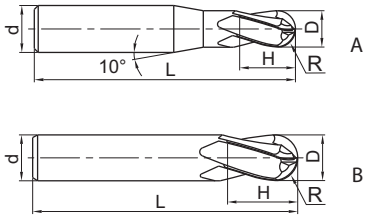
Hard machining

HM-4B



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG555
HM-4B-R1.5		1.5	3	6	6	50	4	A	●
HM-4B-R2.0		2	4	6	8	50	4	A	●
HM-4B-R2.5		2.5	5	6	10	50	4	A	●
HM-4B-R3.0		3	6	6	12	50	4	B	●
HM-4B-R4.0		4	8	8	16	60	4	B	●
HM-4B-R5.0		5	10	10	20	75	4	B	●
HM-4B-R6.0		6	12	12	24	75	4	B	●
HM-4B-R7.0		7	14	14	28	75	4	B	●
HM-4B-R8.0		8	16	16	32	100	4	B	●
HM-4B-R9.0		9	18	18	36	100	4	B	●
HM-4B-R10.0		10	20	20	40	100	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

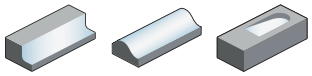
P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

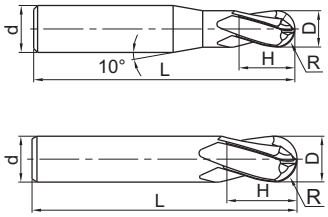
Ball nose cutter long shank Hard machining

HM-4BL



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✲	Dimensions [mm]					Teeth	Geometry	Grade
		R	D	d (h6)	H	L			KMG555
HM-4BL-R1.5		1.5	3	6	6	75	4	A	●
HM-4BL-R2.0		2	4	6	8	75	4	A	●
HM-4BL-R2.5		2.5	5	6	10	75	4	A	●
HM-4BL-R3.0		3	6	6	12	75	4	B	●
HM-4BL-R4.0		4	8	8	16	100	4	B	●
HM-4BL-R5.0		5	10	10	20	100	4	B	●
HM-4BL-R6.0		6	12	12	24	100	4	B	●
HM-4BL-R7.0		7	14	14	28	100	4	B	●
HM-4BL-R8.0		8	16	16	32	150	4	B	●
HM-4BL-R9.0		9	18	18	36	150	4	B	●
HM-4BL-R10.0		10	20	20	40	150	4	B	●

● Ex stock ○ On demand
✲ With internal cooling

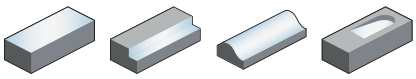
Application field

P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

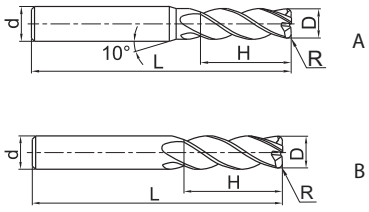
Torus mill | Hard machining



HM-4R

– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm] R	D	d (h6)	H	L	Teeth	Geometry	Grade KMG555
HM-4R-D3.0R0.2		0.2	3	4	8	50	4	A	●
HM-4R-D4.0R0.3		0.3	4	4	10	50	4	B	●
HM-4R-D4.0R0.5		0.5	4	4	10	50	4	B	●
HM-4R-D5.0R0.5		0.5	5	6	13	50	4	A	●
HM-4R-D5.0R1.0		1	5	6	13	50	4	A	●
HM-4R-D6.0R0.5		0.5	6	6	16	50	4	B	●
HM-4R-D6.0R1.0		1	6	6	16	50	4	B	●
HM-4R-D8.0R0.5		0.5	8	8	20	60	4	B	●
HM-4R-D8.0R1.0		1	8	8	20	60	4	B	●
HM-4R-D10.0R0.5		0.5	10	10	25	75	4	B	●
HM-4R-D10.0R1.0		1	10	10	25	75	4	B	●
HM-4R-D10.0R2.0		2	10	10	25	75	4	B	●
HM-4R-D10.0R3.0		3	10	10	25	75	4	B	●
HM-4R-D12.0R0.5		0.5	12	12	30	75	4	B	●
HM-4R-D12.0R1.0		1	12	12	30	75	4	B	●
HM-4R-D12.0R2.0		2	12	12	30	75	4	B	●
HM-4R-D12.0R3.0		3	12	12	30	75	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
					✔

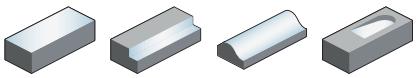
✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

Torus mill short cutting edge

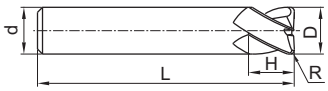
Hard machining

HM-4RF



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]					Teeth	Grade
		R	D	d (h6)	H	L		KMG555
HM-4RF-D6.0R0.5		0.5	6	6	6	50	4	○
HM-4RF-D6.0R1.0		1	6	6	6	50	4	○
HM-4RF-D8.0R0.5		0.5	8	8	8	60	4	○
HM-4RF-D8.0R1.0		1	8	8	8	60	4	○
HM-4RF-D10.0R1.0		1	10	10	10	75	4	○
HM-4RF-D10.0R2.0		2	10	10	10	75	4	○
HM-4RF-D12.0R0.5		0.5	12	12	12	75	4	○
HM-4RF-D12.0R1.0		1	12	12	12	75	4	○
HM-4RF-D12.0R2.0		2	12	12	12	75	4	○

● Ex stock ○ On demand
✻ With internal cooling

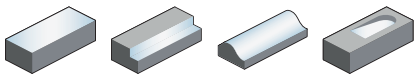
Application field

P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

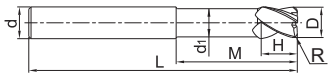
Torus mill long shank | Hard machining



HM-4RP

– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d_1	H	M	L		KMG555
HM-4RP-D6.0R0.5		0.5	6	6	5.8	6	18	75	4	○
HM-4RP-D6.0R1.0		1	6	6	5.8	6	18	75	4	○
HM-4RP-D8.0R0.5		0.5	8	8	7.8	8	24	100	4	○
HM-4RP-D8.0R1.0		1	8	8	7.8	8	24	100	4	○
HM-4RP-D10.0R0.5		0.5	10	10	9.6	10	30	100	4	○
HM-4RP-D10.0R1.0		1	10	10	9.6	10	30	100	4	○
HM-4RP-D10.0R2.0		2	10	10	9.6	10	30	100	4	○
HM-4RP-D12.0R0.5		0.5	12	12	11.5	12	36	100	4	○
HM-4RP-D12.0R1.0		1	12	12	11.5	12	36	100	4	○
HM-4RP-D12.0R2.0		2	12	12	11.5	12	36	100	4	○
HM-4RP-D16.0R1.0		1	16	16	15.5	16	40	150	4	●
HM-4RP-D16.0R2.0		2	16	16	15.5	16	40	150	4	○

● Ex stock ○ On demand

✻ With internal cooling

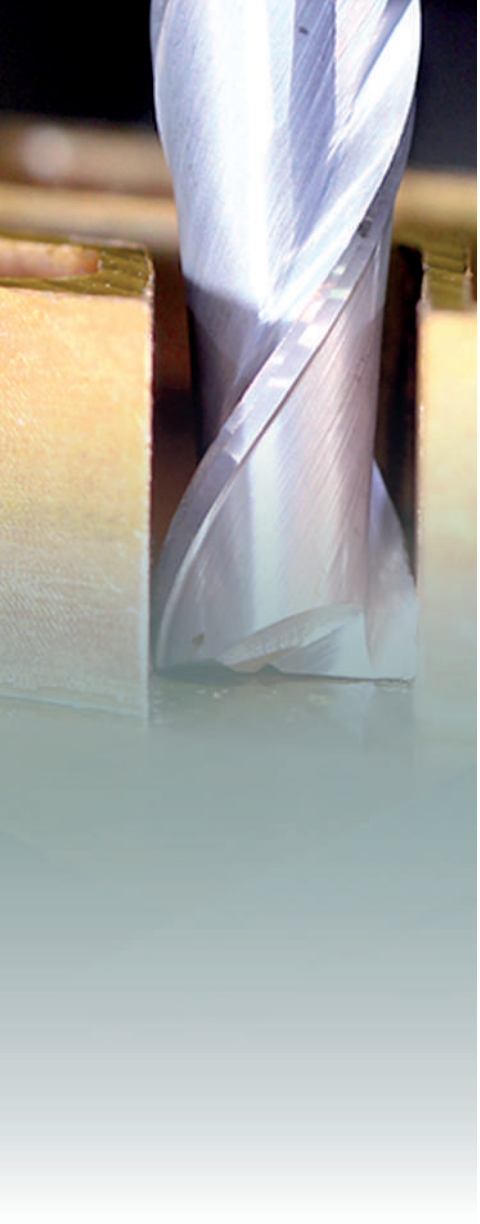
Application field

P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

Notes



NM series

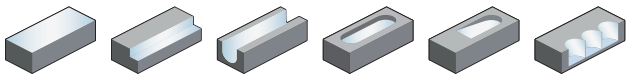
For machining of copper

- For machining of copper and copper alloys (brass, bronze).
- Excellent sharpness of cutting edge for very good surface quality.
- End mills, ball nose cutters and mini cutters.
- Diameter range 0.5–20.0 mm

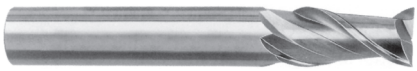


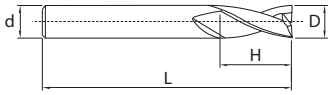
End mill General machining of non-ferrous metals

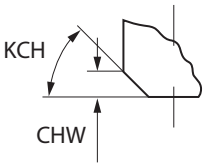
5502R402NM



– Type of shank DIN 6535HA
– Centre cutting
– Helix angle 40°







Article	✻	Dimensions [mm]						Teeth	Grade
		D	d (h6)	H	L	KCH	CHW		YK30F
5502R402NM-0300		3	6	8	57	0	0	2	●
5502R402NM-0400		4	6	11	57	0	0	2	●
5502R402NM-0500		5	6	13	57	0	0	2	●
5502R402NM-0600		6	6	13	57	45	0.1	2	●
5502R402NM-0800		8	8	19	63	45	0.1	2	●
5502R402NM-1000		10	10	22	72	45	0.1	2	●
5502R402NM-1200		12	12	26	83	45	0.1	2	●
5502R402NM-1400		14	14	26	83	45	0.15	2	●
5502R402NM-1600		16	16	32	92	45	0.15	2	●
5502R402NM-1800		18	18	32	92	45	0.15	2	●
5502R402NM-2000		20	20	38	104	45	0.15	2	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

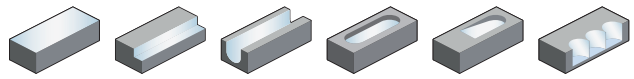
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

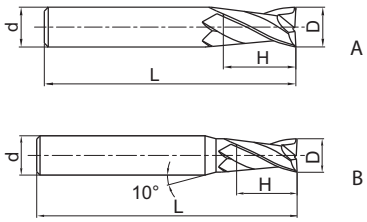
End mill — General machining of non-ferrous metals

NM-2E



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG309
NM-2E-D1.0		1	4	3	50	2	A	●
NM-2E-D2.0		2	4	6	50	2	A	●
NM-2E-D3.0		3	6	8	50	2	A	●
NM-2E-D4.0		4	6	11	50	2	A	●
NM-2E-D5.0		5	6	13	50	2	A	●
NM-2E-D6.0		6	6	16	50	2	B	●
NM-2E-D8.0		8	8	20	60	2	B	●
NM-2E-D10.0		10	10	25	75	2	B	●
NM-2E-D12.0		12	12	30	75	2	B	●

● Ex stock ○ On demand

✻ With internal cooling

Application field

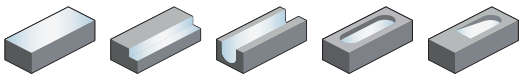
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

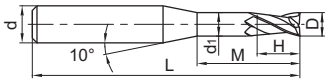
End mill General machining of non-ferrous metals

NM-2EP



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d_1	H	M	L		KMG309
NM-2EP-D0.5-M08		0.5	4	0.45	0.7	8	50	2	●
NM-2EP-D0.5-M06		0.5	4	0.45	0.7	6	50	2	●
NM-2EP-D0.5-M04		0.5	4	0.45	0.7	4	50	2	●
NM-2EP-D0.8-M10		0.8	4	0.75	1.2	10	50	2	●
NM-2EP-D0.8-M04		0.8	4	0.75	1.2	4	50	2	●
NM-2EP-D0.8-M06		0.8	4	0.75	1.2	6	50	2	●
NM-2EP-D0.8-M08		0.8	4	0.75	1.2	8	50	2	●
NM-2EP-D1.0-M08		1	4	0.95	1.5	8	50	2	●
NM-2EP-D1.0-M14		1	4	0.95	1.5	14	50	2	●
NM-2EP-D1.0-M04		1	4	0.95	1.5	4	50	2	●
NM-2EP-D1.0-M12		1	4	0.95	1.5	12	50	2	●
NM-2EP-D1.0-M10		1	4	0.95	1.5	10	50	2	●
NM-2EP-D1.0-M06		1	4	0.95	1.5	6	50	2	●
NM-2EP-D1.5-M08		1.5	4	1.45	2.3	8	50	2	●
NM-2EP-D1.5-M16		1.5	4	1.45	2.3	16	50	2	●
NM-2EP-D2.0-M14		2	4	1.95	3	14	50	2	●
NM-2EP-D2.0-M12		2	4	1.95	3	12	50	2	●
NM-2EP-D2.0-M08		2	4	1.95	3	8	50	2	●
NM-2EP-D2.0-M10		2	4	1.95	3	10	50	2	●
NM-2EP-D2.0-M06		2	4	1.95	3	6	50	2	●
NM-2EP-D2.0-M16		2	4	1.95	3	16	50	2	●
NM-2EP-D2.5-M10		2.5	4	2.4	3.7	10	50	2	●
NM-2EP-D2.5-M20		2.5	4	2.4	3.7	20	60	2	●
NM-2EP-D3.0-M10		3	6	2.85	4.5	10	50	2	●
NM-2EP-D3.0-M20		3	6	2.85	4.5	20	60	2	●
NM-2EP-D4.0-M25		4	6	3.85	6	25	60	2	●
NM-2EP-D4.0-M16		4	6	3.85	6	16	60	2	●
NM-2EP-D5.0-M25		5	6	4.85	7.5	25	70	2	●
NM-2EP-D5.0-M16		5	6	4.85	7.5	16	60	2	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

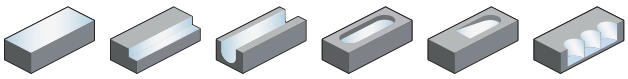
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

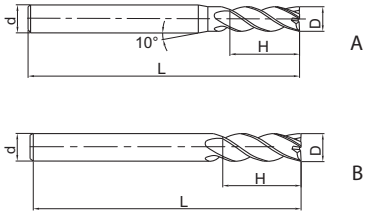
End mill General machining of non-ferrous metals

NM-4E



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMG309
NM-4E-D3.0		3	6	8	50	4	A	●
NM-4E-D4.0		4	6	11	50	4	A	●
NM-4E-D5.0		5	6	13	50	4	A	●
NM-4E-D6.0		6	6	16	50	4	B	●
NM-4E-D8.0		8	8	20	60	4	B	●
NM-4E-D10.0		10	10	25	75	4	B	●
NM-4E-D12.0		12	12	30	75	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

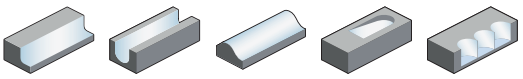
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

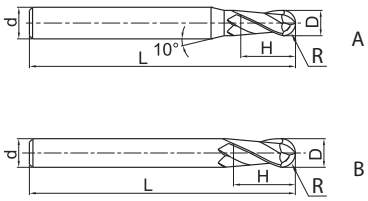
Ball nose cutter — General machining of non-ferrous metals

NM-2B



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm] R	D	d (h6)	H	L	Teeth	Geometry	Grade KMG309
NM-2B-R0.5		0.5	1	4	2	50	2	A	●
NM-2B-R0.75		0.75	1.5	4	3	50	2	A	●
NM-2B-R1.0		1	2	4	4	50	2	A	●
NM-2B-R1.25		1.25	2.5	4	5	50	2	A	●
NM-2B-R1.5		1.5	3	6	6	50	2	A	●
NM-2B-R1.75		1.75	3.5	6	8	50	2	A	●
NM-2B-R2.0		2	4	6	8	50	2	A	●
NM-2B-R2.5		2.5	5	6	10	50	2	A	●
NM-2B-R3.0		3	6	6	12	50	2	B	●
NM-2B-R4.0		4	8	8	16	60	2	B	●
NM-2B-R5.0		5	10	10	20	75	2	B	●
NM-2B-R6.0		6	12	12	24	75	2	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
			✔		

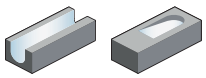
✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

Ball nose cutter

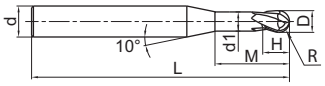
General machining of non-ferrous metals

NM-2BP



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d_1	H	M	L		KMG309
NM-2BP-R0.25-M04		0.25	0.5	4	0.45	0.7	4	50	2	●
NM-2BP-R0.25-M06		0.25	0.5	4	0.45	0.7	6	50	2	●
NM-2BP-R0.3-M04		0.3	0.6	4	0.55	0.9	4	50	2	●
NM-2BP-R0.3-M06		0.3	0.6	4	0.55	0.9	6	50	2	●
NM-2BP-R0.3-M08		0.3	0.6	4	0.55	0.9	8	50	2	●
NM-2BP-R0.4-M04		0.4	0.8	4	0.75	1.2	4	50	2	●
NM-2BP-R0.4-M06		0.4	0.8	4	0.75	1.2	6	50	2	●
NM-2BP-R0.4-M08		0.4	0.8	4	0.75	1.2	8	50	2	●
NM-2BP-R0.4-M10		0.4	0.8	4	0.75	1.2	10	50	2	●
NM-2BP-R0.5-M04		0.5	1	4	0.95	1.5	4	50	2	●
NM-2BP-R0.5-M06		0.5	1	4	0.95	1.5	6	50	2	●
NM-2BP-R0.5-M08		0.5	1	4	0.95	1.5	8	50	2	●
NM-2BP-R0.5-M10		0.5	1	4	0.95	1.5	10	50	2	●
NM-2BP-R0.5-M12		0.5	1	4	0.95	1.5	12	50	2	●
NM-2BP-R0.75-M08		0.75	1.5	4	1.45	2.3	8	50	2	●
NM-2BP-R0.75-M16		0.75	1.5	4	1.45	2.3	16	50	2	●
NM-2BP-R1.0-M06		1	2	4	1.95	3	6	50	2	●
NM-2BP-R1.0-M08		1	2	4	1.95	3	8	50	2	●
NM-2BP-R1.0-M10		1	2	4	1.95	3	10	50	2	●
NM-2BP-R1.0-M12		1	2	4	1.95	3	12	50	2	●
NM-2BP-R1.0-M16		1	2	4	1.95	3	16	50	2	●
NM-2BP-R1.0-M20		1	2	4	1.95	3	20	60	2	●
NM-2BP-R1.5-M10		1.5	3	6	2.85	4.5	10	50	2	●
NM-2BP-R1.5-M20		1.5	3	6	2.85	4.5	20	60	2	●
NM-2BP-R2.0-M10		2	4	6	3.85	6	10	60	2	●
NM-2BP-R2.0-M16		2	4	6	3.85	6	16	60	2	●
NM-2BP-R2.0-M20		2	4	6	3.85	6	20	60	2	●
NM-2BP-R2.0-M25		2	4	6	3.85	6	25	60	2	●
NM-2BP-R2.5-M16		2.5	5	6	4.85	7.5	16	60	2	●
NM-2BP-R2.5-M25		2.5	5	6	4.85	7.5	25	70	2	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

Notes



AL series

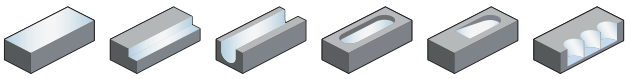
For machining of aluminium alloys

- Newly developed geometries expand our standard program:
  - ALP for high-speed roughing
  - ALG for finishing with very good surface quality
  - AIR torus mills for ultra high-speed machining
- With our diamond-like carbon grade KMD401, tool life is significantly increased.
- End mills, ball nose cutters, torus mills and rippers
- Diameter range 1.0–20.0 mm



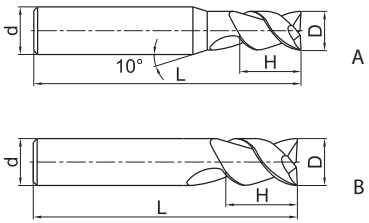
End mill General machining of Al and Al alloys

AL-2E



– Factory standard
– Centre cutting
– Helix angle 55°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			YK30F
AL-2E-D1.0		1	4	3	50	2	A	●
AL-2E-D1.5		1.5	4	4	50	2	A	●
AL-2E-D2.0		2	4	6	50	2	A	●
AL-2E-D2.5		2.5	4	7	50	2	A	●
AL-2E-D3.0		3	6	9	50	2	A	●
AL-2E-D4.0		4	6	12	50	2	A	●
AL-2E-D5.0		5	6	15	50	2	A	●
AL-2E-D6.0		6	6	18	60	2	B	●
AL-2E-D8.0		8	8	20	60	2	B	●
AL-2E-D10.0		10	10	30	75	2	B	●
AL-2E-D12.0		12	12	32	75	2	B	●
AL-2E-D16.0		16	16	45	100	2	B	●
AL-2E-D20.0		20	20	45	100	2	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
			✔		

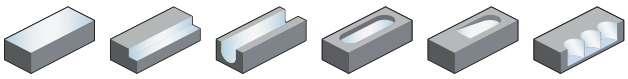
✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

End mill long cutting edge

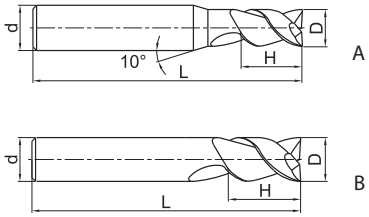
General machining of Al and Al alloys

AL-2EL



– Factory standard
– Centre cutting
– Helix angle 55°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			YK30F
AL-2EL-D3.0		3	6	12	60	2	A	●
AL-2EL-D4.0		4	6	16	60	2	A	●
AL-2EL-D5.0		5	6	20	60	2	A	●
AL-2EL-D6.0		6	6	25	75	2	B	●
AL-2EL-D8.0		8	8	32	75	2	B	●
AL-2EL-D10.0		10	10	45	100	2	B	●
AL-2EL-D12.0		12	12	45	100	2	B	●
AL-2EL-D16.0		16	16	65	150	2	B	●
AL-2EL-D20.0		20	20	75	150	2	B	●

● Ex stock ○ On demand

✻ With internal cooling

Application field

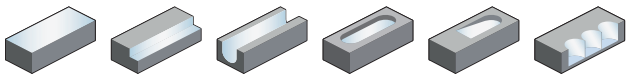
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

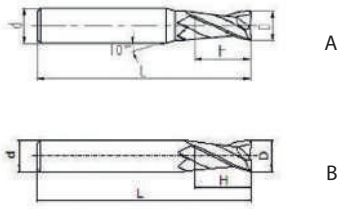
End mill General machining of Al and Al alloys

ALG-2E



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			YK40F
ALG-2E-D1.0		1	4	3	50	2	A	●
ALG-2E-D1.5		1.5	4	4	50	2	A	○
ALG-2E-D2.0		2	4	6	50	2	A	●
ALG-2E-D2.5		2.5	4	8	50	2	A	○
ALG-2E-D3.0S		3	4	8	50	2	A	●
ALG-2E-D3.5S		3.5	4	10	50	2	A	○
ALG-2E-D4.0S		4	4	11	50	2	B	○
ALG-2E-D3.0		3	6	8	50	2	A	●
ALG-2E-D3.5		3.5	6	10	50	2	A	○
ALG-2E-D4.0		4	6	11	50	2	A	●
ALG-2E-D4.5		4.5	6	11	50	2	A	○
ALG-2E-D5.0		5	6	13	50	2	A	●
ALG-2E-D5.5		5.5	6	16	50	2	A	○
ALG-2E-D6.0		6	6	16	50	2	B	●
ALG-2E-D7.0		7	8	20	60	2	A	○
ALG-2E-D8.0		8	8	20	60	2	B	●
ALG-2E-D9.0		9	10	22	75	2	A	○
ALG-2E-D10.0		10	10	25	75	2	B	●
ALG-2E-D11.0		11	12	26	75	2	A	○
ALG-2E-D12.0		12	12	30	75	2	B	●
ALG-2E-D14.0		14	14	32	75	2	B	●
ALG-2E-D16.0		16	16	45	100	2	B	●
ALG-2E-D18.0		18	18	45	100	2	B	○
ALG-2E-D20.0		20	20	45	100	2	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

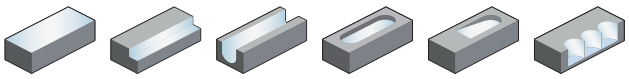
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

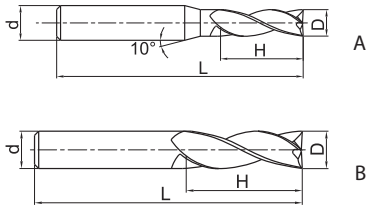
End mill General machining of Al and Al alloys

AL-3E



– Factory standard
– Centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			YK30F
AL-3E-D1.0		1	4	3	50	3	A	●
AL-3E-D1.5		1.5	4	4	50	3	A	●
AL-3E-D2.0		2	4	6	50	3	A	●
AL-3E-D2.5		2.5	4	7	50	3	A	●
AL-3E-D3.0		3	6	9	50	3	A	●
AL-3E-D4.0		4	6	12	50	3	A	●
AL-3E-D5.0		5	6	15	50	3	A	●
AL-3E-D6.0		6	6	18	60	3	B	●
AL-3E-D8.0		8	8	20	60	3	B	●
AL-3E-D10.0		10	10	30	75	3	B	●
AL-3E-D12.0		12	12	32	75	3	B	●
AL-3E-D16.0		16	16	45	100	3	B	●
AL-3E-D20.0		20	20	45	100	3	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
			✔		

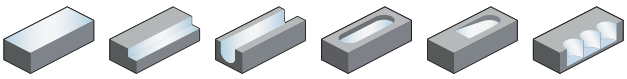
✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

End mill long cutting edge

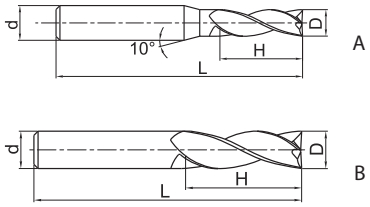
General machining of Al and Al alloys

AL-3EL



– Factory standard
– Centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			YK30F
AL-3EL-D3.0		3	6	12	60	3	A	●
AL-3EL-D4.0		4	6	16	60	3	A	●
AL-3EL-D5.0		5	6	20	60	3	A	●
AL-3EL-D6.0		6	6	25	75	3	B	●
AL-3EL-D8.0		8	8	32	75	3	B	●
AL-3EL-D10.0		10	10	45	100	3	B	●
AL-3EL-D12.0		12	12	45	100	3	B	●
AL-3EL-D16.0		16	16	65	150	3	B	●
AL-3EL-D20.0		20	20	75	150	3	B	●

● Ex stock ○ On demand

✻ With internal cooling

Application field

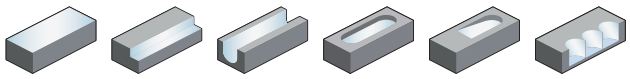
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

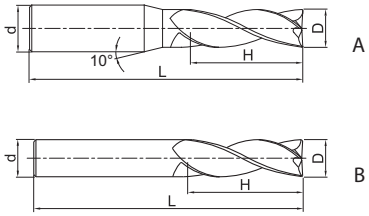
End mill General machining of Al and Al alloys

ALG-3E



– Factory standard
– Centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade	
		D	d (h6)	H	L			KMD401	YK40F
ALG-3E-D1.0		1	4	3	50	3	A	○	●
ALG-3E-D1.5		1.5	4	4	50	3	A	○	●
ALG-3E-D2.0		2	4	6	50	3	A	○	●
ALG-3E-D2.5		2.5	4	8	50	3	A	○	○
ALG-3E-D3.0S		3	4	8	50	3	A	○	●
ALG-3E-D3.5S		3.5	4	10	50	3	A	○	○
ALG-3E-D4.0S		4	4	11	50	3	B	○	●
ALG-3E-D3.0		3	6	8	50	3	A	●	●
ALG-3E-D3.5		3.5	6	10	50	3	A	●	○
ALG-3E-D4.0		4	6	11	50	3	A	●	●
ALG-3E-D4.5		4.5	6	11	50	3	A	●	○
ALG-3E-D5.0		5	6	13	50	3	A	●	●
ALG-3E-D5.5		5.5	6	16	50	3	A	●	○
ALG-3E-D6.0		6	6	16	50	3	B	●	●
ALG-3E-D7.0		7	8	20	60	3	A	●	○
ALG-3E-D8.0		8	8	20	60	3	B	●	●
ALG-3E-D9.0		9	10	22	75	3	A	●	○
ALG-3E-D10.0		10	10	25	75	3	B	●	●
ALG-3E-D11.0		11	12	26	75	3	A	●	○
ALG-3E-D12.0		12	12	30	75	3	B	●	●
ALG-3E-D14.0		14	14	32	75	3	B	●	●
ALG-3E-D16.0		16	16	45	100	3	B	●	●
ALG-3E-D18.0		18	18	45	100	3	B	●	○
ALG-3E-D20.0		20	20	45	100	3	B	○	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

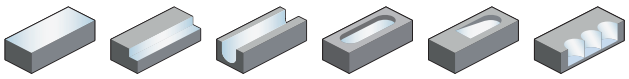
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

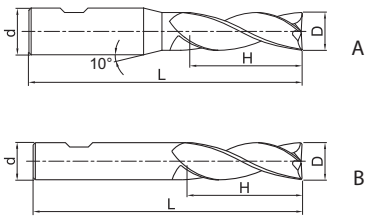
End mill General machining of Al and Al alloys

ALG-3E-W



– Factory standard with weldon clamping surface
– Centre cutting
– Helix angle 45°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMD401
ALG-3E-D3.0-W		3	6	8	50	3	A	●
ALG-3E-D3.5-W		3.5	6	10	50	3	A	●
ALG-3E-D4.0-W		4	6	11	50	3	A	●
ALG-3E-D4.5-W		4.5	6	11	50	3	A	●
ALG-3E-D5.0-W		5	6	13	50	3	A	●
ALG-3E-D5.5-W		5.5	6	16	50	3	A	●
ALG-3E-D6.0-W		6	6	16	50	3	B	●
ALG-3E-D7.0-W		7	8	20	60	3	A	●
ALG-3E-D8.0-W		8	8	20	60	3	B	●
ALG-3E-D9.0-W		9	10	22	75	3	A	●
ALG-3E-D10.0-W		10	10	25	75	3	B	●
ALG-3E-D11.0-W		11	12	26	75	3	A	●
ALG-3E-D12.0-W		12	12	30	75	3	B	●
ALG-3E-D14.0-W		14	14	32	75	3	B	●
ALG-3E-D16.0-W		16	16	45	100	3	B	●
ALG-3E-D18.0-W		18	18	45	100	3	B	●
ALG-3E-D20.0-W		20	20	45	100	3	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

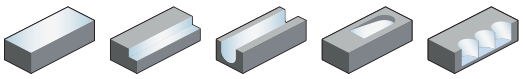
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

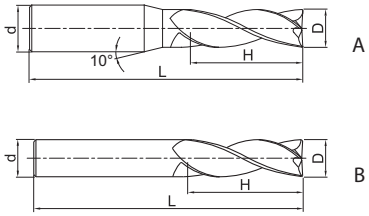
End mill High-performance machining of Al and Al alloys

ALP-3E



– Factory standard
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade	
		D	d (h6)	H	L			KMD401	YK40F
ALP-3E-D1.0		1	4	3	50	3	A	○	○
ALP-3E-D1.5		1.5	4	4	50	3	A	○	●
ALP-3E-D2.0		2	4	6	50	3	A	○	●
ALP-3E-D2.5		2.5	4	8	50	3	A	○	○
ALP-3E-D3.0S		3	4	8	50	3	A	○	●
ALP-3E-D4.0S		4	4	11	50	3	B	○	●
ALP-3E-D3.0		3	6	8	50	3	A	●	●
ALP-3E-D4.0		4	6	11	50	3	A	●	●
ALP-3E-D4.5		4.5	6	11	50	3	A	●	○
ALP-3E-D5.0		5	6	13	50	3	A	●	●
ALP-3E-D5.5		5.5	6	16	50	3	A	●	○
ALP-3E-D6.0		6	6	16	50	3	B	●	●
ALP-3E-D7.0		7	8	20	60	3	B	●	○
ALP-3E-D8.0		8	8	20	60	3	B	●	●
ALP-3E-D9.0		9	10	22	75	3	B	●	○
ALP-3E-D10.0		10	10	25	75	3	B	●	●
ALP-3E-D11.0		11	12	26	75	3	B	●	●
ALP-3E-D12.0		12	12	30	75	3	B	●	●
ALP-3E-D14.0		14	14	32	75	3	B	●	●
ALP-3E-D16.0		16	16	45	100	3	B	●	●
ALP-3E-D20.0		20	20	45	100	3	B	●	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

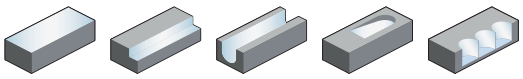
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

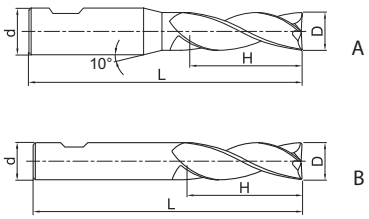
End mill High-performance machining of Al and Al alloys

ALP-3E-W



– Factory standard with weldon clamping surface
– Centre cutting
– Helix angle 35°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMD401
ALP-3E-D3.0-W		3	6	8	50	3	A	●
ALP-3E-D4.0-W		4	6	11	50	3	A	●
ALP-3E-D4.5-W		4.5	6	11	50	3	A	●
ALP-3E-D5.0-W		5	6	13	50	3	A	●
ALP-3E-D5.5-W		5.5	6	16	50	3	A	●
ALP-3E-D6.0-W		6	6	16	50	3	B	●
ALP-3E-D7.0-W		7	8	20	60	3	B	●
ALP-3E-D8.0-W		8	8	20	60	3	B	●
ALP-3E-D9.0-W		9	10	22	75	3	B	●
ALP-3E-D10.0-W		10	10	25	75	3	B	●
ALP-3E-D11.0-W		11	12	26	75	3	B	●
ALP-3E-D12.0-W		12	12	30	75	3	B	●
ALP-3E-D14.0-W		14	14	32	75	3	B	●
ALP-3E-D16.0-W		16	16	45	100	3	B	●
ALP-3E-D20.0-W		20	20	45	100	3	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

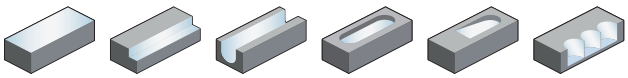
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

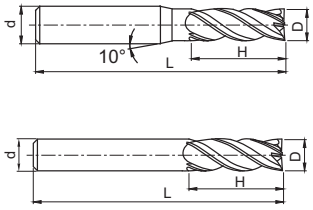
End mill — High-performance machining of Al and Al alloys

ALP-4E



– Factory standard
– Centre cutting
– Helix angle 38°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade	
		D	d (h6)	H	L			KMD401	YK40F
ALP-4E-D3.0S		3	4	9	50	4	A	○	●
ALP-4E-D4.0S		4	4	11	50	4	B	○	●
ALP-4E-D3.0		3	6	9	50	4	A	●	●
ALP-4E-D4.0		4	6	11	50	4	A	●	●
ALP-4E-D5.0		5	6	13	50	4	A	●	●
ALP-4E-D6.0		6	6	16	50	4	B	●	●
ALP-4E-D8.0		8	8	20	60	4	B	●	●
ALP-4E-D10.0		10	10	25	75	4	B	●	●
ALP-4E-D12.0		12	12	30	75	4	B	●	●
ALP-4E-D16.0		16	16	45	100	4	B	●	●
ALP-4E-D18.0		18	18	45	100	4	B	●	○
ALP-4E-D20.0		20	20	45	100	4	B	●	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

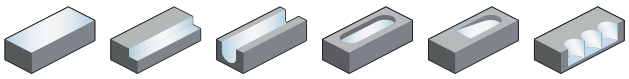
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

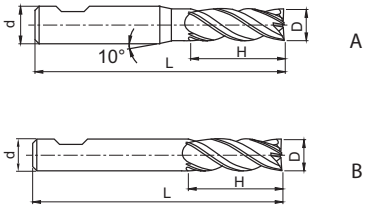
End mill High-performance machining of Al and Al alloys

ALP-4E-W



– Factory standard with weldon clamping surface
– Centre cutting
– Helix angle 38°





Article	✻	Dimensions [mm]				Teeth	Geometry	Grade
		D	d (h6)	H	L			KMD401
ALP-4E-D3.0-W		3	6	9	50	4	A	●
ALP-4E-D4.0-W		4	6	11	50	4	A	●
ALP-4E-D5.0-W		5	6	13	50	4	A	●
ALP-4E-D6.0-W		6	6	16	50	4	B	●
ALP-4E-D8.0-W		8	8	20	60	4	B	●
ALP-4E-D10.0-W		10	10	25	75	4	B	●
ALP-4E-D12.0-W		12	12	30	75	4	B	●
ALP-4E-D16.0-W		16	16	45	100	4	B	●
ALP-4E-D18.0-W		18	18	45	100	4	B	●
ALP-4E-D20.0-W		20	20	45	100	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

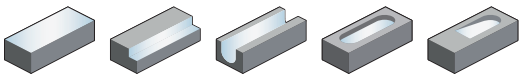
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

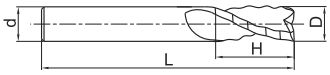
End mill serrated teeth — General machining of Al and Al alloys

AL-3W



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		YK30F
AL-3W-D6.0		6	6	16	50	3	●
AL-3W-D8.0		8	8	20	60	3	●
AL-3W-D10.0		10	10	25	75	3	●
AL-3W-D12.0		12	12	30	75	3	●
AL-3W-D16.0		16	16	45	100	3	●
AL-3W-D20.0		20	20	45	100	3	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

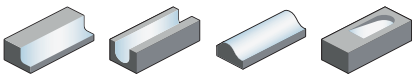
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

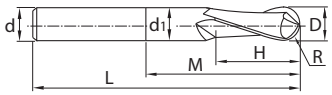
Ball nose cutter — High performance machining of heat-resistant alloys

5565R302NH



– Type of shank DIN 6535HA
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]							Teeth	Grade
		D	R	d (h6)	d_1	H	M	L		YK40F
5565R302NH-0300		3	1.5	6	2.8	6	9	57	2	●
5565R302NH-0400		4	2	6	3.7	8	12	57	2	●
5565R302NH-0500		5	2.5	6	4.6	10	15	57	2	●
5565R302NH-0600		6	3	6	5.5	12	20	57	2	●
5565R302NH-0800		8	4	8	7.4	16	26	63	2	●
5565R302NH-1000		10	5	10	9.2	20	31	72	2	●
5565R302NH-1200		12	6	12	11	24	37	83	2	●
5565R302NH-1600		16	8	16	15	32	43	92	2	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

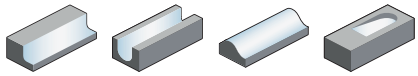
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

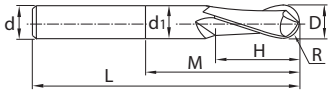
Ball nose cutter long shank | High performance machining of heat-resistant alloys

5566R302NH



– Type of shank DIN 6535HA
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]							Teeth	Grade
		D	R	d (h6)	d_1	H	M	L		YK40F
5566R302NH-0300		3	1.5	6	2.8	6	9	75	2	●
5566R302NH-0400		4	2	6	3.7	8	12	75	2	●
5566R302NH-0500		5	2.5	6	4.6	10	15	80	2	●
5566R302NH-0600		6	3	6	5.5	12	20	80	2	●
5566R302NH-0800		8	4	8	7.4	16	26	90	2	●
5566R302NH-1000		10	5	10	9.2	20	31	100	2	●
5566R302NH-1200		12	6	12	11	24	37	120	2	●
5566R302NH-1600		16	8	16	15	32	43	140	2	●

● Ex stock ○ On demand

✻ With internal cooling

Application field

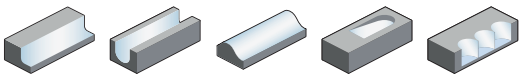
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

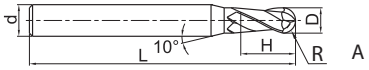
Ball nose cutter General machining of Al and Al alloys

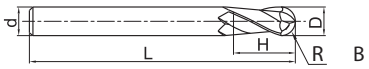
AL-2B



– Factory standard
– Centre cutting
– Helix angle 35°







Article	✻	Dimensions [mm] R	D	d (h6)	H	L	Teeth	Geometry	Grade YK30F
AL-2B-R1.0		1	2	6	4	60	2	A	○
AL-2B-R1.5		1.5	3	6	6	60	2	A	○
AL-2B-R2.0		2	4	6	8	60	2	A	○
AL-2B-R2.5		2.5	5	6	10	60	2	A	○
AL-2B-R3.0		3	6	6	12	60	2	B	○
AL-2B-R4.0		4	8	8	16	75	2	B	○
AL-2B-R5.0		5	10	10	20	75	2	B	○
AL-2B-R6.0		6	12	12	24	75	2	B	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
			✔		

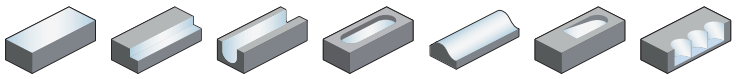
✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

Torus mill

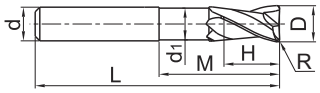
General machining of Al and Al alloys

AL-2R-AIR



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d_1	H	M	L		YK40F
AL-2R-D6.0R1.0-AIR		1	6	6	5.5	7	20	57	2	●
AL-2R-D8.0R1.0-AIR		1	8	8	7.4	9	26	63	2	●
AL-2R-D10.0R1.0-AIR		1	10	10	9.2	11	31	72	2	○
AL-2R-D10.0R2.0-AIR		2	10	10	9.2	11	31	72	2	○
AL-2R-D12.0R1.0-AIR		1	12	12	11	12	37	83	2	●
AL-2R-D12.0R2.0-AIR		2	12	12	11	12	37	83	2	○
AL-2R-D12.0R3.0-AIR		3	12	12	11	12	37	83	2	○
AL-2R-D16.0R1.0-AIR		1	16	16	15	16	43	92	2	○
AL-2R-D16.0R2.0-AIR		2	16	16	15	16	43	92	2	○
AL-2R-D16.0R3.0-AIR		3	16	16	15	16	43	92	2	○
AL-2R-D16.0R4.0-AIR		4	16	16	15	16	43	92	2	○
AL-2R-D20.0R1.0-AIR		1	20	20	19	20	53	104	2	●
AL-2R-D20.0R2.0-AIR		2	20	20	19	20	53	104	2	○
AL-2R-D20.0R3.0-AIR		3	20	20	19	20	53	104	2	○
AL-2R-D20.0R4.0-AIR		4	20	20	19	20	53	104	2	○
AL-2R-D20.0R5.0-AIR		5	20	20	19	20	53	104	2	●
AL-2R-D20.0R6.0-AIR		6	20	20	19	20	53	104	2	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

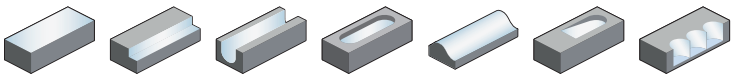
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

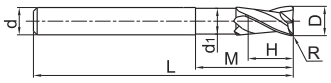
Torus mill long shank — General machining of Al and Al alloys

AL-2RL-AIR



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d_1	H	M	L		YK40F
AL-2RL-D6.0R1.0-AIR		1	6	6	5.5	7	43	80	2	●
AL-2RL-D8.0R1.0-AIR		1	8	8	7.4	9	53	90	2	●
AL-2RL-D10.0R1.0-AIR		1	10	10	9.2	11	59	100	2	●
AL-2RL-D10.0R2.0-AIR		2	10	10	9.2	11	59	100	2	●
AL-2RL-D12.0R1.0-AIR		1	12	12	11	12	74	120	2	●
AL-2RL-D12.0R2.0-AIR		2	12	12	11	12	74	120	2	●
AL-2RL-D12.0R3.0-AIR		3	12	12	11	12	74	120	2	●
AL-2RL-D16.0R1.0-AIR		1	16	16	15	16	84	140	2	●
AL-2RL-D16.0R2.0-AIR		2	16	16	15	16	84	140	2	●
AL-2RL-D16.0R3.0-AIR		3	16	16	15	16	84	140	2	●
AL-2RL-D16.0R4.0-AIR		4	16	16	15	16	84	140	2	●
AL-2RL-D20.0R1.0-AIR		1	20	20	19	20	89	140	2	○
AL-2RL-D20.0R2.0-AIR		2	20	20	19	20	89	140	2	●
AL-2RL-D20.0R3.0-AIR		3	20	20	19	20	89	140	2	●
AL-2RL-D20.0R4.0-AIR		4	20	20	19	20	89	140	2	●
AL-2RL-D20.0R5.0-AIR		5	20	20	19	20	89	140	2	○
AL-2RL-D20.0R6.0-AIR		6	20	20	19	20	89	140	2	○

● Ex stock ○ On demand

✻ With internal cooling

Application field

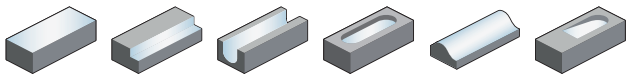
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

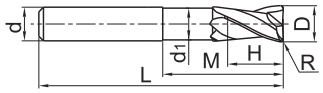
End mill — General machining of Al and Al alloys

ALG-2R



– Straight shank
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]							Teeth	Grade	
		R	D	d (h6)	d_1	H	M	L		KMD401	YK40F
ALG-2R-D6.0R0.3		0.3	6	6	5.7	8	16	75	2	●	●
ALG-2R-D6.0R0.5		0.5	6	6	5.7	8	16	75	2	●	●
ALG-2R-D6.0R1.0		1	6	6	5.7	8	16	75	2	●	●
ALG-2R-D8.0R0.3		0.3	8	8	7.4	10	20	75	2	●	●
ALG-2R-D8.0R0.5		0.5	8	8	7.4	10	20	75	2	●	●
ALG-2R-D8.0R1.0		1	8	8	7.4	10	20	75	2	●	●
ALG-2R-D10.0R0.5		0.5	10	10	9.4	12	35	100	2	●	●
ALG-2R-D10.0R1.0		1	10	10	9.4	12	35	100	2	●	●
ALG-2R-D10.0R1.6		1.6	10	10	9.4	12	35	100	2	●	●
ALG-2R-D10.0R2.5		2.5	10	10	9.4	12	35	100	2	●	●
ALG-2R-D12.0R0.5		0.5	12	12	11.4	15	35	100	2	●	●
ALG-2R-D12.0R1.0		1	12	12	11.4	15	35	100	2	●	●
ALG-2R-D12.0R1.6		1.6	12	12	11.4	15	35	100	2	●	●
ALG-2R-D12.0R2.5		2.5	12	12	11.4	15	35	100	2	●	●
ALG-2R-D12.0R3.2		3.2	12	12	11.4	15	35	100	2	●	●
ALG-2R-D12.0R4.0		4	12	12	11.4	15	35	100	2	●	●
ALG-2R-D16.0R1.0		1	16	16	15.4	15	45	125	2	●	●
ALG-2R-D16.0R1.6		1.6	16	16	15.4	15	45	125	2	●	●
ALG-2R-D16.0R2.5		2.5	16	16	15.4	15	45	125	2	●	●
ALG-2R-D16.0R3.2		3.2	16	16	15.4	15	45	125	2	●	●
ALG-2R-D16.0R4.0		4	16	16	15.4	15	45	125	2	●	●
ALG-2R-D16.0R6.3		6.3	16	16	15.4	15	45	125	2	○	○
ALG-2R-D20.0R1.0		1	20	20	18	20	50	125	2	●	●
ALG-2R-D20.0R1.6		1.6	20	20	18	20	50	125	2	●	●
ALG-2R-D20.0R2.5		2.5	20	20	18	20	50	125	2	●	●
ALG-2R-D20.0R3.2		3.2	20	20	18	20	50	125	2	●	●
ALG-2R-D20.0R4.0		4	20	20	18	20	50	125	2	●	●
ALG-2R-D20.0R6.3		6.3	20	20	18	20	50	125	2	○	○
ALG-2R-D25.0R6.3		6.3	25	25	23	25	75	150	2	○	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

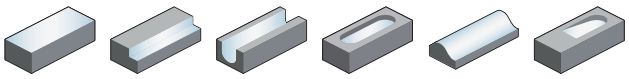
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

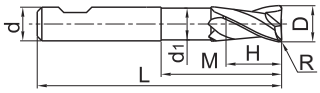
End mill General machining of Al and Al alloys

ALG-2R-W



– Factory standard with weldon clamping surface
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d_1	H	M	L		KMD401
ALG-2R-D6.0R0.3-W		0.3	6	6		8		75	2	●
ALG-2R-D6.0R0.5-W		0.5	6	6		8		75	2	●
ALG-2R-D6.0R1.0-W		1	6	6		8		75	2	●
ALG-2R-D8.0R0.3-W		0.3	8	8		10		75	2	●
ALG-2R-D8.0R0.5-W		0.5	8	8		10		75	2	●
ALG-2R-D8.0R1.0-W		1	8	8		10		75	2	●
ALG-2R-D10.0R0.5-W		0.5	10	10		12		100	2	●
ALG-2R-D10.0R1.0-W		1	10	10		12		100	2	●
ALG-2R-D10.0R1.6-W		1.6	10	10		12		100	2	●
ALG-2R-D10.0R2.5-W		2.5	10	10		12		100	2	●
ALG-2R-D12.0R0.5-W		0.5	12	12		15		100	2	●
ALG-2R-D12.0R1.0-W		1	12	12		15		100	2	●
ALG-2R-D12.0R1.6-W		1.6	12	12		15		100	2	●
ALG-2R-D12.0R2.5-W		2.5	12	12		15		100	2	●
ALG-2R-D12.0R3.2-W		3.2	12	12		15		100	2	●
ALG-2R-D12.0R4.0-W		4	12	12		15		100	2	●
ALG-2R-D16.0R1.0-W		1	16	16		15		125	2	●
ALG-2R-D16.0R1.6-W		1.6	16	16		15		125	2	●
ALG-2R-D16.0R2.5-W		2.5	16	16		15		125	2	●
ALG-2R-D16.0R3.2-W		3.2	16	16		15		125	2	●
ALG-2R-D16.0R4.0-W		4	16	16		15		125	2	●
ALG-2R-D16.0R6.3-W		6.3	16	16		15		125	2	○
ALG-2R-D20.0R1.0-W		1	20	20		20		125	2	●
ALG-2R-D20.0R1.6-W		1.6	20	20		20		125	2	●
ALG-2R-D20.0R2.5-W		2.5	20	20		20		125	2	●
ALG-2R-D20.0R3.2-W		3.2	20	20		20		125	2	●
ALG-2R-D20.0R4.0-W		4	20	20		20		125	2	●
ALG-2R-D20.0R6.3-W		6.3	20	20		20		125	2	○
ALG-2R-D25.0R6.3-W		6.3	25	25		25		150	2	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
			✔		

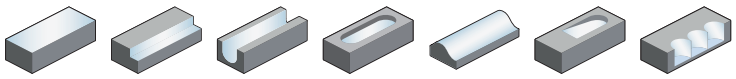
✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

Torus mill

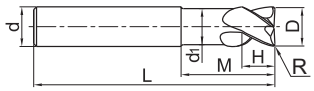
General machining of Al and Al alloys

AL-3R-AIR



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d_1	H	M	L		YK40F
AL-3R-D12.0R1.0-AIR		1	12	12	11	12	37	83	3	●
AL-3R-D12.0R2.0-AIR		2	12	12	11	12	37	83	3	●
AL-3R-D12.0R3.0-AIR		3	12	12	11	12	37	83	3	●
AL-3R-D16.0R1.0-AIR		1	16	16	15	16	43	92	3	●
AL-3R-D16.0R2.0-AIR		2	16	16	15	16	43	92	3	●
AL-3R-D16.0R3.0-AIR		3	16	16	15	16	43	92	3	●
AL-3R-D16.0R4.0-AIR		4	16	16	15	16	43	92	3	●
AL-3R-D20.0R1.0-AIR		1	20	20	19	20	53	104	3	●
AL-3R-D20.0R2.0-AIR		2	20	20	19	20	53	104	3	○
AL-3R-D20.0R3.0-AIR		3	20	20	19	20	53	104	3	○
AL-3R-D20.0R4.0-AIR		4	20	20	19	20	53	104	3	○
AL-3R-D20.0R5.0-AIR		5	20	20	19	20	53	104	3	●
AL-3R-D20.0R6.0-AIR		6	20	20	19	20	53	104	3	○

● Ex stock ○ On demand

✻ With internal cooling

Application field

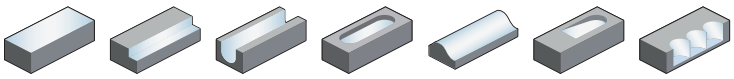
P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

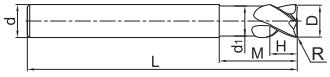
Torus mill long shank — General machining of Al and Al alloys

AL-3RL-AIR



– Factory standard
– Centre cutting
– Helix angle 30°





Article	✻	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d_1	H	M	L		YK40F
AL-3RL-D12.0R1.0-AIR		1	12	12	11	12	74	120	3	●
AL-3RL-D12.0R2.0-AIR		2	12	12	11	12	74	120	3	●
AL-3RL-D12.0R3.0-AIR		3	12	12	11	12	74	120	3	●
AL-3RL-D16.0R1.0-AIR		1	16	16	15	16	84	140	3	●
AL-3RL-D16.0R2.0-AIR		2	16	16	15	16	84	140	3	○
AL-3RL-D16.0R3.0-AIR		3	16	16	15	16	84	140	3	●
AL-3RL-D16.0R4.0-AIR		4	16	16	15	16	84	140	3	●
AL-3RL-D20.0R1.0-AIR		1	20	20	19	20	89	140	3	●
AL-3RL-D20.0R2.0-AIR		2	20	20	19	20	89	140	3	○
AL-3RL-D20.0R3.0-AIR		3	20	20	19	20	89	140	3	○
AL-3RL-D20.0R4.0-AIR		4	20	20	19	20	89	140	3	○
AL-3RL-D20.0R5.0-AIR		5	20	20	19	20	89	140	3	○
AL-3RL-D20.0R6.0-AIR		6	20	20	19	20	89	140	3	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477



HPC series

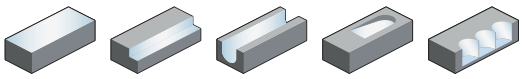
High Performance Cutter (HPC)

- For roughing and finishing of steel up to 55 HRC, stainless steel and cast iron.
- Geometry with unequal helix angle (38°/41°) and unequal pitch for smooth machining without vibrations.
- End mills and torus mills
- Diameter range 4.0–20.0 mm



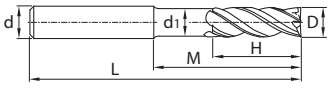
End mill HSC/HPC machining

5501R38414GM



– Type of shank DIN 6535HA
– Centre cutting
– Helix angle 38°/41°





Article	✻	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d_1	H	M	L		KMG405
5501R38414GM-0400		4	6	3.7	8	16	54	4	●
5501R38414GM-0500		5	6	4.7	9	17	54	4	●
5501R38414GM-0600		6	6	5.7	10	18	54	4	●
5501R38414GM-0800		8	8	7.7	12	22	58	4	●
5501R38414GM-1000		10	10	9.5	14	26	66	4	●
5501R38414GM-1200		12	12	11.5	16	28	73	4	●
5501R38414GM-1400		14	14	13.5	18	30	75	4	●
5501R38414GM-1600		16	16	15.5	22	34	82	4	●
5501R38414GM-1800		18	18	17.5	24	36	84	4	●
5501R38414GM-2000		20	20	19.5	26	42	92	4	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

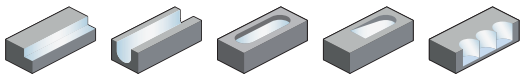
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

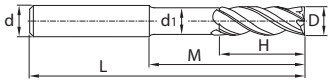
End mill long cutting edge HSC/HPC machining

5502R38414GM



– Type of shank DIN 6535HA
– Centre cutting
– Helix angle 38°/41°





Article	✻	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d_1	H	M	L		KMG405
5502R38414GM-0400		4	6	3.7	11	19	57	4	●
5502R38414GM-0500		5	6	4.7	13	21	57	4	●
5502R38414GM-0600		6	6	5.7	13	21	57	4	●
5502R38414GM-0800		8	8	7.7	19	27	63	4	●
5502R38414GM-1000		10	10	9.5	22	32	72	4	●
5502R38414GM-1200		12	12	11.5	26	38	83	4	●
5502R38414GM-1400		14	14	13.5	26	38	83	4	●
5502R38414GM-1600		16	16	15.5	32	44	92	4	●
5502R38414GM-1800		18	18	17.5	32	44	92	4	●
5502R38414GM-2000		20	20	19.5	38	54	104	4	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

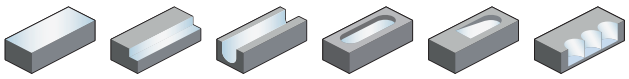
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

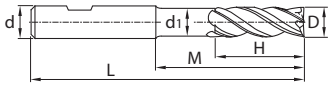
End mill HSC/HPC machining

5601R38414GM



– Type of shank: DIN 6535HB
– Centre cutting
– Helix angle 38°/41°





Article	✻	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d_1	H	M	L		KMG405
5601R38414GM-0400		4	6	3.7	8	16	54	4	●
5601R38414GM-0500		5	6	4.7	9	17	54	4	●
5601R38414GM-0600		6	6	5.7	10	18	54	4	●
5601R38414GM-0800		8	8	7.7	12	22	58	4	●
5601R38414GM-1000		10	10	9.5	14	26	66	4	●
5601R38414GM-1200		12	12	11.5	16	28	73	4	●
5601R38414GM-1400		14	14	13.5	18	30	75	4	●
5601R38414GM-1600		16	16	15.5	22	34	82	4	●
5601R38414GM-1800		18	18	17.5	24	36	84	4	●
5601R38414GM-2000		20	20	19.5	26	42	92	4	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

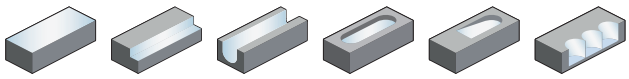
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

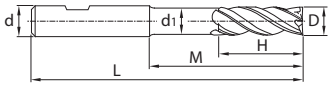
End mill long cutting edge HSC/HPC machining

5602R38414GM



– Type of shank: DIN 6535HB
– Centre cutting
– Helix angle 38°/41°





Article	✻	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d_1	H	M	L		KMG405
5602R38414GM-0300L		3	6	2.7	6.5	15	58	4	○
5602R38414GM-0400L		4	6	3.7	8.5	20	62	4	○
5602R38414GM-0400		4	6	3.7	11	19	57	4	●
5602R38414GM-0500		5	6	4.7	13	21	57	4	●
5602R38414GM-0500L		5	6	4.7	10.5	25	70	4	○
5602R38414GM-0600L		6	6	5.7	13	30	70	4	○
5602R38414GM-0600		6	6	5.7	13	21	57	4	●
5602R38414GM-0800		8	8	7.7	19	27	63	4	●
5602R38414GM-0800L		8	8	7.7	17	40	80	4	○
5602R38414GM-1000		10	10	9.5	22	32	72	4	●
5602R38414GM-1000L		10	10	9.5	21	50	94	4	○
5602R38414GM-1200		12	12	11.5	26	38	83	4	●
5602R38414GM-1200L		12	12	11.5	25	60	109	4	○
5602R38414GM-1400		14	14	13.5	26	38	83	4	●
5602R38414GM-1600L		16	16	15.5	33	80	132	4	○
5602R38414GM-1600		16	16	15.5	32	44	92	4	●
5602R38414GM-1800		18	18	17.5	32	44	92	4	●
5602R38414GM-2000		20	20	19.5	38	54	104	4	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

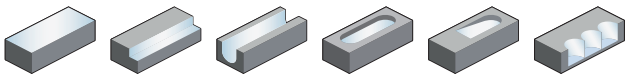
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

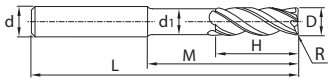
Torus mill long cutting edge HSC/HPC machining

5502R38414GM-R



– Type of shank DIN 6535HA
– Centre cutting
– Helix angle 38°/41°





Article	✻	Dimensions [mm]							Teeth	Grade
		D	R	d (h6)	d_1	H	M	L		KMG405
5502R38414GM-R02-0400		4	0.2	6	3.7	11	19	57	4	●
5502R38414GM-R05-0400		4	0.5	6	3.7	11	19	57	4	●
5502R38414GM-R02-0500		5	0.2	6	4.7	13	21	57	4	●
5502R38414GM-R05-0500		5	0.5	6	4.7	13	21	57	4	●
5502R38414GM-R02-0600		6	0.2	6	5.7	13	21	57	4	●
5502R38414GM-R05-0600		6	0.5	6	5.7	13	21	57	4	●
5502R38414GM-R10-0600		6	1	6	5.7	13	21	57	4	●
5502R38414GM-R02-0800		8	0.2	8	7.7	19	27	63	4	●
5502R38414GM-R05-0800		8	0.5	8	7.7	19	27	63	4	●
5502R38414GM-R10-0800		8	1	8	7.7	19	27	63	4	●
5502R38414GM-R15-0800		8	1.5	8	7.7	19	27	63	4	●
5502R38414GM-R20-0800		8	2	8	7.7	19	27	63	4	●
5502R38414GM-R02-1000		10	0.2	10	9.5	22	32	72	4	●
5502R38414GM-R05-1000		10	0.5	10	9.5	22	32	72	4	●
5502R38414GM-R10-1000		10	1	10	9.5	22	32	72	4	●
5502R38414GM-R15-1000		10	1.5	10	9.5	22	32	72	4	●
5502R38414GM-R20-1000		10	2	10	9.5	22	32	72	4	●
5502R38414GM-R05-1200		12	0.5	12	11.5	26	38	83	4	●
5502R38414GM-R10-1200		12	1	12	11.5	26	38	83	4	●
5502R38414GM-R15-1200		12	1.5	12	11.5	26	38	83	4	●
5502R38414GM-R20-1200		12	2	12	11.5	26	38	83	4	●
5502R38414GM-R10-1600		16	1	16	15.5	32	44	92	4	●
5502R38414GM-R15-1600		16	1.5	16	15.5	32	44	92	4	●
5502R38414GM-R20-1600		16	2	16	15.5	32	44	92	4	●
5502R38414GM-R30-1600		16	3	16	15.5	32	44	92	4	●
5502R38414GM-R10-2000		20	1	20	19.5	38	54	104	4	●
5502R38414GM-R15-2000		20	1.5	20	19.5	38	54	104	4	●
5502R38414GM-R20-2000		20	2	20	19.5	38	54	104	4	●
5502R38414GM-R30-2000		20	3	20	19.5	38	54	104	4	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

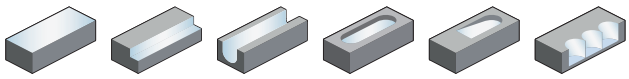
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

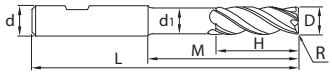
Torus mill long cutting edge HSC/HPC machining

5602R38414GM-R



– Type of shank: DIN 6535HB
– Centre cutting
– Helix angle 38°/41°





Article	✻	Dimensions [mm]							Teeth	Grade
		D	R	d (h6)	d_1	H	M	L		KMG405
5602R38414GM-R02-0400		4	0.2	6	3.7	11	19	57	4	●
5602R38414GM-R05-0400		4	0.5	6	3.7	11	19	57	4	●
5602R38414GM-R02-0500		5	0.2	6	4.7	13	21	57	4	●
5602R38414GM-R05-0500		5	0.5	6	4.7	13	21	57	4	●
5602R38414GM-R02-0600		6	0.2	6	5.7	13	21	57	4	●
5602R38414GM-R05-0600		6	0.5	6	5.7	13	21	57	4	●
5602R38414GM-R10-0600		6	1	6	5.7	13	21	57	4	●
5602R38414GM-R02-0800		8	0.2	8	7.7	19	27	63	4	●
5602R38414GM-R05-0800		8	0.5	8	7.7	19	27	63	4	●
5602R38414GM-R10-0800		8	1	8	7.7	19	27	63	4	●
5602R38414GM-R15-0800		8	1.5	8	7.7	19	27	63	4	●
5602R38414GM-R20-0800		8	2	8	7.7	19	27	63	4	●
5602R38414GM-R02-1000		10	0.2	10	9.5	22	32	72	4	●
5602R38414GM-R05-1000		10	0.5	10	9.5	22	32	72	4	●
5602R38414GM-R10-1000		10	1	10	9.5	22	32	72	4	●
5602R38414GM-R15-1000		10	1.5	10	9.5	22	32	72	4	●
5602R38414GM-R20-1000		10	2	10	9.5	22	32	72	4	●
5602R38414GM-R05-1200		12	0.5	12	11.5	26	38	83	4	●
5602R38414GM-R10-1200		12	1	12	11.5	26	38	83	4	●
5602R38414GM-R15-1200		12	1.5	12	11.5	26	38	83	4	●
5602R38414GM-R20-1200		12	2	12	11.5	26	38	83	4	●
5602R38414GM-R10-1600		16	1	16	15.5	32	44	92	4	●
5602R38414GM-R15-1600		16	1.5	16	15.5	32	44	92	4	●
5602R38414GM-R20-1600		16	2	16	15.5	32	44	92	4	●
5602R38414GM-R30-1600		16	3	16	15.5	32	44	92	4	●
5602R38414GM-R10-2000		20	1	20	19.5	38	54	104	4	●
5602R38414GM-R15-2000		20	1.5	20	19.5	38	54	104	4	●
5602R38414GM-R20-2000		20	2	20	19.5	38	54	104	4	●
5602R38414GM-R30-2000		20	3	20	19.5	38	54	104	4	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

Notes



UM series

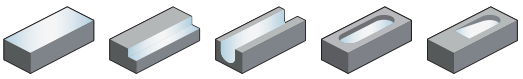
High Speed Cutter (HSC)

- For roughing and finishing of steel up to 55 HRC, stainless steel and cast iron with high metal removal rate.
- Optimised geometry with unequal helix angle (38°/41°) and unequal pitch.
- End mills and torus mills
- Diameter range 4.0–20.0 mm



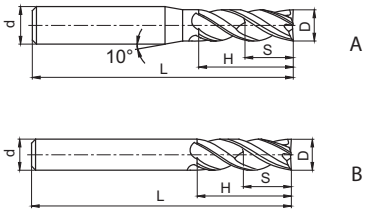
End mill HSC/HPC machining

UM-4E



– Factory standard
– Centre cutting
– Helix angle 38°/41°





Article	✻	Dimensions [mm]					Teeth	Geometry	Grade
		D	d (h6)	H	L	S			KMG405
UM-4E-D4.0S		4	4	11	50	6	4	B	●
UM-4E-D4.0		4	6	11	50	6	4	A	●
UM-4E-D4.5		4.5	6	11	50	6.75	4	A	●
UM-4E-D5.0		5	6	13	50	7.5	4	A	●
UM-4E-D5.5		5.5	6	16	50	8.25	4	A	●
UM-4E-D6.0		6	6	16	50	9	4	B	●
UM-4E-D7.0		7	8	20	60	10.5	4	A	●
UM-4E-D8.0		8	8	20	60	12	4	B	●
UM-4E-D9.0		9	10	22	75	13.5	4	A	●
UM-4E-D10.0		10	10	25	75	15	4	B	●
UM-4E-D11.0		11	12	26	75	16.5	4	A	●
UM-4E-D12.0		12	12	30	75	18	4	B	●
UM-4E-D14.0		14	14	32	75	21	4	B	●
UM-4E-D16.0		16	16	45	100	24	4	B	●
UM-4E-D18.0		18	18	45	100	27	4	B	●
UM-4E-D20.0		20	20	45	100	30	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

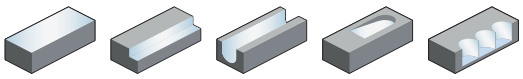
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

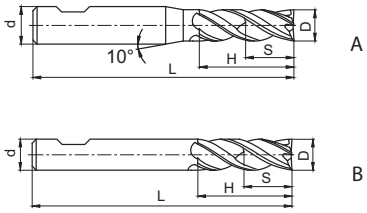
End mill HSC/HPC machining

UM-4E-W



– Factory standard with weldon clamping surface
– Centre cutting
– Helix angle 38°/41°





Article	✻	Dimensions [mm]					Teeth	Geometry	Grade
		D	d (h6)	H	L	S			KMG405
UM-4E-D4.0-W		4	6	11	50	6	4	A	●
UM-4E-D4.5-W		4.5	6	11	50	6.75	4	A	●
UM-4E-D5.0-W		5	6	13	50	7.5	4	A	●
UM-4E-D5.5-W		5.5	6	16	50	8.25	4	A	●
UM-4E-D6.0-W		6	6	16	50	9	4	B	●
UM-4E-D7.0-W		7	8	20	60	10.5	4	A	●
UM-4E-D8.0-W		8	8	20	60	12	4	B	●
UM-4E-D9.0-W		9	10	22	75	13.5	4	A	●
UM-4E-D10.0-W		10	10	25	75	15	4	B	●
UM-4E-D11.0-W		11	12	26	75	16.5	4	A	●
UM-4E-D12.0-W		12	12	30	75	18	4	B	●
UM-4E-D14.0-W		14	14	32	75	21	4	B	●
UM-4E-D16.0-W		16	16	45	100	24	4	B	●
UM-4E-D18.0-W		18	18	45	100	27	4	B	●
UM-4E-D20.0-W		20	20	45	100	30	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

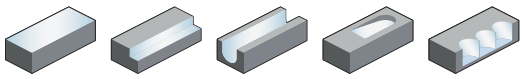
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

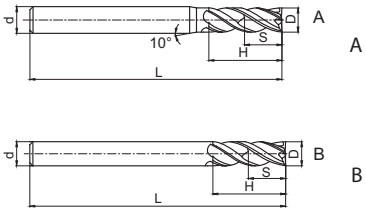
End mill long cutting edge HSC/HPC machining

UM-4EL



– Factory standard
– Centre cutting
– Helix angle 38°/41°





Article	✻	Dimensions [mm]					Teeth	Geometry	Grade
		D	d (h6)	H	L	S			KMG405
UM-4EL-D4.0		4	6	15	75	6	4	A	●
UM-4EL-D5.0		5	6	20	75	7.5	4	A	●
UM-4EL-D6.0		6	6	20	75	9	4	B	●
UM-4EL-D8.0		8	8	25	100	12	4	B	●
UM-4EL-D10.0		10	10	30	100	15	4	B	●
UM-4EL-D12.0		12	12	35	100	18	4	B	●
UM-4EL-D14.0		14	14	40	100	21	4	B	●
UM-4EL-D16.0		16	16	50	150	24	4	B	●
UM-4EL-D20.0		20	20	55	150	30	4	B	●

● Ex stock ○ On demand

✻ With internal cooling

Application field

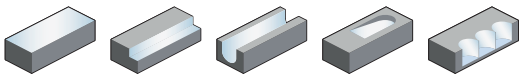
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

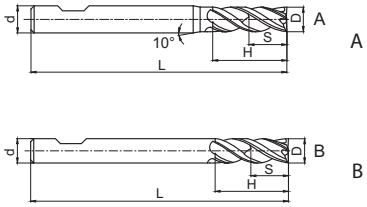
End mill long cutting edge HSC/HPC machining

UM-4EL-W



– Factory standard with weldon clamping surface
– Centre cutting
– Helix angle 38°/41°





Article	✻	Dimensions [mm]					Teeth	Geometry	Grade
		D	d (h6)	H	L	S			KMG405
UM-4EL-D4.0-W		4	6	15	75	6	4	A	●
UM-4EL-D5.0-W		5	6	20	75	7.5	4	A	●
UM-4EL-D6.0-W		6	6	20	75	9	4	B	●
UM-4EL-D8.0-W		8	8	25	100	12	4	B	●
UM-4EL-D10.0-W		10	10	30	100	15	4	B	●
UM-4EL-D12.0-W		12	12	35	100	18	4	B	●
UM-4EL-D14.0-W		14	14	40	100	21	4	B	●
UM-4EL-D16.0-W		16	16	50	150	24	4	B	●
UM-4EL-D20.0-W		20	20	55	150	30	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

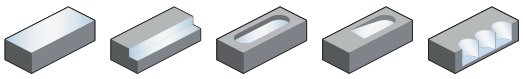
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

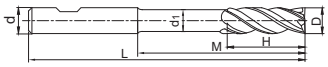
End mill reduced neck HSC/HPC machining

UM-4ELP-W



– Factory standard with weldon clamping surface
– Centre cutting
– Helix angle 38°/41°





Article	✻	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d_1	H	M	L		KMG405
UM-4ELP-D4.0-W		4	6	3.8	15	36	75	4	●
UM-4ELP-D5.0-W		5	6	4.8	20	36	75	4	●
UM-4ELP-D6.0-W		6	6	5.7	20	36	75	4	●
UM-4ELP-D8.0-W		8	8	7.7	25	60	100	4	●
UM-4ELP-D10.0-W		10	10	9.5	30	55	100	4	●
UM-4ELP-D12.0-W		12	12	11.5	35	50	100	4	●
UM-4ELP-D14.0-W		14	14	13.5	40	50	100	4	●
UM-4ELP-D16.0-W		16	16	15.5	50	100	150	4	●
UM-4ELP-D20.0-W		20	20	19.5	55	98	150	4	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

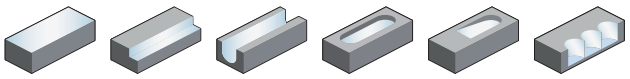
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

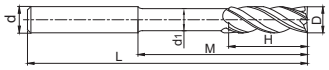
End mill short cutting edge HSC/HPC machining

UM-4EFP



– Factory standard
– Centre cutting
– Helix angle 38°/41°





Article	✻	Dimensions [mm]						Teeth	Grade
		D	d (h6)	d_1	H	M	L		KMG405
UM-4EFP-D6.0		6	6	5.8	9	30	75	4	●
UM-4EFP-D8.0		8	8	7.8	12	40	100	4	●
UM-4EFP-D10.0		10	10	9.6	15	50	100	4	●
UM-4EFP-D12.0		12	12	11.5	18	50	100	4	●
UM-4EFP-D16.0		16	16	15.5	24	50	150	4	●
UM-4EFP-D20.0		20	20	19.5	30	60	150	4	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

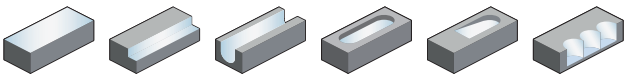
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

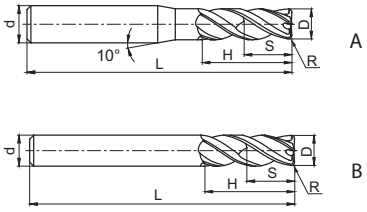
Torus mill HSC/HPC machining

UM-4R



– Factory standard
– Centre cutting
– Helix angle 38°/41°





Article	✻	Dimensions [mm] R	D	d (h6)	H	L	S	Teeth	Geometry	Grade KMG405
UM-4R-D4.0R0.3		0.3	4	6	10	50	6	4	A	●
UM-4R-D4.0R0.5		0.5	4	6	10	50	6	4	A	●
UM-4R-D5.0R0.5		0.5	5	6	13	50	7.5	4	A	●
UM-4R-D5.0R1.0		1	5	6	13	50	7.5	4	A	●
UM-4R-D6.0R0.5		0.5	6	6	16	50	9	4	B	●
UM-4R-D6.0R1.0		1	6	6	16	50	9	4	B	●
UM-4R-D8.0R0.5		0.5	8	8	20	60	12	4	B	●
UM-4R-D8.0R1.0		1	8	8	20	60	12	4	B	●
UM-4R-D10.0R0.5		0.5	10	10	25	75	15	4	B	●
UM-4R-D10.0R1.0		1	10	10	25	75	15	4	B	●
UM-4R-D10.0R2.0		2	10	10	25	75	15	4	B	●
UM-4R-D10.0R3.0		3	10	10	25	75	15	4	B	●
UM-4R-D12.0R0.5		0.5	12	12	30	75	18	4	B	●
UM-4R-D12.0R1.0		1	12	12	30	75	18	4	B	●
UM-4R-D12.0R2.0		2	12	12	30	75	18	4	B	●
UM-4R-D12.0R3.0		3	12	12	30	75	18	4	B	●
UM-4R-D16.0R1.0		1	16	16	45	100	24	4	B	●
UM-4R-D16.0R2.0		2	16	16	45	100	24	4	B	●
UM-4R-D16.0R3.0		3	16	16	45	100	24	4	B	●
UM-4R-D20.0R1.0		1	20	20	45	100	30	4	B	●
UM-4R-D20.0R2.0		2	20	20	45	100	30	4	B	●
UM-4R-D20.0R3.0		3	20	20	45	100	30	4	B	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

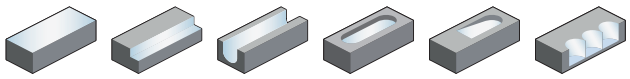
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

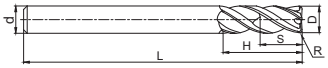
Torus mill long shank HSC/HPC machining

UM-4RL



– Factory standard
– Centre cutting
– Helix angle 38°/41°





Article	✻	Dimensions [mm]						Teeth	Grade
		R	D	d (h6)	H	L	S		KMG405
UM-4RL-D6.0R0.5		0.5	6	6	16	75	9	4	●
UM-4RL-D6.0R1.0		1	6	6	16	75	9	4	●
UM-4RL-D8.0R0.5		0.5	8	8	20	100	12	4	●
UM-4RL-D8.0R1.0		1	8	8	20	100	12	4	●
UM-4RL-D10.0R0.5		0.5	10	10	25	100	15	4	●
UM-4RL-D10.0R1.0		1	10	10	25	100	15	4	●
UM-4RL-D10.0R2.0		2	10	10	25	100	15	4	●
UM-4RL-D12.0R0.5		0.5	12	12	30	100	18	4	●
UM-4RL-D12.0R1.0		1	12	12	30	100	18	4	●
UM-4RL-D12.0R2.0		2	12	12	30	100	18	4	●
UM-4RL-D16.0R1.0		1	16	16	45	150	24	4	●
UM-4RL-D16.0R2.0		2	16	16	45	150	24	4	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

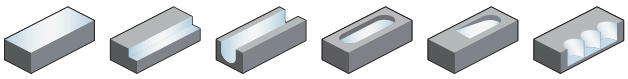
P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

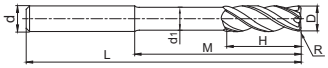
Torus mill short cutting edge HSC/HPC machining

UM-4RFP



– Factory standard
– Centre cutting
– Helix angle 38°/41°





Article	✻	Dimensions [mm]							Teeth	Grade
		R	D	d (h6)	d_1	H	M	L		KMG405
UM-4RFP-D6.0R0.5		0.5	6	6	5.8	6	18	75	4	●
UM-4RFP-D6.0R1.0		1	6	6	5.8	6	18	75	4	●
UM-4RFP-D8.0R0.5		0.5	8	8	7.7	8	24	100	4	●
UM-4RFP-D8.0R1.0		1	8	8	7.7	8	24	100	4	●
UM-4RFP-D10.0R0.5		0.5	10	10	9.6	10	30	100	4	●
UM-4RFP-D10.0R1.0		1	10	10	9.6	10	30	100	4	●
UM-4RFP-D10.0R2.0		2	10	10	9.6	10	30	100	4	●
UM-4RFP-D12.0R0.5		0.5	12	12	11.5	12	36	100	4	●
UM-4RFP-D12.0R1.0		1	12	12	11.5	12	36	100	4	●
UM-4RFP-D12.0R2.0		2	12	12	11.5	12	36	100	4	●
UM-4RFP-D16.0R1.0		1	16	16	15.5	16	40	150	4	●
UM-4RFP-D16.0R2.0		2	16	16	15.5	16	40	150	4	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔	✔			✔

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477



VSM series

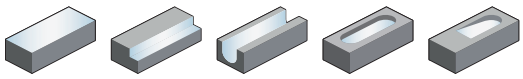
With sharp cutting edge for heat-resistant alloys

- For roughing and finishing of steel, stainless steel and heat-resistant alloys with high metal removal rates.
- Sharp cutting edge with unequal helix angle (38°/41°) and unequal pitch.
- Smooth machining without vibrations.
- End mills and torus mills
- Diameter range 4.0–20.0 mm



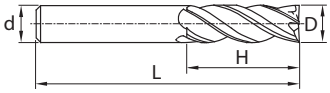
End mill General machining of heat-resistant alloys

VSM-4E



– Factory standard
– Centre cutting
– Helix angle 38°/41°





Article	✲	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		KMG405
VSM-4E-D4.0		4	6	11	50	4	●
VSM-4E-D5.0		5	6	13	50	4	●
VSM-4E-D6.0		6	6	16	50	4	●
VSM-4E-D8.0		8	8	20	60	4	●
VSM-4E-D10.0		10	10	25	75	4	●
VSM-4E-D12.0		12	12	30	75	4	●
VSM-4E-D16.0		16	16	45	100	4	●
VSM-4E-D20.0		20	20	45	100	4	●

● Ex stock ○ On demand
✲ With internal cooling

Application field

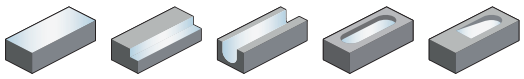
P	M	K	N	S	H
✔	✔			✔	

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

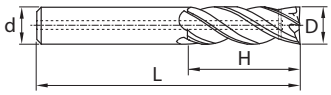
End mill — General machining of heat-resistant alloys

VSM-4E-C



– Factory standard
– Coolant exit, radial
– Centre cutting
– Helix angle 38°/41°





Article	✻	Dimensions [mm]				Teeth	Grade
		D	d (h6)	H	L		KMG405
VSM-4E-C-D10.0	✻	10	10	25	75	4	○
VSM-4E-C-D12.0	✻	12	12	30	75	4	○
VSM-4E-C-D16.0	✻	16	16	45	100	4	○
VSM-4E-C-D20.0	✻	20	20	45	100	4	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔			✔	

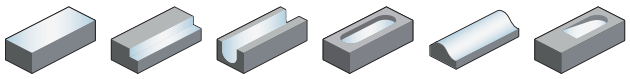
✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

Torus mill

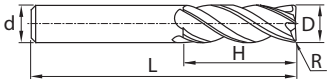
General machining of heat-resistant alloys

VSM-4R



– Factory standard
– Centre cutting
– Helix angle 38°/41°





Article	✻	Dimensions [mm]					Teeth	Grade
		D	R	d (h6)	H	L		KMG405
VSM-4R-D4.0R0.2		4	0.2	6	11	50	4	●
VSM-4R-D4.0R0.5		4	0.5	6	11	50	4	●
VSM-4R-D5.0R0.2		5	0.2	6	13	50	4	●
VSM-4R-D5.0R0.5		5	0.5	6	13	50	4	●
VSM-4R-D6.0R0.2		6	0.2	6	16	50	4	●
VSM-4R-D6.0R0.5		6	0.5	6	16	50	4	●
VSM-4R-D6.0R1.0		6	1	6	16	50	4	●
VSM-4R-D6.0R1.5		6	1.5	6	16	50	4	●
VSM-4R-D8.0R0.5		8	0.5	8	20	63	4	●
VSM-4R-D8.0R0.8		8	0.8	8	20	63	4	●
VSM-4R-D8.0R1.0		8	1	8	20	63	4	●
VSM-4R-D8.0R1.5		8	1.5	8	20	63	4	●
VSM-4R-D8.0R2.0		8	2	8	20	63	4	●
VSM-4R-D10.0R0.5		10	0.5	10	25	75	4	●
VSM-4R-D10.0R0.8		10	0.8	10	25	75	4	●
VSM-4R-D10.0R1.0		10	1	10	25	75	4	●
VSM-4R-D10.0R1.5		10	1.5	10	25	75	4	●
VSM-4R-D10.0R2.0		10	2	10	25	75	4	●
VSM-4R-D12.0R0.5		12	0.5	12	30	75	4	●
VSM-4R-D12.0R0.8		12	0.8	12	30	75	4	●
VSM-4R-D12.0R1.0		12	1	12	30	75	4	●
VSM-4R-D12.0R1.5		12	1.5	12	30	75	4	●
VSM-4R-D12.0R2.0		12	2	12	30	75	4	●
VSM-4R-D12.0R2.5		12	2.5	12	30	75	4	●
VSM-4R-D12.0R3.0		12	3	12	30	75	4	●
VSM-4R-D12.0R4.0		12	4	12	30	75	4	●
VSM-4R-D16.0R0.5		16	0.5	16	45	100	4	●
VSM-4R-D16.0R0.8		16	0.8	16	45	100	4	●
VSM-4R-D16.0R1.0		16	1	16	45	100	4	●
VSM-4R-D16.0R1.5		16	1.5	16	45	100	4	●
VSM-4R-D16.0R2.0		16	2	16	45	100	4	●
VSM-4R-D16.0R2.5		16	2.5	16	45	100	4	●
VSM-4R-D16.0R3.0		16	3	16	45	100	4	●
VSM-4R-D16.0R4.0		16	4	16	45	100	4	●
VSM-4R-D20.0R0.5		20	0.5	20	45	100	4	●
VSM-4R-D20.0R0.1.0		20	1	20	45	100	4	●
VSM-4R-D20.0R1.5		20	1.5	20	45	100	4	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔			✔	

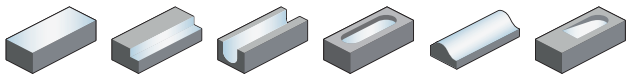
✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

Torus mill

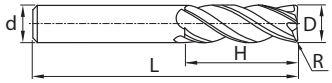
General machining of heat-resistant alloys

VSM-4R



– Factory standard
– Centre cutting
– Helix angle 38°/41°





Article	✻	Dimensions [mm]					Teeth	Grade
		D	R	d (h6)	H	L		KMG405
VSM-4R-D20.0R2.0		20	2	20	45	100	4	●
VSM-4R-D20.0R2.5		20	2.5	20	45	100	4	●
VSM-4R-D20.0R3.0		20	3	20	45	100	4	●
VSM-4R-D20.0R4.0		20	4	20	45	100	4	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔			✔	

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

Notes

FM series

Deburring Cutter



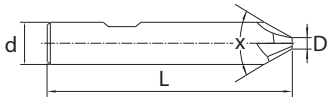
Deburring cutter 60° General machining

5501/5601R60*FM



– Type of shank DIN 6535HA
– Type of shank: DIN 6535HB
– Non-centre cutting
– Helix angle 0°





Article	✻	Dimensions [mm]					Teeth	Grade
		d(h6)	L	D	Shank	X		KMG303
5501R603FM-0300		3	48	0.2	HA	60	3	●
5501R604FM-0400		4	48	0.2	HA	60	4	●
5601R604FM-0600		6	55	0.2	HB	60	4	●
5601R604FM-0800		8	58	0.5	HB	60	4	●
5601R604FM-1000		10	65	0.5	HB	60	4	●
5601R606FM-1000		10	65	0.7	HB	60	6	○
5601R604FM-1200		12	75	0.5	HB	60	4	●
5601R606FM-1200		12	75	0.7	HB	60	6	○
5601R604FM-1600		16	85	0.7	HB	60	4	●
5601R606FM-1600		16	85	0.7	HB	60	6	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔	✔	✔		

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

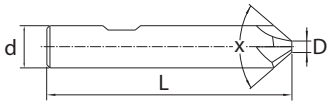
Deburring cutter 90° General machining

5501/5601R90*FM



– Type of shank DIN 6535HA
– Type of shank: DIN 6535HB
– Non-centre cutting
– Helix angle 0°





Article	✻	Dimensions [mm]					Teeth	Grade
		d(h6)	L	D	Shank	X		KMG303
5501R903FM-0300		3	48	0.2	HA	90	3	●
5501R904FM-0400		4	48	0.2	HA	90	4	●
5601R904FM-0600		6	55	0.2	HB	90	4	●
5601R904FM-0800		8	58	0.5	HB	90	4	●
5601R904FM-1000		10	65	0.5	HB	90	4	●
5601R906FM-1000		10	65	0.7	HB	90	6	○
5601R904FM-1200		12	75	0.5	HB	90	4	●
5601R906FM-1200		12	75	0.7	HB	90	6	○
5601R904FM-1600		16	85	0.7	HB	90	4	●
5601R906FM-1600		16	85	0.7	HB	90	6	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔	✔	✔		

✔ Very suitable
✔ Suitable

System code B268 Cutting data B436 Nonstandard order B477

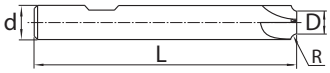
Quarter round profile mill General machining

5601R90*FM-R



– Type of shank: DIN 6535HB
– Non-centre cutting
– Helix angle 0°





Article	✻	Dimensions [mm] d(h6)	L	D	R	Teeth	Grade KMG303
5601R904FM-R02-0600		6	60	5.6	0.2	4	●
5601R904FM-R03-0600		6	60	5.4	0.3	4	●
5601R904FM-R04-0600		6	60	5.2	0.4	4	●
5601R904FM-R05-0800		8	70	7	0.5	4	●
5601R904FM-R06-0800		8	70	6.8	0.6	4	●
5601R904FM-R075-0800		8	70	6.5	0.75	4	●
5601R904FM-R08-0800		8	70	6.4	0.8	4	●
5601R904FM-R10-0800		8	70	6	1	4	●
5601R904FM-R15-1000		10	75	7	1.5	4	●
5601R904FM-R20-1000		10	75	6	2	4	●
5601R904FM-R25-1200		12	75	7	2.5	4	●
5601R904FM-R30-1200		12	75	6	3	4	●
5601R904FM-R40-1600		16	80	8	4	4	●
5601R904FM-R50-2000		20	80	10	5	4	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔	✔	✔		

✔ Very suitable
✔ Suitable

System code > B268 Cutting data > B436 Nonstandard order > B477

Notes

Guide for recommended cutting data – solid carbide milling

End mill – GM series

1

Material group		Composition / structure / heat treatment		Brinell hardness HB	2 Machining group	Starting values for cutting speed v_c [m/min] 5501R302GM 5601R302GM 5502R302GM 5602R302GM				GM-2E GM-2EFP GM-2F			
						Slot milling		Shoulder milling		Slot milling		Shoulder milling	
						Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$	Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$
						0 < x < 3	0,1 x D	0 < x ≤ 20	< 0,5 x D	0 < x < 3	0,1 x D	0 < x ≤ 20	< 0,5 x D
						3 ≤ x ≤ 20	0,8 x D			3 ≤ x ≤ 20	0,8 x D		
						KMG303				KMG303			
						a_e / D				a_e / D			
					3	1/1	1/2	1/10	f-group	4 1/1	1/2	1/10	f-group
P	Unalloyed steel	ca. 0,15 % C	annealed	125	1	150	200	270	2	150	200	270	2
		ca. 0,45 % C	annealed	190	2	145	190	260	2	145	190	260	2
		ca. 0,45 % C	tempered	250	3	105	140	190	2	105	140	190	2
		ca. 0,75 % C	annealed	270	4	90	120	165	2	90	120	165	2
		ca. 0,75 % C	tempered	300	5	85	110	150	2	85	110	150	2
	Low-alloyed steel		annealed	180	6	115	150	205	2	115	150	205	2
			tempered	275	7	90	120	165	2	90	120	165	2
			tempered	300	8	85	110	150	2	85	110	150	2
			tempered	350	9	80	105	145	2	80	105	145	2
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	105	140	190	2	105	140	190	2
			hardened and tempered	325	11	80	110	145	2	80	110	145	2
M	Stainless steel	ferritic/martensitic	annealed	200	12	50	65	90	2	50	65	90	2
		martensitic	tempered	240	13	45	60	80	2	45	60	80	2
		austenitic	quench hardened	180	14	55	70	95	2	55	70	95	2
		austenitic-ferritic		230	15	45	60	80	2	45	60	80	2
K	Grey cast iron	perlitic/ferritic		180	16	110	150	200	2	110	150	200	2
		perlitic (martensitic)		260	17	90	120	165	2	90	120	165	2
	Cast iron with spheroidal graphite	ferritic		160	18	135	180	245	2	135	180	245	2
		perlitic		250	19	105	140	190	2	105	140	190	2
	Malleable cast iron	ferritic		130	20	150	200	270	2	150	200	270	2
		perlitic		230	21	120	160	220	2	120	160	220	2
N	Aluminium wrought alloys	cannot be hardened		60	22								
		hardenable	hardened	100	23								
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24								
		≤ 12 % Si, hardenable	hardened	90	25								
		> 12 % Si, cannot be hardened		130	26								
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27								
		CuZn, CuSnZn		90	28								
		CuSn, Pb-free copper, electrolytic copper		100	29								
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37								
			hardened and tempered	60 HRC	38								
	Hard cast iron		cast	400	39								
	Hardened cast iron		hardened and tempered	55 HRC	40								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B460
For examples of material for cutting tool groups view page D22.

Recommend feed rate

Solid carbide milling group 2 – Square shoulder mills GM *series*

	a_e / D	Feed rate per cutting edge (f_z) [mm]																	
		Ø0,5	Ø0,8	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20			
P	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09			
	1/2	0,01	0,03	0,03	0,03	0,03	0,03	0,04	0,04	0,05	0,08	0,09	0,09	0,10	0,10	0,12			
	1/10	0,02	0,04	0,04	0,04	0,04	0,04	0,06	0,06	0,08	0,12	0,14	0,14	0,16	0,16	0,18			
M	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,03	0,05	0,06	0,06	0,06	0,06	0,07			
	1/2	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09			
	1/10	0,02	0,03	0,03	0,03	0,03	0,03	0,05	0,05	0,06	0,10	0,11	0,11	0,13	0,13	0,15			
K	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09			
	1/2	0,01	0,03	0,03	0,03	0,03	0,03	0,04	0,04	0,05	0,08	0,09	0,09	0,10	0,10	0,12			
	1/10	0,02	0,04	0,04	0,04	0,04	0,04	0,06	0,06	0,08	0,12	0,14	0,14	0,16	0,16	0,18			

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

1. Select the appropriate product series.
2. Determine the immersion.
3. Select the used material and read the cutting speed.
4. Determine the feed rate group and have a look at the appropriate feed rate recommendations.
5. Select the diameter of tool and determine the immersion.

Solid carbide milling Recommended cutting data

End mill – GM series

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]							
						5501R302GM 5601R302GM 5502R302GM 5602R302GM				GM-2E GM-2EFP GM-2F			
						Slot milling		Shoulder milling		Slot milling		Shoulder milling	
						Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$	Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$
						0 < x < 3	0,1 x D	0 < x ≤ 20	< 0,5 x D	0 < x < 3	0,1 x D	0 < x ≤ 20	< 0,5 x D
						3 ≤ x ≤ 20	0,8 x D			3 ≤ x ≤ 20	0,8 x D		
						KMG303				KMG303			
						a_e / D				a_e / D			
						1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	150	200	270	2	150	200	270	2
		approx. 0,45 % C	annealed	190	2	145	190	260	2	145	190	260	2
		approx. 0,45 % C	tempered	250	3	105	140	190	2	105	140	190	2
		approx. 0,75 % C	annealed	270	4	90	120	165	2	90	120	165	2
		approx. 0,75 % C	tempered	300	5	85	110	150	2	85	110	150	2
	Low-alloyed steel		annealed	180	6	115	150	205	2	115	150	205	2
			tempered	275	7	90	120	165	2	90	120	165	2
			tempered	300	8	85	110	150	2	85	110	150	2
			tempered	350	9	80	105	145	2	80	105	145	2
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	105	140	190	2	105	140	190	2
			hardened and tempered	325	11	80	110	145	2	80	110	145	2
M	Stainless steel	ferritic/martensitic	annealed	200	12	50	65	90	2	50	65	90	2
		martensitic	tempered	240	13	45	60	80	2	45	60	80	2
		austenitic	quench hardened	180	14	55	70	95	2	55	70	95	2
		austenitic-ferritic		230	15	45	60	80	2	45	60	80	2
K	Grey cast iron	perlitic/ferritic		180	16	110	150	200	2	110	150	200	2
		perlitic (martensitic)		260	17	90	120	165	2	90	120	165	2
	Cast iron with spheroidal graphite	ferritic		160	18	135	180	245	2	135	180	245	2
		perlitic		250	19	105	140	190	2	105	140	190	2
	Malleable cast iron	ferritic		130	20	150	200	270	2	150	200	270	2
		perlitic		230	21	120	160	220	2	120	160	220	2
N	Aluminium wrought alloys	cannot be hardened		60	22								
		hardenable	hardened	100	23								
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24								
		≤ 12 % Si, hardenable	hardened	90	25								
		> 12 % Si, cannot be hardened		130	26								
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27								
		CuZn, CuSnZn		90	28								
		CuSn, Pb-free copper, electrolytic copper		100	29								
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37								
			hardened and tempered	60 HRC	38								
	Hard cast iron		cast	400	39								
	Hardened cast iron		hardened and tempered	55 HRC	40								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B460.
For examples of material for cutting tool groups view page D22.

	Starting values for cutting speed v_c [m/min]																			
	GM-2EL GM-2EX GM-2FL				GM-2EP GM-2ES				GM-3E GM-4E GM-4E-G				GM-2EL GM-4EL-G				5501R303GM 5601R303GM 5502R303GM 5602R303GM			
	Slot milling		Shoulder milling		Slot milling		Shoulder milling		Slot milling		Shoulder milling		Slot milling		Shoulder milling		Slot milling		Shoulder milling	
	Ø [mm]	$a_{p\ max}$	Ø [mm]	$a_{e\ max}$	Ø [mm]	$a_{p\ max}$	Ø [mm]	$a_{e\ max}$	Ø [mm]	$a_{p\ max}$	Ø [mm]	$a_{e\ max}$	Ø [mm]	$a_{p\ max}$	Ø [mm]	$a_{e\ max}$	Ø [mm]	$a_{p\ max}$	Ø [mm]	$a_{e\ max}$
	0 < x < 3	0,1 x D	0 < x ≤ 20	< 0,5 x D	0 < x < 3	0,1 x D	0 < x ≤ 20	< 0,5 x D	0 < x < 3	0,1 x D	0 < x ≤ 20	< 0,5 x D	0 < x < 3	0,1 x D	0 < x ≤ 20	< 0,5 x D	0 < x < 3	0,1 x D	0 < x ≤ 20	< 0,5 x D
	3 ≤ x ≤ 20	0,8 x D			3 ≤ x ≤ 20	0,8 x D			3 ≤ x ≤ 20	0,8 x D			3 ≤ x ≤ 20	0,8 x D			3 ≤ x ≤ 20	0,8 x D		
	KMG303				KMG303				KMG303				KMG303				KMG303			
	a_e / D				a_e / D				a_e / D				a_e / D				a_e / D			
	1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group
	130	170	230	2	150	200	270	2	150	200	270	2	130	170	230	2	140	185	245	2
	125	165	220	2	145	190	260	2	145	190	260	2	125	165	220	2	135	180	235	2
	95	120	165	2	105	140	190	2	105	140	190	2	95	120	165	2	100	130	175	2
	80	105	140	2	90	120	165	2	90	120	165	2	80	105	140	2	85	115	150	2
	75	95	130	2	85	110	150	2	85	110	150	2	75	95	130	2	80	105	135	2
	100	130	175	2	115	150	205	2	115	150	205	2	100	130	175	2	105	140	185	2
	80	105	140	2	90	120	165	2	90	120	165	2	80	105	140	2	85	115	150	2
	75	95	130	2	85	110	150	2	85	110	150	2	75	95	130	2	80	105	135	2
	70	90	120	2	80	105	145	2	80	105	145	2	70	90	120	2	75	100	130	2
	95	120	165	2	105	140	190	2	105	140	190	2	95	120	165	2	100	130	175	2
	70	95	125	2	80	110	145	2	80	110	145	2	70	95	125	2	75	100	130	2
	45	55	75	2	50	65	90	2	50	65	90	2	45	55	75	2	45	60	80	2
	40	50	65	2	45	60	80	2	45	60	80	2	40	50	65	2	40	55	70	2
	45	60	80	2	55	70	95	2	55	70	95	2	45	60	80	2	50	65	85	2
	40	50	65	2	45	60	80	2	45	60	80	2	40	50	65	2	40	55	70	2
	95	125	170	2	110	150	200	2	110	150	200	2	95	125	170	2	105	140	180	2
	80	105	140	2	90	120	165	2	90	120	165	2	80	105	140	2	85	115	150	2
	120	155	210	2	135	180	245	2	135	180	245	2	120	155	210	2	130	170	225	2
	95	120	165	2	105	140	190	2	105	140	190	2	95	120	165	2	100	130	175	2
	130	170	230	2	150	200	270	2	150	200	270	2	130	170	230	2	140	185	245	2
	105	140	185	2	120	160	220	2	120	160	220	2	105	140	185	2	115	150	200	2

End mill – GM series

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]							
						5501R304GF 5601R304GF 5502R304GF 5602R304GF				GM-4F-G GM-4EFP			
						Slot milling		Shoulder milling		Slot milling		Shoulder milling	
						Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$	Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$
						0 < x < 3	0,1 x D	0 < x ≤ 20	< 0,5 x D	0 < x < 3	0,1 x D	0 < x ≤ 20	< 0,5 x D
						3 ≤ x ≤ 20	0,8 x D			3 ≤ x ≤ 20	0,8 x D		
						KMG303				KMG303			
						a_e / D				a_e / D			
						1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	155	200	265	2	150	200	270	2
		approx. 0,45 % C	annealed	190	2	150	190	255	2	145	190	260	2
		approx. 0,45 % C	tempered	250	3	110	140	190	2	105	140	190	2
		approx. 0,75 % C	annealed	270	4	95	120	160	2	90	120	165	2
		approx. 0,75 % C	tempered	300	5	90	110	150	2	85	110	150	2
	Low-alloyed steel		annealed	180	6	120	150	200	2	115	150	205	2
			tempered	275	7	95	120	160	2	90	120	165	2
			tempered	300	8	90	110	150	2	85	110	150	2
			tempered	350	9	85	105	140	2	80	105	145	2
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	110	140	190	2	105	140	190	2
			hardened and tempered	325	11	85	110	145	2	80	110	145	2
M	Stainless steel	ferritic/martensitic	annealed	200	12	50	65	85	2	50	65	90	2
		martensitic	tempered	240	13	45	60	75	2	45	60	80	2
		austenitic	quench hardened	180	14	55	70	95	2	55	70	95	2
		austenitic-ferritic		230	15	45	60	75	2	45	60	80	2
K	Grey cast iron	perlitic/ferritic		180	16	115	150	195	2	110	150	200	2
		perlitic (martensitic)		260	17	95	120	160	2	90	120	165	2
	Cast iron with spheroidal graphite	ferritic		160	18	140	180	240	2	135	180	245	2
		perlitic		250	19	110	140	190	2	105	140	190	2
	Malleable cast iron	ferritic		130	20	155	200	265	2	150	200	270	2
		perlitic		230	21	125	160	215	2	120	160	220	2
N	Aluminium wrought alloys	cannot be hardened		60	22								
		hardenable	hardened	100	23								
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24								
		≤ 12 % Si, hardenable	hardened	90	25								
		> 12 % Si, cannot be hardened		130	26								
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27								
		CuZn, CuSnZn		90	28								
		CuSn, Pb-free copper, electrolytic copper		100	29								
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37								
			hardened and tempered	60 HRC	38								
	Hard cast iron		cast	400	39								
	Hardened cast iron		hardened and tempered	55 HRC	40								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
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Feed rate recommendations on page B460.
For examples of material for cutting tool groups view page D22.

	Starting values for cutting speed v_c [m/min]																			
	GM-4FL-G GM-4EX-G				GM-6E				GM-6E 5589R45MGFR				5565R302GF 5565R302GM 5566R302GF				GM-2B GM-4B GM-2BS GM-2BP			
	Slot milling		Shoulder milling				Shoulder milling				Shoulder milling		Slot milling		Shoulder milling					
	Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$			Ø [mm]	$a_{e\,max}$			Ø [mm]	$a_{e\,max}$	Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$				
	0 < x < 3	0,1 x D	0 < x ≤ 20	< 0,5 x D			0 < x ≤ 20	< 0,5 x D			0 < x ≤ 20	< 0,5 x D	0 < x < 3	0,1 x D	0 < x ≤ 20	< 0,5 x D				
	3 ≤ x ≤ 20	0,8 x D											3 ≤ x ≤ 20	0,8 x D						
	KMG303				KMG303				KMG303				KMG303				KMG303			
	a_e / D				a_e / D				a_e / D				a_e / D				a_e / D			
	1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group	1/1	1/10	1/20	f-group	1/1	1/10	1/20	f-group
	130	170	230	2			270	2			230	2		250	280	5		250	280	5
	125	165	220	2			260	2			220	2		240	270	5		240	270	5
	95	120	165	2			190	2			165	2		175	200	5		175	200	5
	80	105	140	2			165	2			140	2		150	170	5		150	170	5
	75	95	130	2			150	2			130	2		140	155	5		140	155	5
	100	130	175	2			205	2			175	2		190	210	5		190	210	5
	80	105	140	2			165	2			140	2		150	170	5		150	170	5
	75	95	130	2			150	2			130	2		140	155	5		140	155	5
	70	90	120	2			145	2			120	2		130	150	5		130	150	5
	95	120	165	2			190	2			165	2		175	200	5		175	200	5
	70	95	125	2			145	2			125	2		135	150	5		135	150	5
	45	55	75	2			90	2			75	2		80	90	5		80	90	5
	40	50	65	2			80	2			65	2		70	80	5		70	80	5
	45	60	80	2			95	2			80	2		85	100	5		85	100	5
	40	50	65	2			80	2			65	2		70	80	5		70	80	5
	95	125	170	2			200	2			170	2		185	205	5		185	205	5
	80	105	140	2			165	2			140	2		150	170	5		150	170	5
	120	155	210	2			245	2			210	2		225	255	5		225	255	5
	95	120	165	2			190	2			165	2		175	200	5		175	200	5
	130	170	230	2			270	2			230	2		250	280	5		250	280	5
	105	140	185	2			220	2			185	2		200	225	5		200	225	5

End mill – GM series

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]							
						GM-2BL GM-4BL GM-2BFP				GM-2R GM-4R			
										Slot milling		Shoulder milling	
										Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$
										0 < x < 3	0,1 x D	0 < x ≤ 20	< 0,5 x D
										3 ≤ x ≤ 20	0,8 x D		
						KMG303				KMG303			
						a_e / D				a_e / D			
						1/1	1/10	1/20	f-group	1/1	1/2	1/10	f-group
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1		220	250	5	160	215	275	2
		approx. 0,45 % C	annealed	190	2		210	240	5	155	205	265	2
		approx. 0,45 % C	tempered	250	3		155	175	5	115	155	195	2
		approx. 0,75 % C	annealed	270	4		135	150	5	100	130	165	2
		approx. 0,75 % C	tempered	300	5		125	140	5	90	120	155	2
	Low-alloyed steel		annealed	180	6		165	190	5	120	165	210	2
			tempered	275	7		135	150	5	100	130	165	2
			tempered	300	8		125	140	5	90	120	155	2
			tempered	350	9		115	130	5	85	115	145	2
	High-alloyed steel and high-alloyed tool steel		annealed	200	10		155	175	5	115	155	195	2
			hardened and tempered	325	11		120	135	5	85	115	150	2
M	Stainless steel	ferritic/martensitic	annealed	200	12		75	80	5	55	70	90	2
		martensitic	tempered	240	13		65	70	5	45	65	80	2
		austenitic	quench hardened	180	14		75	85	5	55	75	95	2
		austenitic-ferritic		230	15		65	70	5	45	65	80	2
K	Grey cast iron	perlitic/ferritic		180	16		165	185	5	120	160	205	2
		perlitic (martensitic)		260	17		135	150	5	100	130	165	2
	Cast iron with spheroidal graphite	ferritic		160	18		200	225	5	145	195	250	2
		perlitic		250	19		155	175	5	115	155	195	2
	Malleable cast iron	ferritic		130	20		220	250	5	160	215	275	2
		perlitic		230	21		180	200	5	130	175	220	2
N	Aluminium wrought alloys	cannot be hardened		60	22								
		hardenable	hardened	100	23								
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24								
		≤ 12 % Si, hardenable	hardened	90	25								
		> 12 % Si, cannot be hardened		130	26								
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27								
		CuZn, CuSnZn		90	28								
		CuSn, Pb-free copper, electrolytic copper		100	29								
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37								
			hardened and tempered	60 HRC	38								
	Hard cast iron		cast	400	39								
	Hardened cast iron		hardened and tempered	55 HRC	40								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B460.
For examples of material for cutting tool groups view page D22.

	Starting values for cutting speed v_c [m/min]								
	GM-4RL				5602R303GR 5602R304GR 5602R305GR GM-4W				
	Slot milling		Shoulder milling		Slot milling		Shoulder milling		
	Ø [mm]	$a_{p\ max}$	Ø [mm]	$a_{e\ max}$	Ø [mm]	$a_{p\ max}$	Ø [mm]	$a_{e\ max}$	
	0 < x < 3	0,1 x D	0 < x ≤ 20	< 0,5 x D	0 < x < 3	0,1 x D	0 < x ≤ 20	< 0,5 x D	
	3 ≤ x ≤ 20	0,8 x D			3 ≤ x ≤ 20	0,8 x D			
	KMG303				KMG303				
	a_e / D				a_e / D				
	1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group	
	145	200	240	2	135	180	240	2	
	140	190	230	2	130	175	230	2	
	105	140	170	2	95	130	170	2	
	90	120	145	2	85	110	145	2	
	80	110	135	2	75	100	135	2	
	110	150	180	2	105	135	180	2	
	90	120	145	2	85	110	145	2	
	80	110	135	2	75	100	135	2	
	80	105	125	2	75	95	125	2	
	105	140	170	2	95	130	170	2	
	80	110	130	2	75	100	130	2	
	50	65	80	2	45	60	80	2	
	45	60	70	2	40	55	70	2	
	50	70	85	2	50	65	85	2	
	45	60	70	2	40	55	70	2	
	110	150	180	2	100	135	180	2	
	90	120	145	2	85	110	145	2	
	135	180	220	2	125	165	220	2	
	105	140	170	2	95	130	170	2	
	145	200	240	2	135	180	240	2	
	120	160	195	2	110	145	195	2	

End mill – HM series

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]							
						HM-2E, HM-2EP, HM-2ES, HM-4E				HM-2EFP, HM-4EL, HM-4EFP			
								Shoulder milling				Shoulder milling	
								Ø [mm]	$a_{e\,max}$			Ø [mm]	$a_{e\,max}$
								0 < x ≤ 20	0,05 x D			0 < x ≤ 20	0,05 x D
						KMG555				KMG555			
						a_e / D				a_e / D			
						1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1								
		approx. 0,45 % C	annealed	190	2								
		approx. 0,45 % C	tempered	250	3								
		approx. 0,75 % C	annealed	270	4								
		approx. 0,75 % C	tempered	300	5								
	Low-alloyed steel		annealed	180	6								
			tempered	275	7								
			tempered	300	8								
			tempered	350	9								
	High-alloyed steel and high-alloyed tool steel		annealed	200	10								
			hardened and tempered	325	11								
M	Stainless steel	ferritic/martensitic	annealed	200	12								
		martensitic	tempered	240	13								
		austenitic	quench hardened	180	14								
		austenitic-ferritic		230	15								
K	Grey cast iron	perlitic/ferritic		180	16								
		perlitic (martensitic)		260	17								
	Cast iron with spheroidal graphite	ferritic		160	18								
		perlitic		250	19								
	Malleable cast iron	ferritic		130	20								
		perlitic		230	21								
N	Aluminium wrought alloys	cannot be hardened		60	22								
		hardenable	hardened	100	23								
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24								
		≤ 12 % Si, hardenable	hardened	90	25								
		> 12 % Si, cannot be hardened		130	26								
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27								
		CuZn, CuSnZn		90	28								
		CuSn, Pb-free copper, electrolytic copper		100	29								
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37	55	100	125	3	50	95	115	3
			hardened and tempered	60 HRC	38	55	95	120	3	50	95	110	3
	Hard cast iron		cast	400	39	70	125	160	3	65	120	145	3
	Hardened cast iron		hardened and tempered	55 HRC	40	55	100	125	3	50	95	115	3
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
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Feed rate recommendations on page B460.
For examples of material for cutting tool groups view page D22.

	Starting values for cutting speed v_c [m/min]																			
	HM-6E				HM-6EL				HM-2B HM-2BP HM-2BS HM-4B				HM-2BL HM-4BL				HM-4R HM-4RP HM-4RF			
			Shoulder milling				Shoulder milling												Shoulder milling	
			Ø [mm]	$a_{e\,max}$			Ø [mm]	$a_{e\,max}$											Ø [mm]	$a_{e\,max}$
			0 < x ≤ 20	0,05 x D			0 < x ≤ 20	0,05 x D											0 < x ≤ 20	0,05 x D
	KMG555				KMG555				KMG555				KMG555				KMG555			
	a_e / D				a_e / D				a_e / D				a_e / D				a_e / D			
	1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group	1/1	1/10	1/20	f-group	1/1	1/10	1/20	f-group	1/1	1/2	1/10	f-group
			125	3			115	3		130	145	7		125	140	7	55	100	125	3
			120	3			110	3		80	90	7		80	90	7	55	95	120	3
			160	3			145	3		163	181	7		156	175	7	70	125	160	3
			125	3			115	3		109	145	7		105	140	7	55	100	125	3

End mill – NM series

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]							
						NM-2E 5502R402NM NM-4E NM-2EP				NM-2B NM-4BP			
						Slot milling		Shoulder milling					
						Ø [mm]	$a_{p\ max}$	Ø [mm]	$a_{e\ max}$				
						0<x<12	0,5xD	0<x≤20	<0,5xD				
						12≤x≤20	1,0xD						
						KMG309				KMG309			
						a_e / D				a_e / D			
						1/1	1/2	1/10	f-group	1/1	1/10	1/20	f-group
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1								
		approx. 0,45 % C	annealed	190	2								
		approx. 0,45 % C	tempered	250	3								
		approx. 0,75 % C	annealed	270	4								
		approx. 0,75 % C	tempered	300	5								
	Low-alloyed steel		annealed	180	6								
			tempered	275	7								
			tempered	300	8								
			tempered	350	9								
	High-alloyed steel and high-alloyed tool steel		annealed	200	10								
			hardened and tempered	325	11								
M	Stainless steel	ferritic/martensitic	annealed	200	12								
		martensitic	tempered	240	13								
		austenitic	quench hardened	180	14								
		austenitic-ferritic		230	15								
K	Grey cast iron	perlitic/ferritic		180	16								
		perlitic (martensitic)		260	17								
	Cast iron with spheroidal graphite	ferritic		160	18								
		perlitic		250	19								
	Malleable cast iron	ferritic		130	20								
		perlitic		230	21								
N	Aluminium wrought alloys	cannot be hardened		60	22	920	1100	1200	4		1400	1550	4
		hardenable	hardened	100	23	555	660	720	4		840	930	4
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24	370	440	480	4		560	620	4
		≤ 12 % Si, hardenable	hardened	90	25	460	550	600	4		700	775	4
		> 12 % Si, cannot be hardened		130	26	140	165	180	4		210	235	4
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27	280	330	360	4		420	465	4
		CuZn, CuSnZn		90	28	325	385	420	4		490	545	4
		CuSn, Pb-free copper, electrolytic copper		100	29	280	330	360	4		420	465	4
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37								
			hardened and tempered	60 HRC	38								
	Hard cast iron		cast	400	39								
	Hardened cast iron		hardened and tempered	55 HRC	40								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B460.
For examples of material for cutting tool groups view page D22.

End mill – AL series

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]							
						AL-1E, AL-2E, AL-3E (W), ALG-2E				AL-2EL, AL-3EL			
						Slot milling		Shoulder milling		Slot milling		Shoulder milling	
						Ø [mm]	$a_{p\ max}$	Ø [mm]	$a_{e\ max}$	Ø [mm]	$a_{p\ max}$	Ø [mm]	$a_{e\ max}$
						0<x<12	0,5xD	0<x≤20	<0,5xD	0<x<12	0,5xD	0<x≤20	<0,5xD
						12≤x≤20	1,0xD			12≤x≤20	1,0xD		
						YK30F / YK40F				YK30F			
						a_e / D				a_e / D			
						1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1								
		approx. 0,45 % C	annealed	190	2								
		approx. 0,45 % C	tempered	250	3								
		approx. 0,75 % C	annealed	270	4								
		approx. 0,75 % C	tempered	300	5								
	Low-alloyed steel		annealed	180	6								
			tempered	275	7								
			tempered	300	8								
			tempered	350	9								
	High-alloyed steel and high-alloyed tool steel		annealed	200	10								
			hardened and tempered	325	11								
M	Stainless steel	ferritic/martensitic	annealed	200	12								
		martensitic	tempered	240	13								
		austenitic	quench hardened	180	14								
		austenitic-ferritic		230	15								
K	Grey cast iron	perlitic/ferritic		180	16								
		perlitic (martensitic)		260	17								
	Cast iron with spheroidal graphite	ferritic		160	18								
		perlitic		250	19								
	Malleable cast iron	ferritic		130	20								
		perlitic		230	21								
N	Aluminium wrought alloys	cannot be hardened		60	22	920	1100	1200	4	830	990	1080	4
		hardenable	hardened	100	23	555	660	720	4	500	595	650	4
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24	370	440	480	4	335	400	435	4
		≤ 12 % Si, hardenable	hardened	90	25	460	550	600	4	415	495	540	4
		> 12 % Si, cannot be hardened		130	26	140	165	180	4	125	150	165	4
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27	280	330	360	4	250	300	325	4
		CuZn, CuSnZn		90	28	325	385	420	4	295	350	380	4
		CuSn, Pb-free copper, electrolytic copper		100	29	280	330	360	4	250	300	325	4
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37								
			hardened and tempered	60 HRC	38								
	Hard cast iron		cast	400	39								
	Hardened cast iron		hardened and tempered	55 HRC	40								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
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Feed rate recommendations on page B460.
For examples of material for cutting tool groups view page D22.

	Starting values for cutting speed v_c [m/min]																			
	ALG-3E ALP-3E ALP-4E				ALG-3E (W) ALP-3E (W) ALP-4E (W)				5566R302NH AL-2B				AL-2R-AIR AL-3R-AIR				ALG-2R (W)			
	Slot milling		Shoulder milling		Slot milling		Shoulder milling		Slot milling		Shoulder milling		Slot milling		Shoulder milling		Slot milling		Shoulder milling	
	Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$	Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$	Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$	Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$	Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$
	0<x<12	0,5xD	0<x≤20	<0,5xD	0<x<12	0,5xD	0<x≤20	<0,5xD	0<x<12	0,5xD	0<x≤20	<0,5xD	0<x<12	0,5xD	0<x≤20	<0,5xD	0<x<12	0,5xD	0<x≤20	<0,5xD
	12≤x≤20	1,0xD			12≤x≤20	1,0xD			12≤x≤20	1,0xD			12≤x≤20	1,0xD			12≤x≤20	1,0xD		
	YK40F				KMD401				YK30F / YK40F				YK40F				KMD401			
	a_e / D				ae / D				a_e / D				a_e / D				ae / D			
	1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group	1/1	1/10	1/20	f-group	1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group

End mill – AL series

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]								
						AL-2RL-AIR AL-3RL-AIR								
						Slot milling		Shoulder milling						
						Ø [mm]	$a_{p\ max}$	Ø [mm]	$a_{e\ max}$					
						0<x<12	0,5xD	0<x≤20	<0,5xD					
						12≤x≤20	1,0xD							
						YK40F								
						a_e / D								
						1/1	1/2	1/10	f-group					
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1									
		approx. 0,45 % C	annealed	190	2									
		approx. 0,45 % C	tempered	250	3									
		approx. 0,75 % C	annealed	270	4									
		approx. 0,75 % C	tempered	300	5									
	Low-alloyed steel		annealed	180	6									
			tempered	275	7									
			tempered	300	8									
			tempered	350	9									
	High-alloyed steel and high-alloyed tool steel		annealed	200	10									
			hardened and tempered	325	11									
M	Stainless steel	ferritic/martensitic	annealed	200	12									
		martensitic	tempered	240	13									
		austenitic	quench hardened	180	14									
		austenitic-ferritic		230	15									
K	Grey cast iron	perlitic/ferritic		180	16									
		perlitic (martensitic)		260	17									
	Cast iron with spheroidal graphite	ferritic		160	18									
		perlitic		250	19									
	Malleable cast iron	ferritic		130	20									
		perlitic		230	21									
N	Aluminium wrought alloys	cannot be hardened		60	22	1035	1250	1350	8					
		hardenable	hardened	100	23	625	750	810	8					
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24	415	500	540	8					
		≤ 12 % Si, hardenable	hardened	90	25	520	625	675	8					
		> 12 % Si, cannot be hardened		130	26	160	190	205	8					
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27	315	375	405	8					
		CuZn, CuSnZn		90	28	365	440	475	8					
		CuSn, Pb-free copper, electrolytic copper		100	29	315	375	405	8					
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30									
			hardened	280	31									
		Ni or Co bass	annealed	250	32									
			hardened	350	33									
			cast	320	34									
	Titanium alloys	pure titanium		R_m 400	35									
		α and β alloys	hardened	R_m 1050	36									
H	Hardened steel		hardened and tempered	55 HRC	37									
			hardened and tempered	60 HRC	38									
	Hard cast iron		cast	400	39									
	Hardened cast iron		hardened and tempered	55 HRC	40									
X	Non-metallic materials	Thermoplasts			41									
		Thermosetting plastics			42									
		Plastic, glass-fibre reinforced GFRP			43									
		Plastic, carbon fibre reinforced CFRP			44									
		Graphite			45									
		Wood			46									

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B460.
For examples of material for cutting tool groups view page D22.

Solid carbide milling Recommended cutting data

End mill – PM series

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]							
						PM-2E, PM-4E, PM-4E-G				PM-4EL, PM-4EL-G, PM-4EX-G			
						Slot milling		Shoulder milling		Slot milling		Shoulder milling	
						Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$	Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$
						0 < x < 3	0,1 5 x D	0 < x ≤ 20	0,15 x D	0 < x < 3	0,1 5 x D	0 < x ≤ 20	0,15 x D
						3 ≤ x < 6	0,3 x D			3 ≤ x < 6	0,3 x D		
						6 ≤ x ≤ 20	0,5 x D			6 ≤ x ≤ 20	0,5 x D		
						KMG405				KMG405			
						a_e / D				a_e / D			
						1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	165	220	300	1	140	190	255	1
		approx. 0,45 % C	annealed	190	2	160	210	285	1	135	185	245	1
		approx. 0,45 % C	tempered	250	3	120	155	210	1	100	135	180	1
		approx. 0,75 % C	annealed	270	4	100	135	180	1	85	115	155	1
		approx. 0,75 % C	tempered	300	5	95	125	165	1	80	105	145	1
	Low-alloyed steel		annealed	180	6	125	165	225	1	110	145	195	1
			tempered	275	7	100	135	180	1	85	115	155	1
			tempered	300	8	95	125	165	1	80	105	145	1
			tempered	350	9	90	115	160	1	75	100	135	1
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	120	155	210	1	100	135	180	1
			hardened and tempered	325	11	90	120	160	1	75	105	140	1
M	Stainless steel	ferritic/martensitic	annealed	200	12	55	75	100	1	45	65	85	1
		martensitic	tempered	240	13	50	65	85	1	40	55	75	1
		austenitic	quench hardened	180	14	60	75	105	1	50	65	90	1
		austenitic-ferritic		230	15	50	65	85	1	40	55	75	1
K	Grey cast iron	perlitic/ferritic		180	16	125	165	220	1	105	140	190	1
		perlitic (martensitic)		260	17	100	135	180	1	85	115	155	1
	Cast iron with spheroidal graphite	ferritic		160	18	150	200	270	1	130	175	230	1
		perlitic		250	19	120	155	210	1	100	135	180	1
	Malleable cast iron	ferritic		130	20	165	220	300	1	145	190	255	1
		perlitic		230	21	135	180	240	1	115	155	205	1
N	Aluminium wrought alloys	cannot be hardened		60	22								
		hardenable	hardened	100	23								
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24								
		≤ 12 % Si, hardenable	hardened	90	25								
		> 12 % Si, cannot be hardened		130	26								
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27								
		CuZn, CuSnZn		90	28								
		CuSn, Pb-free copper, electrolytic copper		100	29								
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37	80	105	140	1	65	90	120	1
			hardened and tempered	60 HRC	38								
	Hard cast iron		cast	400	39	105	140	185	1	85	120	160	1
	Hardened cast iron		hardened and tempered	55 HRC	40								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B460.
For examples of material for cutting tool groups view page D22.

	Starting values for cutting speed v_c [m/min]																			
	PM-6E				PM-6EL				PM-2B PM-4B				PM-2BL PM-2BFP PM-4BL				PM-2BC			
			Shoulder milling				Shoulder milling													
			Ø [mm]	$a_{p\ max}$			Ø [mm]	$a_{p\ max}$												
			0 < x ≤ 20	0.15 x D			0 < x ≤ 20	0.15 x D												
	KMG405				KMG405				KMG405				KMG405				KMG405			
	a_e / D				a_e / D				a_e / D				a_e / D				a_e / D			
	1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group	1/1	1/10	1/20	f-group	1/1	1/10	1/20	f-group	1/1	1/10	1/20	f-group
		220	300	1		190	255	1		270	300	5		230	255	5		230	255	5
		210	285	1		185	245	1		260	285	5		220	245	5		220	245	5
		155	210	1		135	180	1		190	210	5		165	180	5		165	180	5
		135	180	1		115	155	1		165	180	5		140	155	5		140	155	5
		125	165	1		105	145	1		150	165	5		130	145	5		130	145	5
		165	225	1		145	195	1		205	225	5		175	195	5		175	195	5
		135	180	1		115	155	1		165	180	5		140	155	5		140	155	5
		125	165	1		105	145	1		150	165	5		130	145	5		130	145	5
		115	160	1		100	135	1		145	160	5		120	135	5		120	135	5
		155	210	1		135	180	1		190	210	5		165	180	5		165	180	5
		120	160	1		105	140	1		145	160	5		125	140	5		125	140	5
		75	100	1		65	85	1		90	100	5		75	85	5		75	85	5
		65	85	1		55	75	1		80	85	5		65	75	5		65	75	5
		75	105	1		65	90	1		95	105	5		80	90	5		80	90	5
		65	85	1		55	75	1		80	85	5		65	75	5		65	75	5
		165	220	1		140	190	1		200	220	5		170	190	5		170	190	5
		135	180	1		115	155	1		165	180	5		140	155	5		140	155	5
		200	270	1		175	230	1		245	270	5		210	230	5		210	230	5
		155	210	1		135	180	1		190	210	5		165	180	5		165	180	5
		220	300	1		190	255	1		270	300	5		230	255	5		230	255	5
		180	240	1		155	205	1		220	240	5		185	205	5		185	205	5
		105	140	1		90	120	1		125	140	5		110	120	5		110	120	5
		140	185	1		120	160	1		165	185	1		145	160	1		145	160	1

Solid carbide milling Recommended cutting data

End mill – PM series

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]							
						PM-2R PM-4R				PM-4RL			
						Slot milling		Shoulder milling		Slot milling		Shoulder milling	
						Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$	Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$
						0 < x < 3	0,1 5x D	0 < x ≤ 20	0.15 x D	0 < x < 3	0,1 5x D	0 < x ≤ 20	0.15 x D
						3 ≤ x < 6	0,3 x D			3 ≤ x < 6	0,3 x D		
						6 ≤ x ≤ 20	0,5 x D			6 ≤ x ≤ 20	0,5 x D		
						KMG405				KMG405			
						a_e / D				a_e / D			
						1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	165	220	300	1	150	200	265	1
		approx. 0,45 % C	annealed	190	2	160	210	285	1	145	190	255	1
		approx. 0,45 % C	tempered	250	3	120	155	210	1	105	140	190	1
		approx. 0,75 % C	annealed	270	4	100	135	180	1	90	120	160	1
		approx. 0,75 % C	tempered	300	5	95	125	165	1	85	110	150	1
	Low-alloyed steel		annealed	180	6	125	165	225	1	115	150	200	1
			tempered	275	7	100	135	180	1	90	120	160	1
			tempered	300	8	95	125	165	1	85	110	150	1
			tempered	350	9	90	115	160	1	80	105	140	1
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	120	155	210	1	105	140	190	1
			hardened and tempered	325	11	90	120	160	1	80	110	145	1
M	Stainless steel	ferritic/martensitic	annealed	200	12	55	75	100	1	50	65	85	1
		martensitic	tempered	240	13	50	65	85	1	45	60	75	1
		austenitic	quench hardened	180	14	60	75	105	1	55	70	95	1
		austenitic-ferritic		230	15	50	65	85	1	45	60	75	1
K	Grey cast iron	perlitic/ferritic		180	16	125	165	220	1	110	150	195	1
		perlitic (martensitic)		260	17	100	135	180	1	90	120	160	1
	Cast iron with spheroidal graphite	ferritic		160	18	150	200	270	1	135	180	240	1
		perlitic		250	19	120	155	210	1	105	140	190	1
	Malleable cast iron	ferritic		130	20	165	220	300	1	150	200	265	1
		perlitic		230	21	135	180	240	1	120	160	215	1
N	Aluminium wrought alloys	cannot be hardened		60	22								
		hardenable	hardened	100	23								
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24								
		≤ 12 % Si, hardenable	hardened	90	25								
		> 12 % Si, cannot be hardened		130	26								
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27								
		CuZn, CuSnZn		90	28								
		CuSn, Pb-free copper, electrolytic copper		100	29								
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37	85	110	145	1	70	95	125	1
			hardened and tempered	60 HRC	38								
	Hard cast iron		cast	400	39	115	145	190	1	95	125	165	1
	Hardened cast iron		hardened and tempered	55 HRC	40								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B460.
For examples of material for cutting tool groups view page D22.

	Starting values for cutting speed v_c [m/min]				
	PM-4H PM-4HL				
			Shoulder milling		
			Ø [mm]	$a_{e\,max}$	
			0 < x ≤ 20	0.15 x D	
	KMG405				
	a_e / D				
	1/1	1/2	1/10	f-group	
		210	270	6	
		200	260	6	
		150	190	6	
		130	165	6	
		120	150	6	
		160	205	6	
		130	165	6	
		120	150	6	
		110	145	6	
		150	190	6	
		115	145	6	
		70	90	6	
		60	80	6	
		75	95	6	
		60	80	6	
		155	200	6	
		130	165	6	
		190	245	6	
		150	190	6	
		210	270	6	
		170	220	6	
		100	125	1	
		130	165	1	

Solid carbide milling Recommended cutting data

End mill – UM/HPC/VSM series

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]							
						5501R38414GM (-R) 5502R38414GM (-R) 5602R38414GM (-R)				5501R38414GM (-R) long series 5502R38414GM (-R) long series 5602R38414GM (-R) long series			
						Slot milling		Shoulder milling		Slot milling		Shoulder milling	
						Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$	Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$
						0 < x < 3	0,3x D	0 < x < 3	0.15 x D	0 < x < 3	0,3x D	0 < x < 3	0.15 x D
						3 ≤ x < 12	0,7 x D	3 ≤ x < 20	0,3 x D	3 ≤ x < 12	0,7 x D	3 ≤ x < 20	0,3 x D
						12≤x≤20	1,5xD			12≤x≤20	1,5xD		
						KMG405				KMG405			
						a_e / D				a_e / D			
						1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	250	300	380	9	190	225	285	9
		approx. 0,45 % C	annealed	190	2	240	285	365	9	185	215	275	9
		approx. 0,45 % C	tempered	250	3	175	210	270	9	135	160	200	9
		approx. 0,75 % C	annealed	270	4	150	180	230	9	115	135	175	9
		approx. 0,75 % C	tempered	300	5	140	165	210	9	105	125	160	9
	Low-alloyed steel		annealed	180	6	190	225	285	9	145	170	215	9
			tempered	275	7	150	180	230	9	115	135	175	9
			tempered	300	8	140	165	210	9	105	125	160	9
			tempered	350	9	130	160	200	9	100	120	150	9
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	175	210	270	9	135	160	200	9
			hardened and tempered	325	11	135	160	205	9	105	120	155	9
M	Stainless steel	ferritic/martensitic	annealed	200	12	80	100	125	9	65	75	95	9
		martensitic	tempered	240	13	70	85	110	9	55	65	80	9
		austenitic	quench hardened	180	14	85	105	130	9	65	80	100	9
		austenitic-ferritic		230	15	70	85	110	9	55	65	80	9
K	Grey cast iron	perlitic/ferritic		180	16	185	220	280	9	140	165	210	9
		perlitic (martensitic)		260	17	150	180	230	9	115	135	175	9
	Cast iron with spheroidal graphite	ferritic		160	18	225	270	345	9	175	205	260	9
		perlitic		250	19	175	210	270	9	135	160	200	9
	Malleable cast iron	ferritic		130	20	250	300	380	9	190	225	285	9
		perlitic		230	21	200	240	305	9	155	180	230	9
N	Aluminium wrought alloys	cannot be hardened		60	22								
		hardenable	hardened	100	23								
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24								
		≤ 12 % Si, hardenable	hardened	90	25								
		> 12 % Si, cannot be hardened		130	26								
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27								
		CuZn, CuSnZn		90	28								
		CuSn, Pb-free copper, electrolytic copper		100	29								
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37	115	140	175	9				
			hardened and tempered	60 HRC	38								
	Hard cast iron		cast	400	39	135	165	205	9				
	Hardened cast iron		hardened and tempered	55 HRC	40								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B460.
For examples of material for cutting tool groups view page D22.

	Starting values for cutting speed v_c [m/min]																
	UM-4E UM-4E-W UM-4R				UM-4EL UM-4EL-W UM-4ELP UM-4EFP				UM-4RL UM-4RFP				VSM-4E VSM-4R				
	Slot milling		Shoulder milling		Slot milling		Shoulder milling		Slot milling		Shoulder milling		Slot milling		Shoulder milling		
	Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$	Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$	Ø [mm]	$a_{p\,max}$	Ø [mm]	$a_{e\,max}$					
	0 < x < 3	0,3x D	0 < x < 3	0.15 x D	0 < x < 3	0,3x D	0 < x < 3	0.15 x D	0 < x < 3	0,3x D	0 < x < 3	0.15 x D	0 < x < 3	0,3x D	0 < x < 3	0.15 x D	
	3 ≤ x < 12	0,7 x D	3 ≤ x < 20	0,3 x D	3 ≤ x < 12	0,7 x D	3 ≤ x < 20	0,3 x D	3 ≤ x < 12	0,7 x D	3 ≤ x < 20	0,3 x D	3 ≤ x < 12	0,7 x D	3 ≤ x < 20	0,3 x D	
	12≤x≤20	1,5xD			12≤x≤20	1,5xD			12≤x≤20	1,5xD			12≤x≤20	1,5xD			
	KMG405				KMG405				KMG405				KMG405				
	a_e / D				a_e / D				a_e / D				a_e / D				
	1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group	
	250	300	380	9	150	180	230	9	150	180	230	9	145	180	250	10	
	240	285	365	9	145	175	220	9	145	175	220	9	140	175	240	10	
	175	210	270	9	105	130	165	9	105	130	165	9	105	130	175	10	
	150	180	230	9	90	110	140	9	90	110	140	9	90	110	150	10	
	140	165	210	9	85	100	130	9	85	100	130	9	80	100	140	10	
	190	225	285	9	115	135	175	9	115	135	175	9	110	135	190	10	
	150	180	230	9	90	110	140	9	90	110	140	9	90	110	150	10	
	140	165	210	9	85	100	130	9	85	100	130	9	80	100	140	10	
	130	160	200	9	80	95	120	9	80	95	120	9	80	95	130	10	
	175	210	270	9	105	130	165	9	105	130	165	9	105	130	175	10	
	135	160	205	9	80	100	125	9	80	100	125	9	80	100	135	10	
	80	100	125	9	50	60	75	9	50	60	75	9	50	60	80	10	
	70	85	110	9	45	55	65	9	45	55	65	9	45	55	70	10	
	85	105	130	9	55	65	80	9	55	65	80	9	50	65	85	10	
	70	85	110	9	45	55	65	9	45	55	65	9	45	55	70	10	
	185	220	280	9	110	135	170	9	110	135	170	9					
	150	180	230	9	90	110	140	9	90	110	140	9					
	225	270	345	9	135	165	210	9	135	165	210	9					
	175	210	270	9	105	130	165	9	105	130	165	9					
	250	300	380	9	150	180	230	9	150	180	230	9					
	200	240	305	9	120	145	185	9	120	145	185	9					
													45	55	85	10	
													25	30	45	10	
													45	55	85	10	
													25	30	45	10	
													25	30	45	10	
													75	90	135	10	
													45	55	85	10	
	115	140	175	9	70	85	110	9	70	85	110	9					
	135	165	205	9	85	100	130	9	85	100	130	9					

Deburring cutters – FM series

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min] 5501 / 5601 5501 / 5601 5601 KMG303 a_e / D 1/1	1/2	1/10	f-group
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1			230	11
		approx. 0,45 % C	annealed	190	2			220	11
		approx. 0,45 % C	tempered	250	3			165	11
		approx. 0,75 % C	annealed	270	4			140	11
		approx. 0,75 % C	tempered	300	5			130	11
	Low-alloyed steel		annealed	180	6			175	11
			tempered	275	7			140	11
			tempered	300	8			130	11
			tempered	350	9			120	11
	High-alloyed steel and high-alloyed tool steel		annealed	200	10			165	11
			hardened and tempered	325	11			125	11
M	Stainless steel	ferritic/martensitic	annealed	200	12			75	11
		martensitic	tempered	240	13			65	11
		austenitic	quench hardened	180	14			80	11
		austenitic-ferritic		230	15			65	11
K	Grey cast iron	perlitic/ferritic		180	16			170	11
		perlitic (martensitic)		260	17			140	11
	Cast iron with spheroidal graphite	ferritic		160	18			210	11
		perlitic		250	19			165	11
	Malleable cast iron	ferritic		130	20			230	11
		perlitic		230	21			185	11
N	Aluminium wrought alloys	cannot be hardened		60	22			1200	11
		hardenable	hardened	100	23			720	11
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24			480	11
		≤ 12 % Si, hardenable	hardened	90	25			600	11
		> 12 % Si, cannot be hardened		130	26			180	11
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27			360	11
		CuZn, CuSnZn		90	28			420	11
		CuSn, Pb-free copper, electrolytic copper		100	29			360	11
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30				
			hardened	280	31				
		Ni or Co bass	annealed	250	32				
			hardened	350	33				
			cast	320	34				
	Titanium alloys	pure titanium		R_m 400	35				
		α and β alloys	hardened	R_m 1050	36				
H	Hardened steel		hardened and tempered	55 HRC	37				
			hardened and tempered	60 HRC	38				
	Hard cast iron		cast	400	39				
	Hardened cast iron		hardened and tempered	55 HRC	40				
X	Non-metallic materials	Thermoplasts			41				
		Thermosetting plastics			42				
		Plastic, glass-fibre reinforced GFRP			43				
		Plastic, carbon fibre reinforced CFRP			44				
		Graphite			45				
		Wood			46				

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
Feed rate recommendations on page B460.
For examples of material for cutting tool groups view page D22.

Recommended feed rate

Solid carbide milling group 1 – Square shoulder mills PM series

	a_e / D	Feed rate per cutting edge (f_z) [mm]																			
		Ø0,5	Ø0,8	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20					
P	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,05	0,07	0,08	0,08	0,09	0,09	0,10					
	1/2	0,01	0,03	0,03	0,03	0,03	0,03	0,04	0,04	0,06	0,09	0,10	0,10	0,12	0,12	0,13					
	1/10	0,02	0,05	0,05	0,05	0,05	0,05	0,07	0,07	0,09	0,14	0,16	0,16	0,18	0,18	0,20					
M	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,06	0,07	0,07	0,08					
	1/2	0,01	0,02	0,02	0,02	0,02	0,02	0,04	0,04	0,05	0,07	0,08	0,08	0,10	0,10	0,11					
	1/10	0,02	0,04	0,04	0,04	0,04	0,04	0,05	0,05	0,07	0,11	0,13	0,13	0,15	0,15	0,16					
K	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,05	0,07	0,08	0,08	0,09	0,09	0,10					
	1/2	0,01	0,03	0,03	0,03	0,03	0,03	0,04	0,04	0,06	0,09	0,10	0,10	0,12	0,12	0,13					
	1/10	0,02	0,05	0,05	0,05	0,05	0,05	0,07	0,07	0,09	0,14	0,16	0,16	0,18	0,18	0,20					
H	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,04	0,05	0,06	0,06	0,07	0,07	0,08					
	1/2	0,01	0,02	0,02	0,02	0,02	0,02	0,04	0,04	0,05	0,07	0,08	0,08	0,10	0,10	0,11					
	1/10	0,02	0,04	0,04	0,04	0,04	0,04	0,05	0,05	0,07	0,11	0,13	0,13	0,15	0,15	0,16					

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

Solid carbide milling group 2 – Square shoulder mills GM series

	a_e / D	Feed rate per cutting edge (f_z) [mm]																			
		Ø0,5	Ø0,8	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20					
P	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09					
	1/2	0,01	0,03	0,03	0,03	0,03	0,03	0,04	0,04	0,05	0,08	0,09	0,09	0,10	0,10	0,12					
	1/10	0,02	0,04	0,04	0,04	0,04	0,04	0,06	0,06	0,08	0,12	0,14	0,14	0,16	0,16	0,18					
M	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,03	0,05	0,06	0,06	0,06	0,06	0,07					
	1/2	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09					
	1/10	0,02	0,03	0,03	0,03	0,03	0,03	0,05	0,05	0,06	0,10	0,11	0,11	0,13	0,13	0,15					
K	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09					
	1/2	0,01	0,03	0,03	0,03	0,03	0,03	0,04	0,04	0,05	0,08	0,09	0,09	0,10	0,10	0,12					
	1/10	0,02	0,04	0,04	0,04	0,04	0,04	0,06	0,06	0,08	0,12	0,14	0,14	0,16	0,16	0,18					

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

Solid carbide milling group 3 – Square shoulder mills HM series

	a_e / D	Feed rate per cutting edge (f_z) [mm]																			
		Ø0,5	Ø0,8	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20					
H	1/1	0,01	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,03	0,05	0,06	0,06	0,06	0,06	0,07					
	1/2	0,01	0,02	0,02	0,02	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09					
	1/10	0,02	0,03	0,03	0,03	0,03	0,03	0,05	0,05	0,06	0,10	0,11	0,11	0,13	0,13	0,15					

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

Solid carbide milling group 4 – Square shoulder mills AL/NM series

	a_e / D	Feed rate per cutting edge (f_z) [mm]																			
		Ø0,5	Ø0,8	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20					
N	1/1	0,02	0,03	0,03	0,03	0,03	0,03	0,05	0,05	0,06	0,09	0,11	0,11	0,12	0,12	0,14					
	3/4	0,02	0,04	0,04	0,04	0,04	0,04	0,06	0,06	0,08	0,12	0,14	0,14	0,16	0,16	0,18					
	1/10	0,03	0,06	0,06	0,06	0,06	0,06	0,09	0,09	0,12	0,19	0,22	0,22	0,25	0,25	0,28					
	1/20	0,04	0,08	0,08	0,08	0,08	0,08	0,12	0,12	0,16	0,23	0,27	0,27	0,31	0,31	0,35					

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

Recommended feed rate

Solid carbide milling group 5 – Ball nose cutters GM series

	a_e / D	Feed rate per cutting edge (f_z) [mm]																			
		Ø0,5	Ø0,8	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20					
P	1/1																				
	1/10	0,02	0,05	0,05	0,05	0,05	0,05	0,07	0,07	0,09	0,14	0,16	0,16	0,18	0,18	0,20					
	1/20	0,03	0,06	0,06	0,06	0,06	0,06	0,08	0,08	0,11	0,17	0,20	0,20	0,23	0,23	0,25					
M	1/1																				
	1/10	0,02	0,04	0,04	0,04	0,04	0,04	0,05	0,05	0,07	0,11	0,13	0,13	0,15	0,15	0,16					
	1/20	0,02	0,05	0,05	0,05	0,05	0,05	0,07	0,07	0,09	0,14	0,16	0,16	0,18	0,18	0,21					
K	1/1																				
	1/10	0,02	0,05	0,05	0,05	0,05	0,05	0,07	0,07	0,09	0,14	0,16	0,16	0,18	0,18	0,20					
	1/20	0,03	0,06	0,06	0,06	0,06	0,06	0,08	0,08	0,11	0,17	0,20	0,20	0,23	0,23	0,25					
H	1/1																				
	1/10	0,02	0,04	0,04	0,04	0,04	0,04	0,05	0,05	0,07	0,11	0,13	0,13	0,15	0,15	0,16					
	1/20	0,02	0,05	0,05	0,05	0,05	0,05	0,07	0,07	0,09	0,14	0,16	0,16	0,18	0,18	0,21					

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

Solid carbide milling group 6 – High feed mills PM series

	a_e / D	Feed rate per cutting edge (f_z) [mm]																			
		Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12													
P	1/1																				
	1/10																				
	1/20	0,15	0,25	0,28	0,33	0,44	0,55	0,66													
M	1/1																				
	1/10																				
	1/20	0,12	0,22	0,25	0,30	0,41	0,52	0,63													
K	1/1																				
	1/10																				
	1/20	0,15	0,25	0,28	0,33	0,44	0,55	0,66													
H	1/1																				
	1/10																				
	1/20	0,12	0,22	0,25	0,30	0,41	0,52	0,63													

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

Solid carbide milling group 7 – Ball nose cutters HM series

	a_e / D	Feed rate per cutting edge (f_z) [mm]																			
		Ø0,5	Ø0,8	Ø 1	Ø 2	Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20					
H	1/1																				
	1/2	0,02	0,04	0,04	0,04	0,04	0,04	0,05	0,05	0,07	0,11	0,13	0,13	0,15	0,15	0,16					
	1/10	0,02	0,05	0,05	0,05	0,05	0,05	0,07	0,07	0,09	0,14	0,16	0,16	0,18	0,18	0,21					

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

Solid carbide milling group 8 – High feed mills AL series

	a_e / D	Feed rate per cutting edge (f_z) [mm]																			
		Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20												
N	1/1	0,04	0,05	0,08	0,09	0,11	0,13	0,16	0,18												
	3/4	0,05	0,07	0,10	0,12	0,14	0,16	0,20	0,23												
	1/10	0,08	0,11	0,16	0,19	0,22	0,25	0,31	0,36												

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

Recommended feed rate

Solid carbide milling group 9 – Square shoulder mills UM series HSC/HPC

	a_e / D	Feed rate per cutting edge (f_z) [mm]																			
		Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20										
P	1/1	0,06	0,06	0,06	0,07	0,07	0,07	0,07	0,08	0,08	0,08										
	1/2	0,08	0,08	0,08	0,09	0,09	0,09	0,09	0,10	0,10	0,10										
	1/10	0,14	0,14	0,16	0,18	0,22	0,25	0,27	0,3	0,32	0,36										
M	1/1	0,05	0,05	0,05	0,05	0,05	0,05	0,05	0,06	0,06	0,06										
	1/2	0,06	0,06	0,06	0,07	0,07	0,07	0,07	0,08	0,08	0,08										
	1/10	0,10	0,10	0,10	0,12	0,12	0,14	0,16	0,16	0,18	0,18										
K	1/1	0,06	0,06	0,06	0,07	0,07	0,07	0,07	0,08	0,08	0,08										
	1/2	0,08	0,08	0,08	0,09	0,09	0,09	0,09	0,10	0,10	0,10										
	1/10	0,14	0,14	0,16	0,18	0,22	0,25	0,27	0,3	0,32	0,36										
H	1/1	0,045	0,045	0,045	0,053	0,053	0,053	0,053	0,06	0,06	0,06										
	1/2	0,06	0,06	0,06	0,07	0,07	0,07	0,07	0,08	0,08	0,08										
	1/10	0,10	0,10	0,10	0,12	0,12	0,14	0,16	0,16	0,18	0,18										

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

Solid carbide milling group 10 – Square shoulder mills VSM series

	a_e / D	Feed rate per cutting edge (f_z) [mm]																			
		Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20										
P	1/1	0,03	0,04	0,05	0,05	0,05	0,05	0,06	0,06	0,07	0,08										
	1/2	0,04	0,06	0,07	0,07	0,07	0,07	0,08	0,09	0,10	0,11										
	1/10	0,05	0,08	0,09	0,09	0,09	0,09	0,11	0,12	0,14	0,15										
M	1/1	0,02	0,03	0,04	0,04	0,04	0,04	0,04	0,05	0,05	0,06										
	1/2	0,03	0,05	0,05	0,05	0,05	0,05	0,06	0,07	0,08	0,08										
	1/10	0,04	0,06	0,07	0,07	0,07	0,07	0,08	0,09	0,10	0,11										
S	1/1	0,02	0,03	0,04	0,04	0,04	0,04	0,04	0,05	0,05	0,06										
	1/2	0,03	0,05	0,05	0,05	0,05	0,05	0,06	0,07	0,08	0,08										
	1/10	0,04	0,06	0,07	0,07	0,07	0,07	0,08	0,09	0,10	0,11										

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

Solid carbide milling group 11 – Deburring cutters FM series

	a_e / D	Feed rate per cutting edge (f_z) [mm]																			
		Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16	Ø 18	Ø 20									
P	1/1																				
	1/2																				
	1/10	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09									
M	1/1																				
	1/2																				
	1/10	0,02	0,02	0,02	0,02	0,03	0,05	0,06	0,06	0,06	0,06	0,07									
K	1/1																				
	1/2																				
	1/10	0,02	0,02	0,03	0,03	0,04	0,06	0,07	0,07	0,08	0,08	0,09									
N	1/1																				
	1/2																				
	1/10	0,03	0,03	0,05	0,05	0,06	0,09	0,11	0,11	0,12	0,12	0,14									

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

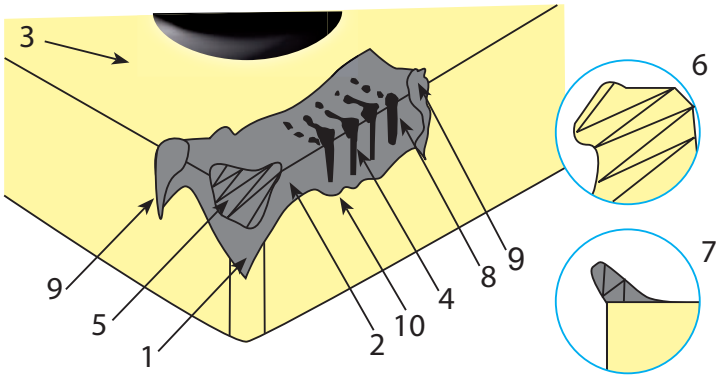
Technical information

Trouble shooting – milling	**B464**
Technical information – milling	**B465-B476**
Form nonstandard order – milling	**B477**

B

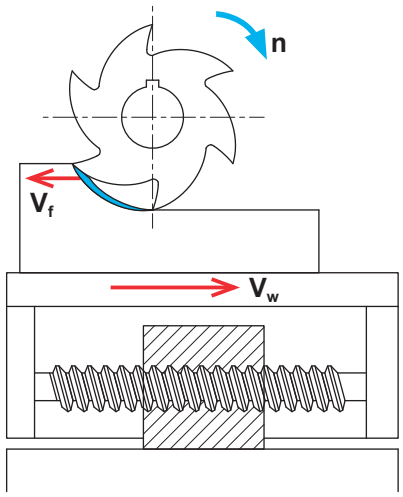
Trouble shooting – indexable milling

Fig.	Type of wear	Effects	Reason	Countermeasure
1+2	Flank wear	– Bad surface quality and dimensional stability – Increase of cutting force	– Grade not wear-resistant enough – Cutting speed too high – Clearance angle too small – Feed rate too low	– Grade with higher wear-resistance – Reduce cutting speed – Increase clearance angle – Reduce feed rate
3	Crater wear	– Bad surface quality and chip control	– Grade not wear-resistant enough – Cutting speed too high – Feed rate too low	– Grade with higher wear-resistance – Reduce cutting speed – Reduce feed rate
4	Chipping	– Unstable tool life – Sudden breakage of cutting edge	– Grade too hard – Feed rate too high – Cutting edge not stable enough – Stability of the holder or tension insufficient	– Grade with higher toughness – Reduce feed rate – Change honing of cutting edge – Use a more stable tool holder
5	Breakage	– Increase of cutting force – Bad surface quality and dimensional stability	– Grade too hard – Feed rate too high – Cutting edge not stable enough – Stability of the holder or tension insufficient	– Grade with higher toughness – Reduce feed rate – Change honing of cutting edge – Use a more stable tool holder
6	Plastic deformation	– Bad dimensional stability – Damage to cutting edge	– Grade not wear-resistant enough – Cutting speed too high – Cutting depth and/or feed rate too high – Temperature on the cutting edge too high	– Grade with higher toughness – Reduce cutting speed – Reduce cutting depth and feed rate – Grade with higher heat-resistance
7	Welding	– Increase of cutting force – Bad surface quality	– Cutting speed too low – Cutting edge not sharp enough – Grade not suitable	– Increase cutting speed – Increase rake angle – Use a more suitable grade
8	Thermal cracks	– Breakage due to thermal interaction, often caused when cutting is interrupted (milling)	– Temperature fluctuation when machining – Grade too hard	– Dry machining – Grade with higher toughness
9	Notch wear	– Burr formation – Increase of cutting force	– Damage through chips (jagged edges) – Feed rate and cutting speed too high	– Grade with higher wear-resistance – Increase rake angle to get a sharper cutting edge – Reduce cutting speed
10	Flaking (coating)	– Often appears when machining hardened materials or caused by vibration	– Cutting edge adhesion and chipping – Bad chip removal	– Increase rake angle to get a sharper cutting edge – Chip breaker with bigger chip space

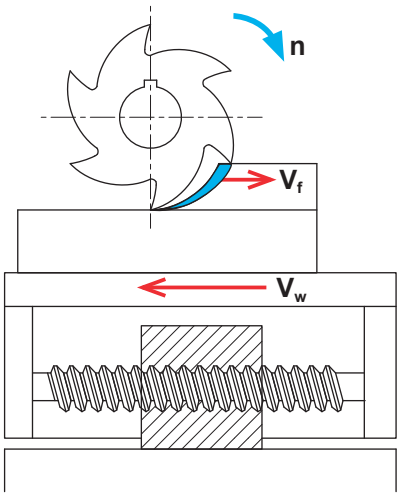


Indexable milling

Difference between up-milling and down-milling



Up-milling



Down-milling

V_f Feed rate tool
V_w Feed rate work piece
n Rotation

Up-milling: the feed direction of the work piece is opposite to that of the milling rotation at the connecting position.

Down-milling: the feed direction of the work piece is the same as that of the milling rotation at the connecting position.

Advantages and disadvantages

Direction	Advantages	Disadvantages
Up-milling	– Prevents hooking of tool – More smooth cut	– Bigger stress on cutting edge – Shorter tool life
Down-milling	– Higher tool life – Less thermal stress	– Hooking of tool possible

Indexable milling

Pitch selection

The pitch is the distance between one point on one cutting edge and the same point on the next edge.
Milling cutters are mainly classified into wide, normal and fine pitches.

Operational stability		
L (low)	M (medium)	H (high)
Wide pitch	Normal pitch	Fine pitch
		
When the milling width is equal to the diameter of the cutter, the machining system is stable and main power of machine is sufficient, selecting a wide pitch can achieve high productive efficiency.	General milling function and multiple mixed productions.	When the milling width is less than the diameter of cutter, cutting by maximum edges can achieve high productive efficiency.

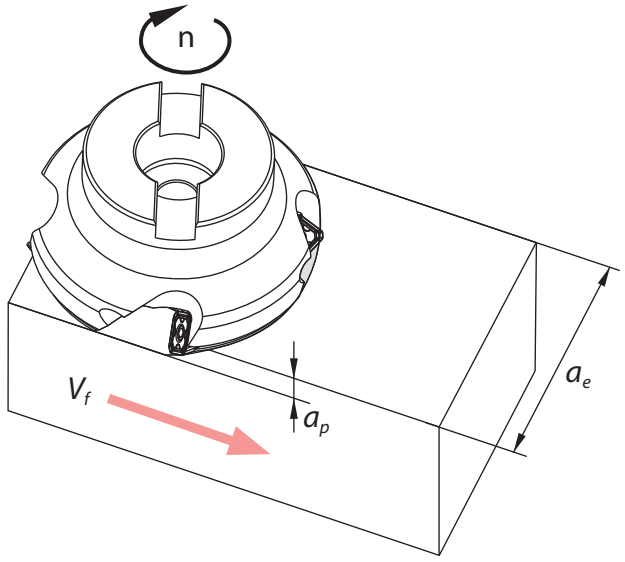
Approach angle

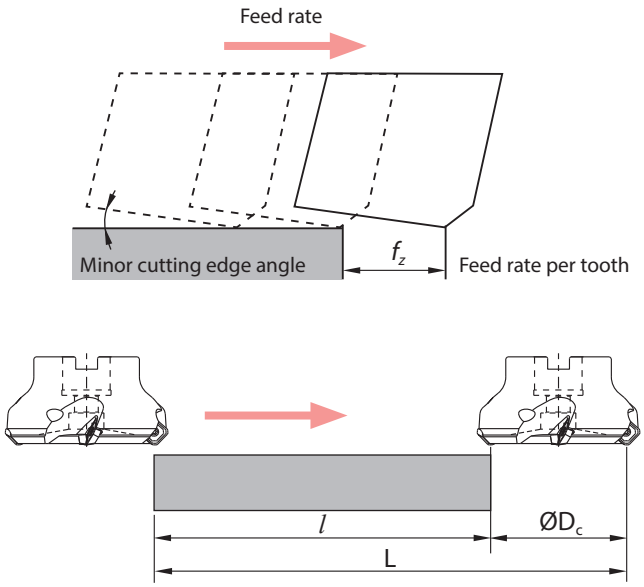
The approach angle is composed by insert. Tool body, chip thickness, cutting forces and tool life are affected especially by the approach angle. Decreasing the approach angle reduces chip thickness and spreads the cutting area between cutting edge and work piece for a given feed rate.
A smaller approach angle also guarantees stable entering or exiting the work piece, to protect the cutting edge and extend tool life. However this will increase higher axial cutting forces on the work piece, thus it is not suitable for machining thin work piecees such as thin plates.

Approach angle	Feed rate per tooth	Max. cutting depth
90°	f_z	$h_{ex} = f_z \times sin_{kr}$
75°		$h_{ex} = 0{,}96 \times f_z$
60°		$h_{ex} = 0{,}86 \times f_z$
45°		$h_{ex} = 0{,}707 \times f_z$
Round		$h_{ex} = \frac{\sqrt{iC^2 \times (iC - 2a_p)^2}}{iC} \times f_z$

Indexable milling

General formulas





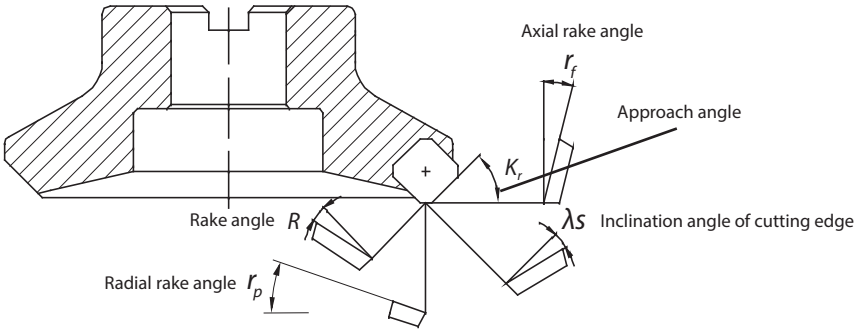
V_c: Feed rate [m/min]
D_c: Nominal diameter of milling tool [mm]
n: Spindle speed [u/min]
z_n: Number of teeth
Q: Metal removal rate [cm^3/min]

V_f: Feed rate of worktable (feed speed) [mm/min]
f_z: Feed rate per tooth [mm/z]
π: ~3,14
T_c: Machining time [min]
f_n: Feed rate per revolution [mm/u]

Cutting speed	$V_c = \frac{\pi \times D_c \times n}{1000}$ [m/min]
Spindle speed	$n = \frac{1000 \times V_c}{\pi \times D_c}$ [rev/min]
Feed rate of work table	$V_f = f_z \times n \times z_n$ [mm/min]
Feed rate per tooth	$f_z = \frac{V_f}{n \times Z_n}$ [mm/z]
Feed rate per revolution	$f_n = \frac{V_f}{n}$ [mm/rev]
Machining time	$T_c = \frac{1000 \times V_c}{\pi \times D_c}$ [min]
Metal removal rate	$Q = \frac{a_p \times a_e \times V_f}{1000}$ [cm^3/min]

Indexable milling

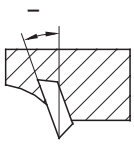
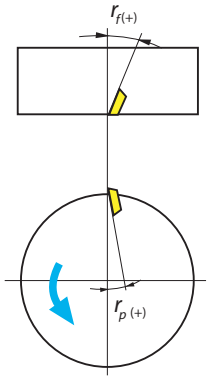
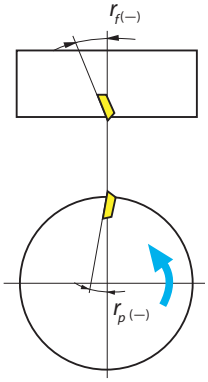
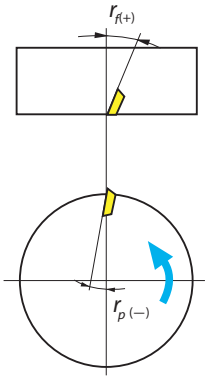
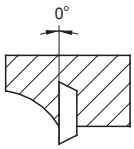
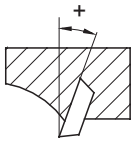
Function of angles when face milling



Main angles

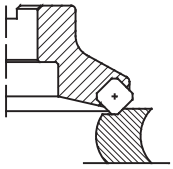
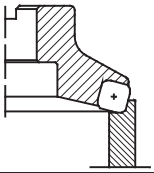
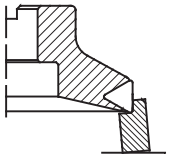
Angle	Feature	Effet		
Axial rake angle r_f	Influences chip direction	Negative angle, good chip removal		
Radial rake angle r_p	Influences cutting edge sharpness	Positive angle, good cutting performance		
Approach angle ***Kr***	Influences chip thickness	Kr↑, chip thickness↑, Kr↓, chip thickness↓;		
Rake angle ***R***	Influences cutting force	Poor cutting performance, stable cutting edge	(−)←0→(+)	Good cutting performance, unstable cutting edge
Inclination angle ***λs***	Influences chip flow direction	Poor cutting performance, stable cutting edge	(−)←0→(+)	Good cutting performance, unstable cutting edge

Combination of different rake angles

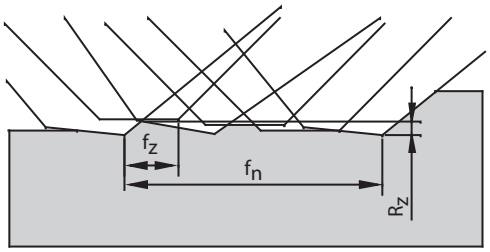
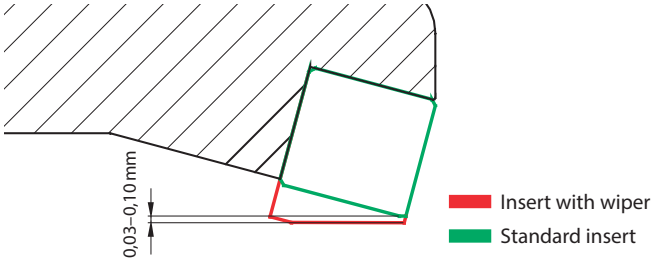
		Double positive	Double negative	Positive/Negative
Negative rake angle				
Neutral angle				
Positive angle				
Axial rake angle r_f		+	−	+
Radial rake angle r_p		+	−	−
Application field	**P**	√		√
	M	√		√
	K		√	√
	N	√		
	S	√		√

Indexable milling

Cutting performances of different approach angles

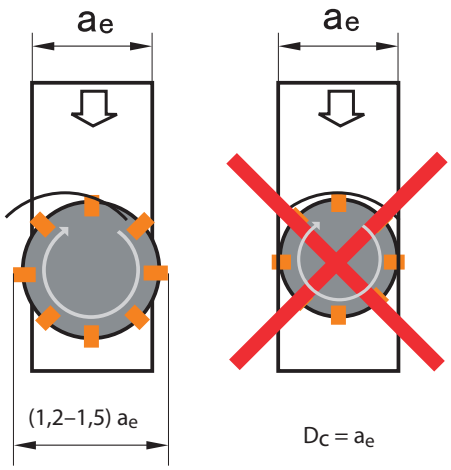
Approach angle	Depiction	Explanation
45°		Axial force is largest. It will bend when machining thin-wall work piece, and reduces the precision of work piece. It is benefit to avoid fringe breakage of work piece when machining cast iron.
75°		The main purpose is to resolve the radial cutting force, it is often used for general face milling.
90°		The axial force is zero in theory, suitable for milling thin plate workpiece.

Inserts with wiper

Using standard inserts	Using inserts with wiper
	
Normal surface quality	High surface quality

The wiper insert must protrude below the other inserts by 0.03–0.10 mm at axial direction, only that the wiping function can take into effect. Generally speaking, a cutter can assemble only one wiper insert. If the diameter of cutter is much bigger or cutter's feed rate per revolution is bigger than the length of wiper edge, 2 to 3 wiper inserts can be assembled.

Cutting width



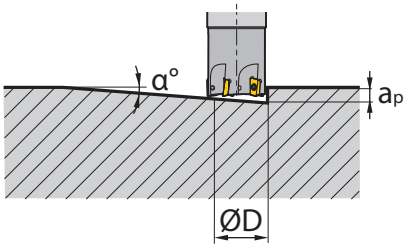
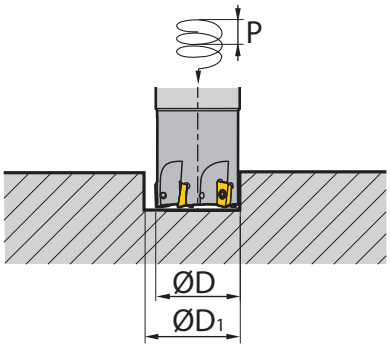
Generally speaking, the relation between cutting width and tool cutting diameter is $D_c = (1.2–1.5)\ a_e$.

In the machining practice, it needs to avoid coincidence of tool center and workpiece center as much as possible.

D_c: Tool diameter
a_e: Lateral infeed

Indexable milling

Plunging and circular milling with insert APKT

	Plunging	Circular milling
		
	$L_m = \frac{a_p}{\tan_\alpha}$	$P = \tan_\alpha \times \pi \times D_1$
	α : Angle de plongée	α : Angle d'hélice

Insert	Diameter ØD [mm]	Max. cutting depth a_p [mm]	Max. plunge angle α°	Min. diameter $ØD_1$ [mm]	Max. diameter [mm]
AP**11**	16	10	10	20	30
	20	10	5	28	38
	25	10	4	40	48
	32	10	3	56	60
	40	10	2	70	76

Reduce the feed rate when plunging and circular milling.
For drilling operations (axial) set the feed rate under 0.2 mm.
„Attention" – drilling can form long chips.

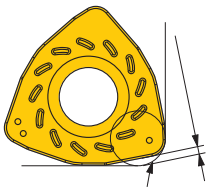
Indexable milling

Plunging and circular milling with insert WPGT or SDMT

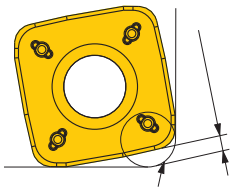
Approx. programmed radius

Insert	approx. R [mm]	Residual material K [mm]
WPGT050315ZSR	2	0,5
WPGT060415ZSR	2,5	0,7
WPGT080615ZSR	2,5	0,7
WPGT090725ZSR	4,5	1,2
SDMT06T208	1,6	0,5
SDMT09T312	2,5	0,87
SDMT120412	4,0	0,93
SDMT150620	4,0	1,38

WPGT

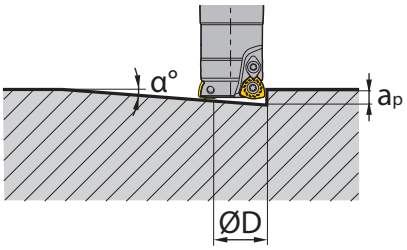


SDMT



Insert WPGT

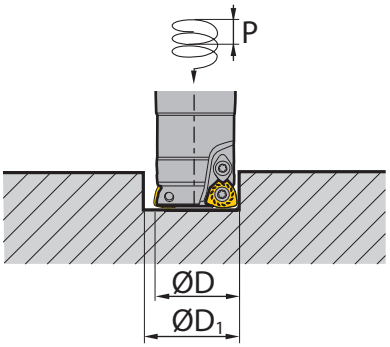
Plunging



$$L_m = \frac{a_p}{\tan_\alpha}$$

α : Angle de plongée

Circular milling



$$P = \tan_\alpha \times \pi \times D_1$$

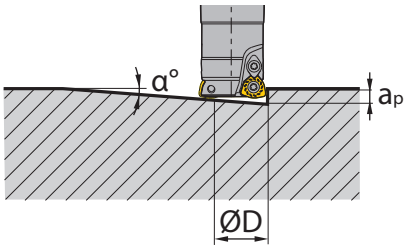
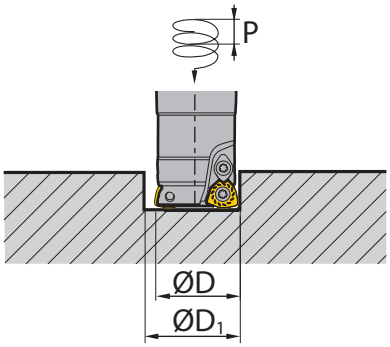
α : Angle d'hélice

Insert	Diameter ØD [mm]	Max. cutting depth a_p [mm]	Max. plunge angle α°	Min. diameter $ØD_1$ [mm]	Max. diameter [mm]
WP**05**	20	1,5	12	24	37
WP**06**	25	1,5	8,8	31	47
	32	1,5	5	45	61
	40	1,5	3,2	61	77
	50	1,5	2,8	81	97
WP**08**	40	1,5	9	52	77
	50	1,5	5,4	71	97
	63	1,5	4,3	97	123
	80	1,5	2,9	131	157
	100	1,5	2,1	171	197
	125	1,5	1,3	221	247
	160	1,5	1,1	291	317
WP**09**	50	3,0	7,2	70	96
	63	3,0	4,5	96	122
	80	3,0	2,8	130	156
	100	3,0	2,2	170	196
	125	3,0	1,6	220	246
	160	3,0	1,2	290	316

Reduce the feed rate when plunging and circular milling.
For drilling operations (axial) set the feed rate under 0.2 mm.
„Attention" – drilling can form long chips.

Indexable milling

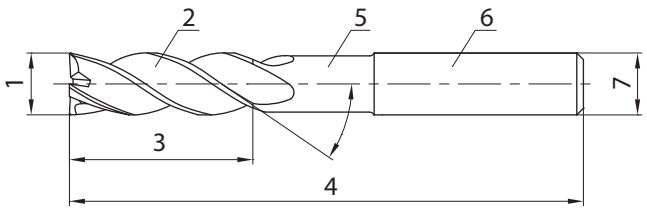
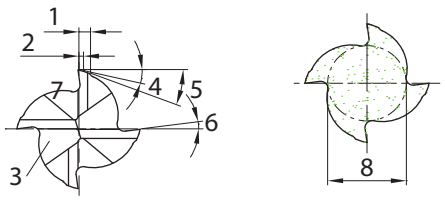
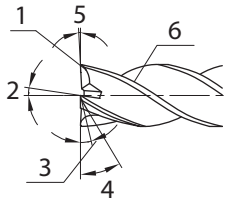
Insert SDMT

		Plunging		Circular milling	
		 $L_m = \frac{a_p}{\tan_\alpha}$ α: Plunge angle		 $P = \tan_\alpha x \pi x D_1$ α: Helix angle	
Insert	Diameter ØD (mm)	Max. cutting depth a_p [mm]	Max. plunge angle α°	Min. diameter $ØD_1$ [mm]	Max. diameter [mm]
SD**06**	20	0,8	3,6	30	38
	25	0,8	2,8	40	48
	32	0,8	1,6	52	60
	40	0,8	1,1	70	78
	50	0,8	0,8	90	98
	63	0,8	0,7	114	122
SD**09**	25	1,4	6,5	34	48
	32	1,4	4,5	48	62
	35	1,4	3,6	54	68
	50	1,4	1,8	84	98
	63	1,4	1,3	110	124
SD**12**	32	1,8	10,4	44	60
	40	1,8	5,7	60	76
	50	1,8	3,5	80	96
	63	1,8	2,5	106	122
	80	1,8	1,6	140	156
	100	1,8	1,2	180	196
SD**15**	40	2,2	7,3	54	76
	80	2,2	1,4	134	156
	100	2,2	1,0	174	196
	125	2,2	0,9	234	246
	160	2,2	0,6	304	316

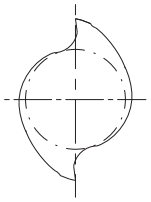
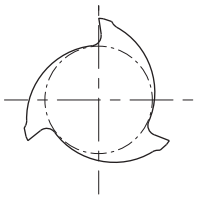
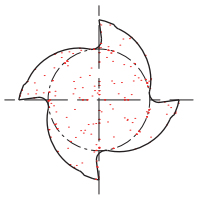
Reduce the feed rate when plunging and circular milling.
For drilling operations (axial) set the feed rate under 0,2 mm.
„Attention“ – drilling can form long chips.

Solid carbide mills

Terminology

A		1. Cutting edge diameter 2. Chip pocket 3. Length of cutting edge 4. Total length 5. Neck 6. Shank 7. Shank diameter
B		1. Chamfer width, main cutting edge 2. Chamfer width, diameter 3. Neck, front side 4. Primary radial clearance angle 5. Secondary radial clearance angle 6. Radial rake angle 7. Axial main cutting edge 8. Core diameter
C		1. Cutting edge 2. Axial rake angle 3. Primary axial clearance angle 4. Secondary axial clearance angle 5. Inclination angle 6. Radial cutting edge

Teeth, chip pocket and tool rigidity

Teeth	2 flutes	3 flutes	4 flutes
Cross section			
Cutting edge ratio	54 %	56 %	60 %
Advantages	– Large chip pocket – Good chip removal	– Good chip removal – Good surface quality	– Good rigidity – Good surface
Application	– Slot milling – Square shoulder milling – Drilling	– Slot milling – Square shoulder milling – Finishing	– Slot milling (flat) – Square shoulder milling – Finishing

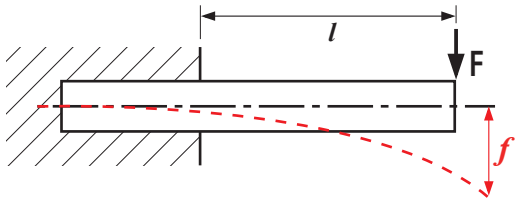
Length of cutting edge (overhang) and cutting diameter

The shorter the overhang, the stronger the rigidity. Thus isn't easy to generate. Bend and vibration in the cutting process may occur.

Length (overhang) increases by 1 time, the deflection degree (f) will be 8 times of the former one.

Reduce the overhang by 20 %
the deflection degree (f) will decrease by 50 %

Increase the diameter by 20 %
the deflection degree (f) will decrease by 50 %

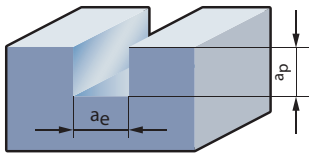


$$f = \frac{F \times l^3}{3 \times E \times l} = \frac{F \times l^3 \times 64}{3 \times E \times l}$$

Solid carbide mills

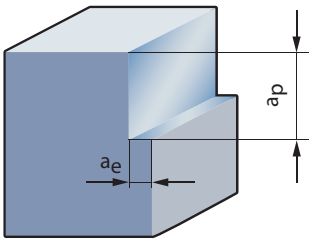
Machining strategy – HPC/UM (HSC) milling cutters

HPC = High Performance Cutting
Machining with significantly increased metal removal rate through higher cutting speeds and feed rates compared with conventional machine cutting processes.

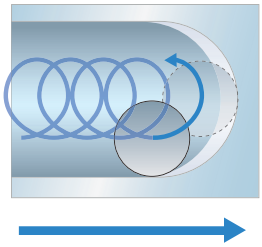


Full-slot milling

HSC (UM) = High Speed Cutting
High cutting speeds and feed rates in combination with low cutting depths lead to lower chip thickness as in normal machining.

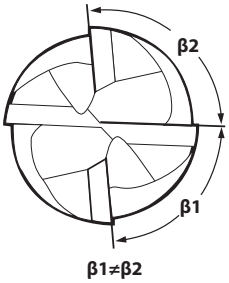


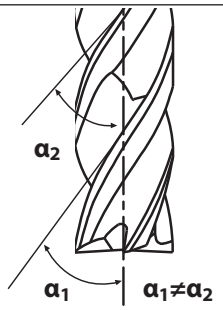
Profiling



Trochoidal milling

The UM milling cutter is specifically optimised for HSC machining.



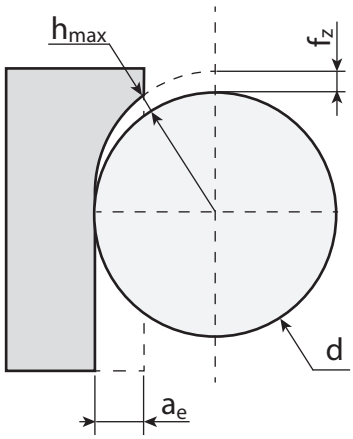


High metal removal rates can be realised with this tool.
Especially on highly dynamic machines with optimised tool paths this milling cutter shows its full potential.

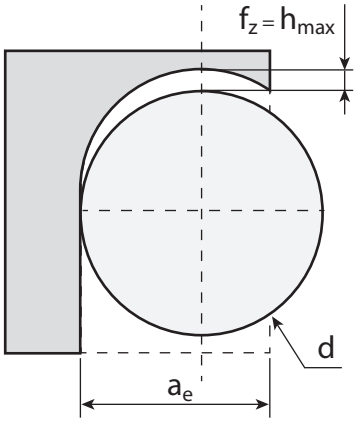
Solid carbide mills

HSC strategy

It's important to use the right strategy. When programming make sure the width of cut is kept. The width of cut is usually not higher than 15 %. Regarding the depth of cut, the total length of the cutting edge can be used.



$a_e < d/2 \quad h_{max} < f_z$

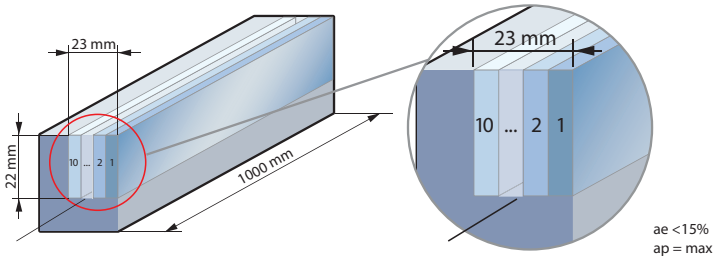


$a_e \geq d/2 \quad h_{max} = f_z$

$$h_{max} = 2f_z\sqrt{\frac{a_e}{d}\left(1-\frac{a_e}{d}\right)}$$

When changing the width of cut the cutting data needs to be adjusted.
As calculatory size applies a chip thickness from approx. 0.15 –0.2 mm on basis of the usual steel types.

Example

Tool	Machining
	
UM-4E-D20.0-W KMG405	HSC strategy

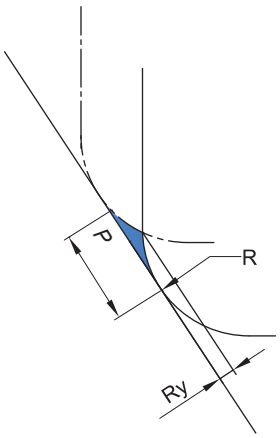
Workpiece material
16MnCr5 (1.7131) ca. 700 N/mm³

Cutting data	
V_c	550 m/min
n	8750 1/min
f_z	0,3 mm (**h_{max} = 0,19 mm**)
V_f	10500 mm/min
a_p	22 mm
a_e	2,3 mm

Result
Chip removal rate **530 cm³/min**! Machining time 58 seconds! The maximum chip thickness is 0.19 mm.

Solid carbide mills

Feed rate selecting table for profile machining with ball nose cutters and torus mills



$$Ry = R \times \{1-\cos[\arcsin(fr/2R)]\}$$

Ry: Theoretical values of surface quality
P: Feed rate
R: Radius of the ball nose cutter or torus mill

R \ Ry	Feed rate									
	0,1	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9	1,0
0,5	0,003	0,010	0,023	0,042	0,067	0,100				
1,0	0,001	0,005	0,011	0,020	0,032	0,046	0,063	0,083	0,107	
1,5	0,001	0,003	0,008	0,013	0,021	0,030	0,041	0,054	0,069	0,086
2,0	0,001	0,003	0,006	0,010	0,015	0,023	0,031	0,040	0,051	0,064
2,5	0,001	0,002	0,005	0,008	0,013	0,018	0,025	0,032	0,041	0,051
3,0		0,001	0,004	0,007	0,010	0,015	0,020	0,027	0,034	0,042
4,0		0,001	0,003	0,005	0,008	0,011	0,015	0,020	0,025	0,031
5,0		0,001	0,002	0,004	0,006	0,009	0,012	0,016	0,020	0,025
6,0			0,002	0,003	0,005	0,008	0,010	0,013	0,017	0,021
8,0			0,001	0,003	0,004	0,006	0,008	0,010	0,013	0,016
10,0			0,001	0,002	0,003	0,005	0,006	0,008	0,010	0,013
12,5			0,001	0,002	0,003	0,004	0,005	0,006	0,008	0,010

R \ Ry	Feed rate									
	1,1	1,2	1,3	1,4	1,5	1,6	1,7	1,8	1,9	2,0
0,5										
1,0										
1,5	0,104									
2,0	0,077	0,092	0,109							
2,5	0,061	0,073	0,086	0,100						
3,0	0,051	0,061	0,071	0,083	0,095	0,109				
4,0	0,038	0,045	0,053	0,062	0,071	0,081	0,091	0,103		
5,0	0,030	0,036	0,042	0,049	0,057	0,064	0,073	0,082	0,091	0,101
6,0	0,025	0,030	0,035	0,041	0,047	0,054	0,061	0,068	0,076	0,084
8,0	0,019	0,023	0,026	0,031	0,035	0,040	0,045	0,051	0,057	0,063
10,0	0,015	0,018	0,021	0,025	0,028	0,032	0,036	0,041	0,045	0,050
12,5	0,012	0,014	0,017	0,020	0,023	0,026	0,029	0,032	0,036	0,040

Nonstandard – solid carbide end mills

Name/Company: **Address:** **Tel.:** **Fax:** **E-mail:**	ZCC-CT **Wanheimer Str. 57** **40472 Düsseldorf, Germany** **Fax:** +49-(0)211-989240-111 **E-mail:** technik@zccct-europe.com

Material	
Material	
Tensile strength (N/mm^2)	
Hardness	

Coating			
Yes	☐	No	☐

Centre cutting			
Yes	☐	No	☐

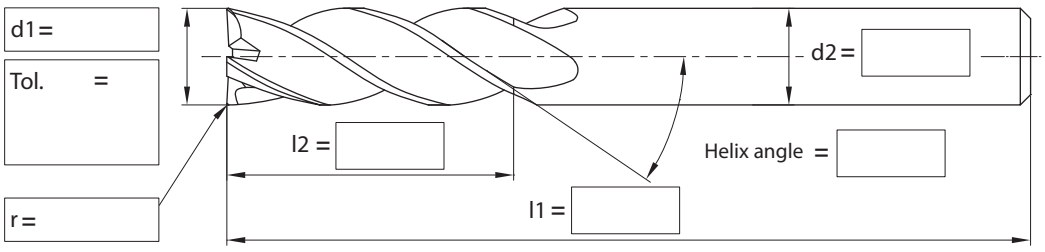
Series			
GM		NM	
PM		AL	
UM		VSM	
HM		HPC	

Machining operations		
		
☐ Slot milling	☐ Square shoulder milling	☐ Profile milling

Tool holder type			
DIN6535			
			
Form HA ☐	Form HB ☐	Normal straight shaft ☐	Special type ☐

Type		
		
☐ Square shoulder mill	☐ Ball nose cutter	☐ Torus mill

Number of teeth



Remarks:	
Order quantity:	Desired delivery date:
Date:	Signature:

Notes

Indexable drills

Product overview	**C2**
Chip breaker overview	**C3**
Grade overview	**C4**
Application fields of grades	**C5**
System code – drilling bodies	**C7**
Drilling bodies	**C8-C17**
ISO code – inserts	**C18**
Inserts	**C19-C21**
Recommended cutting data	**C22-C24**

C

Indexable drills Product overview

Indexable insert drill







ZD03	ZTD02	ZTD03	ZTD04	ZTD05	
16-58	13-50	13-50	13-50	17-50	Diameter
C16	C8	C10	C12	C14	Page

Drilling inserts







SPGT-EM	SPGT-PM	WCMX-53	WCMX-D	WCMX-PG	
05 06 07 09 11 14	05 06 07 09 11 14	03 04 05 06 08	05 06 08	03 04 05 06 08	Edge length
C19	C19	C20	C20	C20	Page

Drilling

PM P M K




For machining of steel, stainless steel and cast iron.

EM P M S




For machining of steel, stainless steel and heat-resistant alloys.

PG P K




For machining of steel and cast iron.

D P M K




For machining of steel, stainless steel and cast iron.

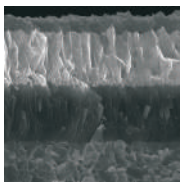
53 P M K N



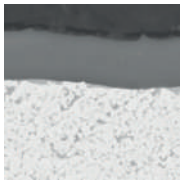
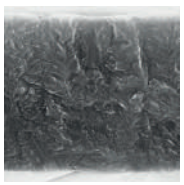

For machining of steel, stainless steel, cast iron and non-ferrous metals.

Indexable drills Grade overview

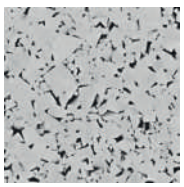
Coated cemented carbide CVD

Grade	ISO	Micro structure	Grade description
YB6338	P20 - P40 K20 - K40		CVD coated P20–P40/K20–K40 carbide substrate for operation with higher cutting speed and feed rate in steel and cast iron.
YBD252	K20 - K35		CVD coated K20–K35 carbide substrate. Optimized for medium to roughing operation of cast iron and Steel. Good wear resistance and toughness at higher cutting speed.

Coated cemented carbide PVD

Grade	ISO	Micro structure	Grade description
YBG202	P10 - P30 M10 - M25		PVD coated M10–M25/P10–P30 carbide substrate for finishing to medium application of stainless steel and steel (milling). Good wear resistance in a wide application field.
YBG205	P10 - P30 M20 - M40 S15-S25		PVD multilayer coated P10–P30/M20–M40/S15–S25 carbide substrate for finishing to medium application of stainless steel, super alloy and steel (milling). Good wear resistance and thermal stability in a wide application field.
YBG212	P25 - P35 M25-M40		PVD coated M25–M40/P25–P35 carbide substrate for steel and stainless steel. Especially for inner insert at drilling operation.

Uncoated cemented carbide

Grade	ISO	Micro structure	Grade description
YD201	K10 - K30 N10 - N30		Uncoated N10–N30/K10–K30 carbide substrate for medium application in aluminum and other material.

Application fields of grades – Indexable drills

	ISO	HC[1] (CVD)	HC[1] (PVD)	HT	HW	PCBN & PCD
P	P01					
	P10	YBD252, YB6338	YBG202, YBG205, YBG212			
	P20					
	P30					
	P40					
M	M01					
	M10		YBG202, YBG205, YBG212			
	M20					
	M30					
	M40					
K	K01					
	K10	YBD252, YB6338	YBG202, YBG205, YBG212			
	K20					
	K30					
	K40					
N	N01					
	N10					
	N20				YD201	
	N30					
S	S01					
	S10		YBG202, YBG205, YBG212			
	S20					
	S30					
H	H01					
	H10					
	H20					
	H30					

P	Steel
M	Stainless steel
K	Cast iron
N	Non-ferrous alloys
S	Heat-resistant alloys
H	Hardened materials

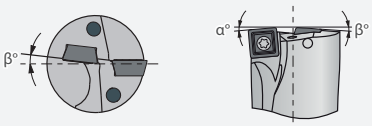
HC[1] Coated cemented carbide
HT Uncoated cermet
HW Uncoated cemented carbide

ZTD series

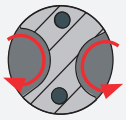
Indexable drills ZTD02 / 03 / 04 / 05



- For machining of steel, stainless steel, cast iron and heat-resistant alloys.
- Drilling bodies with PVD coated surfaces.
- Big chip pocket for better chip removal.
- Optional adapter for inner cooling in conventional machines.
- Diameter range 13.0–50.0 mm



Precise insert seat and stable insert clamping



Big chip pocket



Adapter for inner cooling

Insert grades

YB6338	YBG205	YBG212
CVD	*PVD*	*PVD*
P15 – P35	*P10 – P30*	*M10 – M25*
	M20 – M30	
	S15 – S35	

Chip breakers

-PM



- Steel and cast iron

-EM



- Stainless steel and heat-resistant alloys

ZD – 03 300 – XP – 32 W C 05 – 02

1	2	3	4	5	6	7	8	9

Type	
Code	Description
ZD	Indexable drill (WCMX*)
ZTD	Indexable drill (SPGT*)

1

L/D relation	
Code	Description
02	2xD
03	3xD
04	4xD
05	5xD

2

Diameter [mm]	
Code	Description
130	13
...	

3

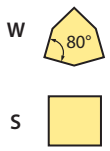
Shank type	
Code	Description
XP	Weldon shank

4

Coupling size [mm]

5

Insert shape



6

Clearance angle	
Code	Description
C	7°
P	11°

7

Cutting edge length [mm]		
Code	Insert shape	
	W	S
03	3,8	
04	4,3	
05	5,4	5
06	6,5	6
08	8,7	7,94
09		9,8
11		11,5
12		12,7
14		14,3

8

Number of teeth

9

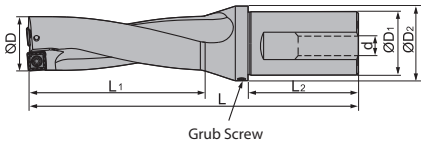
Indexable drills Drilling bodies

Indexable drills series

ZTD02







Article	✻	Stock	Dimensions [mm]								Inserts	Adapter
			ØD	ØD1	ØD2	L1	L2	L	d	kg		
ZTD02-130-XP20-SP05-02	✻	•	13	20	25	31	50	98	M13×1	0.165	SPGT0502**	ZTD-XP20-Thin
ZTD02-140-XP20-SP05-02	✻	•	14	20	25	33	50	100	M13×1	0.171	SPGT0502**	ZTD-XP20-Thin
ZTD02-150-XP20-SP05-02	✻	•	15	20	25	35	50	102	M13×1	0.176	SPGT0502**	ZTD-XP20-Thin
ZTD02-160-XP20-SP05-02	✻	•	16	20	25	37	50	104	M13×1	0.184	SPGT0502**	ZTD-XP20-Thin
ZTD02-170-XP25-SP06-02	✻	•	17	25	32	39	56	117	M16×1,5	0.325	SPGT0602**	ZTD-XP20-Thin
ZTD02-180-XP25-SP06-02	✻	•	18	25	32	41	56	119	M16×1,5	0.332	SPGT0602**	ZTD-XP25-Thin
ZTD02-190-XP25-SP06-02	✻	•	19	25	32	43	56	121	M16×1,5	0.342	SPGT0602**	ZTD-XP25-Thin
ZTD02-200-XP25-SP06-02	✻	•	20	25	32	45	56	123	M16×1,5	0.353	SPGT0602**	ZTD-XP25-Thin
ZTD02-210-XP25-SP06-02	✻	•	21	25	32	47	56	125	M16×1,5	0.35	SPGT0602**	ZTD-XP25-Thin
ZTD02-220-XP25-SP07-02	✻	•	22	25	32	49	56	127	M16×1,5	0.367	SPGT07T3**	ZTD-XP25-Thin
ZTD02-230-XP25-SP07-02	✻	•	23	25	32	51	56	129	M16×1,5	0.38	SPGT07T3**	ZTD-XP25-Thin
ZTD02-240-XP25-SP07-02	✻	•	24	25	32	53	56	131	M16×1,5	0.443	SPGT07T3**	ZTD-XP25-Thin
ZTD02-250-XP25-SP07-02	✻	•	25	25	32	55	56	133	M16×1,5	0.41	SPGT07T3**	ZTD-XP25-Thin
ZTD02-260-XP25-SP07-02	✻	•	26	25	32	57	56	135	M16×1,5	0.454	SPGT07T3**	ZTD-XP25-Thin
ZTD02-270-XP25-SP07-02	✻	•	27	25	32	59	56	137	M16×1,5	0.445	SPGT07T3**	ZTD-XP25-Thin
ZTD02-280-XP32-SP09-02	✻	•	28	32	37	61	60	146	M22×2	0.661	SPGT0904**	ZTD-XP32-Thin
ZTD02-290-XP32-SP09-02	✻	•	29	32	37	63	60	148	M22×2	0.682	SPGT0904**	ZTD-XP32-Thin
ZTD02-300-XP32-SP09-02	✻	•	30	32	37	65	60	150	M22×2	0.702	SPGT0904**	ZTD-XP32-Thin
ZTD02-310-XP32-SP09-02	✻	•	31	32	37	67	60	152	M22×2	0.759	SPGT0904**	ZTD-XP32-Thin
ZTD02-320-XP32-SP09-02	✻	•	32	32	37	69	60	154	M22×2	0.742	SPGT0904**	ZTD-XP32-Thin
ZTD02-330-XP32-SP09-02	✻	•	33	32	37	71	60	156	M22×2	0.774	SPGT0904**	ZTD-XP32-Thin
ZTD02-340-XP40-SP11-02	✻	•	34	40	47	73	70	173	(BSPT)RC1/4	1.2	SPGT1104**	
ZTD02-350-XP40-SP11-02	✻	•	35	40	47	75	70	175	(BSPT)RC1/4	1.23	SPGT1104**	
ZTD02-360-XP40-SP11-02	✻	•	36	40	47	77	70	177	(BSPT)RC1/4	1.26	SPGT1104**	
ZTD02-370-XP40-SP11-02	✻	•	37	40	47	79	70	179	(BSPT)RC1/4	1.29	SPGT1104**	
ZTD02-380-XP40-SP11-02	✻	•	38	40	47	81	70	181	(BSPT)RC1/4	1.33	SPGT1104**	
ZTD02-390-XP40-SP11-02	✻	•	39	40	47	83	70	183	(BSPT)RC1/4	1.39	SPGT1104**	
ZTD02-400-XP40-SP11-02	✻	•	40	40	47	85	70	185	(BSPT)RC1/4	1.43	SPGT1104**	
ZTD02-410-XP40-SP11-02	✻	•	41	40	47	87	70	187	(BSPT)RC1/4	1.44	SPGT1104**	
ZTD02-420-XP40-SP14-02	✻	•	42	40	52	89	70	199	(BSPT)RC1/4	1.62	SPGT1405**	
ZTD02-430-XP40-SP14-02	✻	•	43	40	52	91	70	201	(BSPT)RC1/4	1.67	SPGT1405**	
ZTD02-440-XP40-SP14-02	✻	•	44	40	52	93	70	203	(BSPT)RC1/4	1.71	SPGT1405**	
ZTD02-450-XP40-SP14-02	✻	•	45	40	52	95	70	205	(BSPT)RC1/4	1.76	SPGT1405**	

• Ex stock ○ On demand

✻ Internal cooling

System code > C7 Grade selection > C5 Technical info > C165 Cutting data > C22

Article	✻	Stock	Dimensions [mm]								Inserts	Adapter
			ØD	ØD1	ØD2	L1	L2	L	d	kg		
ZTD02-460-XP40-SP14-02	✻	•	46	40	52	97	70	207	(BSPT)RC1/4	1.81	SPGT1405**	
ZTD02-470-XP40-SP14-02	✻	•	47	40	52	99	70	209	(BSPT)RC1/4	1.87	SPGT1405**	
ZTD02-480-XP40-SP14-02	✻	•	48	40	52	101	70	211	(BSPT)RC1/4	1.92	SPGT1405**	
ZTD02-490-XP40-SP14-02	✻	•	49	40	52	103	70	213	(BSPT)RC1/4	1.98	SPGT1405**	
ZTD02-500-XP40-SP14-02	✻	•	50	40	52	105	70	215	(BSPT)RC1/4	2.05	SPGT1405**	

• Ex stock ○ On demand

✻ Internal cooling

Spare parts

	Insert	SPGT0502**	SPGT0602**	SPGT07T3**	SPGT0904**	SPGT1104**	SPGT1405**
	Grub screw					M6x6 (7.0Nm)	M8x8 (10.2Nm)
	Screw	I60M2x4,3 (0.5Nm)	I60M2,2x5,5 (0.8Nm)	I60M2.5*6.5 (1.0Nm)	I60M3,5x8 (2.7Nm)	I60M4x10 (3.4Nm)	I60M5x13 (6.7Nm)
	Wrench	WT06IP	WT07IP	WT07IP	WT15IP	WT15IP	WT20IP

Insert



C19

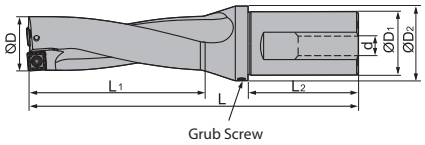
System code > C7 Grade selection > C5 Technical info > C165 Cutting data > C22

Indexable drills series

ZTD03







Article	✻	Stock	Dimensions [mm]								Inserts	Adapter
			ØD	ØD1	ØD2	L1	L2	L	d	kg		
ZTD03-130-XP20-SP05-02	✻	•	13	20	25	44	50	111	M13×1	0.179	SPGT0502**	ZTD-XP20-Thin
ZTD03-140-XP20-SP05-02	✻	•	14	20	25	47	50	114	M13×1	0.186	SPGT0502**	ZTD-XP20-Thin
ZTD03-150-XP20-SP05-02	✻	•	15	20	25	50	50	117	M13×1	0.195	SPGT0502**	ZTD-XP20-Thin
ZTD03-160-XP20-SP05-02	✻	•	16	20	25	53	50	120	M13×1	0.214	SPGT0502**	ZTD-XP20-Thin
ZTD03-170-XP25-SP06-02	✻	•	17	25	32	56	56	134	M16×1,5	0.32	SPGT0602**	ZTD-XP25-Thin
ZTD03-180-XP25-SP06-02	✻	•	18	25	32	59	56	137	M16×1,5	0.331	SPGT0602**	ZTD-XP25-Thin
ZTD03-190-XP25-SP06-02	✻	•	19	25	32	62	56	140	M16×1,5	0.342	SPGT0602**	ZTD-XP25-Thin
ZTD03-200-XP25-SP06-02	✻	•	20	25	32	65	56	143	M16×1,5	0.356	SPGT0602**	ZTD-XP25-Thin
ZTD03-210-XP25-SP06-02	✻	•	21	25	32	68	56	146	M16×1,5	0.391	SPGT0602**	ZTD-XP25-Thin
ZTD03-220-XP25-SP07-02	✻	•	22	25	32	71	56	149	M16×1,5	0.391	SPGT07T3**	ZTD-XP25-Thin
ZTD03-230-XP25-SP07-02	✻	•	23	25	32	74	56	152	M16×1,5	0.442	SPGT07T3**	ZTD-XP25-Thin
ZTD03-240-XP25-SP07-02	✻	•	24	25	32	77	56	155	M16×1,5	0.485	SPGT07T3**	ZTD-XP25-Thin
ZTD03-250-XP25-SP07-02	✻	•	25	25	32	80	56	158	M16×1,5	0.492	SPGT07T3**	ZTD-XP25-Thin
ZTD03-260-XP25-SP07-02	✻	•	26	25	32	83	56	161	M16×1,5	0.497	SPGT07T3**	ZTD-XP25-Thin
ZTD03-270-XP25-SP07-02	✻	•	27	25	32	86	56	164	M16×1,5	0.521	SPGT07T3**	ZTD-XP25-Thin
ZTD03-280-XP32-SP09-02	✻	•	28	32	37	89	60	174	M22×2	0.75	SPGT0904**	ZTD-XP32-Thin
ZTD03-290-XP32-SP09-02	✻	•	29	32	37	92	60	177	M22×2	0.777	SPGT0904**	ZTD-XP32-Thin
ZTD03-300-XP32-SP09-02	✻	•	30	32	37	95	60	180	M22×2	0.81	SPGT0904**	ZTD-XP32-Thin
ZTD03-310-XP32-SP09-02	✻	•	31	32	37	98	60	183	M22×2	0.831	SPGT0904**	ZTD-XP32-Thin
ZTD03-320-XP32-SP09-02	✻	•	32	32	37	101	60	186	M22×2	0.867	SPGT0904**	ZTD-XP32-Thin
ZTD03-330-XP32-SP09-02	✻	•	33	32	37	104	60	189	M22×2	0.928	SPGT0904**	ZTD-XP32-Thin
ZTD03-340-XP40-SP11-02	✻	•	34	40	47	107	70	207	(BSPT)RC1/4	1.33	SPGT1104**	
ZTD03-350-XP40-SP11-02	✻	•	35	40	47	110	70	210	(BSPT)RC1/4	1.371	SPGT1104**	
ZTD03-360-XP40-SP11-02	✻	•	36	40	47	113	70	213	(BSPT)RC1/4	1.414	SPGT1104**	
ZTD03-370-XP40-SP11-02	✻	•	37	40	47	116	70	216	(BSPT)RC1/4	1.448	SPGT1104**	
ZTD03-380-XP40-SP11-02	✻	•	38	40	47	119	70	219	(BSPT)RC1/4	1.498	SPGT1104**	
ZTD03-390-XP40-SP11-02	✻	•	39	40	47	122	70	222	(BSPT)RC1/4	1.554	SPGT1104**	
ZTD03-400-XP40-SP11-02	✻	•	40	40	47	125	70	225	(BSPT)RC1/4	1.667	SPGT1104**	
ZTD03-410-XP40-SP11-02	✻	•	41	40	47	128	70	228	(BSPT)RC1/4	1.653	SPGT1104**	
ZTD03-420-XP40-SP14-02	✻	•	42	40	52	131	70	241	(BSPT)RC1/4	1.903	SPGT1405**	
ZTD03-430-XP40-SP14-02	✻	•	43	40	52	134	70	244	(BSPT)RC1/4	1.951	SPGT1405**	
ZTD03-440-XP40-SP14-02	✻	•	44	40	52	137	70	247	(BSPT)RC1/4	2.039	SPGT1405**	
ZTD03-450-XP40-SP14-02	✻	•	45	40	52	140	70	250	(BSPT)RC1/4	2.12	SPGT1405**	

• Ex stock ○ On demand

✻ Internal cooling

System code > C7 Grade selection > C5 Technical info > C165 Cutting data > C22

Article	✻	Stock	Dimensions [mm]								Inserts	Adapter
			ØD	ØD1	ØD2	L1	L2	L	d	kg		
ZTD03-460-XP40-SP14-02	✻	•	46	40	52	143	70	253	(BSPT)RC1/4	2.186	SPGT1405**	
ZTD03-470-XP40-SP14-02	✻	•	47	40	52	146	70	256	(BSPT)RC1/4	2.264	SPGT1405**	
ZTD03-480-XP40-SP14-02	✻	•	48	40	52	149	70	259	(BSPT)RC1/4	2.341	SPGT1405**	
ZTD03-490-XP40-SP14-02	✻	•	49	40	52	152	70	262	(BSPT)RC1/4	2.43	SPGT1405**	
ZTD03-500-XP40-SP14-02	✻	•	50	40	52	155	70	265	(BSPT)RC1/4	2.52	SPGT1405**	

• Ex stock ○ On demand

✻ Internal cooling

Spare parts

	Insert	SPGT0502**	SPGT0602**	SPGT07T3**	SPGT0904**	SPGT1104**	SPGT1405**
	Grub screw					M6x6 (7.0Nm)	M8x8 (10.2Nm)
	Screw	I60M2x4,3 (0.5Nm)	I60M2,2x5,5 (0.8Nm)	I60M2.5*6.5 (1.0Nm)	I60M3,5x8 (2.7Nm)	I60M4x10 (3.4Nm)	I60M5x13 (6.7Nm)
	Wrench	WT06IP	WT07IP	WT07IP	WT15IP	WT15IP	WT20IP

Insert



C19

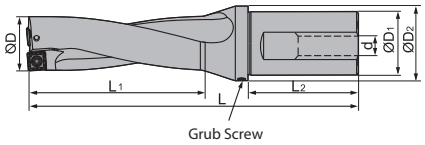
System code > C7 Grade selection > C5 Technical info > C165 Cutting data > C22

Indexable drills series

ZTD04







Article	✻	Stock	Dimensions [mm]								Inserts	Adapter
			ØD	ØD1	ØD2	L1	L2	L	d	kg		
ZTD04-130-XP20-SP05-02	✻	•	13	20	25	57	50	124	M13×1	0.185	SPGT0502**	ZTD-XP20-Thin
ZTD04-140-XP20-SP05-02	✻	○	14	20	25	61	50	128	M13×1	0.195	SPGT0502**	ZTD-XP20-Thin
ZTD04-150-XP20-SP05-02	✻	○	15	20	25	65	50	132	M13×1	0.205	SPGT0502**	ZTD-XP20-Thin
ZTD04-160-XP20-SP05-02	✻	•	16	20	25	69	50	136	M13×1	0.216	SPGT0502**	ZTD-XP20-Thin
ZTD04-170-XP25-SP06-02	✻	•	17	25	32	73	56	151	M16×1,5	0.333	SPGT0602**	ZTD-XP25-Thin
ZTD04-180-XP25-SP06-02	✻	•	18	25	32	77	56	155	M16×1,5	0.347	SPGT0602**	ZTD-XP25-Thin
ZTD04-190-XP25-SP06-02	✻	•	19	25	32	81	56	159	M16×1,5	0.362	SPGT0602**	ZTD-XP25-Thin
ZTD04-200-XP25-SP06-02	✻	•	20	25	32	85	56	163	M16×1,5	0.381	SPGT0602**	ZTD-XP25-Thin
ZTD04-210-XP25-SP06-02	✻	•	21	25	32	89	56	167	M16×1,5	0.4	SPGT0602**	ZTD-XP25-Thin
ZTD04-220-XP25-SP07-02	✻	•	22	25	32	93	56	171	M16×1,5	0.391	SPGT07T3**	ZTD-XP25-Thin
ZTD04-230-XP25-SP07-02	✻	•	23	25	32	97	56	175	M16×1,5	0.484	SPGT07T3**	ZTD-XP25-Thin
ZTD04-240-XP25-SP07-02	✻	•	24	25	32	101	56	179	M16×1,5	0.513	SPGT07T3**	ZTD-XP25-Thin
ZTD04-250-XP25-SP07-02	✻	•	25	25	32	105	56	183	M16×1,5	0.494	SPGT07T3**	ZTD-XP25-Thin
ZTD04-260-XP25-SP07-02	✻	•	26	25	32	109	56	187	M16×1,5	0.535	SPGT07T3**	ZTD-XP25-Thin
ZTD04-270-XP25-SP07-02	✻	•	27	25	32	113	56	191	M16×1,5	0.582	SPGT07T3**	ZTD-XP25-Thin
ZTD04-280-XP32-SP09-02	✻	•	28	32	37	117	60	202	M22×2	0.653	SPGT0904**	ZTD-XP32-Thin
ZTD04-290-XP32-SP09-02	✻	•	29	32	37	121	60	206	M22×2	0.846	SPGT0904**	ZTD-XP32-Thin
ZTD04-300-XP32-SP09-02	✻	•	30	32	37	125	60	210	M22×2	0.893	SPGT0904**	ZTD-XP32-Thin
ZTD04-310-XP32-SP09-02	✻	•	31	32	37	129	60	214	M22×2	0.914	SPGT0904**	ZTD-XP32-Thin
ZTD04-320-XP32-SP09-02	✻	•	32	32	37	133	60	218	M22×2	0.966	SPGT0904**	ZTD-XP32-Thin
ZTD04-330-XP32-SP09-02	✻	•	33	32	37	137	60	222	M22×2	1.016	SPGT0904**	ZTD-XP32-Thin
ZTD04-340-XP40-SP11-02	✻	•	34	40	47	141	70	241	(BSPT)RC1/4	1.46	SPGT1104**	
ZTD04-350-XP40-SP11-02	✻	•	35	40	47	145	70	245	(BSPT)RC1/4	1.52	SPGT1104**	
ZTD04-360-XP40-SP11-02	✻	•	36	40	47	149	70	249	(BSPT)RC1/4	1.579	SPGT1104**	
ZTD04-370-XP40-SP11-02	✻	•	37	40	47	153	70	253	(BSPT)RC1/4	1.592	SPGT1104**	
ZTD04-380-XP40-SP11-02	✻	•	38	40	47	157	70	257	(BSPT)RC1/4	1.801	SPGT1104**	
ZTD04-390-XP40-SP11-02	✻	•	39	40	47	161	70	261	(BSPT)RC1/4	1.801	SPGT1104**	
ZTD04-400-XP40-SP11-02	✻	•	40	40	47	165	70	265	(BSPT)RC1/4	1.874	SPGT1104**	
ZTD04-410-XP40-SP11-02	✻	•	41	40	47	169	70	269	(BSPT)RC1/4	1.861	SPGT1104**	
ZTD04-420-XP40-SP14-02	✻	•	42	40	52	173	70	283	(BSPT)RC1/4	2.168	SPGT1405**	
ZTD04-430-XP40-SP14-02	✻	•	43	40	52	177	70	287	(BSPT)RC1/4	2.17	SPGT1405**	
ZTD04-440-XP40-SP14-02	✻	•	44	40	52	181	70	291	(BSPT)RC1/4	2.31	SPGT1405**	
ZTD04-450-XP40-SP14-02	✻	•	45	40	52	185	70	295	(BSPT)RC1/4	2.421	SPGT1405**	

• Ex stock ○ On demand

✻ Internal cooling

System code > C7 Grade selection > C5 Technical info > C165 Cutting data > C22

Article	✻	Stock	Dimensions [mm]								Inserts	Adapter
			ØD	ØD1	ØD2	L1	L2	L	d	kg		
ZTD04-460-XP40-SP14-02	✻	•	46	40	52	189	70	299	(BSPT)RC1/4	2.507	SPGT1405**	
ZTD04-470-XP40-SP14-02	✻	•	47	40	52	193	70	303	(BSPT)RC1/4	2.612	SPGT1405**	
ZTD04-480-XP40-SP14-02	✻	•	48	40	52	197	70	307	(BSPT)RC1/4	2.66	SPGT1405**	
ZTD04-490-XP40-SP14-02	✻	•	49	40	52	201	70	311	(BSPT)RC1/4	2.836	SPGT1405**	
ZTD04-500-XP40-SP14-02	✻	•	50	40	52	205	70	315	(BSPT)RC1/4	2.954	SPGT1405**	

• Ex stock ○ On demand

✻ Internal cooling

Spare parts

	Insert	SPGT0502**	SPGT0602**	SPGT07T3**	SPGT0904**	SPGT1104**	SPGT1405**
	Grub screw					M6x6 (7.0Nm)	M8x8 (10.2Nm)
	Screw	I60M2x4,3 (0.5Nm)	I60M2.5x6.5 (1.0Nm)	I60M2.5×6.5 (1.0Nm)	I60M3,5x8 (2.7Nm)	I60M4x10 (3.4Nm)	I60M5x13 (6.7Nm)
	Wrench	WT06IP	WT07IP	WT07IP	WT15IP	WT15IP	WT20IP

Insert



C19

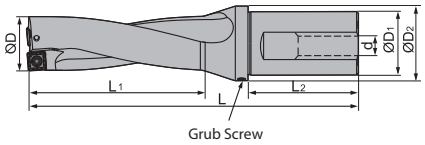
System code C7 | Grade selection C5 | Technical info C165 | Cutting data C22

Indexable drills series

ZTD05







Article	✻	Stock	Dimensions [mm]								Inserts	Adapter
			ØD	ØD1	ØD2	L1	L2	L	d	kg		
ZTD05-170-XP25-SP06-02	✻	•	17	25	32	90	56	168	M13×1	0.374	SPGT0602**	ZTD-XP25-Thin
ZTD05-180-XP25-SP06-02	✻	•	18	25	32	95	56	173	M13×1	0.394	SPGT0602**	ZTD-XP25-Thin
ZTD05-190-XP25-SP06-02	✻	•	19	25	32	100	56	178	M13×1	0.415	SPGT0602**	ZTD-XP25-Thin
ZTD05-200-XP25-SP06-02	✻	•	20	25	32	105	56	183	M13×1	0.44	SPGT0602**	ZTD-XP25-Thin
ZTD05-210-XP25-SP06-02	✻	•	21	25	32	110	56	188	M16×1,5	0.466	SPGT0602**	ZTD-XP25-Thin
ZTD05-220-XP25-SP07-02	✻	•	22	25	32	115	56	193	M16×1,5	0.476	SPGT07T3**	ZTD-XP25-Thin
ZTD05-230-XP25-SP07-02	✻	○	23	25	32	120	56	198	M16×1,5	0.507	SPGT07T3**	ZTD-XP25-Thin
ZTD05-240-XP25-SP07-02	✻	•	24	25	32	125	56	203	M16×1,5	0.542	SPGT07T3**	ZTD-XP25-Thin
ZTD05-250-XP25-SP07-02	✻	•	25	25	32	130	56	208	M16×1,5	0.561	SPGT07T3**	ZTD-XP25-Thin
ZTD05-260-XP25-SP07-02	✻	•	26	25	32	135	56	213	M16×1,5	0.613	SPGT07T3**	ZTD-XP25-Thin
ZTD05-270-XP25-SP07-02	✻	•	27	25	32	140	56	218	M16×1,5	0.665	SPGT07T3**	ZTD-XP25-Thin
ZTD05-280-XP32-SP09-02	✻	•	28	32	37	145	60	230	M16×1,5	0.891	SPGT0904**	ZTD-XP32-Thin
ZTD05-290-XP32-SP09-02	✻	•	29	32	37	150	60	235	M16×1,5	0.965	SPGT0904**	ZTD-XP32-Thin
ZTD05-300-XP32-SP09-02	✻	•	30	32	37	155	60	240	M16×1,5	0.959	SPGT0904**	ZTD-XP32-Thin
ZTD05-310-XP32-SP09-02	✻	•	31	32	37	160	60	245	M16×1,5	1.042	SPGT0904**	ZTD-XP32-Thin
ZTD05-320-XP32-SP09-02	✻	•	32	32	37	165	60	250	M22×2	1.11	SPGT0904**	ZTD-XP32-Thin
ZTD05-330-XP32-SP09-02	✻	•	33	32	37	170	60	255	M22×2	1.117	SPGT0904**	ZTD-XP32-Thin
ZTD05-340-XP40-SP11-02	✻	•	34	40	47	175	70	275	M22×2	1.57	SPGT1104**	
ZTD05-350-XP40-SP11-02	✻	•	35	40	47	180	70	280	M22×2	1.65	SPGT1104**	
ZTD05-360-XP40-SP11-02	✻	•	36	40	47	185	70	285	M22×2	1.712	SPGT1104**	
ZTD05-370-XP40-SP11-02	✻	•	37	40	47	190	70	290	M22×2	1.802	SPGT1104**	
ZTD05-380-XP40-SP11-02	✻	•	38	40	47	195	70	295	(BSPT)RC1/4	1.873	SPGT1104**	
ZTD05-390-XP40-SP11-02	✻	•	39	40	47	200	70	300	(BSPT)RC1/4	1.962	SPGT1104**	
ZTD05-400-XP40-SP11-02	✻	•	40	40	47	205	70	305	(BSPT)RC1/4	2.068	SPGT1104**	
ZTD05-410-XP40-SP11-02	✻	•	41	40	47	210	70	310	(BSPT)RC1/4	2.167	SPGT1104**	
ZTD05-420-XP40-SP14-02	✻	•	42	40	52	215	70	325	(BSPT)RC1/4	2.39	SPGT1405**	
ZTD05-430-XP40-SP14-02	✻	•	43	40	52	220	70	330	(BSPT)RC1/4	2.502	SPGT1405**	
ZTD05-440-XP40-SP14-02	✻	•	44	40	52	225	70	335	(BSPT)RC1/4	2.612	SPGT1405**	
ZTD05-450-XP40-SP14-02	✻	•	45	40	52	230	70	340	(BSPT)RC1/4	2.733	SPGT1405**	
ZTD05-460-XP40-SP14-02	✻	•	46	40	52	235	70	345	(BSPT)RC1/4	2.854	SPGT1405**	
ZTD05-470-XP40-SP14-02	✻	•	47	40	52	240	70	350	(BSPT)RC1/4	2.894	SPGT1405**	
ZTD05-480-XP40-SP14-02	✻	•	48	40	52	245	70	355	(BSPT)RC1/4	3.109	SPGT1405**	
ZTD05-490-XP40-SP14-02	✻	•	49	40	52	250	70	360	(BSPT)RC1/4	3.271	SPGT1405**	
ZTD05-500-XP40-SP14-02	✻	•	50	40	52	255	70	365	(BSPT)RC1/4	3.425	SPGT1405**	

• Ex stock ○ On demand

✻ Internal cooling

System code > C7 Grade selection > C5 Technical info > C165 Cutting data > C22

Spare parts

	Insert	SPGT0602**	SPGT07T3**	SPGT0904**	SPGT1104**	SPGT1405**
	Grub screw				M6x6 (7.0Nm)	M8x8 (10.2Nm)
	Screw	I60M2.5x6.5 (1.0Nm)	I60M2.5×6.5 (1.0Nm)	I60M3,5x8 (2.7Nm)	I60M4x10 (3.4Nm)	I60M5x13 (6.7Nm)
	Wrench	WT07IP	WT06IP	WT15IP	WT15IP	WT20IP

Insert



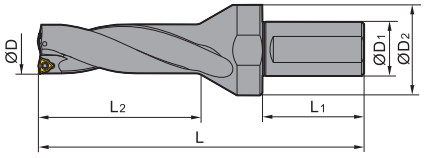
C19

System code > C7 Grade selection > C5 Technical info > C165 Cutting data > C22

Indexable drills series

ZD03





Article	✻	Stock	Dimensions [mm]							Inserts
			ØD	ØD1	ØD2	L1	L2	L	kg	
ZD03-160-XP25-WC03-02	✻	•	16	25	32	56	52	129	0.33	WCMX0302**
ZD03-170-XP25-WC03-02	✻	•	17	25	32	56	55	133	0.33	WCMX0302**
ZD03-180-XP25-WC03-02	✻	•	18	25	32	56	58	137	0.35	WCMX0302**
ZD03-190-XP25-WC03-02	✻	•	19	25	32	56	61	140	0.36	WCMX0302**
ZD03-200-XP25-WC03-02	✻	•	20	25	32	56	64	143	0.37	WCMX0302**
ZD03-210-XP25-WC04-02	✻	•	21	25	45	56	67	153	0.51	WCMX0402**
ZD03-220-XP25-WC04-02	✻	•	22	25	45	56	70	156	0.54	WCMX0402**
ZD03-230-XP25-WC04-02	✻	•	23	25	45	56	73	159	0.55	WCMX0402**
ZD03-240-XP25-WC04-02	✻	•	24	25	45	56	76	162	0.57	WCMX0402**
ZD03-250-XP25-WC04-02	✻	•	25	25	45	56	79	165	0.6	WCMX0402**
ZD03-260-XP32-WC05-02	✻	•	26	32	55	60	83	176	0.93	WCMX0503**
ZD03-270-XP32-WC05-02	✻	•	27	32	55	60	86	180	0.97	WCMX0503**
ZD03-280-XP32-WC05-02	✻	•	28	32	55	60	89	184	1.01	WCMX0503**
ZD03-290-XP32-WC05-02	✻	•	29	32	55	60	92	188	1.05	WCMX0503**
ZD03-300-XP32-WC05-02	✻	•	30	32	55	60	95	192	1.08	WCMX0503**
ZD03-310-XP40-WC06-02	✻	•	31	40	60	70	98	203	1.44	WCMX06T3**
ZD03-320-XP40-WC06-02	✻	•	32	40	60	70	101	206	1.48	WCMX06T3**
ZD03-330-XP40-WC06-02	✻	•	33	40	60	70	104	209	1.52	WCMX06T3**
ZD03-340-XP40-WC06-02	✻	•	34	40	60	70	107	212	1.55	WCMX06T3**
ZD03-350-XP40-WC06-02	✻	•	35	40	60	70	110	215	1.61	WCMX06T3**
ZD03-360-XP40-WC06-02	✻	•	36	40	60	70	113	218	1.66	WCMX06T3**
ZD03-370-XP40-WC06-02	✻	•	37	40	60	70	116	221	1.71	WCMX06T3**
ZD03-380-XP40-WC06-02	✻	•	38	40	60	70	119	225	1.76	WCMX06T3**
ZD03-390-XP40-WC06-02	✻	•	39	40	60	70	122	228	1.82	WCMX06T3**
ZD03-400-XP40-WC06-02	✻	•	40	40	60	70	125	231	1.93	WCMX06T3**
ZD03-410-XP40-WC06-02	✻	•	41	40	60	70	128	234	1.94	WCMX06T3**
ZD03-420-XP40-WC08-02	✻	•	42	40	60	70	131	239	2.18	WCMX0804**
ZD03-430-XP40-WC08-02	✻	•	43	40	60	70	134	242	2.245	WCMX0804**
ZD03-440-XP40-WC08-02	✻	•	44	40	60	70	137	245	2.34	WCMX0804**
ZD03-450-XP40-WC08-02	✻	•	45	40	60	70	140	248	2.34	WCMX0804**
ZD03-460-XP40-WC08-02	✻	•	46	40	60	70	143	251	2.49	WCMX0804**
ZD03-470-XP40-WC08-02	✻	•	47	40	60	70	146	253	2.88	WCMX0804**
ZD03-480-XP40-WC08-02	✻	•	48	40	70	70	149	255	2.55	WCMX0804**

• Ex stock ○ On demand

✻ Internal cooling

System code > C7 Grade selection > C5 Technical info > C165 Cutting data > C22

Article	✻	Stock	Dimensions [mm]							Inserts
			ØD	ØD1	ØD2	L1	L2	L	kg	
ZD03-490-XP40-WC08-02	✻	○	49	40	70	70	152	257	2.619	WCMX0804**
ZD03-500-XP40-WC08-02	✻	•	50	40	70	70	155	259	2.62	WCMX0804**
ZD03-510-XP40-WC08-02	✻	○	51	40	70	70	158	261	2.62	WCMX0804**
ZD03-520-XP40-WC08-02	✻	○	52	40	70	70	161	263	2.808	WCMX0804**
ZD03-530-XP40-WC08-02	✻	○	53	40	70	70	164	265	2.906	WCMX0804**
ZD03-540-XP40-WC08-02	✻	•	54	40	70	70	167	267	2.983	WCMX0804**
ZD03-550-XP40-WC08-02	✻	○	55	40	70	70	170	269	3.126	WCMX0804**
ZD03-560-XP40-WC08-02	✻	○	56	40	70	70	173	271	3.157	WCMX0804**
ZD03-580-XP40-WC08-02	✻	•	58	40	70	70	179	275	3.501	WCMX0804**

• Ex stock ○ On demand

✻ Internal cooling

Spare parts

	Insert	WCMX0302**	WCMX0402**	WCMX0503**	WCMX06T3**	WCMX0804**
	Screw	I60M2.5x6.5 (1.0Nm)	I60M2.5x6.5T (1.0Nm)	I60M3x7 (1.8Nm)	I60M3x7 (1.8Nm)	I60M3.5x10.4 (2.7Nm)
	Wrench	WT06IP	WT07IP	WT15IP	WT15IP	WT20IP

Insert



Medium Cut

C20

System code C7 | Grade selection C5 | Technical info C165 | Cutting data C22

Indexable drills ISO code – inserts

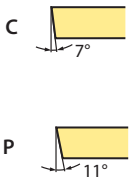
W	C	M	X	08	04	12	R	–	PG
1	2	3	4	5	6	7	8		9

Insert shape



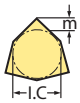
1

Clearance angle



2

Tolerance class





Code	I.C [mm]	m [mm]	S [mm]
G	±0,025	±0,025	±0,130
M	±0,05–0,13	±0,08–0,18	±0,130

3

Fastening features (metric)

Insert shape



T

X Special

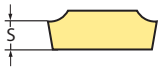
4

Cutting edge length l [mm]

I.C [mm]	Insert shape S	Insert shape W
3,8		**03**
4,3		**04**
5,4		**05**
6,35	**06**	
6,5		**06**
8,0		**08**
8,7	**08**	
9,252	**09**	
12,7	**12**	

5

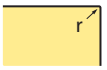
Insert thickness S [mm]



Code	S	Code	S
00	0,79	**05**	5,56
T0	0,99	**T5**	5,95
01	1,59	**06**	6,35
T1	1,98	**T6**	6,75
02	2,38	**07**	7,94
T2	2,58	**09**	9,52
03	3,18	**T9**	9,72
T3	3,97	**11**	11,11
04	4,76	**12**	12,70
T4	4,96		

6

Nose radius r [mm]



Code	r
04	0,4
08	0,8
12	1,2

7

Rotation direction

Code	Description
R	Right
L	Left

8

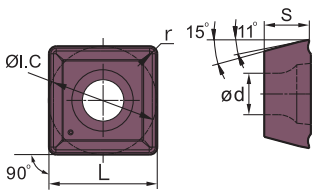
Chip breaker overview (on page C3)

9

SPGT	L	I.C	S	d
05 02	5	5	2.38	2.2
06 02	6	6	2.38	2.6
07 T3	7.94	7.94	3.97	2.8
09 04	9.8	9.8	4.76	4.2
11 04	11.5	11.5	4.76	4.4
14 05	14.3	14.3	5.2	5.75

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Drilling inserts

SP** drilling insert			HC[1] (CVD)		HC[1] (PVD)			HW
		P						
		M						
		K						
		N						
		S						
		H						
ISO		r	YB6338	YBD252	YBG202	YBG205	YBG212	YD201
PM	**SPGT050204-PM**	0.4	●			●	●	
	SPGT060204-PM	0.4	●			●	●	
	SPGT07T308-PM	0.8	●			●	●	
	SPGT090408-PM	0.8	●			●	●	
	SPGT110408-PM	0.8	●			●	●	
	SPGT140512-PM	1.2	●			●	●	
EM	**SPGT050204-EM**	0.4				●	●	
	SPGT060204-EM	0.4				●	●	
	SPGT07T308-EM	0.8				●	●	
	SPGT090408-EM	0.8				●	●	
	SPGT110408-EM	0.8				●	●	
	SPGT140512-EM	1.2				●	●	

● Ex stock ○ On demand

HC[1] Coated carbide
HW Uncoated carbide

Tool holder

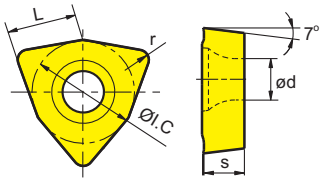
ZTD02	ZTD03	ZTD04	ZTD05
			
C8	C10	C12	C14

System code C18 | Grade selection C5 | Technical info C165 | Cutting data C22

WCMX	L	I.C	S	d
03 02	3.8	5.56	2.38	2.8
04 02	4.3	6.35	2.38	3.1
05 03	5.4	7.94	3.18	3.2
06 T3	6.5	9.525	3.97	3.7
08 04	8.7	12.7	4.76	4.3

Ideal machining conditions
Normal machining conditions
Unfavourable machining conditions

Drilling inserts

WC** drilling insert			HC¹ (CVD)		HC¹ (PVD)			HW
	P							
	M							
	K							
	N							
	S							
	H							
ISO		r	YB6338	YBD252	YBG202	YBG205	YBG212	YD201
53 	**WCMX030208R-53**	0.8		●	●			
	WCMX040208R-53	0.8		●	●			○
	WCMX050308R-53	0.8		●	●			
	WCMX06T308R-53	0.8		●	●			○
	WCMX080412R-53	1.2		●	●			
D 	**WCMX050308-D**	0.8		○				
	WCMX06T308-D	0.8		○				
	WCMX080412-D	1.2		●				
PG 	**WCMX030208R-PG**	0.8			●			
	WCMX040208R-PG	0.8			●			
	WCMX050308R-PG	0.8		○	●	○		
	WCMX06T308R-PG	0.8			●			
	WCMX080412R-PG	1.2			●			

● Ex stock ○ On demand

HC¹ Coated carbide
HW Uncoated carbide

Tool holder
ZD03



C16

System code C18 Grade selection C5 Technical info C165 Cutting data C22

Notes

Indexable drills

Material group		Composition / structure / heat treatment		HB	Machining group	ZTD* SPGT05/06		ZTD* SPGT07/09	
						v_c [m/min]	f [mm]	v_c [m/min]	f [mm]
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	200-300	0,05-0,08	200-300	0,06-0,11
		approx. 0,45 % C	annealed	190	2	200-300	0,05-0,08	200-300	0,06-0,11
		approx. 0,45 % C	tempered	250	3	200-300	0,05-0,08	200-300	0,06-0,11
		approx. 0,75 % C	annealed	270	4	200-300	0,05-0,08	200-300	0,06-0,11
		approx. 0,75 % C	tempered	300	5	200-300	0,05-0,08	200-300	0,06-0,11
	Low-alloyed steel		annealed	180	6	140-220	0,05-0,08	140-220	0,07-0,12
			tempered	275	7	140-220	0,05-0,08	140-220	0,07-0,12
			tempered	300	8	140-220	0,05-0,08	140-220	0,07-0,12
			tempered	350	9	140-220	0,05-0,08	140-220	0,07-0,12
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	120-180	0,05-0,08	120-180	0,07-0,12
			hardened and tempered	325	11	120-180	0,05-0,08	120-180	0,07-0,12
M	Stainless steel	ferritic/martensitic	annealed	200	12	110-230	0,05-0,08	110-230	0,06-0,11
		martensitic	tempered	240	13	110-230	0,05-0,08	110-230	0,06-0,11
		austenitic	quench hardened	180	14	110-230	0,05-0,08	110-230	0,06-0,11
		austenitic-ferritic		230	15	110-230	0,05-0,08	110-230	0,06-0,11
K	Grey cast iron	perlitic/ferritic		180	16	170-240	0,05-0,08	170-240	0,08-0,14
		perlitic (martensitic)		260	17	170-240	0,05-0,08	170-240	0,08-0,14
	Cast iron with spheroidal graphite	ferritic		160	18	130-200	0,05-0,08	130-200	0,08-0,14
		perlitic		250	19	130-200	0,05-0,08	130-200	0,08-0,14
	Malleable cast iron	ferritic		130	20	120-220	0,05-0,08	120-220	0,08-0,14
		perlitic		230	21	120-220	0,05-0,08	120-220	0,08-0,14
N	Aluminium wrought alloys	cannot be hardened		60	22				
		hardenable	hardened	100	23				
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24				
		≤ 12 % Si, hardenable	hardened	90	25				
		> 12 % Si, cannot be hardened		130	26				
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27				
		CuZn, CuSnZn		90	28				
		CuSn, Pb-free copper, electrolytic copper		100	29				
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30				
			hardened	280	31				
		Ni or Co bass	annealed	250	32				
			hardened	350	33				
			cast	320	34				
	Titanium alloys	pure titanium		R_m 400	35				
		α and β alloys	hardened	R_m 1050	36				
H	Hardened steel		hardened and tempered	55 HRC	37				
			hardened and tempered	60 HRC	38				
	Hard cast iron		cast	400	39				
	Hardened cast iron		hardened and tempered	55 HRC	40				
X	Non-metallic materials	Thermoplasts			41				
		Thermosetting plastics			42				
		Plastic, glass-fibre reinforced GFRP			43				
		Plastic, carbon fibre reinforced CFRP			44				
		Graphite			45				
		Wood			46				

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
With hole depths of 5xD adjust the cutting data accordingly to the application.
For examples of material for cutting tool groups view page D22.

	ZTD*		ZD03		ZD03		
	SPGT11/14		WCMX03-05		WCMX06-08		
	v_c [m/min]	f [mm]	v_c [m/min]	f [mm]	v_c [m/min]	f [mm]	
	200-300	0,08-0,14	200-300	0,05-0,08	200-300	0,06-0,11	
	200-300	0,08-0,14	200-300	0,05-0,08	200-300	0,06-0,11	
	200-300	0,08-0,14	200-300	0,05-0,08	200-300	0,06-0,11	
	200-300	0,08-0,14	200-300	0,05-0,08	200-300	0,06-0,11	
	200-300	0,08-0,14	200-300	0,05-0,08	200-300	0,06-0,11	
	140-220	0,09-0,16	140-220	0,05-0,08	140-220	0,07-0,12	
	140-220	0,09-0,16	140-220	0,05-0,08	140-220	0,07-0,12	
	140-220	0,09-0,16	140-220	0,05-0,08	140-220	0,07-0,12	
	140-220	0,09-0,16	140-220	0,05-0,08	140-220	0,07-0,12	
	120-180	0,09-0,16	120-180	0,05-0,08	120-180	0,07-0,12	
	120-180	0,09-0,16	120-180	0,05-0,08	120-180	0,07-0,12	
	110-230	0,08-0,14	110-230	0,05-0,08	110-230	0,06-0,11	
	110-230	0,08-0,14	110-230	0,05-0,08	110-230	0,06-0,11	
	110-230	0,08-0,14	110-230	0,05-0,08	110-230	0,06-0,11	
	110-230	0,08-0,14	110-230	0,05-0,08	110-230	0,06-0,11	
	170-240	0,12-0,21	170-240	0,05-0,08	170-240	0,08-0,14	
	170-240	0,12-0,21	170-240	0,05-0,08	170-240	0,08-0,14	
	130-200	0,12-0,21	130-200	0,05-0,08	130-200	0,08-0,14	
	130-200	0,12-0,21	130-200	0,05-0,08	130-200	0,08-0,14	
	120-220	0,12-0,21	120-220	0,05-0,08	120-220	0,08-0,14	
	120-220	0,12-0,21	120-220	0,05-0,08	120-220	0,08-0,14	

Notes

Solid carbide drills

Product overview	**C26**
Grade overview	**C27**
System code – solide carbide drills	**C28-C29**
SU series	**C31-C72**
SL/SP series	**C73-C92**
ST series	**C93-C104**
SH series	**C106**
SC series	**C107-C110**
PA series	**C111-C114**
PC series	**C116-C118**
NC-tapping device – SC series	**C119-C121**
Recommended cutting data	**C122-C126**
Trouble shooting	**C166-C168**
Technical information	**C170-C172**
Forms nonstandard order	**C178-C180**

C

Solid carbide drills Product overview

	Products	Solid Carbide Drills	L/D	✻	Ø	Application						Type	Page
						P	M	K	N	S	H		
SU	1534SU03		3xD		0.9-20	✓	✓	✓				Twist drills	C32
	1534SU03C		3xD	✻	3-20	✓	✓	✓				Twist drills	C32
	1634SU03C		3xD	✻	3-20	✓	✓	✓				Twist drills	C56
	1734SU03C		3xD	✻	3-20	✓	✓	✓				Twist drills	C64
	1536SU05		5xD		2-20	✓	✓	✓				Twist drills	C43
	1536SU05C		5xD	✻	3-20	✓	✓	✓				Twist drills	C43
	1636SU05C		5xD	✻	3-20	✓	✓	✓				Twist drills	C60
	1736SU05C		5xD	✻	3-20	✓	✓	✓				Twist drills	C68
	1538SU08C		8xD	✻	3-18	✓	✓	✓				Twist drills	C53
	1557SU03		3xD		M4-M16	✓	✓	✓				Step drills	C72
SL SP	1588SL10C		10xD	✻	3-14	✓	✓	✓	✓	✓		Deep hole drills	C74
	1588SL12C		12xD	✻	3-21	✓	✓	✓	✓	✓		Deep hole drills	C77
	1588SL15C		15xD	✻	3-14	✓	✓	✓	✓	✓		Deep hole drills	C81
	1588SL20C		20xD	✻	3-14	✓	✓	✓	✓	✓		Deep hole drills	C84
	1588SL30C		30xD	✻	3-10	✓	✓	✓	✓	✓		Deep hole drills	C87
	1534SP03C		3xD	✻	3.03-20.03	✓	✓	✓	✓	✓		Pilot drills	C89
ST	1534ST03C		3xD	✻	3-20	✓	✓			✓		Twist drills	C94
	1536ST05C		5xD	✻	3-20	✓	✓			✓		Twist drills	C98
	1636ST05C		5xD	✻	3-20	✓	✓			✓		Twist drills	C102
SH	1534SH03		3xD		3-16						✓	Twist drills	C106
SC	1105SC03		3xD		2-16				✓			Twist drills	C107
	1101SC05		5xD		2-16				✓			Twist drills	C110
PA	1165PA03		3xD		3-20				✓			Three-lips drills	C111
PC	1576PC05		5xD		4-20			✓				Straight flute drills	C116
	1576PC05C		5xD	✻	4-20			✓				Straight flute drills	C116
	1579PC15C		15xD	✻	5-14			✓				Straight flute drills	C118
SC*	1143SC90		-		5-20	✓	✓	✓	✓			Centuring drills	C119
	1143SC120		-	✻	5-20	✓	✓	✓	✓			Centuring drills	C120

✓ Very suitable ✓ Suitable

✻ With internal cooling SC*: Centuring drills

Coated cemented carbide PVD

Grade	Grade description
KDG303	PVD coated P10–P20/M10–M20/K10–K20 carbide grade for steel, stainless steel and cast iron. Good wear resistance and toughness for a wide application field.

Uncoated cemented carbide

Grade	Grade description
YK20F	Uncoated K20 carbide substrate for steel, cast iron and non ferrous materials.
YK30F	Uncoated K30 carbide substrate for steel, stainless steel, cast iron and non ferrous materials.

Solid carbide drills

System code – solid carbide drills

1	5	3	6	SU	05	(C)	–	0850	(S)
1	2	3	4	5	6	7		8	9

Type	
Code	Description
1	Forets

1

Shank type	
Code	Description
1	Straight shank
2	Square shank DIN 10
3	Double flattened straight shank DIN 1809
5	Straight shank DIN 6535 HA
6	Weldon shank DIN 6535 HB
7	Whistle Notch shank DIN 6535 HE
9	Morse taper shank

2

Drill type	
Code	Description
0	Twist drill
3	Universal twist drill
4	NC tapping device
5	Step drill
6	Three-lips drill
7	Straight flute drill
8	Deep hole drill

3

Tool length	
Code	Description
1	DIN 338
2	DIN 1897
3	QJ/ZZQ(TO)01.001.002
4	DIN 6537 K
5	DIN 6539
6	DIN 6537 L
7	Factory standard ZCC-C
8	Factory standard ZCC-D
9	Factory standard ZCC-E

4

Application	
Code	Description
SU	Twist drill for general machining
SUK	Twist drill for cast iron
SL	Twist drill for deep hole drilling
SLK	Deep hole drill for cast iron
SP	Pilot drill
ST	Twist drill for soft steel and stainless steel
SH	Twist drill for hardened materials
SC	Twist drill for non-ferrous metals and cast iron
PA	Three-lips drill for non-ferrous metals and cast iron
PC	Straight flute drill for non-ferrous metals and cast iron

5

L/D relation		Angle	
Drill		NC tapping device	
Code	Description	Code	Description
03	3 x D	**90**	90°
05	5 x D	**120**	120°
08	8 x D		
10	10 x D		
12	12 x D		
15	15 x D		
20	20 x D		
30	30 x D		

6

With inner cooling

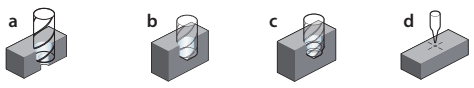
7

Bore diameter [mm]	
Code	Description
0200	2,0
0850	8,5
1800	18,0
...	

8

Shank diameter [mm]	
Code	Description
S	4,0

9



a Boring **b** Drilling **c** Profile drilling **d** Centering

Notes



1538SU

SU series

Twist drills for general applications

- For high-speed machining of steel and stainless steel.
- Longer tool life with AlTiN coating.
- Diameter range 0.9–20.0 mm (3xD, 5xD, 8xD)



S cut

SUK series

Twist drills for machining of cast iron

- Special cut for cast iron with ductile iron and malleable cast iron.
- Improved tool life due to impact resistant cutting edges.



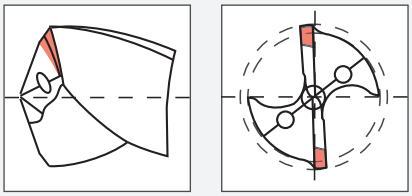
S cut

For cast iron

SUK

Twist drill

Form D: Cut for cast iron



SUK: all articles on demand

Please add **K** when ordering:

1534SUK03-0100

SU(K) drill 3xD | General machining | Add K (SUK) to the code for use on Cast Iron

1534SU03/1534SU03C



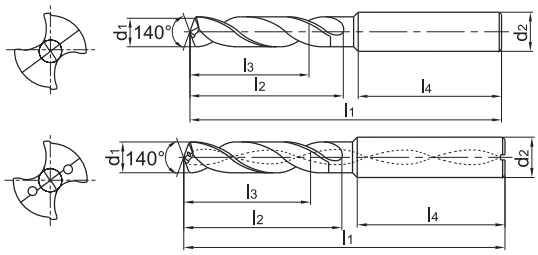
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534SU03-0090S		0.9	4	47	4.2	3.4	37.9	○
1534SU03-0100S		1	4	47	4.7	3.8	37.6	●
1534SU03-0105S		1.05	4	47	4.9	3.9	37.5	●
1534SU03-0110S		1.1	4	47	5.2	4.1	37.2	○
1534SU03-0115S		1.15	4	47	5.4	4.3	37.1	○
1534SU03-0120S		1.2	4	47	5.6	4.5	37	●
1534SU03-0125S		1.25	4	47	5.9	4.7	36.8	○
1534SU03-0130S		1.3	4	47	6.1	4.9	36.6	●
1534SU03-0135S		1.35	4	47	6.3	5.1	36.5	○
1534SU03-0140S		1.4	4	47	6.6	5.3	36.3	○
1534SU03-0145S		1.45	4	47	6.8	5.4	36.2	○
1534SU03-0147S		1.47	4	47	6.9	5.5	36.1	●
1534SU03-0150S		1.5	4	47	7.1	5.6	36	●
1534SU03-0155S		1.55	4	47	7.3	5.8	35.8	○
1534SU03-0160S		1.6	4	47	7.5	6	35.7	●
1534SU03-0165S		1.65	4	47	7.8	6.2	35.5	○
1534SU03-0170S		1.7	4	47	8	6.4	35.4	●
1534SU03-0175S		1.75	4	47	8.2	6.6	35.2	○
1534SU03-0180S		1.8	4	47	8.5	6.8	35	●
1534SU03-0185S		1.85	4	47	8.7	6.9	34.9	○
1534SU03-0190S		1.9	4	47	8.9	7.1	34.8	●
1534SU03-0195S		1.95	4	47	9.2	7.3	34.5	○
1534SU03-0200		2	6	62	20	14	36	●
1534SU03-0210		2.1	6	62	20	14	36	●
1534SU03-0220		2.2	6	62	20	14	36	●
1534SU03-0230		2.33	3	59	13.8	14	36	●
1534SU03-0240		2.4	6	62	20	14	36	●
1534SU03-0250		2.5	6	62	20	14	36	●
1534SU03-0260		2.6	6	62	20	14	36	●
1534SU03-0270		2.7	6	62	20	14	36	●
1534SU03-0280		2.8	6	62	20	14	36	●

● Ex stock ○ On demand
All articles SUK on demand
✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1534SU*	✔	✔	✔			
1534SUK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SU(K) drill 3xD | General machining | Add K (SUK) to the code for use on Cast Iron

1534SU03/1534SU03C

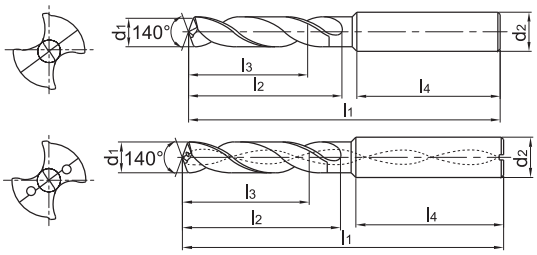
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534SU03-0290		2.9	6	62	20	14	36	●
1534SU03-0300		3	6	62	20	14	36	●
1534SU03C-0300	✻	3	6	62	20	14	36	●
1534SU03-0310		3.1	6	62	20	14	36	●
1534SU03C-0310	✻	3.1	6	62	20	14	36	●
1534SU03-0320		3.2	6	62	20	14	36	●
1534SU03C-0320	✻	3.2	6	62	20	14	36	●
1534SU03-0325		3.25	6	62	20	14	36	●
1534SU03C-0325	✻	3.25	6	62	20	14	36	●
1534SU03-0330		3.3	6	62	20	14	36	●
1534SU03C-0330	✻	3.3	6	62	20	14	36	●
1534SU03-0340		3.4	6	62	20	14	36	●
1534SU03C-0340	✻	3.4	6	62	20	14	36	●
1534SU03-0350		3.5	6	62	20	14	36	●
1534SU03C-0350	✻	3.5	6	62	20	14	36	●
1534SU03-0360		3.6	6	62	20	14	36	●
1534SU03C-0360	✻	3.6	6	62	20	14	36	●
1534SU03-0370		3.7	6	62	20	14	36	●
1534SU03C-0370	✻	3.7	6	62	20	14	36	●
1534SU03-0380		3.8	6	66	24	17	36	●
1534SU03C-0380	✻	3.8	6	66	24	17	36	●
1534SU03-0390		3.9	6	66	24	17	36	●
1534SU03C-0390	✻	3.9	6	66	24	17	36	●
1534SU03-0400		4	6	66	24	17	36	●
1534SU03C-0400	✻	4	6	66	24	17	36	●
1534SU03-0410		4.1	6	66	24	17	36	●
1534SU03C-0410	✻	4.1	6	66	24	17	36	●
1534SU03-0420		4.2	6	66	24	17	36	●
1534SU03C-0420	✻	4.2	6	66	24	17	36	●
1534SU03-0430		4.3	6	66	24	17	36	●
1534SU03C-0430	✻	4.3	6	66	24	17	36	●

● Ex stock ○ On demand

All articles SUK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1534SU*	✔	✔	✔			
1534SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 3xD | General machining | Add K (SUK) to the code for use on Cast Iron

1534SU03/1534SU03C



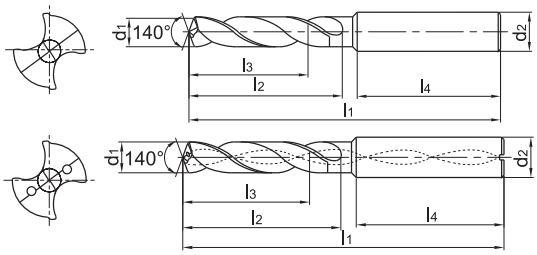
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534SU03-0440		4.4	6	66	24	17	36	●
1534SU03C-0440	✲	4.4	6	66	24	17	36	●
1534SU03-0450		4.5	6	66	24	17	36	●
1534SU03C-0450	✲	4.5	6	66	24	17	36	●
1534SU03-0460		4.6	6	66	24	17	36	●
1534SU03C-0460	✲	4.6	6	66	24	17	36	●
1534SU03-0465		4.65	6	66	24	17	36	●
1534SU03C-0465	✲	4.65	6	66	24	17	36	●
1534SU03-0470		4.7	6	66	24	17	36	●
1534SU03C-0470	✲	4.7	6	66	24	17	36	●
1534SU03-0480		4.8	6	66	28	20	36	●
1534SU03C-0480	✲	4.8	6	66	28	20	36	●
1534SU03-0490		4.9	6	66	28	20	36	●
1534SU03C-0490	✲	4.9	6	66	28	20	36	●
1534SU03-0500		5	6	66	28	20	36	●
1534SU03C-0500	✲	5	6	66	28	20	36	●
1534SU03-0510		5.1	6	66	28	20	36	●
1534SU03C-0510	✲	5.1	6	66	28	20	36	●
1534SU03-0520		5.2	6	66	28	20	36	●
1534SU03C-0520	✲	5.2	6	66	28	20	36	●
1534SU03-0530		5.3	6	66	28	20	36	●
1534SU03C-0530	✲	5.3	6	66	28	20	36	●
1534SU03-0540		5.4	6	66	28	20	36	●
1534SU03C-0540	✲	5.4	6	66	28	20	36	●
1534SU03-0550		5.5	6	66	28	20	36	●
1534SU03C-0550	✲	5.5	6	66	28	20	36	●
1534SU03-0555		5.55	6	66	28	20	36	●
1534SU03C-0555	✲	5.55	6	66	28	20	36	●
1534SU03-0560		5.6	6	66	28	20	36	●
1534SU03C-0560	✲	5.6	6	66	28	20	36	●
1534SU03-0570		5.7	6	66	28	20	36	●

● Ex stock ○ On demand
All articles SUK on demand
✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1534SU*	✔	✔	✔			
1534SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 3xD | General machining | Add K (SUK) to the code for use on Cast Iron

1534SU03/1534SU03C

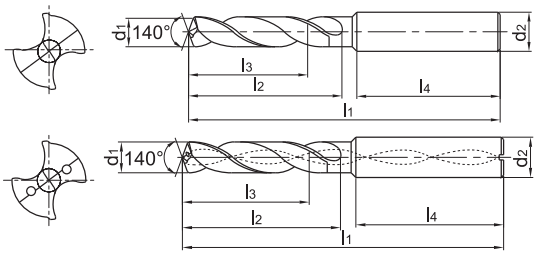
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534SU03C-0570	✻	5.7	6	66	28	20	36	●
1534SU03-0580		5.8	6	66	28	20	36	●
1534SU03C-0580	✻	5.8	6	66	28	20	36	●
1534SU03-0590		5.9	6	66	28	20	36	●
1534SU03C-0590	✻	5.9	6	66	28	20	36	●
1534SU03-0600		6	6	66	28	20	36	●
1534SU03C-0600	✻	6	6	66	28	20	36	●
1534SU03-0610		6.1	8	79	34	24	36	●
1534SU03C-0610	✻	6.1	8	79	34	24	36	●
1534SU03-0620		6.2	8	79	34	24	36	●
1534SU03C-0620	✻	6.2	8	79	34	24	36	●
1534SU03-0630		6.3	8	79	34	24	36	●
1534SU03C-0630	✻	6.3	8	79	34	24	36	●
1534SU03-0640		6.4	8	79	34	24	36	●
1534SU03C-0640	✻	6.4	8	79	34	24	36	●
1534SU03-0650		6.5	8	79	34	24	36	●
1534SU03C-0650	✻	6.5	8	79	34	24	36	●
1534SU03-0660		6.6	8	79	34	24	36	●
1534SU03C-0660	✻	6.6	8	79	34	24	36	●
1534SU03-0670		6.7	8	79	34	24	36	●
1534SU03C-0670	✻	6.7	8	79	34	24	36	●
1534SU03-0675		6.75	8	79	34	24	36	●
1534SU03C-0675	✻	6.75	8	79	34	24	36	●
1534SU03-0680		6.8	8	79	34	24	36	●
1534SU03C-0680	✻	6.8	8	79	34	24	36	●
1534SU03-0690		6.9	8	79	34	24	36	●
1534SU03C-0690	✻	6.9	8	79	34	24	36	●
1534SU03-0700		7	8	79	34	24	36	●
1534SU03C-0700	✻	7	8	79	34	24	36	●
1534SU03-0710		7.1	8	79	41	29	36	●
1534SU03C-0710	✻	7.1	8	79	41	29	36	●

● Ex stock ○ On demand

All articles SUK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1534SU*	✔	✔	✔			
1534SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 3xD | General machining | Add K (SUK) to the code for use on Cast Iron

1534SU03/1534SU03C



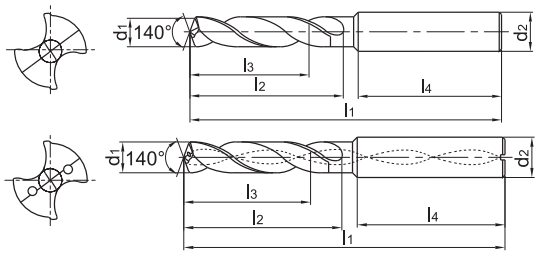
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534SU03-0720		7.2	8	79	41	29	36	●
1534SU03C-0720	✲	7.2	8	79	41	29	36	●
1534SU03-0730		7.3	8	79	41	29	36	●
1534SU03C-0730	✲	7.3	8	79	41	29	36	●
1534SU03-0740		7.4	8	79	41	29	36	●
1534SU03C-0740	✲	7.4	8	79	41	29	36	●
1534SU03-0745		7.45	8	79	41	29	36	○
1534SU03C-0745	✲	7.45	8	79	41	29	36	○
1534SU03-0750		7.5	8	79	41	29	36	●
1534SU03C-0750	✲	7.5	8	79	41	29	36	●
1534SU03-0760		7.6	8	79	41	29	36	●
1534SU03C-0760	✲	7.6	8	79	41	29	36	●
1534SU03-0770		7.7	8	79	41	29	36	●
1534SU03C-0770	✲	7.7	8	79	41	29	36	●
1534SU03-0780		7.8	8	79	41	29	36	●
1534SU03C-0780	✲	7.8	8	79	41	29	36	●
1534SU03-0790		7.9	8	79	41	29	36	●
1534SU03C-0790	✲	7.9	8	79	41	29	36	●
1534SU03-0800		8	8	79	41	29	36	●
1534SU03C-0800	✲	8	8	79	41	29	36	●
1534SU03-0810		8.1	10	89	47	35	40	●
1534SU03C-0810	✲	8.1	10	89	47	35	40	●
1534SU03-0820		8.2	10	89	47	35	40	●
1534SU03C-0820	✲	8.2	10	89	47	35	40	●
1534SU03-0830		8.3	10	89	47	35	40	●
1534SU03C-0830	✲	8.3	10	89	47	35	40	●
1534SU03-0840		8.4	10	89	47	35	40	●
1534SU03C-0840	✲	8.4	10	89	47	35	40	●
1534SU03-0850		8.5	10	89	47	35	40	●
1534SU03C-0850	✲	8.5	10	89	47	35	40	●
1534SU03-0860		8.6	10	89	47	35	40	●

● Ex stock ○ On demand

All articles SUK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1534SU*	✔	✔	✔			
1534SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 3xD | General machining | Add K (SUK) to the code for use on Cast Iron

1534SU03/1534SU03C

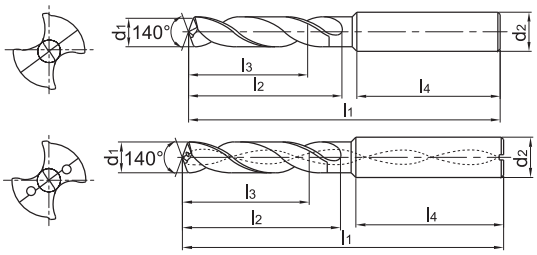
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534SU03C-0860	✻	8.6	10	89	47	35	40	●
1534SU03-0870		8.7	10	89	47	35	40	●
1534SU03C-0870	✻	8.7	10	89	47	35	40	●
1534SU03-0880		8.8	10	89	47	35	40	●
1534SU03C-0880	✻	8.8	10	89	47	35	40	●
1534SU03-0890		8.9	10	89	47	35	40	●
1534SU03C-0890	✻	8.9	10	89	47	35	40	●
1534SU03-0900		9	10	89	47	35	40	●
1534SU03C-0900	✻	9	10	89	47	35	40	●
1534SU03-0910		9.1	10	89	47	35	40	●
1534SU03C-0910	✻	9.1	10	89	47	35	40	●
1534SU03-0920		9.2	10	89	47	35	40	●
1534SU03C-0920	✻	9.2	10	89	47	35	40	●
1534SU03-0930		9.3	10	89	47	35	40	●
1534SU03C-0930	✻	9.3	10	89	47	35	40	●
1534SU03-0935		9.35	10	89	47	35	40	○
1534SU03C-0935	✻	9.35	10	89	47	35	40	○
1534SU03-0940		9.4	10	89	47	35	40	●
1534SU03C-0940	✻	9.4	10	89	47	35	40	●
1534SU03-0945		9.45	10	89	47	35	40	○
1534SU03C-0945	✻	9.45	10	89	47	35	40	○
1534SU03-0950		9.5	10	89	47	35	40	●
1534SU03C-0950	✻	9.5	10	89	47	35	40	●
1534SU03-0960		9.6	10	89	47	35	40	●
1534SU03C-0960	✻	9.6	10	89	47	35	40	●
1534SU03-0970		9.7	10	89	47	35	40	●
1534SU03C-0970	✻	9.7	10	89	47	35	40	●
1534SU03-0980		9.8	10	89	47	35	40	●
1534SU03C-0980	✻	9.8	10	89	47	35	40	●
1534SU03-0990		9.9	10	89	47	35	40	●
1534SU03C-0990	✻	9.9	10	89	47	35	40	●

● Ex stock ○ On demand

All articles SUK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1534SU*	✔	✔	✔			
1534SUK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SU(K) drill 3xD | General machining | Add K (SUK) to the code for use on Cast Iron

1534SU03/1534SU03C



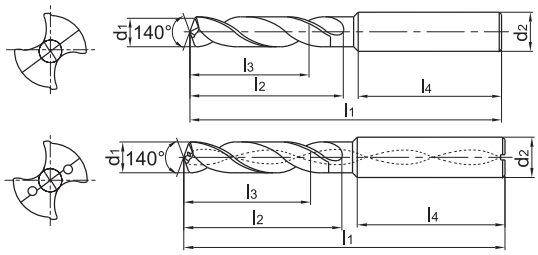
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534SU03-1000		10	10	89	47	35	40	●
1534SU03C-1000	✲	10	10	89	47	35	40	●
1534SU03-1010		10.1	12	102	55	40	45	●
1534SU03C-1010	✲	10.1	12	102	55	40	45	●
1534SU03-1020		10.2	12	102	55	40	45	●
1534SU03C-1020	✲	10.2	12	102	55	40	45	●
1534SU03-1025		10.25	12	102	55	40	45	●
1534SU03C-1025	✲	10.25	12	102	55	40	45	●
1534SU03-1030		10.3	12	102	55	40	45	●
1534SU03C-1030	✲	10.3	12	102	55	40	45	●
1534SU03-1040		10.4	12	102	55	40	45	●
1534SU03C-1040	✲	10.4	12	102	55	40	45	●
1534SU03-1050		10.5	12	102	55	40	45	●
1534SU03C-1050	✲	10.5	12	102	55	40	45	●
1534SU03-1060		10.6	12	102	55	40	45	●
1534SU03C-1060	✲	10.6	12	102	55	40	45	●
1534SU03-1070		10.7	12	102	55	40	45	●
1534SU03C-1070	✲	10.7	12	102	55	40	45	●
1534SU03-1080		10.8	12	102	55	40	45	●
1534SU03C-1080	✲	10.8	12	102	55	40	45	●
1534SU03-1090		10.9	12	102	55	40	45	●
1534SU03C-1090	✲	10.9	12	102	55	40	45	●
1534SU03-1100		11	12	102	55	40	45	●
1534SU03C-1100	✲	11	12	102	55	40	45	●
1534SU03-1110		11.1	12	102	55	40	45	●
1534SU03C-1110	✲	11.1	12	102	55	40	45	●
1534SU03-1120		11.2	12	102	55	40	45	●
1534SU03C-1120	✲	11.2	12	102	55	40	45	●
1534SU03-1125		11.25	12	102	55	40	45	○
1534SU03C-1125	✲	11.25	12	102	55	40	45	○
1534SU03-1130		11.3	12	102	55	40	45	●

● Ex stock ○ On demand

All articles SUK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1534SU*	✔	✔	✔			
1534SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 3xD | General machining | Add K (SUK) to the code for use on Cast Iron

1534SU03/1534SU03C

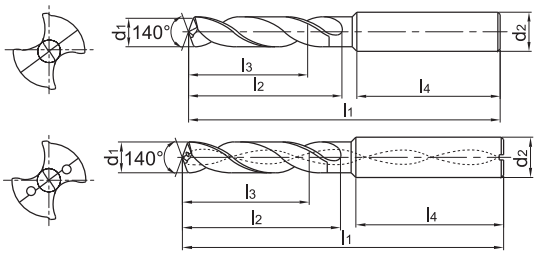
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534SU03C-1130	✻	11.3	12	102	55	40	45	●
1534SU03-1135		11.35	12	102	55	40	45	○
1534SU03C-1135	✻	11.35	12	102	55	40	45	○
1534SU03-1140		11.4	12	102	55	40	45	●
1534SU03C-1140	✻	11.4	12	102	55	40	45	●
1534SU03-1145		11.45	12	102	55	40	45	○
1534SU03C-1145	✻	11.45	12	102	55	40	45	○
1534SU03-1150		11.5	12	102	55	40	45	●
1534SU03C-1150	✻	11.5	12	102	55	40	45	●
1534SU03-1160		11.6	12	102	55	40	45	●
1534SU03C-1160	✻	11.6	12	102	55	40	45	●
1534SU03-1170		11.7	12	102	55	40	45	●
1534SU03C-1170	✻	11.7	12	102	55	40	45	●
1534SU03-1180		11.8	12	102	55	40	45	●
1534SU03C-1180	✻	11.8	12	102	55	40	45	●
1534SU03-1190		11.9	12	102	55	40	45	●
1534SU03C-1190	✻	11.9	12	102	55	40	45	●
1534SU03-1200		12	12	102	55	40	45	●
1534SU03C-1200	✻	12	12	102	55	40	45	●
1534SU03-1210		12.1	14	107	60	43	45	●
1534SU03C-1210	✻	12.1	14	107	60	43	45	●
1534SU03-1220		12.2	14	107	60	43	45	●
1534SU03C-1220	✻	12.2	14	107	60	43	45	●
1534SU03-1225		12.25	14	107	60	43	45	●
1534SU03C-1225	✻	12.25	14	107	60	43	45	●
1534SU03-1230		12.3	14	107	60	43	45	●
1534SU03C-1230	✻	12.3	14	107	60	43	45	●
1534SU03-1250		12.5	14	107	60	43	45	●
1534SU03C-1250	✻	12.5	14	107	60	43	45	●
1534SU03-1270		12.7	14	107	60	43	45	●
1534SU03C-1270	✻	12.7	14	107	60	43	45	●

● Ex stock ○ On demand

All articles SUK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1534SU*	✔	✔	✔			
1534SUK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SU(K) drill 3xD | General machining | Add K (SUK) to the code for use on Cast Iron

1534SU03/1534SU03C

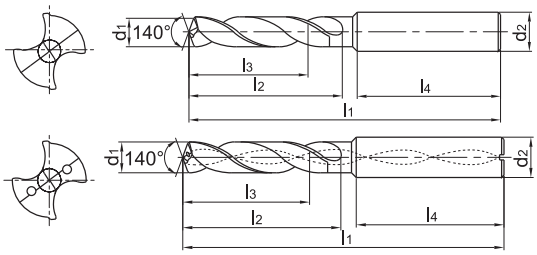
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534SU03-1275		12.75	14	107	60	43	45	●
1534SU03C-1275	✲	12.75	14	107	60	43	45	●
1534SU03-1280		12.8	14	107	60	43	45	●
1534SU03C-1280	✲	12.8	14	107	60	43	45	●
1534SU03-1300		13	14	107	60	43	45	●
1534SU03C-1300	✲	13	14	107	60	43	45	●
1534SU03-1310		13.1	14	107	60	43	45	●
1534SU03C-1310	✲	13.1	14	107	60	43	45	●
1534SU03C-1335	✲	13.35	14	107	60	43	45	●
1534SU03-1350		13.5	14	107	60	43	45	●
1534SU03C-1350	✲	13.5	14	107	60	43	45	●
1534SU03-1380		13.8	14	107	60	43	45	●
1534SU03C-1380	✲	13.8	14	107	60	43	45	●
1534SU03-1400		14	14	107	60	43	45	●
1534SU03C-1400	✲	14	14	107	60	43	45	●
1534SU03-1420		14.2	16	107	60	43	45	●
1534SU03C-1420	✲	14.2	16	107	60	43	45	●
1534SU03-1425		14.25	16	115	65	45	48	●
1534SU03C-1425	✲	14.25	16	115	65	45	48	●
1534SU03-1430		14.3	16	115	65	45	48	●
1534SU03C-1430	✲	14.3	16	115	65	45	48	●
1534SU03-1450		14.5	16	115	65	45	48	●
1534SU03C-1450	✲	14.5	16	115	65	45	48	●
1534SU03-1475		14.75	16	115	65	45	48	●
1534SU03C-1475	✲	14.75	16	115	65	45	48	●
1534SU03-1480		14.8	16	115	65	45	48	●
1534SU03C-1480	✲	14.8	16	115	65	45	48	●
1534SU03-1500		15	16	115	65	45	48	●
1534SU03C-1500	✲	15	16	115	65	45	48	●
1534SU03-1510		15.1	16	115	65	45	48	●
1534SU03C-1510	✲	15.1	16	115	65	45	48	●

● Ex stock ○ On demand
All articles SUK on demand
✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1534SU*	✔	✔	✔			
1534SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 3xD | General machining | Add K (SUK) to the code for use on Cast Iron

1534SU03/1534SU03C

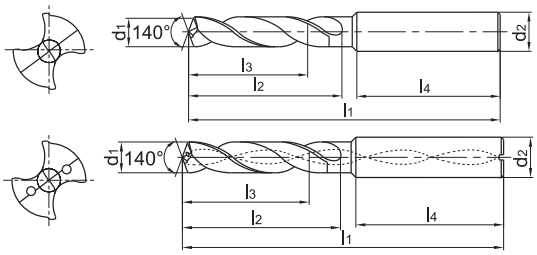
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534SU03-1530		15.3	16	115	65	45	48	●
1534SU03C-1535	✲	15.35	16	115	65	45	48	○
1534SU03-1550		15.5	16	115	65	45	48	●
1534SU03C-1550	✲	15.5	16	115	65	45	48	●
1534SU03-1580		15.8	16	115	65	45	48	●
1534SU03C-1580	✲	15.8	16	115	65	45	48	●
1534SU03-1600		16	16	115	65	45	48	●
1534SU03C-1600	✲	16	16	115	65	45	48	●
1534SU03-1610		16.1	18	123	73	51	48	●
1534SU03-1650		16.5	18	123	73	51	48	●
1534SU03C-1650	✲	16.5	18	123	73	51	48	●
1534SU03-1675		16.75	18	123	73	51	48	●
1534SU03C-1675	✲	16.75	18	123	73	51	48	●
1534SU03-1680		16.8	18	123	73	51	48	●
1534SU03C-1680	✲	16.8	18	123	73	51	48	●
1534SU03-1700		17	18	123	73	51	48	●
1534SU03C-1700	✲	17	18	123	73	51	48	●
1534SU03-1750		17.5	18	123	73	51	48	●
1534SU03C-1750	✲	17.5	18	123	73	51	48	●
1534SU03-1780		17.8	18	123	73	51	48	●
1534SU03C-1780	✲	17.8	18	123	73	51	48	●
1534SU03-1800		18	18	123	73	51	48	●
1534SU03C-1800	✲	18	18	123	73	51	48	●
1534SU03-1850		18.5	20	131	79	55	50	●
1534SU03C-1850	✲	18.5	20	131	79	55	50	●
1534SU03-1880		18.8	20	131	79	55	50	●
1534SU03C-1880	✲	18.8	20	131	79	55	50	●
1534SU03-1900		19	20	131	79	55	50	●
1534SU03C-1900	✲	19	20	131	79	55	50	●
1534SU03-1950		19.5	20	131	79	55	50	●
1534SU03C-1950	✲	19.5	20	131	79	55	50	●

● Ex stock ○ On demand

All articles SUK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1534SU*	✔	✔	✔			
1534SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 3xD — General machining — Add K (SUK) to the code for use on Cast Iron

1534SU03/1534SU03C

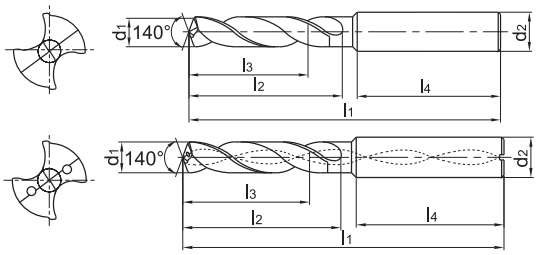
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534SU03-1980		19.8	20	131	79	55	50	●
1534SU03C-1980	✲	19.8	20	131	79	55	50	●
1534SU03-2000		20	20	131	79	55	50	●
1534SU03C-2000	✲	20	20	131	79	55	50	●

● Ex stock ○ On demand

All articles SUK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1534SU*	✔	✔	✔			
1534SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 5xD | General machining | Add K (SUK) to the code for use on Cast Iron

1536SU05/1536SU05C

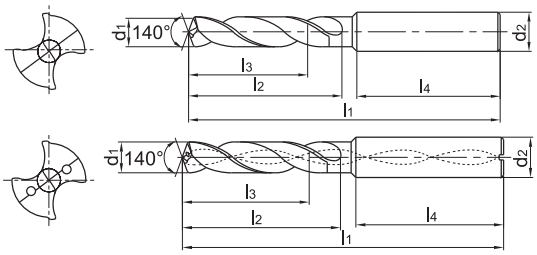
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1536SU05-0200		2	6	66	28	23	36	●
1536SU05-0210		2.1	6	66	28	23	36	●
1536SU05-0220		2.2	6	66	28	23	36	●
1536SU05-0230		2.3	6	66	28	23	36	●
1536SU05-0240		2.4	6	66	28	23	36	●
1536SU05-0250		2.5	6	66	28	23	36	●
1536SU05-0260		2.6	6	66	28	23	36	●
1536SU05-0270		2.7	6	66	28	23	36	●
1536SU05-0280		2.8	6	66	28	23	36	●
1536SU05-0290		2.9	6	66	28	23	36	●
1536SU05-0300		3	6	66	28	23	36	●
1536SU05C-0300	✻	3	6	66	28	23	36	●
1536SU05-0310		3.1	6	66	28	23	36	●
1536SU05C-0310	✻	3.1	6	66	28	23	36	●
1536SU05-0320		3.2	6	66	28	23	36	●
1536SU05C-0320	✻	3.2	6	66	28	23	36	●
1536SU05-0325		3.25	6	66	28	23	36	●
1536SU05C-0325	✻	3.25	6	66	28	23	36	●
1536SU05-0330		3.3	6	66	28	23	36	●
1536SU05C-0330	✻	3.3	6	66	28	23	36	●
1536SU05-0340		3.4	6	66	28	23	36	●
1536SU05C-0340	✻	3.4	6	66	28	23	36	●
1536SU05-0350		3.5	6	66	28	23	36	●
1536SU05C-0350	✻	3.5	6	66	28	23	36	●
1536SU05-0360		3.6	6	66	28	23	36	●
1536SU05C-0360	✻	3.6	6	66	28	23	36	●
1536SU05-0370		3.7	6	66	28	23	36	●
1536SU05C-0370	✻	3.7	6	66	28	23	36	●
1536SU05-0380		3.8	6	74	36	29	36	●
1536SU05C-0380	✻	3.8	6	74	36	29	36	●
1536SU05-0390		3.9	6	74	36	29	36	●

● Ex stock ○ On demand

All articles SUK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1536SU*	✔	✔	✔			
1536SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 5xD | General machining | Add K (SUK) to the code for use on Cast Iron

1536SU05/1536SU05C



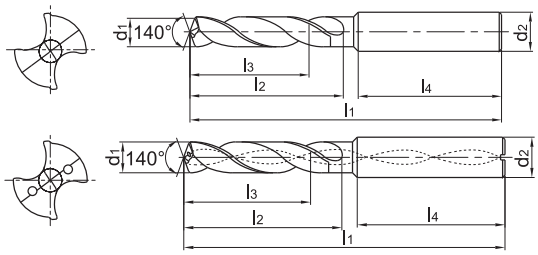
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1536SU05C-0390	✻	3.9	6	74	36	29	36	●
1536SU05-0400		4	6	74	36	29	36	●
1536SU05C-0400	✻	4	6	74	36	29	36	●
1536SU05-0410		4.1	6	74	36	29	36	●
1536SU05C-0410	✻	4.1	6	74	36	29	36	●
1536SU05-0420		4.2	6	74	36	29	36	●
1536SU05C-0420	✻	4.2	6	74	36	29	36	●
1536SU05-0430		4.3	6	74	36	29	36	●
1536SU05C-0430	✻	4.3	6	74	36	29	36	●
1536SU05-0440		4.4	6	74	36	29	36	●
1536SU05C-0440	✻	4.4	6	74	36	29	36	●
1536SU05-0450		4.5	6	74	36	29	36	●
1536SU05C-0450	✻	4.5	6	74	36	29	36	●
1536SU05-0460		4.6	6	74	36	29	36	●
1536SU05C-0460	✻	4.6	6	74	36	29	36	●
1536SU05-0465		4.65	6	74	36	29	36	●
1536SU05C-0465	✻	4.65	6	74	36	29	36	●
1536SU05-0470		4.7	6	74	36	29	36	●
1536SU05C-0470	✻	4.7	6	74	36	29	36	●
1536SU05-0480		4.8	6	82	44	35	36	●
1536SU05C-0480	✻	4.8	6	82	44	35	36	●
1536SU05-0490		4.9	6	82	44	35	36	●
1536SU05C-0490	✻	4.9	6	82	44	35	36	●
1536SU05-0500		5	6	82	44	35	36	●
1536SU05C-0500	✻	5	6	82	44	35	36	●
1536SU05-0510		5.1	6	82	44	35	36	●
1536SU05C-0510	✻	5.1	6	82	44	35	36	●
1536SU05-0520		5.2	6	82	44	35	36	●
1536SU05C-0520	✻	5.2	6	82	44	35	36	●
1536SU05-0530		5.3	6	82	44	35	36	●
1536SU05C-0530	✻	5.3	6	82	44	35	36	●

● Ex stock ○ On demand
All articles SUK on demand
✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1536SU*	✔	✔	✔			
1536SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 5xD | General machining | Add K (SUK) to the code for use on Cast Iron

1536SU05/1536SU05C



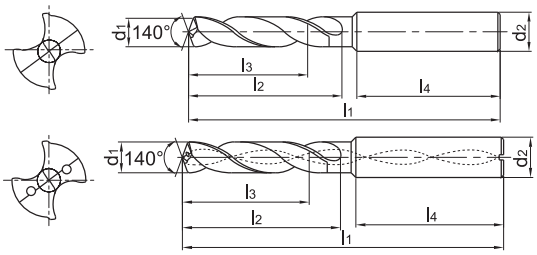
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1536SU05-0540		5.4	6	82	44	35	36	●
1536SU05C-0540	✲	5.4	6	82	44	35	36	●
1536SU05-0550		5.5	6	82	44	35	36	●
1536SU05C-0550	✲	5.5	6	82	44	35	36	●
1536SU05-0555		5.55	6	82	44	35	36	●
1536SU05C-0555	✲	5.55	6	82	44	35	36	●
1536SU05-0560		5.6	6	82	44	35	36	●
1536SU05C-0560	✲	5.6	6	82	44	35	36	●
1536SU05-0570		5.7	6	82	44	35	36	●
1536SU05C-0570	✲	5.7	6	82	44	35	36	●
1536SU05-0580		5.8	6	82	44	35	36	●
1536SU05C-0580	✲	5.8	6	82	44	35	36	●
1536SU05-0590		5.9	6	82	44	35	36	●
1536SU05C-0590	✲	5.9	6	82	44	35	36	●
1536SU05-0600		6	6	82	44	35	36	●
1536SU05C-0600	✲	6	6	82	44	35	36	●
1536SU05-0610		6.1	8	91	53	43	36	●
1536SU05C-0610	✲	6.1	8	91	53	43	36	●
1536SU05-0620		6.2	8	91	53	43	36	●
1536SU05C-0620	✲	6.2	8	91	53	43	36	●
1536SU05-0630		6.3	8	91	53	43	36	●
1536SU05C-0630	✲	6.3	8	91	53	43	36	●
1536SU05-0640		6.4	8	91	53	43	36	●
1536SU05C-0640	✲	6.4	8	91	53	43	36	●
1536SU05-0650		6.5	8	91	53	43	36	●
1536SU05C-0650	✲	6.5	8	91	53	43	36	●
1536SU05-0660		6.6	8	91	53	43	36	●
1536SU05C-0660	✲	6.6	8	91	53	43	36	●
1536SU05-0670		6.7	8	91	53	43	36	●
1536SU05C-0670	✲	6.7	8	91	53	43	36	●
1536SU05-0675		6.75	8	91	53	43	36	●

● Ex stock ○ On demand
All articles SUK on demand
✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1536SU*	✔	✔	✔			
1536SUK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SU(K) drill 5xD | General machining | Add K (SUK) to the code for use on Cast Iron

1536SU05/1536SU05C

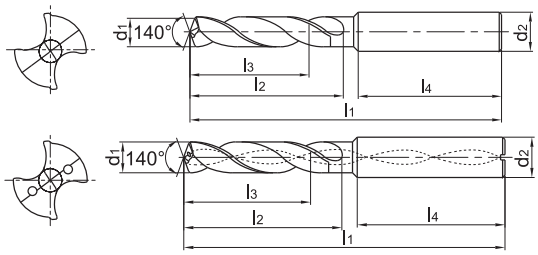
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1536SU05C-0675	✻	6.75	8	91	53	43	36	●
1536SU05-0680		6.8	8	91	53	43	36	●
1536SU05C-0680	✻	6.8	8	91	53	43	36	●
1536SU05-0690		6.9	8	91	53	43	36	●
1536SU05C-0690	✻	6.9	8	91	53	43	36	●
1536SU05-0700		7	8	91	53	43	36	●
1536SU05C-0700	✻	7	8	91	53	43	36	●
1536SU05-0710		7.1	8	91	53	43	36	●
1536SU05C-0710	✻	7.1	8	91	53	43	36	●
1536SU05-0720		7.2	8	91	53	43	36	●
1536SU05C-0720	✻	7.2	8	91	53	43	36	●
1536SU05-0730		7.3	8	91	53	43	36	●
1536SU05C-0730	✻	7.3	8	91	53	43	36	●
1536SU05-0740		7.4	8	91	53	43	36	●
1536SU05C-0740	✻	7.4	8	91	53	43	36	●
1536SU05-0745		7.45	8	91	53	43	36	●
1536SU05C-0745	✻	7.45	8	91	53	43	36	●
1536SU05-0750		7.5	8	91	53	43	36	●
1536SU05C-0750	✻	7.5	8	91	53	43	36	●
1536SU05-0760		7.6	8	91	53	43	36	●
1536SU05C-0760	✻	7.6	8	91	53	43	36	●
1536SU05-0770		7.7	8	91	53	43	36	●
1536SU05C-0770	✻	7.7	8	91	53	43	36	●
1536SU05-0780		7.8	8	91	53	43	36	●
1536SU05C-0780	✻	7.8	8	91	53	43	36	●
1536SU05-0790		7.9	8	91	53	43	36	●
1536SU05C-0790	✻	7.9	8	91	53	43	36	●
1536SU05-0800		8	8	91	53	43	36	●
1536SU05C-0800	✻	8	8	91	53	43	36	●
1536SU05-0810		8.1	10	103	61	49	40	●
1536SU05C-0810	✻	8.1	10	103	61	49	40	●

● Ex stock ○ On demand
All articles SUK on demand
✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1536SU*	✔	✔	✔			
1536SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 5xD | General machining | Add K (SUK) to the code for use on Cast Iron

1536SU05/1536SU05C

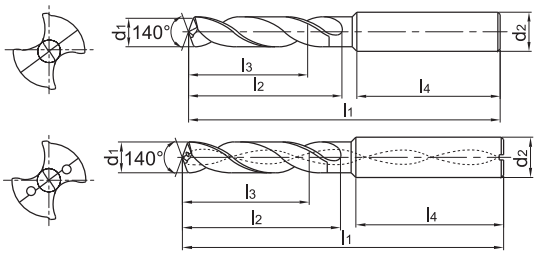
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1536SU05-0820		8.2	10	103	61	49	40	●
1536SU05C-0820	✻	8.2	10	103	61	49	40	●
1536SU05-0830		8.3	10	103	61	49	40	●
1536SU05C-0830	✻	8.3	10	103	61	49	40	●
1536SU05-0840		8.4	10	103	61	49	40	●
1536SU05C-0840	✻	8.4	10	103	61	49	40	●
1536SU05-0850		8.5	10	103	61	49	40	●
1536SU05C-0850	✻	8.5	10	103	61	49	40	●
1536SU05-0860		8.6	10	103	61	49	40	●
1536SU05C-0860	✻	8.6	10	103	61	49	40	●
1536SU05-0870		8.7	10	103	61	49	40	●
1536SU05C-0870	✻	8.7	10	103	61	49	40	●
1536SU05-0880		8.8	10	103	61	49	40	●
1536SU05C-0880	✻	8.8	10	103	61	49	40	●
1536SU05-0890		8.9	10	103	61	49	40	●
1536SU05C-0890	✻	8.9	10	103	61	49	40	●
1536SU05-0900		9	10	103	61	49	40	●
1536SU05C-0900	✻	9	10	103	61	49	40	●
1536SU05-0910		9.1	10	103	61	49	40	●
1536SU05C-0910	✻	9.1	10	103	61	49	40	●
1536SU05-0920		9.2	10	103	61	49	40	●
1536SU05C-0920	✻	9.2	10	103	61	49	40	●
1536SU05-0930		9.3	10	103	61	49	40	●
1536SU05C-0930	✻	9.3	10	103	61	49	40	●
1536SU05-0935		9.35	10	103	61	49	40	●
1536SU05C-0935	✻	9.35	10	103	61	49	40	○
1536SU05-0940		9.4	10	103	61	49	40	●
1536SU05C-0940	✻	9.4	10	103	61	49	40	●
1536SU05-0945		9.45	10	103	61	49	40	●
1536SU05C-0945	✻	9.45	10	103	61	49	40	○
1536SU05-0950		9.5	10	103	61	49	40	●

● Ex stock ○ On demand

All articles SUK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1536SU*	✔	✔	✔			
1536SUK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SU(K) drill 5xD | General machining | Add K (SUK) to the code for use on Cast Iron

1536SU05/1536SU05C

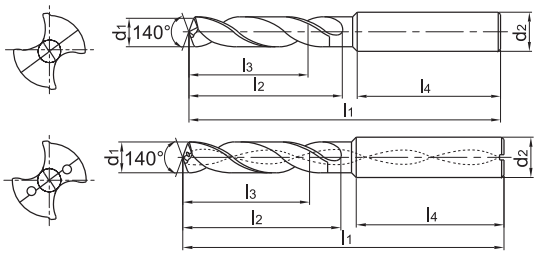
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1536SU05C-0950	✻	9.5	10	103	61	49	40	●
1536SU05-0960		9.6	10	103	61	49	40	●
1536SU05C-0960	✻	9.6	10	103	61	49	40	●
1536SU05-0970		9.7	10	103	61	49	40	●
1536SU05C-0970	✻	9.7	10	103	61	49	40	●
1536SU05-0980		9.8	10	103	61	49	40	●
1536SU05C-0980	✻	9.8	10	103	61	49	40	●
1536SU05-0990		9.9	10	103	61	49	40	●
1536SU05C-0990	✻	9.9	10	103	61	49	40	●
1536SU05-1000		10	10	103	61	49	40	●
1536SU05C-1000	✻	10	10	103	61	49	40	●
1536SU05-1010		10.1	12	118	71	56	45	●
1536SU05C-1010	✻	10.1	12	118	71	56	45	●
1536SU05-1020		10.2	12	118	71	56	45	●
1536SU05C-1020	✻	10.2	12	118	71	56	45	●
1536SU05-1025		10.25	12	118	71	56	45	●
1536SU05C-1025	✻	10.25	12	118	71	56	45	●
1536SU05-1030		10.3	12	118	71	56	45	●
1536SU05C-1030	✻	10.3	12	118	71	56	45	●
1536SU05-1040		10.4	12	118	71	56	45	●
1536SU05C-1040	✻	10.4	12	118	71	56	45	●
1536SU05-1050		10.5	12	118	71	56	45	●
1536SU05C-1050	✻	10.5	12	118	71	56	45	●
1536SU05-1060		10.6	12	118	71	56	45	●
1536SU05C-1060	✻	10.6	12	118	71	56	45	●
1536SU05-1070		10.7	12	118	71	56	45	●
1536SU05C-1070	✻	10.7	12	118	71	56	45	●
1536SU05-1080		10.8	12	118	71	56	45	●
1536SU05C-1080	✻	10.8	12	118	71	56	45	●
1536SU05-1090		10.9	12	118	71	56	45	●
1536SU05C-1090	✻	10.9	12	118	71	56	45	●

● Ex stock ○ On demand

All articles SUK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1536SU*	✔	✔	✔			
1536SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 5xD | General machining | Add K (SUK) to the code for use on Cast Iron

1536SU05/1536SU05C

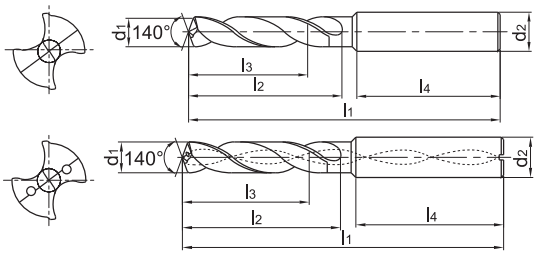
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1536SU05-1100		11	12	118	71	56	45	●
1536SU05C-1100	✲	11	12	118	71	56	45	●
1536SU05-1110		11.1	12	118	71	56	45	●
1536SU05C-1110	✲	11.1	12	118	71	56	45	●
1536SU05-1120		11.2	12	118	71	56	45	●
1536SU05C-1120	✲	11.2	12	118	71	56	45	●
1536SU05-1125		11.25	12	118	71	56	45	●
1536SU05C-1125	✲	11.25	12	118	71	56	45	○
1536SU05-1130		11.3	12	118	71	56	45	●
1536SU05C-1130	✲	11.3	12	118	71	56	45	●
1536SU05-1135		11.35	12	118	71	56	45	●
1536SU05C-1135	✲	11.35	12	118	71	56	45	○
1536SU05-1140		11.4	12	118	71	56	45	●
1536SU05C-1140	✲	11.4	12	118	71	56	45	●
1536SU05-1145		11.45	12	118	71	56	45	○
1536SU05C-1145	✲	11.45	12	118	71	56	45	○
1536SU05-1150		11.5	12	118	71	56	45	●
1536SU05C-1150	✲	11.5	12	118	71	56	45	●
1536SU05-1160		11.6	12	118	71	56	45	●
1536SU05C-1160	✲	11.6	12	118	71	56	45	●
1536SU05-1170		11.7	12	118	71	56	45	●
1536SU05C-1170	✲	11.7	12	118	71	56	45	●
1536SU05-1180		11.8	12	118	71	56	45	●
1536SU05C-1180	✲	11.8	12	118	71	56	45	●
1536SU05-1190		11.9	12	118	71	56	45	●
1536SU05C-1190	✲	11.9	12	118	71	56	45	●
1536SU05-1200		12	12	118	71	56	45	●
1536SU05C-1200	✲	12	12	118	71	56	45	●
1536SU05-1210		12.1	14	124	77	60	45	●
1536SU05C-1210	✲	12.1	14	124	77	60	45	●
1536SU05-1220		12.2	14	124	77	60	45	●

● Ex stock ○ On demand

All articles SUK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1536SU*	✔	✔	✔			
1536SUK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

Solid carbide drills SU series

SU(K) drill 5xD | General machining | Add K (SUK) to the code for use on Cast Iron

1536SU05/1536SU05C

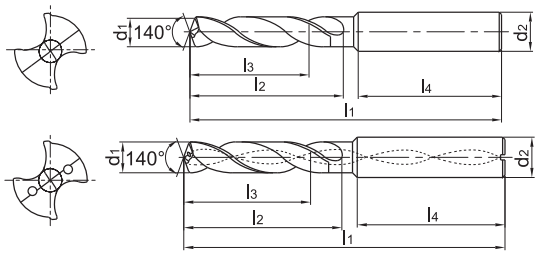
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1536SU05C-1220	✻	12.2	14	124	77	60	45	●
1536SU05-1225		12.25	14	124	77	60	45	●
1536SU05C-1225	✻	12.25	14	124	77	60	45	●
1536SU05-1230		12.3	14	124	77	60	45	●
1536SU05C-1230	✻	12.3	14	124	77	60	45	●
1536SU05-1250		12.5	14	124	77	60	45	●
1536SU05C-1250	✻	12.5	14	124	77	60	45	●
1536SU05-1270		12.7	14	124	77	60	45	●
1536SU05C-1270	✻	12.7	14	124	77	60	45	●
1536SU05-1275		12.75	14	124	77	60	45	●
1536SU05C-1275	✻	12.75	14	124	77	60	45	●
1536SU05-1280		12.8	14	124	77	60	45	●
1536SU05C-1280	✻	12.8	14	124	77	60	45	●
1536SU05-1300		13	14	124	77	60	45	●
1536SU05C-1300	✻	13	14	124	77	60	45	●
1536SU05-1310		13.1	14	124	77	60	45	●
1536SU05C-1310	✻	13.1	14	124	77	60	45	●
1536SU05-1335		13.35	14	124	77	60	56	○
1536SU05C-1335	✻	13.35	14	124	77	60	56	○
1536SU05-1350		13.5	14	124	77	60	45	●
1536SU05C-1350	✻	13.5	14	124	77	60	45	●
1536SU05-1380		13.8	14	124	77	60	45	●
1536SU05C-1380	✻	13.8	14	124	77	60	45	●
1536SU05-1400		14	14	124	77	60	45	●
1536SU05C-1400	✻	14	14	124	77	60	45	●
1536SU05-1420		14.2	16	124	77	60	45	●
1536SU05C-1420	✻	14.2	16	124	77	60	45	●
1536SU05-1425		14.25	16	133	83	63	48	●
1536SU05C-1425	✻	14.25	16	133	83	63	48	●
1536SU05-1430		14.3	16	133	83	63	48	●
1536SU05C-1430	✻	14.3	16	133	83	63	48	●

● Ex stock ○ On demand

All articles SUK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1536SU*	✔	✔	✔			
1536SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 5xD | General machining | Add K (SUK) to the code for use on Cast Iron

1536SU05/1536SU05C

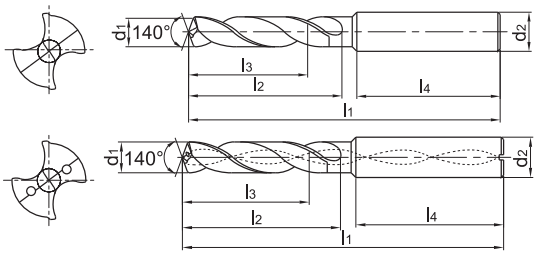
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1536SU05-1450		14.5	16	133	83	63	48	●
1536SU05C-1450	✻	14.5	16	133	83	63	48	●
1536SU05-1475		14.75	16	133	83	63	48	●
1536SU05C-1475	✻	14.75	16	133	83	63	48	●
1536SU05-1480		14.8	16	133	83	63	48	●
1536SU05C-1480	✻	14.8	16	133	83	63	48	●
1536SU05-1500		15	16	133	83	63	48	●
1536SU05C-1500	✻	15	16	133	83	63	48	●
1536SU05-1510		15.1	16	133	83	63	48	●
1536SU05C-1510	✻	15.1	16	133	83	63	48	●
1536SU05C-1530	✻	15.3	16	133	83	63	48	●
1536SU05-1535		15.35	16	133	83	63	48	○
1536SU05C-1535	✻	15.35	16	133	83	63	48	○
1536SU05-1550		15.5	16	133	83	63	48	●
1536SU05C-1550	✻	15.5	16	133	83	63	48	●
1536SU05-1580		15.8	16	133	83	63	48	●
1536SU05C-1580	✻	15.8	16	133	83	63	48	●
1536SU05-1600		16	16	133	83	63	48	●
1536SU05C-1600	✻	16	16	133	83	63	48	●
1536SU05-1650		16.5	18	143	93	71	48	●
1536SU05C-1650	✻	16.5	18	143	93	71	48	●
1536SU05-1675		16.75	18	143	93	71	48	●
1536SU05C-1675	✻	16.75	18	143	93	71	48	●
1536SU05-1680		16.8	18	143	93	71	48	●
1536SU05C-1680	✻	16.8	18	143	93	71	48	●
1536SU05-1700		17	18	143	93	71	48	●
1536SU05C-1700	✻	17	18	143	93	71	48	●
1536SU05-1750		17.5	18	143	93	71	48	●
1536SU05C-1750	✻	17.5	18	143	93	71	48	●
1536SU05-1780		17.8	18	143	93	71	48	●
1536SU05C-1780	✻	17.8	18	143	93	71	48	●

● Ex stock ○ On demand

All articles SUK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1536SU*	✔	✔	✔			
1536SUK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SU(K) drill 5xD | General machining | Add K (SUK) to the code for use on Cast Iron

1536SU05/1536SU05C

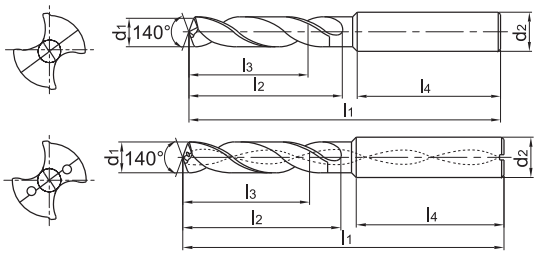
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1536SU05-1800		18	18	143	93	71	48	●
1536SU05C-1800	✲	18	18	143	93	71	48	●
1536SU05-1850		18.5	20	153	101	77	50	●
1536SU05C-1850	✲	18.5	20	153	101	77	50	●
1536SU05-1880		18.8	20	153	101	77	50	●
1536SU05C-1880	✲	18.8	20	153	101	77	50	●
1536SU05-1900		19	20	153	101	77	50	●
1536SU05C-1900	✲	19	20	153	101	77	50	●
1536SU05-1950		19.5	20	153	101	77	50	●
1536SU05C-1950	✲	19.5	20	153	101	77	50	●
1536SU05-1980		19.8	20	153	101	77	50	●
1536SU05C-1980	✲	19.8	20	153	101	77	50	●
1536SU05-2000		20	20	153	101	77	50	●
1536SU05C-2000	✲	20	20	153	101	77	50	●

● Ex stock ○ On demand

All articles SUK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1536SU*	✔	✔	✔			
1536SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 8xD | General machining | Add K (SUK) to the code for use on Cast Iron

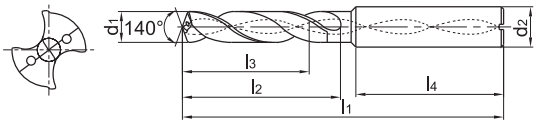
1538SU08C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1538SU08C-0300	✻	3	6	72	34	29	36	●
1538SU08C-0310	✻	3.1	6	72	34	29	36	●
1538SU08C-0320	✻	3.2	6	72	34	29	36	●
1538SU08C-0330	✻	3.3	6	72	34	29	36	●
1538SU08C-0340	✻	3.4	6	72	34	29	36	●
1538SU08C-0350	✻	3.5	6	72	34	29	36	●
1538SU08C-0360	✻	3.6	6	72	34	29	36	●
1538SU08C-0370	✻	3.7	6	72	34	29	36	●
1538SU08C-0380	✻	3.8	6	81	43	36	36	●
1538SU08C-0390	✻	3.9	6	81	43	36	36	●
1538SU08C-0400	✻	4	6	81	43	36	36	●
1538SU08C-0410	✻	4.1	6	81	43	36	36	●
1538SU08C-0420	✻	4.2	6	81	43	36	36	●
1538SU08C-0430	✻	4.3	6	81	43	36	36	●
1538SU08C-0440	✻	4.4	6	81	43	36	36	●
1538SU08C-0450	✻	4.5	6	81	43	36	36	●
1538SU08C-0460	✻	4.6	6	81	43	36	36	●
1538SU08C-0470	✻	4.7	6	81	43	36	36	●
1538SU08C-0480	✻	4.8	6	95	57	48	36	●
1538SU08C-0490	✻	4.9	6	95	57	48	36	●
1538SU08C-0500	✻	5	6	95	57	48	36	●
1538SU08C-0510	✻	5.1	6	95	57	48	36	●
1538SU08C-0520	✻	5.2	6	95	57	48	36	●
1538SU08C-0530	✻	5.3	6	95	57	48	36	●
1538SU08C-0540	✻	5.4	6	95	57	48	36	●
1538SU08C-0550	✻	5.5	6	95	57	48	36	●
1538SU08C-0560	✻	5.6	6	95	57	48	36	●
1538SU08C-0570	✻	5.7	6	95	57	48	36	●
1538SU08C-0580	✻	5.8	6	95	57	48	36	●
1538SU08C-0590	✻	5.9	6	95	57	48	36	●
1538SU08C-0600	✻	6	6	95	57	48	36	●
1538SU08C-0610	✻	6.1	8	114	76	66	36	●
1538SU08C-0620	✻	6.2	8	114	76	66	36	●
1538SU08C-0630	✻	6.3	8	114	76	66	36	●
1538SU08C-0640	✻	6.4	8	114	76	66	36	●

● Ex stock ○ On demand

All articles SUK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1538SU*	✔	✔	✔			
1538SUK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SU(K) drill 8xD | General machining | Add K (SUK) to the code for use on Cast Iron

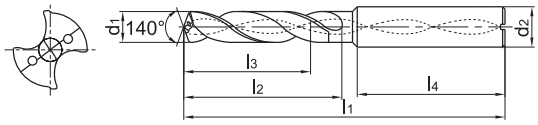
1538SU08C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1538SU08C-0650	✲	6.5	8	114	76	66	36	●
1538SU08C-0660	✲	6.6	8	114	76	66	36	●
1538SU08C-0670	✲	6.7	8	114	76	66	36	●
1538SU08C-0680	✲	6.8	8	114	76	66	36	●
1538SU08C-0690	✲	6.9	8	114	76	66	36	●
1538SU08C-0700	✲	7	8	116	76	66	36	●
1538SU08C-0710	✲	7.1	8	116	76	66	36	●
1538SU08C-0720	✲	7.2	8	116	76	66	36	●
1538SU08C-0730	✲	7.3	8	116	76	66	36	●
1538SU08C-0740	✲	7.4	8	116	76	66	36	●
1538SU08C-0750	✲	7.5	8	116	76	66	36	●
1538SU08C-0760	✲	7.6	8	116	76	66	36	●
1538SU08C-0770	✲	7.7	8	116	76	66	36	●
1538SU08C-0780	✲	7.8	8	116	76	66	36	●
1538SU08C-0790	✲	7.9	8	116	76	66	36	●
1538SU08C-0800	✲	8	8	116	76	66	36	●
1538SU08C-0810	✲	8.1	10	142	95	83	40	●
1538SU08C-0820	✲	8.2	10	142	95	83	40	●
1538SU08C-0830	✲	8.3	10	142	95	83	40	●
1538SU08C-0840	✲	8.4	10	142	95	83	40	●
1538SU08C-0850	✲	8.5	10	142	95	83	40	●
1538SU08C-0860	✲	8.6	10	142	95	83	40	●
1538SU08C-0870	✲	8.7	10	142	95	83	40	●
1538SU08C-0880	✲	8.8	10	142	95	83	40	●
1538SU08C-0890	✲	8.9	10	142	95	83	40	●
1538SU08C-0900	✲	9	10	142	95	83	40	●
1538SU08C-0910	✲	9.1	10	142	95	83	40	●
1538SU08C-0920	✲	9.2	10	142	95	83	40	●
1538SU08C-0930	✲	9.3	10	142	95	83	40	●
1538SU08C-0940	✲	9.4	10	142	95	83	40	●
1538SU08C-0950	✲	9.5	10	142	95	83	40	●
1538SU08C-0960	✲	9.6	10	142	95	83	40	●
1538SU08C-0970	✲	9.7	10	142	95	83	40	●
1538SU08C-0980	✲	9.8	10	142	95	83	40	●
1538SU08C-0990	✲	9.9	10	142	95	83	40	●

● Ex stock ○ On demand

All articles SUK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1538SU*	✔	✔	✔			
1538SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

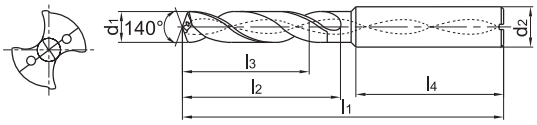
SU(K) drill 8xD | General machining | Add K (SUK) to the code for use on Cast Iron

1538SU08C

– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1538SU08C-1000	✻	10	10	142	95	83	40	●
1538SU08C-1010	✻	10.1	12	162	114	99	45	●
1538SU08C-1020	✻	10.2	12	162	114	99	45	●
1538SU08C-1030	✻	10.3	12	162	114	99	45	●
1538SU08C-1040	✻	10.4	12	162	114	99	45	●
1538SU08C-1050	✻	10.5	12	162	114	99	45	●
1538SU08C-1060	✻	10.6	12	162	114	99	45	●
1538SU08C-1070	✻	10.7	12	162	114	99	45	●
1538SU08C-1080	✻	10.8	12	162	114	99	45	●
1538SU08C-1090	✻	10.9	12	162	114	99	45	●
1538SU08C-1100	✻	11	12	162	114	99	45	●
1538SU08C-1110	✻	11.1	12	162	114	99	45	●
1538SU08C-1120	✻	11.2	12	162	114	99	45	●
1538SU08C-1130	✻	11.3	12	162	114	99	45	●
1538SU08C-1140	✻	11.4	12	162	114	99	45	●
1538SU08C-1150	✻	11.5	12	162	114	99	45	●
1538SU08C-1160	✻	11.6	12	162	114	99	45	●
1538SU08C-1170	✻	11.7	12	162	114	99	45	●
1538SU08C-1180	✻	11.8	12	162	114	99	45	●
1538SU08C-1190	✻	11.9	12	162	114	99	45	●
1538SU08C-1200	✻	12	12	162	114	99	45	●
1538SU08C-1250	✻	12.5	14	178	133	116	45	●
1538SU08C-1270	✻	12.7	14	178	133	116	45	●
1538SU08C-1280	✻	12.8	14	178	133	116	45	●
1538SU08C-1300	✻	13	14	178	133	116	45	●
1538SU08C-1350	✻	13.5	14	178	133	116	45	●
1538SU08C-1400	✻	14	14	178	133	116	45	●
1538SU08C-1450	✻	14.5	16	204	152	132	48	●
1538SU08C-1480	✻	14.8	16	204	152	132	48	●
1538SU08C-1500	✻	15	16	204	152	132	48	●
1538SU08C-1550	✻	15.5	16	204	152	132	48	●
1538SU08C-1600	✻	16	16	204	152	132	48	●
1538SU08C-1650	✻	16.5	18	223	171	149	48	●
1538SU08C-1700	✻	17	18	223	171	149	48	●
1538SU08C-1750	✻	17.5	18	223	171	149	48	●
1538SU08C-1800	✻	18	18	223	171	149	48	●

● Ex stock ○ On demand

All articles SUK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1538SU*	✔	✔	✔			
1538SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 3xD | General machining | Add K (SUK) to the code for use on Cast Iron

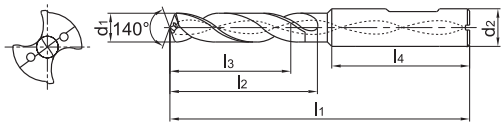
1634SU03C



– Type of shank: DIN 6535HB
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1634SU03C-0300	✲	3	6	62	20	14	36	●
1634SU03C-0310	✲	3.1	6	62	20	14	36	●
1634SU03C-0320	✲	3.2	6	62	20	14	36	●
1634SU03C-0325	✲	3.25	6	62	20	14	36	○
1634SU03C-0330	✲	3.3	6	62	20	14	36	●
1634SU03C-0340	✲	3.4	6	62	20	14	36	●
1634SU03C-0350	✲	3.5	6	62	20	14	36	●
1634SU03C-0360	✲	3.6	6	62	20	14	36	●
1634SU03C-0370	✲	3.7	6	62	20	14	36	●
1634SU03C-0380	✲	3.8	6	66	24	17	36	●
1634SU03C-0390	✲	3.9	6	66	24	17	36	●
1634SU03C-0400	✲	4	6	66	24	17	36	●
1634SU03C-0410	✲	4.1	6	66	24	17	36	●
1634SU03C-0420	✲	4.2	6	66	24	17	36	●
1634SU03C-0430	✲	4.3	6	66	24	17	36	●
1634SU03C-0440	✲	4.4	6	66	24	17	36	●
1634SU03C-0450	✲	4.5	6	66	24	17	36	●
1634SU03C-0460	✲	4.6	6	66	24	17	36	●
1634SU03C-0465	✲	4.65	6	66	24	17	36	○
1634SU03C-0470	✲	4.7	6	66	24	17	36	●
1634SU03C-0480	✲	4.8	6	66	28	20	36	●
1634SU03C-0490	✲	4.9	6	66	28	20	36	●
1634SU03C-0500	✲	5	6	66	28	20	36	●
1634SU03C-0510	✲	5.1	6	66	28	20	36	●
1634SU03C-0520	✲	5.2	6	66	28	20	36	●
1634SU03C-0530	✲	5.3	6	66	28	20	36	●
1634SU03C-0540	✲	5.4	6	66	28	20	36	●
1634SU03C-0550	✲	5.5	6	66	28	20	36	●
1634SU03C-0555	✲	5.55	6	66	28	20	36	●
1634SU03C-0560	✲	5.6	6	66	28	20	36	●
1634SU03C-0570	✲	5.7	6	66	28	20	36	●
1634SU03C-0580	✲	5.8	6	66	28	20	36	●
1634SU03C-0590	✲	5.9	6	66	28	20	36	●
1634SU03C-0600	✲	6	6	66	28	20	36	●
1634SU03C-0610	✲	6.1	8	79	34	24	36	●

● Ex stock ○ On demand

All articles SUK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1634SU*	✔	✔	✔			
1634SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 3xD | General machining | Add K (SUK) to the code for use on Cast Iron

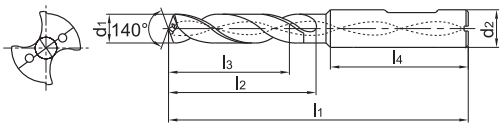
1634SU03C



– Type of shank: DIN 6535HB
– Coolant exit, axial concentric



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1634SU03C-0620	✻	6.2	8	79	34	24	36	●
1634SU03C-0630	✻	6.3	8	79	34	24	36	●
1634SU03C-0640	✻	6.4	8	79	34	24	36	●
1634SU03C-0650	✻	6.5	8	79	34	24	36	●
1634SU03C-0660	✻	6.6	8	79	34	24	36	●
1634SU03C-0670	✻	6.7	8	79	34	24	36	●
1634SU03C-0675	✻	6.75	8	79	34	24	36	○
1634SU03C-0680	✻	6.8	8	79	34	24	36	●
1634SU03C-0690	✻	6.9	8	79	34	24	36	●
1634SU03C-0700	✻	7	8	79	34	24	36	●
1634SU03C-0710	✻	7.1	8	79	41	29	36	●
1634SU03C-0720	✻	7.2	8	79	41	29	36	●
1634SU03C-0730	✻	7.3	8	79	41	29	36	●
1634SU03C-0740	✻	7.4	8	79	41	29	36	●
1634SU03C-0745	✻	7.45	8	79	41	29	36	○
1634SU03C-0750	✻	7.5	8	79	41	29	36	●
1634SU03C-0760	✻	7.6	8	79	41	29	36	●
1634SU03C-0770	✻	7.7	8	79	41	29	36	●
1634SU03C-0780	✻	7.8	8	79	41	29	36	●
1634SU03C-0790	✻	7.9	8	79	41	29	36	●
1634SU03C-0800	✻	8	8	79	41	29	36	●
1634SU03C-0810	✻	8.1	10	89	47	35	40	●
1634SU03C-0820	✻	8.2	10	89	47	35	40	●
1634SU03C-0830	✻	8.3	10	89	47	35	40	●
1634SU03C-0840	✻	8.4	10	89	47	35	40	●
1634SU03C-0850	✻	8.5	10	89	47	35	40	●
1634SU03C-0860	✻	8.6	10	89	47	35	40	●
1634SU03C-0870	✻	8.7	10	89	47	35	40	●
1634SU03C-0880	✻	8.8	10	89	47	35	40	●
1634SU03C-0890	✻	8.9	10	89	47	35	40	●
1634SU03C-0900	✻	9	10	89	47	35	40	●
1634SU03C-0910	✻	9.1	10	89	47	35	40	●
1634SU03C-0920	✻	9.2	10	89	47	35	40	●
1634SU03C-0930	✻	9.3	10	89	47	35	40	●
1634SU03C-0935	✻	9.35	10	89	47	35	40	○

● Ex stock ○ On demand

All articles SUK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1634SU*	✔	✔	✔			
1634SUK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SU(K) drill 3xD | General machining | Add K (SUK) to the code for use on Cast Iron

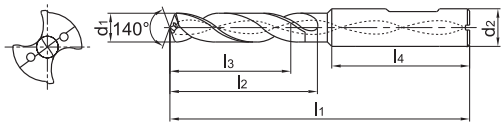
1634SU03C



– Type of shank: DIN 6535HB
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1634SU03C-0940	✲	9.4	10	89	47	35	40	●
1634SU03C-0945	✲	9.45	10	89	47	35	40	○
1634SU03C-0950	✲	9.5	10	89	47	35	40	●
1634SU03C-0960	✲	9.6	10	89	47	35	40	●
1634SU03C-0970	✲	9.7	10	89	47	35	40	●
1634SU03C-0980	✲	9.8	10	89	47	35	40	●
1634SU03C-0990	✲	9.9	10	89	47	35	40	●
1634SU03C-1000	✲	10	10	89	47	35	40	●
1634SU03C-1010	✲	10.1	12	102	55	40	45	●
1634SU03C-1020	✲	10.2	12	102	55	40	45	●
1634SU03C-1025	✲	10.25	12	102	55	40	45	○
1634SU03C-1030	✲	10.3	12	102	55	40	45	●
1634SU03C-1040	✲	10.4	12	102	55	40	45	●
1634SU03C-1050	✲	10.5	12	102	55	40	45	●
1634SU03C-1060	✲	10.6	12	102	55	40	45	●
1634SU03C-1070	✲	10.7	12	102	55	40	45	●
1634SU03C-1080	✲	10.8	12	102	55	40	45	●
1634SU03C-1090	✲	10.9	12	102	55	40	45	●
1634SU03C-1100	✲	11	12	102	55	40	45	●
1634SU03C-1110	✲	11.1	12	102	55	40	45	●
1634SU03C-1120	✲	11.2	12	102	55	40	45	●
1634SU03C-1125	✲	11.25	12	102	55	40	45	○
1634SU03C-1130	✲	11.3	12	102	55	40	45	●
1634SU03C-1135	✲	11.35	12	102	55	40	45	○
1634SU03C-1140	✲	11.4	12	102	55	40	45	●
1634SU03C-1145	✲	11.45	12	102	55	40	45	○
1634SU03C-1150	✲	11.5	12	102	55	40	45	●
1634SU03C-1160	✲	11.6	12	102	55	40	45	●
1634SU03C-1170	✲	11.7	12	102	55	40	45	●
1634SU03C-1180	✲	11.8	12	102	55	40	45	●
1634SU03C-1190	✲	11.9	12	102	55	40	45	●
1634SU03C-1200	✲	12	12	102	55	40	45	●
1634SU03C-1210	✲	12.1	14	107	60	43	45	●
1634SU03C-1220	✲	12.2	14	107	60	43	45	●
1634SU03C-1225	✲	12.25	14	107	60	43	45	○

● Ex stock ○ On demand

All articles SUK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1634SU*	✔	✔	✔			
1634SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 3xD | General machining | Add K (SUK) to the code for use on Cast Iron

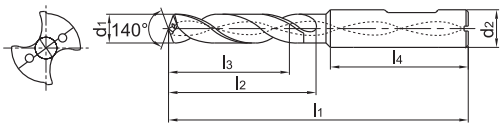
1634SU03C



– Type of shank: DIN 6535HB
– Coolant exit, axial concentric



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1634SU03C-1230	✻	12.3	14	107	60	43	45	●
1634SU03C-1250	✻	12.5	14	107	60	43	45	●
1634SU03C-1270	✻	12.7	14	107	60	43	45	●
1634SU03C-1275	✻	12.75	14	107	60	43	45	○
1634SU03C-1280	✻	12.8	14	107	60	43	45	●
1634SU03C-1300	✻	13	14	107	60	43	45	●
1634SU03C-1310	✻	13.1	14	107	60	43	45	●
1634SU03C-1335	✻	13.35	14	107	60	43	45	○
1634SU03C-1350	✻	13.5	14	107	60	43	45	●
1634SU03C-1380	✻	13.8	14	107	60	43	45	●
1634SU03C-1400	✻	14	14	107	60	43	45	●
1634SU03C-1420	✻	14.2	16	107	60	43	45	○
1634SU03C-1425	✻	14.25	16	115	65	45	48	○
1634SU03C-1430	✻	14.3	16	115	65	45	48	○
1634SU03C-1450	✻	14.5	16	115	65	45	48	●
1634SU03C-1475	✻	14.75	16	115	65	45	48	○
1634SU03C-1480	✻	14.8	16	115	65	45	48	●
1634SU03C-1500	✻	15	16	115	65	45	48	●
1634SU03C-1510	✻	15.1	16	115	65	45	48	○
1634SU03C-1535	✻	15.35	16	115	65	45	48	○
1634SU03C-1550	✻	15.5	16	115	65	45	48	○
1634SU03C-1580	✻	15.8	16	115	65	45	48	○
1634SU03C-1600	✻	16	16	115	65	45	48	●
1634SU03C-1650	✻	16.5	18	123	73	51	48	○
1634SU03C-1675	✻	16.75	18	123	73	51	48	○
1634SU03C-1680	✻	16.8	18	123	73	51	48	○
1634SU03C-1700	✻	17	18	123	73	51	48	●
1634SU03C-1750	✻	17.5	18	123	73	51	48	●
1634SU03C-1780	✻	17.8	18	123	73	51	48	○
1634SU03C-1800	✻	18	18	123	73	51	48	●
1634SU03C-1850	✻	18.5	20	131	79	55	50	○
1634SU03C-1880	✻	18.8	20	131	79	55	50	○
1634SU03C-1900	✻	19	20	131	79	55	50	○
1634SU03C-1950	✻	19.5	20	131	79	55	50	●
1634SU03C-1980	✻	19.8	20	131	79	55	50	○
1634SU03C-2000	✻	20	20	131	79	55	50	●

● Ex stock ○ On demand

All articles SUK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1634SU*	✔	✔	✔			
1634SUK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

Solid carbide drills SU series

SU(K) drill 5xD | General machining | Add K (SUK) to the code for use on Cast Iron

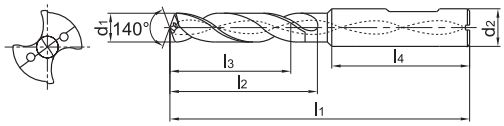
1636SU05C



– Type of shank: DIN 6535HB
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1636SU05C-0300	✲	3	6	62	20	14	36	●
1636SU05C-0310	✲	3.1	6	66	28	23	36	●
1636SU05C-0320	✲	3.2	6	66	28	23	36	●
1636SU05C-0325	✲	3.25	6	66	28	23	36	○
1636SU05C-0330	✲	3.3	6	66	28	23	36	●
1636SU05C-0340	✲	3.4	6	66	28	23	36	●
1636SU05C-0350	✲	3.5	6	66	28	23	36	●
1636SU05C-0360	✲	3.6	6	66	28	23	36	●
1636SU05C-0370	✲	3.7	6	66	28	23	36	●
1636SU05C-0380	✲	3.8	6	74	36	29	36	●
1636SU05C-0390	✲	3.9	6	74	36	29	36	●
1636SU05C-0400	✲	4	6	74	36	29	36	●
1636SU05C-0410	✲	4.1	6	74	36	29	36	●
1636SU05C-0420	✲	4.2	6	74	36	29	36	●
1636SU05C-0430	✲	4.3	6	74	36	29	36	●
1636SU05C-0440	✲	4.4	6	74	36	29	36	●
1636SU05C-0450	✲	4.5	6	74	36	29	36	●
1636SU05C-0460	✲	4.6	6	74	36	29	36	●
1636SU05C-0465	✲	4.65	6	74	36	29	36	●
1636SU05C-0470	✲	4.7	6	74	36	29	36	●
1636SU05C-0480	✲	4.8	6	82	44	35	36	●
1636SU05C-0490	✲	4.9	6	82	44	35	36	●
1636SU05C-0500	✲	5	6	82	44	35	36	●
1636SU05C-0510	✲	5.1	6	82	44	35	36	●
1636SU05C-0520	✲	5.2	6	82	44	35	36	●
1636SU05C-0530	✲	5.3	6	82	44	35	36	●
1636SU05C-0540	✲	5.4	6	82	44	35	36	●
1636SU05C-0550	✲	5.5	6	82	44	35	36	●
1636SU05C-0555	✲	5.55	6	82	44	35	36	●
1636SU05C-0560	✲	5.6	6	82	44	35	36	●
1636SU05C-0570	✲	5.7	6	82	44	35	36	●
1636SU05C-0580	✲	5.8	6	82	44	35	36	●
1636SU05C-0590	✲	5.9	6	82	44	35	36	●
1636SU05C-0600	✲	6	6	82	44	35	36	●
1636SU05C-0610	✲	6.1	8	91	53	43	36	●

● Ex stock ○ On demand

All articles SUK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1636SU*	✔	✔	✔			
1636SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 5xD | General machining | Add K (SUK) to the code for use on Cast Iron

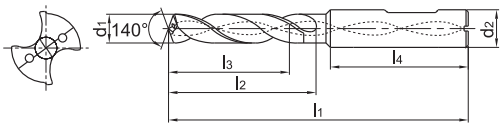
1636SU05C



– Type of shank: DIN 6535HB
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1636SU05C-0620	✲	6.2	8	91	53	43	36	●
1636SU05C-0630	✲	6.3	8	91	53	43	36	●
1636SU05C-0640	✲	6.4	8	91	53	43	36	●
1636SU05C-0650	✲	6.5	8	91	53	43	36	●
1636SU05C-0660	✲	6.6	8	91	53	43	36	●
1636SU05C-0670	✲	6.7	8	91	53	43	36	●
1636SU05C-0675	✲	6.75	8	91	53	43	36	●
1636SU05C-0680	✲	6.8	8	91	53	43	36	●
1636SU05C-0690	✲	6.9	8	91	53	43	36	●
1636SU05C-0700	✲	7	8	91	53	43	36	●
1636SU05C-0710	✲	7.1	8	91	53	43	36	●
1636SU05C-0720	✲	7.2	8	91	53	43	36	●
1636SU05C-0730	✲	7.3	8	91	53	43	36	●
1636SU05C-0740	✲	7.4	8	91	53	43	36	●
1636SU05C-0745	✲	7.45	8	91	53	43	36	●
1636SU05C-0750	✲	7.5	8	91	53	43	36	●
1636SU05C-0760	✲	7.6	8	91	53	43	36	●
1636SU05C-0770	✲	7.7	8	91	53	43	36	●
1636SU05C-0780	✲	7.8	8	91	53	43	36	●
1636SU05C-0790	✲	7.9	8	91	53	43	36	●
1636SU05C-0800	✲	8	8	91	53	43	36	●
1636SU05C-0810	✲	8.1	10	103	61	49	40	●
1636SU05C-0820	✲	8.2	10	103	61	49	40	●
1636SU05C-0830	✲	8.3	10	103	61	49	40	●
1636SU05C-0840	✲	8.4	10	103	61	49	40	●
1636SU05C-0850	✲	8.5	10	103	61	49	40	●
1636SU05C-0860	✲	8.6	10	103	61	49	40	●
1636SU05C-0870	✲	8.7	10	103	61	49	40	●
1636SU05C-0880	✲	8.8	10	103	61	49	40	●
1636SU05C-0890	✲	8.9	10	103	61	49	40	●
1636SU05C-0900	✲	9	10	103	61	49	40	●
1636SU05C-0910	✲	9.1	10	103	61	49	40	●
1636SU05C-0920	✲	9.2	10	103	61	49	40	●
1636SU05C-0930	✲	9.3	10	103	61	49	40	●
1636SU05C-0935	✲	9.35	10	103	61	49	40	○

● Ex stock ○ On demand

All articles SUK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1636SU*	✔	✔	✔			
1636SUK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SU(K) drill 5xD | General machining | Add K (SUK) to the code for use on Cast Iron

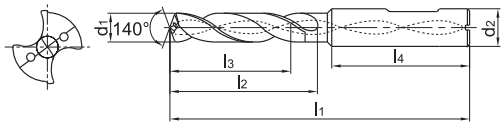
1636SU05C



– Type of shank: DIN 6535HB
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1636SU05C-0940	✲	9.4	10	103	61	49	40	●
1636SU05C-0945	✲	9.45	10	103	61	49	40	○
1636SU05C-0950	✲	9.5	10	103	61	49	40	●
1636SU05C-0960	✲	9.6	10	103	61	49	40	●
1636SU05C-0970	✲	9.7	10	103	61	49	40	●
1636SU05C-0980	✲	9.8	10	103	61	49	40	●
1636SU05C-0990	✲	9.9	10	103	61	49	40	●
1636SU05C-1000	✲	10	10	103	61	49	40	●
1636SU05C-1010	✲	10.1	12	118	71	56	45	●
1636SU05C-1020	✲	10.2	12	118	71	56	45	●
1636SU05C-1025	✲	10.25	12	118	71	56	45	●
1636SU05C-1030	✲	10.3	12	118	71	56	45	●
1636SU05C-1040	✲	10.4	12	118	71	56	45	●
1636SU05C-1050	✲	10.5	12	118	71	56	45	●
1636SU05C-1060	✲	10.6	12	118	71	56	45	●
1636SU05C-1070	✲	10.7	12	118	71	56	45	●
1636SU05C-1080	✲	10.8	12	118	71	56	45	●
1636SU05C-1090	✲	10.9	12	118	71	56	45	●
1636SU05C-1100	✲	11	12	118	71	56	45	●
1636SU05C-1110	✲	11.1	12	118	71	56	45	●
1636SU05C-1120	✲	11.2	12	118	71	56	45	●
1636SU05C-1125	✲	11.25	12	118	71	56	45	○
1636SU05C-1130	✲	11.3	12	118	71	56	45	●
1636SU05C-1135	✲	11.35	12	118	71	56	45	○
1636SU05C-1140	✲	11.4	12	118	71	56	45	●
1636SU05C-1145	✲	11.45	12	118	71	56	45	○
1636SU05C-1150	✲	11.5	12	118	71	56	45	●
1636SU05C-1160	✲	11.6	12	118	71	56	45	●
1636SU05C-1170	✲	11.7	12	118	71	56	45	●
1636SU05C-1180	✲	11.8	12	118	71	56	45	●
1636SU05C-1190	✲	11.9	12	118	71	56	45	●
1636SU05C-1200	✲	12	12	118	71	56	45	●
1636SU05C-1210	✲	12.1	14	124	77	60	45	●
1636SU05C-1220	✲	12.2	14	124	77	60	45	●
1636SU05C-1225	✲	12.25	14	124	77	60	45	●

● Ex stock ○ On demand

All articles SUK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1636SU*	✔	✔	✔			
1636SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 5xD | General machining | Add K (SUK) to the code for use on Cast Iron

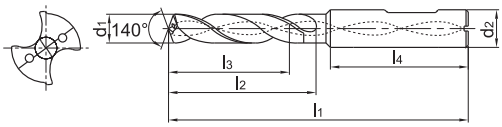
1636SU05C



– Type of shank: DIN 6535HB
– Coolant exit, axial concentric



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1636SU05C-1230	✻	12.3	14	124	77	60	45	●
1636SU05C-1250	✻	12.5	14	124	77	60	45	●
1636SU05C-1270	✻	12.7	14	124	77	60	45	●
1636SU05C-1275	✻	12.75	14	124	77	60	45	○
1636SU05C-1280	✻	12.8	14	124	77	60	45	●
1636SU05C-1300	✻	13	14	124	77	60	45	●
1636SU05C-1310	✻	13.1	14	124	77	60	45	●
1636SU05C-1335	✻	13.35	14	124	77	60	56	○
1636SU05C-1350	✻	13.5	14	124	77	60	45	●
1636SU05C-1380	✻	13.8	14	124	77	60	45	●
1636SU05C-1400	✻	14	14	124	77	60	45	●
1636SU05C-1420	✻	14.2	16	124	77	60	45	●
1636SU05C-1425	✻	14.25	16	133	83	63	48	●
1636SU05C-1430	✻	14.3	16	133	83	63	48	●
1636SU05C-1450	✻	14.5	16	133	83	63	48	●
1636SU05C-1475	✻	14.75	16	133	83	63	48	○
1636SU05C-1480	✻	14.8	16	133	83	63	48	●
1636SU05C-1500	✻	15	16	133	83	63	48	●
1636SU05C-1510	✻	15.1	16	133	83	63	48	●
1636SU05C-1535	✻	15.35	16	133	83	63	48	○
1636SU05C-1550	✻	15.5	16	133	83	63	48	●
1636SU05C-1580	✻	15.8	16	133	83	63	48	●
1636SU05C-1600	✻	16	16	133	83	63	48	●
1636SU05C-1650	✻	16.5	18	143	93	71	48	●
1636SU05C-1675	✻	16.75	18	143	93	71	48	○
1636SU05C-1680	✻	16.8	18	143	93	71	48	●
1636SU05C-1700	✻	17	18	143	93	71	48	●
1636SU05C-1750	✻	17.5	18	143	93	71	48	●
1636SU05C-1780	✻	17.8	18	143	93	71	48	●
1636SU05C-1800	✻	18	18	143	93	71	48	●
1636SU05C-1850	✻	18.5	20	153	101	77	50	●
1636SU05C-1880	✻	18.8	20	153	101	77	50	●
1636SU05C-1900	✻	19	20	153	101	77	50	●
1636SU05C-1950	✻	19.5	20	153	101	77	50	●
1636SU05C-1980	✻	19.8	20	153	101	77	50	●
1636SU05C-2000	✻	20	20	153	101	77	50	●

● Ex stock ○ On demand

All articles SUK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1636SU*	✔	✔	✔			
1636SUK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SU(K) drill 3xD | General machining | Add K (SUK) to the code for use on Cast Iron

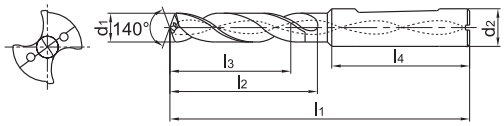
1734SU03C



– Whistle Notch clamping surface
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1734SU03C-0300	✲	3	6	66	28	23	36	●
1734SU03C-0310	✲	3.1	6	62	20	14	36	●
1734SU03C-0320	✲	3.2	6	62	20	14	36	●
1734SU03C-0325	✲	3.25	6	62	20	14	36	○
1734SU03C-0330	✲	3.3	6	62	20	14	36	●
1734SU03C-0340	✲	3.4	6	62	20	14	36	●
1734SU03C-0350	✲	3.5	6	62	20	14	36	●
1734SU03C-0360	✲	3.6	6	62	20	14	36	●
1734SU03C-0370	✲	3.7	6	62	20	14	36	●
1734SU03C-0380	✲	3.8	6	66	24	17	36	●
1734SU03C-0390	✲	3.9	6	66	24	17	36	●
1734SU03C-0400	✲	4	6	66	24	17	36	●
1734SU03C-0410	✲	4.1	6	66	24	17	36	●
1734SU03C-0420	✲	4.2	6	66	24	17	36	●
1734SU03C-0430	✲	4.3	6	66	24	17	36	●
1734SU03C-0440	✲	4.4	6	66	24	17	36	●
1734SU03C-0450	✲	4.5	6	66	24	17	36	●
1734SU03C-0460	✲	4.6	6	66	24	17	36	●
1734SU03C-0465	✲	4.65	6	66	24	17	36	○
1734SU03C-0470	✲	4.7	6	66	24	17	36	●
1734SU03C-0480	✲	4.8	6	66	28	20	36	●
1734SU03C-0490	✲	4.9	6	66	28	20	36	●
1734SU03C-0500	✲	5	6	66	28	20	36	●
1734SU03C-0510	✲	5.1	6	66	28	20	36	●
1734SU03C-0520	✲	5.2	6	66	28	20	36	●
1734SU03C-0530	✲	5.3	6	66	28	20	36	●
1734SU03C-0540	✲	5.4	6	66	28	20	36	●
1734SU03C-0550	✲	5.5	6	66	28	20	36	●
1734SU03C-0555	✲	5.55	6	66	28	20	36	●
1734SU03C-0560	✲	5.6	6	66	28	20	36	●
1734SU03C-0570	✲	5.7	6	66	28	20	36	●
1734SU03C-0580	✲	5.8	6	66	28	20	36	●
1734SU03C-0590	✲	5.9	6	66	28	20	36	●
1734SU03C-0600	✲	6	6	66	28	20	36	●
1734SU03C-0610	✲	6.1	8	79	34	24	36	●

● Ex stock ○ On demand

All articles SUK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1734SU*	✔	✔	✔			
1734SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

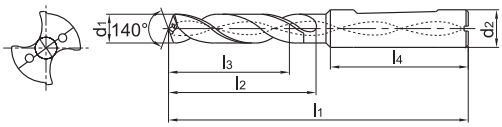
SU(K) drill 3xD | General machining | Add K (SUK) to the code for use on Cast Iron

1734SU03C

– Whistle Notch clamping surface
– Coolant exit, axial concentric



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1734SU03C-0620	✻	6.2	8	79	34	24	36	●
1734SU03C-0630	✻	6.3	8	79	34	24	36	●
1734SU03C-0640	✻	6.4	8	79	34	24	36	●
1734SU03C-0650	✻	6.5	8	79	34	24	36	●
1734SU03C-0660	✻	6.6	8	79	34	24	36	●
1734SU03C-0670	✻	6.7	8	79	34	24	36	●
1734SU03C-0675	✻	6.75	8	79	34	24	36	●
1734SU03C-0680	✻	6.8	8	79	34	24	36	●
1734SU03C-0690	✻	6.9	8	79	34	24	36	●
1734SU03C-0700	✻	7	8	79	34	24	36	●
1734SU03C-0710	✻	7.1	8	79	41	29	36	●
1734SU03C-0720	✻	7.2	8	79	41	29	36	●
1734SU03C-0730	✻	7.3	8	79	41	29	36	●
1734SU03C-0740	✻	7.4	8	79	41	29	36	●
1734SU03C-0745	✻	7.45	8	79	41	29	36	○
1734SU03C-0750	✻	7.5	8	79	41	29	36	●
1734SU03C-0760	✻	7.6	8	79	41	29	36	●
1734SU03C-0770	✻	7.7	8	79	41	29	36	●
1734SU03C-0780	✻	7.8	8	79	41	29	36	●
1734SU03C-0790	✻	7.9	8	79	41	29	36	●
1734SU03C-0800	✻	8	8	79	41	29	36	●
1734SU03C-0810	✻	8.1	10	89	47	35	40	●
1734SU03C-0820	✻	8.2	10	89	47	35	40	●
1734SU03C-0830	✻	8.3	10	89	47	35	40	●
1734SU03C-0840	✻	8.4	10	89	47	35	40	●
1734SU03C-0850	✻	8.5	10	89	47	35	40	●
1734SU03C-0860	✻	8.6	10	89	47	35	40	●
1734SU03C-0870	✻	8.7	10	89	47	35	40	●
1734SU03C-0880	✻	8.8	10	89	47	35	40	●
1734SU03C-0890	✻	8.9	10	89	47	35	40	●
1734SU03C-0900	✻	9	10	89	47	35	40	●
1734SU03C-0910	✻	9.1	10	89	47	35	40	●
1734SU03C-0920	✻	9.2	10	89	47	35	40	●
1734SU03C-0930	✻	9.3	10	89	47	35	40	●
1734SU03C-0935	✻	9.35	10	89	47	35	40	○

● Ex stock ○ On demand

All articles SUK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1734SU*	✔	✔	✔			
1734SUK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

Solid carbide drills SU series

SU(K) drill 3xD | General machining | Add K (SUK) to the code for use on Cast Iron

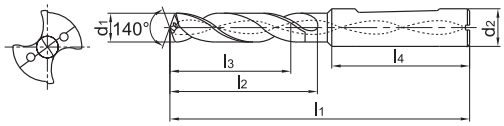
1734SU03C



– Whistle Notch clamping surface
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1734SU03C-0940	✲	9.4	10	89	47	35	40	●
1734SU03C-0945	✲	9.45	10	89	47	35	40	○
1734SU03C-0950	✲	9.5	10	89	47	35	40	●
1734SU03C-0960	✲	9.6	10	89	47	35	40	●
1734SU03C-0970	✲	9.7	10	89	47	35	40	●
1734SU03C-0980	✲	9.8	10	89	47	35	40	●
1734SU03C-0990	✲	9.9	10	89	47	35	40	●
1734SU03C-1000	✲	10	10	89	47	35	40	●
1734SU03C-1010	✲	10.1	12	102	55	40	45	●
1734SU03C-1020	✲	10.2	12	102	55	40	45	●
1734SU03C-1025	✲	10.25	12	102	55	40	45	●
1734SU03C-1030	✲	10.3	12	102	55	40	45	●
1734SU03C-1040	✲	10.4	12	102	55	40	45	●
1734SU03C-1050	✲	10.5	12	102	55	40	45	●
1734SU03C-1060	✲	10.6	12	102	55	40	45	●
1734SU03C-1070	✲	10.7	12	102	55	40	45	●
1734SU03C-1080	✲	10.8	12	102	55	40	45	●
1734SU03C-1090	✲	10.9	12	102	55	40	45	●
1734SU03C-1100	✲	11	12	102	55	40	45	●
1734SU03C-1110	✲	11.1	12	102	55	40	45	●
1734SU03C-1120	✲	11.2	12	102	55	40	45	●
1734SU03C-1125	✲	11.25	12	102	55	40	45	○
1734SU03C-1130	✲	11.3	12	102	55	40	45	●
1734SU03C-1135	✲	11.35	12	102	55	40	45	○
1734SU03C-1140	✲	11.4	12	102	55	40	45	●
1734SU03C-1145	✲	11.45	12	102	55	40	45	○
1734SU03C-1150	✲	11.5	12	102	55	40	45	●
1734SU03C-1160	✲	11.6	12	102	55	40	45	●
1734SU03C-1170	✲	11.7	12	102	55	40	45	●
1734SU03C-1180	✲	11.8	12	102	55	40	45	●
1734SU03C-1190	✲	11.9	12	102	55	40	45	●
1734SU03C-1200	✲	12	12	102	55	40	45	●
1734SU03C-1210	✲	12.1	14	107	60	43	45	●
1734SU03C-1220	✲	12.2	14	107	60	43	45	●
1734SU03C-1225	✲	12.25	14	107	60	43	45	●

● Ex stock ○ On demand

All articles SUK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1734SU*	✔	✔	✔			
1734SUK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SU(K) drill 3xD | General machining | Add K (SUK) to the code for use on Cast Iron

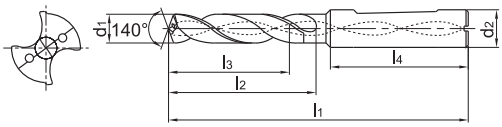
1734SU03C



– Whistle Notch clamping surface
– Coolant exit, axial concentric



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1734SU03C-1230	✻	12.3	14	107	60	43	45	●
1734SU03C-1250	✻	12.5	14	107	60	43	45	●
1734SU03C-1270	✻	12.7	14	107	60	43	45	●
1734SU03C-1275	✻	12.75	14	107	60	43	45	●
1734SU03C-1280	✻	12.8	14	107	60	43	45	●
1734SU03C-1300	✻	13	14	107	60	43	45	●
1734SU03C-1310	✻	13.1	14	107	60	43	45	●
1734SU03C-1335	✻	13.35	14	107	60	43	45	○
1734SU03C-1350	✻	13.5	14	107	60	43	45	●
1734SU03C-1380	✻	13.8	14	107	60	43	45	●
1734SU03C-1400	✻	14	14	107	60	43	45	●
1734SU03C-1420	✻	14.2	16	107	60	43	45	●
1734SU03C-1425	✻	14.25	16	115	65	45	48	●
1734SU03C-1430	✻	14.3	16	115	65	45	48	●
1734SU03C-1450	✻	14.5	16	115	65	45	48	●
1734SU03C-1475	✻	14.75	16	115	65	45	48	●
1734SU03C-1480	✻	14.8	16	115	65	45	48	●
1734SU03C-1500	✻	15	16	115	65	45	48	●
1734SU03C-1510	✻	15.1	16	115	65	45	48	●
1734SU03C-1535	✻	15.35	16	115	65	45	48	○
1734SU03C-1550	✻	15.5	16	115	65	45	48	●
1734SU03C-1580	✻	15.8	16	115	65	45	48	●
1734SU03C-1600	✻	16	16	115	65	45	48	●
1734SU03C-1650	✻	16.5	18	123	73	51	48	●
1734SU03C-1675	✻	16.75	18	123	73	51	48	●
1734SU03C-1680	✻	16.8	18	123	73	51	48	●
1734SU03C-1700	✻	17	18	123	73	51	48	●
1734SU03C-1750	✻	17.5	18	123	73	51	48	●
1734SU03C-1780	✻	17.8	18	123	73	51	48	●
1734SU03C-1800	✻	18	18	123	73	51	48	●
1734SU03C-1850	✻	18.5	20	131	79	55	50	●
1734SU03C-1880	✻	18.8	20	131	79	55	50	●
1734SU03C-1900	✻	19	20	131	79	55	50	●
1734SU03C-1950	✻	19.5	20	131	79	55	50	●
1734SU03C-1980	✻	19.8	20	131	79	55	50	●
1734SU03C-2000	✻	20	20	131	79	55	50	●

● Ex stock ○ On demand

All articles SUK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1734SU*	✔	✔	✔			
1734SUK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SU(K) drill 5xD | General machining | Add K (SUK) to the code for use on Cast Iron

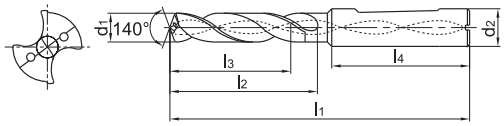
1736SU05C



– Whistle Notch clamping surface
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1736SU05C-0300	✲	3	6	66	28	23	36	●
1736SU05C-0310	✲	3.1	6	66	28	23	36	●
1736SU05C-0320	✲	3.2	6	66	28	23	36	●
1736SU05C-0325	✲	3.25	6	66	28	23	36	○
1736SU05C-0330	✲	3.3	6	66	28	23	36	●
1736SU05C-0340	✲	3.4	6	66	28	23	36	●
1736SU05C-0350	✲	3.5	6	66	28	23	36	●
1736SU05C-0360	✲	3.6	6	66	28	23	36	●
1736SU05C-0370	✲	3.7	6	66	28	23	36	●
1736SU05C-0380	✲	3.8	6	74	36	29	36	●
1736SU05C-0390	✲	3.9	6	74	36	29	36	●
1736SU05C-0400	✲	4	6	74	36	29	36	●
1736SU05C-0410	✲	4.1	6	74	36	29	36	●
1736SU05C-0420	✲	4.2	6	74	36	29	36	●
1736SU05C-0430	✲	4.3	6	74	36	29	36	●
1736SU05C-0440	✲	4.4	6	74	36	29	36	●
1736SU05C-0450	✲	4.5	6	74	36	29	36	●
1736SU05C-0460	✲	4.6	6	74	36	29	36	●
1736SU05C-0465	✲	4.65	6	74	36	29	36	○
1736SU05C-0470	✲	4.7	6	74	36	29	36	●
1736SU05C-0480	✲	4.8	6	82	44	35	36	●
1736SU05C-0490	✲	4.9	6	82	44	35	36	●
1736SU05C-0500	✲	5	6	82	44	35	36	●
1736SU05C-0510	✲	5.1	6	82	44	35	36	●
1736SU05C-0520	✲	5.2	6	82	44	35	36	●
1736SU05C-0530	✲	5.3	6	82	44	35	36	●
1736SU05C-0540	✲	5.4	6	82	44	35	36	●
1736SU05C-0550	✲	5.5	6	82	44	35	36	●
1736SU05C-0555	✲	5.55	6	82	44	35	36	●
1736SU05C-0560	✲	5.6	6	82	44	35	36	●
1736SU05C-0570	✲	5.7	6	82	44	35	36	●
1736SU05C-0580	✲	5.8	6	82	44	35	36	●
1736SU05C-0590	✲	5.9	6	82	44	35	36	●
1736SU05C-0600	✲	6	6	82	44	35	36	●
1736SU05C-0610	✲	6.1	8	91	53	43	36	●

● Ex stock ○ On demand

All articles SUK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1736SU*	✔	✔	✔			
1736SUK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SU(K) drill 5xD | General machining | Add K (SUK) to the code for use on Cast Iron

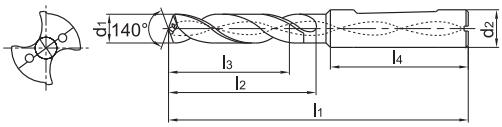
1736SU05C



– Whistle Notch clamping surface
– Coolant exit, axial concentric



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1736SU05C-0620	✻	6.2	8	91	53	43	36	●
1736SU05C-0630	✻	6.3	8	91	53	43	36	●
1736SU05C-0640	✻	6.4	8	91	53	43	36	●
1736SU05C-0650	✻	6.5	8	91	53	43	36	●
1736SU05C-0660	✻	6.6	8	91	53	43	36	●
1736SU05C-0670	✻	6.7	8	91	53	43	36	●
1736SU05C-0675	✻	6.75	8	91	53	43	36	●
1736SU05C-0680	✻	6.8	8	91	53	43	36	●
1736SU05C-0690	✻	6.9	8	91	53	43	36	●
1736SU05C-0700	✻	7	8	91	53	43	36	●
1736SU05C-0710	✻	7.1	8	91	53	43	36	●
1736SU05C-0720	✻	7.2	8	91	53	43	36	●
1736SU05C-0730	✻	7.3	8	91	53	43	36	●
1736SU05C-0740	✻	7.4	8	91	53	43	36	●
1736SU05C-0745	✻	7.45	8	91	53	43	36	○
1736SU05C-0750	✻	7.5	8	91	53	43	36	●
1736SU05C-0760	✻	7.6	8	91	53	43	36	●
1736SU05C-0770	✻	7.7	8	91	53	43	36	●
1736SU05C-0780	✻	7.8	8	91	53	43	36	●
1736SU05C-0790	✻	7.9	8	91	53	43	36	●
1736SU05C-0800	✻	8	8	91	53	43	36	●
1736SU05C-0810	✻	8.1	10	103	61	49	40	●
1736SU05C-0820	✻	8.2	10	103	61	49	40	●
1736SU05C-0830	✻	8.3	10	103	61	49	40	●
1736SU05C-0840	✻	8.4	10	103	61	49	40	●
1736SU05C-0850	✻	8.5	10	103	61	49	40	●
1736SU05C-0860	✻	8.6	10	103	61	49	40	●
1736SU05C-0870	✻	8.7	10	103	61	49	40	●
1736SU05C-0880	✻	8.8	10	103	61	49	40	●
1736SU05C-0890	✻	8.9	10	103	61	49	40	●
1736SU05C-0900	✻	9	10	103	61	49	40	●
1736SU05C-0910	✻	9.1	10	103	61	49	40	●
1736SU05C-0920	✻	9.2	10	103	61	49	40	●
1736SU05C-0930	✻	9.3	10	103	61	49	40	●
1736SU05C-0935	✻	9.35	10	103	61	49	40	○

● Ex stock ○ On demand

All articles SUK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1736SU*	✔	✔	✔			
1736SUK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SU(K) drill 5xD | General machining | Add K (SUK) to the code for use on Cast Iron

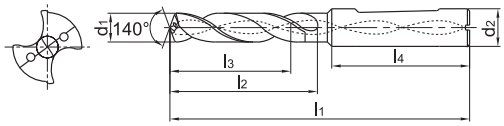
1736SU05C



– Whistle Notch clamping surface
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1736SU05C-0940	✲	9.4	10	103	61	49	40	●
1736SU05C-0945	✲	9.45	10	103	61	49	40	○
1736SU05C-0950	✲	9.5	10	103	61	49	40	●
1736SU05C-0960	✲	9.6	10	103	61	49	40	●
1736SU05C-0970	✲	9.7	10	103	61	49	40	●
1736SU05C-0980	✲	9.8	10	103	61	49	40	●
1736SU05C-0990	✲	9.9	10	103	61	49	40	●
1736SU05C-1000	✲	10	10	103	61	49	40	●
1736SU05C-1010	✲	10.1	12	118	71	56	45	●
1736SU05C-1020	✲	10.2	12	118	71	56	45	●
1736SU05C-1025	✲	10.25	12	118	71	56	45	●
1736SU05C-1030	✲	10.3	12	118	71	56	45	●
1736SU05C-1040	✲	10.4	12	118	71	56	45	●
1736SU05C-1050	✲	10.5	12	118	71	56	45	●
1736SU05C-1060	✲	10.6	12	118	71	56	45	●
1736SU05C-1070	✲	10.7	12	118	71	56	45	●
1736SU05C-1080	✲	10.8	12	118	71	56	45	●
1736SU05C-1090	✲	10.9	12	118	71	56	45	●
1736SU05C-1100	✲	11	12	118	71	56	45	●
1736SU05C-1110	✲	11.1	12	118	71	56	45	●
1736SU05C-1120	✲	11.2	12	118	71	56	45	●
1736SU05C-1125	✲	11.25	12	118	71	56	45	○
1736SU05C-1130	✲	11.3	12	118	71	56	45	●
1736SU05C-1135	✲	11.35	12	118	71	56	45	○
1736SU05C-1140	✲	11.4	12	118	71	56	45	●
1736SU05C-1145	✲	11.45	12	118	71	56	45	○
1736SU05C-1150	✲	11.5	12	118	71	56	45	●
1736SU05C-1160	✲	11.6	12	118	71	56	45	●
1736SU05C-1170	✲	11.7	12	118	71	56	45	●
1736SU05C-1180	✲	11.8	12	118	71	56	45	●
1736SU05C-1190	✲	11.9	12	118	71	56	45	●
1736SU05C-1200	✲	12	12	118	71	56	45	●
1736SU05C-1210	✲	12.1	14	124	77	60	45	●
1736SU05C-1220	✲	12.2	14	124	77	60	45	●
1736SU05C-1225	✲	12.25	14	124	77	60	45	○

● Ex stock ○ On demand

All articles SUK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1736SU*	✔	✔	✔			
1736SUK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

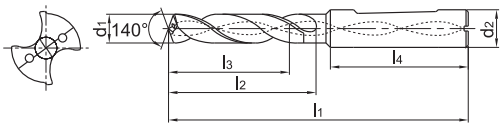
SU(K) drill 5xD | General machining | Add K (SUK) to the code for use on Cast Iron

1736SU05C

– Whistle Notch clamping surface
– Coolant exit, axial concentric



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1736SU05C-1230	✻	12.3	14	124	77	60	45	●
1736SU05C-1250	✻	12.5	14	124	77	60	45	●
1736SU05C-1270	✻	12.7	14	124	77	60	45	●
1736SU05C-1275	✻	12.75	14	124	77	60	45	●
1736SU05C-1280	✻	12.8	14	124	77	60	45	●
1736SU05C-1300	✻	13	14	124	77	60	45	●
1736SU05C-1310	✻	13.1	14	124	77	60	45	●
1736SU05C-1335	✻	13.35	14	124	77	60	56	○
1736SU05C-1350	✻	13.5	14	124	77	60	45	●
1736SU05C-1380	✻	13.8	14	124	77	60	45	●
1736SU05C-1400	✻	14	14	124	77	60	45	●
1736SU05C-1420	✻	14.2	16	124	77	60	45	●
1736SU05C-1425	✻	14.25	16	133	83	63	48	●
1736SU05C-1430	✻	14.3	16	133	83	63	48	●
1736SU05C-1450	✻	14.5	16	133	83	63	48	●
1736SU05C-1475	✻	14.75	16	133	83	63	48	●
1736SU05C-1480	✻	14.8	16	133	83	63	48	●
1736SU05C-1500	✻	15	16	133	83	63	48	●
1736SU05C-1510	✻	15.1	16	133	83	63	48	●
1736SU05C-1535	✻	15.35	16	133	83	63	48	○
1736SU05C-1550	✻	15.5	16	133	83	63	48	●
1736SU05C-1580	✻	15.8	16	133	83	63	48	●
1736SU05C-1600	✻	16	16	133	83	63	48	●
1736SU05C-1650	✻	16.5	18	143	93	71	48	●
1736SU05C-1675	✻	16.75	18	143	93	71	48	●
1736SU05C-1680	✻	16.8	18	143	93	71	48	●
1736SU05C-1700	✻	17	18	143	93	71	48	●
1736SU05C-1750	✻	17.5	18	143	93	71	48	●
1736SU05C-1780	✻	17.8	18	143	93	71	48	●
1736SU05C-1800	✻	18	18	143	93	71	48	●
1736SU05C-1850	✻	18.5	20	153	101	77	50	●
1736SU05C-1880	✻	18.8	20	153	101	77	50	●
1736SU05C-1900	✻	19	20	153	101	77	50	●
1736SU05C-1950	✻	19.5	20	153	101	77	50	●
1736SU05C-1980	✻	19.8	20	153	101	77	50	●
1736SU05C-2000	✻	20	20	153	101	77	50	●

● Ex stock ○ On demand

All articles SUK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1736SU*	✔	✔	✔			
1736SUK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SU drill 3xD General machining

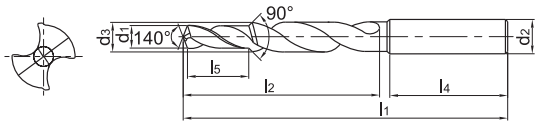
1557SU03



– Type of shank DIN 6535HA



External coolant



Article	✻	Dimensions [mm]							Grade
		d_1 (m8)	d_2 (h6)	d_3 (m7)	l_1	l_2	l_4	l_5	KDG303
1557SU03-M4		3.3	6	4.5	66	28	36	11.4	●
1557SU03-M5		4.2	6	6	66	28	36	13.6	●
1557SU03-M6		5	8	7	79	41	36	16.5	●
1557SU03-M8		6.75	10	9.5	89	47	40	21	●
1557SU03-M8x1.0		7	10	9.8	89	47	40	21	●
1557SU03-M10		8.5	12	12	102	55	45	25.5	●
1557SU03-M10x1.0		9	12	12	102	55	45	25.5	○
1557SU03-M12		10.25	14	14	107	60	45	30	●
1557SU03-M12x1.5		10.5	14	14	107	60	45	30	●
1557SU03-M14		12	16	16	115	65	48	34.5	●
1557SU03-M14x1.5		12.5	16	16	115	65	48	34.5	●
1557SU03-M16		14	18	18	123	73	48	38.5	●
1557SU03-M16x1.5		14.5	18	18	123	73	48	38.5	●

● Ex stock ○ On demand

✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔	✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178



1588SL *For deep hole drilling*

10xD, 12xD, 15xD, 20xD and 30xD drills

- For machining of steel, non-ferrous metals, stainless steel and heat-resistant alloys.
- Double margin for high accuracy and stable machining.
- Special flute design for less friction and good chip flow.

1588SLK DIN 1412 D

Deep hole drills for machining of cast iron

- Special cut for cast iron with ductile iron and malleable cast iron.
- Improved tool life due to impact resistant cutting edges.



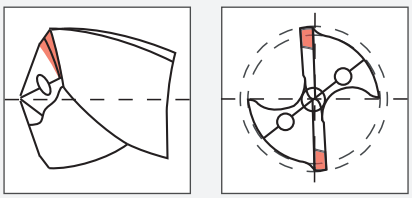
Straight cut

For cast iron

SLK

Deep hole drill

Form D: Cut for cast iron



SLK : All articles on demand.

Please add **K** when ordering:

1534SLK03-0100

SP series

For drilling pilot holes

- Recommended for deep hole drills with 15xD and larger.

SL(K) drill 10xD | General machining | Add K (SLK) to the code for use on Cast Iron

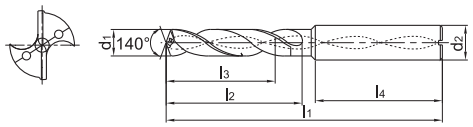
1588SL10C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1588SL10C-0300	✲	3	6	80	43	39	36	●
1588SL10C-0310	✲	3.1	6	80	43	39	36	○
1588SL10C-0320	✲	3.2	6	80	43	39	36	●
1588SL10C-0330	✲	3.3	6	80	43	39	36	●
1588SL10C-0340	✲	3.4	6	80	43	39	36	●
1588SL10C-0350	✲	3.5	6	80	43	39	36	●
1588SL10C-0360	✲	3.6	6	80	43	39	36	●
1588SL10C-0370	✲	3.7	6	80	43	39	36	●
1588SL10C-0380	✲	3.8	6	80	43	39	36	●
1588SL10C-0390	✲	3.9	6	80	43	39	36	●
1588SL10C-0400	✲	4	6	92	55	50	36	●
1588SL10C-0410	✲	4.1	6	92	55	50	36	●
1588SL10C-0420	✲	4.2	6	92	55	50	36	●
1588SL10C-0430	✲	4.3	6	92	55	50	36	●
1588SL10C-0440	✲	4.4	6	92	55	50	36	●
1588SL10C-0450	✲	4.5	6	92	55	50	36	●
1588SL10C-0460	✲	4.6	6	92	55	50	36	●
1588SL10C-0470	✲	4.7	6	92	55	50	36	●
1588SL10C-0480	✲	4.8	6	92	55	50	36	●
1588SL10C-0490	✲	4.9	6	92	55	50	36	●
1588SL10C-0500	✲	5	6	104	68	61	36	●
1588SL10C-0510	✲	5.1	6	104	68	61	36	●
1588SL10C-0520	✲	5.2	6	104	68	61	36	●
1588SL10C-0530	✲	5.3	6	104	68	61	36	●
1588SL10C-0540	✲	5.4	6	104	68	61	36	●
1588SL10C-0550	✲	5.5	6	104	68	61	36	●
1588SL10C-0560	✲	5.6	6	104	68	61	36	●
1588SL10C-0570	✲	5.7	6	104	68	61	36	●
1588SL10C-0580	✲	5.8	6	104	68	61	36	●
1588SL10C-0590	✲	5.9	6	104	68	61	36	●
1588SL10C-0600	✲	6	6	104	68	61	36	●
1588SL10C-0610	✲	6.1	8	117	80	71	36	●
1588SL10C-0620	✲	6.2	8	117	80	71	36	●
1588SL10C-0630	✲	6.3	8	117	80	71	36	●
1588SL10C-0640	✲	6.4	8	117	80	71	36	●

● Ex stock ○ On demand

All articles SLK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1588SL*	✔	✔	✔	✔	✔	
1588SLK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SL(K) drill 10xD | General machining | Add K (SLK) to the code for use on Cast Iron

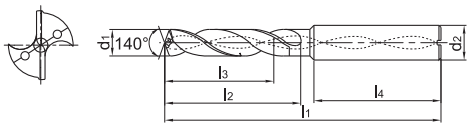
1588SL10C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1588SL10C-0650	✲	6.5	8	117	80	71	36	●
1588SL10C-0660	✲	6.6	8	117	80	71	36	●
1588SL10C-0670	✲	6.7	8	117	80	71	36	●
1588SL10C-0680	✲	6.8	8	117	80	71	36	●
1588SL10C-0690	✲	6.9	8	117	80	71	36	●
1588SL10C-0700	✲	7	8	117	80	71	36	●
1588SL10C-0710	✲	7.1	8	130	94	84	36	●
1588SL10C-0720	✲	7.2	8	130	94	84	36	●
1588SL10C-0730	✲	7.3	8	130	94	84	36	●
1588SL10C-0740	✲	7.4	8	130	94	84	36	●
1588SL10C-0750	✲	7.5	8	130	94	84	36	●
1588SL10C-0760	✲	7.6	8	130	94	84	36	●
1588SL10C-0770	✲	7.7	8	130	94	84	36	●
1588SL10C-0780	✲	7.8	8	130	94	84	36	●
1588SL10C-0790	✲	7.9	8	130	94	84	36	●
1588SL10C-0800	✲	8	8	130	94	84	36	●
1588SL10C-0810	✲	8.1	10	148	105	94	40	●
1588SL10C-0820	✲	8.2	10	148	105	94	40	●
1588SL10C-0830	✲	8.3	10	148	105	94	40	●
1588SL10C-0840	✲	8.4	10	148	105	94	40	●
1588SL10C-0850	✲	8.5	10	148	105	94	40	●
1588SL10C-0860	✲	8.6	10	148	105	94	40	●
1588SL10C-0870	✲	8.7	10	148	105	94	40	●
1588SL10C-0880	✲	8.8	10	148	105	94	40	●
1588SL10C-0890	✲	8.9	10	148	105	94	40	●
1588SL10C-0900	✲	9	10	148	105	94	40	●
1588SL10C-0910	✲	9.1	10	158	115	103	40	●
1588SL10C-0920	✲	9.2	10	158	115	103	40	●
1588SL10C-0930	✲	9.3	10	158	115	103	40	●
1588SL10C-0940	✲	9.4	10	158	115	103	40	●
1588SL10C-0950	✲	9.5	10	158	115	103	40	●
1588SL10C-0960	✲	9.6	10	158	115	103	40	●
1588SL10C-0970	✲	9.7	10	158	115	103	40	●
1588SL10C-0980	✲	9.8	10	158	115	103	40	●
1588SL10C-0990	✲	9.9	10	158	115	103	40	●

● Ex stock ○ On demand

All articles SLK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1588SL*	✔	✔	✔	✔	✔	
1588SLK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SL(K) drill 10xD | General machining | Add K (SLK) to the code for use on Cast Iron

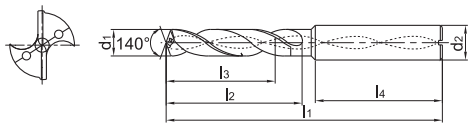
1588SL10C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1588SL10C-1000	✲	10	10	158	115	103	40	●
1588SL10C-1010	✲	10.1	12	183	135	121	45	●
1588SL10C-1020	✲	10.2	12	183	135	121	45	●
1588SL10C-1030	✲	10.3	12	183	135	121	45	●
1588SL10C-1040	✲	10.4	12	183	135	121	45	●
1588SL10C-1050	✲	10.5	12	183	135	121	45	●
1588SL10C-1060	✲	10.6	12	183	135	121	45	●
1588SL10C-1070	✲	10.7	12	183	135	121	45	●
1588SL10C-1080	✲	10.8	12	183	135	121	45	●
1588SL10C-1090	✲	10.9	12	183	135	121	45	●
1588SL10C-1100	✲	11	12	183	135	121	45	●
1588SL10C-1110	✲	11.1	12	183	135	121	45	●
1588SL10C-1120	✲	11.2	12	183	135	121	45	●
1588SL10C-1130	✲	11.3	12	183	135	121	45	●
1588SL10C-1140	✲	11.4	12	183	135	121	45	●
1588SL10C-1150	✲	11.5	12	183	135	121	45	●
1588SL10C-1160	✲	11.6	12	183	135	121	45	●
1588SL10C-1170	✲	11.7	12	183	135	121	45	●
1588SL10C-1180	✲	11.8	12	183	135	121	45	●
1588SL10C-1190	✲	11.9	12	183	135	121	45	●
1588SL10C-1200	✲	12	12	183	135	121	45	●
1588SL10C-1225	✲	12.25	14	209	160	144	45	●
1588SL10C-1250	✲	12.5	14	209	160	144	45	●
1588SL10C-1270	✲	12.7	14	209	160	144	45	●
1588SL10C-1275	✲	12.75	14	209	160	144	45	●
1588SL10C-1280	✲	12.8	14	209	160	144	45	●
1588SL10C-1300	✲	13	14	209	160	144	45	●
1588SL10C-1310	✲	13.1	14	209	160	144	45	●
1588SL10C-1350	✲	13.5	14	209	160	144	45	●
1588SL10C-1380	✲	13.8	14	209	160	144	45	●
1588SL10C-1400	✲	14	14	209	160	144	45	●

● Ex stock ○ On demand

All articles SLK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1588SL*	✔	✔	✔	✔	✔	
1588SLK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SL(K) drill 12xD | General machining | Add K (SLK) to the code for use on Cast Iron

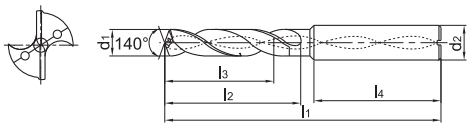
1588SL12C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1588SL12C-0300	✻	3	6	90	50	40	36	●
1588SL12C-0310	✻	3.1	6	90	50	40	36	●
1588SL12C-0320	✻	3.2	6	90	50	40	36	●
1588SL12C-0330	✻	3.3	6	90	50	40	36	●
1588SL12C-0340	✻	3.4	6	90	50	40	36	●
1588SL12C-0350	✻	3.5	6	90	50	40	36	●
1588SL12C-0360	✻	3.6	6	90	50	40	36	●
1588SL12C-0370	✻	3.7	6	90	50	46	36	●
1588SL12C-0380	✻	3.8	6	90	50	46	36	●
1588SL12C-0390	✻	3.9	6	90	50	46	36	●
1588SL12C-0400	✻	4	6	102	64	56	36	●
1588SL12C-0410	✻	4.1	6	102	64	56	36	●
1588SL12C-0420	✻	4.2	6	102	64	56	36	●
1588SL12C-0430	✻	4.3	6	102	64	56	36	●
1588SL12C-0440	✻	4.4	6	102	64	56	36	●
1588SL12C-0450	✻	4.5	6	102	64	56	36	●
1588SL12C-0460	✻	4.6	6	102	64	56	36	●
1588SL12C-0470	✻	4.7	6	102	64	56	36	●
1588SL12C-0480	✻	4.8	6	102	64	56	36	●
1588SL12C-0490	✻	4.9	6	102	64	56	36	●
1588SL12C-0500	✻	5	6	116	78	72	36	●
1588SL12C-0510	✻	5.1	6	116	78	72	36	●
1588SL12C-0520	✻	5.2	6	116	78	72	36	●
1588SL12C-0530	✻	5.3	6	116	78	72	36	○
1588SL12C-0540	✻	5.4	6	116	78	72	36	○
1588SL12C-0550	✻	5.5	6	116	78	72	36	●
1588SL12C-0560	✻	5.6	6	116	78	72	36	●
1588SL12C-0570	✻	5.7	6	116	78	72	36	●
1588SL12C-0580	✻	5.8	6	116	78	72	36	●
1588SL12C-0590	✻	5.9	6	116	78	72	36	●
1588SL12C-0600	✻	6	6	116	78	72	36	●
1588SL12C-0610	✻	6.1	8	131	93	84	36	●
1588SL12C-0620	✻	6.2	8	131	93	84	36	●
1588SL12C-0630	✻	6.3	8	131	93	84	36	●
1588SL12C-0640	✻	6.4	8	131	93	84	36	●

● Ex stock ○ On demand

All articles SLK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1588SL*	✔	✔	✔	✔	✔	
1588SLK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SL(K) drill 12xD | General machining | Add K (SLK) to the code for use on Cast Iron

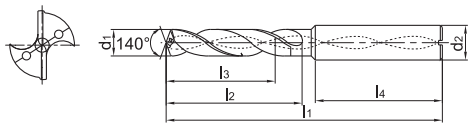
1588SL12C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1588SL12C-0650	✲	6.5	8	131	93	84	36	●
1588SL12C-0660	✲	6.6	8	131	93	84	36	●
1588SL12C-0670	✲	6.7	8	131	93	84	36	●
1588SL12C-0680	✲	6.8	8	131	93	84	36	●
1588SL12C-0690	✲	6.9	8	131	93	84	36	●
1588SL12C-0700	✲	7	8	131	93	84	36	●
1588SL12C-0710	✲	7.1	8	146	108	96	36	●
1588SL12C-0720	✲	7.2	8	146	108	96	36	●
1588SL12C-0730	✲	7.3	8	146	108	96	36	●
1588SL12C-0740	✲	7.4	8	146	108	96	36	●
1588SL12C-0750	✲	7.5	8	146	108	96	36	●
1588SL12C-0760	✲	7.6	8	146	108	96	36	○
1588SL12C-0770	✲	7.7	8	146	108	96	36	○
1588SL12C-0780	✲	7.8	8	146	108	96	36	●
1588SL12C-0790	✲	7.9	8	146	108	96	36	○
1588SL12C-0800	✲	8	8	146	108	96	36	●
1588SL12C-0810	✲	8.1	10	162	120	108	40	●
1588SL12C-0820	✲	8.2	10	162	120	108	40	●
1588SL12C-0830	✲	8.3	10	162	120	108	40	●
1588SL12C-0840	✲	8.4	10	162	120	108	40	●
1588SL12C-0850	✲	8.5	10	162	120	108	40	●
1588SL12C-0860	✲	8.6	10	162	120	108	40	●
1588SL12C-0870	✲	8.7	10	162	120	108	40	●
1588SL12C-0880	✲	8.8	10	162	120	108	40	●
1588SL12C-0890	✲	8.9	10	162	120	108	40	●
1588SL12C-0900	✲	9	10	162	120	108	40	●
1588SL12C-0910	✲	9.1	10	174	132	120	40	○
1588SL12C-0920	✲	9.2	10	174	132	120	40	●
1588SL12C-0930	✲	9.3	10	174	132	120	40	●
1588SL12C-0940	✲	9.4	10	174	132	120	40	●
1588SL12C-0950	✲	9.5	10	174	132	120	40	●
1588SL12C-0960	✲	9.6	10	174	132	120	40	○
1588SL12C-0970	✲	9.7	10	174	132	120	40	●
1588SL12C-0980	✲	9.8	10	174	132	120	40	●
1588SL12C-0990	✲	9.9	10	174	132	120	40	○

● Ex stock ○ On demand

All articles SLK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1588SL*	✔	✔	✔	✔	✔	
1588SLK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SL(K) drill 12xD | General machining | Add K (SLK) to the code for use on Cast Iron

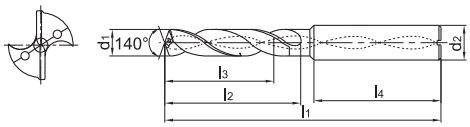
1588SL12C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1588SL12C-1000	✲	10	10	174	132	120	40	●
1588SL12C-1010	✲	10.1	12	204	156	144	45	●
1588SL12C-1020	✲	10.2	12	204	156	144	45	●
1588SL12C-1030	✲	10.3	12	204	156	144	45	●
1588SL12C-1040	✲	10.4	12	204	156	144	45	●
1588SL12C-1050	✲	10.5	12	204	156	144	45	●
1588SL12C-1060	✲	10.6	12	204	156	144	45	●
1588SL12C-1070	✲	10.7	12	204	156	144	45	○
1588SL12C-1080	✲	10.8	12	204	156	144	45	○
1588SL12C-1090	✲	10.9	12	204	156	144	45	○
1588SL12C-1100	✲	11	12	204	156	144	45	●
1588SL12C-1110	✲	11.1	12	204	156	144	45	●
1588SL12C-1120	✲	11.2	12	204	156	144	45	●
1588SL12C-1130	✲	11.3	12	204	156	144	45	○
1588SL12C-1140	✲	11.4	12	204	156	144	45	○
1588SL12C-1150	✲	11.5	12	204	156	144	45	●
1588SL12C-1160	✲	11.6	12	204	156	144	45	○
1588SL12C-1170	✲	11.7	12	204	156	144	45	●
1588SL12C-1180	✲	11.8	12	204	156	144	45	●
1588SL12C-1190	✲	11.9	12	204	156	144	45	○
1588SL12C-1200	✲	12	12	204	156	144	45	●
1588SL12C-1250	✲	12.5	14	230	182	168	45	○
1588SL12C-1270	✲	12.7	14	230	182	168	45	○
1588SL12C-1280	✲	12.8	14	230	182	168	45	○
1588SL12C-1300	✲	13	14	230	182	168	45	○
1588SL12C-1350	✲	13.5	14	230	182	168	45	○
1588SL12C-1400	✲	14	14	230	182	168	45	○
1588SL12C-1450	✲	14.5	16	260	208	194	48	○
1588SL12C-1500	✲	15	16	260	208	194	48	○
1588SL12C-1550	✲	15.5	16	260	208	194	48	○
1588SL12C-1600	✲	16	16	260	208	194	48	○
1588SL12C-1650	✲	16.5	18	286	234	218	48	○
1588SL12C-1700	✲	17	18	286	234	218	48	○
1588SL12C-1750	✲	17.5	18	286	234	218	48	○
1588SL12C-1800	✲	18	18	286	234	218	48	○

● Ex stock ○ On demand

All articles SLK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1588SL*	✔	✔	✔	✔	✔	
1588SLK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SL(K) drill 12xD | General machining | Add K (SLK) to the code for use on Cast Iron

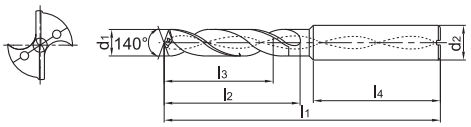
1588SL12C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1588SL12C-1850	✲	18.5	20	310	258	240	48	○
1588SL12C-1900	✲	19	20	310	258	240	48	○
1588SL12C-1950	✲	19.5	20	310	258	240	48	○
1588SL12C-2000	✲	20	20	310	258	240	48	○
1588SL12C-2050	✲	20.5	22	310	258	240	48	○
1588SL12C-2100	✲	21	22	310	258	240	48	○

● Ex stock ○ On demand

All articles SLK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1588SL*	✔	✔	✔	✔	✔	
1588SLK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SL(K) drill 15xD | General machining | Add K (SLK) to the code for use on Cast Iron

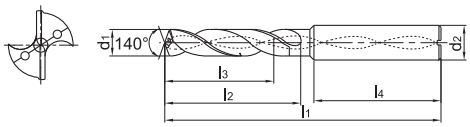
1588SL15C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1588SL15C-0300	✲	3	6	100	60	50	36	●
1588SL15C-0310	✲	3.1	6	105	65	55	36	●
1588SL15C-0320	✲	3.2	6	105	65	55	36	○
1588SL15C-0330	✲	3.3	6	105	65	55	36	●
1588SL15C-0340	✲	3.4	6	105	65	55	36	●
1588SL15C-0350	✲	3.5	6	105	65	55	36	●
1588SL15C-0360	✲	3.6	6	112	72	62	36	○
1588SL15C-0370	✲	3.7	6	112	72	68	36	●
1588SL15C-0380	✲	3.8	6	112	72	68	36	●
1588SL15C-0390	✲	3.9	6	112	72	68	36	○
1588SL15C-0400	✲	4	6	112	72	64	36	●
1588SL15C-0410	✲	4.1	6	120	80	72	36	○
1588SL15C-0420	✲	4.2	6	120	80	72	36	○
1588SL15C-0430	✲	4.3	6	120	80	72	36	○
1588SL15C-0440	✲	4.4	6	120	80	72	36	○
1588SL15C-0450	✲	4.5	6	120	80	72	36	●
1588SL15C-0460	✲	4.6	6	128	88	80	36	●
1588SL15C-0470	✲	4.7	6	128	88	80	36	○
1588SL15C-0480	✲	4.8	6	128	88	80	36	●
1588SL15C-0490	✲	4.9	6	128	88	80	36	●
1588SL15C-0500	✲	5	6	128	88	82	36	●
1588SL15C-0510	✲	5.1	6	136	96	90	36	●
1588SL15C-0520	✲	5.2	6	136	96	90	36	○
1588SL15C-0530	✲	5.3	6	136	96	90	36	●
1588SL15C-0540	✲	5.4	6	136	96	90	36	○
1588SL15C-0550	✲	5.5	6	136	96	90	36	○
1588SL15C-0560	✲	5.6	6	144	104	98	36	○
1588SL15C-0570	✲	5.7	6	144	104	98	36	○
1588SL15C-0580	✲	5.8	6	144	104	98	36	○
1588SL15C-0590	✲	5.9	6	144	104	98	36	○
1588SL15C-0600	✲	6	6	144	104	98	36	○
1588SL15C-0610	✲	6.1	8	152	112	103	36	●
1588SL15C-0620	✲	6.2	8	152	112	103	36	●
1588SL15C-0630	✲	6.3	8	152	112	103	36	○
1588SL15C-0640	✲	6.4	8	152	112	103	36	●

● Ex stock ○ On demand

All articles SLK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1588SL*	✔	✔	✔	✔	✔	
1588SLK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SL(K) drill 15xD | General machining | Add K (SLK) to the code for use on Cast Iron

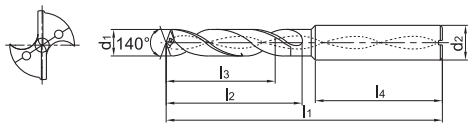
1588SL15C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1588SL15C-0650	✲	6.5	8	152	112	103	36	●
1588SL15C-0660	✲	6.6	8	160	120	111	36	○
1588SL15C-0670	✲	6.7	8	160	120	111	36	●
1588SL15C-0680	✲	6.8	8	160	120	111	36	○
1588SL15C-0690	✲	6.9	8	160	120	111	36	○
1588SL15C-0700	✲	7	8	160	120	111	36	●
1588SL15C-0710	✲	7.1	8	170	130	118	36	○
1588SL15C-0720	✲	7.2	8	170	130	118	36	○
1588SL15C-0730	✲	7.3	8	170	130	118	36	○
1588SL15C-0740	✲	7.4	8	170	130	118	36	○
1588SL15C-0750	✲	7.5	8	170	130	118	36	○
1588SL15C-0760	✲	7.6	8	180	140	128	36	○
1588SL15C-0770	✲	7.7	8	180	140	128	36	○
1588SL15C-0780	✲	7.8	8	180	140	128	36	○
1588SL15C-0790	✲	7.9	8	180	140	128	36	○
1588SL15C-0800	✲	8	8	180	140	128	36	●
1588SL15C-0810	✲	8.1	10	194	150	138	40	○
1588SL15C-0820	✲	8.2	10	194	150	138	40	○
1588SL15C-0830	✲	8.3	10	194	150	138	40	○
1588SL15C-0840	✲	8.4	10	194	150	138	40	○
1588SL15C-0850	✲	8.5	10	194	150	138	40	●
1588SL15C-0860	✲	8.6	10	204	160	148	40	●
1588SL15C-0870	✲	8.7	10	204	160	148	40	○
1588SL15C-0880	✲	8.8	10	204	160	148	40	●
1588SL15C-0890	✲	8.9	10	204	160	148	40	○
1588SL15C-0900	✲	9	10	204	160	148	40	○
1588SL15C-0910	✲	9.1	10	216	172	160	40	○
1588SL15C-0920	✲	9.2	10	216	172	160	40	○
1588SL15C-0930	✲	9.3	10	216	172	160	40	○
1588SL15C-0940	✲	9.4	10	216	172	160	40	○
1588SL15C-0950	✲	9.5	10	216	172	160	40	○
1588SL15C-0960	✲	9.6	10	226	182	170	40	○
1588SL15C-0970	✲	9.7	10	226	182	170	40	○
1588SL15C-0980	✲	9.8	10	226	182	170	40	○
1588SL15C-0990	✲	9.9	10	226	182	170	40	○

● Ex stock ○ On demand

All articles SLK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1588SL*	✔	✔	✔	✔	✔	
1588SLK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SL(K) drill 15xD | General machining | Add K (SLK) to the code for use on Cast Iron

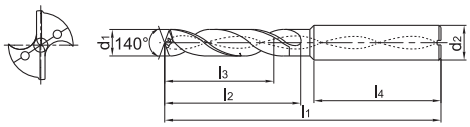
1588SL15C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1588SL15C-1000	✻	10	10	226	182	170	40	●
1588SL15C-1010	✻	10.1	12	240	190	178	45	○
1588SL15C-1020	✻	10.2	12	240	190	178	45	○
1588SL15C-1030	✻	10.3	12	240	190	178	45	○
1588SL15C-1040	✻	10.4	12	240	190	178	45	○
1588SL15C-1050	✻	10.5	12	240	190	178	45	○
1588SL15C-1060	✻	10.6	12	248	198	186	45	○
1588SL15C-1070	✻	10.7	12	248	198	186	45	○
1588SL15C-1080	✻	10.8	12	248	198	186	45	○
1588SL15C-1090	✻	10.9	12	248	198	186	45	○
1588SL15C-1100	✻	11	12	248	198	186	45	●
1588SL15C-1110	✻	11.1	12	262	212	200	45	○
1588SL15C-1120	✻	11.2	12	262	212	200	45	○
1588SL15C-1130	✻	11.3	12	262	212	200	45	○
1588SL15C-1140	✻	11.4	12	262	212	200	45	○
1588SL15C-1150	✻	11.5	12	262	212	200	45	●
1588SL15C-1160	✻	11.6	12	272	222	210	45	○
1588SL15C-1170	✻	11.7	12	272	222	210	45	○
1588SL15C-1180	✻	11.8	12	272	222	210	45	○
1588SL15C-1190	✻	11.9	12	272	222	210	45	○
1588SL15C-1200	✻	12	12	272	222	210	45	●

● Ex stock ○ On demand

All articles SLK on demand

✻ With internal cooling

Application field

Type	P	M	K	N	S	H
1588SL*	✔	✔	✔	✔	✔	
1588SLK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SL(K) drill 20xD | General machining | Add K (SLK) to the code for use on Cast Iron

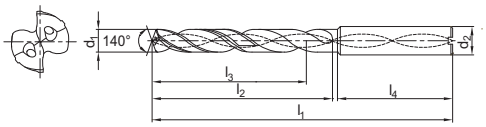
1588SL20C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1588SL20C-0300	✲	3	6	110	70	62	36	●
1588SL20C-0310	✲	3.1	6	123	83	72	36	●
1588SL20C-0320	✲	3.2	6	123	83	72	36	●
1588SL20C-0330	✲	3.3	6	123	83	72	36	●
1588SL20C-0340	✲	3.4	6	123	83	72	36	●
1588SL20C-0350	✲	3.5	6	123	83	72	36	●
1588SL20C-0360	✲	3.6	6	136	96	84	36	●
1588SL20C-0370	✲	3.7	6	136	96	84	36	●
1588SL20C-0380	✲	3.8	6	136	96	84	36	●
1588SL20C-0390	✲	3.9	6	136	96	84	36	●
1588SL20C-0400	✲	4	6	136	96	84	36	●
1588SL20C-0410	✲	4.1	6	148	108	96	36	●
1588SL20C-0420	✲	4.2	6	148	108	96	36	●
1588SL20C-0430	✲	4.3	6	148	108	96	36	○
1588SL20C-0440	✲	4.4	6	148	108	96	36	○
1588SL20C-0450	✲	4.5	6	148	108	96	36	●
1588SL20C-0460	✲	4.6	6	158	118	106	36	○
1588SL20C-0470	✲	4.7	6	158	118	106	36	○
1588SL20C-0480	✲	4.8	6	158	118	106	36	●
1588SL20C-0490	✲	4.9	6	158	118	106	36	○
1588SL20C-0500	✲	5	6	158	118	106	36	●
1588SL20C-0510	✲	5.1	6	168	128	116	36	○
1588SL20C-0520	✲	5.2	6	168	128	116	36	●
1588SL20C-0530	✲	5.3	6	168	128	116	36	●
1588SL20C-0540	✲	5.4	6	168	128	116	36	●
1588SL20C-0550	✲	5.5	6	168	128	116	36	●
1588SL20C-0560	✲	5.6	6	180	140	126	36	○
1588SL20C-0570	✲	5.7	6	180	140	126	36	○
1588SL20C-0580	✲	5.8	6	180	140	126	36	●
1588SL20C-0590	✲	5.9	6	180	140	126	36	○
1588SL20C-0600	✲	6	6	180	140	126	36	●
1588SL20C-0610	✲	6.1	8	192	150	132	36	○
1588SL20C-0620	✲	6.2	8	192	150	132	36	○
1588SL20C-0630	✲	6.3	8	192	150	132	36	○
1588SL20C-0640	✲	6.4	8	192	150	132	36	○

● Ex stock ○ On demand

All articles SLK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1588SL*	✔	✔	✔	✔	✔	
1588SLK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SL(K) drill 20xD | General machining | Add K (SLK) to the code for use on Cast Iron

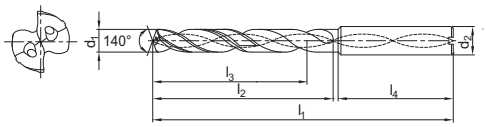
1588SL20C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1588SL20C-0650	✲	6.5	8	192	150	132	36	●
1588SL20C-0660	✲	6.6	8	202	162	144	36	○
1588SL20C-0670	✲	6.7	8	202	162	144	36	○
1588SL20C-0680	✲	6.8	8	202	162	144	36	●
1588SL20C-0690	✲	6.9	8	202	162	144	36	○
1588SL20C-0700	✲	7	8	202	162	144	36	●
1588SL20C-0710	✲	7.1	8	213	173	155	36	○
1588SL20C-0720	✲	7.2	8	213	173	155	36	○
1588SL20C-0730	✲	7.3	8	213	173	155	36	○
1588SL20C-0740	✲	7.4	8	213	173	155	36	○
1588SL20C-0750	✲	7.5	8	213	173	155	36	●
1588SL20C-0760	✲	7.6	8	223	183	165	36	○
1588SL20C-0770	✲	7.7	8	223	183	165	36	○
1588SL20C-0780	✲	7.8	8	223	183	165	36	○
1588SL20C-0790	✲	7.9	8	223	183	165	36	○
1588SL20C-0800	✲	8	8	223	183	165	36	●
1588SL20C-0810	✲	8.1	10	239	195	176	40	○
1588SL20C-0820	✲	8.2	10	239	195	176	40	○
1588SL20C-0830	✲	8.3	10	239	195	176	40	○
1588SL20C-0840	✲	8.4	10	239	195	176	40	○
1588SL20C-0850	✲	8.5	10	239	195	176	40	●
1588SL20C-0860	✲	8.6	10	249	205	186	40	○
1588SL20C-0870	✲	8.7	10	249	205	186	40	○
1588SL20C-0880	✲	8.8	10	249	205	186	40	○
1588SL20C-0890	✲	8.9	10	249	205	186	40	○
1588SL20C-0900	✲	9	10	249	205	186	40	○
1588SL20C-0910	✲	9.1	10	262	218	196	36	○
1588SL20C-0920	✲	9.2	10	262	218	196	36	○
1588SL20C-0930	✲	9.3	10	262	218	196	36	○
1588SL20C-0940	✲	9.4	10	262	218	196	36	○
1588SL20C-0950	✲	9.5	10	262	218	196	36	○
1588SL20C-0960	✲	9.6	10	272	228	206	40	○
1588SL20C-0970	✲	9.7	10	272	228	206	40	○
1588SL20C-0980	✲	9.8	10	272	228	206	40	○
1588SL20C-0990	✲	9.9	10	272	228	206	40	○

● Ex stock ○ On demand

All articles SLK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1588SL*	✔	✔	✔	✔	✔	
1588SLK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SL(K) drill 20xD | General machining | Add K (SLK) to the code for use on Cast Iron

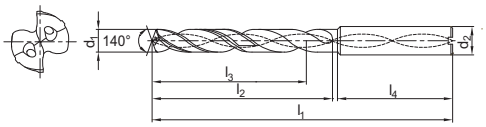
1588SL20C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1588SL20C-1000	✲	10	10	272	228	206	40	●
1588SL20C-1010	✲	10.1	12	292	242	220	45	○
1588SL20C-1020	✲	10.2	12	292	242	220	45	○
1588SL20C-1030	✲	10.3	12	292	242	220	45	○
1588SL20C-1040	✲	10.4	12	292	242	220	45	○
1588SL20C-1050	✲	10.5	12	292	242	220	45	○
1588SL20C-1060	✲	10.6	12	300	250	228	45	○
1588SL20C-1070	✲	10.7	12	300	250	228	45	○
1588SL20C-1080	✲	10.8	12	300	250	228	45	○
1588SL20C-1090	✲	10.9	12	300	250	228	45	○
1588SL20C-1100	✲	11	12	300	250	228	45	○
1588SL20C-1110	✲	11.1	12	315	265	240	45	○
1588SL20C-1120	✲	11.2	12	315	265	240	45	○
1588SL20C-1130	✲	11.3	12	315	265	240	45	○
1588SL20C-1140	✲	11.4	12	315	265	240	45	○
1588SL20C-1150	✲	11.5	12	315	265	240	45	○
1588SL20C-1160	✲	11.6	12	325	275	250	45	○
1588SL20C-1170	✲	11.7	12	325	275	250	45	○
1588SL20C-1180	✲	11.8	12	325	275	250	45	○
1588SL20C-1190	✲	11.9	12	325	275	250	45	○
1588SL20C-1200	✲	12	12	325	275	250	45	○
1588SL20C-1250	✲	12.5	14	325	275	250	45	○
1588SL20C-1300	✲	13	14	338	290	265	45	○
1588SL20C-1350	✲	13.5	14	338	290	265	45	○
1588SL20C-1400	✲	14	14	367	318	290	45	○

● Ex stock ○ On demand

All articles SLK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1588SL*	✔	✔	✔	✔	✔	
1588SLK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SL(K) drill 30xD | General machining | Add K (SLK) to the code for use on Cast Iron

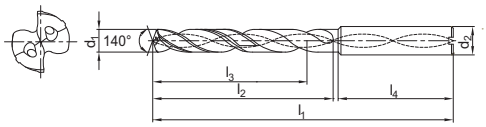
1588SL30C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1588SL30C-0300	✲	3	6	140	100	92	36	●
1588SL30C-0310	✲	3.1	6	160	120	108	36	○
1588SL30C-0320	✲	3.2	6	160	120	108	36	●
1588SL30C-0330	✲	3.3	6	160	120	108	36	○
1588SL30C-0340	✲	3.4	6	160	120	108	36	●
1588SL30C-0350	✲	3.5	6	160	120	108	36	●
1588SL30C-0360	✲	3.6	6	176	136	124	36	○
1588SL30C-0370	✲	3.7	6	176	136	124	36	○
1588SL30C-0380	✲	3.8	6	176	136	124	36	●
1588SL30C-0390	✲	3.9	6	176	136	124	36	●
1588SL30C-0400	✲	4	6	176	136	124	36	●
1588SL30C-0410	✲	4.1	6	192	152	140	36	○
1588SL30C-0420	✲	4.2	6	192	152	140	36	○
1588SL30C-0430	✲	4.3	6	192	152	140	36	○
1588SL30C-0440	✲	4.4	6	192	152	140	36	○
1588SL30C-0450	✲	4.5	6	192	152	140	36	●
1588SL30C-0460	✲	4.6	6	208	168	156	36	○
1588SL30C-0470	✲	4.7	6	208	168	156	36	○
1588SL30C-0480	✲	4.8	6	208	168	156	36	●
1588SL30C-0490	✲	4.9	6	208	168	156	36	●
1588SL30C-0500	✲	5	6	208	168	156	36	●
1588SL30C-0510	✲	5.1	6	228	188	170	36	○
1588SL30C-0520	✲	5.2	6	228	188	170	36	●
1588SL30C-0530	✲	5.3	6	228	188	170	36	○
1588SL30C-0540	✲	5.4	6	228	188	170	36	○
1588SL30C-0550	✲	5.5	6	228	188	170	36	●
1588SL30C-0560	✲	5.6	6	240	200	182	36	○
1588SL30C-0570	✲	5.7	6	240	200	182	36	○
1588SL30C-0580	✲	5.8	6	240	200	182	36	●
1588SL30C-0590	✲	5.9	6	240	200	182	36	○
1588SL30C-0600	✲	6	6	240	200	182	36	●
1588SL30C-0610	✲	6.1	8	260	220	202	36	○
1588SL30C-0620	✲	6.2	8	260	220	202	36	○
1588SL30C-0630	✲	6.3	8	260	220	202	36	●
1588SL30C-0640	✲	6.4	8	260	220	202	36	○

● Ex stock ○ On demand

All articles SLK on demand

✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1588SL*	✔	✔	✔	✔	✔	
1588SLK*			✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

SL(K) drill 30xD | General machining | Add K (SLK) to the code for use on Cast Iron

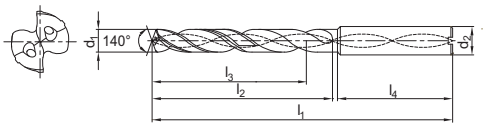
1588SL30C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1588SL30C-0650	✲	6.5	8	260	220	202	36	●
1588SL30C-0660	✲	6.6	8	272	232	214	36	○
1588SL30C-0670	✲	6.7	8	272	232	214	36	○
1588SL30C-0680	✲	6.8	8	272	232	214	36	●
1588SL30C-0690	✲	6.9	8	272	232	214	36	○
1588SL30C-0700	✲	7	8	272	232	214	36	●
1588SL30C-0710	✲	7.1	8	290	250	232	36	○
1588SL30C-0720	✲	7.2	8	290	250	232	36	○
1588SL30C-0730	✲	7.3	8	290	250	232	36	○
1588SL30C-0740	✲	7.4	8	290	250	232	36	○
1588SL30C-0750	✲	7.5	8	290	250	232	36	○
1588SL30C-0760	✲	7.6	8	305	265	246	36	○
1588SL30C-0770	✲	7.7	8	305	265	246	36	○
1588SL30C-0780	✲	7.8	8	305	265	246	36	○
1588SL30C-0790	✲	7.9	8	305	265	246	36	○
1588SL30C-0800	✲	8	8	305	265	246	36	●
1588SL30C-0810	✲	8.1	10	330	285	265	40	○
1588SL30C-0820	✲	8.2	10	330	285	265	40	○
1588SL30C-0830	✲	8.3	10	330	285	265	40	○
1588SL30C-0840	✲	8.4	10	330	285	265	40	○
1588SL30C-0850	✲	8.5	10	330	285	265	40	●
1588SL30C-0860	✲	8.6	10	340	295	275	40	○
1588SL30C-0870	✲	8.7	10	340	295	275	40	○
1588SL30C-0880	✲	8.8	10	340	295	275	40	○
1588SL30C-0890	✲	8.9	10	340	295	275	40	○
1588SL30C-0900	✲	9	10	340	295	275	40	○
1588SL30C-0910	✲	9.1	10	360	315	292	40	○
1588SL30C-0920	✲	9.2	10	360	315	292	40	○
1588SL30C-0930	✲	9.3	10	360	315	292	40	○
1588SL30C-0940	✲	9.4	10	360	315	292	40	○
1588SL30C-0950	✲	9.5	10	360	315	292	40	○
1588SL30C-0960	✲	9.6	10	372	328	305	40	○
1588SL30C-0970	✲	9.7	10	372	328	305	40	○
1588SL30C-0980	✲	9.8	10	372	328	305	40	○
1588SL30C-0990	✲	9.9	10	372	328	305	40	○
1588SL30C-1000	✲	10	10	372	328	305	40	○

● Ex stock ○ On demand
All articles SLK on demand
✲ With internal cooling

Application field

Type	P	M	K	N	S	H
1588SL*	✔	✔	✔	✔	✔	
1588SLK*			✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

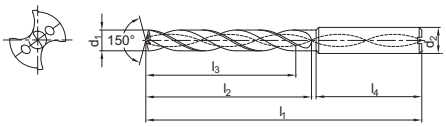
SP drill 3xD — General machining

1534SP03C

– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (h7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534SP03C-0303	✻	3.03	6	62	20	14	36	●
1534SP03C-0313	✻	3.13	6	62	20	14	36	○
1534SP03C-0323	✻	3.23	6	62	20	14	36	○
1534SP03C-0333	✻	3.33	6	62	20	14	36	●
1534SP03C-0343	✻	3.43	6	62	20	14	36	●
1534SP03C-0353	✻	3.53	6	62	20	14	36	●
1534SP03C-0363	✻	3.63	6	62	20	14	36	○
1534SP03C-0373	✻	3.73	6	62	20	14	36	○
1534SP03C-0383	✻	3.83	6	66	24	17	36	○
1534SP03C-0393	✻	3.93	6	66	24	17	36	○
1534SP03C-0403	✻	4.03	6	66	24	17	36	●
1534SP03C-0413	✻	4.13	6	66	24	17	36	○
1534SP03C-0423	✻	4.23	6	66	24	17	36	○
1534SP03C-0433	✻	4.33	6	66	24	17	36	○
1534SP03C-0443	✻	4.43	6	66	24	17	36	○
1534SP03C-0453	✻	4.53	6	66	24	17	36	●
1534SP03C-0463	✻	4.63	6	66	24	17	36	○
1534SP03C-0473	✻	4.73	6	66	24	17	36	○
1534SP03C-0483	✻	4.83	6	66	28	20	36	○
1534SP03C-0493	✻	4.93	6	66	28	20	36	○
1534SP03C-0503	✻	5.03	6	66	28	20	36	●
1534SP03C-0513	✻	5.13	6	66	28	20	36	○
1534SP03C-0523	✻	5.23	6	66	28	20	36	○
1534SP03C-0533	✻	5.33	6	66	28	20	36	○
1534SP03C-0543	✻	5.43	6	66	28	20	36	○
1534SP03C-0553	✻	5.53	6	66	28	20	36	●
1534SP03C-0563	✻	5.63	6	66	28	20	36	○
1534SP03C-0573	✻	5.73	6	66	28	20	36	○
1534SP03C-0583	✻	5.83	6	66	28	20	36	○
1534SP03C-0593	✻	5.93	6	66	28	20	36	○
1534SP03C-0603	✻	6.03	6	66	28	20	36	●
1534SP03C-0613	✻	6.13	8	79	34	24	36	○
1534SP03C-0623	✻	6.23	8	79	34	24	36	○
1534SP03C-0633	✻	6.33	8	79	34	24	36	○
1534SP03C-0643	✻	6.43	8	79	34	24	36	○
1534SP03C-0653	✻	6.53	8	79	34	24	36	●
1534SP03C-0663	✻	6.63	8	79	34	24	36	○

● Ex stock ○ On demand

Pilot drill Ø = Deep drill Ø + 0,03 mm

✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔	✔	✔	✔	

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SP drill 3xD General machining

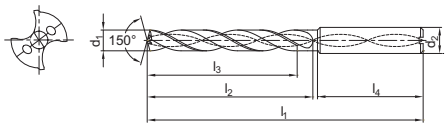
1534SP03C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (h7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534SP03C-0673	✲	6.73	8	79	34	24	36	○
1534SP03C-0683	✲	6.83	8	79	34	24	36	○
1534SP03C-0693	✲	6.93	8	79	34	24	36	○
1534SP03C-0703	✲	7.03	8	79	34	24	36	●
1534SP03C-0713	✲	7.13	8	79	41	29	36	○
1534SP03C-0723	✲	7.23	8	79	41	29	36	○
1534SP03C-0733	✲	7.33	8	79	41	29	36	●
1534SP03C-0743	✲	7.43	8	79	41	29	36	○
1534SP03C-0753	✲	7.53	8	79	41	29	36	●
1534SP03C-0763	✲	7.63	8	79	41	29	36	○
1534SP03C-0773	✲	7.73	8	79	41	29	36	○
1534SP03C-0783	✲	7.83	8	79	41	29	36	○
1534SP03C-0793	✲	7.93	8	79	41	29	36	○
1534SP03C-0803	✲	8.03	8	79	41	29	36	●
1534SP03C-0813	✲	8.13	10	89	47	35	40	○
1534SP03C-0823	✲	8.23	10	89	47	35	40	○
1534SP03C-0833	✲	8.33	10	89	47	35	40	●
1534SP03C-0843	✲	8.43	10	89	47	35	40	○
1534SP03C-0853	✲	8.53	10	89	47	35	40	○
1534SP03C-0863	✲	8.63	10	89	47	35	40	○
1534SP03C-0873	✲	8.73	10	89	47	35	40	○
1534SP03C-0883	✲	8.83	10	89	47	35	40	●
1534SP03C-0893	✲	8.93	10	89	47	35	40	○
1534SP03C-0903	✲	9.03	10	89	47	35	40	●
1534SP03C-0913	✲	9.13	10	89	47	35	40	○
1534SP03C-0923	✲	9.23	10	89	47	35	40	○
1534SP03C-0933	✲	9.33	10	89	47	35	40	○
1534SP03C-0943	✲	9.43	10	89	47	35	40	○
1534SP03C-0953	✲	9.53	10	89	47	35	40	●
1534SP03C-0963	✲	9.63	10	89	47	35	40	○
1534SP03C-0973	✲	9.73	10	89	47	35	40	●
1534SP03C-0983	✲	9.83	10	89	47	35	40	●
1534SP03C-0993	✲	9.93	10	89	47	35	40	○
1534SP03C-1003	✲	10.03	10	89	47	35	40	●
1534SP03C-1013	✲	10.13	12	102	55	40	45	○
1534SP03C-1023	✲	10.23	12	102	55	40	45	○
1534SP03C-1033	✲	10.33	12	102	55	40	45	○

● Ex stock ○ On demand

Pilot drill Ø = Deep drill Ø + 0,03 mm

✲ With internal cooling

Application field

P	M	K	N	S	H
✔	✔	✔	✔	✔	

✔ Very suitable
✔ Suitable

System code > C28 Machining instructions > C165 Cutting data > C122 Nonstandard order > C178

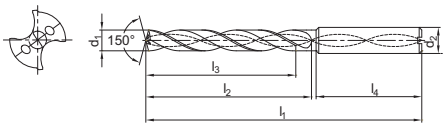
SP drill 3xD — General machining

1534SP03C

– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (h7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534SP03C-1043	✻	10.43	12	102	55	40	45	○
1534SP03C-1053	✻	10.53	12	102	55	40	45	●
1534SP03C-1063	✻	10.63	12	102	55	40	45	○
1534SP03C-1073	✻	10.73	12	102	55	40	45	○
1534SP03C-1083	✻	10.83	12	102	55	40	45	●
1534SP03C-1093	✻	10.93	12	102	55	40	45	○
1534SP03C-1103	✻	11.03	12	102	55	40	45	●
1534SP03C-1113	✻	11.13	12	102	55	40	45	○
1534SP03C-1123	✻	11.23	12	102	55	40	45	○
1534SP03C-1133	✻	11.33	12	102	55	40	45	○
1534SP03C-1143	✻	11.43	12	102	55	40	45	○
1534SP03C-1153	✻	11.53	12	102	55	40	45	●
1534SP03C-1163	✻	11.63	12	102	55	40	45	○
1534SP03C-1173	✻	11.73	12	102	55	40	45	○
1534SP03C-1183	✻	11.83	12	102	55	40	45	●
1534SP03C-1193	✻	11.93	12	102	55	40	45	○
1534SP03C-1203	✻	12.03	12	102	55	40	45	●
1534SP03C-1213	✻	12.13	14	107	60	43	45	○
1534SP03C-1223	✻	12.23	14	107	60	43	45	○
1534SP03C-1233	✻	12.33	14	107	60	43	45	○
1534SP03C-1243	✻	12.43	14	107	60	43	45	○
1534SP03C-1253	✻	12.53	14	107	60	43	45	●
1534SP03C-1263	✻	12.63	14	107	60	43	45	○
1534SP03C-1273	✻	12.73	14	107	60	43	45	○
1534SP03C-1283	✻	12.83	14	107	60	43	45	○
1534SP03C-1293	✻	12.93	14	107	60	43	45	○
1534SP03C-1303	✻	13.03	14	107	60	43	45	○
1534SP03C-1353	✻	13.53	14	107	60	43	45	○
1534SP03C-1403	✻	14.03	14	107	60	43	45	○
1534SP03C-1453	✻	14.53	16	115	65	45	48	○
1534SP03C-1503	✻	15.03	16	115	65	45	48	○
1534SP03C-1553	✻	15.53	16	115	65	45	48	○
1534SP03C-1603	✻	16.03	16	115	65	45	48	○
1534SP03C-1653	✻	16.53	18	123	73	51	48	○
1534SP03C-1703	✻	17.03	18	123	73	51	48	○
1534SP03C-1753	✻	17.53	18	123	73	51	48	○
1534SP03C-1803	✻	18.03	18	123	73	51	48	○

● Ex stock ○ On demand

Pilot drill Ø = Deep drill Ø + 0,03 mm

✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔	✔	✔	✔	

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SP drill 3xD — General machining

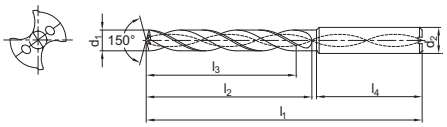
1534SP03C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (h7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534SP03C-1853	✻	18.53	20	131	79	55	50	○
1534SP03C-1903	✻	19.03	20	131	79	55	50	○
1534SP03C-1953	✻	19.53	20	131	79	55	50	○
1534SP03C-2003	✻	20.03	20	131	79	55	50	○

● Ex stock ○ On demand

Pilot drill Ø = Deep drill Ø + 0,03 mm

✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔	✔	✔	✔	

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

ST series

Twist drills with sharp cutting edge



- For machining of tough steel, stainless steel and heat-resistant alloys.
- Diameter range 3.0–20.0 mm (3xD, 5xD)


Straight cut

Chip comparison


Chip (competitor A)


1534ST03C-1000 chip (ZCC-CT)

ST drill 3xD — Steel, stainless steel, heat-resistant alloys

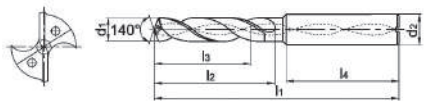
1534ST03C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534ST03C-0300	✲	3	6	62	20	14	36	●
1534ST03C-0310	✲	3.1	6	62	20	14	36	●
1534ST03C-0320	✲	3.2	6	62	20	14	36	●
1534ST03C-0325	✲	3.25	6	62	20	14	36	○
1534ST03C-0330	✲	3.3	6	62	20	14	36	●
1534ST03C-0340	✲	3.4	6	62	20	14	36	●
1534ST03C-0350	✲	3.5	6	62	20	14	36	●
1534ST03C-0360	✲	3.6	6	62	20	14	36	●
1534ST03C-0370	✲	3.7	6	62	20	14	36	●
1534ST03C-0380	✲	3.8	6	66	24	17	36	●
1534ST03C-0390	✲	3.9	6	66	24	17	36	●
1534ST03C-0400	✲	4	6	66	24	17	36	●
1534ST03C-0410	✲	4.1	6	66	24	17	36	●
1534ST03C-0420	✲	4.2	6	66	24	17	36	●
1534ST03C-0430	✲	4.3	6	66	24	17	36	●
1534ST03C-0440	✲	4.4	6	66	24	17	36	●
1534ST03C-0450	✲	4.5	6	66	24	17	36	●
1534ST03C-0460	✲	4.6	6	66	24	17	36	●
1534ST03C-0465	✲	4.65	6	66	24	17	36	○
1534ST03C-0470	✲	4.7	6	66	24	17	36	●
1534ST03C-0480	✲	4.8	6	66	28	20	36	●
1534ST03C-0490	✲	4.9	6	66	28	20	36	●
1534ST03C-0500	✲	5	6	66	28	20	36	●
1534ST03C-0510	✲	5.1	6	66	28	20	36	●
1534ST03C-0520	✲	5.2	6	66	28	20	36	●
1534ST03C-0530	✲	5.3	6	66	28	20	36	●
1534ST03C-0540	✲	5.4	6	66	28	20	36	●
1534ST03C-0550	✲	5.5	6	66	28	20	36	●
1534ST03C-0555	✲	5.55	6	66	28	20	36	○
1534ST03C-0560	✲	5.6	6	66	28	20	36	●
1534ST03C-0570	✲	5.7	6	66	28	20	36	●
1534ST03C-0580	✲	5.8	6	66	28	20	36	●
1534ST03C-0590	✲	5.9	6	66	28	20	36	●
1534ST03C-0600	✲	6	6	66	28	20	36	●
1534ST03C-0610	✲	6.1	8	79	34	24	36	○
1534ST03C-0620	✲	6.2	8	79	34	24	36	●
1534ST03C-0630	✲	6.3	8	79	34	24	36	●

● Ex stock ○ On demand
✲ With internal cooling

Application field

P	M	K	N	S	H
✔	✔			✔	

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

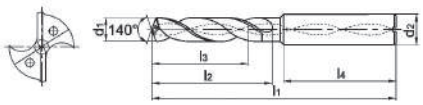
ST drill 3xD — Steel, stainless steel, heat-resistant alloys

1534ST03C

– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534ST03C-0640	✻	6.4	8	79	34	24	36	●
1534ST03C-0650	✻	6.5	8	79	34	24	36	●
1534ST03C-0660	✻	6.6	8	79	34	24	36	●
1534ST03C-0670	✻	6.7	8	79	34	24	36	●
1534ST03C-0675	✻	6.75	8	79	34	24	36	○
1534ST03C-0690	✻	6.9	8	79	34	24	36	●
1534ST03C-0700	✻	7	8	79	34	24	36	●
1534ST03C-0710	✻	7.1	8	79	41	29	36	●
1534ST03C-0720	✻	7.2	8	79	41	29	36	●
1534ST03C-0730	✻	7.3	8	79	41	29	36	●
1534ST03C-0740	✻	7.4	8	79	41	29	36	●
1534ST03C-0750	✻	7.5	8	79	41	29	36	●
1534ST03C-0760	✻	7.6	8	79	41	29	36	●
1534ST03C-0770	✻	7.7	8	79	41	29	36	●
1534ST03C-0780	✻	7.8	8	79	41	29	36	●
1534ST03C-0790	✻	7.9	8	79	41	29	36	●
1534ST03C-0800	✻	8	8	79	41	29	36	●
1534ST03C-0810	✻	8.1	10	89	47	35	40	●
1534ST03C-0820	✻	8.2	10	89	47	35	40	●
1534ST03C-0830	✻	8.3	10	89	47	35	40	●
1534ST03C-0840	✻	8.4	10	89	47	35	40	●
1534ST03C-0850	✻	8.5	10	89	47	35	40	●
1534ST03C-0860	✻	8.6	10	89	47	35	40	●
1534ST03C-0870	✻	8.7	10	89	47	35	40	●
1534ST03C-0880	✻	8.8	10	89	47	35	40	●
1534ST03C-0890	✻	8.9	10	89	47	35	40	●
1534ST03C-0900	✻	9	10	89	47	35	40	○
1534ST03C-0910	✻	9.1	10	89	47	35	40	●
1534ST03C-0930	✻	9.3	10	89	47	35	40	●
1534ST03C-0940	✻	9.4	10	89	47	35	40	●
1534ST03C-0950	✻	9.5	10	89	47	35	40	●
1534ST03C-0960	✻	9.6	10	89	47	35	40	●
1534ST03C-0970	✻	9.7	10	89	47	35	40	●
1534ST03C-0980	✻	9.8	10	89	47	35	40	●
1534ST03C-0990	✻	9.9	10	89	47	35	40	●
1534ST03C-1000	✻	10	10	89	47	35	40	●
1534ST03C-1010	✻	10.1	12	102	55	40	45	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔			✔	

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

Solid carbide drills ST series

ST drill 3xD — Steel, stainless steel, heat-resistant alloys

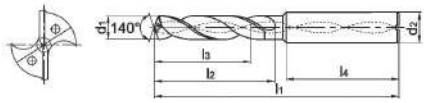
1534ST03C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534ST03C-1025	✲	10.25	12	102	55	40	45	●
1534ST03C-1030	✲	10.3	12	102	55	40	45	●
1534ST03C-1040	✲	10.4	12	102	55	40	45	●
1534ST03C-1050	✲	10.5	12	102	55	40	45	○
1534ST03C-1060	✲	10.6	12	102	55	40	45	●
1534ST03C-1070	✲	10.7	12	102	55	40	45	●
1534ST03C-1080	✲	10.8	12	102	55	40	45	●
1534ST03C-1090	✲	10.9	12	102	55	40	45	●
1534ST03C-1100	✲	11	12	102	55	40	45	●
1534ST03C-1110	✲	11.1	12	102	55	40	45	●
1534ST03C-1120	✲	11.2	12	102	55	40	45	●
1534ST03C-1130	✲	11.3	12	102	55	40	45	●
1534ST03C-1140	✲	11.4	12	102	55	40	45	●
1534ST03C-1150	✲	11.5	12	102	55	40	45	●
1534ST03C-1160	✲	11.6	12	102	55	40	45	●
1534ST03C-1170	✲	11.7	12	102	55	40	45	●
1534ST03C-1180	✲	11.8	12	102	55	40	45	●
1534ST03C-1190	✲	11.9	12	102	55	40	45	●
1534ST03C-1200	✲	12	12	102	55	40	45	●
1534ST03C-1225	✲	12.25	14	107	60	43	45	●
1534ST03C-1230	✲	12.3	14	107	60	43	45	●
1534ST03C-1250	✲	12.5	14	107	60	43	45	●
1534ST03C-1270	✲	12.7	14	107	60	43	45	●
1534ST03C-1275	✲	12.75	14	107	60	43	45	●
1534ST03C-1280	✲	12.8	14	107	60	43	45	●
1534ST03C-1300	✲	13	14	107	60	43	45	○
1534ST03C-1310	✲	13.1	14	107	60	43	45	●
1534ST03C-1350	✲	13.5	14	107	60	43	45	●
1534ST03C-1380	✲	13.8	14	107	60	43	45	●
1534ST03C-1400	✲	14	14	107	60	43	45	●
1534ST03C-1425	✲	14.25	16	115	65	45	48	●
1534ST03C-1430	✲	14.3	16	115	65	45	48	●
1534ST03C-1450	✲	14.5	16	115	65	45	48	●
1534ST03C-1475	✲	14.75	16	115	65	45	48	●
1534ST03C-1480	✲	14.8	16	115	65	45	48	●
1534ST03C-1500	✲	15	16	115	65	45	48	●
1534ST03C-1510	✲	15.1	16	115	65	45	48	●

● Ex stock ○ On demand
✲ With internal cooling

Application field

P	M	K	N	S	H
✔	✔			✔	

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

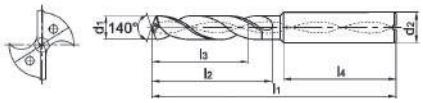
ST drill 3xD — Steel, stainless steel, heat-resistant alloys

1534ST03C

– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534ST03C-1550	✻	15.5	16	115	65	45	48	●
1534ST03C-1580	✻	15.8	16	115	65	45	48	●
1534ST03C-1600	✻	16	16	115	65	45	48	●
1534ST03C-1650	✻	16.5	18	123	73	51	48	●
1534ST03C-1675	✻	16.75	18	123	73	51	48	●
1534ST03C-1680	✻	16.8	18	123	73	51	48	●
1534ST03C-1700	✻	17	18	123	73	51	48	●
1534ST03C-1750	✻	17.5	18	123	73	51	48	●
1534ST03C-1780	✻	17.8	18	123	73	51	48	●
1534ST03C-1800	✻	18	18	123	73	51	48	●
1534ST03C-1850	✻	18.5	20	131	79	55	50	●
1534ST03C-1880	✻	18.8	20	131	79	55	50	●
1534ST03C-1900	✻	19	20	131	79	55	50	●
1534ST03C-1950	✻	19.5	20	131	79	55	50	●
1534ST03C-1980	✻	19.8	20	131	79	55	50	●
1534ST03C-2000	✻	20	20	131	79	55	50	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔			✔	

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

Solid carbide drills ST series

ST drill 5xD — Steel, stainless steel, heat-resistant alloys

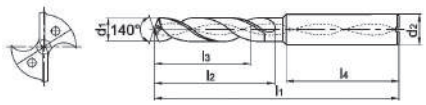
1536ST05C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1536ST05C-0300	✲	3	6	66	28	23	36	●
1536ST05C-0310	✲	3.1	6	66	28	23	36	●
1536ST05C-0320	✲	3.2	6	66	28	23	36	●
1536ST05C-0325	✲	3.25	6	66	28	23	36	○
1536ST05C-0330	✲	3.3	6	66	28	23	36	●
1536ST05C-0340	✲	3.4	6	66	28	23	36	●
1536ST05C-0350	✲	3.5	6	66	28	23	36	●
1536ST05C-0360	✲	3.6	6	66	28	23	36	●
1536ST05C-0370	✲	3.7	6	66	28	23	36	●
1536ST05C-0380	✲	3.8	6	74	36	29	36	●
1536ST05C-0390	✲	3.9	6	74	36	29	36	●
1536ST05C-0400	✲	4	6	74	36	29	36	●
1536ST05C-0410	✲	4.1	6	74	36	29	36	●
1536ST05C-0420	✲	4.2	6	74	36	29	36	●
1536ST05C-0430	✲	4.3	6	74	36	29	36	●
1536ST05C-0440	✲	4.4	6	74	36	29	36	●
1536ST05C-0450	✲	4.5	6	74	36	29	36	●
1536ST05C-0460	✲	4.6	6	74	36	29	36	●
1536ST05C-0465	✲	4.65	6	74	36	29	36	○
1536ST05C-0470	✲	4.7	6	74	36	29	36	●
1536ST05C-0480	✲	4.8	6	82	44	35	36	●
1536ST05C-0490	✲	4.9	6	82	44	35	36	●
1536ST05C-0500	✲	5	6	82	44	35	36	●
1536ST05C-0510	✲	5.1	6	82	44	35	36	●
1536ST05C-0520	✲	5.2	6	82	44	35	36	●
1536ST05C-0530	✲	5.3	6	82	44	35	36	●
1536ST05C-0540	✲	5.4	6	82	44	35	36	●
1536ST05C-0550	✲	5.5	6	82	44	35	36	●
1536ST05C-0555	✲	5.55	6	82	44	35	36	○
1536ST05C-0560	✲	5.6	6	82	44	35	36	●
1536ST05C-0570	✲	5.7	6	82	44	35	36	●
1536ST05C-0580	✲	5.8	6	82	44	35	36	●
1536ST05C-0590	✲	5.9	6	82	44	35	36	●
1536ST05C-0600	✲	6	6	82	44	35	36	●
1536ST05C-0610	✲	6.1	8	91	53	43	36	●
1536ST05C-0620	✲	6.2	8	91	53	43	36	●
1536ST05C-0630	✲	6.3	8	91	53	43	36	●

● Ex stock ○ On demand
✲ With internal cooling

Application field

P	M	K	N	S	H
✔	✔			✔	

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

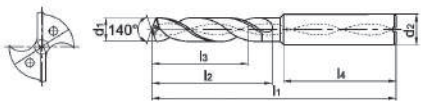
ST drill 5xD — Steel, stainless steel, heat-resistant alloys

1536ST05C

– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1536ST05C-0640	✻	6.4	8	91	53	43	36	●
1536ST05C-0650	✻	6.5	8	91	53	43	36	●
1536ST05C-0660	✻	6.6	8	91	53	43	36	●
1536ST05C-0670	✻	6.7	8	91	53	43	36	●
1536ST05C-0675	✻	6.75	8	91	53	43	36	○
1536ST05C-0680	✻	6.8	8	91	53	43	36	●
1536ST05C-0690	✻	6.9	8	91	53	43	36	●
1536ST05C-0700	✻	7	8	91	53	43	36	●
1536ST05C-0710	✻	7.1	8	91	53	43	36	●
1536ST05C-0720	✻	7.2	8	91	53	43	36	●
1536ST05C-0730	✻	7.3	8	91	53	43	36	●
1536ST05C-0740	✻	7.4	8	91	53	43	36	●
1536ST05C-0750	✻	7.5	8	91	53	43	36	●
1536ST05C-0760	✻	7.6	8	91	53	43	36	●
1536ST05C-0770	✻	7.7	8	91	53	43	36	●
1536ST05C-0780	✻	7.8	8	91	53	43	36	●
1536ST05C-0790	✻	7.9	8	91	53	43	36	●
1536ST05C-0800	✻	8	8	91	53	43	36	●
1536ST05C-0810	✻	8.1	10	103	61	49	40	●
1536ST05C-0820	✻	8.2	10	103	61	49	40	●
1536ST05C-0830	✻	8.3	10	103	61	49	40	●
1536ST05C-0840	✻	8.4	10	103	61	49	40	●
1536ST05C-0850	✻	8.5	10	103	61	49	40	●
1536ST05C-0860	✻	8.6	10	103	61	49	40	●
1536ST05C-0870	✻	8.7	10	103	61	49	40	●
1536ST05C-0880	✻	8.8	10	103	61	49	40	●
1536ST05C-0890	✻	8.9	10	103	61	49	40	●
1536ST05C-0900	✻	9	10	103	61	49	40	●
1536ST05C-0910	✻	9.1	10	103	61	49	40	●
1536ST05C-0920	✻	9.2	10	103	61	49	40	●
1536ST05C-0930	✻	9.3	10	103	61	49	40	●
1536ST05C-0940	✻	9.4	10	103	61	49	40	●
1536ST05C-0950	✻	9.5	10	103	61	49	40	●
1536ST05C-0960	✻	9.6	10	103	61	49	40	●
1536ST05C-0970	✻	9.7	10	103	61	49	40	●
1536ST05C-0980	✻	9.8	10	103	61	49	40	●
1536ST05C-0990	✻	9.9	10	103	61	49	40	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔			✔	

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

Solid carbide drills ST series

ST drill 5xD — Steel, stainless steel, heat-resistant alloys

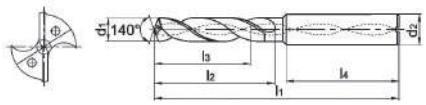
1536ST05C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1536ST05C-1000	✲	10	10	103	61	49	40	●
1536ST05C-1010	✲	10.1	12	118	71	56	45	●
1536ST05C-1020	✲	10.2	12	118	71	56	45	●
1536ST05C-1025	✲	10.25	12	118	71	56	45	○
1536ST05C-1030	✲	10.3	12	118	71	56	45	●
1536ST05C-1040	✲	10.4	12	118	71	56	45	●
1536ST05C-1050	✲	10.5	12	118	71	56	45	●
1536ST05C-1060	✲	10.6	12	118	71	56	45	●
1536ST05C-1070	✲	10.7	12	118	71	56	45	●
1536ST05C-1080	✲	10.8	12	118	71	56	45	●
1536ST05C-1090	✲	10.9	12	118	71	56	45	●
1536ST05C-1100	✲	11	12	118	71	56	45	●
1536ST05C-1110	✲	11.1	12	118	71	56	45	●
1536ST05C-1120	✲	11.2	12	118	71	56	45	●
1536ST05C-1130	✲	11.3	12	118	71	56	45	●
1536ST05C-1140	✲	11.4	12	118	71	56	45	●
1536ST05C-1150	✲	11.5	12	118	71	56	45	●
1536ST05C-1160	✲	11.6	12	118	71	56	45	●
1536ST05C-1170	✲	11.7	12	118	71	56	45	●
1536ST05C-1180	✲	11.8	12	118	71	56	45	●
1536ST05C-1190	✲	11.9	12	118	71	56	45	●
1536ST05C-1200	✲	12	12	118	71	56	45	●
1536ST05C-1220	✲	12.2	14	124	77	60	45	●
1536ST05C-1225	✲	12.25	14	124	77	60	45	○
1536ST05C-1230	✲	12.3	14	124	77	60	45	●
1536ST05C-1250	✲	12.5	14	124	77	60	45	●
1536ST05C-1270	✲	12.7	14	124	77	60	45	●
1536ST05C-1275	✲	12.75	14	124	77	60	45	○
1536ST05C-1280	✲	12.8	14	124	77	60	45	●
1536ST05C-1300	✲	13	14	124	77	60	45	●
1536ST05C-1310	✲	13.1	14	124	77	60	45	●
1536ST05C-1350	✲	13.5	14	124	77	60	45	●
1536ST05C-1380	✲	13.8	14	124	77	60	45	●
1536ST05C-1400	✲	14	14	124	77	60	45	●
1536ST05C-1425	✲	14.25	16	133	83	63	48	○
1536ST05C-1430	✲	14.3	16	133	83	63	48	●
1536ST05C-1450	✲	14.5	16	133	83	63	48	●

● Ex stock ○ On demand
✲ With internal cooling

Application field

P	M	K	N	S	H
✔	✔			✔	

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

ST drill 5xD — Steel, stainless steel, heat-resistant alloys

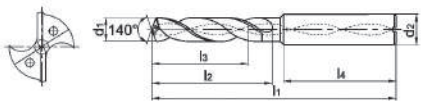
1536ST05C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1536ST05C-1475	✻	14.75	16	133	83	63	48	○
1536ST05C-1480	✻	14.8	16	133	83	63	48	●
1536ST05C-1500	✻	15	16	133	83	63	48	●
1536ST05C-1510	✻	15.1	16	133	83	63	48	●
1536ST05C-1550	✻	15.5	16	133	83	63	48	●
1536ST05C-1580	✻	15.8	16	133	83	63	48	●
1536ST05C-1600	✻	16	16	133	83	63	48	●
1536ST05C-1650	✻	16.5	18	143	93	71	48	●
1536ST05C-1675	✻	16.75	18	143	93	71	48	○
1536ST05C-1680	✻	16.8	18	143	93	71	48	●
1536ST05C-1700	✻	17	18	143	93	71	48	●
1536ST05C-1750	✻	17.5	18	143	93	71	48	●
1536ST05C-1780	✻	17.8	18	143	93	71	48	●
1536ST05C-1800	✻	18	18	143	93	71	48	●
1536ST05C-1850	✻	18.5	20	153	101	77	50	●
1536ST05C-1880	✻	18.8	20	153	101	77	50	●
1536ST05C-1900	✻	19	20	153	101	77	50	●
1536ST05C-1950	✻	19.5	20	153	101	77	50	●
1536ST05C-1980	✻	19.8	20	153	101	77	50	●
1536ST05C-2000	✻	20	20	153	101	77	50	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔			✔	

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

Solid carbide drills ST series

ST drill 5xD — Steel, stainless steel, heat-resistant alloys

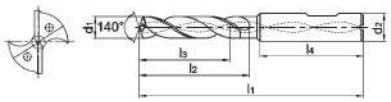
1636ST05C



– Type of shank: DIN 6535HB
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1636ST05C-0520	✲	5.2	6	82	44	35	36	○
1636ST05C-0730	✲	7.3	8	91	53	43	36	○
1636ST05C-0800	✲	8	8	91	53	43	36	○
1636ST05C-0810	✲	8.1	10	103	61	49	40	○
1636ST05C-0820	✲	8.2	10	103	61	49	40	○
1636ST05C-0830	✲	8.3	10	103	61	49	40	○
1636ST05C-0840	✲	8.4	10	103	61	49	40	○
1636ST05C-0850	✲	8.5	10	103	61	49	40	○
1636ST05C-0860	✲	8.6	10	103	61	49	40	○
1636ST05C-0870	✲	8.7	10	103	61	49	40	○
1636ST05C-0880	✲	8.8	10	103	61	49	40	○
1636ST05C-0890	✲	8.9	10	103	61	49	40	○
1636ST05C-0900	✲	9	10	103	61	49	40	○
1636ST05C-0910	✲	9.1	10	103	61	49	40	○
1636ST05C-0930	✲	9.3	10	103	61	49	40	○
1636ST05C-0940	✲	9.4	10	103	61	49	40	○
1636ST05C-0950	✲	9.5	10	103	61	49	40	○
1636ST05C-0960	✲	9.6	10	103	61	49	40	○
1636ST05C-0970	✲	9.7	10	103	61	49	40	○
1636ST05C-0980	✲	9.8	10	103	61	49	40	○
1636ST05C-0990	✲	9.9	10	103	61	49	40	○
1636ST05C-1000	✲	10	10	103	61	49	40	○
1636ST05C-1010	✲	10.1	12	118	71	56	45	○
1636ST05C-1025	✲	10.25	12	118	71	56	45	○
1636ST05C-1030	✲	10.3	12	118	71	56	45	○
1636ST05C-1040	✲	10.4	12	118	71	56	45	○
1636ST05C-1050	✲	10.5	12	118	71	56	45	○
1636ST05C-1060	✲	10.6	12	118	71	56	45	○
1636ST05C-1070	✲	10.7	12	118	71	56	45	○
1636ST05C-1080	✲	10.8	12	118	71	56	45	○
1636ST05C-1090	✲	10.9	12	118	71	56	45	○
1636ST05C-1100	✲	11	12	118	71	56	45	○
1636ST05C-1110	✲	11.1	12	118	71	56	45	○
1636ST05C-1120	✲	11.2	12	118	71	56	45	○
1636ST05C-1130	✲	11.3	12	118	71	56	45	○
1636ST05C-1140	✲	11.4	12	118	71	56	45	○
1636ST05C-1150	✲	11.5	12	118	71	56	45	○

● Ex stock ○ On demand
✲ With internal cooling

Application field

P	M	K	N	S	H
✔	✔			✔	

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

ST drill 5xD — Steel, stainless steel, heat-resistant alloys

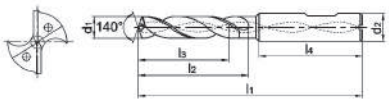
1636ST05C



– Type of shank: DIN 6535HB
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1636ST05C-1160	✲	11.6	12	118	71	56	45	○
1636ST05C-1170	✲	11.7	12	118	71	56	45	○
1636ST05C-1180	✲	11.8	12	118	71	56	45	○
1636ST05C-1190	✲	11.9	12	118	71	56	45	○
1636ST05C-1200	✲	12	12	118	71	56	45	○
1636ST05C-1225	✲	12.25	14	124	77	60	45	○
1636ST05C-1230	✲	12.3	14	124	77	60	45	○
1636ST05C-1250	✲	12.5	14	124	77	60	45	○
1636ST05C-1270	✲	12.7	14	124	77	60	45	○
1636ST05C-1275	✲	12.75	14	124	77	60	45	○
1636ST05C-1280	✲	12.8	14	124	77	60	45	○
1636ST05C-1300	✲	13	14	124	77	60	45	○
1636ST05C-1310	✲	13.1	14	124	77	60	45	○
1636ST05C-1350	✲	13.5	14	124	77	60	45	○
1636ST05C-1380	✲	13.8	14	124	77	60	45	○
1636ST05C-1400	✲	14	14	124	77	60	45	○
1636ST05C-1425	✲	14.25	16	133	83	63	48	○
1636ST05C-1430	✲	14.3	16	133	83	63	48	○
1636ST05C-1450	✲	14.5	16	133	83	63	48	○
1636ST05C-1475	✲	14.75	16	133	83	63	48	○
1636ST05C-1480	✲	14.8	16	133	83	63	48	○
1636ST05C-1500	✲	15	16	133	83	63	48	○
1636ST05C-1510	✲	15.1	16	133	83	63	48	○
1636ST05C-1550	✲	15.5	16	133	83	63	48	○
1636ST05C-1580	✲	15.8	16	133	83	63	48	○
1636ST05C-1600	✲	16	16	133	83	63	48	○
1636ST05C-1650	✲	16.5	18	143	93	71	48	○
1636ST05C-1675	✲	16.75	18	143	93	71	48	○
1636ST05C-1680	✲	16.8	18	143	93	71	48	○
1636ST05C-1700	✲	17	18	143	93	71	48	●
1636ST05C-1750	✲	17.5	18	143	93	71	48	○
1636ST05C-1780	✲	17.8	18	143	93	71	48	○
1636ST05C-1800	✲	18	18	143	93	71	48	○
1636ST05C-1850	✲	18.5	20	153	101	77	50	○
1636ST05C-1880	✲	18.8	20	153	101	77	50	○
1636ST05C-1900	✲	19	20	153	101	77	50	○
1636ST05C-1950	✲	19.5	20	153	101	77	50	○
1636ST05C-1980	✲	19.8	20	153	101	77	50	○
1636ST05C-2000	✲	20	20	153	101	77	50	○

● Ex stock ○ On demand
✲ With internal cooling

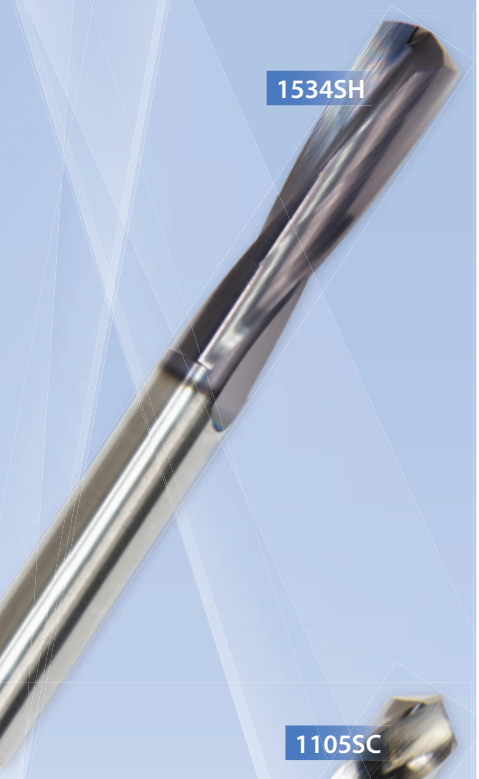
Application field

P	M	K	N	S	H
✔	✔			✔	

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

Notes



SH series

Twist drills for hardened materials

- Specially designed chip geometry for very high stability.
- High performance coating for longer tool life.
- Diameter range 3.0–16.0 mm (3xD)



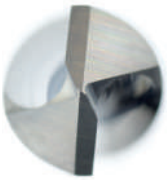
S cut



SC series

Twist drills for aluminium alloys

- Equal nominal diameter and shank diameter.
- Diameter meter 2.0–16.0 mm (3xD, 5xD)



Straight cut



PA series

Three-lips drills for aluminium alloys

- Three cutting edges provide high concentricity and therefore high feed rates.
- Equal nominal diameter and shank diameter.
- Diameter range 3.0–20.0 mm (3xD)



Straight cut

SH drill 3xD Hard materials

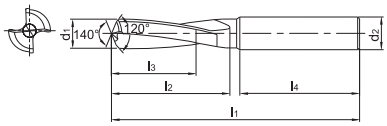
1534SH03



– Type of shank DIN 6535HA



External coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	KDG303
1534SH03-0300		3	6	62	20	14	36	○
1534SH03-0330		3.3	6	62	20	14	36	●
1534SH03-0400		4	6	66	24	17	36	○
1534SH03-0420		4.2	6	66	24	17	36	●
1534SH03-0500		5	6	66	28	20	36	○
1534SH03-0600		6	6	66	28	20	36	○
1534SH03-0675		6.75	8	79	34	24	36	○
1534SH03-0700		7	8	79	34	24	36	○
1534SH03-0800		8	8	79	41	29	36	○
1534SH03-0850		8.5	10	89	47	35	40	○
1534SH03-0900		9	10	89	47	35	40	○
1534SH03-1000		10	10	89	47	35	40	○
1534SH03-1025		10.25	12	102	55	40	45	○
1534SH03-1050		10.5	12	102	55	40	45	○
1534SH03-1200		12	12	102	55	40	45	○
1534SH03-1250		12.5	14	107	60	43	45	○
1534SH03-1400		14	14	107	60	43	45	○
1534SH03-1450		14.5	16	115	65	45	48	○
1534SH03-1600		16	16	115	65	45	48	○

● Ex stock ○ On demand

✲ With internal cooling

Application field

P	M	K	N	S	H
					✔

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SC drill 3xD — Non-ferrous metals

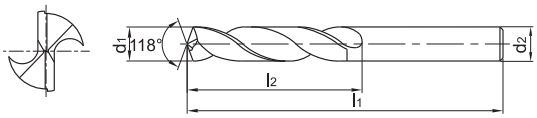
1105SC03



– Factory standard



External coolant



Article	✻	Dimensions [mm]				Grade
		d_1 (h8)	d_2 (h7)	l_1	l_2	YK20F
1105SC03-0200		2	2	38	12	○
1105SC03-0250		2.5	2.5	43	14	○
1105SC03-0280		2.8	2.8	46	16	○
1105SC03-0300		3	3	46	16	○
1105SC03-0310		3.1	3.1	49	18	○
1105SC03-0320		3.2	3.2	49	18	○
1105SC03-0330		3.3	3.3	49	18	○
1105SC03-0340		3.4	3.4	52	20	○
1105SC03-0350		3.5	3.5	52	20	○
1105SC03-0360		3.6	3.6	52	20	○
1105SC03-0370		3.7	3.7	52	20	○
1105SC03-0380		3.8	3.8	55	22	○
1105SC03-0390		3.9	3.9	55	22	○
1105SC03-0400		4	4	55	22	○
1105SC03-0410		4.1	4.1	55	22	○
1105SC03-0420		4.2	4.2	55	22	○
1105SC03-0430		4.3	4.3	58	24	○
1105SC03-0440		4.4	4.4	58	24	○
1105SC03-0450		4.5	4.5	58	24	○
1105SC03-0460		4.6	4.6	58	24	○
1105SC03-0470		4.7	4.7	58	24	○
1105SC03-0480		4.8	4.8	62	26	○
1105SC03-0490		4.9	4.9	62	26	○
1105SC03-0500		5	5	62	26	○
1105SC03-0510		5.1	5.1	62	26	○
1105SC03-0520		5.2	5.2	62	26	○
1105SC03-0530		5.3	5.3	62	26	○
1105SC03-0540		5.4	5.4	66	28	○
1105SC03-0550		5.5	5.5	66	28	○
1105SC03-0560		5.6	5.6	66	28	○
1105SC03-0570		5.7	5.7	66	28	○
1105SC03-0580		5.8	5.8	66	28	○
1105SC03-0590		5.9	5.9	66	28	○
1105SC03-0600		6	6	66	28	○
1105SC03-0610		6.1	6.1	70	31	○
1105SC03-0620		6.2	6.2	70	31	○
1105SC03-0630		6.3	6.3	70	31	○
1105SC03-0640		6.4	6.4	70	31	○

● Ex stock ○ On demand

✻ With internal cooling

Application field

P	M	K	N	S	H
			✔		

✔ Very suitable

✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

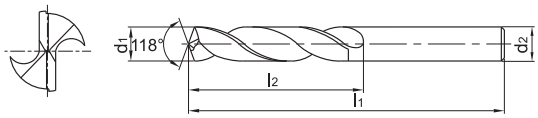
SC drill 3xD — Non-ferrous metals

1105SC03

– Factory standard



External coolant



Article	✻	Dimensions [mm]				Grade
		d_1 (h8)	d_2 (h7)	l_1	l_2	YK20F
1105SC03-0650		6.5	6.5	70	31	○
1105SC03-0660		6.6	6.6	70	31	○
1105SC03-0670		6.7	6.7	70	31	○
1105SC03-0680		6.8	6.8	74	34	○
1105SC03-0690		6.9	6.9	74	34	○
1105SC03-0700		7	7	74	34	○
1105SC03-0710		7.1	7.1	74	34	○
1105SC03-0720		7.2	7.2	74	34	○
1105SC03-0730		7.3	7.3	74	34	○
1105SC03-0740		7.4	7.4	74	34	○
1105SC03-0750		7.5	7.5	74	34	○
1105SC03-0760		7.6	7.6	79	37	○
1105SC03-0770		7.7	7.7	79	37	○
1105SC03-0780		7.8	7.8	79	37	○
1105SC03-0790		7.9	7.9	79	37	○
1105SC03-0800		8	8	79	37	○
1105SC03-0810		8.1	8.1	79	37	○
1105SC03-0820		8.2	8.2	79	37	○
1105SC03-0830		8.3	8.3	79	37	○
1105SC03-0840		8.4	8.4	79	37	○
1105SC03-0850		8.5	8.5	79	37	○
1105SC03-0860		8.6	8.6	84	40	○
1105SC03-0870		8.7	8.7	84	40	○
1105SC03-0880		8.8	8.8	84	40	○
1105SC03-0890		8.9	8.9	84	40	○
1105SC03-0900		9	9	84	40	○
1105SC03-0910		9.1	9.1	84	40	○
1105SC03-0920		9.2	9.2	84	40	○
1105SC03-0930		9.3	9.3	84	40	○
1105SC03-0940		9.4	9.4	84	40	○
1105SC03-0950		9.5	9.5	84	40	○
1105SC03-0960		9.6	9.6	89	43	○
1105SC03-0970		9.7	9.7	89	43	○
1105SC03-0980		9.8	9.8	89	43	○
1105SC03-0990		9.9	9.9	89	43	○
1105SC03-1000		10	10	89	43	○
1105SC03-1010		10.1	10.1	89	43	○
1105SC03-1020		10.2	10.2	89	43	○

● Ex stock ○ On demand

✻ With internal cooling

Application field

P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SC drill 3xD — Non-ferrous metals

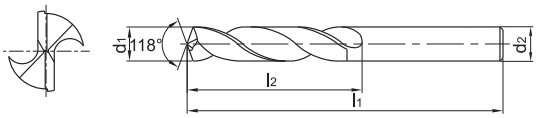
1105SC03



– Factory standard



External coolant



Article	✻	Dimensions [mm]				Grade
		d_1 (h8)	d_2 (h7)	l_1	l_2	YK20F
1105SC03-1040		10.4	10.4	89	43	○
1105SC03-1050		10.5	10.5	89	43	○
1105SC03-1070		10.7	10.7	95	47	○
1105SC03-1080		10.8	10.8	95	47	○
1105SC03-1100		11	11	95	47	○
1105SC03-1150		11.5	11.5	95	47	○
1105SC03-1200		12	12	102	51	○
1105SC03-1250		12.5	12.5	102	51	○
1105SC03-1280		12.8	12.8	102	51	○
1105SC03-1300		13	13	102	51	○
1105SC03-1310		13.1	13.1	102	51	○
1105SC03-1350		13.5	13.5	107	54	○
1105SC03-1400		14	14	107	54	○
1105SC03-1430		14.3	14.3	111	56	○
1105SC03-1450		14.5	14.5	111	56	○
1105SC03-1500		15	15	111	56	○
1105SC03-1600		16	16	115	58	○

● Ex stock ○ On demand

✻ With internal cooling

Application field

P	M	K	N	S	H
			✔		

✔ Very suitable

✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

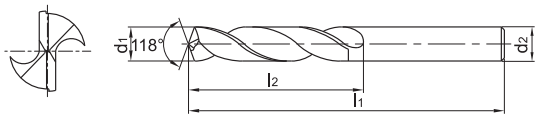
SC drill 5xD — Non-ferrous metals

1101SC05

– Factory standard



External coolant



Article	✲	Dimensions [mm]				Grade
		d_1 (h8)	d_2 (h7)	l_1	l_2	YK20F
1101SC05-0200		2	2	49	24	○
1101SC05-0250		2.5	2.5	57	30	○
1101SC05-0280		2.8	2.8	61	33	○
1101SC05-0300		3	3	61	33	○
1101SC05-0350		3.5	3.5	70	39	○
1101SC05-0380		3.8	3.8	75	43	○
1101SC05-0400		4	4	75	43	○
1101SC05-0420		4.2	4.2	75	43	○
1101SC05-0450		4.5	4.5	80	47	○
1101SC05-0480		4.8	4.8	86	52	○
1101SC05-0500		5	5	86	52	○
1101SC05-0550		5.5	5.5	93	57	○
1101SC05-0580		5.8	5.8	93	57	○
1101SC05-0600		6	6	93	57	○
1101SC05-0650		6.5	6.5	101	63	○
1101SC05-0680		6.8	6.8	109	69	○
1101SC05-0700		7	7	109	69	○
1101SC05-0750		7.5	7.5	109	69	○
1101SC05-0780		7.8	7.8	117	75	○
1101SC05-0800		8	8	117	75	○
1101SC05-0850		8.5	8.5	117	75	○
1101SC05-0880		8.8	8.8	125	81	○
1101SC05-0900		9	9	125	81	○
1101SC05-0950		9.5	9.5	125	81	○
1101SC05-0980		9.8	9.8	133	87	○
1101SC05-1000		10	10	133	87	○
1101SC05-1050		10.5	10.5	133	87	○
1101SC05-1080		10.8	10.8	142	94	○
1101SC05-1100		11	11	142	94	○
1101SC05-1150		11.5	11.5	142	94	○
1101SC05-1200		12	12	151	101	○
1101SC05-1250		12.5	12.5	151	101	○
1101SC05-1300		13	13	151	101	○
1101SC05-1350		13.5	13.5	160	108	○
1101SC05-1400		14	14	160	108	○
1101SC05-1450		14.5	14.5	169	114	○
1101SC05-1500		15	15	169	114	○
1101SC05-1550		15.5	15.5	178	120	○
1101SC05-1600		16	16	178	120	○

● Ex stock ○ On demand

✲ With internal cooling

Application field

P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

PA drill 3xD — Non-ferrous metals

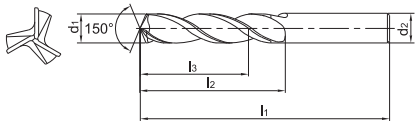
1165PA03



– Factory standard



External coolant



Article	✻	Dimensions [mm]					Grade	
		d_1 (h7)	d_2 (h7)	l_1	l_2	l_3	KDG303	YK30F
1165PA03-0300		3	3	46	16	12	●	●
1165PA03-0310		3.1	3.1	49	18	14	○	○
1165PA03-0320		3.2	3.2	49	18	14	○	●
1165PA03-0330		3.3	3.3	49	18	14	○	○
1165PA03-0340		3.4	3.4	52	20	15	○	●
1165PA03-0350		3.5	3.5	52	20	15	○	○
1165PA03-0360		3.6	3.6	52	20	15	○	○
1165PA03-0370		3.7	3.7	52	20	15	○	○
1165PA03-0380		3.8	3.8	55	22	17	○	○
1165PA03-0390		3.9	3.9	55	22	17	○	○
1165PA03-0400		4	4	55	22	17	○	○
1165PA03-0410		4.1	4.1	55	22	17	○	○
1165PA03-0420		4.2	4.2	55	22	17	○	○
1165PA03-0430		4.3	4.3	58	24	18	○	○
1165PA03-0440		4.4	4.4	58	24	18	○	○
1165PA03-0450		4.5	4.5	58	24	18	○	○
1165PA03-0460		4.6	4.6	58	24	18	○	○
1165PA03-0470		4.7	4.7	58	24	18	○	○
1165PA03-0480		4.8	4.8	62	26	20	○	○
1165PA03-0490		4.9	4.9	62	26	20	○	○
1165PA03-0500		5	5	62	26	20	○	○
1165PA03-0510		5.1	5.1	62	26	20	○	○
1165PA03-0520		5.2	5.2	62	26	20	○	○
1165PA03-0530		5.3	5.3	62	26	20	○	○
1165PA03-0540		5.4	5.4	66	28	21	○	○
1165PA03-0550		5.5	5.5	66	28	21	○	○
1165PA03-0560		5.6	5.6	66	28	21	○	○
1165PA03-0570		5.7	5.7	66	28	21	○	○
1165PA03-0580		5.8	5.8	66	28	21	○	○
1165PA03-0590		5.9	5.9	66	28	21	○	○
1165PA03-0600		6	6	66	28	21	○	○
1165PA03-0610		6.1	6.1	70	31	23	○	○
1165PA03-0620		6.2	6.2	70	31	23	○	○
1165PA03-0630		6.3	6.3	70	31	23	○	○
1165PA03-0640		6.4	6.4	70	31	23	○	○
1165PA03-0650		6.5	6.5	70	31	23	○	○
1165PA03-0660		6.6	6.6	70	31	23	○	●
1165PA03-0670		6.7	6.7	70	31	23	○	●

● Ex stock ○ On demand

✻ With internal cooling

Application field

P	M	K	N	S	H
			✔		

✔ Very suitable

✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

Solid carbide drills PA series

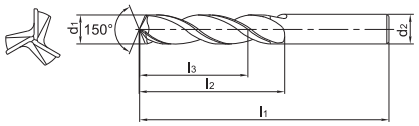
PA drill 3xD Non-ferrous metals

1165PA03

– Factory standard



External coolant



Article	✻	Dimensions [mm]					Grade	
		d_1 (h7)	d_2 (h7)	l_1	l_2	l_3	KDG303	YK30F
1165PA03-0680		6.8	6.8	74	34	25	○	○
1165PA03-0690		6.9	6.9	74	34	25	○	○
1165PA03-0700		7	7	74	34	25	○	○
1165PA03-0710		7.1	7.1	74	34	25	○	○
1165PA03-0720		7.2	7.2	74	34	25	○	○
1165PA03-0730		7.3	7.3	74	34	25	○	○
1165PA03-0740		7.4	7.4	74	34	25	○	○
1165PA03-0750		7.5	7.5	74	34	25	○	○
1165PA03-0760		7.6	7.6	79	37	27	○	○
1165PA03-0770		7.7	7.7	79	37	27	○	○
1165PA03-0780		7.8	7.8	79	37	27	○	○
1165PA03-0790		7.9	7.9	79	37	27	○	○
1165PA03-0800		8	8	79	37	27	○	○
1165PA03-0810		8.1	8.1	79	37	27	○	○
1165PA03-0820		8.2	8.2	79	37	27	○	○
1165PA03-0830		8.3	8.3	79	37	27	○	○
1165PA03-0840		8.4	8.4	79	37	27	○	○
1165PA03-0850		8.5	8.5	79	37	27	○	○
1165PA03-0860		8.6	8.6	84	40	29	○	●
1165PA03-0870		8.7	8.7	84	40	29	○	○
1165PA03-0880		8.8	8.8	84	40	29	○	○
1165PA03-0890		8.9	8.9	84	40	29	○	○
1165PA03-0900		9	9	84	40	29	○	○
1165PA03-0910		9.1	9.1	84	40	29	○	○
1165PA03-0920		9.2	9.2	84	40	29	○	○
1165PA03-0930		9.3	9.3	84	40	29	○	○
1165PA03-0940		9.4	9.4	84	40	29	○	○
1165PA03-0950		9.5	9.5	84	40	29	○	○
1165PA03-0960		9.6	9.6	89	43	31	○	○
1165PA03-0970		9.7	9.7	89	43	31	○	○
1165PA03-0980		9.8	9.8	89	43	31	○	○
1165PA03-0990		9.9	9.9	89	43	31	○	○
1165PA03-1000		10	10	89	43	31	○	○
1165PA03-1010		10.1	10.1	89	43	31	○	○
1165PA03-1020		10.2	10.2	89	43	31	○	○
1165PA03-1030		10.3	10.3	89	43	31	○	○
1165PA03-1050		10.5	10.5	89	43	31	○	○
1165PA03-1100		11	11	95	47	33	○	○

● Ex stock ○ On demand

✻ With internal cooling

Application field

P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code > C28 Machining instructions > C165 Cutting data > C122 Nonstandard order > C178

PA drill 3xD — Non-ferrous metals

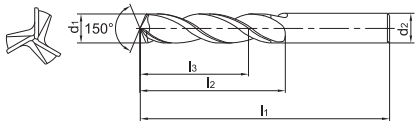
1165PA03



– Factory standard



External coolant



Article	✻	Dimensions [mm]					Grade	
		d_1 (h7)	d_2 (h7)	l_1	l_2	l_3	KDG303	YK30F
1165PA03-1120		11.2	11.2	95	47	33	○	○
1165PA03-1150		11.5	11.5	95	47	33	○	○
1165PA03-1180		11.8	11.8	95	47	33	○	○
1165PA03-1200		12	12	102	51	35	○	○
1165PA03-1210		12.1	12.1	102	51	35	○	○
1165PA03-1250		12.5	12.5	102	51	35	○	○
1165PA03-1300		13	13	102	51	35	○	○
1165PA03-1350		13.5	13.5	107	54	37	○	○
1165PA03-1400		14	14	107	54	37	○	○
1165PA03-1450		14.5	14.5	111	56	38	○	○
1165PA03-1500		15	15	111	56	38	○	○
1165PA03-1550		15.5	15.5	115	58	38	○	○
1165PA03-1600		16	16	115	58	38	○	○
1165PA03-1650		16.5	16.5	119	60	39	○	○
1165PA03-1700		17	17	119	60	39	○	○
1165PA03-1750		17.5	17.5	123	62	40	○	○
1165PA03-1800		18	18	123	62	40	○	○
1165PA03-1850		18.5	18.5	127	64	41	○	○
1165PA03-1900		19	19	127	64	41	○	○
1165PA03-1950		19.5	19.5	131	66	42	○	○
1165PA03-2000		20	20	131	66	42	○	○

● Ex stock ○ On demand

✻ With internal cooling

Application field

P	M	K	N	S	H
			✔		

✔ Very suitable

✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

Notes



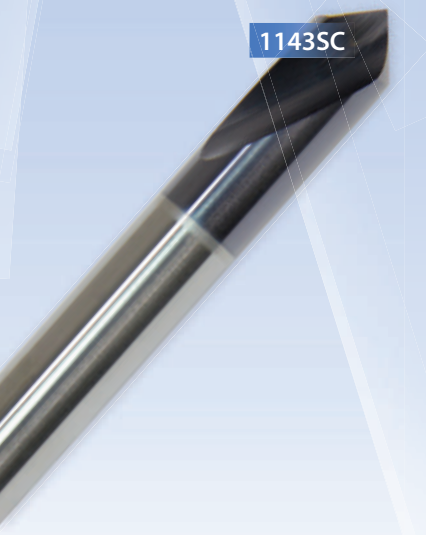
PC series

Straight flute drill for cast iron

- High precision (hole quality up to H7) and good surface quality on the complete bore length.
- Diameter range 4.0–20.0 mm (5xD, 15xD)



Straight cut



SC series

NC tapping device for steel, stainless steel, cast iron and non-ferrous metals

- For centring and chamfering.
- With 90° and 120° point angle.
- Diameter range 5.0–20.0 mm

PC drill 5xD — Cast iron

1576PC05/1576PC05C



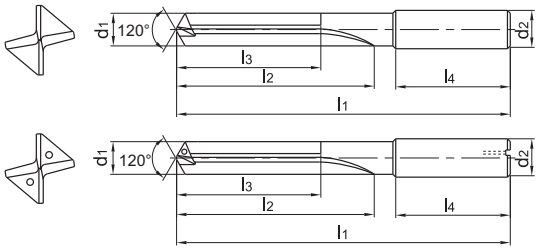
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	YK20F
1576PC05-0400		4	6	74	36	29	36	○
1576PC05C-0400	✻	4	6	74	36	29	36	●
1576PC05-0420		4.2	6	74	36	29	36	○
1576PC05C-0420	✻	4.2	6	74	36	29	36	●
1576PC05-0500		5	6	82	44	35	36	○
1576PC05C-0500	✻	5	6	82	44	35	36	●
1576PC05-0600		6	6	82	44	35	36	○
1576PC05C-0600	✻	6	6	82	44	35	36	●
1576PC05-0675		6.75	8	91	53	43	36	○
1576PC05C-0675	✻	6.75	8	91	53	43	36	●
1576PC05-0700		7	8	91	53	43	36	○
1576PC05C-0700	✻	7	8	91	53	43	36	●
1576PC05-0800		8	8	91	53	43	36	○
1576PC05C-0800	✻	8	8	91	53	43	36	●
1576PC05-0850		8.5	10	103	61	49	40	○
1576PC05C-0850	✻	8.5	10	103	61	49	40	●
1576PC05-0900		9	10	103	61	49	40	○
1576PC05C-0900	✻	9	10	103	61	49	40	●
1576PC05-1000		10	10	103	61	49	40	○
1576PC05C-1000	✻	10	10	103	61	49	40	●
1576PC05-1025		10.25	12	118	71	56	45	○
1576PC05C-1025	✻	10.25	12	118	71	56	45	●
1576PC05-1100		11	12	118	71	56	45	○
1576PC05C-1100	✻	11	12	118	71	56	45	●
1576PC05-1200		12	12	118	71	56	45	○
1576PC05C-1200	✻	12	12	118	71	56	45	●
1576PC05-1300		13	14	124	77	60	45	○
1576PC05C-1300	✻	13	14	124	77	60	45	●
1576PC05-1400		14	14	124	77	60	45	○
1576PC05C-1400	✻	14	14	124	77	60	45	●
1576PC05-1500		15	16	133	83	63	48	○
1576PC05C-1500	✻	15	16	133	83	63	48	○
1576PC05-1550		15.5	16	133	83	63	48	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
		✔			

✔ Very suitable
✔ Suitable

System code > C28 | Machining instructions > C165 | Cutting data > C122 | Nonstandard order > C178

PC drill 5xD — Cast iron

1576PC05/1576PC05C



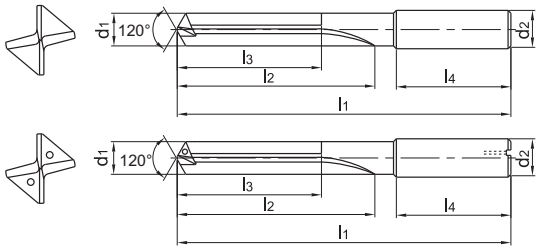
– Type of shank DIN 6535HA
– Coolant exit, axial concentric



External coolant



Internal coolant



Article	✻	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	YK20F
1576PC05C-1550	✻	15.5	16	133	83	63	48	○
1576PC05-1600		16	16	133	83	63	48	○
1576PC05C-1600	✻	16	16	133	83	63	48	○
1576PC05-1700		17	18	143	93	71	48	○
1576PC05C-1700	✻	17	18	143	93	71	48	○
1576PC05-1750		17.5	18	143	93	71	48	○
1576PC05C-1750	✻	17.5	18	143	93	71	48	○
1576PC05-1800		18	18	143	93	71	48	○
1576PC05C-1800	✻	18	18	143	93	71	48	●
1576PC05-1950		19.5	20	153	101	77	50	○
1576PC05C-1950	✻	19.5	20	153	101	77	50	○
1576PC05-2000		20	20	153	101	77	50	○
1576PC05C-2000	✻	20	20	153	101	77	50	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
		✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

PC drill 15xD Cast iron

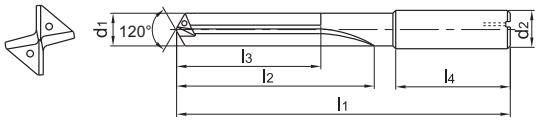
1579PC15C



– Type of shank DIN 6535HA
– Coolant exit, axial concentric



Internal coolant



Article	✲	Dimensions [mm]						Grade
		d_1 (m7)	d_2 (h6)	l_1	l_2	l_3	l_4	YK20F
1579PC15C-0500	✲	5	6	145	105	96	36	○
1579PC15C-0600	✲	6	6	145	105	96	36	○
1579PC15C-0800	✲	8	8	180	137	127	36	○
1579PC15C-0900	✲	9	10	217	170	158	40	○
1579PC15C-1000	✲	10	10	217	170	158	40	○
1579PC15C-1100	✲	11	12	258	205	190	45	○
1579PC15C-1200	✲	12	12	258	205	190	45	○
1579PC15C-1400	✲	14	14	290	236	219	45	○

● Ex stock ○ On demand
✲ With internal cooling

Application field

P	M	K	N	S	H
		✔			

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SC drill – NC tapping device 90° General machining

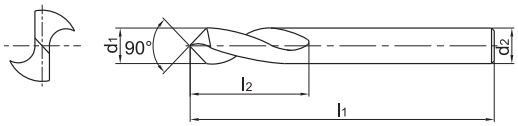
1143SC90



– Factory standard



External coolant



Article	✻	Dimensions [mm]				Grade	
		d_1 (h6)	d_2 (h6)	l_1	l_2	KDG303	YK30F
1143SC90-0500		5	5	62	10	●	
1143SC90-0600		6	6	66	15	●	
1143SC90-0800		8	8	79	17	●	
1143SC90-1000		10	10	89	20	●	
1143SC90-1200		12	12	102	25	●	
1143SC90-1400		14	14	107	30	●	
1143SC90-1600		16	16	115	35	●	
1143SC90-2000		20	20	131	40	●	○

● Ex stock ○ On demand

✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔	✔	✔		

✔ Very suitable

✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

SC drill – NC tapping device 120° General machining

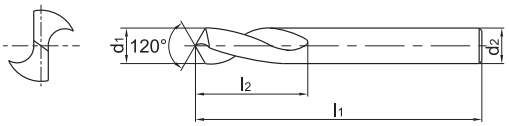
1143SC120



– Factory standard



External coolant



Article	✲	Dimensions [mm]				Grade
		d_1 (h6)	d_2 (h6)	l_1	l_2	KDG303
1143SC120-0500		5	5	62	10	●
1143SC120-0600		6	6	66	15	●
1143SC120-0800		8	8	79	17	●
1143SC120-1000		10	10	89	20	●
1143SC120-1200		12	12	102	25	●
1143SC120-1400		14	14	107	30	●
1143SC120-1600		16	16	115	35	●
1143SC120-2000		20	20	131	42	●

● Ex stock ○ On demand

✲ With internal cooling

Application field

P	M	K	N	S	H
✔	✔	✔	✔		

✔ Very suitable
✔ Suitable

System code C28 | Machining instructions C165 | Cutting data C122 | Nonstandard order C178

Notes

Guide for recommended cutting data – solid carbide drilling

Solid carbide drills

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]								
						SU Series 3-5xD KDG 303			SU-Drill 8xD KDG 303			SU Step Drill 3xD KDG 303		
						Coolant								
						internal	external	f-group	internal	external	f-group	internal	external	f-group
P	Unalloyed steel	ca. 0,15 % C	annealed	125	1	150	135	8	135	125	7	150	135	8
		ca. 0,45 % C	annealed	190	2	130	120	8	120	110	7	130	120	8
		ca. 0,45 % C	tempered	250	3	120	110	6	110	100	5	120	110	6
		ca. 0,75 % C	annealed	270	4	110	100	6	100	90	5	110	100	6
		ca. 0,75 % C	tempered	300	5	100	90	6	90	85	5	100	90	6
	Low-alloyed steel		annealed	180	6	130	120	8	120	110	7	130	120	8
			tempered	275	7	110	100	6	100	90	5	110	100	6
			tempered	300	8	100	90	6	90	85	5	100	90	6
			tempered	350	9	90	85	6	85	80	5	90	85	6
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	120	110	8	110	100	7	120	110	8
			hardened and tempered	325	11	100	90	6	90	85	5	100	90	6
M	Stainless steel	ferritic/martensitic	annealed	200	12	80	75	5	75	70	5	80	75	5
		martensitic	tempered	240	13	55	50	5	50	45	5	55	50	5
		austenitic	quench hardened	180	14	60	55	5	55	50	5	60	55	5
		austenitic-ferritic		230	15	50	45	5	45	45	5	50	45	5
K	Grey cast iron	perlitic/ferritic		180	16	135	125	8	125	115	7	135	125	8
		perlitic (martensitic)		260	17	110	100	8	100	90	7	110	100	8
	Cast iron with spheroidal graphite	ferritic		160	18	120	110	8	110	100	7	120	110	8
		perlitic		250	19	80	75	8	75	70	7	80	75	8
	Malleable cast iron	ferritic		130	20	130	120	8	120	110	7	130	120	8
		perlitic		230	21	80	75	8	75	70	7	80	75	8
N	Aluminium wrought alloys	cannot be hardened		60	22									
		hardenable	hardened	100	23									
	Cast aluminium alloys	≤ 12% Si, cannot be hardened		75	24									
		≤ 12% Si, hardenable	hardened	90	25									
		> 12% Si, cannot be hardened		130	26									
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27									
		CuZn, CuSnZn		90	28									
		CuSn, Pb-free copper, electrolytic copper		100	29									
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30									
			hardened	280	31									
		Ni or Co bass	annealed	250	32									
			hardened	350	33									
			cast	320	34									
	Titanium alloys	pure titanium		R_m 400	35									
		α and β alloys	hardened	R_m 1050	36									
H	Hardened steel		hardened and tempered	55 HRC	37									
			hardened and tempered	60 HRC	38									
	Hard cast iron		cast	400	39									
	Hardened cast iron		hardened and tempered	55 HRC	40									
X	Non-metallic materials	Thermoplasts			41									
		Thermosetting plastics			42									
		Plastic, glass-fibre reinforced GFRP			43									
		Plastic, carbon fibre reinforced CFRP			44									
		Graphite			45									
		Wood			46									

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
With hole depths of 5xD adjust the cutting data accordingly to the application.
f-group = feed rate recommendations on page C126.
For examples of material for cutting tool groups view page D22.

Recommend feed rate

Solid carbide drilling

f-group	Feed rate [mm]																			
	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø11	Ø12	Ø13	Ø14	Ø15	Ø16	Ø17	Ø18	Ø19	Ø20
1	0,01	0,02	0,03	0,04	0,04	0,05	0,05	0,06	0,06	0,06	0,07	0,07	0,08	0,08	0,09	0,09	0,09	0,09	0,10	0,10
2	0,01	0,02	0,03	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,08	0,09	0,09	0,09	0,10	0,10	0,10	0,11	0,11	0,11
3	0,01	0,02	0,04	0,05	0,06	0,06	0,07	0,07	0,08	0,09	0,09	0,10	0,10	0,11	0,11	0,12	0,12	0,12	0,13	0,13
4	0,02	0,03	0,04	0,06	0,06	0,07	0,08	0,09	0,09	0,10	0,11	0,11	0,12	0,12	0,13	0,13	0,14	0,14	0,15	0,15
5	0,02	0,03	0,05	0,06	0,07	0,09	0,09	0,10	0,11	0,11	0,12	0,13	0,14	0,14	0,15	0,15	0,16	0,16	0,17	0,17
6	0,02	0,04	0,06	0,07	0,09	0,10	0,11	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,17	0,18	0,18	0,19	0,19	0,20
7	0,02	0,04	0,06	0,09	0,10	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,18	0,19	0,20	0,20	0,21	0,22	0,22	0,23
8	0,03	0,05	0,07	0,10	0,11	0,13	0,14	0,15	0,16	0,17	0,18	0,20	0,21	0,22	0,23	0,23	0,24	0,25	0,26	0,26
9	0,03	0,06	0,08	0,11	0,13	0,15	0,16	0,17	0,18	0,20	0,21	0,23	0,24	0,25	0,26	0,27	0,28	0,29	0,29	0,30
10	0,04	0,07	0,10	0,13	0,15	0,17	0,19	0,20	0,21	0,23	0,24	0,26	0,27	0,29	0,30	0,31	0,32	0,33	0,34	0,35
11	0,04	0,07	0,11	0,15	0,17	0,20	0,21	0,23	0,24	0,26	0,28	0,30	0,32	0,33	0,35	0,36	0,37	0,38	0,39	0,40
12	0,05	0,09	0,13	0,17	0,20	0,23	0,25	0,26	0,28	0,30	0,32	0,35	0,36	0,38	0,40	0,41	0,42	0,44	0,45	0,46
13	0,05	0,10	0,15	0,20	0,23	0,26	0,28	0,30	0,32	0,35	0,37	0,40	0,42	0,44	0,46	0,47	0,49	0,50	0,52	0,53
14	0,06	0,11	0,17	0,23	0,26	0,30	0,33	0,35	0,37	0,40	0,43	0,46	0,48	0,50	0,53	0,54	0,56	0,58	0,59	0,61
15	0,07	0,13	0,20	0,26	0,30	0,35	0,37	0,40	0,43	0,46	0,49	0,53	0,55	0,58	0,61	0,62	0,64	0,66	0,68	0,70

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

1. Select the appropriate product series.
2. Determine the immersion.
3. Select the used material and read the cutting speed.
4. Determine the feed rate group and have a look at the appropriate feed rate recommendations.
5. Select the diameter of tool and determine the immersion.

Solid carbide drills

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]								
						SU Series			SU-Drill			SU Step Drill		
						3-5xD			8xD			3xD		
						KDG 303			KDG 303			KDG 303		
						Coolant								
						Int.	Ext.	f-group	Int.	Ext.	f-group	Int.	Ext.	f-group
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	150	135	8	135	125	7	150	135	8
		approx. 0,45 % C	annealed	190	2	130	120	8	120	110	7	130	120	8
		approx. 0,45 % C	tempered	250	3	120	110	6	110	100	5	120	110	6
		approx. 0,75 % C	annealed	270	4	110	100	6	100	90	5	110	100	6
		approx. 0,75 % C	tempered	300	5	100	90	6	90	85	5	100	90	6
	Low-alloyed steel		annealed	180	6	130	120	8	120	110	7	130	120	8
			tempered	275	7	110	100	6	100	90	5	110	100	6
			tempered	300	8	100	90	6	90	85	5	100	90	6
			tempered	350	9	90	85	6	85	80	5	90	85	6
	High-alloyed steel and high-alloyed tool steel		annealed	200	10	120	110	8	110	100	7	120	110	8
			hardened and tempered	325	11	100	90	6	90	85	5	100	90	6
M	Stainless steel	ferritic/martensitic	annealed	200	12	80	75	5	75	70	5	80	75	5
		martensitic	tempered	240	13	55	50	5	50	45	5	55	50	5
		austenitic	quench hardened	180	14	60	55	5	55	50	5	60	55	5
		austenitic-ferritic		230	15	50	45	5	45	45	5	50	45	5
K	Grey cast iron	perlitic/ferritic		180	16	135	125	8	125	115	7	135	125	8
		perlitic (martensitic)		260	17	110	100	8	100	90	7	110	100	8
	Cast iron with spheroidal graphite	ferritic		160	18	120	110	8	110	100	7	120	110	8
		perlitic		250	19	80	75	8	75	70	7	80	75	8
	Malleable cast iron	ferritic		130	20	130	120	8	120	110	7	130	120	8
		perlitic		230	21	80	75	8	75	70	7	80	75	8
N	Aluminium wrought alloys	cannot be hardened		60	22									
		hardenable	hardened	100	23									
	Cast aluminium alloys	≤ 12% Si, cannot be hardened		75	24									
		≤ 12% Si, hardenable	hardened	90	25									
		> 12% Si, cannot be hardened		130	26									
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27									
		CuZn, CuSnZn		90	28									
		CuSn, Pb-free copper, electrolytic copper		100	29									
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30									
			hardened	280	31									
		Ni or Co bass	annealed	250	32									
			hardened	350	33									
			cast	320	34									
	Titanium alloys	pure titanium		R_m 400	35									
		α and β alloys	hardened	R_m 1050	36									
H	Hardened steel		hardened and tempered	55 HRC	37									
			hardened and tempered	60 HRC	38									
	Hard cast iron		cast	400	39									
	Hardened cast iron		hardened and tempered	55 HRC	40									
X	Non-metallic materials	Thermoplasts			41									
		Thermosetting plastics			42									
		Plastic, glass-fibre reinforced GFRP			43									
		Plastic, carbon fibre reinforced CFRP			44									
		Graphite			45									
		Wood			46									

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
With hole depths of 5xD adjust the cutting data accordingly to the application.
f-group = feed rate recommendations on page C126.
For examples of material for cutting tool groups view page D22.

	Starting values for cutting speed v_c [m/min]																					
	SL-Drill		SL-Drill		SP-Drill		ST-Drill		SH-Drill		SC-Drill		PA-Drill		PC-Drill		PC-Drill		SC-Drill			
	12-15xD		20-30xD		3xD		3-5xD		3xD		3 -5xD		3xD		3-5xD		15xD		Centering drill			
	KDG 303		KDG 303		KDG 303		KDG 303		KDG 303		YK20F		YK 30F		YK20F		YK20F		KDG 303			
	Int.	f-group	Int.	f-group	Int.	f-group	Int.	f-group	Ext.	f-group	Ext.	f-group	Ext.	f-group	Ext.	f-group	Int.	f-group	Ext.	f-group		
	130	7	95	7	165	8	150	8											135	8		
	110	7	80	7	145	8	130	8											120	8		
	100	5	70	5	135	6	120	6											110	6		
	85	5	60	5	125	6	110	6											100	6		
	75	5	55	5	110	6	100	6											90	6		
	110	7	80	7	145	8	130	8											120	8		
	85	5	60	5	125	6	110	6											100	6		
	75	5	55	5	110	6	100	6											90	6		
	65	5	50	5	100	6	90	6											85	6		
	100	7	70	7	135	8	120	8											110	8		
	75	5	55	5	110	6	100	6											90	6		
	60	4	55	4	90	5	80	5											75	5		
	35	4	30	4	65	5	55	5											50	5		
	40	4	35	4	70	5	60	5											55	5		
	35	4	35	4	55	5	50	5											45	5		
	125	7	90	7	150	8									120	8	100	7	120	8		
	100	7	70	7	125	8									100	8	80	7	100	8		
	110	7	80	7	135	8									100	8	80	7	100	8		
	70	7	50	7	90	8									80	8	65	7	80	8		
	120	7	85	7	145	8									120	8	100	7	120	8		
	70	7	50	7	90	8									90	8	75	7	90	8		
	150	8	105	8	170	8					180	9	180	9					180	9		
	150	8	105	8	170	8					180	9	180	9					180	9		
	150	8	105	8	170	8					130	9	130	9					130	9		
	150	8	105	8	170	8					130	9	130	9					130	9		
	150	8	105	8	170	8					120	9	120	9					120	9		
	150	8	105	8	170	8					130	9	130	9					130	9		
	150	8	105	8	170	8					130	9	130	9					130	9		
	150	8	105	8	170	8					130	9	130	9					130	9		
	30	4	20	4	30	5	30	5														
	35	4	25	4	35	5	35	5														
	35	4	25	4	35	5	35	5														
	15	4	10	4	15	5	15	5														
	15	4	10	4	15	5	15	5														
	30	4	20	4	30	5	30	5														
	30	4	20	4	30	5	30	5														
									25	2												
									20	1												
									50	3												
									25	2												

Recommended feed rate

Solid carbide drills

f-group	Feed rate [mm]																			
	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø11	Ø12	Ø13	Ø14	Ø15	Ø16	Ø17	Ø18	Ø19	Ø20
1	0,01	0,02	0,03	0,04	0,04	0,05	0,05	0,06	0,06	0,06	0,07	0,07	0,08	0,08	0,09	0,09	0,09	0,09	0,10	0,10
2	0,01	0,02	0,03	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,08	0,09	0,09	0,09	0,10	0,10	0,10	0,11	0,11	0,11
3	0,01	0,02	0,04	0,05	0,06	0,06	0,07	0,07	0,08	0,09	0,09	0,10	0,10	0,11	0,11	0,12	0,12	0,12	0,13	0,13
4	0,02	0,03	0,04	0,06	0,06	0,07	0,08	0,09	0,09	0,10	0,11	0,11	0,12	0,12	0,13	0,13	0,14	0,14	0,15	0,15
5	0,02	0,03	0,05	0,06	0,07	0,09	0,09	0,10	0,11	0,11	0,12	0,13	0,14	0,14	0,15	0,15	0,16	0,16	0,17	0,17
6	0,02	0,04	0,06	0,07	0,09	0,10	0,11	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,17	0,18	0,18	0,19	0,19	0,20
7	0,02	0,04	0,06	0,09	0,10	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,18	0,19	0,20	0,20	0,21	0,22	0,22	0,23
8	0,03	0,05	0,07	0,10	0,11	0,13	0,14	0,15	0,16	0,17	0,18	0,20	0,21	0,22	0,23	0,23	0,24	0,25	0,26	0,26
9	0,03	0,06	0,08	0,11	0,13	0,15	0,16	0,17	0,18	0,20	0,21	0,23	0,24	0,25	0,26	0,27	0,28	0,29	0,29	0,30
10	0,04	0,07	0,10	0,13	0,15	0,17	0,19	0,20	0,21	0,23	0,24	0,26	0,27	0,29	0,30	0,31	0,32	0,33	0,34	0,35
11	0,04	0,07	0,11	0,15	0,17	0,20	0,21	0,23	0,24	0,26	0,28	0,30	0,32	0,33	0,35	0,36	0,37	0,38	0,39	0,40
12	0,05	0,09	0,13	0,17	0,20	0,23	0,25	0,26	0,28	0,30	0,32	0,35	0,36	0,38	0,40	0,41	0,42	0,44	0,45	0,46
13	0,05	0,10	0,15	0,20	0,23	0,26	0,28	0,30	0,32	0,35	0,37	0,40	0,42	0,44	0,46	0,47	0,49	0,50	0,52	0,53
14	0,06	0,11	0,17	0,23	0,26	0,30	0,33	0,35	0,37	0,40	0,43	0,46	0,48	0,50	0,53	0,54	0,56	0,58	0,59	0,61
15	0,07	0,13	0,20	0,26	0,30	0,35	0,37	0,40	0,43	0,46	0,49	0,53	0,55	0,58	0,61	0,62	0,64	0,66	0,68	0,70

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

Solid carbide reamers

Product overview	**C128**
Grade overview	**C129**
System code – solid carbide reamers	**C130**
Solid carbide reamers	**C131-C135**
Recommended cutting data	**C136-C140**
Technical information	**C173-C174**
Form nonstandard order	**C181**

C

Solid carbide reamers Product overview

Products	Solid carbide reamers	Ø	Application						Type	Page
			P	M	K	N	S	H		
3101H7		4-20			✔	✔			Right helical flute	C131
3102H7		4-20			✔	✔			Straight flute	C132
3112H7		4-20	✔		✔				Straight flute with inner hole	C133
3103H7		4-20			✔	✔			Left helical flute	C134

✔ Very suitable ✔ Suitable

Coated cemented carbide PVD

Grade	Grade description
KRG102	PVD coated P10–P20/K10–K20 carbide substrate for steel and cast iron.

Uncoated cemented carbide

Grade	Grade description
YK10F	Uncoated N10/K10 carbide substrate for cast iron and non ferrous materials.

Solid carbide reamers

System code – solid carbide reamers

3	1	0	1	H7	– 0850
1	2	3	4	5	6

Type	
Code	Description
3	Reamer

1

Shank type	
Code	Description
1	Straight shank
2	Straight shank DIN10
5	Straight shank DIN 6535 HA
9	Morse taper shank

2

Coolant supply	
Code	Description
0	External
1	Internal

3

Flute	
Code	Description
1	Right-hand twist
2	Straight flute
3	Left-hand twist

4

Classe de tolérance	
Code	Description
H7	The tolerance class of the reamed hole is equivalent to H7 (GB/T1800-1804)

5

Diameter [mm]	
Code	Description
0850	8,5
...	

6



a Reaming

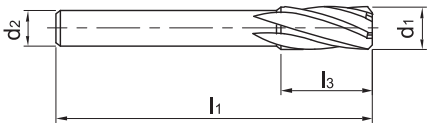
Reamer, right-hand twist — Cast iron, non-ferrous metals

3101H7



– Factory standard





Article	✻	Dimensions [mm]				Teeth	Grade
		d_1	d_2 (h6)	l_1	l_3		YK10F
3101H7-0400		4	3.55	56	20	4	●
3101H7-0500		5	4	63	22	6	○
3101H7-0600		6	5	63	22	6	○
3101H7-0700		7	6.3	71	25	6	○
3101H7-0800		8	6.3	71	25	6	○
3101H7-0900		9	8	71	25	6	○
3101H7-1000		10	8	71	25	6	○
3101H7-1100		11	10	80	28	6	○
3101H7-1200		12	10	80	28	6	○
3101H7-1300		13	10	80	28	6	○
3101H7-1400		14	12.5	90	32	6	○
3101H7-1450		14.5	12.5	90	32	6	○
3101H7-1500		15	12.5	90	32	6	○
3101H7-1600		16	12.5	90	32	6	○
3101H7-1700		17	12.5	90	32	6	○
3101H7-1800		18	16	100	36	6	○
3101H7-1900		19	16	100	36	6	○
3101H7-2000		20	16	100	36	6	○

● Ex stock ○ On demand

✻ With internal cooling

Application field

P	M	K	N	S	H
		✔	✔		

✔ Very suitable

✔ Suitable

System code C130 Machining instructions C165 Cutting data C136 Nonstandard order C181

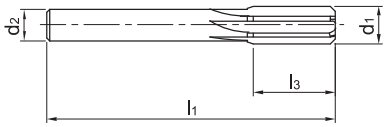
Reamer, straight flute — Cast iron, non-ferrous metals

3102H7



– Factory standard





Article	✻	Dimensions [mm]				Teeth	Grade
		d_1	d_2 (h6)	l_1	l_3		YK10F
3102H7-0400		4	3.55	56	20	4	○
3102H7-0500		5	4	63	22	6	○
3102H7-0600		6	5	63	22	6	○
3102H7-0700		7	6.3	71	25	6	○
3102H7-0800		8	6.3	71	25	6	○
3102H7-0900		9	8	71	25	6	○
3102H7-1000		10	8	71	25	6	○
3102H7-1050		10.5	8	71	25	6	○
3102H7-1100		11	10	80	28	6	○
3102H7-1200		12	10	80	28	6	○
3102H7-1300		13	10	80	28	6	○
3102H7-1400		14	12.5	90	32	6	○
3102H7-1450		14.5	12.5	90	32	6	○
3102H7-1500		15	12.5	90	32	6	○
3102H7-1600		16	12.5	90	32	6	○
3102H7-1700		17	12.5	90	32	6	○
3102H7-1800		18	16	100	36	6	○
3102H7-1900		19	16	100	36	6	○
3102H7-2000		20	16	100	36	6	○

● Ex stock ○ On demand

✻ With internal cooling

Application field

P	M	K	N	S	H
		✔	✔		

✔ Very suitable
✔ Suitable

System code > C130 Machining instructions > C165 Cutting data > C136 Nonstandard order > C181

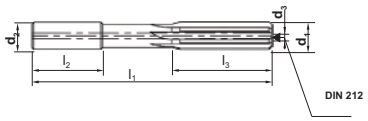
Reamer, straight flute — Steel, cast iron

3112H7



– Factory standard
– Coolant exit, axial concentric





Article	✲	Dimensions [mm]						Teeth	Grade
		d_1	d_2 (h6)	d_3 (m7)	l_1	l_2	l_3		KRG102
3112H7-0400	✲	4	4	0.6	70	28	20	6	●
3112H7-0500	✲	5	5	1	70	28	22	6	●
3112H7-0600	✲	6	6	1	100	36	22	6	●
3112H7-0700	✲	7	8	1.3	110	42	25	6	●
3112H7-0800	✲	8	8	1.3	110	42	25	6	●
3112H7-0900	✲	9	10	2	110	42	25	6	●
3112H7-1000	✲	10	10	2	110	38	25	6	●
3112H7-1100	✲	11	12	2	110	38	28	6	●
3112H7-1200	✲	12	12	2	110	38	28	6	●
3112H7-1300	✲	13	14	2	110	38	28	6	●
3112H7-1400	✲	14	14	2	110	38	32	6	●
3112H7-1500	✲	15	16	2	110	38	32	6	●
3112H7-1600	✲	16	16	2	150	52	32	6	●
3112H7-1800	✲	18	18	3	150	52	36	6	●
3112H7-2000	✲	20	20	3	150	50	36	6	●

● Ex stock ○ On demand
✲ With internal cooling

Application field

P	M	K	N	S	H
✔		✔			

✔ Very suitable
✔ Suitable

System code C130 Machining instructions C165 Cutting data C136 Nonstandard order C181

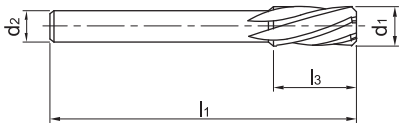
Reamer, left-hand twist — Cast iron, non-ferrous metals

3103H7



– Factory standard





Article	✻	Dimensions [mm]				Teeth	Grade
		d_1	d_2 (h6)	l_1	l_3		YK10F
3103H7-0400		4	3.55	56	20	4	○
3103H7-0450		4.5	4	63	22	6	○
3103H7-0500		5	4	63	22	6	○
3103H7-0600		6	5	63	22	6	○
3103H7-0700		7	6.3	71	25	6	○
3103H7-0800		8	6.3	71	25	6	○
3103H7-0900		9	8	71	25	6	○
3103H7-1000		10	8	71	25	6	○
3103H7-1100		11	10	80	28	6	○
3103H7-1150		11.5	10	80	28	6	○
3103H7-1200		12	10	80	28	6	○
3103H7-1300		13	10	80	28	6	○
3103H7-1350		13.5	12.5	90	32	6	○
3103H7-1400		14	12.5	90	32	6	○
3103H7-1500		15	12.5	90	32	6	○
3103H7-1600		16	12.5	90	32	6	○
3103H7-1700		17	12.5	90	32	6	○
3103H7-1800		18	16	100	36	6	○
3103H7-1900		19	16	100	36	6	○
3103H7-2000		20	16	100	36	6	○

● Ex stock ○ On demand

✻ With internal cooling

Application field

P	M	K	N	S	H
		✔	✔		

✔ Very suitable
✔ Suitable

System code > C130 Machining instructions > C165 Cutting data > C136 Nonstandard order > C181

Notes

Guide for recommended cutting data – Solid carbide reamers

Solid carbide reamers

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]							
						3101H7		3102H7		3112H7		3103H7	
						YK10F		YK10F		KRG102		YK10F	
						Coolant							
						external	f-group	external	f-group	internal	f-group	external	f-group
P	Unalloyed steel	ca. 0,15 % C	annealed	125	1					85	5		
		ca. 0,45 % C	annealed	190	2					75	5		
		ca. 0,45 % C	tempered	250	3					70	5		
		ca. 0,75 % C	annealed	270	4					60	5		
		ca. 0,75 % C	tempered	300	5					55	5		
	Low-alloyed steel		annealed	180	6					75	5		
			tempered	275	7					60	5		
			tempered	300	8					55	5		
			tempered	350	9					55	5		
	High-alloyed steel and high-alloyed tool steel		annealed	200	10					70	5		
			hardened and tempered	325	11					55	5		
M	Stainless steel	ferritic/martensitic	annealed	200	12								
		martensitic	tempered	240	13								
		austenitic	quench hardened	180	14								
		austenitic-ferritic		230	15								
K	Grey cast iron	perlitic/ferritic		180	16	23	5	23	5	75	5	23	5
		perlitic (martensitic)		260	17	19	5	19	5	60	5	19	5
	Cast iron with spheroidal graphite	ferritic		160	18	19	5	19	5	60	5	19	5
		perlitic		250	19	17	5	17	5	50	5	17	5
	Malleable cast iron	ferritic		130	20	23	5	23	5	75	5	23	5
		perlitic		230	21	14	5	14	5	55	5	14	5
N	Aluminium wrought alloys	cannot be hardened		60	22	45	6	45	6			45	6
		hardenable	hardened	100	23	40	6	40	6			40	6
	Cast aluminium alloys	≤ 12% Si, cannot be hardened		75	24	37	6	37	6			37	6
		≤ 12% Si, hardenable	hardened	90	25	35	6	35	6			35	6
		> 12% Si, cannot be hardened		130	26	32	6	32	6			32	6
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27	37	6	37	6			37	6
		CuZn, CuSnZn		90	28	34	6	34	6			34	6
		CuSn, Pb-free copper, electrolytic copper		100	29	37	6	37	6			37	6
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37								
			hardened and tempered	60 HRC	38								
	Hard cast iron		cast	400	39								
	Hardened cast iron		hardened and tempered	55 HRC	40								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
With hole depths of 5xD adjust the cutting data accordingly to the application.
f-group = feed rate recommendations on page C140.
For examples of material for cutting tool groups view page D22.

Recommend feed rate

Solid carbide reamers

f-group	Feed rate [mm]																			
	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø11	Ø12	Ø13	Ø14	Ø15	Ø16	Ø17	Ø18	Ø19	Ø20
1	0,01	0,02	0,03	0,04	0,04	0,05	0,05	0,06	0,06	0,06	0,07	0,07	0,08	0,08	0,09	0,09	0,09	0,09	0,10	0,10
2	0,01	0,02	0,03	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,08	0,09	0,09	0,09	0,10	0,10	0,10	0,11	0,11	0,11
3	0,01	0,02	0,04	0,05	0,06	0,06	0,07	0,07	0,08	0,09	0,09	0,10	0,10	0,11	0,11	0,12	0,12	0,12	0,13	0,13
4	0,02	0,03	0,04	0,06	0,06	0,07	0,08	0,09	0,09	0,10	0,11	0,11	0,12	0,12	0,13	0,13	0,14	0,14	0,15	0,15
5	0,02	0,03	0,05	0,06	0,07	0,09	0,09	0,10	0,11	0,11	0,12	0,13	0,14	0,14	0,15	0,15	0,16	0,16	0,17	0,17
6	0,02	0,04	0,06	0,07	0,09	0,10	0,11	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,17	0,18	0,18	0,19	0,19	0,20
7	0,02	0,04	0,06	0,09	0,10	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,18	0,19	0,20	0,20	0,21	0,22	0,22	0,23
8	0,03	0,05	0,07	0,10	0,11	0,13	0,14	0,15	0,16	0,17	0,18	0,20	0,21	0,22	0,23	0,23	0,24	0,25	0,26	0,26
9	0,03	0,06	0,08	0,11	0,13	0,15	0,16	0,17	0,18	0,20	0,21	0,23	0,24	0,25	0,26	0,27	0,28	0,29	0,29	0,30
10	0,04	0,07	0,10	0,13	0,15	0,17	0,19	0,20	0,21	0,23	0,24	0,26	0,27	0,29	0,30	0,31	0,32	0,33	0,34	0,35
11	0,04	0,07	0,11	0,15	0,17	0,20	0,21	0,23	0,24	0,26	0,28	0,30	0,32	0,33	0,35	0,36	0,37	0,38	0,39	0,40
12	0,05	0,09	0,13	0,17	0,20	0,23	0,25	0,26	0,28	0,30	0,32	0,35	0,36	0,38	0,40	0,41	0,42	0,44	0,45	0,46
13	0,05	0,10	0,15	0,20	0,23	0,26	0,28	0,30	0,32	0,35	0,37	0,40	0,42	0,44	0,46	0,47	0,49	0,50	0,52	0,53
14	0,06	0,11	0,17	0,23	0,26	0,30	0,33	0,35	0,37	0,40	0,43	0,46	0,48	0,50	0,53	0,54	0,56	0,58	0,59	0,61
15	0,07	0,13	0,20	0,26	0,30	0,35	0,37	0,40	0,43	0,46	0,49	0,53	0,55	0,58	0,61	0,62	0,64	0,66	0,68	0,70

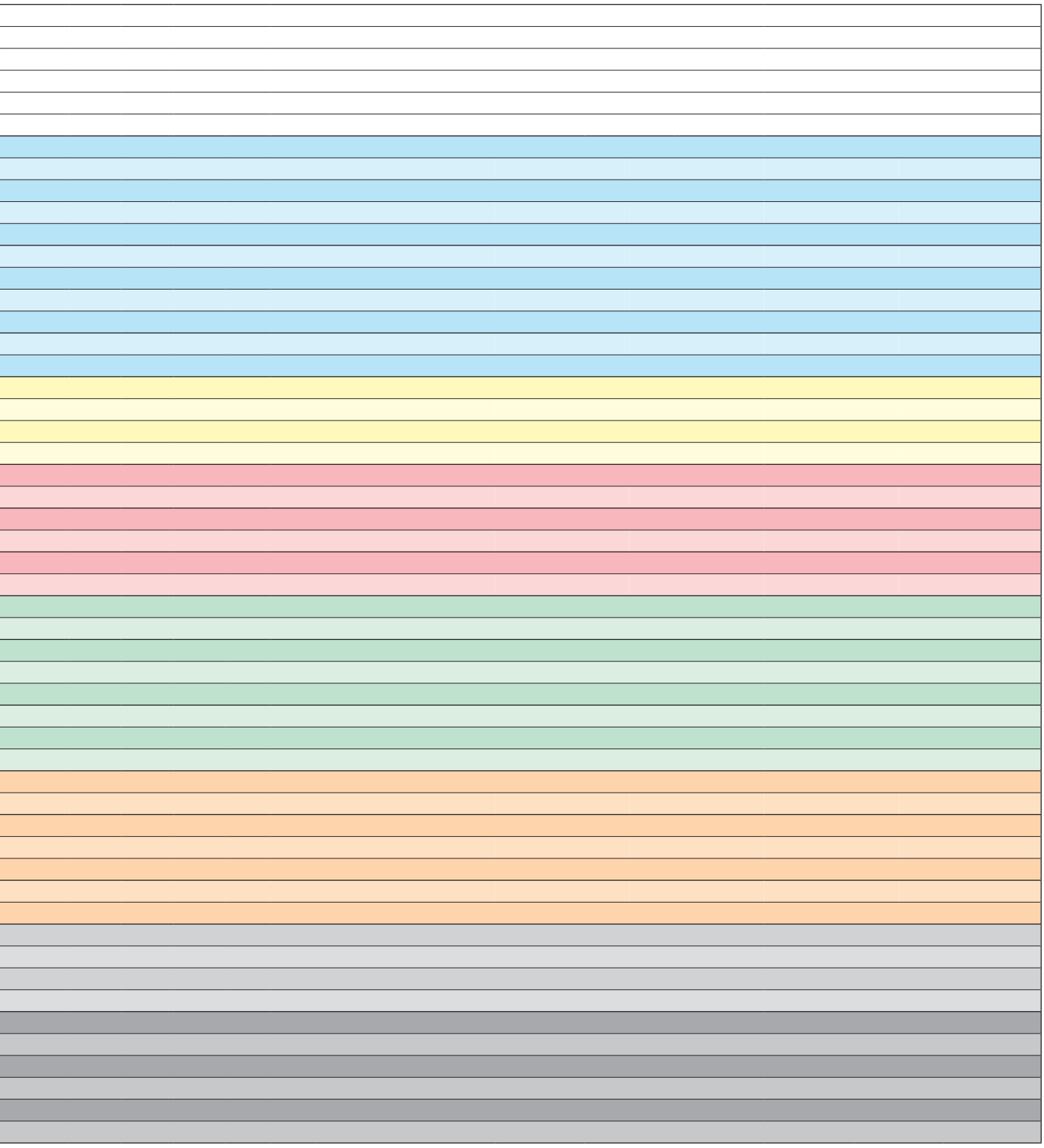
Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

1. Select the appropriate product series.
2. Determine the immersion.
3. Select the used material and read the cutting speed.
4. Determine the feed rate group and have a look at the appropriate feed rate recommendations.
5. Select the diameter of tool and determine the immersion.

Solid carbide reamers

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]							
						3101H7		3102H7		3112H7		3103H7	
						YK10F		YK10F		KRG102		YK10F	
						Coolant							
						Ext.	f-group	Ext.	f-group	Int.	f-group	Ext.	f-group
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1					85	5		
		approx. 0,45 % C	annealed	190	2					75	5		
		approx. 0,45 % C	tempered	250	3					70	5		
		approx. 0,75 % C	annealed	270	4					60	5		
		approx. 0,75 % C	tempered	300	5					55	5		
	Low-alloyed steel		annealed	180	6					75	5		
			tempered	275	7					60	5		
			tempered	300	8					55	5		
			tempered	350	9					55	5		
	High-alloyed steel and high-alloyed tool steel		annealed	200	10					70	5		
			hardened and tempered	325	11					55	5		
M	Stainless steel	ferritic/martensitic	annealed	200	12								
		martensitic	tempered	240	13								
		austenitic	quench hardened	180	14								
		austenitic-ferritic		230	15								
K	Grey cast iron	perlitic/ferritic		180	16	23	5	23	5	75	5	23	5
		perlitic (martensitic)		260	17	19	5	19	5	60	5	19	5
	Cast iron with spheroidal graphite	ferritic		160	18	19	5	19	5	60	5	19	5
		perlitic		250	19	17	5	17	5	50	5	17	5
	Malleable cast iron	ferritic		130	20	23	5	23	5	75	5	23	5
		perlitic		230	21	14	5	14	5	55	5	14	5
N	Aluminium wrought alloys	cannot be hardened		60	22	45	6	45	6			45	6
		hardenable	hardened	100	23	40	6	40	6			40	6
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24	37	6	37	6			37	6
		≤ 12 % Si, hardenable	hardened	90	25	35	6	35	6			35	6
		> 12 % Si, cannot be hardened		130	26	32	6	32	6			32	6
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27	37	6	37	6			37	6
		CuZn, CuSnZn		90	28	34	6	34	6			34	6
		CuSn, Pb-free copper, electrolytic copper		100	29	37	6	37	6			37	6
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37								
			hardened and tempered	60 HRC	38								
	Hard cast iron		cast	400	39								
	Hardened cast iron		hardened and tempered	55 HRC	40								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
With hole depths of 5xD adjust the cutting data accordingly to the application.
f-group = feed rate recommendations on page C140.
For examples of material for cutting tool groups view page D22.



Recommended feed rate

Solid carbide reamers

f-group	Feed rate [mm]																			
	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø11	Ø12	Ø13	Ø14	Ø15	Ø16	Ø17	Ø18	Ø19	Ø20
1	0,01	0,02	0,03	0,04	0,04	0,05	0,05	0,06	0,06	0,06	0,07	0,07	0,08	0,08	0,09	0,09	0,09	0,09	0,10	0,10
2	0,01	0,02	0,03	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,08	0,09	0,09	0,09	0,10	0,10	0,10	0,11	0,11	0,11
3	0,01	0,02	0,04	0,05	0,06	0,06	0,07	0,07	0,08	0,09	0,09	0,10	0,10	0,11	0,11	0,12	0,12	0,12	0,13	0,13
4	0,02	0,03	0,04	0,06	0,06	0,07	0,08	0,09	0,09	0,10	0,11	0,11	0,12	0,12	0,13	0,13	0,14	0,14	0,15	0,15
5	0,02	0,03	0,05	0,06	0,07	0,09	0,09	0,10	0,11	0,11	0,12	0,13	0,14	0,14	0,15	0,15	0,16	0,16	0,17	0,17
6	0,02	0,04	0,06	0,07	0,09	0,10	0,11	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,17	0,18	0,18	0,19	0,19	0,20
7	0,02	0,04	0,06	0,09	0,10	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,18	0,19	0,20	0,20	0,21	0,22	0,22	0,23
8	0,03	0,05	0,07	0,10	0,11	0,13	0,14	0,15	0,16	0,17	0,18	0,20	0,21	0,22	0,23	0,23	0,24	0,25	0,26	0,26
9	0,03	0,06	0,08	0,11	0,13	0,15	0,16	0,17	0,18	0,20	0,21	0,23	0,24	0,25	0,26	0,27	0,28	0,29	0,29	0,30
10	0,04	0,07	0,10	0,13	0,15	0,17	0,19	0,20	0,21	0,23	0,24	0,26	0,27	0,29	0,30	0,31	0,32	0,33	0,34	0,35
11	0,04	0,07	0,11	0,15	0,17	0,20	0,21	0,23	0,24	0,26	0,28	0,30	0,32	0,33	0,35	0,36	0,37	0,38	0,39	0,40
12	0,05	0,09	0,13	0,17	0,20	0,23	0,25	0,26	0,28	0,30	0,32	0,35	0,36	0,38	0,40	0,41	0,42	0,44	0,45	0,46
13	0,05	0,10	0,15	0,20	0,23	0,26	0,28	0,30	0,32	0,35	0,37	0,40	0,42	0,44	0,46	0,47	0,49	0,50	0,52	0,53
14	0,06	0,11	0,17	0,23	0,26	0,30	0,33	0,35	0,37	0,40	0,43	0,46	0,48	0,50	0,53	0,54	0,56	0,58	0,59	0,61
15	0,07	0,13	0,20	0,26	0,30	0,35	0,37	0,40	0,43	0,46	0,49	0,53	0,55	0,58	0,61	0,62	0,64	0,66	0,68	0,70

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

Solid carbide threading tools

Product overview	**C142**
Grade overview	**C143**
System code – solid carbide threading tools	**C144**
Solid carbide thread formers	**C145-C150**
Solid carbide taps	**C151-C158**
Solid carbide thread milling cutters	**C159**
Recommended cutting data	**C160-C164**
Technical information	**C175-C177**
Form nonstandard order	**C182**

C

Solid carbide threading tools Product overview

Products	Solid carbide threading tools	Ø	Application						Type	Page
			P	M	K	N	S	H		
4122A		M1-M2.5				✓			Solid carbide thread formers	C145
4222A		M3-M16				✓			Solid carbide thread formers	C146
4122M		M1-M2.5	✓	✓					Solid carbide thread formers	C148
4222M		M3-M16	✓	✓					Solid carbide thread formers	C149
4201C		M3-M16			✓				Solid carbide tap, right-hand twist	C151
4202C		M3-M16			✓				Solid carbide tap, straight flute	C153
4201A		M3-M16				✓			Solid carbide tap, right-hand twist	C155
4202A		M3-M16				✓			Solid carbide tap, straight flute	C157
4111		M3-M20	✓		✓	✓			Solid carbide thread milling cutters	C159

✓ Very suitable ✓ Suitable

Coated cemented carbide PVD

Grade	Grade description
KTG402	PVD coated P20–P30/M20–M30 carbide substrate for steel and stainless steel. Especially for thread forming tools.
KTG4015	PVD coated P20–P30/K20–K30 carbide substrate for steel and cast iron. Especially for thread forming tools.

Uncoated cemented carbide

Grade	Grade description
YK40F	Uncoated K20–K30/N20–N30 carbide substrate for cast iron and non ferrous materials.

Solid carbide threading tools

System code – solid carbide threading tools

4	2	0	1	A	(C)	(S)	– M5x0.8 –	6H
1	2	3	4	5	6	7	8	9

Type	
Code	Description
4	Threading tool

1

Shank type	
Code	Description
1	Straight shank
2	Straight shank DIN10
5	Straight shank DIN 6535 HA
9	Conical shank

2

Tool type	
Code	Description
0	Tap
1	Thread milling cutter
2	Thread former

3

Flute	
Code	Description
1	Right-hand twist
2	Straight
3	Left-hand twist

4

Material	
Code	Description
A	Aluminum alloy
C	Cast iron
M	Stainless steel
P	Steel
H	Hardened steel

5

Coolant supply	
Code	Description
C	Internal

6

Blind hole	
Code	Description
S	Blind hole

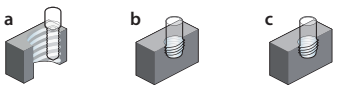
7

Thread type	
Code	Description
M5x0.8	Standard production tolerance
...	Fine production tolerance

8

Precision class	
Code	Description
6H	Nominal diameter x pitch
6HX	Fine production tolerance

9



a Thread milling b Thread drilling c Thread forming

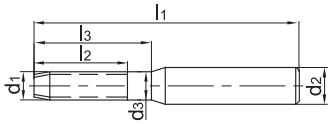
Thread former Non-ferrous metals

4122A



– Factory standard





Article	✻	Dimensions [mm]								Teeth	Coredrill	Grade
			d_1	P	d_2	d_3	l_1	l_2	l_3		d	YK40F
4122A-M1*0.25-6H		3P	M1	0.25	3		40	5	6	3	0.9	●
4122AS-M1*0.25-6H		1.5P	M1	0.25	3		40	5	6	3	0.9	○
4122A-M1.2*0.25-6H		3P	M1.2	0.25	3		40	5	6	3	1.1	●
4122AS-M1.2*0.25-6H		1.5P	M1.2	0.25	3		40	5	6	3	1.1	○
4122A-M1.6*0.35-6H		3P	M1.6	0.35	3	1.1	40	5	11	3	1.47	●
4122AS-M1.6*0.35-6H		1.5P	M1.6	0.35	3	1.1	40	5	11	3	1.47	●
4122A-M2*0.4-6H		3P	M2	0.4	3	1.5	45	6	12	3	1.85	●
4122AS-M2*0.4-6H		1.5P	M2	0.4	3	1.5	45	6	12	3	1.85	●
4122A-M2.5*0.45-6H		3P	M2.5	0.45	3	1.9	50	6	14	3	2.33	○
4122AS-M2.5*0.45-6H		1.5P	M2.5	0.45	3	1.9	50	6	14	3	2.33	●

● Ex stock ○ On demand

✻ With internal cooling

Application field

P	M	K	N	S	H
			✔		

✔ Very suitable

✔ Suitable

System code C144 Machining instructions C165 Cutting data C160 Nonstandard order C182

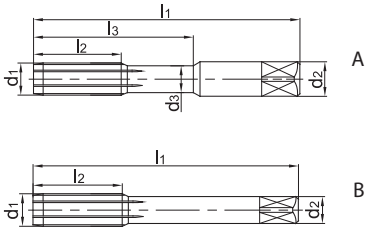
Thread former — Non-ferrous metals

4222A



– Type of shank DIN 10
– Coolant exit, axial concentric





Article	*	Dimensions [mm]								Teeth	Geometry	Coredrill	Grade
			d_1	P	d_2	d_3	l_1	l_2	l_3			d	YK40F
4222A-M3*0.5-6H		3P	M3	0.5	3.5	2.3	56	6	18	4	A	2.8	○
4222AS-M3*0.5-6H		1.5P	M3	0.5	3.5	2.3	56	6	18	4	A	2.8	●
4222A-M4*0.5-6H		3P	M4	0.5	4.5	3.1	63	8	21	4	A	3.8	○
4222AS-M4*0.5-6H		1.5P	M4	0.5	4.5	3.1	63	8	21	4	A	3.8	○
4222A-M4*0.7-6H		3P	M4	0.7	4.5	3.1	63	8	21	4	A	3.7	○
4222AS-M4*0.7-6H		1.5P	M4	0.7	4.5	3.1	63	8	21	4	A	3.7	○
4222A-M5*0.5-6H		3P	M5	0.5	6	4.3	70	10	25	4	A	4.8	○
4222AS-M5*0.5-6H		1.5P	M5	0.5	6	4.3	70	10	25	4	A	4.8	○
4222A-M5*0.8-6H		3P	M5	0.8	6	4	70	10	25	4	A	4.65	○
4222AS-M5*0.8-6H		1.5P	M5	0.8	6	4	70	10	25	4	A	4.65	○
4222A-M6*0.75-6H		3P	M6	0.75	6	5	80	12	30	4	A	5.7	○
4222AS-M6*0.75-6H		1.5P	M6	0.75	6	5	80	12	30	4	A	5.7	○
4222A-M6*1-6H		3P	M6	1	6	4.7	80	12	30	4	A	5.6	○
4222AS-M6*1-6H		1.5P	M6	1	6	4.7	80	12	30	4	A	5.6	○
4222A-M7*1-6H		3P	M7	1	7	5.7	80	14	30	4	A	6.6	○
4222AS-M7*1-6H		1.5P	M7	1	7	5.7	80	14	30	4	A	6.6	○
4222A-M8*1-6H		3P	M8	1	8	6.7	90	16	35	4	A	7.6	○
4222AS-M8*1-6H		1.5P	M8	1	8	6.7	90	16	35	4	A	7.6	○
4222A-M8*1.25-6H		3P	M8	1.25	8	6.4	90	16	35	4	A	7.45	○
4222AS-M8*1.25-6H		1.5P	M8	1.25	8	6.4	90	16	35	4	A	7.45	○
4222A-M10*1-6H		3P	M10	1	10	8.7	100	20	39	5	A	9.6	○
4222AS-M10*1-6H		1.5P	M10	1	10	8.7	100	20	39	5	A	9.6	○
4222A-M10*1.25-6H		3P	M10	1.25	10	8.4	100	20	39	5	A	9.45	○
4222AS-M10*1.25-6H		1.5P	M10	1.25	10	8.4	100	20	39	5	A	9.45	○
4222A-M10*1.5-6H		3P	M10	1.5	10	8.1	100	20	39	5	A	9.35	○
4222AC-M10*1.5-6H	*	3P	M10	1.5	10	8.1	100	20	39	5	A	9.35	○
4222AS-M10*1.5-6H		1.5P	M10	1.5	10	8.1	100	20	39	5	A	9.35	○
4222ACS-M10*1.5-6H	*	1.5P	M10	1.5	10	8.1	100	20	39	5	A	9.35	○
4222A-M12*1.25-6H		3P	M12	1.25	9		110	24		5	B	11.45	○
4222AS-M12*1.25-6H		1.5P	M12	1.25	9		110	24		5	B	11.45	○
4222A-M12*1.5-6H		3P	M12	1.5	9		110	24		5	B	11.35	○
4222AS-M12*1.5-6H		1.5P	M12	1.5	9		110	24		5	B	11.35	○
4222A-M12*1.75-6H		3P	M12	1.75	9		110	24		5	B	11.25	○

● Ex stock ○ On demand
* With internal cooling

Application field

P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code > C144 Machining instructions > C165 Cutting data > C160 Nonstandard order > C182

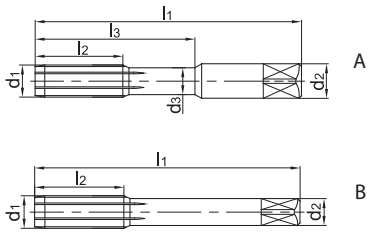
Thread former — Non-ferrous metals

4222A



– Type of shank DIN 10
– Coolant exit, axial concentric





Article	✻	Dimensions [mm]								Teeth	Geometry	Coredrill	Grade
			d_1	P	d_2	d_3	l_1	l_2	l_3			d	YK40F
4222AC-M12*1.75-6H	✻	3P	M12	1.75	9		110	24		5	B	11.25	○
4222AS-M12*1.75-6H		1.5P	M12	1.75	9		110	24		5	B	11.25	○
4222ACS-M12*1.75-6H	✻	1.5P	M12	1.75	9		110	24		5	B	11.25	○
4222A-M14*1.5-6H		3P	M14	1.5	11		110	26		6	B	13.35	○
4222AS-M14*1.5-6H		1.5P	M14	1.5	11		110	26		6	B	13.35	○
4222A-M14*2-6H		3P	M14	2	11		110	26		6	B	13.1	○
4222AS-M14*2-6H		1.5P	M14	2	11		110	26		6	B	13.1	○
4222A-M16*1.5-6H		3P	M16	1.5	12		110	27		6	B	15.35	○
4222AS-M16*1.5-6H		1.5P	M16	1.5	12		110	27		6	B	15.35	○
4222A-M16*2-6H		3P	M16	2	12		110	27		6	B	15.1	○
4222AC-M16*2-6H	✻	3P	M16	2	12		110	27		6	B	15.1	○
4222AS-M16*2-6H		1.5P	M16	2	12		110	27		6	B	15.1	○
4222ACS-M16*2-6H	✻	1.5P	M16	2	12		110	27		6	B	15.1	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code > C144 | Machining instructions > C165 | Cutting data > C160 | Nonstandard order > C182

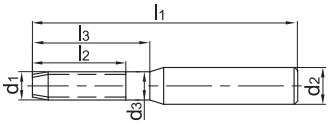
Thread former Steel, stainless steel

4122M



– Factory standard





Article	✻	Dimensions [mm]								Teeth	Coredrill	Grade	
			d_1	P	d_2	d_3	l_1	l_2	l_3		d	KTG402	YK40F
4122M-M1*0.25-6H		3P	M1	0.25	3		40	5	6	4	0.9	●	○
4122MS-M1*0.25-6H		2P	M1	0.25	3		40	5	6	4	0.9	●	○
4122M-M1.2*0.25-6H		3P	M1.2	0.25	3		40	5	6	4	1.1	○	○
4122MS-M1.2*0.25-6H		2P	M1.2	0.25	3		40	5	6	4	1.1	○	○
4122M-M1.6*0.35-6H		3P	M1.6	0.35	3	1.1	40	5	11	4	1.47	○	○
4122MS-M1.6*0.35-6H		2P	M1.6	0.35	3	1.1	40	5	11	4	1.47	○	○
4122M-M2*0.4-6H		3P	M2	0.4	3	1.5	45	6	12	4	1.85	●	○
4122MS-M2*0.4-6H		2P	M2	0.4	3	1.5	45	6	12	4	1.85	●	○
4122M-M2.5*0.45-6H		3P	M2.5	0.45	3	1.9	50	6	14	4	2.33	○	○
4122MS-M2.5*0.45-6H		2P	M2.5	0.45	3	1.9	50	6	14	4	2.33	●	○

● Ex stock ○ On demand

✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔				

✔ Very suitable
✔ Suitable

System code > C144 Machining instructions > C165 Cutting data > C160 Nonstandard order > C182

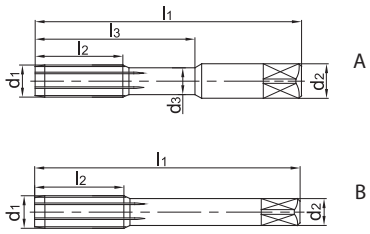
Thread former | Steel, stainless steel

4222M



– Type of shank DIN 10
– Coolant exit, axial concentric





Article	✻	Dimensions [mm]								Teeth	Geometry	Coredrill	Grade	
			d_1	P	d_2	d_3	l_1	l_2	l_3			d	KTG402	YK40F
4222M-M3*0.5-6H		3P	M3	0.5	3.5	2.3	56	6	18	4	A	2.8	●	○
4222MS-M3*0.5-6H		2P	M3	0.5	3.5	2.3	56	6	18	4	A	2.8	○	○
4222M-M4*0.5-6H		3P	M4	0.5	4.5	3.1	63	8	21	4	A	3.8	●	○
4222MS-M4*0.5-6H		2P	M4	0.5	4.5	3.1	63	8	21	4	A	3.8	○	○
4222M-M4*0.7-6H		3P	M4	0.7	4.5	3.1	63	8	21	4	A	3.7	●	○
4222MS-M4*0.7-6H		2P	M4	0.7	4.5	3.1	63	8	21	4	A	3.7	●	○
4222M-M5*0.5-6H		3P	M5	0.5	6	4.3	70	10	25	4	A	4.8	●	○
4222MS-M5*0.5-6H		2P	M5	0.5	6	4.3	70	10	25	4	A	4.8	●	○
4222M-M5*0.8-6H		3P	M5	0.8	6	4	70	10	25	4	A	4.65	●	○
4222MS-M5*0.8-6H		2P	M5	0.8	6	4	70	10	25	4	A	4.65	●	○
4222M-M6*0.75-6H		3P	M6	0.75	6	5	80	12	30	4	A	5.7	●	○
4222MS-M6*0.75-6H		2P	M6	0.75	6	5	80	12	30	4	A	5.7	●	○
4222M-M6*1-6H		3P	M6	1	6	4.7	80	12	30	4	A	5.6	○	○
4222MS-M6*1-6H		2P	M6	1	6	4.7	80	12	30	4	A	5.6	○	○
4222M-M7*1-6H		3P	M7	1	7	5.7	80	14	30	4	A	6.6	○	○
4222MS-M7*1-6H		2P	M7	1	7	5.7	80	14	30	4	A	6.6	○	○
4222M-M8*1-6H		3P	M8	1	8	6.7	90	16	35	4	A	7.6	○	○
4222MS-M8*1-6H		2P	M8	1	8	6.7	90	16	35	4	A	7.6	○	○
4222M-M8*1.25-6H		3P	M8	1.25	8	6.4	90	16	35	4	A	7.45	●	○
4222MS-M8*1.25-6H		2P	M8	1.25	8	6.4	90	16	35	4	A	7.45	●	○
4222M-M10*1-6H		3P	M10	1	10	8.7	100	20	39	5	A	9.6	○	○
4222MS-M10*1-6H		2P	M10	1	10	8.7	100	20	39	5	A	9.6	○	○
4222M-M10*1.25-6H		3P	M10	1.25	10	8.4	100	20	39	5	A	9.45	○	○
4222MS-M10*1.25-6H		2P	M10	1.25	10	8.4	100	20	39	5	A	9.45	●	○
4222M-M10*1.5-6H		3P	M10	1.5	10	8.1	100	20	39	5	A	9.35	○	○
4222MC-M10*1.5-6H	✻	3P	M10	1.5	10	8.1	100	20	39	5	A	9.35	●	○
4222MS-M10*1.5-6H		2P	M10	1.5	10	8.1	100	20	39	5	A	9.35	●	○
4222MCS-M10*1.5-6H	✻	2P	M10	1.5	10	8.1	100	20	39	5	A	9.35	●	○
4222M-M12*1.25-6H		3P	M12	1.25	9		110	24		5	B	11.45	●	○
4222MS-M12*1.25-6H		2P	M12	1.25	9		110	24		5	B	11.45	●	○
4222M-M12*1.5-6H		3P	M12	1.5	9		110	24		5	B	11.35	○	○
4222MS-M12*1.5-6H		2P	M12	1.5	9		110	24		5	B	11.35	○	○
4222M-M12*1.75-6H		3P	M12	1.75	9		110	24		5	B	11.25	○	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔				

✔ Very suitable
✔ Suitable

System code C144 | Machining instructions C165 | Cutting data C160 | Nonstandard order C182

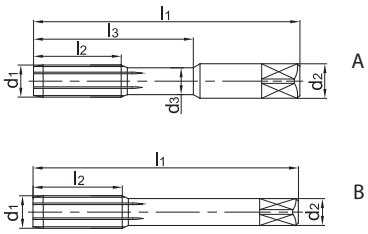
Thread former Steel, stainless steel

4222M



– Type of shank DIN 10
– Coolant exit, axial concentric





Article	✻	Dimensions [mm]								Teeth	Geometry	Coredrill	Grade	
			d_1	P	d_2	d_3	l_1	l_2	l_3			d	KTG402	YK40F
4222MC-M12*1.75-6H	✻	3P	M12	1.75	9		110	24		5	B	11.25	○	○
4222MS-M12*1.75-6H		2P	M12	1.75	9		110	24		5	B	11.25	●	○
4222MCS-M12*1.75-6H	✻	2P	M12	1.75	9		110	24		5	B	11.25	○	○
4222M-M14*1.5-6H		3P	M14	1.5	11		110	26		6	B	13.35	●	○
4222MS-M14*1.5-6H		2P	M14	1.5	11		110	26		6	B	13.35	○	○
4222M-M14*2-6H		3P	M14	2	11		110	26		6	B	13.1	○	○
4222MS-M14*2-6H		2P	M14	2	11		110	26		6	B	13.1	○	○
4222M-M16*1.5-6H		3P	M16	1.5	12		110	27		6	B	15.35	●	○
4222MS-M16*1.5-6H		2P	M16	1.5	12		110	27		6	B	15.35	○	○
4222M-M16*2-6H		3P	M16	2	12		110	27		6	B	15.1	○	○
4222MC-M16*2-6H	✻	3P	M16	2	12		110	27		6	B	15.1	○	○
4222MS-M16*2-6H		2P	M16	2	12		110	27		6	B	15.1	○	○
4222MCS-M16*2-6H	✻	2P	M16	2	12		110	27		6	B	15.1	○	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
✔	✔				

✔ Very suitable
✔ Suitable

System code C144 Machining instructions C165 Cutting data C160 Nonstandard order C182

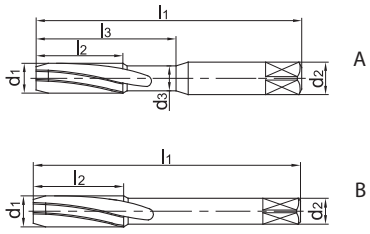
Tap, right-hand twist — Cast iron

4201C



– Type of shank DIN 10
– Coolant exit, axial concentric





Article	✻	Dimensions [mm]								Teeth	Geometry	Coredrill	Grade
			d_1	P	d_2	d_3	l_1	l_2	l_3			d	YK40F
4201C-M3*0.5-6H		3P	M3	0.5	3.5	2.3	56	11	18	3	A	2.5	●
4201C-M3*0.5-6HX		3P	M3	0.5	3.5	2.3	56	11	18	3	A	2.5	●
4201CS-M3*0.5-6H		1.5P	M3	0.5	3.5	2.3	56	11	18	3	A	2.5	●
4201CS-M3*0.5-6HX		1.5P	M3	0.5	3.5	2.3	56	11	18	3	A	2.5	●
4201C-M4*0.7-6H		3P	M4	0.7	4.5	3.1	63	13	21	3	A	3.3	●
4201C-M4*0.7-6HX		3P	M4	0.7	4.5	3.1	63	13	21	3	A	3.3	●
4201CS-M4*0.7-6H		1.5P	M4	0.7	4.5	3.1	63	13	21	3	A	3.3	●
4201CS-M4*0.7-6HX		1.5P	M4	0.7	4.5	3.1	63	13	21	3	A	3.3	●
4201C-M5*0.8-6H		3P	M5	0.8	6	4	70	16	25	3	A	4.2	●
4201C-M5*0.8-6HX		3P	M5	0.8	6	4	70	16	25	3	A	4.2	●
4201CS-M5*0.8-6H		1.5P	M5	0.8	6	4	70	16	25	3	A	4.2	●
4201CS-M5*0.8-6HX		1.5P	M5	0.8	6	4	70	16	25	3	A	4.2	●
4201C-M6*0.75-6H		3P	M6	0.75	6	5	80	19	30	3	A	5.25	●
4201C-M6*0.75-6HX		3P	M6	0.75	6	5	80	19	30	3	A	5.25	●
4201CS-M6*0.75-6H		1.5P	M6	0.75	6	5	80	19	30	3	A	5.25	●
4201CS-M6*0.75-6HX		1.5P	M6	0.75	6	5	80	19	30	3	A	5.25	●
4201C-M6*1-6H		3P	M6	1	6	4.7	80	19	30	3	A	5	○
4201CC-M6*1-6H	✻	3P	M6	1	6	4.7	80	19	30	3	A	5	○
4201C-M6*1-6HX		3P	M6	1	6	4.7	80	19	30	3	A	5	○
4201CS-M6*1-6H		1.5P	M6	1	6	4.7	80	19	30	3	A	5	○
4201CCS-M6*1-6H	✻	1.5P	M6	1	6	4.7	80	19	30	3	A	5	●
4201CS-M6*1-6HX		1.5P	M6	1	6	4.7	80	19	30	3	A	5	○
4201C-M7*1-6H		3P	M7	1	7	5.7	80	19	30	3	A	6	○
4201CS-M7*1-6H		1.5P	M7	1	7	5.7	80	19	30	3	A	6	○
4201C-M8*1-6H		3P	M8	1	8	6.7	90	20	35	3	A	7	○
4201CS-M8*1-6H		1.5P	M8	1	8	6.7	90	20	35	3	A	7	○
4201C-M8*1.25-6H		3P	M8	1.25	8	6.4	90	22	35	3	A	6.75	●
4201CC-M8*1.25-6H	✻	3P	M8	1.25	8	6.4	90	22	35	3	A	6.75	●
4201C-M8*1.25-6HX		3P	M8	1.25	8	6.4	90	22	35	3	A	6.75	●
4201CS-M8*1.25-6H		1.5P	M8	1.25	8	6.4	90	22	35	3	A	6.75	○
4201CCS-M8*1.25-6H	✻	1.5P	M8	1.25	8	6.4	90	22	35	3	A	6.75	○
4201CS-M8*1.25-6HX		1.5P	M8	1.25	8	6.4	90	22	35	3	A	6.75	○
4201C-M10*1-6H		3P	M10	1	10	8.7	100	20	39	4	A	9	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
		✔			

✔ Very suitable
✔ Suitable

System code C144 | Machining instructions C165 | Cutting data C160 | Nonstandard order C182

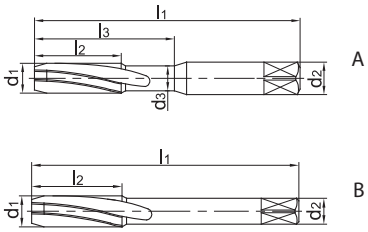
Tap, right-hand twist — Cast iron

4201C



– Type of shank DIN 10
– Coolant exit, axial concentric





Article	✲	Dimensions [mm]								Teeth	Geometry	Coredrill	Grade
			d_1	P	d_2	d_3	l_1	l_2	l_3			d	YK40F
4201CS-M10*1-6H		1.5P	M10	1	10	8.7	100	20	39	4	A	9	○
4201C-M10*1.25-6H		3P	M10	1.25	10	8.4	100	24	39	4	A	8.75	○
4201CS-M10*1.25-6H		1.5P	M10	1.25	10	8.4	100	24	39	4	A	8.75	○
4201C-M10*1.5-6H		3P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4201CC-M10*1.5-6H	✲	3P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4201C-M10*1.5-6HX		3P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4201CS-M10*1.5-6H		1.5P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4201CCS-M10*1.5-6H	✲	1.5P	M10	1.5	10	8.1	100	24	39	4	A	8.5	●
4201CS-M10*1.5-6HX		1.5P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4201C-M12*1.25-6H		3P	M12	1.25	9		110	29		4	B	10.75	○
4201CS-M12*1.25-6H		1.5P	M12	1.25	9		110	29		4	B	10.75	○
4201C-M12*1.5-6H		3P	M12	1.5	9		110	29		4	B	10.5	○
4201CS-M12*1.5-6H		1.5P	M12	1.5	9		110	29		4	B	10.5	○
4201C-M12*1.75-6H		3P	M12	1.75	9		110	29		4	B	10.25	○
4201CC-M12*1.75-6H	✲	3P	M12	1.75	9		110	29		4	B	10.25	●
4201C-M12*1.75-6HX		3P	M12	1.75	9		110	29		4	B	10.25	○
4201CS-M12*1.75-6H		1.5P	M12	1.75	9		110	29		4	B	10.25	○
4201CCS-M12*1.75-6H	✲	1.5P	M12	1.75	9		110	29		4	B	10.25	○
4201CS-M12*1.75-6HX		1.5P	M12	1.75	9		110	29		4	B	10.25	○
4201C-M14*1.5-6H		3P	M14	1.5	11		110	30		4	B	12.5	○
4201CS-M14*1.5-6H		1.5P	M14	1.5	11		110	30		4	B	12.5	○
4201C-M14*2-6H		3P	M14	2	11		110	30		4	B	12	○
4201CS-M14*2-6H		1.5P	M14	2	11		110	30		4	B	12	○
4201C-M16*1.5-6H		3P	M16	1.5	12		110	32		4	B	14.5	○
4201CS-M16*1.5-6H		1.5P	M16	1.5	12		110	32		4	B	14.5	○
4201C-M16*2-6H		3P	M16	2	12		110	32		4	B	14	○
4201C-M16*2-6HX		3P	M16	2	12		110	32		4	B	14	○
4201CS-M16*2-6H		1.5P	M16	2	12		110	32		4	B	14	○
4201CS-M16*2-6HX		1.5P	M16	2	12		110	32		4	B	14	○

● Ex stock ○ On demand
✲ With internal cooling

Application field

P	M	K	N	S	H
		✔			

✔ Very suitable
✔ Suitable

System code C144 | Machining instructions C165 | Cutting data C160 | Nonstandard order C182

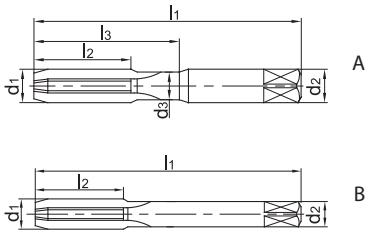
Tap, straight flute — Cast iron

4202C



– Type of shank DIN 10
– Coolant exit, axial concentric





Article	✻	Dimensions [mm]								Teeth	Geometry	Coredrill	Grade
			d_1	P	d_2	d_3	l_1	l_2	l_3			d	YK40F
4202C-M3*0.5-6H		3P	M3	0.5	3.5	2.3	56	11	18	3	A	2.5	○
4202C-M3*0.5-6HX		3P	M3	0.5	3.5	2.3	56	11	18	3	A	2.5	○
4202CS-M3*0.5-6H		1.5P	M3	0.5	3.5	2.3	56	11	18	3	A	2.5	○
4202CS-M3*0.5-6HX		1.5P	M3	0.5	3.5	2.3	56	11	18	3	A	2.5	○
4202C-M4*0.7-6H		3P	M4	0.7	4.5	3.1	63	13	21	3	A	3.3	○
4202C-M4*0.7-6HX		3P	M4	0.7	4.5	3.1	63	13	21	3	A	3.3	○
4202CS-M4*0.7-6H		1.5P	M4	0.7	4.5	3.1	63	13	21	3	A	3.3	○
4202CS-M4*0.7-6HX		1.5P	M4	0.7	4.5	3.1	63	13	21	3	A	3.3	○
4202C-M5*0.8-6H		3P	M5	0.8	6	4	70	16	25	3	A	4.2	○
4202C-M5*0.8-6HX		3P	M5	0.8	6	4	70	16	25	3	A	4.2	○
4202CS-M5*0.8-6H		1.5P	M5	0.8	6	4	70	16	25	3	A	4.2	○
4202CS-M5*0.8-6HX		1.5P	M5	0.8	6	4	70	16	25	3	A	4.2	○
4202C-M6*0.75-6H		3P	M6	0.75	6	5	80	19	30	3	A	5.25	○
4202C-M6*0.75-6HX		3P	M6	0.75	6	5	80	19	30	3	A	5.25	○
4202CS-M6*0.75-6H		1.5P	M6	0.75	6	5	80	19	30	3	A	5.25	○
4202CS-M6*0.75-6HX		1.5P	M6	0.75	6	5	80	19	30	3	A	5.25	○
4202C-M6*1-6H		3P	M6	1	6	4.7	80	19	30	3	A	5	○
4202CC-M6*1-6H	✻	3P	M6	1	6	4.7	80	19	30	3	A	5	○
4202C-M6*1-6HX		3P	M6	1	6	4.7	80	19	30	3	A	5	○
4202CS-M6*1-6H		1.5P	M6	1	6	4.7	80	19	30	3	A	5	○
4202CCS-M6*1-6H	✻	1.5P	M6	1	6	4.7	80	19	30	3	A	5	○
4202CS-M6*1-6HX		1.5P	M6	1	6	4.7	80	19	30	3	A	5	○
4202C-M7*1-6H		3P	M7	1	7	5.7	80	19	30	3	A	6	○
4202CS-M7*1-6H		1.5P	M7	1	7	5.7	80	19	30	3	A	6	○
4202C-M8*1-6H		3P	M8	1	8	6.7	90	20	35	3	A	7	○
4202CS-M8*1-6H		1.5P	M8	1	8	6.7	90	20	35	3	A	7	○
4202C-M8*1.25-6H		3P	M8	1.25	8	6.4	90	22	35	3	A	6.75	○
4202CC-M8*1.25-6H	✻	3P	M8	1.25	8	6.4	90	22	35	3	A	6.75	○
4202C-M8*1.25-6HX		3P	M8	1.25	8	6.4	90	22	35	3	A	6.75	○
4202CS-M8*1.25-6H		1.5P	M8	1.25	8	6.4	90	22	35	3	A	6.75	○
4202CCS-M8*1.25-6H	✻	1.5P	M8	1.25	8	6.4	90	22	35	3	A	6.75	○
4202CS-M8*1.25-6HX		1.5P	M8	1.25	8	6.4	90	22	35	3	A	6.75	○
4202C-M10*1-6H		3P	M10	1	10	8.7	100	20	39	4	A	9	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
		✔			

✔ Very suitable
✔ Suitable

System code C144 | Machining instructions C165 | Cutting data C160 | Nonstandard order C182

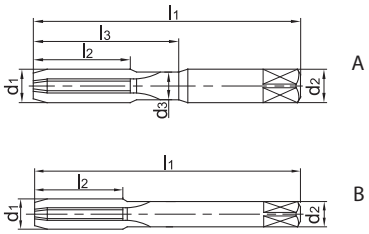
Tap, straight flute — Cast iron

4202C



– Type of shank DIN 10
– Coolant exit, axial concentric





Article	✲	Dimensions [mm]								Teeth	Geometry	Coredrill	Grade
			d_1	P	d_2	d_3	l_1	l_2	l_3			d	YK40F
4202CS-M10*1-6H		1.5P	M10	1	10	8.7	100	20	39	4	A	9	○
4202C-M10*1.25-6H		3P	M10	1.25	10	8.4	100	24	39	4	A	8.75	○
4202CS-M10*1.25-6H		1.5P	M10	1.25	10	8.4	100	24	39	4	A	8.75	○
4202C-M10*1.5-6H		3P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4202CC-M10*1.5-6H	✲	3P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4202C-M10*1.5-6HX		3P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4202CS-M10*1.5-6H		1.5P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4202CCS-M10*1.5-6H	✲	1.5P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4202CS-M10*1.5-6HX		1.5P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4202C-M12*1.25-6H		3P	M12	1.25	9		110	29		4	B	10.75	○
4202CS-M12*1.25-6H		1.5P	M12	1.25	9		110	29		4	B	10.75	○
4202C-M12*1.5-6H		3P	M12	1.5	9		110	29		4	B	10.5	○
4202CS-M12*1.5-6H		1.5P	M12	1.5	9		110	29		4	B	10.5	○
4202C-M12*1.75-6H		3P	M12	1.75	9		110	29		4	B	10.25	○
4202CC-M12*1.75-6H	✲	3P	M12	1.75	9		110	29		4	B	10.25	○
4202C-M12*1.75-6HX		3P	M12	1.75	9		110	29		4	B	10.25	○
4202CS-M12*1.75-6H		1.5P	M12	1.75	9		110	29		4	B	10.25	○
4202CCS-M12*1.75-6H	✲	1.5P	M12	1.75	9		110	29		4	B	10.25	○
4202CS-M12*1.75-6HX		1.5P	M12	1.75	9		110	29		4	B	10.25	○
4202C-M14*1.5-6H		3P	M14	1.5	11		110	30		4	B	12.5	○
4202CS-M14*1.5-6H		1.5P	M14	1.5	11		110	30		4	B	12.5	○
4202C-M14*2-6H		3P	M14	2	11		110	30		4	B	12	○
4202CS-M14*2-6H		1.5P	M14	2	11		110	30		4	B	12	○
4202C-M16*1.5-6H		3P	M16	1.5	12		110	32		4	B	14.5	○
4202CS-M16*1.5-6H		1.5P	M16	1.5	12		110	32		4	B	14.5	○
4202C-M16*2-6H		3P	M16	2	12		110	32		4	B	14	○
4202C-M16*2-6HX		3P	M16	2	12		110	32		4	B	14	○
4202CS-M16*2-6H		1.5P	M16	2	12		110	32		4	B	14	○
4202CS-M16*2-6HX		1.5P	M16	2	12		110	32		4	B	14	○

● Ex stock ○ On demand
✲ With internal cooling

Application field

P	M	K	N	S	H
		✔			

✔ Very suitable
✔ Suitable

System code > C144 | Machining instructions > C165 | Cutting data > C160 | Nonstandard order > C182

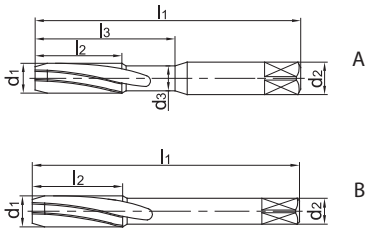
Tap, right-hand twist — Non-ferrous metals

4201A



– Type of shank DIN 10
– Coolant exit, axial concentric





Article	✻	Dimensions [mm]								Teeth	Geometry	Coredrill	Grade
			d_1	P	d_2	d_3	l_1	l_2	l_3			d	YK40F
4201A-M3*0.5-6H		3P	M3	0.5	3.5	2.3	56	11	18	3	A	2.5	●
4201A-M3*0.5-6HX		3P	M3	0.5	3.5	2.3	56	11	18	3	A	2.5	○
4201AS-M3*0.5-6H		1.5P	M3	0.5	3.5	2.3	56	11	18	3	A	2.5	●
4201AS-M3*0.5-6HX		1.5P	M3	0.5	3.5	2.3	56	11	18	3	A	2.5	○
4201A-M4*0.7-6H		3P	M4	0.7	4.5	3.1	63	13	21	3	A	3.3	●
4201A-M4*0.7-6HX		3P	M4	0.7	4.5	3.1	63	13	21	3	A	3.3	○
4201AS-M4*0.7-6H		1.5P	M4	0.7	4.5	3.1	63	13	21	3	A	3.3	●
4201AS-M4*0.7-6HX		1.5P	M4	0.7	4.5	3.1	63	13	21	3	A	3.3	○
4201A-M5*0.8-6H		3P	M5	0.8	6	4	70	16	25	3	A	4.2	○
4201A-M5*0.8-6HX		3P	M5	0.8	6	4	70	16	25	3	A	4.2	○
4201AS-M5*0.8-6H		1.5P	M5	0.8	6	4	70	16	25	3	A	4.2	●
4201AS-M5*0.8-6HX		1.5P	M5	0.8	6	4	70	16	25	3	A	4.2	○
4201A-M6*0.75-6H		3P	M6	0.75	6	5	80	19	30	3	A	5.25	○
4201A-M6*0.75-6HX		3P	M6	0.75	6	5	80	19	30	3	A	5.25	●
4201AS-M6*0.75-6H		1.5P	M6	0.75	6	5	80	19	30	3	A	5.25	●
4201AS-M6*0.75-6HX		1.5P	M6	0.75	6	5	80	19	30	3	A	5.25	○
4201A-M6*1-6H		3P	M6	1	6	4.7	80	19	30	3	A	5	●
4201AC-M6*1-6H	✻	3P	M6	1	6	4.7	80	19	30	3	A	5	○
4201A-M6*1-6HX		3P	M6	1	6	4.7	80	19	30	3	A	5	●
4201AS-M6*1-6H		1.5P	M6	1	6	4.7	80	19	30	3	A	5	●
4201ACS-M6*1-6H	✻	1.5P	M6	1	6	4.7	80	19	30	3	A	5	●
4201AS-M6*1-6HX		1.5P	M6	1	6	4.7	80	19	30	3	A	5	○
4201A-M7*1-6H		3P	M7	1	7	5.7	80	19	30	3	A	6	○
4201AS-M7*1-6H		1.5P	M7	1	7	5.7	80	19	30	3	A	6	○
4201A-M8*1-6H		3P	M8	1	8	6.7	90	20	35	3	A	7	○
4201AS-M8*1-6H		1.5P	M8	1	8	6.7	90	20	35	3	A	7	●
4201A-M8*1.25-6H		3P	M8	1.25	8	6.4	90	22	35	3	A	6.75	○
4201AC-M8*1.25-6H	✻	3P	M8	1.25	8	6.4	90	22	35	3	A	6.75	●
4201A-M8*1.25-6HX		3P	M8	1.25	8	6.4	90	22	35	3	A	6.75	○
4201AS-M8*1.25-6H		1.5P	M8	1.25	8	6.4	90	22	35	3	A	6.75	●
4201ACS-M8*1.25-6H	✻	1.5P	M8	1.25	8	6.4	90	22	35	3	A	6.75	●
4201AS-M8*1.25-6HX		1.5P	M8	1.25	8	6.4	90	22	35	3	A	6.75	○
4201A-M10*1-6H		3P	M10	1	10	8.7	100	20	39	4	A	9	●

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code C144 | Machining instructions C165 | Cutting data C160 | Nonstandard order C182

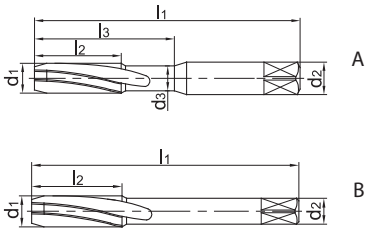
Tap, right-hand twist — Non-ferrous metals

4201A



– Type of shank DIN 10
– Coolant exit, axial concentric





Article	✲	Dimensions [mm]								Teeth	Geometry	Coredrill	Grade
			d_1	P	d_2	d_3	l_1	l_2	l_3			d	YK40F
4201AS-M10*1-6H		1.5P	M10	1	10	8.7	100	20	39	4	A	9	●
4201A-M10*1.25-6H		3P	M10	1.25	10	8.4	100	24	39	4	A	8.75	○
4201AS-M10*1.25-6H		1.5P	M10	1.25	10	8.4	100	24	39	4	A	8.75	○
4201A-M10*1.5-6H		3P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4201AC-M10*1.5-6H	✲	3P	M10	1.5	10	8.1	100	24	39	4	A	8.5	●
4201A-M10*1.5-6HX		3P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4201AS-M10*1.5-6H		1.5P	M10	1.5	10	8.1	100	24	39	4	A	8.5	●
4201ACS-M10*1.5-6H	✲	1.5P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4201AS-M10*1.5-6HX		1.5P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4201A-M12*1.25-6H		3P	M12	1.25	9		110	29		4	B	10.75	○
4201AS-M12*1.25-6H		1.5P	M12	1.25	9		110	29		4	B	10.75	○
4201A-M12*1.5-6H		3P	M12	1.5	9		110	29		4	B	10.5	○
4201AS-M12*1.5-6H		1.5P	M12	1.5	9		110	29		4	B	10.5	○
4201A-M12*1.75-6H		3P	M12	1.75	9		110	29		4	B	10.25	○
4201AC-M12*1.75-6H	✲	3P	M12	1.75	9		110	29		4	B	10.25	○
4201A-M12*1.75-6HX		3P	M12	1.75	9		110	29		4	B	10.25	○
4201AS-M12*1.75-6H		1.5P	M12	1.75	9		110	29		4	B	10.25	●
4201ACS-M12*1.75-6H	✲	1.5P	M12	1.75	9		110	29		4	B	10.25	○
4201AS-M12*1.75-6HX		1.5P	M12	1.75	9		110	29		4	B	10.25	○
4201A-M14*1.5-6H		3P	M14	1.5	11		110	30		4	B	12.5	○
4201AS-M14*1.5-6H		1.5P	M14	1.5	11		110	30		4	B	12.5	○
4201A-M14*2-6H		3P	M14	2	11		110	30		4	B	12	○
4201AS-M14*2-6H		1.5P	M14	2	11		110	30		4	B	12	○
4201A-M16*1.5-6H		3P	M16	1.5	12		110	32		4	B	14.5	○
4201AS-M16*1.5-6H		1.5P	M16	1.5	12		110	32		4	B	14.5	○
4201A-M16*2-6H		3P	M16	2	12		110	32		4	B	14	○
4201A-M16*2-6HX		3P	M16	2	12		110	32		4	B	14	○
4201AS-M16*2-6H		1.5P	M16	2	12		110	32		4	B	14	○
4201AS-M16*2-6HX		1.5P	M16	2	12		110	32		4	B	14	○

● Ex stock ○ On demand
✲ With internal cooling

Application field

P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code > C144 Machining instructions > C165 Cutting data > C160 Nonstandard order > C182

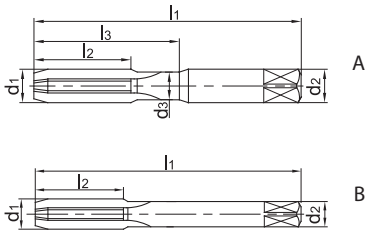
Tap, straight flute — Non-ferrous metals

4202A



– Type of shank DIN 10
– Coolant exit, axial concentric





Article	✻	Dimensions [mm]								Teeth	Geometry	Coredrill	Grade
			d_1	P	d_2	d_3	l_1	l_2	l_3			d	YK40F
4202A-M3*0.5-6H		3P	M3	0.5	3.5	2.3	56	11	18	3	A	2.5	○
4202A-M3*0.5-6HX		3P	M3	0.5	3.5	2.3	56	11	18	3	A	2.5	○
4202AS-M3*0.5-6H		1.5P	M3	0.5	3.5	2.3	56	11	18	3	A	2.5	○
4202AS-M3*0.5-6HX		1.5P	M3	0.5	3.5	2.3	56	11	18	3	A	2.5	○
4202A-M4*0.7-6H		3P	M4	0.7	4.5	3.1	63	13	21	3	A	3.3	○
4202A-M4*0.7-6HX		3P	M4	0.7	4.5	3.1	63	13	21	3	A	3.3	○
4202AS-M4*0.7-6H		1.5P	M4	0.7	4.5	3.1	63	13	21	3	A	3.3	○
4202AS-M4*0.7-6HX		1.5P	M4	0.7	4.5	3.1	63	13	21	3	A	3.3	○
4202A-M5*0.8-6H		3P	M5	0.8	6	4	70	16	25	3	A	4.2	○
4202A-M5*0.8-6HX		3P	M5	0.8	6	4	70	16	25	3	A	4.2	○
4202AS-M5*0.8-6H		1.5P	M5	0.8	6	4	70	16	25	3	A	4.2	○
4202AS-M5*0.8-6HX		1.5P	M5	0.8	6	4	70	16	25	3	A	4.2	○
4202A-M6*0.75-6H		3P	M6	0.75	6	5	80	19	30	3	A	5.25	○
4202A-M6*0.75-6HX		3P	M6	0.75	6	5	80	19	30	3	A	5.25	○
4202AS-M6*0.75-6H		1.5P	M6	0.75	6	5	80	19	30	3	A	5.25	○
4202AS-M6*0.75-6HX		1.5P	M6	0.75	6	5	80	19	30	3	A	5.25	○
4202A-M6*1-6H		3P	M6	1	6	4.7	80	19	30	3	A	5	○
4202AC-M6*1-6H	✻	3P	M6	1	6	4.7	80	19	30	3	A	5	○
4202A-M6*1-6HX		3P	M6	1	6	4.7	80	19	30	3	A	5	○
4202AS-M6*1-6H		1.5P	M6	1	6	4.7	80	19	30	3	A	5	○
4202ACS-M6*1-6H	✻	1.5P	M6	1	6	4.7	80	19	30	3	A	5	○
4202AS-M6*1-6HX		1.5P	M6	1	6	4.7	80	19	30	3	A	5	○
4202A-M7*1-6H		3P	M7	1	7	5.7	80	19	30	3	A	6	○
4202AS-M7*1-6H		1.5P	M7	1	7	5.7	80	19	30	3	A	6	○
4202A-M8*1-6H		3P	M8	1	8	6.7	90	20	35	3	A	7	○
4202AS-M8*1-6H		1.5P	M8	1	8	6.7	90	20	35	3	A	7	○
4202A-M8*1.25-6H		3P	M8	1.25	8	6.4	90	22	35	3	A	6.75	○
4202AC-M8*1.25-6H	✻	3P	M8	1.25	8	6.4	90	22	35	3	A	6.75	○
4202A-M8*1.25-6HX		3P	M8	1.25	8	6.4	90	22	35	3	A	6.75	○
4202AS-M8*1.25-6H		1.5P	M8	1.25	8	6.4	90	22	35	3	A	6.75	○
4202ACS-M8*1.25-6H	✻	1.5P	M8	1.25	8	6.4	90	22	35	3	A	6.75	○
4202AS-M8*1.25-6HX		1.5P	M8	1.25	8	6.4	90	22	35	3	A	6.75	○
4202A-M10*1-6H		3P	M10	1	10	8.7	100	20	39	4	A	9	○

● Ex stock ○ On demand
✻ With internal cooling

Application field

P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code C144 | Machining instructions C165 | Cutting data C160 | Nonstandard order C182

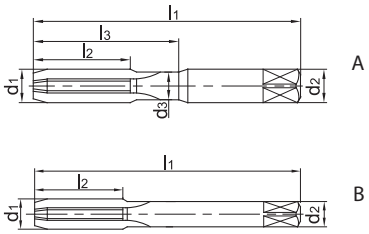
Tap, straight flute — Non-ferrous metals

4202A



– Type of shank DIN 10
– Coolant exit, axial concentric





Article	✲	Dimensions [mm]								Teeth	Geometry	Coredrill	Grade
			d_1	P	d_2	d_3	l_1	l_2	l_3			d	YK40F
4202AS-M10*1-6H		1.5P	M10	1	10	8.7	100	20	39	4	A	9	○
4202A-M10*1.25-6H		3P	M10	1.25	10	8.4	100	24	39	4	A	8.75	○
4202AS-M10*1.25-6H		1.5P	M10	1.25	10	8.4	100	24	39	4	A	8.75	○
4202A-M10*1.5-6H		3P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4202AC-M10*1.5-6H	✲	3P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4202A-M10*1.5-6HX		3P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4202AS-M10*1.5-6H		1.5P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4202ACS-M10*1.5-6H	✲	1.5P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4202AS-M10*1.5-6HX		1.5P	M10	1.5	10	8.1	100	24	39	4	A	8.5	○
4202A-M12*1.25-6H		3P	M12	1.25	9		110	29		4	B	10.75	○
4202AS-M12*1.25-6H		1.5P	M12	1.25	9		110	29		4	B	10.75	○
4202A-M12*1.5-6H		3P	M12	1.5	9		110	29		4	B	10.5	○
4202AS-M12*1.5-6H		1.5P	M12	1.5	9		110	29		4	B	10.5	○
4202A-M12*1.75-6H		3P	M12	1.75	9		110	29		4	B	10.25	○
4202AC-M12*1.75-6H	✲	3P	M12	1.75	9		110	29		4	B	10.25	○
4202A-M12*1.75-6HX		3P	M12	1.75	9		110	29		4	B	10.25	○
4202AS-M12*1.75-6H		1.5P	M12	1.75	9		110	29		4	B	10.25	●
4202ACS-M12*1.75-6H	✲	1.5P	M12	1.75	9		110	29		4	B	10.25	○
4202AS-M12*1.75-6HX		1.5P	M12	1.75	9		110	29		4	B	10.25	○
4202A-M14*1.5-6H		3P	M14	1.5	11		110	30		4	B	12.5	○
4202AS-M14*1.5-6H		1.5P	M14	1.5	11		110	30		4	B	12.5	○
4202A-M14*2-6H		3P	M14	2	11		110	30		4	B	12	○
4202AS-M14*2-6H		1.5P	M14	2	11		110	30		4	B	12	○
4202A-M16*1.5-6H		3P	M16	1.5	12		110	32		4	B	14.5	○
4202AS-M16*1.5-6H		1.5P	M16	1.5	12		110	32		4	B	14.5	○
4202A-M16*2-6H		3P	M16	2	12		110	32		4	B	14	○
4202A-M16*2-6HX		3P	M16	2	12		110	32		4	B	14	○
4202AS-M16*2-6H		1.5P	M16	2	12		110	32		4	B	14	○
4202AS-M16*2-6HX		1.5P	M16	2	12		110	32		4	B	14	○

● Ex stock ○ On demand
✲ With internal cooling

Application field

P	M	K	N	S	H
			✔		

✔ Very suitable
✔ Suitable

System code C144 | Machining instructions C165 | Cutting data C160 | Nonstandard order C182

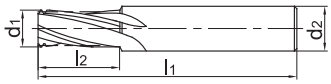
Thread milling cutter, coated — Steel, cast iron, non-ferrous metals

4111



– Factory standard





Article	✻	Dimensions [mm]						Teeth	Coredrill	Grade	
		D	d_1	P	d_2	l_1	l_2		d	KTG4015	YK40F
4111-M3*0.5		M3	2.35	0.5	4	50	6	3	2.5	●	●
4111-M4*0.7		M4	3.15	0.7	4	50	8	3	3.3	●	○
4111-M5*0.8		M5	4	0.8	6	50	10	3	4.2	●	○
4111-M5*0.5		M5	4.3	0.5	6	50	10	3	4.5	●	○
4111-M6*1		M6	4.75	1	6	60	12	4	5	●	●
4111-M6*0.75		M6	5	0.75	6	60	12	4	5.25	○	○
4111-M8*1.25		M8	6.45	1.25	8	60	16	4	6.75	●	●
4111-M8*1		M8	6.65	1	8	60	16	4	7	●	○
4111-M10*1.5		M10	8.1	1.5	10	75	20	4	8.5	●	○
4111-M10*1		M10	8.55	1	10	75	20	4	9	●	○
4111-M12*1.75		M12	9.75	1.75	12	75	24	4	10.25	●	○
4111-M12*1.25		M12	10.25	1.25	12	75	24	4	10.75	●	○
4111-M14*2		M14	11.4	2	14	75	28	4	12	●	○
4111-M14*1.5		M14	11.9	1.5	14	75	28	4	12.5	●	○
4111-M14*1		M14	12.35	1	14	75	20	4	13	●	○
4111-M16*2		M16	13.3	2	16	90	32	6	14	●	○
4111-M18*2.5		M18	14.75	2.5	18	90	36	6	15.5	●	○
4111-M18*1		M18	16.15	1	18	90	20	6	17	●	○
4111-M20*2.5		M20	16.65	2.5	18	100	40	6	17.5	●	○
4111-M20*2		M20	17.1	2	18	100	40	6	18	●	○

● Ex stock ○ On demand

✻ With internal cooling

Application field

P	M	K	N	S	H
✔		✔	✔		

✔ Very suitable

✔ Suitable

System code C144 | Machining instructions C165 | Cutting data C160 | Nonstandard order C182

Guide for recommended cutting data – Solid carbide threading tools

Solid carbide threading tools

	Material group	Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]							
						Thread former		Thread former				Thread former	
						4122A 4222A	4122M 4222M	4201C	4201A	4202C	4202A		
						YK40F	YK40F	YK40F	YK40F	YK40F	YK40F	KTG40115	
						Coolan:							
						external	external	external	external	external	external	external	f-group
P	Unalloyed steel	ca. 0,15 % C	annealed	125	1		20					100	1
		ca. 0,45 % C	annealed	190	2		20					90	1
		ca. 0,45 % C	tempered	250	3		20					80	1
		ca. 0,75 % C	annealed	270	4		20					70	1
		ca. 0,75 % C	tempered	300	5		20					70	1
	Low-alloyed steel		annealed	180	6		20					90	1
			tempered	275	7		20					70	1
			tempered	300	8		20					60	1
			tempered	350	9		20					55	1
	High-alloyed steel and high-alloyed tool steel		annealed	200	10		20					80	1
			hardened and tempered	325	11		20					50	1
M	Stainless steel	ferritic/martensitic	annealed	200	12		20						
		martensitic	tempered	240	13		20						
		austenitic	quench hardened	180	14		20						
		austenitic-ferritic		230	15		20						
K	Grey cast iron	perlitic/ferritic		180	16			20		20		80	1
		perlitic (martensitic)		260	17			20		20		60	1
	Cast iron with spheroidal graphite	ferritic		160	18			15		15		80	1
		perlitic		250	19			15		15		60	1
	Malleable cast iron	ferritic		130	20			20		20		60	1
		perlitic		230	21			20		20		80	1
N	Aluminium wrought alloys	cannot be hardened		60	22							180	1
		hardenable	hardened	100	23							150	1
	Cast aluminium alloys	≤ 12 % Si, cannot be hardened		75	24	30	30		30		30	150	1
		≤ 12 % Si, hardenable	hardened	90	25	25	25		25		25	150	1
		> 12 % Si, cannot be hardened		130	26							150	1
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27							150	1
		CuZn, CuSnZn		90	28							150	1
		CuSn, Pb-free copper, electrolytic copper		100	29							150	1
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37								
			hardened and tempered	60 HRC	38								
	Hard cast iron		cast	400	39								
	Hardened cast iron		hardened and tempered	55 HRC	40								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
With hole depths of 5xD adjust the cutting data accordingly to the application.
f-group = feed rate recommendations on page C164.
For examples of material for cutting tool groups view page D22.

Recommend feed rate

Solid carbide threading tools

4

5

f-group	Feed rate [mm]																			
	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø11	Ø12	Ø13	Ø14	Ø15	Ø16	Ø17	Ø18	Ø19	Ø20
1	0,01	0,02	0,03	0,04	0,04	0,05	0,05	0,06	0,06	0,06	0,07	0,07	0,08	0,08	0,09	0,09	0,09	0,09	0,10	0,10
2	0,01	0,02	0,03	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,08	0,09	0,09	0,09	0,10	0,10	0,10	0,11	0,11	0,11
3	0,01	0,02	0,04	0,05	0,06	0,06	0,07	0,07	0,08	0,09	0,09	0,10	0,10	0,11	0,11	0,12	0,12	0,12	0,13	0,13
4	0,02	0,03	0,04	0,06	0,06	0,07	0,08	0,09	0,09	0,10	0,11	0,11	0,12	0,12	0,13	0,13	0,14	0,14	0,15	0,15
5	0,02	0,03	0,05	0,06	0,07	0,09	0,09	0,10	0,11	0,11	0,12	0,13	0,14	0,14	0,15	0,15	0,16	0,16	0,17	0,17
6	0,02	0,04	0,06	0,07	0,09	0,10	0,11	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,17	0,18	0,18	0,19	0,19	0,20
7	0,02	0,04	0,06	0,09	0,10	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,18	0,19	0,20	0,20	0,21	0,22	0,22	0,23
8	0,03	0,05	0,07	0,10	0,11	0,13	0,14	0,15	0,16	0,17	0,18	0,20	0,21	0,22	0,23	0,23	0,24	0,25	0,26	0,26
9	0,03	0,06	0,08	0,11	0,13	0,15	0,16	0,17	0,18	0,20	0,21	0,23	0,24	0,25	0,26	0,27	0,28	0,29	0,29	0,30
10	0,04	0,07	0,10	0,13	0,15	0,17	0,19	0,20	0,21	0,23	0,24	0,26	0,27	0,29	0,30	0,31	0,32	0,33	0,34	0,35
11	0,04	0,07	0,11	0,15	0,17	0,20	0,21	0,23	0,24	0,26	0,28	0,30	0,32	0,33	0,35	0,36	0,37	0,38	0,39	0,40
12	0,05	0,09	0,13	0,17	0,20	0,23	0,25	0,26	0,28	0,30	0,32	0,35	0,36	0,38	0,40	0,41	0,42	0,44	0,45	0,46
13	0,05	0,10	0,15	0,20	0,23	0,26	0,28	0,30	0,32	0,35	0,37	0,40	0,42	0,44	0,46	0,47	0,49	0,50	0,52	0,53
14	0,06	0,11	0,17	0,23	0,26	0,30	0,33	0,35	0,37	0,40	0,43	0,46	0,48	0,50	0,53	0,54	0,56	0,58	0,59	0,61
15	0,07	0,13	0,20	0,26	0,30	0,35	0,37	0,40	0,43	0,46	0,49	0,53	0,55	0,58	0,61	0,62	0,64	0,66	0,68	0,70

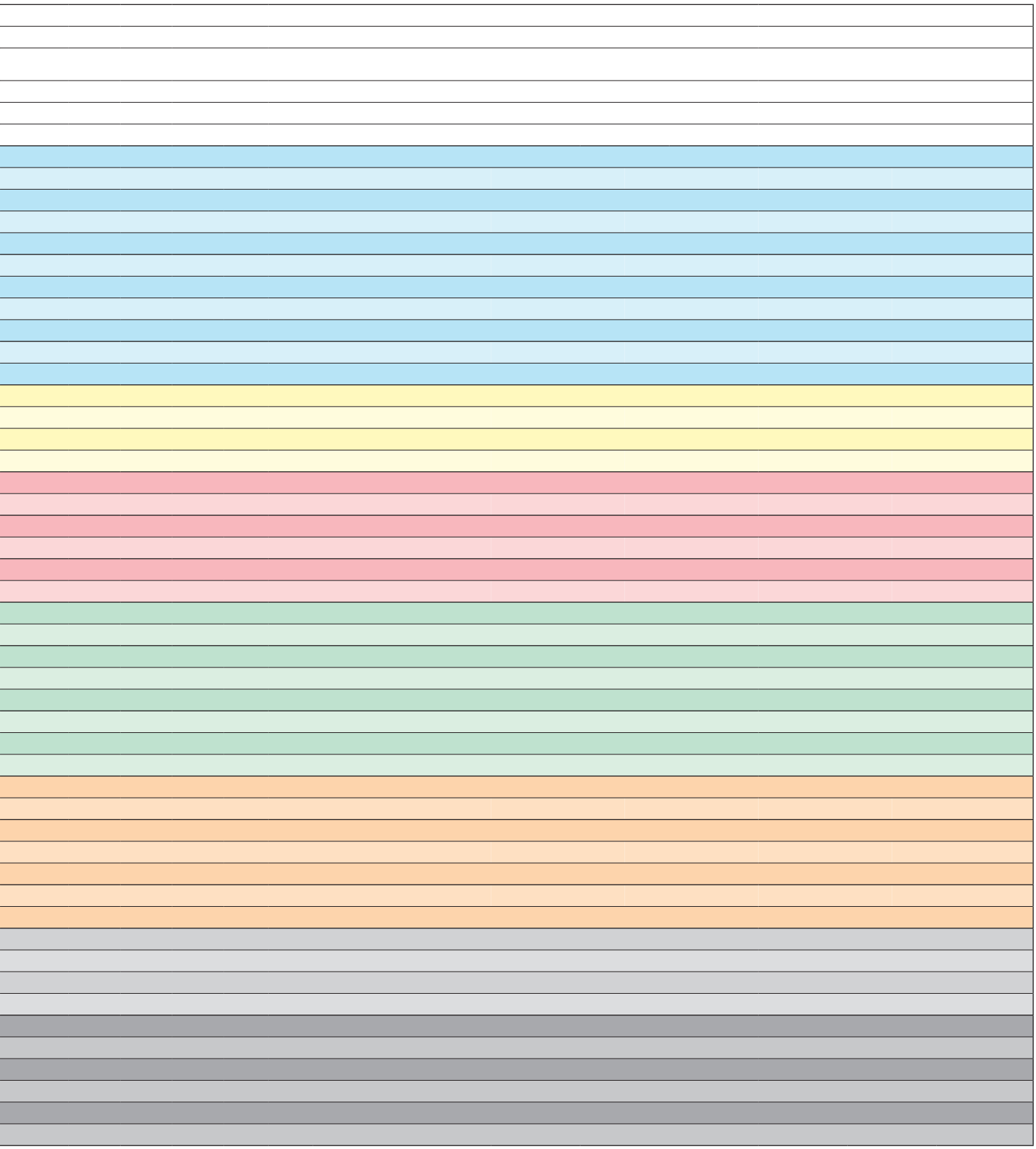
Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

1. Select the appropriate product series.
2. Determine the immersion.
3. Select the used material and read the cutting speed.
4. Determine the feed rate group and have a look at the appropriate feed rate recommendations.
5. Select the diameter of tool and determine the immersion.

Solid carbide threading tools

Material group		Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]							
						Thread former		Thread tap				Thread milling	
						4122A 4222A	4122M 4222M	4201C	4201A	4202C	4202A	4111	
						YK40F	YK40F	YK40F	YK40F	YK40F	YK40F	KTG4015	
						Coolant							
						External	External	External	External	External	External	External	f-group
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1		20					100	1
		approx. 0,45 % C	annealed	190	2		20					90	1
		approx. 0,45 % C	tempered	250	3		20					80	1
		approx. 0,75 % C	annealed	270	4		20					70	1
		approx. 0,75 % C	tempered	300	5		20					70	1
	Low-alloyed steel		annealed	180	6		20					90	1
			tempered	275	7		20					70	1
			tempered	300	8		20					60	1
			tempered	350	9		20					55	1
	High-alloyed steel and high-alloyed tool steel		annealed	200	10		20					80	1
			hardened and tempered	325	11		20					50	1
M	Stainless steel	ferritic/martensitic	annealed	200	12		20						
		martensitic	tempered	240	13		20						
		austenitic	quench hardened	180	14		20						
		austenitic-ferritic		230	15		20						
K	Grey cast iron	perlitic/ferritic		180	16			20		20		80	1
		perlitic (martensitic)		260	17			20		20		60	1
	Cast iron with spheroidal graphite	ferritic		160	18			15		15		80	1
		perlitic		250	19			15		15		60	1
	Malleable cast iron	ferritic		130	20			20		20		60	1
		perlitic		230	21			20		20		80	1
N	Aluminium wrought alloys	cannot be hardened		60	22							180	1
		hardenable	hardened	100	23							150	1
	Cast aluminium alloys	≤ 12% Si, cannot be hardened		75	24	30	30		30		30	150	1
		≤ 12% Si, hardenable	hardened	90	25	25	25		25		25	150	1
		> 12% Si, cannot be hardened		130	26							150	1
	Copper and copper alloys (bronze/brass)	machining steel, PB> 1%		110	27							150	1
		CuZn, CuSnZn		90	28							150	1
		CuSn, Pb-free copper, electrolytic copper		100	29							150	1
S	Heat-resistant alloys	Fe-based alloys	annealed	200	30								
			hardened	280	31								
		Ni or Co bass	annealed	250	32								
			hardened	350	33								
			cast	320	34								
	Titanium alloys	pure titanium		R_m 400	35								
		α and β alloys	hardened	R_m 1050	36								
H	Hardened steel		hardened and tempered	55 HRC	37								
			hardened and tempered	60 HRC	38								
	Hard cast iron		cast	400	39								
	Hardened cast iron		hardened and tempered	55 HRC	40								
X	Non-metallic materials	Thermoplasts			41								
		Thermosetting plastics			42								
		Plastic, glass-fibre reinforced GFRP			43								
		Plastic, carbon fibre reinforced CFRP			44								
		Graphite			45								
		Wood			46								

Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.
With hole depths of 5xD adjust the cutting data accordingly to the application.
f-group = feed rate recommendations on page C164.
For examples of material for cutting tool groups view page D22.



Recommended feed rate

Solid carbide threading tools

Groupe f	Feed rate [mm]																			
	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø11	Ø12	Ø13	Ø14	Ø15	Ø16	Ø17	Ø18	Ø19	Ø20
1	0,01	0,02	0,03	0,04	0,04	0,05	0,05	0,06	0,06	0,06	0,07	0,07	0,08	0,08	0,09	0,09	0,09	0,09	0,10	0,10
2	0,01	0,02	0,03	0,04	0,05	0,06	0,06	0,06	0,07	0,07	0,08	0,09	0,09	0,09	0,10	0,10	0,10	0,11	0,11	0,11
3	0,01	0,02	0,04	0,05	0,06	0,06	0,07	0,07	0,08	0,09	0,09	0,10	0,10	0,11	0,11	0,12	0,12	0,12	0,13	0,13
4	0,02	0,03	0,04	0,06	0,06	0,07	0,08	0,09	0,09	0,10	0,11	0,11	0,12	0,12	0,13	0,13	0,14	0,14	0,15	0,15
5	0,02	0,03	0,05	0,06	0,07	0,09	0,09	0,10	0,11	0,11	0,12	0,13	0,14	0,14	0,15	0,15	0,16	0,16	0,17	0,17
6	0,02	0,04	0,06	0,07	0,09	0,10	0,11	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,17	0,18	0,18	0,19	0,19	0,20
7	0,02	0,04	0,06	0,09	0,10	0,11	0,12	0,13	0,14	0,15	0,16	0,17	0,18	0,19	0,20	0,20	0,21	0,22	0,22	0,23
8	0,03	0,05	0,07	0,10	0,11	0,13	0,14	0,15	0,16	0,17	0,18	0,20	0,21	0,22	0,23	0,23	0,24	0,25	0,26	0,26
9	0,03	0,06	0,08	0,11	0,13	0,15	0,16	0,17	0,18	0,20	0,21	0,23	0,24	0,25	0,26	0,27	0,28	0,29	0,29	0,30
10	0,04	0,07	0,10	0,13	0,15	0,17	0,19	0,20	0,21	0,23	0,24	0,26	0,27	0,29	0,30	0,31	0,32	0,33	0,34	0,35
11	0,04	0,07	0,11	0,15	0,17	0,20	0,21	0,23	0,24	0,26	0,28	0,30	0,32	0,33	0,35	0,36	0,37	0,38	0,39	0,40
12	0,05	0,09	0,13	0,17	0,20	0,23	0,25	0,26	0,28	0,30	0,32	0,35	0,36	0,38	0,40	0,41	0,42	0,44	0,45	0,46
13	0,05	0,10	0,15	0,20	0,23	0,26	0,28	0,30	0,32	0,35	0,37	0,40	0,42	0,44	0,46	0,47	0,49	0,50	0,52	0,53
14	0,06	0,11	0,17	0,23	0,26	0,30	0,33	0,35	0,37	0,40	0,43	0,46	0,48	0,50	0,53	0,54	0,56	0,58	0,59	0,61
15	0,07	0,13	0,20	0,26	0,30	0,35	0,37	0,40	0,43	0,46	0,49	0,53	0,55	0,58	0,61	0,62	0,64	0,66	0,68	0,70

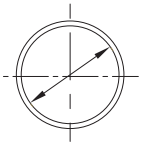
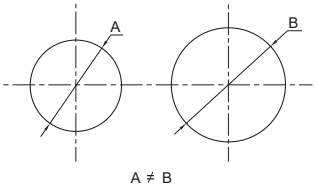
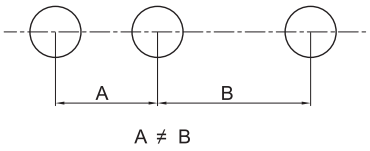
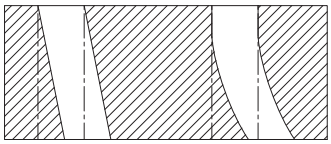
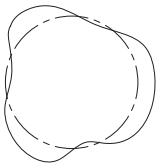
Note: The given cutting values are guide values, which were determined under ideal conditions.
The values have to be adapted in individual cases.

Technical information

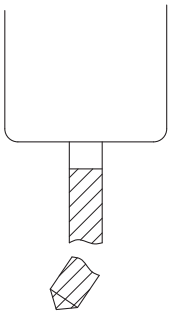
Trouble shooting – drilling	**C166-C169**
Technical information – drilling	**C170-C177**
Forms nonstandard order	**C178-C182**

C

Trouble shooting – solid carbide drills

Error	Reason	Countermeasure
Oversized holes 	– Insufficient clamping of workpiece and/or tool – Large radial run out – Point relief is off centre	– Use precision clamping – Reduce spindle play – Check and adjust clamped drill
	– Asymmetric point angle – Large radial run out – Point relief is off centre	– Regrind drill – Check quality of regrinding
Irregular hole size 	– Asymmetric point angle – Large radial run out – Point relief is off centre – High wear	– Use precision clamping – Reduce spindle play – Check and adjust clamped drill
	– Insufficient clamping of work piece and/or tool – Large radial run out – Point relief is off centre – High wear	– Use precision clamping – Reduce spindle play – Check and adjust clamped drill
	– Feed rate too high	– Reduce feed rate
	– Insufficient coolant	– Increase amount of coolant or change coolant supply
Low position accuracy 	– Insufficient clamping and spindle positio-ning – Large radial run out of spindle	– Improve positioning of machine – Use precision clamping – Calibrate spindle – Check and adjust clamped drill
	– The feed direction is not vertical to the workpiece surface	– Adjust feed rate vertically to workpiece surface
	– Tool isn't aligned with centre of spindle (lathe machines	– Centre the tool
Bad drill run out 	– High tool wear	– Regrind drill
	– Poor drill accuracy	– Improve positioning of drill
	– Asymmetric point angle – Large radial run out – Point relief is off centre	– Regrind drill – Check quality of regrinding
	– Insufficient tool stability	– Improve stability of tool
	– Uneven workpiece surface – Tool isn't aligned with centre of spindle (lathe machines)	– Before boring align the workpiece horizontally to the drill or pre-machine the workpiece
Inaccurate hole (roundness) 	– Asymmetric point angle – Large radial run out – Point relief is off centre – High wear	– Regrind drill – Check quality of regrinding
	– Insufficient clamping of work piece and/or tool – Large radial run out of spindle	– Use precision clamping – Calibrate spindle – Check and adjust clamped drill
	– Clearance angle too large	– Regrind the drill
	– Insufficient tool stability	– Improve tool stability

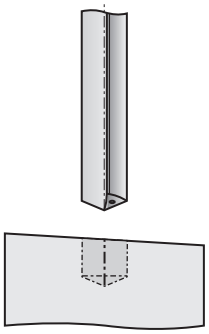
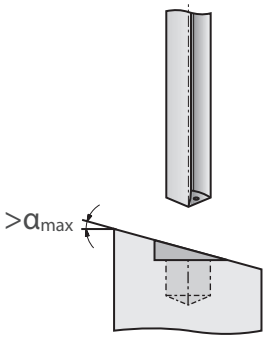
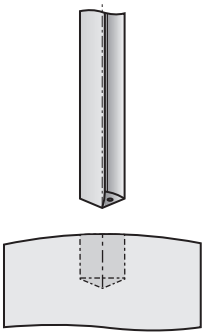
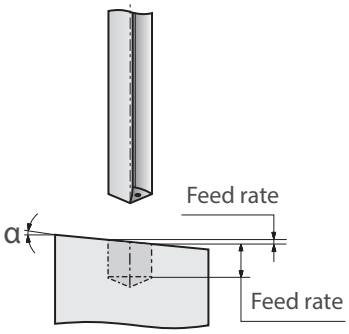
Trouble shooting – solid carbide drills

Error	Reason	Countermeasure
Bad surface quality	– Bad drill regrinding	– Improve regrinding
	– Insufficient amount of coolant or coolant method	– Change coolant supply – Increase amount of coolant
	– Insufficient clamping – Large radial run out of spindle	– Use precision clamping – Calibrate spindle
	– Feed rate too high	– Reduce feed rate
	– High wear of cutting edge – High welding	– Regrind drill – Use a coated drill
	– Bad chip removal	– Chose a suitable drill (with an accordingly flute, helical angle etc.) – Adjust cutting speed (reduce feed rate, etc.)
Bad cylindricity 	– No symmetrical point angle – Large radial run out (drilling) – Centre insert is off centre – Large cutting edge wear – Feed rate too low	– Regrind drill – Check regrind – Increase feed rate
Breakage of drill 	– Insufficient clamping of tool and/or workpiece	– Improve stability of tool and clamping of workpiece
	– Clearance angle too small	– Use a drill with bigger clearance angle or regrind
	– Feed rate too high	– Reduce feed rate
	– Excessive wear	– Regrind drill
	– Chip jamming	– Chose a suitable drill (considering flute geometry, helical angle, etc.) – Adjust cutting speed – Reduce feed rate
	– Drilling in uneven surfaces	– Increase rigidity of drill and clamping of machine and workpiece – Use drill with sharp centre insert – Pre-drill a centre hole – Create a straight surface (e.g. with solid carbide milling cutter) – Use a guide bush or bush plate
Chipping on the drill 	– Hard surface or blow holes	– Check material and chose suitable grade – Change cutting conditions (cutting speed, feed rate or machining method)
	– Feed rate too high	– Reduce feed rate
	– Insufficient coolant	– Improve/increase coolant supply
Chipping on the cutting edge 	– Poor clamping – Large radial run out	– Use a more precise clamping device – Adjust the spindle
	– Cutting speed and feed rate too high	– Reduce cutting speed and feed rate
	– Clearance angle too large	– Use a drill with smaller clearance angle or regrind

Trouble shooting – solid carbide drills

Error	Reason	Countermeasure
Excessive wear 	– Overdue regrinding	– Regrind in time
	– Drill tip not in centre position	– Adjust drill with centre of spindle
	– Cutting speed too high	– Reduce cutting speed
	– Cutting angle not suitable	– Chose right cutting angle
	– Material not suitable	– Chose suitable material
	– Insufficient cooling	– Use suitable cooling
Wear and chipping on point relief	– Feed rate too high	– Reduce feed rate
	– Cutting angle not suitable	– Chose right cutting angle
	– Material not suitable	– Chose suitable material
	– Clearance angle too small	– Regrind drill
Breakage on margin	– Guide bush too large	– Change guide bush
Built up edge on margin	– High wear and heat	– Regrind drill
	– Insufficient cooling	– Change cooling method
	– Wrong coolant	– Change coolant
	– Workpiece material is too soft	– Use drill with smaller clearance angle
High vibrations	– Clearance angle too large	– Regrind drill
	– Drill stability too low	– Improve stability
Swarf clogs the drill	– Long chips – Chip removal not fluent	– Optimise cutting data – Change drill or adjust machine
One-side wear	– Drill tip not centred	– Adjust drill with centre of spindle
	– Poor clamping	– Improve drill clamping – Check concentricity

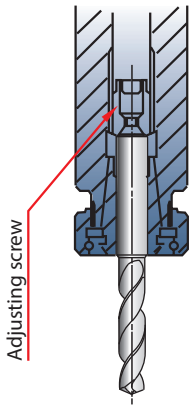
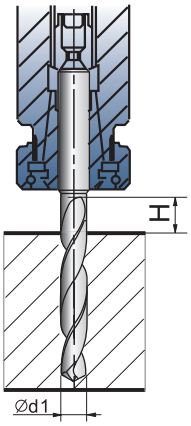
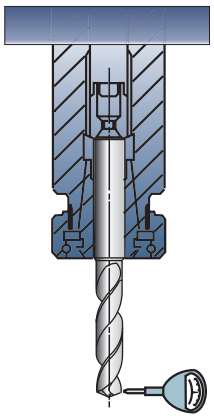
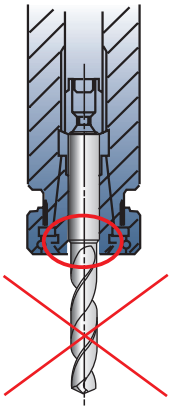
Trouble shooting – PC series

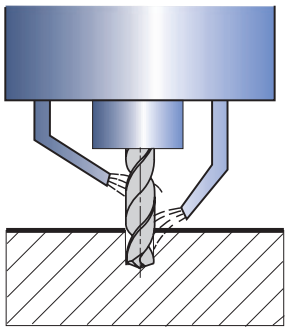
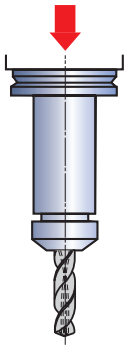
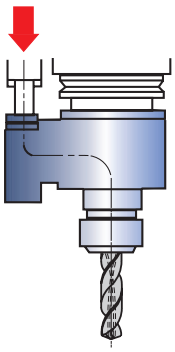
Machining	Recommendation
Sloped surface 	– Inclined surfaces should be pre-machined (chamfering). 
Inclined surface 	– Reduce feed rate accordingly. 

Inclination angle	Max. feed rate
1°	80%
2°	50%
3°	30%

Solid carbide drills

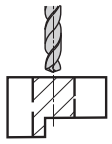
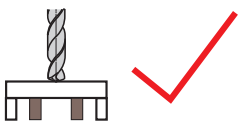
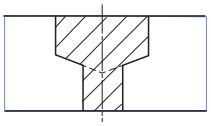
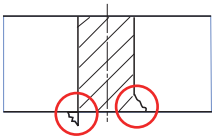
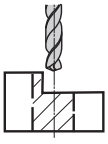
Operation notes

Correct drill clamping	Max. drilling length	Radial run-out	Wrong drill clamping
			
Use precision collets	H = 1,5 x d1	Radial run-out <0.02 mm	Don't clamp on the drill flutes.

External coolant method	Internal coolant method	
		
The coolant liquid should shoot to the end and the centre of the drill as shown in the figure.	Coolant pressure is about 0.5–1 mpa (coolant pressure is 2–3 mpa when the diameter is less than 5 mm), coolant volume: 1.5–4 L/min	

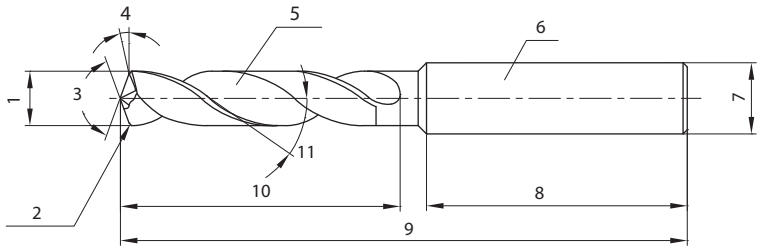
Handling of coolants:

1. Small chip particles and dust can cause jamming in the oil hole. A fine mesh filter should be used.
2. Dirt and dust particles will adhere to the oil hole and lead to unsmooth coolant flow. Regularly change the coolant. Please ensure proper coolant supply.

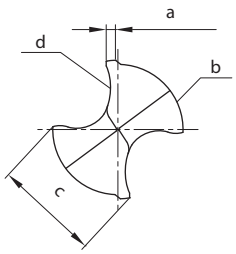
Interrupted cutting	Thin work pieces	Stepped holes	Burrs and work piece chippings on exit
 Reduce the feed rate when drilling interrupted cut.	  If bending occurs, add a supporter.	 – First drill the larger hole, then the smaller hole. – We can offer multiple step and chamfer drills on request.	 – Reduce the feed rate approx. by half when the drill exits. – Use a drill with a different point angle.
 Machine a countersink with an end mill prior to drilling.			

Solid carbide drills

Terminology

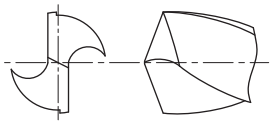
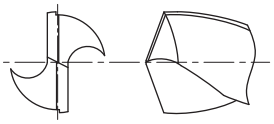
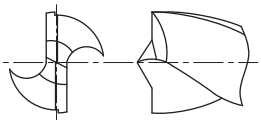


1. Drilling diameter
2. Chamfer
3. Point angle
4. Clearance angle
5. Chip pocket
6. Shank
7. Shank diameter
8. Shank length
9. Overall length
10. Flute length
11. Helical angle



a. Margin width
b. Body clearance
c. Land width
d. Primary cutting edge

Cutting edge type

Shape	 (Conical)	 (Dual flats)	 (Centring tip)
Features	– The flank face is conical and the clearance angel increases toward the centre of drill. – Wide applications, commonly used both for soft and hard materials.	– The flank face is dual flats, to facilitate cutting and initial entering. – Often used for small diameter drills.	– This shape has two-stage point angles for perfect centring capabilities and reduces burrs. – It is the first choice for drilling thin plate.

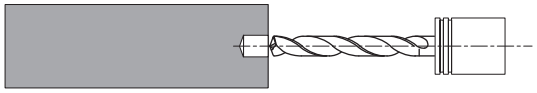
Solid carbide drills

Drill specification and cutting parameters

Chip pocket	The chip pocket ensures that the chips are removed out of the hole during processing.
Helical angle	The helical angle describes the pitch of the flute. It's specified according to the to be machined material. hardened materials — small ← helical angle → large — tough materials
Cutting edge length or spiral length	The cutting edge length needs to be specified according to the drilling depth, guide bushing length and the whole regrinding length. The larger the helical angle, the lower the stability. Since it greatly influences the tool life, it should be as small as possible. The recommended min. spiral length is the drilling depth plus 1.5 times of the hole diameter.
Point angle	Generally the point angle is 140°, for special applications it should be set differently. tough materials, easy to machine — small ← point angle → large — hardened materials and high-performance drilling
Core diameter	The core diameter is an important factor and influences the stability and the chip flow. low axial cutting force, low stability, for easy to machine materials — small ← core diameter → large — high axial cutting force, high stability, for hardened materials or cross holes
Chamfer width	The chamfer width influences the guidance and friction of the drill during machining. low friction and bad drill guidance — small ← chamfer width → large — high friction and good drill guidance
Back taper	The drill diameter is slightly reduced from cutting edge to shank to reduce friction during machining.
Body clearance	The area behind the chamfer width. The body clearance is necessary to reduce friction during machining.

Deep hole drilling

1 Preparation of the pilot hole with 1534SP03C*



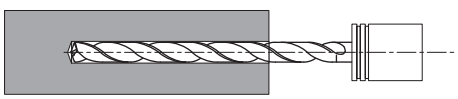
– Point angle of pilot drill must be bigger than SL drill.
– Diameter of pilot drill must be 0.01–0.04 mm bigger than SL drill.
– The pilot hole should be 1–3×D.

2 Entering the pilot hole with SL drill



– Entering the pilot hole with low cutting speed. (VC: 20–30 m/min)
– Stop 1–3 mm before end of pilot hole. (Vf = 0)
– Increase cutting speed up to recommended parameter and then start drilling at feed rate.

3 Manufacturing the deep hole



– Drilling with suitable cutting speed and feed rate.
In case of cross holes feed rate should be reduced to 0.05 mm/rev..

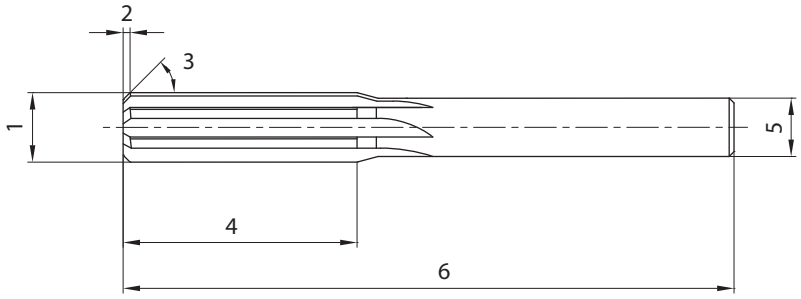
4 Pulling out the drill



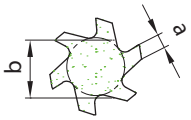
– After reaching the required depth reduce the cutting speed (VC: 20–30 m/min) and pull out the drill at high feed rate. (Vf: 2000 mm/min)

Solid carbide reamers

Terminology

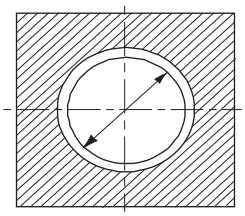
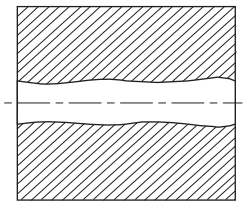
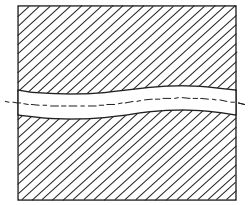
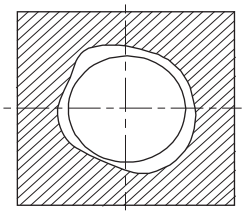
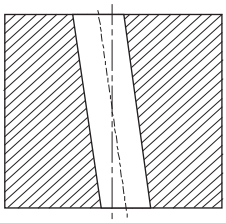
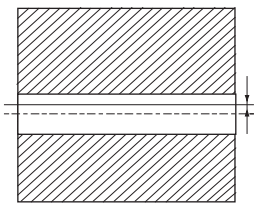


1.Nominal diameter
2.Chamfer length
3.Entry angle
4.Cutting edge length
5.Shank diameter
6.Total length



a.Cutting edge thickness
b.Core diameter

Reaming is semi-finishing and finishing of a previously formed hole within a narrow tolerance for higher surface quality, perfect roundness, cylindricity, etc.. To achieve a precisely reamed hole, the right choice of reamer and reamer diameter is important. In addition to that, the bore tolerance, the material and the machining conditions need to be taken into account. Furthermore the bore quality is strongly influenced by the radial run-out of the cutting tool.

 Diameter tolerance/Allowance	 Cylindricity	 Straightness
 Roundness	 Vertical deviation	 Off centre

Trouble shooting – solid carbide reamers

Problem	Solution
Oversized hole	– Reduce the diameter of the reamer. – Check concentricity of the reamer and hole. – Check the radial run-out of the reamer. – Check the shank of the reamer for scratches. – Select a suitable coolant. – Adjust the cutting parameters.
Hole too small	– Increase the diameter of the reamer. – Reduce the cutting speed. – Reduce allowance. – Regrind or replace the reamer. – Ensure sufficient cooling.
Poor hole roundness and straightness	– Guarantee concentricity of the reamer chamfer. – Reduce overhang. – Check radial run-out after the reamer is clamped. – Adjust concentricity of the reamer and hole. – Check and ensure drill geometry.
Poor surface quality	– Reduce the cutting speed. – Ensure correct reaming allowance. – Check the cutting chamfer length of the reamer for wear and built-up edge. – Ensure stability of the machine, tool holder and reamer. – Chose the reamer according to the application. – Check the hole allowance.
Poor bore quality	– Pull out the reamer in cutting direction. – Reduce the cutting speed. – Use reamers with more teeth. – Check for concentricity and radial run-out. – Improve coolant supply. – Chose the optimal coolant lubrication.
Reamer breakage and thermal damage	– The guide chamfer is insufficient. Check the drill and drilling axis. – Adjust machining allowance. – Ensure sufficient coolant supply. – Adjust the cutting speed and feed rate. – Improve the stability of the machine, the tool holder and the cutting tool. – Change or regrind the cutting tool if the cutter wear is too high.
Damage on reamer shank	– Check clamping sleeve and tool holder for damage.
Short tool life	– Check coolant supply. – Change from straight fluted to helical fluted reamers. – Check all factors affecting machining precision.
Scratched hole surface	– Check the cutting edge for built-up edges and if necessary correct the cutting data. – Improve clamping of the workpiece.
Trumpet-shaped entry hole	– Improve clamping of the workpiece. – Check radial run-out of the clamped reamer. – The centre of the reamer may not be aligned with the centre of the hole. Adjust concentricity.

Solid carbide thread formers

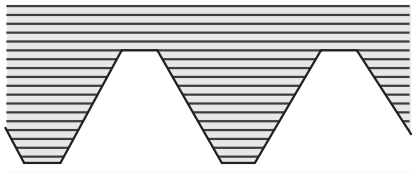
What is thread forming?

The material fibres aren't severed but compressed at the base of the thread. This is why no material is lost unlike when thread cutting.

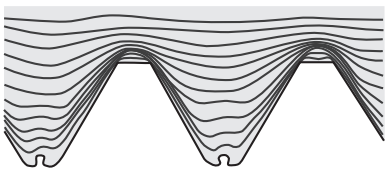
Advantages of thread forming:
- The thread is formed much more precisely.
- The thread is more resilient.
- The threads have a very smooth surface.
- Higher rotation speeds and feed rates possible than in thread cutting.
- Longer tool life increases the productivity.

Disadvantages of thread forming:
- Higher requirements on the hole tolerance.
- Can't be used as hand tool.
- Greater heat build-up than in thread drilling.
- Limited material choice.
- Often the use of a release agent is necessary.

Thread formers should be used in materials with good cold formability. Next to steel, stainless steel and aluminium alloys, these include light metals and light metal alloys with a yield strength of 1200 N/mm^2. Basically, all long-chipping materials are suitable.



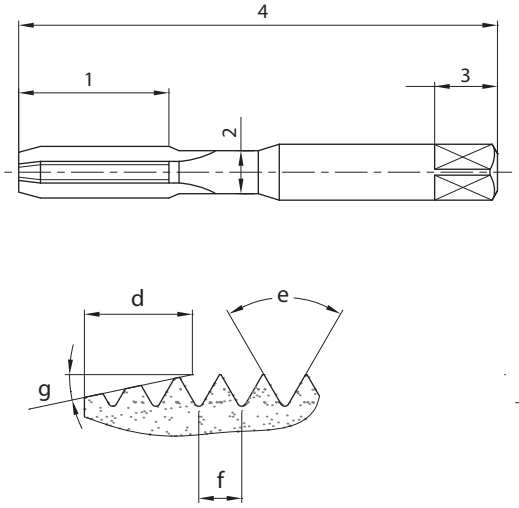
Fibre orientation after thread cutting



Fibre orientation after thread forming

Solid carbide taps

Terminology



Chamfer and thread profile

1.Thread length
2.Neck diameter
3.Square head length
4.Total length

a.Core diameter
b.Cutting edge thickness
c.Chip pocket

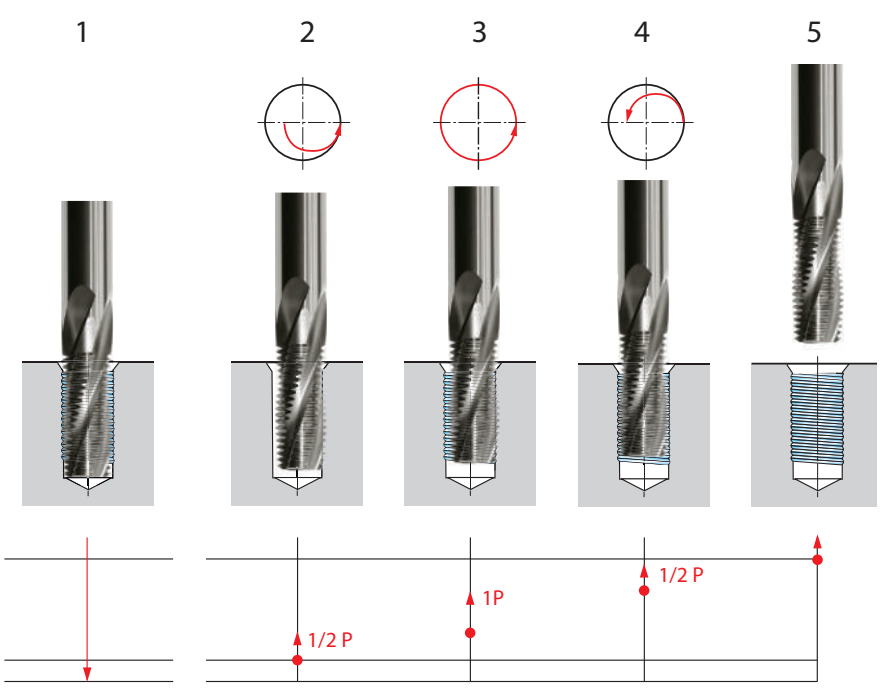
d.Chamfer length
e.Thread profile angle
f.Pitch
g.Chamfer angle

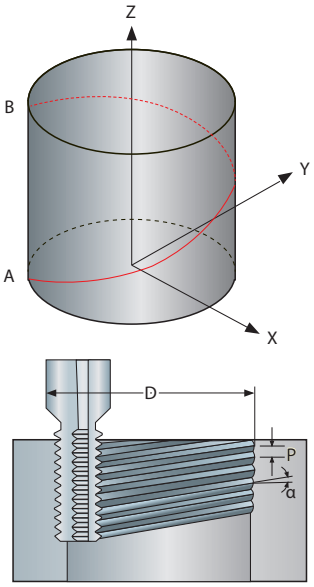
Chip space and application

Chip space type	Features	Application
 Helical flute tap	– Helical flute – No chips inside the hole – Good entering performance – Simple centring	– For long-chipping materials – Suitable for blind holes – Usage in holes with groove
 Straight flute tap	– Straight flute – Stable cutting edge – Easy regrinding	– For hard machining – For short-chipping materials – For through holes and blind holes – For wear material

Solid carbide thread milling cutters

Solid carbide thread milling cutters with cylindrical shank – example





α Helix angle
D Diameter
p Pitch

Nonstandard – solid carbide drills

Name/Company: **Address:** **Tel.:** **Fax:** **E-Mail:**	ZCC-CT **Wanheimer Str. 57** **40472 Düsseldorf, Deutschland** **Fax:** +49-(0)211-989240-111 **E-Mail:** technik@zccct-europe.com Scan for PDF

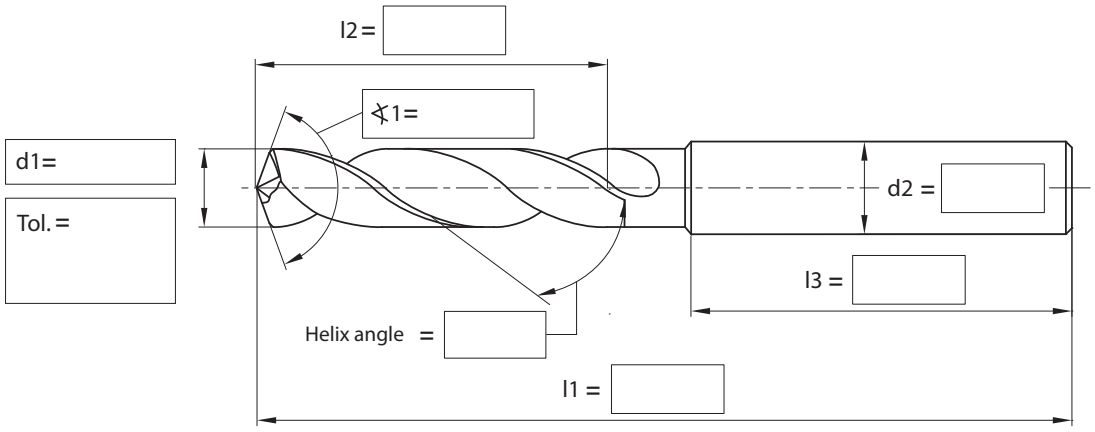
Material	
Material	
Tensile strength (N/mm^2)	
Hardness	

Twist drill series		
SU ☐	SH ☐	SL ☐
SUK ☐		SLK ☐
ST ☐	SC ☐	PA ☐

Cooling	
External	☐
Internal	☐

Tool holder type		
DIN6535		
Form HA ☐	Form HB ☐	Form HE ☐

Coating	
Yes ☐	No ☐

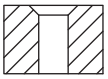
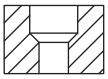


Remarks:	
Order quantity:	Expected delivery date:
Date:	Confirmation:

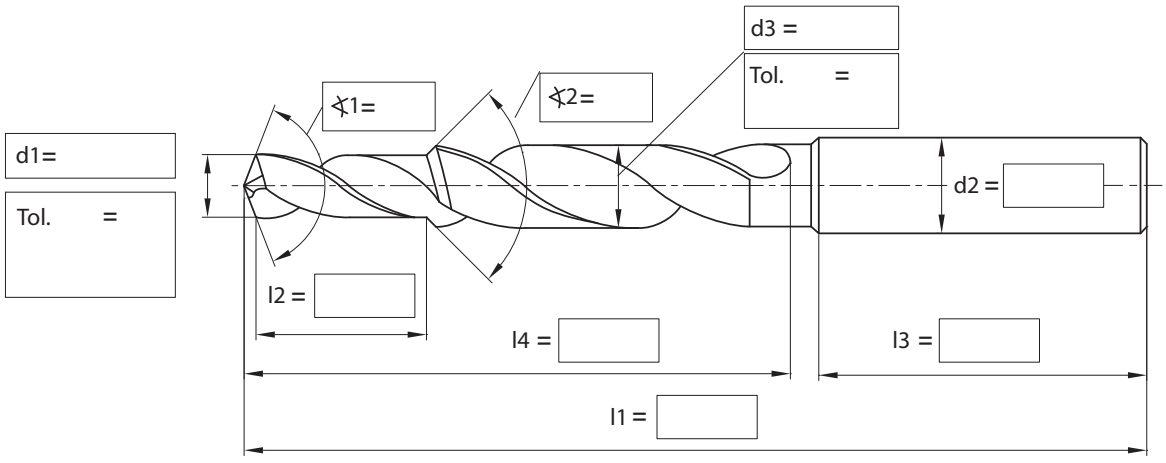
Nonstandard – solid carbide step drills

Name/Company: **Address:** **Tel.:** **Fax:** **E-Mail:**	ZCC-CT **Wanheimer Str. 57** **40472 Düsseldorf, Deutschland** **Fax:** +49-(0)211-989240-111 **E-Mail:** technik@zccct-europe.com Scan for PDF

Material	
Material	
ensile strength (N/mm²)	
Hardness	

Machining information	
 Chamfering ☐	 Stepped hole ☐

Cooling		Tool holder type			Twist drill series		Coating	
	External ☐	DIN6535			SU ☐	ST ☐	Yes	☐
	Internal ☐	 Form HA ☐	 Form HB ☐	 Form HE ☐	SUK ☐		No	☐
					PC ☐			



Remarks:	
Order quantity:	Expected delivery date:
Date:	Confirmation:

Nonstandard – solid carbide three-lips drills

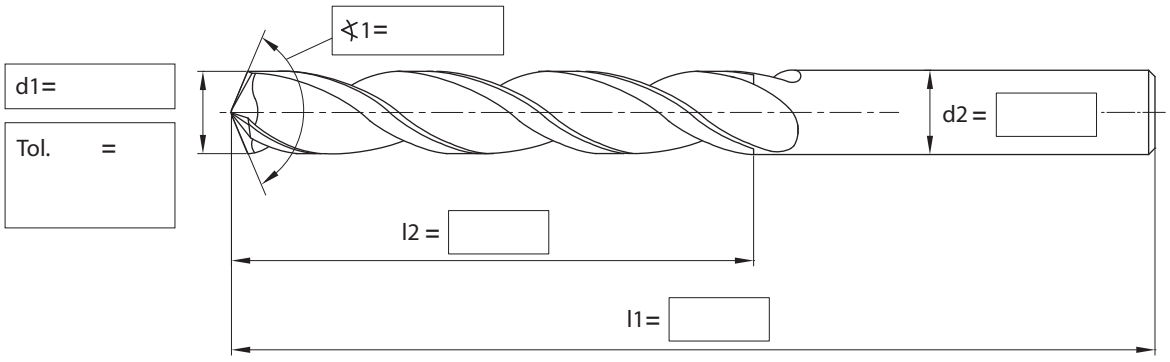
Name/Company: **Address:** **Tel.:** **Fax:** **E-Mail:**	ZCC-CT **Wanheimer Str. 57** **40472 Düsseldorf, Deutschland** **Fax:** +49-(0)211-989240-111 **E-Mail:** technik@zccct-europe.com Scan for PDF

Material	
Material	
ensile strength (N/mm^2)	
Hardness	

Tool holder type		
DIN6535		
Form HA ☐	Form HB ☐	Form HE ☐

Cooling	
External	☐
Internal	☐

Coating			
Yes	☐	No	☐



Remarks:	
Order quantity:	Expected delivery date:
Date:	Confirmation:

Nonstandard – solid carbide reamers

Name/Company: **Address:** **Tel.:** **Fax:** **E-Mail:**	ZCC-CT **Wanheimer Str. 57** **40472 Düsseldorf, Deutschland** **Fax:** +49-(0)211-989240-111 **E-Mail:** technik@zccct-europe.com Scan for PDF

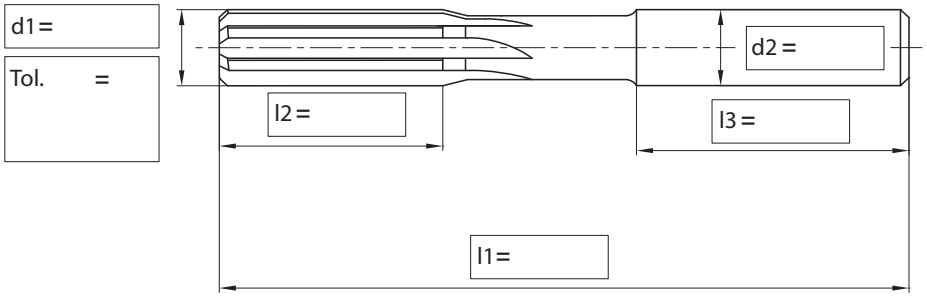
Material	
Material	
Tensile strength (N/mm^2)	
Hardness	

Coating	
Yes	☐
No	☐

Cooling	
External	☐
Internal	☐

Helix angle	
Right	☐
Straight	☐
Left	☐

Machining information	
Through hole	☐
Blind hole	☐



Remarks:	
Order quantity:	Desired delivery date:
Date:	Signature:

Nonstandard – solid carbide taps and thread formers

Name/Company: **Address:** **Tel.:** **Fax:** **E-Mail:**	ZCC-CT **Wanheimer Str. 57** **40472 Düsseldorf, Deutschland** **Fax:** +49-(0)211-989240-111 **E-Mail:** technik@zccct-europe.com Scan for PDF

Material	
Material	
Tensile strength (N/mm²)	
Hardness	

Coating	
Yes	☐
No	☐

Cooling	
External	☐
Internal	☐

Helix angle

Straight ☐

Right ☐

Machining information

Through hole ☐ Blind hole ☐

Thread profile

Thread angle = 60°

p

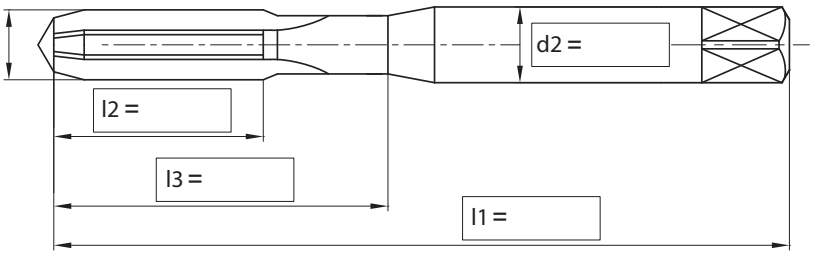
Pitch p = ☐

Tool type

Tap ☐

Thread former ☐

Thread size ☐



Remarks:	
Order quantity:	Desired delivery date:
Date:	Signature:

Technical Information

Comparison table materials	**D2-D8**
Comparison table hardness and tensile strength	**D9-D10**
Conversion table chip breaker – turning	**D11-D12**
Conversion table chip breaker – milling/turning	**D13-D21**
Example of materials for machining groups	**D22**
Form test protocol	**D23**
Torque for screw	**D24**

D

Comparison table materials

ISO	Country and standard											
	China	USA	Germany		Great Britain		Sweden	France	Italy	Spain	Japan	Russia
	GB	AISI/SAE	W.-nr	DIN	BS	EN	SS	AFNOR	UNI	UNE	JIS	GOST
P	Alloy steel											
	15	1015	1.0401	C15	080M15	-	1350	CC12	C15C16	F.111	-	
	20	1020	1.0402	C22	050A20	2C	1450	CC20	C20C21	F.112	-	20
	35	1035	1.0501	C35	060A35	-	1550	CC35	C35	F.113	-	35
	45	1045	1.0503	C45	080M40	-	1650	CC45	C45	F.114	-	45
	55	1055	1.0535	C55	070M55	-	1655	-	C55	-	-	55
	60	1060	1.0601	C60	080A62	43D	-	CC55	C60	-	-	60
	Y15	1213	1.7015	9SMn28	230M07	-	1912	S250	CF9SMn28	11SMn28	SUM22	15Ch
	-	12L13	1.0718	9SMnPb28	-	-	1914	S250Pb	CF9MnPb28	11SMnPb28	SUM22L	-
	-	-	1.0722	10SPb20	-	-	-	10PbF2	CF10Pb20	10SPb20	-	-
	-	1140	1.0726	35S20	212M36	8M	1957	35MF4	-	F210G	-	-
	Y13	1215	1.0736	9SMn36	240M07	1B	-	S300	CF9SMn36	12SMn35	-	-
	-	12L14	1.0737	9SMnPb36	-	-	1926	S300Pb	CF9SMnPb36	12SMnP35	-	-
	55Si2Mn	9255	1.0904	55Si9	250A53	45	2085	55S7	55Si8	56Si7	-	-
	-	9262	1.0961	60SiCr7	-	-	-	60SC7	60SiCr8	60SiCr8	-	-
	15	1015	1.1141	Ck15	080M15	32C	1370	XC12	C16	C15K	S15C	15
	40Mn	1039	1.1157	40Mn4	150M36	15	-	35M5	-	-	-	40G
	25	1025	1.1158	Ck25	-	-	-	-	-	-	S25C	25
	35Mn2	1335	1.1167	36Mn5	-	-	2120	40Mn5	-	36Mn5	SMn438(H)	35G2,35GL
	30Mn	1330	1.1170	28Mn6	150M28	14A	-	20M5	C28Mn	-	SCMn1	30G
	35Mn	1035	1.1183	Cf35	060A35	-	1572	XS38TS	C36	-	S35C	-
	Ck45	1045	1.1191	45	080M46	-	1672	XC42	C45	C45K	S45C	-
	55	1055	1.1203	Ck55	070M55	-	-	XC45	C50	C55K	S55C	55
	50	1050	1.1213	Cf53	060A52	-	1674	XC48TS	C53	-	S50C	-
	60Mn	1060	1.1221	Ck60	080A62	43D	1678	XC60	C60	-	S58C	60,60G
	-	1095	1.1274	Ck101	060A96	-	1870	-	-	-	SUP4	-
	-	-	1.3401	X120Mn12	Z120M12	-	-	X120M12	XG120Mn12	X120Mn12	SCMnH/1	110G13L
	Gr15;45Gr	52100	1.3505	100Cr6	534A99	31	2258	100C6	100Cr6	F.131	SUJ2	SchCh 15
	-	ASTM A204Gr.A	1.5415	15Mo3	1501-240	-	2912	15D3	16Mo3KW	16Mo3	-	-
	-	4520	1.5426	16Mo5	1503-245-420	-	-	-	16Mo5	16Mo5	-	-
	-	ASTM A350LF5	1.5622	14Ni6	-	-	-	16N6	14Ni6	15Ni6	-	-
	-	ASTM A353	1.5662	X8Ni9	1501-509;510	-	-	-	X10Ni9	XBNi09	-	-

Comparison table materials

ISO	Country and standard											
	China	USA	Germany		Great Britain		Sweden	France	Italy	Spain	Japan	Russia
	GB	AISI/SAE	W.-nr	DIN	BS	EN	SS	AFNOR	UNI	UNE	JIS	GOST
P	**Alloy steel**											
	-	2515	1.5680	12Ni19	-	-	-	Z18N5	-	-	-	-
	-	3135	1.5710	36NiCr6	640A35	111A	-	35NC6	-	-	SNC236	-
	-	3415	1.5732	14NiCr10	-	-	-	14NC11	16NiCr11	15NiCr11	SNC415(H)	-
	-	3415 3310	1.5752	14NiCr14	655M13 655A12	36A	-	12NC15	-	-	SNC815(H)	-
	-	9840	1.6511	36CrNiMo4	816M40	110	-	40NCD3	38CrNiMo4(KB)	35CrNiMo4	-	40 ChN2MA
	-	8620	1.6523	21NiCrMo2	850M20	362	2503	20NCD2	20NiCrMo2	20NiCrMo2	SNCCM220(H)	-
	-	8740	1.6546	40NiCrMo2	311-Type7	-	-	-	40NiCrMo2(KB)	40NiCrMo2	SNC240	38ChGNM
	40CrNiMoA	4340	1.6582	34CrNiMo6	817M40	24	2541	35NCD6	35CrNiMo6(KB)	-	-	38Ch2N2MA
	-	-	1.6587	17CrNiMo6	820A16	-	-	18NCD6	-	14CrNiMo13	-	-
	15Cr	5015	1.7015	15Cr3	523M15	-	-	12C3	-	-	SCr415(H)	15Ch
	35Cr	5132	1.7033	34Cr4	530A32	18B	-	32C4	34Cr4(KB)	35Cr4	SCr430(H)	35Ch
	40Cr	5140	1.7035	41Cr4	530M40	18	-	42C4	41Cr4	42Cr4	SCr440(H)	40Ch
	40Cr	5140	1.7045	42Cr4	-	-	2245	-	-	42Cr4	SCr440	40Ch
	18CrMn	5115	1.7131	16MnCr15	(527M20)	-	2511	16MC5	16MnCr15	16MnCr15	-	18ChG
	20CrMn	5155	1.7176	55Cr3	527A60	48	-	55C3	-	-	SUP9(A)	50ChGA
	30CrMn	4130	1.7218	25CrMo4	1717CDS110	-	2225	25CD4	25CrMo4(KB)	55Cr3	SCM420; SCM430	30ChM
	35CrMo	4137;4135	1.7220	34CrMo4	708A37	19B	2234	35CD4	35CrMo4	34CrMo4	SCM432; SCRRM3	AS38ChGM
	40CrMoA	4140;4142	1.7223	41CrMo4	708M40	19A	2244	42CD4TS	41CrMo4	41CrMo4	SCM440	40 ChFA
	42CrMo 42CrMnMo	4140	1.7225	42CrMo4	708M40	19A	2244	42CD4	42CrMo4	42CrMo4	SCM440(H)	-
	-	-	1.7262	15CrMo5	-	-	2216	12CD4	-	12CrMo4	SCM415(H)	-
	-	ASTM A182 F11;F12	1.7335	13CrMo44	1501- 620Gr.27	-	-	15CD3.5; 15CD4.5	14CrMo44	14CrMo45	-	12ChM , 15ChM
	-	-	1.7361	32CrMo12	722M24	40B	2240	30CD12	32CrMo12	F.124.A	-	-
	-	ASTM A182 F.22	1.7380	10CrMo910	1501- 622Gr.31;45	-	2218	12CD9;10	12CrMo9,10	TU.H	-	-
	-	-	1.7715	14MoV63	1503-660-440	-	-	-	-	13MoCrV6	-	-
	50CrVA	6150	1.8159	50CrV4	735A50	47	2230	50CV4	50CrV4	51CrV4	SUP10	50ChGFA
	-	-	1.8509	41CrAlMo7	905M39	41B	2940	40CAD6,12	41CrAlMo7	41CrAlMo7	-	38ChMJuA
	-	-	1.8523	39CrMoV139	897M39	40C	-	-	36CrMoV12	-	-	-

Comparison table materials

ISO	Country and standard											
	China	USA	Germany		Great Britain		Sweden	France	Italy	Spain	Japan	Russia
	GB	AISI/ SAE	W.-nr	DIN	BS	EN	SS	AFNOR	UNI	UNE	JIS	GOST
P	Alloy steel											
	T10	W.110	1.1545	C105W1	-	-	1880	Y1105	C98KU C100KU	F.515 F.516	-	U10A
	T12A	W.112	1.1663	C125W	-	-	-	Y2120	C120KU	(C120)	SK2	U13
	CrV;9SiCr	L3	1.2067	100Cr6	BL3	-	-	Y100C6	-	100Cr6	-	-
	Cr12	D3	1.2080	X210Cr12	BD3	-	-	Z200Cr12	X210Cr13KU X250Cr12KU	X210Cr12	SKD1	Ch12
	4Cr5MoVSi	H13	1.2344	X40CrMoV5 1	BH13	-	2242	Z40CDV5	X35CrMoV05KU X40CrMoV51KU	X40CrMoV5	SKD61	4Ch5MF1S
	Cr6WV	A2	1.2363	X100CrMoV5 1	BA2	-	2260	Z100CDV5	X100CrMoV51KU	X100CrMoV5	SKD12	-
	CrWMo	-	1.2419	105WCr6	-	-	2140	105WC13	10WCr6 107WCr5KU	105WCr5	SKS31 SKS2 SKS3	ChWG
	Cr12W	-	1.2436	X210CrW12	-	-	2312	-	X215CrW12 1KU	X210CrW12	SKD2	-
	5CrNiMo	S1	1.2542	45WCrV7	BS1	-	2710	-	45WCrV8KU	45WCrSi8	-	-
	3Cr2W8V	H21	1.2581	X30WCrV9 3 X30WCrV93KU	BH21	-	-	Z30WCV9	X28W09KU X30WCrV9 3KU	X30WCrV9	SKD5	3Ch2W8F
	Cr12MoV	-	1.2601	X165CrMoV 12	-	-	2310	-	X165CrMoW12KU	X160CrMoV12	SKD11	-
	5CrNiMo	L6	1.2713	55NiCrMoV6	-	-	-	55NCDV7	-	F.250.S	SKT4	5ChNM
	V	W210	1.2833	100V1	BW2	-	-	Y1105V	-	-	SKS43	-
	W6Mo5Cr4V2Co5	-	1.3243	S6-5-2-5	-	-	2723	Z85WDKCV	HS6-5-2-5	HS6-5-2-5	SKH55	R6M5K5
	W18Cr4VCo5	T4	1.3255	S18-1-2-5	BT4	-	-	Z80WKCV 10-05-04-01	X78WCo1805KU	HS18-1-1-5	SKH3	-
	W6Mo5Cr4V2	M2	1.3343	S6-5-2	BM2	-	2722	Z85WDCV 06-05-04-02	X82WMo0605KU	HS6-5-2	SKH9	R6M5
	-	M7	1.3348	S2-9-2	-	-Z-	2782	Z100WCWV 09-02-04-02	HS2-9-2	HS2-9-2	-	-
	W18Cr4V	T1	1.3355	S18-0-1	BT1	-	-	Z80WCV 18-04-01	X75W18KU	HS18-0-1	SKH2	-
	W6Mo5Cr4V3	M3	-	S6-5-3	-	-	-	-	-	-	SKH52	-
	-	M42	-	-	BM42	-	-	-	-	-	SKH59	-

Comparison table materials

ISO	Country and standard						Main application
	China	USA	Germany	Japan	Daido Steel Co., Ltd (Japan)	Russia	
	GB	AISI/SAE	DIN	JIS	DAIDO	GOST	
P	**Plastic die steel**						
	-	P20 mod.		-	PX5N		For mass production of large mirror dies. Automobile tail light, front fender of car, video camera, household electrical appliances etc
	-	-		-	NAK55		High precision mirror die. Video camera, music disc, Cosmetic Containers, transparent covers, transparent films etc
	-	-		-	NAK80		High precision mirror die. Video camera, music disc, Cosmetic Containers, transparent covers, transparent films etc
	3Cr13	420 mod.		SUS420J2 mod.	S-STAR		For ultra-mirror corrosion resistant precise dies. Accessories of camera, CD, lens, watch case.
	Cold-working die steel						
	-	02	-	SKS93	YK30		Stamping die, gauge calipers, paper cutter, auxiliary tools
	9CrWMn	01 mod.	-	SKS3 mod.	GOA		Blanking die, gauge calipers, drawing die, taps, Perforated punch.
	Cr12MoV	D2	X165CrMoV12	SKD11	DC11		Blanking die, cold forming die, cold drawing die, forming roller, punch
	-	D2 mod.	-	SKD11 mod.	DC53		Blanking die, cold forming die, cold drawing die, forming roll, punch
	Hot-working die steel						
	4Cr5MoSiV1	H13	X40CrMoV51	SKD61	DHA1		Aluminum-compression die, connecting parts of compression die, hot stamping die, hot extrusion die, thermal shear cutting blade
	-	-	-	-	DH21		Long life Aluminum compression die
	-	-	-	-	DH31-S		Compression die
	-	-	-	-	DH2F		Compression die, plastic die

Comparison table materials

ISO	Country and standard											
	China	USA	Germany		Great Britain		Sweden	France	Italy	Spain	Japan	Russia
	GB	AISI/ SAE	W.-nr	DIN	BS	EN	SS	AFNOR	UNI	UNE	JIS	GOST
M	**Stainless steel**											
	0Cr13; 1Cr12	403	1.4000	X6Cr13	403S17	-	2301	Z6C13	X6Cr13	F.3110	SUS403	08Ch13
	-	-	1.4001	X7Cr14	-	-	-	-	-	F.8401	-	-
	1Cr13	410	1.4006	X10Cr13	410S21	56A	2302	Z10C14	X12Cr13	F.3401	SUS410	12Ch13
	1Cr17	430	1.4016	X6Cr17	430S15	60	220	Z8C17	X8Cr17	F.3113	SUS430	12Ch17
	2Cr13	410	1.4021	X20Cr13	S62	56B; 56C	-	Z20C13	X20C13	F.3401	SUS410	20Ch13
	-	-	1.4027	G-X20Cr14	420C29	56B	-	Z20C13M	-	-	SCS2	20Ch13L
	4Cr13	-	1.4034	X46Cr13	420S45	56D	2304	Z40CM Z38C13M	X40Cr14	F.3405	SUS420J2	40Ch13
	1Cr17Ni2	431	1.4057	X20CrNi172	431S29	57	2321	Z15CNi6.02	X16CNi16	F.3427	SUS431	20Ch17N2
	Y1Cr17	430F	1.4104	X12CrMoS17	-	-	2383	Z10CF17	X10CrS17	F.3117	SUS430F	-
	1Cr17Mo	434	1.4113	X6CrMo171	434S17	-	2325	Z8CD17.01	X8CrMo17	-	SUS434	-
	-	-	1.4313	X5CrNi134	425C11	-	-	Z4CND13.4M	-	-	SCS5	-
	-	-	1.4408	G-X6CrNiMo1810	316C16	-	-	-	-	F.8414	SCS14	07Ch18N10G2S2M2L
	4Cr9Si2	HW3	1.4718	X45CrSi93	401S45	52	-	Z45CS9	X45CrSi8	F.322	SUH1	40Ch9S2
	0Cr13Al	405	1.4724	X10CrAl13	403S17	-	-	Z10C13	X10CrAl12	F.311	SUS405	10Ch13SJu
	Cr17	430	1.4742	X10CrAl18	430S15	60	-	Z10CAS18	X8Cr17	F.3113	SUS430	15Ch18SJu
	8Cr20Si2Ni	HNV6	1.4757	X80CrNiSi20	443S65	59	-	Z80CSN20.02	X80CrSiNi20	F.320V	SUH4	-
	2Cr25N	446	1.4762	X10CrAl24	-	-	2322	Z10CAS24	X16Cr26	-	SUH446	-
	Austenitic stainless steel											
	0Cr18Ni9	304	1.4301	X5CrNi1810	304S15	58E	2332	Z6CN18.09	X5CrNi1810	F.3551; F.3541; F.3504	SUS304	08Ch18N10
	1Cr18Ni9MoZr	303	1.4305	X10CrNiS189	303S21	58M	2346	Z10CNF18.09	X10CrNiS18.09	F.3508	SUS303	-
	0Cr19Ni10	304L	1.4306	X2CrNi1911	304S12	-	2352	Z2CN18.10	X2CrNi18.11	F.3503	SCS19	03Ch18N11
	-	-	1.4308	G-X6CrNi189	304C15	-	-	Z6CN18.10M	-	-	SCS13	07Ch18N9L
	Cr17Ni7	301	1.4310	X12CrNi177	-	-	2331	Z12CN17.07	X12CrNi1707	F.3517	SUS301	-
	-	304LN	1.4311	X2CrNiN1810	304S62	-	2371	Z2CN18.10	-	-	SUS304LN	-
	0Cr19Ni9	304	1.4350	X5CrNi189	304S31	58E	-	Z6CN18.09	X5CrNi1810	-	SUS304	-
	0Cr17Ni11Mo2	316	1.4401	X5CrNiMo1712	316S16	Z6CND17.11	2347	1.4401	X5CrNiMo1712	F.3543	SUS316	-
	00Cr17Ni13Mo2	316LN	1.4429	X2CrNiMoN17133	-	-	2375	Z2CND17.13	-	-	SUS316LN	-
	0Cr27Ni12Mo3	316L	1.4435	X2CrNiMo18143	316S12	-	2353	Z2CDN17.13	X2CrNiMo1713	-	SCS16,	03Ch17N14M2
	00Cr19Ni13Mo3	317L	1.4438	X2CrNiMo17133	317S12	-	2367	Z2CND19.15	X2CrNiMo18.16	-	SUS317L	-
	-	329L	1.4460	X8CrNiMo275	-	-	2324	-	-	-	SUS329L; SCH11; SCS11	-
	1Cr18Ni9Ti	321	1.4541	X6CrNiTi1810	2337	321S12	58B	Z6CNT18.10	X6CrNiTi1811	F.3553	SUS321	12Ch18N10T
	1Cr18Ni11Nb	347	1.4550	X6CrNiNb1810	347S17	58F	2338	Z6CNNb18.1	X6CrNiTi1811	F.3552	SUS347	08Ch18N12B
	Cr18Ni12Mo2Ti	316Ti	1.4571	X6CrNiMoTi17122	320S17	58J	2350	Z6NDT17.12	X6CrNiMoTi17	F.3535	-	10Ch17N13M2T

Comparison table materials

ISO	Country and standard										
	China	USA	Germany		Great Britain		Sweden	France	Italy	Spain	Japan	Russia
	GB	AISI/ SAE	W.-nr	DIN	BS	EN	SS	AFNOR	UNI	UNE	JIS	GOST
M	**Austenitic stainless steel**											
	-	-	1.4581	G-X5CrNiMoNb1810	318C7	-	-	Z4CNDNb1812M	XG8CrNiMo18	-	SCS22	-
	Cr17Ni12Mo3Nb	318	1.4583	X10CrNiMoNb1812	-	-	-	Z6CNDNb1713B	X6CrNiMoTiNb17	-	-	-
	1Cr23Ni13	309	1.4828	X15CrNiSi2012	309S24	-	-	Z15CNS20.1	-	-	SUH309	20Ch20N14S2
	0Cr25Ni20	310S	1.4845	X12CrNi2521	310S24	-	2361	Z12CN2520	X6CrNi2520	F.331	SUH310	20Ch23N18
	Cr15Ni36W3Ti	330	1.4864	X12NiCrSi3616	-	-	-	Z12CNS35.1	-	-	SUH330	-
	-	-	1.4865	G-X40NiCrSi3818	330C11	-	-	-	XG50NiCr3919	-	SCH15	-
	5Cr2Mn9Ni4N	EV8	1.4871	X53CrMnNiN219	349S54; 321S12	- 58B	-	Z52CMN21.0	X53CrMnNiN219	-	SUH35	55Ch20G9AN4
	1Cr18Ni9Ti	321	1.4878	X12CrNiTi189	321S320	58C	-	Z6CNT18.12	X6CrNiTi1811	F.3523	SU321	09Ch18N10T

ISO	Country and standard									
	China	USA	Germany	Great Britain	Sweden	France	Italy	Spain	Japan	Russia
K	**Nodular cast iron**									
	QT400-18	60-40-18	GGG40	400/17	0717-02	FGS370-17	GS370-17	FGE38-17	FCD400	VC 42-12
	QT450-10	65-45-12	--	420/12	--	FGS400-12	GS400-12	FGE42-12	FCD450	-
	QT500-7	70-50-05	GGG50	500/7	0727-02	FGS500-7	GS500-7	FGE50-7	FCD500	VC 50-2
	QT600-3	80-60-03	GGG60	600/7	0732-03	FGS600-2	GS600-2	FGE60-2	FCD600	VC 60-2
	QT700-2	100-70-03	GGG70	700/2	0737-01	FGS700-2	GS700-2	FGE70-2	FCD700	VC 70-2
	QT800-2	120-90-02	GGG80	800/2	0864-03	FGS800-2	GS800-2	FGE80-2	FCD800	VC 80-2
	QT900-2	--	--	900/2	--	--	--	--	--	-
	Nodular cast iron									
	--	NO.60	GG40	--	0140	FGL400	--	--		Sc 40
	HT350	NO.50	GG35	350	0135	FGL350	G35	FG35	FC350	Sc 35
	HT300	NO.45	GG30	300	0130	FGL300	G30	FG30	FC300	Sc 30
	HT250	NO.35	GG25	250	0125	FGL250	G25	FG25	FC250	Sc 25
	HT200	NO.30	GG20	200	0120	FGL200	G20	FG20	FC200	Sc 20
	HT150	NO.20	GG15	150	0115	FGL150	G15	FG15	FC150	Sc 15
	HT100	--	--	100	0110	--	G10	--	FC100	-

ISO	Country and standard										
	China	USA	Germany		Great Britain		Sweden	France	Italy	Spain	Japan	Russia
	GB	AISI/SAE	W.-nr	DIN	BS	EN	SS	AFNOR	UNI	UNE	JIS	GOST
H	**Hardened materials**											
	-	440A	1.4108	X100CrMo03	-	-	2258 08	-	-	-	C4BS	-
	-	610	1.4111	X100CrMoV15	-	-	2534 05	-	-		AC4A	-
	-	0-2	-	X65CrMo14	-	-	2541 06	-	-		AC4A	-

Comparison table materials

ISO	Country and standard											
	China	USA	Germany		Great Britain		Sweden	France	Italy	Spain	Japan	Russia
	GB	AISI/SAE	W.-nr	DIN	BS	EN	SS	AFNOR	UNI	UNE	JIS	GOST
N	Aluminium-based alloys											
	-	SC64D	3.2373	G-AlSi9MgWA			4251	A-S7G			C4BS	-
	-	DG-AlSi12		G-ALMG5	LM5		4252	A-SU12			AC4A	
	-	356.1			LM25		4244				A5052	
	-	A413.0		GD-AlSi12			4247				A6061	
	-	A380.1		GD-AlSi8Cu3	LM24		4250				A7075	
	-	A413.1		G-AlSi12(Cu)	LM20		4260				ADC12	
	-	A413.2		G-AlSi12	LM6		4261					
	-	A360.2		G-AlSi10Mg(Cu)	LM9		4253					

ISO	Country and standard											
	China	USA	Germany		Great Britain		Sweden	France	Italy	Spain	Japan	Russia
	GB	AISI/SAE	W.-nr	DIN	BS	EN	SS	AFNOR	UNI	UNE	JIS	GOST
S	Nickel based alloys											
	-	5391	LW2 4670	S-NiCr13A16MoNb	mar-46	-	-	NC12AD	-	-		
	-	AMS 5397	LW2 4674	NiCo15Cr10MoAlTi	-	-	-	-	-	-		
	-	5660	LW2.4662	NiFe35Cr14MoTi	-	-	-	ZSNCDT42	-	-		
	-	5383	LW2.4668	NiCr19Fe19NbMo	HR8	-	-	NC19eNB	-	-		
	-	-	2.4631	NiCr20TiAk	Hr401.601	-	-	NC20TA	-	-		-
	-	AMS 5399	2.4973	NiCr19Co11MoTi	-	-	-	NC19KDT	-	-		-
	-	AMS 5544	LW2.4668	NiCr19Fe19NbMo	-	-	-	NC20K14	-	-		
	-	5390A	2.4603	-	-	-	-	NC22FeD	-	-		-
	-	5666	2.4856	NiCr22Mo9Nb	-	-	-	NC22FeDNB	-	-		-
	-	-	2.4630	NiCr20Ti	HR5.2034	-	-	NC20T	-	-		-
	-	4676	2.4375	NiCu30AL3Ti	3072-76	-	-	-	-	-		-
	Cobalt based alloys											
	-	5537C AMS		CoCr20W15Ni	-	-	-	KC20WN	-	-		
	-	5772	LW2.4964	CoCr20W14Ni				KC22WN				
	Titanium alloys											
	-	UNS R54520	3.7115.1	TiAl5Sn2.5	TA14/17	-	-	T-A5E	-	-		
	-							UNS R56400				
	-	-	3.7165.1	TiAl6V4	TA10-13/ TA28		-	UNS R56401	T-A6V	-	-	
	-			TiAl5V5Mo5Cr3								
	-	-	3.7185	TiAl4Mo4Sn4Si0.5	-	-	-	-	-	-		

Comparison table hardness and tensile strength

Hardness				Tensile strength N/mm²
Rockwell Hardness		Vickers Hardness	Brinell Hardness	
HRC	HRA	HV	HB	
70.0	86.6	1037	—	—
69.5	86.3	1017	—	—
69.0	86.1	997	—	—
68.5	85.8	978	—	—
68.0	85.5	959	—	—
67.5	85.2	941	—	—
67.0	85.0	923	—	—
66.5	84.7	906	—	—
66.0	84.4	889	—	—
65.5	84.1	872	—	—
65.0	83.9	856	—	—
64.5	83.6	840	—	—
64.0	83.3	825	—	—
63.5	83.1	810	—	—
63.0	82.8	795	—	—
62.5	82.5	780	—	—
62.0	82.2	766	—	—
61.5	82.0	752	—	—
61.0	81.7	739	—	—
60.5	81.4	726	—	—
60.0	81.2	713	—	2555
59.5	80.9	700	—	2500
59.0	80.6	688	—	2450
58.5	80.3	676	—	2395
58.0	80.1	664	—	2345
57.5	79.8	653	—	2295
57.0	79.5	642	—	2250
56.5	79.3	631	—	2205
56.0	79.0	620	—	2160
55.5	78.7	609	—	2115
55.0	78.5	599	—	2075
54.5	78.2	589	—	2035
54.0	77.9	579	—	1995
53.5	77.7	570	—	1955
53.0	77.4	561	—	1920
52.5	77.1	551	—	1885
52.0	76.9	543	—	1850
51.5	76.6	534	—	1815

Hardness				Tensile strength N/mm²
Rockwell Hardness		Vickers Hardness	Brinell Hardness	
HRC	HRA	HV	HB	
51.0	76.3	525	501	1780
50.5	76.1	517	494	1750
50.0	75.8	509	488	1720
49.5	75.5	501	481	1690
49.0	75.3	493	474	1660
48.5	75.0	485	468	1630
48.0	74.7	478	461	1605
47.5	74.5	470	455	1575
47.0	74.2	463	449	1550
46.5	73.9	456	442	1525
46.0	73.7	449	436	1500
45.5	73.4	443	430	1475
45.0	73.2	436	424	1450
44.5	72.9	429	418	1430
44.0	72.6	423	413	1405
43.5	72.4	417	407	1385
43.0	72.1	411	401	1360
42.5	71.8	405	396	1340
42.0	71.6	399	391	1320
41.5	71.3	393	385	1300
41.0	71.1	388	380	1280
40.0	70.8	382	375	1260
40.0	70.5	377	370	1245
39.5	70.3	372	365	1225
39.0	70.0	367	360	1210
38.5	—	362	355	1190
38.0	—	357	350	1175
37.5	—	352	345	1160
37.0	—	347	341	1140
36.5	—	342	336	1125
36.0	—	338	332	1110
35.5	—	333	327	1095
35.0	—	329	323	1080
34.5	—	324	318	1065
34.0	—	320	314	1050
33.5	—	316	310	1035
33.0	—	312	306	1020
32.5	—	308	302	1010

Comparison table hardness and tensile strength

Hardness				Tensile strength N/mm²	Hardness				Tensile strength N/mm²
Rockwell Hardness		Vickers Hardness	Brinell Hardness		Rockwell Hardness		Vickers Hardness	Brinell Hardness	
HRC	HRA	HV	HB		HRC	HRA	HV	HB	
32.0	—	304	298	995	24.0	—	249	245	820
31.5	—	300	294	980	23.5	—	246	242	810
31.0	—	296	291	970	23.0	—	243	240	800
30.5	—	292	287	960	22.5	—	240	237	790
30.0	—	289	283	950	22.0	—	237	234	785
29.5	—	285	280	935	21.5	—	234	232	775
29.0	—	281	276	920	21.0	—	231	229	765
28.5	—	278	273	910	20.5	—	229	227	760
28.0	—	274	269	900	20.0	—	226	225	750
27.5	—	271	266	890	19.5	—	223	222	745
27.0	—	268	263	880	19.0	—	221	220	735
26.5	—	264	260	870	18.5	—	218	218	730
26.0	—	261	257	860	18.0	—	216	216	725
25.5	—	258	254	850	17.5	—	214	214	715
25.0	—	255	251	835	17.0	—	211	211	710
24.5	—	252	248	830					

Note: The conversion values for steel in the table are commonly applicable for the steels with carbon from low to high.

Conversion table chip breakers – turning

Comparison table for turning inserts chip breaker

ISO	Anwendung	ZCC-CT		Sandvik		Seco		Kennametal		ISCAR		Walter		Mitsubishi		Sumitomo		Tungaloy		Kyocera		Korloy		Ingersoll Tague Tec	
		Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos
P	Steel																								
	Wiper-finishing	WG		WF WL	WF WK	W-MF2	W-F1	FW MW	FW MW	WF		NF	PF	SW	FW	NLU-W	NLU-W	ASW		WP		VW LW		WS	
	Finishing	DF EF	SF HF	PF QF	PF UF 23	FF1 MF1	FF1 F1	FF FN	11 UF LF	SF	PF SM	NF3 NS6	PF4 PF5	FH FS	FJ FV	NSE NSU NLU NFA NFL	NLU NFP NFK	TF TS 17	PF 01	DP GP VF	CF	VG VF VL	VF	FG FC VF	FA SA FG
	Semi-finishing	DM EM	HM	PM QM	PM UM	MF2	F2	FN	MF	NF TF SM	14 16 17 19	NS6	PS5	SH SA	SW SV MV	NSX	NSU NSC NSK	TS TM AS	PS	HQ CQ CJ	CK DP GP VF XP	VQ VC VB	HMP	WT ML	WT
	Medium machining to light roughing	DM PM	HR	PM QM	PR UR	M3 MF3	F2	MN	MF	GN PP NR	17 19	NM4 NM6	PM5	MV MZ MA	MV MW	NGE NGU NUX	NMU NSF	TM DM	PM	GS CS HS PS	HQ XQ GK G	VM	C25	PC MC MT MG MF	PC MT PMR
	Wiper-medium			WR WM	WM	W-M3 W-R4 W-R7	W-F2	MW RW	MW	WG		NM	PM	MW		NGU-W		TH TR TU		WQ				RT	
	Roughing	DR		PR QR 31		M5 MR5 MR7		RP UN RN		TNM GN	19	NM9		GH MAT MT		NMU NMX	NMU			PT GT HT	G St-form	HR		HT HD HY HZ RX RH	CMX
	Single side roughing	HDR 31HPR DR LR		HR QR		R8 R9 -56 -57 -UX		RH RM RP		NM		NR6 NR8		HA HZ HH HV HX		NMP NHG NHP NHU NHW				HX		GH VH VT			
M	Stainless steel																								
	Wiper-finishing	WG		WF WL WMX	WF WK	W-MF2		FW MW	FW MW	WF			PF	SW	FW	NLU-W	NLU-W								
	Finishing	EF DF	EF HF	MF	MF UF	FF1 F2 MF1	F1	FF FP	11 UF LF	NF VL	PF SM	NF4	PF4 PF5	FS	FJ FV	NSU NLU	NSU NLU	SS	SS	GU			VF	EA SF	FG
	Semi-finishing	EF EM	EF EM HF HM	MF MM	MF MM UM	MF3	F2	FP	MF	PP TF	14 16 17 19	NM4	PS5	SH MS	SW SV MV	NEX NUP	NSU	SS SM	PS	MS	CK DP GP VF XP	VP2	HMP		
	Medium machining to light roughing	EM DM	EM HM	MM	MM UM	R6 56	F2	MP	HP	PP TF	17 19	NM4 NR4	PM5	MS ES MH	MV MW	NGU	NMU	SA S	PM	MS	HQ XQ GK G	HS VP3	C25	EM SU MT	MT PMR WT
	Wiper-medium			WR WM	WM	W-M3		MW RW	MW	WG			PM	MW		NGU -W									
	Roughing	ER DR	HR	MR QR PR	MR	R7 R8		MP -P		HTW NR	19	NR4		GH HZ		NMU NMX NHG						VM		ET	CMX
	Single side roughing	ER DR HDR LR		HR QR		-56		RP		NM						NMP NHG NHP NHU NHW	NMP NHG NHP NHU NHW								

Conversion table chip breakers – turning

Comparison table for turning inserts chip breaker

ISO	Application	ZCC-CT		Sandvik		Seco		Kennametal		ISCAR		Walter		Mitsubishi		Sumitomo		Tungaloy		Kyocera		Korloy		Ingersoll Tague Tec	
		Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos	Neg	Pos
K Cast iron	Wiper-Finishing	WG		WF WM	WF	W-MF2	W-F1	FW MW	FW MW	WF						NLU-W	NLU-W								
	Finishing	DF	HF	KF	KF	F1	F1	FF FN	11 UF LF	NF SM	14 19		PS5			NSU	NLU			C		VM			
	Semi-finishing	PM	HM	KF KM	KF KM	M3	F2	FN	MF	GN	14 19	NM5	PS5	GH		NUX NGU	NSU	CM		C Stand. form		B25	HMP		
	Medium machining to light roughing	DR	HM HR	KM QM	KM	M3	F2	UN	HP	GN NR		NM6	PM5			NUZ NGU NMU	NMU	CM		GC ZS		VK GR	C25	MT MG	MT PMR WT
	Wiper medium					W-M3 W-R4 W-R7		MW	MW	WG		NM	PM			NGU-W									
	Roughing	DR *NMA	HR	KR QR	KR UR	M5				NR		NR6		GH		NMU				ZS		MA		RT	CMX
N Non-ferrous metals	Finishing		LC		AL			LF		NF			PM2												
	Semi-finishing		LC		AL		AL	GP		NF PP	AS					NAG				AH	AH	HA	AK	FL SA	
	Medium machining to light roughing		LH		AL		AL	GG-FS MS	HP	NMS											AR				
S Heat-resistant alloys	Finishing	NF EF	NF	NGP	MF	MF1		FS	GT-HP	SF PF	PF SM		PF4	FJ		NSU	NSU					VP1			
	Semi-finishing	NF NM EM	NF	23	MM	MF1 M1		FS MS	GT-MF	SF PF	PF SM		PF5	MJ		NEX NUP	NSU NSK					VP2	AK		
	Medium machining to light roughing	NM EM		MF	MM UM	M1		MS	MT-LF	PP TF			PS5	MS		NMU	NSK					VP3	HMP	SU	
	Roughing	ER		SR		MR3 MR4		RP		TF HTW NR				GJ								VM			

Conversion table grades – turning

Coated cemented carbide CVD

ISO		ZCC-CT	Sandvik	Kennametal	Sumitomo	Mitsubishi	Toshiba Tungaloy	Kyocera	Walter	Iscar	SECO	Korloy	Ingersoll Tague Tec	Widia
P	Steel	YBC052	GC4205 GC4305	KCP05 KC9105	AC805P	UE6005 UE6105	T9005 T9105	CA5505	WPP01 WPP05	IC8150 IC9150 IC428	TP0500 TP0501			
P10-15	Steel	YB6315 YBC152 YBC252	GC4315 GC4215	KCP10 KC9110	AC810P AC700G	UC6110 MY5015	T9015 T9115	CA510 CA5515 CA510	WPP10 WPP10S	IC8150 IC8250 IC9150 IC9250 IC9015	TP1500 TP1501	NC3010	TT8115 TT8125	WP15CT
P20-25	Steel	YBC252 YBC251	GC4325 GC4225 GC4025	KCP25 KC9125	AC820P AC8020P AC900G AC2000	UE6020 MC6025	T9025 T9125	CA5525 CA525 CR9025	WPP20 WPP20S	IC8150 IC8250 IC9250 IC9025	TP2501 TP2500 TP200	NC3220 NC3120	TT8125 TT3500	WP25CT
P30-35	Steel	YBC352 YBC351	GC4335 GC4235 GC4035	KCP30 KC8050	AC830P AC3000	UE6035 UE6400	T903 T9135	CA530 CA5535 CA535	WPP30 WPP30S	IC8250 IC8350 IC9350	TP3500	NC3030 NC5330 NC500H	TT5100 TT8135	WP35CT
M10	Stainless steel	YBM151 YBM153	GC2015 GC1515	KCM15	AC610M	MC7015	T9115			IC8250 IC9250 IC6015			TT9215	WM15CT
M20	Stainless steel	YBM253 YBM251	GC2015 GC2025	KCM25 KC9225	AC610M AC630M	US7020 MC7015 MC7025	T6020 T6120 T9125	CA6515	WAM20	IC8250 IC9350 IC9025 IC6025	TM 2000 TP200 TP2500	NC9025	TT5100 TT9225	WM25CT
M30	Stainless steel	YBM351 YBM253	GC2025 GC2035	KCM25 KCM35 KC9225	AC630M AC6030M AC830P AC3000	US735 US7025	T6030 T6130	CA6525	WAM30	IC8350 IC9350 IC9025	TP3500 TM4000		TT5100 TT7100 TT9235	WM35CT
M40	Stainless steel	YBM351	GC2035	KCM35 KC9240 KC9245	AC630M AC6030M AC830P AC3000	US735	T6030 T6130	CA6525		IC6025 IC9350	TP40		TT5100 TT7100 TT9235	
K01-05	Cast iron	YBD052	GC3005 GC3205	KCK05	AC405K AC410K	UC5005 UC5105	T5105	CA4505		IC5005 IC9007		NC6205	TT1300 TT7005	WK05CT
K10-15	Cast iron	YB7315 YBD102 YBD152 YBD152C	GC3215	KCK15 KC9315	AC410K AC415K AC420K AC700G	MC5015 UC5115 MY5015	T5105 T5115	CA4010 CA4515 CA4115	WAK10 WAK10S	IC9015 IC9007 IC8150 IC5010 IC428 IC4028 IC9150	TK1001 TK1000	NC6210	TT1300 TT7310 T7015	
K20-25	Cast iron	YB7315 YBD152 YBD152C	GC3225	KCK20 KC9320	AC420K AC900G	MC5015 UC5115 UE6110 MY5015	T5125 T9125	CA4125	WAK20 WKK20S	IC5010 IC428 IC4028 C9150	TK2000 TK2001	NC5330		WK20CT

Conversion table grades – turning

Coated cemented carbide PVD

ISO		ZCC-CT	Sandvik	Kennametal	Sumitomo	Mitsubishi	Toshiba Tungaloy	Kyocera	Walter	Iscar	SECO	Korloy	Ingersoll Tague Tec	Widia
P01-05	P Steel		GC1105					PR1005						
P10-15	P Steel	YBG101 YBG102 YBG105	GC1515 GC1115 GC1025	KC5010 KC5510 KC7215 KC7315	AC510U	VP10MF VP15TF	AH710	PR930 PR1005 PR930 PR115	WSM10 WXN10	IC520N IC507 IC570 IC807 IC907 IC908				
P20-25	P Steel	YB9320 YBG205 YBG202	GC1515 GC1125 GC1025	KC5025 KC5525 KU25T	AC520U	VP20RT VP20MF	AH725 AH120	PR930 PR1025 PR1225	WSM20 WMP20S WSM21	IC228 IC250 IC308 IC828 IC350 IC354 IC507 IC807 IC808 IC907 IC908 IC928 IC1008 IC1028 IC3028	CP200 CP250 TP2000 TS2500		TT8020 TT9020	
P30-35	P Steel	YBG302	GC1125 GC2035	KC7335	AC530U		SH730 J740 GH130 AH740	PR660	WSM30	IC228 IC250 IC328 IC330 IC354 IC528 IC1008 IC1028 IC3028	CP500	PC5300		
M10	M Stainless steel	YBG101 YBG102 YBG105	GC1105 GC1115 GC1025 GC1125 GC1515	KCU10 KC5010 KC5510 KC6005 KC6015	EH10Z AC510U AC530U	VP10MF	AH710	PR915 PR1005	WSM10	IC330 IC354 IC507 IC520 IC570 IC807 IC1028 IC3028	CP500 TS2000	PC8110	TT5080	WS10PT
M20	M Stainless steel	YB9320 YBG205 YBG202	GC1025 GC1125	KC501 KCU25	AC520U AC530U	VP10RT VP15TF VP20RT VP20MF	AH120 AH725 SH730 AH710 AH630 GH330	PR1025 PR1125 PR1225	WSM10 WMP20S WSM20 WSM21	IC228 IC250 IC354 IC808 IC908 IC1008 IC1028 IC3028	TS2000 TS2500 CP200 CP250		TT8020 TT9020 TT9080	WS25PT
M30	M Stainless steel	YBG302	GC2035	KC5025 KCU25		VP10RT VP15TF VP20RT VP20MF MP7035	AH12 AH725 SH730 AH710 AH630 GH330 J740	PR1025 PR1125	WSM20 WSM21 WSM30	IC228 IC250 IC328 IC330 IC1008 IC1028 IC3028	CP500 TS2500	PC5300 PC9030		
S05	S Heat-resistant alloys		S05F			MP9005	AH905			IC507 IC907				
S10	S Heat-resistant alloys	YBG102 YBG105 YBG202 YBG205	GC1105 GC1115	KC5010 KCU10 KC5510 KC510	AC510U EH510Z	MP9015 VP10RT	AH905 SH730 AH110 AH120		WSM10	IC507 IC807 IC808 IC806 IC907	CP200 CP250 TS2000 TS2500	PC8110	TT5080	WS10PT
S20	S Heat-resistant alloys	YB9320 YBG205 YBG202	GC1025 GC1125 GC1515	KC5010 KCU10 KC5025 KCU25 KC5525	AC520U EH520Z	MP9015 MT9015 VP20RT	AH120 AH725	PR1125	WSM20 WSM21 WSM30	IC507 IC807 IC907	CP250 TS2500 CP500	PC5300	TT5080 TT8020 TT9080	WS25PT
S30	S Heat-resistant alloys	YBG302			AC520U	VP15TF	AH725	PR1125	WSM30	IC3028 IC808 IC830		PC5400	TT8020	
N10	N Non-ferrous metals	YBG101 YBG102 YBG105	GC1515	KC5410					WXN10	IC520				

Conversion table grades – turning

Cermet

ISO		ZCC-CT	Sandvik	Kennametal	Sumitomo	Mitsubishi	Toshiba Tungaloy	Kyocera	Walter	Iscar	SECO	Korloy	Ingersoll Tague Tec	Widia
P	Steel													
P01-05			CT5005		T110A T1000A	AP25N VP25N	N5520 AT520 GT520 GT720	TN30 TN6010 PV30 PV7010		IC20N IC520N		CN1000 CC105	CT3000 PV3010	
P10-15		**YNG151 YNG151C**	CT5015 CT530	KT315 KT125	T1200A T2000Z T1500A T1500Z	NX2525 AP25N VP25N	N5520 NS730 GT730 NS9530 GT9530	TN60 TN6010 PV60 PV6010		IC20N IC520N IC530N	CM TP1020 TP1030 CMP	CN1000 CT10 CN2000 CC115	CT3000 PV3010	TTI15
P20-25		**YNT251**	GC1525	KT325 KT1120 KT5020	T1200A T2000Z T1500A T1500Z	NX2525 NX3035 AP25N VP25N MP3025	N5530 NS730 GT730 NS9530 GT9530	TN60 TN6020 PV60 PV7020 PV7025		IC20N IC30N IC75T IC520N IC530N	CM TP1020 TP1030 CMP	CN20 CN2000 CC115		TTI15
P30-35					T3000Z	MP3025 VP45N		PV7025 PV90		IC75T				
M	Stainless steel													
M10		**YNG151 YNG151C**	GC1525	KT125	T110A T1000A T1500Z T2000Z	NX2525 AP25N VP25N	NS520 AT530 GT530 GT720	TN60 TN6020 PV60 PV7020			CM TP1020 TP1030 CMP		CT3000 PV3010	TTI15
M20		**YNT251**	CT5015 CT530	HT2	T110A T1000A T1500Z T2000Z	NX2525 AP25N VP25N	N5530 GT730 NS730	TN90 TN6020 PV90 PV7020 PV7025					CT3000 PV3010	TTI15
M30					T3000Z									
M40														
K	Cast iron													
K01-05					T110A T1000A T2000Z T1500Z	NX2525 AP25N	N5520 GT730 NS730	TN30 TN6010 PV30 PV7005 PV7010				CN1000	CT3000 PV3010	
K10-15		**YNG151 YNG151C**	CT5015	KT325 KT125	T1200A T1500A T2000Z T1500Z	NX2525 AP25N	N5520 GT730 NS730	TN60 TN6020 PV60 PV7020 PV7025				CN1000	CT3000 PV3010	
K20-25		**YNT251**	CT5015		T3000Z	NX2525 AP25N								

Conversion table grades – turning

Uncoated carbide

ISO	ZCC-CT	Sandvik	Kennametal	Sumitomo	Mitsubishi	Toshiba Tungaloy	Kyocera	Walter	Iscar	SECO	Korloy	Ingersoll Tague Tec	Widia
N Non-ferrous metals													
N01	**YD101 YD201**	H10 H13A	KF1	H1		KS05F				883 890			
N10	**YD101 YD201**	H10 H13A	K313 K68 KF1 THM-F	H1	HTi10	KS15F	KW10	WK01 WK10	IC20	890 KX HX	H01	K10	THM
N20	**YD101 YD201**	H10 H13A	K313 K68 KF1 THM-F			KS15F	KW15		IC20	KX HX			

Conversion table grades – milling

CVD milling grades

Material / Class		ZCC-CT	Sandvik	Kennametal	Sumitomo	Mitsubishi	Toshiba Tungaloy	Kyocera	Walter	Iscar	SECO	Korloy	Ingersoll Tague Tec
P	Steel		K20W GC4220			F7010							
P10			K20W GC3040 GC4220 GC4230		ACP100	F7010				IC4100 IC5100	MP1500	NC5330 NCM325	IN6505 IN6520
P20		**YBC301 YBC302 YBC251 YBC253**	GC3040 GC4230		CS3000	FH7020	T3130		WKP25 WKP25S	IC4050 IC4100 IC5100 IC5400	MP1500 MP2500 MS2500 T25M	NC5330 NCM325	IN6505 IN6520 IN7035
P30		**YBC301 YBC302 YBM253 YBM351**	GC2040 GC4240	KC930M KC935M	CS3000	F7030	T3130		WKP35 WKP35S WTP35	IC4050 IC5400	MK3000 T25M T350M	NCM325	IN7035 IN6530
P40		**YBC401 YBM351**	GC2040 GC4240								T350M		IN6530
M	Stainless steel												
M10			GC4230			F7010					MP1500	NCM325 NC5330	IN6520
M20		**YBM251 YBM253**	GC4230			F7020	T3130			IC4050	MP1500 MP2500 MS2500 T25M	NCM325 NCM335	IN7035 IN6520 IN6505
M30		**YBM351**	GC2040 GC4240	KC930M KC935M		F7030	T3130		WTP35		MP2500 MS2500 T25M T350M	NCM335	IN6530 IN7035 IN6505
M40			GC2040 GC4240								T350M		IN6530
K	Cast iron												
K05		**YBD152**		KCK15		F7010 MC5020				DT7150 IC4100			
K10		**YBD152 YBD252**	K20W	KCK15	ACK200	F7010 MC5020	T1115		WAK15	DT7150 IC4100 IC4010	MP1500 MK1500	NC5330	IN6520
K20		**YBD252**	K20W		ACK200		T1115		WKP25 WKP25S	DT7150 IC4100	MP1500 MP2500 MS2500 T25M MK1500	NC5330	IN6530 IN6515 IN6520
K30				KC930M KC935M					WKP35 WKP35S	IC4050	MK3000 MP2500 MS2500		IN6530 IN6515

Conversion table grades – milling

CVD milling grades

Material / Class		ZCC-CT	Sandvik	Kennametal	Sumitomo	Mitsubishi	Toshiba Tungaloy	Kyocera	Walter	Iscar	SECO	Korloy	Ingersoll Tague Tec
S	S05										MK3000		
Heat-resistant alloys	S10												
	S20										MP2500 MS2500 T25M		IN7035 IN6520
	S30		GC2040						WTP35		MM4500 T350M		
N	N05												
Non-ferrous metals	N10												
	N20										MP2500 25M		
H	H05												
Hardened materials	H10		K20W										
	H20		K20W GC3040										

Conversion table grades – milling

PVD milling grades

Material / Class		ZCC-CT	Sandvik	Kennametal	Sumitomo	Mitsubishi	Toshiba Tungaloy	Kyocera	Walter	Iscar	SECO	Korloy	Ingersoll Tague Tec
P Steel	P05				ACZ120	VP05HT	GH130			IC903			
	P10	YBG102	GC1010 GC1025 GC1020	KC522M KC525M KC610M KC643M KC715M	ACZ210M ACZ220W	VP10H	AH120 GH130	PR730 PR1225 PR1525	WHX15 WHH15 WXM15	IC903 IC950 IC1008	F15M		IN2004 IN2006
	P20	YBG202 YBG252	GC1020 GC1025 GC1010 GC2030	KC522M KC525M KC643M KC715M KC725M	ACP200 ACZ330 ACX70 ACW30 AC350 ACZ50M	VP15TF VP20M VP20RT	AH725 AH120 AH130 AH330 AH725 AH730 GH330	PR630 PR830 PR730 PR1225 PR1230 PR1525	WXM15	IC810 IC380 IC830 IC900 IC908 IC910 IC950 IC1008	F25M MP3000	PC3500 PC3600	IN2006 IN1030 IN2004 IN2005 IN2015 IN2030 IN2505 IN2540
	P30	YBG302	GC1030 GC2030	KC530M KC725M KC735M	ACP200 ACP300 ACZ250M ACZ330 ACZ350 ACX70 ACW30 AC350	VP30RT	AH740 AH130 AH140	PR630 PR660 PR830 PR1230	WXM35	IC300 IC328 IC830 IC900 IC928 IC350 IC808 IC908	F30M MP3000	PC3500 PC3600 PC5300 PC3545 PC9570T	IN1030 IN2005 IN2015 IN2030 IN2035 IN2040 IN2505 IN2530 IN4035
	P40		GC1030	KC735M	ACP300 ACZ350		AH140 AH750		WXP45 WSP45 WSP46	IC300 IC328 IC928	F40M	PC5300 PC3545	IN2035 IN2040
M Stainless steel	M10		GC1020	KC522M KC610M KC643M KC715M	ACZ220W ACZ350 EH20Z		AH330 GH110 GH130	PR730 PR1225 PR660 PR1525		PR730 PR660 PR1225 PR1525	F15M	PC8110	IN2505
	M20	YBG202 YBG205 YBG252 YB9320	GC1020 GC1025 GC1030 GC203	KC522M KC525M KC610M KC715M KC725M	ACP200 ACZ50M ACZ220M ACZ350 EH20Z AC350	VP15TF VP20RT	AH725 AH730 GH110	PR730 PR1025 PR660 PR1225 PR1525	WXM15	PR730 PR660 PR1025 PR1225 PR1525	F25M MP3000	PC5300 PC8110 PC9530	IN2005 IN2015 IN2505
	M30	YBG302	GC1040 GC203	KC525M KC530M KC725M KC735M	ACP300 ACZ250M ACX80 AC350	VP30RT	AH740 AH120 AH130 GH330 GH340				F30M MP3000	PC9530 PC3545 PC9570T	IN1030 IN2015 IN2030 IN2035 IN2530 IN4035
	M40		GC1040	KC530M KC735M	ACP300 ACX80		AH140 AH750 GH330 GH340		WSM35 WSM36 WXM35		F40M	PC3545	IN1030 IN2030 IN2035 IN2530 IN4035
K Cast iron	K05		GC1010	KC510M	ACZ210M ACZ120 ACZ310		AH330	PR905 PR1210 PR1510			MH1000	PC8110	IN2510
	K10	YBG102 YBG152	GC1010	KC510M KC520M KC620M KC643M	EH20Z ACZ310		AH120 AH330 AH725	PR905 PR1210 PR1510	WXH15 WHH15 WXM15	IC810 IC950 IC1008	F15M MK2000	PC6510	IN2004 IN2010 IN2510
	K20		GC1020	KC520M KC620M KC725M	ACK300 EH20Z ACX80 ACW30	VP15TF	GH130		WKK25	IC328 IC830 IC950 IC350 IC808 IC908 IC1008	F25M MK2000 MO3000	PC6510 PC5300	IN1030 IN2004 IN2010 IN2015 IN2030 IN2505
	K30		GC1020	KC620M KC725M	ACK300 ACZ250M					IC328 IC830 IC900 IC908 IC350 IC808 IC908	F30M F40M MP3000	PC5300 PC9570T	IN2005 IN2015 IN2030 IN2505

Conversion table grades – milling

PVD milling grades

Material / Class		ZCC-CT	Sandvik	Kennametal	Sumitomo	Mitsubishi	Toshiba Tungaloy	Kyocera	Walter	Iscar	SECO	Korloy	Ingersoll Tague Tec
S	Heat-resistant alloys	YBG102									MH1000 F15M	PC8110	
S	Heat-resistant alloys	YBG102 YBG202 YBG205		KC525M KC643M	ACZ20W	VP15TF		PR905 PR1210 PR1510		IC808	NH1000 F15M F25M	PC5300	
S	Heat-resistant alloys	YBG202 YBG205	S30T GC1025 GC1030 GC2030	KC525M KC643M	ACZ20W			PR905 PR1210 PR1510		IC908 IC380 IC900 IC903 IC908 IC928 IC830 IC808	F25M F30M	PC5300 PC3545	IN2005 IN2505
S	Heat-resistant alloys		GC2030	KC725M KC735M	ACZ50M				WSM35 WSM36 WSP45 WSP46 WXM35 WXP45	IC328 IC928 IC830	F40M	PC3545	IN1030 IN2030 IN2035 IN2530 IN4035
N	Non-ferrous metals			KC510M							MH1000 F15M		
N	Non-ferrous metals	YBG202	GC1025 GC1030	KC510M KC620M KC522M	EH20Z				WXN15		MH1000 F15M		
N	Non-ferrous metals		GC1025 GC1030	KC620M KC522M KC525M KC651M							F25M F30M F40M MP3000		
H	Hadened materiels					VP05HT				IC903	MH1000 F15M	PC210F	IN2004 IN2006
H	Hadened materiels	YBG102	GC1010	KC643M		VP10MF			WXH15 WHH15	IC900 IC808	MK2000 F30M MP3000	PC210F	IN2004 IN2005 IN2006
H	Hadened materiels	YBG202	GC1010 GC1025 GC1030			VP15TF				IC810 IC908	F30M F40M MK2000 MP3000		

Conversion table grades – milling

Uncoated milling grades

ISO		ZCC-CT	Sandvik	Kennametal	Sumitomo	Mitsubishi	Toshiba Tungaloy	Walter	Kyocera	Iscar	SECO	Korloy	Ingersoll Tague Tec
N	Non-ferrous metals		H10	K115M K110M				WK10		IC20N		H01	IN04S
N10		YD101		K313	EH520	HTi10		WKM	GW25	IC08	H15	G10	IN10K IN05S
N20		YD201	H13A H10F	KMF	EH520	TF15		KMG40		IC28	H25		IN15K

Examples of materials for machining groups

Material No.	Material	Machining group
1.0722	10SPb20	1
1.0715	9SMn28	1
1.0736	9SMn36	1
1.0718	9SMnPb28	1
1.0737	9SMnPb36	1
1.0401	C15	1
1.0402	C22	1
1.1141	Ck15	1
1.1170	28Mn6	2
1.0726	35S20	2 / 3
1.1167	36Mn5	2 / 3
1.1157	40Mn4	2 / 3
1.0501	C35	2 / 3
1.0503	C45	2 / 3
1.1191	Ck45	2 / 3
1.1183	Cf35	2 /3
1.1213	Cf53	2 /3
1.1545	C 105 W1	4 / 5
1.1663	C 125 W	4 / 5
1.0535	C55	4 / 5
1.0601	C60	4 / 5
1.1274	Ck101	4 / 5
1.1203	Ck55	4 / 5
1.1221	Ck60	4 / 5
1.5710	36NiCr6	5 / 9
1.5120	38MnSi 4	5 / 9
1.1545	C 105 W2	4 / 5
1.1663	C 125 W	4 / 5
1.0535	C65	4 / 5
1.0601	C70	4 / 5
1.1274	Ck101	4 / 5
1.1203	Ck55	4 / 5
1.1221	Ck60	4 / 5
1.5710	36NiCr7	5 / 9
1.5120	38MnSi 5	5 / 9
1.1545	C 105 W3	4 / 5
1.1663	C 125 W	4 / 5
1.0535	C75	4 / 5
1.0601	C80	4 / 5
1.1274	Ck101	4 / 5
1.1203	Ck55	4 / 5
1.1221	Ck60	4 / 5
1.5710	36NiCr8	5 / 9
1.5120	38MnSi 6	5 / 9
1.1545	C 105 W4	4 / 5
1.1663	C 125 W	4 / 5
1.0535	C85	4 / 5
1.0601	C90	4 / 5
1.1274	Ck101	4 / 5

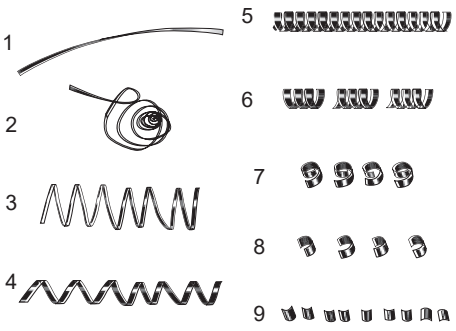
Material No.	Material	Machining group
1.1203	Ck55	4 / 5
1.1221	Ck60	4 / 5
1.5710	36NiCr9	5 / 9
1.5120	38MnSi 7	5 / 9
1.1545	C 105 W5	4 / 5
1.1663	C 125 W	4 / 5
1.0535	C95	4 / 5
1.0601	C100	4 / 5
1.1274	Ck101	4 / 5
1.1203	Ck55	4 / 5
1.1221	Ck60	4 / 5
1.5710	36NiCr10	5 / 9
1.5120	38MnSi 8	5 / 9
1.5680	12Ni19	10 / 11
1.3255	S 18-1-2-5	10 / 11
1.3348	S 2-9-2	10 / 11
1.3343	S 6-5-2	10 / 11
1.3243	S 6-5-2-5	10 / 11
1.2363	X 100 CrMoV 5-1	10 / 11
1.2601	X165CrMoV12	10 / 11
1.2080	X210 Cr 12	10 / 11
1.2581	X30WCrV 9-3	10 / 11
1.2344	X40CrMoV 5-1	10 / 11
1.4718	X45CrSi9-3	10 / 11
1.3355	S 18-0-1	10 /11
1.4027	G-X20Cr14	12 / 13
1.4006	X12 Cr 13	12 / 13
1.4104	X12CrMoS 17	12 / 13
1.4057	X19CrNi 17-2	12 / 13
1.4034	X46Cr 13	12 / 13
1.4871	X53 CrMnNiN 21-9	12 / 13
1.4113	X6CrMo 17	12 / 13
1.4000	X6CR 13	12 / 13
1.4001	X7Cr14	12 / 13
1.4016	X6Cr17	12 / 13
1.4581	G-X5CrNiMoNb 18	14
1.4308	G-X6CrNi 18-9	14
1.4408	G-X6CrNiMo 18-10	14
1.4583	X6CrNiMoNb 18-12	14
1.4571	X6CrNiMoTi 17-12-2	14
1.4550	X6CrNiNb 18-10	14
1.4541	X14CrNiTi 18-10	14
1.4845	X12CrNi 25-21	14
1.4310	X10CrNi 18-8	14
1.4305	X10CrNiS 18-10	14
1.4878	X12CrNiTi 18-9	14
1.4317	X2CrNi 18-8	14
1.4436	X3CrNiMo 17-13-3	14
1.4440	X2CrNiMo 18-16	14

Material No.	Material	Machining group
1.4429	X2CrNiMoN 17-13-3	14
1.4311	X2CrNiN 18 10	14
1.4301	X5CrNi 18-10	14
1.4401	X5CrNiMo 17-12-2	14
0.6010	GG10	16
0.6015	GG15	16
0.6020	GG20	16
0.6025	GG25	16 / 17
0.6030	GG30	17
0.6035	GG35	17
0.6040	GG40	17
1.4829	X12NiCrSi 22-12	17
1.4828	X15CrNiSi20-12	17
0.7033	GGG35.3	18
0.7040	GGG40	18
0.7043	GGG40.3	18
0.8135	GTS-35	18
0.7050	GGG50	19
0.7060	GGG60	19
0.7070	GGG70	19
0.7660	GGGNiCr 20-2	19
0.7652	GGGNiMn 13-7	19
0.8155	GTS-55	21
0.8165	GTS-65	21
0.8170	GTS-70	21
0.8145	GTS-45	21
3.0205	Al99	22
3.3315	AlMg 1	22
3.1325	AlCuMg 1	23
3.2315	AlMgSi 1	23
3.2581	G-AlSi12	24
3.2163	G-AlSi9Cu3	24
3.2381	G-AlSi10Mg	25
2.0375	CuZn36Pb 3	27
2.1096	G-CuSn5ZnPb	27
2.0590	G-CuZn40Fe	27
2.0240	CuZn15	28
2.0060	E-Cu 57	29
1.4865	G-X40NiCrSi 38-18	30
1.4864	X12NiCrSi 36-16	30
2.4631	NiCr20TiAl	32
2.4856	NiCr22Mo9Nb	32
2.4375	NiCu30Al	33
2.4955	NiFe25Cr20NbTi	33
2.4764	CoCr20W15Ni	34
1.3401	G-X120Mn12	34
3.7165	TiAl6V4	36

Test protocol

Date: **ZCC Cutting Tools Europe GmbH**

General	End User		Distributor	
Company				
Contact person				
Machine				
Type				
Producer				
Power [kW]				
Tooling system				
Work piece				
Material				
Hardness/Tensile strength [N/mm²]				
Heat treatment/Surface				
Interrupt cutting				
Cutting tools				
Producer (holder)				
Toolholder (name)				
Teeth Z				
Producer/Supplier				
Insert type/Tool number				
Grade				
Solid carbide tools number				
Cooling				
Cutting Data				
RPM n [U/min]				
Cutting speed Vc [m/min]				
Feed rate f [mm/rpm]				
Feed rate Vf [mm/min]				
Depth of cut a_p [mm]				
Width of cut a_e [mm]				
Machining length [mm]				
Cutting time T [min]				
Results				
Machined pieces/Edges				
Surface quality				
Flankwear VB				
Criteria				
Notch wear				
Crater wear				
Plastic deformation				
Built-up edge				
Insert breakage				
Cutting edge breakage				
Chip forms				



Conclusion:

Fax: +49-(0)211-989240-111
E-mail: technik@zccct-europe.com

Signature:

Torque for screw

Thread	M1,6	M1,8	M2	M2,2	M2,5	M3	M3,5	M4	M4,5	M5	M6	M7	M8	M10	M12
Torque [Nm]	0,2	0,3	0,4	0,7	0,8	1,5	2,3	3,4	5,0	6,7	11,4	19,2	27,0	55,8	85

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	B133
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ANGX*PNR-LH	B127
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R/LT****N-AP A428
R/LT****N-BPTB A437
R/LT****N-BSPT A419
R/LT****N-BSPTB A436
R/LT****N-BUT A430
R/LT****N-GM A413
R/LT****N-GMB A431
R/LT****N-NPT A420
R/LT****N-NPTF A421
R/LT****N-R A422
R/LT****N-RT A429
R/LT****N-STAC A427
R/LT****N-TR A425
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R/LT****N-W A417
R/LT****N-WB A434
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R/LT****W-A(G)B A432
R/LT****W-AC A426
R/LT****W-AP A428
R/LT****W-BPTB A437
R/LT****W-BSPT A419
R/LT****W-BSPTB A436
R/LT****W-BUT A430
R/LT****W-GM A413
R/LT****W-GMB A431
R/LT****W-MJ A423
R/LT****W-NPT A420
R/LT****W-NPTF A421
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ROLLOMATIC


ZCC-CT


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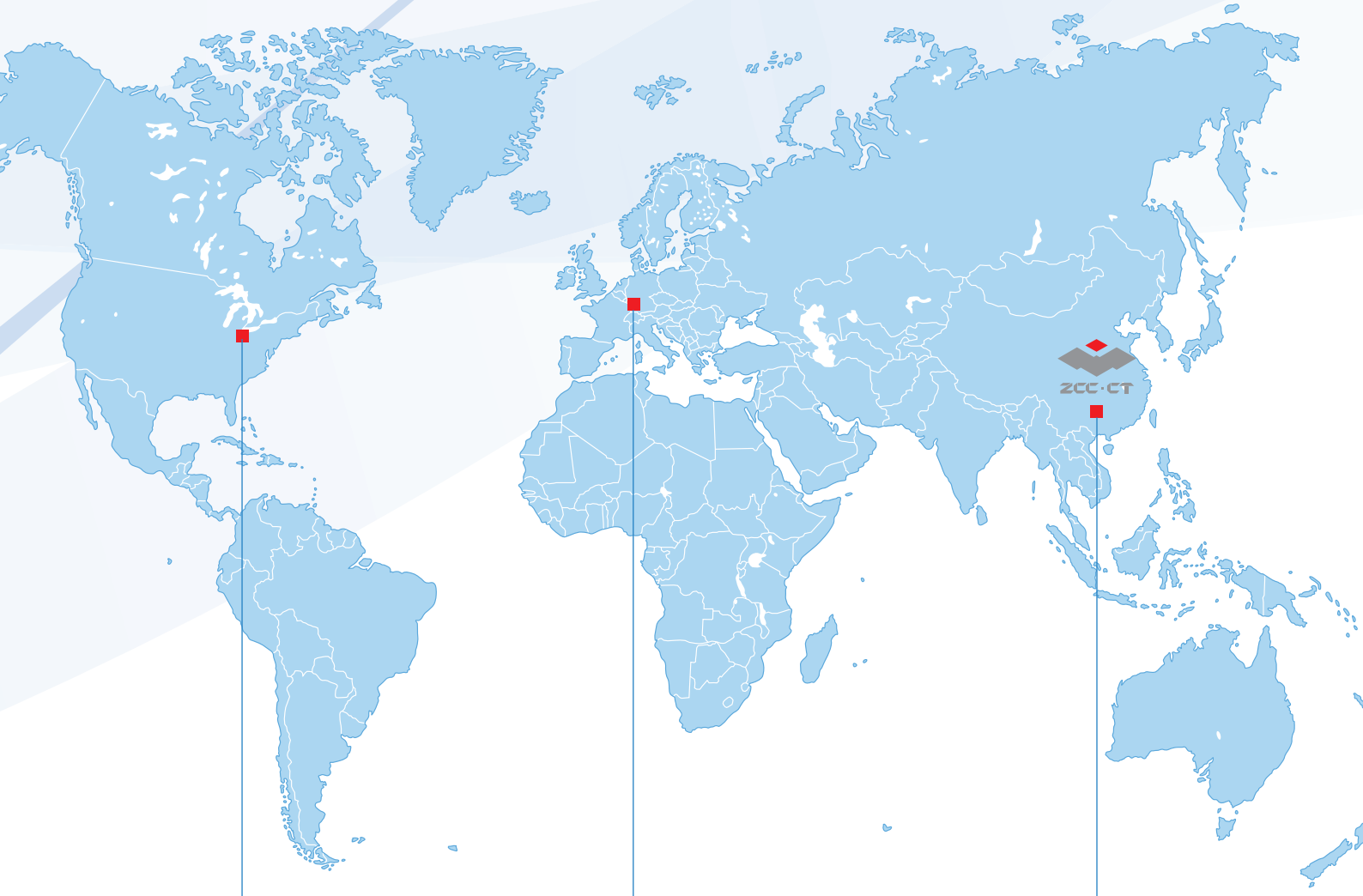
POWER



Detroit (USA)

Düsseldorf (Germany / Europe)

HEADQUARTERS
Zhuzhou (China)







The Company

Zhuzhou Cemented Carbide Cutting Tools Co., Ltd. (ZCC-CT) *is located in Zhuzhou, Hunan in the People's Republic of China is the largest Chinese manufacturer of carbide tools. ZCC-CT belongs to the Zhuzhou Cemented Carbide Group (ZCC), which manufactures carbide products and carbide powders. Both companies are part of the Minmetals Corporation, which Trades in mining metals and minerals.*

Since its founding in 1953*, ZCC Cutting Tools has become one of the world's leading carbide manufacturers and has more than 2,000 employees, thanks to its highly qualified staff and use of the latest technologies. As a Minmetals Corporation company, ZCC-CT can completely cover the entire value-added chain of modern carbide tool production from the extraction of raw materials to the coated final product and all the steps in between.*

Based on the latest European production technologies, it is possible for us to offer products with a consistent high quality at all times. The extensive product range includes carbide indexable inserts, indexable inserts made from cermet, CBN, PKD and ceramic, solid carbide tools as well as turning tool holders and suitable tool systems. The products are produced in accordance with the current international standards, such as ISO, DIN, ANSI, JIS and BSI. In addition, ZCC Cutting Tools offer customer-specific solutions and special carbide products in accordance with specifications.

Research and development are a very high priority at ZCC-CT. In this area ZCC-CT use the world's most modern equipment and advanced machinery from Germany and Switzerland, for which the investments are higher than average. With highly trained engineers and a qualified international team, ZCC Cutting Tools researches the necessary foundations and is constantly developing new and improved products based on them. The company continuously strives to improve quality in order to meet customers' growing demands for new and innovative products and to be able to individually enhance customer benefits.

Both production and administration in China are subject to the ISO 9001:2008 standard. Environmental management is subject to the ISO 14001:2004 standard.

Since 2003, ZCC Cutting Tools has had a branch office in Europe.

The European head office and central warehouse are located in Düsseldorf, Germany. All European countries as well as Russia and Turkey are serviced from there. The company's quality management system is certified in the area of sales and logistics of tools for metal processing in accordance with DIN EN ISO 9001:2008.

In order to meet our own high requirements for above-average customer service and in parallel with the growth of the company as a whole, the number of employees at ZCC Cutting Tools is growing in sales and internal sales, in technical support and application technology, research and development as well as in the areas of logistic, marketing, IT, human resources and accounting.

Our sales representatives and our sales partners in Europe together serve customers on site. ZCC-CT application engineers are furthermore available with all their expertise and experience by phone, email or personally in your production environment.

The internal sales team handles enquiries throughout Europe with native speakers and ensures together with the employees in logistics that all orders are delivered to you and all our customers as fast as possible.

All of us at ZCC Cutting Tools Europe are here for you and will support you as your competent partner in all questions of machining production. That is our definition of added value through partnership.



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