



ZCC Cutting Tools Europe GmbH

Product Innovations 03/2025

[XMR12 high-feed milling system – XM-2C deburring cutter with interchangeable head –
UL solid carbide deep hole drill]

The Company

Zhuzhou Cemented Carbide Cutting Tools Co., Ltd. (ZCC-CT), based in Zhuzhou, China, is the largest Chinese manufacturer of carbide tools. It is also a key company of China Tungsten High-Tech Material Co. Ltd. part of the China Minmetals Corporation.

Since its founding in 1953, ZCC Cutting Tools Co., Ltd. has grown to become one of the world's leading carbide manufacturers with more than 2,000 employees by using the latest technologies and employing highly skilled personnel. The company continuously modernises production technologies and expands its production capacities to enable the company's ongoing growth. As part of Minmetals Corporation, ZCC-CT is able to cover the entire value chain of modern carbide tool production itself, from raw material extraction through to the coated end product and all associated intermediate steps.

By drawing on the latest in European production technology, the company offers products that consistently meet the highest quality standards. Our extensive product range includes carbide/solid carbide, cermet, CBN, PCD and ceramic inserts, carbide tools, tool holders, milling bodies and the accompanying tool systems. All products are consistently produced to accepted international standards, including ISO, DIN, ANSI, JIS and BSI. In addition, ZCC-CT offers customised solutions and special carbide products built to individual specifications.

ZCC-CT invests heavily in research and development. The associated investments go beyond that of most competitors. ZCC Cutting Tools' excellently trained engineers, scientists and a competent, international team, research the necessary fundamentals. These form the basis for the ongoing development of new products and the improvement of existing ones.

The company continuously introduces improvements in quality to meet the customers' ever-increasing demands for new and innovative products and to maximise the benefit of each individual

customer. Both production and administration in China are subject to the ISO 9001:2008 standard, while environmental management is subject to the requirements set out in ISO 14001:2004.

The foundation of the European headquarters of ZCC-CT, ZCC Cutting Tools Europe GmbH and the European central warehouse, both located in Düsseldorf (Germany), dates back to 2003. Today, all European countries as well as the adjacent markets are served from there.

The quality management system of ZCC Cutting Tools Europe GmbH is certified in the area of 'distribution and logistics of metal-working tools' in accordance with ISO 9001:2008.

The Test and Demonstration Centre is available for optimizing customer processes according to individual requirements.

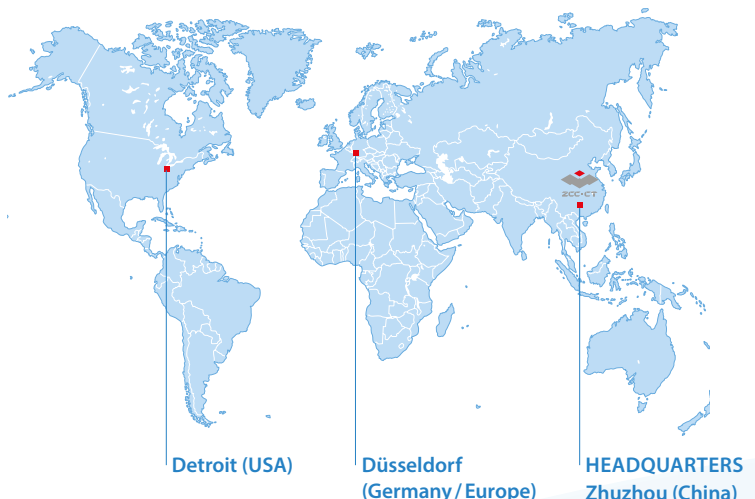
External sales staff and distribution partners in Europe work hand in hand to support customers across the region. Our friendly ZCC-CT application engineers are also available to support you with their expertise and experience by phone, e-mail or in person at your production facility.

The entire field and office sales force is available to answer enquiries from clients across Europe in their native language. Together with employees from the logistics team and with the help of a sophisticated service system, they ensure that all orders are delivered as quickly as possible to you. Branch offices in France and Great Britain add to additional regional proximity to customers.

ZCC Cutting Tools Europe GmbH and all of our employees are there for you and have your back as a competent partner for all matters concerning machining production. This is how we define 'your partner – your value'.



Member of Minmetals Group



This brochure will be presenting the following new products:

Product Innovations 03 / 2025

INDEXABLE MILLING

Page



XMR12 high-feed milling system – Maximum chip removal rates coupled with minimum machining times

B12

SOLID CARBIDE MILLING

Page



XM-2C series – Flexible deburring cutter with interchangeable head

B27

SOLID CARBIDE DRILLING

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UL series – Solid carbide deep hole drills for difficult-to-machine materials

C36



A glimpse inside: Highlights from previous Product Innovations brochures

Product Innovations 09 / 2024

GENERAL TURNING

QF chip breaker – Maximum chip control in finishing operations

INDEXABLE MILLING

SMP09 slot mill cutting system – Highly versatile tangential milling system

TOOL HOLDERS

zClamp Hydro hydraulic expansion chucks – Secure tool clamping for maximum process reliability



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Product Innovations 09 / 2023

GENERAL TURNING

XLR chip breaker – Roughing made easy

ONMX high feed turning system – New Octa insert and tool holder series for efficient turning applications

PNMX high feed turning system – New Penta insert and tool holder series for efficient turning applications

THREADING

zType threading tool holders with internal cooling – New series for high-quality results in threading operations

SOLID CARBIDE DRILLING

FD flat drills – 180° solid carbide drills for any application



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Product Innovations 03 / 2023

GENERAL TURNING

YBG205H grade – The perfect choice for high-temperature turning applications

PARTING & GROOVING

MU chip breaker – Universal tool that delivers optimum chip control

INDEXABLE MILLING

FME17 face milling system – Highly efficient universal tool for machining end faces and contours

EMP05 plunge milling system – Universal tool for any machining application

FMR06 round insert milling cutter – Maximum cutting performance

CSX1000 grade – High-performance grade for superalloys

APL chip breaker – Universal geometry



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Product Innovations 09 / 2022

GENERAL TURNING

XMH chip breaker – Semi-finishing made easy

THREADING

zType threading inserts – New series for high-quality results in threading operations

INDEXABLE MILLING

FMA12 face milling system – Now available in new ONHU09T5 insert size

EMP14 aluminium milling system – Precisely 90° for shoulder milling operations

FMR11 round insert milling cutter – Maximum cutting performance

SOLID CARBIDE MILLING

VPM series – Now also available as a torus milling cutter/with Weldon clamping surface



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GENERAL TURNING

miniTURN – New YPG202 grade for enhanced performance

INDEXABLE MILLING

YBG205H grade – Optimal for high-temperature applications

FMP06 – High-performance hard machining with 88° approach angle

FMA17 – Versatile milling system for efficient facing operations

FMP17 – Efficient universal tool for machining end faces and contours

FMR04 – Extension: Now with new inserts and chip breakers

SOLID CARBIDE MILLING

TM series – Expanded line with compact torus milling cutters from Ø1.0 mm

VPM series – High-speed full-slot milling

SOLID CARBIDE DRILLING

UD series – Extension: Now available in diameters from 1.0 mm with internal cooling



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XMR12 high-feed milling system

Indexable milling

System code – milling bodies	B8–B9
ISO-Code – inserts	B10–B11
 XMR12 high-feed milling system	 B12–B19
 Recommended cutting data	 B20–B23

B

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FM A 12 050 – A22 O – N 06 – 04 (L) (AC)

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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	
A	45°
E	75°
D	60°
P	90°
R	

2

Serial number

3

Nominal diameter [mm]	
Code	Description
025	25
050	50
160	160
315	315
...	

4

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	
C	
D	
E	
F	
N	
P	

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

Cooling	
Code	Description
C	Inner cooling
AC	Air 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)					
	Ø	B27	B32	B40	B40
		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.

S P K N 12 04 ED T21K R – DM

1 2 3 4 5 6 7 8 9 10

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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

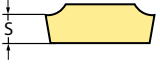
3

Fastening features (metric)	
Insert shape	
A	B
C	F
G	H
J	M
N	Q
R	T
U	W
X	Special

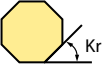
4

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	an
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	P	
T		2	15°	2	0,20	W	
S		3	20°	3	0,25	-	
		4	25°	4	0,30		
		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 breakers

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XMR12 high-feed milling system

Maximum chip removal rates coupled with minimum machining times

YOUR BENEFITS

- Double-sided inserts for **greater efficiency** and **stability**
- Finer pitch for **higher productivity**
- Top results when working with **steel** and **cast materials**
- Positive cutting geometry for **lower cutting forces**
- **Wide range of applications** (e.g., face milling, grooving, ramping)
- Available as an end mill, a shell-type milling cutter or an indexable head

Higher feed rates possible thanks to large number of insert seats available



Diameter range 16 – 63 mm

Thicker inserts for increased process reliability



Fig.: QCH-25-EN12-M12-04-XMR12

Fig.: XMR12-063-A22-EN12-10C

Insert grades

YBG205H

PVD
P10-P30
M20-M40

Chip breaker

ENMX-GM



General machining

ENMX-XR



High-feed machining

Four-edged inserts for **high efficiency**



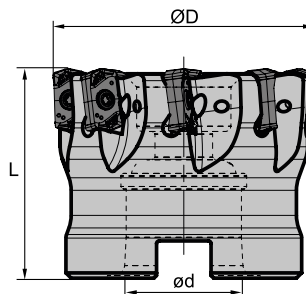
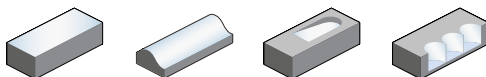
Low cutting forces thanks to positive cutting edge design



Fig.: ENMX-120608-GM YBG205H

High-feed milling

XMR12 Kr: 18°



Article	*	Stock	Dimensions [mm]			Teeth	Coupling	kg	Insert
			ØD	ød	L				
XMR12-040-A16-EN12-06C	*	●	40	16	40	6	A	0,204	ENMX1206**
XMR12-050-A22-EN12-08C	*	●	50	22	50	8	A	0,336	
XMR12-063-A22-EN12-10C	*	●	63	22	50	10	A		

● Ex stock ○ On demand

* With internal cooling

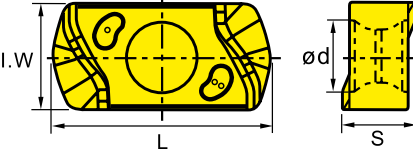
Spare parts			
	Insert	ENMX1206**	
	ØD	32-80	
	Screw	I60M2,5x6,5 (1,0Nm)	
	Wrench	WT07IP	



Milling inserts

-  Ideal machining conditions
 Normal machining conditions
 Unfavourable machining conditions

ENMX	L	I.C	S	d
12 06	12	6	3	2,88

EN** milling inserts			HC ¹ (CVD)									HC ¹ (PVD)							HT	HC ²	HW							
			P																									
			M																									
			K																									
			N																									
			S																									
			H																									
ISO		a _p	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBD203	YBH053	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YBG205H	YBG320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	ENMX120608-GM	2,8	0,8																●									
	ENMX1206R30-GM	2,8	3																●									
	ENMX1206XR-GM	0,6	0,6																●									

● Ex stock ○ On demand

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

For **ENMX120608** and **ENMX1206R30** the diameter changes [ØD] -0.4mm / [L1] +0.11mm.

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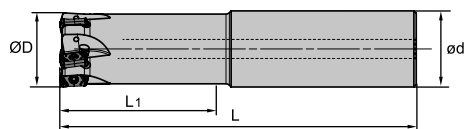
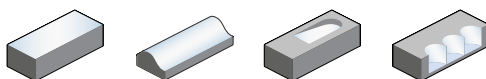
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High-feed milling

XMR12 Kr: 18°



Article	*	Stock	Dimensions [mm]				Teeth	kg	Insert
			ØD	ød	L ₁	L			
XMR12-016-G16-EN12-02C	*	●	16	16	30	100	2	0,13	ENMX1206**
XMR12-017-G16-EN12-02C	*	●	17	16	30	100	2	0,13	
XMR12-018-G16-EN12-02C	*	●	18	16	30	100	2	0,13	
XMR12-020-G20-EN12-03C	*	●	20	20	50	130	3	0,25	
XMR12-022-G20-EN12-03C	*	●	22	20	50	130	3	0,25	
XMR12-025-G25-EN12-04C	*	●	25	25	60	140	4	0,44	
XMR12-028-G25-EN12-04C	*	○	28	25	60	140	4	0,44	
XMR12-032-G32-EN12-05C	*	●	32	32	70	150	5	0,84	
XMR12-035-G32-EN12-05C	*	●	35	32	35	150	5	0,86	

● Ex stock ○ On demand

* With internal cooling

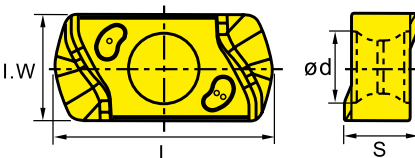
Spare parts			
	Insert	ENMX1206**	
	ØD	12-45	
	Screw	I60M2,5x6,5 (1,0Nm)	
	Wrench	WT07IP	



Milling inserts

-  Ideal machining conditions
 Normal machining conditions
 Unfavourable machining conditions

ENMX	L	I.C	S	d
12 06	12	6	3	2,88

EN** milling inserts			HC ¹ (CVD)										HC ¹ (PVD)						HT	HC ²	HW							
			P																									
			M																									
			K																									
			N																									
			S																									
			H																									
ISO		a _p	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBD203	YBH053	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YBG205H	YB9320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	ENMX120608-GM	2,8	0,8																●									
	ENMX1206R30-GM	2,8	3																●									
	ENMX1206XR-GM	0,6	0,6																●									

● Ex stock ○ On demand

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

For **ENMX120608** and **ENMX1206R30** the diameter changes [ØD] -0.4mm / [L1] +0.11mm.

A

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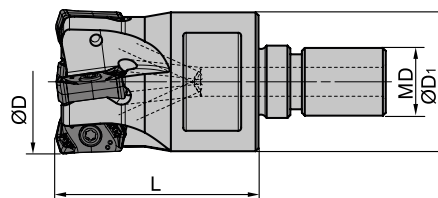
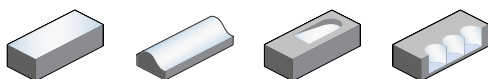
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High-feed milling

QCH-EN Kr: 18



Article	*	Stock	Dimensions [mm]				Teeth	kg	Insert
			ØD	ØD ₁	L	MD			
QCH-16-EN12-M8-02-XMR12	*	●	16	13	28	8	2	0,025	ENMX1206**
QCH-17-EN12-M8-02-XMR12	*	●	17	15	28	8	2		
QCH-18-EN12-M8-02-XMR12	*	●	18	15	28	8	2	0,033	
QCH-20-EN12-M10-03-XMR12	*	●	20	17	30	10	3	0,046	
QCH-22-EN12-M10-03-XMR12	*	●	22	19	30	10	3	0,057	
QCH-25-EN12-M12-04-XMR12	*	●	25	21,6	35	12	4	0,09	
QCH-28-EN12-M12-04-XMR12	*	●	28	21,6	35	12	4	0,104	
QCH-32-EN12-M16-05-XMR12	*	●	32	28	43	16	5	0,199	
QCH-33-EN12-M16-05-XMR12	*	●	33	28	43	16	5		
QCH-40-EN12-M16-06-XMR12	*	●	40	29	40	16	6		

● Ex stock ○ On demand

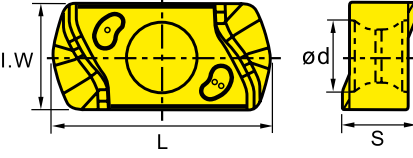
* With internal cooling

Spare parts			
	Insert	ENMX1206**	
	ØD	16-45	
	Screw	I60M2,5x6,5 (1,0 Nm)	
	Wrench	WT07IP	

Milling inserts

-  Ideal machining conditions
 Normal machining conditions
 Unfavourable machining conditions

ENMX	L	I.C	S	d
12 06	12	6	3	2,88

EN** milling inserts			HC ¹ (CVD)										HC ¹ (PVD)						HT	HC ²	HW							
			P																									
			M																									
			K																									
			N																									
			S																									
			H																									
ISO		a _p	r	YBC302	YBC301	YBC401	YBM253	YBM251	YBM351	YBD152	YBD252	YBD203	YBH053	YBG101	YBG102	YBG202	YBG212	YBS203	YBG205	YBG205H	YBG320	YBG302	YBS303	YBG252	YNG151	YNG151C	YD101	YD201
	ENMX120608-GM	2,8	0,8																	●								
	ENMX1206R30-GM	2,8	3																	●								
	ENMX1206XR-GM	0,6	0,6																	●								

● Ex stock ○ On demand

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

For **ENMX120608** and **ENMX1206R30** the diameter changes [ØD] -0.4mm / [L1] +0.11mm.

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Indexable milling – group 7 (XMR01, XMR12, XMP01, QCH)

	Material group	Composition / structure / heat treatment		Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]					
						HC (CVD)					
						YBC302			YBD152		
						a_e / D			a_e / D		
						1/1 3/4	1/5	1/20	1/1 3/4	1/5	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			
P	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	$\leq 12\% \text{ Si}$, cannot be hardened		75	24						
		$\leq 12\% \text{ Si}$, hardenable	hardened	90	25						
		$> 12\% \text{ Si}$, 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						
H	Titanium alloys	pure titanium		R_m 400	35						
		α and β alloys	hardened	R_m 1050	36						
	Hardened steel		hardened and tempered	55 HRC	37						
			hardened and tempered	60 HRC	38						
X	Hard cast iron		cast	400	39						
	Hardened cast iron		hardened and tempered	55 HRC	40						
	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 B254.
 For examples of material for cutting tool groups view page D11.

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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 – group7 (XMR01, XMR12, XMP01, QCH)

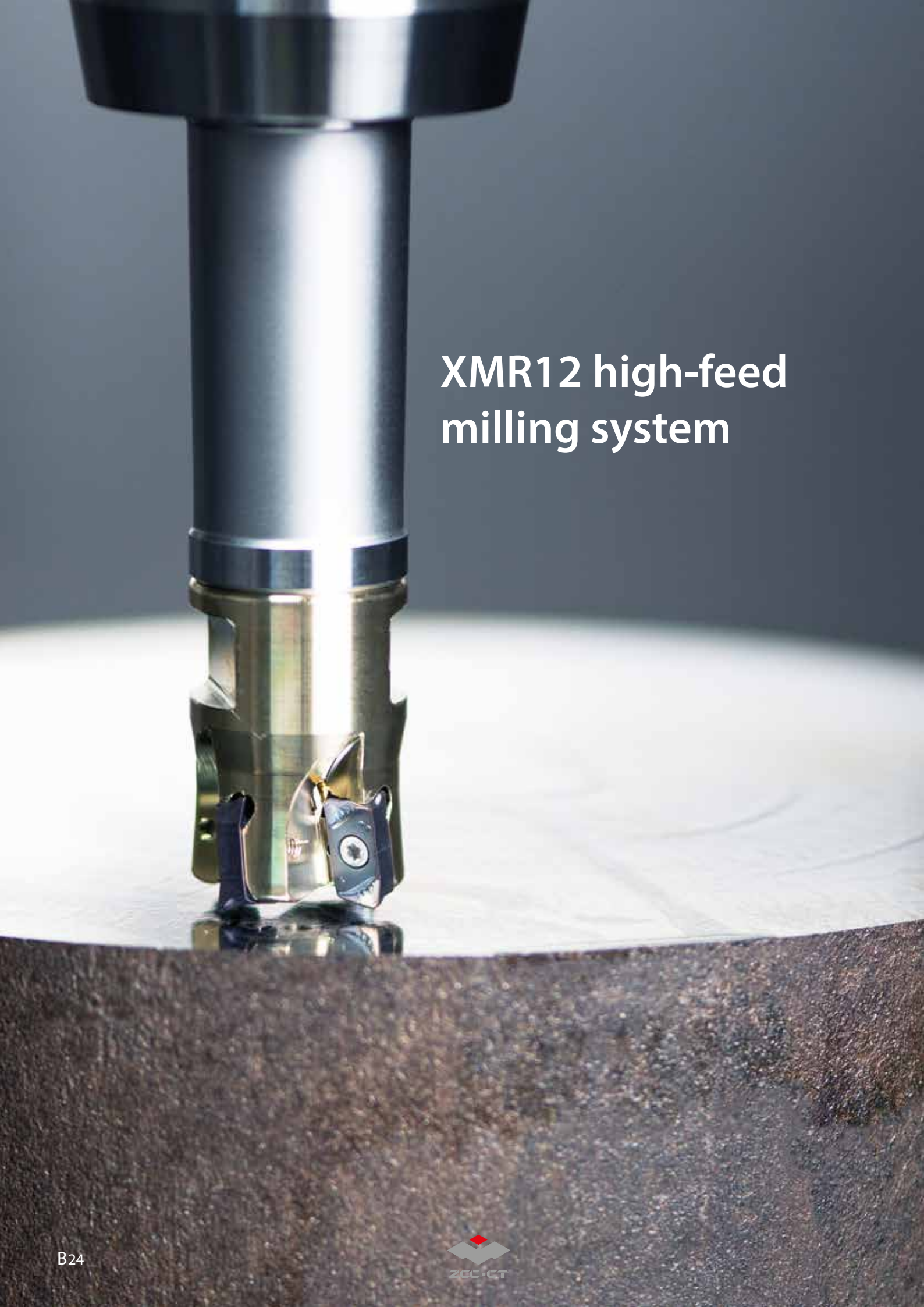
Material group		Feed rate per cutting edge [mm]									
		XMR01 face milling			XMR01 plunge milling			XMR01 circular milling			
		SDMT/WPGT			SDMT/WPGT			SDMT/WPGT			
		Tool diameter [mm]									
		20–25	30–50	63–160	20–25	30–50	63–160	20–25	30–50	63–160	
P	Unalloyed steel	1,00	1,20	2,00	0,20	0,25	0,30	0,80	0,96	1,40	
	Low-alloyed steel	0,93	1,12	1,86	0,19	0,23	0,28	0,74	0,89	1,30	
	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	
	Cast iron with spheroidal graphite	0,90	1,08	1,80	0,20	0,25	0,30	0,80	0,96	1,40	
	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										
	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.

Indexable milling – group7 (XMR01, XMR12, XMP01, QCH)

	Material group	Feed rate per cutting edge [mm]							
		XMP01	QCH	QCH	QCH	QCH	QCH	QCH	
		CNE	ZOHX	RD*	APKT	WPGT	SDMT	XPHT	ENMX
		Tool diameter [mm]							
		80–400	16–32	15–32	16–40	20–42	20–40	16–32	16–40
P	Unalloyed steel	0,20	0,20	0,20	0,15	1,00	1,00	0,20	1,00
	Low-alloyed steel	0,20	0,19	0,19	0,14	0,93	0,93	0,19	0,93
	High-alloyed steel and high-alloyed tool steel	0,20	0,18	0,18	0,13	0,70	0,70	0,18	0,70
M	Stainless steel	0,20	0,14	0,14	0,11	0,50	0,50	0,14	0,50
K	Grey cast iron	0,20	0,22	0,22	0,17	0,90	0,90	0,22	0,90
	Cast iron with spheroidal graphite	0,20	0,20	0,20	0,15	0,90	0,90	0,20	0,90
	Malleable cast iron	0,20	0,20	0,20	0,15	1,00	1,00	0,20	1,00
N	Aluminium wrought alloys				0,13				
	Aluminum cast alloys				0,13				
	Copper and copper alloys (bronze/brass)				0,11				
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.

A close-up photograph of a high-speed milling operation. A vertical, polished metal milling tool is shown cutting into a dark, textured metal workpiece. The tool has a multi-fluted design and is positioned vertically. The workpiece is a thick, dark metal plate with a rough, machined surface. The background is a blurred, light-colored surface.

XMR12 high-feed milling system

Solid carbide milling

System code – series QCH	B26
XM-2C series	B27–B29
Recommended cutting data	B30–B32

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Q 08 – XM – 2 C60 – D12 H9.4

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Thread type

Thread diameter [mm]

Code	Description
08	8,0
10	10,0
12	12,0
14	14,0
18	18,0

Application

Code	Description
PM	High-performance machining
HMX	Hard machining
XM	Deburring

1

2

3

Number of teeth

Cutting edge type

Code	Description
E	Square shoulder mill with protective chamfer
B	Ball nose cutter
R	Torus mill
C	

Diameter [mm]

Code	Description
D3.0	3,0
D8.0	8,0
D20.0	20,0

4

5

6

Radius R / Effective cutting edge length H [mm]

Code	Description
R0.5	0,5
R1.0	1,5
R3.0	3,0
H9.4	9,4

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a Groove milling

b Square shoulder milling

c Profile milling

d Slot milling

e Face milling

f Chamfer milling

g Plunge milling

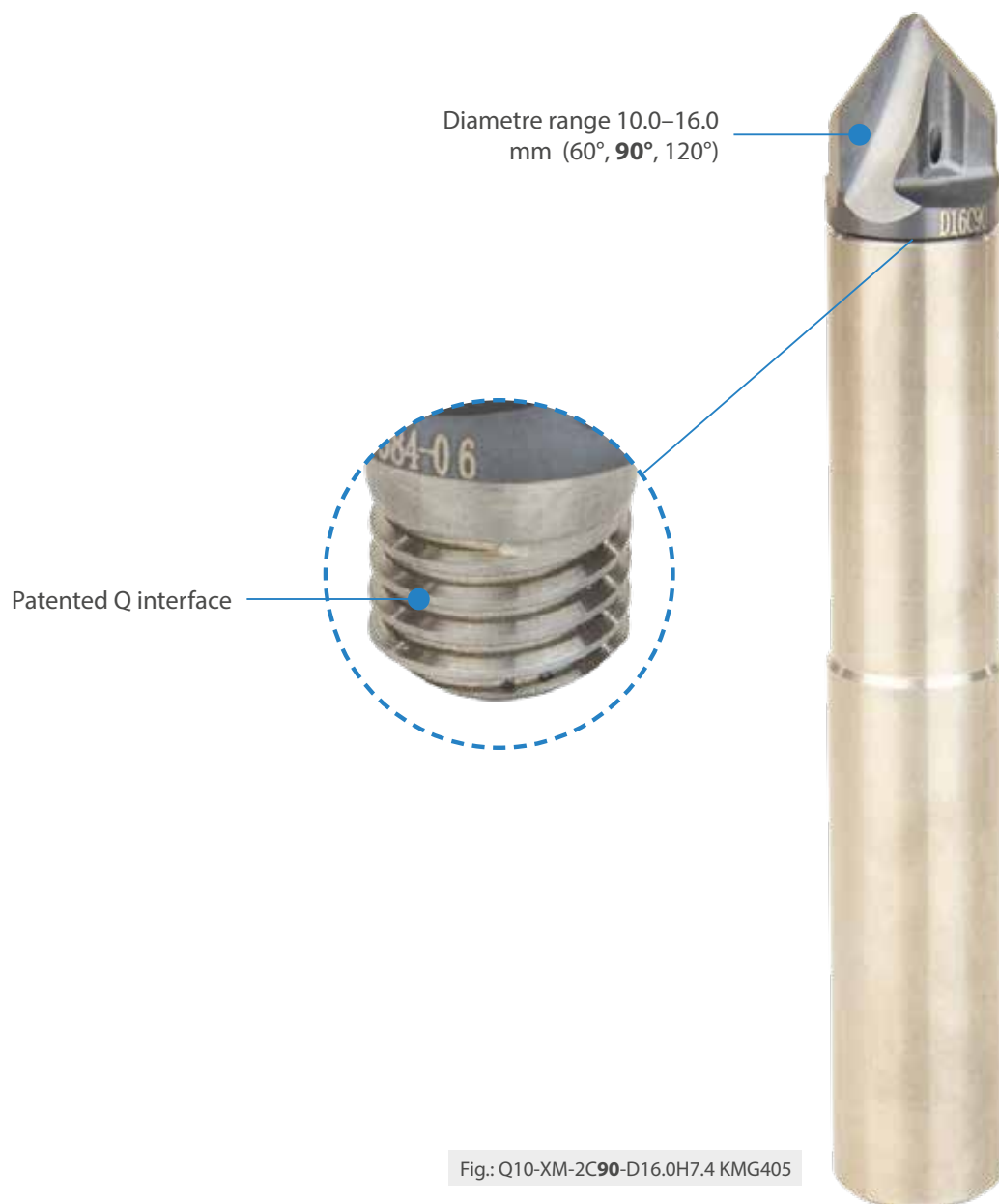
h Circular milling/Ramping

XM-2C series

Flexible deburring cutter with interchangeable head

YOUR BENEFITS

- **Greater flexibility** in real-world applications thanks to numerous possible combinations
- **Perfect concentricity** and **maximum change-over accuracy** thanks to patented Q interface
- **Universal tool** for countersinking holes and deburring contours



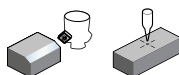
A

Turning

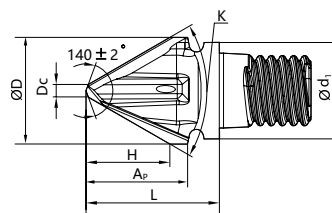
Deburring cutters

General machining

XM-2C



- Centre cutting
- Helix angle 0°



B

Milling

Article	*	Dimensions [mm]								Teeth	Grade
		D	d ₁	Dc	A _p	H	K	L	MD		
Q07-XM-2C60-D10.0H7.6	*	10.0	9.5	1.5	9.3	7.6	60°	12.0	Q07	2	●
Q07-XM-2C90-D10.0H4.5	*	10.0	9.5	1.5	9.3	4.5	90°	12.0	Q07	2	●
Q07-XM-2C120-D10.0H2.7	*	10.0	9.5	1.5	9.3	2.7	120°	12.0	Q07	2	●
Q08-XM-2C60-D12.0H9.2	*	12.0	11.5	1.5	11.0	9.2	60°	16.0	Q08	2	●
Q08-XM-2C90-D12.0H5.3	*	12.0	11.5	1.5	11.0	5.3	90°	16.0	Q08	2	●
Q08-XM-2C120-D12.0H3.5	*	12.0	11.5	1.5	11.0	3.5	120°	16.0	Q08	2	●
Q10-XM-2C60-D16.0H12.1	*	16.0	15.2	1.5	14.0	12.1	60°	18.0	Q10	2	●
Q10-XM-2C90-D16.0H7.4	*	16.0	15.2	1.5	14.0	7.4	90°	18.0	Q10	2	●
Q10-XM-2C120-D16.0H4.5	*	16.0	15.2	1.5	14.0	4.5	120°	18.0	Q10	2	●

● Ex stock ○ On demand

* With inner cooling

C

Drilling

Application fields

P	M	K	N	S	H
✓	✓	✓	✓	✓	✓

✓ Very suitable

✓ Suitable

D

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**XM-2C deburring cutter
with interchangeable head**

End mills – QCH series

Material group	Composition / structure / heat treatment	Brinell hardness HB	Machining group	Starting values for cutting speed v_c [m/min]									
				Q**-PM-4E Q**-PM-4R Q**-VPM-4E					Q**PM-2B Q**PM-4B				
				Slot milling		Shoulder milling							
				$\varnothing$ [mm]	$a_{p \max}$	$\varnothing$ [mm]	$a_{e \max}$						
				$0 < x < 3$	$0,3 \times D$	$0 < x < 20$	$0,15 \times D$						
				$3 \leq x < 6$	$0,3 \times D$								
				$6 \leq x \leq 20$	$0,5 \times D$								
				KMG405 a_e / D					KMG405 a_e / D				
P	Unalloyed steel	approx. 0,15 % C	annealed	125	1	1/1	1/2	1/10	f-group	1/1	1/2	1/10	f-group
		approx. 0,45 % C	annealed	190	2	165	220	300	1	–	270	300	5
		approx. 0,45 % C	tempered	250	3	160	210	285	1	–	260	285	5
		approx. 0,75 % C	annealed	270	4	120	155	210	1	–	190	210	5
		approx. 0,75 % C	tempered	300	5	100	135	180	1	–	165	180	5
P	Low-alloyed steel		annealed	180	6	95	125	165	1	–	150	165	5
			tempered	275	7	125	165	225	1	–	205	225	5
			tempered	300	8	100	135	180	1	–	165	180	5
			tempered	350	9	95	125	165	1	–	150	165	5
P	High-alloyed steel and high-alloyed tool steel		annealed	200	10	90	115	160	1	–	145	160	5
			hardened and tempered	325	11	120	155	210	1	–	190	210	5
M	Stainless steel	ferritic/martensitic	annealed	200	12	90	120	160	1	–	145	160	5
		martensitic	tempered	240	13	55	75	100	1	–	90	100	5
		austenitic	quench hardened	180	14	50	65	85	1	–	80	85	5
		austenitic-ferritic		230	15	60	75	105	1	–	95	105	5
K	Grey cast iron	perlitic/ferritic		180	16	50	65	85	1	–	80	85	5
		perlitic (martensitic)		260	17	125	165	220	1	–	200	220	5
	Cast iron with spheroidal graphite	ferritic		160	18	100	135	180	1	–	165	180	5
		perlitic		250	19	150	200	270	1	–	245	270	5
K	Malleable cast iron	ferritic		130	20	120	155	210	1	–	190	210	5
		perlitic		230	21	165	220	300	1	–	270	300	5
N	Aluminium wrought alloys	cannot be hardened		60	22	135	180	240	1	–	220	240	5
		hardenable	hardened	100	23								
	Cast aluminium alloys	$\leq 12\% \text{ Si}$, cannot be hardened		75	24								
		$\leq 12\% \text{ Si}$, hardenable	hardened	90	25								
		$> 12\% \text{ Si}$, cannot be hardened		130	26								
N	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								
S	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	80	105	140	1				
	Hard cast iron		cast	400	39	–	–	–	–				
			hardened and tempered	55 HRC	40	105	140	185	1				
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 B522.
For examples of material for cutting tool groups view page D11.

Starting values for cutting speed v_c [m/min]																			
Q**-HMX-4E Q**-HMX-4R					Q**-HMX-2B Q**-HMX-4B					Q**-XM-2C									
Shoulder milling																			
$\emptyset$ [mm]	a_p max	$\emptyset$ [mm]	a_e max		$\emptyset$ [mm]	a_p max	$\emptyset$ [mm]	a_e max											
		$0 < x \leq 20$	$0.15 \times D$																
KMG5515 a_e / D					KMG5515 a_e / D					KMG405 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						
										-	-	230	11						
										-	-	220	11						
										-	-	165	11						
										-	-	140	11						
										-	-	130	11						
										-	-	175	11						
										-	-	140	11						
										-	-	130	11						
										-	-	120	11						
										-	-	165	11						
										-	-	125	11						
										-	-	75	11						
										-	-	65	11						
										-	-	80	11						
										-	-	65	11						
										-	-	170	11						
										-	-	140	11						
										-	-	210	11						
										-	-	165	11						
										-	-	230	11						
										-	-	185	11						
										-	-	1200	11						
										-	-	720	11						
										-	-	480	11						
										-	-	600	11						
										-	-	180	11						
										-	-	360	11						
										-	-	420	11						
										-	-	360	11						
										-	-	60	11						
										-	-	50	11						
										-	-	50	11						
										-	-	30	11						
										-	-	40	11						
										-	-	70	11						
	-	-	-	-	-	-	-	-	-	-	-	60	11						
	55	100	125	3	-	130	145	7	-	-	-	70	11						
	55	95	120	3	-	80	90	7	-	-	-	40	11						
	70	125	160	3	-	163	181	7	-	-	-	80	11						
	55	100	125	3	-	109	145	7	-	-	-	40	11						

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Solid carbide milling group 11 – Deburring cutters FM series, QCH 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.

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Solid carbide drills

System code – solid carbide drills
UL series

C34–C35
C36–C45

C

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1 5 3 6 SU 05 (C) – 0850 (S)

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Turning

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

B

Milling

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

C

Drilling

Application	
Code	Description
UD	Twist drills for tough materials
UL	Deep hole drills for difficult-to-machine materials
GD	Twist drills for high feeds
SU	Twist drill for general machining
SL	Twist drill for deep hole drilling
SP	Pilot drill
SH	Twist drill for hardened materials
SC	Twist drill for non-ferrous metals and cast iron

5

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L/D relation		Angle	
Drill		NC tapping device	
Code	Description	Code	Description
03	3xD	90	90°
05	5xD	120	120°
08	8xD		
10	10xD		
12	12xD		
15	15xD		
20	20xD		
30	30xD		

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

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a Boring



b Drilling



c Profile drilling



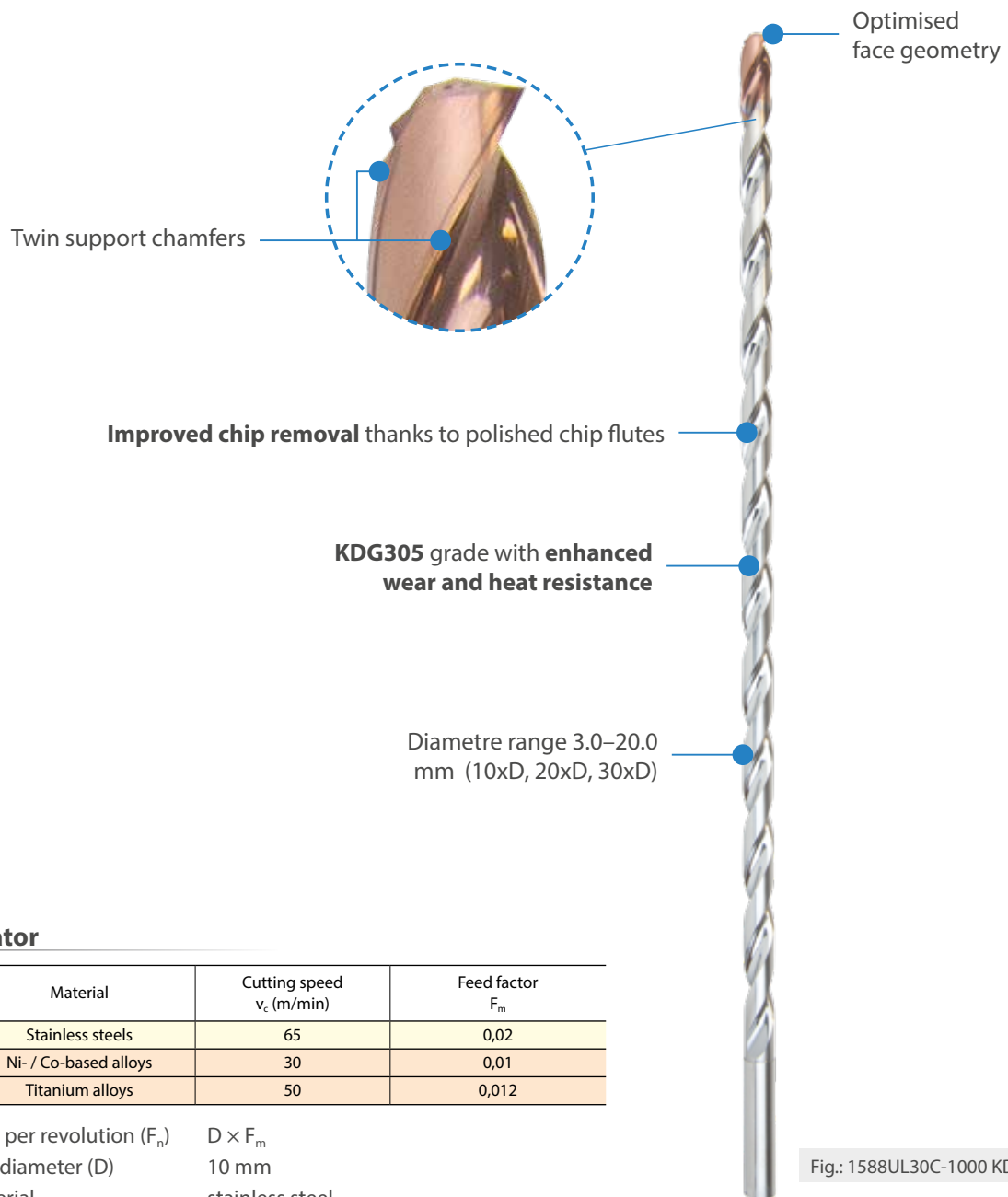
d Centering

UL series

Solid carbide deep hole drills for difficult-to-machine materials

YOUR BENEFITS

- **Reduced cutting forces** thanks to new cutting edge design
- Larger clearance angle **for higher productivity**
- Enhanced chip breaking for **optimal process reliability**
- **Enhanced tool guidance** thanks to four support chamfers



Feed calculator

ISO group	Material	Cutting speed v_c (m/min)	Feed factor F_m
M	Stainless steels	65	0,02
S	Ni- / Co-based alloys	30	0,01
S	Titanium alloys	50	0,012

Formula: feed per revolution (F_n) $D \times F_m$
Example: drill diameter (D) 10 mm
material stainless steel

$$F_n = 10 \text{ mm} \times 0.02 = 0.2 \text{ mm/r}$$

Fig.: 1588UL30C-1000 KDG305

UL drill 10xD

General machining

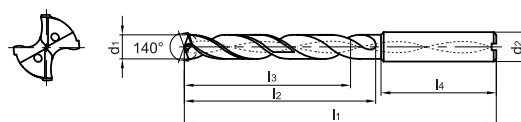
1588UL10C



- Type of shank: DIN 6535HA
- Coolant exit, axial concentric



Internal cooling



Article	*	Dimensions [mm]						Grade
		d ₁ (m7)	d ₂ (h6)	l ₁	l ₂	l ₃	l ₄	KDG305
1588UL10C-0300	*	3	6	80	43	39	36	●
1588UL10C-0310	*	3,1	6	80	43	39	36	●
1588UL10C-0320	*	3,2	6	80	43	39	36	●
1588UL10C-0330	*	3,3	6	80	43	39	36	●
1588UL10C-0340	*	3,4	6	80	43	39	36	●
1588UL10C-0350	*	3,5	6	80	43	39	36	●
1588UL10C-0360	*	3,6	6	80	43	39	36	●
1588UL10C-0370	*	3,7	6	80	43	39	36	●
1588UL10C-0380	*	3,8	6	80	43	39	36	●
1588UL10C-0390	*	3,9	6	80	43	39	36	●
1588UL10C-0400	*	4	6	92	55	50	36	●
1588UL10C-0410	*	4,1	6	92	55	50	36	●
1588UL10C-0420	*	4,2	6	92	55	50	36	●
1588UL10C-0430	*	4,3	6	92	55	50	36	●
1588UL10C-0440	*	4,4	6	92	55	50	36	●
1588UL10C-0450	*	4,5	6	92	55	50	36	●
1588UL10C-0460	*	4,6	6	92	55	50	36	●
1588UL10C-0470	*	4,7	6	92	55	50	36	●
1588UL10C-0480	*	4,8	6	92	55	50	36	●
1588UL10C-0490	*	4,9	6	92	55	50	36	●
1588UL10C-0500	*	5	6	104	68	61	36	●
1588UL10C-0510	*	5,1	6	104	68	61	36	●
1588UL10C-0520	*	5,2	6	104	68	61	36	●
1588UL10C-0530	*	5,3	6	104	68	61	36	●
1588UL10C-0540	*	5,4	6	104	68	61	36	●
1588UL10C-0550	*	5,5	6	104	68	61	36	●
1588UL10C-0560	*	5,6	6	104	68	61	36	●
1588UL10C-0570	*	5,7	6	104	68	61	36	●
1588UL10C-0580	*	5,8	6	104	68	61	36	●
1588UL10C-0590	*	5,9	6	104	68	61	36	●
1588UL10C-0600	*	6	6	104	68	61	36	●
1588UL10C-0610	*	6,1	8	117	80	71	36	●
1588UL10C-0620	*	6,2	8	117	80	71	36	●
1588UL10C-0630	*	6,3	8	117	80	71	36	●
1588UL10C-0640	*	6,4	8	117	80	71	36	●
1588UL10C-0650	*	6,5	8	117	80	71	36	●
1588UL10C-0660	*	6,6	8	117	80	71	36	●

● Ex stock ○ On demand

* With internal cooling

Application field

P	M	K	N	S	H
✓	✓			✓	

✓ Very suitable

✓ Suitable

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UL drill 10xD

General machining

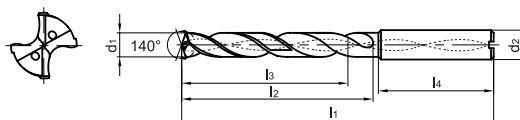
1588UL10C



- Type of shank: DIN 6535HA
- Coolant exit, axial concentric



Internal cooling



Article	*	Dimensions [mm]						Grade
		d ₁ (m7)	d ₂ (h6)	l ₁	l ₂	l ₃	l ₄	KDG305
1588UL10C-0670	*	6,7	8	117	80	71	36	○
1588UL10C-0680	*	6,8	8	117	80	71	36	●
1588UL10C-0690	*	6,9	8	117	80	71	36	○
1588UL10C-0700	*	7	8	117	80	71	36	●
1588UL10C-0710	*	7,1	8	130	94	84	36	○
1588UL10C-0720	*	7,2	8	130	94	84	36	○
1588UL10C-0730	*	7,3	8	130	94	84	36	○
1588UL10C-0740	*	7,4	8	130	94	84	36	○
1588UL10C-0750	*	7,5	8	130	94	84	36	●
1588UL10C-0760	*	7,6	8	130	94	84	36	○
1588UL10C-0770	*	7,7	8	130	94	84	36	○
1588UL10C-0780	*	7,8	8	130	94	84	36	○
1588UL10C-0790	*	7,9	8	130	94	84	36	○
1588UL10C-0800	*	8	8	130	94	84	36	●
1588UL10C-0810	*	8,1	10	148	105	94	40	○
1588UL10C-0820	*	8,2	10	148	105	94	40	○
1588UL10C-0830	*	8,3	10	148	105	94	40	○
1588UL10C-0840	*	8,4	10	148	105	94	40	○
1588UL10C-0850	*	8,5	10	148	105	94	40	●
1588UL10C-0860	*	8,6	10	148	105	94	40	○
1588UL10C-0870	*	8,7	10	148	105	94	40	○
1588UL10C-0880	*	8,8	10	148	105	94	40	○
1588UL10C-0890	*	8,9	10	148	105	94	40	○
1588UL10C-0900	*	9	10	148	105	94	40	●
1588UL10C-0910	*	9,1	10	158	115	103	40	○
1588UL10C-0920	*	9,2	10	158	115	103	40	○
1588UL10C-0930	*	9,3	10	158	115	103	40	○
1588UL10C-0940	*	9,4	10	158	115	103	40	○
1588UL10C-0950	*	9,5	10	158	115	103	40	●
1588UL10C-0960	*	9,6	10	158	115	103	40	○
1588UL10C-0970	*	9,7	10	158	115	103	40	○
1588UL10C-0980	*	9,8	10	158	115	103	40	○
1588UL10C-0990	*	9,9	10	158	115	103	40	○
1588UL10C-1000	*	10	10	158	115	103	40	●
1588UL10C-1050	*	10,5	12	183	135	121	45	○
1588UL10C-1100	*	11	12	183	135	121	45	○
1588UL10C-1150	*	11,5	12	183	135	121	45	○

● Ex stock ○ On demand

* With internal cooling

Application field

P	M	K	N	S	H
✓	✓			✓	

✓ Very suitable

✓ Suitable

UL drill 10xD

General machining

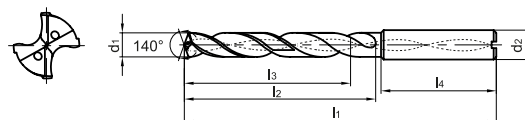
1588UL10C



- Type of shank: DIN 6535HA
- Coolant exit, axial concentric



Internal cooling



Article	*	Dimensions [mm]						Grade
		d ₁ (m7)	d ₂ (h6)	l ₁	l ₂	l ₃	l ₄	KDG305
1588UL10C-1200	*	12	12	183	135	121	45	●
1588UL10C-1250	*	12,5	14	209	160	144	45	○
1588UL10C-1300	*	13	14	209	160	144	45	○
1588UL10C-1350	*	13,5	14	209	160	144	45	○
1588UL10C-1400	*	14	14	209	160	144	45	●
1588UL10C-1450	*	14,5	16	234	184	145	48	○
1588UL10C-1500	*	15	16	234	184	150	48	○
1588UL10C-1550	*	15,5	16	234	184	155	48	○
1588UL10C-1600	*	16	16	234	184	160	48	●
1588UL10C-1650	*	16,5	18	258	208	165	48	○
1588UL10C-1700	*	17	18	258	208	170	48	○
1588UL10C-1750	*	17,5	18	258	208	175	48	○
1588UL10C-1800	*	18	18	258	208	180	48	○
1588UL10C-1850	*	18,5	20	284	232	185	50	○
1588UL10C-1900	*	19	20	284	232	190	50	○
1588UL10C-1950	*	19,5	20	284	232	195	50	○
1588UL10C-2000	*	20	20	284	232	200	50	○

● Ex stock ○ On demand

* With internal cooling

Application field

P	M	K	N	S	H
✓	✓			✓	

✓ Very suitable

✓ Suitable

UL drill 20xD

General machining

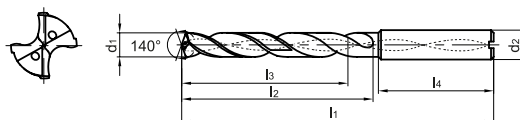
1588UL20C



- Type of shank: DIN 6535HA
- Coolant exit, axial concentric



Internal cooling



Article	*	Dimensions [mm]						Grade
		d ₁ (m7)	d ₂ (h6)	l ₁	l ₂	l ₃	l ₄	KDG305
1588UL20C-0300	*	3	6	110	70	62	36	●
1588UL20C-0310	*	3,1	6	123	83	72	36	●
1588UL20C-0320	*	3,2	6	123	83	72	36	●
1588UL20C-0330	*	3,3	6	123	83	72	36	●
1588UL20C-0340	*	3,4	6	123	83	72	36	●
1588UL20C-0350	*	3,5	6	123	83	72	36	●
1588UL20C-0360	*	3,6	6	136	96	84	36	●
1588UL20C-0370	*	3,7	6	136	96	84	36	●
1588UL20C-0380	*	3,8	6	136	96	84	36	●
1588UL20C-0390	*	3,9	6	136	96	84	36	●
1588UL20C-0400	*	4	6	136	96	84	36	●
1588UL20C-0410	*	4,1	6	148	108	96	36	●
1588UL20C-0420	*	4,2	6	148	108	96	36	●
1588UL20C-0430	*	4,3	6	148	108	96	36	●
1588UL20C-0440	*	4,4	6	148	108	96	36	●
1588UL20C-0450	*	4,5	6	148	108	96	36	●
1588UL20C-0460	*	4,6	6	158	118	106	36	●
1588UL20C-0470	*	4,7	6	158	118	106	36	○
1588UL20C-0480	*	4,8	6	158	118	106	36	○
1588UL20C-0490	*	4,9	6	158	118	106	36	●
1588UL20C-0500	*	5	6	158	118	106	36	●
1588UL20C-0510	*	5,1	6	168	128	116	36	●
1588UL20C-0520	*	5,2	6	168	128	116	36	●
1588UL20C-0530	*	5,3	6	168	128	116	36	●
1588UL20C-0540	*	5,4	6	168	128	116	36	○
1588UL20C-0550	*	5,5	6	168	128	116	36	●
1588UL20C-0560	*	5,6	6	180	140	126	36	●
1588UL20C-0570	*	5,7	6	180	140	126	36	●
1588UL20C-0580	*	5,8	6	180	140	126	36	●
1588UL20C-0590	*	5,9	6	180	140	126	36	○
1588UL20C-0600	*	6	6	180	140	126	36	●
1588UL20C-0610	*	6,1	8	192	150	132	36	●
1588UL20C-0620	*	6,2	8	192	150	132	36	●
1588UL20C-0630	*	6,3	8	192	150	132	36	●
1588UL20C-0640	*	6,4	8	192	150	132	36	●
1588UL20C-0650	*	6,5	8	192	150	132	36	●
1588UL20C-0660	*	6,6	8	202	162	144	36	●

● Ex stock ○ On demand

* With internal cooling

Application field

P	M	K	N	S	H
✓	✓			✓	

✓ Very suitable

✓ Suitable

UL drill 20xD

General machining

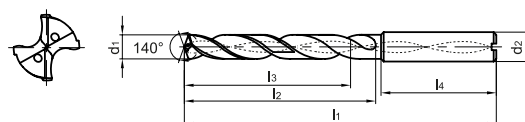
1588UL20C



- Type of shank: DIN 6535HA
- Coolant exit, axial concentric



Internal cooling



Article	*	Dimensions [mm]						Grade	
		d ₁ (m7)	d ₂ (h6)	l ₁	l ₂	l ₃	l ₄	KDG305	
1588UL20C-0670	*	6,7	8	202	162	144	36	○	
1588UL20C-0680	*	6,8	8	202	162	144	36	●	
1588UL20C-0690	*	6,9	8	202	162	144	36	●	
1588UL20C-0700	*	7	8	202	162	144	36	●	
1588UL20C-0710	*	7,1	8	213	173	155	36	●	
1588UL20C-0720	*	7,2	8	213	173	155	36	○	
1588UL20C-0730	*	7,3	8	213	173	155	36	●	
1588UL20C-0740	*	7,4	8	213	173	155	36	○	
1588UL20C-0750	*	7,5	8	213	173	155	36	●	
1588UL20C-0760	*	7,6	8	223	183	165	36	○	
1588UL20C-0770	*	7,7	8	223	183	165	36	○	
1588UL20C-0780	*	7,8	8	223	183	165	36	●	
1588UL20C-0790	*	7,9	8	223	183	165	36	○	
1588UL20C-0800	*	8	8	223	183	165	36	●	
1588UL20C-0810	*	8,1	10	239	195	176	40	●	
1588UL20C-0820	*	8,2	10	239	195	176	40	●	
1588UL20C-0830	*	8,3	10	239	195	176	40	○	
1588UL20C-0840	*	8,4	10	239	195	176	40	○	
1588UL20C-0850	*	8,5	10	239	195	176	40	●	
1588UL20C-0860	*	8,6	10	249	205	186	40	○	
1588UL20C-0870	*	8,7	10	249	205	186	40	○	
1588UL20C-0880	*	8,8	10	249	205	186	40	○	
1588UL20C-0890	*	8,9	10	249	205	186	40	○	
1588UL20C-0900	*	9	10	249	205	186	40	●	
1588UL20C-0910	*	9,1	10	262	218	196	36	○	
1588UL20C-0920	*	9,2	10	262	218	196	36	○	
1588UL20C-0930	*	9,3	10	262	218	196	36	○	
1588UL20C-0940	*	9,4	10	262	218	196	36	○	
1588UL20C-0950	*	9,5	10	262	218	196	36	●	
1588UL20C-0960	*	9,6	10	272	228	206	40	○	
1588UL20C-0970	*	9,7	10	272	228	206	40	○	
1588UL20C-0980	*	9,8	10	272	228	206	40	○	
1588UL20C-0990	*	9,9	10	272	228	206	40	○	
1588UL20C-1000	*	10	10	272	228	206	40	●	
1588UL20C-1050	*	10,5	12	292	242	220	45	●	
1588UL20C-1100	*	11	12	300	250	228	45	●	
1588UL20C-1150	*	11,5	12	315	265	240	45	●	

● Ex stock ○ On demand

* With internal cooling

Application field

P	M	K	N	S	H
✓	✓			✓	

✓ Very suitable

✓ Suitable

UL drill 20xD

General machining

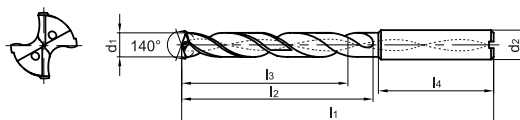
1588UL20C



- Type of shank: DIN 6535HA
- Coolant exit, axial concentric



Internal cooling



Article	*	Dimensions [mm]						Grade
		d ₁ (m7)	d ₂ (h6)	l ₁	l ₂	l ₃	l ₄	KDG305
1588UL20C-1200	*	12	12	325	275	250	45	○
1588UL20C-1250	*	12,5	14	325	275	250	45	○
1588UL20C-1300	*	13	14	338	290	265	45	○
1588UL20C-1350	*	13,5	14	338	290	265	45	○
1588UL20C-1400	*	14	14	367	318	290	45	○

● Ex stock ○ On demand

* With internal cooling

Application field

P	M	K	N	S	H
✓	✓			✓	

✓ Very suitable

✓ Suitable

UL drill 30xD

General machining

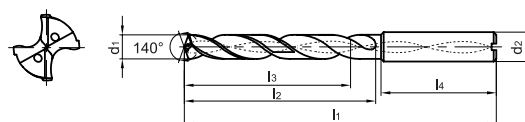
1588UL30C



- Type of shank: DIN 6535HA
- Coolant exit, axial concentric



Internal cooling



Article	*	Dimensions [mm]						Grade	
		d ₁ (m7)	d ₂ (h6)	l ₁	l ₂	l ₃	l ₄	KDG305	
1588UL30C-0300	*	3	6	140	100	92	36	●	
1588UL30C-0310	*	3,1	6	160	120	108	36	○	
1588UL30C-0320	*	3,2	6	160	120	108	36	●	
1588UL30C-0330	*	3,3	6	160	120	108	36	●	
1588UL30C-0340	*	3,4	6	160	120	108	36	●	
1588UL30C-0350	*	3,5	6	160	120	108	36	●	
1588UL30C-0360	*	3,6	6	176	136	124	36	●	
1588UL30C-0370	*	3,7	6	176	136	124	36	○	
1588UL30C-0380	*	3,8	6	176	136	124	36	●	
1588UL30C-0390	*	3,9	6	176	136	124	36	●	
1588UL30C-0400	*	4	6	176	136	124	36	●	
1588UL30C-0410	*	4,1	6	192	152	140	36	○	
1588UL30C-0420	*	4,2	6	192	152	140	36	●	
1588UL30C-0430	*	4,3	6	192	152	140	36	○	
1588UL30C-0440	*	4,4	6	192	152	140	36	○	
1588UL30C-0450	*	4,5	6	192	152	140	36	●	
1588UL30C-0460	*	4,6	6	208	168	156	36	○	
1588UL30C-0470	*	4,7	6	208	168	156	36	○	
1588UL30C-0480	*	4,8	6	208	168	156	36	●	
1588UL30C-0490	*	4,9	6	208	168	156	36	●	
1588UL30C-0500	*	5	6	208	168	156	36	●	
1588UL30C-0510	*	5,1	6	228	188	170	36	●	
1588UL30C-0520	*	5,2	6	228	188	170	36	●	
1588UL30C-0530	*	5,3	6	228	188	170	36	○	
1588UL30C-0540	*	5,4	6	228	188	170	36	○	
1588UL30C-0550	*	5,5	6	228	188	170	36	●	
1588UL30C-0560	*	5,6	6	240	200	182	36	○	
1588UL30C-0570	*	5,7	6	240	200	182	36	○	
1588UL30C-0580	*	5,8	6	240	200	182	36	○	
1588UL30C-0590	*	5,9	6	240	200	182	36	○	
1588UL30C-0600	*	6	6	240	200	182	36	●	
1588UL30C-0610	*	6,1	8	260	220	202	36	○	
1588UL30C-0620	*	6,2	8	260	220	202	36	●	
1588UL30C-0630	*	6,3	8	260	220	202	36	●	
1588UL30C-0640	*	6,4	8	260	220	202	36	●	
1588UL30C-0650	*	6,5	8	260	220	202	36	●	
1588UL30C-0660	*	6,6	8	272	232	214	36	●	

● Ex stock ○ On demand

* With internal cooling

Application field

P	M	K	N	S	H
✓	✓			✓	

✓ Very suitable

✓ Suitable

UL drill 30xD

General machining

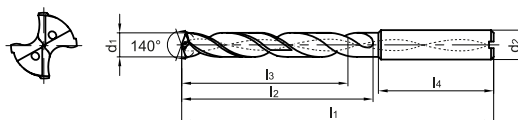
1588UL30C



- Type of shank: DIN 6535HA
- Coolant exit, axial concentric



Internal cooling



Article	*	Dimensions [mm]						Grade
		d ₁ (m7)	d ₂ (h6)	l ₁	l ₂	l ₃	l ₄	KDG305
1588UL30C-0670	*	6,7	8	272	232	214	36	○
1588UL30C-0680	*	6,8	8	272	232	214	36	●
1588UL30C-0690	*	6,9	8	272	232	214	36	○
1588UL30C-0700	*	7	8	272	232	214	36	●
1588UL30C-0710	*	7,1	8	290	250	232	36	○
1588UL30C-0720	*	7,2	8	290	250	232	36	○
1588UL30C-0730	*	7,3	8	290	250	232	36	○
1588UL30C-0740	*	7,4	8	290	250	232	36	○
1588UL30C-0750	*	7,5	8	290	250	232	36	●
1588UL30C-0760	*	7,6	8	305	265	246	36	○
1588UL30C-0770	*	7,7	8	305	265	246	36	○
1588UL30C-0780	*	7,8	8	305	265	246	36	○
1588UL30C-0790	*	7,9	8	305	265	246	36	○
1588UL30C-0800	*	8	8	305	265	246	36	●
1588UL30C-0810	*	8,1	10	330	285	265	40	○
1588UL30C-0820	*	8,2	10	330	285	265	40	○
1588UL30C-0830	*	8,3	10	330	285	265	40	○
1588UL30C-0840	*	8,4	10	330	285	265	40	○
1588UL30C-0850	*	8,5	10	330	285	265	40	●
1588UL30C-0860	*	8,6	10	340	295	275	40	●
1588UL30C-0870	*	8,7	10	340	295	275	40	○
1588UL30C-0880	*	8,8	10	340	295	275	40	○
1588UL30C-0890	*	8,9	10	340	295	275	40	○
1588UL30C-0900	*	9	10	340	295	275	40	●
1588UL30C-0910	*	9,1	10	360	315	292	40	○
1588UL30C-0920	*	9,2	10	360	315	292	40	○
1588UL30C-0930	*	9,3	10	360	315	292	40	○
1588UL30C-0940	*	9,4	10	360	315	292	40	○
1588UL30C-0950	*	9,5	10	360	315	292	40	○
1588UL30C-0960	*	9,6	10	372	328	305	40	○
1588UL30C-0970	*	9,7	10	372	328	305	40	○
1588UL30C-0980	*	9,8	10	372	328	305	40	○
1588UL30C-0990	*	9,9	10	372	328	305	40	○
1588UL30C-1000	*	10	10	372	328	305	40	●

● Ex stock ○ On demand

* With internal cooling

Application field

P	M	K	N	S	H
✓	✓			✓	

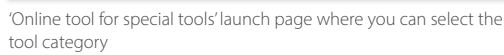
✓ Very suitable

✓ Suitable



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