C.P.T.®
Präzisions Werkzeuge
x-treme thread cutting™

CM-Line

Solid Carbide Exchangeable Modular Mill-Thread Cutters

English

CM-Line

Solid Carbide Exchangeable Modular Mill-Thread Cutters

CPT introduces ***CM-Line*** solid-carbide exchangeable modular mill-thread cutters.
Designed to ensure a precise connection between the cutter and the tool shank, ***CM-Line*** delivers consistent and repeatable machining results.

Features and Benefits

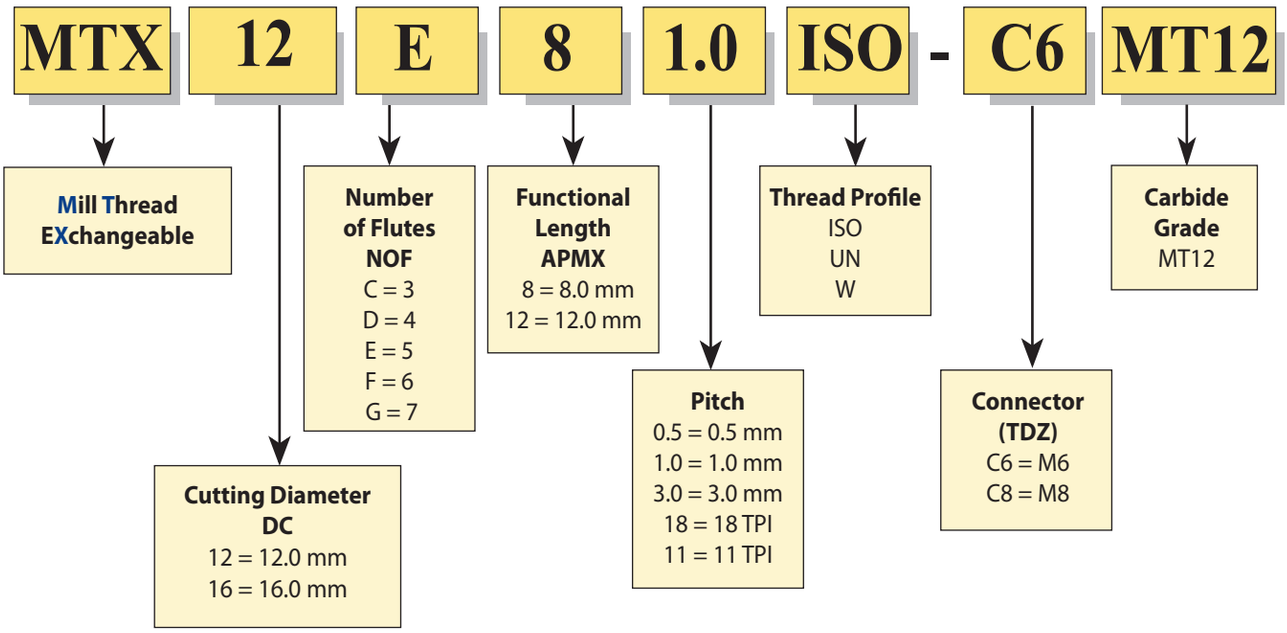
- Fast, easy switching between a variety of solid-carbide thread milling head profiles – maximizing efficiency, flexibility, and uptime in every application.
- Reduced overall manufacturing costs and minimized tooling inventory with an efficient, all-in-one solution.
- Thread mill changes are quick – a simple turn of a wrench – while the shank remains secured in the machine.
- A wide selection of shank lengths provides reliable performance for both short- and long-reach applications across a diverse range of overhangs.
- Reduced environmental impact: exchangeable mill-thread cutters minimize waste and maximize tool life, delivering both economic and ecological benefits.

Carbide grade: MT12

A premium PVD-coated grade combining excellent wear resistance, hardness, and toughness; suitable for machining steels, stainless steels, cast iron, and superalloys at medium-to-high cutting speeds.

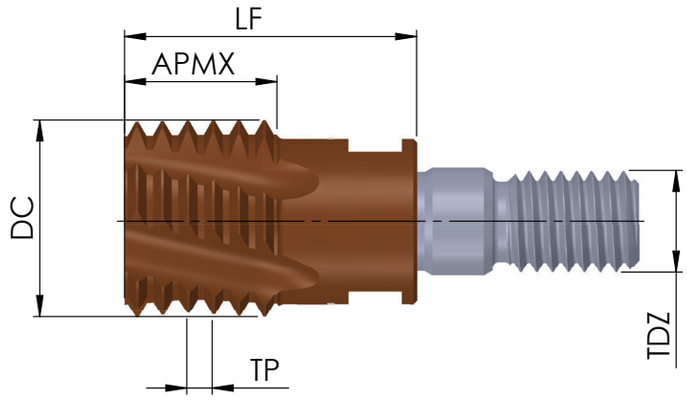
Product Identification – Ordering Code

CM-Line exchangeable head



ISO

Tools for Internal Thread



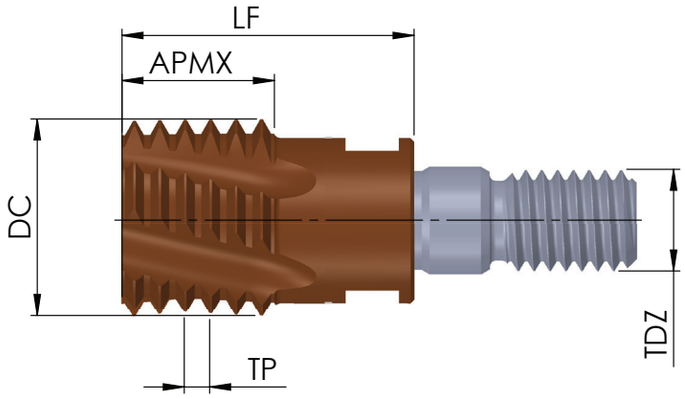
Grade	P	M	K	N	S	H
MT12	●	●	●	○	●	≤52 HRc

TP mm	M coarse	M fine	Ordering Code	DC	NOF	APMX	LF	TDZ
0.5		M13, M14	**MTX 12E8 0.5ISO-C6**	12.0	5	8.0	20	M6
0.75		M13, M14	**MTX 12E8 0.75ISO-C6**	12.0	5	8.3	20	M6
1.0		M14, M16	**MTX 12E8 1.0ISO-C6**	12.0	5	8.0	20	M6
1.0		M18, M20	**MTX 16F12 1.0ISO-C8**	16.0	6	12.0	24	M8
1.25		M14	**MTX 12E7 1.25ISO-C6**	12.0	5	7.5	20	M6
1.5		M14, M16	**MTX 12E7 1.5ISO-C6**	12.0	5	7.5	20	M6
1.5		M18, M20	**MTX 16F12 1.5ISO-C8**	16.0	6	12.0	24	M8
2.0	M16	M17, M18	**MTX 12D8 2.0ISO-C6**	12.0	4	8.0	20	M6
2.0		M20, M22	**MTX 16E12 2.0ISO-C8**	16.0	5	12.0	24	M8
2.5	M20, M22		**MTX 16F12 2.5ISO-C8**	16.0	6	12.5	24	M8
3.0	M24, M27	M28, M30	**MTX 16D12 3.0ISO-C8**	16.0	4	12.0	24	M8
3.5	M30, M33		**MTX 17D10 3.5ISO-C8**	17.0	4	10.5	24	M8

Order example: MTX 12E8 1.0ISO-C6 MT12

UN

Tools for Internal Thread



Grade	P	M	K	N	S	H
MT12	●	●	●	○	●	≤52 HRc

TP TPI	UNC	UNF	UNEF	Ordering Code	DC	NOF	APMX	LF	TDZ
28		1/2		**MTX 114E7 28UN-C6**	11.4	5	7.3	20	M6
24			9/16, 5/8	**MTX 12E8 24UN-C6**	12.0	5	8.5	20	M6
20			3/4-1	**MTX 12E7 20UN-C6**	12.0	5	7.6	20	M6
18		9/16, 5/8	1 1/16, 1 1/8	**MTX 12E7 18UN-C6**	12.0	5	7.1	20	M6
16		3/4, 7/8		**MTX 16F12 16UN-C8**	16.0	6	12.7	24	M8
14		7/8		**MTX 16E12 14UN-C8**	16.0	5	12.7	24	M8
12		1, 1 1/8		**MTX 16E12 12UN-C8**	16.0	5	12.7	24	M8
10	3/4			**MTX 152E12 10UN-C8**	15.2	5	12.7	24	M8
9	7/8			**MTX 16D11 9UN-C8**	16.0	4	11.3	24	M8
8	1			**MTX 16D12 8UN-C8**	16.0	4	12.7	24	M8
7	1 1/8, 1 1/4			**MTX 17D10 7UN-C8**	17.0	4	10.9	24	M8

Order example: MTX 16 F12 16UN-C8 MT12

G (55°)

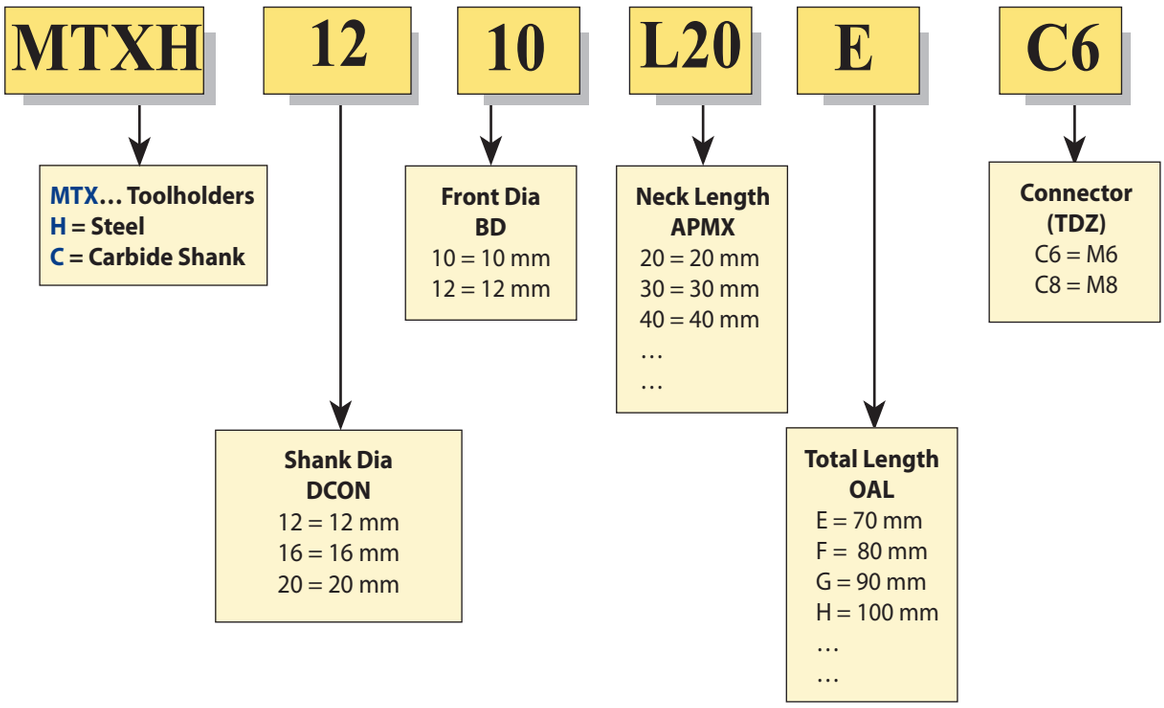
Same Tool for Internal and External Thread

TP TPI	Standard	Ordering Code	DC	NOF	APMX	LF	TDZ
19	G3/8	**MTX 142E12 19W-C8**	14.2	5	12.0	24	M8
14	G1/2-7/8	**MTX 16E12 14W-C8**	16.0	5	12.7	24	M8
11	G≥1	**MTX 16E12 11W-C8**	16.0	5	12.5	24	M8

Order example: MTX 16E12 14W-C8 MT12

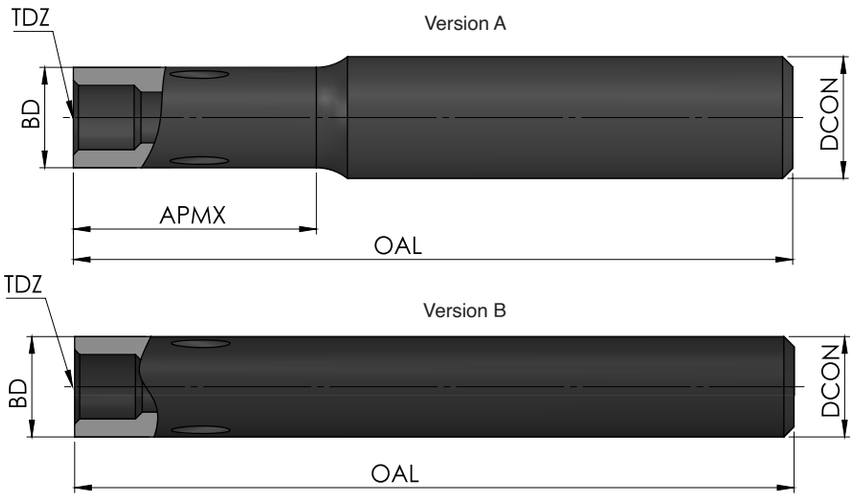
Product Identification – Ordering Code

CM-Line Toolholders



Steel Toolholders

With Internal Coolant

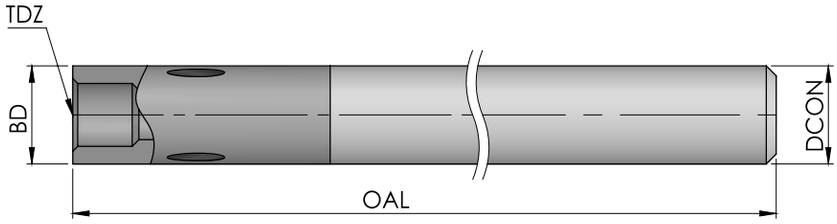


Ordering Code	TDZ	DCON	BD	APMX	OAL	Toolholder Version
MTXH 1210 L20 E-C6	M6	12	10	20	70	A
MTXH 1210 L30 F-C6		12	10	30	80	A
MTXH 1610 L22 G-C6		16	10	22	90	A
MTXH 1610 L33 H-C6		16	10	33	100	A
MTXH 1010 G-C6		10	10	---	90	B
MTXH 1612 L30 G-C8	M8	16	12	30	90	A
MTXH 1612 L40 H-C8		16	12	40	100	A
MTXH 2012 L35 H-C8		20	12	35	100	A
MTXH 2012 L45 J-C8		20	12	45	110	A
MTXH 1212 H-C8		12	12	---	100	B

Order example: MTXH 1212 H-C8

Carbide Shank Toolholders

With Internal Coolant



Ordering Code	TDZ	DCON	BD	OAL
MTXC 1010 J-C6	M6	10	10	110
MTXC 1212 K-C8	M8	12	12	130

Order example: MTXC 1212 K-C8

Wrench

Ordering Code	Description	Connection/TDZ
WK13	Key 8x10	C6/M6 – Key side 8 C8/M8 – Key side 10

Cutting Data

ISO	Materials	Cutting Speed m/min	Feed mm/tooth Cutting Diameter DC					
			Ø11	Ø12	Ø13	Ø14	Ø15	Ø16
P	Low and Medium Carbon Steels <0.55%C	60-120	0.09-0.16	0.10-0.17	0.10-0.17	0.11-0.18	0.11-0.18	0.11-0.18
	High Carbon Steels ≥0.55%C	60-90	0.07-0.14	0.09-0.16	0.09-0.16	0.10-0.17	0.10-0.17	0.11-0.18
	Alloy Steels, Treated Steels	50-80	0.04-0.10	0.05-0.12	0.05-0.12	0.06-0.13	0.06-0.13	0.07-0.14
M	Stainless Steel-Free Cutting	70-100	0.04-0.10	0.05-0.11	0.05-0.11	0.05-0.12	0.05-0.12	0.06-0.13
	Stainless Steel-Austenitic	60-90	0.04-0.10	0.05-0.11	0.05-0.11	0.05-0.12	0.05-0.12	0.06-0.13
	Cast Steels	70-90	0.04-0.10	0.05-0.12	0.05-0.12	0.06-0.13	0.06-0.13	0.07-0.14
K	Cast Iron	40-80	0.09-0.16	0.10-0.17	0.10-0.17	0.11-0.18	0.11-0.18	0.11-0.18
N	Aluminum ≤12%Si, Copper	100-200	0.09-0.16	0.10-0.17	0.10-0.17	0.11-0.18	0.11-0.18	0.11-0.18
	Aluminum >12%Si	60-140	0.04-0.10	0.05-0.11	0.05-0.11	0.06-0.13	0.06-0.13	0.07-0.14
	Synthetics, Duroplastics, Thermoplastics	50-200	0.12-0.19	0.12-0.19	0.12-0.19	0.13-0.20	0.13-0.20	0.13-0.20
S	Nickel alloys, Titanium alloys	20-40	0.03-0.07	0.03-0.07	0.03-0.07	0.04-0.08	0.04-0.08	0.04-0.08
H	Hardened Steels 45-52 HRc	60-70	0.03-0.06	0.03-0.07	0.03-0.07	0.04-0.08	0.04-0.08	0.04-0.09

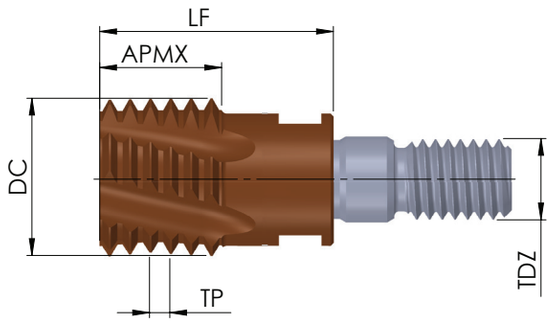
● First choice ○ Alternative

Case Study
Application

Internal thread: M14x1.5, blind hole
Thread length: 17 mm
Workpiece material: AISI 4340 Steel | 36CrNiMo4 | 1.6511 – hardened to 32-35 HRc

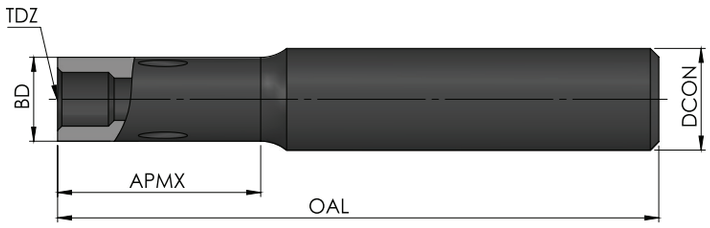
Solid Carbide CM-Line Thread Mill:

Ordering Code: MTX 12E7 1.5ISO-C6 MT12
Dc: 12 mm
NOF: 5
APMX: 7.5 mm
LF: 20 mm
TDZ: M6



Steel Toolholders:

Ordering Code: MTXH 1210 L20 E-C6
TDZ: M6
DCON: 12 mm
BD: 10 mm
APMX: 20 mm
OAL: 70 mm



Machine:

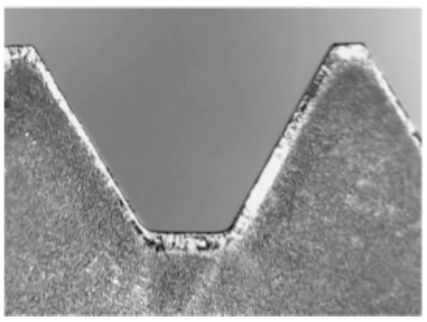
DMG Vertical milling center, 3 axis
Coolant: emulsion 5%

Cutting data:

Cutting speed, Vc = 90 m/min (2390 RPM)
Feed, Fz = 0.17 mm/tooth (F290 mm/min)
Cycle time: 18 sec
Single radial pass
Working method and direction: conventional milling, top to bottom

Edge wear and tool life:

The thread mill has provided stable performance with small uniform edge wear
Tool life: 450 threads



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