Member IMC Group Tungaloy

MillLine

For more information

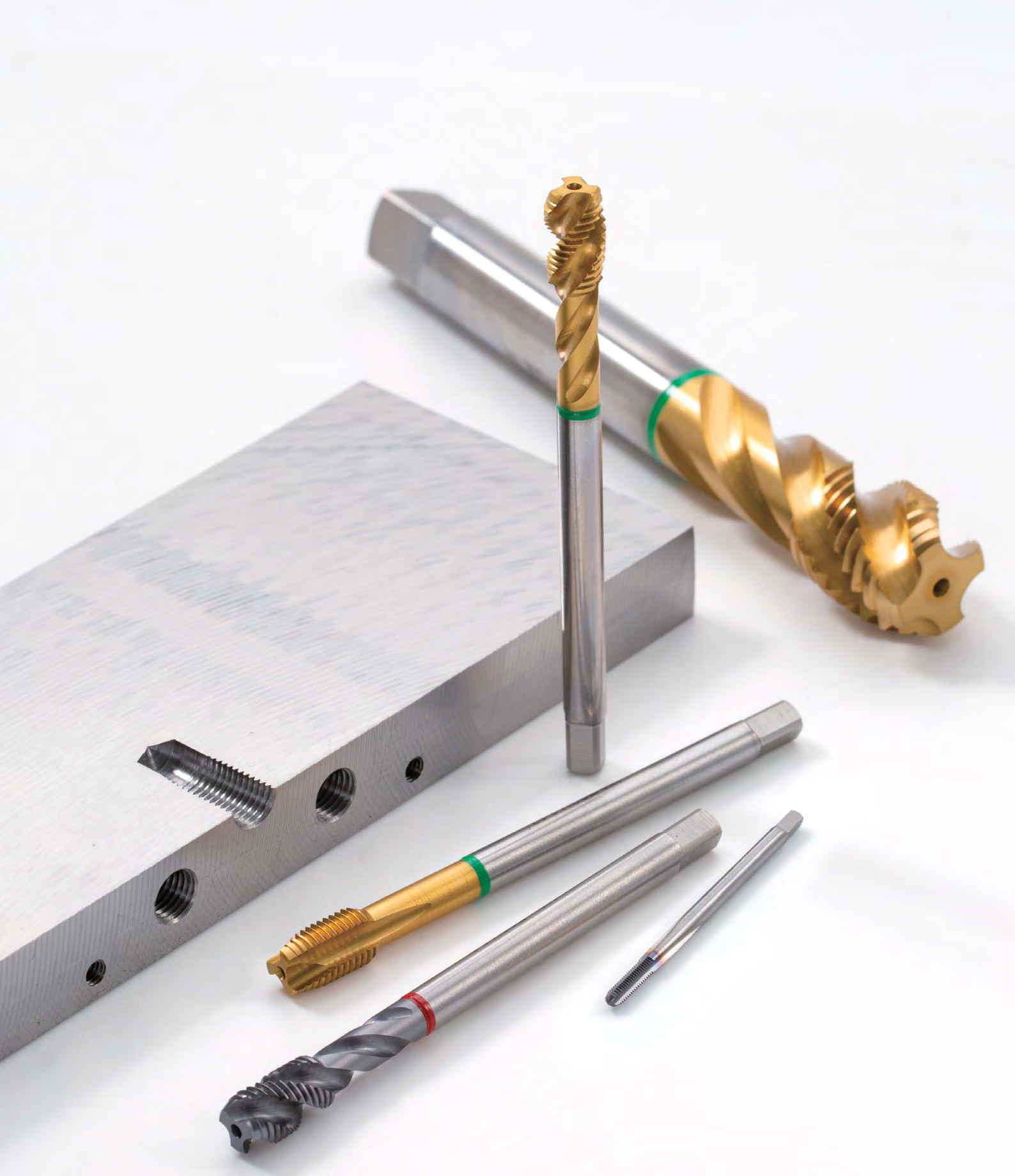
High-Performance HSS Taps

TUNGTAP

Tungaloy Report No. 567-G

Cost-Efficient, High-Performance Taps for Reliable Threading

TUNGALOY ADDFORCE ACCELERATED LINES



High-Quality HSS Taps for a Wide Range of Materials

TAP DESIGNATION CODE KEY

1	2		3	4	5		6	7	8	9		10
T	T	-	M	10	X1.5	-	D	N	E	G	-	(Grade)

1 Tap

2 Tap Style:
H - Hand Tap
F - Formed Tap
P - Point Tap
S - Spiral Tap
T - Straight Tap

3 Thread standard:
M - ISO metric coarse thread
MF - ISO metric fine thread
UNC - Unified coarse thread
UNF - Unified fine thread

4 Diameter

5 Pitch

6 Standard:
D - DIN
J - JIS
A - ANSI

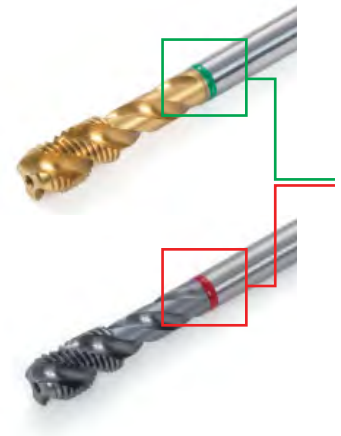
7 Coolant hole
C - With
N - Without

8 Chamfer lead

A	Form a (chamfer lead 5-6 threads)
B	Form b (with gun-nose and chamfer lead 4-5 threads)
C	Form c (chamfer lead 2-3 threads)
D	Form d (chamfer lead 4-5 threads)
E	Form e (chamfer lead 1.5-2 Threads)
F	Form f (chamfer lead 1-1.5 Threads)
G	1-3 for Hand Tap set

9 Tap Color codes

- M - Multi-material application
- W - Steel with good machinability Rm<750 N/mm²
- S - Stainless steel
- H - Hardened steel and high temp./super alloys Rm>750 N/mm²
- G - Grey cast iron
- N - Low alloy steel Rm<600 N/mm²
- A - Aluminum and aluminum alloys
- F - Any material with at least 8~10% elongation
- Y - Nickel alloys



The colored ring on the shank helps easily identify the tap's recommended workpiece material.

10 Grade

		Substrate		
		HSS	HSSE	PM
Surface treatment	TiN	-	PB070 P M K	PB060 P M K S
	TiCN	-	GB070 P M K H	GB060 P M K H S
	TiAlN	-	AB070 P M K S	AB060 P K S
	DLC	-	DB070 N	-
	Without surface treatment	B080 For Hand Taps	B070 P K N	-
	Nitriding	-	NB070 S H	NB060 P K
	Stream tempered	-	HB070 P	HB060 M

TAP SURFACE TREATMENTS AND COATING TYPES

The high speed steels used by **TUNGALOY** grant high wear resistance and toughness. For machining certain materials, various surface treatments are an advantage.

Steam Tempered (HB070, HB080)

The steam tempered is a Fe3O4 oxide coating which reduces the friction between the tool and workpiece and prevents cold welding.

Nitriding (NB070, NB080)

Recommended surface treatment for machining hard wear/abrasive materials such as grey cast iron, aluminum alloys with high silicon percentage (more than 10%).

TiN Coating (PB070, PB080)

The TiN coating has a hardness of approximately 2,300 HV and is temperature resistant up to approximately 600°C. This is an excellent golden colored coating for general applications.

TiCN-COATING – GB070, GB080

TiCN takes place of TiN when the conditions require the coating to have a different hardness and toughness. The TiCN brings an advantage to machining very difficult steels or cutting interrupted bores. The TiCN-coating has a hardness of approx. 3,000 HV, but is temperature-resistant up to approx. 400° only. That means TiCN needs excellent cooling for long service life.
Color: Blue-grey coefficient of friction against steel : 0.4

DLC-Coating – DB070

With its high wear resistance and slight adhesion on nonferrous metals DLC (Diamond-like carbon) coating is perfectly recommended for cutting Aluminium and Aluminium alloys.

TiAlN-COATING – AB070, AB080

This is a special coating for machining abrasive materials such as: gray cast iron, alu-alloys with silicon, fiber reinforced plastics, etc., or machining under high temperatures, which means with insufficient cooling, or high speeds ≥ 600m/min. The TiAlN has a hardness of approx. 3,000 HV and is temperature resistant up to approx. 800°. Color: Violet-grey coefficient of friction against steel : 0.4

Tolerances According to DIN EN 22857

Intended for taps with ISO metric threads. The following chart gives a comparison between the new standard DIN EN 22857 and the withdrawn standard DIN 802 part 1. An important change is the re-classification from tap tolerance to tap application class.

Application Class for Taps to DIN EN 22857		Tolerance Class to Withdrawn Standard DIN 802 Part 1	Allotment of the Tolerance Zones of the Nut Thread to Be Cut				
class 1	ISO 1	4H	4H	5H	-	-	-
class 2	ISO 2	6H	5G	5G	6H	-	-
class 3	ISO 3	6G	-	-	6G	7H	8H
-	-	7G	-	-	-	7G	8G

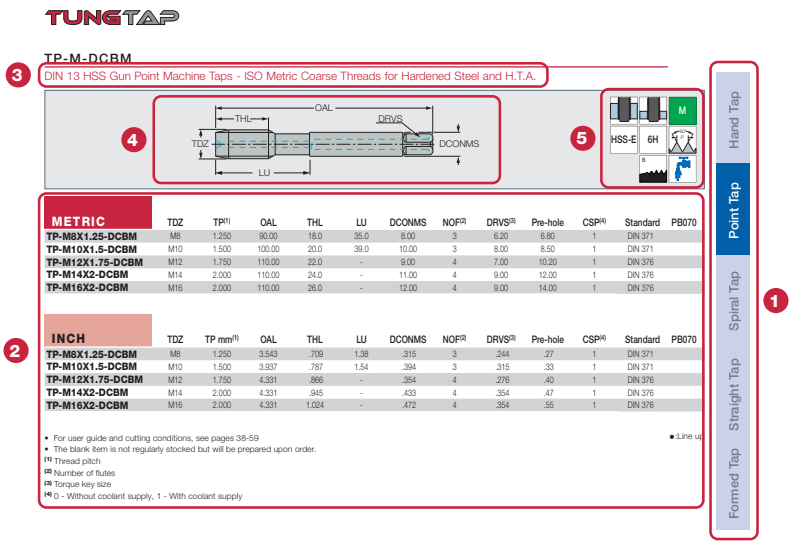
A suitable transition period is to be expected.

Codes for tolerance classes 7G/8G and <X> tolerance zones have yet to be standardized within DIN EN 22857, and the values from DIN 802 part will remain valid.

CONTENT STRUCTURE

How to Use the Pages

Select tap style (1) at the right end of each page and choose a designation you need (2) refer to details (3 - 5)



1. Tap style
2. Tap designation & Dimension table
3. Details (Tap style, Pitch, Application)
4. Dimensions drawing

5 Icon

Hole types

	Deep Blind Hole
	Short Blind Hole
	Deep Hole with Short Thread
	Deep Through Hole
	Short Through Hole

Tap color codes

M	Multi-material application
W	Steel with good machinability Rm<750 N/mm²
S	Stainless steel
H	Hardened steel and high temp./super alloys Rm>750 N/mm²
G	Grey cast iron
N	Low alloy steel Rm<600 N/mm²
A	Aluminum and aluminum alloys
F	Any material with at least 8~10% elongation
Y	Nickel alloys

Tap materials

HSS	H.S.S (M2) Suitable for a Wide Range of Materials
HSS-E	H.S.S-E 5% Co Contents (M35) Excellent Wear Resistance
PM	Powder Metal Superior Hardness and Wear Resistance Compared to HSS and HSSE

Thread geometry

	Triangular Thread

Coolant hole

	Without Coolant Hole
	With Coolant Hole

Thread tolerance

6H	General Tolerance Class for Metric Thread (DIN EN 22857)
6HX	Same As Metric 6H Tolerance Range But Stricter Inspection and Quality
2B	General Tolerance Class for Unified Thread (ANSI/ASME B1.1)

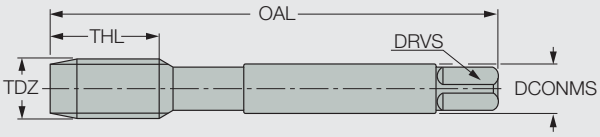
Chamfer lead forms

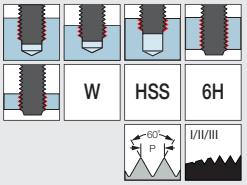
	Form B 3.5-4 Threads
	Form C 2-3 Threads
	Form E 1.5-2 Threads

	Taper/Plug/Bottoming Hand Tap Set

TH-M-DNGW

DIN 13 HSS Hand Tap Set for ISO Metric Coarse Threads





METRIC	TDZ	TP[1]	OAL	THL	DCONMS	NOF[2]	DRVS[3]	Pre-hole	Standard	B080
TH-M2X0.4-DNGW	M2	0.4	36	8	2.8	3	2.1	1.6	DIN 352	
TH-M2.2X0.45-DNGW	M2.2	0.45	36	9	2.8	3	2.1	1.75	DIN 352	
TH-M2.5X0.45-DNGW	M2.5	0.45	40	9	2.8	3	2.1	2.05	DIN 352	
TH-M3X0.5-DNGW	M3	0.5	42	12	3.5	3	2.7	2.5	DIN 352	
TH-M3.5X0.6-DNGW	M3.5	0.6	45	14	4	3	3	2.9	DIN 352	
TH-M4X0.7-DNGW	M4	0.7	46	14	4.5	3	3.4	3.3	DIN 352	
TH-M5X0.8-DNGW	M5	0.8	50	16	6	3	4.9	4.2	DIN 352	
TH-M6X1-DNGW	M6	1	52	18	6	3	4.9	5	DIN 352	
TH-M8X1.25-DNGW	M8	1.25	63	18	6	3	4.9	6.8	DIN 352	
TH-M10X1.5-DNGW	M10	1.5	70	23	7	3	5.5	8.5	DIN 352	
TH-M12X1.75-DNGW	M12	1.75	75	28	9	3	7	10.2	DIN 352	
TH-M14X2-DNGW	M14	2	80	30	11	4	9	12	DIN 352	
TH-M16X2-DNGW	M16	2	80	30	12	4	9	14	DIN 352	
TH-M18X2.5-DNGW	M18	2.5	95	35	14	4	11	15.5	DIN 352	
TH-M20X2.5-DNGW	M20	2.5	95	34	16	4	12	17.5	DIN 352	

INCH	TDZ	TP mm[1]	OAL	THL	DCONMS	NOF[2]	DRVS[3]	Pre-hole	Standard	B080
TH-M2X0.4-DNGW	M2	.400	1.417	.315	.110	3	.083	.06	DIN 352	
TH-M2.2X0.45-DNGW	M2.2	.450	1.417	.354	.110	3	.083	.07	DIN 352	
TH-M2.5X0.45-DNGW	M2.5	.450	1.575	.354	.110	3	.083	.08	DIN 352	
TH-M3X0.5-DNGW	M3	.500	1.654	.472	.138	3	.106	.10	DIN 352	
TH-M3.5X0.6-DNGW	M3.5	.600	1.772	.551	.157	3	.118	.11	DIN 352	
TH-M4X0.7-DNGW	M4	.700	1.811	.551	.177	3	.134	.13	DIN 352	
TH-M5X0.8-DNGW	M5	.800	1.968	.630	.236	3	.193	.17	DIN 352	
TH-M6X1-DNGW	M6	1.000	2.047	.709	.236	3	.193	.20	DIN 352	
TH-M8X1.25-DNGW	M8	1.250	2.480	.709	.236	3	.193	.27	DIN 352	
TH-M10X1.5-DNGW	M10	1.500	2.756	.906	.276	3	.217	.33	DIN 352	
TH-M12X1.75-DNGW	M12	1.750	2.953	1.102	.354	3	.276	.40	DIN 352	
TH-M14X2-DNGW	M14	2.000	3.150	1.181	.433	4	.354	.47	DIN 352	
TH-M16X2-DNGW	M16	2.000	3.150	1.181	.472	4	.354	.55	DIN 352	
TH-M18X2.5-DNGW	M18	2.500	3.740	1.378	.551	4	.433	.61	DIN 352	
TH-M20X2.5-DNGW	M20	2.500	3.740	1.339	.630	4	.472	.69	DIN 352	

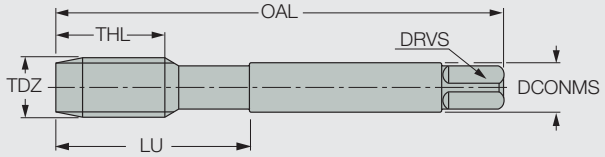
- NOTE: Each set contains 2 or 3 taps
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

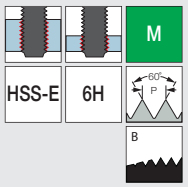
●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TP-M-DNBM

DIN 13 HSSE 5% Co Gun Point Machine Taps - ISO metric coarse threads for a wide range of materials.





Tough ↔ Hard

METRIC	TDZ	TP[1]	OAL	THL	LU	DCONMS	NOF[2]	DRVS[3]	Pre-hole	Standard	B070	PB070
TP-M2X0.4-DNBM	M2	0.4	45	8	-	2.8	2	2.1	1.6	DIN 371		
TP-M2.2X0.45-DNBM	M2.2	0.45	45	9	-	2.8	2	2.1	1.75	DIN 371		
TP-M2.5X0.45-DNBM	M2.5	0.45	50	9	-	2.8	2	2.1	2.05	DIN 371		
TP-M3X0.5-DNBM	M3	0.5	56	10	18	3.5	3	2.7	2.5	DIN 371		
TP-M3.5X0.6-DNBM	M3.5	0.6	56	10	20	4	3	3	2.9	DIN 371		
TP-M4X0.7-DNBM	M4	0.7	63	12	21	4.5	3	3.4	3.3	DIN 371	●	
TP-M5X0.8-DNBM	M5	0.8	70	14	25	6	3	4.9	4.2	DIN 371	●	
TP-M6X1-DNBM	M6	1	80	16	30	6	3	4.9	5	DIN 371	●	●
TP-M8X1.25-DNBM	M8	1.25	90	18	35	8	3	6.2	6.8	DIN 371	●	
TP-M10X1.5-DNBM	M10	1.5	100	20	39	10	3	8	8.5	DIN 371	●	
TP-M12X1.75-DNBM	M12	1.75	110	22	-	9	4	7	10.2	DIN 376		
TP-M14X2-DNBM	M14	2	110	24	-	11	4	9	12	DIN 376		
TP-M16X2-DNBM	M16	2	110	26	-	12	4	9	14	DIN 376		
TP-M18X2.5-DNBM	M18	2.5	125	30	-	14	4	11	15.5	DIN 376		
TP-M20X2.5-DNBM	M20	2.5	140	30	-	16	4	12	17.5	DIN 376		
TP-M22X2.5-DNBM	M22	2.5	140	30	-	18	4	14.5	19.5	DIN 376		
TP-M24X3-DNBM	M24	3	160	36	-	18	4	14.5	21	DIN 376		
TP-M27X3-DNBM	M27	3	160	36	-	20	4	16	24	DIN 376		
TP-M30X3.5-DNBM	M30	3.5	180	40	-	22	4	18	26.5	DIN 376		

Tough ↔ Hard

INCH	TDZ	TP mm[1]	OAL	THL	LU	DCONMS	NOF[2]	DRVS[3]	Pre-hole	Standard	B070	PB070
TP-M2X0.4-DNBM	M2	.400	1.772	.315	-	.110	2	.083	.06	DIN 371		
TP-M2.2X0.45-DNBM	M2.2	.450	1.772	.354	-	.110	2	.083	.07	DIN 371		
TP-M2.5X0.45-DNBM	M2.5	.450	1.968	.354	-	.110	2	.083	.08	DIN 371		
TP-M3X0.5-DNBM	M3	.500	2.205	.394	.71	.138	3	.106	.10	DIN 371		
TP-M3.5X0.6-DNBM	M3.5	.600	2.205	.394	.79	.157	3	.118	.11	DIN 371		
TP-M4X0.7-DNBM	M4	.700	2.480	.472	.83	.177	3	.134	.13	DIN 371	●	
TP-M5X0.8-DNBM	M5	.800	2.756	.551	.98	.236	3	.193	.17	DIN 371	●	
TP-M6X1-DNBM	M6	1.000	3.150	.630	1.18	.236	3	.193	.20	DIN 371	●	●
TP-M8X1.25-DNBM	M8	1.250	3.543	.709	1.38	.315	3	.244	.27	DIN 371	●	
TP-M10X1.5-DNBM	M10	1.500	3.937	.787	1.54	.394	3	.315	.33	DIN 371	●	
TP-M12X1.75-DNBM	M12	1.750	4.331	.866	-	.354	4	.276	.40	DIN 376		
TP-M14X2-DNBM	M14	2.000	4.331	.945	-	.433	4	.354	.47	DIN 376		
TP-M16X2-DNBM	M16	2.000	4.331	1.024	-	.472	4	.354	.55	DIN 376		
TP-M18X2.5-DNBM	M18	2.500	4.921	1.181	-	.551	4	.433	.61	DIN 376		
TP-M20X2.5-DNBM	M20	2.500	5.512	1.181	-	.630	4	.472	.69	DIN 376		
TP-M22X2.5-DNBM	M22	2.500	5.512	1.181	-	.709	4	.571	.77	DIN 376		
TP-M24X3-DNBM	M24	3.000	6.299	1.417	-	.709	4	.571	.83	DIN 376		
TP-M27X3-DNBM	M27	3.000	6.299	1.417	-	.787	4	.630	.94	DIN 376		
TP-M30X3.5-DNBM	M30	3.500	7.087	1.575	-	.866	4	.709	1.04	DIN 376		

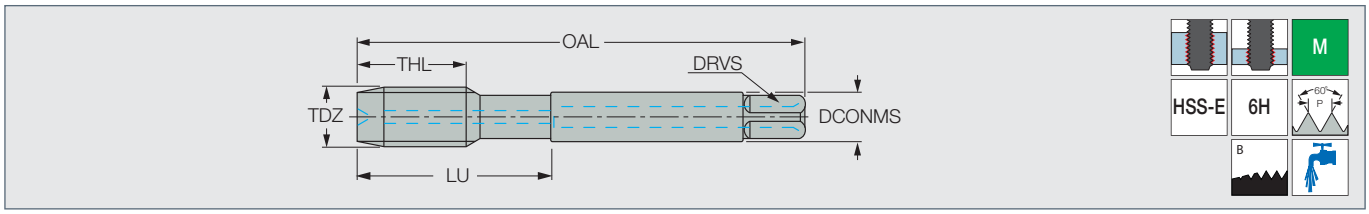
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TP-M-DCBM

DIN 13 HSS Gun Point Machine Taps - ISO Metric Coarse Threads for Hardened Steel and H.T.A.



METRIC	TDZ	TP[1]	OAL	THL	LU	DCONMS	NOF[2]	DRVS[3]	Pre-hole	CSP[4]	Standard	PB070
TP-M8X1.25-DCBM	M8	1.25	90	18	35	8	3	6.2	6.8	1	DIN 371	
TP-M10X1.5-DCBM	M10	1.5	100	20	39	10	3	8	8.5	1	DIN 371	
TP-M12X1.75-DCBM	M12	1.75	110	22	-	9	4	7	10.2	1	DIN 376	
TP-M14X2-DCBM	M14	2	110	24	-	11	4	9	12	1	DIN 376	
TP-M16X2-DCBM	M16	2	110	26	-	12	4	9	14	1	DIN 376	

INCH	TDZ	TP mm[1]	OAL	THL	LU	DCONMS	NOF[2]	DRVS[3]	Pre-hole	CSP[4]	Standard	PB070
TP-M8X1.25-DCBM	M8	1.250	3.543	.709	1.38	.315	3	.244	.27	1	DIN 371	
TP-M10X1.5-DCBM	M10	1.500	3.937	.787	1.54	.394	3	.315	.33	1	DIN 371	
TP-M12X1.75-DCBM	M12	1.750	4.331	.866	-	.354	4	.276	.40	1	DIN 376	
TP-M14X2-DCBM	M14	2.000	4.331	.945	-	.433	4	.354	.47	1	DIN 376	
TP-M16X2-DCBM	M16	2.000	4.331	1.024	-	.472	4	.354	.55	1	DIN 376	

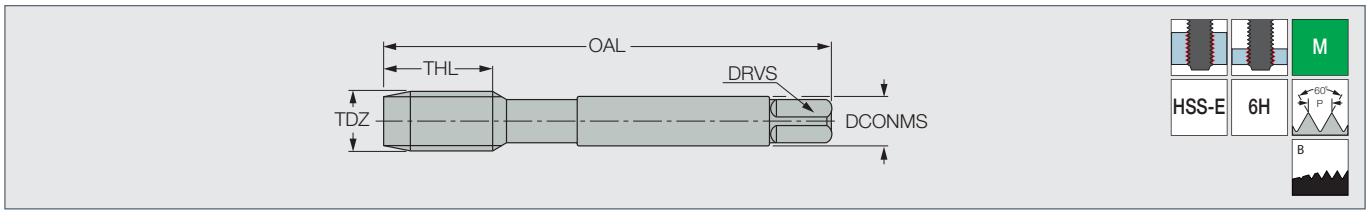
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size
(4) 0 - Without coolant supply, 1 - With coolant supply

TP-MF-DNBM

DIN 13 HSSE 5% Co Gun Point Machine Taps - ISO metric fine threads for a wide range of materials.



Tough ⟷ Hard

METRIC	TDZ	TP(1)	OAL	THL	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	B070	PB070
TP-MF4X0.5-DNBM	MF4	0.5	63	10	2.8	3	2.1	3.5	DIN 374		
TP-MF5X0.5-DNBM	MF5	0.5	70	12	3.5	3	2.7	4.5	DIN 374		
TP-MF6X0.75-DNBM	MF6	0.75	80	12	4.5	3	3.4	5.2	DIN 374		
TP-MF8X1-DNBM	MF8	1	90	15	6	3	4.9	7	DIN 374		
TP-MF10X1-DNBM	MF10	1	90	18	7	3	5.5	9	DIN 374		●
TP-MF10X1.25-DNBM	MF10	1.25	100	18	7	3	5.5	8.8	DIN 374		●
TP-MF12X1-DNBM	MF12	1	100	18	9	4	7	11	DIN 374		
TP-MF12X1.25-DNBM	MF12	1.25	100	18	9	4	7	10.8	DIN 374		●
TP-MF12X1.5-DNBM	MF12	1.5	100	18	9	4	7	10.5	DIN 374		●
TP-MF14X1-DNBM	MF14	1	100	18	11	4	9	13	DIN 374		
TP-MF14X1.25-DNBM	MF14	1.25	100	18	11	4	9	12.8	DIN 374		●
TP-MF14X1.5-DNBM	MF14	1.5	100	18	11	4	9	12.5	DIN 374		●
TP-MF16X1.5-DNBM	MF16	1.5	100	18	12	4	9	14.5	DIN 374		●
TP-MF18X1.5-DNBM	MF18	1.5	110	20	14	4	11	16.5	DIN 374		
TP-MF20X1.5-DNBM	MF20	1.5	125	24	16	4	12	18.5	DIN 374		
TP-MF22X1.5-DNBM	MF22	1.5	125	24	18	4	14.5	20.5	DIN 374		
TP-MF24X1.5-DNBM	MF24	1.5	140	24	18	4	14.5	22.5	DIN 374		

Tough ⟷ Hard

INCH	TDZ	TP mm(1)	OAL	THL	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	B070	PB070
TP-MF4X0.5-DNBM	MF4	.500	2.480	.394	.110	3	.083	.14	DIN 374		
TP-MF5X0.5-DNBM	MF5	.500	2.756	.472	.138	3	.106	.18	DIN 374		
TP-MF6X0.75-DNBM	MF6	.750	3.150	.472	.177	3	.134	.20	DIN 374		
TP-MF8X1-DNBM	MF8	1.000	3.543	.591	.236	3	.193	.28	DIN 374		
TP-MF10X1-DNBM	MF10	1.000	3.543	.709	.276	3	.217	.35	DIN 374		●
TP-MF10X1.25-DNBM	MF10	1.250	3.937	.709	.276	3	.217	.35	DIN 374		●
TP-MF12X1-DNBM	MF12	1.000	3.937	.709	.354	4	.276	.43	DIN 374		
TP-MF12X1.25-DNBM	MF12	1.250	3.937	.709	.354	4	.276	.43	DIN 374		●
TP-MF12X1.5-DNBM	MF12	1.500	3.937	.709	.354	4	.276	.41	DIN 374		●
TP-MF14X1-DNBM	MF14	1.000	3.937	.709	.433	4	.354	.51	DIN 374		
TP-MF14X1.25-DNBM	MF14	1.250	3.937	.709	.433	4	.354	.50	DIN 374		●
TP-MF14X1.5-DNBM	MF14	1.500	3.937	.709	.433	4	.354	.49	DIN 374		●
TP-MF16X1.5-DNBM	MF16	1.500	3.937	.709	.472	4	.354	.57	DIN 374		●
TP-MF18X1.5-DNBM	MF18	1.500	4.331	.787	.551	4	.433	.65	DIN 374		
TP-MF20X1.5-DNBM	MF20	1.500	4.921	.945	.630	4	.472	.73	DIN 374		
TP-MF22X1.5-DNBM	MF22	1.500	4.921	.945	.709	4	.571	.81	DIN 374		
TP-MF24X1.5-DNBM	MF24	1.500	5.512	.945	.709	4	.571	.89	DIN 374		

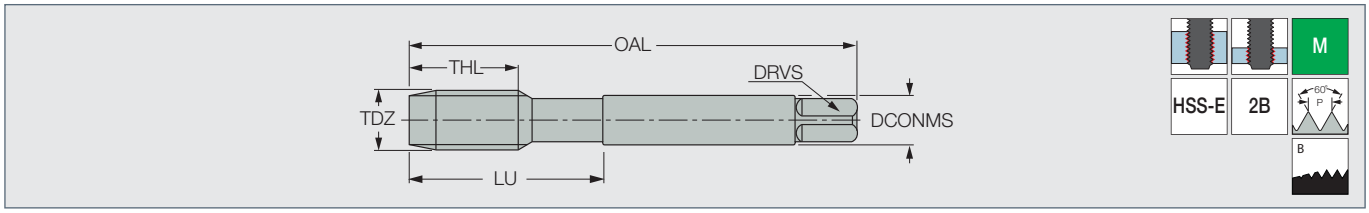
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

●: Line up

TP-UNC-DNBM

HSSE 5% Co Gun Point Machine Taps - unified coarse threads for a wide range of materials.



Tough ↔ Hard

METRIC	TDZ	TPI(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	B070	PB070
TP-UNCNO.4X40-DNBM	UNC No.4	40	56	10	18	3.5	2	2.7	2.35	DIN 371		
TP-UNCNO.5X40-DNBM	UNC No.5	40	56	10	18	3.5	3	2.7	2.65	DIN 371		
TP-UNCNO.6X32-DNBM	UNC No.6	32	56	10	20	4	3	3	2.85	DIN 371		
TP-UNCNO.8X32-DNBM	UNC No.8	32	63	12	21	4.5	3	3.4	3.5	DIN 371		
TP-UNCNO.10X24-DNBM	UNC No.10	24	7	14	25	6	3	4.9	3.9	DIN 371		
TP-UNCNO.12X24-DNBM	UNC No.12	24	80	16	30	6	3	4.9	4.5	DIN 371		
TP-UNC1/4X20-DNBM	UNC 1/4	20	80	16	30	7	3	5.5	5.1	DIN 371		
TP-UNC5/16X18-DNBM	UNC 5/16	18	90	18	35	8	3	6.2	6.6	DIN 371		
TP-UNC3/8X16-DNBM	UNC 3/8	16	100	20	39	10	3	8	8	DIN 371		
TP-UNC7/16X14-DNBM	UNC 7/16	14	100	20	-	8	4	6.2	9.4	DIN 376		
TP-UNC1/2X13-DNBM	UNC 1/2	13	110	22	-	9	4	7	10.8	DIN 376		
TP-UNC9/16X12-DNBM	UNC 9/16	12	110	24	-	11	4	9	12.2	DIN 376		
TP-UNC5/8X11-DNBM	UNC 5/8	11	110	26	-	12	4	9	13.5	DIN 376		
TP-UNC3/4X10-DNBM	UNC 3/4	10	125	30	-	14	4	11	16.5	DIN 376		
TP-UNC7/8X9-DNBM	UNC 7/8	9	140	30	-	18	4	14.5	19.5	DIN 376		
TP-UNC1X8-DNBM	UNC 1"	8	160	36	-	18	4	14.5	22.25	DIN 376		

Tough ↔ Hard

INCH	TDZ	TPI(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	B070	PB070
TP-UNCNO.4X40-DNBM	UNC No.4	40.0	2.205	.394	.71	.138	2	.106	.09	DIN 371		
TP-UNCNO.5X40-DNBM	UNC No.5	40.0	2.205	.394	.71	.138	3	.106	.10	DIN 371		
TP-UNCNO.6X32-DNBM	UNC No.6	32.0	2.205	.394	.79	.157	3	.118	.11	DIN 371		
TP-UNCNO.8X32-DNBM	UNC No.8	32.0	2.480	.472	.83	.177	3	.134	.14	DIN 371		
TP-UNCNO.10X24-DNBM	UNC No.10	24.0	.276	.551	.98	.236	3	.193	.15	DIN 371		
TP-UNCNO.12X24-DNBM	UNC No.12	24.0	3.150	.630	1.18	.236	3	.193	.18	DIN 371		
TP-UNC1/4X20-DNBM	UNC 1/4	20.0	3.150	.630	1.18	.276	3	.217	.20	DIN 371		
TP-UNC5/16X18-DNBM	UNC 5/16	18.0	3.543	.709	1.38	.315	3	.244	.26	DIN 371		
TP-UNC3/8X16-DNBM	UNC 3/8	16.0	3.937	.787	1.54	.394	3	.315	.31	DIN 371		
TP-UNC7/16X14-DNBM	UNC 7/16	14.0	3.937	.787	-	.315	4	.244	.37	DIN 376		
TP-UNC1/2X13-DNBM	UNC 1/2	13.0	4.331	.866	-	.354	4	.276	.43	DIN 376		
TP-UNC9/16X12-DNBM	UNC 9/16	12.0	4.331	.945	-	.433	4	.354	.48	DIN 376		
TP-UNC5/8X11-DNBM	UNC 5/8	11.0	4.331	1.024	-	.472	4	.354	.53	DIN 376		
TP-UNC3/4X10-DNBM	UNC 3/4	10.0	4.921	1.181	-	.551	4	.433	.65	DIN 376		
TP-UNC7/8X9-DNBM	UNC 7/8	9.0	5.512	1.181	-	.709	4	.571	.77	DIN 376		
TP-UNC1X8-DNBM	UNC 1"	8.0	6.299	1.417	-	.709	4	.571	.88	DIN 376		

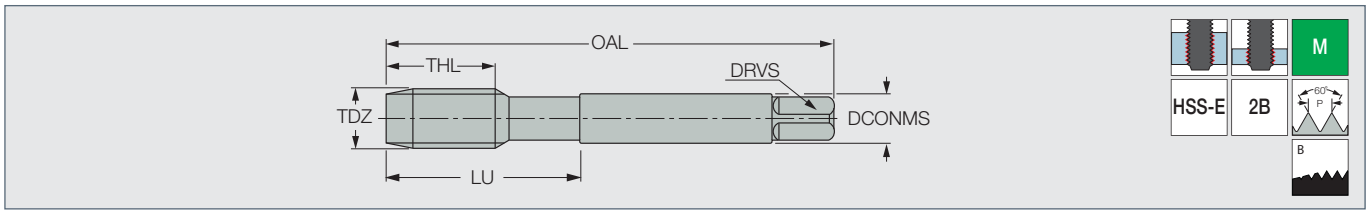
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

●: Line up

(1) Threads per inch
(2) Number of flutes
(3) Torque key size

TP-UNF-DNBM

HSSE 5% Co Gun Point Machine Taps - unified fine threads for a wide range of materials.



Tough ↔ Hard

METRIC	TDZ	TPI(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	B070	PB070
TP-UNFNO.4X48-DNBM	UNF No.4	48	56	8	18	3.5	2	2.7	2.4	DIN 371		
TP-UNFNO.5X44-DNBM	UNF No.5	44	56	9	18	3.5	3	2.7	2.7	DIN 371		
TP-UNFNO.6X40-DNBM	UNF No.6	40	56	10	20	4	3	3	2.95	DIN 371		
TP-UNFNO.8X36-DNBM	UNF No.8	36	63	12	21	4.5	3	3.4	3.5	DIN 371		
TP-UNFNO.10X32-DNBM	UNF No.10	32	70	12	25	6	3	4.9	4.1	DIN 371		
TP-UNFNO.12X28-DNBM	UNF No.12	28	80	12	30	6	3	4.9	4.6	DIN 371		
TP-UNF1/4X28-DNBM	UNF 1/4	28	80	12	30	7	3	5.5	5.5	DIN 371		
TP-UNF5/16X24-DNBM	UNF 5/16	24	90	15	35	8	3	6.2	6.9	DIN 371		
TP-UNF3/8X24-DNBM	UNF 3/8	24	90	18	39	10	3	8	8.5	DIN 371		
TP-UNF7/16X20-DNBM	UNF 7/16	20	100	18	-	8	4	6.2	9.9	DIN 376		
TP-UNF1/2X20-DNBM	UNF 1/2	20	100	18	-	9	4	7	11.5	DIN 376		
TP-UNF9/16X18-DNBM	UNF 9/16	18	100	18	-	11	4	9	12.9	DIN 376		
TP-UNF5/8X18-DNBM	UNF 5/8	18	100	18	-	12	4	9	14.5	DIN 376		
TP-UNF3/4X16-DNBM	UNF 3/4	16	110	24	-	14	4	11	17.5	DIN 376		
TP-UNF7/8X14-DNBM	UNF 7/8	14	125	24	-	18	4	14.5	20.5	DIN 376		
TP-UNF1X12-DNBM	UNF 1"	12	140	28	-	18	4	14.5	23.25	DIN 376		

Tough ↔ Hard

INCH	TDZ	TPI(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	B070	PB070
TP-UNFNO.4X48-DNBM	UNF No.4	48.0	2.205	.315	.71	.138	2	.106	.09	DIN 371		
TP-UNFNO.5X44-DNBM	UNF No.5	44.0	2.205	.354	.71	.138	3	.106	.11	DIN 371		
TP-UNFNO.6X40-DNBM	UNF No.6	40.0	2.205	.394	.79	.157	3	.118	.12	DIN 371		
TP-UNFNO.8X36-DNBM	UNF No.8	36.0	2.480	.472	.83	.177	3	.134	.14	DIN 371		
TP-UNFNO.10X32-DNBM	UNF No.10	32.0	2.756	.472	.98	.236	3	.193	.16	DIN 371		
TP-UNFNO.12X28-DNBM	UNF No.12	28.0	3.150	.472	1.18	.236	3	.193	.18	DIN 371		
TP-UNF1/4X28-DNBM	UNF 1/4	28.0	3.150	.472	1.18	.276	3	.217	.22	DIN 371		
TP-UNF5/16X24-DNBM	UNF 5/16	24.0	3.543	.591	1.38	.315	3	.244	.27	DIN 371		
TP-UNF3/8X24-DNBM	UNF 3/8	24.0	3.543	.709	1.54	.394	3	.315	.33	DIN 371		
TP-UNF7/16X20-DNBM	UNF 7/16	20.0	3.937	.709	-	.315	4	.244	.39	DIN 376		
TP-UNF1/2X20-DNBM	UNF 1/2	20.0	3.937	.709	-	.354	4	.276	.45	DIN 376		
TP-UNF9/16X18-DNBM	UNF 9/16	18.0	3.937	.709	-	.433	4	.354	.51	DIN 376		
TP-UNF5/8X18-DNBM	UNF 5/8	18.0	3.937	.709	-	.472	4	.354	.57	DIN 376		
TP-UNF3/4X16-DNBM	UNF 3/4	16.0	4.331	.945	-	.551	4	.433	.69	DIN 376		
TP-UNF7/8X14-DNBM	UNF 7/8	14.0	4.921	.945	-	.709	4	.571	.81	DIN 376		
TP-UNF1X12-DNBM	UNF 1"	12.0	5.512	1.102	-	.709	4	.571	.92	DIN 376		

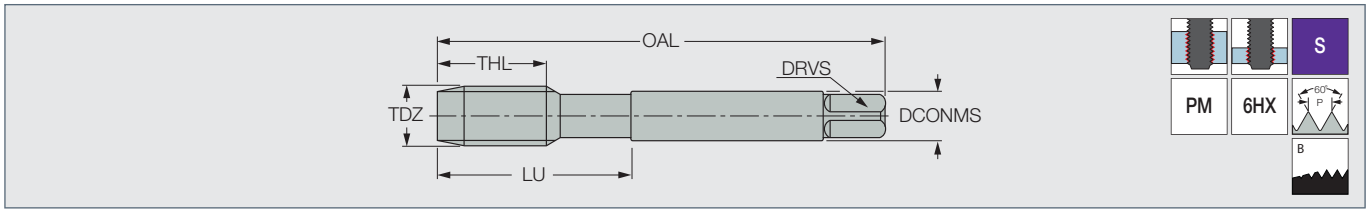
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

●: Line up

(1) Threads per inch
(2) Number of flutes
(3) Torque key size

TP-M-DNBS

PM Gun Point Machine Taps according to DIN 13 - ISO Metric coarse threads on steel with good machinability.



Tough ⟷ Hard

METRIC	TDZ	TP(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	HB060	GB060
TP-M2X0.4-DNBS	M2	0.4	45	8	39	2.8	2	2.1	1.6	DIN 371		
TP-M2.5X0.45-DNBS	M2.5	0.45	50	9	30	2.8	2	2.1	2.05	DIN 371		
TP-M3X0.5-DNBS	M3	0.5	56	10	18	3.5	3	2.7	2.5	DIN 371		
TP-M4X0.7-DNBS	M4	0.7	63	12	21	4.5	3	3.4	3.3	DIN 371		
TP-M5X0.8-DNBS	M5	0.8	70	14	25	6	3	4.9	4.2	DIN 371		
TP-M6X1-DNBS	M6	1	80	16	30	6	3	4.9	5	DIN 371		
TP-M8X1.25-DNBS	M8	1.25	90	18	35	8	3	6.2	6.8	DIN 371		
TP-M10X1.5-DNBS	M10	1.5	100	20	39	10	3	8	8.5	DIN 371		
TP-M12X1.75-DNBS	M12	1.75	110	22	-	9	4	7	10.2	DIN 376		
TP-M14X2-DNBS	M14	2	110	24	-	11	4	9	12	DIN 376		
TP-M16X2-DNBS	M16	2	110	26	-	12	4	9	14	DIN 376		
TP-M18X2.5-DNBS	M18	2.5	125	30	-	14	4	11	15.5	DIN 376		
TP-M20X2.5-DNBS	M20	2.5	140	30	21	16	4	12	17.5	DIN 376		

Tough ⟷ Hard

INCH	TDZ	TP mm(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	HB060	GB060
TP-M2X0.4-DNBS	M2	.400	1.772	.315	1.54	.110	2	.083	.06	DIN 371		
TP-M2.5X0.45-DNBS	M2.5	.450	1.968	.354	1.18	.110	2	.083	.08	DIN 371		
TP-M3X0.5-DNBS	M3	.500	2.205	.394	.71	.138	3	.106	.10	DIN 371		
TP-M4X0.7-DNBS	M4	.700	2.480	.472	.83	.177	3	.134	.13	DIN 371		
TP-M5X0.8-DNBS	M5	.800	2.756	.551	.98	.236	3	.193	.17	DIN 371		
TP-M6X1-DNBS	M6	1.000	3.150	.630	1.18	.236	3	.193	.20	DIN 371		
TP-M8X1.25-DNBS	M8	1.250	3.543	.709	1.38	.315	3	.244	.27	DIN 371		
TP-M10X1.5-DNBS	M10	1.500	3.937	.787	1.54	.394	3	.315	.33	DIN 371		
TP-M12X1.75-DNBS	M12	1.750	4.331	.866	-	.354	4	.276	.40	DIN 376		
TP-M14X2-DNBS	M14	2.000	4.331	.945	-	.433	4	.354	.47	DIN 376		
TP-M16X2-DNBS	M16	2.000	4.331	1.024	-	.472	4	.354	.55	DIN 376		
TP-M18X2.5-DNBS	M18	2.500	4.921	1.181	-	.551	4	.433	.61	DIN 376		
TP-M20X2.5-DNBS	M20	2.500	5.512	1.181	.83	.630	4	.472	.69	DIN 376		

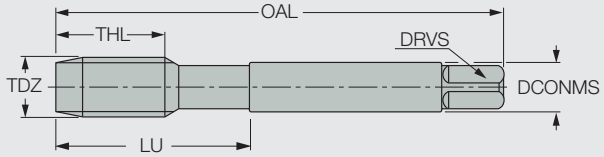
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

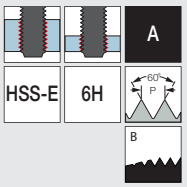
●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TP-M-DNBA

DIN 13 HSSE 5% Co Gun Point Machine Taps - ISO metric coarse threads for machining aluminum.





METRIC	TDZ	TP(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	DB070
TP-M2X0.4-DNBA	M2	0.4	45	8	-	2.8	2	2.1	1.6	DIN 371	
TP-M3X0.5-DNBA	M3	0.5	56	10	18	3.5	3	2.7	2.5	DIN 371	
TP-M4X0.7-DNBA	M4	0.7	63	12	21	4.5	3	3.4	3.3	DIN 371	
TP-M5X0.8-DNBA	M5	0.8	70	14	25	6	3	4.9	4.2	DIN 371	
TP-M6X1-DNBA	M6	1	80	16	30	6	3	4.9	5	DIN 371	
TP-M8X1.25-DNBA	M8	1.25	90	18	35	8	3	6.2	6.8	DIN 371	
TP-M10X1.5-DNBA	M10	1.5	100	20	39	10	3	8	8.5	DIN 371	
TP-M12X1.75-DNBA	M12	1.75	110	22	-	9	4	7	10.2	DIN 376	
TP-M14X2-DNBA	M14	2	110	24	-	11	4	9	12	DIN 376	
TP-M16X2-DNBA	M16	2	110	26	-	12	4	9	14	DIN 376	
TP-M18X2.5-DNBA	M18	2.5	125	30	-	14	4	11	15.5	DIN 376	
TP-M20X2.5-DNBA	M20	2.5	140	30	-	16	4	12	17.5	DIN 376	

INCH	TDZ	TP mm(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	DB070
TP-M2X0.4-DNBA	M2	.400	1.772	.315	-	.110	2	.083	.06	DIN 371	
TP-M3X0.5-DNBA	M3	.500	2.205	.394	.71	.138	3	.106	.10	DIN 371	
TP-M4X0.7-DNBA	M4	.700	2.480	.472	.83	.177	3	.134	.13	DIN 371	
TP-M5X0.8-DNBA	M5	.800	2.756	.551	.98	.236	3	.193	.17	DIN 371	
TP-M6X1-DNBA	M6	1.000	3.150	.630	1.18	.236	3	.193	.20	DIN 371	
TP-M8X1.25-DNBA	M8	1.250	3.543	.709	1.38	.315	3	.244	.27	DIN 371	
TP-M10X1.5-DNBA	M10	1.500	3.937	.787	1.54	.394	3	.315	.33	DIN 371	
TP-M12X1.75-DNBA	M12	1.750	4.331	.866	-	.354	4	.276	.40	DIN 376	
TP-M14X2-DNBA	M14	2.000	4.331	.945	-	.433	4	.354	.47	DIN 376	
TP-M16X2-DNBA	M16	2.000	4.331	1.024	-	.472	4	.354	.55	DIN 376	
TP-M18X2.5-DNBA	M18	2.500	4.921	1.181	-	.551	4	.433	.61	DIN 376	
TP-M20X2.5-DNBA	M20	2.500	5.512	1.181	-	.630	4	.472	.69	DIN 376	

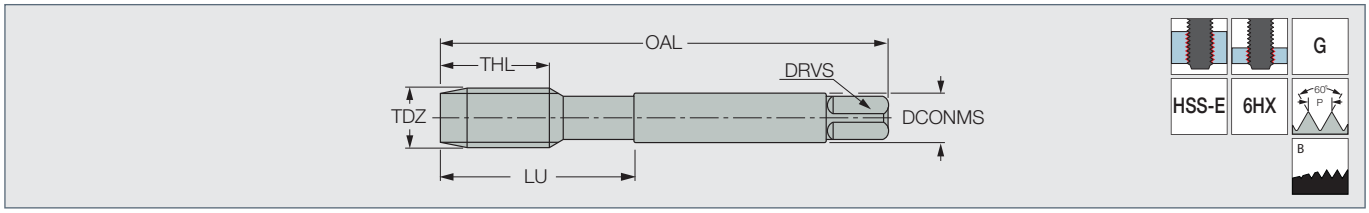
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TP-M-DNBG

DIN 13 HSSE 5% Co Gun Point Machine Taps - ISO metric coarse threads for machining cast iron.



METRIC	TDZ	TP(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	AB070
TP-M3X0.5-DNBG	M3	0.5	56	10	18	3.5	3	2.7	2.5	DIN 371	
TP-M4X0.7-DNBG	M4	0.7	63	12	21	4.5	3	3.4	3.3	DIN 371	
TP-M5X0.8-DNBG	M5	0.8	70	14	25	6	3	4.9	4.2	DIN 371	
TP-M6X1-DNBG	M6	1	80	16	30	6	3	4.9	5	DIN 371	
TP-M8X1.25-DNBG	M8	1.25	90	18	35	8	3	6.2	6.8	DIN 371	
TP-M10X1.5-DNBG	M10	1.5	100	20	39	10	3	8	8.5	DIN 371	
TP-M12X1.75-DNBG	M12	1.75	110	22	-	9	4	7	10.2	DIN 376	
TP-M14X2-DNBG	M14	2	110	24	-	11	4	9	12	DIN 376	
TP-M16X2-DNBG	M16	2	110	26	-	12	4	9	14	DIN 376	
TP-M18X2.5-DNBG	M18	2.5	125	30	-	14	4	11	15.5	DIN 376	
TP-M20X2.5-DNBG	M20	2.5	140	30	-	16	4	12	17.5	DIN 376	

INCH	TDZ	TP mm(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	AB070
TP-M3X0.5-DNBG	M3	.500	2.205	.394	.71	.138	3	.106	.10	DIN 371	
TP-M4X0.7-DNBG	M4	.700	2.480	.472	.83	.177	3	.134	.13	DIN 371	
TP-M5X0.8-DNBG	M5	.800	2.756	.551	.98	.236	3	.193	.17	DIN 371	
TP-M6X1-DNBG	M6	1.000	3.150	.630	1.18	.236	3	.193	.20	DIN 371	
TP-M8X1.25-DNBG	M8	1.250	3.543	.709	1.38	.315	3	.244	.27	DIN 371	
TP-M10X1.5-DNBG	M10	1.500	3.937	.787	1.54	.394	3	.315	.33	DIN 371	
TP-M12X1.75-DNBG	M12	1.750	4.331	.866	-	.354	4	.276	.40	DIN 376	
TP-M14X2-DNBG	M14	2.000	4.331	.945	-	.433	4	.354	.47	DIN 376	
TP-M16X2-DNBG	M16	2.000	4.331	1.024	-	.472	4	.354	.55	DIN 376	
TP-M18X2.5-DNBG	M18	2.500	4.921	1.181	-	.551	4	.433	.61	DIN 376	
TP-M20X2.5-DNBG	M20	2.500	5.512	1.181	-	.630	4	.472	.69	DIN 376	

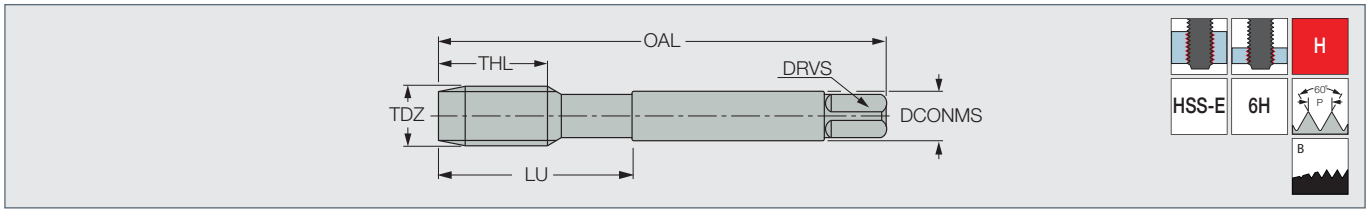
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TP-M-DNBH

DIN 13 HSSE 5% Co Gun Point Machine Taps - ISO metric coarse threads, for hardened steel and high temperature alloys.



Tough ↔ Hard

METRIC	TDZ	TP(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	NB070	GB070
TP-M2X0.4-DNBH	M2	0.4	45	8	-	2.8	2	2.1	1.6	DIN 371		
TP-M2.2X0.45-DNBH	M2.2	0.45	45	9	-	2.8	2	2.1	1.75	DIN 371		
TP-M2.5X0.45-DNBH	M2.5	0.45	50	9	-	2.8	2	2.1	2.05	DIN 371		
TP-M3X0.5-DNBH	M3	0.5	56	10	18	3.5	3	2.7	2.5	DIN 371	●	
TP-M3.5X0.6-DNBH	M3.5	0.6	56	10	20	4	3	3	2.9	DIN 371		
TP-M4X0.7-DNBH	M4	0.7	63	12	21	4.5	3	3.4	3.3	DIN 371		
TP-M5X0.8-DNBH	M5	0.8	70	14	25	6	3	4.9	4.2	DIN 371		
TP-M6X1-DNBH	M6	1	80	16	30	6	3	4.9	5	DIN 371		
TP-M8X1.25-DNBH	M8	1.25	90	18	35	8	3	6.2	6.8	DIN 371		
TP-M10X1.5-DNBH	M10	1.5	100	20	39	10	3	8	8.5	DIN 371		
TP-M12X1.75-DNBH	M12	1.75	110	22	-	9	4	7	10.2	DIN 376		
TP-M14X2-DNBH	M14	2	110	24	-	11	4	9	12	DIN 376		
TP-M16X2-DNBH	M16	2	110	26	-	12	4	9	14	DIN 376		
TP-M18X2.5-DNBH	M18	2.5	125	30	-	14	4	11	15.5	DIN 376		
TP-M20X2.5-DNBH	M20	2.5	140	30	-	16	4	12	17.5	DIN 376		

Tough ↔ Hard

INCH	TDZ	TP mm(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	NB070	GB070
TP-M2X0.4-DNBH	M2	.400	1.772	.315	-	.110	2	.083	.06	DIN 371		
TP-M2.2X0.45-DNBH	M2.2	.450	1.772	.354	-	.110	2	.083	.07	DIN 371		
TP-M2.5X0.45-DNBH	M2.5	.450	1.968	.354	-	.110	2	.083	.08	DIN 371		
TP-M3X0.5-DNBH	M3	.500	2.205	.394	.71	.138	3	.106	.10	DIN 371	●	
TP-M3.5X0.6-DNBH	M3.5	.600	2.205	.394	.79	.157	3	.118	.11	DIN 371		
TP-M4X0.7-DNBH	M4	.700	2.480	.472	.83	.177	3	.134	.13	DIN 371		
TP-M5X0.8-DNBH	M5	.800	2.756	.551	.98	.236	3	.193	.17	DIN 371		
TP-M6X1-DNBH	M6	1.000	3.150	.630	1.18	.236	3	.193	.20	DIN 371		
TP-M8X1.25-DNBH	M8	1.250	3.543	.709	1.38	.315	3	.244	.27	DIN 371		
TP-M10X1.5-DNBH	M10	1.500	3.937	.787	1.54	.394	3	.315	.33	DIN 371		
TP-M12X1.75-DNBH	M12	1.750	4.331	.866	-	.354	4	.276	.40	DIN 376		
TP-M14X2-DNBH	M14	2.000	4.331	.945	-	.433	4	.354	.47	DIN 376		
TP-M16X2-DNBH	M16	2.000	4.331	1.024	-	.472	4	.354	.55	DIN 376		
TP-M18X2.5-DNBH	M18	2.500	4.921	1.181	-	.551	4	.433	.61	DIN 376		
TP-M20X2.5-DNBH	M20	2.500	5.512	1.181	-	.630	4	.472	.69	DIN 376		

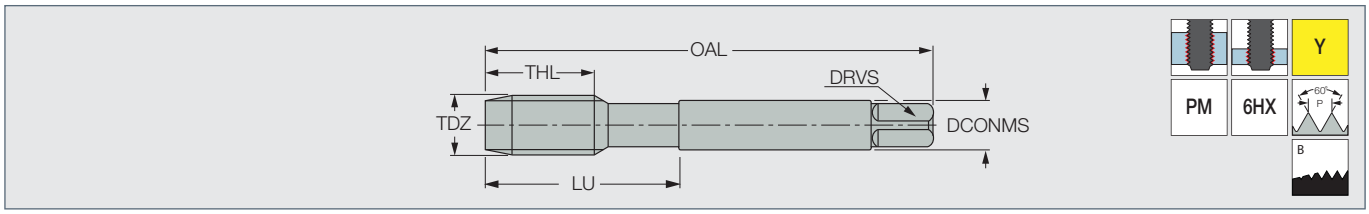
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TP-M-DNBY

DIN 13 HSS Gun Point Machine Taps - ISO Metric Coarse Threads for Hardened Steel and H.T.A.



METRIC	TDZ	TP(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	GB060
TP-M2X0.4-DNBY	M2	0.4	45	8	-	2.8	2	2.1	1.6	DIN 371	
TP-M2.2X0.45-DNBY	M2.2	0.45	45	9	-	2.8	2	2.1	1.75	DIN 371	
TP-M2.5X0.45-DNBY	M2.5	0.45	50	9	-	2.8	2	2.1	25	DIN 371	
TP-M3X0.5-DNBY	M3	0.5	56	10	18	3.5	3	2.7	2.5	DIN 371	
TP-M3.5X0.6-DNBY	M3.5	0.6	56	10	20	4	3	3	2.9	DIN 371	
TP-M4X0.7-DNBY	M4	0.7	63	12	21	4.5	3	3.4	3.3	DIN 371	
TP-M5X0.8-DNBY	M5	0.8	70	14	25	6	3	4.9	4.2	DIN 371	
TP-M6X1-DNBY	M6	1	80	16	30	6	3	4.9	5	DIN 371	
TP-M8X1.25-DNBY	M8	1.25	90	18	35	8	3	6.2	6.8	DIN 371	
TP-M10X1.5-DNBY	M10	1.5	100	20	39	10	3	8	8.5	DIN 371	
TP-M12X1.75-DNBY	M12	1.75	110	22	-	9	4	7	10.2	DIN 376	
TP-M14X2-DNBY	M14	2	110	24	-	11	4	9	12	DIN 376	
TP-M16X2-DNBY	M16	2	110	26	-	12	4	9	14	DIN 376	
TP-M18X2.5-DNBY	M18	2.5	125	30	-	14	4	11	15.5	DIN 376	
TP-M20X2.5-DNBY	M20	2.5	140	30	-	16	4	12	17.5	DIN 376	

INCH	TDZ	TP mm(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	GB060
TP-M2X0.4-DNBY	M2	.400	1.772	.315	-	.110	2	.083	.06	DIN 371	
TP-M2.2X0.45-DNBY	M2.2	.450	1.772	.354	-	.110	2	.083	.07	DIN 371	
TP-M2.5X0.45-DNBY	M2.5	.450	1.968	.354	-	.110	2	.083	.08	DIN 371	
TP-M3X0.5-DNBY	M3	.500	2.205	.394	.71	.138	3	.106	.10	DIN 371	
TP-M3.5X0.6-DNBY	M3.5	.600	2.205	.394	.79	.157	3	.118	.11	DIN 371	
TP-M4X0.7-DNBY	M4	.700	2.480	.472	.83	.177	3	.134	.13	DIN 371	
TP-M5X0.8-DNBY	M5	.800	2.756	.551	.98	.236	3	.193	.17	DIN 371	
TP-M6X1-DNBY	M6	1.000	3.150	.630	1.18	.236	3	.193	.20	DIN 371	
TP-M8X1.25-DNBY	M8	1.250	3.543	.709	1.38	.315	3	.244	.27	DIN 371	
TP-M10X1.5-DNBY	M10	1.500	3.937	.787	1.54	.394	3	.315	.33	DIN 371	
TP-M12X1.75-DNBY	M12	1.750	4.331	.866	-	.354	4	.276	.40	DIN 376	
TP-M14X2-DNBY	M14	2.000	4.331	.945	-	.433	4	.354	.47	DIN 376	
TP-M16X2-DNBY	M16	2.000	4.331	1.024	-	.472	4	.354	.55	DIN 376	
TP-M18X2.5-DNBY	M18	2.500	4.921	1.181	-	.551	4	.433	.61	DIN 376	
TP-M20X2.5-DNBY	M20	2.500	5.512	1.181	-	.630	4	.472	.69	DIN 376	

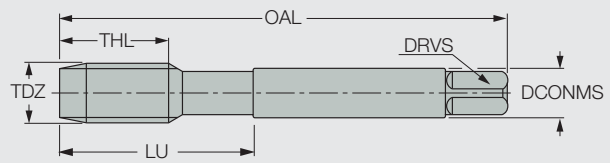
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

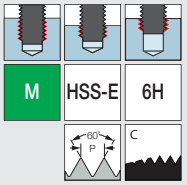
●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TS-M-DNCM

DIN 13 HSSE 5% Co Spiral Flute Machine Taps ISO Metric coarse threads for a wide range of materials.





Tough ↔ Hard

METRIC	TDZ	TP[1]	OAL	THL	LU	DCONMS	NOF[2]	DRVS[3]	Pre-hole	Standard	B070	PB070
TS-M2X0.4-DNCM	M2	0.4	45	6	10	2.8	3	2.1	1.6	DIN 371	●	
TS-M2.2X0.45-DNCM	M2.2	0.45	45	6	10	2.8	3	2.1	1.75	DIN 371		
TS-M2.5X0.45-DNCM	M2.5	0.45	50	6	12	2.8	3	2.1	2.05	DIN 371		
TS-M3X0.5-DNCM	M3	0.5	56	7	18	3.5	3	2.7	2.5	DIN 371	●	●
TS-M3.5X0.6-DNCM	M3.5	0.6	56	7	20	4	3	3	2.9	DIN 371		
TS-M4X0.7-DNCM	M4	0.7	63	8	21	4.5	3	3.4	3.3	DIN 371	●	●
TS-M5X0.8-DNCM	M5	0.8	70	10	25	6	3	4.9	4.2	DIN 371	●	●
TS-M6X1-DNCM	M6	1	80	12	30	6	3	4.9	5	DIN 371	●	●
TS-M8X1.25-DNCM	M8	1.25	90	15	35	8	3	6.2	6.8	DIN 371	●	●
TS-M10X1.5-DNCM	M10	1.5	100	18	39	10	3	8	8.5	DIN 371	●	●
TS-M12X1.75-DNCM	M12	1.75	110	18	-	9	3	7	10.2	DIN 376	●	●
TS-M14X2-DNCM	M14	2	110	20	-	11	3	9	12	DIN 376		
TS-M16X2-DNCM	M16	2	110	20	-	12	4	9	14	DIN 376	●	●
TS-M18X2.5-DNCM	M18	2.5	125	25	-	14	4	11	15.5	DIN 376		
TS-M20X2.5-DNCM	M20	2.5	140	25	-	16	4	12	17.5	DIN 376		
TS-M22X2.5-DNCM	M22	2.5	140	25	-	18	4	14.5	19.5	DIN 376		
TS-M24X3-DNCM	M24	3	160	30	-	18	4	14.5	21	DIN 376		
TS-M27X3-DNCM	M27	3	160	30	-	20	4	16	24	DIN 376		
TS-M30X3.5-DNCM	M30	3.5	180	35	-	22	4	18	26.5	DIN 376		

Tough ↔ Hard

INCH	TDZ	TP mm[1]	OAL	THL	LU	DCONMS	NOF[2]	DRVS[3]	Pre-hole	Standard	B070	PB070
TS-M2X0.4-DNCM	M2	.400	1.772	.236	.39	.110	3	.083	.06	DIN 371	●	
TS-M2.2X0.45-DNCM	M2.2	.450	1.772	.236	.39	.110	3	.083	.07	DIN 371		
TS-M2.5X0.45-DNCM	M2.5	.450	1.968	.236	.47	.110	3	.083	.08	DIN 371		
TS-M3X0.5-DNCM	M3	.500	2.205	.276	.71	.138	3	.106	.10	DIN 371	●	●
TS-M3.5X0.6-DNCM	M3.5	.600	2.205	.276	.79	.157	3	.118	.11	DIN 371		
TS-M4X0.7-DNCM	M4	.700	2.480	.315	.83	.177	3	.134	.13	DIN 371	●	●
TS-M5X0.8-DNCM	M5	.800	2.756	.394	.98	.236	3	.193	.17	DIN 371	●	●
TS-M6X1-DNCM	M6	1.000	3.150	.472	1.18	.236	3	.193	.20	DIN 371	●	●
TS-M8X1.25-DNCM	M8	1.250	3.543	.591	1.38	.315	3	.244	.27	DIN 371	●	●
TS-M10X1.5-DNCM	M10	1.500	3.937	.709	1.54	.394	3	.315	.33	DIN 371	●	●
TS-M12X1.75-DNCM	M12	1.750	4.331	.709	-	.354	3	.276	.40	DIN 376	●	●
TS-M14X2-DNCM	M14	2.000	4.331	.787	-	.433	3	.354	.47	DIN 376		
TS-M16X2-DNCM	M16	2.000	4.331	.787	-	.472	4	.354	.55	DIN 376	●	●
TS-M18X2.5-DNCM	M18	2.500	4.921	.984	-	.551	4	.433	.61	DIN 376		
TS-M20X2.5-DNCM	M20	2.500	5.512	.984	-	.630	4	.472	.69	DIN 376		
TS-M22X2.5-DNCM	M22	2.500	5.512	.984	-	.709	4	.571	.77	DIN 376		
TS-M24X3-DNCM	M24	3.000	6.299	1.181	-	.709	4	.571	.83	DIN 376		
TS-M27X3-DNCM	M27	3.000	6.299	1.181	-	.787	4	.630	.94	DIN 376		
TS-M30X3.5-DNCM	M30	3.500	7.087	1.378	-	.866	4	.709	1.04	DIN 376		

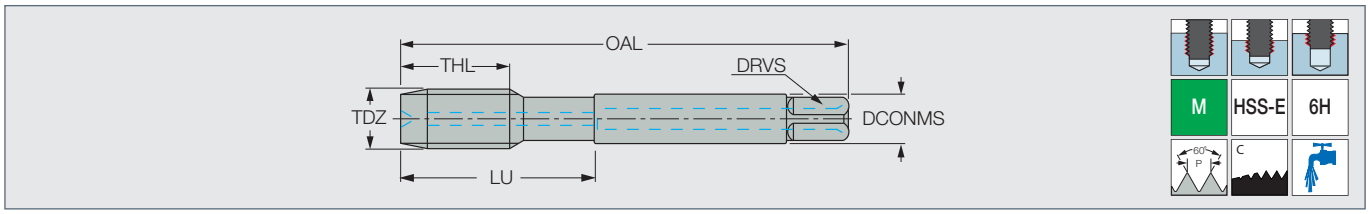
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TS-M-DCCM

DIN 13 HSS Spiral Flute Machine Taps - Metric Coarse Threads for a Wide Range of Materials



METRIC	TDZ	TP[1]	OAL	THL	LU	DCONMS	NOF[2]	DRVS[3]	Pre-hole	Standard	CSP[4]	PB070
TS-M6X1-DCCM	M6	1	80	12	30	6	3	4.9	5	DIN 371	1	
TS-M8X1.25-DCCM	M8	1.25	90	15	35	8	3	6.2	6.8	DIN 371	1	
TS-M10X1.5-DCCM	M10	1.5	100	18	39	10	3	8	8.5	DIN 371	1	
TS-M12X1.75-DCCM	M12	1.75	110	18	-	9	3	7	10.2	DIN 376	1	
TS-M14X2-DCCM	M14	2	110	20	-	11	3	9	12	DIN 376	1	
TS-M16X2-DCCM	M16	2	110	20	-	12	4	9	14	DIN 376	1	

INCH	TDZ	TP mm[1]	OAL	THL	LU	DCONMS	NOF[2]	DRVS[3]	Pre-hole	Standard	CSP[4]	PB070
TS-M6X1-DCCM	M6	1.000	3.150	.472	1.18	.236	3	.193	.20	DIN 371	1	
TS-M8X1.25-DCCM	M8	1.250	3.543	.591	1.38	.315	3	.244	.27	DIN 371	1	
TS-M10X1.5-DCCM	M10	1.500	3.937	.709	1.54	.394	3	.315	.33	DIN 371	1	
TS-M12X1.75-DCCM	M12	1.750	4.331	.709	-	.354	3	.276	.40	DIN 376	1	
TS-M14X2-DCCM	M14	2.000	4.331	.787	-	.433	3	.354	.47	DIN 376	1	
TS-M16X2-DCCM	M16	2.000	4.331	.787	-	.472	4	.354	.55	DIN 376	1	

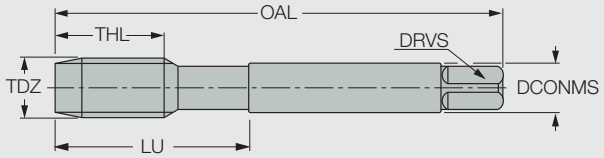
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

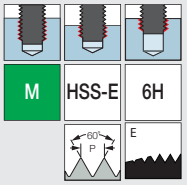
●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size
(4) 0 - Without coolant supply, 1 - With coolant supply

TS-M-DNEM

DIN 13 HSSE. 5% Co Spiral Flute Machine Taps ISO Metric coarse threads for a wide range of materials.





METRIC	TDZ	TP[1]	OAL	THL	LU	DCONMS	NOF[2]	DRVS[3]	Pre-hole	Standard	B070
TS-M4X0.7-DNEM	M4	0.7	63	8	21	4.5	3	3.4	3.3	DIN 371	
TS-M5X0.8-DNEM	M5	0.8	70	10	25	6	3	4.9	4.2	DIN 371	
TS-M6X1-DNEM	M6	1	80	12	30	6	3	4.9	5	DIN 371	
TS-M8X1.25-DNEM	M8	1.25	90	15	35	8	3	6.2	6.8	DIN 371	
TS-M10X1.5-DNEM	M10	1.5	100	18	39	10	3	8	8.5	DIN 371	
TS-M12X1.75-DNEM	M12	1.75	110	18	-	9	3	7	10.2	DIN 376	
TS-M14X2-DNEM	M14	2	110	20	-	11	3	9	12	DIN 376	
TS-M16X2-DNEM	M16	2	110	20	-	12	4	9	14	DIN 376	

INCH	TDZ	TP mm[1]	OAL	THL	LU	DCONMS	NOF[2]	DRVS[3]	Pre-hole	Standard	B070
TS-M4X0.7-DNEM	M4	.700	2.480	.315	.83	.177	3	.134	.13	DIN 371	
TS-M5X0.8-DNEM	M5	.800	2.756	.394	.98	.236	3	.193	.17	DIN 371	
TS-M6X1-DNEM	M6	1.000	3.150	.472	1.18	.236	3	.193	.20	DIN 371	
TS-M8X1.25-DNEM	M8	1.250	3.543	.591	1.38	.315	3	.244	.27	DIN 371	
TS-M10X1.5-DNEM	M10	1.500	3.937	.709	1.54	.394	3	.315	.33	DIN 371	
TS-M12X1.75-DNEM	M12	1.750	4.331	.709	-	.354	3	.276	.40	DIN 376	
TS-M14X2-DNEM	M14	2.000	4.331	.787	-	.433	3	.354	.47	DIN 376	
TS-M16X2-DNEM	M16	2.000	4.331	.787	-	.472	4	.354	.55	DIN 376	

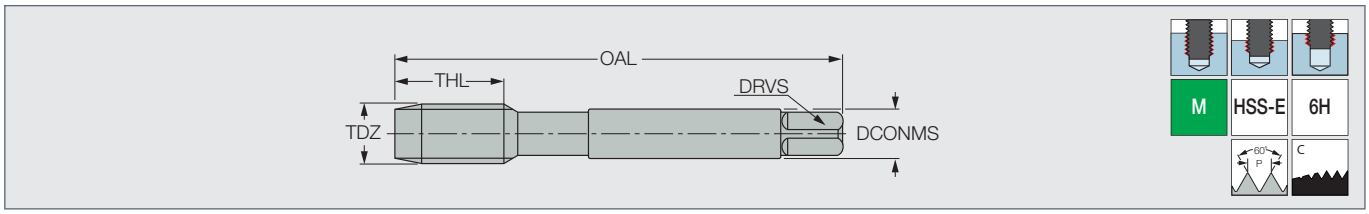
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TS-MF-DNCM

DIN 13 HSSE 5% Co Spiral Flute Machine Taps. ISO Metric fine threads for a wide range of materials.



Tough ↔ Hard

METRIC	TDZ	TP(1)	OAL	THL	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	B070	PB070
TS-MF4X0.5-DNCM	MF4	0.5	63	10	2.8	3	2.1	3.5	DIN 374		
TS-MF5X0.5-DNCM	MF5	0.5	70	12	3.5	3	2.7	4.5	DIN 374		
TS-MF6X0.75-DNCM	MF6	0.75	80	12	4.5	3	3.4	5.2	DIN 374		
TS-MF8X1-DNCM	MF8	1	90	15	60	3	4.9	7	DIN 374		
TS-MF10X1.25-DNCM	MF10	1.25	100	18	70	3	5.5	8.8	DIN 374		●
TS-MF10X1-DNCM	MF10	1	90	18	70	3	5.5	9	DIN 374		●
TS-MF12X1.5-DNCM	MF12	1.5	100	18	90	4	7	10.5	DIN 374		●
TS-MF12X1.25-DNCM	MF12	1.25	100	18	90	4	7	10.8	DIN 374		●
TS-MF12X1-DNCM	MF12	1	100	18	90	4	7	11	DIN 374		
TS-MF14X1.5-DNCM	MF14	1.5	100	18	110	4	9	12.5	DIN 374		●
TS-MF14X1.25-DNCM	MF14	1.25	100	18	110	4	9	12.8	DIN 374		●
TS-MF14X1-DNCM	MF14	1	100	18	110	4	9	13	DIN 374		
TS-MF16X1.5-DNCM	MF16	1.5	100	18	120	4	9	14.5	DIN 374		●
TS-MF18X1.5-DNCM	MF18	1.5	110	20	140	4	11	16.5	DIN 374		
TS-MF20X1.5-DNCM	MF20	1.5	125	24	160	4	12	18.5	DIN 374		
TS-MF22X1.5-DNCM	MF22	1.5	125	24	180	4	14.5	20.5	DIN 374		
TS-MF24X1.5-DNCM	MF24	1.5	140	24	180	4	14.5	22.5	DIN 374		

Tough ↔ Hard

INCH	TDZ	TP mm(1)	OAL	THL	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	B070	PB070
TS-MF4X0.5-DNCM	MF4	.500	2.480	.394	.110	3	.083	.14	DIN 374		
TS-MF5X0.5-DNCM	MF5	.500	2.756	.472	.138	3	.106	.18	DIN 374		
TS-MF6X0.75-DNCM	MF6	.750	3.150	.472	.177	3	.134	.20	DIN 374		
TS-MF8X1-DNCM	MF8	1.000	3.543	.591	.236	3	.193	.28	DIN 374		
TS-MF10X1.25-DNCM	MF10	1.250	3.937	.709	.276	3	.217	.35	DIN 374		●
TS-MF10X1-DNCM	MF10	1.000	3.543	.709	.276	3	.217	.35	DIN 374		●
TS-MF12X1-DNCM	MF12	1.500	3.937	.709	.354	4	.276	.41	DIN 374		●
TS-MF12X1.25-DNCM	MF12	1.250	3.937	.709	.354	4	.276	.43	DIN 374		●
TS-MF12X1.5-DNCM	MF12	1.000	3.937	.709	.354	4	.276	.43	DIN 374		
TS-MF14X1-DNCM	MF14	1.500	3.937	.709	.433	4	.354	.49	DIN 374		●
TS-MF14X1.5-DNCM	MF14	1.250	3.937	.709	.433	4	.354	.50	DIN 374		●
TS-MF14X1.25-DNCM	MF14	1.000	3.937	.709	.433	4	.354	.51	DIN 374		
TS-MF16X1.5-DNCM	MF16	1.500	3.937	.709	.472	4	.354	.57	DIN 374		●
TS-MF18X1.5-DNCM	MF18	1.500	4.331	.787	.551	4	.433	.65	DIN 374		
TS-MF20X1.5-DNCM	MF20	1.500	4.921	.945	.630	4	.472	.73	DIN 374		
TS-MF22X1.5-DNCM	MF22	1.500	4.921	.945	.709	4	.571	.81	DIN 374		
TS-MF24X1.5-DNCM	MF24	1.500	5.512	.945	.709	4	.571	.89	DIN 374		

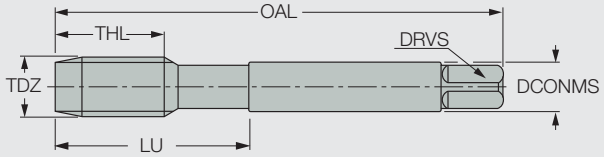
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

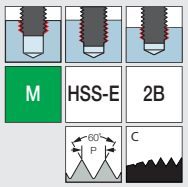
●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TS-UNC-DNCM

HSSE 5% Co Spiral Flute Machine Taps unified coarse threads for a wide range of materials





Tough ⟷ Hard

METRIC	TDZ	TPI(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	B070	PB070
TS-UNCNO.4X40-DNCM	UNC No.4	40	56	10	18	3.5	3	2.7	2.35	DIN 371		
TS-UNCNO.5X40-DNCM	UNC No.5	40	56	10	18	3.5	3	2.7	2.65	DIN 371		
TS-UNCNO.6X32-DNCM	UNC No.6	32	56	10	20	4	3	3	2.85	DIN 371		
TS-UNCNO.8X32-DNCM	UNC No.8	32	63	12	21	4.5	3	3.4	3.5	DIN 371		
TS-UNCNO.10X24-DNCM	UNC No.10	24	70	14	25	6	3	4.9	3.9	DIN 371		
TS-UNCNO.12X24-DNCM	UNC No.12	24	80	16	30	6	3	4.9	4.5	DIN 371		
TS-UNC1/4X20-DNCM	UNC 1/4	20	80	16	30	7	3	5.5	5.1	DIN 371		
TS-UNC5/16X18-DNCM	UNC 5/16	18	90	18	35	8	3	6.2	6.6	DIN 371		
TS-UNC3/8X16-DNCM	UNC 3/8	16	100	20	39	10	3	8	8	DIN 371		
TS-UNC7/16X14-DNCM	UNC 7/16	14	100	20	-	8	3	6.2	9.4	DIN 376		
TS-UNC1/2X13-DNCM	UNC 1/2	13	110	22	-	9	3	7	10.8	DIN 376		
TS-UNC9/16X12-DNCM	UNC 9/16	12	110	24	-	11	4	9	12.2	DIN 376		
TS-UNC5/8X11-DNCM	UNC 5/8	11	110	26	-	12	4	9	13.5	DIN 376		
TS-UNC3/4X10-DNCM	UNC 3/4	10	125	30	-	14	4	11	16.5	DIN 376		
TS-UNC7/8X9-DNCM	UNC 7/8	9	140	30	-	18	4	14.5	19.5	DIN 376		
TS-UNC1X8-DNCM	UNC 1"	8	160	35	-	18	4	14.5	22.25	DIN 376		

Tough ⟷ Hard

INCH	TDZ	TPI(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	B070	PB070
TS-UNCNO.4X40-DNCM	UNC No.4	40.0	2.205	.394	.71	.138	3	.106	.09	DIN 371		
TS-UNCNO.5X40-DNCM	UNC No.5	40.0	2.205	.394	.71	.138	3	.106	.10	DIN 371		
TS-UNCNO.6X32-DNCM	UNC No.6	32.0	2.205	.394	.79	.157	3	.118	.11	DIN 371		
TS-UNCNO.8X32-DNCM	UNC No.8	32.0	2.480	.472	.83	.177	3	.134	.14	DIN 371		
TS-UNCNO.10X24-DNCM	UNC No.10	24.0	.276	.551	.98	.236	3	.193	.15	DIN 371		
TS-UNCNO.12X24-DNCM	UNC No.12	24.0	3.150	.630	1.18	.236	3	.193	.18	DIN 371		
TS-UNC1/4X20-DNCM	UNC 1/4	20.0	3.150	.630	1.18	.276	3	.217	.20	DIN 371		
TS-UNC5/16X18-DNCM	UNC 5/16	18.0	3.543	.709	1.38	.315	3	.244	.26	DIN 371		
TS-UNC3/8X16-DNCM	UNC 3/8	16.0	3.937	.787	1.54	.394	3	.315	.31	DIN 371		
TS-UNC7/16X14-DNCM	UNC 7/16	14.0	3.937	.787	-	.315	3	.244	.37	DIN 376		
TS-UNC1/2X13-DNCM	UNC 1/2	13.0	4.331	.866	-	.354	3	.276	.43	DIN 376		
TS-UNC9/16X12-DNCM	UNC 9/16	12.0	4.331	.945	-	.433	4	.354	.48	DIN 376		
TS-UNC5/8X11-DNCM	UNC 5/8	11.0	4.331	1.024	-	.472	4	.354	.53	DIN 376		
TS-UNC3/4X10-DNCM	UNC 3/4	10.0	4.921	1.181	-	.551	4	.433	.65	DIN 376		
TS-UNC7/8X9-DNCM	UNC 7/8	9.0	5.512	1.181	-	.709	4	.571	.77	DIN 376		
TS-UNC1X8-DNCM	UNC 1"	8.0	6.299	1.378	-	.709	4	.571	.88	DIN 376		

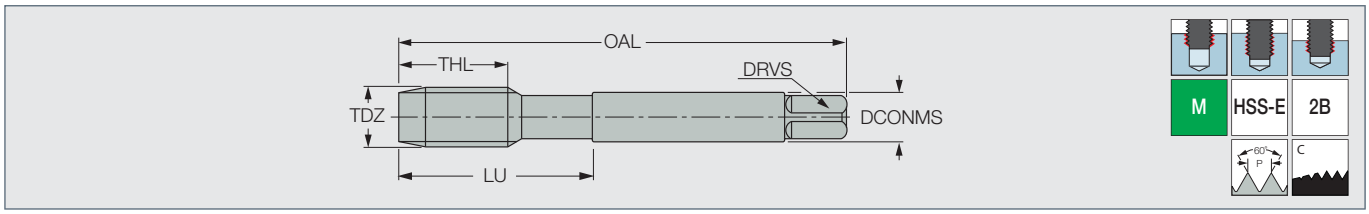
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

●: Line up

(1) Threads per inch
(2) Number of flutes
(3) Torque key size

TS-UNF-DNCM

HSSE 5% Co Spiral Flute Machine Taps unified fine threads, for a wide range of materials.



Tough ↔ Hard

METRIC	TDZ	TPI(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	B070	PB070
TS-UNFNO.4X48-DNCM	UNF No.4	48	56	8	18	3.5	3	2.7	2.4	DIN 371		
TS-UNFNO.5X44-DNCM	UNF No.5	44	56	9	18	3.5	3	2.7	2.7	DIN 371		
TS-UNFNO.6X40-DNCM	UNF No.6	40	56	10	20	4	3	3	2.95	DIN 371		
TS-UNFNO.8X36-DNCM	UNF No.8	36	63	12	21	4.5	3	3.4	3.5	DIN 371		
TS-UNFNO.10X32-DNCM	UNF No.10	32	70	12	25	6	3	4.9	4.1	DIN 371		
TS-UNFNO.12X28-DNCM	UNF No.12	28	80	12	30	6	3	4.9	4.6	DIN 371		
TS-UNF1/4X28-DNCM	UNF 1/4	28	80	12	30	7	3	5.5	5.5	DIN 371		
TS-UNF5/16X24-DNCM	UNF 5/16	24	90	15	35	8	3	6.2	6.9	DIN 371		
TS-UNF3/8X24-DNCM	UNF 3/8	24	90	18	39	10	3	8	8.5	DIN 371		
TS-UNF7/16X20-DNCM	UNF 7/16	20	100	18	-	8	4	6.2	9.9	DIN 376		
TS-UNF1/2X20-DNCM	UNF 1/2	20	100	18	-	9	4	7	11.5	DIN 376		
TS-UNF9/16X18-DNCM	UNF 9/16	18	100	18	-	11	4	9	12.9	DIN 376		
TS-UNF5/8X18-DNCM	UNF 5/8	18	100	18	-	12	4	9	14.5	DIN 376		
TS-UNF3/4X16-DNCM	UNF 3/4	16	110	24	-	14	4	11	17.5	DIN 376		
TS-UNF7/8X14-DNCM	UNF 7/8	14	125	24	-	18	4	14.5	20.5	DIN 376		
TS-UNF1X12-DNCM	UNF 1"	12	140	28	-	18	4	14.5	23.25	DIN 376		

Tough ↔ Hard

INCH	TDZ	TPI(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	B070	PB070
TS-UNFNO.4X48-DNCM	UNF No.4	48.0	2.205	.315	.71	.138	3	.106	.09	DIN 371		
TS-UNFNO.5X44-DNCM	UNF No.5	44.0	2.205	.354	.71	.138	3	.106	.11	DIN 371		
TS-UNFNO.6X40-DNCM	UNF No.6	40.0	2.205	.394	.79	.157	3	.118	.12	DIN 371		
TPSN UNF #8-36-M	UNF No.8	36.0	2.480	.472	.83	.177	3	.134	.14	DIN 371		
TS-UNFNO.10X32-DNCM	UNF No.10	32.0	2.756	.472	.98	.236	3	.193	.16	DIN 371		
TS-UNFNO.8X36-DNCM	UNF No.12	28.0	3.150	.472	1.18	.236	3	.193	.18	DIN 371		
TS-UNF1/4X28-DNCM	UNF 1/4	28.0	3.150	.472	1.18	.276	3	.217	.22	DIN 371		
TS-UNF5/16X24-DNCM	UNF 5/16	24.0	3.543	.591	1.38	.315	3	.244	.27	DIN 371		
TS-UNF3/8X24-DNCM	UNF 3/8	24.0	3.543	.709	1.54	.394	3	.315	.33	DIN 371		
TS-UNF7/16X20-DNCM	UNF 7/16	20.0	3.937	.709	-	.315	4	.244	.39	DIN 376		
TS-UNF1/2X20-DNCM	UNF 1/2	20.0	3.937	.709	-	.354	4	.276	.45	DIN 376		
TS-UNF9/16X18-DNCM	UNF 9/16	18.0	3.937	.709	-	.433	4	.354	.51	DIN 376		
TS-UNF5/8X18-DNCM	UNF 5/8	18.0	3.937	.709	-	.472	4	.354	.57	DIN 376		
TS-UNF3/4X16-DNCM	UNF 3/4	16.0	4.331	.945	-	.551	4	.433	.69	DIN 376		
TS-UNF7/8X14-DNCM	UNF 7/8	14.0	4.921	.945	-	.709	4	.571	.81	DIN 376		
TS-UNF1X12-DNCM	UNF 1"	12.0	5.512	1.102	-	.709	4	.571	.92	DIN 376		

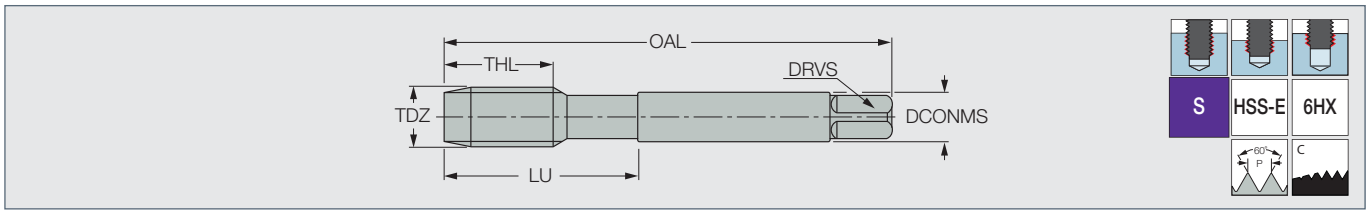
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

(1) Threads per inch
(2) Number of flutes
(3) Torque key size

●: Line up

TS-M-DNCS

PM Right-hand 40° Spiral Flute Machine Taps - ISO metric coarse threads, according to DIN 13, for stainless steel.



Tough ⟷ Hard

METRIC	TDZ	TP(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	HB060	GB060
TS-M2X0.4-DNCS	M2	0.4	45	6	10	2.8	3	2.1	1.6	DIN 371		
TS-M2.5X0.45-DNCS	M2.5	0.45	50	6	12	2.8	3	2.1	2.05	DIN 371		
TS-M3X0.5-DNCS	M3	0.5	56	7	18	3.5	3	2.7	2.5	DIN 371		
TS-M4X0.7-DNCS	M4	0.7	63	8	21	4.5	3	3.4	3.3	DIN 371		
TS-M5X0.8-DNCS	M5	0.8	70	10	25	6	3	4.9	4.2	DIN 371		
TS-M6X1-DNCS	M6	1	80	12	30	6	3	4.9	5	DIN 371	●	
TS-M8X1.25-DNCS	M8	1.25	90	15	35	8	3	6.2	6.8	DIN 371		
TS-M10X1.5-DNCS	M10	1.5	100	18	39	10	3	8	8.5	DIN 371		
TS-M12X1.75-DNCS	M12	1.75	110	18	-	9	3	7	10.2	DIN 376		
TS-M14X2-DNCS	M14	2	110	20	-	11	3	9	12	DIN 376		
TS-M16X2-DNCS	M16	2	110	20	-	12	4	9	14	DIN 376		
TS-M18X2.5-DNCS	M18	2.5	125	25	-	14	4	11	15.5	DIN 371		
TS-M20X2.5-DNCS	M20	2.5	140	25	-	16	4	12	17.5	DIN 376		

Tough ⟷ Hard

INCH	TDZ	TP mm(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	HB060	GB060
TS-M2X0.4-DNCS	M2	.400	1.772	.236	.39	.110	3	.083	.06	DIN 371		
TS-M2.5X0.45-DNCS	M2.5	.450	1.968	.236	.47	.110	3	.083	.08	DIN 371		
TS-M3X0.5-DNCS	M3	.500	2.205	.276	.71	.138	3	.106	.10	DIN 371		
TS-M4X0.7-DNCS	M4	.700	2.480	.315	.83	.177	3	.134	.13	DIN 371		
TS-M5X0.8-DNCS	M5	.800	2.756	.394	.98	.236	3	.193	.17	DIN 371		
TS-M6X1-DNCS	M6	1.000	3.150	.472	1.18	.236	3	.193	.20	DIN 371	●	
TS-M8X1.25-DNCS	M8	1.250	3.543	.591	1.38	.315	3	.244	.27	DIN 371		
TS-M10X1.5-DNCS	M10	1.500	3.937	.709	1.54	.394	3	.315	.33	DIN 371		
TS-M12X1.75-DNCS	M12	1.750	4.331	.709	-	.354	3	.276	.40	DIN 376		
TS-M14X2-DNCS	M14	2.000	4.331	.787	-	.433	3	.354	.47	DIN 376		
TS-M16X2-DNCS	M16	2.000	4.331	.787	-	.472	4	.354	.55	DIN 376		
TS-M18X2.5-DNCS	M18	2.500	4.921	.984	-	.551	4	.433	.61	DIN 371		
TS-M20X2.5-DNCS	M20	2.500	5.512	.984	-	.630	4	.472	.69	DIN 376		

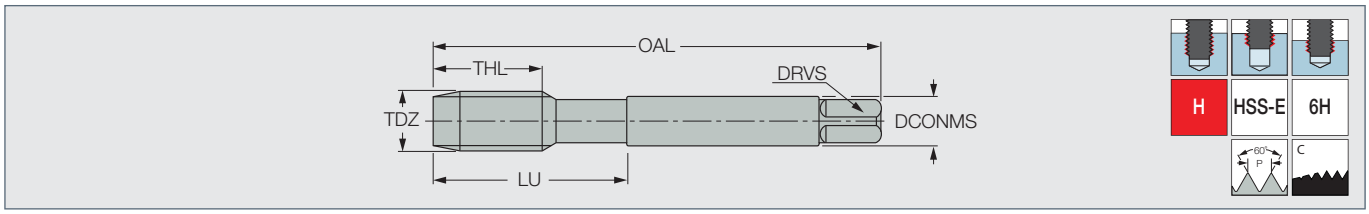
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TS-M-DNCH

DIN 13 HSS Right-Hand 40° Spiral Flute Machine Taps - ISO Metric Coarse Threads for H.T.A.



Tough ↔ Hard

METRIC	TDZ	TP(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	B070	GB070
TS-M2X0.4-DNCH	M2	0.4	45	6	10	2.8	3	2.1	1.6	DIN 371		
TS-M2.2X0.45-DNCH	M2.2	0.4	45	6	10	2.8	3	2.1	1.75	DIN 371		
TS-M2.5X0.45-DNCH	M2.5	0.45	50	6	12	2.8	3	2.1	25	DIN 371		
TS-M3X0.5-DNCH	M3	0.5	56	7	18	3.5	3	2.7	2.5	DIN 371		
TS-M3.5X0.6-DNCH	M3.5	0.6	56	7	20	4	3	3	2.9	DIN 371		
TS-M4X0.7-DNCH	M4	0.7	63	8	21	4.5	3	3.4	3.3	DIN 371		
TS-M5X0.8-DNCH	M5	0.8	70	10	25	6	3	4.9	4.2	DIN 371		
TS-M6X1-DNCH	M6	1	80	12	30	6	3	4.9	5	DIN 371		●
TS-M8X1.25-DNCH	M8	1.25	90	15	35	8	3	6.2	6.8	DIN 371		●
TS-M10X1.5-DNCH	M10	1.5	100	18	39	10	3	8	8.5	DIN 371		●
TS-M12X1.75-DNCH	M12	1.75	110	18	-	9	3	7	10.2	DIN 376		
TS-M14X2-DNCH	M14	2	110	20	-	11	3	9	12	DIN 376		
TS-M16X2-DNCH	M16	2	110	20	-	12	4	9	14	DIN 376		
TS-M18X2.5-DNCH	M18	2.5	125	25	-	14	4	11	15.5	DIN 376		
TS-M20X2.5-DNCH	M20	2.5	140	25	-	16	4	12	17.5	DIN 376		

Tough ↔ Hard

INCH	TDZ	TP mm(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	B070	GB070
TS-M2X0.4-DNCH	M2	.400	1.772	.236	.39	.110	3	.083	.06	DIN 371		
TS-M2.2X0.45-DNCH	M2.2	.450	1.772	.236	.39	.110	3	.083	.07	DIN 371		
TS-M2.5X0.45-DNCH	M2.5	.450	1.968	.236	.47	.110	3	.083	.08	DIN 371		
TS-M3X0.5-DNCH	M3	.500	2.205	.276	.71	.138	3	.106	.10	DIN 371		
TS-M3.5X0.6-DNCH	M3.5	.600	2.205	.276	.79	.157	3	.118	.11	DIN 371		
TS-M4X0.7-DNCH	M4	.700	2.480	.315	.83	.177	3	.134	.13	DIN 371		
TS-M5X0.8-DNCH	M5	.800	2.756	.394	.98	.236	3	.193	.17	DIN 371		
TS-M6X1-DNCH	M6	1.000	3.150	.472	1.18	.236	3	.193	.20	DIN 371		●
TS-M8X1.25-DNCH	M8	1.250	3.543	.591	1.38	.315	3	.244	.27	DIN 371		●
TS-M10X1.5-DNCH	M10	1.500	3.937	.709	1.54	.394	3	.315	.33	DIN 371		●
TS-M12X1.75-DNCH	M12	1.750	4.331	.709	-	.354	3	.276	.40	DIN 376		
TS-M14X2-DNCH	M14	2.000	4.331	.787	-	.433	3	.354	.47	DIN 376		
TS-M16X2-DNCH	M16	2.000	4.331	.787	-	.472	4	.354	.55	DIN 376		
TS-M18X2.5-DNCH	M18	2.500	4.921	.984	-	.551	4	.433	.61	DIN 376		
TS-M20X2.5-DNCH	M20	2.500	5.512	.984	-	.630	4	.472	.69	DIN 376		

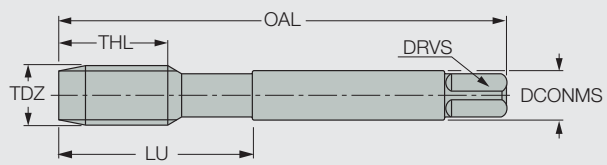
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

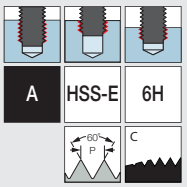
●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TS-M-DNCA

DIN 13 HSS Right-Hand 40° Spiral Flute Machine Taps for ISO Metric Coarse Threads on Aluminum and Aluminum Alloys





METRIC	TDZ	TP(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	DB070
TS-M2X0.4-DNCA	M2	0.4	45	6	10	2.8	3	2.1	1.6	DIN 371	
TS-M3X0.5-DNCA	M3	0.5	56	7	18	3.5	3	2.7	2.5	DIN 371	
TS-M4X0.7-DNCA	M4	0.7	63	8	21	4.5	3	3.4	3.3	DIN 371	
TS-M5X0.8-DNCA	M5	0.8	70	10	25	6	3	4.9	4.2	DIN 371	
TS-M6X1-DNCA	M6	1	80	12	30	6	3	4.9	5	DIN 371	
TS-M8X1.25-DNCA	M8	1.25	90	15	35	8	3	6.2	6.8	DIN 371	
TS-M10X1.5-DNCA	M10	1.5	100	18	39	10	3	8	8.5	DIN 371	
TS-M12X1.75-DNCA	M12	1.75	110	18	-	9	3	7	10.2	DIN 376	
TS-M14X2-DNCA	M14	2	110	20	-	11	3	9	12	DIN 376	
TS-M16X2-DNCA	M16	2	110	20	-	12	4	9	14	DIN 376	
TS-M18X2.5-DNCA	M18	2.5	125	25	-	14	4	11	15.5	DIN 376	
TS-M20X2.5-DNCA	M20	2.5	140	25	-	16	4	12	17.5	DIN 376	

INCH	TDZ	TP mm(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	DB070
TS-M2X0.4-DNCA	M2	.400	1.772	.236	.39	.110	3	.083	.06	DIN 371	
TS-M3X0.5-DNCA	M3	.500	2.205	.276	.71	.138	3	.106	.10	DIN 371	
TS-M4X0.7-DNCA	M4	.700	2.480	.315	.83	.177	3	.134	.13	DIN 371	
TS-M5X0.8-DNCA	M5	.800	2.756	.394	.98	.236	3	.193	.17	DIN 371	
TS-M6X1-DNCA	M6	1.000	3.150	.472	1.18	.236	3	.193	.20	DIN 371	
TS-M8X1.25-DNCA	M8	1.250	3.543	.591	1.38	.315	3	.244	.27	DIN 371	
TS-M10X1.5-DNCA	M10	1.500	3.937	.709	1.54	.394	3	.315	.33	DIN 371	
TS-M12X1.75-DNCA	M12	1.750	4.331	.709	-	.354	3	.276	.40	DIN 376	
TS-M14X2-DNCA	M14	2.000	4.331	.787	-	.433	3	.354	.47	DIN 376	
TS-M16X2-DNCA	M16	2.000	4.331	.787	-	.472	4	.354	.55	DIN 376	
TS-M18X2.5-DNCA	M18	2.500	4.921	.984	-	.551	4	.433	.61	DIN 376	
TS-M20X2.5-DNCA	M20	2.500	5.512	.984	-	.630	4	.472	.69	DIN 376	

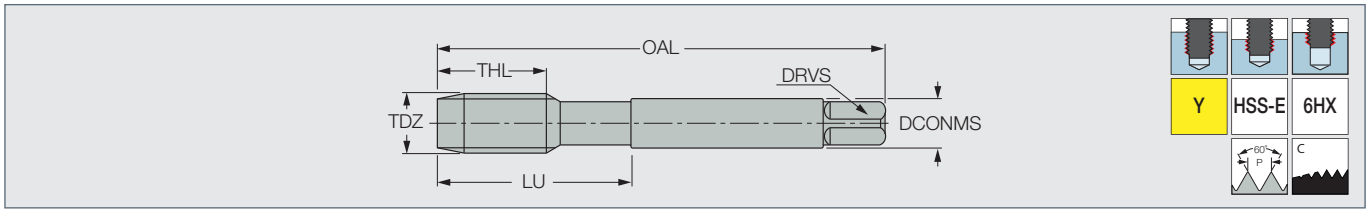
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

●: Line up

TS-M-DNCY

DIN 13 HSS Spiral Flute Machine Taps - Metric Coarse Threads for a Wide Range of Materials



METRIC	TDZ	TP[1]	OAL	THL	LU	DCONMS	NOF[2]	DRVS[3]	Pre-hole	Standard	PB060
TS-M2X0.4-DNCY	M2	0.4	45	8	-	2.8	3	2.1	1.6	DIN 371	
TS-M2.2X0.45-DNCY	M2.2	0.45	45	9	-	2.8	3	2.1	1.75	DIN 376	
TS-M2.5X0.45-DNCY	M2.5	0.45	50	9	-	2.8	3	2.1	25	DIN 371	
TS-M3X0.5-DNCY	M3	0.5	56	10	18	3.5	3	2.7	2.5	DIN 371	
TS-M3.5X0.6-DNCY	M3.5	0.6	56	10	20	4	3	3	2.9	DIN 371	
TS-M4X0.7-DNCY	M4	0.7	63	12	21	4.5	3	3.4	3.3	DIN 371	
TS-M5X0.8-DNCY	M5	0.8	70	14	25	6	3	4.9	4.2	DIN 371	
TS-M6X1-DNCY	M6	1	80	16	30	6	3	4.9	5	DIN 371	
TS-M8X1.25-DNCY	M8	1.25	90	18	35	8	3	6.2	6.8	DIN 371	
TS-M10X1.5-DNCY	M10	1.5	100	20	39	10	3	8	8.5	DIN 371	
TS-M12X1.75-DNCY	M12	1.75	110	22	-	9	4	7	10.2	DIN 376	
TS-M14X2-DNCY	M14	2	110	24	-	11	4	9	12	DIN 376	
TS-M16X2-DNCY	M16	2	110	26	-	12	4	9	14	DIN 376	
TS-M18X2.5-DNCY	M18	2.5	125	30	-	14	4	11	15.5	DIN 376	
TS-M20X2.5-DNCY	M20	2.5	140	30	-	16	4	12	17.5	DIN 376	

INCH	TDZ	TP mm[1]	OAL	THL	LU	DCONMS	NOF[2]	DRVS[3]	Pre-hole	Standard	PB060
TS-M2X0.4-DNCY	M2	.400	1.772	.315	-	.110	3	.083	.06	DIN 371	
TS-M2.2X0.45-DNCY	M2.2	.450	1.772	.354	-	.110	3	.083	.07	DIN 376	
TS-M2.5X0.45-DNCY	M2.5	.450	1.968	.354	-	.110	3	.083	.08	DIN 371	
TS-M3X0.5-DNCY	M3	.500	2.205	.394	.71	.138	3	.106	.10	DIN 371	
TS-M3.5X0.6-DNCY	M3.5	.600	2.205	.394	.79	.157	3	.118	.11	DIN 371	
TS-M4X0.7-DNCY	M4	.700	2.480	.472	.83	.177	3	.134	.13	DIN 371	
TS-M5X0.8-DNCY	M5	.800	2.756	.551	.98	.236	3	.193	.17	DIN 371	
TS-M6X1-DNCY	M6	1.000	3.150	.630	1.18	.236	3	.193	.20	DIN 371	
TS-M8X1.25-DNCY	M8	1.250	3.543	.709	1.38	.315	3	.244	.27	DIN 371	
TS-M10X1.5-DNCY	M10	1.500	3.937	.787	1.54	.394	3	.315	.33	DIN 371	
TS-M12X1.75-DNCY	M12	1.750	4.331	.866	-	.354	4	.276	.40	DIN 376	
TS-M14X2-DNCY	M14	2.000	4.331	.945	-	.433	4	.354	.47	DIN 376	
TS-M16X2-DNCY	M16	2.000	4.331	1.024	-	.472	4	.354	.55	DIN 376	
TS-M18X2.5-DNCY	M18	2.500	4.921	1.181	-	.551	4	.433	.61	DIN 376	
TS-M20X2.5-DNCY	M20	2.500	5.512	1.181	-	.630	4	.472	.69	DIN 376	

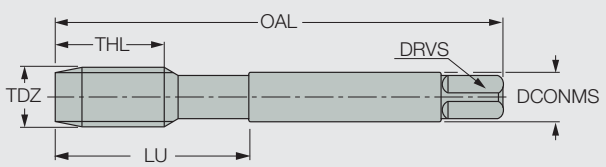
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

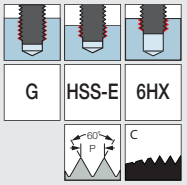
●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TS-M-DNCG

HSS Spiral Flute Machine Taps - ISO metric coarse threads, according to DIN 13,for grey cast iron.





METRIC	TDZ	TP(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	AB070
TS-M3X0.5-DNCG	M3	0.5	56	7	18	3.5	3	2.7	2.5	DIN 371	
TS-M4X0.7-DNCG	M4	0.7	63	8	21	4.5	3	3.4	3.3	DIN 371	
TS-M5X0.8-DNCG	M5	0.8	70	10	25	6	3	4.9	4.2	DIN 371	
TS-M6X1-DNCG	M6	1	80	12	30	6	3	4.9	5	DIN 371	
TS-M8X1.25-DNCG	M8	1.25	90	15	35	8	3	6.2	6.8	DIN 371	
TS-M10X1.5-DNCG	M10	1.5	100	18	39	10	3	8	8.5	DIN 371	
TS-M12X1.75-DNCG	M12	1.75	110	18	-	9	3	7	10.2	DIN 376	
TS-M14X2-DNCG	M14	2	110	20	-	11	3	9	12	DIN 376	
TS-M16X2-DNCG	M16	2	110	20	-	12	4	9	14	DIN 376	
TS-M18X2.5-DNCG	M18	2.5	125	25	-	14	4	11	15.5	DIN 376	
TS-M20X2.5-DNCG	M20	2.5	140	25	-	16	4	12	17.5	DIN 376	

INCH	TDZ	TP mm(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	AB070
TS-M3X0.5-DNCG	M3	.500	2.205	.276	.71	.138	3	.106	.10	DIN 371	
TS-M4X0.7-DNCG	M4	.700	2.480	.315	.83	.177	3	.134	.13	DIN 371	
TS-M5X0.8-DNCG	M5	.800	2.756	.394	.98	.236	3	.193	.17	DIN 371	
TS-M6X1-DNCG	M6	1.000	3.150	.472	1.18	.236	3	.193	.20	DIN 371	
TS-M8X1.25-DNCG	M8	1.250	3.543	.591	1.38	.315	3	.244	.27	DIN 371	
TS-M10X1.5-DNCG	M10	1.500	3.937	.709	1.54	.394	3	.315	.33	DIN 371	
TS-M12X1.75-DNCG	M12	1.750	4.331	.709	-	.354	3	.276	.40	DIN 376	
TS-M14X2-DNCG	M14	2.000	4.331	.787	-	.433	3	.354	.47	DIN 376	
TS-M16X2-DNCG	M16	2.000	4.331	.787	-	.472	4	.354	.55	DIN 376	
TS-M18X2.5-DNCG	M18	2.500	4.921	.984	-	.551	4	.433	.61	DIN 376	
TS-M20X2.5-DNCG	M20	2.500	5.512	.984	-	.630	4	.472	.69	DIN 376	

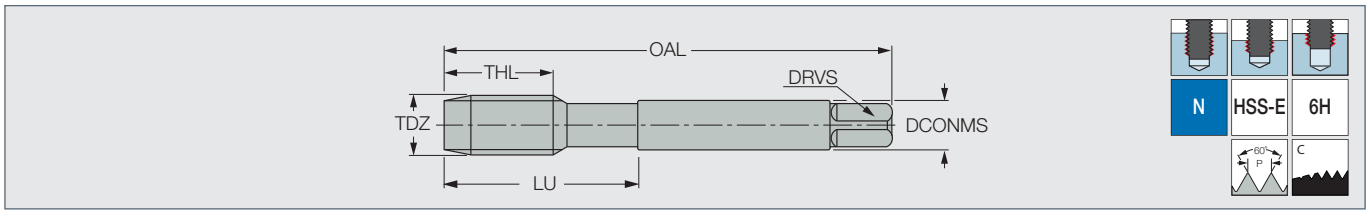
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TS-M-DNCN

HSS Spiral Flute Machine Taps - ISO metric coarse threads, according to DIN 13, for low Carbone Steel



METRIC	TDZ	TP(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	HB070
TS-M4X0.7-DNCN	M4	0.7	63	8	21	4.5	3	3.4	3.3	DIN 371	
TS-M5X0.8-DNCN	M5	0.8	70	10	25	6	3	4.9	4.2	DIN 371	
TS-M6X1-DNCN	M6	1	80	12	30	6	3	4.9	5	DIN 371	
TS-M8X1.25-DNCN	M8	1.25	90	15	35	8	3	6.2	6.8	DIN 371	
TS-M10X1.5-DNCN	M10	1.5	100	18	39	10	3	8	8.5	DIN 371	
TS-M11X1.5-DNCN	M11	1.5	100	18	-	8	3	6.2	9.5	DIN 376	
TS-M12X1.75-DNCN	M12	1.75	110	18	-	9	3	7	10.2	DIN 376	
TS-M14X2-DNCN	M14	2	110	20	-	11	3	9	12	DIN 376	
TS-M16X2-DNCN	M16	2	110	20	-	12	4	9	14	DIN 376	
TS-M18X2.5-DNCN	M18	2.5	125	25	-	14	4	11	15.5	DIN 376	
TS-M20X2.5-DNCN	M20	2.5	140	25	-	16	4	12	17.5	DIN 376	

INCH	TDZ	TP mm(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	HB070
TS-M4X0.7-DNCN	M4	.700	2.480	.315	.83	.177	3	.134	.13	DIN 371	
TS-M5X0.8-DNCN	M5	.800	2.756	.394	.98	.236	3	.193	.17	DIN 371	
TS-M6X1-DNCN	M6	1.000	3.150	.472	1.18	.236	3	.193	.20	DIN 371	
TS-M8X1.25-DNCN	M8	1.250	3.543	.591	1.38	.315	3	.244	.27	DIN 371	
TS-M10X1.5-DNCN	M10	1.500	3.937	.709	1.54	.394	3	.315	.33	DIN 371	
TS-M11X1.5-DNCN	M11	1.500	3.937	.709	-	.315	3	.244	.37	DIN 376	
TS-M12X1.75-DNCN	M12	1.750	4.331	.709	-	.354	3	.276	.40	DIN 376	
TS-M14X2-DNCN	M14	2.000	4.331	.787	-	.433	3	.354	.47	DIN 376	
TS-M16X2-DNCN	M16	2.000	4.331	.787	-	.472	4	.354	.55	DIN 376	
TS-M18X2.5-DNCN	M18	2.500	4.921	.984	-	.551	4	.433	.61	DIN 376	
TS-M20X2.5-DNCN	M20	2.500	5.512	.984	-	.630	4	.472	.69	DIN 376	

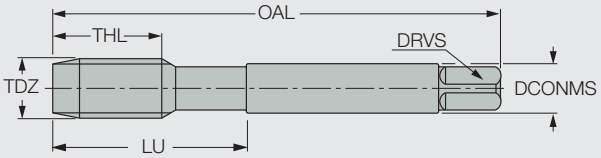
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

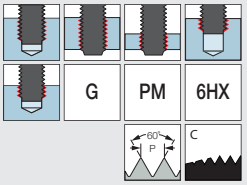
(1) Thread pitch
(2) Number of flutes
(3) Torque key size

●: Line up

TT-M-DNCG

PM Straight Flute Machine Taps - ISO metric coarse threads, according to DIN 13, for gray cast iron.





Tough ⟷ Hard

METRIC	TDZ	TP(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	NB060	AB060
TT-M2X0.4-DNCG	M2	0.4	45	8	-	2.8	3	2.1	1.6	DIN 371		
TT-M3X0.5-DNCG	M3	0.5	56	10	18	3.5	3	2.7	2.5	DIN 371		
TT-M4X0.7-DNCG	M4	0.7	63	12	21	4.5	3	3.4	3.3	DIN 371		
TT-M5X0.8-DNCG	M5	0.8	70	14	25	6	4	4.9	4.2	DIN 371		●
TT-M6X1-DNCG	M6	1	80	16	30	6	4	4.9	5	DIN 371		
TT-M8X1.25-DNCG	M8	1.25	90	18	35	8	4	6.2	6.8	DIN 371		●
TT-M10X1.5-DNCG	M10	1.5	100	20	39	10	4	8	8.5	DIN 371		●
TT-M12X1.75-DNCG	M12	1.75	110	22	-	9	4	7	10.2	DIN 376		
TT-M14X2-DNCG	M14	2	110	24	-	11	4	9	12	DIN 376		
TT-M16X2-DNCG	M16	2	110	26	-	12	4	9	14	DIN 376		
TT-M18X2.5-DNCG	M18	2.5	125	30	-	14	4	11	15.5	DIN 376		
TT-M20X2.5-DNCG	M20	2.5	140	30	-	16	4	12	17.5	DIN 376		

Tough ⟷ Hard

INCH	TDZ	TP mm(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	NB060	AB060
TT-M2X0.4-DNCG	M2	.400	1.772	.315	-	.110	3	.083	.06	DIN 371		
TT-M3X0.5-DNCG	M3	.500	2.205	.394	.71	.138	3	.106	.10	DIN 371		
TT-M4X0.7-DNCG	M4	.700	2.480	.472	.83	.177	3	.134	.13	DIN 371		
TT-M5X0.8-DNCG	M5	.800	2.756	.551	.98	.236	4	.193	.17	DIN 371		●
TT-M6X1-DNCG	M6	1.000	3.150	.630	1.18	.236	4	.193	.20	DIN 371		
TT-M8X1.25-DNCG	M8	1.250	3.543	.709	1.38	.315	4	.244	.27	DIN 371		●
TT-M10X1.5-DNCG	M10	1.500	3.937	.787	1.54	.394	4	.315	.33	DIN 371		●
TT-M12X1.75-DNCG	M12	1.750	4.331	.866	-	.354	4	.276	.40	DIN 376		
TT-M14X2-DNCG	M14	2.000	4.331	.945	-	.433	4	.354	.47	DIN 376		
TT-M16X2-DNCG	M16	2.000	4.331	1.024	-	.472	4	.354	.55	DIN 376		
TT-M18X2.5-DNCG	M18	2.500	4.921	1.181	-	.551	4	.433	.61	DIN 376		
TT-M20X2.5-DNCG	M20	2.500	5.512	1.181	-	.630	4	.472	.69	DIN 376		

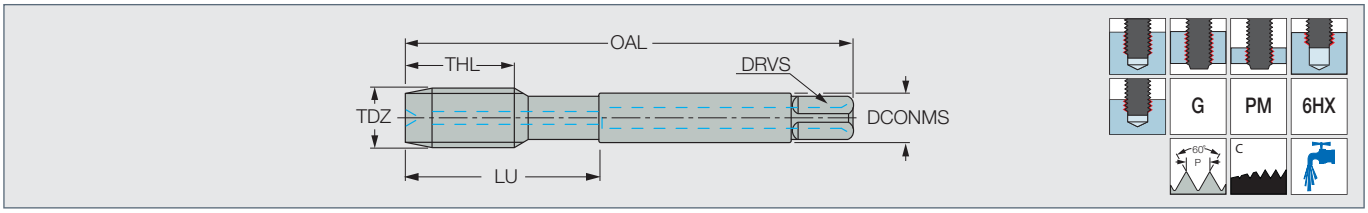
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TT-M-DCCG

DIN 13 HSS Straight Flute Machine Taps - ISO Metric Coarse Threads for Grey Cast Iron



METRIC	TDZ	TP[1]	OAL	THL	LU	DCONMS	NOF[2]	DRVS[3]	Pre-hole	CSP[4]	Standard	AB060
TT-M6X1-DCCG	M6	1	80	16	30	6	4	4.9	5	1	DIN 371	
TT-M8X1.25-DCCG	M8	1.25	90	18	35	8	4	6.2	6.8	1	DIN 371	
TT-M10X1.5-DCCG	M10	1.5	100	20	39	10	4	8	8.5	1	DIN 371	
TT-M12X1.75-DCCG	M12	1.75	110	22	-	9	4	7	10.2	1	DIN 376	
TT-M14X2-DCCG	M14	2	110	26	-	12	4	9	14.11	1	DIN 376	
TT-M16X2-DCCG	M16	2	110	26	-	12	4	9	14	1	DIN 376	

INCH	TDZ	TP mm[1]	OAL	THL	LU	DCONMS	NOF[2]	DRVS[3]	Pre-hole	CSP[4]	Standard	AB060
TT-M6X1-DCCG	M6	1.000	3.150	.630	1.18	.236	4	.193	.20	1	DIN 371	
TT-M8X1.25-DCCG	M8	1.250	3.543	.709	1.38	.315	4	.244	.27	1	DIN 371	
TT-M10X1.5-DCCG	M10	1.500	3.937	.787	1.54	.394	4	.315	.33	1	DIN 371	
TT-M12X1.75-DCCG	M12	1.750	4.331	.866	-	.354	4	.276	.40	1	DIN 376	
TT-M14X2-DCCG	M14	2.000	4.331	1.024	-	.472	4	.354	.56	1	DIN 376	
TT-M16X2-DCCG	M16	2.000	4.331	1.024	-	.472	4	.354	.55	1	DIN 376	

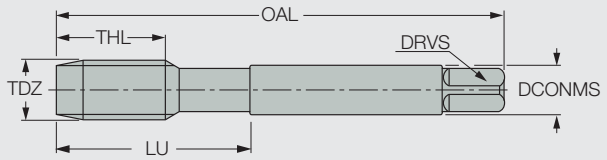
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

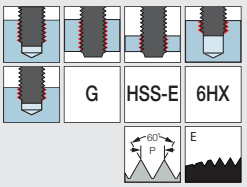
●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size
(4) 0 - Without coolant supply, 1 - With coolant supply

TT-M-DNEG

PM Straight Flute Machine Taps - ISO metric coarse threads, according to DIN 13, for gray cast iron.





METRIC	TDZ	TP[1]	OAL	THL	LU	DCONMS	NOF[2]	DRVS[3]	Pre-hole	Standard	AB060
TT-M4X0.7-DNEG	M4	0.7	63	12	21	4.5	3	3.4	3.3	DIN 371	
TT-M5X0.8-DNEG	M5	0.8	70	14	25	6	4	4.9	4.2	DIN 371	
TT-M6X1-DNEG	M6	1	80	16	30	6	4	4.9	5	DIN 371	
TT-M8X1.25-DNEG	M8	1.25	90	18	35	8	4	6.2	6.8	DIN 371	
TT-M10X1.5-DNEG	M10	1.5	100	20	39	10	4	8	8.5	DIN 371	
TT-M12X1.75-DNEG	M12	1.75	110	22	-	9	4	7	10.2	DIN 376	
TT-M14X2-DNEG	M14	2	110	24	-	11	4	9	12	DIN 376	
TT-M16X2-DNEG	M16	2	110	26	-	12	4	9	14	DIN 376	

INCH	TDZ	TP mm[1]	OAL	THL	LU	DCONMS	NOF[2]	DRVS[3]	Pre-hole	Standard	AB060
TT-M4X0.7-DNEG	M4	.700	2.480	.472	.83	.177	3	.134	.13	DIN 371	
TT-M5X0.8-DNEG	M5	.800	2.756	.551	.98	.236	4	.193	.17	DIN 371	
TT-M6X1-DNEG	M6	1.000	3.150	.630	1.18	.236	4	.193	.20	DIN 371	
TT-M8X1.25-DNEG	M8	1.250	3.543	.709	1.38	.315	4	.244	.27	DIN 371	
TT-M10X1.5-DNEG	M10	1.500	3.937	.787	1.54	.394	4	.315	.33	DIN 371	
TT-M12X1.75-DNEG	M12	1.750	4.331	.866	-	.354	4	.276	.40	DIN 376	
TT-M14X2-DNEG	M14	2.000	4.331	.945	-	.433	4	.354	.47	DIN 376	
TT-M16X2-DNEG	M16	2.000	4.331	1.024	-	.472	4	.354	.55	DIN 376	

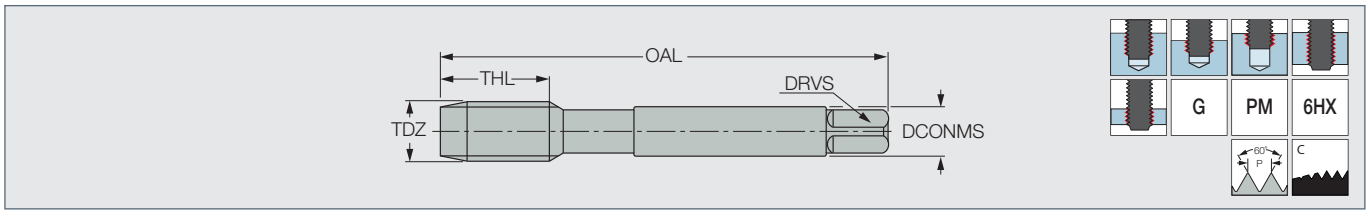
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TT-MF-DNCG

PM Straight Flute Machine Taps - ISO metric fine threads, according to DIN 13, for for gray cast iron.



METRIC	TDZ	TP(1)	OAL	THL	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	AB060
TT-MF8X1-DNCG	MF8	1	90	15	6	4	4.9	7	DIN 374	
TT-MF10X1.25-DNCG	MF10	1.25	100	18	7	4	5.5	8.8	DIN 374	
TT-MF10X1-DNCG	MF10	1	90	18	7	4	5.5	9	DIN 374	
TT-MF12X1.5-DNCG	MF12	1.5	100	18	9	4	7	10.5	DIN 374	
TT-MF12X1.25-DNCG	MF12	1.25	100	18	9	4	7	10.8	DIN 374	
TT-MF12X1-DNCG	MF12	1	100	18	9	4	7	11	DIN 374	
TT-MF14X1.5-DNCG	MF14	1.5	100	18	11	4	9	12.5	DIN 374	
TT-MF14X1.25-DNCG	MF14	1.25	100	18	11	4	9	12.8	DIN 374	
TT-MF14X1-DNCG	MF14	1	100	18	11	4	9	13	DIN 374	
TT-MF16X1.5-DNCG	MF16	1.5	100	18	12	4	9	14.5	DIN 374	

INCH	TDZ	TP mm(1)	OAL	THL	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	AB060
TT-MF8X1-DNCG	MF8	1.000	3.543	.591	.236	4	.193	.28	DIN 374	
TT-MF10X1.25-DNCG	MF10	1.250	3.937	.709	.276	4	.217	.35	DIN 374	
TT-MF10X1-DNCG	MF10	1.000	3.543	.709	.276	4	.217	.35	DIN 374	
TT-MF12X1.25-DNCG	MF12	1.500	3.937	.709	.354	4	.276	.41	DIN 374	
TT-MF12X1-DNCG	MF12	1.250	3.937	.709	.354	4	.276	.43	DIN 374	
TT-MF12X1.5-DNCG	MF12	1.000	3.937	.709	.354	4	.276	.43	DIN 374	
TT-MF14X1-DNCG	MF14	1.500	3.937	.709	.433	4	.354	.49	DIN 374	
TT-MF14X1.25-DNCG	MF14	1.250	3.937	.709	.433	4	.354	.50	DIN 374	
TT-MF14X1.5-DNCG	MF14	1.000	3.937	.709	.433	4	.354	.51	DIN 374	
TT-MF16X1.5-DNCG	MF16	1.500	3.937	.709	.472	4	.354	.57	DIN 374	

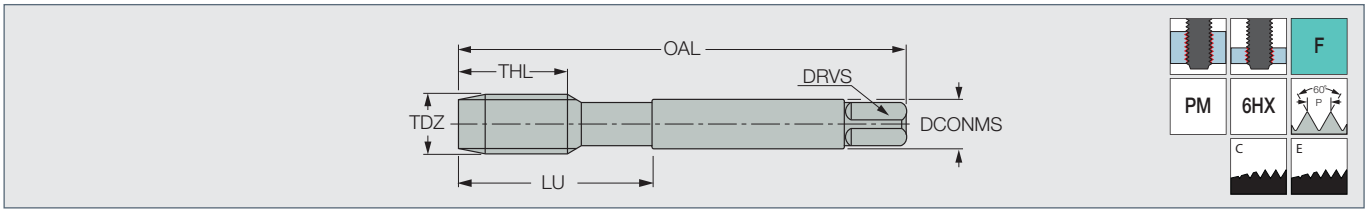
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TF-M-DNCF/DNEF

PM Cold Forming Machine Taps - ISO metric coarse threads, according to DIN 13.



Tough ⟷ Hard

METRIC	TDZ	TP(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	PB060	GB060
TF-M3X0.5-DNCF	M3	0.5	56	10	18	3.5	3	2.7	2.5	DIN 371	–	
TF-M3X0.5-DNEF	M3	0.5	56	10	18	3.5	3	2.7	2.5	DIN 371		–
TF-M4X0.7-DNCF	M4	0.7	63	12	21	4.5	3	3.4	3.3	DIN 371	–	
TF-M4X0.7-DNEF	M4	0.7	63	12	21	4.5	3	3.4	3.3	DIN 371		–
TF-M5X0.8-DNCF	M5	0.8	70	14	25	6	5	4.9	4.2	DIN 371	–	
TF-M5X0.8-DNEF	M5	0.8	70	14	25	6	5	4.9	4.2	DIN 371		–
TF-M6X1-DNCF	M6	1	80	16	30	6	5	4.9	5	DIN 371	–	
TF-M6X1-DNEF	M6	1	80	16	30	6	5	4.9	5	DIN 371		–
TF-M8X1.25-DNCF	M8	1.25	90	18	35	8	5	6.2	6.8	DIN 371	–	
TF-M8X1.25-DNEF	M8	1.25	90	18	35	8	5	6.2	6.8	DIN 371		–
TF-M10X1.5-DNCF	M10	1.5	100	20	39	10	5	8	8.5	DIN 371	–	
TF-M10X1.5-DNEF	M10	1.5	100	20	39	10	5	8	8.5	DIN 371		–
TF-M12X1.75-DNCF	M12	1.75	110	22	-	9	6	7	10.2	DIN 376	–	
TF-M12X1.75-DNEF	M12	1.75	110	22	-	9	6	7	10.2	DIN 376		–
TF-M14X2-DNCF	M14	2	110	24	-	11	6	9	12	DIN 376	–	
TF-M14X2-DNEF	M14	2	110	24	-	11	6	9	12	DIN 376		–
TF-M16X2-DNCF	M16	2	110	26	-	12	6	9	14	DIN 376	–	
TF-M16X2-DNEF	M16	2	110	26	-	12	6	9	14	DIN 376		–
TF-M18X2.5-DNCF	M18	2.5	125	30	-	14	6	11	15.5	DIN 376	–	
TF-M20X2.5-DNCF	M20	2.5	140	30	-	16	6	12	17.5	DIN 376	–	

Tough ⟷ Hard

INCH	TDZ	TP mm(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	PB060	GB060
TF-M3X0.5-DNCF	M3	0.5	2.205	0.394	0.71	0.138	3	0.106	0.1	DIN 371	–	
TF-M3X0.5-DNEF	M3	0.5	2.205	0.394	0.71	0.138	3	0.106	0.1	DIN 371		–
TF-M4X0.7-DNCF	M4	0.7	2.48	0.472	0.83	0.177	3	0.134	0.13	DIN 371	–	
TF-M4X0.7-DNEF	M4	0.7	2.48	0.472	0.83	0.177	3	0.134	0.13	DIN 371		–
TF-M5X0.8-DNCF	M5	0.8	2.756	0.551	0.98	0.236	5	0.193	0.17	DIN 371	–	
TF-M5X0.8-DNEF	M5	0.8	2.756	0.551	0.98	0.236	5	0.193	0.17	DIN 371		–
TF-M6X1-DNCF	M6	1	3.15	0.63	1.18	0.236	5	0.193	0.2	DIN 371	–	
TF-M6X1-DNEF	M6	1	3.15	0.63	1.18	0.236	5	0.193	0.2	DIN 371		–
TF-M8X1.25-DNCF	M8	1.25	3.543	0.709	1.38	0.315	5	0.244	0.27	DIN 371	–	
TF-M8X1.25-DNEF	M8	1.25	3.543	0.709	1.38	0.315	5	0.244	0.27	DIN 371		–
TF-M10X1.5-DNCF	M10	1.5	3.937	0.787	1.54	0.394	5	0.315	0.33	DIN 371	–	
TF-M10X1.5-DNEF	M10	1.5	3.937	0.787	1.54	0.394	5	0.315	0.33	DIN 371		–
TF-M12X1.75-DNCF	M12	1.75	4.331	0.866	-	0.354	6	0.276	0.4	DIN 376	–	
TF-M12X1.75-DNEF	M12	1.75	4.331	0.866	-	0.354	6	0.276	0.4	DIN 376		–
TF-M14X2-DNCF	M14	2	4.331	0.945	-	0.433	6	0.354	0.47	DIN 376	–	
TF-M14X2-DNEF	M14	2	4.331	0.945	-	0.433	6	0.354	0.47	DIN 376		–
TF-M16X2-DNCF	M16	2	4.331	1.024	-	0.472	6	0.354	0.55	DIN 376	–	
TF-M16X2-DNEF	M16	2	4.331	1.024	-	0.472	6	0.354	0.55	DIN 376		–
TF-M18X2.5-DNCF	M18	2.5	4.921	1.181	-	0.551	6	0.433	0.61	DIN 376	–	
TF-M20X2.5-DNCF	M20	2.5	5.512	1.181	-	0.63	6	0.472	0.69	DIN 376	–	

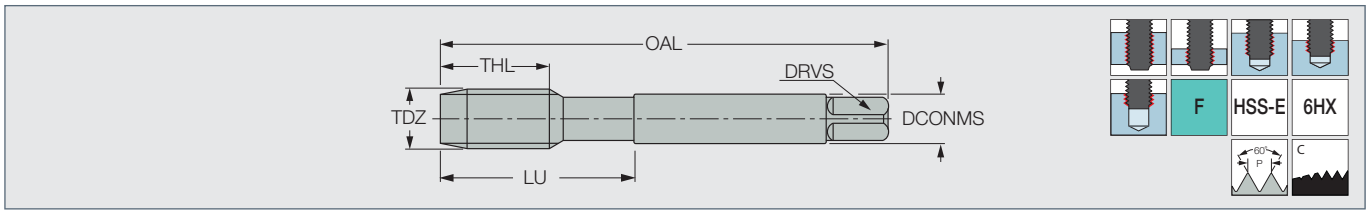
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TF-M-DNCF

HSSE 5% Co Cold Forming Machine Taps - ISO metric coarse threads, according to DIN 13.



METRIC	TDZ	TP(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	PB070
TF-M3X0.5-DNCF	M3	0.5	56	10	18	3.5	3	2.7	2.5	DIN 371	●
TF-M4X0.7-DNCF	M4	0.7	63	12	21	4.5	3	3.4	3.3	DIN 371	●
TF-M5X0.8-DNCF	M5	0.8	70	14	25	6	5	4.9	4.2	DIN 371	●
TF-M6X1-DNCF	M6	1	80	16	30	6	5	4.9	5	DIN 371	●
TF-M8X1.25-DNCF	M8	1.25	90	18	35	8	5	6.2	6.8	DIN 371	●
TF-M10X1.5-DNCF	M10	1.5	100	20	39	10	5	8	8.5	DIN 371	●
TF-M12X1.75-DNCF	M12	1.75	110	22	-	9	6	7	10.2	DIN 376	●
TF-M14X2-DNCF	M14	2	110	24	-	11	6	9	12	DIN 376	
TF-M16X2-DNCF	M16	2	110	26	-	12	6	9	14	DIN 376	
TF-M18X2.5-DNCF	M18	2.5	125	30	-	14	6	11	15.5	DIN 376	
TF-M20X2.5-DNCF	M20	2.5	140	30	-	16	6	12	17.5	DIN 376	

INCH	TDZ	TP mm(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	PB070
TF-M3X0.5-DNCF	M3	.500	2.205	.394	.71	.138	3	.106	.10	DIN 371	●
TF-M4X0.7-DNCF	M4	.700	2.480	.472	.83	.177	3	.134	.13	DIN 371	●
TF-M5X0.8-DNCF	M5	.800	2.756	.551	.98	.236	5	.193	.17	DIN 371	●
TF-M6X1-DNCF	M6	1.000	3.150	.630	1.18	.236	5	.193	.20	DIN 371	●
TF-M8X1.25-DNCF	M8	1.250	3.543	.709	1.38	.315	5	.244	.27	DIN 371	●
TF-M10X1.5-DNCF	M10	1.500	3.937	.787	1.54	.394	5	.315	.33	DIN 371	●
TF-M12X1.75-DNCF	M12	1.750	4.331	.866	-	.354	6	.276	.40	DIN 376	●
TF-M14X2-DNCF	M14	2.000	4.331	.945	-	.433	6	.354	.47	DIN 376	
TF-M16X2-DNCF	M16	2.000	4.331	1.024	-	.472	6	.354	.55	DIN 376	
TF-M18X2.5-DNCF	M18	2.500	4.921	1.181	-	.551	6	.433	.61	DIN 376	
TF-M20X2.5-DNCF	M20	2.500	5.512	1.181	-	.630	6	.472	.69	DIN 376	

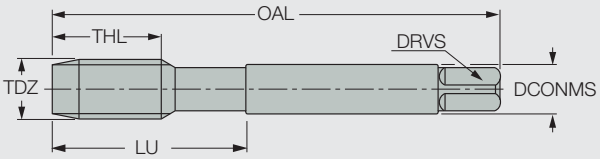
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

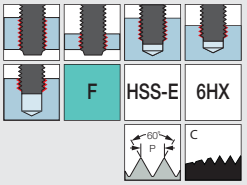
●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TF-MF-DNCF

HSSE 5% Co Cold Forming Machine Taps - ISO metric fine threads, according to DIN 13.





METRIC	TDZ	TP(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	PB070
TF-MF8X1-DNCF	MF8	1	90	15	-	6	5	4.9	7	DIN 374	
TF-MF10X1-DNCF	MF10	1	90	18	-	7	5	5.5	9	DIN 374	●
TF-MF10X1.25-DNCF	MF10	1.25	100	18	-	7	5	5.5	8.8	DIN 374	●
TF-MF12X1-DNCF	MF12	1	100	18	-	9	6	7	11	DIN 374	
TF-MF12X1.25-DNCF	MF12	1.25	100	18	-	9	6	7	10.8	DIN 374	●
TF-MF12X1.5-DNCF	MF12	1.5	100	18	-	9	6	7	10.5	DIN 374	●
TF-MF14X1-DNCF	MF14	1	100	18	-	11	6	9	13	DIN 374	
TF-MF14X1.25-DNCF	MF14	1.25	100	18	-	11	6	9	12.8	DIN 374	●
TF-MF14X1.5-DNCF	MF14	1.5	100	18	-	11	6	9	12.5	DIN 374	●
TF-MF16X1.5-DNCF	MF16	1.5	100	18	-	12	6	9	14.5	DIN 374	●
TF-MF18X1.5-DNCF	MF18	1.5	110	18	-	14	6	11	16.5	DIN 374	
TF-MF20X1.5-DNCF	MF20	1.5	125	18	-	16	6	12	18.5	DIN 374	

INCH	TDZ	TP mm(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	PB070
TF-MF8X1-DNCF	MF8	1.000	3.543	.591	-	.236	5	.193	.28	DIN 374	
TF-MF10X1.25-DNCF	MF10	1.000	3.543	.709	-	.276	5	.217	.35	DIN 374	●
TF-MF10X1-DNCF	MF10	1.250	3.937	.709	-	.276	5	.217	.35	DIN 374	●
TF-MF12X1.5-DNCF	MF12	1.000	3.937	.709	-	.354	6	.276	.43	DIN 374	●
TF-MF12X1-DNCF	MF12	1.250	3.937	.709	-	.354	6	.276	.43	DIN 374	
TF-MF12X1.25-DNCF	MF12	1.500	3.937	.709	-	.354	6	.276	.41	DIN 374	●
TF-MF14X1-DNCF	MF14	1.000	3.937	.709	-	.433	6	.354	.51	DIN 374	
TF-MF14X1.25-DNCF	MF14	1.250	3.937	.709	-	.433	6	.354	.50	DIN 374	●
TF-MF14X1.5-DNCF	MF14	1.500	3.937	.709	-	.433	6	.354	.49	DIN 374	●
TF-MF16X1.5-DNCF	MF16	1.500	3.937	.709	-	.472	6	.354	.57	DIN 374	●
TF-MF18X1.5-DNCF	MF18	1.500	4.331	.709	-	.551	6	.433	.65	DIN 374	
TF-MF20X1.5-DNCF	MF20	1.500	4.921	.709	-	.630	6	.472	.73	DIN 374	

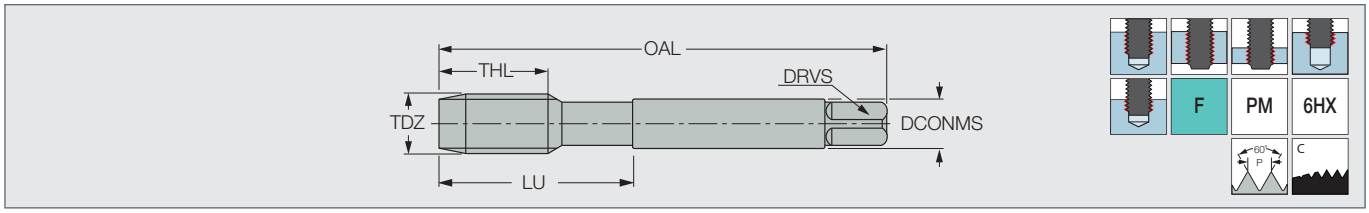
- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TF-MF-DNCF

PM Cold Forming Machine Taps - ISO metric fine threads, according to DIN 13.



METRIC	TDZ	TP(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	GB060
TF-MF8X1-DNCF	MF8	1	90	15	-	6	5	4.9	7	DIN 374	
TF-MF10X1.25-DNCF	MF10	1.25	100	18	-	7	5	5.5	8.8	DIN 374	
TF-MF10X1-DNCF	MF10	1	90	18	-	7	5	5.5	9	DIN 374	
TF-MF12X1.5-DNCF	MF12	1.5	100	18	-	9	6	7	10.5	DIN 374	
TF-MF12X1.25-DNCF	MF12	1.25	100	18	-	9	6	7	10.8	DIN 374	
TF-MF12X1-DNCF	MF12	1	100	18	-	9	6	7	11	DIN 374	
TF-MF14X1.5-DNCF	MF14	1.5	100	18	-	11	6	9	12.5	DIN 374	
TF-MF14X1.25-DNCF	MF14	1.25	100	18	-	11	6	9	12.8	DIN 374	
TF-MF14X1-DNCF	MF14	1	100	18	-	11	6	9	13	DIN 374	
TF-MF16X1.5-DNCF	MF16	1.5	100	18	-	12	6	9	14.5	DIN 374	
TF-MF18X1.5-DNCF	MF18	1.5	110	18	-	14	6	11	16.5	DIN 374	
TF-MF20X1.5-DNCF	MF20	1.5	125	18	-	16	6	12	18.5	DIN 374	

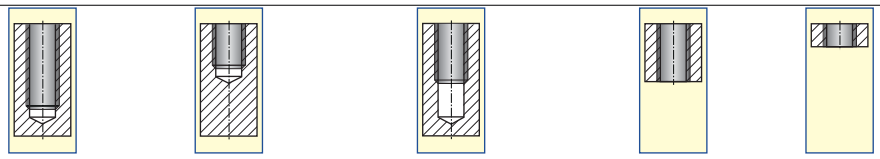
INCH	TDZ	TP mm(1)	OAL	THL	LU	DCONMS	NOF(2)	DRVS(3)	Pre-hole	Standard	GB060
TF-MF8X1-DNCF	MF8	1.000	3.543	.591	-	.236	5	.193	.28	DIN 374	
TF-MF10X1-DNCF	MF10	1.250	3.937	.709	-	.276	5	.217	.35	DIN 374	
TF-MF10X1.25-DNCF	MF10	1.000	3.543	.709	-	.276	5	.217	.35	DIN 374	
TF-MF12X1-DNCF	MF12	1.500	3.937	.709	-	.354	6	.276	.41	DIN 374	
TF-MF12X1.25-DNCF	MF12	1.250	3.937	.709	-	.354	6	.276	.43	DIN 374	
TF-MF14X1-DNCF	MF12	1.000	3.937	.709	-	.354	6	.276	.43	DIN 374	
TF-MF14X1.25-DNCF	MF14	1.500	3.937	.709	-	.433	6	.354	.49	DIN 374	
TF-MF18X1.5-DNCF	MF14	1.250	3.937	.709	-	.433	6	.354	.50	DIN 374	
TF-MF20X1.5-DNCF	MF14	1.000	3.937	.709	-	.433	6	.354	.51	DIN 374	
TF-MF16X1.5-DNCF	MF16	1.500	3.937	.709	-	.472	6	.354	.57	DIN 374	
TF-MF14X1.5-DNCF	MF18	1.500	4.331	.709	-	.551	6	.433	.65	DIN 374	
TF-MF12X1.5-DNCF	MF20	1.500	4.921	.709	-	.630	6	.472	.73	DIN 374	

- For user guide and cutting conditions, see pages 38-59
- The blank item is not regularly stocked but will be prepared upon order.

●: Line up

(1) Thread pitch
(2) Number of flutes
(3) Torque key size

TAP DESIGNATION CODE KEY



Hole Type[4]

1 2 3 4 5

tap color code[1]
tool material[1]
surface treatment/coating[2]
flute hand and angle
lead according to DIN 2197[3]
Hole Type[4]

Material No.	Material		Condition	Tensile Strength [N/mm²]	Hardness HB	Chip	Coolant
1	non-alloy steel and cast steel, free cutting steel	<0.25% C	annealed	420	125	Ext. Long	T
2		≥0.25% C	annealed	650	190	Medium	T
3		<0.55% C	quenched and tempered	850	250	Long	T
4		≥0.55% C	annealed	750	220	Long	T
7	low alloy and cast steel (less than 5% of alloying elements)		quenched and tempered	930	275	Long	X
8				1000	300	Long	X
9				1200	350	Long	A
10	high alloyed steel, cast steel and tool steel		annealed	680	200	Long	X
11			quenched and tempered	1100	325	Long	X
12	stainless steel and cast steel		ferritic/martensitic	680	200	Medium	A
13			martensitic	820	240	Long	A
14	stainless steel and cast steel		austenitic, duplex	600	180	Long	A
15	gray cast iron (gg)		ferritic / pearlitic		180	Ext. Short	X
16			pearlitic / martensitic		260	Ext. Short	X
17	nodular cast iron (ggg)		ferritic		160	Short	X
18			pearlitic		250	Ext. Short	X
19	malleable cast iron		ferritic		130	Short	X
20			pearlitic		230	Short	X
21	aluminum-wrought alloys		not hardenable		60	Medium	T
22			hardenable		100	Medium	T
23	aluminum-cast alloys	≤12% Si	not hardenable		75	Short	T
24			hardenable		90	Short	T
25		>12% Si	high temperature		130	Short	T
26	copper alloys	>1% Pb	free cutting		110	Med/Short	T
27			brass		90	Long	T
28			electrolytic copper		100	Long	T
29	non metallic		duroplastics, fiber plastics		70 Shore D	Short	Z
31	high temperature alloys	Fe based	annealed		200	Long	A
32			hardened		280	Long	A
33		Ni or Co based	annealed		250	Long	A
34			hardened		350	Long	A
35			cast		320	Long	A
36	titanium alloys		pure	400	190	Med/Short	A
37			alpha+beta alloys, hardened	1050	310	Med/Short	A

[1] See page 4
[2] See page 4
[3] See page 10
[4] See page 6

coolant
A - cutting oil
T - oil emulsion
X - oil or emulsion
Z - dry or emulsion

W[1]	M		M		M		M		M		M		S		H		N		H		G		F
HSS	HSS-E		HSS-E		HSS-E		HSS-E		HSS-E		HSS-E		HSS-E		HSS-E		HSS-E		HSS-E		HSS-E		HSS-E	
-	-		TI		ST		-		TI		ST		ST		-		ST		ST		NI		TI	
-	-		-		-		R40°		R40°		R40°		-		-		R40°		R40°		-		-	
1\2\3	B		B		B		C		C		C		B		B		C		C		C		C	
1-2-3-4-5	4-5		4-5		4-5		1-2-3		1-2-3		1-2-3		4-5		4-5		1-2-3		1-2-3		1-2-3-4-5		1-2-3-4-5	
M/min	M/min		M/min		M/min		M/min		M/min		M/min		M/min		M/min		M/min		M/min		M/min		M/min	
	•	10-25	••	15-45	•	8-25	••	20-25	••	15-45	•	8-25	••			20-25	••	8-25	•	20-25	••			20-60
	•	10-20	••	12-40	•	10-35	••	15-20	••	12-40	•	10-35	••			15-20	••	10-35	••	15-20	••			20-60
	•	12-18	••	15-25	•	6-12	••	12-18	••	15-25	•	6-12	••			12-18	••			12-18	••			17-55
	•	12-18	••	15-40	•	6-20	••	12-18	••	15-40	•	6-20	••			12-18	••			12-18	••			17-55
	•	10-15	••	5-25	•	4-10	••	10-15	••	5-25	•	4-10	••			10-15	••			10-15	••			
	•	6-10	••	5-25	•	4-10	••	6-10	••	5-25	•	4-10	••			6-10	••			6-10	••			
	•	3-5	••	5-20	•	3-5	••	3-5	••	5-20	•	3-5	••			3-5	••			3-5	••			
	•	10-15	••	20-30	•	7-12	••	10-15	••	20-30	•	7-12	••			10-15	••			10-15	••			10-30
	•	7-13	••	12-25	•	5-10	••	7-13	••	12-25	•	5-10	••			7-13	••			7-13	••			
	•	5-9	••	8-18	•	1-5	•	5-9	••	2-10	•	1-5	•	2-10	•					5-9	••			7-15
	•	4-6	••	8-15	•	1-5	•	4-6	••	2-10	•	1-5	•	2-10	•					4-6	••			
	•	5-9	••	8-15	•	1-4	•	5-9	••	2-10	•	1-4	•	2-10	•					5-9	••			
	•	10-15	••	15-45	••	13-20	•	10-15	••	15-45	••	13-20	•							10-15	••	10-30	•	
	•	8-12	••	10-40	••	21-31	•	8-12	••	10-40	••	21-31	•							8-12	••	10-30	•	
	•	8-12	•	10-25	••	21-31	•	8-12	•	10-25	•	21-31	•							8-12	••	10-40	•	
	•	8-12	••	10-20	••	21-31	•	8-12	••	10-20	••	21-31	•							8-12	••	10-35	•	
	•	10-15	•	15-45	••	13-20	•	10-15	••	15-45	••	13-20	•							10-15	••	10-45	•	
	•	10-15	•	10-40	••	13-20	•	10-15	••	10-40	••	13-20	•							10-15	••	10-40	•	
	•	25-35	•	50-70	•	12-25	••	25-35	•	30-60	•	12-25	••					12-25	••	25-35	••			
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	•	10-15	•	10-40	•	10-25	••	10-15	•	15-40	•	10-25	••					10-25	••	10-15	••			
	•	10-15	•	10-40	•	10-25	••	10-15	•	15-40	•	10-25	••					10-25	••	10-15	••			
	•	10-15	•	10-30	•	10-20	••	10-15	•	15-30	•	10-20	••					10-20	••	10-15	••			
	•	25-35	•	50-70	•	20-40	••	25-35	•	30-65	•	20-40	••					20-40	••	25-35	••			17-40
	•	15-20	•	5-60	•	13-30	••	15-20	•	20-45	•	13-30	••					13-30	••	15-20	••			20-60
	•	15-20	•	5-25	•	10-17	••	15-20	•	15-30	•	10-17	••					10-17	••	15-20	••			20-60
	•	6-10	•	5-25	•	6-13	••	6-10	•	10-20	•	6-13	••					6-13	••	6-10	••			
	•	2-4	••	4-8	•			2-4	•	3-7	••					2-4				2-4	•			
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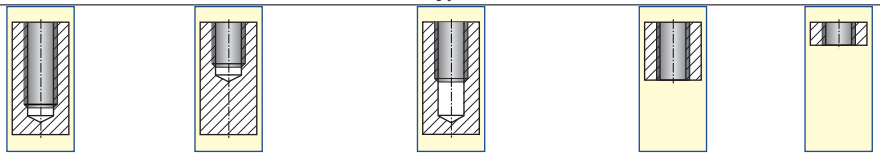
	•	2-4	••	4-8	•			2-4		3-7	••					2-4				2-4	•			
	•	2-4	••	4-8	•			2-4		3-7	••					2-4				2-4	•			
	•	2-4	••	4-8	•			2-4		3-7	••					2-4				2-4	•			
	•	6-10	••					6-10	••							6-10				6-10	•			
	•	6-10	•					6-10	••							6-10				6-10	•			

• Recommended
•• Suitable
(1) Hand Tap



tap color code(1)
tool material(1)
surface treatment/coating(2)
flute hand and angle
lead according to DIN 2197(3)
Hole Type(4)

Material Group No.	Material		Condition	Tensile Strength [ksi]	Hardness HB	Chip	Coolant
1	non-alloy steel and cast steel, free cutting steel	<0.25% C	annealed	61	125	Ext. Long	T
2		≥0.25% C	annealed	94	190	Medium	T
3		<0.55% C	quenched and tempered	123	250	Long	T
4		≥0.55% C	annealed	109	220	Long	T
7	low alloy and cast steel (less than 5% of alloying elements)		quenched and tempered	135	275	Long	X
8				145	300	Long	X
9				174	350	Long	A
10	high alloyed steel, cast steel and tool steel		annealed	99	200	Long	X
11			quenched and tempered	160	325	Long	X
12	stainless steel and cast steel		ferritic/martensitic	99	200	Medium	A
13			martensitic	119	240	Long	A
14	stainless steel and cast steel		austenitic, duplex	87	180	Long	A
15	gray cast iron (GG)		ferritic / pearlitic		180	Ext. Short	X
16			pearlitic / martensitic		260	Ext. Short	X
17	nodular cast iron (GGG)		ferritic		160	Short	X
18			pearlitic		250	Ext. Short	X
19	malleable cast iron		ferritic		130	Short	X
20			pearlitic		230	Short	X
21	aluminum-wrought alloys		not hardenable		60	Medium	T
22			hardenable		100	Medium	T
23	aluminum-cast alloys	≤12% Si	not hardenable		75	Short	T
24			hardenable		90	Short	T
25		>12% Si	high temperature		130	Short	T
26	copper alloys	>1% Pb	free cutting		110	Med/Short	T
27			brass		90	Long	T
28			electrolytic copper		100	Long	T
29	non metallic		duroplastics, fiber plastics		70 Shore D	Short	Z
31	high temperature alloys	Fe based	annealed		200	Long	A
32			hardened		280	Long	A
33		Ni or Co based	annealed		250	Long	A
34			hardened		350	Long	A
35			cast		320	Long	A
36	titanium alloys		pure	58	190	Med/Short	A
37			alpha+beta alloys, hardened	152	310	Med/Short	A

- • Recommended
- •• Suitable
- (1) See page 4
- (2) See page 4
- (3) See page 10
- (4) See page 6

coolant
A - cutting oil
T - oil emulsion
X - oil or emulsion
Z - dry or emulsion

W[1]	M	M	M	M	M	M	S	H	N	H	G	F
HSS	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
-	-	TI	ST	-	TI	ST	ST	-	ST	ST	NI	TI
-	-	-	-	R40°	R40°	R40°	-	-	R40°	R40°	-	-
1\2\3	B	B	B	C	C	C	B	B	C	C	C	C
1-2-3-4-5	4-5	4-5	4-5	1-2-3	1-2-3	1-2-3	4-5	4-5	1-2-3	1-2-3	1-2-3-4-5	1-2-3-4-5
SFM	SFM	SFM	SFM	SFM	SFM	SFM	SFM	SFM	SFM	SFM	SFM	SFM
•	35-80	••	15-150	•	25-80	••	65-80	••	50-150	•	25-80	••			65-80	••	25-80	•	65-80	••			65-195
•	35-65	••	40-130	•	35-115	••	60-65	••	40-130	•	35-115	••			50-65	••	35-115	••	50-65	••			65-195
•	40-60	••	50-80	•	20-40	••	40-60	••	50-80	•	20-40	••			40-60	••			40-60	••			55-180
•	40-60	••	50-130	•	20-65	••	40-60	••	50-130	•	15-35	••			40-60	••			40-60	••			55-180
•	35-50	••	15-80	•	15-35	••	35-50	••	15-80	•	15-35	••			35-50	••			35-50	••			
•	20-35	••	15-80	•	15-35	••	20-35	••	15-80	•	15-35	••			20-35	••			20-35	••			
•	10-15	••	15-65	•	10-15	••	10-15	••	15-65	•	10-15	••			10-15	••			10-15	••			
•	35-50	••	65-100	•	25-40	••	35-50	••	65-100	•	25-40	••			35-50	••			35-50	••			35-100
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•	15-30	••	25-60	•	5-15	•	15-30	••	5-35	•	5-16	•	5-35	•					15-30	••			25-50
•	15-20	••	25-50	•	5-15	•	15-20	••	5-35	•	5-16	•	5-35	•					15-20	••			
•	15-30	••	25-50	•	5-15	•	15-30	••	5-35	•	5-15	•	5-35	•					15-30	••			
•	35-50	••	50-150	••	45-65	•	35-50	••	50-150	••	45-65	•							35-50	••	35-100	•	
•	25-40	••	35-130	••	70-100	•	25-40	••	35-130	••	70-100	•							25-40	••	35-100	•	
•	25-40	•	35-80	••	70-100	•	25-40	•	35-80	•	70-100	•							25-40	••	35-130	•	
•	25-40	••	35-65	••	70-100	•	25-40	••	35-65	••	70-100	•							25-40	••	35-100	•	
•	35-50	•	50-150	••	45-65	•	35-50	••	50-150	••	45-65	•							35-50	••	35-150	•	
•	35-50	•	35-130	••	45-65	•	35-50	••	35-130	••	45-65	•							35-50	••	35-130	•	
•	80-115	•	165-230	•	40-80	••	80-115	•	100-195	•	40-80	••					40-80	••	80-115	••			
•	80-115	•	165-230	•	40-80	••	80-115	•	100-195	•	40-80	••					40-80	••	80-115	••			
•	35-50	•	35-130	•	35-80	••	35-50	•	50-130	•	35-80	••					35-80	••	35-50	••			
•	35-50	•	35-100	•	35-80	••	35-50	•	50-130	•	35-80	••					35-80	••	35-50	••			
•	35-50	•	35-100	•	35-65	••	35-50	•	50-100	•	35-65	••					35-65	••	35-50	••			
•	80-115	•	165-230	•	65-130	••	80-115	•	100-215	•	65-130	••					65-130	••	80-115	••			55-130
•	50-65	•	15-195	•	45-100	••	50-65	•	65-150	•	45-100	••					45-100	••	50-65	••			65-195
•	50-65	•	15-80	•	35-55	••	50-65	•	50-100	•	35-55	••					35-55	••	50-65	••			65-195
•	20-35	•	15-80	•	25-45	••	20-35	•	35-65	•	20-45	••					20-45	••	20-35	••			
•	5-15	••	15-25	•			5-15	•	10-25	••					5-15				5-15	•			
•	5-15	••	15-25	•			5-15		10-25	••					5-15				5-15	•			
•	5-15	••	15-25	•			5-15		10-25	••					5-15				5-15	•			
•	5-15	••	15-25	•			5-15		10-25	••					5-15				5-15	•			
•	5-15	••	15-25	•			5-15		10-25	••					5-15				5-15	•			
•	20-35	••					20-35	••							20-35				20-35	•			
•	20-35	•					20-35	••							20-35				20-35	•			

• Recommended
•• Suitable
(1) Hand Tap

PRE-TAPPING HOLE SIZES FOR CUTTING TAPS

ISO Metric Threads Coarse Pitch			Reccomended Drill for Pre-Hole	
M	Pitch mm	Recommended Pre-Hole Size mm	Series	Description
2	0.4	1.6	DSM (Solid carbide drill)	DSM0160G05 YH170
2.2	0.45	1.75		DSM0175G05 YH170
2.3	0.4	1.9		DSM0190G05 YH170
2.5	0.45	2.05		DSM0205G05 YH180
2.6	0.45	2.1		DSM0210G05 YH180
3	0.5	2.5		DSM0250G05 YH180
3.5	0.6	2.9		DSM0290G05 YH180
4	0.7	3.3	DSW (Solid carbide drill)	DSW033-023-06DI5 AH725
4.5	0.75	3.7		DSW037-023-06DI5 AH725
5	0.8	4.2		DSW042-029-06DI5 AH725
6	1	5		DSW050-035-06DI5 AH725
7	1	6		DSW060-035-06DI5 AH725
8	1.25	6.8		DSW068-043-08DI5 AH725
9	1.25	7.8		DSW078-043-08DI5 AH725
10	1.5	8.5		DSW085-049-10DI5 AH725
11	1.5	9.5		DSW095-049-10DI5 AH725
12	1.75	10.2	DrillMeister (Head changeable drill)	DMP102 AH9130 TID100F16-3 / TID100L25A90M10
14	2	12		DMP120 AH9130 TID120F16-3 / TID120L25A90M10
16	2	14		DMP140 AH9130 TID140F16-3 / TID140L25A90M12
18	2.5	15.5		DMP155 AH9130 TID150F20-3 / TID150L25A90M12
20	2.5	17.5		DMP175 AH9130 TID170F20-3
22	2.5	19.5		DMP195 AH9130 TID190F25-3
24	3	21		DMP210 AH9130 TID210***
27	3	24		DMP240 AH9130 TID210F25-3
30	3.5	26.5	DrillForceMeister (Head changeable drill)	SMP265 AH9130 TIS260F32-3

ISO Metric Threads Fine Pitch			Reccomended Drill for Pre-Hole	
MF	Pitch mm	Recommended Pre-Hole Size mm	Series	Description
2.5	0.35	2.15	DSM (Solid carbide drill)	DSM0215G05 YH180
3	0.35	2.65		DSM0265G05 YH180
3.5	0.35	3.15	DSW (Solid carbide drill)	DSW032-023-06DI5 AH725
4	0.5	3.5		DSW035-023-06DI5 AH725
4.5	0.5	4		DSW040-029-06DI5 AH725
5	0.5	4.5		DSW045-029-06DI5 AH725
5.5	0.5	5		DSW050-035-06DI5 AH725
6	0.75	5.2		DSW052-035-06DI5 AH725
7	0.75	6.2		DSW062-043-08DI5 AH725
8	0.75	7.2		DSW072-043-08DI5 AH725
8	1	7		DSW070-043-08DI5 AH725
9	0.75	8.2		DSW082-049-10DI5 AH725
9	1	8		DSW080-043-08DI5 AH725
10	0.75	9.2		DSW092-049-10DI5 AH725
10	1	9		DSW090-049-10DI5 AH725
10	1.25	8.8		DSW088-049-10DI5 AH725
11	0.75	10.2	DrillMeister (Head changeable drill)	DMP102 AH9130 TID100F16-3 / TID100L25A90M10
11	1	10		DMP100 AH9130 TID100F16-3 / TID100L25A90M10
12	1	11		DMP110 AH9130 TID110F16-3
12	1.25	10.8		DMP108 AH9130 TID105F16-3 / TID105L25A90M10
12	1.5	10.5		DMP105 AH9130 TID105F16-3 / TID105L25A90M10
14	1	13		DMP130 AH9130 TID130F16-3
14	1.25	12.8		DMP128 AH9130 TID125F16-3 / TID125L25A90M10
14	1.5	12.5		DMP125 AH9130 TID125F16-3 / TID125L25A90M10
15	1	14		DMP140 AH9130 TID140F12-3 / TID140L25A90M12
15	1.5	13.5		DMP135 AH9130 TID135F16-3
16	1	15		DMP150 AH9130 TID150F20-3 / TID150L25A90M12
16	1.5	14.5		DMP145 AH9130 TID145F16-3 / TID145L25A90M12
17	1	16		DMP160 AH9130 TID160F20-3 / TID160L25A90M12
17	1.5	15.5		DMP155 AH9130 TID150F20-3 / TID150L25A90M12
18	1	17		DMP170 AH9130 TID170F20-3

In Addition to the Recommended Tools, We Offer a Lineup with Various Diameters and Lengths. Please Refer to the Catalog for Each Series for More Details.

DSM DSW DrillMeister DrillForceMeister

PRE-TAPPING HOLE SIZES FOR CUTTING TAPS

ISO Metric Threads Fine Pitch			Reccomended Drill for Pre-Hole	
MF	Pitch mm	Recommended Pre-Hole Size mm	Series	Description
18	1.5	16.5	DrillMeister (Head changeable drill)	DMP165 AH9130 TID160F20-3 / TID160L25A90M12
18	2	16		DMP160 HA9130 TID160F20-3 / TID160L25A90M12
20	1	19		DMP190 AH9130 TID190F25-3
20	1.5	18.5		DMP185 AH9130 TID180F25-3
20	2	18		DMP180 AH9130 TID180F25-3
22	1	21		DMP210 AH9130 TID210F25-3
22	1.5	20.5		DMP205 AH9130 TID200F25-3
22	2	20		DMP200 AH9130 TID200F25-3
24	1	23		DMP230 AH9130 TID230F32-3
24	1.5	22.5		DMP225 AH9130 TID220F25-3
24	2	22		DMP220 AH9130 TID220F25-3
25	1	24		DMP240 AH9130 TID240F32-3
25	1.5	23.5		DMP235 AH9130 TID230F32-3
25	2	23		DMP230 AH9130 TID230F32-3
26	1.5	24.5		DMP245 AH9130 TID240F32-3
27	1	26	DrillForceMeister (Head changeable drill)	SMP260 AH9130 TIS260F32-3
27	1.5	25.5	DrillMeister (Head changeable drill)	DMP255 AH9130 TID250F32-3
27	2	25		DMP250 AH9130 TID250F32-3
28	1	27	DrillForceMeister (Head changeable drill)	SMP270 AH9130 TIS270F32-3
28	1.5	26.5		SMP265 AH9130 TIS260F32-3
28	2	26		SMP260 AH9130 TIS260F32-3
30	1	29		SMP290 AH9130 TIS290F32-3
30	1.5	28.5		-
30	2	28		SMP280 AH9130 TIS280F32-3
30	3	27		SMP270 AH9130 TIS270F32-3

American Unified Coarse Threads			Reccomended Drill for Pre-Hole	
UNC	T.P.I.	Drill Size mm	Series	Description
#4	40	2.3	DSM (Solid carbide drill)	DSM0230G05 YH180
#5	40	2.6		DSM0260G05 YH180
#6	32	2.85		DSM0285G05 YH180
#8	32	3.5	DSW (Solid carbide drill)	DSW035-023-06DI5 AH725
#10	24	3.9		DSW039-029-06DI5 AH725
#12	24	4.5		DSW045-029-06DI5 AH725
1/4"	20	5.2		DSW052-035-06DI5 AH725
5/16"	18	6.6		DSW066-043-08DI5 AH725
3/8"	16	8		DSW080-043-08DI5 AH725
7/16"	14	9.4		DSW094-049-10DI5 AH725
1/2"	13	10.75	DrillMeister (Head changeable drill)	DMP108 AH9130 TID105F16-3 / TID105L25A90M10
9/16"	12	12.25		DMP122 AH9130 TID120F16-3 / TID120L25A90M10
5/8"	11	13.5		DMP135 AH9130 TID135F16-3
3/4"	10	16.5		DMP165 AH9130 TID160F20-3 / TID160L25A90M12
7/8"	9	19.5		DMP195 AH9130 TID190F25-3
1"	8	22.25		DMP222 AH9130 TID220F25-3

American Unified Fine Threads			Reccomended Drill for Pre-Hole	
UNF	T.P.I	Drill Size mm	Series	Description
#4	48	2.4	DSM (Solid carbide drill)	DSM0240G05 YH180
#5	44	2.7		DSM0270G05 YH180
#6	40	3	DSW (Solid carbide drill)	DSW030-023-06DI5 AH725
#8	36	3.5		DSW035-023-06DI5 AH725
#10	32	4.1		DSW041-029-06DI5 AH725
#12	28	4.7		DSW047-029-06DI5 AH725
1/4"	28	5.5		DSW055-035-06DI5 AH725
5/16"	24	6.9		DSW069-043-08DI5 AH725
3/8"	24	8.5		DSW085-049-10DI5 AH725
7/16"	20	9.9		DSW099-049-10DI5 AH725
1/2"	20	11.5	DrillMeister (Head changeable drill)	DMP115 AH9130 TID115F16-3
9/16"	18	12.9		DMP129 AH9130 TID125F16-3 / TID125L25A90M10
5/8"	18	14.5		DMP145 AH9130 TID145F16-3 / TID145L25A90M12
3/4"	16	17.5		DMP175 AH9130 TID170F20-3
7/8"	14	20.5		DMP205 AH9130 TID200F25-3
1"	12	23.25		DMP233 AH9130 TID230F32-3

In Addition to the Recommended Tools, We Offer a Lineup with Various Diameters and Lengths. Please Refer to the Catalog for Each Series for More Details.

DSM DSW DrillMeister

PRE-TAPPING HOLE SIZES FOR FORMED TAPS

ISO Metric Threads Coarse Pitch			Reccomended Drill for Pre-Hole	
M	Pitch mm	Recommended Pre-Hole Size mm	Series	Description
3	0.5	2.8	DSM (Solid carbide drill)	DSM0280G05 YH180
3.5	0.6	3.25	DSW (Solid carbide drill)	-
4	0.7	3.7		DSW037-023-06DI5 AH725
4.5	0.75	4.2		DSW042-029-06DI5 AH725
5	0.8	4.65		-
6	1	5.55		-
7	1	6.55		-
8	1.25	6.6		DSW066-043-08DI5 AH725
9	1.25	7.45		-
10	1.5	8.45		-
11	1.5	9.35		-
12	1.75	11.25	DrillMeister (Head changeable drill)	-
14	2	13.1		DMP131 AH9130 TID130F16-3
16	2	15.1		TID150F20-3 / TID150L25A90M12
18	2.5	16.85		-
20	2.5	18.85		-

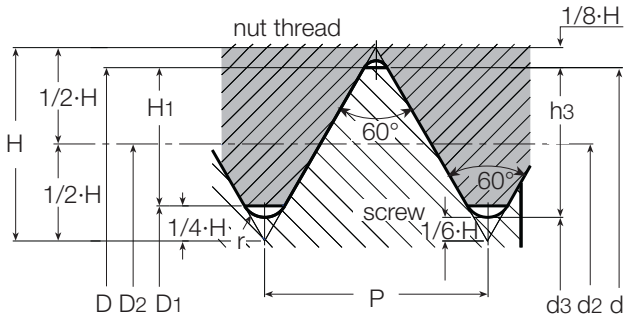
ISO Metric Threads Fine Pitch			Reccomended Drill for Pre-Hole	
MF	Pitch mm	Recommended Pre-Hole Size mm	Series	Description
3	0.35	2.88	DSM (Solid carbide drill)	-
3.5	0.35	3.38	DSW (Solid carbide drill)	-
4	0.5	3.8		DSW038-029-06DI5 AH725
5	0.5	4.8		DSW048-035-06DI5 AH725
6	0.5	5.8		DSW058-035-06DI5 AH725
6	0.75	5.7		DSW057-035-06DI5 AH725
7	0.75	6.7		DSW067-043-08DI5 AH725
8	0.75	7.7		DSW077-043-08DI5 AH725
8	1	7.6		DSW076-043-08DI5 AH725
9	0.75	8.7		DSW087-049-10DI5 AH725
9	1	8.6		DSW086-049-10DI5 AH725
10	0.75	9.7		DSW097-049-10DI5 AH725
10	1	9.6		DSW096-049-10DI5 AH725
10	1.25	9.45		-
11	1	10.6	DrillMeister (Head changeable drill)	DMP106 AH9130 TID105F16-3 / TID105L25A90M10
12	1	11.6		DMP116 AH9130 TID115F16-3
12	1.25	11.45		-
12	1.5	11.35		-
14	1	13.6		DMP136 AH9130 TID135F16-3
14	1.25	13.45		-
14	1.5	13.35		-
15	1	14.6		DMP146 AH9130 TID145F16-3 / TID145L25A90M12
15	1.5	14.35		-
16	1	15.6		DMP156 AH9130 TID150F20-3 / TID150L25A90M12
16	1.5	15.35		-
18	4	17.6		DMP176 AH9130 TID170F20-3
18	1.5	17.35		-
18	2	17.1		DMP171 AH9130 TID170F20-3
20	1	19.6		DMP196 AH9130 TID190F25-3
20	1.5	19.35		-
20	2	19.1		DMP191 AH9130 TID190F25-3

In Addition to the Recommended Tools, We Offer a Lineup with Various Diameters and Lengths. Please Refer to the Catalog for Each Series for More Details.The Pre-Hole Diameter for Roll Taps May Need Fine Adjustments Depending on the Elongation Rate of the Workpiece Material. We Also Offer Custom-Sized Tools to Meet Your Specific Requirements.

DSM DSW DrillMeister

ISO METRIC THREAD NOMINAL DIMENSIONS ACCORDING TO UNI 4535-64

tap flank diameter production tolerances for ISO 6H Nut threads limit dimensions - nut threads ISO 6H



coarse pitch threads dimensions in mm

$H = 0.86603P$

$H_1 = \frac{5}{8} H = 0.54127P$

$h_3 = \frac{17}{24} H = 0.61343P$

$d_2 = D_2 = d - \frac{3}{4} H = d - 0.64952P$

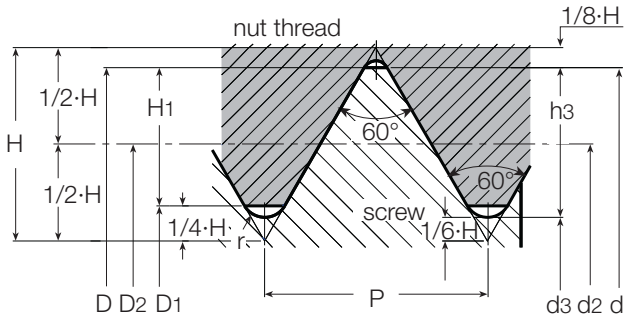
$d_3 = d - 2h_3 = d - 1.22687P$

$r = \frac{H}{6} = 0.14434P$

Nominal Dia. d=D	Pitch P	Flank Dia. D2=D2	Minor Diameter		Thread Depth		Radius r	Flank Dia. Tap Tolerance 6H D2		Flank Dia. Tap Tolerance 6H	
			Screw D3	Nut D1	Screw H3	Nut H1		Min.	Max.	Min.	Max.
M1.6	0.35	1.373	1.171	1.221	0.215	0.189	0.051	1.393	1.407	1.373	1.458
M1.8	0.35	1.573	1.371	1.421	0.215	0.189	0.051	1.593	1.607	1.573	1.658
M2	0.4	1.740	1.509	1.567	0.245	0.217	0.058	1.761	1.776	1.740	1.830
M2.2	0.45	1.908	1.648	1.713	0.276	0.244	0.065	1.931	1.946	1.908	2.003
M2.5	0.45	2.208	1.948	2.013	0.276	0.244	0.065	2.231	2.246	2.208	2.303
M3	0.5	2.675	2.387	2.459	0.307	0.271	0.072	2.699	2.715	2.675	2.775
M3.5	0.6	3.110	2.764	2.850	0.368	0.325	0.087	3.137	3.155	3.110	3.222
M4	0.7	3.545	3.141	3.242	0.429	0.379	0.101	3.574	3.593	3.545	3.663
M4.5	0.75	4.013	3.580	3.688	0.460	0.406	0.108	4.042	4.061	4.013	4.131
M5	0.8	4.480	4.019	4.134	0.491	0.433	0.115	4.510	4.530	4.480	4.605
M6	1	5.350	4.773	4.917	0.613	0.541	0.144	5.385	5.409	5.350	5.500
M7	1	6.350	5.773	5.917	0.613	0.541	0.144	6.385	6.409	6.350	6.500
M8	1.25	7.188	6.466	6.647	0.767	0.677	0.180	7.226	7.251	7.188	7.348
M9	1.25	8.188	7.466	7.647	0.767	0.677	0.180	8.226	8.251	8.188	8.348
M10	1.5	9.026	8.160	8.376	0.920	0.812	0.217	9.068	9.096	9.026	9.206
M11	1.5	10.026	9.160	9.376	0.920	0.812	0.217	10.068	10.096	10.026	10.206
M12	1.75	10.863	9.853	10.106	1.074	0.947	0.253	10.911	10.943	10.863	11.063
M14	2	12.701	11.546	11.835	1.227	1.083	0.289	12.752	12.786	12.701	12.913
M16	2	14.701	13.546	13.835	1.227	1.083	0.289	14.752	14.786	14.701	14.913
M18	2.5	16.376	14.933	15.294	1.534	1.353	0.361	16.430	16.466	16.376	16.600
M20	2.5	18.376	16.933	17.294	1.534	1.353	0.361	18.430	18.466	18.376	18.600
M22	2.5	20.376	18.933	19.294	1.534	1.353	0.361	20.430	20.466	20.376	20.600
M24	3	22.051	20.319	20.752	1.840	1.624	0.433	22.115	22.157	22.051	22.316
M27	3	25.051	23.319	23.752	1.840	1.624	0.433	25.115	25.157	25.051	25.316
M30	3.5	27.727	25.706	26.211	2.147	1.894	0.505	27.794	27.839	27.727	28.007
M33	3.5	30.727	28.706	29.211	2.147	1.894	0.505	30.794	30.839	30.727	31.007
M36	4	33.402	31.093	31.670	2.454	2.165	0.577	33.473	33.520	33.402	33.702
M39	4	36.402	34.093	34.670	2.454	2.165	0.577	36.473	36.520	36.402	36.702
M42	4.5	39.077	36.479	37.129	2.760	2.436	0.650	39.152	39.202	39.077	39.392
M45	4.5	42.077	39.479	40.129	2.760	2.436	0.650	42.152	42.202	42.077	42.392
M48	5	44.752	41.866	42.587	3.067	2.706	0.722	44.832	44.885	44.752	45.087
M52	5	48.752	45.866	46.587	3.067	2.706	0.722	48.832	48.885	48.752	49.087
M56	5.5	52.428	49.252	50.046	3.374	2.977	0.794	52.512	52.568	52.428	52.783
M60	5.5	56.428	53.252	54.046	3.374	2.977	0.794	56.512	56.568	56.428	56.783
M64	6	60.103	56.639	57.505	3.681	3.248	0.866	60.193	60.253	60.103	60.478
M68	6	64.103	60.639	61.505	3.681	3.248	0.866	64.193	64.253	64.103	64.478
Metric Thread MA (old UNI 159 Profile)								Nut Tolerance SH8			
M1.7	0.35	1.473	1.246	1.246	0.227	0.227	0.040	1.493	1,507	1.473	1.529
M2.3	0.4	2.040	1.780	1.780	0.260	0.260	0.040	2.061	2.076	2.040	2.120
M2.6	0.45	2.308	2.016	2.016	0.292	0.292	0.050	2.331	2.346	2.308	2.388

ISO METRIC FINE THREAD NOMINAL DIMENSIONS ACCORDING TO UNI 4535-64

tap flank diameter production tolerances for ISO 6H Nut threads limit dimensions - nut threads ISO 6H



coarse pitch threads dimensions in mm

$H = 0.86603P$

$H_1 = \frac{5}{8} H = 0.54127P$

$h_3 = \frac{17}{24} H = 0.61343P$

$d_2 = D_2 = d - \frac{3}{4} H = d - 0.64952P$

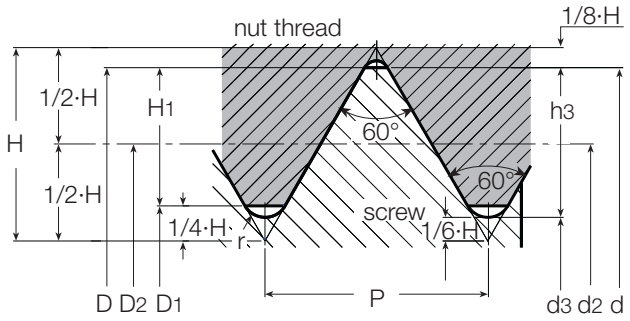
$d_3 = d - 2h_3 = d - 1.22687P$

$r = \frac{H}{6} = 0.14434P$

Nominal Dia. d=D	Pitch P	Flank Dia. D2=D2	Minor Diameter		Thread Depth		Radius r	Flank Dia. Tap Tolerance 6H D2		Flank Dia. Tap Tolerance 6H	
			Screw D3	Nut D1	Screw H3	Nut H1		Min.	Max.	Min.	Max.
M 2	0.25	1.838	1.693	1.729	0.153	0.135	0.036	1.844	1.856	1.838	1.886
M 2.5	0.35	2.273	2.701	2.121	0.215	0.189	0.051	2.293	2.307	2.273	2.358
M 3	0.35	2.773	2.571	2.621	0.215	0.189	0.051	2.794	2.809	2.773	2.863
M 3.5	0.35	3.273	3.071	3.121	0.215	0.189	0.051	3.294	3.309	3.273	3.363
M 4	0.5	3.675	3.387	3.459	0.307	0.271	0.072	3.699	3.715	3.675	3.775
M 4.5	0.5	4.175	3.887	3.959	0.307	0.271	0.072	4.199	4.215	4.175	4.275
M 5	0.5	4.675	4.387	4.459	0.307	0.271	0.072	4.699	4.715	4.675	4.775
M 5.5	0.5	5.175	4.887	4.959	0.307	0.271	0.072	5.199	5.215	5.175	5.275
M 6	0.5	5.675	5.387	5.459	0.307	0.271	0.072	5.702	5.72	5.675	5.787
M 6	0.75	5.513	5.08	5.188	0.46	0.406	0.108	5.545	5.566	5.513	5.645
M 7	0.75	6.513	6.08	6.188	0.46	0.406	0.108	6.545	6.566	6.513	6.645
M 8	0.5	7.675	7.387	7.459	0.307	0.271	0.072	7.702	7.72	7.675	7.787
M 8	0.75	7.513	7.08	7.188	0.46	0.406	0.108	7.545	7.566	7.513	7.645
M 8	1	7.35	6.773	6.917	0.613	0.541	0.144	7.835	7.409	7.35	7.5
M 9	0.75	8.513	8.08	8.188	0.46	0.406	0.108	8.545	8.566	8.513	8.645
M 9	1	8.35	7.773	7.917	0.613	0.541	0.144	8.385	8.409	8.35	8.5
M 10	0.5	9.675	9.387	9.459	0.307	0.271	0.072	9.702	9.72	9.675	9.787
M 10	0.75	9.513	9.08	9.188	0.46	0.406	0.108	9.545	9.566	9.513	9.645
M 10	1	9.35	8.773	8.917	0.613	0.541	0.144	9.385	9.409	9.35	9.5
M 10	1.25	9.188	8.466	8.647	0.767	0.677	0.18	9.226	9.251	9.188	9.348
M 11	0.75	10.513	10.08	10.188	0.46	0.406	0.108	10.545	10.566	10.513	10.645
M 11	1	10.35	9.773	9.917	0.613	0.541	0.144	10.385	10.409	10.35	10.5
M 12	0.75	11.513	11.08	11.188	0.46	0.406	0.108	11.547	11.569	11.513	11.653
M 12	1	11.35	10.773	10.917	0.613	0.541	0.144	11.388	11.413	11.35	11.51
M 12	1.25	11.188	10.466	10.647	0.767	0.677	0.18	11.23	11.258	11.188	11.368
M 12	1.5	11.026	10.16	10.376	0.92	0.812	0.217	11.071	11.101	11.026	11.216
M 13	1	12.35	11.773	11.917	0.613	0.541	0.144	12.388	12.413	12.35	12.51
M 14	1	13.35	12.773	12.917	0.613	0.541	0.144	13.388	13.413	13.35	13.51
M 14	1.25	13.188	12.466	12.647	0.767	0.677	0.18	13.23	13.258	13.188	13.368
M 14	1.5	13.026	12.16	12.376	0.92	0.812	0.217	13.071	13.101	13.026	13.216
M 15	1	14.35	13.773	13.917	0.613	0.541	0.144	14.388	14.413	14.35	14.51
M 15	1.5	14.026	13.16	13.376	0.92	0.812	0.217	14.071	14.101	14.026	14.216
M 16	1	15.35	14.773	14.917	0.613	0.541	0.144	15.388	15.413	15.35	15.51
M 16	1.25	15.188	14.466	14.647	0.767	0.677	0.18	15.23	15.258	15.188	15.368
M 16	1.5	15.026	14.16	14.376	0.92	0.812	0.217	15.071	15.101	15.026	15.216
M 17	1	16.35	15.773	15.917	0.613	0.541	0.144	16.388	16.413	16.35	16.51
M 17	1.5	16.026	15.16	15.376	0.92	0.812	0.217	16.071	16.101	16.026	16.216
M 18	1	17.350	16.773	16.917	0.613	0.541	0.144	17.388	17.413	17.35	17.51
M 18	1.5	17.026	16.16	16.376	0.92	0.812	0.217	17.071	17.101	17.026	17.216
M 18	2	16.701	15.546	15.835	1.227	1.083	0.289	16.752	16.786	16.701	16.913
M 20	1	19.35	18.773	18.917	0.613	0.541	0.144	19.388	19.413	19.35	19.51

ISO METRIC FINE THREAD NOMINAL DIMENSIONS ACCORDING TO UNI 4535-64

tap flank diameter production tolerances for ISO 6H Nut threads limit dimensions - nut threads ISO 6H



coarse pitch threads dimensions in mm

$H = 0.86603P$

$H_1 = \frac{5}{8} H = 0.54127P$

$h_3 = \frac{17}{24} H = 0.61343P$

$d_2 = D_2 = d - \frac{3}{4} H = d - 0.64952P$

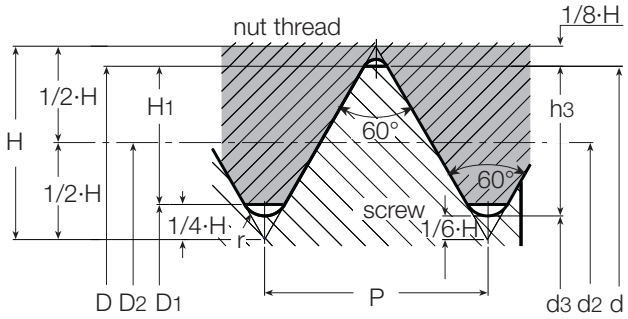
$d_3 = d - 2h_3 = d - 1.22687P$

$r = \frac{H}{6} = 0.14434P$

Nominal Dia. d=D	Pitch P	Flank Dia. D2=d2	Minor Diameter		Thread Depth		Radius r	Flank Dia. Tap Tolerance 6H D2		Flank Dia. Tap Tolerance 6H	
			Screw D3	Nut D1	Screw H3	Nut H1		Min.	Max.	Min.	Max.
M 20	1.5	19.026	18.16	18.376	0.92	0.812	0.217	19.071	19.101	19.026	19.216
M 20	2	18.701	17.546	17.835	1.227	1.083	0.289	18.752	18.786	18.701	18.913
M 22	1	21.35	20.773	20.917	0.613	0.541	0.144	21.388	21.413	21.35	21.51
M 22	1.5	21.026	20.16	20.376	0.92	0.812	0.217	21.071	21.101	21.026	21.216
M 22	2	20.701	19.546	19.835	1.227	1.083	0.289	20.752	20.786	20.701	20.913
M 24	1	23.350	22.773	22.917	0.613	0.541	0.144	23.390	23.416	23.350	23.520
M 24	1.5	23.026	22.160	22.376	0.920	0.812	0.217	23.074	23.106	23.026	23.226
M 24	2	22.701	21.546	21.835	1.227	1.083	0.289	22.754	22.791	22.701	22.925
M 25	1	24.350	23.773	23.917	0.613	0.541	0.144	24.390	24.416	24.350	24.520
M 25	1.5	24.026	23.160	23.376	0.920	0.812	0.217	24.074	24.106	24.026	24.226
M 25	2	23.701	22.546	22.835	1.227	1.083	0.289	23.754	23.791	23.701	23.925
M 26	1	25.350	24.773	24.917	0.613	0.541	0.144	25.390	25.416	25.350	25.520
M 26	1.5	25.026	24.160	24.376	0.920	0.812	0.217	25.074	25.106	25.026	25.226
M 26	2	24.701	23.546	23.835	1.227	1.083	0.289	24.754	24.791	24.701	24.925
M 27	1	26.350	25.773	25.917	0.613	0.541	0.144	26.390	26.416	26.350	26.520
M 27	1.5	26.026	25.160	25.376	0.920	0.812	0.217	26.074	26.106	26.026	26.226
M 27	2	25.701	24.546	24.835	1.227	1.083	0.289	25.754	25.791	25.701	25.925
M 28	1	27.350	26.773	26.917	0.613	0.541	0.144	27.390	27.416	27.350	27.520
M 28	1.5	27.026	26.160	26.376	0.920	0.812	0.217	27.074	27.106	27.026	27.226
M 28	2	26.701	25.546	25.835	1.227	1.083	0.289	26.754	26.791	26.701	26.925
M 30	1	29.350	28.773	28.917	0.613	0.541	0.144	29.390	29.416	29.350	29.520
M 30	1.5	29.026	28.160	28.376	0.920	0.812	0.217	29.074	29.106	29.026	29.226
M 30	2	28.701	27.546	27.835	1.227	1.083	0.289	28.754	28.791	28.701	28.925
M 30	3	28.051	26.319	26.752	1.840	1.624	0.433	28.115	28.157	28.051	28.316
M 32	1.5	31.026	30.160	30.376	0.920	0.812	0.217	31.074	31.106	31.026	31.226
M 32	2	30.701	29.546	29.835	1.227	1.083	0.289	30.754	30.791	30.701	30.925
M 33	1.5	32.026	31.160	31.376	0.920	0.812	0.217	32.074	32.106	32.026	32.226
M 33	2	31.701	30.546	30.835	1.227	1.083	0.289	31.754	31.791	31.701	31.925
M 33	3	31.051	29.319	29.752	1.840	1.624	0.433	31.115	31.157	31.051	31.316
M 35	1.5	34.026	33.160	33.376	0.920	0.812	0.217	34.074	34.106	34.026	34.226
M 35	2	33.701	32.546	32.835	1.227	1.083	0.289	33.754	33.791	33.701	33.925
M 36	1.5	35.026	34.160	34.376	0.920	0.812	0.217	35.074	35.106	35.026	35.226
M 36	2	34.701	33.546	33.835	1.227	1.083	0.289	34.754	34.791	34.701	34.925
M 36	3	34.051	32.319	32.752	1.840	1.624	0.433	34.115	34.157	34.051	34.316
M 38	1.5	37.026	36.160	36.376	0.920	0.812	0.217	37.074	37.106	37.026	37.226
M 39	1.5	38.026	37.160	37.376	0.920	0.812	0.217	38.074	38.106	38.026	38.226
M 39	2	37.701	36.546	36.835	1.227	1.083	0.289	37.754	37.791	37.701	37.925
M 39	3	37.051	35.319	35.752	1.840	1.624	0.433	37.115	37.157	37.051	37.316
M 40	1.5	39.026	38.160	38.376	0.920	0.812	0.217	39.074	39.106	39.026	39.226
M 40	2	38.701	37.546	37.835	1.227	1.083	0.289	38.754	38.791	38.701	38.925
M 40	3	38.051	36.319	36.752	1.840	1.624	0.433	38.115	38.157	38.051	38.316

ISO METRIC FINE THREAD NOMINAL DIMENSIONS ACCORDING TO UNI 4535-64

tap flank diameter production tolerances for ISO 6H Nut threads limit dimensions - nut threads ISO 6H



coarse pitch threads dimensions in mm

$H = 0.86603P$

$H_1 = \frac{5}{8} H = 0.54127P$

$h_3 = \frac{17}{24} H = 0.61343P$

$d_2 = D_2 = d - \frac{3}{4} H = d - 0.64952P$

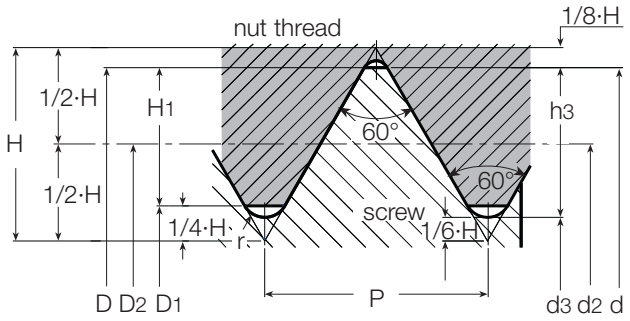
$d_3 = d - 2h_3 = d - 1.22687P$

$r = \frac{H}{6} = 0.14434P$

Nominal Dia. d=D	Pitch P	Flank Dia. D2=D2	Minor Diameter		Thread Depth		Radius r	Flank Dia. Tap Tolerance 6H D2		Flank Dia. Tap Tolerance 6H	
			Screw D3	Nut D1	Screw H3	Nut H1		Min.	Max.	Min.	Max.
M 42	1.5	41.026	40.160	40.376	0.920	0.812	0.217	41.074	41.106	41.026	41.226
M 42	2	40.701	39.546	39.835	1.227	1.083	0.289	40.754	40.791	40.701	40.925
M 42	3	40.051	38.319	38.752	1.840	1.624	0.433	40.115	40.157	40.051	40.316
M 45	1.5	44.026	43.160	43.376	0.920	0.812	0.217	44.074	44.106	44.026	44.226
M 45	2	43.701	42.546	42.835	1.227	1.083	0.289	43.754	43.791	43.701	43.925
M 45	3	43.051	41.319	41.752	1.840	1.624	0.433	43.115	43.157	43.051	43.316
M 48	1.5	47.026	46.160	46.376	0.920	0.812	0.217	47.077	47.111	47.026	47.238
M 48	2	46.701	45.546	45.835	1.227	1.083	0.289	46.758	46.796	46.701	46.937
M 48	3	46.051	44.319	44.752	1.840	1.624	0.433	46.118	46.163	46.051	46.331
M 50	1.5	49.026	48.160	48.376	0.920	0.812	0.217	49.077	49.111	49.026	49.238
M 50	2	48.701	47.546	47.835	1.227	1.083	0.289	48.758	48.796	48.701	48.937
M 50	3	48.051	46.319	46.752	1.840	1.624	0.433	48.118	48.163	48.051	48.331
M 52	1.5	51.026	50.160	50.376	0.920	0.812	0.217	51.077	51.111	51.026	51.238
M 52	2	50.701	49.546	49.835	1.227	1.083	0.289	50.758	50.796	50.701	50.937
M 52	3	50.051	48.319	48.752	1.840	1.624	0.433	50.118	50.163	50.051	50.331
M 55	1.5	54.026	53.160	53.376	0.920	0.812	0.217	54.077	54.111	54.026	54.238
M 55	2	53.701	52.546	52.835	1.227	1.083	0.289	53.758	53.796	53.701	53.937
M 55	3	53.051	51.319	51.752	1.840	1.624	0.433	53.118	53.163	53.051	53.331
M 56	1.5	55.026	54.160	54.376	0.920	0.812	0.217	55.077	55.111	55.026	55.238
M 56	2	54.701	53.546	53.835	1.227	1.083	0.289	54.758	54.796	54.701	54.937
M 56	3	54.051	52.319	52.752	1.840	1.624	0.433	54.118	54.163	54.051	54.331
M 58	1.5	57.026	56.160	56.376	0.920	0.812	0.217	57.077	57.111	57.026	57.238
M 58	2	56.701	55.546	55.835	1.227	1.083	0.289	56.758	56.796	56.701	56.937
M 58	3	56.051	54.319	54.752	1.840	1.624	0.433	56.118	56.163	56.051	56.331
M 60	1.5	59.026	58.160	58.376	0.920	0.812	0.217	59.077	59.111	59.026	59.238
M 60	2	58.701	57.546	57.835	1.227	1.083	0.289	58.758	58.796	58.701	58.937
M 60	3	58.051	56.319	56.752	1.840	1.624	0.433	58.118	58.163	58.051	58.331
Metric Thread MA (old UNI 160 Profile)									Nut Tolerance SH8		
M 2,3	0.25	2.138	1.976	1.976	0.162	0.162	0.03	2.144	2.156	2.138	2.194
M 2,6	0.35	2.373	2.146	2.146	0.227	0.227	0.04	2.393	2.407	2.373	2.429

UNIFIED COARSE THREAD NOMINAL DIMENSIONS ACCORDING TO ANSI B1.1

Tap flank diameter production tolerances for ISO 2B
Nut threads limit dimensions - nut threads ANSI B1.1, 2B-3B



Coarse Pitch Threads Dimensions in mm

$H = 0.86603P$

$H_1 = \frac{5}{8} H = 0.54127P$

$h_3 = \frac{17}{24} H = 0.61343P$

$d_2 = D_2 = d - \frac{3}{4} H = d - 0.64952P$

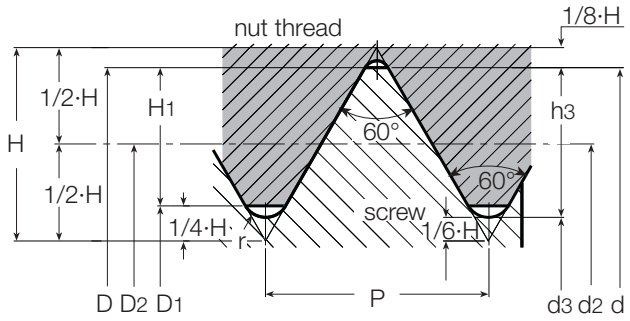
$d_3 = d - 2h_3 = d - 1.22687P$

$r = \frac{H}{6} = 0.14434P$

Nominal T.P.I Dia.		Pitch P	External Dia. d=D	Flank Dia. D2=D2	Minor Diameter		Pitch Diameter Tap Tolerance 2B		Pitch Diameter Nut Tolerance		
					Nut D1	Screw H3	Min.	Max.	Max. 2B/3B	Max. 2B	Max. 3B
UNC#1	- 64	0.397	1.854	1.598	1.425	1.367	1.610	1.623	1.598	1.664	1.646
UNC# 2	- 64	0.454	2.184	1.890	1.694	1.628	1.902	1.915	1.890	1.961	1.943
UNC#3	- 48	0.529	2.515	2.172	1.941	1.864	2.184	2.197	2.172	2.248	2.228
UNC# 4	- 40	0.635	2.845	2.433	2.156	2.065	2.446	2.459	2.433	2.517	2.494
UNC# 5	- 40	0.635	3.175	2.764	2.487	2.395	2.776	2.789	2.764	2.847	2.827
UNC# 6	- 32	0.794	3.505	2.990	2.647	2.532	3.105	3.028	2.990	3.084	3.058
UNC# 8	- 32	0.794	4.166	3.650	3.307	3.193	3.675	3.688	3.650	3.746	3.721
UNC# 10	- 24	1.058	4.826	4.138	3.680	3.528	4.163	4.176	4.138	4.247	4.219
UNC# 12	- 24	1.058	5.486	4.798	4.341	4.188	4.823	4.836	4.798	4.910	4.882
UNC 1/4"	- 20	1.270	6.350	5.524	4.976	4.793	5.575	5.588	5.524	5.646	5.616
UNC 5/16"	- 18	1.411	7.938	7.021	6.411	6.205	7.071	7.084	7.021	7.155	7.120
UNC 3/8"	- 16	1.588	9.525	8.494	7.805	7.577	8.545	8.557	8.494	8.639	8.603
UNC 7/16"	- 14	1.814	11.112	9.934	9.149	8.887	9.985	9.997	9.934	10.089	10.051
UNC 1/2"	- 13	1.954	12.700	11.430	10.584	10.302	11.481	11.494	11.430	11.595	11.552
UNC 9/16"	- 12	2.117	14.288	12.913	11.996	11.692	12.964	12.977	12.913	13.086	13.043
UNC 5/8"	- 11	2.309	15.875	14.376	13.376	13.043	14.427	14.440	14.376	14.559	14.514
UNC 3/4"	- 10	2.540	19.050	17.399	16.229	15.933	17.450	17.463	17.399	17.595	17.544
UNC 7/8"	- 9	2.822	22.225	20.391	19.169	18.763	20.455	20.467	20.391	20.599	20.546
UNC 1"	- 8	3.175	25.400	23.338	21.963	21.504	23.401	23.414	23.338	23.561	23.505
UNC 1 1/8"	- 7	3.629	28.575	26.218	24.648	24.122	26.294	26.319	26.218	26.457	26.398
UNC 1 1/4"	- 7	3.629	31.750	29.393	27.823	27.297	29.469	29.494	29.393	29.637	29.576
UNC 1 3/8"	- 6	4.233	34.925	32.174	30.343	29.731	32.250	32.276	32.174	32.438	32.372
UNC 1 1/2"	- 6	4.233	38.100	35.349	33.518	32.906	35.425	35.451	35.349	35.616	35.550
UNC 1 3/4"	- 5	5.080	44.450	41.151	38.951	38.217	41.241	41.266	41.151	41.445	41.372
UNC 2"	- 4 1/2	5.644	50.800	47.135	44.689	43.876	47.235	47.260	47.135	47.450	47.371
UNC 2 1/4"	- 4 1/2	5.644	57.150	53.485	51.039	50.226			53.485	53.805	53.726
UNC 2 1/2"	- 4	6.350	63.500	59.375	56.627	55.710			59.375	59.718	59.632
UNC 2 3/4"	- 4	6.350	69.850	65.725	62.977	62.060			65.725	66.073	65.987
UNC 3"	- 4	6.350	76.200	72.075	69.327	68.410			72.075	72.428	72.339
UNC 3 1/4"	- 4	6.350	82.550	78.425	75.677	74.760			78.425	78.783	78.694
UNC 3 1/2"	- 4	6.350	88.900	84.775	82.027	81.110			84.775	85.183	85.049
UNC 3 3/4"	- 4	6.350	95.250	91.125	88.377	87.460			91.125	91.493	91.402
UNC 4"	- 4	6.350	101.600	97.475	94.727	93.810			97.475	97.848	97.757

UNIFIED FINE THREAD NOMINAL DIMENSIONS ACCORDING TO ANSI B1.1

Tap flank diameter production tolerances for ISO 2B Nut threads limit dimensions - nut threads ANSI B1.1, 2B-3B



Coarse Pitch Threads Dimensions in mm

$H = 0.86603P$

$H_1 = \frac{5}{8} H = 0.54127P$

$h_3 = \frac{17}{24} H = 0.61343P$

$d_2 = D_2 = d - \frac{3}{4} H = d - 0.64952P$

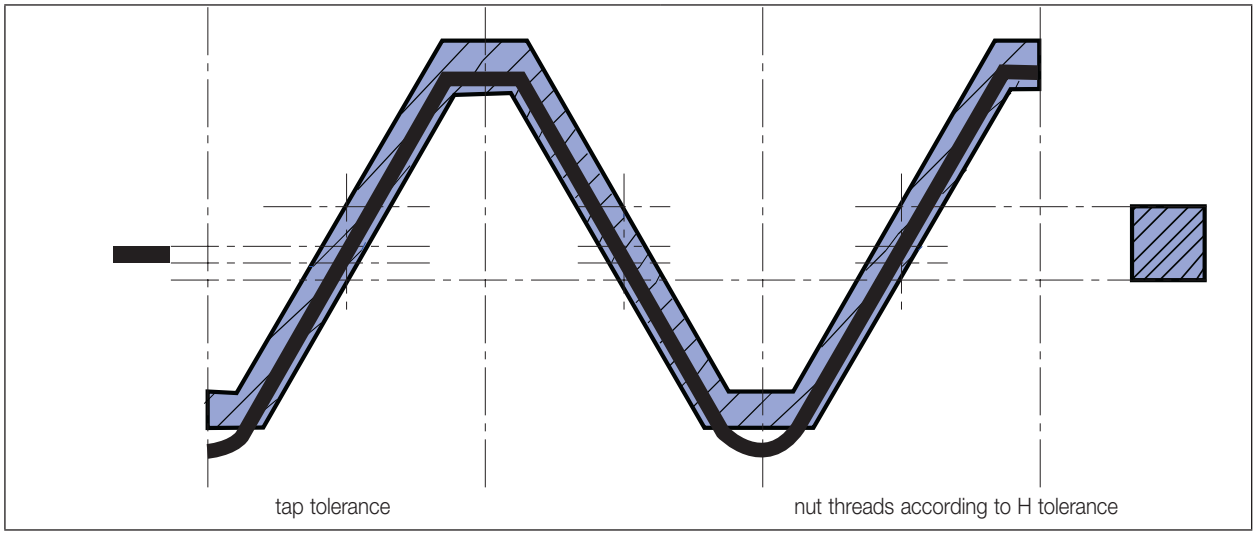
$d_3 = d - 2h_3 = d - 1.22687P$

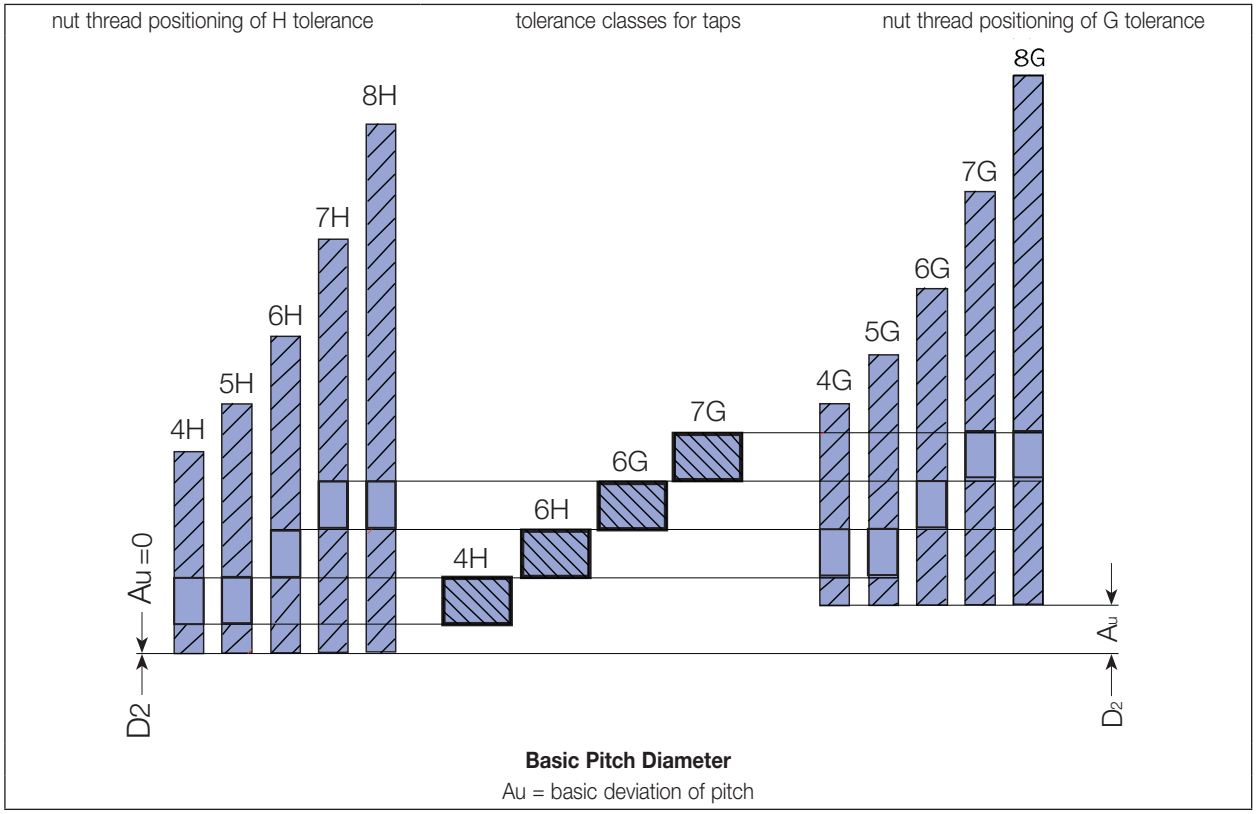
$r = \frac{H}{6} = 0.14434P$

Nominal T.P.I Dia.		Pitch P	External Dia. d=D	Flank Di a. D2=D2	Minor Diameter		Pitch Diameter Tap Tolerance 2B		Pitch Diameter Nut Tolerance		
					Nut D1	Screw H3	Min.	Max.	Max. 2B/3B	Max. 2B	Max. 3B
UNF#0	- 80	0.318	1.524	1.318	1.181	1.135	1.331	1.344	1.318	1.377	1.361
UNF#1	- 72	0.353	1.854	1.626	1.473	1.422	1.638	1.651	1.626	1.689	1.674
UNF#2	- 64	0.397	2.184	1.928	1.755	1.697	1.941	1.953	1.928	1.996	1.979
UNF#3	- 56	0.454	2.515	2.220	2.024	1.958	2.233	2.245	2.220	2.291	2.273
UNF#4	- 48	0.529	2.845	2.502	2.271	2.195	2.515	2.527	2.502	2.581	2.560
UNF#5	- 44	0.577	3.175	2.799	2.550	2.466	2.812	2.824	2.799	2.880	2.860
UNF#6	- 40	0.635	3.505	3.094	2.817	2.725	3.108	3.119	3.094	3.180	3.157
UNF#8	- 36	0.706	4.166	3.708	3.401	3.299	3.721	3.734	3.708	3.800	3.777
UNF#10	- 32	0.794	4.826	4.310	3.967	3.853	4.336	4.348	4.310	4.409	4.384
UNF#12	- 28	0.907	5.486	4.897	4.503	4.374	4.923	4.935	4.897	5.004	4.976
UNF 1/4"	- 28	0.907	6.350	5.761	5.367	5.237	5.799	5.812	5.761	5.870	5.842
UNF 5/16"	- 24	1.058	7.938	7.249	6.792	6.640	7.287	7.300	7.249	7.371	7.341
UNF 3/8"	- 24	1.058	9.525	8.837	8.379	8.227	8.875	8.887	8.837	8.961	8.931
UNF 7/16"	- 20	1.270	11.112	10.287	9.738	9.555	10.338	10.351	10.287	10.424	10.391
UNF 1/2"	- 20	1.270	12.700	11.874	11.326	11.143	11.925	11.938	11.874	12.017	11.981
UNF 9/16"	- 18	1.411	14.288	13.371	12.761	12.555	13.421	13.434	13.371	13.520	13.482
UNF 5/8"	- 18	1.411	15.875	14.958	14.348	14.143	15.009	15.022	14.958	15.110	15.072
UNF 3/4"	- 16	1.588	19.050	18.019	17.330	17.102	18.070	18.082	18.019	18.184	18.143
UNF 7/8"	- 14	1.814	22.225	21.046	20.262	20.000	21.110	21.123	21.046	21.224	21.181
UNF 1"	- 12	2.117	25.400	24.026	23.109	22.804	24.089	24.102	24.026	24.219	24.171
UNF 1*1/8"	- 12	2.117	28.575	27.201	26.284	25.979	27.252	27.277	27.201	27.339	27.351
UNF 1*1/4"	- 12	2.117	31.750	30.376	29.459	29.154	30.427	30.452	30.376	30.579	30.528
UNF 1*3/8"	- 12	2.117	34.925	33.551	32.634	32.329	33.602	33.627	33.551	33.759	33.706
UNF 1*1/2"	- 12	2.117	38.100	36.726	35.809	35.504	36.777	36.802	36.726	36.937	36.886

TAP TOLERANCES

Tolerance classes of taps and tolerance positions for screw threads as per ISO metric standard.





For Optimum Tapping Conditions, Reduced Machining Times and Increased Tap Life

Selection of the Most Suitable Tap

As a general rule, materials with deformation capability of at least 10% can be cold-formed. To decide on the most suitable tap, please refer to the tap recommendation table on pages 4-5.

Pre-Tapping Holes

Check that the holes are within the prescribed size range depending on the application (see table on pages 11-13).
The holes should be clean and swarf-free.

Lubrication

Frequently the lubricant content of the coolant used for general machining is too low for tapping.

- If it is not possible to increase the lubricant content, following are some possible solutions:
- A separate lubricating unit can be connected to the machine control, to deliver the required quantity of concentrated emulsion into the core hole or onto the tap.Tapping in separate operations allows the use of the ideal tapping lubricant.

Tapping Speeds

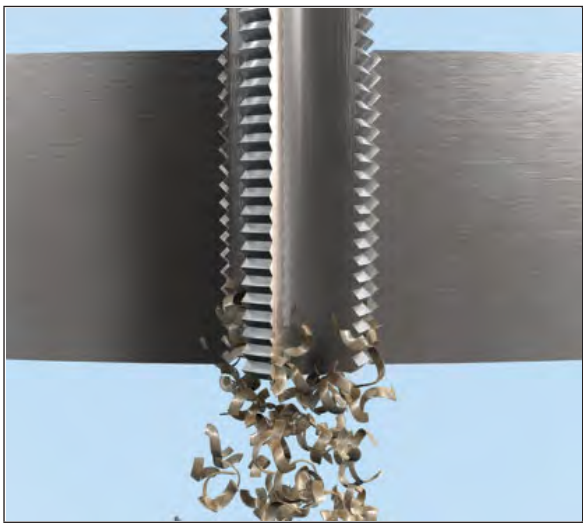
The tapping speed has a great influence on chip flow and the life of the tap. It is worthwhile to establish the ideal speed by tapping trials. For recommended initial values, see table on page 9. In addition, the following should be taken into consideration: characteristics of the material, machine and clamping method.

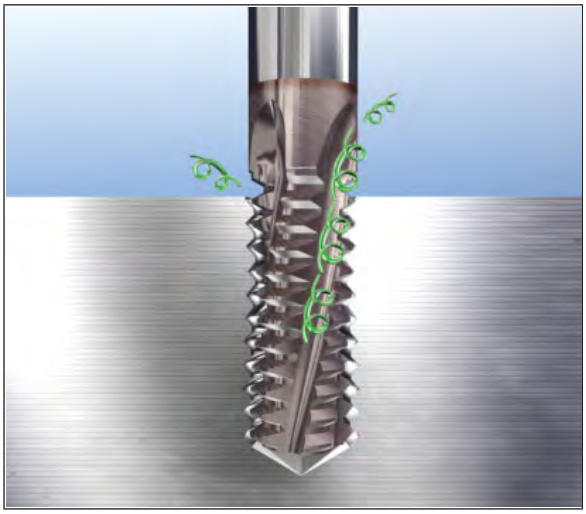
Effects of Unsuitable Tapping Speed

- Forced tapping.
- Tap lead chipping caused by overloaded cutting tooth.
- Torn threads.
- Unsatisfactory tap life.
- Rejected threads.

Chip Explusion

Tap selection is also influenced by the type of hole being threaded. Through hole tapping usually requires a tap that pushes the chips out in front of the cutting edge and through the other end of the hole. A bottom hole tap must pull chips up and out of the hole.





Tap Jamming

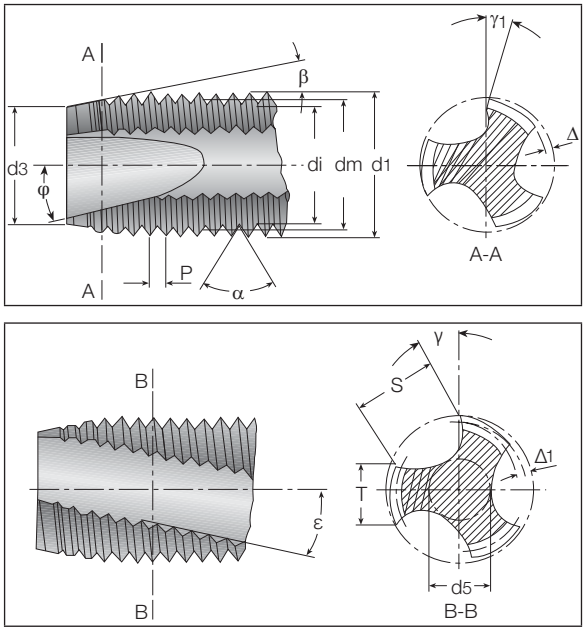
Some possible causes of tap jamming are:

- Unsuitable tap.
- Tap with incorrect cutting geometry.
- Unsuitable coolant for material.
- Insufficient coolant.
- Axial pressure (pull or push) on the tap.
- Core hole too small.
- Breaks in walls of core hole.
- Speed too high or too low.
- Swarf trapped in the hole.
- Incorrect alignment of tap and core hole.
- Tap eccentricity.

TROUBLESHOOTING

Problem	Cause	Solution
Tapped Hole Oversized	incorrect tap (cutting geometry unsuitable for application)	use tap selected from the relevant material group
	faulty alignment	ensure that the tap is correctly aligned with the core hole axis
	tap jamming	improve lubrication and direction of coolant adjust cutting speed
	incorrectly reground tap (lead tip is not concentric)	regrind tap
Stripped Threads	incorrect tap (cutting geometry incorrect for application)	use a tap from the relevant material group
	spindle speed and feed rate are not synchronized	check feed rate programming and/or pitch of leading spindle. use a tapping spindle with axial float (gti/gtin)
	insufficient starting pressure exerted on tap (causes peeling)	increase starting pressure
Bell Mouthed Tapped Hole	incorrect starting pressure	use a tapping spindle with axial float (gti/gtin)
Unsatisfactory Thread Surface Finish	incorrect tap (cutting geometry unsuitable for application)	select tap for the relevant material group
	the tap is blunt	replace or regrind tap
	tap badly re-ground	regrind tap, check that cutting geometry is suitable for material
	incorrect lubricant, concentration or quantity	ensure the use of a suitable coolant and an ample supply
Partial Chipping of Tap	swarf jamming	check cutting speed. use alternative tap
	tap has jammed against bottom of pre-hole	check hole and thread depths. drill a deeper pre-hole
	tap incorrectly reground (lead-in diameter too short, therefore too few cutting teeth)	ensure that correct dimensions are maintained when regrinding
	irregular workpiece material structure	adjust cutting speed. improve lubricant quality of coolant
Excessive Tap Wear	incorrect cutting speed	adjust cutting speed to suit workpiece material
	coolant lacking in lubricating qualities and/or quantity	ensure the use of a suitable coolant and an ample supply. check that the coolant is reaching the cutting zone
	surface of the pre-hole is compacted	check pre-hole drilling conditions (drill carefully to reduce risk of surface compacting). check drill cutting edges
Tap Breakage	incorrect tap in use (cutting geometry unsuitable for application)	use tap from the relevant material group
	centering error	ensure that axes of tap and pre-hole are aligned
	blunt tap	regrind tap
	tap has reached bottom of pre-hole	use tapping spindle with axial float and slipping clutch (**GTI**/**GTIN**)
	pre-hole too small	check for correct pre-hole size, see pages 11-13

TAP NOMENCLATURE (REGRINDING)



d1	major diameter	ϒ	gun nose front rake angle
dm	flank diameter	Δ	chamfer relief
di	minor diameter	Δ 1	pitch diameter relief on the land
d3	chamfer diameter	ϒ1	rake angle
P	pitch	T	width of land
α	flank angle	S	flute width
ß	chamfer angle	d5	web thickness
φ	gun nose angle	ε	angle of spiral flute

Regrinding

Tap regrinding is performed in two steps:

1 regrinding of relieved chamfer
2 regrinding of flutes (see picture 1)

Regrinding of Relieved Chamfer

It is recommended that the resharpening should be executed either on specific tap regrinding machines or on conventional resharpening machines equipped with an auxiliary device to generate the circular back relief.

Picture 2 shows the regrinding done with the cylindrical surface of a grinding wheel. Before regrinding, verify that the tap, fixed between points or on the pincer, runs concentrical. Also ensure that angle B is in the correct order to keep the same number of threads on chamfer.

Resharpening of Flutes

The rake angle g is obtained by moving the tap axis, in relation to the regrinding surface, of an amount X to be calculated with the formula: X = 1/2 d1 sin (ϒ) (see picture 3).(d1 =tap major diameter).

Example:
Tap 10 X 1,5 to Cut on Steel
Strength = 600 N/mm²

D1 = 10 Mm ; ϒ = 15° ; Sin (ϒ) = 0,25882;

$$X = \frac{0.25885}{2} \text{ x10 ; X=1.29 mm}$$

On all taps with spiral flutes, it is possible to find the pitch of the spiral in reference to the lead screw necessary for resharpening. In case of using taps equipped with a deburring tool, it is necessary to extend the flutes according to the supplier's recommendation. As the wear on a tap is mainly on the chamfer area, for taps with a gun nose, regrinding the flutes can be done on the front area only (see picture 4).

In cases where the thread flanks are worn (in addition to the active edges), regrinding as described above is impractical.

In this case restoration is done, by cutting the chamfer away (thus creating a shorter tap) and then reproducing the chamfer with same angle and relief. (see picture 5).

In the absence of special regrinding machines, such restoration is advisable for regrinding taps with spiral flutes. This is because regrinding the flutes becomes unnecessary.

GENERAL RECOMMENDATIONS (REGRINDING)

Maintenance

It is important to periodically regrind the worn tap.
This is to avoid permanent damage or even tool breakage.

The Grinding Wheels

The structure and grain of grinding wheels must be appropriate for the tap to be resharpened.

Taps for Cast Iron

Taps used on cast iron can rarely be resharpened, as it is very abrasive and tends to wear the flank in such a manner that it becomes grossly out of tolerance.

Taps for Aluminun

After regrinding it is advisable to remove the steel burrs with a wire brush.

Tap Inspection

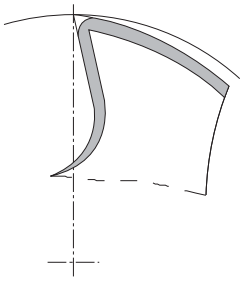
It is important to inspect the tap after regrinding to ensure that all of the dimensions and angles have remained according to the specifications.

Controls (Tests)

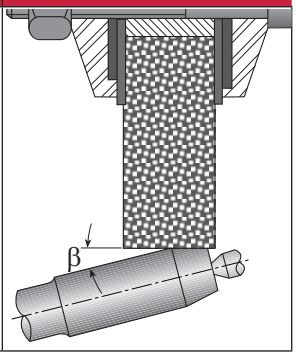
Once the tap is resharpened, it is always best to test it to correctly to obtain the same threads as when the tap was new.

- The chamfer must be perfectly on axis in order to avoid the effects of picture 6.
  The cutters must have correct divisions.
- The results of resharpening with an incorrect division is shown in picture 7.
- The length and number of threads in a chamfer must be precisely identical to those of the new tap.

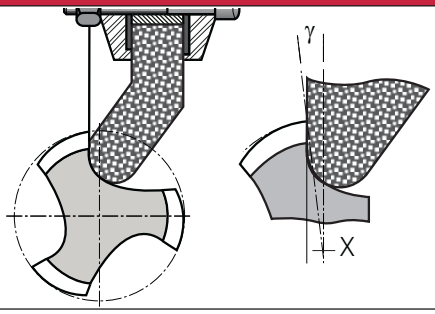
Picture 1



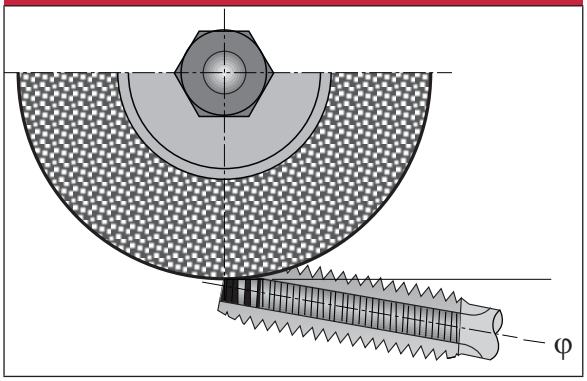
Picture 2



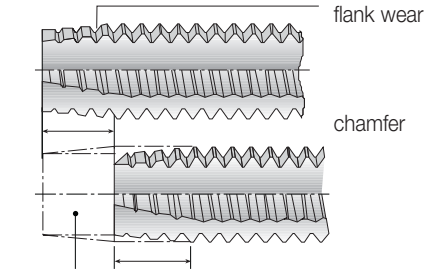
Picture 3



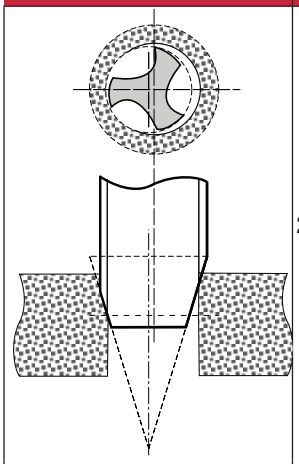
Picture 4



Picture 5

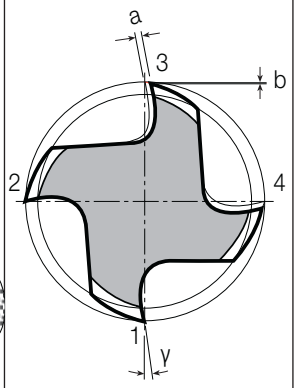


Picture 6



chamfer out of center

Picture 7



incorrect division-cutters not concentric

TUNGTAP

TEST REPORT FORM

Company _____ **Department** _____

Address _____ **Phone** _____

_____

Tool

description of the tap being used at present thread diameter and pitch

_____

make _____ type _____

class of tolerance

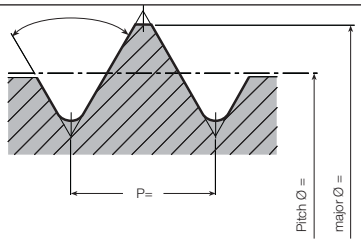
- right-hand cutting
- left-hand cutting _____
- fluteless
- right-hand spiral flutes _____ degrees _____
- straight flutes
- left-hand spiral flutes _____ degrees _____
- spiral point
- length of chamfer _____ mm _____

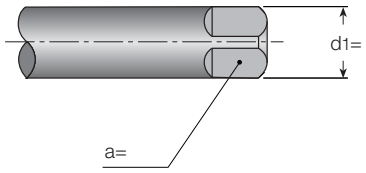
additional information for special pitches or thread forms

major diameter _____

pitch diameter _____ flank angle _____ degrees _____

minor diameter _____





Hole

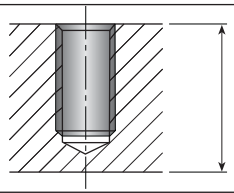
tap drill diameter _____ length of hole _____

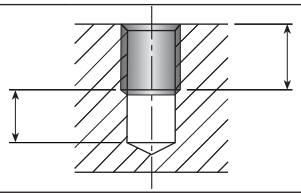
- through hold

depth of full thread _____

- blind hole

special requirements or unusual characteristics of the threaded product _____





unusual characteristics of the threaded product or of the tapping method. _____

ie. counterbore, tapping on an angle, etc. _____

TEST REPORT FORM

Tapping Speed	_____ m/min _____ rPM
Lubricant	- none - emulsion _____ % - cutting oil - other _____ - under pressure - vaporization _____
Machine	type _____ - horizontal tapping - vertical tapping
Driving	- tap revolvers number of spindles _____ - workpiece revolvers
Feed	- without - power - CNC _____ %
Toolholder	- rigid - floating - safety clutch make _____ type _____
Material to Be Tapped	material no. or designation _____ composition, if known _____ tensile strength or hardness _____ N/mm^2 _____ HB _____ HRc chip form - short - long - annealed steel - hardened steel - heat treated steel

more details: _____

_____

_____

_____

_____

_____

_____

contact person _____

date _____ signature _____

THREAD STANDARDS

Cylindrical Threads	
UNC	unified coarse thread series
UNF	unified fine thread series
UNEF	unified extra-fine thread series
UN	constant pitch series - threads with constant pitch of t.p.i. 4, 6, 8, 12, 16, 20, 28, 32
UNS	selected combinations - threads with special dia. - pitch combinations
UNJ	unified threads with constant pitch with radius on minor diameter from 0.15011 pitch to 0.18042 pitch
UNJC	unified coarse thread with radius on minor diameter from 0.15011 pitch to 0.18042 pitch
UNJEF	unified extra-fine thread with radius on minor diameter from 0.15011 pitch to 0.18042 pitch
UNJF	unified fine threads with radius on minor diameter from 0.15011 pitch to 0.18042 pitch

Pipe Cylindrical Threads	
NPS	cylindrical threads for pipe
NPSC	american standard for pipe coupling
NPSF	american standard for internal threads on pipe, dryseal
NPSH	american standard for cylindrical threads for pipes, joints and nipples
NPSI	american standard for internal cylindrical threads on pipe (dryseal)
NPSL	american standard for cylindrical threads on pipes for nuts
NPSM	american standard for cylindrical threads on pipes for mechanical joints
NGO	american national pipe threads for gas exhaust
NGS	american national pipe threads for gas

Taper Pipe Threads	
ANPT	taper pipe threads for army, navy and airforce
F-PTE	taper pipe fine threads (dryseal)

Trapezoidal and Saw Tooth Threads	
ACME-C ACME	self-centering threads
ACME-G ACME	generical application
STUB-ACME	acme flat threads with reduced thread depth
60° STUB-ACME	acme flat threads with 60° flank angle
N BUTT	american national saw tooth threads

British Standard	
BSW	whitworth british standard coarse pitch
BSF	whitworth british standard fine pitch
WHIT	whitworth standard special pitch
R	british standard external threading for taper pipe (dryseal) (already BSP-Tr)
Rc	british standard internal threading taper thread for pipe (BSP-Tr)
Rp	british standard cylindrical thread for pipe (already BSP.PI)
BA	british standard association threads
BSC	british standard threads for bicycles
CEI	british standard for bicycles

GTI / GTIN - TAPPING ATTACHMENT

Compact tapping collet with tension and compression floating mechanism for ER32 collet chucks.
A tapping collet for standard and rigid tapping operations. The **GTIN** ER32 collet makes tap removal and replacement easy, quick and reliable. Designed for stationary and rotating applications, the **GTIN** ER32 collets are economical and efficient due to the ability to use existing ER32 collet chucks (with various shank sizes and types).

Applications

The **GTIN** ER32 tapping collet is designed especially for CNC mill/turn centers, for regular and rigid tapping.

Advantages

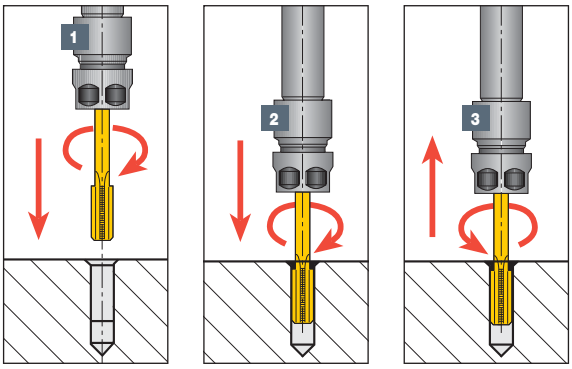
Quick tap change with a front clamping nut.

- Compact design for minimal clearance between the turret and chuck.
- Fits every type of stationary and rotating ER32 collet chuck.
- Positive tap drive with internal square driver.
- Compensates for machine feed and tap pitch variance, resulting in greater thread accuracy.
- Floating mechanism compensates for misalignment between tap and workpiece.
- High accuracy due to tension and compression mechanism.
- Available for all tap shank standards (DIN, ISO, ANSI, JIS).
- Tapping range M1-M16 (#0 to 5/8″).
- Saves setup time by quick tap changing without removing **GTIN** from the machine.
- Optimal for machines which have limited space between the turret and workpiece.

Operation

For through- and blind-hole tapping:

1. enter feed rate according to thread pitch (or 1-2 % lower). Set spindle to starting point with 0.08 mm clearance.
2. start spindle forward with right hand rotation until reaching desired depth.
3. stop feed and rotation and reverse to starting point.



Description

Short tap chucks for ER collets.

Application

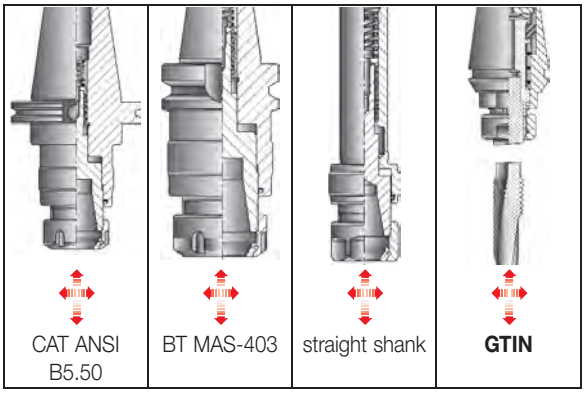
Axial float/tension/compression type for CNC milling machines and lathes with reversing motors and rigid tapping.

Features

- Compensates for machine feed and tap pitch variance.
- Floating mechanism compensates for misalignment between tap and workpiece.
- Right- and left-hand tapping.

Advantages

- Practical and efficient tap holding by the ER spring collet without using jaw drive.
- Compact design for minimal clearance applications.
- Heavy duty design for high torque drive ensures the same accuracy as the tap itself.



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