

THREAD MAKING



THREAD MAKING



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Guide to Icons



➤ TS-THREAD
Holder Page



➤ Insert Page



➤ Cutting Condition Page

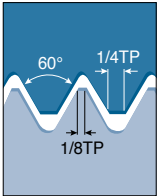
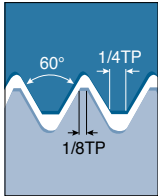
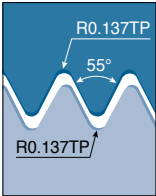


T-TAP (Tapping)

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Tool Selection Guide

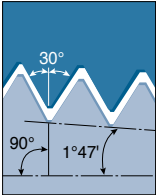
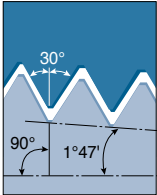
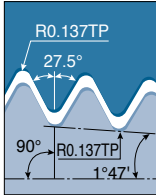
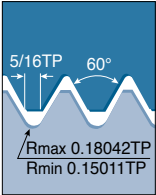
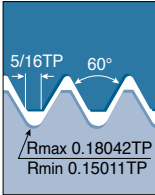
Solid carbide threading end mills

Thread	TS-THREAD		
	Metric ISO	American UN	Whitworth
			
Application	General usage for all industries	General usage for all industries	General industries. Pipe fittings and couplings
MTEC  General type	● C15	● C21	● C25
MTECB  Internal coolant hole	● C13	● C20	● C25
MTECZ  Internal coolant in the flutes	● C14	● C22	● C25
MTECS  Short head	● C17-C18	● C23	
MTECSH  Short head for hard materials	● C19	● C24	
MTECQ  Reduced neck diameter for deep threading	● C16		
MTECI  Partial profile	● C29	● C29	
MTEC E  External threading	● C16	● C22	

• For correct tool choice and CNC programming, use the 'TS-thread guide' software (Available at www.taegutec.com)

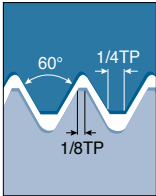
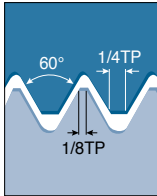
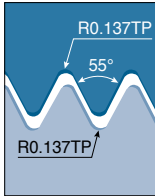
Tool Selection Guide

Solid carbide threading end mills

TS-THREAD				
NPT	NPTF	BSPT	UNJ	MJ
				
Steam, gas and water pipes	Steam, gas and water pipes. Dry seal	55° form for steam, gas and water pipes	Aviation and aerospace industry	Aviation and aerospace industry
● C26	● C26	● C27		
● C26		● C27		
	● C26	● C27		
			● C28	● C28

Tool Selection Guide

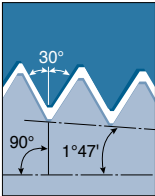
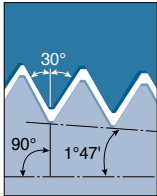
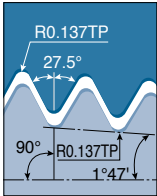
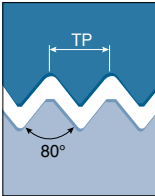
Indexable insert type

Thread	TS-THREAD		
	Metric ISO	American UN	Whitworth
			
Insert page	C39, C47	C40, C41, C48	C42, C49
Application	General usage for all industries	General usage for all industries	General industries. Pipe fittings and couplings
MTE D C31 Single insert	•	•	•
MTE D-C C32 Solid carbide shank	•	•	•
MTE D-W C33 Twin insert	•	•	•
TMTSRH C34 Helical end mill	•	•	•
MTF D C35 Large diameter thread	•	•	•
MTFLE D C36 Multi tooth-external threading	•	•	•
TMTSRH C37 Helical shell mill	•	•	•

• For correct tool choice and CNC programming, use the 'TS-thread guide' software (Available at www.taegutec.com)

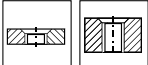
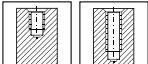
Tool Selection Guide

Indexable insert type

TS-THREAD			
NPT	NPTF	BSPT	PG
			
C43, C49	C44	C45, C50	C46
Steam, gas and water pipes	Steam, gas and water pipes. Dry seal	55° form for steam, gas and water pipes	Electrical connector
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•
•	•	•	•

Tool Selection Guide

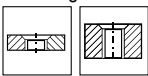
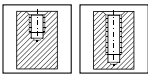
Straight flute with spiral point tap

Series		T-TAP		
		Straight flute with spiral point tap		
		TPH...52B	TPH...52B05	TPH...52B10
Pages		C56	C57	C58
Coating type		Uncoated	Steam tempered	TiN coated
Chamfer form		Form B 4-5 threads chamfer	Form B 4-5 threads chamfer	Form B 4-5 threads chamfer
Range (ISO metric)	Coarse threads	M2 - M20	M2 - M20	M2 - M20
	Fine threads	M8 - M16	M8 - M16	M8 - M16
Tolerance		ISO 2-6H	ISO 2-6H	ISO 2-6H
Material	P	○	●	●
	M		●	●
	K	○	○	○
	N	●	○	○
	S			○
Application	Through hole  (2xTDZ) (3xTDZ)	●	●	●
	Blind hole  (2xTDZ) (3xTDZ)			

● Recommended, ○ Suitable

Tool Selection Guide

40° right hand spiral flute tap

Series		T-TAP		
		40° right hand spiral flute tap		
		TPH...54C	TPH...54C05	TPH...54C10
				
Pages		C59	C60	C61
Coating type		Uncoated	Steam tempered	TiN coated
Chamfer form		Form C 2-3 threads chamfer	Form C 2-3 threads chamfer	Form C 2-3 threads chamfer
Range (ISO metric)	Coarse threads	M2 - M20	M2 - M20	M2 - M20
	Fine threads	M8 - M16	M8 - M16	M8 - M16
Tolerance		ISO 2-6H	ISO 2-6H	ISO 2-6H
Material	P	○	●	●
	M		●	●
	K	○	○	○
	N	●	○	○
	S			○
Application	Through hole  (2xTDZ) (3xTDZ)			
	Blind hole  (2xTDZ) (3xTDZ)	●	●	●

● Recommended, ○ Suitable

Thread making grades

Grades	ISO	Characteristics & applications
TT9030 PVD coated	P20 – P40 M20 – M40 S20 – S40	• General machining of steel • General machining of stainless steel • General machining of heat-resistant alloy

TS-THREAD

Thread Milling



MTEC  **06** **04** **C** **14** **1.0** **ISO** **TT9030**

1 2 3 4 5 6 7 8 9

1 TaeguTec mill thread

MT - Mill thread
E - End mill
C - Carbide

2 End mill type

B - Axial coolant bore
Z - Coolant hole in the flutes
S - Short head
SH - Short head for threading hard materials
Q - Reduced diameter neck
I - Partial profile

3 Shank diameter

06 6.0 mm
10 10.0 mm

4 Cutting diameter

031 3.1 mm
04 4.0 mm

5 No. of flutes

C - 3 flutes
D - 4 flutes
E - 5 flutes
F - 6 flutes

6 Length of thread (APMX)

10 10.0 mm

7 Thread pitch

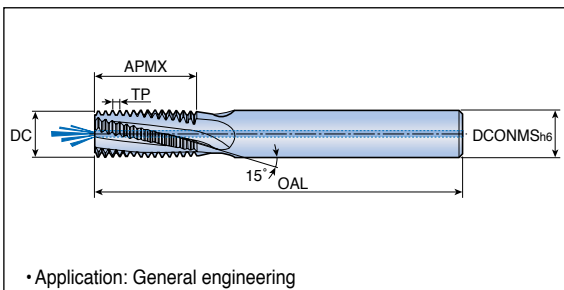
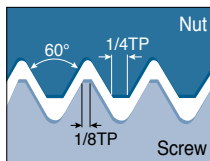
0.25-4.0 mm (Thread pitch)
72-7 TPI (Threads per inch)

8 Thread standard

ISO
UN
W
NPT
NPTF
BSPT
UNJ
MJ

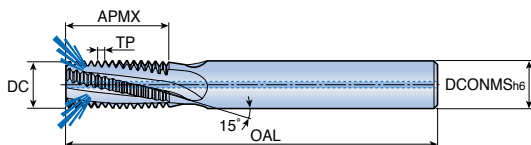
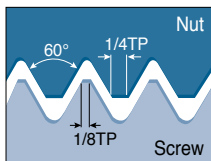
9 Grades

Coated
TT9030
TT1040



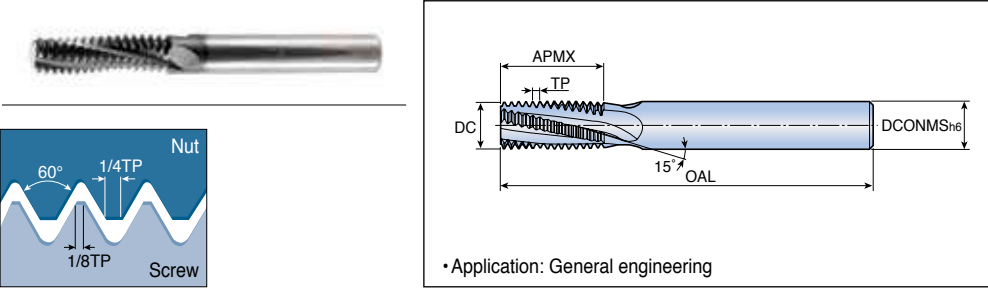
Cutting Condition

●: Standard items

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●: Standard items

Solid carbide threading end mills for internal threading

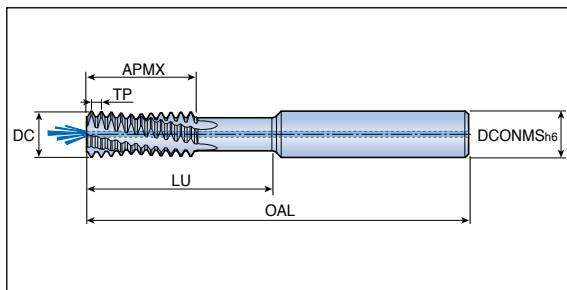
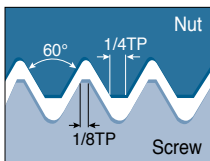


Designation			TP (mm)	M coarse	M fine	Dimension (mm)				NOF	Grade TT9030
						DCONMS	DC	APMX	OAL		
MTEC	06022C5	0.5 ISO	0.5	M3	Ø ≥ 4	6	2.2	5.3	58	3	●
	06038C10	0.5 ISO	0.5	-	Ø ≥ 5	6	3.8	10.4	58	3	●
	06031C7	0.7 ISO	0.7	M4	Ø ≥ 5	6	3.1	7.4	58	3	●
	06045C10	0.75 ISO	0.75	-	Ø ≥ 6	6	4.5	10.1	58	3	●
	06036C9	0.8 ISO	0.8	M5	Ø ≥ 6	6	3.6	9.2	58	3	●
	0604C10	1.0 ISO	1.0	M6	Ø ≥ 7	6	4.0	10.5	58	3	●
	0604C14	1.0 ISO	1.0	M6	Ø ≥ 7	6	4.0	14.5	58	3	●
	0606C12	1.0 ISO	1.0	-	Ø ≥ 9	6	6.0	12.5	58	3	●
	0808D16	1.0 ISO	1.0	-	Ø ≥ 10	8	8.0	16.5	64	4	●
	0605C14	1.25 ISO	1.25	M8	Ø ≥ 10	6	5.0	14.4	58	3	●
	0605C19	1.25 ISO	1.25	M8	Ø ≥ 10	6	5.0	19.4	58	3	●
	0807C17	1.5 ISO	1.5	M10	Ø ≥ 12	8	7.0	17.3	64	3	●
	0807C24	1.5 ISO	1.5	M10	Ø ≥ 12	8	7.0	24.8	76	3	●
	1010D21	1.5 ISO	1.5	-	Ø ≥ 14	10	10.0	21.8	73	4	●
	1616F33	1.5 ISO	1.5	-	Ø ≥ 20	16	16.0	33.8	105	6	●
	0808C20	1.75 ISO	1.75	M12	Ø ≥ 14	8	8.0	20.1	64	3	●
	0808C28	1.75 ISO	1.75	M12	Ø ≥ 14	8	8.0	28.9	76	3	●
	1010C27	2.0 ISO	2.0	M16	Ø ≥ 17	10	10.0	27.0	73	3	●
	1010C39	2.0 ISO	2.0	M16	Ø ≥ 17	10	10.0	39.0	105	3	●
	1212D27	2.0 ISO	2.0	-	Ø ≥ 18	12	12.0	27.0	84	4	●
	2020F41	2.0 ISO	2.0	-	Ø ≥ 26	20	20.0	41.0	105	6	●
	1414D33	2.5 ISO	2.5	M20	Ø ≥ 22	14	14.0	33.8	84	4	●
	1414D48	2.5 ISO	2.5	M20	Ø ≥ 22	14	14.0	48.8	105	4	●
	1616C40	3.0 ISO	3.0	M24	Ø ≥ 25	16	16.0	40.5	105	3	●
	1616C58	3.0 ISO	3.0	M24	Ø ≥ 25	16	16.0	58.5	120	3	●

MTECQ-ISO

TS-THREAD

Solid carbide thread end mills with internal coolant holes and a reduced diameter neck for deep internal threading



Designation	TP (mm)	TDZ	Dimension (mm)					NOF	Grade TT9030
			DCONMS	DC	APMX	LU	OAL		
MTECQ 1010D32 1.0 ISO	1.0	$\varnothing \geq 12$	10	10.0	18.0	32.0	73	4	●
1212D38 1.0 ISO	1.0	$\varnothing \geq 14$	12	12.0	21.0	38.0	84	4	●
1010D30 1.5 ISO	1.5	$\varnothing \geq 13$	10	10.0	18.0	30.0	73	4	●
2020F56 2.0 ISO	2.0	$\varnothing \geq 24$	20	20.0	34.0	56.0	105	6	●



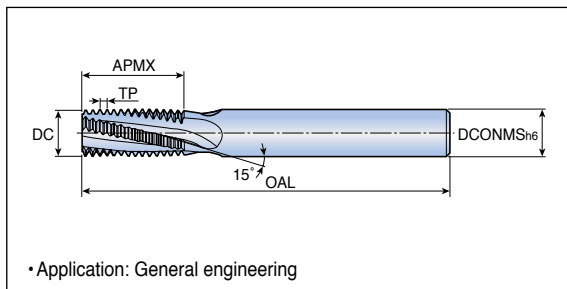
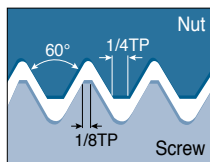
- TDZ: Thread diameter size
- NOF: Number of flutes

●: Standard items

MTEC E-ISO

TS-THREAD

Solid carbide end mills for external threading

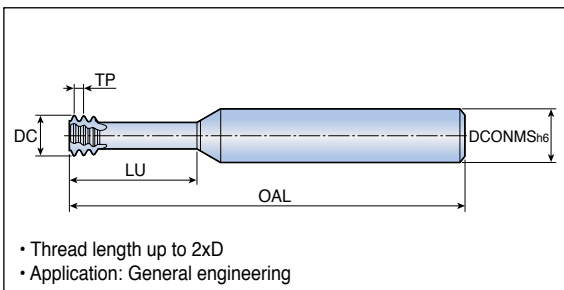
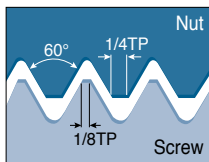


Designation	TP (mm)	Dimension (mm)				NOF	Grade TT9030
		DCONMS	DC	APMX	OAL		
MTEC E 1010D16 1.0 ISO	1.0	10	10.0	16.5	73	4	●
1010D16 1.25 ISO	1.25	10	10.0	16.9	73	4	●
1010D15 1.5 ISO	1.5	10	10.0	15.8	73	4	●
1212D20 1.5 ISO	1.5	12	12.0	20.3	84	4	●
1212D21 2.0 ISO	2.0	12	12.0	21.0	84	4	●



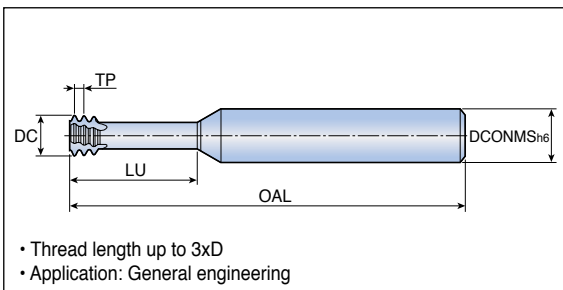
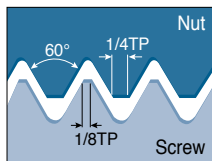
- NOF: Number of flutes

●: Standard items

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- TDZ: Thread diameter size
- NOF: Number of flutes

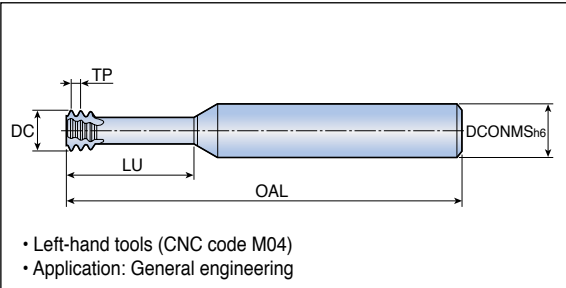
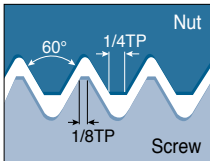
- : Standard items



- TDZ: Thread diameter size
- NOF: Number of flutes
- ⁽¹⁾ Specially designed for the production of dental implants

●: Standard items

Short solid carbide end mills for internal threading of hardened steel

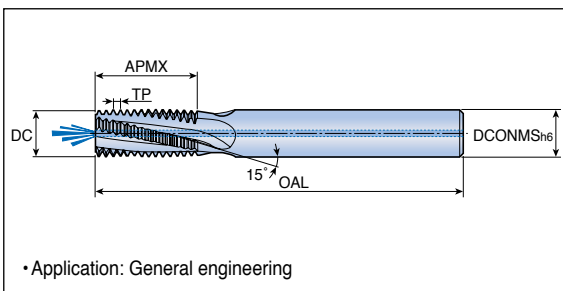
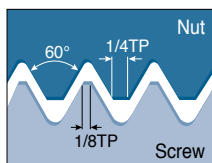


Designation				TP (mm)	TDZ	Dimension (mm)				NOF	Grade TT1040
						DCONMS	DC	LU	OAL		
MTECSH	03011C4	0.3	ISO	0.30	M1.4	3	1.05	4.0	39	3	●
	03012C5	0.35	ISO	0.35	M1.6	3	1.20	4.8	39	3	●
	03016C6	0.4	ISO	0.40	M2	3	1.55	6.0	58	3	●
	06016C4	0.4	ISO	0.40	M2	6	1.55	4.5	58	3	●
	06017C5	0.45	ISO	0.45	M2.2	6	1.65	5.0	58	3	●
	0602C5	0.45	ISO	0.45	M2.5	6	1.95	5.5	58	3	●
	0602C7	0.45	ISO	0.45	M2.5	6	1.95	7.5	58	3	●
	06024C6	0.5	ISO	0.50	M3	6	2.35	6.5	58	3	●
	06024C9	0.5	ISO	0.50	M3	6	2.35	9.5	58	3	●
	06028C7	0.6	ISO	0.60	M3.5	6	2.75	7.5	58	3	●
	06031C9	0.7	ISO	0.70	M4	6	3.10	9.0	58	3	●
	06031C12	0.7	ISO	0.70	M4	6	3.10	12.5	58	3	●
	06038C12	0.8	ISO	0.80	M5	6	3.80	12.5	58	3	●
	06038C16	0.8	ISO	0.80	M5	6	3.80	16.0	58	3	●
	06047C14	1.0	ISO	1.00	M6	6	4.65	14.0	58	3	●
	06047C20	1.0	ISO	1.00	M6	6	4.65	20.0	58	3	●
	0606C18	1.25	ISO	1.25	M8	6	5.95	18.0	58	3	●
	0606C24	1.25	ISO	1.25	M8	6	5.95	24.0	58	3	●
	08078C23	1.5	ISO	1.50	M10	8	7.80	23.0	64	3	●
	1009C26	1.75	ISO	1.75	M12	10	9.00	26.0	73	3	●
	12118D35	2.0	ISO	2.00	M16	12	11.80	35.0	84	4	●



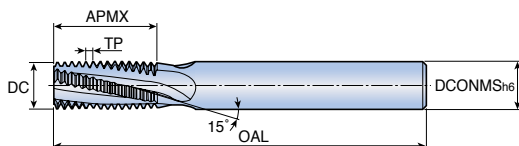
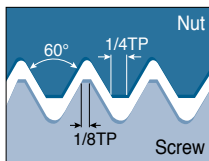
- TDZ: Thread diameter size
- NOF: Number of flutes

●: Standard items

[illegible]

- NOF: Number of flutes

●: Standard items

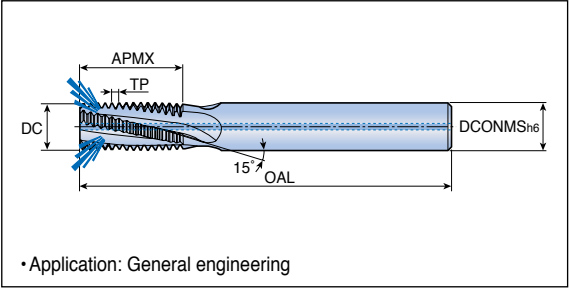
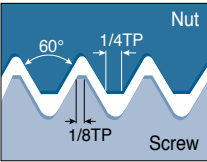
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●: Standard items

MTECZ-UN

TS-THREAD

Solid carbide with internal coolant in the flutes for internal threading



Designation	TPI	UNC	UNF	UNEF	Dimension (mm)				NOF	Grade TT9030
					DCONMS	DC	APMX	OAL		
MTECZ 1010D22 20 UN	20	-	1/2	-	10	10.0	22.3	73	4	●
12113D26 18 UN	18	-	9/16-5/8	11/8-15/8	12	11.3	26.1	84	4	●
08067C16 16 UN	16	3/8	-	-	8	6.7	16.7	64	3	●
10092C22 13 UN	13	1/2	-	-	10	9.2	22.5	73	3	●



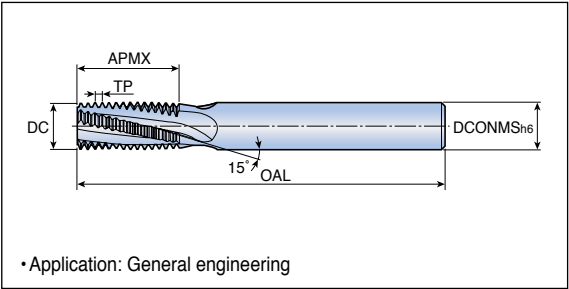
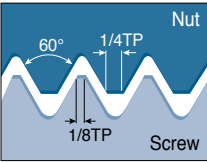
• NOF: Number of flutes

●: Standard items

MTEC E-UN

TS-THREAD

Solid carbide end mills for external threading

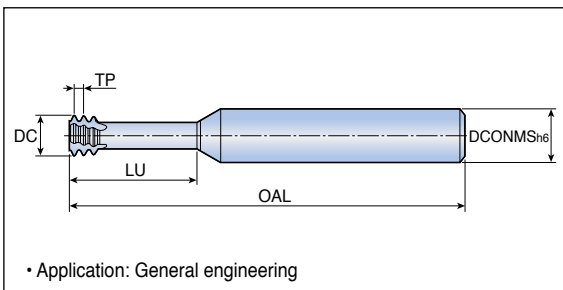
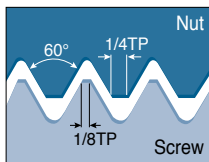


Designation	TPI	Dimension (mm)				NOF	Grade TT9030
		DCONMS	DC	APMX	OAL		
MTEC E 1010D16 24 UN	24	10	10.0	16.4	73	4	●

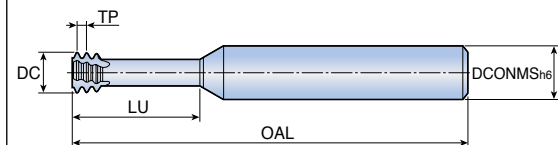
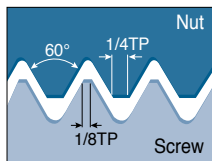


• NOF: Number of flutes

●: Standard items

[illegible]

●: Standard items



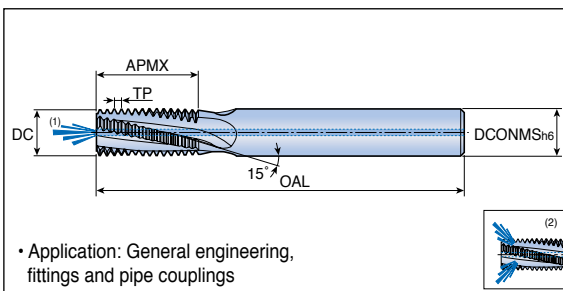
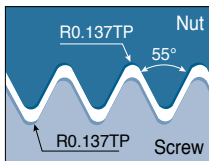
- Left-hand tools (CNC code M04)
- Application: General engineering

[illegible]

- NOF: Number of flutes

●: Standard items

TS-THREAD

[illegible]

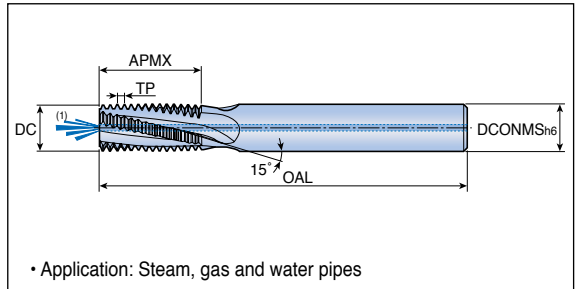
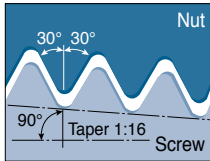
- TDZ: Thread diameter size
- NOF: Number of flutes
- ⁽¹⁾ B type ⁽²⁾ Z type

●: Standard items

MTECB-NPT / MTEC-NPT

TS-THREAD

Solid carbide end mills for internal or external threading



Designation	TPI	TDZ	Dimension (mm)				NOF	Grade TT9030
			DCONMS	DC	APMX	OAL		
MTECB 08076C10 27 NPT	27	1/8	8	7.6	10.8	64	3	●
1010D16 18 NPT	18	1/4-3/8	10	10.0	16.2	73	4	●
16155D22 14 NPT	14	1/2-3/4	16	15.5	22.7	105	4	●
MTEC 0606C9 27 NPT	27	1/8	6	6.0	9.9	58	3	●
0808C14 18 NPT	18	1/4-3/8	8	8.0	14.8	64	3	●
1212D20 14 NPT	14	1/2-3/4	12	12.0	20.9	84	4	●
1616D27 11.5 NPT	11.5	1-2	16	16.0	27.6	105	4	●



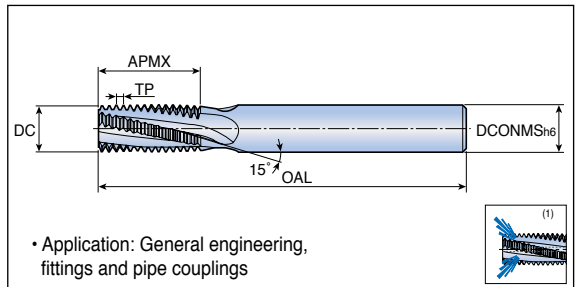
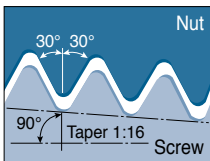
- TDZ: Thread diameter size
- NOF: Number of flutes
- ⁽¹⁾ B type

●: Standard items

MTECZ-NPTF / MTEC-NPTF

TS-THREAD

Solid carbide end mills for internal or external threading



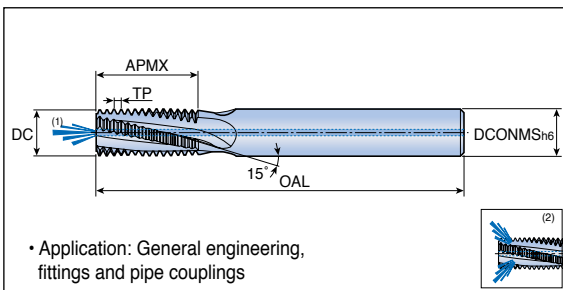
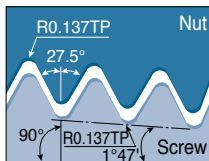
Designation	TPI	TDZ	Dimension (mm)				NOF	Grade TT9030
			DCONMS	DC	APMX	OAL		
MTECZ 1010D16 18 NPTF	18	1/4-3/8	10	10.0	16.2	73	4	●
MTEC 0606C9 27 NPTF	27	1/8	6	6.0	9.9	58	3	●
0808C14 18 NPTF	18	1/4-3/8	8	8.0	14.8	64	3	●
1212D20 14 NPTF	14	1/2-3/4	12	12.0	20.9	84	4	●



- TDZ: Thread diameter size
- NOF: Number of flutes
- ⁽¹⁾ Z type

●: Standard items

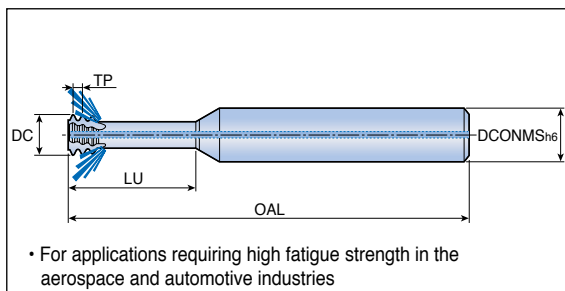
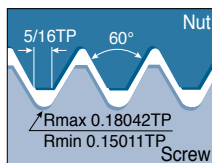
TS-THREAD

[illegible]

- TDZ: Thread diameter size
- NOF: Number of flutes
- ⁽¹⁾B type ⁽²⁾Z type

●: Standard items

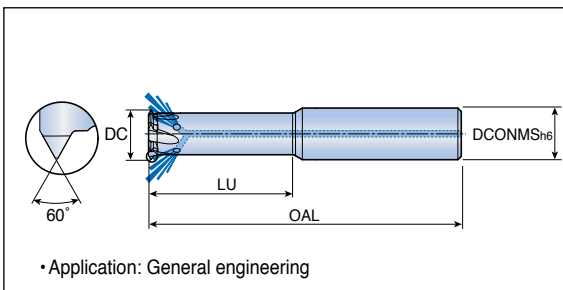
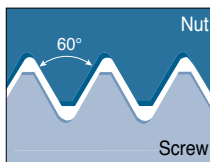
TS-THREAD

[illegible]

- NOF: Number of flutes
- ⁽¹⁾ Without coolant holes

●: Standard items

TS-THREAD

[illegible]

- TDZ: Thread diameter size
- NOF: Number of flutes

- : Standard items

Tool Designation System

End mills

MT **E** **D25** - **1** - **W** **20** **(C)** - **21**

1 **2** **3** **4** **5** **6** **7** **8**

1 Mill thread

M - Mill
T - Thread

2 Tool type

E - End mills type

3 Cutting diameter

D25 - 25.0mm

4 Number of insert

1 1 insert
2 2 inserts

5 Shank type

W - Weldon shank
C - Cylindrical type

6 Shank diameter

20 - 20.0mm

7 Shank material

C Carbide shank

8 Insert size (APMX)

12 12.0 mm
14 14.0 mm
21 21.0 mm
30 30.0 mm
40 40.0 mm

Cutters

MT **F** **D063** - **5** - **22** - **21**

1 **2** **3** **4** **5** **6**

1 Mill thread

M - Mill
T - Thread

2 Tool type

F - Facemill type

3 Cutting diameter

D063 - 63.0mm

4 Number of insert

4 4 inserts
5 5 inserts

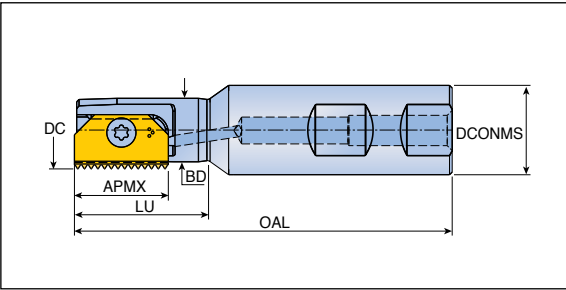
5 Bore diameter

22 22.0 mm
27 27.0 mm
32 32.0 mm

6 Insert size (APMX)

21 21.0 mm
30 30.0 mm
40 40.0 mm

Indexable threading end mills - Weldon shank

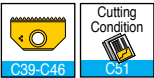


Designation	Dimension (mm)						Shank	Kg	Insert
	APMX	DC	DCONMS	BD	LU	OAL			
MTE D09.5-1-W20-12 ⁽¹⁾	12	9.5	20	7.5	15.5	85	W	0.16	TTMT12
D09.9-1-W20-12	12	9.9	20	7.5	16.0	85	W	0.16	TTMT12
D12.2-1-W20-14	14	12.2	20	8.8	20.0	75	W	0.15	TTMT14
D14.5-1-W20-14	14	14.5	20	10.8	27.1	85	W	0.16	TTMT14
D17.0-1-W20-14	14	17.0	20	12.8	30.0	85	W	0.23	TTMT14
D18-1-W20-21 ⁽²⁾	21	18.5	20	14.2	30.0	85	W	0.20	TTMT21
D21-1-W20-21	21	21.0	20	15.9	40.0	94	W	0.23	TTMT21
D25-1-W20-21	21	25.0	20	20.0	61.0	115	W	0.24	TTMT21
D29-1-W25-30	30	29.0	25	22.2	50.0	110	W	0.32	TTMT30
D31-1-W25-30	30	31.0	25	25.0	90.0	150	W	0.60	TTMT30
D38-1-W32-30	30	38.0	32	32.0	86.0	150	W	0.90	TTMT30
D48-1-W40-40	40	48.0	40	35.0	78.0	153	W	1.30	TTMT40
D48-1-W40-40-B	40	48.0	40	36.5	138.0	210	W	1.50	TTMT40

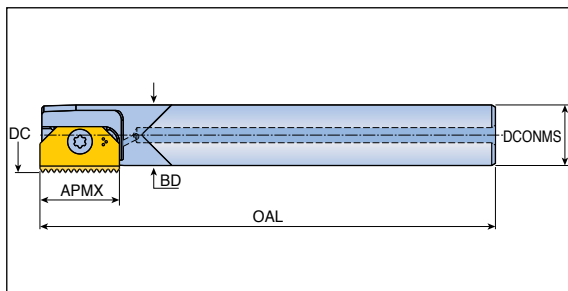
- Minimum bore should be one-third larger than DC (diameter)
- All end mills are equipped with a bore for internal coolant
- ⁽¹⁾ Not suitable for inserts: TTMT12 18 NPT, TTMT12 18 NPTF, TTMT12 19 BSPT
- ⁽²⁾ Not suitable for inserts: TTMT21 1 3.50 ISO, TTMT21 1 7 UN, TTMT21 11.5 NPT, TTMT21 11.5 NPTF

Spare parts

Designation	Screw	Wrench	Wrench handle	
MTE D...12	SR M2.5-T8-MT	BLD T08/M7	SW4-SD	-
MTE D...14	S11	BLD T08/M7	SW4-SD	-
MTE D...21	SR M4-IP15-MT	BLD IP15/S7	SW6-SD	-
MTE D...30/40(-B)	SR M5-IP25-MT	BLD IP25/S7	-	SW6-T

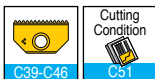


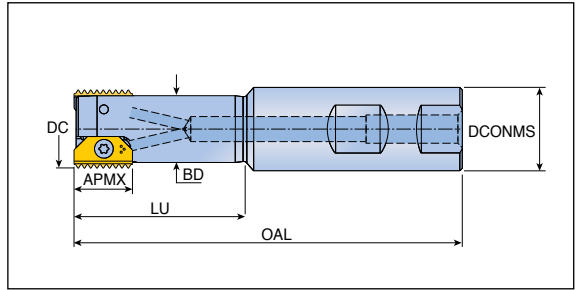
TS-THREAD



- For holders with long overhang, reduce the cutting speed and feed rate, between 20 to 40% (depending on workpiece, material, pitch and overhang)

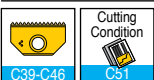
Designation	Screw	Wrench	Wrench handle	
MTE D...C...12	SR M2.5-T8-MT	BLD T08/M7	SW4-SD	-
MTE D...C...14(-B)	S11	BLD T08/M7	SW4-SD	-
MTE D...C...21(-B)	SR M4-IP15-MT	BLD IP15/S7	SW6-SD	-
MTE D...C...30	SR M5-IP25-MT-S	BLD IP25/S7	-	SW6-T

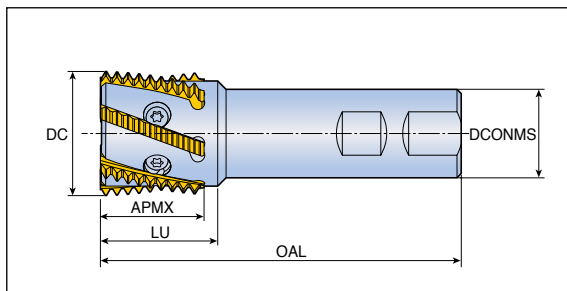


TS-THREAD[illegible]

- ## Spare parts

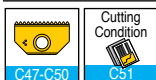
Designation	Screw	Wrench	Wrench handle	
				
MTE D...W...14	S11	BLD T08/M7	SW4-SD	-
MTE D...W...21	SR M4-IP15-MT	BLD IP15/S7	SW6-SD	-
MTE D...W...30/40	SR M5-IP25-MT	BLD IP25/S7	-	SW6-T



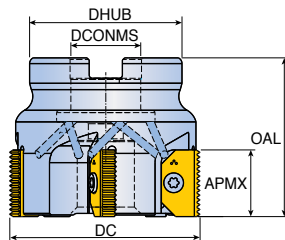


- All end mills are equipped with a bore for internal coolant
- NOF: Number of flutes

Designation	Screw	Wrench		
TMTSRH 23	TS23	TK21		
TMTSRH 32	TS32	TK22		
TMTSRH 45	TS45	TK40		

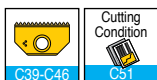


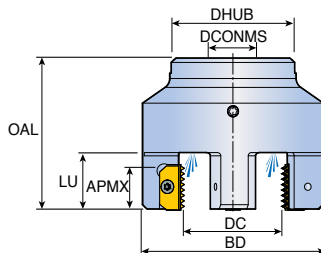
TS-THREAD



- All shell mills are equipped with a bore for internal coolant
- CICT: Number of inserts

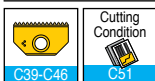
Designation	Screw	Screw 1	Wrench	Wrench handle	
MTF D063...21	SR M4-IP15-MT	SR M10X25 DIN912	BLD IP15/S7	SW6-SD	-
MTF D063...30	SR M5-IP25-MT	SR M10X25 DIN912	BLD IP25/S7	-	SW6-T
MTF D080...30/40	SR M5-IP25-MT	SR M12X25	BLD IP25/S7	-	SW6-T
MTF D100...30/40	SR M5-IP25-MT	SR M16X30 DIN912	BLD IP25/S7	-	SW6-T



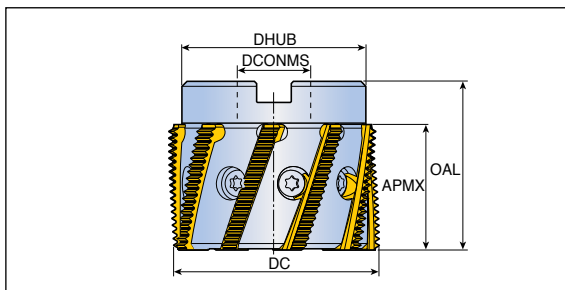


- All shell mills are equipped with a bore for internal coolant
- CICT: Number of inserts

Designation	Screw	Wrench	Wrench handle	
MTFLE D...21	SR M4-IP15-MT	BLD IP15/S7	SW6-SD	

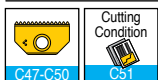


TS-THREAD

[illegible]

- ## Spare parts

Designation	Screw	Wrench		
				
TMTSRH 32	TS32S	TK22		
TMTSRH 45	TS45S	TK40		
TMTSRH 63	TS63	TK40		



Thread milling inserts

TTMT(H)	30	E	1.5	ISO	TT9030
1	2	3	4	5	6

1 TaeguTec mill thread

TT - TaeguTec
M - Mill
T - Thread
H - Helical insert

2 Insert size (INSL)

12 12.0 mm
14 14.0 mm
21 21.0 mm
30 30.0 mm
40 40.0 mm



3 Application

E - External
I - Internal
□ - External + internal

4 Thread pitch

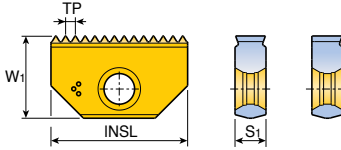
0.5 - 6.0 mm (Thread pitch)
32 - 4 TPI (Threads per inch)

5 Thread standard

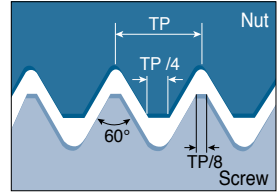
ISO
UN
WHIT
NPT
NPTF
BSPT

6 Grades

Coated
TT9030



TTMT12 I ⁽¹⁾



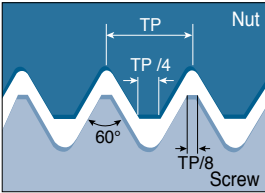
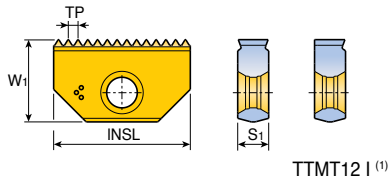
Insert	Designation	TP (mm)	Dimension (mm)			Grade
			INSL	W1	S1	
	TTMT12 I 0.5 ISO⁽¹⁾	0.50	12	6.5	2.9	●
	TTMT12 I 0.75 ISO⁽¹⁾	0.75	12	6.5	2.9	●
	TTMT12 I 1.0 ISO⁽¹⁾	1.00	12	6.5	2.9	●
	TTMT12 I 1.25 ISO⁽¹⁾	1.25	12	6.5	2.9	●
	TTMT12 I 1.5 ISO⁽¹⁾	1.50	12	6.5	2.9	●
	TTMT14 I 0.5 ISO	0.50	14	7.9	3.2	●
	TTMT14 E/I 0.75 ISO	0.75	14	7.9	3.2	●
	TTMT14 E/I 1.0 ISO	1.00	14	7.9	3.2	●
	TTMT14 E/I 1.25 ISO	1.25	14	7.9	3.2	●
	TTMT14 E/I 1.5 ISO	1.50	14	7.9	3.2	●
	TTMT14 E/I 1.75 ISO	1.75	14	7.9	3.2	●
	TTMT14 E/I 2.0 ISO	2.00	14	7.9	3.2	●
	TTMT14 E/I 2.5 ISO	2.50	14	7.9	3.2	●
	TTMT21 E/I 1.0 ISO	1.00	21	12.6	4.8	●
	TTMT21 E/I 1.5 ISO	1.50	21	12.6	4.8	●
	TTMT21 I 1.75 ISO	1.75	21	12.6	4.8	●
	TTMT21 E/I 2.0 ISO	2.00	21	12.6	4.8	●
	TTMT21 E/I 2.5 ISO	2.50	21	12.6	4.8	●
	TTMT21 E/I 3.0 ISO	3.00	21	12.6	4.8	●
	TTMT21 I 3.5 ISO	3.50	21	12.6	4.8	●
	TTMT30 E/I 1.5 ISO	1.50	30	16.7	5.6	●
	TTMT30 E/I 2.0 ISO	2.00	30	16.7	5.6	●
	TTMT30 E/I 3.0 ISO	3.00	30	16.7	5.6	●
	TTMT30 E/I 3.5 ISO	3.50	30	16.7	5.6	●
	TTMT30 E/I 4.0 ISO	4.00	30	16.7	5.6	●
	TTMT30 I 4.5 ISO	4.50	30	16.7	5.6	●
	TTMT30 I 5.0 ISO	5.00	30	16.7	5.6	●
	TTMT40 E/I 1.5 ISO	1.50	40	20.8	6.4	●
	TTMT40 E/I 2.0 ISO	2.00	40	20.8	6.4	●
	TTMT40 E/I 3.0 ISO	3.00	40	20.8	6.4	●
	TTMT40 I 3.5 ISO	3.50	40	20.8	6.4	●
	TTMT40 E/I 4.0 ISO	4.00	40	20.8	6.4	●
	TTMT40 I 4.5 ISO	4.50	40	20.8	6.4	●
	TTMT40 E/I 5.0 ISO	5.00	40	20.8	6.4	●
	TTMT40 I 5.5 ISO	5.50	40	20.8	6.4	●
	TTMT40 E/I 6.0 ISO	6.00	40	20.8	6.4	●



• ⁽¹⁾ TTMT12 insert is only available with a single cutting edge

●: Standard items

UN, UNC, UNF, UNEF, UNS



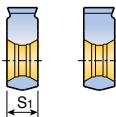
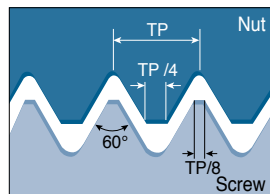
Insert	Designation	TPI	Dimension (mm)			Grade
			INSL	W1	S1	
	TTMT12 I 32 UN ⁽¹⁾	32	12	6.5	2.9	●
	TTMT12 I 28 UN ⁽¹⁾	28	12	6.5	2.9	●
	TTMT12 I 24 UN ⁽¹⁾	24	12	6.5	2.9	●
	TTMT12 I 20 UN ⁽¹⁾	20	12	6.5	2.9	●
	TTMT12 I 18 UN ⁽¹⁾	18	12	6.5	2.9	●
	TTMT12 I 16 UN ⁽¹⁾	16	12	6.5	2.9	●
	TTMT14 E/I 32 UN	32	14	7.9	3.2	●
	TTMT14 E/I 28 UN	28	14	7.9	3.2	●
	TTMT14 I 27 UN	27	14	7.9	3.2	●
	TTMT14 E/I 24 UN	24	14	7.9	3.2	●
	TTMT14 E/I 20 UN	20	14	7.9	3.2	●
	TTMT14 E/I 18 UN	18	14	7.9	3.2	●
	TTMT14 E/I 16 UN	16	14	7.9	3.2	●
	TTMT14 E/I 14 UN	14	14	7.9	3.2	●
	TTMT14 E/I 12 UN	12	14	7.9	3.2	●
	TTMT14 I 11 UN	11	14	7.9	3.2	●
	TTMT14 I 10 UN	10	14	7.9	3.2	●
	TTMT21 E/I 24 UN	24	21	12.6	4.8	●
	TTMT21 E/I 20 UN	20	21	12.6	4.8	●
	TTMT21 E/I 18 UN	18	21	12.6	4.8	●
	TTMT21 E/I 16 UN	16	21	12.6	4.8	●
	TTMT21 E/I 14 UN	14	21	12.6	4.8	●
	TTMT21 E/I 12 UN	12	21	12.6	4.8	●
	TTMT21 E/I 10 UN	10	21	12.6	4.8	●
	TTMT21 I 8 UN	8	21	12.6	4.8	●
	TTMT21 I 7 UN	7	21	12.6	4.8	●
	TTMT30 E/I 20 UN	20	30	16.7	5.6	●
	TTMT30 E/I 18 UN	18	30	16.7	5.6	●
	TTMT30 E/I 16 UN	16	30	16.7	5.6	●
	TTMT30 E/I 14 UN	14	30	16.7	5.6	●
	TTMT30 E/I 12 UN	12	30	16.7	5.6	●
	TTMT30 E/I 10 UN	10	30	16.7	5.6	●
	TTMT30 E/I 8 UN	8	30	16.7	5.6	●
	TTMT30 E/I 6 UN	6	30	16.7	5.6	●
	TTMT30 I 5 UN	5	30	16.7	5.6	●



● ⁽¹⁾ TTMT12 insert is only available with a single cutting edge

●: Standard items

UN, UNC, UNF, UNEF, UNS

TTMT12 I ⁽¹⁾[illegible]

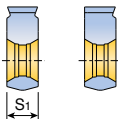
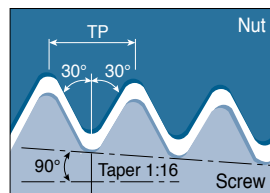
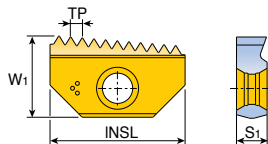


Diagram illustrating the geometry of a screw thread. The thread profile is shown with a pitch (TP) and a 55° angle. The diagram also labels the 'Nut' and 'Screw' components, and includes the formula $R=0.137P$.



NPT - National pipe taper thread

[illegible]

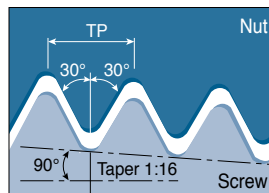
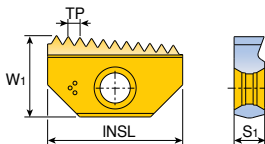
- The same insert for external and internal threading
- Conical pipe thread inserts are single-sided

●: Standard items

TTMT-NPTF

TS-THREAD

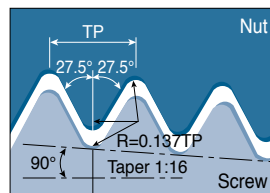
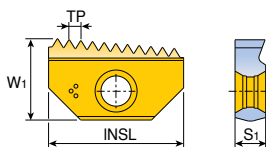
NPTF - National pipe thread tapered (Dryseal)

[illegible]

- The same insert for external and internal threading
- Conical pipe thread Inserts are single-sided

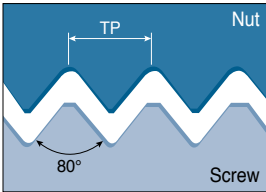
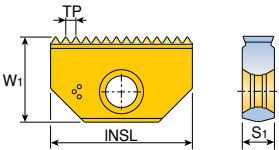
●: Standard items

BSPT - British standard pipe tapered

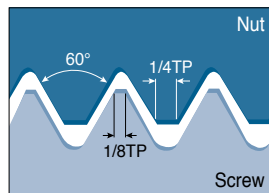
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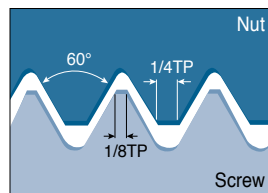
- The same insert for external and internal threading
- Conical pipe thread inserts are single-sided

- : Standard items



Insert	Designation	TPI	Thread size	Dimension (mm)			Grade
				INSL	W1	S1	
	TTMT14 18 PG	18	PG9, 11, 13.5, 16	14	7.9	3.2	●
	TTMT21 18 PG	18	PG16	21	12.6	4.8	●
	TTMT21 16 PG	16	PG21, 29, 36, 42, 48	21	12.6	4.8	●
	TTMT30 16 PG	16	PG36, 42, 48	30	16.7	5.6	●

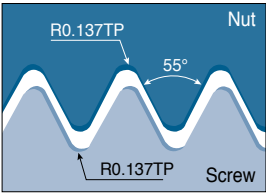
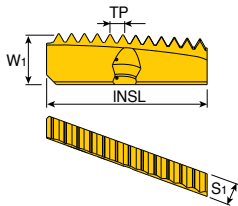




TMTH-W

TS-THREAD

Helical inserts for whitworth threads, BSW, BSF, BSP (Internal and external)



Insert	Designation	TPI	THID	THOD	Dimension (mm)			Tool	Grade
					INSL	W1	S1		
	TMTH 23 11 W	11	≥G 1"	≥G 1"	27	8.0	3.5	TMTSRH 23-2	●
	TMTH 32 11 W	11	≥G 1 1/8"	≥G 1"	32	9.0	4.0	TMTSRH 32-5	●
	TMTH 45 11 W	11	≥G 1 3/4"	≥G 1"	37	11.9	5.0	TMTSRH 45-6	●
	TMTH 63 11 W	11	≥G 2 1/2"	≥G 1"	38	11.9	5.0	TMTSRH 63-9	●



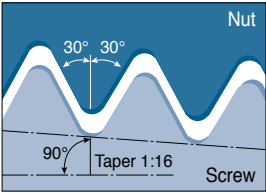
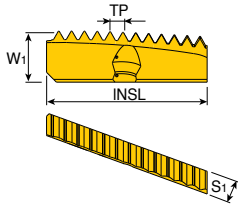
- THID: Thread designation inside
- THOD: Thread designation outside

●: Standard item

TMTH-NPT

TS-THREAD

Helical inserts for NPT threads (Internal and external)



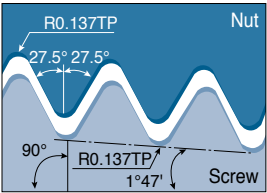
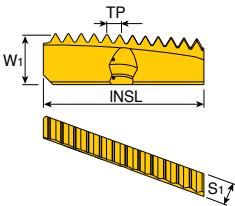
Insert	Designation	TPI	THID	THOD	Dimension (mm)			Tool	Grade
					INSL	W1	S1		
	TMTH 23 11.5 NPT	11.5	1"-2" NPT	1"-2" NPT	27	8.0	3.5	TMTSRH 23-2	●
	TMTH 32 11.5 NPT	11.5	1 1/4"-2" NPT	1"-2" NPT	32	9.0	4.0	TMTSRH 32-5	●
	TMTH 45 11.5 NPT	11.5	2" NPT	1"-2" NPT	37	11.9	5.0	TMTSRH 45-6	●
	TMTH 63 11.5 NPT	11.5	-	≥1" NPT	38	11.9	5.0	TMTSRH 63-9	●



- THID: Thread designation inside
- THOD: Thread designation outside

●: Standard items

Helical inserts for BSPT threads (Internal and external)



Insert	Designation	TPI	THID	THOD	Dimension (mm)			Tool	Grade
					INSL	W1	S1		
	TMTH 23 11 BSPT	11	≥1" BSPT	≥1" BSPT	27	8.0	3.5	TMTSRH 23-2	●
	TMTH 32 11 BSPT	11	≥1 1/8" BSPT	≥1" BSPT	32	9.0	4.0	TMTSRH 32-5	●
	TMTH 45 11 BSPT	11	≥1 3/4" BSPT	≥1" BSPT	37	11.9	5.0	TMTSRH 45-6	●
	TMTH 63 11 BSPT	11	≥2 1/2" BSPT	≥1" BSPT	38	11.9	5.0	TMTSRH 63-9	●

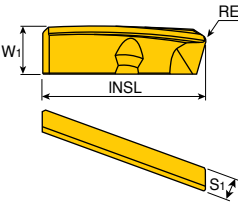


- THID: Thread designation inside
- THOD: Thread designation outside

●: Standard Item

TMTH-F

Helical long edge finishing inserts



Insert	Designation	Dimension (mm)				Tool	Grade
		INSL	W1	S1	RE		
	TMTH 23F R0.2	27	8.0	3.5	0.2	TMTSRH 23-2	●
	TMTH 23F R0.5	27	8.0	3.5	0.5	TMTSRH 23-2	●
	TMTH 23F R1.0	27	8.0	3.5	1.0	TMTSRH 23-2	●
	TMTH 32F R0.2	32	9.0	4.0	0.2	TMTSRH 32-5	●
	TMTH 32F R0.5	32	9.0	4.0	0.5	TMTSRH 32-5	●
	TMTH 32F R1.0	32	9.0	4.0	1.0	TMTSRH 32-5	●
	TMTH 45F R0.2	37	11.9	5.0	0.2	TMTSRH 45-6	●



●: Standard items

Recommended Cutting Conditions

Machining data for indexable insert of threading cutters

ISO	Material	Condition	Tensile strength (N/mm ²)	Hardness HB	Material No.	Cutting speed Vc(m/min)
						TT9030
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C Annealed	420	125	1	100-200
		>=0.25%C Annealed	650	190	2	95-190
		<0.55%C Quenched and tempered	850	250	3	90-180
		>=0.55%C Annealed	750	220	4	90-170
		Quenched and tempered	1000	300	5	80-150
	Low alloy steel and cast steel (Less than 5% of alloying elements)	Annealed	600	200	6	120-170
		Quenched and tempered	930	275	7	115-160
			1000	300	8	105-150
			1200	350	9	140
	High alloy steel, cast steel and tool steel	Annealed	680	200	10	90-170
		Quenched and tempered	1100	325	11	75-145
M	Stainless steel and cast steel	Ferritic / martensitic	680	200	12	110-170
		Martensitic	820	240	13	100-160
		Austenitic	600	180	14	90-145
K	Gray cast iron (GG)	Ferritic		160	15	65-135
		Pearlitic		250	16	65-110
	Cast iron nodular (GGG)	Ferritic		180	17	65-135
		Pearlitic		260	18	60-100
	Malleable cast iron	Ferritic		130	19	65-135
		Pearlitic		230	20	60-120
N	Aluminum - Wrought alloy	Not cureable		60	21	110-260
		Cured		100	22	110-200
	Aluminum- cast, alloyed	<=12% Si Not cureable		75	23	145-350
		Cured		90	24	145-275
		>12% Si High temp.		130	25	95-225
	Copper alloys	>1% Pb Free cutting		110	26	145-350
		Brass		90	27	145-350
		Electrolitic copper		100	28	145-350
S	High temp. alloys	Fe based Annealed		200	31	20-60
				280	32	20-50
		Ni or Co based Annealed		250	33	20-30
				350	34	10-20
				320	35	15-25
	Titanium, Ti alloys		Rm 400		36	30-90
		Alpha+beta alloys cured	Rm 1050		37	20-70
H	Hardened steel	Hardened		55HRC	38	25-60
		Hardened		60HRC	39	20-40
	Chilled cast iron	Cast		400	40	25-60
	Cast iron nodular	Hardened		55HRC	41	20-50

• For more information of material groups, see the materials & grades "material conversion table"

Steel Stainless steel Cast iron Nonferrous High temp. alloys Hardened steel

• Feed rate: 0.05 - 0.15 mm/tooth

Recommended Cutting Conditions

Machining data for solid carbide threading end mills

ISO	Material	Condition	Tensile strength (N/mm ²)	Hardness HB	Material No.	Cutting speed Vc(m/min)
						TT9030
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C Annealed	420	125	1	100-250
		≥0.25%C Annealed	650	190	2	80-210
		<0.55%C Quenched and tempered	850	250	3	65-170
		≥0.55%C Annealed	750	220	4	110-180
		Quenched and tempered	1000	300	5	95-160
	Low alloy steel and cast steel (Less than 5% of alloying elements)	Annealed	600	200	6	90-160
			930	275	7	65-200
		Quenched and tempered	1000	300	8	70-210
			1200	350	9	95-160
	High alloy steel, cast steel and tool steel	Annealed	680	200	10	130-170
		Quenched and tempered	1100	325	11	75-100
M	Stainless steel and cast steel	Ferritic / martensitic	680	200	12	110-170
		Martensitic	820	240	13	70-155
		Austenitic	600	180	14	85-100
K	Gray cast iron (GG)	Ferritic		160	15	70-150
		Pearlitic		250	16	110-140
	Cast iron nodular (GGG)	Ferritic		180	17	120-160
		Pearlitic		260	18	75-160
	Malleable cast iron	Ferritic		130	19	120-160
		Pearlitic		230	20	110-140
N	Aluminum - Wrought alloy	Not cureable		60	21	160-300
		Cured		100	22	
	Aluminum-cast, alloyed	≤12% Si Not cureable		75	23	
		Cured		90	24	
		>12% Si High temp.		130	25	
	Copper alloys	>1% Pb Free cutting		110	26	
		Brass		90	27	
		Electrolitic copper		100	28	
	Non-metallic	Duroplastics, fiber plastics			29	100-400
		Hard rubber			30	
S	High temp. alloys	Fe based Annealed		200	31	
				280	32	
		Ni or Co based Annealed		250	33	20-80
				350	34	
				320	35	
	Titanium, Ti alloys		Rm 400		36	
		Alpha+beta alloys cured	Rm 1050		37	20-80
H	Hardened steel	Hardened		55HRC	38	55-65
		Hardened		60HRC	39	45-55
	Chilled cast iron	Cast		400	40	90-105
	Cast iron nodular	Hardened		55HRC	41	55-65

• For more information of material groups, see the materials & grades "material conversion table"

■ Steel
 ■ Stainless steel
 ■ Cast iron
 ■ Nonferrous
 ■ High temp. alloys
 ■ Hardened steel

Recommended Cutting Conditions



Machining data for solid carbide threading end mills

Feed (mm/tooth) for diameter (mm)											
Ø2	Ø3	Ø4	Ø6	Ø8	Ø10	Ø12	Ø14	Ø16	Ø20	Ø25	Ø30
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.02	0.03	0.03	0.05	0.06	0.07	0.08	0.09	0.1	0.12	0.15	0.18
0.02	0.03	0.03	0.05	0.06	0.07	0.08	0.09	0.1	0.12	0.15	0.18
0.02	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.02	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.07	0.08	0.1	0.11
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.03	0.04	0.04	0.06	0.07	0.08	0.09	0.11	0.12	0.15	0.18	0.21
0.05	0.06	0.07	0.09	0.1	0.11	0.12	0.13	0.15	0.18	0.22	0.25
0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05
0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05

• For cutters with long cutting flute, reduce feed rate by 40%

Recommended Cutting Conditions



Machining data for short solid carbide thread mills

ISO	Material	Hardness (HRC)	Cutting speed Vc (m/min)	Feed (mm/tooth) for diameter (mm)													
				Ø1.5	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø12	Ø14	Ø15	
P	Low & medium carbon steels		60-120	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18	
	High carbon steels		60-90	0.04	0.05	0.06	0.08	0.09	0.10	0.12	0.13	0.14	0.14	0.16	0.17	0.18	
	Alloy steels, treated steels		50-80	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.1	0.12	0.13	0.14	
	Cast steels		70-90	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.1	0.12	0.13	0.14	
M	Stainless steels		60-90	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.1	0.11	0.12	0.13	
K	Cast Iron		40-80	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18	
N	Aluminum		80-150	0.05	0.05	0.07	0.09	0.11	0.13	0.14	0.15	0.16	0.16	0.17	0.18	0.18	
	Synthetics, duroplastics, thermoplastics		50-200	0.10	0.11	0.12	0.14	0.16	0.18	0.19	0.19	0.19	0.19	0.19	0.20	0.20	
S	Nickel alloys, titanium alloys.		20-40	0.03	0.03	0.04	0.04	0.05	0.06	0.06	0.06	0.07	0.07	0.07	0.08	0.08	
H	Hardened steel	45-50	60-70	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.07	0.08					
		51-55	50-60	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07					
		56-62	40-50	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.05	0.06					

• For more information of material groups, see the materials & grades "material conversion table"

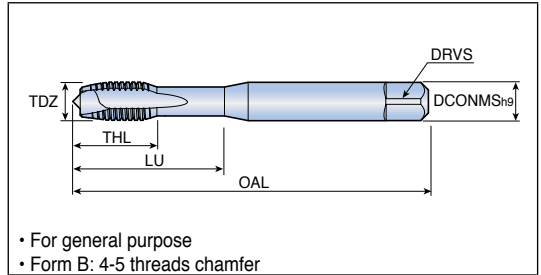
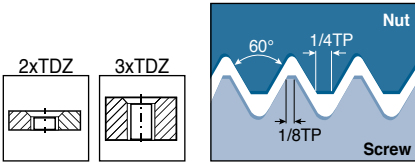
Steel Stainless steel Cast iron Nonferrous High temp. alloys Hardened steel

T-TAP

Tapping



Straight flute with spiral point - Uncoated



Metric ISO standard thread DIN 13 standard

Designation	TDZ	TP (mm)	Standard (DIN)	Tolerance	Dimension (mm)					
					OAL	THL	LU	DCONMS	DRVS	Core hole
TPH452B M2x0.4	M2	0.4	DIN371	ISO 2-6H	45	8	-	2.8	2.1	1.6
TPH452B M2.5x0.45	M2.5	0.45			50	9	-	2.8	2.1	2.05
TPH452B M3x0.5	M3	0.5			56	10	18	3.5	2.7	2.5
TPH452B M4x0.7	M4	0.7			63	12	21	4.5	3.4	3.3
TPH452B M5x0.8	M5	0.8			70	14	25	6	4.9	4.2
TPH452B M6x1.0	M6	1			80	16	30	6	4.9	5
TPH452B M8x1.25	M8	1.25			90	18	35	8	6.2	6.8
TPH452B M10x1.5	M10	1.5			100	20	39	10	8	8.5
TPH652B M12x1.75	M12	1.75	DIN376	ISO 2-6H	110	22	-	9	7	10.2
TPH652B M14x2.0	M14	2			110	24	-	11	9	12
TPH652B M16x2.0	M16	2			110	26	-	12	9	14
TPH652B M20x2.5	M20	2.5			140	30	-	16	12	17.5

Metric ISO fine thread DIN 13 standard

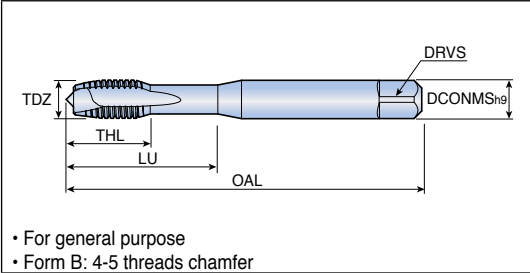
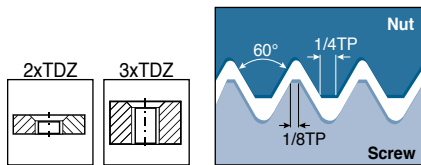
Designation	TDZ	TP (mm)	Standard (DIN)	Tolerance	Dimension (mm)					
					OAL	THL	LU	DCONMS	DRVS	Core hole
TPH552B MF8x1.0	M8	1	DIN374	ISO 2-6H	90	15	-	6	4.9	7
TPH552B MF10x1.25	M10	1.25			100	18	-	7	5.5	8.8
TPH552B MF12x1.5	M12	1.5			100	18	-	9	7	10.5
TPH552B MF14x1.5	M14	1.5			100	18	-	11	9	12.5
TPH552B MF16x1.5	M16	1.5			100	18	-	12	9	14.5



TPH...52B05



Straight flute with spiral point - Steam tempered



Metric ISO standard thread DIN 13 standard

Designation	TDZ	TP (mm)	Standard (DIN)	Tolerance	Dimension (mm)					
					OAL	THL	LU	DCONMS	DRVS	Core hole
TPH452B05 M2x0.4	M2	0.4	DIN371	ISO 2-6H	45	8	-	2.8	2.1	1.6
TPH452B05 M2.5x0.45	M2.5	0.45			50	9	-	2.8	2.1	2.05
TPH452B05 M3x0.5	M3	0.5			56	10	18	3.5	2.7	2.5
TPH452B05 M4x0.7	M4	0.7			63	12	21	4.5	3.4	3.3
TPH452B05 M5x0.8	M5	0.8			70	14	25	6	4.9	4.2
TPH452B05 M6x1.0	M6	1			80	16	30	6	4.9	5
TPH452B05 M8x1.25	M8	1.25			90	18	35	8	6.2	6.8
TPH452B05 M10x1.5	M10	1.5			100	20	39	10	8	8.5
TPH652B05 M12x1.75	M12	1.75	DIN376	ISO 2-6H	110	22	-	9	7	10.2
TPH652B05 M14x2.0	M14	2			110	24	-	11	9	12
TPH652B05 M16x2.0	M16	2			110	26	-	12	9	14
TPH652B05 M20x2.5	M20	2.5			140	30	-	16	12	17.5

Metric ISO fine thread DIN 13 standard

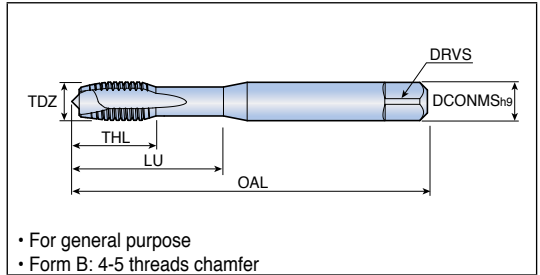
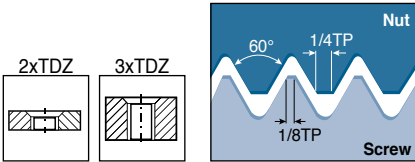
Designation	TDZ	TP (mm)	Standard (DIN)	Tolerance	Dimension (mm)					
					OAL	THL	LU	DCONMS	DRVS	Core hole
TPH552B05 MF8x1.0	M8	1	DIN374	ISO 2-6H	90	15	-	6	4.9	7
TPH552B05 MF10x1.25	M10	1.25			100	18	-	7	5.5	8.8
TPH552B05 MF12x1.5	M12	1.5			100	18	-	9	7	10.5
TPH552B05 MF14x1.5	M14	1.5			100	18	-	11	9	12.5
TPH552B05 MF16x1.5	M16	1.5			100	18	-	12	9	14.5



TPH...52B10



Straight flute with spiral point - TiN coated



Metric ISO standard thread DIN 13 standard

Designation	TDZ	TP (mm)	Standard (DIN)	Tolerance	Dimension (mm)					
					OAL	THL	LU	DCONMS	DRVS	Core hole
TPH452B10 M2x0.4	M2	0.4	DIN371	ISO 2-6H	45	8	-	2.8	2.1	1.6
TPH452B10 M2.5x0.45	M2.5	0.45			50	9	-	2.8	2.1	2.05
TPH452B10 M3x0.5	M3	0.5			56	10	18	3.5	2.7	2.5
TPH452B10 M4x0.7	M4	0.7			63	12	21	4.5	3.4	3.3
TPH452B10 M5x0.8	M5	0.8			70	14	25	6	4.9	4.2
TPH452B10 M6x1.0	M6	1			80	16	30	6	4.9	5
TPH452B10 M8x1.25	M8	1.25			90	18	35	8	6.2	6.8
TPH452B10 M10x1.5	M10	1.5			100	20	39	10	8	8.5
TPH652B10 M12x1.75	M12	1.75	DIN376	ISO 2-6H	110	22	-	9	7	10.2
TPH652B10 M14x2.0	M14	2			110	24	-	11	9	12
TPH652B10 M16x2.0	M16	2			110	26	-	12	9	14
TPH652B10 M20x2.5	M20	2.5			140	30	-	16	12	17.5

Metric ISO fine thread DIN 13 standard

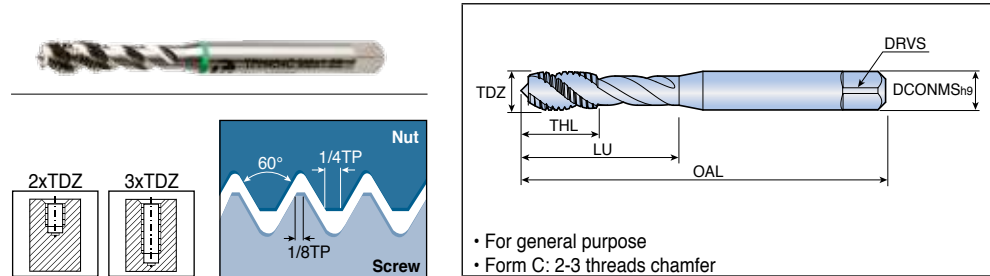
Designation	TDZ	TP (mm)	Standard (DIN)	Tolerance	Dimension (mm)					
					OAL	THL	LU	DCONMS	DRVS	Core hole
TPH552B10 MF8x1.0	M8	1	DIN374	ISO 2-6H	90	15	-	6	4.9	7
TPH552B10 MF10x1.25	M10	1.25			100	18	-	7	5.5	8.8
TPH552B10 MF12x1.5	M12	1.5			100	18	-	9	7	10.5
TPH552B10 MF14x1.5	M14	1.5			100	18	-	11	9	12.5
TPH552B10 MF16x1.5	M16	1.5			100	18	-	12	9	14.5



TPH...54C



Right hand spiral flute (40°) - Uncoated



Metric ISO standard thread DIN 13 standard

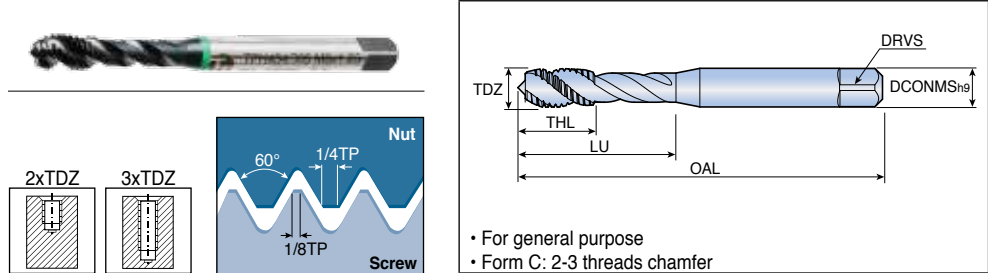
Designation	TDZ	TP (mm)	Standard (DIN)	Tolerance	Dimension (mm)					
					OAL	THL	LU	DCONMS	DRVS	Core hole
TPH454C M2x0.4	M2	0.4	DIN371	ISO 2-6H	45	6	10	2.8	2.1	1.6
TPH454C M2.5x0.45	M2.5	0.45			50	6	12	2.8	2.1	2.05
TPH454C M3x0.5	M3	0.5			56	7	18	3.5	2.7	2.5
TPH454C M4x0.7	M4	0.7			63	8	21	4.5	3.4	3.3
TPH454C M5x0.8	M5	0.8			70	10	25	6	4.9	4.2
TPH454C M6x1.0	M6	1			80	12	30	6	4.9	5
TPH454C M8x1.25	M8	1.25			90	15	35	8	6.2	6.8
TPH454C M10x1.5	M10	1.5			100	18	39	10	8	8.5
TPH654C M12x1.75	M12	1.75	DIN376	ISO 2-6H	110	18	-	9	7	10.2
TPH654C M14x2.0	M14	2			110	20	-	11	9	12
TPH654C M16x2.0	M16	2			110	20	-	12	9	14
TPH654C M20x2.5	M20	2.5			140	25	-	16	12	17.5

Metric ISO fine thread DIN 13 standard

Designation	TDZ	TP (mm)	Standard (DIN)	Tolerance	Dimension (mm)					
					OAL	THL	LU	DCONMS	DRVS	Core hole
TPH554C MF8x1.0	M8	1	DIN374	ISO 2-6H	90	15	-	6	4.9	7
TPH554C MF10x1.25	M10	1.25			100	18	-	7	5.5	8.8
TPH554C MF12x1.5	M12	1.5			100	18	-	9	7	10.5
TPH554C MF14x1.5	M14	1.5			100	18	-	11	9	12.5
TPH554C MF16x1.5	M16	1.5			100	18	-	12	9	14.5



Right hand spiral flute (40°) - Steam tempered



Metric ISO standard thread DIN 13 standard

Designation	TDZ	TP (mm)	Standard (DIN)	Tolerance	Dimension (mm)					
					OAL	THL	LU	DCONMS	DRVS	Core hole
TPH454C05 M2x0.4	M2	0.4	DIN371	ISO 2-6H	45	6	10	2.8	2.1	1.6
TPH454C05 M2.5x0.45	M2.5	0.45			50	6	12	2.8	2.1	2.05
TPH454C05 M3x0.5	M3	0.5			56	7	18	3.5	2.7	2.5
TPH454C05 M4x0.7	M4	0.7			63	8	21	4.5	3.4	3.3
TPH454C05 M5x0.8	M5	0.8			70	10	25	6	4.9	4.2
TPH454C05 M6x1.0	M6	1			80	12	30	6	4.9	5
TPH454C05 M8x1.25	M8	1.25			90	15	35	8	6.2	6.8
TPH454C05 M10x1.5	M10	1.5			100	18	39	10	8	8.5
TPH654C05 M12x1.75	M12	1.75	DIN376	ISO 2-6H	110	18	-	9	7	10.2
TPH654C05 M14x2.0	M14	2			110	20	-	11	9	12
TPH654C05 M16x2.0	M16	2			110	20	-	12	9	14
TPH654C05 M20x2.5	M20	2.5			140	25	-	16	12	17.5

Metric ISO fine thread DIN 13 standard

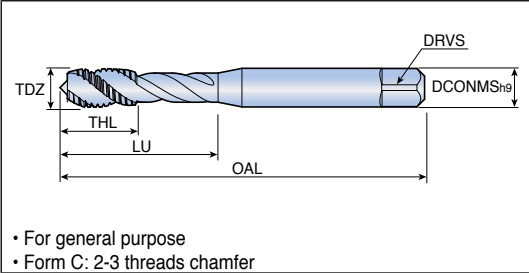
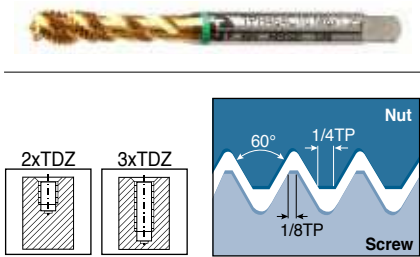
Designation	TDZ	TP (mm)	Standard (DIN)	Tolerance	Dimension (mm)					
					OAL	THL	LU	DCONMS	DRVS	Core hole
TPH554C05 MF8x1.0	M8	1	DIN374	ISO 2-6H	90	15	-	6	4.9	7
TPH554C05 MF10x1.25	M10	1.25			100	18	-	7	5.5	8.8
TPH554C05 MF12x1.5	M12	1.5			100	18	-	9	7	10.5
TPH554C05 MF14x1.5	M14	1.5			100	18	-	11	9	12.5
TPH554C05 MF16x1.5	M16	1.5			100	18	-	12	9	14.5



TPH...54C10



Right hand spiral flute (40°) - TiN coated



Metric ISO standard thread DIN 13 standard

Designation	TDZ	TP (mm)	Standard (DIN)	Tolerance	Dimension (mm)					
					OAL	THL	LU	DCONMS	DRVS	Core hole
TPH454C10 M2x0.4	M2	0.4	DIN371	ISO 2-6H	45	6	10	2.8	2.1	1.6
TPH454C10 M2.5x0.45	M2.5	0.45			50	6	12	2.8	2.1	2.05
TPH454C10 M3x0.5	M3	0.5			56	7	18	3.5	2.7	2.5
TPH454C10 M4x0.7	M4	0.7			63	8	21	4.5	3.4	3.3
TPH454C10 M5x0.8	M5	0.8			70	10	25	6	4.9	4.2
TPH454C10 M6x1.0	M6	1			80	12	30	6	4.9	5
TPH454C10 M8x1.25	M8	1.25			90	15	35	8	6.2	6.8
TPH454C10 M10x1.5	M10	1.5			100	18	39	10	8	8.5
TPH654C10 M12x1.75	M12	1.75	DIN376	ISO 2-6H	110	18	-	9	7	10.2
TPH654C10 M14x2.0	M14	2			110	20	-	11	9	12
TPH654C10 M16x2.0	M16	2			110	20	-	12	9	14
TPH654C10 M20x2.5	M20	2.5			140	25	-	16	12	17.5

Metric ISO fine thread DIN 13 standard

Designation	TDZ	TP (mm)	Standard (DIN)	Tolerance	Dimension (mm)					
					OAL	THL	LU	DCONMS	DRVS	Core hole
TPH554C10 MF8x1.0	M8	1	DIN374	ISO 2-6H	90	15	-	6	4.9	7
TPH554C10 MF10x1.25	M10	1.25			100	18	-	7	5.5	8.8
TPH554C10 MF12x1.5	M12	1.5			100	18	-	9	7	10.5
TPH554C10 MF14x1.5	M14	1.5			100	18	-	11	9	12.5
TPH554C10 MF16x1.5	M16	1.5			100	18	-	12	9	14.5



Recommended Cutting Conditions



Machining data for straight flute with spiral point tap

Cutting speed Vc(m/min)

ISO	Material		Condition	Straight flute with spiral point tap			Lubrication
				Uncoated	Steam tempered	TiN coated	
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C	Annealed	5-25	5-25 *	15-45 *	E/O
		>=0.25%C	Annealed	5-20	5-20 *	10-40 *	E/O
		<0.55%C	Quenched and tempered	-	2-15 *	5-25 *	E/O
		>=0.55%C	Annealed	5-20	5-20 *	10-40 *	E/O
		Quenched and tempered	-	2-15 *	5-25 *	E/O	
	Low alloy steel and cast steel (Less than 5% of alloying elements)	Annealed	5-25	5-25 *	15-45 *	E/O	
		Quenched and tempered	-	2-15 *	5-20 *	E/O	
	High alloy steel, cast steel and tool steel	Annealed	5-20	5-20	10-40 *	E/O	
Quenched and tempered		-	-	5-20	O/S		
M	Stainless steel and cast steel	Ferritic / martensitic	-	2-10 *	5-20 *	E/O	
		Martensitic	-	2-10 *	5-20 *	E/O	
		Austenitic	-	2-10 *	5-20 *	E/O	
K	Gray cast iron (GG)	Ferritic	10-15	10-25	15-45	E/D	
		Pearlitic	10-15	10-25	10-40	E/D	
	Cast iron nodular (GGG)	Ferritic	8-12	5-20	10-30	E/D	
		Pearlitic	8-12	5-15	10-25	E/D	
	Malleable cast iron	Ferritic	10-15	10-25	15-45	E/D	
		Pearlitic	10-15	10-20	10-40	E/D	
N	Aluminum - wrought alloy	Not cureable	15-25 *	15-25	15-25	E/O	
		Cured	15-25 *	15-25	15-25	E/O	
	Aluminum-cast, alloyed	<=12% Si	Not cureable	15-20 *	10-20	15-40 *	E/O
			Cured	15-20 *	10-20	15-40 *	E/O
		>12% Si	High temp.	15-20 *	15-20	10-30	E/O
	Copper alloys	>1% Pb	Free cutting	15-25 *	15-25	10-30	E/O
			Brass	10-40	10-40	20-60	E/O
			Electrolitic copper	10-15 *	2-10	5-25	E/O
	Non-metallic	Duroplastics, fiber plastics	-	10-20	10-20	D	
		Hard rubber	-	10-20	10-20	D	
S	High temp. alloys	Fe based	Annealed	-	-	3-5	S
			Cured	-	-	3-5	S
		Ni or Co based	Annealed	-	-	2-4	S
			Cured	-	-	2-4	S
			Cast	-	-	2-4	S
	Titanium, Ti alloys		-	-	4-6	S	
		Alpha+beta alloys cured	-	-	4-6	S	

* : Recommended

• For more information of material groups, see the materials & grades "material conversion table"

Steel Stainless steel Cast iron Nonferrous High temp. alloys Hardened steel

• Lubrication E: Emulsion O: Cutting oil S: Special cutting oil D: Dry/air

Recommended Cutting Conditions



Machining data for 40° right hand spiral flute tap

Cutting speed Vc(m/min)

ISO	Material		Condition	40° right hand spiral flute tap			Lubrication
				Uncoated	Steam tempered	TiN coated	
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C	Annealed	5-25	5-25 *	15-45 *	E/O
		>=0.25%C	Annealed	5-20	5-20 *	10-40 *	E/O
		<0.55%C	Quenched and tempered	-	2-15 *	5-25 *	E/O
		>=0.55%C	Annealed	5-20	5-20 *	10-40 *	E/O
		Quenched and tempered	-	2-15 *	5-25 *	E/O	
	Low alloy steel and cast steel (Less than 5% of alloying elements)	Annealed	5-25	5-25 *	15-45 *	E/O	
		Quenched and tempered	-	2-15 *	5-20 *	E/O	
	High alloy steel, cast steel and tool steel	Annealed	5-20	5-20	10-40 *	E/O	
	Quenched and tempered	-	-	5-20	O/S		
M	Stainless steel and cast steel	Ferritic / martensitic	-	2-10 *	5-20 *	E/O	
		Martensitic	-	2-10 *	5-20 *	E/O	
		Austenitic	-	2-10 *	5-20 *	E/O	
K	Gray cast iron (GG)	Ferritic	10-15	10-25	15-45	E/D	
		Pearlitic	10-15	10-20	10-40	E/D	
	Cast iron nodular (GGG)	Ferritic	8-12	5-20	10-30	E/D	
		Pearlitic	8-12	5-15	10-25	E/D	
	Malleable cast iron	Ferritic	10-15	10-25	15-45	E/D	
	Pearlitic	10-15	10-20	10-40	E/D		
N	Aluminum - wrought alloy	Not cureable	15-25 *	15-25	15-25	E/O	
		Cured	15-25 *	15-25	15-25	E/O	
	Aluminum-cast, alloyed	<=12% Si	Not cureable	15-20 *	10-20	15-40 *	E/O
		Cured	15-20 *	10-20	15-40 *	E/O	
	>12% Si	High temp.	15-20 *	15-20	10-30	E/O	
		>1% Pb	Free cutting	15-25 *	15-25	10-30	E/O
	Copper alloys	Brass	10-40	10-40	50-60	E/O	
		Electrolitic copper	10-15 *	2-10	5-25	E/O	
Non-metallic	Duroplastics, fiber plastics	-	10-20	10-20	D		
	Hard rubber	-	10-20	10-20	D		
S	High temp. alloys	Fe based	Annealed	-	-	3-5	S
			Cured	-	-	3-5	S
		Ni or Co based	Annealed	-	-	2-4	S
			Cured	-	-	2-4	S
			Cast	-	-	2-4	S
	Titanium, Ti alloys		-	-	4-6	S	
		Alpha+beta alloys cured	-	-	4-6	S	

* : Recommended

• For more information of material groups, see the materials & grades "material conversion table"

Steel Stainless steel Cast iron Nonferrous High temp. alloys Hardened steel

• Lubrication E: Emulsion O: Cutting oil S: Special cutting oil D: Dry/air

