

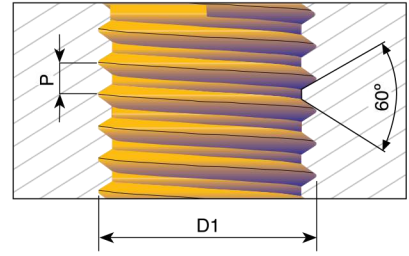
**MINI ZÁVITOVÉ FRÉZY
VHM MONOLITNÉ BEZ
VNÚTORNÉHO CHLADENIA**



Mini Mill - Thread

ISO

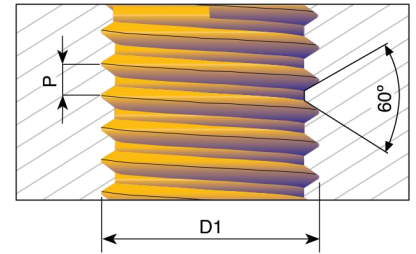
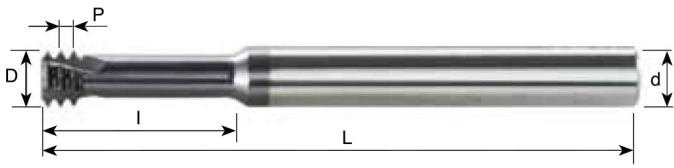
Tools for Internal Thread



Pitch mm	D1	Ordering Code	d	D	No. of Flutes	I	L	Thread depth
0.25	M1	MTS03007C2 0.25 ISO	3	0.72	3	2.5	39	2.5xD1
0.25	M1.2	MTS03009C3 0.25 ISO	3	0.90	3	3.0	39	2xD1
0.3	M1.4	MTS03011C4 0.3 ISO	3	1.05	3	4.0	39	3xD1
0.35	M1.6	MTS03012C5 0.35 ISO	3	1.20	3	4.8	39	3xD1
	M1.6	MTS06012C5 0.35 ISO-L	6	1.20	3	4.8	105	3xD1
0.35	M5	MTS06045D14 0.35 ISO	6	4.50	4	14.5	48	3xD1
0.4	M2	MTS06016C4 0.4 ISO	6	1.53	3	4.5	58	2xD1
	M2	MTS06016C4 0.4 ISO-L	6	1.53	3	4.5	105	2xD1
	M2	MTS03016C6 0.4 ISO	3	1.53	3	6.0	39	3xD1
	M2	MTS03016C10 0.4 ISO	3	1.53	3	10.4	39	5xD1
0.45	M2.2	MTS06017C5 0.45 ISO	6	1.65	3	5.0	58	2xD1
	M2.2	MTS03017C7 0.45 ISO	3	1.65	3	7.0	39	3xD1
0.45	M2.5	MTS0602C5 0.45 ISO	6	1.95	3	5.5	58	2xD1
	M2.5	MTS0602C5 0.45 ISO-L	6	1.95	3	5.5	105	2xD1
	M2.5	MTS0602C7 0.45 ISO	6	1.95	3	7.5	58	3xD1
	M2.5	MTS0602C8 0.45 ISO-L	6	1.95	3	8.0	105	3xD1
	M2.5	MTS0302C10 0.45 ISO	3	1.95	3	10.5	39	4xD1
0.5	M3	MTS06024C6 0.5 ISO	6	2.37	3	6.5	58	2xD1
	M3	MTS06024C6 0.5 ISO-L	6	2.37	3	6.5	105	2xD1
	M3	MTS06024C9 0.5 ISO	6	2.37	3	9.5	58	3xD1
	M3	MTS06024C9 0.5 ISO-L	6	2.37	3	9.5	105	3xD1
	M3	MTS03024C12 0.5 ISO	3	2.40	3	12.5	39	4xD1
	M3	MTS03024C15 0.5 ISO	3	2.40	3	15.5	39	5xD1
0.5	M6, M7	MTS06054D20 0.5 ISO	6	5.35	4	20.0	58	3xD1
0.6	M3.5	MTS06028C7 0.6 ISO	6	2.75	3	7.5	58	2xD1
	M3.5	MTS06028C10 0.6 ISO	6	2.75	3	10.5	58	3xD1
0.7	M4	MTS06031C9 0.7 ISO	6	3.10	3	9.0	58	2xD1
	M4	MTS06031C12 0.7 ISO	6	3.10	3	12.5	58	3xD1
	M4	MTS06031C12 0.7 ISO-L	6	3.10	3	12.5	105	3xD1
	M4	MTS06031C16 0.7 ISO	6	3.10	3	16.7	58	4xD1
0.75	M10	MTS0808D25 0.75 ISO	8	8.00	4	25.0	64	2.5xD1
0.8	M5	MTS06038C12 0.8 ISO	6	3.80	3	12.5	58	2xD1
	M5	MTS06038C16 0.8 ISO	6	3.80	3	16.0	58	3xD1
	M5	MTS06038C16 0.8 ISO-L	6	3.80	3	16.0	105	3xD1
	M5	MTS0604C20 0.8 ISO	6	4.00	3	20.8	58	4xD1

ISO

Tools for Internal Thread



Pitch mm	D1	Ordering Code	d	D	No. of Flutes	I	L	Thread depth
1.0	M6	MTS06047C14 1.0 ISO	6	4.65	3	14.0	58	2xD1
	M6	MTS06047C20 1.0 ISO	6	4.65	3	20.0	58	3xD1
	M6	MTS06047C20 1.0 ISO-L	6	4.65	3	20.0	105	3xD1
	M6	MTS06048C25 1.0 ISO	6	4.80	3	25.0	58	4xD1
1.0	M10	MTS0808D31 1.0 ISO	8	8.00	4	31.0	64	3xD1
1.25	M8	MTS0606C18 1.25 ISO	6	6.0	3	18.0	58	2xD1
	M8	MTS0606C24 1.25 ISO	6	6.0	3	24.0	58	3xD1
	M8	MTS0606C24 1.25 ISO-L	6	6.0	3	24.0	105	3xD1
1.5	M10	MTS08078C23 1.5 ISO	8	7.80	3	23.0	64	2xD1
	M10	MTS08078C31 1.5 ISO	8	7.80	3	31.5	64	3xD1
	M10	MTS08078C31 1.5 ISO-L	8	7.80	3	31.5	105	3xD1
1.75	M12	MTS1009C26 1.75 ISO	10	9.00	3	26.0	73	2xD1
	M12	MTS1009C37 1.75 ISO	10	9.00	3	37.8	73	3xD1
2.0	M16	MTS12118D35 2.0 ISO	12	11.80	4	35.0	84	2xD1
	M16	MTS12118D50 2.0 ISO	12	11.80	4	50.0	105	3xD1
2.5	M20	MTS1615E43 2.5 ISO	16	15.00	5	43.0	105	2xD1

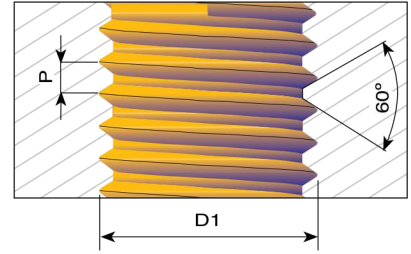
- Machining Titanium, surgical stainless steels and hardened materials up to 45 HRC.
- Suitable for high speed air turbine machines (30,000-40,000 RPM) and for standard machining centers (6,000 RPM and higher).
- Can also be used for general purpose threading.

Order example: MTS 03024C12 0.5 ISO MT7

Mini Mill - Thread

UN

Tools for Internal Thread

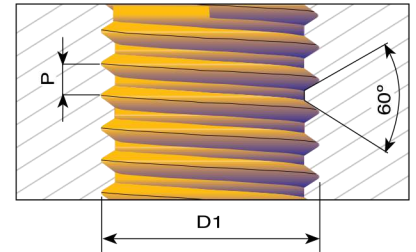
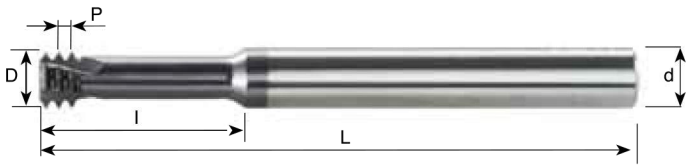


Pitch TPI	UNC	UNF	Ordering Code	d	D	No. of Flutes	l	L	Thread depth
80		0	MTS06012C4 80 UN	6	1.15	3	4.0	58	3xD1
		0	MTS03012C8 80 UN	3	1.15	3	8.0	39	5xD1
72		1	MTS06014C3 72 UN	6	1.45	3	3.7	58	2xD1
		1	MTS03015C6 72 UN	3	1.45	3	6.0	39	3xD1
64	1	2	MTS06014C3 64 UN	6	1.40	3	3.8	58	2xD1
56	2	3	MTS03016C4 56 UN	3	1.65	3	4.4	39	2xD1
	2	3	MTS06016C4 56 UN	6	1.65	3	4.4	58	2xD1
	2	3	MTS03016C6 56 UN	3	1.65	3	6.6	39	3xD1
	2	3	MTS06016C6 56 UN	6	1.65	3	6.6	58	3xD1
	2	3	MTS06016C6 56 UN-L	6	1.65	3	6.6	105	3xD1
	2	3	MTS03016C9 56 UN	3	1.65	3	9.2	39	4xD1
	2	3	MTS03016C11 56 UN	3	1.65	3	11.4	39	5xD1
48	3	4	MTS06019C5 48 UN	6	1.90	3	5.2	58	2xD1
40	4		MTS06021C6 40 UN	6	2.10	3	6.3	58	2xD1
	4		MTS06021C6 40 UN-L	6	2.10	3	6.3	105	2xD1
	4		MTS03021C8 40 UN	3	2.10	3	8.0	39	3xD1
	4		MTS06021C8 40 UN	6	2.10	3	8.0	58	3xD1
	4		MTS06021C8 40 UN-L	6	2.10	3	8.0	105	3xD1
	4		MTS03021C12 40 UN	3	2.10	3	12.0	39	4xD1
40	5	6	MTS06024C7 40 UN	6	2.45	3	7.0	58	2xD1
	5	6	MTS06024C9 40 UN	6	2.45	3	9.6	58	3xD1
36		8	MTS06033C9 36 UN	6	3.30	3	9.0	58	2xD1
32	6		MTS06025C7 32 UN	6	2.55	3	7.1	58	2xD1
	6		MTS06025C7 32 UN-L	6	2.55	3	7.1	105	2xD1
	6		MTS03025C10 32 UN	3	2.55	3	10.5	39	3xD1
	6		MTS06025C10 32 UN	6	2.55	3	10.5	58	3xD1
	6		MTS06025C10 32 UN-L	6	2.55	3	10.5	105	3xD1
	6		MTS03025C14 32 UN	3	2.55	3	14.8	39	4xD1
32	8		MTS06032C9 32 UN	6	3.20	3	9.5	58	2xD1
	8		MTS06032C9 32 UN-L	6	3.20	3	9.5	105	2xD1
	8		MTS06032C12 32 UN	6	3.20	3	12.5	58	3xD1
	8		MTS06032C12 32 UN-L	6	3.20	3	12.5	105	3xD1
	8		MTS06032C17 32 UN	6	3.20	3	17.5	58	4xD1
32		10	MTS06037C10 32 UN	6	3.70	3	10.5	58	2xD1
		10	MTS06037C15 32 UN	6	3.70	3	15.0	58	3xD1
		10	MTS06037C15 32 UN-L	6	3.70	3	15.0	105	3xD1
		10	MTS06037C20 32 UN	6	3.70	3	20.0	58	4xD1

Order example: [MTS 06021C6 40 UN MT7](#)

UN

Tools for Internal Thread



Pitch TPI	UNC	UNF	Ordering Code	d	D	No. of Flutes	I	L	Thread depth
28		12	MTS06042C11 28 UN	6	4.20	3	11.0	58	2xD1
28		1/4	MTS0605C14 28 UN	6	5.00	3	14.5	58	2xD1
		1/4	MTS0605C19 28 UN	6	5.00	3	19.0	58	3xD1
		1/4	MTS0605C19 28 UN-L	6	5.00	3	19.0	105	3xD1
24	10, 12		MTS06035C10 24 UN	6	3.50	3	10.6	58	2xD1
	10, 12		MTS06035C15 24 UN	6	3.50	3	15.5	58	3xD1
24		5/16, 3/8	MTS08066C17 24 UN	8	6.60	3	17.0	64	2xD1
		5/16, 3/8	MTS08066C24 24 UN	8	6.60	3	24.0	64	3xD1
20	1/4		MTS06047C14 20 UN	6	4.75	3	14.0	58	2xD1
	1/4		MTS06047C14 20 UN-L	6	4.75	3	14.0	105	2xD1
	1/4		MTS06047C19 20 UN	6	4.75	3	19.0	58	3xD1
	1/4		MTS06047C19 20 UN-L	6	4.75	3	19.0	105	3xD1
20		7/16	MTS0808C25 20 UN	8	8.00	3	25.0	64	2xD1
		7/16	MTS0808C34 20 UN	8	8.00	3	34.6	64	3xD1
18	5/16		MTS0606C17 18 UN	6	6.00	3	17.0	58	2xD1
	5/16		MTS0606C23 18 UN	6	6.00	3	23.0	58	3xD1
18		5/8	MTS1212D35 18 UN	12	12.00	4	35.0	84	2xD1
		5/8	MTS1212D49 18 UN	12	12.00	4	49.0	105	3xD1
16	3/8		MTS08067C22 16 UN	8	6.70	3	22.0	64	2xD1
	3/8		MTS08067C30 16 UN	8	6.70	3	30.2	64	3xD1
14	7/16		MTS08077C25 14 UN	8	7.70	3	25.0	64	2xD1
	7/16		MTS08077C35 14 UN	8	7.70	3	35.2	64	3xD1
13	1/2		MTS10092C27 13 UN	10	9.20	3	27.5	73	2xD1
	1/2		MTS10092C40 13 UN	10	9.20	3	40.1	73	3xD1
12	9/16		MTS12105C31 12 UN	12	10.50	3	31.5	84	2xD1
	9/16		MTS12105C45 12 UN	12	10.50	3	45.0	105	3xD1
11	5/8		MTS12114C34 11 UN	12	11.40	3	34.5	84	2xD1
	5/8		MTS12114C50 11 UN	12	11.40	3	50.0	105	3xD1
10	3/4		MTS16144D41 10 UN	16	14.40	4	41.5	105	2xD1
	3/4		MTS16144D59 10 UN	16	14.40	4	59.7	105	3xD1

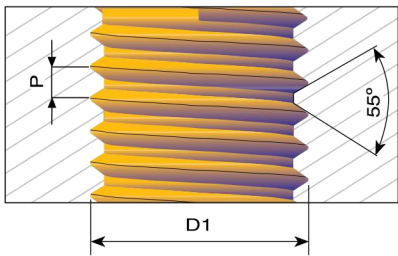
Order example: [MTS 0605C19 28 UN MT7](#)

- Machining Titanium, surgical stainless steels and hardened materials up to 45 HRC.
- Suitable for high speed air turbine machines (30,000-40,000 RPM) and for standard machining centers (6,000 RPM and higher).
- Can also be used for general purpose threading.

Mini Mill - Thread

G 55° BSW, BSP

Same Tool for Internal and External Thread



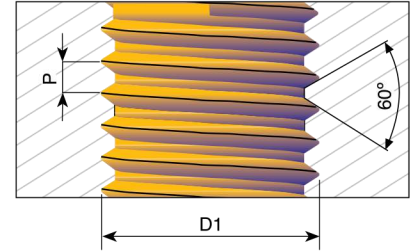
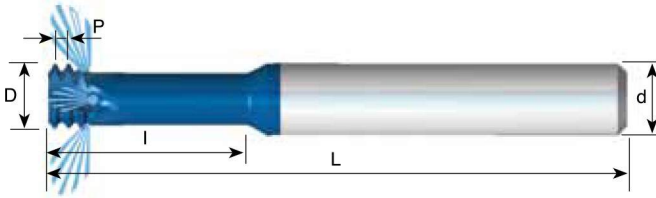
For thread depth up to 2 x D1

Pitch TPI	Standard	Ordering Code	d	D	No. of Flutes	I	L	Thread depth
28	G 1/8	MTS08078C19 28 W	8	7.8	3	19.5	64	2xD1
19	G 1/4 - 3/8	MTS1010D30 19 W	10	10.0	4	30.0	73	2xD1
14	G 1/2 - 7/8	MTS1212D37 14 W	12	12.0	4	37.0	84	2xD1
11	G ≥ 1	MTS1616D44 11 W	16	16.0	4	44.0	105	2xD1

Order example: MTS 1212D37 14 W MT7

UNJ With internal coolant through the flutes

Tools for Internal Thread



For thread depth up to $2.5 \times D1$

Pitch TPI	UNJC	UNJF	Ordering Code	d	D	No. of Flutes	I	L
* 32	8	10	MTS06033C10 32 UNJ	6	3.30	3	10.5	58
28		1/4	MTS08051C16 28 UNJ	8	5.10	3	16.0	64
24		5/16, 3/8	MTS08067C20 24 UNJ	8	6.70	3	20.0	64
* 20	1/4		MTS06049C16 20 UNJ	6	4.90	3	16.0	58
20		7/16	MTS0808C28 20 UNJ	8	8.00	3	28.0	64
18	5/16	9/16	MTS08061C20 18 UNJ	8	6.15	3	20.0	64
16	3/8		MTS08069C24 16 UNJ	8	6.90	3	24.0	64
14	7/16		MTS08079C25 14 UNJ	8	7.90	3	25.0	64
13	1/2		MTS10094C27 13 UNJ	10	9.40	3	27.5	73

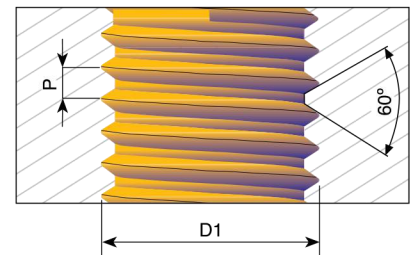
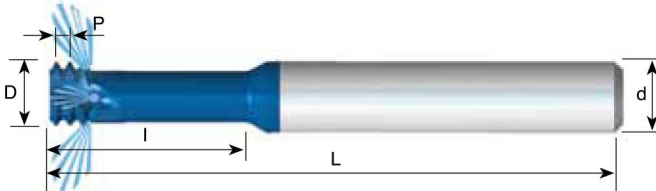
* Cutters without coolant

Order example: MTS 06049C16 20 UNJ MT8

Carbide grade MT8 Sub Micron grade with advanced PVD triple coating (ISO K 10-K20). Extremely high heat resistant and smooth cutting operation, for high performance, and normal machining conditions. General purpose for all materials

MJ With internal coolant through the flutes

Tools for Internal Thread



For thread depth up to $2.5 \times D1$

Pitch TPI	D1	Ordering Code	d	D	No. of Flutes	I	L
* 0.7	MJ4	MTS06032C10 0.7 MJ	6	3.20	3	10.0	58
* 0.8	MJ5	MTS06039C12 0.8 MJ	6	3.90	3	12.5	58
* 1.0	MJ6	MTS06048C15 1.0 MJ	6	4.80	3	15.0	58
1.25	MJ8	MTS08061C20 1.25 MJ	8	6.10	3	20.0	64
1.5	MJ10	MTS0808C25 1.5 MJ	8	8.00	3	25.5	64
1.75	MJ12	MTS10092C30 1.75 MJ	10	9.20	3	30.0	73
2.0	MJ14, MJ16	MTS1010C35 2.0 MJ	10	10.00	3	35.0	73

* Cutters without coolant

Order example: MTS 06048C15 1.0 MJ MT8

Carbide grade MT8 Sub Micron grade with advanced PVD triple coating (ISO K 10-K20). Extremely high heat resistant and smooth cutting operation, for high performance, and normal machining conditions. General purpose for all materials

Mill - Thread Technical Section

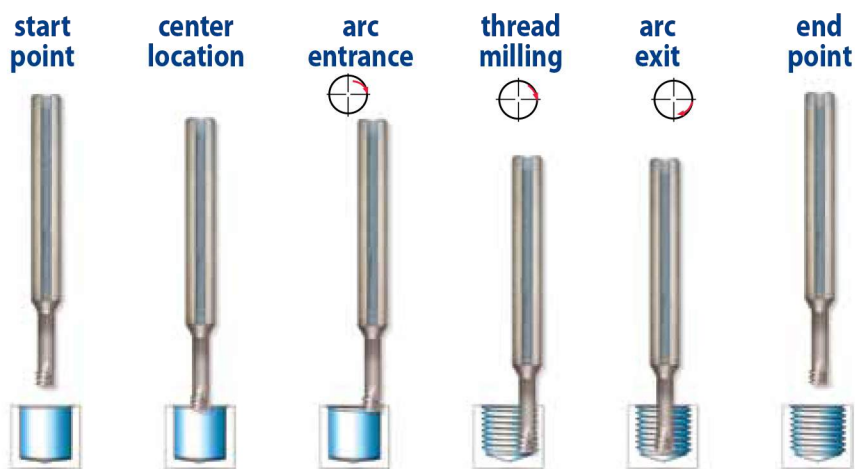
Mini Mill-Thread MTS and MTI types

MT7 Sub-Micron Grade with Titanium Aluminum Nitride multi-layer coating (ISO K10 - K20). This is a general purpose grade, which can be used with all materials; it should be run at medium to high cutting speeds.

MT8 Sub-Micron Grade with Aluminum Titanium Nitride (AlTiN) multi-layer coating (ISO K10-K20). Extremely high heat resistant and smooth cutting operation, for high performance, and normal machining conditions. General purpose for all materials.

MT11 Ultra-fine sub-micron grade with advanced PVD triple coating.

ISO Standard	Materials	Cutting Speed m/min	Feed mm/tooth													
			Cutting Diameter = D													
			Ø1	Ø1.5	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø12	Ø14	Ø16
P	Low and Medium Carbon Steels < 0.55%C	60-120	0.04	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 ≥ 0.55%C	60- 90	0.03	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	0.03	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.10	0.12	0.13	0.14
M	Stainless Steels - Free Cutting	70-100	0.02	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
	Stainless Steels - Austenitic	60- 90	0.02	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
	Cast Steels	70- 90	0.03	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.10	0.12	0.13	0.14
K	Cast Iron	40- 80	0.04	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 ≤12%Si, Copper	100-200	0.04	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
	Aluminum >12% Si	60-140	0.03	0.03	0.03	0.04	0.05	0.06	0.06	0.07	0.08	0.09	0.10	0.11	0.13	0.14
	Synthetics, Duroplastics, Thermoplastics	50-200	0.09	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 and Titanium Alloys	20- 40	0.03	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



Mini Mill-Thread vs. Taps

Features	Mini Mill-Thread	Taps
Thread surface quality	High	Medium
Thread geometry	Very accurate	Medium
Thread tolerances	4H, 5H, 6H with std cutter	6H with standard tap, 4H with specific tap
Machining time	Same as tap or shorter	Short
Tool breakage	Almost not possible	Could happen often
Machining load	Very low	High
Range of thread diameters	Wide range of diameters	Specific tap for each diameter
Right/Left hand threading	Same cutter	Specific tap for each
Geometric shape	Full profile	Partial profile