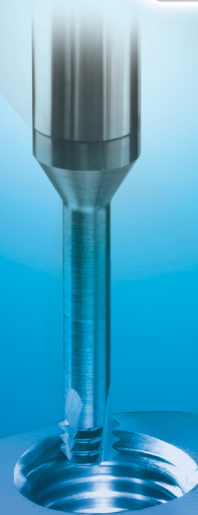
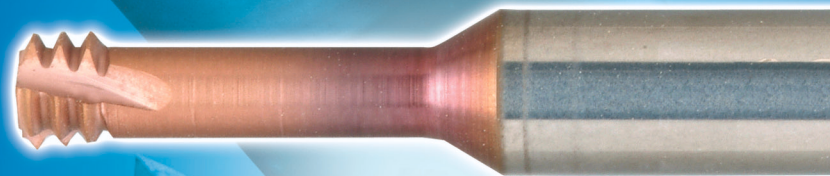


**NEW**  
2008 EDITION

# Mini Mill-Thread

Solid-Carbide Thread Mills  
for threading bores  
as small as M1.0 X 0.25

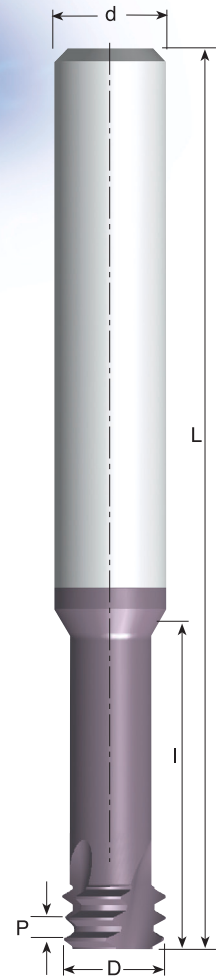


**Carmex**  
Precision Tools Ltd.

Metric

Specially designed solid-carbide thread mills for producing internal threads in very small bores. Due to the unique tool design, accurate geometries and high quality MT7 sub-micron carbide grade with Titanium Aluminum Nitride coating, the following are achieved:

- Threading from M1.0 x 0.25 (bore diameter  $\varnothing$  0.95)
- Working at high cutting speed
- Short machining time
- Low cutting forces thanks to the short profile
- No broken taps
- Threading up to shoulder in blind holes
- Machining of hardened materials up to 40HRc



## ISO

### Tools for Internal Thread For thread depth up to 2xD1

Pitch	D1	Ordering Code	d	D	No. of Flutes	I	L
* 0.25	M1.2	MTS03009C3 0.25 ISO	3	0.90	3	3.0	39
0.4	M2	MTS06016C4 0.4 ISO	6	1.55	3	4.5	58
0.45	M2.2	MTS06017C5 0.45 ISO	6	1.65	3	5.0	58
0.45	M2.5	MTS0602C5 0.45 ISO	6	1.95	3	5.5	58
0.5	M3	MTS06024C6 0.5 ISO	6	2.35	3	6.5	58
0.6	M3.5	MTS06028C7 0.6 ISO	6	2.75	3	7.5	58
0.7	M4	MTS06031C9 0.7 ISO	6	3.10	3	9.0	58
0.8	M5	MTS06038C12 0.8 ISO	6	3.80	3	12.5	58
1.0	M6	MTS06047C14 1.0 ISO	6	4.65	3	14.0	58
1.25	M8	MTS0606C18 1.25 ISO	6	5.95	3	18.0	58
1.5	M10	MTS08078C23 1.5 ISO	8	7.80	3	23.0	64
1.75	M12	MTS1009C26 1.75 ISO	10	9.00	3	26.0	73
2.0	M16	MTS12118D35 2.0 ISO	12	11.80	4	35.0	84
2.5	M20	MTS1615E43 2.5 ISO	16	15.00	5	43.0	105

### For thread depth up to 3xD1

Pitch	D1	Ordering Code	d	D	No. of Flutes	I	L
* 0.3	M1.4	MTS03011C4 0.3 ISO	3	1.05	3	4.0	39
* 0.35	M1.6	MTS03012C5 0.35 ISO	3	1.20	3	5.0	39
* 0.4	M2	MTS03016C6 0.4 ISO	3	1.55	3	6.0	39
0.45	M2.5	MTS0602C7 0.45 ISO	6	1.95	3	7.5	58
0.5	M3	MTS06024C9 0.5 ISO	6	2.35	3	9.5	58
0.7	M4	MTS06031C12 0.7 ISO	6	3.10	3	12.5	58
0.8	M5	MTS06038C16 0.8 ISO	6	3.80	3	16.0	58
1.0	M6	MTS06047C20 1.0 ISO	6	4.65	3	20.0	58
1.25	M8	MTS0606C24 1.25 ISO	6	5.95	3	24.0	58

Order example: MTS 06047C14 1.0 ISO MT7

### \*Specially designed for the production of dental implants

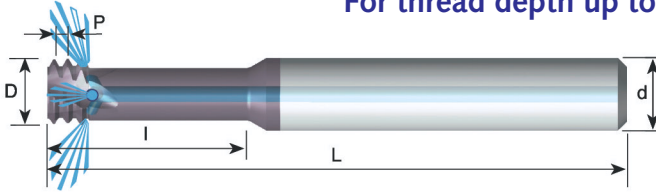
- Machining Titanium, surgical stainless steels and hardened materials.
- Suitable for high speed air turbine machines (30,000-40,000 RPM) and for standard machining centers (6,000 RPM and higher).
- Can also be used for general purpose threading.

# UNJ

With internal coolant through the flutes

Tools for Internal Thread

For thread depth up to 2.5xD1

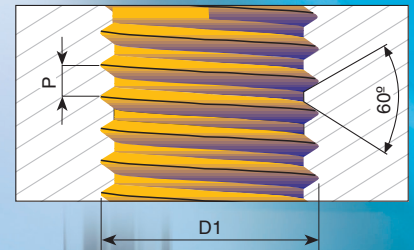


Pitch TPI	UNC	UNF	Ordering Code	d	D	No. of Flutes	I	L
* 32	8	10	MTS06033C10 32 UNJ	6	3.30	3	10.5	58
28		1/4	MTS08051C16 28 UNJ	8	5.10	3	16.0	64
24		5/16, 3/8	MTS08067C20 24 UNJ	8	6.70	3	20.0	64
* 20	1/4	7/16	MTS06049C16 20 UNJ	6	4.90	3	16.0	58
20			MTS0808C28 20 UNJ	8	8.00	3	28.0	64
18	5/16		MTS08061C20 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

\* without coolant

Order example: MTS06049C16 20UNJ MT8

**Carbide grade MT8** Sub Micron grade with Aluminium 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.

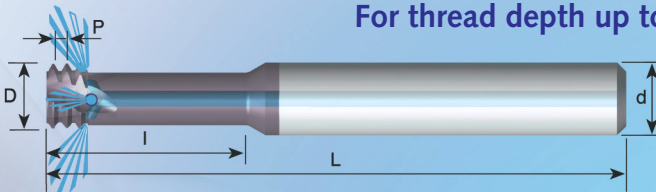


# MJ

With internal coolant through the flutes

Tools for Internal Thread

For thread depth up to 2.5xD1

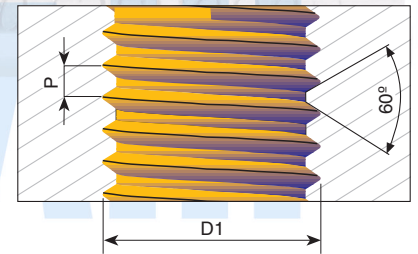


Pitch mm	D1	Ordering Code	d	D	No. of Flutes	I	L
* 0.7	MJ4	MTS06032C10 0.7 MJ	6	3.20	3	10.0	58
* 0.8	MJ5	MTS06039C12 0.8 MJ	6	3.90	3	12.5	58
* 1.0	MJ6	MTS06048C15 1.0 MJ	6	4.80	3	15.0	58
1.25	MJ8	MTS08061C20 1.25 MJ	8	6.10	3	20.0	64
1.5	MJ10	MTS0808C25 1.5 MJ	8	8.00	3	25.0	64
1.75	MJ12	MTS10092C30 1.75 MJ	10	9.20	3	30.0	73
2.0	MJ14, MJ16	MTS1010C35 2.0 MJ	10	10.00	3	35.0	73

\* without coolant

Order example: MTS06048C15 1.0 MJ MT8

**Carbide grade MT8** Sub Micron grade with Aluminium 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.



# UN

## Tools for Internal Thread For thread depth up to 2xD1

Pitch TPI	UNC	UNF	Ordering Code	d	D	No. of Flutes	I	L
72		1	MTS06014C3 72 UN	6	1.45	3	3.7	58
64	1	2	MTS06014C3 64 UN	6	1.40	3	3.8	58
56	2	3	MTS06016C4 56 UN	6	1.65	3	4.4	58
48	3	4	MTS06019C5 48 UN	6	1.90	3	5.2	58
40	4		MTS06021C6 40 UN	6	2.10	3	6.3	58
40	5	6	MTS06024C7 40 UN	6	2.45	3	7.0	58
36		8	MTS06033C9 36 UN	6	3.30	3	9.0	58
32	6		MTS06025C7 32 UN	6	2.55	3	7.1	58
32	8		MTS06032C9 32 UN	6	3.20	3	9.5	58
32		10	MTS06037C10 32 UN	6	3.70	3	10.5	58
28		12	MTS06042C11 28 UN	6	4.20	3	11.0	58
28		1/4	MTS0605C14 28 UN	6	5.00	3	14.5	58
24	10,12		MTS06035C10 24 UN	6	3.50	3	10.6	58
24		5/16, 3/8	MTS08066C17 24 UN	8	6.60	3	17.0	64
20	1/4		MTS06047C14 20 UN	6	4.75	3	14.0	58
20		7/16	MTS0808C25 20 UN	8	8.00	3	25.0	64
18	5/16		MTS0606C17 18 UN	6	6.00	3	17.0	58
18		5/8	MTS1212D35 18 UN	12	12.00	4	35.0	84
16	3/8		MTS08067C22 16 UN	8	6.70	3	22.0	64
14	7/16		MTS08077C25 14 UN	8	7.70	3	25.0	64
13	1/2		MTS10092C27 13 UN	10	9.20	3	27.5	73
12	9/16		MTS12105C31 12 UN	12	10.50	3	31.5	84
11	5/8		MTS12114C34 11 UN	12	11.40	3	34.5	84
10	3/4		MTS16144D41 10 UN	16	14.40	4	41.5	105

Order example: MTS06021C6 40UN MT7

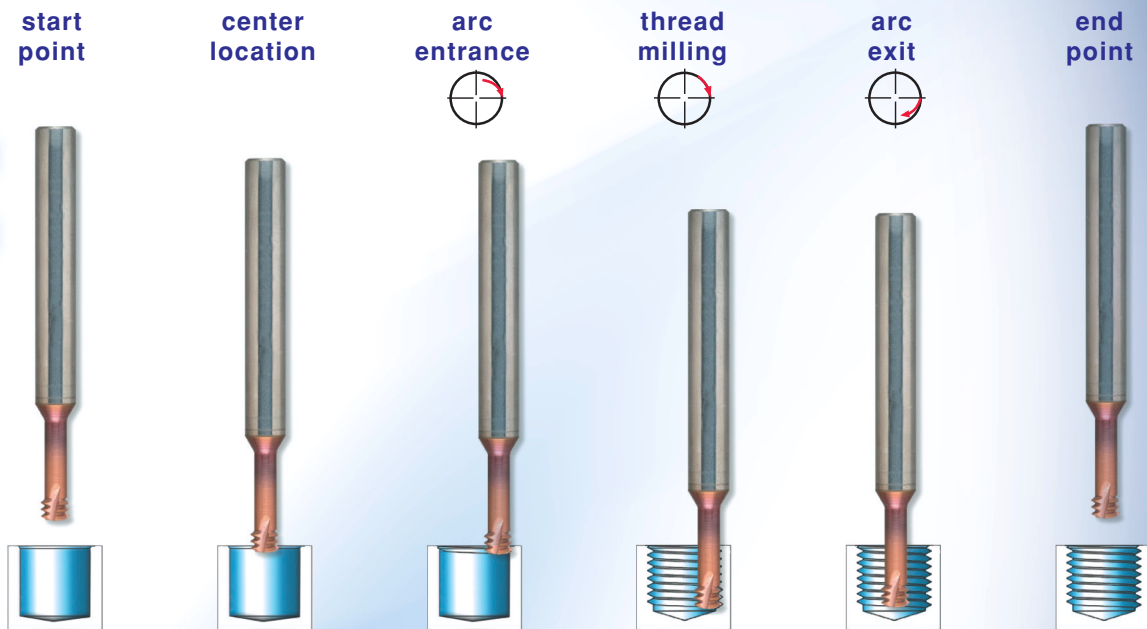
## For thread depth up to 3xD1

Pitch TPI	UNC	UNF	Ordering Code	d	D	No. of Flutes	I	L
80		0	MTS06012C4 80 UN	6	1.15	3	4.0	58
* 72		1	MTS03015C6 72 UN	3	1.45	3	6.0	39
56	2	3	MTS06016C6 56 UN	6	1.65	3	6.6	58
40	4		MTS06021C8 40 UN	6	2.10	3	8.0	58
40	5	6	MTS06024C9 40 UN	6	2.45	3	9.6	58
32	6		MTS06025C10 32 UN	6	2.55	3	10.5	58
32	8		MTS06032C12 32 UN	6	3.20	3	12.5	58
32		10	MTS06037C15 32 UN	6	3.70	3	15.0	58
28		1/4	MTS0605C19 28 UN	6	5.00	3	19.0	58
24		5/16, 3/8	MTS08066C24 24 UN	8	6.60	3	24.0	64
20	1/4		MTS06047C19 20 UN	6	4.75	3	19.0	58
18	5/16		MTS0606C23 18 UN	6	6.00	3	23.0	58

### \*Specially designed for the production of dental implants

- Machining Titanium, surgical stainless steels and hardened materials.
- 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.

ISO Standard	Material	Cutting Speed m/min	Feed mm/tooth													
			Cutting Diameter = D													
			ø1	ø1.5	ø2	ø3	ø4	ø5	ø6	ø7	ø8	ø9	ø10	ø12	ø14	ø15
<b>P</b>	Low & Medium Carbon Steels	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	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
<b>M</b>	Stainless Steels	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
<b>K</b>	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
<b>N</b>	Aluminum	80-150	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
	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
<b>S</b>	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

Mini - 1 hr



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