



**YE-TM14**



# THREAD MILLS

Higher cutting speeds and feeds than tapping.  
One tool for blind holes and through holes.



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**YG-1 CO., LTD.**

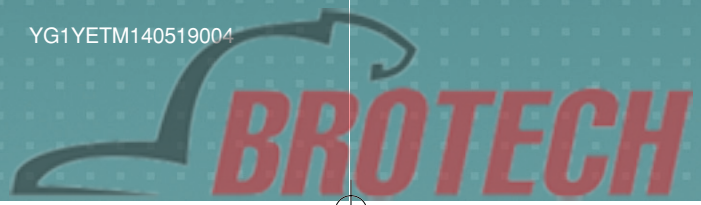
**HEAD OFFICE**  
211, Sewolcheon-ro, Bupyeong-gu, Incheon, Korea  
PHONE : +82-32-526-0909, FAX : +82-32-526-4373  
<http://www.yg1.kr>  
E-mail: [yg1@yg1.kr](mailto:yg1@yg1.kr)

Tool specifications are subject to change without notice.



**YG-1 CO., LTD.**

YG1YETM140519004



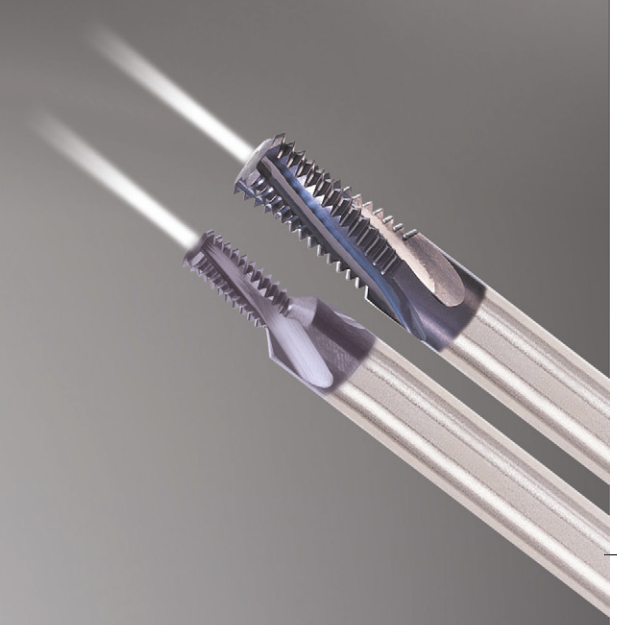


# THREAD MILLS

- Solid Carbide Thread Mill without Coolant Hole
- Solid Carbide Thread Mill with Coolant Hole
- Solid Carbide Thread Mill with Coolant Hole & Chamfer
- Solid Carbide Miniature Thread Mill
- Solid Carbide Drill and Thread Mill



Much higher productivity, much more improved thread surface finish than tapping. Advantages of Thread Milling includes "higher cutting speeds and feeds than tapping", "making smaller and easier to remove chips than taps", and "multiple function with one tool - both right/left hand threads and blind/through holes". Also applicable to hardened materials and exotic materials with predictable production. Expansion of thread mill operation range to "drill and thread mill with chamfer" and "thread mill with chamfer/internal coolant" series.



## ● Application Program Available

### Programming of Thread Milling

Internal Thread Milling in Machining Center  
Fanuc

Thread Milling

M - Metric

D = thread diameter (mm)	12.000
P = pitch (mm)	1.750
L = thread length (mm)	15.00
S = safety distance (mm)	5.0

Steel, Low Alloy, < 850 N/mm<sup>2</sup>

M10095C26,25 I, 75P L1111500

Number of passes, axial	1
Number of passes, radial (max 2)	1

d = cutter diameter (mm)	9.5
l = length of cutting edge (mm)	26.25
z = number of flutes	4
V = cutting speed (m/min)	100
Fz = feed/tooth (mm/tooth)	0.060
Fdr = drilling feed (mm/rev.)	
N = spindle speed (rpm)	3,351
FD = feed at thread diameter (mm/min)	804
Fd = feed in center of mill (mm/min)	168
T = time to mill the thread (seconds)	5

CNC program for Fanuc

```
G90 G00 G57 X0. Y0.
G43 H10 Z5. M3 S3351
G91 G00 Z-20.438
G41 D10 X0. Y-5.125 F101
G03 X6.088 Y5.125 Z0.438 R5.201
G03 X0. Y0. Z1.75 I-6.088 J0. F168
G03 X-6.088 Y5.125 Z0.438 R5.201
G00 G40 X0. Y-5.125
G00 Z17.812
G90 G49 G00 Z200. M5
M30
```

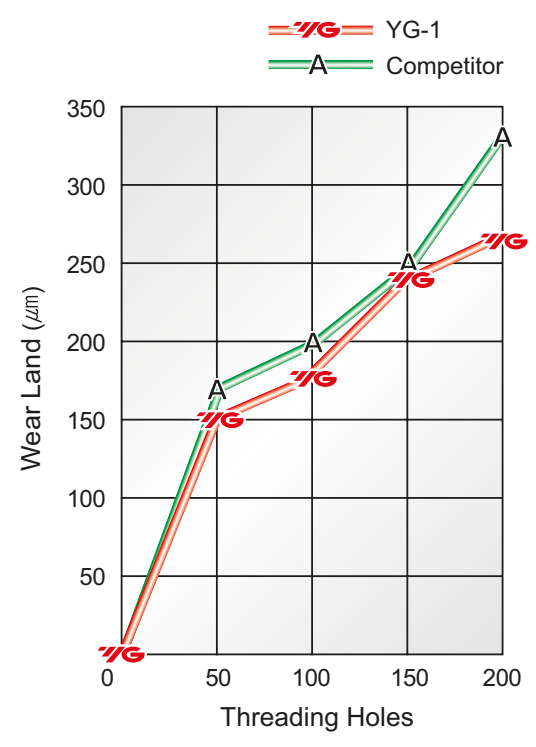




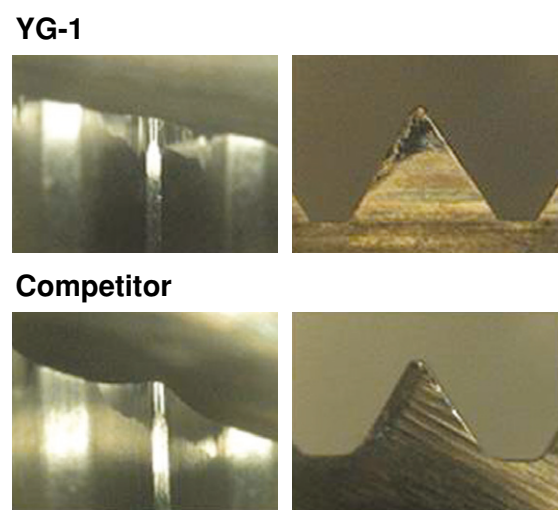
# Thread Mill - Test Report

# THREAD MILLS SELECTION GUIDE

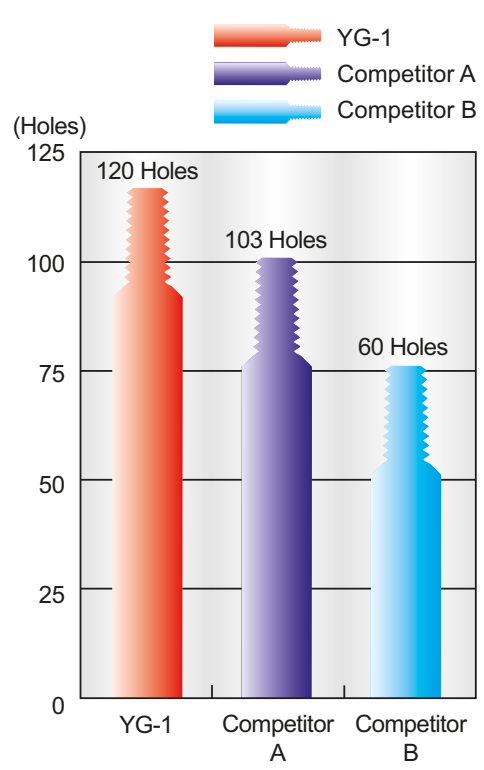
## Thread Mill with Chamfer



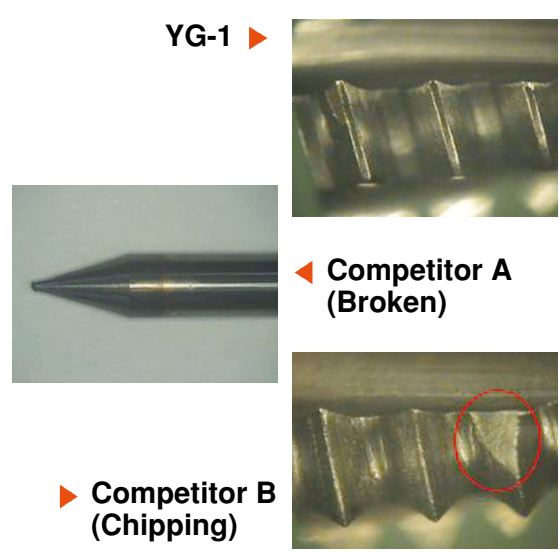
**CUTTING CONDITION**  
**SIZE :** M8 × 1.25, Ø6.5 × 16.8 × 90° × 74  
**Work Material :** C45 (HRc 20)  
**Cutting Speed :** 100m/min  
**R.P.M :** 4897 rev/min  
**Threading Feed :** 0.030 mm/tooth  
**Cutting Depth :** 16.0mm(2 × D)  
**Coolant :** Wet Cut



## Miniature Thread Mills



**CUTTING CONDITION**  
**SIZE :** M2 × 0.4, Ø1.52 × 1.2(4.2) × 57  
**Work Material :** X40CrMoV51 (HRc 40)  
**Cutting Speed :** 65m/min  
**R.P.M :** 13348 rev/min  
**Threading Feed :** 0.016 mm/tooth  
**Cutting Depth :** 4.0mm(2 × D)  
**Coolant :** Wet Cut

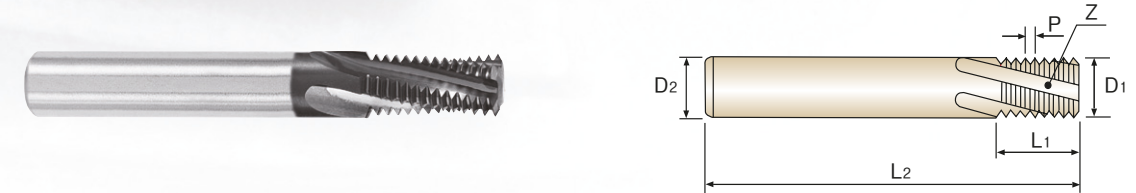


ITEM	MODEL	DESCRIPTION	PAGE
<b>Solid Carbide Thread Mill without Coolant Hole</b>			
L1211		<b>M</b> Solid Carbide Thread Mill for ISO Metric Internal Thread - DIN 13	6
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L4274		<b>UNF</b> Solid Carbide Thread Mill with Coolant Hole & Chamfer for UNF Internal Thread - ANSI B 1.1	16
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<b>Solid Carbide Miniature Thread Mill</b>			
L12D1		<b>M</b> Solid Carbide Miniature Thread Mill for ISO Metric Internal Thread - DIN13	18
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L19E1		<b>M</b> Solid Carbide Miniature Thread Mill for Hard Materials, ISO Metric Internal Thread - DIN13	20
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<b>Solid Carbide Drill and Thread Mill</b>			
L41A1 L42A1		<b>M</b> Solid Carbide Drill and Thread Mill with Chamfer for ISO Metric Internal Thread - DIN 13	22
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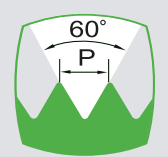
# M Solid Carbide Thread Mill for ISO Metric Internal Thread - DIN 13

# MF Solid Carbide Thread Mill for ISO Metric Internal Thread - DIN 13



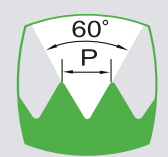
## L1211 SERIES TiAIN

- Material : Solid Carbide
- Shank : DIN6535 HA
- Spiral Angle : 15°
- Thread Length : 2 × D



## L1212 SERIES TiAIN

- Material : Solid Carbide
- Shank : DIN6535 HA
- Spiral Angle : 15°
- Thread Length : 1.5 × D



unit : mm

EDP No. TiAIN	Nominal Diameter [ D ]	Pitch P	Cutter Diameter D <sub>1</sub>	Shank Diameter		Thread Length		Over All Length L <sub>2</sub>	No. of Flute Z
				D <sub>2</sub>	L <sub>1</sub>				
L1211200	M3	0.5	2.2	6	5	57	3		
L1211240	M4	0.7	2.9	6	7	57	3		
L1211280	M5	0.8	3.8	6	8	57	3		
L1211310	M6	1.0	4.5	6	13	57	3		
L1211360	M8	1.25	6.0	6	17.5	65	3		
L1211420	M10	1.5	7.5	8	21	72	4		
L1211500	M12	1.75	9.5	10	26.25	80	4		
L1211540	M14	2.0	10.0	10	30	83	4		
L1211600	M16	2.0	12.0	12	34	92	4		
L1211650	M18	2.5	14.0	14	37.5	92	5		
L1211700	M20	2.5	16.0	16	42.5	105	5		

\* Other coatings are available on your request.

unit : mm

EDP No. TiAIN	Nominal Diameter [ D ]	Pitch P	Cutter Diameter D <sub>1</sub>	Shank Diameter		Thread Length		Over All Length L <sub>2</sub>	No. of Flute Z
				D <sub>2</sub>	L <sub>1</sub>				
L1212370	M8	1.0	6.0	6	13	57	3		
L1212380	M8	0.75	6.0	6	12.75	57	3		
L1212440	M10	1.0	8.0	8	16	63	4		
L1212510	M12	1.5	9.5	10	19.5	72	4		
L1212520	M12	1.25	9.5	10	18.75	72	4		
L1212530	M12	1.0	9.5	10	19	72	4		
L1212550	M14	1.5	10.0	10	22.5	83	4		
L1212570	M14	1.0	10.0	10	22	83	4		
L1212610	M16	1.5	12.0	12	25.5	83	4		
L1212620	M16	1.0	12.0	12	25	83	4		
L1212670	M18	1.5	14.0	14	28.5	92	5		
L1212680	M18	1.0	14.0	14	28	92	5		
L1212720	M20	1.5	16.0	16	31.5	92	5		
L1212730	M20	1.0	16.0	16	31	92	5		

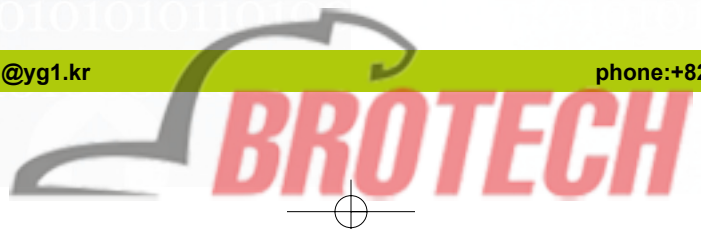
\* Other coatings are available on your request.

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Heat Treated Steels	High Hardened Steel	Cast Iron	Stainless Steels	Titanium Alloy	Chrome-Nickel Alloy	Non Ferrous Materials
◎	◎	◎	◎	◎	○	○	○	◎

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Heat Treated Steels	High Hardened Steel	Cast Iron	Stainless Steels	Titanium Alloy	Chrome-Nickel Alloy	Non Ferrous Materials
◎	◎	◎	◎	◎	○	○	○	◎





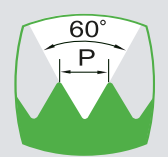
# UNC Solid Carbide Thread Mill for UNC Internal Thread - ANSI B 1.1

# UNF Solid Carbide Thread Mill for UNF Internal Thread - ANSI B 1.1



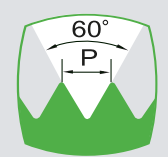
**L1213** SERIES TiAIN

- Material : Solid Carbide
- Shank : DIN6535 HA
- Spiral Angle : 15°
- Thread Length : 2 × D



**L1214** SERIES TiAIN

- Material : Solid Carbide
- Shank : DIN6535 HA
- Spiral Angle : 15°
- Thread Length : 2 × D



unit : mm

EDP No.	Nominal Diameter [ D ]	T.P.I	Cutter Diameter		Thread Length		Over All Length	No. of Flute
			D <sub>1</sub>	D <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>		
L1213400	1/4"	20	4.5	6	14	57	3	
L1213440	5/16"	18	5.8	6	16.9	65	3	
L1213480	3/8"	16	7.0	8	20.6	72	4	
L1213520	7/16"	14	8.0	8	23.6	72	4	
L1213560	1/2"	13	9.5	10	27.4	80	4	
L1213600	9/16"	12	10.0	10	31.8	83	4	
L1213640	5/8"	11	12.0	12	34.6	92	4	
L1213700	3/4"	10	14.0	14	40.6	104	5	

\* Other coatings are available on your request.

unit : mm

EDP No.	Nominal Diameter [ D ]	T.P.I	Cutter Diameter		Thread Length		Over All Length	No. of Flute
			D <sub>1</sub>	D <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>		
L1214420	1/4"	28	5.0	6	13.6	57	3	
L1214460	5/16"	24	6.0	6	16.9	65	3	
L1214500	3/8"	24	8.0	8	20.1	72	4	
L1214540	7/16"	20	8.0	8	24.1	72	4	
L1214580	1/2"	20	10.0	10	26.7	80	4	
L1214620	9/16"	18	12.0	12	29.6	83	4	
L1214660	5/8"	18	12.0	12	33.9	92	4	
L1214720	3/4"	16	14.0	14	39.7	104	5	

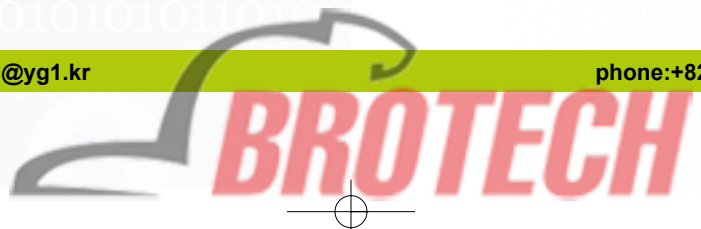
\* Other coatings are available on your request.

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Heat Treated Steels	High Hardened Steel	Cast Iron	Stainless Steels	Titanium Alloy	Chrome-Nickel Alloy	Non Ferrous Materials
◎	◎	◎		◎	○	○	○	◎

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Heat Treated Steels	High Hardened Steel	Cast Iron	Stainless Steels	Titanium Alloy	Chrome-Nickel Alloy	Non Ferrous Materials
◎	◎	◎		◎	○	○	○	◎





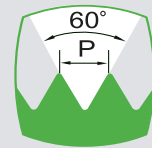
# M Solid Carbide Thread Mill with Coolant Hole for ISO Metric Internal Thread - DIN 13

# MF Solid Carbide Thread Mill with Coolant Hole for ISO Metric Internal Thread - DIN 13



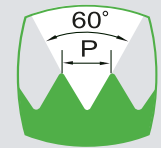
## L4211 SERIES TiAIN

- Material : Solid Carbide
- Shank : DIN6535 HA
- Spiral Angle : 15°
- Thread Length : 2 × D



## L4212 SERIES TiAIN

- Material : Solid Carbide
- Shank : DIN6535 HA
- Spiral Angle : 15°
- Thread Length : 1.5 × D



unit : mm

EDP No.	Nominal Diameter [ D ]	Pitch	Cutter Diameter	Shank Diameter		Thread Length		Over All Length	No. of Flute
				D <sub>2</sub>	D <sub>1</sub>	L <sub>1</sub>	L <sub>2</sub>		
TiAIN		P	D <sub>1</sub>	D <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	Z		
L4211310	M6	1.0	4.5	6	13.0	57	3		
L4211360	M8	1.25	6.0	6	17.5	65	3		
L4211420	M10	1.5	7.5	8	21.0	72	4		
L4211500	M12	1.75	9.5	10	26.25	80	4		
L4211540	M14	2.0	10.0	10	30.0	83	4		
L4211600	M16	2.0	12.0	12	34.0	92	4		
L4211700	M20	2.5	16.0	16	42.5	105	5		

\* Other coatings are available on your request.

unit : mm

EDP No.	Nominal Diameter [ D ]	Pitch	Cutter Diameter	Shank Diameter		Thread Length		Over All Length	No. of Flute
				D <sub>2</sub>	D <sub>1</sub>	L <sub>1</sub>	L <sub>2</sub>		
TiAIN		P	D <sub>1</sub>	D <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	Z		
L4212370	M8	1.0	6.0	6	13.0	57	3		
L4212380	M8	0.75	6.0	6	12.75	57	3		
L4212440	M10	1.0	8.0	8	16.0	63	4		
L4212510	M12	1.5	9.5	10	19.5	72	4		
L4212520	M12	1.25	9.5	10	18.75	72	4		
L4212530	M12	1.0	9.5	10	19.0	72	4		
L4212550	M14	1.5	10.0	10	22.5	83	4		
L4212570	M14	1.0	10.0	10	22.0	83	4		
L4212610	M16	1.5	12.0	12	25.5	83	4		
L4212620	M16	1.0	12.0	12	25.0	83	4		
L4212670	M18	1.5	14.0	14	28.5	92	5		
L4212680	M18	1.0	14.0	14	28.0	92	5		
L4212720	M20	1.5	16.0	16	31.5	92	5		
L4212730	M20	1.0	16.0	16	31.0	92	5		

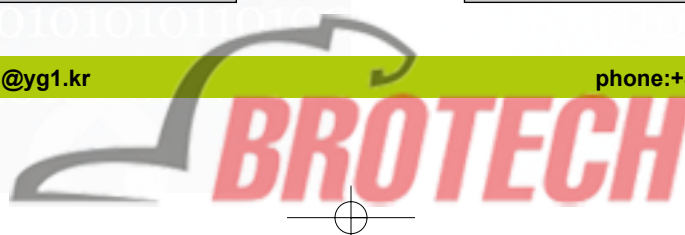
\* Other coatings are available on your request.

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Heat Treated Steels	High Hardened Steel	Cast Iron	Stainless Steels	Titanium Alloy	Chrome-Nickel Alloy	Non Ferrous Materials
◎	◎	◎	◎	◎	○	○	○	◎

◎ : Excellent ○ : Good

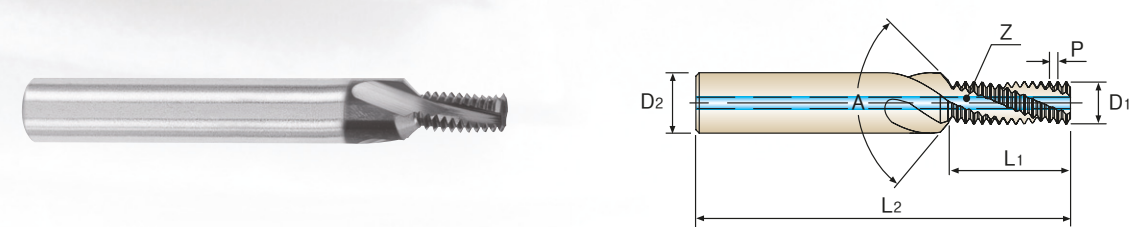
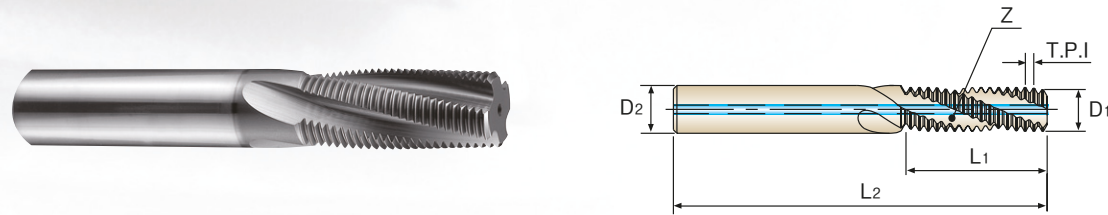
Carbon Steels	Alloy Steels	Heat Treated Steels	High Hardened Steel	Cast Iron	Stainless Steels	Titanium Alloy	Chrome-Nickel Alloy	Non Ferrous Materials
◎	◎	◎	◎	◎	○	○	○	◎





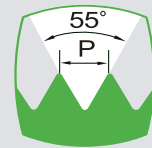
# BSP(G) Solid Carbide Thread Mill with Internal Coolant Hole for BSP(G) Internal/External Thread

# M Solid Carbide Thread Mill with Coolant Hole & Chamfer for ISO Metric Internal Thread - DIN 13



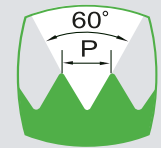
## L6215 SERIES TiAlN

- Material : Solid Carbide
- Shank : DIN6535 HA
- Spiral Angle : 15°
- Internal Coolant Hole



## L4271 SERIES TiAlN

- Material : Solid Carbide
- Shank : DIN6535 HA
- Spiral Angle : 15°
- Thread Length : 2 × D



unit : mm

EDP No.	Nominal Diameter [ D ]	T.P.I	Cutter Diameter	Shank Diameter	Thread Length	Over All Length	No. of Flute
TiAlN			D <sub>1</sub>	D <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	Z
L6215020	1/16"	28	5.9	6	16.3	65	3
L6215200	1/8"	28	7.9	8	20.0	70	4
L6215400	1/4"	19	9.9	10	26.7	80	4
L6215480	3/8"	19	13.9	14	33.4	92	4
L6215560	1/2"	14	15.9	16	43.5	104	5
L6215700	3/4"	14	17.9	18	34.5	100	5
L6215780	1"	11	19.9	20	34.6	100	5

\* Other coatings are available on your request.

unit : mm

EDP No.	Nominal Diameter [ D ]	Pitch	Cutter Diameter	Shank Diameter	Thread Length	Over All Length	Angle	No. of Flute
TiAlN		P	D <sub>1</sub>	D <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	A	Z
L4271310	M6	1.0	4.8	8	12.4	62	90°	3
L4271360	M8	1.25	6.5	10	16.8	74	90°	3
L4271420	M10	1.5	8.2	12	20.15	80	90°	4
L4271500	M12	1.75	9.9	14	25.25	90	90°	4
L4271540	M14	2.0	11.6	16	28.85	100	90°	4
L4271600	M16	2.0	13.6	18	32.85	102	90°	4

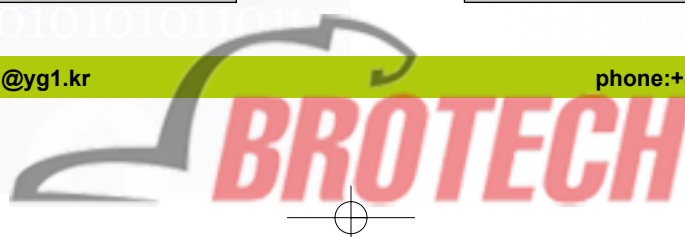
\* Other coatings are available on your request.

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Heat Treated Steels	High Hardened Steel	Cast Iron	Stainless Steels	Titanium Alloy	Chrome-Nickel Alloy	Non Ferrous Materials
◎	◎	◎		◎	○	○	○	◎

◎ : Excellent ○ : Good

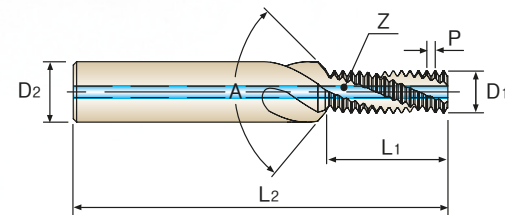
Carbon Steels	Alloy Steels	Heat Treated Steels	High Hardened Steel	Cast Iron	Stainless Steels	Titanium Alloy	Chrome-Nickel Alloy	Non Ferrous Materials
◎	◎	◎		◎	○	○	○	◎





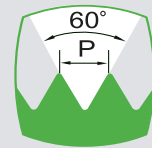
# MF

## Solid Carbide Thread Mill with Coolant Hole & Chamfer for ISO Metric Internal Thread - DIN 13



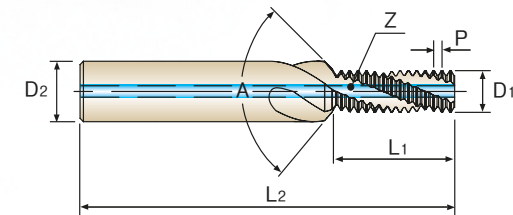
### L4272 SERIES TiAIN

- Material : Solid Carbide
- Shank : DIN6535 HA
- Spiral Angle : 15°
- Thread Length : 1.5 × D



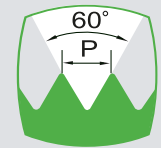
# UNC

## Solid Carbide Thread Mill with Coolant Hole & Chamfer for UNC Internal Thread - ANSI B 1.1



### L4273 SERIES TiAIN

- Material : Solid Carbide
- Shank : DIN6535 HA
- Spiral Angle : 15°
- Thread Length : 2 × D



unit : mm

EDP No.	Nominal Diameter [D]	Pitch P	Cutter Diameter D <sub>1</sub>	Shank Diameter D <sub>2</sub>	Thread Length		Angle A	No. of Flute Z
					L <sub>1</sub>	L <sub>2</sub>		
L4272370	M8	1.0	6.7	10	12.4	74	90°	3
L4272430	M10	1.25	8.3	12	15.9	80	90°	4
L4272440	M10	1.0	8.7	12	15.4	80	90°	4
L4272510	M12	1.5	10.0	14	18.65	90	90°	4
L4272520	M12	1.25	10.3	14	18.3	80	90°	4
L4272530	M12	1.0	10.7	14	18.4	90	90°	4
L4272550	M14	1.5	12.0	16	21.65	100	90°	4
L4272610	M16	1.5	14.0	18	24.65	102	90°	5

\* Other coatings are available on your request.

unit : mm

EDP No.	Nominal Diameter [D]	T.P.I	Cutter Diameter D <sub>1</sub>	Shank Diameter D <sub>2</sub>	Thread Length		Angle A	No. of Flute Z
					L <sub>1</sub>	L <sub>2</sub>		
L4273400	1/4"	20	4.8	8	13.3	62	90°	3
L4273440	5/16"	18	6.2	10	16.18	74	90°	3
L4273480	3/8"	16	7.6	12	19.8	80	90°	4
L4273520	7/16"	14	8.9	12	22.62	80	90°	4
L4273560	1/2"	13	10.3	14	26.32	90	90°	4
L4273600	9/16"	12	11.7	16	30.63	100	90°	4
L4273640	5/8"	11	13.1	18	33.41	102	90°	4
L4273700	3/4"	10	16.0	20	39.29	110	90°	5

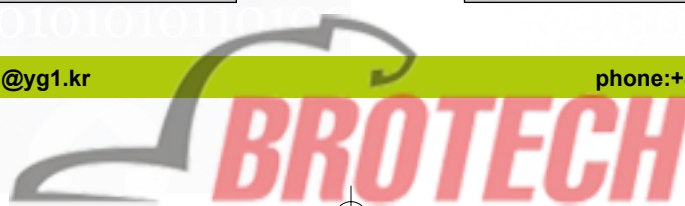
\* Other coatings are available on your request.

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Heat Treated Steels	High Hardened Steel	Cast Iron	Stainless Steels	Titanium Alloy	Chrome-Nickel Alloy	Non Ferrous Materials
◎	◎	◎		◎	○	○	○	◎

◎ : Excellent ○ : Good

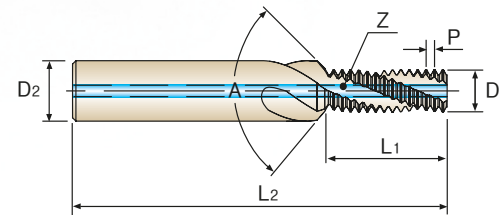
Carbon Steels	Alloy Steels	Heat Treated Steels	High Hardened Steel	Cast Iron	Stainless Steels	Titanium Alloy	Chrome-Nickel Alloy	Non Ferrous Materials
◎	◎	◎		◎	○	○	○	◎





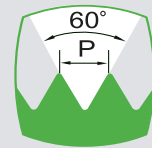
# UNF

Solid Carbide Thread Mill with Coolant Hole & Chamfer for UNF Internal Thread - ANSI B 1.1



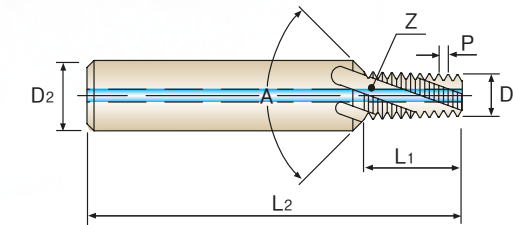
## L4274 SERIES TiAIN

- Material : Solid Carbide
- Shank : DIN6535 HA
- Spiral Angle : 15°
- Thread Length : 2 × D



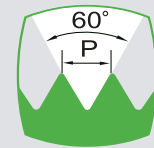
# NPT

Solid Carbide Thread Mill with Coolant Hole & Chamfer for NPT Thread - ANSI B 1.20.1



## L4276 SERIES TiAIN

- Material : Solid Carbide
- Shank : DIN6535 HA
- Spiral Angle : 15°
- Thread Length : 9 × P



unit : mm

EDP No.	Nominal Diameter [D]	T.P.I	Cutter Diameter	Shank Diameter	Thread Length	Over All Length	Angle	No. of Flute
			D <sub>1</sub>	D <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	A	Z
L4274420	1/4"	28	5.1	8	13.21	62	90°	3
L4274460	5/16"	24	6.5	10	16.37	74	90°	3
L4274500	3/8"	24	8.1	12	19.54	80	90°	4
L4274540	7/16"	20	9.4	12	22.19	80	90°	4
L4274580	1/2"	20	11.0	14	26	90	90°	4
L4274620	9/16"	18	12.4	16	28.88	100	90°	4
L4274660	5/8"	18	14.0	18	33.12	102	90°	5
L4274720	3/4"	16	17.0	20	38.86	110	90°	5

\* Other coatings are available on your request.

unit : mm

EDP No.	Nominal Diameter [D]	T.P.I	Cutter Diameter	Shank Diameter	Thread Length	Over All Length	Angle	No. of Flute
			D <sub>1</sub>	D <sub>2</sub>	L <sub>1</sub>	L <sub>2</sub>	A	Z
L4276020	NPT1/16"	27	5.9	10	8.9	64	90°	3
L4276200	NPT1/8"	27	7.8	12	8.9	70	90°	4
L4276400	NPT1/4"	18	10.05	16	13.4	81	90°	4
L4276480	NPT3/8"	18	13.45	18	13.4	81	90°	4

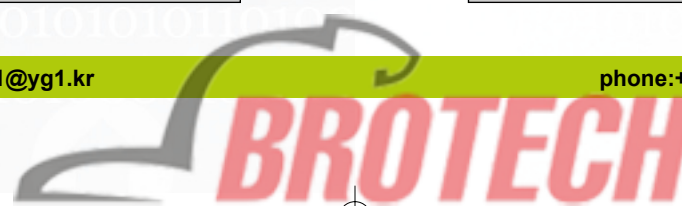
\* Other coatings are available on your request.

⊙ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Heat Treated Steels	High Hardened Steel	Cast Iron	Stainless Steels	Titanium Alloy	Chrome-Nickel Alloy	Non Ferrous Materials
⊙	⊙	⊙		⊙	○	○	○	⊙

⊙ : Excellent ○ : Good

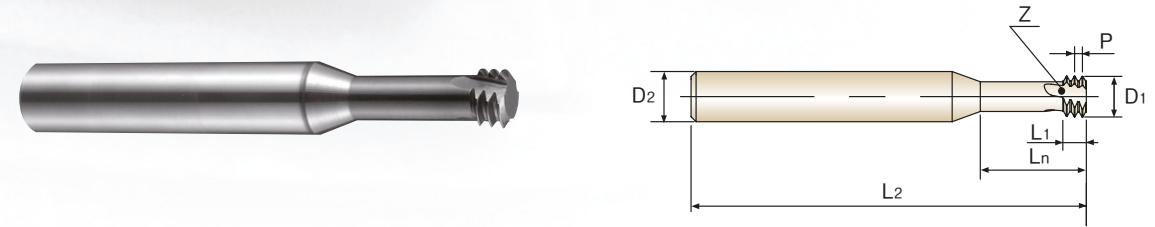
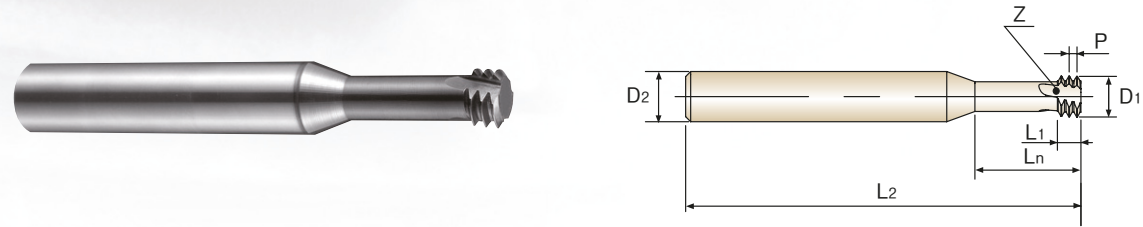
Carbon Steels	Alloy Steels	Heat Treated Steels	High Hardened Steel	Cast Iron	Stainless Steels	Titanium Alloy	Chrome-Nickel Alloy	Non Ferrous Materials
⊙	⊙	⊙		⊙	○	○	○	⊙





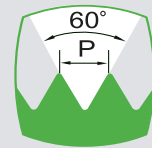
# M Solid Carbide Miniature Thread Mill for ISO Metric Internal Thread - DIN13

# UNC Solid Carbide Miniature Thread Mill for UNC Internal Thread - ANSI B 1.1



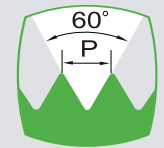
## L12D1 SERIES TiAIN

- Material : Solid Carbide
- Shank : DIN6535 HA
- Spiral Angle : 15°
- Thread Length : 3 × P



## L12D3 SERIES TiAIN

- Material : Solid Carbide
- Shank : DIN6535 HA
- Spiral Angle : 15°
- Thread Length : 3 × P



unit : mm

EDP No.	Nominal Diameter [D]	Pitch	Cutter Diameter	Shank Diameter	Thread Length	Neck Length	Over All Length	No. of Flute
TiAIN		P	D <sub>1</sub>	D <sub>2</sub>	L <sub>1</sub>	L <sub>n</sub>	L <sub>2</sub>	Z
L12D1090	M1.6	0.35	1.18	3	1.05	3.4	30	3
L12D1130	M2	0.4	1.52	6	1.2	4.2	57	3
L12D1150	M2.2	0.45	1.66	6	1.35	4.6	57	3
L12D1170	M2.5	0.45	1.96	6	1.35	5.3	57	3
L12D1200	M3	0.5	2.4	6	1.5	6.3	57	3
L12D1240	M4	0.7	3.16	6	2.1	8.4	57	3
L12D1280	M5	0.8	4.04	6	2.4	10.5	57	3
L12D1310	M6	1.0	4.8	6	3.0	12.6	57	3
L12D1360	M8	1.25	6.5	8	3.75	16.8	63	3
L12D1420	M10	1.5	8.2	10	4.5	21.0	73	3
L12D1500	M12	1.75	9.9	10	5.25	25.2	73	3

\* Other coatings are available on your request.

unit : mm

EDP No.	Nominal Diameter [D]	T.P.I	Cutter Diameter	Shank Diameter	Thread Length	Neck Length	Over All Length	No. of Flute
TiAIN			D <sub>1</sub>	D <sub>2</sub>	L <sub>1</sub>	L <sub>n</sub>	L <sub>2</sub>	Z
L12D3040	#1	64	1.38	6	1.19	3.9	57	3
L12D3080	#2	56	1.64	6	1.36	4.6	57	3
L12D3160	#4	40	2.08	6	1.91	6.0	57	3
L12D3240	#6	32	2.55	6	2.38	7.4	57	3
L12D3280	#8	32	3.21	6	2.38	8.7	57	3
L12D3320	#10	24	3.56	6	3.18	10.1	57	3
L12D3360	#12	24	4.22	6	3.18	11.5	57	3
L12D3400	1/4	20	4.83	6	3.81	13.3	57	3
L12D3440	5/16	18	6.24	8	4.23	16.7	63	3
L12D3480	3/8	16	7.62	8	4.76	20.0	63	3
L12D3520	7/16	14	8.94	10	5.44	23.3	73	3

\* Other coatings are available on your request.

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Heat Treated Steels	High Hardened Steel	Cast Iron	Stainless Steels	Titanium Alloy	Chrome-Nickel Alloy	Non Ferrous Materials
◎	◎	◎		◎	○	○	○	◎

◎ : Excellent ○ : Good

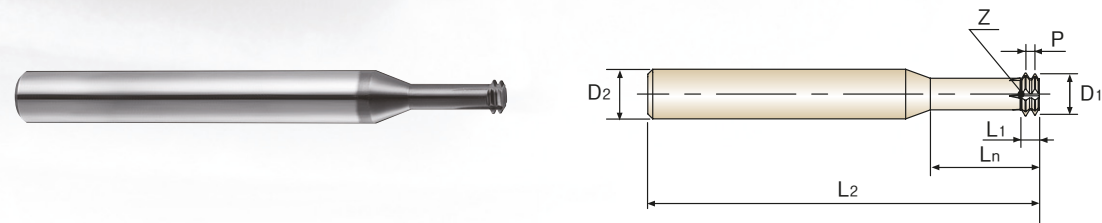
Carbon Steels	Alloy Steels	Heat Treated Steels	High Hardened Steel	Cast Iron	Stainless Steels	Titanium Alloy	Chrome-Nickel Alloy	Non Ferrous Materials
◎	◎	◎		◎	○	○	○	◎





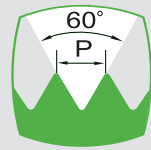
# M

## Solid Carbide Miniature Thread Mill for Hard Materials, ISO Metric Internal Thread - DIN13



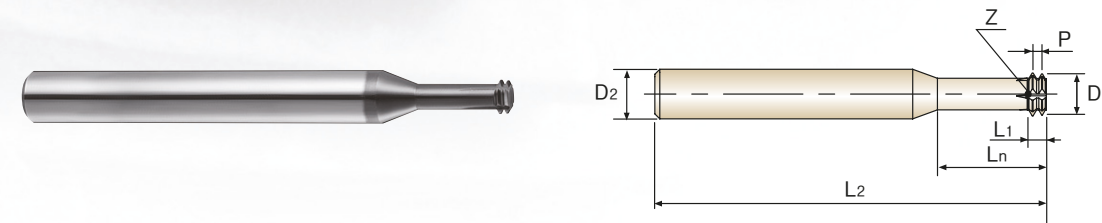
**L19E1 SERIES** AITiN

- Material : Solid Carbide
- Shank : DIN6535 HA
- Left Hand Cut, Straight Flute
- Thread Length :  $2 \times P$
- Left hand Cut (CNC code : M04)
- The work direction is from top to bottom (Climb Milling)
- For hard materials up to HRC62



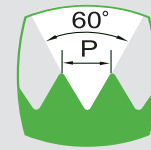
# UNC

## Solid Carbide Miniature Thread Mill for Hard Materials, UNC Internal Thread - ANSI B 1.1



**L19E3 SERIES** AITiN

- Material : Solid Carbide
- Shank : DIN6535 HA
- Left Hand Cut, Straight Flute
- Thread Length :  $2 \times P$
- Left hand Cut (CNC code : M04)
- The work direction is from top to bottom (Climb Milling)
- For hard materials up to HRC62



unit : mm

EDP No. AITiN	Nominal Diameter [D]	Pitch P	Cutter Diameter D <sub>1</sub>	Shank Diameter D <sub>2</sub>	Thread Length L <sub>1</sub>	Neck Length L <sub>n</sub>	Over All Length L <sub>2</sub>	No. of Flute Z
L19E1130	M2	0.4	1.52	6	0.8	4.2	57	4
L19E1150	M2.2	0.45	1.66	6	0.9	4.6	57	4
L19E1170	M2.5	0.45	1.96	6	0.9	5.3	57	4
L19E1200	M3	0.5	2.4	6	1.0	6.3	57	4
L19E1240	M4	0.7	3.16	6	1.4	8.4	57	4
L19E1280	M5	0.8	4.04	6	1.6	10.5	57	4
L19E1310	M6	1.0	4.8	6	2.0	12.6	57	5
L19E1360	M8	1.25	6.5	8	2.5	16.8	63	5
L19E1420	M10	1.5	8.2	10	3.0	21.0	73	6
L19E1500	M12	1.75	9.9	10	3.5	25.2	73	6

\* Other coatings are available on your request.

unit : mm

EDP No. AITiN	Nominal Diameter [D]	T.P.I	Cutter Diameter D <sub>1</sub>	Shank Diameter D <sub>2</sub>	Thread Length L <sub>1</sub>	Neck Length L <sub>n</sub>	Over All Length L <sub>2</sub>	No. of Flute Z
L19E3080	#2	56	1.64	6	0.91	4.6	57	4
L19E3160	#4	40	2.08	6	1.27	6.0	57	4
L19E3240	#6	32	2.55	6	1.59	7.4	57	4
L19E3280	#8	32	3.21	6	1.59	8.7	57	4
L19E3320	#10	24	3.56	6	2.12	10.1	57	4
L19E3360	#12	24	4.22	6	2.12	11.5	57	4
L19E3400	1/4	20	4.83	6	2.54	13.3	57	5
L19E3440	5/16	18	6.24	8	2.82	16.7	63	5
L19E3480	3/8	16	7.62	8	3.18	20.0	63	6
L19E3520	7/16	14	8.94	10	3.63	23.3	73	6

\* Other coatings are available on your request.

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Heat Treated Steels	High Hardened Steel	Cast Iron	Stainless Steels	Titanium Alloy	Chrome-Nickel Alloy	Non Ferrous Materials
	○	◎	◎	◎	○	○	◎	

◎ : Excellent ○ : Good

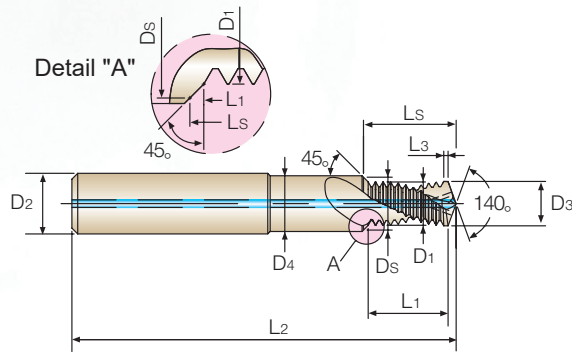
Carbon Steels	Alloy Steels	Heat Treated Steels	High Hardened Steel	Cast Iron	Stainless Steels	Titanium Alloy	Chrome-Nickel Alloy	Non Ferrous Materials
	○	◎	◎	◎	○	○	◎	





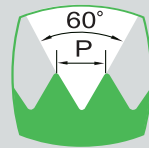
# M

## Solid Carbide Drill and Thread Mill with Chamfer for ISO Metric Internal Thread - DIN 13



**L41A1 SERIES** UNCOATED  
**L42A1 SERIES** TiAIN

- Material : Solid Carbide
- Shank : DIN6535 HA
- Thread Length : 2 × D
- No. of Flute : 2
- 140° Drill Point, 90° Countersink
- Drilling, Chamfering and Thread milling



## RECOMMENDED CUTTING SPEED

### RECOMMENDED CUTTING CONDITION for Thread Mills

unit : mm

Material	Hardness (HB)	Strength (N/mm <sup>2</sup> )	Cutting Speed (m/min)	Feed per Tooth (fz)	
				Cutter Diameter ≤ Ø8.0	Cutter Diameter > Ø8.0
Low Carbon Steel Medium Carbon Steel	≤ 200	≤ 700	80 - 120	0.02 - 0.04	0.04 - 0.10
High Carbon Steel	≤ 250	≤ 850	80 - 120	0.02 - 0.04	0.04 - 0.10
Alloy Steel	≤ 250	≤ 850	80 - 120	0.02 - 0.04	0.04 - 0.10
Heat Treated Steel	≤ 400	≤ 1400	60 - 100	0.02 - 0.04	0.04 - 0.10
Stainless Steel	≤ 300	≤ 1000	40 - 80	0.01 - 0.02	0.02 - 0.06
Cast Iron	≤ 300	≤ 1000	50 - 100	0.02 - 0.04	0.04 - 0.10
Chrome-Nickel Alloys Titanium Alloys	≤ 350	≤ 1200	20 - 60	0.01 - 0.02	0.02 - 0.06
Non Ferrous Material	≤ 200	≤ 700	100 - 300	0.03 - 0.07	0.05 - 0.10

### RECOMMENDED CUTTING CONDITION for Drill and Thread Mills

unit : mm

Material	Hardness (HB)	Strength (N/mm <sup>2</sup> )	Cutting Speed (m/min)	Fz(Threading) - Feed per tooth		Fdr(Drilling) - Feed per revolution	
				Cutter Diameter ≤ Ø8.0	Cutter Diameter > Ø8.0	Cutter Diameter ≤ Ø8.0	Cutter Diameter > Ø8.0
Cast Iron	≤ 200	≤ 700	80-150	0.03-0.08	0.08-0.12	0.10-0.20	0.20-0.25
Aluminium-alloy Magnesium	≤ 180	≤ 600	100-300	0.05-0.10	0.10-0.15	0.10-0.20	0.20-0.30
Plastics	-	-	80-150	0.05-0.10	0.10-0.15	0.10-0.20	0.20-0.30

### RECOMMENDED CUTTING CONDITION for Hard Material Miniature Thread Mills

unit : mm

Material	Hardness (HB)	Strength (N/mm <sup>2</sup> )	Cutting Speed (m/min)	Feed per Tooth (fz)	
				Cutter Diameter ≤ Ø3.0	Cutter Diameter > Ø3.0
Alloy Steel	295 ~ 415HB	1000 ~ 1400	80-120	0.02-0.04	0.04-0.06
Stainless Steel	280 ~ 415HB	950 ~ 1250	40-80	0.02-0.04	0.04-0.06
Cast Iron	≤ HB300	≤ 1000	50-100	0.03-0.05	0.05-0.07
Chrome-Nickel Alloys Titanium Alloys	≤ HB445	≤ 1500	20-60	0.02-0.03	0.03-0.05
Hardened Material	45~50HRc		25-70	0.03-0.05	0.05-0.07
	51~55HRc		25-60	0.02-0.04	0.04-0.06
	56~62HRc		25-50	0.01-0.03	0.03-0.05

unit : mm

EDP No.		Nominal Diameter [D]	Pitch P	Cutter Diameter D1	Shank Diameter D2	Effect. Diameter Ds	Drill Diameter D3	Max. C'sink D4	Thread Length L1	Effect. Length Ls	Drill Length L3	Over All Length L2
UNCOATED	TiAIN											
L41A1310	L42A1310	M6	1.0	4.75	8	6.3	5.00	6.6	13.00	14.68	1.00	62
L41A1360	L42A1360	M8	1.25	6.35	10	8.3	6.75	9.0	16.27	18.48	1.25	74
L41A1420	L42A1420	M10	1.5	7.95	12	10.3	8.50	11.0	21.05	23.77	1.50	79
L41A1500	L42A1500	M12	1.75	9.95	14	12.3	10.25	13.5	24.21	27.25	1.50	89
L41A1540	L42A1540	M14	2.0	11.20	16	14.3	12.00	15.5	29.58	33.32	1.50	102

\* Other coatings are available on your request.

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Heat Treated Steels	High Hardened Steel	Cast Iron	Stainless Steels	Titanium Alloy	Chrome-Nickel Alloy	Non Ferrous Materials
				◎				◎





## TO CALCULATE SPEED & FEED RATES

### Calculate R.P.M of cutter

$$N = \frac{1000 \times V}{d \times \pi}$$

### Calculate Feed per Revolution

$$F_1 = fz \times Z \times N$$

### Finally Calculate Feed at Tool Center Line

$$F_2 = \frac{F_1 \times (D - d)}{D}$$

**N** : R.P.M

**V** : Recommended Cutting Speed

**d** : Diameter of Cutter

**fz** : Recommended Feed per Tooth

**Z** : Number of Teeth

**F<sub>2</sub>** : Feed at Center Line of Cutting

**F<sub>1</sub>** : Feed at Cutting Edge

**D** : Major Diameter of Component

## THREAD MILLS

Solid Carbide Thread Mill without Coolant Hole  
 Solid Carbide Thread Mill with Coolant Hole  
 Solid Carbide Thread Mill with Coolant Hole & Chamfer  
 Solid Carbide Miniature Thread Mill  
 Solid Carbide Drill and Thread Mill

