

# 9 Thread Mills / Premium Thread Mills

Cutter dia.	Overall length	Thread length	Thread+Neck length	Shank dia.
Dc	L	$\ell$	$\ell_n$	Ds

JIS

①

Spiral Fluted Taps  
(for blind hole)

②

Spiral Fluted Taps  
(for through hole)

③

Spiral Pointed Taps  
(for through hole)

④

Hand Taps

⑤

Cemented  
Carbide Taps

⑥

Roll Taps

⑦

Special Thread Taps  
Simple Inspection Tools

⑧

Pipe Taps

⑨

Thread Mills  
Premium Thread Mills

⑩

Dies

⑪

Center Drills  
Centering Tools

⑫

Precision Machinery/  
Medical Surgical Instruments

JIS

⑨-5

Z-PRO

## PRML TI

Z-PRO

Premium Thread Mills for Heat-Resistant Alloys

Specification

HF

Coating

<2D

Tapping Speeds depending on Materials

Stainless steels  
ステンレス鋼  
**60~80**  
(m/min)

Titanium alloy  
チタン合金  
**40~60**  
(m/min)



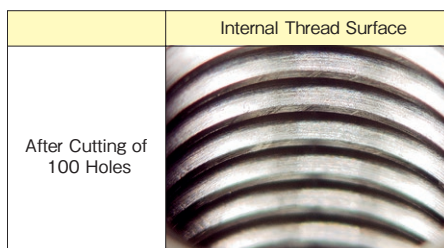
### Product Features

- The same PRML TI can process right and left hand internal threads by using the helical interpolating process.
- This is most suitable for tapping heat-resistant alloys.
- Because it cuts at the first thread, it won't make the internal threads taper and the internal threads become highly accurate.
- When cutting, the load on the tool is small and the tool life is long.
- Cutting resistance is reduced by turning the tool counterclockwise and machining it from the top to the bottom with 1 pass cutting.

### Cutting Data

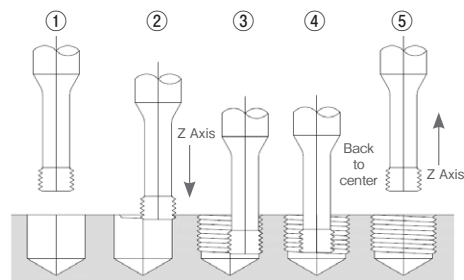
Processing Conditions [6.0P1.0]

Workpiece Material	Ti-6Al-4V
Cutting Speed	50m/min
Feed per Tooth	0.04mm/t
Cutting Length	10mm
Bored Hole Size	φ7.0
Number of Passes	1Time
Machinery Type	Machining center (BT30)
Cutting Fluid	Water soluble cutting fluid, 20 to 1 dilution



### Instructions

Use a counterclockwise spindle rotation for a left hand cutting tool. Process from top to the bottom like ② ~ ③. The program can be created from our web site.



### Processing Conditions:

Workpiece Material	Cutting Speed (m/min)	Feed per Tooth fz (mm/t)
Titanium Alloy	40 ~ 60	0.02 ~ 0.06
Austenitic Stainless Steel	60 ~ 80	0.06 ~ 0.08
Martensitic Stainless Steel	40 ~ 60	0.02 ~ 0.06

- 1) These cutting conditions are based on water soluble cutting fluid. Depending on the condition of the cutting fluid, satisfactory performance may not be delivered.
  - 2) Being careful of the nozzle position, supply enough oil obliquely from above the tool during use.
- Formulas for revolution speed and feed speed of tool  
 Revolution speed ( $\text{min}^{-1}$ ) =  $1000 \times \text{Cutting speed} / 3.14 / \text{Cutter dia. (Dc)}$   
 Feed speed (mm/min) =  $fz \times \text{No. of flutes} \times \text{Revolution speed} \times (\text{Nominal dia. of internal thread} - \text{Cutter dia. (Dc)}) / \text{Nominal dia. of internal thread}$

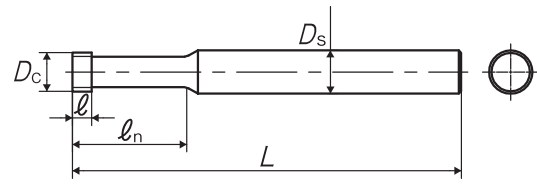
Think threads with  
**YAMAWA**

Cutter dia.	Overall length	Thread length	Thread+Neck length	Shank dia.
Dc	L	$\ell$	$\ell_n$	Ds

9

JIS

TYPE: 1

Spiral Fluted Taps  
(for blind hole)

①

Spiral Fluted Taps  
(for through hole)

②

Spiral Pointed Taps  
(for through hole)

③

Hand Taps

④

Cemented  
Carbide Taps

⑤

Roll Taps

⑥

Special Thread Taps  
Simple Inspection Tools

⑦

Pipe Taps

⑧

Thread Mills  
Premium Thread Mills

⑨

Dies

⑩

Center Drills  
Centering Tools

⑪

Precision Machinery/  
Medical Surgical Instruments

⑫

Segment : 1L

Tool No.	Code	Dc (mm)	Pitch (mm)	L (mm)	$\ell$ (mm)	$\ell_n$ (mm)	Ds (mm)	No. of flutes	Min. size	Max. threading length	TYPE	MSRP
For Metric Threads												
1.5P0.4	MH1.5ENIWLM	1.5	0.4	50	1.2	5.2	4	3	2	4	1	¥ 21,400
1.7P0.45	MH1.7FNIWLM	1.7	0.45	50	1.4	5.8	4	3	2.2	4.4	1	¥ 21,400
2.4P0.5	MH2.4GNIWLM	2.4	0.5	50	1.5	7.5	4	3	3	6	1	¥ 17,800
3.1P0.7	MH3.1NIWLM	3.1	0.7	50	2.1	10.1	4	3	4	8	1	¥ 17,800
3.5P0.8	MH3.5KNIWLM	3.5	0.8	60	2.4	12	6	3	5	10	1	¥ 16,200
4.0P1.0	MH4.0MNIWLM	4.0	1	60	3	14	6	3	6	12	1	¥ 16,200
4.0P0.75	MH4.0JNIWLM	4.0	0.75	60	2.3	14	6	3	6	12	1	¥ 16,200
6.0P1.25	MH6.0NNIWLM	6	1.25	70	3.8	18	6	4	8	16	1	¥ 20,200
6.0P1.0	MH6.0MNIWLM	6	1	70	3	18	6	4	8	16	1	¥ 20,200
7.5P1.5	MH7.5ONIWLM	7.5	1.5	80	4.5	22	8	4	10	20	1	¥ 21,100
7.5P1.25	MH7.5NNIWLM	7.5	1.25	80	3.8	22	8	4	10	20	1	¥ 21,100
7.5P1.0	MH7.5MNIWLM	7.5	1	80	3	22	8	4	10	20	1	¥ 21,100
9.0P1.75	MH9.0PNIWLM	9	1.75	90	5.3	26	10	4	12	24	1	¥ 24,100
9.0P1.5	MH9.0ONIWLM	9	1.5	90	4.5	26	10	4	12	24	1	¥ 24,100
9.0P1.25	MH9.0NNIWLM	9	1.25	90	3.8	26	10	4	12	24	1	¥ 24,100

Tool No.	Code	Dc (mm)	Number of threads	L (mm)	$\ell$ (mm)	$\ell_n$ (mm)	Ds (mm)	No. of flutes	Min. size	Max. threading length	TYPE	MSRP
For Unified Threads												
5.8U18	MH5.8ONIWLU	5.8	18	70	4.2	17.9	6	4	5/16	15.9	1	¥ 20,200
5.8U24	MH5.8MNIWLU	5.8	24	70	3.2	21.1	6	4	5/16	19.1	1	¥ 20,200
6.0U16	MH6.0PNIWLU	6	16	70	4.8	21.1	6	4	3/8	19.1	1	¥ 20,200
8.0U14	MH8.0QNIWLU	8	14	80	5.4	24.2	8	4	7/16	22.2	1	¥ 21,100
8.0U20	MH8.0NNIWLU	8	20	80	3.8	27.4	8	4	7/16	25.4	1	¥ 21,100
9.0U13	MH9.0RNIWLU	9	13	90	5.9	27.4	10	4	1/2	25.4	1	¥ 24,100