

9 Thread Mills / Premium Thread Mills

Cutter dia.	Overall length	Thread length	Thread+Neck length	Shank dia.
Dc	L	ℓ	ℓn	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

⑨-3

Z-PRO PRML

Z-PRO Premium Thread Mills

Specification



Tapping Speeds depending on Materials

Low carbon steels 低炭素鋼	Medium carbon steels 中炭素鋼	High carbon steels 高炭素鋼	Alloy steels 合金鋼	Thermal refined steels 調質鋼	Thermal refined steels 調質鋼	Cast irons 鑄鉄	Ductile cast irons 強靱鑄鉄
60~100 (m/min)	60~100 (m/min)	40~100 (m/min)	40~100 (m/min)	40~100 (m/min)	40~100 (m/min)	40~100 (m/min)	40~100 (m/min)
				25~35HRC	35~45HRC		

Product Features

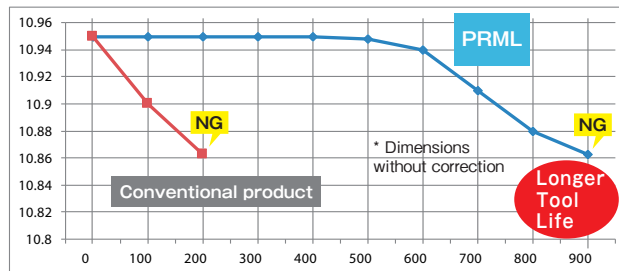
- The same PRML can process right and left hand internal threads by using the helical interpolating process.
- Because it cuts at the first thread, it won't make the internal threads taper and the internal threads become highly accurate.
- When cutting, the load on the tool is small and the tool life 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

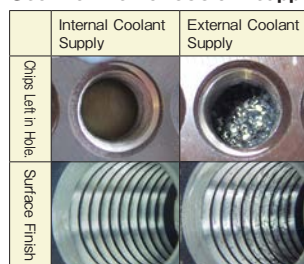
Processing Conditions [9.0P1.75 M12×1.75]

Workpiece Material	SCM440 (30HRC)
Cutting Speed	100m/min
Feed per Tooth	0.06mm/t
Cutting Length	24mm
Bored Hole Size	φ10.3
Number of Passes	1Time
Machinery Type	Tapping center (BT 30)
Cutting Fluid	Water soluble cutting fluid, 20 to 1 dilution

Pitch diameter change graph



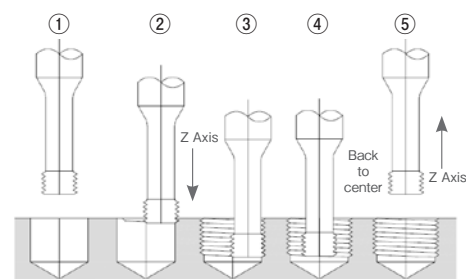
Use the internal coolant supply for blind hole applications.



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:

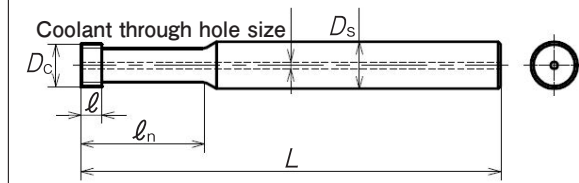
Workpiece Material	Cutting Speed (m/min)	Feed per Tooth fz (mm/t)
Thermal refined steel 35 ~ 45HRC	40 ~ 100	0.02 ~ 0.05
Thermal refined steel 25 ~ 35HRC	40 ~ 100	0.03 ~ 0.06
Cast Iron FC	40 ~ 100	0.02 ~ 0.05
Ductile Cast Iron FCD	40 ~ 100	0.02 ~ 0.05
Alloy Steel SCM	40 ~ 100	0.04 ~ 0.06
High Carbon Steel S45C ~	40 ~ 100	0.04 ~ 0.06
Medium Carbon Steel S25C ~ S45C	60 ~ 100	0.03 ~ 0.05
Low Carbon Steel ~ S20C / SS400	60 ~ 100	0.03 ~ 0.05

◇ Tool feed speed calculation formula

Feed speed (mm/min) = fz x No. of flutes x Revolution speed x
(Nominal dia. of internal thread - Cutter dia. (Dc)) / Nominal dia. of internal thread

Cutter dia.	Overall length	Thread length	Thread+Neck length	Shank dia.
Dc	L	ℓ	ℓ_n	Ds

TYPE: 1



Segment : 1L

Tool No.	Code	Dc (mm)	Pitch (mm)	L (mm)	ℓ (mm)	ℓ_n (mm)	Ds (mm)	No. of flutes	Coolant hole size (mm)	Min. size	Max. threading length	TYPE	MSRP
For Metric Threads													
3.5P0.8	MH3.5KNEXLM	3.5	0.8	60	2.4	12	6	3	0.5	5	10	1	¥ 16,200
4.0P1.0	MH4.0MNEXLM	4	1	60	3	14	6	3	0.5	6	12	1	¥ 16,200
4.0P0.75	MH4.0JNEXLM	4	0.75	60	2.3	14	6	3	0.5	6	12	1	¥ 16,200
6.0P1.25	MH6.0NNEXLM	6	1.25	70	3.8	18	6	4	1	8	16	1	¥ 22,100
6.0P1.0	MH6.0MNEXLM	6	1	70	3	18	6	4	1	8	16	1	¥ 22,100
7.5P1.5	MH7.5ONEXLM	7.5	1.5	80	4.5	22	8	4	1	10	20	1	¥ 23,100
7.5P1.25	MH7.5NNEXLM	7.5	1.25	80	3.8	22	8	4	1	10	20	1	¥ 23,100
7.5P1.0	MH7.5MNEXLM	7.5	1	80	3	22	8	4	1	10	20	1	¥ 23,100
9.0P1.75	MH9.0PNEXLM	9	1.75	90	5.3	26	10	4	1.5	12	24	1	¥ 26,400
9.0P1.5	MH9.0ONEXLM	9	1.5	90	4.5	26	10	4	1.5	12	24	1	¥ 26,400
9.0P1.25	MH9.0NNEXLM	9	1.25	90	3.8	26	10	4	1.5	12	24	1	¥ 26,400

Tool No.	Code	Dc (mm)	Number of threads	L (mm)	ℓ (mm)	ℓ_n (mm)	Ds (mm)	No. of flutes	Coolant hole size (mm)	Min. size	Max. threading length	TYPE	MSRP
For Unified Threads													
3.5U24	MH3.5MNEXLU	3.5	24	60	3.2	11.7	6	3	0.5	No10	9.7	1	¥ 16,200
3.5U32	MH3.5JNEXLU	3.5	32	60	2.4	11.7	6	3	0.5	No10	9.7	1	¥ 16,200
4.5U20	MH4.5NNEXLU	4.5	20	60	3.8	14.7	6	4	0.5	1/4	12.7	1	¥ 17,900
4.5U28	MH4.5KNEXLU	4.5	28	60	2.7	14.7	6	4	0.5	1/4	12.7	1	¥ 17,900
5.8U18	MH5.8ONEXLU	5.8	18	70	4.2	17.9	6	4	1	5/16	15.9	1	¥ 22,100
5.8U24	MH5.8MNEXLU	5.8	24	70	3.2	21.1	6	4	1	5/16	19.1	1	¥ 22,100
6.0U16	MH6.0PNEXLU	6	16	70	4.8	21.1	6	4	1	3/8	19.1	1	¥ 22,100
8.0U14	MH8.0QNEXLU	8	14	80	5.4	24.2	8	4	1	7/16	22.2	1	¥ 23,100
8.0U20	MH8.0NNEXLU	8	20	80	3.8	27.4	8	4	1	7/16	25.4	1	¥ 23,100
9.0U13	MH9.0RNEXLU	9	13	90	5.9	27.4	10	4	1.5	1/2	25.4	1	¥ 26,400

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