

PRML SERIES

Outstanding thread surface and high accuracy
with the innovative PRML thread mills



• Premium Thread Mills •

Z-PRO

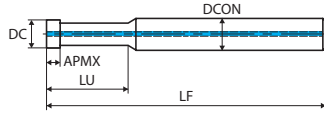
PRML



Ultra micro grain cemented carbide Premium thread mills

- Internal threading tool with left hand cut
- 3 threads length

Dimensions and sizes



TP: Thread Pitch - TPI: Thread per Inch

DC x TP	Minimum thread size	Minimum processable size (mm)	Maximum threading depth (mm)	Code	DC (mm)	TP (mm)	LF (mm)	APMX (mm)	LU (mm)	DCON (mm)	ZEFB
M											
3.5X0.8	5	5.000	10	MH3.5KNEXLM	3.5	0.8	60	2.4	12	6	3
4X1	6	6.000	12	MH4.0MNEXLM	4	1	60	3	14	6	3
4X0.75	6	6.000	12	MH4.0JNEXLM	4	0.75	60	2.3	14	6	3
6X1.25	8	8.000	16	MH6.0MNEXLM	6	1.25	70	3.8	18	6	4
6X1	8	8.000	16	MH6.0MNEXLM	6	1	70	3	18	6	4
7.5X1.5	10	10.000	20	MH7.5ONEXLM	7.5	1.5	80	4.5	22	8	4
7.5X1.25	10	10.000	20	MH7.5NNEXLM	7.5	1.25	80	3.8	22	8	4
7.5X1	10	10.000	20	MH7.5MNEXLM	7.5	1	80	3	22	8	4
9X1.75	12	12.000	24	MH9.0PNEXLM	9	1.75	90	5.3	26	10	4
9X1.5	12	12.000	24	MH9.0ONEXLM	9	1.5	90	4.5	26	10	4
9X1.25	12	12.000	24	MH9.0NNEXLM	9	1.25	90	3.8	26	10	4

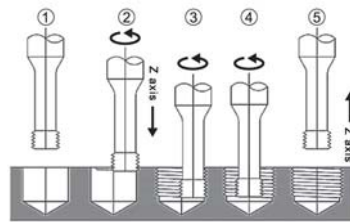
DC x TPI	Minimum thread size	Minimum processable size (mm)	Maximum threading depth (mm)	Code	DC (mm)	TPI (mm)	LF (mm)	APMX (mm)	LU (mm)	DCON (mm)	ZEFB
U											
3.5X24	No.10	4.826	9.7	MH3.5MNEXLU	3.5	24	60	3.2	11.7	6	3
3.5X32	No.10	4.826	9.7	MH3.5JNEXLU	3.5	32	60	2.4	11.7	6	3
4.5X20	1/4	6.350	12.7	MH4.5NNEXLU	4.5	20	60	3.8	14.7	6	4
4.5X28	1/4	6.350	12.7	MH4.5KNEXLU	4.5	28	60	2.7	14.7	6	4
5.8X18	5/16	7.938	15.9	MH5.8ONEXLU	5.8	18	70	4.2	17.9	6	4
5.8X24	5/16	7.938	19.1	MH5.8MNEXLU	5.8	24	70	3.2	21.1	6	4
6X16	3/8	9.525	19.1	MH6.0PNEXLU	6	16	70	4.8	21.1	6	4
8X14	7/16	11.112	22.2	MH8.0QNEXLU	8	14	80	5.4	24.2	8	4
8X20	7/16	11.112	25.4	MH8.0NNEXLU	8	20	80	3.8	27.4	8	4
9X13	1/2	12.700	25.4	MH9.0RNEXLU	9	13	90	5.9	27.4	10	4

Parameters

Work-materials	Vc (m/min)	fz (mm/z)
Thermal Refined Steel 35 to 45HRC	40-100	0.02-0.05
Thermal Refined Steel 25 to 35HRC	40-100	0.03-0.06
Grey Cast Iron	40-100	0.02-0.05
Nodular Cast Iron	40-100	0.02-0.05
Alloy Steel	40-100	0.04-0.06
High Carbon Steel	40-100	0.04-0.06
Medium Carbon Steel	60-100	0.03-0.05
Low Carbon Steel	60-100	0.03-0.05

Product features

The PRML is a left hand cutting tool. The tool rotates counter clockwise. The PRML feeds in the Z axis from the top as shown below.

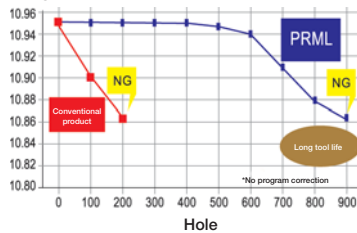


Process data

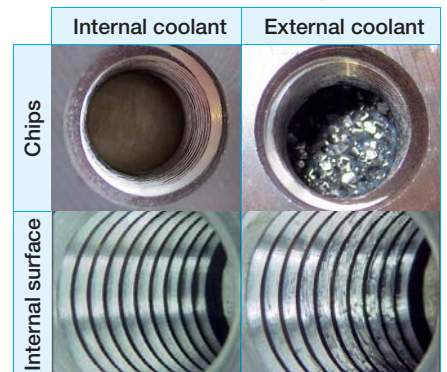
Process Conditions: PRML 9.0P1.75 M12x1.75

Work-material	42CrMo4 (30HRC)
Cutting Speed	100 m/min
Feed per tooth fz	0.06 mm/t
Cutting Depth	24 mm
Hole diameter	φ10.3
Number of passes	1
Machine	Machining Center (BT30)
Tapping oil	Water soluble oil (5%)

Degradation of Pitch Diameter



Internal coolant is recommended for blind hole thread milling



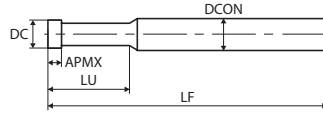
PRML TI



Ultra fine cemented carbide Premium thread mill for heat resistant alloys

- Internal threading tool with left hand cut
- 3 threads length

Dimensions and sizes



TP: Thread Pitch - TPI: Thread per Inch

DC x TP	Minimum thread size	Minimum processable size (mm)	Maximum threading depth (mm)	Code	DC (mm)	TP (mm)	LF (mm)	APMX (mm)	LU (mm)	DCON (mm)	ZEFB
M											
6X1.25	8	8.000	16	MH6.0NNIWL	6	1.25	70	3.8	18	6	4
6X1	8	8.000	16	MH6.0MNIWL	6	1	70	3	18	6	4
7.5X1.5	10	10.000	20	MH7.5ONIWL	7.5	1.5	80	4.5	22	8	4
7.5X1.25	10	10.000	20	MH7.5NNIWL	7.5	1.25	80	3.8	22	8	4
7.5X1	10	10.000	20	MH7.5MNIWL	7.5	1	80	3	22	8	4
9X1.75	12	12.000	24	MH9.0PNIWL	9	1.75	90	5.3	26	10	4
9X1.5	12	12.000	24	MH9.0ONIWL	9	1.5	90	4.5	26	10	4
9X1.25	12	12.000	24	MH9.0NNIWL	9	1.25	90	3.8	26	10	4

DC x TPI	Minimum thread size	Minimum processable size (mm)	Maximum threading depth (mm)	Code	DC (mm)	TPI (mm)	LF (mm)	APMX (mm)	LU (mm)	DCON (mm)	ZEFB
U											
5.8X18	5.8	7.938	15.9	MH5.8ONIWL	5.8	18	70	4.2	17.9	6	4
5.8X24	5.8	7.938	19.1	MH5.8MNIWL	5.8	24	70	3.2	21.1	6	4
6X16	6	9.525	19.1	MH6.0PNIWL	6	16	70	4.8	21.1	6	4
8X14	8	11.112	22.2	MH8.0QNIWL	8	14	80	5.4	24.2	8	4
8X20	8	11.112	25.4	MH8.0NNIWL	8	20	80	3.8	27.4	8	4
9X13	9	12.700	25.4	MH9.0RNIWL	9	13	90	5.9	27.4	10	4

Parameters

Work-materials	Vc (m/min)	fz (mm/z)
Titanium alloys	40-60	0.02-0.06
Austenitic stainless steel	60-80	0.06-0.08
Low Carbon Steel	40-60	0.02-0.06

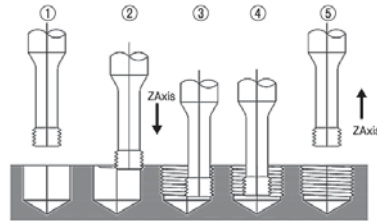
Speed:

Rotation speed (min-1) = 1000 X Cutting speed / 3.14 / PRML TI diameter (Dc)

Feed rate (mm/min) = fz X Number of flutes X Rotational speed X (internal nominal diameter - PRML TI diameter (Dc)) / Thread nominal diameter.

Product features

The PRML TI is a left hand cutter, please use a counterclockwise spindle rotation. Process the thread from top to bottom like 2 to 3. For programming, please visit Yamawa.com.

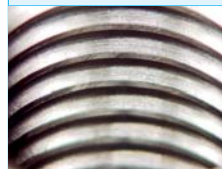


Process data

Process conditions: 6.0 P1.0 (Code: MH6.0MNIWL)

Work-material	TiAl6V4
Cutting Speed	50 m/min
Feed per flute fz	0.04 mm/t
Threading length	10 mm
Hole diameter	φ7.0
Number of passes	1
Machine	Machining Center (BT30)
Tapping oil	Water soluble oil (5%)

Threading length



Excellent thread surface even after 100 hole threaded!

WARNING

- Tools may shatter. Wear cover or eye glass to avoid injury during tapping.
- Tools may shatter. Use tools under the proper tapping condition.
- Never wear gloves during turning operations as the gloves may get caught with the tools.
- Wear safety shoes to avoid injuring yourself by the falling tools.
- On attaching tools to the machine, fasten firmly to avoid shattering and run-out.
- Fasten the workpieces firmly so that they never move during operation. Never use worn tools or damaged tools with chipping.
- Take a special care to fire trouble. High temperature during machining may cause fire.



