

MHRZ

Medium Hard

Z-PRO
Ultimate Machining Taps

JIS

Z-PRO
M6~M20

**Expansion of long shank taps !
for M6~M16**

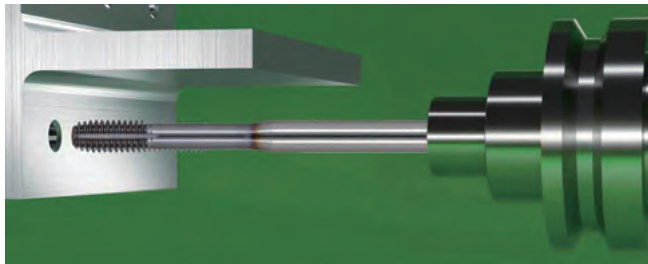


Now, the worrries about tapping carbon steels
and alloy steels of medium hardness have gone.

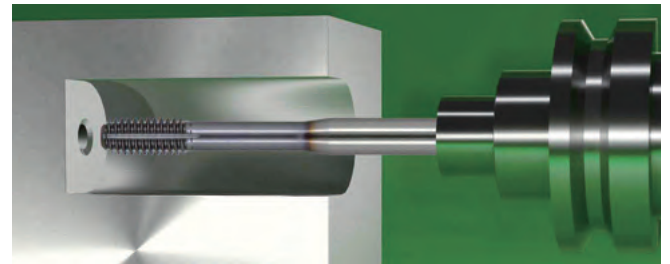


Product Features

- Torque reduction is achieved from the new design and specifications.
- Tool life is dramatically improved with superb tool materials and coatings offering excellent wear resistance.
- Stable screw thread tapping in thermal refined material up to 35 HRC.
- The MHRZ roll taps can be used with water soluble cutting fluid.
- Secures appropriate tool projection length to prevent interference with workpieces



Obstacle



Deep position

Benefits of Z-PRO Dimension

- A longer overall length enables a better supply of cutting fluid, resulting in an excellent surface finish of internal threads.

Comparison of Z-PRO and JIS Shape.

Z-PRO
Shape

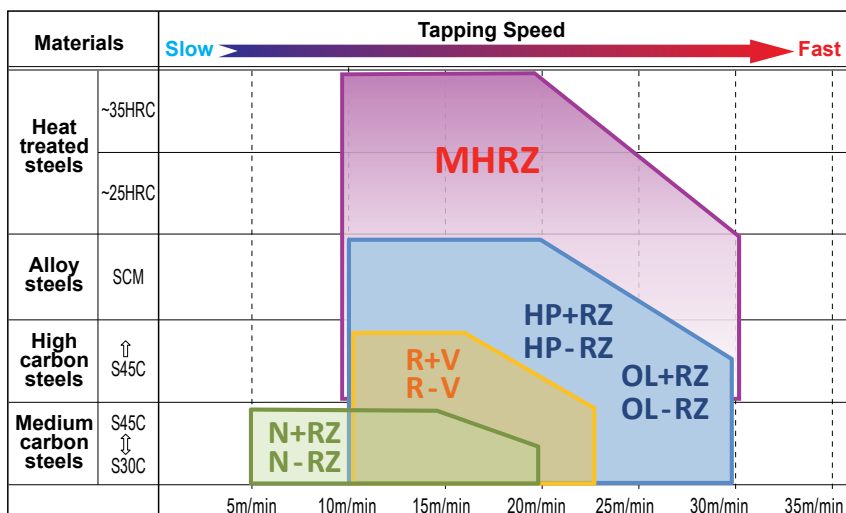
JIS
Shape



The longer tool projection allows...

a better external lubrication, resulting in an excellent surface finish of internal threads.

Machining Area



No more worries!!



◆ By adopting roll taps, the worries about the problems caused by chips are completely solved.

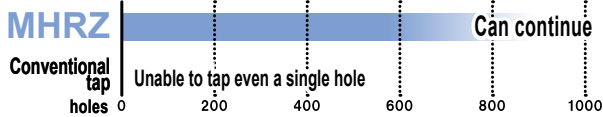


◆ A great improvement in surface finish of internal threads

Tapping Data / Tapping Torque / Machining Examples

base material with excellent durability and high level of abrasion resistance together with optimal coating are used

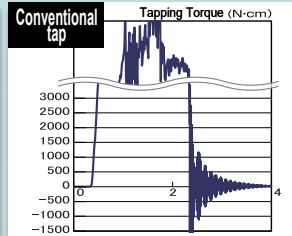
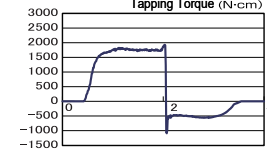
Longer tool life is realized.



Size	M12×1.5	Tapping Length	18mm (through hole)
Workpiece Material	SCM440 / 35HRC	Machine	MC (full synchronous feed)
Tapping Speed	20m/min	Tapping Fluid	Water soluble cutting fluid
Bored Hole Size	Φ11.3mm	Number of Holes	800holes

Uniquely developed thread specifications succeeded in reducing torque

Torque comparison with conventional products



Comparison of Internal Threads with Cutting Taps



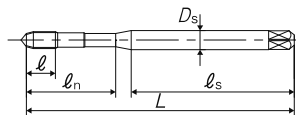
Examples of Tapping Data

MHRZ	Workpiece Material	Tapping Conditions/Tapping Result							Remarks
Nominal Size	Material Symbol (Hardness)	Bored Hole Size (mm)	Tapping Length (mm)(★)	Machine	Tapping Speed (m/min)	Feed Mechanism	Tapping Fluid	Tool Life (Holes/pcs)	Status of Conventional Tap / Parts
M 6 X 1	SUS316	5.60	9 (1.5D)	CNC	28	Synchronized	Non-water soluble	10,000	GP.NG. at 5000 holes Automobile parts
M 6 X 1	S55C	5.55	15 (2.5D)	MC	26	Synchronized	Water soluble	6,000	Random breakage Shaft parts
M 6 X 1	SCM420H (30HRC)	5.55	6 (1D)	MC	20	Synchronized	Water soluble	2,000	Galling occurred on internal threads. Gear parts
M 6 X 1	SCM435 (30HRC)	5.55	6 (1D)	MC	10	Synchronized	Non-water soluble	4,800	Replaced due to premature wear. Automobile parts
M 8 X 1.25	Aluminum alloy castings (200HBW)	7.50	16 (2D)	MC	30	Synchronized	Water soluble	16,000	Chipping occurred at 15,000 holes. Automobile parts
M10 X 1.5	SCr420 (30HRC)	9.40	35 (3.5D)	MC	10	Synchronized	Non-water soluble	860	Chipping occurred at 80 holes. Automobile parts

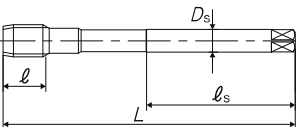
★(D) indicates the ratio of the tapping length to the outside diameter.

Shapes and Dimension

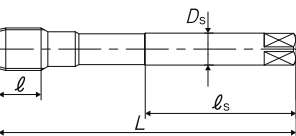
TYPE:1



TYPE:2



TYPE:3

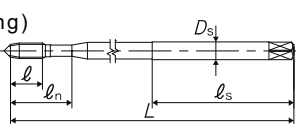


Nominal Size	Class	Code	Chamfer	L (mm)	ℓ (mm)	ℓn (mm)	ℓs (mm)	Ds (mm)	TYPE	MSRP (JPY)
◎ M6X1	G8	1110101055	4P	80	11	30	45	6	1	4,620
		1111101055	2P							
◎ M8X1.25	G8	1110101064	4P	90	12	-	46	6.2	2	6,080
		1111101064	2P							
◎ M10X1.5	G8	1110101078	4P	100	13	-	51	7	2	7,680
		1111101078	2P							
◎ M10X1.25	G8	1110101079	4P	100	13	-	51	7	2	7,680
		1111101079	2P							
◎ M12X1.75	G8	1110101088	4P	110	15	-	56	8.5	2	10,100
		1111101088	2P							
◎ M12X1.5	G8	1110101089	4P	110	15	-	56	8.5	2	10,100
		1111101089	2P							
◎ M12X1.25	G8	1110101090	4P	110	15	-	56	8.5	2	10,100
		1111101090	2P							
◎ M14X1.5	G9	1110101102	4P	110	18	-	56	10.5	2	13,800
		1111101102	2P							
◎ M16X1.5	G9	1110101116	4P	110	18	-	56	12.5	2	17,900
		1111101116	2P							
◎ M18X1.5	G10	1110101130	4P	125	20	-	64	14	2	22,500
		1111101130	2P							
◎ M20X1.5	G10	1110101144	4P	140	20	-	71	15	3	32,500
		1111101144	2P							

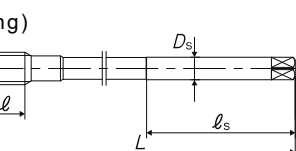
◎ . . . Additional Size

Long

TYPE:4(Long)



TYPE:5(Long)



Nominal Size	Class	Code	Chamfer	L (mm)	ℓ (mm)	ℓn (mm)	ℓs (mm)	Ds (mm)	TYPE	MSRP (JPY)
◎ M6X1	G8	2110101055	4P	100	11	30	45	6	4	5,960
		2111101055	2P							
		2310101055	4P	150						8,600
		2311101055	2P							
◎ M8X1.25	G8	2110101064	4P	150	12	-	46	6.2	5	10,300
		2111101064	2P							
◎ M10X1.5	G8	2110101078	4P	150	13	-	51	7	5	12,100
		2111101078	2P							
◎ M10X1.25	G8	2110101079	4P	150	13	-	51	7	5	12,100
		2111101079	2P							
◎ M12X1.75	G8	2110101088	4P	150	15	-	56	8.5	5	14,400
		2111101088	2P							
◎ M12X1.5	G8	2110101089	4P	150	15	-	56	8.5	5	14,400
		2111101089	2P							
◎ M12X1.25	G8	2110101090	4P	150	15	-	56	8.5	5	14,400
		2111101090	2P							
◎ M14X1.5	G9	2110101102	4P	150	18	-	56	10.5	5	19,200
		2111101102	2P							
◎ M16X1.5	G9	2110101116	4P	150	18	-	56	12.5	5	20,200
		2111101116	2P							

◎ . . . Additional Size

For M6 and smaller, external centers of 2 thread chamfer taps are removed.
Number of oil grooves: M6=5, M8=6, M10 and larger=8

Roll Taps for Carbon Steels of Medium Hardness

MHRZ-J

M6~M20

HSS-Co

Coating

2~4

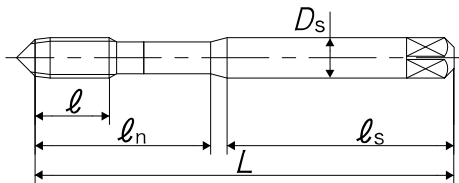
Medium carbon steels
10~30
(m/min)High carbon steels
10~30
(m/min)Alloy steels
10~30
(m/min)Thermal refined steels
10~20
(m/min)

25~35HRC

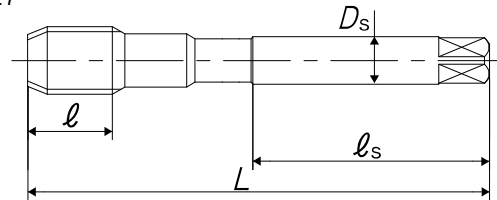


Shapes and dimension

TYPE:6



TYPE:7



Nominal Size	Class	Code	Chamfer	L (mm)	l (mm)	ln (mm)	ls (mm)	Ds (mm)	TYPE	MSRP (YEN)
M6X1	G8	RY6.0M8OCTP	4P	62	11	26	33	6	6	4,510
		RY6.0M8OCTB	2P							
M8X1.25	G8	RY8.0N8OCTP	4P	70	12	-	36	6.2	7	6,120
		RY8.0N8OCTB	2P							
M10X1.5	G8	RY010O8OCTP	4P	75	13	-	38	7	7	7,400
		RY010O8OCTB	2P							
M10X1.25	G8	RY010N8OCTP	4P	75	13	-	38	7	7	7,400
		RY010N8OCTB	2P							
M12X1.75	G8	RY012P8OCTP	4P	82	15	-	42	8.5	7	11,400
		RY012P8OCTB	2P							
M12X1.5	G8	RY012O8OCTP	4P	82	15	-	42	8.5	7	11,400
		RY012O8OCTB	2P							
M12X1.25	G8	RY012N8OCTP	4P	82	15	-	42	8.5	7	11,400
		RY012N8OCTB	2P							
M14X1.5	G9	RY014O9OCTP	4P	88	18	-	45	10.5	7	15,400
		RY014O9OCTB	2P							
M16X1.5	G9	RY016O9OCTP	4P	95	18	-	48	12.5	7	19,300
		RY016O9OCTB	2P							
M18X1.5	G10	RY018OOOCTP	4P	100	20	-	51	14	7	27,100
		RY018OOOCTB	2P							
M20X1.5	G10	RY020OOOCTP	4P	105	20	-	50	15	7	31,800
		RY020OOOCTB	2P							

For M6 and smaller, external centers of 2 thread chamfer taps are removed. Number of oil grooves: M6=5, M8=6, M10 and larger=8

Warning

- ◆Tools may shatter. Wear cover or eye glasses 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 chattering and run-out.
- ◆Fasten the work pieces 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.

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