Think threads with YAMAWA

PM PIPE SERIES

Ideal for tapping material such as plastic mold steels with hardness of 30-45HRC !!

PMST OX Rc(PT)
PMSP OX Rc(PT)

Product Features

PMST OX Rc(PT)

HSS-P OX

PMSP OX Rc(PT)

HSS-P OX

▪Application

Yamawa's PM taper pipe taps are suitable for tapping hardened mold steels with a hardness of 30-45HRC

Work material		Recommended tapping speeds (m/min)
S136H	AISI420ESR (30~36HRC)	~5
718H	AISI P20 (36~42HRC)	~5

●Made with DIN length blanks.
The DIN length provides excellent chip evacuation.

●Made with our new powder metals HSS.
Powder metals HSS has excellent wear resistance.

●Cutting surfaces have oxidization treatment.
Oxidization treatment (OX) is applied to the surface treatment which has excellent welding resistance.

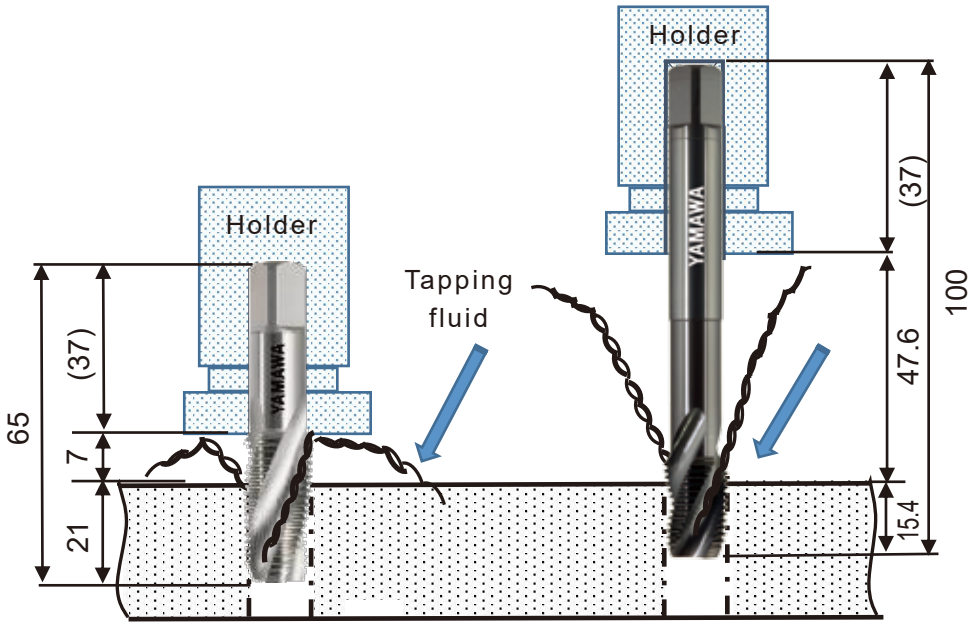
●Unique cutting edge design is suitable for high hardness materials.

DIN overall length provides excellent chip evacuation.

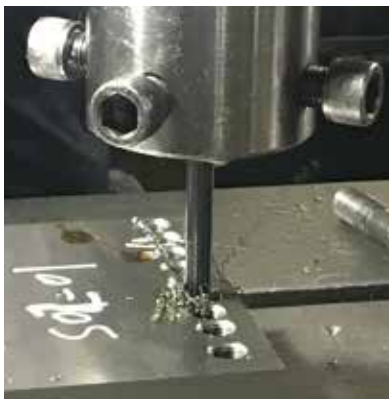
Ex.PT/Rc 3/8-19

JIS overall length SP-PT

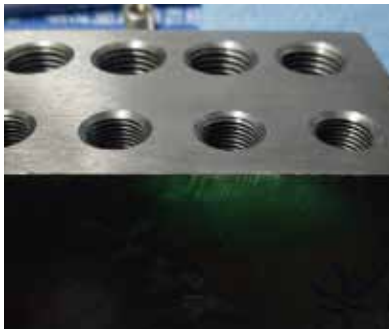
DIN overall length PMSP OX Rc



Good chip evacuation



Good surface finish



Benefits of DIN overall length

- Chips do not interfere with the holder.
- Tapping fluid can also be supplied directly to the taps cutting edges.

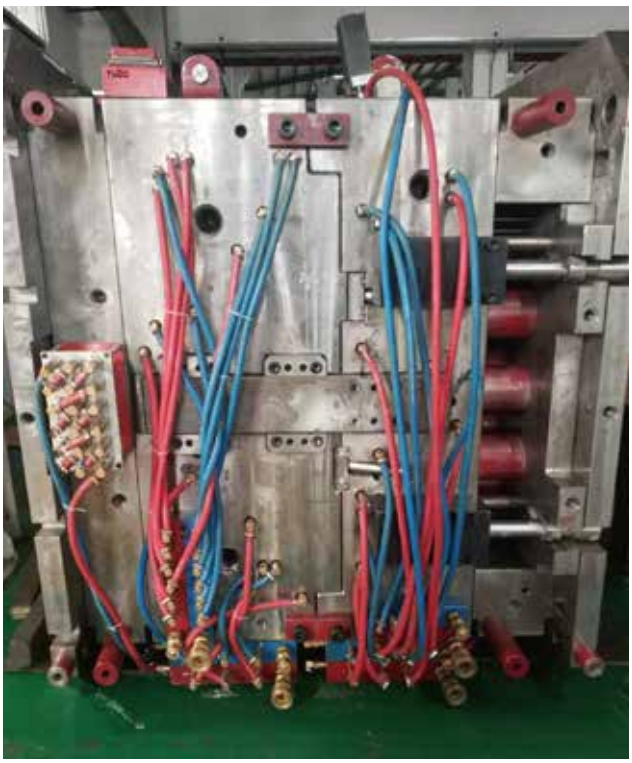
Case reference

What is a plastic mold?

Many items such as refrigerators, washing machines, TVs, home appliances smartphones, automobiles, construction machines, ships, airplanes and other transportation equipment, have components which are produced in molds.

The injection mold is widely used in many industries for producing plastic products.
Injection mold is a molding method in which molten plastic is injected into a mold. It is then cooled to solidify, and then the finished part is removed from the mold.
Cooling holes are required for cooling molded products. Taper pipe screws are used at the entrance of the cooling holes.
The screw size depends on the size of the molded product. Most common sizes are 1/8 or 1/4 of Rc (PT) but can range up to 1 inch.

Plastic mold



Plastic mold cooling holes

Several Rc (PT) screws are used for cooling holes.

With the mold having a hardness of 30~45HRC, and the fact that it has tapered threads, it can causes tapping issues such as torn threads, premature wear of taps, along with chipping and breakage of taps.
With such tapping conditions in mind, the products we have developed are PMST OX Rc and PMSP OX Rc, which are taps for PM pipe threads.

Shape comparison of Rc and PT taps

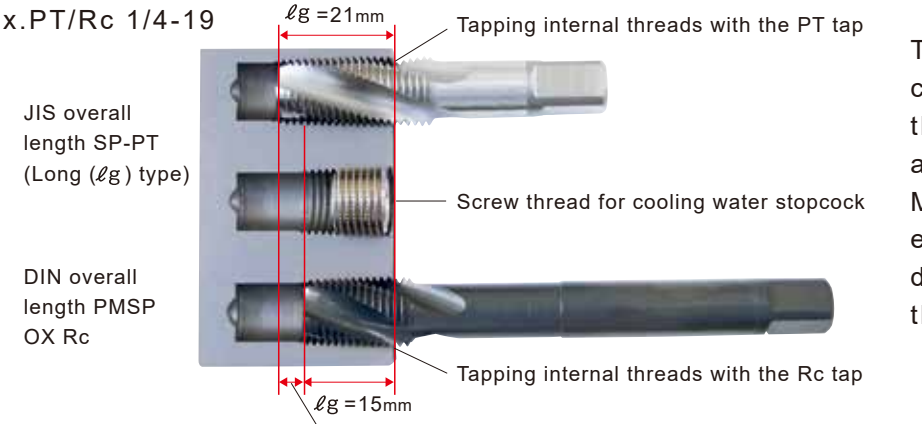
Shape comparison table of "PMST OX Rc / PMSP OX Rc" and "SP-PT (Long (ℓg) type)"

Nominal size	PMST OX Rc / PMSP OX Rc tap shape			
	L (mm)	ℓ (mm)	ℓg (mm)	Ds (mm)
Rc 1/16-28	90	14	10.1	8
Rc 1/8-28	90	15	10.1	8
Rc 1/4-19	100	19	15	11
Rc 3/8-19	100	21	15.4	14
Rc 1/2-14	125	26	20.5	18
Rc 3/4-14	140	28	21.8	23
Rc 1-11	160	33	26	26

Nominal size	SP-PT tap (Long (ℓg) type) shape			
	L (mm)	ℓ (mm)	ℓg (mm)	Ds (mm)
PT 1/16-28	55	19	13	8
PT 1/8-28	55	19	13	8
PT 1/4-19	62	28	21	11
PT 3/8-19	65	28	21	14
PT 1/2-14	80	35	25	18
PT 3/4-14	85	35	25	23
PT 1-11	95	45	32	26

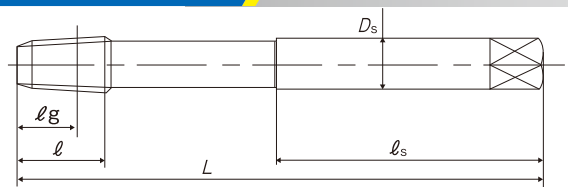
Comparison of Rc and PT

Ex.PT/Rc 1/4-19



The photo on the left is a comparison of internal threads tapped with the PT and Rc taps.
Machining with an Rc tap eliminates the need to tap deeper by matching the threads to be fitted.

Tap shapes and dimensions



Nominal size	Product code		Chamfer	Basic major dia.	L (mm)	ℓ (mm)	ℓg (mm)	ℓs (mm)	Ds (mm)	No. of flutes	
	ST	SP								ST	SP
Rc(PT) 1/8-28	TJRC020DPX	SJRC020DPX	2.5P	9.728	90	15	10.1	46	8	4	3
Rc(PT) 1/4-19	TJRC040DPX	SJRC040DPX	2.5P	13.157	100	19	15	51	11	4	3
Rc(PT) 3/8-19	TJRC060DPX	SJRC060DPX	2.5P	16.662	100	21	15.4	51	14	4	3
Rc(PT) 1/2-14	TJRC080DPX	SJRC080DPX	2.5P	20.955	125	26	20.5	64	18	4	4
Rc(PT) 3/4-14	TJRC120DPX	SJRC120DPX	2.5P	26.441	140	28	21.8	71	23	4	4
Rc(PT) 1-11	-	SJRC160DPX	2.5P	33.249	160	33	26	82	26	-	4

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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YAMAWA group for Overseas

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ISO 9001 JQA-QMA14664

ISO 14001 JQA-EM3465