

③ Spiral Pointed Tap Series for through hole

Overall length	Thread length	Shank length	Shank dia.	Size of square	Length of square
L	ℓ	ℓs	Ds	K	ℓk

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

Z-PRO

HVPO ZP



Z-PRO

Hybrid Value Spiral Pointed Taps for Zinc Plating

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	Stainless steels ステンレス鋼	Cast steels 鋳鋼
3~12 (m/min)	3~12 (m/min)	3~12 (m/min)	3~12 (m/min)	3~10 (m/min)	~5 (m/min)	3~12 (m/min)

25~35HRC

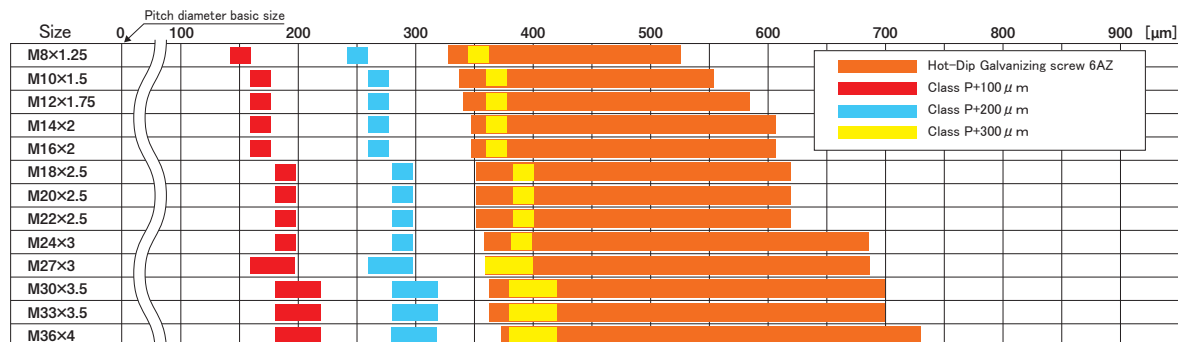
Product Features

- We have a standard line-up of optimum tap classes for tapping internal threads before zinc plating.
- We have commercialized three types of oversize tap classes in great market demand for different purposes: +0.1 mm, +0.2 mm, and +0.3 mm.
- Specifications are based on HVPO (Hybrid Value Pointed Taps), so you can use them for various workpiece materials and machines.
- Stable tapping without chipping can be achieved in both vertical and horizontal tapping.

Uses of Products

HVPO ZP taps are used mainly for tapping internal threads before plating to prevent rust and corrosion on parts for roads, bridges, and other large buildings. In zinc plating, HVPO ZP taps are used for tapping internal threads that have a large plating thickness.

Comparison Table of Pitch Diameter Tolerance Zones between taps' classes and internal thread classes (for Hot-Dip Galvanizing)



※M8 × 1.25 was calculated according to the formula for dimensional tolerances that will be the basis for the tolerance zone classes 6AZ specified in JIS B 0209-5.
・ The above graph is an excerpt from JIS B 0209-5 "Limits of sizes for internal screw threads to mate with hot-dip galvanized external screw threads with maximum size of tolerance position h before galvanizing," which shows a pitch diameter comparison between the limits of sizes for internal threads of tolerance zone class 6AZ and the classes of tap HVPO ZP.
・ For example, to satisfy the tolerance zone class 6AZ in the case of a nominal size of M10 × 1.5, this indicates that using class P+300 μm would be appropriate.
・ Since the plating thickness varies with the plating type and method, the required internal thread diameter may deviate from the above standards. Therefore, for HVPO ZP, we have prepared standard options of class P+100 μm (+0.1 mm), class P+200 μm (+0.2 mm), and class P+300 μm (+0.3 mm), which are in high demand in the market.

Reference Bored Hole Size Chart

It is recommended to drill a larger tap drill hole before zinc plating, taking into account the plating thickness.

Please refer to the following, and confirm the final dimensions.

unit: mm

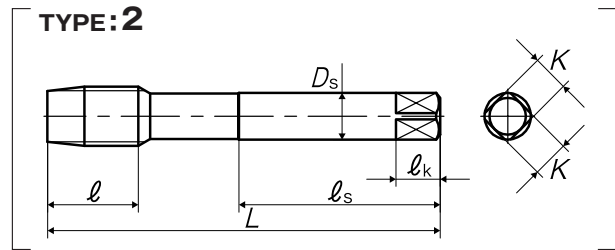
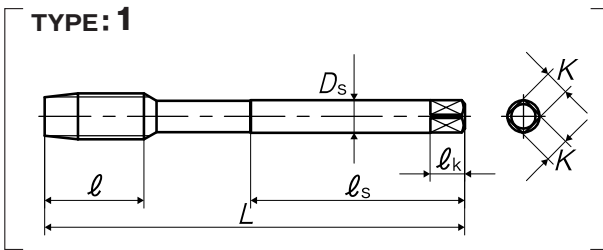
Size	Oversize bored hole size (reference)			Internal thread Class 6H Min. minor diameter
	Oversize+0.1mm	Oversize+0.2mm	Oversize+0.3mm	
M8 × 1.25	6.95	7.05	7.15	6.647
M10 × 1.5	8.70	8.80	8.90	8.376
M12 × 1.75	10.5	10.6	10.7	10.106
M14 × 2	12.2	12.3	12.4	11.835
M16 × 2	14.2	14.3	14.4	13.835
M18 × 2.5	15.7	15.8	15.9	15.294
M20 × 2.5	17.7	17.8	17.9	17.294
M22 × 2.5	19.7	19.8	19.9	19.294
M24 × 3	21.2	21.3	21.4	20.752
M27 × 3	24.2	24.3	24.4	23.752
M30 × 3.5	26.7	26.8	26.9	26.211
M33 × 3.5	29.7	29.8	29.9	29.211
M36 × 4	32.2	32.3	32.4	31.670

Think threads with
YAMAWA

Overall length	Thread length	Shank length	Shank dia.	Size of square	Length of square
L	ℓ	ℓ_s	Ds	K	ℓ_k

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JIS



Segment : 1C

Size	Class	Code	Chamfer	L (mm)	ℓ (mm)	ℓ_s (mm)	Ds (mm)	K (mm)	ℓ_k (mm)	No. of flutes	TYPE	MSRP
For Metric Threads												
M8 × 1.25	P3+0.1	1122201064	5P	90	19	46	6.2	5	8	3	1	¥ 3,110
M8 × 1.25	P3+0.2	1122301064	5P	90	19	46	6.2	5	8	3	1	¥ 3,110
M8 × 1.25	P3+0.3	1122401064	5P	90	19	46	6.2	5	8	3	1	¥ 3,110
M10 × 1.5	P4+0.1	1122201078	5P	100	23	51	7	5.5	8	3	1	¥ 4,070
M10 × 1.5	P4+0.2	1122301078	5P	100	23	51	7	5.5	8	3	1	¥ 4,070
M10 × 1.5	P4+0.3	1122401078	5P	100	23	51	7	5.5	8	3	1	¥ 4,070
M12 × 1.75	P4+0.1	1122201088	5P	110	26	56	8.5	6.5	9	3	1	¥ 5,460
M12 × 1.75	P4+0.2	1122301088	5P	110	26	56	8.5	6.5	9	3	1	¥ 5,460
M12 × 1.75	P4+0.3	1122401088	5P	110	26	56	8.5	6.5	9	3	1	¥ 5,460
M14 × 2	P4+0.1	1122201100	5P	110	26	56	10.5	8	11	3	1	¥ 7,480
M14 × 2	P4+0.2	1122301100	5P	110	26	56	10.5	8	11	3	1	¥ 7,480
M14 × 2	P4+0.3	1122401100	5P	110	26	56	10.5	8	11	3	1	¥ 7,480
M16 × 2	P4+0.1	1122201114	5P	110	26	56	12.5	10	13	3	1	¥ 9,970
M16 × 2	P4+0.2	1122301114	5P	110	26	56	12.5	10	13	3	1	¥ 9,970
M16 × 2	P4+0.3	1122401114	5P	110	26	56	12.5	10	13	3	1	¥ 9,970
M18 × 2.5	P5+0.1	1122201128	5P	125	33	64	14	11	14	3	1	¥ 13,400
M18 × 2.5	P5+0.2	1122301128	5P	125	33	64	14	11	14	3	1	¥ 13,400
M18 × 2.5	P5+0.3	1122401128	5P	125	33	64	14	11	14	3	1	¥ 13,400
M20 × 2.5	P5+0.1	1122201141	5P	140	33	71	15	12	15	3	2	¥ 18,200
M20 × 2.5	P5+0.2	1122301141	5P	140	33	71	15	12	15	3	2	¥ 18,200
M20 × 2.5	P5+0.3	1122401141	5P	140	33	71	15	12	15	3	2	¥ 18,200
M22 × 2.5	P5+0.1	1122201156	5P	140	33	71	17	13	16	3	2	¥ 23,000
M22 × 2.5	P5+0.2	1122301156	5P	140	33	71	17	13	16	3	2	¥ 23,000
M22 × 2.5	P5+0.3	1122401156	5P	140	33	71	17	13	16	3	2	¥ 23,000
M24 × 3	P5+0.1	1122201167	5P	160	37	82	19	15	18	3	2	¥ 28,700
M24 × 3	P5+0.2	1122301167	5P	160	37	82	19	15	18	3	2	¥ 28,700
M24 × 3	P5+0.3	1122401167	5P	160	37	82	19	15	18	3	2	¥ 28,700
M27 × 3	P5+0.1	1122201186	5P	160	37	82	20	15	18	4	2	¥ 40,700
M27 × 3	P5+0.2	1122301186	5P	160	37	82	20	15	18	4	2	¥ 40,700
M27 × 3	P5+0.3	1122401186	5P	160	37	82	20	15	18	4	2	¥ 40,700
M30 × 3.5	P5+0.1	1122201199	5P	180	44	92	23	17	20	4	2	¥ 51,600
M30 × 3.5	P5+0.2	1122301199	5P	180	44	92	23	17	20	4	2	¥ 51,600
M30 × 3.5	P5+0.3	1122401199	5P	180	44	92	23	17	20	4	2	¥ 51,600
M33 × 3.5	P5+0.1	1122201211	5P	180	46	92	25	19	22	4	2	¥ 60,100
M33 × 3.5	P5+0.2	1122301211	5P	180	46	92	25	19	22	4	2	¥ 60,100
M33 × 3.5	P5+0.3	1122401211	5P	180	46	92	25	19	22	4	2	¥ 60,100
M36 × 4	P6+0.1	1122201225	5P	200	52	102	28	21	24	4	2	¥ 69,300
M36 × 4	P6+0.2	1122301225	5P	200	52	102	28	21	24	4	2	¥ 69,300
M36 × 4	P6+0.3	1122401225	5P	200	52	102	28	21	24	4	2	¥ 69,300

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Center Drills
Centering Tools ⑪Precision Machinery/
Metal Surgical Instruments ⑫