

HVSP

Spiral fluted taps for large
forged parts in the heavy
metalworking industry

First choice taps for large diameter blind hole.

• HVSP •

Z-PRO
Ultimate Machine Tap Series

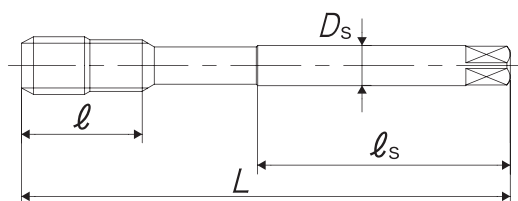


Spiral fluted taps for large parts in heavy industries

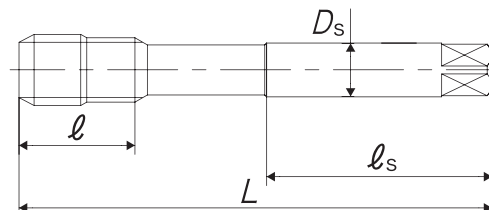


Dimensions and sizes

(M12~M22)



(M24~M48) (1-8UNC~2-8UN)



Size Dc x Ø x Ds	Class	L	l	l _s	D _s	No. of flutes	Drill size	Product code
M12 x 1.75	ISO2X(6HX)	110	26	56	9	3	10.30	SG012PSEEXJ
M14 x 2	ISO2X(6HX)	110	26	56	11	3	12.00	SG014QSEEXJ
M16 x 2	ISO2X(6HX)	110	26	56	12	3	14.00	SG016QSEEXJ
M18 x 2.5	ISO2X(6HX)	125	33	64	14	4	15.50	SG018RTEEXJ
M20 x 2.5	ISO2X(6HX)	140	33	71	16	4	17.50	SG020RTEEXJ
M22 x 2.5	ISO2X(6HX)	140	33	71	18	4	19.50	SG022RTEEXJ
M24 x 3	ISO2X(6HX)	160	37	82	18	4	21.00	SG024STEEXJ
M27 x 3	ISO2X(6HX)	160	37	82	20	4	24.00	SG027STEEXJ
M30 x 3.5	ISO2X(6HX)	180	44	92	22	4	26.50	SG030TBEEXJ
M33 x 3.5	ISO2X(6HX)	180	46	92	25	4	29.50	SG033TBEEXJ
M36 x 4	ISO2X(6HX)	200	52	102	28	4	36.00	SG036UBEEXJ
M39 x 4	ISO2X(6HX)	200	52	102	32	4	35.00	SG039UBEEXJ
M42 x 4.5	ISO2X(6HX)	200	59	102	32	4	37.50	SG042VBEEXJ
M48 x 5	ISO2X(6HX)	250	65	128	36	4	43.00	SG048WBEEXJ
M30 x 3	ISO2X(6HX)	180	44	92	22	4	27.00	SM030SUEEXJ
M33 x 3	ISO2X(6HX)	180	46	92	25	4	30.00	SM033SUEEXJ
M36 x 3	ISO2X(6HX)	200	52	102	28	4	33.00	SM036SUEEXJ
M39 x 3	ISO2X(6HX)	200	52	102	32	4	36.00	SM039SUEEXJ
M42 x 3	ISO2X(6HX)	200	59	102	32	4	39.00	SM042SUEEXJ
M48 x 3	ISO2X(6HX)	225	49	115	36	4	45.00	SM048SUEEXJ
1-8UNC	2BX	160	37	82	18	4	22.30	SGU16XYEEXJ
1 1/8-7UNC	2BX	180	44	92	22	4	25.00	SGU18YYEEXJ
1 1/4-7UNC	2BX	180	49	92	22	4	28.20	SGU20YYEEXJ
1 3/8-6UNC	2BX	200	55	102	28	4	30.80	SGU22ZYEEXJ
1 1/2-6UNC	2BX	200	59	102	32	4	34.00	SGU24ZYEEXJ
1 3/4-5UNC	2BX	220	65	112	36	4	39.50	SGU280YEEXJ
2-4.5UNC	2BX	250	73	128	40	4	45.30	SGU329YEEXJ
1 1/8-8UN	2BX	180	44	77	22	4	25.40	SMU18XYEEXJ
1 1/4-8UN	2BX	180	49	92	22	4	28.60	SMU20XYEEXJ
1 3/8-8UN	2BX	200	55	102	28	4	31.80	SMU22XYEEXJ
1 1/2-8UN	2BX	200	59	102	32	4	35.00	SMU24XYEEXJ
1 3/4-8UN	2BX	200	49	102	36	4	41.30	SMU28XYEEXJ
2-8UN	2BX	250	73	128	40	4	47.80	SMU32XYEEXJ
1-12UNF	2BX	140	27	71	18	4	23.30	SMU16SYEEXJ
1 1/8-12UNF	2BX	150	27	92	22	4	26.50	SMU18SYEEXJ
1 1/4-12UNF	2BX	150	27	77	22	4	29.60	SMU20SYEEXJ
1 3/8-12UNF	2BX	170	29	87	28	4	32.80	SMU22SYEEXJ
1 1/2-12UNF	2BX	170	29	87	32	4	36.00	SMU24SYEEXJ
1 3/4-12UNF	2BX	180	31	92	36	4	42.50	SMU28SYEEXJ

Parameters

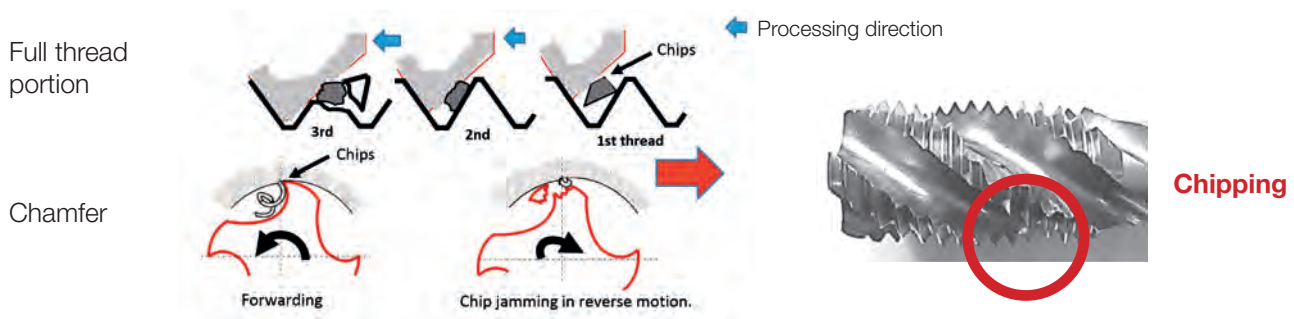
Recommended tapping conditions for the HVSP tap series.

Work-materials		Vc (m/min)
Stainless steel	SUS303 / SUS304 / SUS316	3~8
Alloy steel	SCM / SCr	3~8
High carbon steels	S45C~	3~8
Medium carbon steels	S25C~S45C	3~8
Low carbon steels	~S20C / SS400	3~8

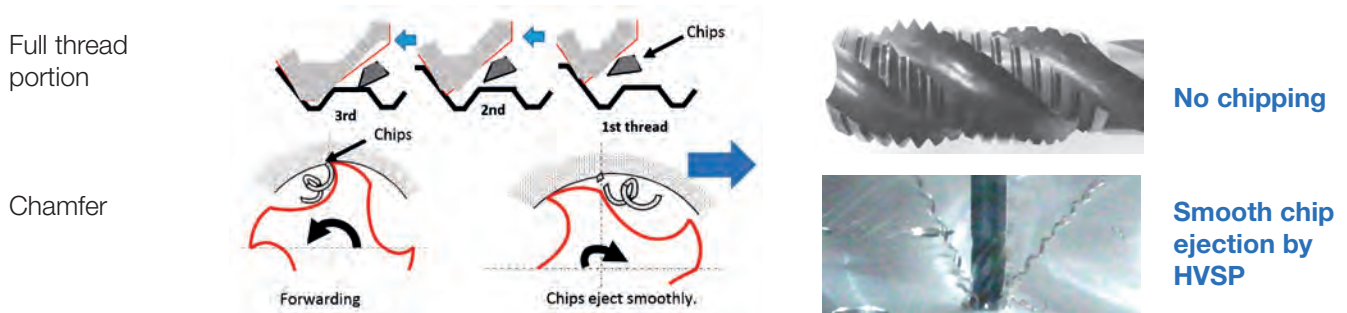
Product features

HVSP are designed to avoid chipping problems and provide smooth chip ejection, by combining the unique Yamawa BLF thread geometry, a special geometry of the cutting edge and a unique flute design

Tapping with standard SP - Chipping happens on thread portion



Tapping with HVSP - No chipping

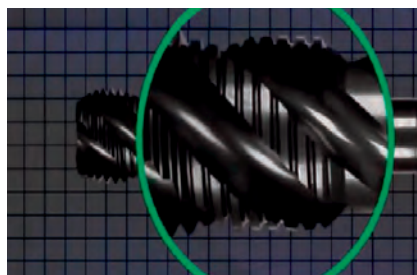


Designed to avoid chipping problems



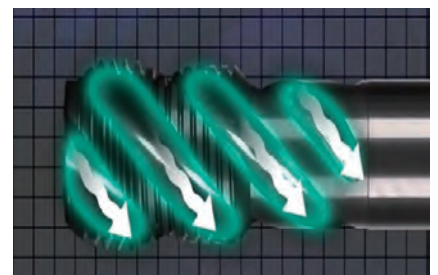
Advanced cutting edge

Specially designed geometry in cutting edge prevents chip incursion from the back side of chamfer thread portion during reverse motion



BLF shape on full thread portion

The BLF shape produces excellent cutting performances enabling the prevention of flute chipping problems



Unique flute design

Unique flute design for smooth chip ejection

Soft Structural steel such as St44-2 and low carbon steels are widely used in large size parts. Chips created by large size taps are thick and long becoming difficult to eject, resulting in high risk of chip tangling and cutting edge chipping.



Ejected chips by large size taps



Entangled chips



Chipping

Combination with straight oil

Large diameter taps are more effective with an oxidation treatment enabling flutes to retain more oil during tapping helping to avoid welding problems on the thread portion of the tap and galling on tapped thread surface.

Straight tapping oil +



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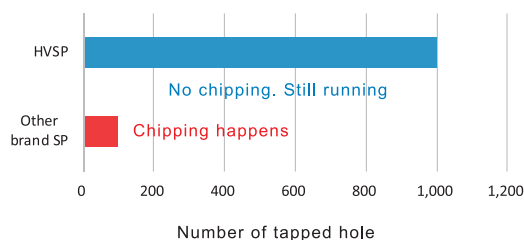


Excellent internal thread surface!

Process data

Case 1

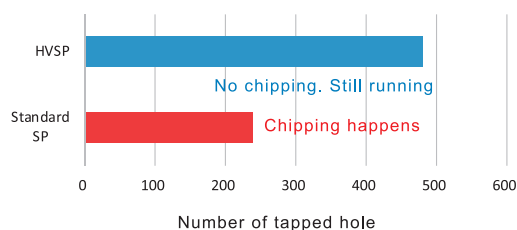
Comparison with other brand SP



Item	HVSP M16X2
	Other brand SP M16X2
Workpiece material	St44-2 / 1.0044 / Fe430B
Hole shape (depth)	Blind hole (42mm)
Direction	Horizontal
Bored hole dia. (mm)	14.20
Machine	Special machine (non rigid)
Cutting speed (m/min)	7.8
Lubrication	Straight oil

Case 2

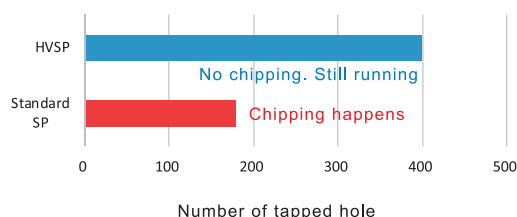
Comparison with standard SP



Item	HVSP M30
	Standard SP M30
Workpiece material	42CrMo4 / 1.7218
Hole shape (depth)	Blind hole (60mm)
Direction	Horizontal
Bored hole dia. (mm)	26.50
Machine	Machining center (non rigid)
Cutting speed (m/min)	4.7
Lubrication	Straight oil

Case 3

Comparison with standard SP



Item	HVSP M36
	Other brand SP M36
Workpiece material	Ck55 / 1.1203 / C55
Hole shape (depth)	Blind hole (42mm)
Direction	Vertical
Bored hole dia. (mm)	32.50
Machine	Drilling machine (non rigid)
Cutting speed (m/min)	5.0
Lubrication	Straight oil

WARNING

- Tools may shatter. Wear cover or eye glass to avoid injury during tapping.
- Tools may be 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 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.

Think threads with
YAMAWA

