

AU+SERIES

AU+Series enables the tapping at medium to high speed for wide range of workpiece materials.

▪ AU+ Series ▪

AU+SP AU+SL





AU+SP



Applicable to wide range of workpiece materials

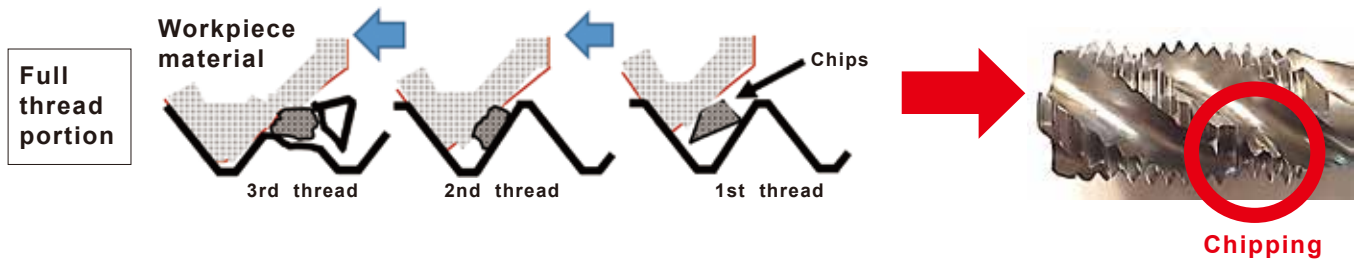
Workpiece material	Recommended tapping speed (m/min)
Stainless steels SUS304	5~10
Alloy steels SCM/Sr	10~20
High carbon steels S45C~	10~20
Medium carbon steels S25C~S45C	10~20
Low carbon steels ~S20C/SS400	10~20
Aluminium alloy castings AC•ADC Zinc alloy castings ZDC	20~30

BLF(special shape)+improvement in chip ejection efficiency

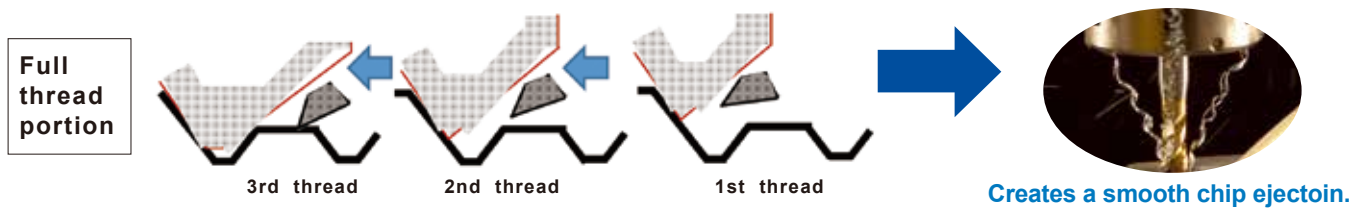
On full thread portion, AU+SP is specially designed to have the first 3 threads at full height and the balance of the threads at about the pitch diameter in height.

By adopting this unique thread design (BLF shape), AU+SP realizes smooth chip ejection.

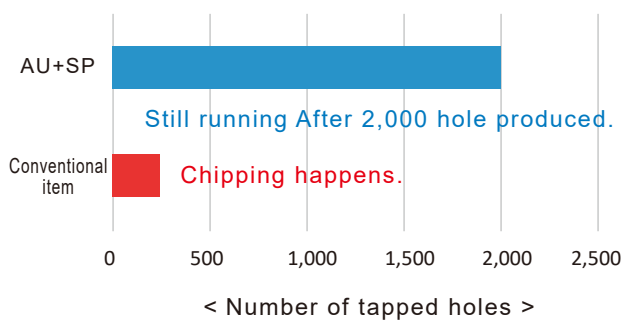
<Tapping with standard SP> Chipping happens on thread portion.



<Tapping with AU+SP> No chipping.



Tapping data



Product	AU+SP M6X1
	Conventional item
Workpiece material	SCM440
Cutting speed	10m/min
Hole diameter	Φ5.0
Threading length	9mm, blind hole
Machine	Machining Centers, Vertical
Lubrication	Water soluble oil



AU+SL



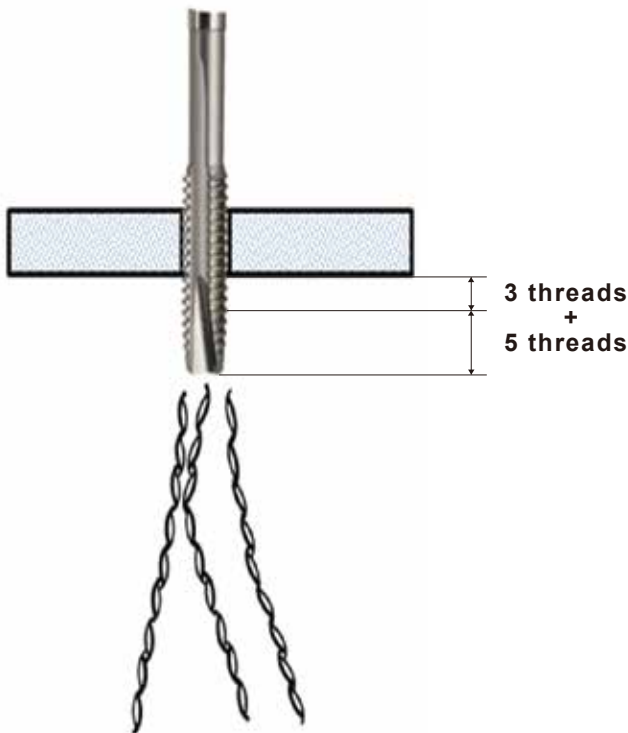
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Trouble shooting of through hole tapping

Yamawa offers a Left Hand Spiral Fluted Taps to cut right hand threads for through hole use. These taps offer a special advantage of a better cylindrical thread contact for reduced friction while pushing the chips forward ahead and out of the hole.

If you face chipping and breakage problems tapping, check if Is there chamfer cutting beyond the end of the component ?

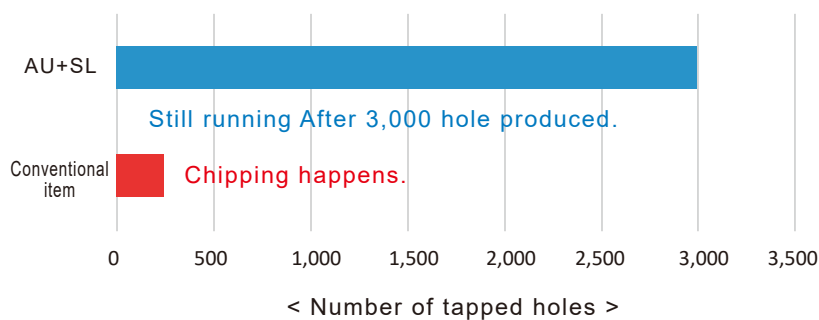


Chip shape of SL taps



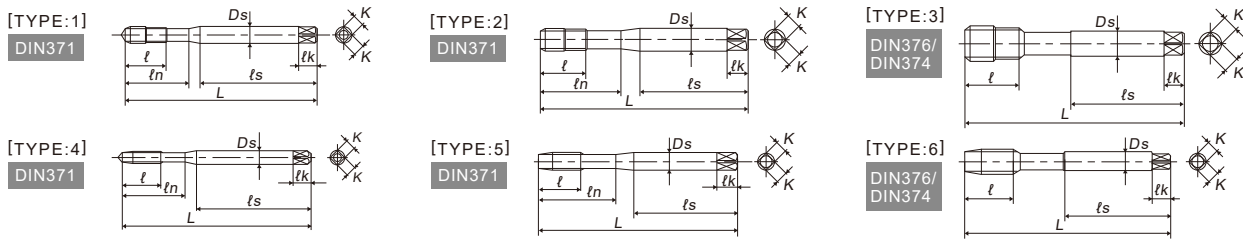
If the chips are not completely separated from the work material, the chips get caught in the tap on the reverse motion and chipping may occur. Please try to lengthen the feed stroke by 3 additional threads to ensure the cutting chamfer is completely clear of the bored hole.

Tapping data



Product	AU+SL M6X1
	Conventional item
Workpiece material	SCM440
Cutting speed	15m/min
Hole diameter	Φ5.0
Threading length	9mm, Through hole
Machine	Machining Centers, Vertical
Lubrication	Water soluble oil

Dimensions and Sizes

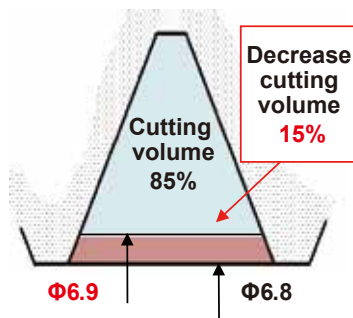


[Class] AU+SP:ISO2, AU+SL:ISO2X

[Chamfer] AU+SP:2.5P, AU+SL: 5P

Size	L (mm)	l (mm)	ln (mm)	ls (mm)	Ds (mm)	K (mm)	lk (mm)	No. of flutes	AU+SP		AU+SL		
									Code	Type	Code	Type	
M	M 3X0.5	56	9	18	34	3.5	2.7	6	3	SE3.0GANEV	1	LE3.0GBNEV	4
	M 4X0.7	63	13	21	38	4.5	3.4	6	3	SE4.0IANEV	1	LE4.0IBNEV	4
	M 5X0.8	70	14	25	39	6	4.9	8	3	SE5.0KANEV	1	LE5.0KBNEV	4
	M 6X1	80	15	30	45	6	4.9	8	3	SE6.0MANEV	1	LE6.0MBNEV	4
	M 8X1.25	90	19	35	47	8	6.2	9	3	SE8.0NANEV	2	LE8.0NBNEV	5
	M10X1.5	100	23	39	52	10	8	11	4	SE010OANEV	2	LE010OBNEV	6
	M12X1.75	110	26	-	56	9	7	10	4	SH012PANEV	3	LH012PBNEV	6
	M14X2	110	26	-	56	9	9	12	4	SH014QANEV	3	LH014QBNEV	6
	M16X2	110	26	-	56	12	9	12	4	SH016QANEV	3	LH016QBNEV	6
	M18X2.5	125	33	-	64	14	11	14	4	SH018RANEV	3	LH018RBNEV	6
M20X2.5	140	33	-	71	16	12	15	4	SH020RANEV	3	LH020RBNEV	6	
MF	MF 8X1	90	19	-	46	6	4.9	8	4	SN8.0MANEV	3	LN8.0MBNEV	6
	MF10X1.25	100	23	-	51	7	5.5	8	4	SN010NANEV	3	LN010NBNEV	6
	MF10X1	90	19	-	46	7	5.5	8	4	SN010MANEV	3	LN010MBNEV	6
	MF12X1.5	100	21	-	51	9	7	10	4	SN012OANEV	3	LN012OBNEV	6
	MF12X1.25	100	21	-	51	9	7	10	4	SN012NANEV	3	LN012NBNEV	6
	MF14X1.5	100	21	-	51	11	9	12	4	SN014OANEV	3	LN014OBNEV	6
	MF16X1.5	100	21	-	51	12	9	12	4	SN016OANEV	3	LN016OBNEV	6
	MF18X1.5	110	24	-	56	14	11	14	4	SN018OANEV	3	LN018OBNEV	6
	MF20X1.5	125	24	-	64	16	12	15	4	SN020OANEV	3	LN020OBNEV	6

[Table for bored hole diameter]



When tapping troubles occur, the 1st solution is to make larger bored hole size before tapping. For example, tapping M8x1.25 thread, by adjusting the bored hole diameter from 6.8mm to 6.9mm, the cutting volume decrease 15%. The tapping load decreases as well. Larger bored hole diameter can help to solve tap breakage and welding problems.

Size	Minor diameter of 6H internal threads		Recommended bored hole size
	Max.	Min.	
M 4X0.7	3.422	3.242	3.38
M 5X0.8	4.334	4.134	4.28
M 6X1	5.153	4.917	5.09
M 8X1.25	6.912	6.647	6.85
M10X1.5	8.676	8.376	8.6
M12X1.75	10.441	10.106	10.4

- ◆For other sizes, please refer to the technical page of Yamawa product catalog.
- Please make the hole before tapping as close as Max value of minor diameter of 6H internal threads.

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

YAMAWA International Co., Ltd.



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JQA-EM3465