

JIS • ANSI • DIN

LINE UP

② SPIRAL FLUTED TAP SERIES FOR THROUGH HOLE

	JIS	ANSI	DIN
Z-PRO MHSL	②-3	②-9	②-11
MHSL-J	②-7		
Z-PRO LKSL	②-13		
Z-PRO LKSL XL	②-14		
AU+SL	②-15		②-17
SU+SL	②-19		
SL+VA			②-21
ZET-P	②-23		②-28
ZELX TI LHSP		②-26	
F-SL	②-29		②-33
ZELX FR LHSP		②-31	
LS-F-SL	②-34		
HDISL	②-35		②-37



For improvement, spec may change without advance notice.

Selection chart of taps

Tapping conditions		Machining, in low-speed tapping area		Machining, in middle-speed tapping area		Machining/Fully synchronized feed only, in high-speed tapping area				
Product symbol		Z-PRO LKSL	Z-PRO LKSL XL	SU+SL	AU+SL	Z-PRO MHSL	MHSL-J	ZET-P	F-SL	LS-F-SL
Tap material Surface treatment		HSS OX	HSS OX	HSS OX	HSS Coating	HSS-Co Coating	HSS-Co Coating	HSS-P NI	HSS Coating	HSS Coating
Name		Long neck		For stainless steel	coated	For middle hardness carbon steel	For middle hardness carbon steel JIS	For titanium alloys	For high-speed	Long, for high-speed
										
Bored Hole Shape										
For Metric Threads		②-13	②-14	②-20	②-16	②-4	②-8	②-24	②-30	②-34
For Unified Threads								②-24		
For Whitworth Threads										
For Screw Threads used on Sewing Machines										
Pipe Threads										
American Pipe Threads										
For Miniature Threads										
For Trapezoidal Threads										
~S25C		Low carbon steels	◆ ○	◆ ○	◆ ○	◆ ○	◆ ○	◆ ○	◆ ○	◆ ○
S25C~S45C		Medium carbon steels	◆ ○	◆ ○	◆ ○	◆ ○	◆ ○	◆ ○	◆ ○	◆ ○
S45C~		High carbon steels	◆ ○	◆ ○	◆ ○	◆ ○	◆ ○	◆ ○	◆ ○	◆ ○
SCM		Alloy steels	◆ ○	◆ ○	◆ ○	◆ ○	◆ ○	◆ ○	◆ ○	◆ ○
25~35HRC		Heat treated steel	◆ ○	◆ ○			◆ ○	◆ ○		
35~45HRC		Heat treated steel					◆ ○			
45~55HRC		Heat treated steel								
55~63HRC		Heat treated steel								
SUS		Stainless steels (SUS)	◆ ○	◆ ○	◆ ○	◆ ○				
SKD		Tool steels				◆ ○	◆ ○			
SC		Cast steels					◆ ○			
FC		Cast irons								
FCD		Ductile cast irons								
Cu		Copper								
Bs		Brass								
BsC		Brass castings								
PB		Bronze								
AL		Wrought aluminum	◆ ○	◆ ○						
AC, ADC		Aluminum alloy casting	◆ ○	◆ ○		◆ ○				
Mg		Magnesium alloy die castings				◆ ○				
ZDC		Zinc alloy die castings				◆ ○				
		Titanium alloys						◆ ○		
		Nickel base alloys								
		Thermosetting plastic								
		Thermoplastic resin								

Recommended tap

⊙

: Most suitable tap

○

: Suitable tap

Recommended tapping fluid

◆

: Insoluble

◇

: Water-soluble

	HDISL
	HSS-Co Coating
	Dry tapping, for ultra high-speed For steel
	
	②-36

	◆	⊙
	◆	⊙
	◆	○
	◆	○

Spiral Fluted Taps (for blind hole)	①
Spiral Fluted Taps (for through hole)	②
Spiral Pointed Taps (for through hole)	③
Hand Taps	④
Cemented Carbide Taps	⑤
Roll Taps	⑥
Special Thread Taps Simple Inspection Tools	⑦
Pipe Taps	⑧
Thread Mills Premium Thread Mills	⑨
Dies	⑩
Center Drills Centering Tools	⑪
Precision Machinery/ Medical Surgical Instruments	⑫

② Spiral Fluted Tap Series for through hole

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

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 Thread Mills Premium Thread Mills

⑩ Dies

⑪ Center Drills Centering Tools

⑫ Precision Machinery/ Medical Surgical Instruments

JIS

②-3

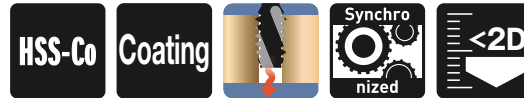


Z-PRO MHSL

Z-PRO

Spiral Fluted Taps for Carbon Steels of Medium Hardness, Through Hole Use (with LH Spiral Flutes)

Specification



Tapping Speeds depending on Materials

M1.8 ~ M5×0.5

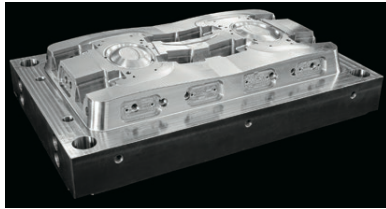
Medium carbon steels 中炭素鋼	High carbon steels 高炭素鋼	Alloy steels 合金鋼	Thermal refined steels 調質鋼	Thermal refined steels 調質鋼	Tool steels 工具鋼
2~16 (m/min)	2~16 (m/min)	2~16 (m/min)	2~16 (m/min)	1~12 (m/min)	1~12 (m/min)
			25~35HRC	35~45HRC	

M6 ~ M16

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	Tool steels 工具鋼
10~20 (m/min)	10~20 (m/min)	10~20 (m/min)	10~20 (m/min)	5~15 (m/min)
			25~35HRC	

Product Features

- High wear-resistant HSS material and special coating for longer tool life
- Unique flute design for stable and smooth chip ejection
- Secures appropriate tool projection length to prevent interference with workpieces



Suitable for tapping threads in mold parts



Suitable for creating tip mounting threads

Tapping Data

Tapping Conditions [M2.5×0.45]

Workpiece Material	SCM440 (45HRC)
Bored Hole Size	φ2.1
Tapping Length	5mm
Tapping Speed	5m/min
Machine	Machining center, vertical type (fully synchronized feed)
Tapping Fluid	Water soluble cutting fluid

After tapping 200 holes (The tap can still be used for tapping)

State of Wear	Good internal threads

Tapping examples on the market

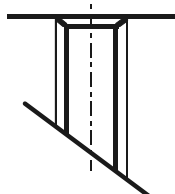
MHSL	Workpiece Material	Tapping Condition / Tapping Result						Remarks
Nominal Size	Material Symbol (Hardness)	Bored Hole Size (mm)	Tapping Length (mm)*	Cutting Speed (m/min)	Feed Mechanism	Cutting Fluid	Tool Life (Holes/pc)	
M2.5 × 0.45	SCM440 (45HRC)	2.1	4 (1.6D)	2.5	Synchronized	Water soluble	300 holes	Reduced breakage problems
M2.5 × 0.45	SKD61 (45HRC)	2.1	5 (2D)	5	Synchronized	Water soluble	150 holes or more (The tap still works well)	-
M4 × 0.7	SCM440 (45HRC)	3.4	6 (1.5D)	5	Synchronized	Water soluble	351 holes	Reduced tapping time

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

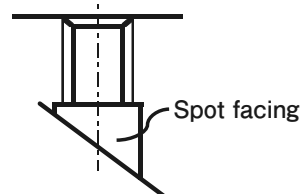
Measures against tapping-related problems

When tapping internal threads in a through hole toward the slanted surface as shown on the left, spot facing as shown on the right is recommended to prevent the occurrence of a broken tap or such other problems.

Before countermeasures



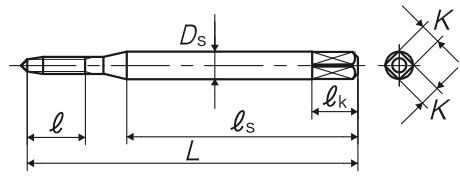
After countermeasures



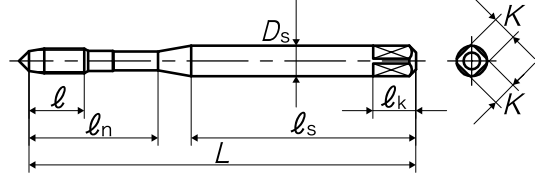
Think threads with
YAMAWA

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

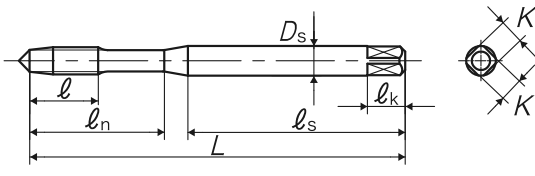
TYPE:1

Spiral Fluted Taps
(for blind hole) ①

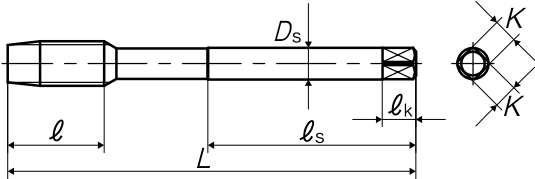
TYPE:3

Spiral Fluted Taps
(for through hole) ②

TYPE:2

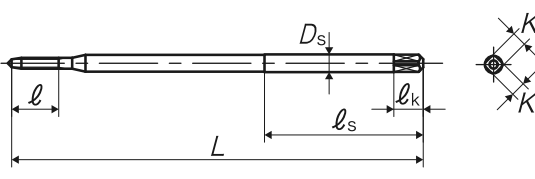
Spiral Pointed Taps
(for through hole) ③

TYPE:4



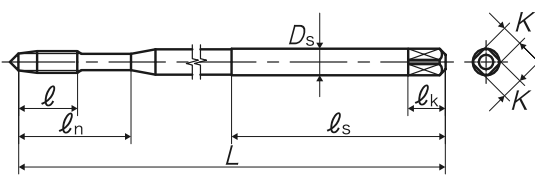
Hand Taps ④

TYPE:5



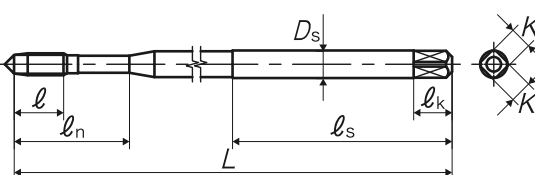
Cemented Carbide Taps ⑤

TYPE:6



Roll Taps ⑥

TYPE:7

Special Thread Taps
Simple Inspection Tools ⑦

Segment : 1T

Size	Class	Code	Chamfer	L (mm)	ℓ (mm)	ℓ_n (mm)	ℓ_s (mm)	Ds (mm)	K (mm)	ℓ_k (mm)	No. of flutes	TYPE	MSRP
For Metric Threads													
M1.8 × 0.35	P2	1109101017	5P	40	8	-	27	3	2.5	5	2	1	¥ 4,970
M2 × 0.4	P2	1109101021	5P	45	8	15	27	3	2.5	5	2	2	¥ 3,970
M2.2 × 0.45	P3	1109101024	5P	45	9	15	27	3	2.5	5	3	2	¥ 3,730
M2.5 × 0.45	P3	1109101029	5P	50	8	15	32	3	2.5	5	3	2	¥ 3,360
M3 × 0.5	P3	1109101035	5P	56	9	18	32	4	3.2	6	3	2	¥ 3,050
M3.5 × 0.6	P3	1109101038	5P	63	13	20	36	5	4	7	3	2	¥ 3,050
M4 × 0.7	P3	1109101042	5P	63	13	21	36	5	4	7	3	2	¥ 3,000
M4.5 × 0.75	P3	1109101045	5P	70	14	24	40	5.5	4.5	7	3	2	¥ 3,880
M5 × 0.8	P3	1109101049	5P	70	14	25	40	5.5	4.5	7	3	2	¥ 3,030
M5 × 0.5	P3	1109101051	5P	70	9	25	40	5.5	4.5	7	3	3	¥ 3,880
M6 × 1	P3	1109101055	5P	80	15	30	45	6	4.5	7	3	2	¥ 3,340
M8 × 1.25	P4	1109101064	5P	90	19	-	46	6.2	5	8	3	4	¥ 4,960
M10 × 1.5	P4	1109101078	5P	100	23	-	51	7	5.5	8	3	4	¥ 5,740
M10 × 1.25	P4	1109101079	5P	100	23	-	51	7	5.5	8	3	4	¥ 5,740
M12 × 1.75	P5	1109101088	5P	110	26	-	56	8.5	6.5	9	4	4	¥ 8,230
M12 × 1.5	P5	1109101089	5P	110	26	-	56	8.5	6.5	9	4	4	¥ 8,230
M12 × 1.25	P5	1109101090	7P	110	26	-	56	8.5	6.5	9	4	4	¥ 8,230
M14 × 1.5	P5	1109101102	7P	110	26	-	56	10.5	8	11	4	4	¥ 11,500
M16 × 1.5	P5	1109101116	7P	110	26	-	56	12.5	10	13	4	4	¥ 14,900

Pipe Taps ⑧

Thread Mills
Premium Thread Mills ⑨

Dies ⑩

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

② Spiral Fluted Tap Series for through hole

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

JIS

MHSL Z-PRO Spiral Fluted Taps for Carbon Steels of Medium Hardness, Through Hole Use (with LH Spiral Flutes)

Size	Class	Code	Chamfer	L (mm)	ℓ (mm)	ℓn (mm)	ℓs (mm)	Ds (mm)	K (mm)	ℓk (mm)	No. of flutes	TYPE	MSRP
For Long Metric Threads													
M1.8 × 0.35	P2	2109101017	5P	70	8	-	27	3	2.5	5	2	5	¥ 10,200
M2 × 0.4	P2	2209101021	5P	100	8	15	27	3	2.5	5	2	6	¥ 10,800
M2.2 × 0.45	P3	2209101024	5P	100	9	15	27	3	2.5	5	3	6	¥ 10,100
M2.5 × 0.45	P3	2209101029	5P	100	8.1	15	32	3	2.5	5	3	6	¥ 6,640
M3 × 0.5	P3	2109101035	5P	100	9	18	32	4	3.2	6	3	6	¥ 5,530
M3.5 × 0.6	P3	2109101038	5P	100	11	20	36	5	4	7	3	6	¥ 5,530
M4 × 0.7	P3	2109101042	5P	100	11	21	36	5	4	7	3	6	¥ 5,040
M4.5 × 0.75	P3	2109101045	5P	100	13	24	40	5.5	4.5	7	3	6	¥ 5,660
M5 × 0.8	P3	2109101049	5P	100	13	25	40	5.5	4.5	7	3	6	¥ 4,530
M5 × 0.5	P3	2109101051	5P	100	9	25	40	5.5	4.5	7	3	7	¥ 5,660

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

②-5

 Think threads with
YAMAWA

M E M O

Spiral Fluted Taps
(for blind hole) ①Spiral Fluted Taps
(for through hole) ②Spiral Pointed Taps
(for through hole) ③

Hand Taps ④

Cemented
Carbide Taps ⑤

Roll Taps ⑥

Special Thread Taps
Simple Inspection Tools ⑦

Pipe Taps ⑧

Thread Mills
Premium Thread Mills ⑨

Dies ⑩

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

② Spiral Fluted Tap Series for through hole

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

JIS

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(for blind hole)

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Simple Inspection tools

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Premium Thread Mills

⑩ Dies

⑪ Center Drills
Centering Tools

⑫ Precision Machinery/
Medical Surgical Instruments

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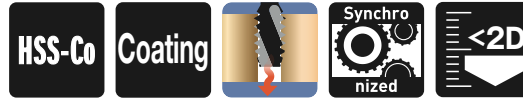
JIS

MHSL-J

Spiral Fluted Taps for Carbon Steels of Medium Hardness,
Through Hole Use (with LH Spiral Flutes) JIS



Specification



Tapping Speeds depending on Materials

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	Tool steels 工具鋼
10 ~ 20 (m/min)	10 ~ 20 (m/min)	10 ~ 20 (m/min)	10 ~ 20 (m/min)	5 ~ 15 (m/min)
25~35HRC				

Product Features

- Ideal for forged products and tempered S48C to S55C materials from 25 to 35 HRC.
- Produced from HSS-Co materials with a special coating for enhanced wear resistance and to improve long tool life.
- The original left hand spiral flute shape is used to produce a smooth chip discharge and increase performance in the medium tapping speed range. Also, the MHSL improves the internal threads surface finish.

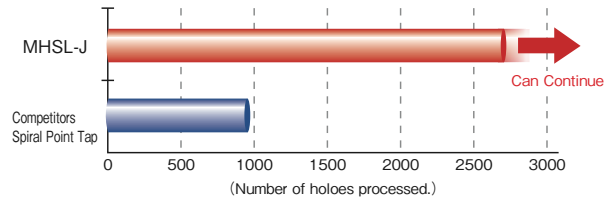


Improved chip ejection!

Tapping Data

Tapping Conditions [M12×1.25]

Workpiece Material	S53C (forged) / Hub bearing
Bored Hole Size	φ10.8
Tapping Length	12mm through hole
Tapping Speed	30m/min
Machine	Horizontal machining center (fully synchronized feed)
Tapping Fluid	Water soluble cutting fluid



Tapping Conditions [M12×1.25]

Workpiece Material	S53C (25HRC)
Tapping Length	13mm
Tapping Speed	30m/min
Machine	Machining center
Tapping Fluid	Water soluble cutting fluid

Enhanced wear resistance

The previous model caused abnormal noise after tapping 1,239 holes.

Left-hand spiral With surface treatment 1,239 holes Worn

Good! MHSL-J 2,800 holes Still works well

Improved surface finish

Good! MHSL-J has high cutting performance, providing excellent surface finish of internal threads.

PO bright finish Initial tapping Internal thread

Left-hand spiral With surface treatment Initial tapping Internal thread

Tapping examples on the market

MHSL-J	Workpiece Material	Tapping Condition / Tapping Result							Remarks
Nominal Size	Material Symbol (Hardness)	Pilot Hole Size (mm)	Tapping Length (mm)*	Machine	Cutting Speed (m/min)	Feed Mechanism	Cutting Oil	(Holes or Pieces)	Previous State / Workpiece name
M6 × 1	S35C	5.1	12 (2D)	Horizontal MC	7.5	Synchronized	Non-water soluble	10,000	Bad surface finish * Workpiece name: Shafts
M8 × 1.25	S45C	6.8	8 (1D)	Vertical MC	40	Synchronized	Water soluble	9,120	Replaced after tapping 5,200 holes * Workpiece name: Shafts
M8 × 1.25	S55C (25HRC)	6.85	12 (1.5D)	Vertical MC	30	Synchronized	Water soluble	2,160	Unstable tool life * Workpiece name: Clutch parts
M10 × 1.25	S45C (23HRC)	8.8	20 (2D)	Vertical MC	8	Synchronized	Water soluble	2,450	Replaced after tapping 1,600 holes * Workpiece name: Arms
M12 × 1.75	S55C (27HRC)	10.4	12 (1D)	Vertical MC	19	Synchronized	Water soluble	2,840	Unstable tool life * Workpiece name: Hub bearings
M14 × 1.5	S53C (25HRC)	12.6	14 (1D)	Vertical MC	32	Synchronized	Water soluble	4,430	Replaced due to excessive torque after tapping 3,000 holes * Workpiece name: Hub bearings
M14 × 1.5	S55C (23HRC)	12.6	14 (1D)	Vertical MC	22	Synchronized	Water soluble	2,700	Replaced after tapping 2,000 holes * Workpiece name: Hub bearings

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

Examples of machined parts

Excellent durability for tapping through holes in medium hard steels for such as hub bearings of bicycles.

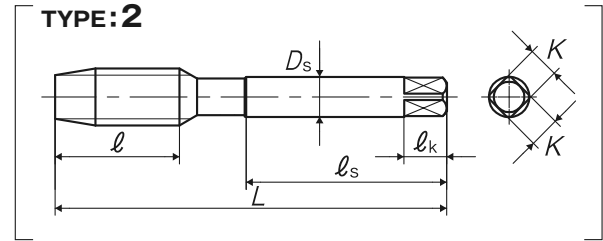
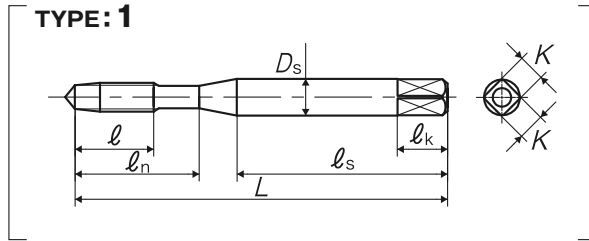


Think threads with
YAMAWA

JIS

②-7

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



Segment : 1T

Size	Class	Code	Chamfer	L (mm)	ℓ (mm)	ℓ_n (mm)	ℓ_s (mm)	Ds (mm)	K (mm)	ℓ_k (mm)	No. of flutes	TYPE	MSRP
For Metric Threads													
M6 × 1	P3	MHSLR6.0M5	5P	62	15	26	33	6	4.5	7	3	1	¥ 3,280
M8 × 1.25	P4	MHSLS8.0N5	5P	70	19	-	36	6.2	5	8	3	2	¥ 4,270
M10 × 1.5	P4	MHSLS010O5	5P	75	23	-	38	7	5.5	8	3	2	¥ 4,990
M10 × 1.25	P4	MHSLS010N5	5P	75	23	-	38	7	5.5	8	3	2	¥ 4,990
M12 × 1.75	P5	MHSLT012P5	5P	82	26	-	42	8.5	6.5	9	4	2	¥ 6,530
M12 × 1.5	P5	MHSLT012O5	5P	82	26	-	42	8.5	6.5	9	4	2	¥ 6,530
M12 × 1.25	P5	MHSLT012N7	7P	82	26	-	42	8.5	6.5	9	4	2	¥ 6,530
M14 × 1.5	P5	MHSLT014O7	7P	88	26	-	45	10.5	8	11	4	2	¥ 9,100
M16 × 1.5	P5	MHSLT016O7	7P	95	26	-	48	12.5	10	13	4	2	¥ 12,400

Spiral Fluted Taps
(for blind hole)

①

Spiral Fluted Taps
(for through hole)

②

Spiral Pointed Taps
(for through hole)

③

Hand Taps

④

Cemented
Carbide Taps

⑤

Roll Taps

⑥

Special Thread Taps
Simple Inspection Tools

⑦

Pipe Taps

⑧

Thread Mills
Premium Thread Mills

⑨

Dies

⑩

Center Drills
Centering Tools

⑪

Precision Machinery/
Medical Surgical Instruments

⑫

② Spiral Fluted Tap Series for through hole

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

ANSI

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(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

ANSI

Z-PRO
MHSL



Z-PRO Spiral Fluted Taps for Carbon Steels of Medium Hardness, Through Hole Use (with LH Spiral Flutes)

Specification

HSS-Co

Coating



■ Suitable for through hole tapping of medium hardness steels such as forgings of high carbon steels and thermal refined steels (25HRC ~ 35HRC)

Tapping Speeds depending on Materials

M2 ~ M5 × 0.5

Medium carbon steels
中炭素鋼
2~16
(m/min)

High carbon steels
高炭素鋼
2~16
(m/min)

Alloy steels
合金鋼
2~16
(m/min)

Thermal refined steels
調質鋼
2~16
(m/min)
25~35HRC

Thermal refined steels
調質鋼
1~12
(m/min)
35~45HRC

Tool steels
工具鋼
1~12
(m/min)

M6 ~ M16

Medium carbon steels
中炭素鋼
10~20
(m/min)

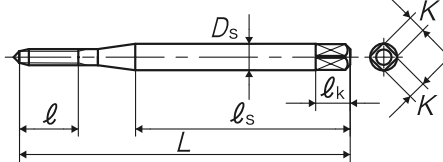
High carbon steels
高炭素鋼
10~20
(m/min)

Alloy steels
合金鋼
10~20
(m/min)

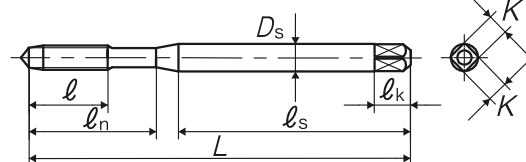
Thermal refined steels
調質鋼
10~20
(m/min)
25~35HRC

Tool steels
工具鋼
5~15
(m/min)

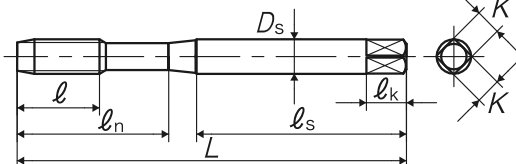
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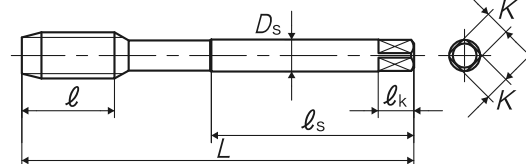
TYPE:2



TYPE:3



TYPE:4



Segment : 1T

Size	Class	Code	Chamfer	L (inch)	ℓ (inch)	ℓ_n (inch)	ℓ_s (inch)	Ds (inch)	K (inch)	ℓ_k (inch)	No. of flutes	TYPE
For Metric threads												
M2 × 0.4	D3	5109101021	5P	1.772	0.314	-	1.161	0.141	0.110	0.187	2	1
M2.5 × 0.45	D4	5109101029	5P	2.205	0.354	0.693	1.280	0.141	0.110	0.187	3	2
M3 × 0.5	D4	5109101035	5P	2.205	0.433	0.736	1.339	0.141	0.110	0.187	3	2
M3.5 × 0.6	D4	5109101038	5P	2.205	0.433	0.748	1.339	0.141	0.110	0.187	3	2
M4 × 0.7	D5	5109101042	5P	2.480	0.512	0.815	1.535	0.168	0.131	0.25	3	2
M4.5 × 0.75	D5	5109101045	5P	2.756	0.551	0.945	1.654	0.194	0.152	0.25	3	5
M5 × 0.8	D5	5109101049	5P	2.756	0.551	0.984	1.654	0.194	0.152	0.25	3	2
M5 × 0.5	D4	5109101051	5P	2.756	0.354	0.984	1.654	0.194	0.152	0.25	3	2
M6 × 1	D5	LS6.0M5FCL5	5P	3.150	0.591	1.181	1.713	0.255	0.191	0.312	3	2

ANSI

②-9

Think threads with
YAMAWA

· This product is different from JIS products in shape and dimensions, please be careful when using.

Size	Class	Code	Chamfer	L (inch)	ℓ (inch)	ℓ_n (inch)	ℓ_s (inch)	Ds (inch)	K (inch)	ℓ_k (inch)	No. of flutes	TYPE
M8 × 1.25	D5	LS8.0N5FCL5	5P	3.543	0.748	1.378	1.831	0.318	0.238	0.375	3	3
M10 × 1.5	D6	LS010O6FCL5	5P	3.937	0.906	1.535	2.126	0.381	0.286	0.437	3	3
M10 × 1.25	D6	LS010N6FCL5	5P	3.937	0.906	1.535	2.126	0.381	0.286	0.437	3	3
M12 × 1.75	D7	LS012P7FCL5	5P	4.331	1.024	-	2.205	0.367	0.275	0.437	4	4
M12 × 1.5	D6	LS012O6FCL5	5P	4.331	1.024	-	2.205	0.367	0.275	0.437	4	4
M12 × 1.25	D6	LS012N6FCL7	7P	4.331	1.024	-	2.205	0.367	0.275	0.437	4	4
M14 × 1.5	D7	LS014O7FCL7	7P	4.331	1.024	-	2.205	0.429	0.322	0.5	4	4
M16 × 1.5	D7	LS016O7FCL7	7P	4.331	1.024	-	2.205	0.480	0.360	0.562	4	4

Spiral Fluted Taps
(for blind hole)

①

Spiral Fluted Taps
(for through hole)

②

Spiral Pointed Taps
(for through hole)

③

Hand Taps

④

Cemented
Carbide Taps

⑤

Roll Taps

⑥

Special Thread Taps
Simple Inspection Tools

⑦

Pipe Taps

⑧

Thread Mills
Premium Thread Mills

⑨

Dies

⑩

Center Drills
Centering Tools

⑪

Precision Machinery/
Medical Surgical Instruments

⑫

ANSI

②-10

② Spiral Fluted Tap Series for through hole

DIN

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

DIN

②-11

DIN

Z-PRO

MHSL

Z-PRO Spiral Fluted Taps for Carbon Steels of Medium Hardness, Through Hole Use (with LH Spiral Flutes)

Specification

HSS-Co

Coating



Synchro
nized



■ Suitable for through hole tapping of medium hardness steels such as forgings of high carbon steels and thermal refined steels. (25HRC ~ 35HRC)

Tapping Speeds depending on Materials

M1.8 ~ M5 × 0.5

Medium carbon steels
中炭素鋼
2~16
(m/min)

High carbon steels
高炭素鋼
2~16
(m/min)

Alloy steels
合金鋼
2~16
(m/min)

Thermal refined steels
調質鋼
2~16
(m/min)
25~35HRC

Thermal refined steels
調質鋼
1~12
(m/min)
35~45HRC

Tool steels
工具鋼
1~12
(m/min)

M6 ~ M16

Medium carbon steels
中炭素鋼
10~20
(m/min)

High carbon steels
高炭素鋼
10~20
(m/min)

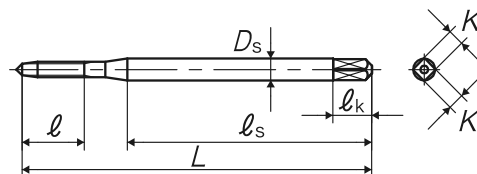
Alloy steels
合金鋼
10~20
(m/min)

Thermal refined steels
調質鋼
10~20
(m/min)
25~35HRC

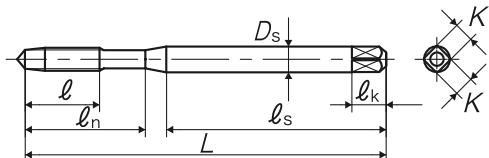
Tool steels
工具鋼
5~15
(m/min)



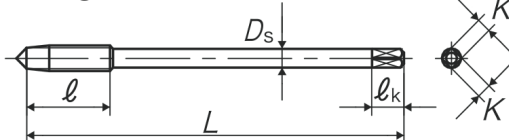
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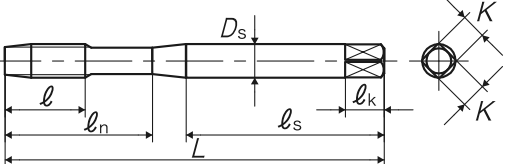
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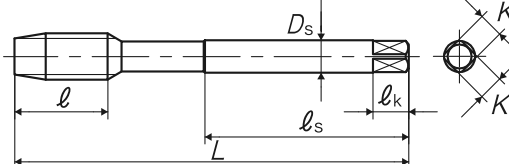
TYPE: 3



TYPE: 4



TYPE: 5



Segment : 1T

Size	Class	Code	Chamfer	L (mm)	l (mm)	l _n (mm)	l _s (mm)	D _s (mm)	K (mm)	l _k (mm)	No. of flutes	TYPE
For Metric Threads												
M1.8 × 0.35	ISO2X	3109101017	B(5P)	40	8	-	28.5	2.5	2.1	5	2	1
M2 × 0.4	ISO2X	3109101021	5P	45	8	-	32	2.8	2.1	5	2	1
M2.2 × 0.45	ISO2X	3109101024	B(5P)	45	9	-	32.5	2.8	2.1	5	3	1
M2.5 × 0.45	ISO2X	3109101029	5P	50	8	15	33	2.8	2.1	5	3	2
M3 × 0.5	ISO2X	3109101035	5P	56	9	18	34	3.5	2.7	6	3	2
M3.5 × 0.6	ISO2X	3109101038	5P	56	11	20	32	4	3	6	3	2
M4 × 0.7	ISO2X	3109101042	5P	63	13	21	38	4.5	3.4	6	3	2
M4.5 × 0.75	ISO2X	3109101045	5P	70	14	24	39	6	4.9	8	3	2
M5 × 0.8	ISO2X	3109101049	5P	70	14	25	39	6	4.9	8	3	2
M5 × 0.5	ISO2X	3109101051	5P	70	11	-	-	3.5	2.7	6	3	3

Think threads with
YAMAWA

· This product is different from JIS products in shape and dimensions, please be careful when using.

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

2

DIN

Size	Class	Code	Chamfer	L (mm)	ℓ (mm)	ℓ_n (mm)	ℓ_s (mm)	Ds (mm)	K (mm)	ℓ_k (mm)	No. of flutes	TYPE
M6 × 1	ISO2X	LD6.0MBFCL5	5P	80	15	30	45	6	4.9	8	3	2
M8 × 1.25	ISO2X	LD8.0NBFCL5	5P	90	19	35	47	8	6.2	9	3	4
M10 × 1.5	ISO2X	LD010OBFCL5	5P	100	23	39	52.5	10	8	11	3	4
M10 × 1.25	ISO2X	LM010NBFCL5	5P	100	23	-	51	7	5.5	8	3	5
M12 × 1.75	ISO2X	LG012PBFCL5	5P	110	26	-	56	9	7	10	4	5
M12 × 1.5	ISO2X	LM012OBFCL5	5P	100	21	-	51	9	7	10	4	5
M12 × 1.25	ISO2X	LM012NBFCL7	7P	100	21	-	51	9	7	10	4	5
M14 × 1.5	ISO2X	LM014OBFCL7	7P	100	21	-	51	11	9	12	4	5
M16 × 1.5	ISO2X	LM016OBFCL7	7P	100	21	-	51	12	9	12	4	5

Spiral Fluted Taps
(for blind hole)

①

Spiral Fluted Taps
(for through hole)

②

Spiral Pointed Taps
(for through hole)

③

Hand Taps

④

Cemented
Carbide Taps

⑤

Roll Taps

⑥

Special Thread Taps
Simple Inspection Tools

⑦

Pipe Taps

⑧

Thread Mills
Premium Thread Mills

⑨

Dies

⑩

Center Drills
Centering Tools

⑪

Precision Machinery/
Medical Surgical Instruments

⑫

DIN

②-12

② Spiral Fluted Tap Series for through hole

Overall length	Chamfer + full thread	Thread length	Thread + Neck length	Shank length	Shank dia.	Size of square	Length of square
L	ℓ_t	ℓ	ℓ_n	ℓ_s	Ds	K	ℓ_k

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

②-13

S

Z-PRO
LKSL

Z-PRO

Long Neck Spiral Fluted Tap for Through Hole



Specification

HSS

OX
Oxide



<5D

■ Spiral fluted tap for through hole with a long neck that enables deep hole tapping.

Tapping Speeds depending on Materials

Low carbon steels
低炭素鋼
3~7
(m/min)

Medium carbon steels
中炭素鋼
3~7
(m/min)

High carbon steels
高炭素鋼
3~7
(m/min)

Alloy steels
合金鋼
3~7
(m/min)

Thermal refined steels
調質鋼
3~7
(m/min)

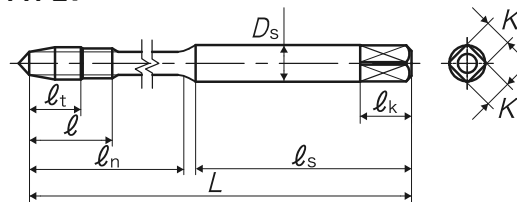
Stainless steels
ステンレス鋼
3~7
(m/min)

25~35HRC

Wrought aluminum
アルミ圧延材
3~7
(m/min)

Aluminum alloy castings
アルミ合金鋳物
3~7
(m/min)

TYPE: 1



Segment : 1S

Size	Class	Code	Chamfer	L (mm)	ℓ_t (mm)	ℓ (mm)	ℓ_n (mm)	ℓ_s (mm)	Ds (mm)	K (mm)	ℓ_k (mm)	No. of flutes	TYPE	MSRP
For Metric Threads														
M3 × 0.5	P3	1307101035	5P	56	5	9	28	26	4	3.2	6	3	1	¥ 2,010 *
M4 × 0.7	P3	1307101042	5P	63	7	11	32	29	5	4	7	3	1	¥ 2,010 *
M5 × 0.8	P3	1307101049	5P	70	9	13	35	33	5.5	4.5	7	3	1	¥ 2,020 *
M6 × 1	P4	1307101055	5P	80	11	15	45	33	6	4.5	7	3	1	¥ 2,300 *

Think threads with
YAMAWA

※ = Specified Distribution Items. Made to order products.

Spiral Fluted Tap Series for through hole

Overall length	Chamfer + full thread	Thread length	Thread + Neck length	Shank length	Shank dia.	Size of square	Length of square
L	ℓt	ℓ	ℓn	ℓs	Ds	K	ℓk

2

JIS

Z-PRO

LKSL XL



Z-PRO

Extra-Long Neck Spiral Fluted Tap for Through Hole

Specification

HSS

OX

Oxide



■ Spiral fluted tap for through hole with an extra-long neck that enables deep hole tapping.

Tapping Speeds depending on Materials

Low carbon steels
低炭素鋼
~3
(m/min)

Medium carbon steels
中炭素鋼
~3
(m/min)

High carbon steels
高炭素鋼
~3
(m/min)

Alloy steels
合金鋼
~3
(m/min)

Thermal refined steels
調質鋼
~3
(m/min)

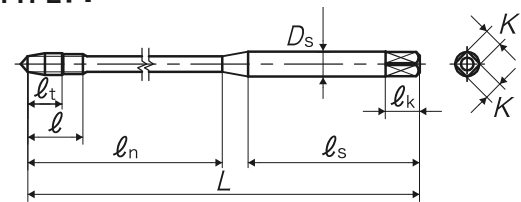
Stainless steels
ステンレス鋼
~3
(m/min)

25~35HRC

Wrought aluminum
アルミ圧延材
~3
(m/min)

Aluminum alloy castings
アルミ合金鋳物
~3
(m/min)

TYPE: 1



Segment : 1S

Size	Class	Code	Chamfer	L (mm)	ℓt (mm)	ℓ (mm)	ℓn (mm)	ℓs (mm)	Ds (mm)	K (mm)	ℓk (mm)	No. of flutes	TYPE	MSRP
For Metric Threads														
M3 × 0.5	P3	2008101035	5P	100	5	9	60	34	4	3.2	6	3	1	¥ 3,730 *
M4 × 0.7	P3	2008101042	5P	100	7	11	60	34	5	4	7	3	1	¥ 3,730 *
M5 × 0.8	P3	2008101049	5P	120	9	13	70	45	5.5	4.5	7	3	1	¥ 3,470 *
M6 × 1	P4	2008101055	5P	120	11	15	70	47	6	4.5	7	3	1	¥ 3,120 *

Spiral Fluted Taps
(for blind hole)

Spiral Fluted Taps
(for through hole)

Spiral Pointed Taps
(for through hole)

Hand Taps

Cemented
Carbide Taps

Roll Taps

Special Thread Taps
Simple Inspection Tools

Pipe Taps

Thread Mills
Premium Thread Mills

Dies

Center Drills
Centering Tools

Precision Machinery/
Medical Surgical Instruments

JIS

②-14

Think threads with
YAMAWA

※ = Specified Distribution Items. Made to order products.

② Spiral Fluted Tap Series for through hole

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

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

②-15

S

AU+SL

Spiral Fluted Taps, Coated, Through Hole Use (with LH Spiral Flutes)



Specification



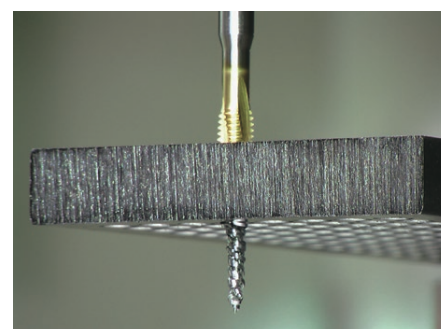
Tapping Speeds depending on Materials

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	Stainless steels ステンレス鋼	Aluminum alloy castings アルミ合金鋳物	Zinc alloy castings 亜鉛合金鋳物
10 ~ 20 (m/min)	10 ~ 20 (m/min)	10 ~ 20 (m/min)	10 ~ 20 (m/min)	5 ~ 10 (m/min)	20 ~ 30 (m/min)	20 ~ 30 (m/min)

Product Features

- The AU+SL utilizing a left hand spiral flute to achieve stable chip discharge performance even at high spindle speed tapping.
- Offers good chip discharge in a wide range of work materials from steel to stainless steel.
- The laser marking has been moved to the square area of the shank to insure a fine surface on the shank diameter. Burrs can be generated and the precision of the shank can be impaired by placing the markings on the shank's diameter. To maintain the precision and the circularity of the finished shank diameter and maintain the high accuracy, the taps size and limits are now marked on the square portion of the tap.
- The AU+SL is applicable to a wide range of work materials. It utilizes a flute shape that can maximize the features of the wear and heat resistance by coating. The coating offers an adhesion resistance, and can handle a wide range of work materials. It is also ideal for water soluble cutting fluids.

Good chips discharge

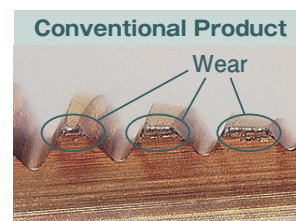


Tapping Data

Tapping Conditions [M6×1]

Workpiece Material	SCM440
Bored Hole Size	φ5.0
Tapping Length	9mm through hole
Tapping Speed	15m/min
Machinery Type	Vertical machining center
Tapping Fluid	Water soluble cutting fluid (chlorine-free 20 to 1 dilution)

Cutting Edge after 3,000 Holes.



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

2

JIS

Spiral Fluted Taps
(for blind hole)

①

Spiral Fluted Taps
(for through hole)

②

Spiral Pointed Taps
(for through hole)

③

Hand Taps

④

Cemented
Carbide Taps

⑤

Roll Taps

⑥

Special Thread Taps
Simple Inspection Tools

⑦

Pipe Taps

⑧

Thread Mills
Premium Thread Mills

⑨

Dies

⑩

Center Drills
Centering Tools

⑪

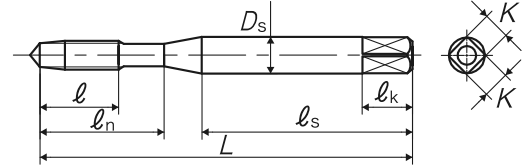
Precision Machinery/
Medical Surgical Instruments

⑫

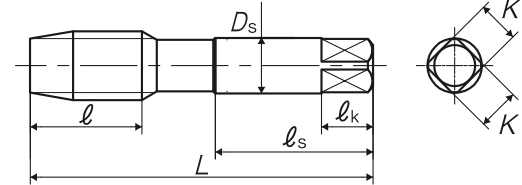
JIS

②-16

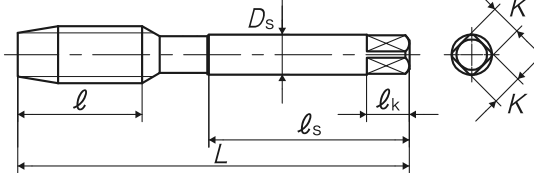
TYPE: 1



TYPE: 3



TYPE: 2



Segment : 1S

Size	Class	Code	Chamfer	L (mm)	ℓ (mm)	ℓ_n (mm)	ℓ_s (mm)	Ds (mm)	K (mm)	ℓ_k (mm)	No. of flutes	TYPE	MSRP
For Metric Threads													
M3 × 0.5	P2	VSAPQ3.0GL	5P	46	9	14	26	4	3.2	6	3	1	¥ 2,800
M4 × 0.7	P3	VSAPR4.0IL	5P	52	11	17	29	5	4	7	3	1	¥ 2,800
M5 × 0.8	P3	VSAPR5.0KL	5P	60	13	22	33	5.5	4.5	7	3	1	¥ 2,850
M6 × 1	P3	VSAPR6.0ML	5P	62	15	26	33	6	4.5	7	3	1	¥ 2,880
M8 × 1.25	P3	VSAPR8.0NL	5P	70	19	-	36	6.2	5	8	3	2	¥ 4,160
M8 × 1	P3	VSAPR8.0ML	5P	70	19	-	36	6.2	5	8	3	2	¥ 4,700
M10 × 1.5	P3	VSAPR10.0OL	5P	75	23	-	38	7	5.5	8	3	2	¥ 4,870
M10 × 1.25	P3	VSAPR10.0NL	5P	75	23	-	38	7	5.5	8	3	2	¥ 4,870
M10 × 1	P3	VSAPR10.0ML	5P	75	23	-	38	7	5.5	8	3	2	¥ 5,350
M12 × 1.75	P4	VSAPS012PL	5P	82	26	-	42	8.5	6.5	9	3	2	¥ 6,440
M12 × 1.5	P3	VSAPR012OL	5P	82	26	-	42	8.5	6.5	9	3	2	¥ 6,440
M12 × 1.25	P3	VSAPR012NL	5P	82	26	-	42	8.5	6.5	9	3	2	¥ 6,440
M14 × 2	P4	VSAPS014QL	5P	88	26	-	45	10.5	8	11	3	2	¥ 8,870
M14 × 1.5	P3	VSAPR014OL	5P	88	26	-	45	10.5	8	11	3	2	¥ 8,870
M16 × 2	P4	VSAPS016QL	5P	95	26	-	48	12.5	10	13	3	2	¥ 12,000
M16 × 1.5	P3	VSAPR016OL	5P	95	26	-	48	12.5	10	13	3	2	¥ 12,000
M18 × 2.5	P4	VSAPS018RL	5P	100	33	-	51	14	11	14	4	2	¥ 15,700
M18 × 1.5	P4	VSAPS018OL	5P	100	33	-	51	14	11	14	4	2	¥ 15,700
M20 × 2.5	P4	VSAPS020RL	5P	105	33	-	50	15	12	15	4	3	¥ 19,800
M20 × 1.5	P4	VSAPS020OL	5P	105	33	-	50	15	12	15	4	3	¥ 19,800

② Spiral Fluted Tap Series for through hole

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

DIN

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

DIN

②-17

DIN

AU+SL

Spiral Fluted Taps, Coated, Through Hole Use (with LH Spiral Flutes)



Specification



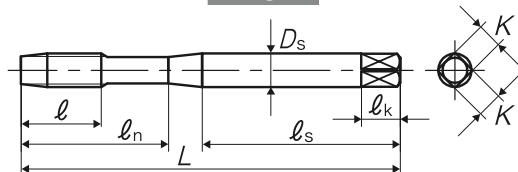
■ The AU+SL is compatible with a wide range of workpiece materials.

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	Stainless steels ステンレス鋼	Aluminum alloy castings アルミ合金鋳物	Zinc alloy castings 亜鉛合金鋳物
10 ~ 20 (m/min)	10 ~ 20 (m/min)	10 ~ 20 (m/min)	10 ~ 20 (m/min)	5 ~ 10 (m/min)	20 ~ 30 (m/min)	20 ~ 30 (m/min)

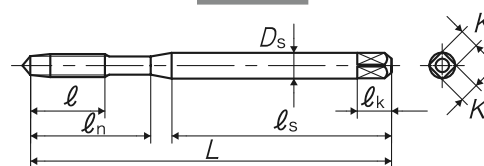
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DIN371



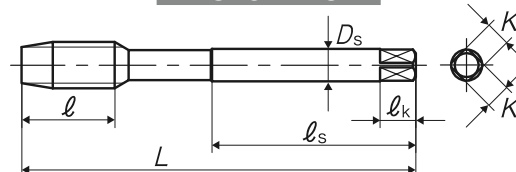
TYPE:1

DIN371



TYPE:3

DIN376/DIN374



Segment : 1S

Size	Class	Code	Chamfer	L (mm)	ℓ (mm)	ℓ_n (mm)	ℓ_s (mm)	Ds (mm)	K (mm)	ℓ_k (mm)	No. of flutes	TYPE
For Metric Threads												
M3 × 0.5	ISO2X	LE3.0GBNEV	5P	56	9	18	34	3.5	2.7	6	3	1
M4 × 0.7	ISO2X	LE4.0IBNEV	5P	63	13	21	38	4.5	3.4	6	3	1
M5 × 0.8	ISO2X	LE5.0KBNEV	5P	70	14	25	39	6	4.9	8	3	1
M6 × 1	ISO2X	LE6.0MBNEV	5P	80	15	30	45	6	4.9	8	3	1
M8 × 1.25	ISO2X	LE8.0NBNEV	5P	90	19	35	47	8	6.2	9	3	2
M8 × 1	ISO2X	LN8.0MBNEV	5P	90	19	-	46	6	4.9	8	3	3
M10 × 1.5	ISO2X	LE010OBNEV	5P	100	23	39	52.5	10	8	11	3	2
M10 × 1.25	ISO2X	LN010NBNEV	5P	100	23	-	51	7	5.5	8	3	3
M10 × 1	ISO2X	LN010MBNEV	5P	90	19	-	46	7	5.5	8	3	3
M12 × 1.75	ISO2X	LH012PBNEV	5P	110	26	-	56	9	7	10	3	3
M12 × 1.5	ISO2X	LN012OBNEV	5P	100	21	-	51	9	7	10	3	3
M12 × 1.25	ISO2X	LN012NBNEV	5P	100	21	-	51	9	7	10	3	3
M14 × 2	ISO2X	LH014QBNEV	5P	110	26	-	56	11	9	12	3	3

Think threads with
YAMAWA

· This product is different from JIS products in shape and dimensions, please be careful when using.

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

2

DIN

Size	Class	Code	Chamfer	L (mm)	ℓ (mm)	ℓ_n (mm)	ℓ_s (mm)	Ds (mm)	K (mm)	ℓ_k (mm)	No. of flutes	TYPE
M14 × 1.5	ISO2X	LN014OBNEV	5P	100	21	-	51	11	9	12	3	3
M16 × 2	ISO2X	LH016QBNEV	5P	110	26	-	56	12	9	12	3	3
M16 × 1.5	ISO2X	LN016OBNEV	5P	100	21	-	51	12	9	12	3	3
M18 × 2.5	ISO2X	LH018RBNEV	5P	125	33	-	64	14	11	14	4	3
M18 × 1.5	ISO2X	LN018OBNEV	5P	110	24	-	56	14	11	14	4	3
M20 × 2.5	ISO2X	LH020RBNEV	5P	140	33	-	71	16	12	15	4	3
M20 × 1.5	ISO2X	LN020OBNEV	5P	125	24	-	64	16	12	15	4	3

Spiral Fluted Taps
(for blind hole)

①

Spiral Fluted Taps
(for through hole)

②

Spiral Pointed Taps
(for through hole)

③

Hand Taps

④

Cemented
Carbide Taps

⑤

Roll Taps

⑥

Special Thread Taps
Simple Inspection Tools

⑦

Pipe Taps

⑧

Thread Mills
Premium Thread Mills

⑨

Dies

⑩

Center Drills
Centering Tools

⑪

Precision Machinery/
Medical Surgical Instruments

⑫

DIN

②-18

② Spiral Fluted Tap Series for through hole

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

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

②-19



SU+SL

Spiral Fluted Taps for Stainless Steels, Through Hole Use (with LH Spiral Flutes)



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	Stainless steels ステンレス鋼
10~15 (m/min)	10~15 (m/min)	10~15 (m/min)	10~15 (m/min)	5~15 (m/min)

Product Features

- Suitable for stainless steels tending to work-harden and sticky, as well as chrome steels and molybdenum steels, through hole use.
- Recommended speed : 5 ~ 15m/min
- In tapping SUS304, SU+SL has more than 3 times longer tool life than SU-PO. Even in 2000 tapping holes, the surface of thread finish is good and the shape of threads is clearly stable.
- Adopting left hand spiral flutes, compared with SU-PO, SU+SL improves the chip ejection and realizes longer tool life.

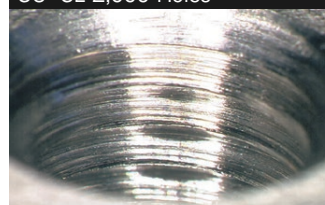
Tapping Data

Tapping condition [M5×0.8]

Work Material	SUS304(90HRB)
Hole Size	φ4.2
Tapping Length	12mm, through hole
Tapping Speed	15m/min
Machine	Vertical machining center
Tapping Fluid	Non-water soluble cutting oil without chlorine

Comparison of Internal Threads

SU+SL 2,000 Holes

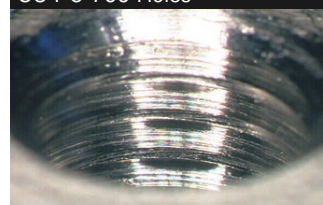


Roughness of Thread Flank Face Ra=1.1 μm

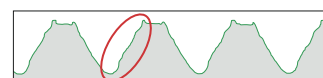


Shape of Internal Thread

SU-PO 700 Holes

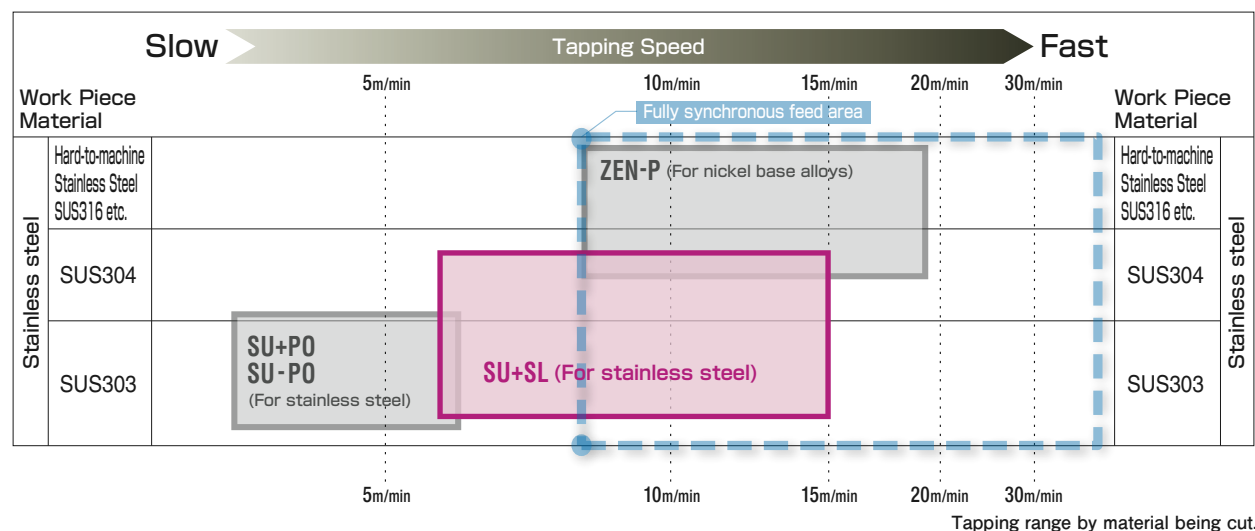


Roughness of Thread Flank Face Ra=2.0 μm



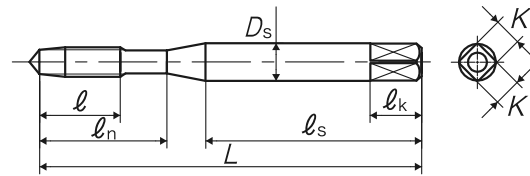
Shape of Internal Thread

Speed chart



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

TYPE: 1



Segment : 1S

Size	Class	Code	Chamfer	L (mm)	ℓ (mm)	ℓ_n (mm)	ℓ_s (mm)	Ds (mm)	K (mm)	ℓ_k (mm)	No. of flutes	TYPE	MSRP
For Metric Threads													
M3 × 0.5	P2	SUPQ3.0GL	5P	46	9	14	26	4	3.2	6	3	1	¥ 1,560
M4 × 0.7	P2	SUPQ4.0IL	5P	52	11	17	29	5	4	7	3	1	¥ 1,560
M5 × 0.8	P3	SUPR5.0KL	5P	60	13	22	33	5.5	4.5	7	3	1	¥ 1,590
M6 × 1	P2	SUPQ6.0ML	5P	62	15	26	33	6	4.5	7	3	1	¥ 1,840

2

JIS

Spiral Fluted Taps
(for blind hole)

①

Spiral Fluted Taps
(for through hole)

②

Spiral Pointed Taps
(for through hole)

③

Hand Taps

④

Cemented
Carbide Taps

⑤

Roll Taps

⑥

Special Thread Taps
Simple Inspection Tools

⑦

Pipe Taps

⑧

Thread Mills
Premium Thread Mills

⑨

Dies

⑩

Center Drills
Centering Tools

⑪

Precision Machinery/
Medical Surgical Instruments

⑫

JIS

②-20

② Spiral Fluted Tap Series for through hole

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

DIN

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

DIN

②-21

DIN

SL+VA

Spiral Fluted Taps for Stainless Steels, Through Hole Use (with LH Spiral Flutes)



Specification

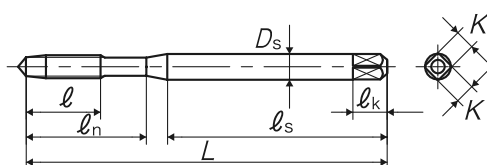


■Applying the blanks of high toughness and high accuracy, SL+VA derives the maximum performance from high facility machining centers and high precision toolings. Spiral fluted taps for stainless steels, through hole use (with LH spiral flutes).

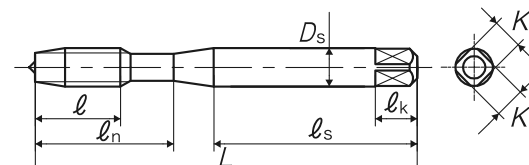
Tapping Speeds depending on Materials

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	Stainless steels ステンレス鋼
10 ~ 20 (m/min)	10 ~ 20 (m/min)	10 ~ 20 (m/min)	10 ~ 20 (m/min)	10 ~ 20 (m/min)

TYPE:1



TYPE:2



Segment : 1S

Size	Class	Code	Chamfer	L (mm)	ℓ (mm)	ℓ_n (mm)	ℓ_s (mm)	Ds (mm)	K (mm)	ℓ_k (mm)	No. of flutes	TYPE
For Metric Threads												
M3 × 0.5	ISO2X	LE3.0GBGEX	5P	56	9	18	34	3.5	2.7	6	3	1
M4 × 0.7	ISO2X	LE4.0IBGEX	5P	63	13	21	38	4.5	3.4	6	3	1
M5 × 0.8	ISO2X	LE5.0KBGEX	5P	70	14	25	39	6	4.9	8	3	1
M6 × 1	ISO2X	LZ6.0MBGEX	5P	80	15	30	45	6	4.9	8	3	2
M8 × 1.25	ISO2X	LZ8.0NBGEX	5P	90	19	35	48	8	6.2	9	3	2
M10 × 1.5	ISO2X	LZ010OBGEX	5P	100	23	39	53	10	8	11	3	2
M12 × 1.75	ISO2X	LZ012PBGEX	5P	110	26	45	56	12	9	12	3	2

Think threads with
YAMAWA

・ This product is different from JIS products in shape and dimensions, please be careful when using.

M E M O

Spiral Fluted Taps
(for blind hole) ①Spiral Fluted Taps
(for through hole) ②Spiral Pointed Taps
(for through hole) ③

Hand Taps ④

Cemented
Carbide Taps ⑤

Roll Taps ⑥

Special Thread Taps
Simple Inspection Tools ⑦

Pipe Taps ⑧

Thread Mills
Premium Thread Mills ⑨

Dies ⑩

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

② Spiral Fluted Tap Series for through hole

Overall length	Thread length	Thread + Neck length	Shank length	Shank dia.	Size of square	Length of square
L	ℓ	ℓn	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

②-23

S

F

ZET-P

Spiral Fluted Taps for Titanium Alloys, Through Hole Use (with LH Spiral Flutes)



Specification



Tapping Speeds depending on Materials

Titanium alloys
チタン合金
5~10
(m/min)

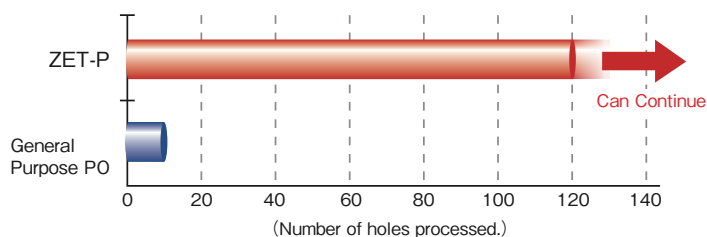
Product Features

- The tap is produced from a high grade powder high speed steel that is excellent in heat resistance and abrasion resistance applications.
- A left hand spiral flute with a right hand screw thread helps prevent material shrinkage and the chips are pushed forward out of the hole to allow the cutting heat to be carried out.
- Appropriate flute shape for titanium alloy is utilized, and the discharge of chips is made smooth.
- A nitride surface treatment is performed for added wear resistance.
- Considering the shrinkage of the internal screw thread, the tap is produced to a moderate oversize condition.

Tapping Data

Tapping Conditions [M6×1]

Workpiece Material	Ti-6Al -4V
Bored Hole Size	φ5.0
Tapping Length	12mm
Tapping Speed	8m/min
Machinery Type	CNC tapping center
Tapping Fluid	Water soluble cutting fluid



Characteristics of titanium alloy

- It is mainly composed of titanium that has a high strength and is light weight. It has excellent heat resistance. There are various kinds of titanium alloys such as Ti - 5Al - 2.5Sn, Ti - 5Ta, and the most popular Ti - 6Al - 4V which is commonly used due to its good characteristics.

Examples of problems in tapping

- Titanium alloys have high temperature strength and the thermal diffusion is small, so abrupt abrasion occurs on the tap.
- The spring back on internal screw threads may cause diameters to shrink and the tap may be crimped causing breakage.
- Chip welding occurs easily on the cutting chamfer of the tap and the threads flank surface. The finished threads surface of the internal screw thread also becomes rough and coarse.

Think threads with
YAMAWA

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

2

JIS

Spiral Fluted Taps
(for blind hole)

①

Spiral Fluted Taps
(for through hole)

②

Spiral Pointed Taps
(for through hole)

③

Hand Taps

④

Cemented
Carbide Taps

⑤

Roll Taps

⑥

Special Thread Taps
Simple Inspection Tools

⑦

Pipe Taps

⑧

Thread Mills
Premium Thread Mills

⑨

Dies

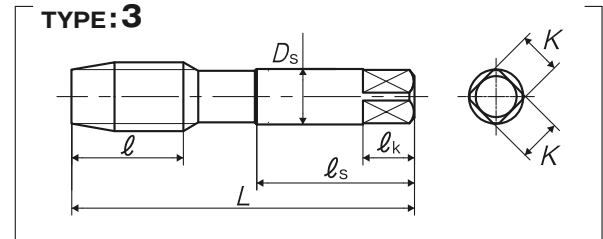
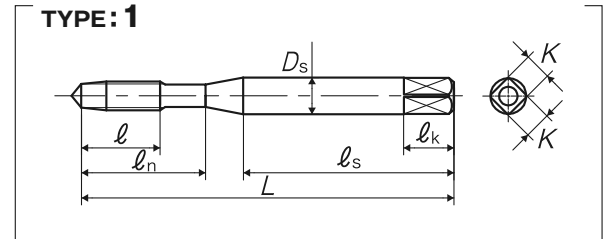
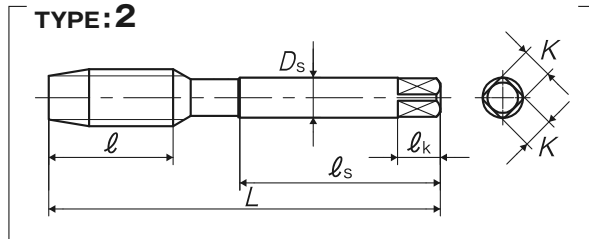
⑩

Center Drills
Centering Tools

⑪

Precision Machinery/
Medical Surgical Instruments

⑫



Segment : 1T

Size	Class	Code	Chamfer	L (mm)	ℓ (mm)	ℓ_n (mm)	ℓ_s (mm)	Ds (mm)	K (mm)	ℓ_k (mm)	No. of flutes	TYPE	MSRP
For Metric Threads													
M3 × 0.5	P3	ZETPMR3.0G	5P	46	9	14	26	4	3.2	6	3	1	¥ 2,880
M4 × 0.7	P3	ZETPMR4.0I	5P	52	11	17	29	5	4	7	3	1	¥ 2,880
M5 × 0.8	P3	ZETPMR5.0K	5P	60	13	22	33	5.5	4.5	7	3	1	¥ 2,900
M6 × 1	P3	ZETPMR6.0M	5P	62	15	26	33	6	4.5	7	3	1	¥ 3,200
M8 × 1.25	P4	ZETPMS8.0N	5P	70	19	-	36	6.2	5	8	3	2	¥ 4,460
M10 × 1.5	P4	ZETPMS010O	5P	75	23	-	38	7	5.5	8	3	2	¥ 5,670
M10 × 1.25	P4	ZETPMS010N	5P	75	23	-	38	7	5.5	8	3	2	¥ 5,670 *
M12 × 1.75	P5	ZETPMT012P	5P	82	26	-	42	8.5	6.5	9	3	2	¥ 8,030
M12 × 1.5	P4	ZETPMS012O	5P	82	26	-	42	8.5	6.5	9	3	2	¥ 8,030 *
M12 × 1.25	P5	ZETPMT012N	5P	82	26	-	42	8.5	6.5	9	3	2	¥ 8,030 *
M14 × 2	P5	ZETPMT014Q	5P	88	26	-	45	10.5	8	11	3	2	¥ 11,000 *
M14 × 1.5	P4	ZETPMS014O	5P	88	26	-	45	10.5	8	11	3	2	¥ 11,000 *
M16 × 2	P5	ZETPMT016Q	5P	95	26	-	48	12.5	10	13	3	2	¥ 14,800 *
M16 × 1.5	P4	ZETPMS016O	5P	95	26	-	48	12.5	10	13	3	2	¥ 14,800 *
M18 × 2.5	P5	ZETPMT018R	5P	100	33	-	51	14	11	14	4	2	¥ 19,700 *
M18 × 1.5	P5	ZETPMT018O	5P	100	33	-	51	14	11	14	4	2	¥ 19,700 *
M20 × 2.5	P5	ZETPMT020R	5P	105	33	-	50	15	12	15	4	3	¥ 26,700 *
M20 × 1.5	P5	ZETPMT020O	5P	105	33	-	50	15	12	15	4	3	¥ 26,700 *
For Unified Threads													
No.4-40UNC	P3	ZETPMRUN4H	5P	46	9	14	25	4	3.2	6	3	1	¥ 3,630 *
No.6-32UNC	P3	ZETPMRUN6J	5P	52	11	17	27	5	4	7	3	1	¥ 3,380 *
No.8-32UNC	P3	ZETPMRUN8J	5P	60	13	22	31	5.5	4.5	7	3	1	¥ 3,400 *
No.10-24UNC	P3	ZETPMRUNAM	5P	60	13	22	32	5.5	4.5	7	3	1	¥ 3,400 *
No.10-32UNF	P3	ZETPMRUNAJ	5P	60	13	22	32	5.5	4.5	7	3	1	¥ 3,400 *
1/4-20UNC	P3	ZETPMRU04N	5P	62	15	26	33	6	4.5	7	3	1	¥ 3,650 *
1/4-28UNF	P3	ZETPMRU04K	5P	62	15	26	33	6	4.5	7	3	1	¥ 3,650 *
5/16-18UNC	P4	ZETPMSU05O	5P	70	19	-	36	6.2	5	8	3	2	¥ 5,130 *
5/16-24UNF	P4	ZETPMSU05M	5P	70	19	-	36	6.2	5	8	3	2	¥ 5,130 *
3/8-16UNC	P4	ZETPMSU06P	5P	75	23	-	38	7	5.5	8	3	2	¥ 6,570 *
3/8-24UNF	P4	ZETPMSU06M	5P	75	23	-	38	7	5.5	8	3	2	¥ 6,570 *
7/16-14UNC	P4	ZETPMSU07Q	5P	82	26	-	42	8.5	6.5	9	3	2	¥ 9,260 *
7/16-20UNF	P4	ZETPMSU07N	5P	82	26	-	42	8.5	6.5	9	3	2	¥ 9,260 *
1/2-13UNC	P5	ZETPMTU08R	5P	88	26	-	45	10.5	8	11	3	2	¥ 9,820 *

* = Specified Distribution Items. Made to order products.

 Think threads with
YAMAWA

JIS

②-24

② Spiral Fluted Tap Series for through hole

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

JIS

ZET-P Spiral Fluted Taps for Titanium Alloys, Through Hole Use (with LH spiral flutes)

Size	Class	Code	Chamfer	L (mm)	ℓ (mm)	ℓn (mm)	ℓs (mm)	Ds (mm)	K (mm)	ℓk (mm)	No. of flutes	TYPE	MSRP
1/2-20UNF	P4	ZETPMSU08N	5P	88	26	-	45	10.5	8	11	3	2	¥ 9,820 ※
5/8-11UNC	P5	ZETPMTU10U	5P	95	26	-	48	12.5	10	13	3	2	¥ 14,800 ※
5/8-18UNF	P4	ZETPMSU10O	5P	95	26	-	48	12.5	10	13	3	2	¥ 14,800 ※
3/4-10UNC	P5	ZETPMTU12V	5P	105	33	-	50	15	12	15	4	3	¥ 26,700 ※
3/4-16UNF	P5	ZETPMTU12P	5P	105	33	-	50	15	12	15	4	3	¥ 26,700 ※

①

Spiral Fluted Taps
(for through 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

②-25

Think threads with
YAMAWA

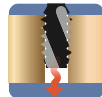
※ = Specified Distribution Items. Made to order products.

ZELX TI LHSP

Spiral Fluted Taps for Titanium Alloys, Through Hole Use (with LH Spiral Flutes)



Specification

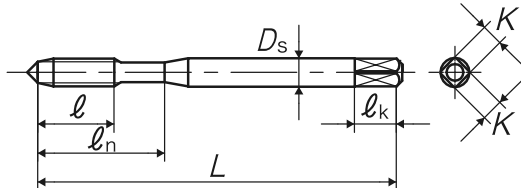


■ Suitable for titanium alloys which, including titanium as the main composition, are tough, light and heat resistant.

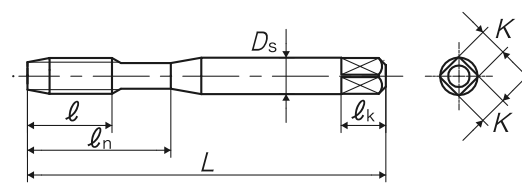
Tapping Speed depending on Materials

Titanium alloys
チタン合金
5~10
(m/min)

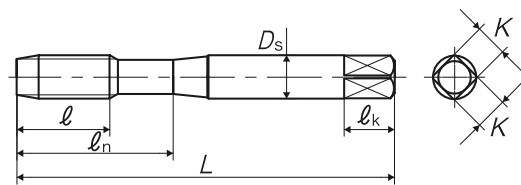
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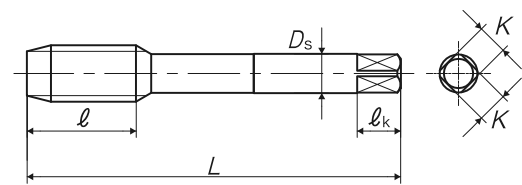
TYPE:2



TYPE:3



TYPE:4



Segment : 1T

Size	Class	Code	Chamfer	L (inch)	l (inch)	ln (inch)	Ds (inch)	K (inch)	lk (inch)	No. of flutes	TYPE
For Metric Threads											
M2.5 × 0.45	D3	Y85700	5P	1.812	0.295	0.5	0.141	0.11	0.187	3	1
M3 × 0.5	D3	Y85701	5P	1.937	0.374	0.625	0.141	0.11	0.187	3	1
M3.5 × 0.6	D4	Y85702	5P	2	0.413	0.687	0.141	0.11	0.187	3	1
M4 × 0.7	D4	Y85703	5P	2.125	0.453	0.75	0.168	0.131	0.25	3	1
M5 × 0.8	D4	Y85704	5P	2.375	0.531	0.875	0.194	0.152	0.25	3	1
M6 × 1	D5	Y85705	5P	2.5	0.591	1	0.255	0.191	0.312	3	2
M7 × 1	D5	Y85706	5P	2.718	0.669	1.125	0.318	0.238	0.375	3	3
M8 × 1.25	D5	Y85708	5P	2.718	0.669	1.125	0.318	0.238	0.375	3	3
M8 × 1	D5	Y85707	5P	2.718	0.669	1.125	0.318	0.238	0.375	3	3
M10 × 1.5	D6	Y85710	5P	2.937	0.748	1.25	0.381	0.286	0.437	3	3
M10 × 1.25	D5	Y85709	5P	2.937	0.748	1.25	0.381	0.286	0.437	3	3
M12 × 1.75	D6	Y85712	5P	3.375	0.984	-	0.367	0.275	0.437	3	4
M12 × 1.25	D5	Y85711	5P	3.375	0.984	-	0.367	0.275	0.437	3	4
For Unified Threads											
No.2-56UNC	GH2	Y85623	5P	1.75	0.256	0.437	0.141	0.11	0.187	3	1
No.4-40UNC	GH2	Y85601	5P	1.875	0.335	0.562	0.141	0.11	0.187	3	1
No.5-40UNC	GH2	Y85603	5P	1.937	0.374	0.625	0.141	0.11	0.187	3	1

2 Spiral Fluted Tap Series for through hole

Overall length	Thread length	Thread + Neck length	Shank dia.	Size of square	Length of square
L	ℓ	ℓn	Ds	K	ℓk

ANSI

ZELX TI LHSP Spiral Fluted Taps for Titanium Alloys, Through Hole Use (with LH spiral flutes)

Size	Class	Code	Chamfer	L (inch)	ℓ (inch)	ℓn (inch)	Ds (inch)	K (inch)	ℓk (inch)	No. of flutes	TYPE
No.6-32UNC	GH3	Y85605	5P	2	0.413	0.687	0.141	0.11	0.187	3	1
No.6-32UNC	GH5	Y85635	5P	2	0.413	0.687	0.141	0.11	0.187	3	1
No.8-32UNC	GH3	Y85607	5P	2.125	0.453	0.75	0.168	0.131	0.25	3	1
No.8-32UNC	GH4	Y85629	5P	2.125	0.453	0.75	0.168	0.131	0.25	3	1
No.8-32UNC	GH5	Y85637	5P	2.125	0.453	0.75	0.168	0.131	0.25	3	1
No.8-32UNC	GH6	Y85660	5P	2.125	0.453	0.75	0.168	0.131	0.25	3	1
No.8-32UNC	GH7	Y85667	5P	2.125	0.453	0.75	0.168	0.131	0.25	3	1
No.10-24UNC	GH3	Y85609	5P	2.375	0.531	0.875	0.194	0.152	0.25	3	1
No.10-24UNC	GH5	Y85639	5P	2.375	0.531	0.875	0.194	0.152	0.25	3	1
No.10-32UNF	GH3	Y85610	5P	2.375	0.531	0.875	0.194	0.152	0.25	3	1
No.10-32UNF	GH4	Y85630	5P	2.375	0.531	0.875	0.194	0.152	0.25	3	1
No.10-32UNF	GH5	Y85640	5P	2.375	0.531	0.875	0.194	0.152	0.25	3	1
No.10-32UNF	GH6	Y85661	5P	2.375	0.531	0.875	0.194	0.152	0.25	3	1
No.10-32UNF	GH7	Y85670	5P	2.375	0.531	0.875	0.194	0.152	0.25	3	1
1/4-20UNC	GH3	Y85613	5P	2.5	0.591	1	0.255	0.191	0.312	3	2
1/4-20UNC	GH5	Y85643	5P	2.5	0.591	1	0.255	0.191	0.312	3	2
1/4-28UNF	GH3	Y85614	5P	2.5	0.591	1	0.255	0.191	0.312	3	2
1/4-28UNF	GH4	Y85631	5P	2.5	0.591	1	0.255	0.191	0.312	3	2
1/4-28UNF	GH5	Y85644	5P	2.5	0.591	1	0.255	0.191	0.312	3	2
1/4-28UNF	GH6	Y85662	5P	2.5	0.591	1	0.255	0.191	0.312	3	2
1/4-28UNF	GH7	Y85674	5P	2.5	0.591	1	0.255	0.191	0.312	3	2
5/16-18UNC	GH3	Y85615	5P	2.718	0.669	1.125	0.318	0.238	0.375	3	3
5/16-18UNC	GH5	Y85645	5P	2.718	0.669	1.125	0.318	0.238	0.375	3	3
5/16-24UNF	GH3	Y85616	5P	2.718	0.669	1.125	0.318	0.238	0.375	3	3
5/16-24UNF	GH4	Y85632	5P	2.718	0.669	1.125	0.318	0.238	0.375	3	3
5/16-24UNF	GH5	Y85646	5P	2.718	0.669	1.125	0.318	0.238	0.375	3	3
5/16-24UNF	GH6	Y85663	5P	2.718	0.669	1.125	0.318	0.238	0.375	3	3
5/16-24UNF	GH7	Y85676	5P	2.718	0.669	1.125	0.318	0.238	0.375	3	3
3/8-16UNC	GH3	Y85617	5P	2.937	0.748	1.25	0.381	0.286	0.437	3	3
3/8-16UNC	GH5	Y85647	5P	2.937	0.748	1.25	0.381	0.286	0.437	3	3
3/8-24UNF	GH3	Y85618	5P	2.937	0.748	1.25	0.381	0.286	0.437	3	3
3/8-24UNF	GH4	Y85633	5P	2.937	0.748	1.25	0.381	0.286	0.437	3	3
3/8-24UNF	GH5	Y85648	5P	2.937	0.748	1.25	0.381	0.286	0.437	3	3
3/8-24UNF	GH6	Y85664	5P	2.937	0.748	1.25	0.381	0.286	0.437	3	3
3/8-24UNF	GH7	Y85678	5P	2.937	0.748	1.25	0.381	0.286	0.437	3	3
7/16-14UNC	GH3	Y85619	5P	3.156	0.866	-	0.323	0.242	0.406	3	4
7/16-14UNC	GH5	Y85649	5P	3.156	0.866	-	0.323	0.242	0.406	3	4
7/16-20UNF	GH3	Y85620	5P	3.156	0.866	-	0.323	0.242	0.406	3	4
7/16-20UNF	GH5	Y85650	5P	3.156	0.866	-	0.323	0.242	0.406	3	4
1/2-13UNC	GH3	Y85621	5P	3.375	0.984	-	0.367	0.275	0.437	3	4
1/2-13UNC	GH5	Y85651	5P	3.375	0.984	-	0.367	0.275	0.437	3	4
1/2-20UNF	GH3	Y85622	5P	3.375	0.984	-	0.367	0.275	0.437	3	4
1/2-20UNF	GH5	Y85652	5P	3.375	0.984	-	0.367	0.275	0.437	3	4
5/8-11UNC	GH3	Y85625	5P	3.812	1.083	-	0.48	0.36	0.562	3	4
5/8-18UNF	GH3	Y85626	5P	3.812	1.083	-	0.48	0.36	0.562	3	4
3/4-10UNC	GH3	Y85627	5P	4.25	1.201	-	0.59	0.442	0.687	3	4
3/4-16UNF	GH3	Y85628	5P	4.25	1.201	-	0.59	0.442	0.687	3	4

ANSI

Think threads with
YAMAWA

· This product is different from JIS products in shape and dimensions, please be careful when using.

Spiral Fluted Tap Series for through hole

DIN

ZET-P

Spiral Fluted Taps for Titanium Alloys, Through Hole Use (with LH Spiral Flutes)

Specification

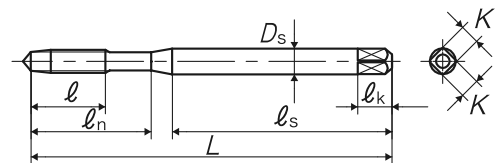


■ ZET-P, spiral fluted tap, through hole use (with LH spiral flutes), is suitable for titanium alloys which, having titanium as the main composition, are tough, light, and heat resistant.

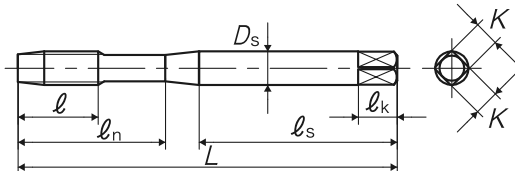
Tapping Speeds depending on Materials

Titanium alloys
チタン合金
5~10
(m/min)

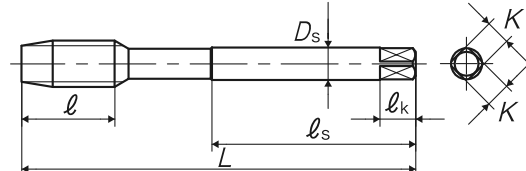
TYPE: 1



TYPE: 2



TYPE: 3



Segment : 1T

Size	Class	Code	Chamfer	L (mm)	l (mm)	ln (mm)	ls (mm)	Ds (mm)	K (mm)	lk (mm)	No. of flutes	TYPE
For Metric Threads												
M3 × 0.5	ISO2X	LD3.0GBIPN	5P	56	9	18	34	3.5	2.7	6	3	1
M4 × 0.7	ISO2X	LD4.0IBIPN	5P	63	13	21	38	4.5	3.4	6	3	1
M5 × 0.8	ISO2X	LD5.0KBIPN	5P	70	14	25	39	6	4.9	8	3	1
M6 × 1	ISO2X	LD6.0MBIPN	5P	80	15	30	45	6	4.9	8	3	1
M8 × 1.25	ISO2X	LD8.0NBIPN	5P	90	19	35	47	8	6.2	9	3	2
M8 × 1	ISO2X	LM8.0MBIPN	5P	90	19	-	46	6	4.9	8	3	3
M10 × 1.5	ISO2X	LD010OBIPN	5P	100	23	39	52.5	10	8	11	3	2
M10 × 1.25	ISO2X	LM010NBIPN	5P	100	23	-	51	7	5.5	8	3	3
M12 × 1.75	ISO2X	LG012PBIPN	5P	110	26	-	56	9	7	10	3	3
M12 × 1.5	ISO2X	LM012OBIPN	5P	100	21	-	51	9	7	10	3	3
M12 × 1.25	ISO2X	LM012NBIPN	5P	100	21	-	51	9	7	10	3	3
M14 × 2	ISO2X	LG014QBIPN	5P	110	26	-	56	11	9	12	3	3
M14 × 1.5	ISO2X	LM014OBIPN	5P	100	21	-	51	11	9	12	3	3
M16 × 2	ISO2X	LG016QBIPN	5P	110	26	-	56	12	9	12	3	3
M16 × 1.5	ISO2X	LM016OBIPN	5P	100	21	-	51	12	9	12	3	3

• This product is different from JIS products in shape and dimensions, please be careful when using.

Think threads with
YAMAWA

2

DIN

Spiral Fluted Taps
(for blind hole)

①

Spiral Fluted Taps
(for through hole)

②

Spiral Pointed Taps
(for through hole)

③

Hand Taps

④

Cemented
Carbide Taps

⑤

Roll Taps

⑥

Special Thread Taps
Simple Inspection Tools

⑦

Pipe Taps

⑧

Thread Mills
Premium Thread Mills

⑨

Dies

⑩

Center Drills
Centering Tools

⑪

Precision Machinery/
Medical Surgical Instruments

⑫

DIN

②-28

② Spiral Fluted Tap Series for through hole

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

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

②-29

S

F-SL

Spiral Fluted Taps for High Speed Tapping, Through Hole Use (with LH Spiral Flutes)



Specification



Tapping Speeds depending on Materials

Low carbon steels 低炭素鋼	Medium carbon steels 中炭素鋼
15 ~ 25 (m/min)	15 ~ 25 (m/min)

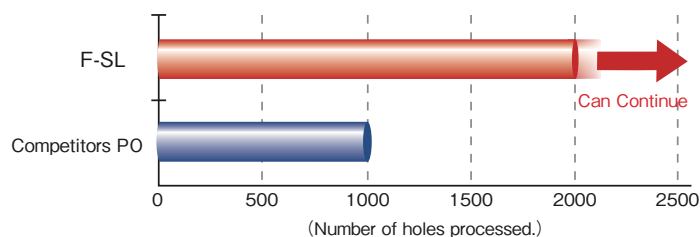
Product Features

- High speed machining is possible with a machine equipped with a fully synchronous feed mechanism.
- At low speed, the shape and discharge of the chip deteriorate, causing problems.

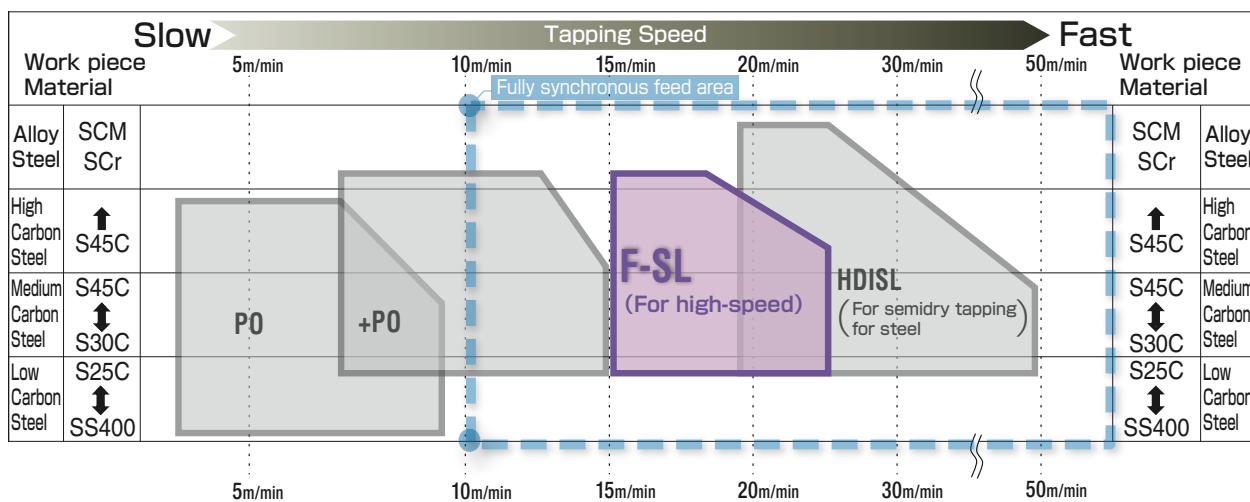
Tapping Data

Tapping conditions [M8 × 1.25]

Workpiece Material	S50C
Hardness	Raw material
Bored Hole Shape	Through hole
Tapping Length	1.5D ~
Machinery Type	M/C
Tapping Direction	Vertical
Type of Feed	Synchronous
Tapping Speed	30m/min
Cutting Fluid	Water soluble cutting fluid
Bored Hole Process	Drill
Tapped Holes	2,000 holes



Recommended speed table



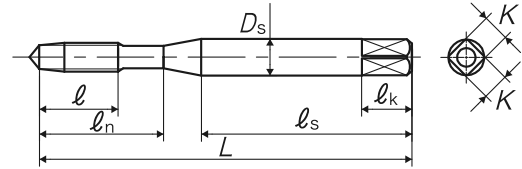
The above diagram is for the different materials shown.

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

2

JIS

TYPE: 1

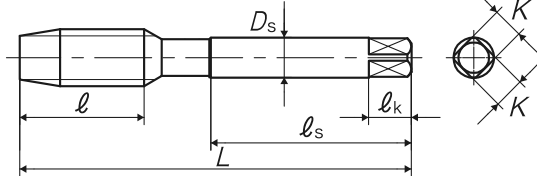
Spiral Fluted Taps
(for blind hole)

①

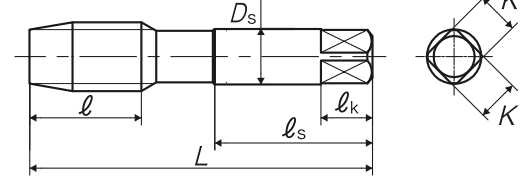
Spiral Fluted Taps
(for through hole)

②

TYPE: 2



TYPE: 3

Spiral Pointed Taps
(for through hole)

③

Hand Taps
(for through hole)

④

Segment : 1S

Size	Class	Code	Chamfer	L (mm)	ℓ (mm)	ℓ_n (mm)	ℓ_s (mm)	Ds (mm)	K (mm)	ℓ_k (mm)	No. of flutes	TYPE	MSRP
For Metric Threads													
M3 × 0.5	P2	VFSHMQ3.0GL	5P	46	9	14	26	4	3.2	6	3	1	¥ 4,240
M4 × 0.7	P2	VFSHMQ4.0IL	5P	52	11	17	29	5	4	7	3	1	¥ 4,300
M5 × 0.8	P2	VFSHMQ5.0KL	5P	60	13	22	33	5.5	4.5	7	3	1	¥ 4,610
M6 × 1	P2	VFSHMQ6.0ML	5P	62	15	26	33	6	4.5	7	3	1	¥ 4,960
M8 × 1.25	P3	VFSHMR8.0NL	5.5P	70	19	-	36	6.2	5	8	3	2	¥ 6,470
M10 × 1.5	P3	VFSHMR010OL	5.5P	75	23	-	38	7	5.5	8	3	2	¥ 7,550
M10 × 1.25	P3	VFSHMR010NL	5.5P	75	23	-	38	7	5.5	8	3	2	¥ 7,550
M12 × 1.75	P4	VFSHMS012PL	5.5P	82	26	-	42	8.5	6.5	9	3	2	¥ 9,560
M12 × 1.5	P3	VFSHMR012OL	5.5P	82	26	-	42	8.5	6.5	9	3	2	¥ 9,560
M12 × 1.25	P4	VFSHMS012NL	5.5P	82	26	-	42	8.5	6.5	9	3	2	¥ 9,560
M14 × 2	P4	VFSHMS014QL	5.5P	88	26	-	45	10.5	8	11	3	2	¥ 11,800 ※
M14 × 1.5	P3	VFSHMR014OL	5.5P	88	26	-	45	10.5	8	11	3	2	¥ 11,800 ※
M16 × 2	P4	VFSHMS016QL	5.5P	95	26	-	48	12.5	10	13	3	2	¥ 15,500 ※
M16 × 1.5	P3	VFSHMR016OL	5.5P	95	26	-	48	12.5	10	13	3	2	¥ 15,500 ※
M18 × 2.5	P4	VFSHMS018RL	5.5P	100	33	-	51	14	11	14	4	2	¥ 20,700 ※
M18 × 1.5	P4	VFSHMS018OL	5.5P	100	33	-	51	14	11	14	4	2	¥ 20,700 ※
M20 × 2.5	P4	VFSHMS020RL	5.5P	105	33	-	50	15	12	15	4	3	¥ 26,100 ※
M20 × 1.5	P4	VFSHMS020OL	5.5P	105	33	-	50	15	12	15	4	3	¥ 26,100 ※
M22 × 2.5	P4	VFSHMS022RL	5.5P	115	33	-	55	17	13	16	4	3	¥ 32,900 ※
M22 × 1.5	P4	VFSHMS022OL	5.5P	115	33	-	55	17	13	16	4	3	¥ 32,900 ※
M24 × 3	P4	VFSHMS024SL	5.5P	120	39	-	55	19	15	18	4	3	¥ 41,400 ※
M24 × 1.5	P4	VFSHMS024OL	5.5P	120	39	-	55	19	15	18	4	3	¥ 41,400 ※

Cemented
Carbide Taps

⑤

Roll Taps

⑥

Special Thread Taps
Simple Inspection Tools

⑦

Pipe Taps

⑧

Thread Mills
Premium Thread Mills

⑨

Dies

⑩

Center Drills
Centering Tools

⑪

Precision Machinery/
Medical Surgical Instruments

⑫

JIS

②-30

※ = Specified Distribution Items. Made to order products.

 Think threads with
YAMAWA

② Spiral Fluted Tap Series for through hole

Overall length	Thread length	Thread + Neck length	Shank dia.	Size of square	Length of square
L	ℓ	ℓ _n	D _s	K	ℓ _k

ANSI

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

ANSI

ZELX FR LHSP

Spiral Fluted Taps for High Speed Tapping, Through Hole Use (with LH Spiral Flutes)



Specification

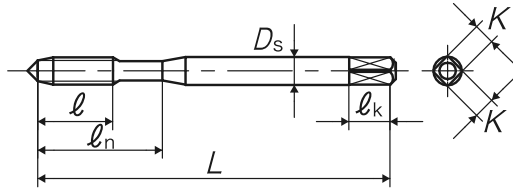


Tapping Speed depending on Materials

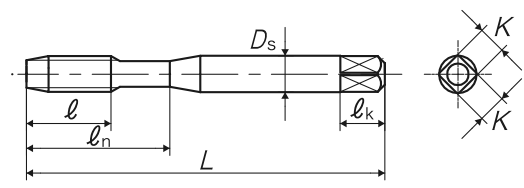
Low carbon steels 低炭素鋼	Medium carbon steels 中炭素鋼
15 ~ 25 (m/min)	15 ~ 25 (m/min)

■ ZELX FR LHSP, spiral fluted tap, through hole use (with LH spiral flutes) is applicable for such high speed tapping as 15m/min to 25m/min. Under low tapping speed, chip shape and chip ejection may become poor and cause tapping troubles.

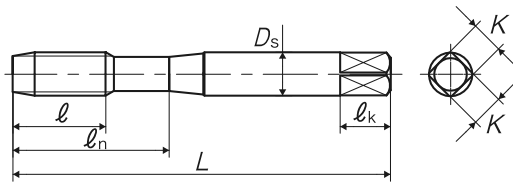
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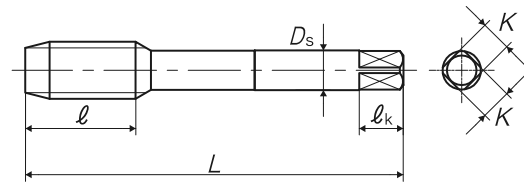
TYPE:2



TYPE:3



TYPE:4



Segment : 1S

Size	Class	Code	Chamfer	L (inch)	ℓ (inch)	ℓ _n (inch)	D _s (inch)	K (inch)	ℓ _k (inch)	No. of flutes	TYPE
For Unified Threads											
No.4-40UNC	GH2	Y84201	5P	1.875	0.335	0.562	0.141	0.11	0.187	3	1
No.5-40UNC	GH2	Y84203	5P	1.937	0.374	0.625	0.141	0.11	0.187	3	1
No.6-32UNC	GH3	Y84205	5P	2	0.413	0.687	0.141	0.11	0.187	3	1
No.8-32UNC	GH3	Y84207	5P	2.125	0.453	0.75	0.168	0.131	0.25	3	1
No.10-24UNC	GH3	Y84209	5P	2.375	0.531	0.875	0.194	0.152	0.25	3	1
No.10-32UNF	GH3	Y84210	5P	2.375	0.531	0.875	0.194	0.152	0.25	3	1
1/4-20UNC	GH3	Y84213	5.5P	2.5	0.591	1	0.255	0.191	0.312	3	2
1/4-28UNF	GH3	Y84214	5.5P	2.5	0.591	1	0.255	0.191	0.312	3	2
5/16-18UNC	GH3	Y84215	5.5P	2.718	0.669	1.125	0.318	0.238	0.375	3	3
5/16-24UNF	GH3	Y84216	5.5P	2.718	0.669	1.125	0.318	0.238	0.375	3	3
3/8-16UNC	GH3	Y84217	5.5P	2.937	0.748	1.25	0.381	0.286	0.437	3	3
3/8-24UNF	GH3	Y84218	5.5P	2.937	0.748	1.25	0.381	0.286	0.437	3	3
7/16-14UNC	GH3	Y84219	5.5P	3.156	0.984	-	0.323	0.242	0.406	3	4
7/16-20UNF	GH3	Y84220	5.5P	3.156	0.866	-	0.323	0.242	0.406	3	4
1/2-13UNC	GH3	Y84221	5.5P	3.375	1.142	-	0.367	0.275	0.437	3	4
1/2-20UNF	GH3	Y84222	5.5P	3.375	0.945	-	0.367	0.275	0.437	3	4

ANSI

Overall length	Thread length	Thread + Neck length	Shank dia.	Size of square	Length of square
L	ℓ	ℓn	Ds	K	ℓk

Size	Class	Code	Chamfer	L (inch)	ℓ (inch)	ℓn (inch)	Ds (inch)	K (inch)	ℓk (inch)	No. of flutes	TYPE
5/8-11UNC	GH3	Y84225	5.5P	3.812	1.26	-	0.48	0.36	0.562	3	4
5/8-18UNF	GH3	Y84226	5.5P	3.812	0.984	-	0.48	0.36	0.562	3	4
3/4-10UNC	GH3	Y84227	5.5P	4.25	1.467	-	0.59	0.422	0.687	4	4
3/4-16UNF	GH3	Y84228	5.5P	4.25	1.142	-	0.59	0.422	0.687	4	4

2

ANSI

Spiral Fluted Taps
(for blind hole)

①

Spiral Fluted Taps
(for through hole)

②

Spiral Pointed Taps
(for through hole)

③

Hand Taps

④

Cemented
Carbide Taps

⑤

Roll Taps

⑥

Special Thread Taps
Simple Inspection Tools

⑦

Pipe Taps

⑧

Thread Mills
Premium Thread Mills

⑨

Dies

⑩

Center Drills
Centering Tools

⑪

Precision Machinery/
Medical Surgical Instruments

⑫

ANSI

②-32

Think threads with
YAMAWA

· This product is different from JIS products in shape and dimensions, please be careful when using.

② Spiral Fluted Tap Series for through hole

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

DIN

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

DIN

F-SL

Spiral Fluted Taps for High Speed Tapping, Through Hole Use (with LH Spiral Flutes)



Specification

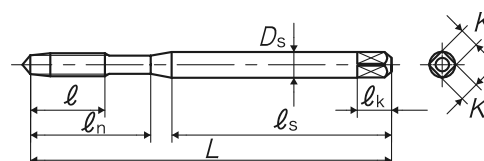


Tapping Speeds depending on Materials

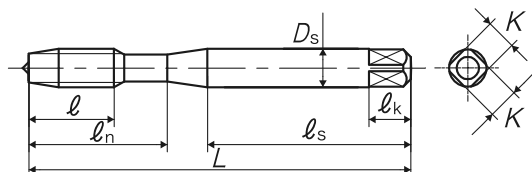
Low carbon steels 低碳素鋼	Medium carbon steels 中炭素鋼
15 ~ 25 (m/min)	15 ~ 25 (m/min)

■ F-SL, spiral fluted tap, through hole use (with LH spiral flutes) is applicable for such high speed tapping as 15m/min to 25m/min. Under low tapping speed, chip shape and chip ejection may become poor and cause tapping troubles.

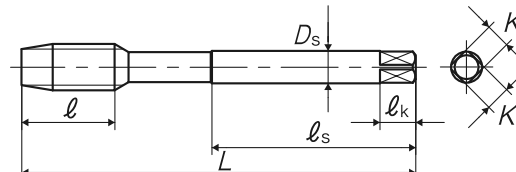
TYPE: 1



TYPE: 2



TYPE: 3



Segment : 1S

Size	Class	Code	Chamfer	L (mm)	ℓ (mm)	ℓ_n (mm)	ℓ_s (mm)	Ds (mm)	K (mm)	ℓ_k (mm)	No. of flutes	TYPE
For Metric Threads												
M3 × 0.5	ISO2X	LD3.0GBNEV	5P	56	9	18	34	3.5	2.7	6	3	1
M4 × 0.7	ISO2X	LD4.0IBNEV	5P	63	13	21	38	4.5	3.4	6	3	1
M5 × 0.8	ISO2X	LD5.0KBNEV	5P	70	14	25	39	6	4.9	8	3	1
M6 × 1	ISO2X	LY6.0MBNEV	5.5P	80	15	30	45	6	4.9	8	3	2
M8 × 1.25	ISO2X	LY8.0NBNEV	5.5P	90	19	35	48	8	6.2	9	3	2
M10 × 1.5	ISO2X	LY010OBNEV	5.5P	100	23	39	53	10	8	11	3	2
M10 × 1.25	ISO2X	LY010NBNEV	5.5P	100	19	39	53	10	8	11	3	2
M12 × 1.75	ISO2X	LY012PBNEV	5.5P	110	26	45	56	12	9	12	3	2
M12 × 1.75	ISO2X	LG012PBNEV	5.5P	110	26	-	56	9	7	10	3	3
M12 × 1.5	ISO2X	LY012OBNEV	5.5P	110	23	45	56	12	9	12	3	2
M12 × 1.5	ISO2X	LM012OBNEV	5.5P	100	21	-	51	9	7	10	3	3
M12 × 1.25	ISO2X	LY012NBNEV	5.5P	110	19	45	56	12	9	12	3	2
M12 × 1.25	ISO2X	LM012NBNEV	5.5P	100	21	-	51	9	7	10	3	3

DIN

②-33

Think threads with
YAMAWA

· This product is different from JIS products in shape and dimensions, please be careful when using.

Spiral Fluted Tap Series for through hole

JIS

LS-F-SL

Long Shank Spiral Fluted Taps for High Speed Tapping, Through Hole Use (with LH Spiral Flutes)
Specification



Overall length	Thread length	Thread + Neck length	Shank length	Shank dia.	Size of square	Length of square
L	ℓ	ℓ _n	ℓ _s	D _s	K	ℓ _k

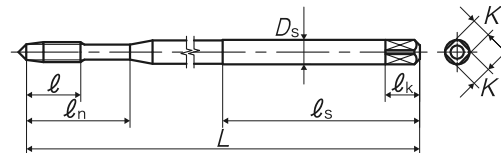


■ This is a long shank spiral fluted tap for tapping through holes at high-speeds of 15 m/min to 25 m/min. Using it at a low-speed will result in bad shape and ejection of chips, leading to trouble.

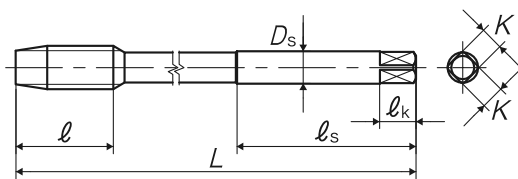
Tapping Speeds depending on Materials

Low carbon steels 低碳素鋼	Medium carbon steels 中炭素鋼
15 ~ 25 (m/min)	15 ~ 25 (m/min)

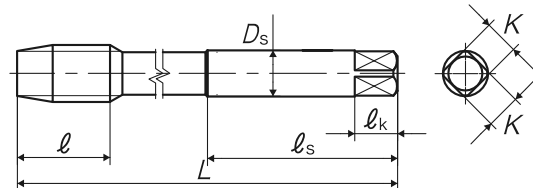
TYPE: 1



TYPE: 2



TYPE: 3



Segment : 1S

Size	Class	Code	Chamfer	L (mm)	ℓ (mm)	ℓ _n (mm)	ℓ _s (mm)	D _s (mm)	K (mm)	ℓ _k (mm)	No. of flutes	TYPE	MSRP
For Metric Threads													
M3 × 0.5	P2	L43.0GQFEVE	5P	100	9	18	40	4	3.2	6	3	1	¥ 7,680 ※
M4 × 0.7	P2	L44.0IQFEVE	5P	100	11	21	40	5	4	7	3	1	¥ 7,300 ※
M5 × 0.8	P2	L45.0KQFEVE	5P	100	13	25	40	5.5	4.5	7	3	1	¥ 6,620 ※
M6 × 1	P2	L46.0MQFEVE	5P	100	15	30	40	6	4.5	7	3	1	¥ 5,990 ※
M8 × 1.25	P3	LY8.0NRFEVE	5.5P	100	19	-	50	6.2	5	8	3	2	¥ 7,300 ※
M10 × 1.5	P3	LY010ORFEVE	5.5P	100	23	-	50	7	5.5	8	3	2	¥ 9,510 ※
M10 × 1.5	P3	LY010ORFEVG	5.5P	150	23	-	50	7	5.5	8	3	2	¥ 14,100 ※
M10 × 1.25	P3	LY010NRFEVE	5.5P	100	23	-	50	7	5.5	8	3	2	¥ 9,510 ※
M10 × 1.25	P3	LY010NRFEVG	5.5P	150	23	-	50	7	5.5	8	3	2	¥ 14,100 ※
M12 × 1.75	P4	LY012PSFEVG	5.5P	150	26	-	50	8.5	6.5	9	3	2	¥ 17,200 ※
M12 × 1.5	P3	LY012ORFEVG	5.5P	150	26	-	50	8.5	6.5	9	3	2	¥ 17,200 ※
M12 × 1.25	P4	LY012NSFEVG	5.5P	150	26	-	50	8.5	6.5	9	3	2	¥ 17,200 ※
M14 × 2	P4	LY014QSFEVG	5.5P	150	26	-	60	10.5	8	11	3	2	¥ 21,300 ※
M14 × 1.5	P3	LY014ORFEVG	5.5P	150	26	-	60	10.5	8	11	3	2	¥ 21,300 ※
M16 × 2	P4	LY016QSFEVG	5.5P	150	26	-	60	12.5	10	13	3	2	¥ 23,200 ※
M16 × 1.5	P3	LY016ORFEVG	5.5P	150	26	-	60	12.5	10	13	3	2	¥ 23,200 ※
M18 × 2.5	P4	LY018RSFEVG	5.5P	150	33	-	70	14	11	14	4	2	¥ 29,200 ※
M18 × 1.5	P4	LY018OSFEVG	5.5P	150	33	-	70	14	11	14	4	2	¥ 29,200 ※
M20 × 2.5	P4	LY020RSFEVG	5.5P	150	33	-	70	15	12	15	4	3	¥ 36,200 ※
M20 × 1.5	P4	LY020OSFEVG	5.5P	150	33	-	70	15	12	15	4	3	¥ 36,200 ※
M22 × 2.5	P4	LY022RSFEVG	5.5P	150	33	-	70	17	13	16	4	3	¥ 42,000 ※
M22 × 1.5	P4	LY022OSFEVG	5.5P	150	33	-	70	17	13	16	4	3	¥ 42,000 ※
M24 × 3	P4	LY024SSFEVG	5.5P	150	39	-	80	19	15	18	4	3	¥ 49,200 ※
M24 × 1.5	P4	LY024OSFEVG	5.5P	150	39	-	80	19	15	18	4	3	¥ 49,200 ※
M27 × 3	P4	LY027SSFEVK	5.5P	200	39	-	80	20	15	18	4	3	¥ 74,800 ※
M30 × 3.5	P5	LY030TTFEVK	5.5P	200	46	-	80	23	17	20	4	3	¥ 86,800 ※

※ = Specified Distribution Items. Made to order products.

Think threads with
YAMAWA

2

JIS

Spiral Fluted Taps
(for blind hole)

①

Spiral Fluted Taps
(for through hole)

②

Spiral Pointed Taps
(for through hole)

③

Hand Taps

④

Cemented
Carbide Taps

⑤

Roll Taps

⑥

Special Thread Taps
Simple Inspection Tools

⑦

Pipe Taps

⑧

Thread Mills
Premium Thread Mills

⑨

Dies

⑩

Center Drills
Centering Tools

⑪

Precision Machinery/
Medical Surgical Instruments

⑫

JIS

②-34

② Spiral Fluted Tap Series for through hole

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

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

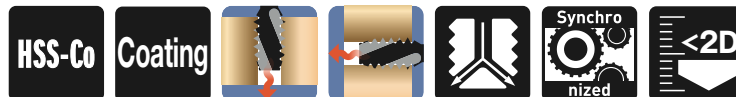
S
I
S

HDISL



Spiral Fluted Taps for Steels, for Dry Tapping and for Ultra High Speed Tapping, Through Hole Use (with LH Spiral Fluted)

Specification



Tapping Speeds depending on Materials

Medium carbon steels 中炭素鋼	High carbon steels 高炭素鋼	Alloy steels 合金鋼
20~50 (m/min)	20~50 (m/min)	20~50 (m/min)

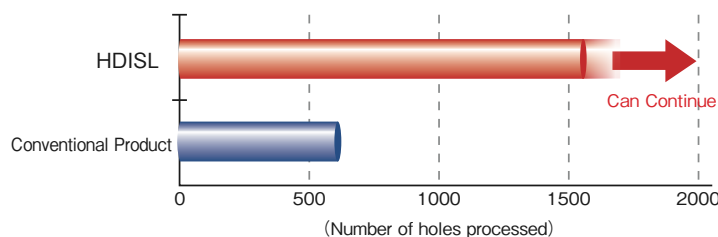
Product Features

- Ultra high-speed machining with mist or dry tapping machining are possible with a side coolant through hole shape.
- The left hand spiral flute shape makes it the perfect tapping for vertical or horizontal machining in carbon steel and alloy steel in through hole applications.

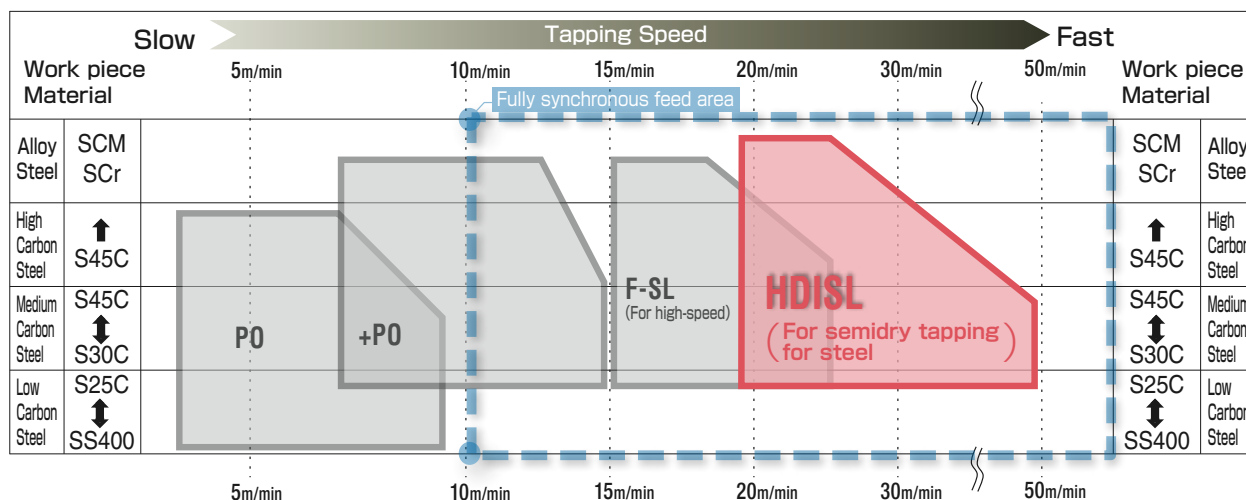
Tapping Data

Tapping Conditions [M12×1.25]

Workpiece Material	S55C tempered steel
Hole Shape	Through holes
Bored Hole Size	$\phi 10.75$
Tapping Length	18mm
Tapping Speed	50m/min
Machinery Type	M/C machine (horizontal type)
Cutting Fluid	Water soluble cutting fluid
Number of Holes Processed	1,600 holes



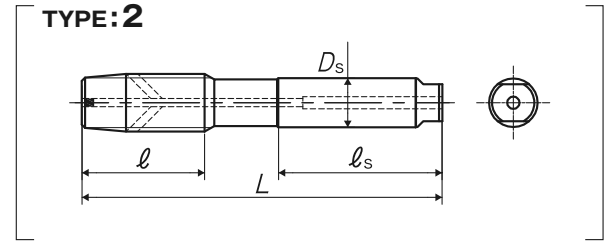
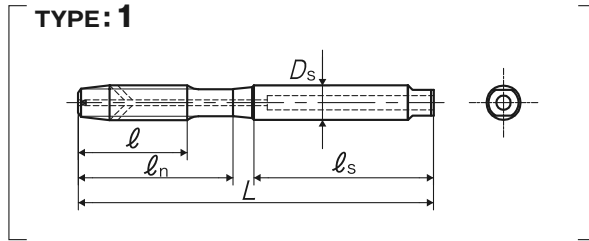
Speed recommendation table



The above diagram is for the different materials shown.

JIS

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



Segment : 1T

Size	Class	Code	Chamfer	L (mm)	ℓ (mm)	ℓ_n (mm)	ℓ_s (mm)	Ds (mm)	K (mm)	ℓ_k (mm)	No. of flutes	TYPE	MSRP
For Metric Threads													
M6 × 1	P4	HDISLS6.0M	5.5P	62	19	27	32	6	-	-	3	1	¥ 5,040
M8 × 1.25	P4	HDISLS8.0N	5.5P	70	22	-	36	8	-	-	3	2	¥ 7,410
M10 × 1.5	P4	HDISLS010O	5.5P	75	24	-	37	10	-	-	3	2	¥ 9,380
M10 × 1.25	P4	HDISLS010N	5.5P	75	24	-	37	10	-	-	3	2	¥ 9,380
M12 × 1.75	P4	HDISLS012P	5.5P	82	29	-	40	12	-	-	3	2	¥ 13,400
M12 × 1.5	P4	HDISLS012O	5.5P	82	29	-	40	12	-	-	3	2	¥ 13,400
M12 × 1.25	P4	HDISLS012N	5.5P	82	29	-	40	12	-	-	3	2	¥ 13,400
M14 × 1.5	P4	HDISLS014O	5.5P	88	30	-	40	12	-	-	3	2	¥ 18,300
M16 × 1.5	P4	HDISLS016O	5.5P	95	32	-	43	16	-	-	3	2	¥ 24,100
M18 × 1.5	P4	HDISLS018O	5.5P	100	37	-	45	16	-	-	4	2	¥ 34,200
M20 × 1.5	P5	HDISLT020O	5.5P	105	37	-	45	16	-	-	4	2	¥ 44,600

Remarks:

1. HDISL do not have square on its shank, please use holders having strong gripping force, such as milling chucks.
2. Rear end of the shank is to tongue specification. If the portion which contacts the rear end has V saucer, coolant may leak.

Spiral Fluted Taps
(for blind hole) ①

Spiral Fluted Taps
(for through hole) ②

Spiral Pointed Taps
(for through hole) ③

Hand Taps ④

Cemented
Carbide Taps ⑤

Roll Taps ⑥

Special Thread Taps
Simple Inspection Tools ⑦

Pipe Taps ⑧

Thread Mills
Premium Thread Mills ⑨

Dies ⑩

Center Drills
Centering Tools ⑪

Precision Machinery/
Medical Surgical Instruments ⑫

JIS

②-36

② Spiral Fluted Tap Series for through hole

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

DIN

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

Dies

⑩

⑪ Center Drills
Centering Tools

⑫ Precision Machinery/
Medical Surgical Instruments

DIN

②-37

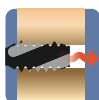
DIN

HDISL

Spiral Fluted Taps for Steels, for Dry Tapping and for Ultra High Speed Tapping, Through Hole Use (with LH Spiral Flutes)



Specification



■ Tapping under ultra high speed and under mist and dry, is possible with HDISL. Having radial coolant through hole, HDISL is suitable for carbon steels and alloy steels. For through hole use (with LH spiral flutes) for both vertical and horizontal use.

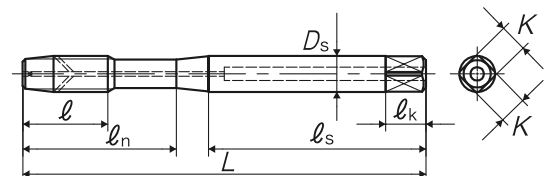
Tapping Speeds depending on Materials

Medium carbon steels
中炭素鋼
20~50
(m/min)

High carbon steels
高炭素鋼
20~50
(m/min)

Alloy steels
合金鋼
20~50
(m/min)

TYPE: 1



Segment : 1T

Size	Class	Code	Chamfer	L (mm)	ℓ (mm)	ℓ_n (mm)	ℓ_s (mm)	Ds (mm)	K (mm)	ℓ_k (mm)	No. of flutes	TYPE
For Metric Threads												
M6 × 1	ISO2X	LY6.0MBEDTLZ	5.5P	80	15	30	45	6	4.9	8	3	1
M8 × 1.25	ISO2X	LY8.0NBEDTLZ	5.5P	90	19	35	48	8	6.2	9	3	1
M10 × 1.5	ISO2X	LY010OBEDTLZ	5.5P	100	23	39	53	10	8	11	3	1
M10 × 1.25	ISO2X	LY010NBEDTLZ	5.5P	100	23	39	53	10	8	11	3	1
M12 × 1.75	ISO2X	LY012PBEDTLZ	5.5P	110	26	44	57	12	9	12	3	1
M12 × 1.5	ISO2X	LY012OBEDTLZ	5.5P	110	26	44	57	12	9	12	3	1
M12 × 1.25	ISO2X	LY012NBEDTLZ	5.5P	110	26	44	57	12	9	12	3	1

Think threads with
YAMAWA

· This product is different from JIS products in shape and dimensions, please be careful when using.