

Think threads with
YAMAWA

VU SERIES

Z-PRO Ultimate Machining Taps.
The evolution of high performance tapping.

Z-PRO

Ultimate Machining Taps

JIS / DIN / ANSI



VUSP

VUPO

Product Features

Z-PRO
Ultimate Machining Taps

Coated Spiral Fluted Taps

VUSP

HSS-P

Coating



- Improved tool life from using a high grade of powder high speed steel with a special coating!
 - Improved chip evacuation and cutting resistance from a unique flute shape to produce excellent internal threads!
 - Utilizing a longer overall length to avoid the chips interfering with the holder!
- The Z-PRO VUSP is designed for use with water-soluble cutting fluid where there is a good coolant supply.

Compatible with a wide range of workpiece material

VUSP Recommended Tapping Conditions

Workpiece Material	Tapping Speed (m/min)	Workpiece Material	Tapping Speed (m/min)
General Structural Steel	10~20	Alloy Steel	10~20
Carbon Steel	10~25	Stainless Steel	5~10

VUSP is suitable for use with water-soluble cutting fluid

Ideal for machining in the medium speed range using water-soluble cutting fluid.

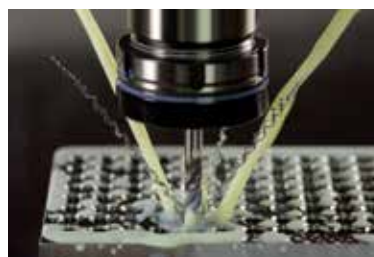
Fluid	Hole shape	Hand tapping	Drilling machine	Low speed (NC lathe, MC)	Middle speed (NC lathe, MC)	
Water soluble cutting fluid					VUSP Vc ≤ 25m/min	
					VUPO	
Oil		HT IHT	ISP	SP	+SP	AU+SP
			IPO	PO	+PO	AU+SL

Tapping Data

Tapping conditions VUSP M8X1.25

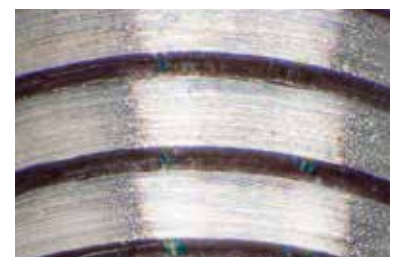
Workpiece Material	SUS304
Tapping Speed	10m/min
Machine	Vertical Machining center
Tapping Fluid	Water soluble cutting fluid

Excellent chip evacuation



The unique cutting edge shape and the long overall-length tap prevent chips from interfering with the holder. They also ensure an excellent supply of water-soluble cutting fluid.

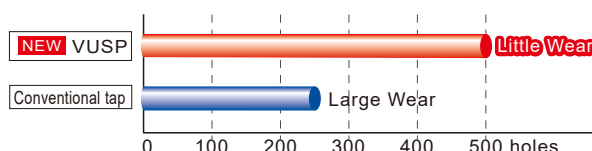
Excellent internal thread



In tapping of SUS304, excellent internal thread surface is obtained even in tapping environments that use water-soluble cutting fluid.

Tapping conditions VUSP M3X0.5

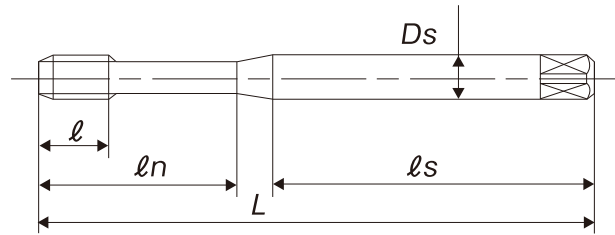
Workpiece Material	S50C
Tapping Length	4.5mm
Tapping Speed	20m/min
Machine	Vertical Machining center
Tapping Fluid	Water soluble cutting fluid



After 250 holes tapped. Little wear, No chipping



[M3~M6]

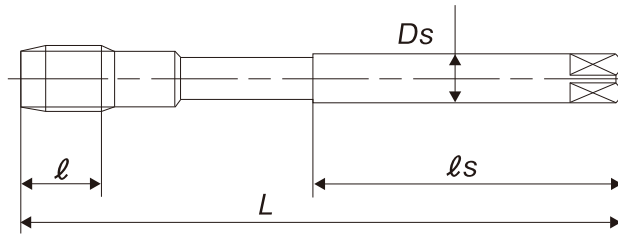


Size	Class	Product Code	Chamfer	L (mm)	l (mm)	ln (mm)	ls (mm)	Ds (mm)	No. of flutes
M3 X 0.5	P2	1101101035	2.5P	56	5	18	32	4	3
M3 X 0.5	P3	1101201035	2.5P	56	5	18	32	4	3
M3 X 0.5	P4	1101301035	2.5P	56	5	18	32	4	3
M3 X 0.35	P2	1101101036	2.5P	56	5	18	32	4	3
M3 X 0.35	P3	1101201036	2.5P	56	5	18	32	4	3
M3 X 0.35	P4	1101301036	2.5P	56	5	18	32	4	3
M4 X 0.7	P2	1101101042	2.5P	63	7	21	36	5	3
M4 X 0.7	P3	1101201042	2.5P	63	7	21	36	5	3
M4 X 0.7	P4	1101301042	2.5P	63	7	21	36	5	3
M4 X 0.5	P2	1101101043	2.5P	63	5	21	36	5	3
M4 X 0.5	P3	1101201043	2.5P	63	5	21	36	5	3
M4 X 0.5	P4	1101301043	2.5P	63	5	21	36	5	3
M5 X 0.8	P2	1101101049	2.5P	70	9	25	40	5.5	3
M5 X 0.8	P3	1101201049	2.5P	70	9	25	40	5.5	3
M5 X 0.8	P4	1101301049	2.5P	70	9	25	40	5.5	3
M5 X 0.5	P2	1101101051	2.5P	70	6	25	40	5.5	3
M5 X 0.5	P3	1101201051	2.5P	70	6	25	40	5.5	3
M5 X 0.5	P4	1101301051	2.5P	70	6	25	40	5.5	3
M6 X 1	P2	1101101055	2.5P	80	11	30	45	6	3
M6 X 1	P3	1101201055	2.5P	80	11	30	45	6	3
M6 X 1	P4	1101301055	2.5P	80	11	30	45	6	3
M6 X 0.75	P2	1101101056	2.5P	80	8	30	45	6	3
M6 X 0.75	P3	1101201056	2.5P	80	8	30	45	6	3
M6 X 0.75	P4	1101301056	2.5P	80	8	30	45	6	3
M6 X 0.5	P2	1101101057	2.5P	80	8	30	45	6	3
M6 X 0.5	P3	1101201057	2.5P	80	8	30	45	6	3
M6 X 0.5	P4	1101301057	2.5P	80	8	30	45	6	3
M8 X 1.25	P3	1101101064	2.5P	90	12	–	46	6.2	3
M8 X 1.25	P4	1101201064	2.5P	90	12	–	46	6.2	3
M8 X 1.25	P5	1101301064	2.5P	90	12	–	46	6.2	3
M8 X 1	P3	1101101065	2.5P	90	12	–	46	6.2	3
M8 X 1	P4	1101201065	2.5P	90	12	–	46	6.2	3
M8 X 1	P5	1101301065	2.5P	90	12	–	46	6.2	3

Oversize

Coated Spiral Fluted Taps **VUSP**

[M8~M16]

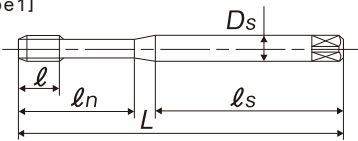


Size	Class	Product Code	Chamfer	L (mm)	l (mm)	l_n (mm)	l_s (mm)	D_s (mm)	No. of flutes
M10X 1.5	P3	1101101078	2.5P	100	13	-	51	7	3
M10X 1.5	P4	1101201078	2.5P	100	13	-	51	7	3
M10X 1.5	P5	1101301078	2.5P	100	13	-	51	7	3
M10X 1.25	P3	1101101079	2.5P	100	13	-	51	7	3
M10X 1.25	P4	1101201079	2.5P	100	13	-	51	7	3
M10X 1.25	P5	1101301079	2.5P	100	13	-	51	7	3
M10X 1	P3	1101101080	2.5P	100	13	-	51	7	3
M10X 1	P4	1101201080	2.5P	100	13	-	51	7	3
M10X 1	P5	1101301080	2.5P	100	13	-	51	7	3
M12X 1.75	P4	1101101088	2.5P	110	15	-	56	8.5	3
M12X 1.75	P5	1101201088	2.5P	110	15	-	56	8.5	3
M12X 1.75	P6	1101301088	2.5P	110	15	-	56	8.5	3
M12X 1.5	P3	1101101089	2.5P	110	15	-	56	8.5	3
M12X 1.5	P4	1101201089	2.5P	110	15	-	56	8.5	3
M12X 1.5	P5	1101301089	2.5P	110	15	-	56	8.5	3
M12X 1.25	P3	1101101090	2.5P	110	15	-	56	8.5	3
M12X 1.25	P4	1101201090	2.5P	110	15	-	56	8.5	3
M12X 1.25	P5	1101301090	2.5P	110	15	-	56	8.5	3
M14X 2	P4	1101101100	2.5P	110	18	-	56	10.5	3
M14X 2	P5	1101201100	2.5P	110	18	-	56	10.5	3
M14X 2	P6	1101301100	2.5P	110	18	-	56	10.5	3
M14X 1.5	P3	1101101102	2.5P	110	14	-	56	10.5	3
M14X 1.5	P4	1101201102	2.5P	110	14	-	56	10.5	3
M14X 1.5	P5	1101301102	2.5P	110	14	-	56	10.5	3
M16X 2	P4	1101101114	2.5P	110	18	-	56	12.5	3
M16X 2	P5	1101201114	2.5P	110	18	-	56	12.5	3
M16X 2	P6	1101301114	2.5P	110	18	-	56	12.5	3
M16X 1.5	P3	1101101116	2.5P	110	14	-	56	12.5	3
M16X 1.5	P4	1101201116	2.5P	110	14	-	56	12.5	3
M16X 1.5	P5	1101301116	2.5P	110	14	-	56	12.5	3

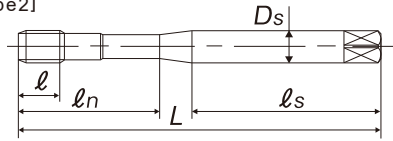
Oversize

Coated Spiral Fluted Taps VUSP

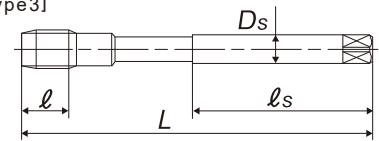
[Type1]



[Type2]

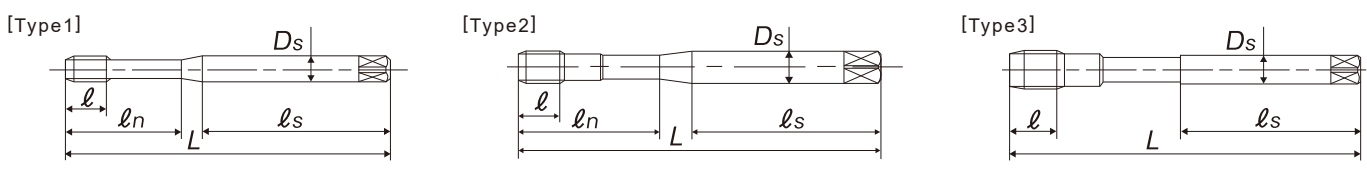


[Type3]



Size	Class	Product Code	Chamfer	L (mm)	l (mm)	ln (mm)	ls (mm)	Ds (mm)	No. of flutes	Type
M 3 X 0.5	IS02X	3101101035	2.5P	56	5	18	34	3.5	3	1
M 3 X 0.35	IS02X	3101101036	2.5P	56	5	18	34	3.5	3	1
M 4 X 0.7	IS02X	3101101042	2.5P	63	7	21	38	4.5	3	1
M 4 X 0.5	IS02X	3101101043	2.5P	63	5	21	38	4.5	3	1
M 5 X 0.8	IS02X	3101101049	2.5P	70	9	25	39	6	3	1
M 5 X 0.5	IS02X	3101101051	2.5P	70	6	25	39	6	3	1
M 6 X 1	IS02X	3101101055	2.5P	80	11	30	45	6	3	1
M 6 X 0.75	IS02X	3101101056	2.5P	80	8	30	45	6	3	1
M 6 X 0.5	IS02X	3101101057	2.5P	80	8	30	45	6	3	1
M 8 X 1.25	IS02X	3101101064	2.5P	90	12	35	47	8	3	2
M 8 X 1	IS02X	3101101065	2.5P	90	12	–	46	6	3	3
M10 X 1.5	IS02X	3101101078	2.5P	100	13	39	52	10	3	2
M10 X 1.25	IS02X	3101101079	2.5P	100	13	–	51	7	3	3
M10 X 1	IS02X	3101101080	2.5P	90	13	–	46	7	3	3
M12 X 1.75	IS02X	3101101088	2.5P	110	15	–	56	9	3	3
M12 X 1.5	IS02X	3101101089	2.5P	100	15	–	51	9	3	3
M12 X 1.25	IS02X	3101101090	2.5P	100	15	–	51	9	3	3
M14 X 2	IS02X	3101101100	2.5P	110	18	–	56	11	3	3
M14 X 1.5	IS02X	3101101102	2.5P	100	14	–	51	11	3	3
M16 X 2	IS02X	3101101114	2.5P	110	18	–	56	12	3	3
M16 X 1.5	IS02X	3101101116	2.5P	100	14	–	51	12	3	3

Coated Spiral Fluted Taps VUSP



Size	Class	Product Code	Chamfer	L (inch)	l (inch)	ln (inch)	ls (inch)	Ds (inch)	No. of flutes	Type
M 3 X 0.5	D4	5101101035	2.5P	2.205	0.197	0.709	1.339	0.142	3	1
M 4 X 0.7	D5	5101101042	2.5P	2.480	0.276	0.787	1.535	0.169	3	1
M 5 X 0.8	D5	5101101049	2.5P	2.756	0.354	0.984	1.654	0.193	3	1
M 6 X 1	D6	5101101055	2.5P	3.150	0.433	1.181	1.693	0.256	3	1
M 8 X 1.25	D7	5101101064	2.5P	3.543	0.472	1.378	1.850	0.319	3	2
M 8 X 1	D6	5101101065	2.5P	3.543	0.472	1.378	1.850	0.319	3	2
M10 X 1.5	D8	5101101078	2.5P	3.937	0.512	1.535	2.126	0.382	3	2
M10 X 1.25	D6	5101101079	2.5P	3.937	0.512	1.535	2.126	0.382	3	2
M10 X 1	D6	5101101080	2.5P	3.937	0.512	1.535	2.126	0.382	3	2
M12 X 1.75	D8	5101101088	2.5P	4.331	0.591	-	2.205	0.366	3	3
M12 X 1.5	D7	5101101089	2.5P	4.331	0.591	-	2.205	0.366	3	3
M12 X 1.25	D7	5101101090	2.5P	4.331	0.591	-	2.205	0.366	3	3
M14 X 2	D9	5101101100	2.5P	4.331	0.709	-	2.205	0.429	3	3
M14 X 1.5	D8	5101101102	2.5P	4.331	0.709	-	2.205	0.429	3	3
M16 X 2	D8	5101101114	2.5P	4.331	0.709	-	2.205	0.480	3	3
M16 X 1.5	D9	5101101116	2.5P	4.331	0.709	-	2.205	0.480	3	3

Size	Class	Product Code	Chamfer	L (inch)	l (inch)	ln (inch)	ls (inch)	Ds (inch)	No. of flutes	Type
1/4-20UNC	H3	5101103058	2.5P	3.150	0.433	1.181	1.713	0.255	2	1
1/4-20UNC	H5	5101203058	2.5P	3.150	0.433	1.181	1.713	0.255	2	1
5/16-18UNC	H5	5101103071	2.5P	3.543	0.472	1.378	1.831	0.318	3	2
3/8-16UNC	H5	5101103082	2.5P	3.937	0.512	1.535	2.028	0.381	3	2
1/2-13UNC	H5	5101103111	2.5P	4.331	0.591	-	2.205	0.367	3	3

VUSP CH Coated Spiral Fluted Taps



VUSP with coolant through hole(CH:Coolant Hole)



Size	Class	Product Code	Chamfer	L (inch)	l (inch)	ln (inch)	ls (inch)	Ds (inch)	No. of flutes	Type
5/16-18UNC	H5	5201103071	2.5P	3.543	0.472	1.378	1.831	0.318	3	1
3/8-16UNC	H5	5201103082	2.5P	3.937	0.512	1.535	2.028	0.381	3	1
1/2-13UNC	H5	5201103111	2.5P	4.331	0.591	-	2.205	0.367	3	2

Product Features

Z-PRO
Ultimate Machining Taps

Coated Spiral Pointed Taps

VUPO

HSS-P

Coating



- Improved tool life from using a high grade of powder high speed steel with a special coating!
- Improved chip evacuation and cutting resistance from a unique flute shape to produce excellent internal threads!
- Longer overall Length...Allows a longer projected length out of the holder for better application of cutting fluids. The Z-PRO VUPO is designed for use with water-soluble cutting fluid where there is a good coolant supply.

Compatible with a wide range of workpiece material

VUPO Recommended Processing Conditions

Workpiece Material	Tapping Speed (m/min)	Workpiece Material	Tapping Speed (m/min)
General Structural Steel	10~30	Alloy Steel	10~30
Carbon Steel	10~30	Stainless Steel	5~15

VUPO is suitable for use with water-soluble cutting fluid

Ideal for machining in the medium speed range using water-soluble cutting fluid.

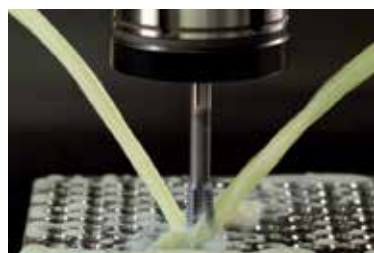
Fluid	Hole shape	Hand tapping	Drilling machine	Low speed (NC lathe, MC)	Middle speed (NC lathe, MC)	
Water soluble cutting fluid					VUSP	
					VUPO Vc ≤ 30m/min	
Oil		HT IHT	ISP	SP	+SP	AU+SP
			IPO	PO	+PO	AU+SL

Tapping Data

Tapping conditions VUPO M10X1.5

Workpiece Material	SUS304
Tapping Speed	10m/min
Machine	Vertical Machining center
Tapping Fluid	Water soluble cutting fluid

Excellent supply of cutting fluid



The unique cutting edge shape and the longer projection achieve an excellent supply of water-soluble cutting fluid.

Excellent internal thread



In tapping of SUS304, excellent internal thread surface is obtained even in tapping environments that use water-soluble cutting fluid.

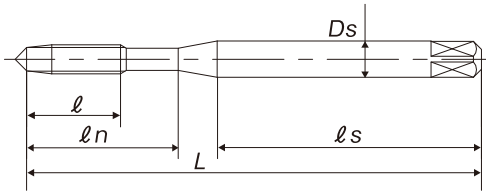
Tapping conditions VUPO M10X1.5

Workpiece Material	S50C
Tapping Length	20mm(2D)
Tapping Speed	20m/min
Machine	Vertical Machining center
Tapping Fluid	Water soluble cutting fluid

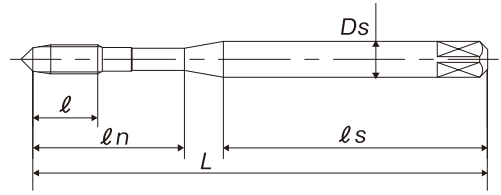
	NEW VUPO	Conventional tap
Wear after 560 holes tapped		



[Type1]



[Type2]

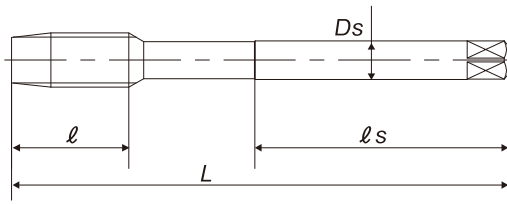


Size	Class	Product Code	Chamfer	L (mm)	l (mm)	ln (mm)	ls (mm)	Ds (mm)	No. of flutes	Type
M2 X 0.4	P2	1102101021	5P	45	8	15	27	3	2	1
M2.2 X 0.45	P2	1102101024	5P	45	8	15	27	3	2	1
M2.3 X 0.4	P2	1102101026	5P	45	8	15	27	3	2	1
M2.5 X 0.45	P2	1102101029	5P	50	8	15	32	3	2	1
M2.6 X 0.45	P2	1102101032	5P	50	8	15	32	3	2	1
M3 X 0.5	P2	1102101035	5P	56	9	18	32	4	3	1
M3 X 0.5	P3	1102201035	5P	56	9	18	32	4	3	1
M3 X 0.5	P4	1102301035	5P	56	9	18	32	4	3	1
M3 X 0.35	P2	1102101036	5P	56	6.5	18	32	4	3	2
M3 X 0.35	P3	1102201036	5P	56	6.5	18	32	4	3	2
M3 X 0.35	P4	1102301036	5P	56	6.5	18	32	4	3	2
M4 X 0.7	P3	1102101042	5P	63	13	21	36	5	3	1
M4 X 0.7	P4	1102201042	5P	63	13	21	36	5	3	1
M4 X 0.7	P5	1102301042	5P	63	13	21	36	5	3	1
M4 X 0.5	P2	1102101043	5P	63	9	21	36	5	3	2
M4 X 0.5	P3	1102201043	5P	63	9	21	36	5	3	2
M4 X 0.5	P4	1102301043	5P	63	9	21	36	5	3	2
M5 X 0.8	P3	1102101049	5P	70	14	25	40	5.5	3	1
M5 X 0.8	P4	1102201049	5P	70	14	25	40	5.5	3	1
M5 X 0.8	P5	1102301049	5P	70	14	25	40	5.5	3	1
M5 X 0.5	P2	1102101051	5P	70	9	25	40	5.5	3	2
M5 X 0.5	P3	1102201051	5P	70	9	25	40	5.5	3	2
M5 X 0.5	P4	1102301051	5P	70	9	25	40	5.5	3	2
M6 X 1	P3	1102101055	5P	80	15	30	45	6	3	1
M6 X 1	P4	1102201055	5P	80	15	30	45	6	3	1
M6 X 1	P5	1102301055	5P	80	15	30	45	6	3	1
M6 X 0.75	P2	1102101056	5P	80	15	30	45	6	3	1
M6 X 0.75	P3	1102201056	5P	80	15	30	45	6	3	1
M6 X 0.75	P4	1102301056	5P	80	15	30	45	6	3	1
M6 X 0.5	P2	1102101057	5P	80	9	30	45	6	3	2
M6 X 0.5	P3	1102201057	5P	80	9	30	45	6	3	2
M6 X 0.5	P4	1102301057	5P	80	9	30	45	6	3	2

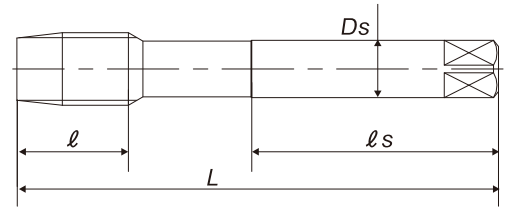
Oversize

Coated Spiral Pointed Taps VUPO

[Type3]



[Type4]

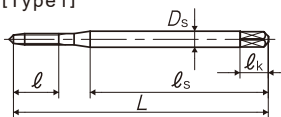


Size	Class	Product Code	Chamfer	L (mm)	ℓ (mm)	ℓ _n (mm)	ℓ _s (mm)	D _s (mm)	No. of flutes	Type
M8 X 1.25	P3	1102101064	5P	90	19	—	46	6.2	3	3
M8 X 1.25	P4	1102201064	5P	90	19	—	46	6.2	3	3
M8 X 1.25	P5	1102301064	5P	90	19	—	46	6.2	3	3
M8 X 1	P3	1102101065	5P	90	19	—	46	6.2	3	3
M8 X 1	P4	1102201065	5P	90	19	—	46	6.2	3	3
M8 X 1	P5	1102301065	5P	90	19	—	46	6.2	3	3
M10X 1.5	P3	1102101078	5P	100	23	—	51	7	3	3
M10X 1.5	P4	1102201078	5P	100	23	—	51	7	3	3
M10X 1.5	P5	1102301078	5P	100	23	—	51	7	3	3
M10X 1.25	P3	1102101079	5P	100	23	—	51	7	3	3
M10X 1.25	P4	1102201079	5P	100	23	—	51	7	3	3
M10X 1.25	P5	1102301079	5P	100	23	—	51	7	3	3
M10X 1	P3	1102101080	5P	100	23	—	51	7	3	3
M10X 1	P4	1102201080	5P	100	23	—	51	7	3	3
M10X 1	P5	1102301080	5P	100	23	—	51	7	3	3
M12X 1.75	P4	1102101088	5P	110	26	—	56	8.5	3	3
M12X 1.75	P5	1102201088	5P	110	26	—	56	8.5	3	3
M12X 1.75	P6	1102301088	5P	110	26	—	56	8.5	3	3
M12X 1.5	P3	1102101089	5P	110	26	—	56	8.5	3	3
M12X 1.5	P4	1102201089	5P	110	26	—	56	8.5	3	3
M12X 1.5	P5	1102301089	5P	110	26	—	56	8.5	3	3
M12X 1.25	P4	1102101090	5P	110	26	—	56	8.5	3	3
M12X 1.25	P5	1102201090	5P	110	26	—	56	8.5	3	3
M12X 1.25	P6	1102301090	5P	110	26	—	56	8.5	3	3
M14X 2	P4	1102101100	5P	110	26	—	56	10.5	3	3
M14X 2	P5	1102201100	5P	110	26	—	56	10.5	3	3
M14X 2	P6	1102301100	5P	110	26	—	56	10.5	3	3
M14X 1.5	P3	1102101102	5P	110	26	—	56	10.5	3	3
M14X 1.5	P4	1102201102	5P	110	26	—	56	10.5	3	3
M14X 1.5	P5	1102301102	5P	110	26	—	56	10.5	3	3
M16X 2	P4	1102101114	5P	110	26	—	56	12.5	3	3
M16X 2	P5	1102201114	5P	110	26	—	56	12.5	3	3
M16X 2	P6	1102301114	5P	110	26	—	56	12.5	3	3
M16X 1.5	P3	1102101116	5P	110	26	—	56	12.5	3	3
M16X 1.5	P4	1102201116	5P	110	26	—	56	12.5	3	3
M16X 1.5	P5	1102301116	5P	110	26	—	56	12.5	3	3
M18 X 2.5	P5	1102101128	5P	125	33	—	64	14	3	3
M18 X 1.5	P4	1102101130	5P	125	33	—	64	14	3	3
M20 X 2.5	P5	1102101141	5P	140	33	—	71	15	3	4
M20 X 1.5	P4	1102101144	5P	140	33	—	71	15	3	4
M22 X 2.5	P5	1102101156	5P	140	33	—	71	17	3	4
M22 X 1.5	P4	1102101158	5P	140	33	—	71	17	3	4
M24 X 3	P5	1102101167	5P	160	37	—	82	19	3	4
M24 X 1.5	P4	1102101170	5P	160	37	—	82	19	3	4

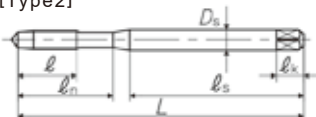
Oversize

Coated Spiral Pointed Taps VUPO

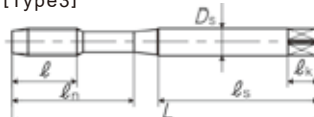
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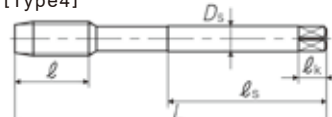
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[Type3]



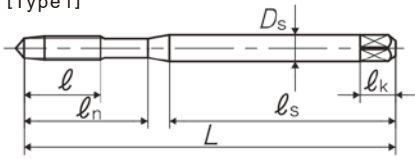
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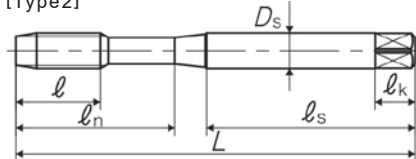
Size	Class	Product Code	Chamfer	L (mm)	l (mm)	l _n (mm)	l _s (mm)	D _s (mm)	No. of flutes	Type
M2 X 0.4	ISO2X	3102101021	5P	45	8	–	32	2.8	2	1
M2.2X 0.45	ISO2X	3102101024	5P	45	9	–	32	2.8	2	1
M2.3X 0.4	ISO2X	3102101026	5P	45	9	–	32	2.8	2	1
M2.5X 0.45	ISO2X	3102101029	5P	50	8	15	33	2.8	3	2
M2.6X 0.45	ISO2X	3102101032	5P	50	8	15	33	2.8	3	2
M3 X 0.5	ISO2X	3102101035	5P	56	9	18	34	3.5	3	2
M3 X 0.35	ISO2X	3102101036	5P	56	6.5	18	34	3.5	3	2
M4 X 0.7	ISO2X	3102101042	5P	63	13	21	38	4.5	3	2
M4 X 0.5	ISO2X	3102101043	5P	63	9	21	38	4.5	3	2
M5 X 0.8	ISO2X	3102101049	5P	70	14	25	39	6	3	2
M5 X 0.5	ISO2X	3102101051	5P	70	9	25	39	6	3	2
M6 X 1	ISO2X	3102101055	5P	80	15	30	45	6	3	2
M6 X 0.75	ISO2X	3102101056	5P	80	15	30	45	6	3	2
M6 X 0.5	ISO2X	3102101057	5P	80	9	30	45	6	3	2
M8 X 1.25	ISO2X	3102101064	5P	90	19	35	47	8	3	3
M8 X 1	ISO2X	3102101065	5P	90	19	–	46	6	3	4
M10 X 1.5	ISO2X	3102101078	5P	100	23	39	52	10	3	3
M10 X 1.25	ISO2X	3102101079	5P	100	23	–	51	7	3	4
M10 X 1	ISO2X	3102101080	5P	90	19	–	46	7	3	4
M12 X 1.75	ISO2X	3102101088	5P	110	26	–	56	9	3	4
M12 X 1.5	ISO2X	3102101089	5P	100	21	–	51	9	3	4
M12 X 1.25	ISO2X	3102101090	5P	100	21	–	51	9	3	4
M14 X 2	ISO2X	3102101100	5P	110	26	–	56	11	3	4
M14 X 1.5	ISO2X	3102101102	5P	100	21	–	51	11	3	4
M16 X 2	ISO2X	3102101114	5P	110	26	–	56	11	3	4
M16 X 1.5	ISO2X	3102101116	5P	100	21	–	51	12	3	4
M18 X 2.5	ISO2X	3102101128	5P	125	33	–	64	14	3	4
M18 X 1.5	ISO2X	3102101130	5P	110	24	–	56	14	3	4
M20 X 2.5	ISO2X	3102101141	5P	140	33	–	71	16	3	4
M20 X 1.5	ISO2X	3102101144	5P	125	24	–	64	16	3	4
M22 X 2.5	ISO2X	3102101156	5P	140	33	–	71	18	3	4
M22 X 1.5	ISO2X	3102101158	5P	125	24	–	64	18	3	4
M24 X 3	ISO2X	3102101167	5P	160	37	–	82	18	3	4
M24 X 1.5	ISO2X	3102101170	5P	140	27	–	71	18	3	4

Coated Spiral Pointed Taps VUPO

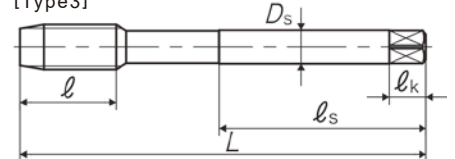
[Type1]



[Type2]



[Type3]



Size	Class	Product Code	Chamfer	L (inch)	l (inch)	l _n (inch)	l _s (inch)	D _s (inch)	No. of flutes	Type
M3 X 0.5	D4	5102101035	5P	2.205	0.197	0.709	1.339	0.142	3	1
M4 X 0.7	D5	5102101042	5P	2.480	0.276	0.787	1.535	0.169	3	1
M5 X 0.8	D5	5102101049	5P	2.756	0.354	0.984	1.654	0.193	3	1
M6 X 1	D6	5102101055	5P	3.150	0.433	1.181	1.693	0.256	3	1
M8 X 1.25	D7	5102101064	5P	3.543	0.472	1.378	1.850	0.319	3	2
M8 X 1	D6	5102101065	5P	3.543	0.472	1.378	1.850	0.319	3	2
M10 X 1.5	D8	5102101078	5P	3.937	0.512	1.535	2.126	0.382	3	2
M10 X 1.25	D7	5102101079	5P	3.937	0.512	1.535	2.126	0.382	3	2
M10 X 1	D6	5102101080	5P	3.937	0.512	1.535	2.126	0.382	3	2
M12 X 1.75	D8	5102101088	5P	4.331	0.591	–	2.205	0.366	3	3
M12 X 1.5	D7	5102101089	5P	4.331	0.591	–	2.205	0.366	3	3
M12 X 1.25	D7	5102101090	5P	4.331	0.591	–	2.205	0.366	3	3
M14 X 2	D9	5102101100	5P	4.331	0.709	–	2.205	0.429	3	3
M14 X 1.5	D8	5102101102	5P	4.331	0.709	–	2.205	0.429	3	3
M16 X 2	D8	5102101114	5P	4.331	0.709	–	2.205	0.480	3	3
M16 X 1.5	D9	5102101116	5P	4.331	0.709	–	2.205	0.480	3	3

Size	Class	Product Code	Chamfer	L (inch)	l (inch)	l _n (inch)	l _s (inch)	D _s (inch)	No. of flutes	Type
1/4-20UNC	H5	5102103058	5P	3.150	0.591	1.181	1.713	0.255	3	1
5/16-18UNC	H5	5102103071	5P	3.543	0.748	1.378	1.831	0.318	3	2
3/8-16UNC	H5	5102103082	5P	3.937	0.906	1.535	2.028	0.381	3	2
1/2-13UNC	H5	5102103111	5P	4.331	1.024	–	2.205	0.367	3	3

Other sizes will be posted as soon as they will be available

Tapping record for VU series taps

VUSP For blind hole

Size	Workpiece material	Tapping condition/Tapping result							(Remarks) Conventional product status/Workpiece name
	Material symbol (Hardness)	Hole Size (mm)	Tapping Length (mm)(*)	Machine	Tapping speed (m/min)	Feed	Tapping Fluid	Tool Life (Holes)	
M 4 X 0.7	SKD11 (25HRC)	3.3	8 (2D)	M/C	10	Fully synchronous	Water soluble	500	Replaced due to chipping at 400 holes.
M 5 X 0.8	SCM435	4.2	15 (3D)	N/C	4	Gear	Water soluble	1,400	Broken at 100 holes due to entanglement of chips.
M 8 X 1.25	FCD750	6.8	20 (2.5D)	M/C	20	Fully synchronous	Water soluble	1,500	Replaced due to chipping at 1,000 holes.
M 8 X 1.25	SUS304	6.75	16 (2D)	M/C	15	Fully synchronous	Water soluble	1,390	Chipping occurs at 600 holes.
M 8 X 1.25	SS400	6.8	16 (2D)	M/C	30	Fully synchronous	Water soluble	1,500	Tool Life is 800 holes. • Workpiece name: Cylinder head
M 8 X 1.25	S50C	6.8	16 (2D)	M/C	15	Fully synchronous	Water soluble	900	Tool Life is 700 holes.
M10 X 1.5	SS400	8.5	15 (1.5D)	M/C	10	Fully synchronous	Water soluble	1,500	Tool Life is unstable.
M12 X 1.75	SS400	10.4	24 (2D)	M/C	12	Fully synchronous	Water soluble	2,800	Chipping randomly and breakage at 2,000 holes.
M12 X 1.75	PVC (Thermoplastic resin)	10.3	18 (1.5D)	M/C	19	Fully synchronous	Water soluble	5,000	Screw plug gauge OUT at 3,000 holes.
M12 X 1.75	SCM415	10.3	24 (2D)	N/C	7	Fully synchronous	Water soluble	800	Screw plug gauge OUT at 500 holes. • Workpiece name: Machine parts(Spindle)
M12 X 1.25	S45C	10.8	24 (2D)	Drilling machine	5.6	Non-synchronous	Oil (Spray)	1,100	Tool Life is 1,000 holes.
M14 X 2	SCM435 (35HRC)	12.1	21 (1.5D)	M/C	10	Fully synchronous	Oil	150	Broken at 10 holes due to entanglement of chips. • Workpiece name: Shaft
M16 X 1.5	S45C	14.5	32 (2D)	M/C	20	Fully synchronous	Water soluble	1,900	Screw plug gauge OUT at 1,500 holes. • Workpiece name: Rocker arm

*(D) shows the tapping length as a ratio of tap diameter.

VUPO For through hole

Size	Workpiece material	Tapping condition/Tapping result							(Remarks) Conventional product status/Workpiece name
	Material symbol (Hardness)	Hole Size (mm)	Tapping Length (mm)(*)	Machine	Tapping speed (m/min)	Feed	Tapping Fluid	Tool Life (Holes)	
M 3 X 0.5	SCM440 (39HRC)	2.5	6 (2D)	N/C	5.6	Fully synchronous	Water soluble	1,260	Tool Life is unstable and poor surface finish. • Workpiece name: Flange
M 3 X 0.5	S45C (25HRC)	2.5	9 (3D)	M/C	10	Fully synchronous	Water soluble	500	Tool Life is 400 holes.
M 4 X 0.7	SUS304	3.3	10 (2.5D)	M/C	10	Fully synchronous	Water soluble	830	The chamfer part is worn and replaced at about 300 holes.
M 4 X 0.7	A5052	3.4	12 (3D)	M/C	12	Fully synchronous	Water soluble	1,500	Tool Life is 1,000 holes. • Workpiece name: Medical parts
M 6 X 1	S33C	5.1	9 (1.5D)	M/C	20	Fully synchronous	Water soluble	4,500	Tool Life is 3,400 holes. • Workpiece name: Hub bearing
M 8 X 1.25	SUS303	6.8	12 (1.5D)	M/C	11	Fully synchronous	Water soluble	33,000	Replaced due to wear or chipping at 10,000 holes. • Workpiece name: Nut
M10 X 1.5	S45C	8.5	25 (2.5D)	M/C	7.5	Fully synchronous	Water soluble	3,600	Breaks randomly at 1,000 holes. • Workpiece name: Crank plate
M12 X 1.75	SCM415	10.3	24 (2D)	M/C	15	Fully synchronous	Water soluble	1,000	Replaced due to chipping at 700 holes.
M12 X 1.75	SCM440 (30HRC)	10.4	30 (2.5D)	N/C	11	Fully synchronous	Water soluble	650	Replaced due to chipping at 420 holes.
M12 X 1.25	S45C	10.2	36 (3D)	M/C	30	Non-synchronous	Water soluble	1,100	Tool Life is unstable.
M12 X 1.25	S43C	10.8	24 (2D)	M/C	15	Fully synchronous	Water soluble	1,500	Replaced due to chipping at 500 holes. • Workpiece name: Wheel shaft

*(D) shows the tapping length as a ratio of tap diameter.

Warning

- ◆Tools may shatter during use. Wear safety eye cover or eye glasses to avoid injury during tapping.
- ◆Use tools under the proper tapping condition.
- ◆Never wear gloves during turning operations as the gloves may get caught in the tools.
- ◆Wear safety shoes to avoid foot injury by the falling tools.
- ◆When attaching tools to the machine, fasten firmly to avoid chatter and run-out.
- ◆Fasten the workpiece firmly so it never moves during the tapping operation. Never use worn tools or damaged tools.
- ◆Take a special care to prevent fire during machining. High temperature during tapping can cause a fire.

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