M X-COATED HSS-PM SPIRAL FLUTE TAPS for MULTI-PURPOSE

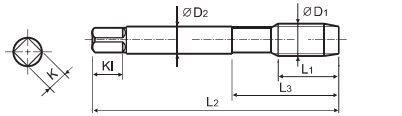
ISO Metric Coarse Threads DIN13

TRE30 SERIES

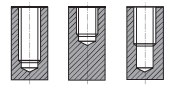
DIN 371

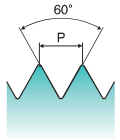
DIN 376

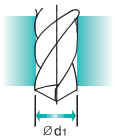
- ▶ High performance in various ductile materials
- ▶ Specially designed to prevent oversized threads and reduce gauging problems



Hole type 2.5×D







Material groups **MU** | HSS PM | DIN 371/376 | 6HX | 60° | C | R45 | X Coating | p.7

Machine Taps

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	X-coating	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M2 x	0.4	TRE30136GS	3.2	45.0	13.0	2.8	2.1	5.0	2	1.6
M2.5 x	0.45	TRE30176GS	3.6	50.0	15.0	2.8	2.1	5.0	2	2.1
M3 x	0.5	TRE30206GS	4.0	56.0	18.0	3.5	2.7	6.0	3	2.5
M3.5 x	0.6	TRE30226GS	4.8	56.0	20.0	4.0	3.0	6.0	3	2.9
M4 x	0.7	TRE30246GS	5.6	63.0	21.0	4.5	3.4	6.0	3	3.3
M5 x	0.8	TRE30286GS	6.4	70.0	25.0	6.0	4.9	8.0	3	4.2
M6 x	1.0	TRE30316GS	8.0	80.0	30.0	6.0	4.9	8.0	3	5.0
M7 x	1.0	TRE30346GS	10.0	80.0	30.0	7.0	5.5	8.0	3	6.0
M8 x	1.25	TRE30366GS	13.0	90.0	35.0	8.0	6.2	9.0	3	6.8
M9 x	1.25	TRE30396GS	13.0	90.0	35.0	9.0	7.0	10.0	3	7.8
M10 x	1.5	TRE30426GS	15.0	100.0	39.0	10.0	8.0	11.0	3	8.5
M12 x	1.75	TRE30506GS	18.0	110.0	44.0	9.0	7.0	10.0	3	10.3
M14 x	2.0	TRE30546GS	20.0	110.0	44.0	11.0	9.0	12.0	3	12.0
M16 x	2.0	TRE30606GS	20.0	110.0	44.0	12.0	9.0	12.0	3	14.0
M18 x	2.5	TRE30656GS	25.0	125.0	50.0	14.0	11.0	14.0	4	15.5
M20 x	2.5	TRE30706GS	25.0	140.0	54.0	16.0	12.0	15.0	4	17.5
M22 x	2.5	TRE30746GS	25.0	140.0	54.0	18.0	14.5	17.0	4	19.5
M24 x	3.0	TRE30786GS	30.0	160.0	60.0	18.0	14.5	17.0	4	21.0

▶DIN 371(M2~M10) and DIN 376(M12~M24)

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	◎	◎	◎	◎	○	○	○	◎	◎	◎	○	○	◎	◎		

ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

M X-COATED HSS-PM SPIRAL FLUTE TAPS for MULTI-PURPOSE

ISO Metric Coarse Threads DIN13

TRE34 SERIES

DIN 371

DIN 376

- ▶ High performance in various ductile materials
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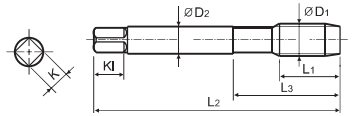
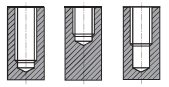
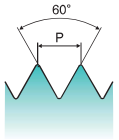
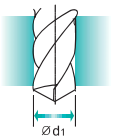


Hole type 2.5×D







Material groups **MU** | HSS PM | DIN 371/376 | 6HX | 60° | E | R45 | X Coating | p.7

Machine Taps

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	X-coating	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M2 x	0.4	TRE34136GS	3.2	45.0	13.0	2.8	2.1	5.0	2	1.6
M3 x	0.5	TRE34206GS	4.0	56.0	18.0	3.5	2.7	6.0	3	2.5
M4 x	0.7	TRE34246GS	5.6	63.0	21.0	4.5	3.4	6.0	3	3.3
M5 x	0.8	TRE34286GS	6.4	70.0	25.0	6.0	4.9	8.0	3	4.2
M6 x	1.0	TRE34316GS	8.0	80.0	30.0	6.0	4.9	8.0	3	5.0
M8 x	1.25	TRE34366GS	13.0	90.0	35.0	8.0	6.2	9.0	3	6.8
M10 x	1.5	TRE34426GS	15.0	100.0	39.0	10.0	8.0	11.0	3	8.5
M12 x	1.75	TRE34506GS	18.0	110.0	44.0	9.0	7.0	10.0	3	10.3
M14 x	2.0	TRE34546GS	20.0	110.0	44.0	11.0	9.0	12.0	3	12.0
M16 x	2.0	TRE34606GS	20.0	110.0	44.0	12.0	9.0	12.0	3	14.0
M20 x	2.5	TRE34706GS	25.0	140.0	54.0	16.0	12.0	15.0	4	17.5

▶DIN 371(M2~M10) and DIN 376(M12~M20)

◎ : Excellent ○ : Good

ISO	P											M			K					
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	○	◎	◎	◎	◎	◎	◎	◎	○	○	○	◎	◎	◎	○	○	◎	◎		

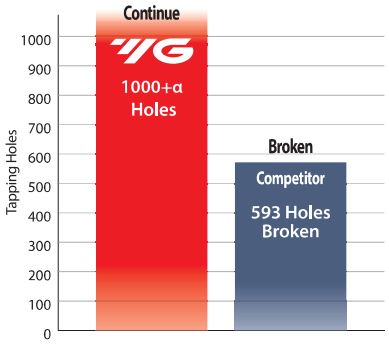
ISO	N										S							H		
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

CASE STUDY

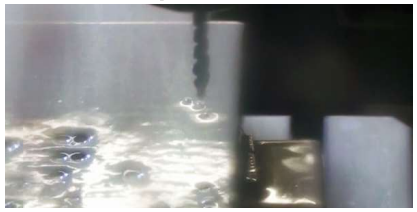
TEST Ⅲ SPIRAL FLUTE TAP (M6x1.0)

Cutting Condition

Tool	Sprial Flute Tap
Size	M6x1.0
Work Material	JIS: SUS304 / DIN: X16CrNi1810 / WR: 1.4350
RPM	531 rev/min.
Vc	10 m/min.
Feed	531 mm/min.
Tap Drill Size	5.1mm
Tapping Depth	12 mm
Tapping Holes	YG-1: 1000+α / Competitor: 593
Coolant	Wet Cut



Prime Taps (1000 Holes+α)



Competitor (593 Holes, Broken)

TEST Ⅳ SPIRAL FLUTE TAP (M8x1.25)

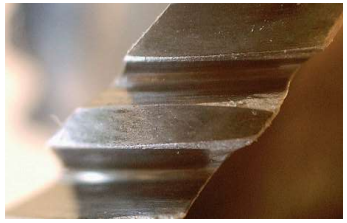
Cutting Condition

Tool	Sprial Flute Tap
Size	M8x1.25
Work Material	JIS: S45C / DIN: CK45 / WR: 1.1191
RPM	796 rev/min
Vc	20 m/min
Feed	995 mm/min
Tap Drill Size	6.8mm
Tapping Depth	17 mm
Tapping Holes	YG-1: 1350+α / Competitor: 1350+α
Coolant	Wet Cut

Comparison of Wear Resistance

Prime Taps

Competitor



SELECTION GUIDE

YG THREADING TOOLS

HSS-PM PRIME TAPS

Premium Spiral Point and Spiral Flute Taps
High Performance in Various Ductile Materials

HOLE TYPE			Max. 2.5xD Blind Hole		Max. 3.0xD Through Hole
TOOL MATERIAL			HSS-PM		
CHAMFER LEAD ACC. TO DIN2197			C	E	B
FLUTE TYPE			Spiral Flute	Spiral Flute	Spiral Point
SPIRAL FLUTE ANGLE			R45	R45	-
SERIES	M	DIN371/376	TRE30 (p.8)	TRE34 (p.9)	TRJ15 (p.14)
		DIN352			
		DIN357/LONG			
	MF	DIN374	TRE31 (p.10)		TRJ16 (p.15)
		DIN2181			
	UNC	DIN371/376	TRE32 (p.12)		TRJ17 (p.17)
		DIN351			
	UNF	DIN371/374	TRE33 (p.13)		TRJ18 (p.19)
		DIN2181			
	BSW	DIN2182/2183			
		DIN351			
	G(BSP)	DIN5156/5157			
	EG-M	DIN371/376			
	EG-UNC	DIN371/376			
	EG-UNF	DIN371/374			
SURFACE TREATMENT			X-coating		
MODEL					

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc	Recommended cutting conditions Vc (m/min.)					
P	1	Non-alloy steel	About 0.15% C	Annealed	125		○	5-20	○	5-20	◎	15-45
	2		About 0.45% C	Annealed	190	13	◎	10-50	◎	10-50	◎	10-55
	3		About 0.45% C	Quenched & Tempered	250	25	◎	10-50	◎	10-50	◎	10-55
	4		About 0.75% C	Annealed	270	28	◎	15-40	◎	15-40	◎	15-50
	5		About 0.75% C	Quenched & Tempered	300	32	◎	15-40	◎	15-40	◎	15-50
	6	Low alloy steel		Annealed	180	10	◎	8-30	◎	8-30	◎	8-30
	7			Quenched & Tempered	275	29	◎	8-30	◎	8-30	◎	8-30
	8			Quenched & Tempered	300	32	◎	8-30	◎	8-30	◎	8-30
	9			Quenched & Tempered	350	38	○	8-30	○	8-30	◎	8-30
	10	High alloyed steel, and tool steel		Annealed	200	15	○	8-30	○	8-30	○	8-30
	11			Quenched & Tempered	325	35	○	8-30	○	8-30	○	8-30
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15	◎	5-15	◎	5-15	◎	8-20
	13		Martensitic	Quenched & Tempered	240	23	◎	5-15	◎	5-15	◎	8-20
	14		Austenitic		180	10	◎	5-15	◎	5-15	◎	8-20
K	15	Grey cast iron	Pearlitic / ferritic		180	10	○	15-35	○	15-35	◎	15-35
	16		Pearlitic (Martensitic)		260	26	○	15-35	○	15-35	◎	15-35
	17	Nodular cast iron	Ferritic		160	3	◎	15-35	◎	15-35	◎	15-35
	18		Pearlitic		250	25	◎	15-35	◎	15-35	◎	15-35
	19	Malleable cast iron	Ferritic		130							
	20		Pearlitic		230	21						
N	21	Aluminum-wrought alloy	Not Curable		60		○	15-35	○	15-35	○	15-35
	22		Curable	Hardened	100		○	15-35	○	15-35	○	15-35
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75		◎	15-35	◎	15-35	◎	15-35
	24		≤ 12% Si, Curable	Hardened	90		◎	15-35	◎	15-35	◎	15-35
	25		> 12% Si, Not Curable		130		○	15-35	○	15-35	○	15-35
	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110		◎	15-35	◎	15-35	◎	15-35
	27		CuZn, CuSnZn (Brass)		90		◎	15-35	◎	15-35	◎	15-35
	28		CuSn, lead-free copper and electrolytic copper		100		◎	15-35	◎	15-35	◎	15-35
	29	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic									
	30		Rubber, Wood, etc.									
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15						
	32			Cured	280	30						
	33		Ni or Co Based	Annealed	250	25						
	34			Cured	350	38						
	35			Cast	320	34						
	36	Titanium Alloys	Pure Titanium		400 Rm							
	37		Alpha + Beta Alloys	Hardened	1050 Rm							
H	38	Hardened steel		Hardened	550	55						
	39			Hardened	630	60						
	40	Chilled Cast Iron		Cast	400	42						
	41	Hardened Cast Iron		Hardened	550	55						