YE-PT26 EUROPE

YG

TAP

PRIME

HSS-PM(Powder Metallurgy) Premium Taps

- Spiral Point, Spiral Flute, and Forming Taps for CNC Machines
- High and Reliable Performance in Various Ductile Materials

NEW PORTFOLIO!

EXPANSION Spiral Point, Spiral Flute Cutting Tap
NEW Short Chamfer Cutting Tap
NEW Forming Tap
NEW with Internal Coolant





Prime X-Coated Tap for CNC Machining in Various Ductile Materials

The special grinding process provides a unique geometry for spiral flute and spiral point taps to optimize chip evacuation, while Forming Taps form threads through material displacement without chip evacuation, resulting in stronger threads and improved surface finish.

Spiral Flute

Spiral Point

GUIDE TO ICONS

Working Material

Material groups **MU** Multi-Purpose

Surface Treatment

X Coating YG-1 X-Coating

Tool Raw Material

HSS PM YG-1 Premium Powder Metallurgy HSS

Helix Angle

R45

Thread Angle

60° 55°

Cutting Condition

Standard of Tools

DIN 371/376 DIN 374 DIN 371/374 DIN 5156

Number of DIN Standard

Class of Thread

6HX 6GX 7GX 2BX

Chamfer Lead

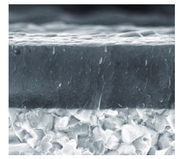
B Form B (with Spiral Point and Chamfer Lead 4-5 Thread)

C Form C (Chamfer Lead 2-3 Thread)

E Form E (Chamfer Lead 1.5-2 Thread)

FEATURES & BENEFITS

High and Reliable Performance on Various Ductile Materials



YG-1's X-Coating

- YG-1's High Performance Coating for high heat and wear resistance

YG-1 Special Thread Structure

- Reduction in torque, wear, and the risk of over feeding as compared to conventional taps

Extra Short Threaded Body and Recess

- Minimize bird nesting, reduced chipping, improved thread finish



Spiral Flute Forming Spiral Point

Optimized Edge Preparation

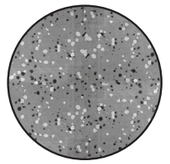
- Consistent performance and process stability to prevent chipping

Optimized Flute Geometry for Excellent Chip Flow

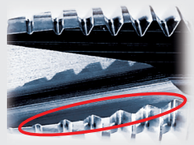
- Increased tool life as a result of an optimum combination of material, geometry, and coating which gives unrestricted chip flow

HSS-PM(Powder Metallurgy) Premium Taps

Powdered Metal Technology for a tough-chipping resistant cutting edge for long tool life and reliable thread finish







Premium Cutting Edge Strength

- More controlled structure with high wear resistance
- Consistent performance and process stability with chipping resistance

CASE STUDY

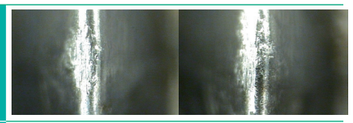
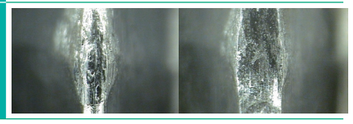
TEST I FORMING TAP (M6x1.0)

Cutting Condition

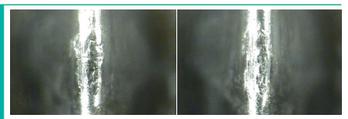
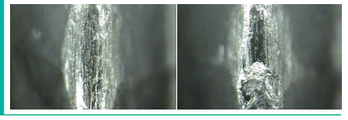
Tool	Forming Tap
Size	M6x1.0
Work Material	- JIS: SCM440(HRc35) - DIN: 42CrMo4 - WR: 1.7225
RPM	530 rev./min.
Vc	10 m/min.

Feed	1.0 mm/rev.
Tap Drill Size	Ø5.5 mm
Tapping Depth	12 mm
Tapping Holes	1,000
Machine	Machining Center (Horizontal)

RESULT 1

YG-1 (1,000 Holes)	
Competitor (1,000 Holes)	

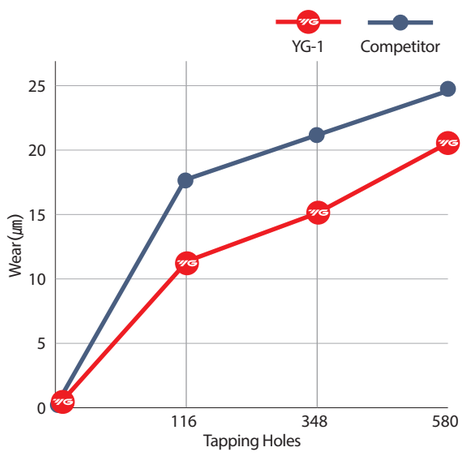
RESULT 2

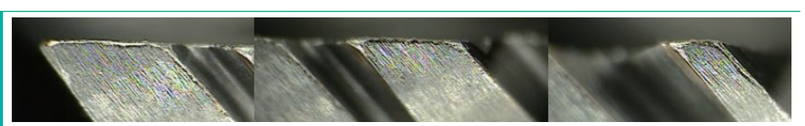
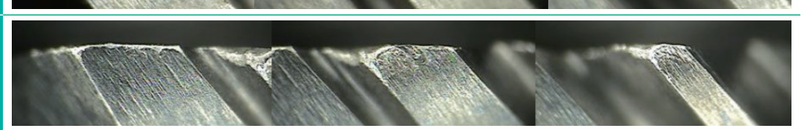
YG-1 (1,000 Holes)	
Competitor (1,000 Holes)	

TEST II SPIRAL FLUTE TAP (M4x0.7)

Cutting Condition

Tool	Spiral Flute Tap
Size	M4x0.7
Work Material	- JIS: SCM440(HRc30) - DIN: 42CrMo4 - WR: 1.7225
RPM	2,387 rev./min.
Vc	30 m/min.
Feed	0.7 mm/rev.
Tap Drill Size	Ø3.3 mm
Tapping Depth	8 mm
Tapping Holes	580
Coolant	Wet Cut



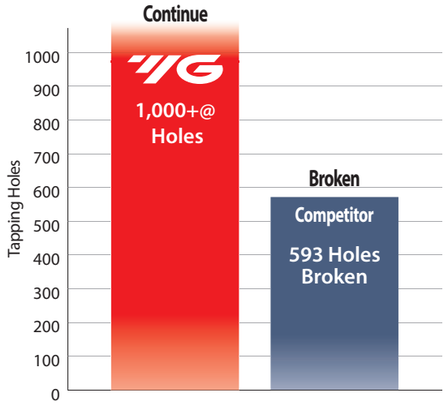
YG-1 (580 Holes)	
Competitor (580 Holes)	

CASE STUDY

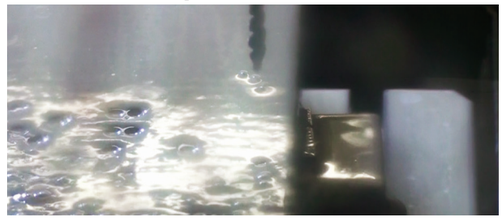
TEST III SPIRAL FLUTE TAP (M6x1.0)

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	5.1 mm
Tapping Depth	12 mm
Tapping Holes	YG-1: 1,000+@ / Competitor: 593
Coolant	Wet Cut



YG Prime Taps (1,000+@ Holes)



Competitor (593 Holes, Broken)



TEST IV SPIRAL FLUTE TAP (M8x1.25)

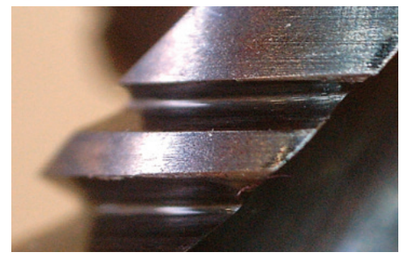
Cutting Condition

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	6.8 mm
Tapping Depth	17 mm
Tapping Holes	YG-1: 1,350+@ / Competitor: 1,350+@
Coolant	Wet Cut

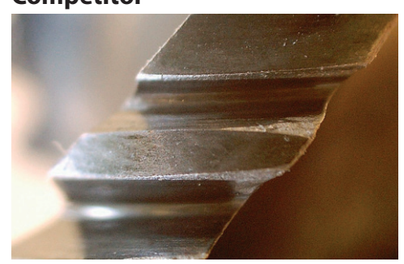


Comparison of Wear Resistance

YG PRIME TAP



Competitor



YG

SELECTION GUIDE

HSS-PM
PRIME TAP

Premium HSS-PM X-Coated Tap
for CNC Machines

Please visit
globalyg1.com/mat
for material search

◎ : Excellent ○ : Good

HOLE TYPE			Max. 2.5xD Blind Hole										
TOOL MATERIAL			HSS-PM										
CHAMFER LEAD ACC. TO DIN2197			C	C	E	C	C	E					
FLUTE TYPE			Spiral Flute										
SPIRAL FLUTE ANGLE			R45										
CLASS OF THREAD			6HX	6GX	6HX	2BX	-	-					
SERIES	M	DIN371/376	TRE30 (p.9)	TRE35 (p.10)	TRE34 (p.11)								
	MF	DIN374	TRE31 (p.12)	TRE36 (p.14)									
	UNC	DIN371/376				TRE32 (p.15)							
	UNF	DIN371/374				TRE33 (p.16)							
	G(BSP)	DIN5156					TRE37 (p.17)	TRE38 (p.18)					
SURFACE TREATMENT / COATING			X-Coating										
MODEL													

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)	○ (5-20)	○ (5-20)	○ (5-20)	○ (5-20)	P
	2		About 0.45% C	Annealed	190	13	◎ (10-50)	◎ (10-50)	◎ (10-50)	◎ (10-50)	◎ (10-50)	◎ (10-50)	
	3		About 0.45% C	Quenched & Tempered	250	25	◎ (10-50)	◎ (10-50)	◎ (10-50)	◎ (10-50)	◎ (10-50)	◎ (10-50)	
	4		About 0.75% C	Annealed	270	28	◎ (15-40)	◎ (15-40)	◎ (15-40)	◎ (15-40)	◎ (15-40)	◎ (15-40)	
	5		About 0.75% C	Quenched & Tempered	300	32	◎ (15-40)	◎ (15-40)	◎ (15-40)	◎ (15-40)	◎ (15-40)	◎ (15-40)	
	6	Low alloy steel		Annealed	180	10	◎ (8-30)	◎ (8-30)	◎ (8-30)	◎ (8-30)	◎ (8-30)	◎ (8-30)	
	7			Quenched & Tempered	275	29	◎ (8-30)	◎ (8-30)	◎ (8-30)	◎ (8-30)	◎ (8-30)	◎ (8-30)	
	8			Quenched & Tempered	300	32	◎ (8-30)	◎ (8-30)	◎ (8-30)	◎ (8-30)	◎ (8-30)	◎ (8-30)	
	9			Quenched & Tempered	350	38	○ (8-30)	○ (8-30)	○ (8-30)	○ (8-30)	○ (8-30)	○ (8-30)	
	10	High alloyed steel, and tool steel		Annealed	200	15	○ (8-30)	○ (8-30)	○ (8-30)	○ (8-30)	○ (8-30)	○ (8-30)	
	11			Quenched & Tempered	325	35	○ (8-30)	○ (8-30)	○ (8-30)	○ (8-30)	○ (8-30)	○ (8-30)	
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	M
	13		Martensitic	Quenched & Tempered	240	23	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	
	14			Austenitic	180	10	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	
K	15	Grey cast iron	Pearlitic / Ferritic		180	10	○ (15-35)	○ (15-35)	○ (15-35)	○ (15-35)	○ (15-35)	○ (15-35)	K
	16		Pearlitic (Martensitic)		260	26	○ (15-35)	○ (15-35)	○ (15-35)	○ (15-35)	○ (15-35)	○ (15-35)	
	17	Nodular cast iron	Ferritic		160	3	◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	
	18		Pearlitic		250	25	◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (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)	○ (15-35)	○ (15-35)	○ (15-35)	N
	22		Curable	Hardened	100		○ (15-35)	○ (15-35)	○ (15-35)	○ (15-35)	○ (15-35)	○ (15-35)	
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75		◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	
	24		≤ 12% Si, Curable	Hardened	90		◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	
	25		> 12% Si, Not Curable		130		○ (15-35)	○ (15-35)	○ (15-35)	○ (15-35)	○ (15-35)	○ (15-35)	
	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110		◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	
	27		CuZn, CuSnZn (Brass)		90		◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	
	28		CuSn, lead-free copper and electrolytic copper		100		◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (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							S
	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							H
	39			Hardened	630	60							
	40	Chilled Cast Iron		Cast	400	42							
	41	Hardened Cast Iron		Hardened	550	55							

	Max. 3.0xD Through Hole				Max. 3.0xD Blind / Through Hole						Max. 2.5xD Blind Hole
HSS-PM											
B	B	B	B	C	C	C	E	C	C	C	
Spiral Point				Forming						Spiral Flute	
-	-	-	-	-	-	-	-	-	-	R45	
6HX	6GX	2BX	-	6HX	6GX	7GX	6HX	2BX	-	6HX	
TRJ15 (p.19)	TRJ10 (p.20)			TRQ10 (p.26)	TRQ14 (p.27)	TRQ16 (p.28)	TRQ12 (p.29)			TRE39 (p.36)	
TRJ16 (p.21)	TRJ11 (p.22)			TRQ11 (p.30)	TRQ15 (p.31)		TRQ13 (p.32)			TRE40 (p.38)	
		TRJ17 (p.23)						TRQ18 (p.33)			
		TRJ18 (p.24)						TRQ19 (p.34)			
			TRJ12 (p.25)						TRQ17 (p.35)		
X-Coating											
											

Recommended cutting conditions Vc (m/min.)												
◎ (15-45)	◎ (15-45)	◎ (15-45)	◎ (15-45)	◎ (15-40)	◎ (15-40)	◎ (15-40)	◎ (15-40)	◎ (15-40)	◎ (15-40)	○ (5-25)	1	P
◎ (10-55)	◎ (10-55)	◎ (10-55)	◎ (10-55)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (10-55)	2	
◎ (10-55)	◎ (10-55)	◎ (10-55)	◎ (10-55)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (10-55)	3	
◎ (15-50)	◎ (15-50)	◎ (15-50)	◎ (15-50)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-45)	4	
◎ (15-50)	◎ (15-50)	◎ (15-50)	◎ (15-50)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-45)	5	
◎ (8-30)	◎ (8-30)	◎ (8-30)	◎ (8-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (8-35)	6	
◎ (8-30)	◎ (8-30)	◎ (8-30)	◎ (8-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (15-30)	◎ (8-35)	7	
◎ (8-30)	◎ (8-30)	◎ (8-30)	◎ (8-30)	◎ (5-20)	◎ (5-20)	◎ (5-20)	◎ (5-20)	◎ (5-20)	◎ (5-20)	◎ (8-35)	8	
◎ (8-30)	◎ (8-30)	◎ (8-30)	◎ (8-30)	◎ (5-20)	◎ (5-20)	◎ (5-20)	◎ (5-20)	◎ (5-20)	◎ (5-20)	○ (8-35)	9	
○ (8-30)	○ (8-30)	○ (8-30)	○ (8-30)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	○ (8-35)	10	
○ (8-30)	○ (8-30)	○ (8-30)	○ (8-30)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	○ (8-35)	11	
◎ (8-20)	◎ (8-20)	◎ (8-20)	◎ (8-20)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-17)	12	M
◎ (8-20)	◎ (8-20)	◎ (8-20)	◎ (8-20)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-15)	◎ (5-17)	13	
◎ (8-20)	◎ (8-20)	◎ (8-20)	◎ (8-20)	◎ (3-9)	◎ (3-9)	◎ (3-9)	◎ (3-9)	◎ (3-9)	◎ (3-9)	◎ (5-17)	14	
◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)							○ (15-40)	15	K
◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)							○ (15-40)	16	
◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)							◎ (15-40)	17	
◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)							◎ (15-40)	18	
											19	
											20	
○ (15-35)	○ (15-35)	○ (15-35)	○ (15-35)	◎ (20-50)	◎ (20-50)	◎ (20-50)	◎ (20-50)	◎ (20-50)	◎ (20-50)	○ (15-40)	21	N
○ (15-35)	○ (15-35)	○ (15-35)	○ (15-35)	◎ (20-50)	◎ (20-50)	◎ (20-50)	◎ (20-50)	◎ (20-50)	◎ (20-50)	○ (15-40)	22	
◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (20-40)	◎ (20-40)	◎ (20-40)	◎ (20-40)	◎ (20-40)	◎ (20-40)	◎ (15-40)	23	
◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (20-40)	◎ (20-40)	◎ (20-40)	◎ (20-40)	◎ (20-40)	◎ (20-40)	◎ (15-40)	24	
○ (15-35)	○ (15-35)	○ (15-35)	○ (15-35)	◎ (20-40)	◎ (20-40)	◎ (20-40)	◎ (20-40)	◎ (20-40)	◎ (20-40)	○ (15-40)	25	
◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (10-30)	◎ (10-30)	◎ (10-30)	◎ (10-30)	◎ (10-30)	◎ (10-30)	◎ (15-40)	26	
◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (10-30)	◎ (10-30)	◎ (10-30)	◎ (10-30)	◎ (10-30)	◎ (10-30)	◎ (15-40)	27	
◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)	◎ (10-30)	◎ (10-30)	◎ (10-30)	◎ (10-30)	◎ (10-30)	◎ (10-30)	◎ (15-40)	28	
											29	
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SELECTION GUIDE

HSS-PM
PRIME TAP

Premium HSS-PM X-Coated Tap
for CNC Machines

HOLE TYPE			Max. 2.5xD Blind Hole		Max. 3.0xD Through Hole	Max. 3.0xD Blind / Through Hole		
TOOL MATERIAL			HSS-PM					
CHAMFER LEAD ACC. TO DIN2197			E	C	B	C	C	E
FLUTE TYPE			Spiral Flute		Spiral Point	Forming		
SPIRAL FLUTE ANGLE			R45		-	-	-	-
CLASS OF THREAD			6HX	-	6HX	6HX	6GX	6HX
SERIES	M	DIN371/376	TRE41 (p.37)		TRJ24 (p.40)	TRQ20 (p.42)	TRQ24 (p.43)	TRQ22 (p.44)
	MF	DIN374			TRJ25 (p.41)	TRQ21 (p.45)	TRQ25 (p.46)	TRQ23 (p.47)
	UNC	DIN371/376						
	UNF	DIN371/374						
	G(BSP)	DIN5156		TRE42 (p.39)				
SURFACE TREATMENT / COATING			X-Coating					
MODEL			NEW	NEW	NEW	NEW	NEW	NEW

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		○ (5-25)	○ (5-25)	◎ (15-50)	◎ (15-45)	◎ (15-45)	◎ (15-45)
	2		About 0.45% C	Annealed	190	13	◎ (10-55)	◎ (10-55)	◎ (10-60)	◎ (15-35)	◎ (15-35)	◎ (15-35)
	3		About 0.45% C	Quenched & Tempered	250	25	◎ (10-55)	◎ (10-55)	◎ (10-60)	◎ (15-35)	◎ (15-35)	◎ (15-35)
	4		About 0.75% C	Annealed	270	28	◎ (15-45)	◎ (15-45)	◎ (15-55)	◎ (15-35)	◎ (15-35)	◎ (15-35)
	5		About 0.75% C	Quenched & Tempered	300	32	◎ (15-45)	◎ (15-45)	◎ (15-55)	◎ (15-35)	◎ (15-35)	◎ (15-35)
	6	Low alloy steel		Annealed	180	10	◎ (8-35)	◎ (8-35)	◎ (8-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)
	7			Quenched & Tempered	275	29	◎ (8-35)	◎ (8-35)	◎ (8-35)	◎ (15-35)	◎ (15-35)	◎ (15-35)
	8			Quenched & Tempered	300	32	◎ (8-35)	◎ (8-35)	◎ (8-35)	◎ (5-22)	◎ (5-22)	◎ (5-22)
	9			Quenched & Tempered	350	38	○ (8-35)	○ (8-35)	◎ (8-35)	◎ (5-22)	◎ (5-22)	◎ (5-22)
	10	High alloyed steel, and tool steel		Annealed	200	15	○ (8-35)	○ (8-35)	○ (8-35)	◎ (5-17)	◎ (5-17)	◎ (5-17)
	11			Quenched & Tempered	325	35	○ (8-35)	○ (8-35)	○ (8-35)	◎ (5-17)	◎ (5-17)	◎ (5-17)
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15	◎ (5-17)	◎ (5-17)	◎ (8-25)	◎ (5-17)	◎ (5-17)	◎ (5-17)
	13		Martensitic	Quenched & Tempered	240	23	◎ (5-17)	◎ (5-17)	◎ (8-25)	◎ (5-17)	◎ (5-17)	◎ (5-17)
	14			Austenitic	180	10	◎ (5-17)	◎ (5-17)	◎ (8-25)	◎ (3-10)	◎ (3-10)	◎ (3-10)
K	15	Grey cast iron	Pearlitic / Ferritic		180	10	○ (15-40)	○ (15-40)	◎ (15-40)			
	16		Pearlitic (Martensitic)		260	26	○ (15-40)	○ (15-40)	◎ (15-40)			
	17	Nodular cast iron	Ferritic		160	3	◎ (15-40)	◎ (15-40)	◎ (15-40)			
	18		Pearlitic		250	25	◎ (15-40)	◎ (15-40)	◎ (15-40)			
	19	Malleable cast iron	Ferritic		130							
	20		Pearlitic		230	21						
N	21	Aluminum-wrought alloy	Not Curable		60		○ (15-40)	○ (15-40)	○ (15-40)	◎ (20-55)	◎ (20-55)	◎ (20-55)
	22		Curable	Hardened	100		○ (15-40)	○ (15-40)	○ (15-40)	◎ (20-55)	◎ (20-55)	◎ (20-55)
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75		◎ (15-40)	◎ (15-40)	◎ (15-40)	◎ (20-45)	◎ (20-45)	◎ (20-45)
	24		≤ 12% Si, Curable	Hardened	90		◎ (15-40)	◎ (15-40)	◎ (15-40)	◎ (20-45)	◎ (20-45)	◎ (20-45)
	25		> 12% Si, Not Curable		130		○ (15-40)	○ (15-40)	○ (15-40)	◎ (20-45)	◎ (20-45)	◎ (20-45)
	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110		◎ (15-40)	◎ (15-40)	◎ (15-40)	◎ (10-35)	◎ (10-35)	◎ (10-35)
	27		CuZn, CuSnZn (Brass)		90		◎ (15-40)	◎ (15-40)	◎ (15-40)	◎ (10-35)	◎ (10-35)	◎ (10-35)
	28		CuSn, lead-free copper and electrolytic copper		100		◎ (15-40)	◎ (15-40)	◎ (15-40)	◎ (10-35)	◎ (10-35)	◎ (10-35)
	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						

M X-COATED HSS-PM SPIRAL FLUTE TAPS for MULTI-PURPOSE
ISO Metric Coarse Threads DIN 13

SERIES **TRE30**

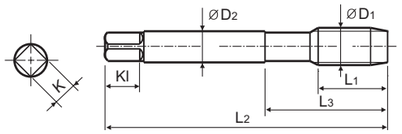
▶ High performance on various ductile materials
▶ Specially designed to prevent oversized threads and reduce gauging problems

DIN 371

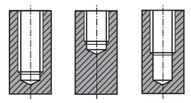


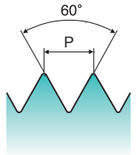
DIN 376

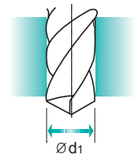




Hole type 2.5×D







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

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	13	2.8	2.1	5	2	1.6
M2.5	x 0.45	**TRE30176GS**	3.6	50	15	2.8	2.1	5	2	2.1
M3	x 0.5	**TRE30206GS**	4	56	18	3.5	2.7	6	3	2.5
M3.5	x 0.6	**TRE30226GS**	4.8	56	20	4	3	6	3	2.9
M4	x 0.7	**TRE30246GS**	5.6	63	21	4.5	3.4	6	3	3.3
M5	x 0.8	**TRE30286GS**	6.4	70	25	6	4.9	8	3	4.2
M6	x 1.0	**TRE30316GS**	8	80	30	6	4.9	8	3	5
M7	x 1.0	**TRE30346GS**	10	80	30	7	5.5	8	3	6
M8	x 1.25	**TRE30366GS**	13	90	35	8	6.2	9	3	6.8
M9	x 1.25	**TRE30396GS**	13	90	35	9	7	10	3	7.8
M10	x 1.5	**TRE30426GS**	15	100	39	10	8	11	3	8.5
M12	x 1.75	**TRE30506GS**	18	110	44	9	7	10	3	10.3
M14	x 2.0	**TRE30546GS**	20	110	52	11	9	12	3	12
M16	x 2.0	**TRE30606GS**	20	110	52	12	9	12	3	14
M18	x 2.5	**TRE30656GS**	25	125	66	14	11	14	4	15.5
M20	x 2.5	**TRE30706GS**	25	140	72	16	12	15	4	17.5
M22	x 2.5	**TRE30746GS**	25	140	78	18	14.5	17	4	19.5
M24	x 3.0	**TRE30786GS**	30	160	85	18	14.5	17	4	21

▶ 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

M X-COATED HSS-PM SPIRAL FLUTE TAPS for MULTI-PURPOSE
ISO Metric Coarse Threads DIN 13

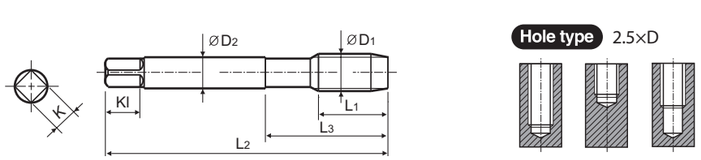
NEW SERIES **TRE35**

DIN 371

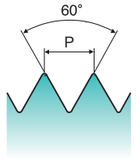
DIN 376

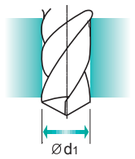


- ▶ High performance on various ductile materials
- ▶ Specially designed to prevent oversized threads and reduce gauging problems



Hole type 2.5×D





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

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	**TRE35136GS**	3.2	45	13	2.8	2.1	5	2	1.6
M3	x 0.5	**TRE35206GS**	4	56	18	3.5	2.7	6	3	2.5
M4	x 0.7	**TRE35246GS**	5.6	63	21	4.5	3.4	6	3	3.3
M5	x 0.8	**TRE35286GS**	6.4	70	25	6	4.9	8	3	4.2
M6	x 1.0	**TRE35316GS**	8	80	30	6	4.9	8	3	5
M8	x 1.25	**TRE35366GS**	13	90	35	8	6.2	9	3	6.75
M10	x 1.5	**TRE35426GS**	15	100	39	10	8	11	3	8.5
M12	x 1.75	**TRE35506GS**	18	110	44	9	7	9.8	3	10.25
M14	x 2.0	**TRE35546GS**	20	110	52	11	9	11.8	3	12
M16	x 2.0	**TRE35606GS**	20	110	52	12	9	11.8	3	14

▶ DIN 371(M2~M10) and DIN 376(M12~M16)

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

M X-COATED HSS-PM SPIRAL FLUTE TAPS for MULTI-PURPOSE
ISO Metric Coarse Threads DIN 13

SERIES **TRE34**

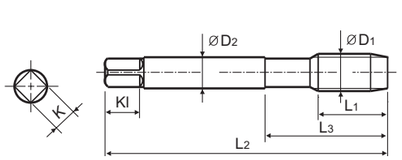
DIN 371

DIN 376

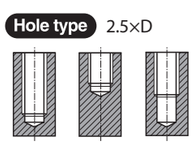


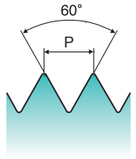
- ▶ High performance on various ductile materials
- ▶ Specially designed to prevent oversized threads and reduce gauging problems

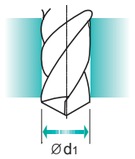
Short Chamfer



Hole type 2.5×D







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

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	13	2.8	2.1	5	2	1.6
M3	x 0.5	**TRE34206GS**	4	56	18	3.5	2.7	6	3	2.5
M4	x 0.7	**TRE34246GS**	5.6	63	21	4.5	3.4	6	3	3.3
M5	x 0.8	**TRE34286GS**	6.4	70	25	6	4.9	8	3	4.2
M6	x 1.0	**TRE34316GS**	8	80	30	6	4.9	8	3	5
M8	x 1.25	**TRE34366GS**	13	90	35	8	6.2	9	3	6.8
M10	x 1.5	**TRE34426GS**	15	100	39	10	8	11	3	8.5
M12	x 1.75	**TRE34506GS**	18	110	44	9	7	10	3	10.3
M14	x 2.0	**TRE34546GS**	20	110	52	11	9	12	3	12
M16	x 2.0	**TRE34606GS**	20	110	52	12	9	12	3	14
M20	x 2.5	**TRE34706GS**	25	140	72	16	12	15	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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

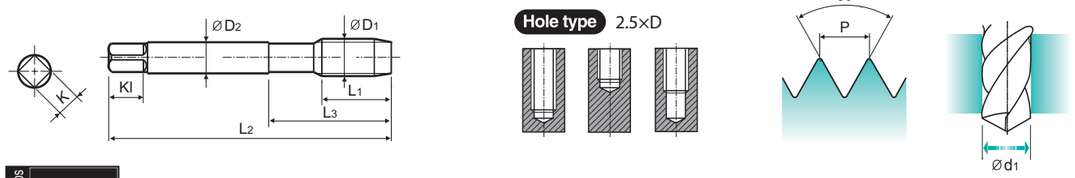
MF X-COATED HSS-PM SPIRAL FLUTE TAPS for MULTI-PURPOSE
ISO Metric Fine Threads DIN 13

SERIES **TRE31**

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

DIN 374





Material groups **MU** | HSS PM | DIN 374 | 6HX | 60° | C | R45 | X Coating | p.6

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
M4 x	0.5	**TRE31256GS**	5.6	63	21	2.8	2.1	5	3	3.5
M4 x	0.35	**TRE31696GS**	5.6	63	21	2.8	2.1	5	3	3.7
M5 x	0.5	**TRE31296GS**	6.4	70	25	3.5	2.7	6	3	4.5
M6 x	0.75	**TRE31326GS**	8	80	30	4.5	3.4	6	3	5.3
M6 x	0.5	**TRE31336GS**	8	80	30	4.5	3.4	6	3	5.5
M8 x	1.0	**TRE31376GS**	10	90	36	6	4.9	8	3	7
M8 x	0.75	**TRE31386GS**	10	80	30	6	4.9	8	3	7.3
M9 x	1.0	**TRE31406GS**	10	90	36	7	5.5	8	3	8
M9 x	0.75	**TRE31416GS**	10	80	30	7	5.5	8	3	8.3
M10 x	1.25	**TRE31436GS**	13	100	40	7	5.5	8	3	8.8
M10 x	1.0	**TRE31446GS**	10	90	36	7	5.5	8	3	9
M10 x	0.75	**TRE31456GS**	10	90	36	7	5.5	8	3	9.3
M12 x	1.5	**TRE31516GS**	15	100	40	9	7	10	3	10.5
M12 x	1.25	**TRE31526GS**	15	100	40	9	7	10	3	10.8
M12 x	1.0	**TRE31536GS**	15	100	40	9	7	10	3	11
M14 x	1.5	**TRE31556GS**	15	100	47	11	9	12	3	12.5
M14 x	1.25	**TRE31566GS**	15	100	47	11	9	12	3	12.8
M14 x	1.0	**TRE31576GS**	15	100	47	11	9	12	3	13
M16 x	1.5	**TRE31616GS**	15	100	49	12	9	12	3	14.5
M16 x	1.0	**TRE31626GS**	15	100	49	12	9	12	3	15

▶ NEXT PAGE

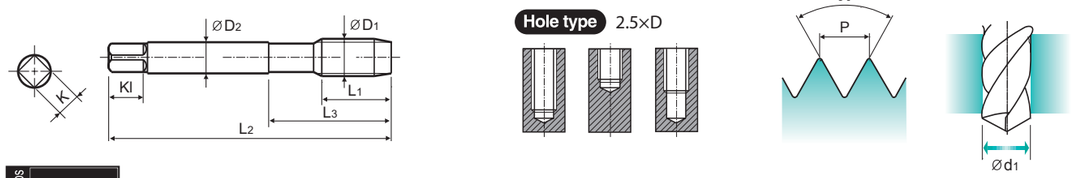
◎ : Excellent ○ : Good

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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

MF X-COATED HSS-PM SPIRAL FLUTE TAPS for MULTI-PURPOSE
ISO Metric Fine Threads DIN 13
SERIES TRE31
▶ High performance on various ductile materials
▶ Specially designed to prevent oversized threads and reduce gauging problems
DIN 374





Material groups MU | HSS PM | DIN 374 | 6HX | 60° | C | R45 | X Coating | p.6

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
M18 x	2.0	**TRE31666GS**	20	125	66	14	11	14	4	16
M18 x	1.5	**TRE31676GS**	15	110	55	14	11	14	4	16.5
M18 x	1.0	**TRE31686GS**	15	110	55	14	11	14	4	17
M20 x	2.0	**TRE31716GS**	20	140	72	16	12	15	4	18
M20 x	1.5	**TRE31726GS**	15	125	60	16	12	15	4	18.5
M20 x	1.0	**TRE31736GS**	15	125	60	16	12	15	4	19
M22 x	2.0	**TRE31756GS**	20	140	78	18	14.5	17	4	20
M22 x	1.5	**TRE31766GS**	15	125	65	18	14.5	17	4	20.5
M22 x	1.0	**TRE31776GS**	15	125	65	18	14.5	17	4	21
M24 x	2.0	**TRE31796GS**	20	140	70	18	14.5	17	4	22
M24 x	1.5	**TRE31806GS**	15	140	70	18	14.5	17	4	22.5
M24 x	1.0	**TRE31816GS**	15	140	70	18	14.5	17	4	23

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

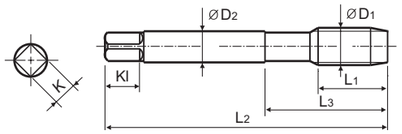
MF X-COATED HSS-PM SPIRAL FLUTE TAPS for MULTI-PURPOSE
ISO Metric Fine Threads DIN 13

NEW SERIES **TRE36**

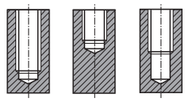
- ▶ High performance on various ductile materials
- ▶ Specially designed to prevent oversized threads and reduce gauging problems

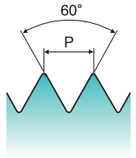
DIN 374

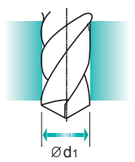




Hole type 2.5×D







Material groups **MU** | HSS PM | DIN 374 | 6GX | 60° | C | R45 | X Coating | p.6

Machine Taps

Unit : mm

SIZE ØD1	Pitch P	EDP No. X-Coating	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter ØD2	Square Size K	Square Length Kl	No. of Flute Z	Tapping Drill Diameter Ød1
M6	x 0.75	**TRE36326GS**	8	80	30	4.5	3.4	5.8	3	5.25
M6	x 0.5	**TRE36336GS**	8	80	30	4.5	3.4	5.8	3	5.5
M8	x 1.0	**TRE36376GS**	10	90	36	6	4.9	7.8	3	7
M8	x 0.75	**TRE36386GS**	10	80	30	6	4.9	7.8	3	7.25
M10	x 1.25	**TRE36436GS**	13	100	40	7	5.5	7.8	3	8.75
M10	x 1.0	**TRE36446GS**	10	90	36	7	5.5	7.8	3	9
M12	x 1.5	**TRE36516GS**	15	100	40	9	7	9.8	3	10.5
M12	x 1.25	**TRE36526GS**	15	100	40	9	7	9.8	3	10.75
M12	x 1.0	**TRE36536GS**	15	100	40	9	7	9.8	3	11
M14	x 1.5	**TRE36556GS**	15	100	47	11	9	11.8	3	12.5
M14	x 1.25	**TRE36566GS**	15	100	47	11	9	11.8	3	12.75
M16	x 1.5	**TRE36616GS**	15	100	47	12	9	11.8	3	14.5

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

UNC X-COATED HSS-PM SPIRAL FLUTE TAPS for MULTI-PURPOSE
Unified Coarse Threads

SERIES **TRE32**

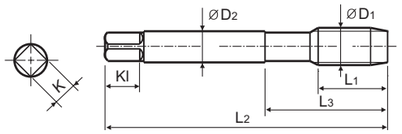
- ▶ High performance on various ductile materials
- ▶ Specially designed to prevent oversized threads and reduce gauging problems

DIN 371

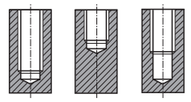


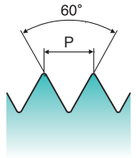
DIN 376

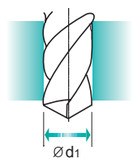




Hole type 2.5×D







Material groups **MU** | HSS PM | DIN 371/376 | 2BX | 60° | C | R45 | X Coating | p.6

Machine Taps

Unit : mm

SIZE ØD1	TPI	EDP No. X-Coating	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter ØD2	Square Size K	Square Length Kl	No. of Flute Z	Tapping Drill Diameter Ød1
#4	- 40 UNC	**TRE32162GS**	5.1	56	18	3.5	2.7	6	2	2.3
#5	- 40 UNC	**TRE32202GS**	5.1	56	18	3.5	2.7	6	3	2.6
#6	- 32 UNC	**TRE32242GS**	6.4	56	20	4	3	6	3	2.8
#8	- 32 UNC	**TRE32282GS**	6.4	63	21	4.5	3.4	6	3	3.4
#10	- 24 UNC	**TRE32322GS**	8.5	70	25	6	4.9	8	3	3.9
#12	- 24 UNC	**TRE32362GS**	8.5	80	30	6	4.9	8	3	4.5
1/4	- 20 UNC	**TRE32402GS**	10.2	80	30	7	5.5	8	3	5.1
5/16	- 18 UNC	**TRE32442GS**	14.2	90	35	8	6.2	9	3	6.6
3/8	- 16 UNC	**TRE32482GS**	15.9	100	39	9	7	10	3	8
7/16	- 14 UNC	**TRE32522GS**	18.2	100	40	8	6.2	9	3	9.4
1/2	- 13 UNC	**TRE32562GS**	19.6	110	46	9	7	10	3	10.8
9/16	- 12 UNC	**TRE32602GS**	21.2	110	54	11	9	12	3	12.2
5/8	- 11 UNC	**TRE32642GS**	23.1	110	59	12	9	12	3	13.6
3/4	- 10 UNC	**TRE32702GS**	25.4	125	69	14	11	14	4	16.5
7/8	- 9 UNC	**TRE32742GS**	28.3	140	80	18	14.5	17	4	19.5
1"	- 8 UNC	**TRE32782GS**	31.8	160	90	20	16	19	4	22.2

▶ DIN 371(#4~3/8) and DIN 376(7/16~1")

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

UNF

X-COATED HSS-PM SPIRAL FLUTE TAPS for MULTI-PURPOSE
Unified Fine Threads

SERIES **TRE33**

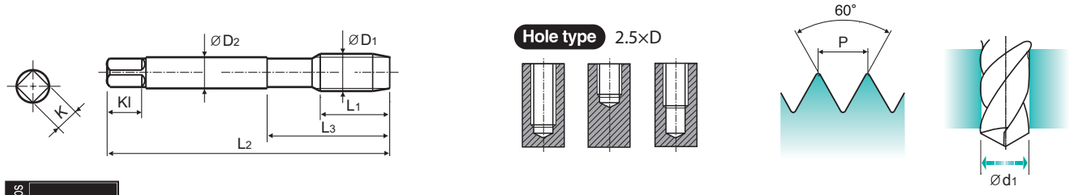
- ▶ High performance on various ductile materials
- ▶ Specially designed to prevent oversized threads and reduce gauging problems

DIN 371



DIN 374





Material groups **MU** | HSS PM | DIN 371/374 | 2BX | 60° | C | R45 | X Coating | p.6

Machine Taps

Unit : mm

SIZE ØD1	TPI	EDP No. X-Coating	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter ØD2	Square Size K	Square Length Kl	No. of Flute Z	Tapping Drill Diameter Ød1
#4	48 UNF	**TRE33182GS**	5.1	56	18	3.5	2.7	6	2	2.4
#5	44 UNF	**TRE33222GS**	5.1	56	18	3.5	2.7	6	3	2.7
#6	40 UNF	**TRE33262GS**	6.4	56	20	4	3	6	3	2.9
#8	36 UNF	**TRE33302GS**	6.4	63	21	4.5	3.4	6	3	3.5
#10	32 UNF	**TRE33342GS**	8.5	70	25	6	4.9	8	3	4.1
#12	28 UNF	**TRE33382GS**	8.5	80	30	6	4.9	8	3	4.6
1/4	28 UNF	**TRE33422GS**	10.2	80	30	7	5.5	8	3	5.5
5/16	24 UNF	**TRE33462GS**	10.6	90	35	8	6.2	9	3	6.9
3/8	24 UNF	**TRE33502GS**	10.6	100	39	9	7	10	3	8.5
7/16	20 UNF	**TRE33542GS**	12.7	100	40	8	6.2	9	3	9.9
1/2	20 UNF	**TRE33582GS**	12.7	100	42	9	7	10	3	11.5
9/16	18 UNF	**TRE33622GS**	14.2	100	44	11	9	12	3	12.9
5/8	18 UNF	**TRE33662GS**	14.2	100	48	12	9	12	3	14.5
3/4	16 UNF	**TRE33722GS**	15.9	110	57	14	11	14	4	17.5
7/8	14 UNF	**TRE33762GS**	18.2	125	65	18	14.5	17	4	20.5
1"	12 UNF	**TRE33802GS**	21.2	140	74	20	16	19	4	23.2

▶ DIN 371(#4~3/8) and DIN 374(7/16~1")

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

G(BSP)

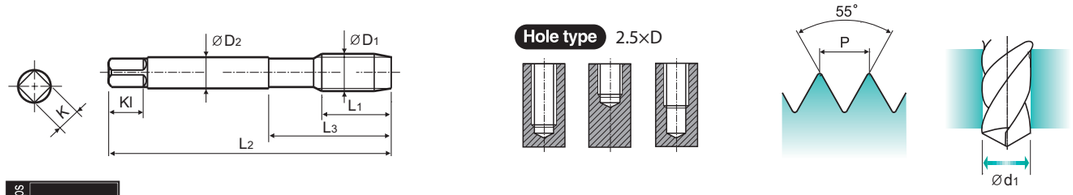
X-COATED HSS-PM SPIRAL FLUTE TAPS for MULTI-PURPOSE
Whitworth PIPE Threads DIN ISO 228/1

NEW SERIES **TRE37**

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

DIN 5156





Material groups **MU** | HSS PM | DIN 5156 | 55° | C | R45 | X Coating | p.6

Machine Taps

Unit : mm

SIZE ØD1	TPI	EDP No. X-Coating	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter ØD2	Square Size K	Square Length Kl	No. of Flute Z	Tapping Drill Diameter Ød1
G1/16	28	**TRE37020GS**	10	90	36	6	4.9	7.8	3	6.8
G1/8	28	**TRE37200GS**	12	90	36	7	5.5	7.8	3	8.8
G1/4	19	**TRE37400GS**	14	100	48	11	9	11.8	3	11.8
G3/8	19	**TRE37480GS**	16	100	52	12	9	11.8	4	15.25
G1/2	14	**TRE37560GS**	18	125	70	16	12	14.8	4	19
G3/4	14	**TRE37700GS**	22	140	82	20	16	19	4	24.5
G1"	11	**TRE37780GS**	24	160	95	25	20	23	4	30.75

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

G(BSP) X-COATED HSS-PM SPIRAL FLUTE TAPS for MULTI-PURPOSE
Whitworth PIPE Threads DIN ISO 228/1

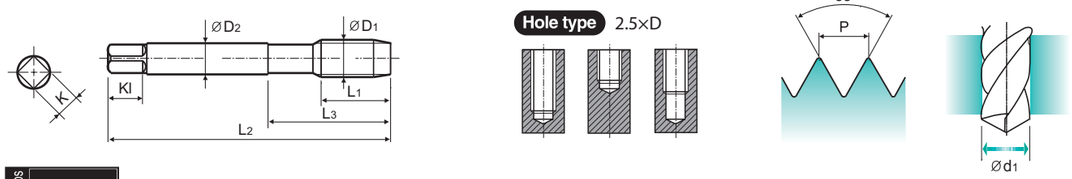
NEW SERIES **TRE38**

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

DIN 5156



Short Chamfer



Material groups **MU** | HSS PM | DIN 5156 | 55° | E | R45 | X Coating | p.6

Machine Taps

Unit : mm

SIZE ØD1	TPI	EDP No. X-Coating	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter ØD2	Square Size K	Square Length Kl	No. of Flute Z	Tapping Drill Diameter Ød1
G1/16	28	**TRE38020GS**	10	90	36	6	4.9	7.8	3	6.8
G1/8	28	**TRE38200GS**	12	90	36	7	5.5	7.8	3	8.8
G1/4	19	**TRE38400GS**	14	100	48	11	9	11.8	3	11.8
G3/8	19	**TRE38480GS**	16	100	52	12	9	11.8	4	15.25
G1/2	14	**TRE38560GS**	18	125	70	16	12	14.8	4	19
G3/4	14	**TRE38700GS**	22	140	82	20	16	19	4	24.5
G1"	11	**TRE38780GS**	24	160	95	25	20	23	4	30.75

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

M X-COATED HSS-PM SPIRAL POINT TAPS for MULTI-PURPOSE
ISO Metric Coarse Threads DIN 13

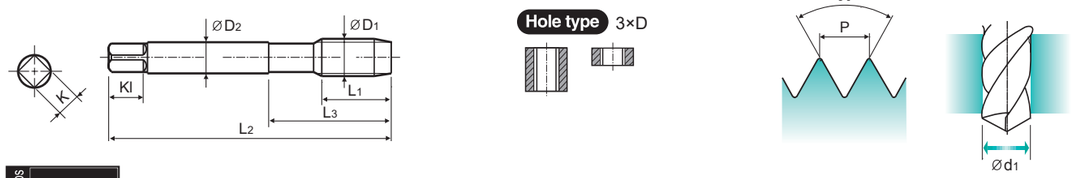
SERIES **TRJ15**

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

DIN 371

DIN 376





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

Machine Taps

Unit : mm

SIZE ØD1	Pitch P	EDP No. X-Coating	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter ØD2	Square Size K	Square Length Kl	No. of Flute Z	Tapping Drill Diameter Ød1
M2	x 0.4	**TRJ15136GS**	8	45	13	2.8	2.1	5	2	1.6
M2.5	x 0.45	**TRJ15176GS**	9	50	15	2.8	2.1	5	2	2.1
M3	x 0.5	**TRJ15206GS**	11	56	18	3.5	2.7	6	3	2.5
M3.5	x 0.6	**TRJ15226GS**	12	56	20	4	3	6	3	2.9
M4	x 0.7	**TRJ15246GS**	13	63	21	4.5	3.4	6	3	3.3
M5	x 0.8	**TRJ15286GS**	15	70	25	6	4.9	8	3	4.2
M6	x 1.0	**TRJ15316GS**	17	80	30	6	4.9	8	3	5
M7	x 1.0	**TRJ15346GS**	17	80	30	7	5.5	8	3	6
M8	x 1.25	**TRJ15366GS**	20	90	35	8	6.2	9	3	6.8
M9	x 1.25	**TRJ15396GS**	20	90	35	9	7	10	3	7.8
M10	x 1.5	**TRJ15426GS**	22	100	39	10	8	11	3	8.5
M12	x 1.75	**TRJ15506GS**	24	110	44	9	7	10	3	10.3
M14	x 2.0	**TRJ15546GS**	26	110	44	11	9	12	3	12
M16	x 2.0	**TRJ15606GS**	27	110	44	12	9	12	3	14
M18	x 2.5	**TRJ15656GS**	30	125	50	14	11	14	3	15.5
M20	x 2.5	**TRJ15706GS**	32	140	54	16	12	15	3	17.5
M22	x 2.5	**TRJ15746GS**	32	140	54	18	14.5	17	3	19.5
M24	x 3.0	**TRJ15786GS**	34	160	60	18	14.5	17	3	21

▶ 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

M X-COATED HSS-PM SPIRAL POINT TAPS for MULTI-PURPOSE
ISO Metric Coarse Threads DIN 13

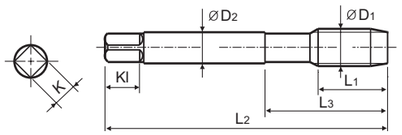
NEW SERIES **TRJ10**

DIN 371

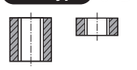
DIN 376

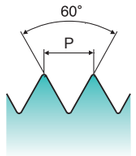


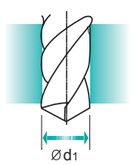
▶ High performance on various ductile materials
▶ Specially designed to prevent oversized threads and reduce gauging problems



Hole type 3×D







Material groups **MU** | HSS PM | DIN 371/376 | 6GX | 60° | B | 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	**TRJ10136GS**	8	45	13	2.8	2.1	5	3	1.6
M3	x 0.5	**TRJ10206GS**	11	56	18	3.5	2.7	6	3	2.5
M4	x 0.7	**TRJ10246GS**	13	63	21	4.5	3.4	6	3	3.3
M5	x 0.8	**TRJ10286GS**	15	70	25	6	4.9	8	3	4.2
M6	x 1.0	**TRJ10316GS**	17	80	30	6	4.9	8	3	5
M8	x 1.25	**TRJ10366GS**	20	90	35	8	6.2	9	3	6.75
M10	x 1.5	**TRJ10426GS**	22	100	39	10	8	11	3	8.5
M12	x 1.75	**TRJ10506GS**	24	110	44	9	7	9.8	3	10.25
M14	x 2.0	**TRJ10546GS**	26	110	44	11	9	11.8	3	12
M16	x 2.0	**TRJ10606GS**	27	110	44	12	9	11.8	3	14

▶ DIN 371(M2~M10) and DIN 376(M12~M16)

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

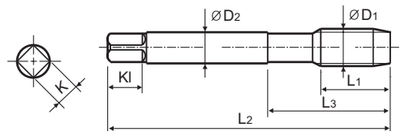
MF X-COATED HSS-PM SPIRAL POINT TAPS for MULTI-PURPOSE
ISO Metric Fine Threads DIN 13

SERIES **TRJ16**

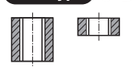
DIN 374

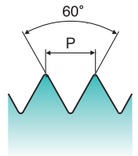


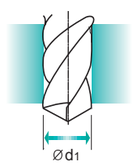
▶ High performance on various ductile materials
▶ Specially designed to prevent oversized threads and reduce gauging problems



Hole type 3×D







Material groups **MU** | HSS PM | DIN 374 | 6HX | 60° | B | 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
M4	x 0.5	**TRJ16256GS**	10	63	21	2.8	2.1	5	3	3.5
M4	x 0.35	**TRJ16696GS**	10	63	21	2.8	2.1	5	3	3.7
M5	x 0.5	**TRJ16296GS**	11	70	25	3.5	2.7	6	3	4.5
M6	x 0.75	**TRJ16326GS**	13	80	30	4.5	3.4	6	3	5.3
M6	x 0.5	**TRJ16336GS**	13	80	30	4.5	3.4	6	3	5.5
M8	x 1.0	**TRJ16376GS**	17	90	36	6	4.9	8	3	7
M8	x 0.75	**TRJ16386GS**	14	80	30	6	4.9	8	3	7.3
M9	x 1.0	**TRJ16406GS**	20	90	36	7	5.5	8	3	8
M9	x 0.75	**TRJ16416GS**	17	80	36	7	5.5	8	3	8.3
M10	x 1.25	**TRJ16436GS**	22	100	40	7	5.5	8	3	8.8
M10	x 1.0	**TRJ16446GS**	18	90	36	7	5.5	8	3	9
M10	x 0.75	**TRJ16456GS**	18	90	36	7	5.5	8	3	9.3
M12	x 1.5	**TRJ16516GS**	22	100	40	9	7	10	3	10.5
M12	x 1.25	**TRJ16526GS**	22	100	40	9	7	10	3	10.8
M12	x 1.0	**TRJ16536GS**	18	100	40	9	7	10	3	11
M14	x 1.5	**TRJ16556GS**	22	100	40	11	9	12	3	12.5
M14	x 1.25	**TRJ16566GS**	22	100	40	11	9	12	3	12.8
M14	x 1.0	**TRJ16576GS**	18	100	40	11	9	12	3	13
M16	x 1.5	**TRJ16616GS**	22	100	40	12	9	12	3	14.5
M16	x 1.0	**TRJ16626GS**	18	100	40	12	9	12	3	15
M18	x 2.0	**TRJ16666GS**	26	125	50	14	11	14	3	16
M18	x 1.5	**TRJ16676GS**	25	110	44	14	11	14	3	16.5
M18	x 1.0	**TRJ16686GS**	20	110	44	14	11	14	3	17
M20	x 2.0	**TRJ16716GS**	27	140	54	16	12	15	3	18
M20	x 1.5	**TRJ16726GS**	25	125	50	16	12	15	3	18.5
M20	x 1.0	**TRJ16736GS**	20	125	50	16	12	15	3	19
M22	x 2.0	**TRJ16756GS**	27	140	54	18	14.5	17	3	20
M22	x 1.5	**TRJ16766GS**	25	125	50	18	14.5	17	3	20.5
M22	x 1.0	**TRJ16776GS**	20	125	50	18	14.5	17	3	21
M24	x 2.0	**TRJ16796GS**	27	140	54	18	14.5	17	3	22
M24	x 1.5	**TRJ16806GS**	27	140	54	18	14.5	17	3	22.5
M24	x 1.0	**TRJ16816GS**	20	140	54	18	14.5	17	3	23

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

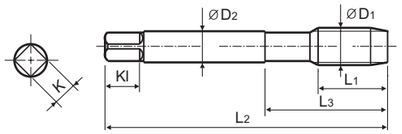
MF X-COATED HSS-PM SPIRAL POINT TAPS for MULTI-PURPOSE
ISO Metric Fine Threads DIN 13

NEW SERIES **TRJ11**

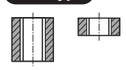
▶ High performance on various ductile materials
▶ Specially designed to prevent oversized threads and reduce gauging problems

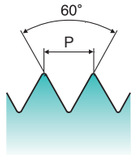
DIN 374

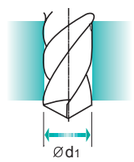




Hole type 3×D







Material groups **MU** | HSS PM | DIN 374 | 6GX | 60° | B | 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
M6	x 0.75	**TRJ11326GS**	13	80	30	4.5	3.4	5.8	3	5.25
M6	x 0.5	**TRJ11336GS**	13	80	30	4.5	3.4	5.8	3	5.5
M8	x 1.0	**TRJ11376GS**	17	90	36	6	4.9	7.8	3	7
M8	x 0.75	**TRJ11386GS**	14	80	30	6	4.9	7.8	3	7.25
M10	x 1.25	**TRJ11436GS**	22	100	40	7	5.5	7.8	3	8.75
M10	x 1.0	**TRJ11446GS**	18	90	36	7	5.5	7.8	3	9
M12	x 1.5	**TRJ11516GS**	22	100	40	9	7	9.8	3	10.5
M12	x 1.25	**TRJ11526GS**	22	100	40	9	7	9.8	3	10.75
M12	x 1.0	**TRJ11536GS**	18	100	40	9	7	9.8	3	11
M14	x 1.5	**TRJ11556GS**	22	100	40	11	9	11.8	3	12.5
M14	x 1.25	**TRJ11566GS**	22	100	40	11	9	11.8	3	12.75
M16	x 1.5	**TRJ11616GS**	22	100	40	12	9	11.8	3	14.5

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

UNC X-COATED HSS-PM SPIRAL POINT TAPS for MULTI-PURPOSE
Unified Coarse Threads

SERIES **TRJ17**

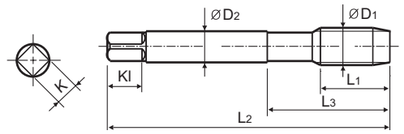
▶ High performance on various ductile materials
▶ Specially designed to prevent oversized threads and reduce gauging problems

DIN 371

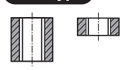


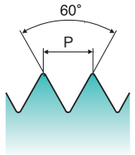
DIN 376

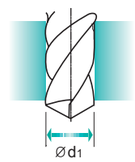




Hole type 3×D







Material groups **MU** | HSS PM | DIN 371/376 | 2BX | 60° | B | X Coating | p.7

Machine Taps

Unit : mm

SIZE	TPI	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1		X-Coating	L1	L2	L3	ØD2	K	Kl	Z	Ød1
#4	- 40 UNC	**TRJ17162GS**	11	56	18	3.5	2.7	6	2	2.3
#5	- 40 UNC	**TRJ17202GS**	11	56	18	3.5	2.7	6	3	2.6
#6	- 32 UNC	**TRJ17242GS**	12	56	20	4	3	6	3	2.8
#8	- 32 UNC	**TRJ17282GS**	13	63	21	4.5	3.4	6	3	3.4
#10	- 24 UNC	**TRJ17322GS**	15	70	25	6	4.9	8	3	3.9
#12	- 24 UNC	**TRJ17362GS**	16	80	30	6	4.9	8	3	4.5
1/4	- 20 UNC	**TRJ17402GS**	17	80	30	7	5.5	8	3	5.1
5/16	- 18 UNC	**TRJ17442GS**	20	90	35	8	6.2	9	3	6.6
3/8	- 16 UNC	**TRJ17482GS**	22	100	39	9	7	10	3	8
7/16	- 14 UNC	**TRJ17522GS**	22	100	40	8	6.2	9	3	9.4
1/2	- 13 UNC	**TRJ17562GS**	25	110	44	9	7	10	3	10.8
9/16	- 12 UNC	**TRJ17602GS**	26	110	44	11	9	12	3	12.2
5/8	- 11 UNC	**TRJ17642GS**	27	110	44	12	9	12	3	13.6
3/4	- 10 UNC	**TRJ17702GS**	30	125	50	14	11	14	3	16.5
7/8	- 9 UNC	**TRJ17742GS**	32	140	54	18	14.5	17	3	19.5
1"	- 8 UNC	**TRJ17782GS**	36	160	60	20	16	19	3	22.2

▶ DIN 371(#4~3/8) and DIN376(7/16~1")

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

UNF

X-COATED HSS-PM SPIRAL POINT TAPS for MULTI-PURPOSE
Unified Fine Threads

SERIES **TRJ18**

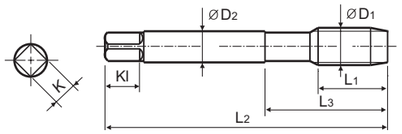
- ▶ High performance on various ductile materials
- ▶ Specially designed to prevent oversized threads and reduce gauging problems

DIN 371

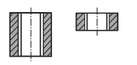


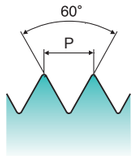
DIN 374

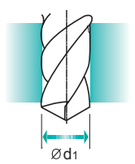




Hole type 3×D







Material groups **MU** | HSS PM | DIN 371/374 | 2BX | 60° | B | X Coating | p.7

Machine Taps

Unit : mm

SIZE ØD1	TPI	EDP No. X-Coating	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter ØD2	Square Size K	Square Length Kl	No. of Flute Z	Tapping Drill Diameter Ød1
#4	48 UNF	**TRJ18182GS**	11	56	18	3.5	2.7	6	2	2.4
#5	44 UNF	**TRJ18222GS**	11	56	18	3.5	2.7	6	3	2.7
#6	40 UNF	**TRJ18262GS**	12	56	20	4	3	6	3	2.9
#8	36 UNF	**TRJ18302GS**	13	63	21	4.5	3.4	6	3	3.5
#10	32 UNF	**TRJ18342GS**	15	70	25	6	4.9	8	3	4.1
#12	28 UNF	**TRJ18382GS**	16	80	30	6	4.9	8	3	4.6
1/4	28 UNF	**TRJ18422GS**	17	80	30	7	5.5	8	3	5.5
5/16	24 UNF	**TRJ18462GS**	17	90	35	8	6.2	9	3	6.9
3/8	24 UNF	**TRJ18502GS**	18	100	39	9	7	10	3	8.5
7/16	20 UNF	**TRJ18542GS**	22	100	40	8	6.2	9	3	9.9
1/2	20 UNF	**TRJ18582GS**	22	100	40	9	7	10	3	11.5
9/16	18 UNF	**TRJ18622GS**	22	100	40	11	9	12	3	12.9
5/8	18 UNF	**TRJ18662GS**	22	100	40	12	9	12	3	14.5
3/4	16 UNF	**TRJ18722GS**	25	110	44	14	11	14	3	17.5
7/8	14 UNF	**TRJ18762GS**	26	125	50	18	14.5	17	3	20.5
1"	12 UNF	**TRJ18802GS**	28	140	54	20	16	19	3	23.2

▶ DIN 371(#4~3/8) and DIN374(7/16~1")

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

G(BSP)

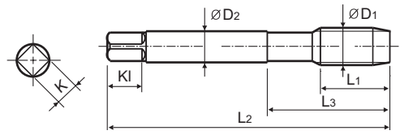
X-COATED HSS-PM SPIRAL POINT TAPS for MULTI-PURPOSE
Whitworth PIPE Threads DIN ISO 228/1

NEW SERIES **TRJ12**

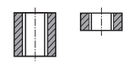
- ▶ High performance on various ductile materials
- ▶ Specially designed to prevent oversized threads and reduce gauging problems

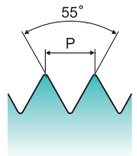
DIN 5156

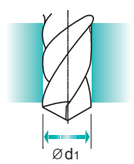




Hole type 3×D







Material groups **MU** | HSS PM | DIN 5156 | 55° | B | X Coating | p.7

Machine Taps

Unit : mm

SIZE ØD1	TPI	EDP No. X-Coating	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter ØD2	Square Size K	Square Length Kl	No. of Flute Z	Tapping Drill Diameter Ød1
G1/16	28	**TRJ12020GS**	20	90	36	6	4.9	7.8	3	6.8
G1/8	28	**TRJ12200GS**	20	90	36	7	5.5	7.8	3	8.8
G1/4	19	**TRJ12400GS**	22	100	48	11	9	11.8	3	11.8
G3/8	19	**TRJ12480GS**	22	100	52	12	9	11.8	3	15.25
G1/2	14	**TRJ12560GS**	25	125	70	16	12	14.8	3	19
G3/4	14	**TRJ12700GS**	28	140	82	20	16	19	4	24.5
G1"	11	**TRJ12780GS**	30	160	95	25	20	23	4	30.75

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

M X-COATED HSS-PM FORMING TAPS for MULTI-PURPOSE
ISO Metric Coarse Threads DIN 13

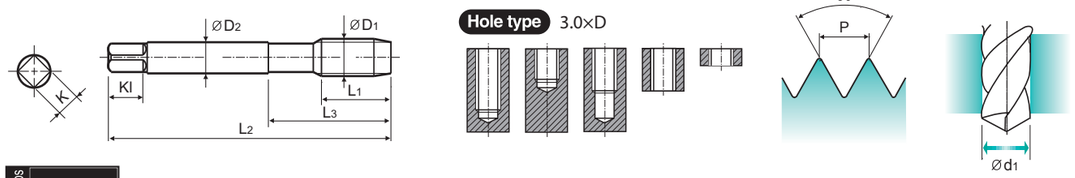
NEW SERIES **TRQ10**

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

DIN 371

DIN 376





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

Machine Taps

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Number of Lobe	Tapping Drill Diameter
ØD1	P	X-Coating	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M3	x 0.5	**TRQ10206GS**	6	56	18	3.5	2.7	6	4	2.8
M3.5	x 0.6	**TRQ10226GS**	7.2	56	20	4	3	6	4	3.25
M4	x 0.7	**TRQ10246GS**	8.4	63	21	4.5	3.4	6	4	3.7
M5	x 0.8	**TRQ10286GS**	9.6	70	25	6	4.9	8	5	4.65
M6	x 1.0	**TRQ10316GS**	10	80	30	6	4.9	8	5	5.55
M7	x 1.0	**TRQ10346GS**	10	80	30	7	5.5	8	5	6.55
M8	x 1.25	**TRQ10366GS**	12	90	35	8	6.2	9	5	7.4
M9	x 1.25	**TRQ10396GS**	12	90	35	9	7	10	5	8.4
M10	x 1.5	**TRQ10426GS**	15	100	39	10	8	11	8	9.3
M12	x 1.75	**TRQ10506GS**	17	110	44	9	7	9.8	8	11.2
M14	x 2.0	**TRQ10546GS**	20	110	44	11	9	11.8	8	13
M16	x 2.0	**TRQ10606GS**	20	110	44	12	9	11.8	8	15
M18	x 2.5	**TRQ10656GS**	20	125	50	14	11	13.8	8	16.8
M20	x 2.5	**TRQ10706GS**	20	140	54	16	12	14.8	8	18.8
M22	x 2.5	**TRQ10746GS**	20	140	54	18	14.5	16.8	8	20.8
M24	x 3.0	**TRQ10786GS**	24	160	60	18	14.5	17	8	22.5

▶ DIN 371(M3~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	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎													

M X-COATED HSS-PM FORMING TAPS for MULTI-PURPOSE
ISO Metric Coarse Threads DIN 13

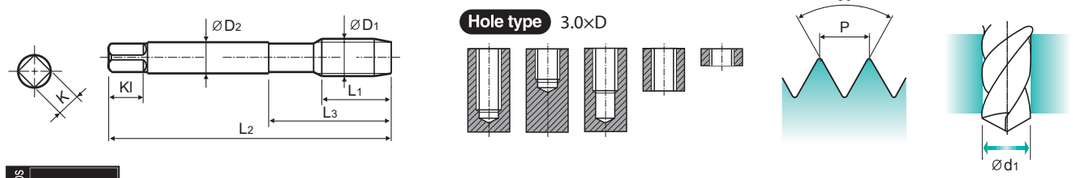
NEW SERIES **TRQ14**

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

DIN 371

DIN 376





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

Machine Taps

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Number of Lobe	Tapping Drill Diameter
ØD1	P	X-Coating	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M3	x 0.5	**TRQ14206GS**	6	56	18	3.5	2.7	6	4	2.8
M3.5	x 0.6	**TRQ14226GS**	7.2	56	20	4	3	6	4	3.25
M4	x 0.7	**TRQ14246GS**	8.4	63	21	4.5	3.4	6	4	3.7
M5	x 0.8	**TRQ14286GS**	9.6	70	25	6	4.9	8	5	4.65
M6	x 1.0	**TRQ14316GS**	10	80	30	6	4.9	8	5	5.55
M7	x 1.0	**TRQ14346GS**	10	80	30	7	5.5	8	5	6.55
M8	x 1.25	**TRQ14366GS**	12	90	35	8	6.2	9	5	7.4
M9	x 1.25	**TRQ14396GS**	12	90	35	9	7	10	5	8.4
M10	x 1.5	**TRQ14426GS**	15	100	39	10	8	11	8	9.3
M12	x 1.75	**TRQ14506GS**	17	110	44	9	7	9.8	8	11.2
M14	x 2.0	**TRQ14546GS**	20	110	44	11	9	11.8	8	13
M16	x 2.0	**TRQ14606GS**	20	110	44	12	9	11.8	8	15
M18	x 2.5	**TRQ14656GS**	20	125	50	14	11	13.8	8	16.8
M20	x 2.5	**TRQ14706GS**	20	140	54	16	12	14.8	8	18.8
M22	x 2.5	**TRQ14746GS**	20	140	54	18	14.5	16.8	8	20.8
M24	x 3.0	**TRQ14786GS**	24	160	60	18	14.5	17	8	22.5

▶ DIN 371(M3~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	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎													

M X-COATED HSS-PM FORMING TAPS for MULTI-PURPOSE
ISO Metric Coarse Threads DIN 13

NEW SERIES **TRQ16**

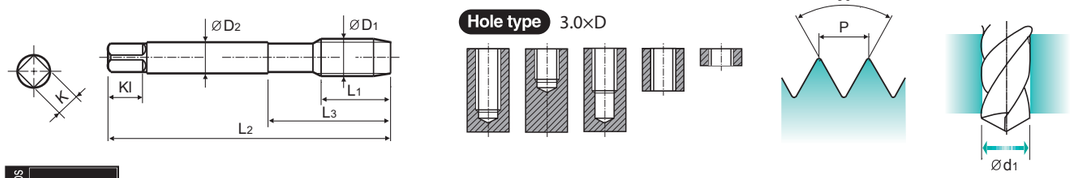
▶ High performance on various ductile materials
▶ Specially designed to prevent oversized threads and reduce gauging problems

DIN 371



DIN 376





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

Machine Taps

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Number of Lobe	Tapping Drill Diameter
ØD1	P	X-Coating	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M3	x 0.5	**TRQ16206GS**	6	56	18	3.5	2.7	6	4	2.8
M3.5	x 0.6	**TRQ16226GS**	7.2	56	20	4	3	6	4	3.25
M4	x 0.7	**TRQ16246GS**	8.4	63	21	4.5	3.4	6	4	3.7
M5	x 0.8	**TRQ16286GS**	9.6	70	25	6	4.9	8	5	4.65
M6	x 1.0	**TRQ16316GS**	10	80	30	6	4.9	8	5	5.55
M7	x 1.0	**TRQ16346GS**	10	80	30	7	5.5	8	5	6.55
M8	x 1.25	**TRQ16366GS**	12	90	35	8	6.2	9	5	7.4
M9	x 1.25	**TRQ16396GS**	12	90	35	9	7	10	5	8.4
M10	x 1.5	**TRQ16426GS**	15	100	39	10	8	11	8	9.3
M12	x 1.75	**TRQ16506GS**	17	110	44	9	7	9.8	8	11.2
M14	x 2.0	**TRQ16546GS**	20	110	44	11	9	11.8	8	13
M16	x 2.0	**TRQ16606GS**	20	110	44	12	9	11.8	8	15

▶ DIN 371(M3~M10) and DIN 376(M12~M16)

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎													

M X-COATED HSS-PM FORMING TAPS for MULTI-PURPOSE
ISO Metric Coarse Threads DIN 13

NEW SERIES **TRQ12**

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

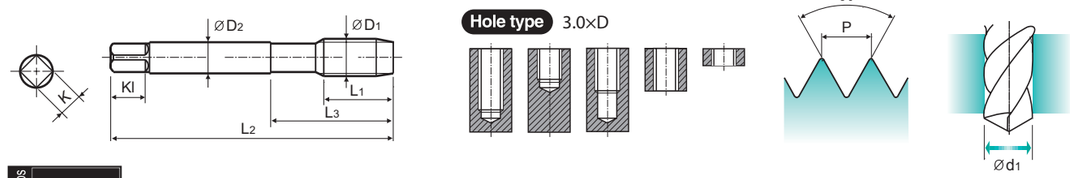
DIN 371



DIN 376



Short Chamfer



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

Machine Taps

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Number of Lobe	Tapping Drill Diameter
ØD1	P	X-Coating	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M3	x 0.5	**TRQ12206GS**	6	56	18	3.5	2.7	6	4	2.8
M3.5	x 0.6	**TRQ12226GS**	7.2	56	20	4	3	6	4	3.25
M4	x 0.7	**TRQ12246GS**	8.4	63	21	4.5	3.4	6	4	3.7
M5	x 0.8	**TRQ12286GS**	9.6	70	25	6	4.9	8	5	4.65
M6	x 1.0	**TRQ12316GS**	10	80	30	6	4.9	8	5	5.55
M7	x 1.0	**TRQ12346GS**	10	80	30	7	5.5	8	5	6.55
M8	x 1.25	**TRQ12366GS**	12	90	35	8	6.2	9	5	7.4
M9	x 1.25	**TRQ12396GS**	12	90	35	9	7	10	5	8.4
M10	x 1.5	**TRQ12426GS**	15	100	39	10	8	11	8	9.3
M12	x 1.75	**TRQ12506GS**	17	110	44	9	7	9.8	8	11.2
M14	x 2.0	**TRQ12546GS**	20	110	44	11	9	11.8	8	13
M16	x 2.0	**TRQ12606GS**	20	110	44	12	9	11.8	8	15

▶ DIN 371(M3~M10) and DIN 376(M12~M16)

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎													

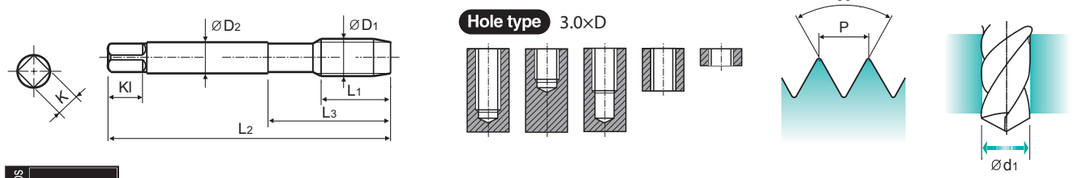
MF X-COATED HSS-PM FORMING TAPS for MULTI-PURPOSE
ISO Metric Fine Threads DIN 13

NEW SERIES **TRQ11**

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

DIN 374





Material groups **MU** | HSS PM | DIN 374 | 6HX | 60° | C | X Coating | p.7

Machine Taps

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Number of Lobe	Tapping Drill Diameter
ØD1	P	X-Coating	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M6	x 0.75	**TRQ11326GS**	10	80	30	4.5	3.4	5.8	5	5.7
M6	x 0.5	**TRQ11336GS**	10	80	30	4.5	3.4	5.8	5	5.8
M8	x 1.0	**TRQ11376GS**	12	90	36	6	4.9	7.8	5	7.5
M8	x 0.75	**TRQ11386GS**	12	80	30	6	4.9	7.8	5	7.7
M10	x 1.25	**TRQ11436GS**	15	100	40	7	5.5	7.8	8	9.4
M10	x 1.0	**TRQ11446GS**	15	90	36	7	5.5	7.8	8	9.5
M10	x 0.75	**TRQ11456GS**	15	90	36	7	5.5	7.8	8	9.7
M12	x 1.5	**TRQ11516GS**	17	100	40	9	7	9.8	8	11.3
M12	x 1.25	**TRQ11526GS**	17	100	40	9	7	9.8	8	11.4
M12	x 1.0	**TRQ11536GS**	17	100	40	9	7	9.8	8	11.5
M14	x 1.5	**TRQ11556GS**	20	100	40	11	9	11.8	8	13.3
M14	x 1.25	**TRQ11566GS**	20	100	40	11	9	11.8	8	13.4
M14	x 1.0	**TRQ11576GS**	20	100	40	11	9	11.8	8	13.5
M16	x 1.5	**TRQ11616GS**	20	100	40	12	9	11.8	8	15.3
M16	x 1.0	**TRQ11626GS**	20	100	40	12	9	11.8	8	15.5
M18	x 2.0	**TRQ11666GS**	20	125	50	14	11	13.8	8	17
M18	x 1.5	**TRQ11676GS**	15	110	44	14	11	13.8	8	17.3
M18	x 1.0	**TRQ11686GS**	10	110	44	14	11	13.8	8	17.5
M20	x 2.0	**TRQ11716GS**	20	140	54	16	12	14.8	8	19
M20	x 1.5	**TRQ11726GS**	15	125	50	16	12	14.8	8	19.3
M20	x 1.0	**TRQ11736GS**	10	125	50	16	12	14.8	8	19.5
M22	x 1.5	**TRQ11766GS**	15	125	50	18	14.5	16.8	8	21.25
M24	x 1.5	**TRQ11806GS**	15	140	54	18	14.5	17	8	23.25

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎													

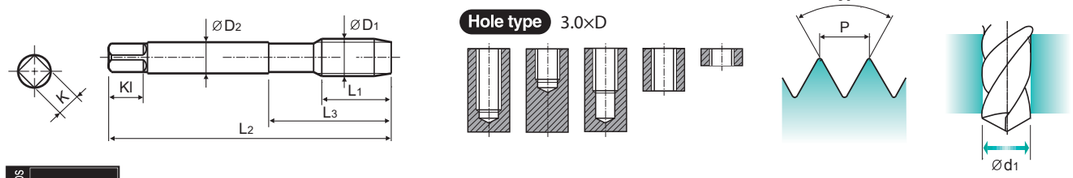
MF X-COATED HSS-PM FORMING TAPS for MULTI-PURPOSE
ISO Metric Fine Threads DIN 13

NEW SERIES **TRQ15**

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

DIN 374





Material groups **MU** | HSS PM | DIN 374 | 6GX | 60° | C | X Coating | p.7

Machine Taps

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Number of Lobe	Tapping Drill Diameter
ØD1	P	X-Coating	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M6	x 0.75	**TRQ15326GS**	10	80	30	4.5	3.4	5.8	5	5.7
M6	x 0.5	**TRQ15336GS**	10	80	30	4.5	3.4	5.8	5	5.8
M8	x 1.0	**TRQ15376GS**	12	90	36	6	4.9	7.8	5	7.5
M8	x 0.75	**TRQ15386GS**	12	80	30	6	4.9	7.8	5	7.7
M10	x 1.25	**TRQ15436GS**	15	100	40	7	5.5	7.8	8	9.4
M10	x 1.0	**TRQ15446GS**	15	90	36	7	5.5	7.8	8	9.5
M10	x 0.75	**TRQ15456GS**	15	90	36	7	5.5	7.8	8	9.7
M12	x 1.5	**TRQ15516GS**	17	100	40	9	7	9.8	8	11.3
M12	x 1.25	**TRQ15526GS**	17	100	40	9	7	9.8	8	11.4
M12	x 1.0	**TRQ15536GS**	17	100	40	9	7	9.8	8	11.5
M14	x 1.5	**TRQ15556GS**	20	100	40	11	9	11.8	8	13.3
M14	x 1.25	**TRQ15566GS**	20	100	40	11	9	11.8	8	13.4
M14	x 1.0	**TRQ15576GS**	20	100	40	11	9	11.8	8	13.5
M16	x 1.5	**TRQ15616GS**	20	100	40	12	9	11.8	8	15.3
M16	x 1.0	**TRQ15626GS**	20	100	40	12	9	11.8	8	15.5
M18	x 2.0	**TRQ15666GS**	20	125	50	14	11	13.8	8	17
M18	x 1.5	**TRQ15676GS**	15	110	44	14	11	13.8	8	17.3
M18	x 1.0	**TRQ15686GS**	10	110	44	14	11	13.8	8	17.5
M20	x 2.0	**TRQ15716GS**	20	140	54	16	12	14.8	8	19
M20	x 1.5	**TRQ15726GS**	15	125	50	16	12	14.8	8	19.3
M20	x 1.0	**TRQ15736GS**	10	125	50	16	12	14.8	8	19.5
M22	x 1.5	**TRQ15766GS**	15	125	50	18	14.5	16.8	8	21.25
M24	x 1.5	**TRQ15806GS**	15	140	54	18	14.5	17	8	23.25

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎													

MF X-COATED HSS-PM FORMING TAPS for MULTI-PURPOSE
ISO Metric Fine Threads DIN 13

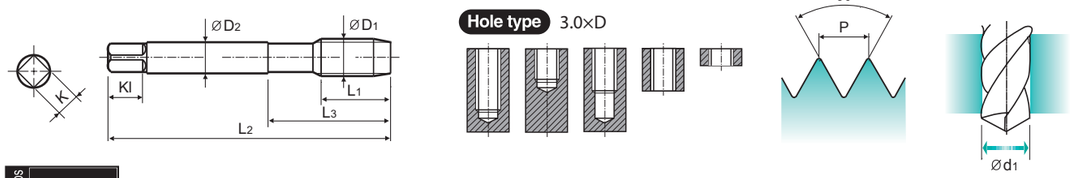
NEW SERIES **TRQ13**

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

DIN 374



Short Chamfer



Material groups **MU** | HSS PM | DIN 374 | 6HX | 60° | E | X Coating | p.7

Machine Taps

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Number of Lobe	Tapping Drill Diameter
ØD1	P	X-Coating	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M8	x 1.0	**TRQ13376GS**	12	90	36	6	4.9	7.8	5	7.5
M8	x 0.75	**TRQ13386GS**	12	80	30	6	4.9	7.8	5	7.7
M10	x 1.25	**TRQ13436GS**	15	100	40	7	5.5	7.8	8	9.4
M10	x 1.0	**TRQ13446GS**	15	90	36	7	5.5	7.8	8	9.5
M12	x 1.5	**TRQ13516GS**	17	100	40	9	7	9.8	8	11.3
M12	x 1.25	**TRQ13526GS**	17	100	40	9	7	9.8	8	11.4
M12	x 1.0	**TRQ13536GS**	17	100	40	9	7	9.8	8	11.5
M14	x 1.5	**TRQ13556GS**	20	100	40	11	9	11.8	8	13.3
M14	x 1.25	**TRQ13566GS**	20	100	40	11	9	11.8	8	13.4
M14	x 1.0	**TRQ13576GS**	20	100	40	11	9	11.8	8	13.5
M16	x 1.5	**TRQ13616GS**	20	100	40	12	9	11.8	8	15.3
M16	x 1.0	**TRQ13626GS**	20	100	40	12	9	11.8	8	15.5

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎													

UNC X-COATED HSS-PM FORMING TAPS for MULTI-PURPOSE
Unified Coarse Threads

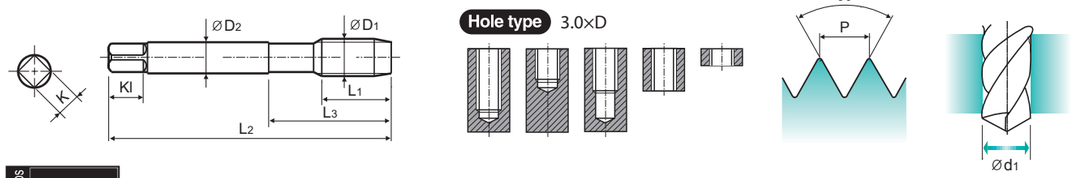
NEW SERIES **TRQ18**

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

DIN 371

DIN 376





Material groups **MU** | HSS PM | DIN 371/376 | 2BX | 60° | C | X Coating | p.7

Machine Taps

Unit : mm

SIZE	TPI	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Number of Lobe	Tapping Drill Diameter
ØD1		X-Coating	L1	L2	L3	ØD2	K	Kl	Z	Ød1
#4	- 40 UNC	**TRQ18162GS**	7.6	56	18	3.5	2.7	6	4	2.6
#5	- 40 UNC	**TRQ18202GS**	7.6	56	18	3.5	2.7	6	4	2.9
#6	- 32 UNC	**TRQ18242GS**	9.5	56	20	4	3	6	4	3.15
#8	- 32 UNC	**TRQ18282GS**	9.5	63	21	4.5	3.4	6	4	3.8
#10	- 24 UNC	**TRQ18322GS**	12.7	70	25	6	4.9	8	5	4.3
#12	- 24 UNC	**TRQ18362GS**	12.7	80	30	6	4.9	8	5	4.95
1/4	- 20 UNC	**TRQ18402GS**	12.7	80	30	7	5.5	8	5	5.7
5/16	- 18 UNC	**TRQ18442GS**	14.1	90	35	8	6.2	9	5	7.2
3/8	- 16 UNC	**TRQ18482GS**	15.9	100	39	9	7	10	8	8.7
7/16	- 14 UNC	**TRQ18522GS**	18.1	100	40	8	6.2	8.8	8	10.2
1/2	- 13 UNC	**TRQ18562GS**	19.5	110	44	9	7	9.8	8	11.7
9/16	- 12 UNC	**TRQ18602GS**	21.2	110	44	11	9	11.8	8	13.2
5/8	- 11 UNC	**TRQ18642GS**	23.1	110	44	12	9	11.8	8	14.7
3/4	- 10 UNC	**TRQ18702GS**	20.3	125	50	14	11	13.8	8	17.8
7/8	- 9 UNC	**TRQ18742GS**	22.6	140	54	18	14.5	16.8	8	20.8
1"	- 8 UNC	**TRQ18782GS**	25.4	160	60	20	16	19	8	23.8

▶ DIN 371(#4~3/8) and DIN376(7/16~1")

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎													

UNF
X-COATED HSS-PM FORMING TAPS for MULTI-PURPOSE
Unified Fine Threads

NEW SERIES **TRQ19**

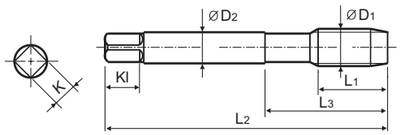
- ▶ High performance on various ductile materials
- ▶ Specially designed to prevent oversized threads and reduce gauging problems

DIN 371

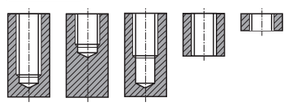


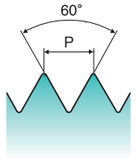
DIN 374

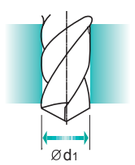




Hole type 3.0×D







Material groups **MU** | HSS PM | DIN 371/374 | 2BX | 60° | C | X Coating

p.7

Machine Taps

Unit : mm

SIZE ØD1	TPI	EDP No. X-Coating	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter ØD2	Square Size K	Square Length Kl	Number of Lobe Z	Tapping Drill Diameter Ød1
#4	48 UNF	**TRQ19182GS**	7.6	56	18	3.5	2.7	6	4	2.6
#5	44 UNF	**TRQ19222GS**	7.6	56	18	3.5	2.7	6	4	2.9
#6	40 UNF	**TRQ19262GS**	9.5	56	20	4	3	6	4	3.25
#8	36 UNF	**TRQ19302GS**	9.5	63	21	4.5	3.4	6	4	3.9
#10	32 UNF	**TRQ19342GS**	12.7	70	25	6	4.9	8	5	4.45
#12	28 UNF	**TRQ19382GS**	12.7	80	30	6	4.9	8	5	5.05
1/4	28 UNF	**TRQ19422GS**	12.7	80	30	7	5.5	8	5	5.9
5/16	24 UNF	**TRQ19462GS**	14.1	90	35	8	6.2	9	5	7.4
3/8	24 UNF	**TRQ19502GS**	15.9	100	39	9	7	10	8	9
7/16	20 UNF	**TRQ19542GS**	18.1	100	40	8	6.2	8.8	8	10.5
1/2	20 UNF	**TRQ19582GS**	19.5	100	40	9	7	9.8	8	12.1
9/16	18 UNF	**TRQ19622GS**	21.2	100	40	11	9	11.8	8	13.6
5/8	18 UNF	**TRQ19662GS**	23.1	100	40	12	9	11.8	8	15.2
3/4	16 UNF	**TRQ19722GS**	15.9	110	44	14	11	13.8	8	18.3
7/8	14 UNF	**TRQ19762GS**	18.1	125	50	18	14.5	16.8	8	21.3
1"	12 UNF	**TRQ19802GS**	21.2	140	54	20	16	19	8	24.3

▶ DIN 371(#4~3/8) and DIN374(7/16~1")

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎													

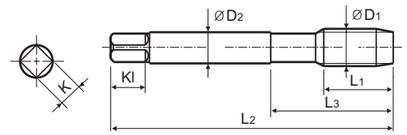
G(BSP)
X-COATED HSS-PM FORMING TAPS for MULTI-PURPOSE
Whitworth PIPE Threads DIN ISO 228/1

NEW SERIES **TRQ17**

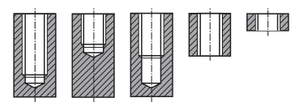
- ▶ High performance on various ductile materials
- ▶ Specially designed to prevent oversized threads and reduce gauging problems

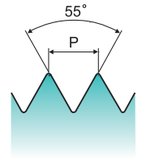
DIN 5156

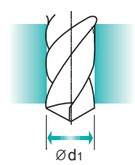




Hole type 3.0×D







Material groups **MU** | HSS PM | DIN 5156 | 55° | C | X Coating

p.7

Machine Taps

Unit : mm

SIZE ØD1	TPI	EDP No. X-Coating	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter ØD2	Square Size K	Square Length Kl	Number of Lobe Z	Tapping Drill Diameter Ød1
G1/16	28	**TRQ17020GS**	9	90	36	6	4.9	7.8	5	7.3
G1/8	28	**TRQ17200GS**	9	90	36	7	5.5	7.8	8	9.3
G1/4	19	**TRQ17400GS**	13	100	40	11	9	11.8	8	12.5
G3/8	19	**TRQ17480GS**	13	100	40	12	9	11.8	8	16
G1/2	14	**TRQ17560GS**	18	125	50	16	12	14.8	8	20
G3/4	14	**TRQ17700GS**	18	140	54	20	16	19	8	25.5
G1"	11	**TRQ17780GS**	23	160	60	25	20	23	8	32.1

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎													

M X-COATED HSS-PM SPIRAL FLUTE TAPS for MULTI-PURPOSE
ISO Metric Coarse Threads DIN 13

NEW SERIES **TRE39**

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

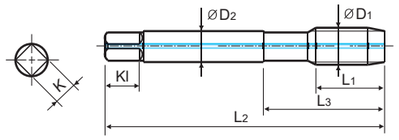
DIN 371



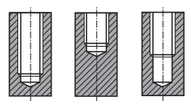
DIN 376

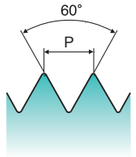


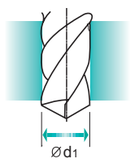
with Internal Coolant



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
M6	x 1.0	**TRE39316GS**	10	80	30	6	4.9	8	3	5
M8	x 1.25	**TRE39366GS**	13	90	35	8	6.2	9	3	6.75
M10	x 1.5	**TRE39426GS**	15	100	39	10	8	11	3	8.5
M12	x 1.75	**TRE39506GS**	18	110	44	9	7	9.8	3	10.25
M14	x 2.0	**TRE39546GS**	20	110	52	11	9	11.8	3	12
M16	x 2.0	**TRE39606GS**	20	110	52	12	9	11.8	3	14
M18	x 2.5	**TRE39656GS**	25	125	66	14	11	13.8	4	15.5
M20	x 2.5	**TRE39706GS**	25	140	72	16	12	14.8	4	17.5
M22	x 2.5	**TRE39746GS**	25	140	78	18	14.5	16.8	4	19.5
M24	x 3.0	**TRE39786GS**	30	160	85	18	14.5	17	4	21
M27	x 3.0	**TRE39866GS**	30	160	92	20	16	19	4	24
M30	x 3.5	**TRE39946GS**	35	180	102	22	18	21	4	26.5

▶ DIN 371(M6~M10) and DIN 376(M12~M30)

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

M X-COATED HSS-PM SPIRAL FLUTE TAPS for MULTI-PURPOSE
ISO Metric Coarse Threads DIN 13

NEW SERIES **TRE41**

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

DIN 371

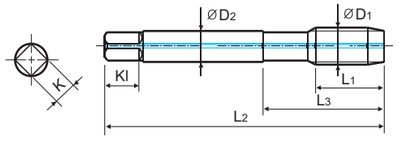


DIN 376

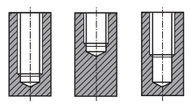


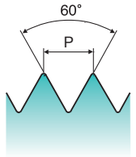
Short Chamfer

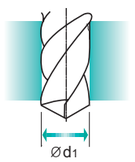
with Internal Coolant



Hole type 2.5×D







Material groups **MU** | HSS PM | DIN 371/376 | 6HX | 60° | E | R45 | X Coating | p.8

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
M6	x 1.0	**TRE41316GS**	10	80	30	6	4.9	8	3	5
M8	x 1.25	**TRE41366GS**	13	90	35	8	6.2	9	3	6.75
M10	x 1.5	**TRE41426GS**	15	100	39	10	8	11	3	8.5
M12	x 1.75	**TRE41506GS**	18	110	44	9	7	9.8	3	10.25
M14	x 2.0	**TRE41546GS**	20	110	52	11	9	11.8	3	12
M16	x 2.0	**TRE41606GS**	20	110	52	12	9	11.8	3	14
M20	x 2.5	**TRE41706GS**	25	140	72	16	12	14.8	4	17.5

▶ DIN 371(M6~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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

MF X-COATED HSS-PM SPIRAL FLUTE TAPS for MULTI-PURPOSE
ISO Metric Fine Threads DIN 13

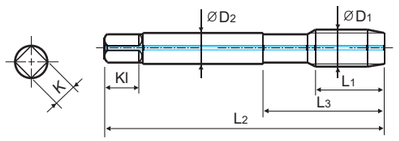
NEW SERIES **TRE40**

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

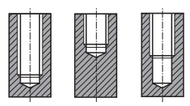
DIN 374

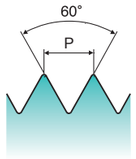


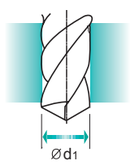
with Internal Coolant



Hole type 2.5×D







Material groups **MU** | HSS PM | DIN 374 | 6HX | 60° | C | R45 | X Coating

p.7

Machine Taps

Unit : mm

SIZE ØD1	Pitch P	EDP No. X-Coating	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter ØD2	Square Size K	Square Length Kl	No. of Flute Z	Tapping Drill Diameter Ød1
M6	x 0.75	**TRE40326GS**	8	80	30	4.5	3.4	5.8	3	5.25
M6	x 0.5	**TRE40336GS**	8	80	30	4.5	3.4	5.8	3	5.5
M8	x 1.0	**TRE40376GS**	10	90	36	6	4.9	7.8	3	7
M8	x 0.75	**TRE40386GS**	10	80	30	6	4.9	7.8	3	7.25
M10	x 1.25	**TRE40436GS**	13	100	40	7	5.5	7.8	3	8.75
M10	x 1.0	**TRE40446GS**	10	90	36	7	5.5	7.8	3	9
M10	x 0.75	**TRE40456GS**	10	90	36	7	5.5	7.8	3	9.25
M12	x 1.5	**TRE40516GS**	15	100	40	9	7	9.8	3	10.5
M12	x 1.25	**TRE40526GS**	15	100	40	9	7	9.8	3	10.75
M12	x 1.0	**TRE40536GS**	15	100	40	9	7	9.8	3	11
M14	x 1.5	**TRE40556GS**	15	100	47	11	9	11.8	3	12.5
M14	x 1.25	**TRE40566GS**	15	100	47	11	9	11.8	3	12.75
M14	x 1.0	**TRE40576GS**	15	100	47	11	9	11.8	3	13
M16	x 1.5	**TRE40616GS**	15	100	49	12	9	11.8	3	14.5
M16	x 1.0	**TRE40626GS**	15	100	49	12	9	11.8	3	15
M18	x 2.0	**TRE40666GS**	20	125	66	14	11	13.8	4	16
M18	x 1.5	**TRE40676GS**	15	110	55	14	11	13.8	4	16.5
M18	x 1.0	**TRE40686GS**	15	110	55	14	11	13.8	4	17
M20	x 2.0	**TRE40716GS**	20	140	72	16	12	14.8	4	18
M20	x 1.5	**TRE40726GS**	15	125	60	16	12	14.8	4	18.5
M20	x 1.0	**TRE40736GS**	15	125	60	16	12	14.8	4	19
M22	x 2.0	**TRE40756GS**	20	140	78	18	14.5	16.8	4	20
M22	x 1.5	**TRE40766GS**	15	125	65	18	14.5	16.8	4	20.5
M22	x 1.0	**TRE40776GS**	15	125	65	18	14.5	16.8	4	21
M24	x 2.0	**TRE40796GS**	20	140	70	18	14.5	17	4	22
M24	x 1.5	**TRE40806GS**	15	140	70	18	14.5	17	4	22.5
M24	x 1.0	**TRE40816GS**	15	140	70	18	14.5	17	4	23

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

G(BSP) X-COATED HSS-PM SPIRAL FLUTE TAPS for MULTI-PURPOSE
Whitworth PIPE Threads DIN ISO 228/1

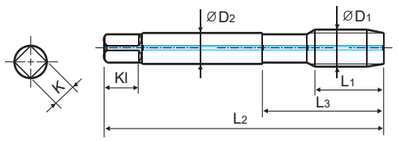
NEW SERIES **TRE42**

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

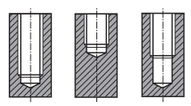
DIN 5156

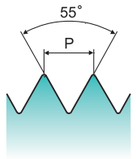


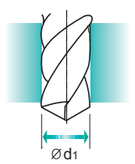
with Internal Coolant



Hole type 2.5×D







Material groups **MU** | HSS PM | DIN 5156 | 55° | C | R45 | X Coating

p.8

Machine Taps

Unit : mm

SIZE ØD1	TPI	EDP No. X-Coating	Thread Length L1	Overall Length L2	Neck Length L3	Shank Diameter ØD2	Square Size K	Square Length Kl	No. of Flute Z	Tapping Drill Diameter Ød1
G1/16	- 28	**TRE42020GS**	10	90	36	6	4.9	7.8	3	6.8
G1/8	- 28	**TRE42200GS**	12	90	36	7	5.5	7.8	3	8.8
G1/4	- 19	**TRE42400GS**	14	100	48	11	9	11.8	3	11.8
G3/8	- 19	**TRE42480GS**	16	100	52	12	9	11.8	4	15.25
G1/2	- 14	**TRE42560GS**	18	125	70	16	12	14.8	4	19
G3/4	- 14	**TRE42700GS**	22	140	82	20	16	19	4	24.5
G1"	- 11	**TRE42780GS**	24	160	95	25	20	23	4	30.75

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

M X-COATED HSS-PM SPIRAL POINT TAPS for MULTI-PURPOSE
ISO Metric Coarse Threads DIN 13

NEW SERIES **TRJ24**

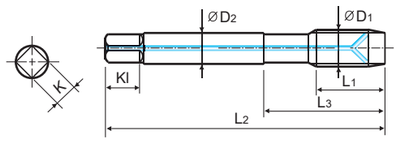
- ▶ High performance on various ductile materials
- ▶ Specially designed to prevent oversized threads and reduce gauging problems

DIN 371

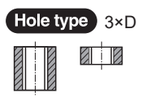
DIN 376

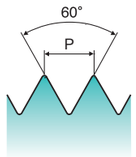


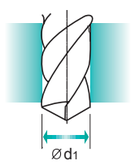
with Internal Coolant



Hole type 3×D







Material groups **MU** | HSS PM | DIN 371/376 | 6HX | 60° | B | X Coating | p.8

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
M6	x 1.0	**TRJ24316GSP**	17	80	30	6	4.9	8	3	5
M8	x 1.25	**TRJ24366GSP**	20	90	35	8	6.2	9	3	6.75
M10	x 1.5	**TRJ24426GSP**	22	100	39	10	8	11	3	8.5
M12	x 1.75	**TRJ24506GSP**	24	110	44	9	7	9.8	3	10.25
M14	x 2.0	**TRJ24546GSP**	26	110	52	11	9	11.8	3	12
M16	x 2.0	**TRJ24606GSP**	27	110	52	12	9	11.8	3	14
M18	x 2.5	**TRJ24656GSP**	30	125	66	14	11	13.8	3	15.5
M20	x 2.5	**TRJ24706GSP**	32	140	72	16	12	14.8	3	17.5
M22	x 2.5	**TRJ24746GSP**	32	140	78	18	14.5	16.8	3	19.5
M24	x 3.0	**TRJ24786GSP**	34	160	85	18	14.5	17	3	21
M27	x 3.0	**TRJ24866GSP**	36	160	92	20	16	19	4	24
M30	x 3.5	**TRJ24946GSP**	40	180	102	22	18	21	4	26.5

▶ DIN 371(M6~M10) and DIN 376(M12~M30)

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

MF X-COATED HSS-PM SPIRAL POINT TAPS for MULTI-PURPOSE
ISO Metric Fine Threads DIN 13

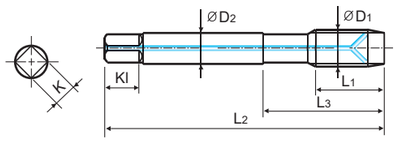
NEW SERIES **TRJ25**

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

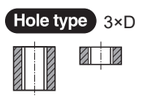
DIN 374

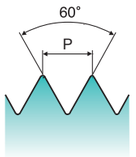


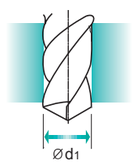
with Internal Coolant



Hole type 3×D







Material groups **MU** | HSS PM | DIN 374 | 6HX | 60° | B | X Coating | p.8

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
M6	x 0.75	**TRJ25326GSP**	13	80	30	4.5	3.4	5.8	3	5.25
M6	x 0.5	**TRJ25336GSP**	13	80	30	4.5	3.4	5.8	3	5.5
M8	x 1.0	**TRJ25376GSP**	17	90	36	6	4.9	7.8	3	7
M8	x 0.75	**TRJ25386GSP**	14	80	30	6	4.9	7.8	3	7.25
M10	x 1.25	**TRJ25436GSP**	22	100	40	7	5.5	7.8	3	8.75
M10	x 1.0	**TRJ25446GSP**	18	90	36	7	5.5	7.8	3	9
M10	x 0.75	**TRJ25456GSP**	18	90	36	7	5.5	7.8	3	9.25
M12	x 1.5	**TRJ25516GSP**	22	100	40	9	7	9.8	3	10.5
M12	x 1.25	**TRJ25526GSP**	22	100	40	9	7	9.8	3	10.75
M12	x 1.0	**TRJ25536GSP**	18	100	40	9	7	9.8	3	11
M14	x 1.5	**TRJ25556GSP**	22	100	47	11	9	11.8	3	12.5
M14	x 1.25	**TRJ25566GSP**	22	100	47	11	9	11.8	3	12.75
M14	x 1.0	**TRJ25576GSP**	18	100	47	11	9	11.8	3	13
M16	x 1.5	**TRJ25616GSP**	22	100	49	12	9	11.8	3	14.5
M16	x 1.0	**TRJ25626GSP**	18	100	49	12	9	11.8	3	15
M18	x 2.0	**TRJ25666GSP**	26	125	66	14	11	13.8	3	16
M18	x 1.5	**TRJ25676GSP**	25	110	55	14	11	13.8	3	16.5
M18	x 1.0	**TRJ25686GSP**	20	110	55	14	11	13.8	3	17
M20	x 2.0	**TRJ25716GSP**	27	140	72	16	12	14.8	3	18
M20	x 1.5	**TRJ25726GSP**	25	125	60	16	12	14.8	3	18.5
M20	x 1.0	**TRJ25736GSP**	20	125	60	16	12	14.8	3	19
M22	x 2.0	**TRJ25756GSP**	27	140	78	18	14.5	16.8	3	20
M22	x 1.5	**TRJ25766GSP**	25	125	65	18	14.5	16.8	3	20.5
M22	x 1.0	**TRJ25776GSP**	20	125	65	18	14.5	16.8	3	21
M24	x 2.0	**TRJ25796GSP**	27	140	70	18	14.5	17	3	22
M24	x 1.5	**TRJ25806GSP**	27	140	70	18	14.5	17	3	22.5
M24	x 1.0	**TRJ25816GSP**	20	140	70	18	14.5	17	3	23

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	○	○	◎	◎	○	◎	◎	◎													

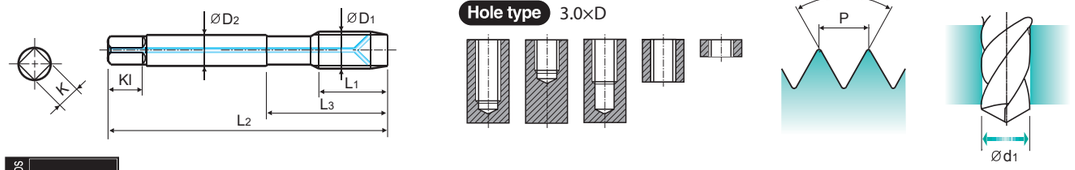
M X-COATED HSS-PM FORMING TAPS for MULTI-PURPOSE
ISO Metric Coarse Threads DIN 13

NEW SERIES **TRQ20**



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

with Internal Coolant



Material groups **MU** | HSS PM | DIN 371/376 | 6HX | 60° | C | X Coating | p.8

Machine Taps

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Number of Lobe	Tapping Drill Diameter
ØD1	P	X-Coating	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M5	x 0.8	**TRQ20286GSP**	9.6	70	25	6	4.9	8	5	4.65
M6	x 1.0	**TRQ20316GSP**	10	80	30	6	4.9	8	5	5.55
M8	x 1.25	**TRQ20366GSP**	12	90	35	8	6.2	9	5	7.4
M10	x 1.5	**TRQ20426GSP**	15	100	39	10	8	11	8	9.3
M12	x 1.75	**TRQ20506GSP**	17	110	44	9	7	9.8	8	11.2
M14	x 2.0	**TRQ20546GSP**	20	110	44	11	9	11.8	8	13
M16	x 2.0	**TRQ20606GSP**	20	110	44	12	9	11.8	8	15
M18	x 2.5	**TRQ20656GSP**	20	125	50	14	11	13.8	8	16.8
M20	x 2.5	**TRQ20706GSP**	20	140	54	16	12	14.8	8	18.8
M22	x 2.5	**TRQ20746GSP**	20	140	54	18	14.5	16.8	8	20.8
M24	x 3.0	**TRQ20786GSP**	24	160	60	18	14.5	17	8	22.5

▶ DIN 371(M5~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	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎													

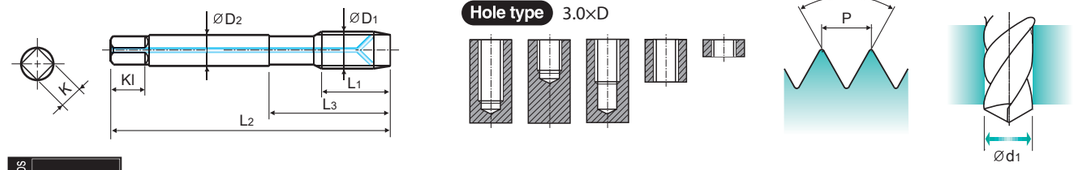
M X-COATED HSS-PM FORMING TAPS for MULTI-PURPOSE
ISO Metric Coarse Threads DIN 13

NEW SERIES **TRQ24**



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

with Internal Coolant



Material groups **MU** | HSS PM | DIN 371/376 | 6GX | 60° | C | X Coating | p.8

Machine Taps

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Number of Lobe	Tapping Drill Diameter
ØD1	P	X-Coating	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M5	x 0.8	**TRQ24286GSP**	9.6	70	25	6	4.9	8	5	4.65
M6	x 1.0	**TRQ24316GSP**	10	80	30	6	4.9	8	5	5.55
M8	x 1.25	**TRQ24366GSP**	12	90	35	8	6.2	9	5	7.4
M10	x 1.5	**TRQ24426GSP**	15	100	39	10	8	11	8	9.3
M12	x 1.75	**TRQ24506GSP**	17	110	44	9	7	9.8	8	11.2
M14	x 2.0	**TRQ24546GSP**	20	110	44	11	9	11.8	8	13
M16	x 2.0	**TRQ24606GSP**	20	110	44	12	9	11.8	8	15

▶ DIN 371(M5~M10) and DIN 376(M12~M16)

◎ : 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	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎						

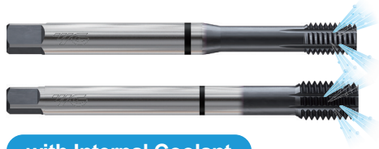
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	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	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎													

M X-COATED HSS-PM FORMING TAPS for MULTI-PURPOSE
ISO Metric Coarse Threads DIN 13

NEW SERIES **TRQ22**

DIN 371

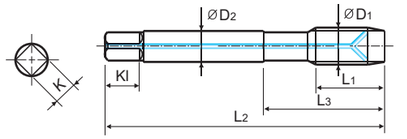
DIN 376



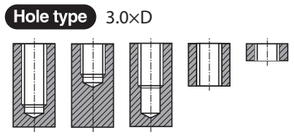
- High performance on various ductile materials
- Specially designed to prevent oversized threads and reduce gauging problems

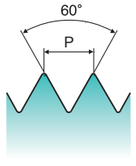
Short Chamfer

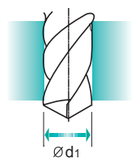
with Internal Coolant



Hole type 3.0×D







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

p.8

Machine Taps

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Number of Lobe	Tapping Drill Diameter
ØD1	P	X-Coating	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M5	x 0.8	**TRQ22286GSP**	9.6	70	25	6	4.9	8	5	4.65
M6	x 1.0	**TRQ22316GSP**	10	80	30	6	4.9	8	5	5.55
M8	x 1.25	**TRQ22366GSP**	12	90	35	8	6.2	9	5	7.4
M10	x 1.5	**TRQ22426GSP**	15	100	39	10	8	11	8	9.3
M12	x 1.75	**TRQ22506GSP**	17	110	44	9	7	9.8	8	11.2
M14	x 2.0	**TRQ22546GSP**	20	110	44	11	9	11.8	8	13
M16	x 2.0	**TRQ22606GSP**	20	110	44	12	9	11.8	8	15

▶ DIN 371(M5~M10) and DIN 376(M12~M16)

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎													

MF X-COATED HSS-PM FORMING TAPS for MULTI-PURPOSE
ISO Metric Fine Threads DIN 13

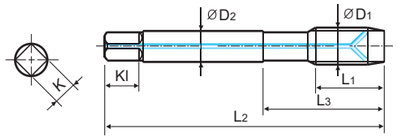
NEW SERIES **TRQ21**

DIN 374

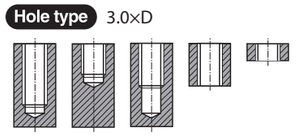


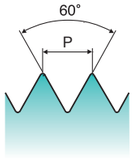
- High performance on various ductile materials
- Specially designed to prevent oversized threads and reduce gauging problems

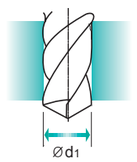
with Internal Coolant



Hole type 3.0×D







Material groups **MU** | HSS PM | DIN 374 | 6HX | 60° | C | X Coating

p.8

Machine Taps

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Number of Lobe	Tapping Drill Diameter
ØD1	P	X-Coating	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M6	x 0.75	**TRQ21326GSP**	10	80	30	4.5	3.4	5.8	5	5.7
M6	x 0.5	**TRQ21336GSP**	10	80	30	4.5	3.4	5.8	5	5.8
M8	x 1.0	**TRQ21376GSP**	12	90	36	6	4.9	7.8	5	7.5
M8	x 0.75	**TRQ21386GSP**	12	80	30	6	4.9	7.8	5	7.7
M10	x 1.25	**TRQ21436GSP**	15	100	40	7	5.5	7.8	8	9.4
M10	x 1.0	**TRQ21446GSP**	15	90	36	7	5.5	7.8	8	9.5
M10	x 0.75	**TRQ21456GSP**	15	90	36	7	5.5	7.8	8	9.7
M12	x 1.5	**TRQ21516GSP**	17	100	40	9	7	9.8	8	11.3
M12	x 1.25	**TRQ21526GSP**	17	100	40	9	7	9.8	8	11.4
M12	x 1.0	**TRQ21536GSP**	17	100	40	9	7	9.8	8	11.5
M14	x 1.5	**TRQ21556GSP**	20	100	40	11	9	11.8	8	13.3
M14	x 1.25	**TRQ21566GSP**	20	100	40	11	9	11.8	8	13.4
M14	x 1.0	**TRQ21576GSP**	20	100	40	11	9	11.8	8	13.5
M16	x 1.5	**TRQ21616GSP**	20	100	40	12	9	11.8	8	15.3
M16	x 1.0	**TRQ21626GSP**	20	100	40	12	9	11.8	8	15.5
M18	x 2.0	**TRQ21666GSP**	20	125	50	14	11	13.8	8	17
M18	x 1.5	**TRQ21676GSP**	15	110	44	14	11	13.8	8	17.3
M18	x 1.0	**TRQ21686GSP**	10	110	44	14	11	13.8	8	17.5
M20	x 2.0	**TRQ21716GSP**	20	140	54	16	12	14.8	8	19
M20	x 1.5	**TRQ21726GSP**	15	125	50	16	12	14.8	8	19.3
M20	x 1.0	**TRQ21736GSP**	10	125	50	16	12	14.8	8	19.5
M22	x 1.5	**TRQ21766GSP**	15	125	50	18	14.5	16.8	8	21.25
M24	x 1.5	**TRQ21806GSP**	15	140	54	18	14.5	17	8	23.25

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎													

MF X-COATED HSS-PM FORMING TAPS for MULTI-PURPOSE
ISO Metric Fine Threads DIN 13

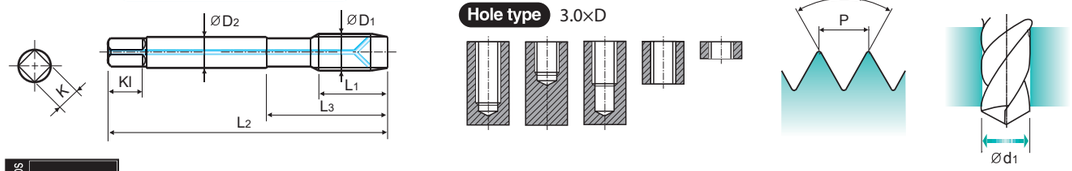
NEW SERIES **TRQ25**

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

DIN 374



with Internal Coolant



Material groups **MU** | HSS PM | DIN 374 | 6GX | 60° | C | X Coating | p.8

Machine Taps

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Number of Lobe	Tapping Drill Diameter
ØD1	P	X-Coating	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M6	x 0.75	**TRQ25326GSP**	10	80	30	4.5	3.4	5.8	5	5.7
M6	x 0.5	**TRQ25336GSP**	10	80	30	4.5	3.4	5.8	5	5.8
M8	x 1.0	**TRQ25376GSP**	12	90	36	6	4.9	7.8	5	7.5
M8	x 0.75	**TRQ25386GSP**	12	80	30	6	4.9	7.8	5	7.7
M10	x 1.25	**TRQ25436GSP**	15	100	40	7	5.5	7.8	8	9.4
M10	x 1.0	**TRQ25446GSP**	15	90	36	7	5.5	7.8	8	9.5
M10	x 0.75	**TRQ25456GSP**	15	90	36	7	5.5	7.8	8	9.7
M12	x 1.5	**TRQ25516GSP**	17	100	40	9	7	9.8	8	11.3
M12	x 1.25	**TRQ25526GSP**	17	100	40	9	7	9.8	8	11.4
M12	x 1.0	**TRQ25536GSP**	17	100	40	9	7	9.8	8	11.5
M14	x 1.5	**TRQ25556GSP**	20	100	40	11	9	11.8	8	13.3
M14	x 1.25	**TRQ25566GSP**	20	100	40	11	9	11.8	8	13.4
M14	x 1.0	**TRQ25576GSP**	20	100	40	11	9	11.8	8	13.5
M16	x 1.5	**TRQ25616GSP**	20	100	40	12	9	11.8	8	15.3
M16	x 1.0	**TRQ25626GSP**	20	100	40	12	9	11.8	8	15.5

◎ : 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	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎													

MF X-COATED HSS-PM FORMING TAPS for MULTI-PURPOSE
ISO Metric Fine Threads DIN 13

NEW SERIES **TRQ23**

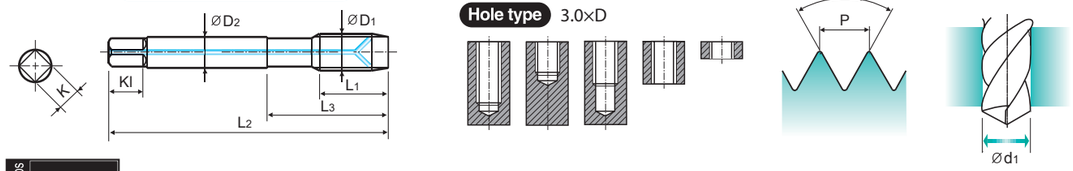
▶ High performance on various ductile materials
▶ Specially designed to prevent oversized threads and reduce gauging problems

DIN 374



Short Chamfer

with Internal Coolant



Material groups **MU** | HSS PM | DIN 374 | 6HX | 60° | E | X Coating | p.8

Machine Taps

Unit : mm

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Number of Lobe	Tapping Drill Diameter
ØD1	P	X-Coating	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M8	x 1.0	**TRQ23376GSP**	12	90	36	6	4.9	7.8	5	7.5
M8	x 0.75	**TRQ23386GSP**	12	80	30	6	4.9	7.8	5	7.7
M10	x 1.25	**TRQ23436GSP**	15	100	40	7	5.5	7.8	8	9.4
M10	x 1.0	**TRQ23446GSP**	15	90	36	7	5.5	7.8	8	9.5
M12	x 1.5	**TRQ23516GSP**	17	100	40	9	7	9.8	8	11.3
M12	x 1.25	**TRQ23526GSP**	17	100	40	9	7	9.8	8	11.4
M12	x 1.0	**TRQ23536GSP**	17	100	40	9	7	9.8	8	11.5
M14	x 1.5	**TRQ23556GSP**	20	100	40	11	9	11.8	8	13.3
M14	x 1.25	**TRQ23566GSP**	20	100	40	11	9	11.8	8	13.4
M14	x 1.0	**TRQ23576GSP**	20	100	40	11	9	11.8	8	13.5
M16	x 1.5	**TRQ23616GSP**	20	100	40	12	9	11.8	8	15.3
M16	x 1.0	**TRQ23626GSP**	20	100	40	12	9	11.8	8	15.5

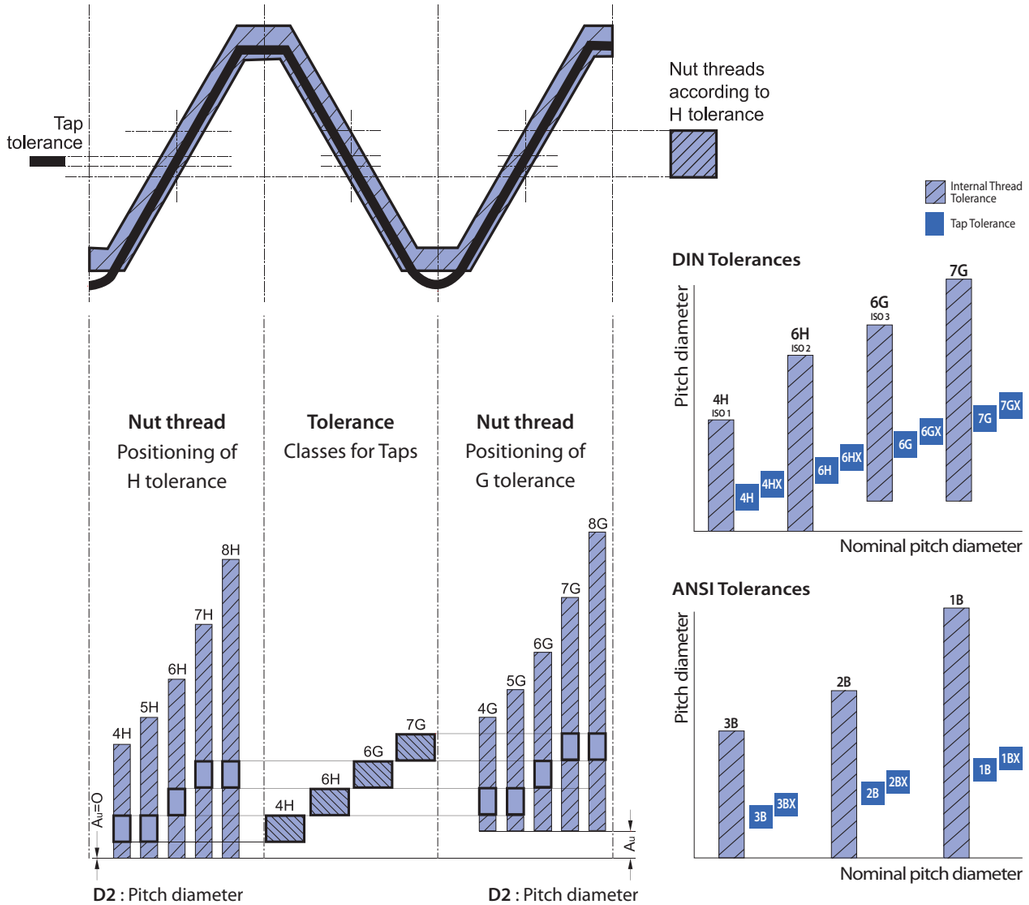
◎ : Excellent ○ : Good

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	400 Rm	1050 Rm	550	630	400	550
Recommended	◎	◎	◎	◎	◎	◎	◎	◎													

TAP TOLERANCES

▶ Tolerance classes of taps and tolerance positions for screw threads as per Metric ISO Standard.



▶ Tap tolerances and recommended classes

Tap tolerance ISO	Tap tolerance DIN	Correct class to obtain Nut thread with tolerance				
ISO 1	4H	4H	5H	-	-	-
ISO 2	6H	4G	5G	6H	-	-
ISO 3	6G	-	-	6G	7H	8H
-	7G	-	-	-	7G	8G

TROUBLE SHOOTING GUIDE

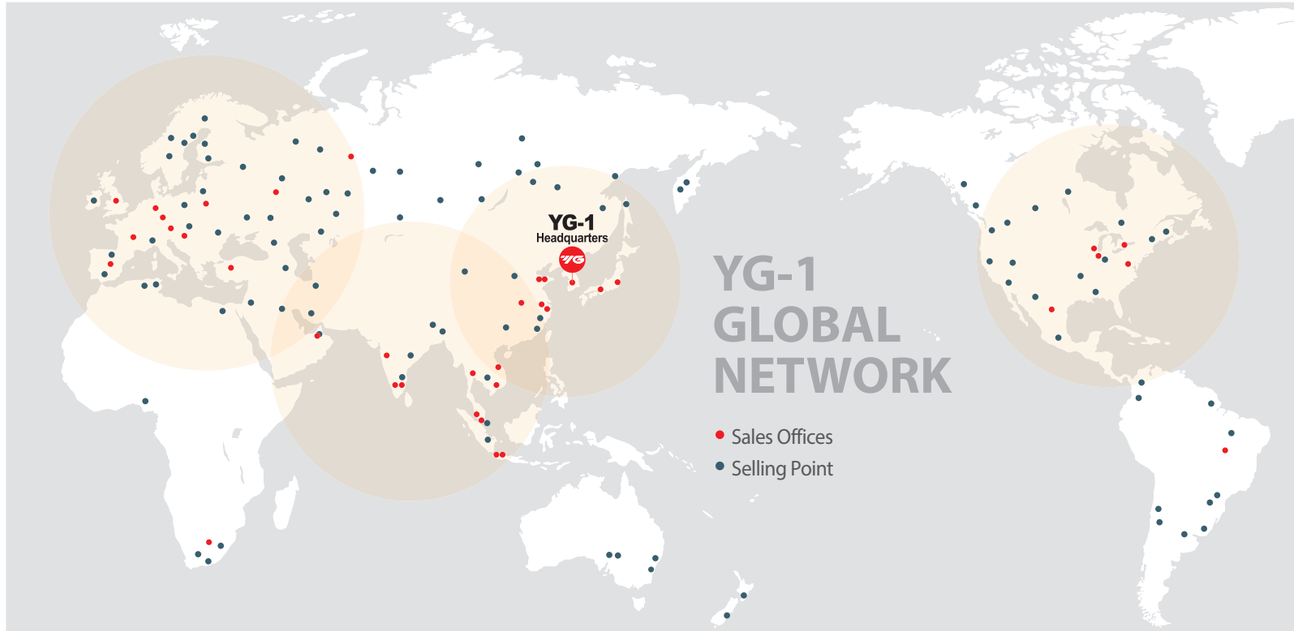
Specific Problem	Cause	Solution
Dimensional Accuracy		
Oversize Pitch Diameter	Incorrect Tap	1. Use proper limits of taps 2. Use longer chamfered taps
	Chip Packing	1. Use spiral point or spiral fluted taps 2. Reduce number of flutes to provide extra chip room 3. Use larger hole size 4. If tapping a hole, allow deeper hole where applicable or shorten the thread length of the parts 5. Use proper lubricant
	Galling	1. Apply proper surface treatment such as Hardslick or chrome 2. Use proper cutting lubricant 3. Reduce tapping speed 4. Use proper cutting angle in accordance with material being tapped 5. Use large hole size
	Operating Conditions	1. Apply proper tapping speed 2. Correct alignment of tap and drill hole 3. Free cutting either tap or workpiece 4. Use proper tapping speed to avoid torn or rough threads 5. Use lead screw tapper 6. Use proper tapping machine with suitable power 7. Avoid misalignment of the tap and drill hole from loose spindle or worn holder
	Tool Condition	1. Obtain proper indexing angle for the flutes at the cutting edge 2. Grind proper cutting angle and chamfer angle 3. Avoid too narrow a land width 4. Remove burrs from regrinding
Oversize Internal Diameter	Hole Size	1. Use minimum hole size 2. Avoid tapered hole 3. Use proper chamfered taps
	Galling	1. Galling solutions 1 through 4 above can be applied to this specific problem
Undersize Pitch Diameter	Incorrect Tap	1. Use oversize taps 2. Apply proper chamfer angle 3. Increase cutting angle
	Damaged Thread	1. Use proper reversing speed to avoid damaging tapped thread on the way out of the hole
	Left-over Chips	1. Increase cutting performance to avoid any left over chips in the hole 2. Remove left over chips from the hole for gage checking
Undersize Internal Diameter	Hole Size	1. Use maximum drill size
Breakage	Incorrect Tap Selection	1. Avoid chip packing in the flutes or on the bottom of the hole Use spiral pointed or spiral fluted taps or fluteless taps 2. Apply correct surface treatment such as Hardslick or bright
	Excessive Tapping Torque	1. Use larger drill size 2. Try to shorten thread length 3. Increase cutting angle 4. Apply a tap with more thread relief and reduced land width 5. Apply correct surface treatment such as Hardslick

TROUBLE SHOOTING GUIDE

Specific Problem	Cause	Solution
Dimensional Accuracy		
Breakage	Operating Conditions	1. Reduce tapping speed 2. Avoid misalignment between tap and the hole and tapered hole 3. Use floating type of tapping holder 4. Use tapping holder with torque adjustment 5. Avoid hitting bottom of the hole with tap
	Tool Condition	1. Do not grind the bottom of the flute 2. Avoid too narrow a land width 3. Remove all worn sections when regrinding the flutes 4. Regrind tool more frequently
Chipping	Incorrect Tap Selection	1. Reduce cutting angle 2. Use a different kind of high-speed steel tap 3. Reduce hardness of the tap 4. Increase chamfer length 5. Avoid chip packing in the flutes or in the bottom of the hole by using spiral fluted or spiral pointed taps
	Wear	1. Reduce tapping speed 2. Avoid misalignment between tap and hole 3. Avoid sudden return of reverse in blind hole tapping 4. Avoid galling 5. Use larger hole size
Wear	Incorrect Tap Selection	1. Apply specially designed tap for tapping heat treated material 2. Change to a type of high-speed steel tap that contains vanadium 3. Apply special surface treatment such as TiCN, TiAlN or Hardslick 4. Increase chamfer length
	Operating Conditions	1. Reduce tapping speed 2. Apply proper cutting lubricants 3. Avoid work hardened hole 4. Use larger hole size
	Tool Condition	1. Grind proper cutting angle 2. Avoid hardness reduction from grinding process
Torn or Rough Thread	Chamfer Too Short	1. Increase chamfer length
	Wrong Cutting Angle	1. Apply proper cutting angle
	Galling	1. Use thread relieved taps 2. Reduce land width 3. Apply surface treatment such as Hardslick or chrome 4. Use proper cutting lubricant 5. Reduce tapping speed 6. Use larger hole size 7. Obtain proper alignment between tap and work
	Chip Packing	1. Use spiral pointed or spiral fluted taps 2. Use larger drill size
Chattering on Tapped Thread	Tool Free Cutting	1. Reduce cutting angle 2. Reduce amount of thread relief
	Tool Condition	1. Avoid too narrow land width 2. Do not grind the bottom of the flute

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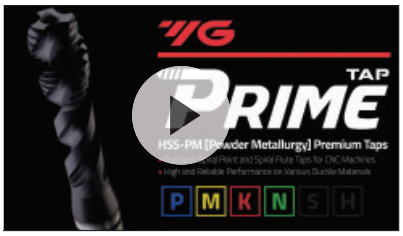
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