



TM923 SERIES

THREAD MILLS

SYNCHRO TAPS

COMBO TAPS

YG TAP GENERAL

YG TAP STEEL

YG TAP HARDENED

YG TAP INOX

YG TAP CAST IRON

YG TAP ALU

YG TAP Ti Ni

YG TAP FORMING

NUT TAPS

STI TAPS

PIPE TAPS

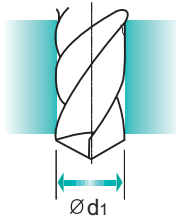
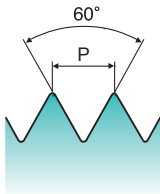
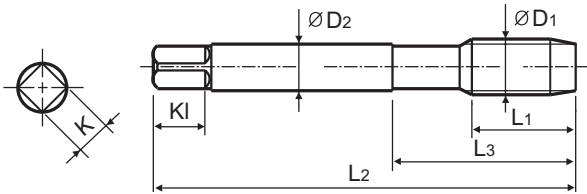
TECHNICAL DATA

ISO metric coarse threads DIN 13

Metrisches ISO-Gewinde DIN 13
ISO MÉTRIQUE DIN13
ISO Metrico passo grosso DIN 13

For tapping Nickel alloys and heat resistant alloy steels which are used in aero space and checmical industries.

Zum Gewindeschneiden von Nickellegierungen und hitzefesten Legierungsstählen, die in der Luftfahrtindustrie und chemischen Industrie verwendet werden.



Ni HSS-PM DIN 371/376 6H 60° B Bright

Machine taps
Maschinengewindebohrer

Recommended Cutting Page : P.268 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	Bright	L1	L2	L3	ØD2	K	K1	Z	Ød1
M2 × 0.4		TM923136	8	45	13	2.8	2.1	5	3	1.6
M2.2 × 0.45		TM923156	8	45	13	2.8	2.1	5	3	1.75
*M2.3 × 0.4		TM923196	8	45	13	2.8	2.1	5	3	1.9
M2.5 × 0.45		TM923176	9	50	15	2.8	2.1	5	3	2.05
*M2.6 × 0.45		TM923496	9	50	15	2.8	2.1	5	3	2.1
M3 × 0.5		TM923206	11	56	18	3.5	2.7	6	3	2.5
M3.5 × 0.6		TM923226	12	56	20	4	3	6	3	2.9
M4 × 0.7		TM923246	13	63	21	4.5	3.4	6	3	3.3
M4.5 × 0.75		TM923266	14	70	25	6	4.9	8	3	3.7
M5 × 0.8		TM923286	15	70	25	6	4.9	8	3	4.2
M6 × 1		TM923316	17	80	30	6	4.9	8	3	5
M7 × 1		TM923346	17	80	30	7	5.5	8	3	6
M8 × 1.25		TM923366	20	90	35	8	6.2	9	3	6.8
M9 × 1.25		TM923396	20	90	35	9	7	10	3	7.8
M10 × 1.5		TM923426	22	100	39	10	8	11	3	8.5
M11 × 1.5		TM923466	22	100	40	8	6.2	9	3	9.5
M12 × 1.75		TM923506	24	110	44	9	7	10	3	10.2
M14 × 2		TM923546	26	110	44	11	9	12	3	12
M16 × 2		TM923606	27	110	44	12	9	12	3	14
M18 × 2.5		TM923656	30	125	50	14	11	14	4	15.5
M20 × 2.5		TM923706	32	140	54	16	12	15	4	17.5
M22 × 2.5		TM923746	32	140	54	18	14.5	17	4	19.5
M24 × 3		TM923786	34	160	60	18	14.5	17	4	21
M27 × 3		TM923866	36	160	60	20	16	19	4	24
M30 × 3.5		TM923946	40	180	70	22	18	21	4	26.5

DIN 371(M2~M10) and DIN 376(M11~M30)

* DIN profile not ISO

◎ : Excellent ○ : Good

ISO	P											M			K						
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25		21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended						◎	◎	◎	◎												
ISO	N										S							H			
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended											◎	◎	◎	◎	◎		○			○	



RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDKONDITIONEN

THREAD MILLS						TM903	TZ903	TM293	TZ293	TM933	TZ933	TM923	TZ923	TQ833	TR833	TQ873	TR873
SYNCHRO TAPS	ISO	VDI 3323	Material Description	HB	HRC	Vc (m/min)											
COMBO TAPS	P	1	Non-alloy steel	125													
		2		190	13												
YG TAP GENERAL		3		250	25												
		4		270	28												
5		300		32													
YG TAP STEEL		6	Low alloy steel	180	10					10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15
		7		275	29	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	
YG TAP HARDENED		8		300	32	6-10	6-10	6-10	6-10	6-10	6-10	6-10	6-10	6-10	6-10	6-10	6-10
		9		350	38	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5	3-5
		10		High alloyed steel, and tool steel	200	15											
		11	325		35												
YG TAP INOX	M	12	Stainless steel	200	15												
YG TAP CAST IRON		13		240	23												
		14		180	10												
YG TAP ALU	K	15	Grey cast iron	180	10												
		16		260	26												
YG TAP Ti Ni		17	Nodular cast iron	160	3												
		18		250	25												
		19	Malleable cast iron	130													
		20		230	21												
YG TAP FORMING	N	21	Aluminum-wrought alloy	60													
22		100															
NUT TAPS		23	Aluminum-cast, alloyed	75													
		24		90													
STI TAPS		25		130													
		26	Copper and Copper Alloys (Bronze / Brass)	110													
27		90															
PIPE TAPS		28		100													
		29	Non Metallic Materials														
TECHNICAL DATA		30															
	S	31	Heat Resistant Super Alloys	200	15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15
		32		280	30			10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	10-15	
		33		250	25			2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	
		34		350	38			2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	
		35		320	34			2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	2-4	
		36	Titanium Alloys	400Rm		10-15	10-15	10-15	10-15				10-15	10-15	10-15	10-15	
		37		1050Rm		4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6	4-6		
		H	38	Hardened steel	550	55							3-5				
39			630		60												
40			Chilled Cast Iron	400	42			3-5	3-5		3-5	3-5			3-5	3-5	
41			Hardened Cast Iron	550	55												

SURFACE TREATMENT AND COATING

The applied High Speed Steels holds a grant of good wear resistance and toughness. Therefore YG-1 normally delivers taps with bright and unfinished surface. For certain materials, various surface treatments provide higher advantage in machining.

STEAM TEMPERED - Vap

Steam Tempered is a Fe₃O₄-oxyd-coating which reduces friction between the tool and workpiece, also preventing cold welding.

NITRIDING - NI

Recommend surface treatment for machining materials that affect wear abrasion, such as grey cast iron, alu-alloys with high Si-percentages (more than 10%).

Below are the various surface treatments for excellent finish surfaces suitable for many applications. The surface treatments are produced and developed within the company.

TiN-COATING

TiN-coating yields a hardness of approx. 2,300 HV and also a heat resistant up to approx. 600°C. The current coating is an excellent all-round coating for normal applications.

Colour : Golden Coefficient of friction against steel : 0.4

TiCN-COATING

TiCN takes place of TiN when the conditions require the coating to have a different hardness and toughness.

The TiCN brings advantages for machining very difficult steels or cutting interrupted bores.

The TiCN-coating has a hardness of approx. 3,000 HV, but is heat resistance only holds up to approx. 400°C, meaning that the TiCN needs an excellent cooling system for a long service life.

Colour : Blue-Grey Coefficient of friction against steel : 0.4

TiAlN-COATING

A special coating for machining abrasive materials such as grey cast iron, alu-alloys with silicon, fiber reinforced plastics, etc., or machining at high temperatures with insufficient cooling, or at high speeds $\geq 600\text{m/min}$. TiAlN has a hardness of approx. 3,000 HV and is heat resistant up to approx. 800°C.

Colour : Violet-Grey Coefficient of friction against steel : 0.4

Hardslick-COATING

Hardslick combines the advantages of an extremely hard, thermally stable TiAlN-coating with the sliding and lubricating properties of an outer WC/C(Tungsten carbide/carbon)-coating in a novel way. The Hardslick coating has a hardness of approx. 3,000 HV and is temperature-resistant up to approx. 800°C.

Colour : Violet-Grey Coefficient of friction against steel : 0.2

SELECTION GUIDE



HSS-PM
YG TAP
Ti Ni

For Heat Resistant Super Alloys and Titanium Alloys
Applied with Cutting Edge Rake Angles and Thread Relief



Please visit
globalyg1.com/mat
for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : P.268

HOLE TYPE			 Max. 2.5xD Blind Hole	 Max. 3.0xD Through Hole		
TOOL MATERIAL			HSS-PM			
CHAMFER LEAD ACC. TO DIN2197			C	C	B	B
FLUTE TYPE			Spiral Flute	Spiral Flute	Spiral Point	Spiral Point
SPIRAL FLUTE ANGLE			R25	R25	-	-
SERIES	M	DIN371/376	TM903 (P.256)	TZ903 (P.257)	TM293 (P.258)	TZ293 (P.259)
		DIN352				
		DIN357/LONG				
	MF	DIN374				
		DIN2181				
	UNC	DIN371/376				
		DIN351				
	UNF	DIN371/374				
		DIN2181				
	BSW	DIN2182/2183				
		DIN351				
	G(BSP)	DIN5156/5157				
EG-M	DIN371/376					
EG-UNC	DIN371/376					
EG-UNF	DIN371/374					
SURFACE TREATMENT			Bright	TiAIN	Bright	TiAIN
MODEL						
HB	HRc					
125						
190	13					
250	25					
270	28					
300	32					
180	10					
275	29	○	○	○	○	
300	32	○	○	○	○	
350	38	○	○	○	○	
200	15					
325	35					
200	15					
240	23					
180	10					
180	10					
260	26					
160	3					
250	25					
130						
230	21					
60						
100						
75						
90						
130						
110						
90						
100						
200	15	○	○	○	○	
280	30			○	○	
250	25			○	○	
350	38			○	○	
320	34			○	○	
400 Rm		○	○	○	○	
1050 Rm		⊙	⊙	⊙	⊙	
550	55					
630	60					
400	42			○	○	
550	55					

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc				
P	1	Non-alloy steel	About 0.15% C	Annealed	125					
	2		About 0.45% C	Annealed	190	13				
	3		About 0.45% C	Quenched & Tempered	250	25				
	4		About 0.75% C	Annealed	270	28				
	5		About 0.75% C	Quenched & Tempered	300	32				
	6	Low alloy steel		Annealed	180	10				
	7			Quenched & Tempered	275	29	○	○	○	○
	8			Quenched & Tempered	300	32	○	○	○	○
	9			Quenched & Tempered	350	38	○	○	○	○
	10	High alloyed steel, and tool steel		Annealed	200	15				
	11			Quenched & Tempered	325	35				
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15				
	13		Martensitic	Quenched & Tempered	240	23				
	14		Austenitic		180	10				
K	15	Grey cast iron	Pearlitic / ferritic		180	10				
	16		Pearlitic (Martensitic)		260	26				
	17	Nodular cast iron	Ferritic		160	3				
	18		Pearlitic		250	25				
	19	Malleable cast iron	Ferritic		130					
	20		Pearlitic		230	21				
N	21	Aluminum-wrought alloy	Not Curable		60					
	22		Curable	Hardened	100					
	23		≤ 12% Si, Not Curable		75					
	24	Aluminum-cast, alloyed	≤ 12% Si, Curable	Hardened	90					
	25		> 12% Si, Not Curable		130					
	26		Cutting Alloys, PB>1%		110					
	27	Copper and Copper Alloys (Bronze / Brass)	CuZn, CuSnZn (Brass)		90					
	28		CuSn, lead-free copper and electrolytic copper		100					
	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			Annealed	250	25			○	○
	34		Ni or Co Based	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				

- THREAD MILLS
- SYNCHRO TAPS
- COMBO TAPS
- YG TAP GENERAL
- YG TAP STEEL
- YG TAP HARDENED
- YG TAP INOX
- YG TAP CAST IRON
- YG TAP ALU
- YG TAP Ti Ni**
- YG TAP FORMING
- NUT TAPS
- STI TAPS
- PIPE TAPS
- TECHNICAL DATA