SCREW THREAD INSERT TAPS

TC944 SERIES

EG-UNC

Unified coarse threads for Screw Thread insert

Unified Regelgew.f.Gew.Drahteins
UNC POUR FILETS RAPPORTÉS
ISO Metrico passo grosso per Helicoil

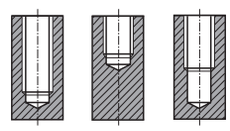
▶ Wire insert threads are used for increasing fastening strength in soft materials.

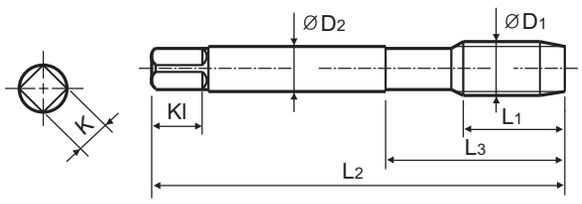
▶ Gewinde mit Drahteinsätzen werden verwendet um größere Drehmomente in weichen Werkstoffen zu erreichen.

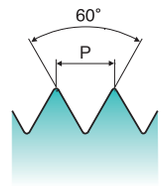
DIN 371

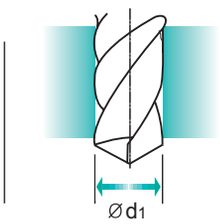
DIN 376

Hole type
2.5×D









Material groups **Al** | HSS-E | DIN 371/376 | 2B | 60° | C | Bright | R40

Machine taps
Maschinengewindebohrer

Recommended Cutting Page : P.298

Unit : mm

SIZE ØD1	TPI	EDP No. Bright	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	TC944162	7	63	21	4.5	3.4	6	3	3.1
#5	- 40 UNC	TC944202	7	63	21	4.5	3.4	6	3	3.4
#6	- 32 UNC	TC944242	8	70	25	6	4.9	8	3	3.8
#8	- 32 UNC	TC944282	8	80	25	6	4.9	8	3	4.4
#10	- 24 UNC	TC944322	10	80	30	7	5.5	8	3	5.2
#12	- 24 UNC	TC944362	10	80	30	7	5.5	8	3	5.8
1/4	- 20 UNC	TC944402	14	90	35	8	6.2	9	3	6.7
5/16	- 18 UNC	TC944442	16	100	39	10	8	11	3	8.4
3/8	- 16 UNC	TC944482	16	110	39	12	9	12	3	10
7/16	- 14 UNC	TC944522	20	110	44	11	9	12	3	11.6
1/2	- 13 UNC	TC944562	22	110	44	12	9	12	3	13.3
9/16	- 12 UNC	TC944602	22	125	50	14	11	14	3	15
5/8	- 11 UNC	TC944642	25	125	50	14	11	14	4	16.5
3/4	- 10 UNC	TC944702	27	140	56	18	14.5	17	4	19.75

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

◎ : 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	◎	◎	◎	◎			◎														

SCREW THREAD INSERT TAPS

RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDKONDITIONEN

					TC909 TC944	TC973 TC934 TC954
ISO	VDI 3323	Material Description	HB	HRc	Vc (m/min)	
P	1	Non-alloy steel	125		15-20	15-20
	2		190	13	15-20	15-20
	3		250	25	12-18	12-18
	4		270	28		
	5		300	32		
	6	Low alloy steel	180	10		
	7		275	29		
	8		300	32		
	9		350	38		
	10	High alloyed steel, and tool steel	200	15		
	11		325	35		
M	12	Stainless steel	200	15		
	13		240	23		
	14		180	10		
K	15	Grey cast iron	180	10		
	16		260	26		
	17	Nodular cast iron	160	3		
	18		250	25		
	19	Malleable cast iron	130			
	20		230	21		
N	21	Aluminum-wrought alloy	60		10-15	10-15
	22		100		10-15	10-15
	23	Aluminum-cast, alloyed	75		15-20	15-20
	24		90		15-20	15-20
	25		130			
	26	Copper and Copper Alloys (Bronze / Brass)	110			
	27		90		8-12	8-12
	28		100			
	29	Non Metallic Materials				
	30					
S	31	Heat Resistant Super Alloys	200	15		
	32		280	30		
	33		250	25		
	34		350	38		
	35		320	34		
	36	Titanium Alloys	400 Rm			
	37		1050 Rm			
H	38	Hardened steel	550	55		
	39		630	60		
	40	Chilled Cast Iron	400	42		
	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 ≥ 600m/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

YG THREADING TOOLS

HSS-E SCREW THREAD INSERT TAPS

Tapping STI Threads of Soft Materials

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : P.298

						Max. 2.5xD Blind Hole	Max. 3.0xD Through Hole
HOLE TYPE							
TOOL MATERIAL						HSS-E	
CHAMFER LEAD ACC. TO DIN2197						C	B
FLUTE TYPE						Spiral Flute	Spiral Point
SPIRAL FLUTE ANGLE						R40	-
SERIES	M	DIN371/376					
		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				TC909 (P.293)	TC973 (P.294)
	EG-UNC	DIN371/376				TC944 (P.295)	TC934 (P.296)
	EG-UNF	DIN371/374					TC954 (P.297)
SURFACE TREATMENT						Bright	Bright
MODEL							

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	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75		◎	◎
	24		≤ 12% Si, Curable	Hardened	90		◎	◎
	25		> 12% Si, Not Curable		130			
	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110			
	27		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		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		