Leading Through Innovation

HSS-E

SCREW THREAD INSERT TAP

EINSATZGEWINDE INSERT TAPS

- Tapping STI Threads of Soft Materials
- Gewindeschneiden von STI-Gewinden in weichen Materialien

SELECTION GUIDE

YG THREADING TOOLS

HSS-E SCREW THREAD INSERT TAP

Tapping STI Threads of Soft Materials

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : p.416

HOLE TYPE			Max. 2.5xD Blind Hole	Max. 3.0xD Through Hole
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.411)	TC973 (p.412)
	EG-UNC	DIN371/376	TC944 (p.413)	TC934 (p.414)
	EG-UNF	DIN371/374		TC954 (p.415)
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		

SCREW THREAD INSERT TAP

TC909 SERIES

EG-M

ISO metric coarse threads for Screw Thread insert

Metrisches ISO Regelgew.f.Gew. Drahteins
ISO MÉTRIQUE DIN13 POUR FILETS RAPPORTÉS
ISO Metrico passo grosso per Helicoil

Machine taps
Maschinengewindebohrer

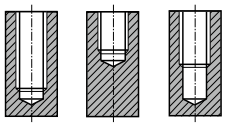
▶ Wire insert threads are used for increasing fastening strength in soft materials.

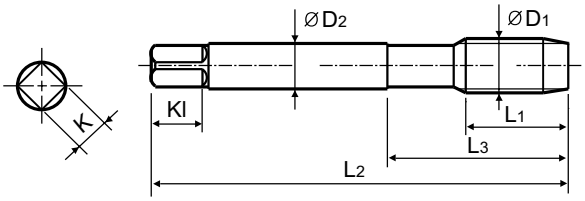
▶ Gewinde mit Drahteinsätzen werden verwendet um größere Drehmomente in weichen Werkstoffen zu erreichen.

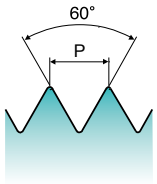
DIN 371

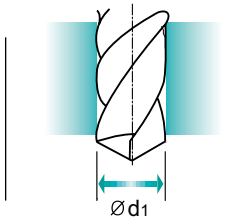
DIN 376

Hole type
2.5×D









Material groups **Al**

HSS-E | DIN 371/376 | 6H Mod. | 60° | C | R40 | Bright

p.416

Recommended ToolHolder
Plain Shank
TAPPING ER CHUCK
TAPPING CHUCK
ONE STEP TAPPING CHUCK

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	Kl	Z	Ød1
M2.5	× 0.45	TC909176	6	56	18	3.5	2.7	6	3	2.65
M3	× 0.5	TC909206	5	63	21	4.5	3.4	6	3	3.15
M3.5	× 0.6	TC909226	8	70	25	6	4.9	8	3	3.7
M4	× 0.7	TC909246	8	70	25	6	4.9	8	3	4.2
M5	× 0.8	TC909286	8	80	30	6	4.9	8	3	5.25
M6	× 1.0	TC909316	10	90	35	8	6.2	9	3	6.3
M8	× 1.25	TC909366	16	100	39	10	8	11	3	8.4
M10	× 1.5	TC909426	15	110	44	9	7	10	3	10.4
M12	× 1.75	TC909506	20	110	44	11	9	12	3	12.5
M14	× 2.0	TC909546	22	110	44	12	9	12	3	14.5
M16	× 2.0	TC909606	25	125	50	14	11	14	4	16.5
M18	× 2.5	TC909656	27	140	54	18	14.5	17	4	18.75
M20	× 2.5	TC909706	30	160	60	18	14.5	17	4	20.75

▶ DIN 371(M2.5~M8) and DIN 376(M10~M20)

◎ : Excellent ○ : Good

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

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

SCREW THREAD INSERT TAP

TC973 SERIES

EG-M ISO metric coarse threads for Screw Thread insert

Metrisches ISO Regelgew.f.Gew. Drahteins
ISO MÉTRIQUE DIN13 POUR FILETS RAPPORTÉS
ISO Metrico passo grosso per Helicoil

Machine taps
Maschinengewindebohrer

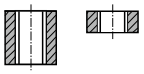
▶ Wire insert threads are used for increasing fastening strength in soft materials.

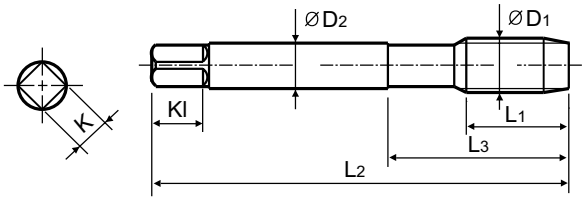
▶ Gewinde mit Drahteinsätzen werden verwendet um größere Drehmomente in weichen Werkstoffen zu erreichen.

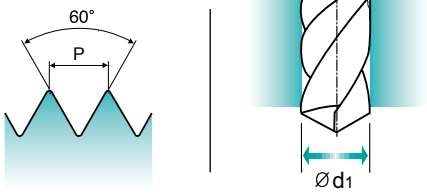
DIN 371

DIN 376

Hole type
3.0×D







Material groups **Al** | HSS-E | DIN 371/376 | 6H Mod. | 60° | B | Bright

p.416

Recommended ToolHolder: Plain Shank; TAPPING ER CHUCK; TAPPING CHUCK; ONE STEP TAPPING CHUCK

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	Kl	Z	Ød1
M2.5	× 0.45	TC973176	11	56	18	3.5	2.7	6	3	2.65
M3	× 0.5	TC973206	10	63	21	4.5	3.4	6	3	3.15
M3.5	× 0.6	TC973226	14	70	25	6	4.9	8	3	3.7
M4	× 0.7	TC973246	13	70	25	6	4.9	8	3	4.2
M5	× 0.8	TC973286	13	80	30	6	4.9	8	3	5.25
M6	× 1.0	TC973316	17	90	35	8	6.2	9	3	6.3
M8	× 1.25	TC973366	18	100	39	10	8	11	3	8.4
M10	× 1.5	TC973426	22	110	44	9	7	10	3	10.4
M12	× 1.75	TC973506	26	110	44	11	9	12	3	12.5
M14	× 2.0	TC973546	27	110	44	12	9	12	3	14.5
M16	× 2.0	TC973606	30	125	50	14	11	14	4	16.5
M18	× 2.5	TC973656	32	140	54	18	14.5	17	4	18.75
M20	× 2.5	TC973706	34	160	60	18	14.5	17	4	20.75

▶ DIN 371(M2.5~M8) and DIN 376(M10~M20)

◎ : Excellent ○ : Good

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

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

SCREW THREAD INSERT TAP

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

Machine taps
Maschinengewindebohrer

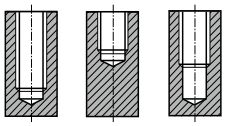
▶ Wire insert threads are used for increasing fastening strength in soft materials.

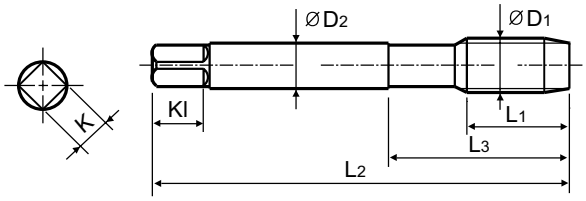
▶ Gewinde mit Drahteinsätzen werden verwendet um größere Drehmomente in weichen Werkstoffen zu erreichen.

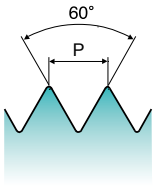
DIN 371

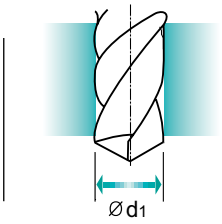
DIN 376

Hole type
2.5×D









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

p.416

Recommended ToolHolder: Plain Shank — TAPPING ER CHUCK / TAPPING CHUCK / ONE STEP TAPPING CHUCK

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 TAP

TC934 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

Machine taps
Maschinengewindebohrer

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

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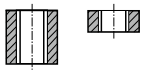
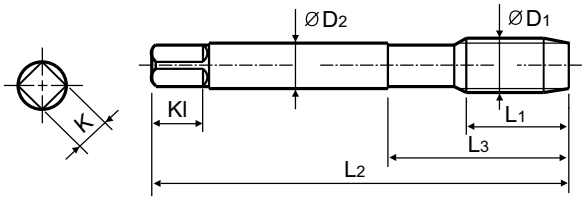
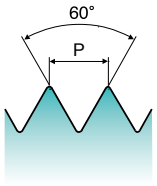
DIN 371

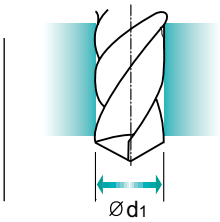
DIN 376

Hole type
3.0×D









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

p.416

Recommended ToolHolder: Plain Shank; TAPPING ER CHUCK; TAPPING CHUCK; ONE STEP TAPPING CHUCK

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	TC934162	13	63	21	4.5	3.4	6	3	3.1
#5	- 40 UNC	TC934202	13	63	21	4.5	3.4	6	3	3.4
#6	- 32 UNC	TC934242	14	70	25	6	4.9	8	3	3.8
#8	- 32 UNC	TC934282	13	80	25	6	4.9	8	3	4.4
#10	- 24 UNC	TC934322	17	80	30	7	5.5	8	3	5.2
#12	- 24 UNC	TC934362	17	80	30	7	5.5	8	3	5.8
1/4	- 20 UNC	TC934402	20	90	35	8	6.2	9	3	6.7
5/16	- 18 UNC	TC934442	22	100	39	10	8	11	3	8.4
3/8	- 16 UNC	TC934482	21	110	39	12	9	12	3	10
7/16	- 14 UNC	TC934522	26	110	44	11	9	12	3	11.6
1/2	- 13 UNC	TC934562	27	110	44	12	9	12	3	13.3
9/16	- 12 UNC	TC934602	30	125	50	14	11	14	3	15
5/8	- 11 UNC	TC934642	30	125	50	14	11	14	4	16.5
3/4	- 10 UNC	TC934702	32	140	54	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 TAP

TC954 SERIES

EG-UNF

Unified fine threads for Screw Thread insert

Unified Feingew.f.Gew.Drahteins
UNC POUR FILETS RAPPORTÉS
ISO Metrico passo fine per Helicoil

Machine taps
Maschinengewindebohrer

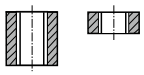
▶ Wire insert threads are used for increasing fastening strength in soft materials.

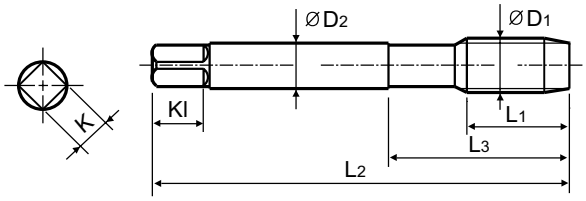
▶ Gewinde mit Drahteinsätzen werden verwendet um größere Drehmomente in weichen Werkstoffen zu erreichen.

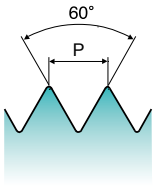
DIN 371

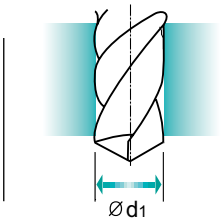
DIN 374

Hole type
3.0×D









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

p.416

Recommended ToolHolder: Plain Shank — TAPPING ER CHUCK / TAPPING CHUCK / ONE STEP TAPPING CHUCK

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	- 48 UNF	TC954182	12	56	20	4	3	6	3	3.1
#6	- 40 UNF	TC954262	14	70	25	6	4.9	8	3	3.7
#8	- 36 UNF	TC954302	13	70	25	6	4.9	8	3	4.4
#10	- 32 UNF	TC954342	13	80	25	6	4.9	8	3	5.1
1/4	- 28 UNF	TC954422	17	90	35	8	6.2	9	3	6.6
5/16	- 24 UNF	TC954462	18	100	39	10	8	11	3	8.25
3/8	- 24 UNF	TC954502	18	110	39	12	9	12	3	9.8
7/16	- 20 UNF	TC954542	22	100	40	9	7	10	3	11.5
1/2	- 20 UNF	TC954582	22	100	40	11	9	12	3	13.1
9/16	- 18 UNF	TC954622	22	100	40	12	9	12	3	14.75
5/8	- 18 UNF	TC954662	25	110	44	14	11	14	4	16.25
3/4	- 16 UNF	TC954722	25	125	50	16	12	15	4	19.5

▶ DIN 371(#4~3/8) and DIN 374(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 TAP

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
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
	27	Copper and Copper Alloys (Bronze / Brass)	90		8-12	8-12