Leading Through Innovation

HSS & HSS-E

PIPE TAP
GASGEWINDEBOHRER

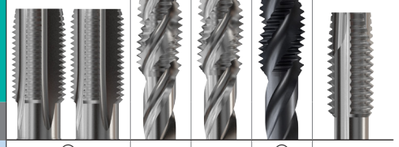
- **Tapping Whitworth Pipe threads**
- **Zum Gewindeschneiden von Whitworth-Rohrgewinden**

SELECTION GUIDE

YG THREADING TOOLS

HSS & HSS-E PIPE TAP

Tapping Whitworth Pipe threads

			Max. 2.0xD Blind/Through Hole	Max. 2.5xD Blind Hole			Max. 3.0xD Through Hole
HOLE TYPE							
TOOL MATERIAL			HSS	HSS-E			
CHAMFER LEAD ACC. TO DIN2197			I/III	C			B
FLUTE TYPE			Straight Flute	Spiral Flute			Spiral Point
SPIRAL FLUTE ANGLE			-	R40	R40	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	T7709 (p.B313)	TC728 (p.B314)	TC729 (p.B315)	TB514 (p.B316)	TC727 (p.B317)
	EG-M	DIN371/376					
	EG-UNC	DIN371/376					
	EG-UNF	DIN371/374					
SURFACE TREATMENT			Bright	Bright	Bright	VAP	Bright
MODEL							

Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : p.B318

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					

PIPE TAP

T7709 SERIES

G(BSP) Whitworth Pipe threads DIN ISO 228/1

Whitworth Rohrgewinde DIN ISO 228/1
G(BSP) PROFIL 55° DIN ISO 228/1
Filettatura Whitworth per tubi DIN ISO 228/1

Sets of taps
Gewindebohrer-Satz

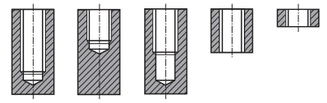
▶ Serial hand tap set in First and Bottoming.
▶ Bottoming tap of set has final internal thread dimensions only.

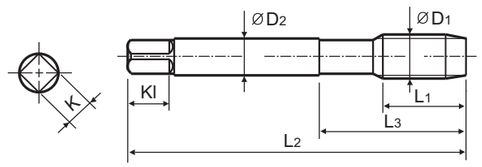
▶ Handgewindebohrersatz mit Vor- und Fertigschneider.
▶ Nur der Fertigschneider kann das gewünschte Gewinde schneiden.

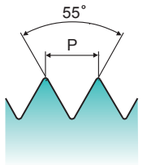
First

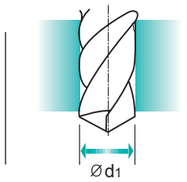
Bottoming

Hole type
2.0×D









Material groups GS | HSS | DIN 5157 | 55° | I/III | Bright

p.B318

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
G1/16	28	T7709029	22	56	26	6	4.9	8	3	6.8
G1/8	28	T7709209	20	63	27	7	5.5	8	4	8.8
G1/4	19	T7709409	22	70	32	11	9	12	4	11.8
G3/8	19	T7709489	22	70	32	12	9	12	4	15.25
G1/2	14	T7709569	22	80	35	16	12	15	4	19
G3/4	14	T7709709	22	90	40	20	16	19	4	24.5
G1	11	T7709789	25	100	45	25	20	23	6	30.75
G1-1/4	11	T7709869	40	125	77	32	24	27	6	39.5
G1-1/2	11	T7709949	40	140	85	36	29	32	6	45.2

◎ : 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	○	○	○																		

PIPE TAP

TC728 SERIES

G(BSP) Whitworth pipe threads DIN ISO 228/1

Whitworth Rohrgewinde DIN ISO 228/1
G(BSP) PROFIL 55° DIN ISO 228/1
Filettatura Whitworth per tubi DIN ISO 228/1

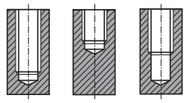
Machine taps
Maschinengewindebohrer

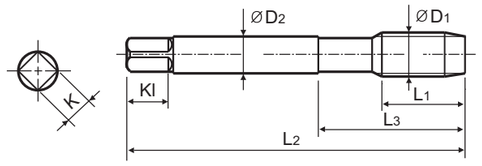
▶ Suitable for tapping blind holes due to special flute geometry and excellent chip evacuation.

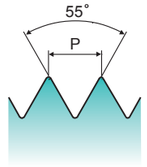
▶ Geeignet zum Gewinden von Sacklöchern dank besonderer Nutengeometrie und ausgezeichneter Spanabfuhr.

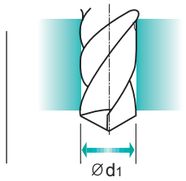
DIN 5156

Hole type
2.5×D









Material groups **GS** | HSS-E | DIN 5156 | 55° | C | R40 | Bright

p.B318

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

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		Bright	L1	L2	L3	ØD2	K	Kl	Z	Ød1
G1/8	- 28	**TC728200**	20	90	36	7	5.5	8	3	8.8
G1/4	- 19	**TC728400**	22	100	40	11	9	12	3	11.8
G3/8	- 19	**TC728480**	22	100	40	12	9	12	3	15.25
G1/2	- 14	**TC728560**	25	125	50	16	12	15	4	19
G3/4	- 14	**TC728700**	28	140	54	20	16	19	4	24.5
G1	- 11	**TC728780**	30	160	60	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	○	○	○	○	◎	◎	○														

PIPE TAP

TC729 SERIES

G(BSP) Whitworth pipe threads DIN ISO 228/1

Whitworth Rohrgewinde DIN ISO 228/1
G(BSP) PROFIL 55° DIN ISO 228/1
Filettatura Whitworth per tubi DIN ISO 228/1

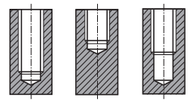
Machine taps
Maschinengewindebohrer

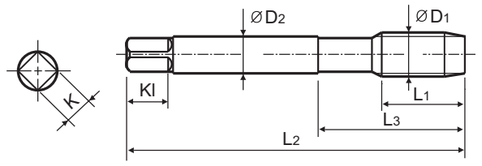
▶ Suitable for tapping blind holes due to special flute geometry and excellent chip evacuation.

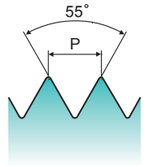
▶ Geeignet zum Gewinden von Sacklöchern dank besonderer Nutengeometrie und ausgezeichneter Spanabfuhr.

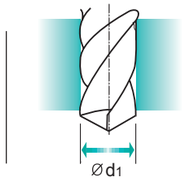
DIN 5156

Hole type
2.5×D









Material groups **VG** | HSS-E | DIN 5156 | 55° | C | R40 | Bright

p.B318

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

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		Bright	L1	L2	L3	ØD2	K	Kl	Z	Ød1
G1/8	- 28	**TC729200**	20	90	36	7	5.5	8	3	8.8
G1/4	- 19	**TC729400**	22	100	40	11	9	12	3	11.8
G3/8	- 19	**TC729480**	22	100	40	12	9	12	3	15.25
G1/2	- 14	**TC729560**	25	125	50	16	12	15	4	19
G3/4	- 14	**TC729700**	28	140	54	20	16	19	4	24.5
G1	- 11	**TC729780**	30	160	60	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																					

PIPE TAP

TB514 SERIES

G(BSP) Whitworth pipe threads DIN ISO 228/1

Whitworth Rohrgewinde DIN ISO 228/1
G(BSP) PROFIL 55° DIN ISO 228/1
Filettatura Whitworth per tubi DIN ISO 228/1

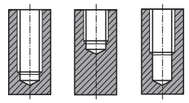
Machine taps
Maschinengewindebohrer

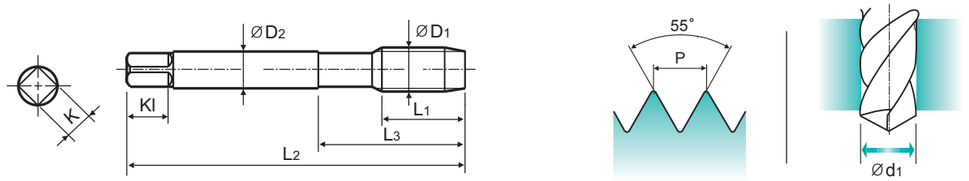
▶ Suitable for tapping blind holes due to special flute geometry and excellent chip evacuation.

▶ Geeignet zum Gewinden von Sacklöchern dank besonderer Nutengeometrie und ausgezeichneter Spanabfuhr.

DIN 5156

Hole type
2.5×D





Material groups: VA NW | HSS-E | DIN 5156 | 55° | C | R40 | Vap

p.B318

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

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		Vap	L1	L2	L3	ØD2	K	Kl	Z	Ød1
G1/8	- 28	**TB514200**	20	90	36	7	5.5	8	3	8.8
G1/4	- 19	**TB514400**	22	100	40	11	9	12	3	11.8
G3/8	- 19	**TB514480**	22	100	40	12	9	12	3	15.25
G1/2	- 14	**TB514560**	25	125	50	16	12	15	4	19
G3/4	- 14	**TB514700**	28	140	54	20	16	19	4	24.5
G1	- 11	**TB514780**	30	160	60	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																					

PIPE TAP

TC727 SERIES

G(BSP) Whitworth Pipe threads DIN ISO 228/1

Whitworth Rohrgewinde DIN ISO 228/1
G(BSP) PROFIL 55° DIN ISO 228/1
Filettatura Whitworth per tubi DIN ISO 228/1

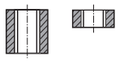
Machine taps
Maschinengewindebohrer

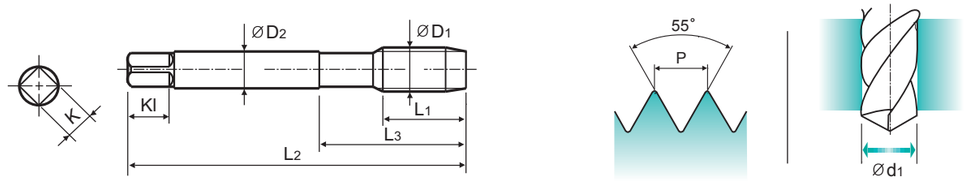
▶ Suitable for through hole in more cutting speed than other taps due to strong geometry.

▶ Geeignet für Sacklöcher in höherer Schnittgeschwindigkeit als andere Gewindebohrer dank einer stabilen Bohrergeometrie.

DIN 5156

Hole type
3.0×D





Material groups: GS | HSS-E | DIN 5156 | 55° | B | Bright

p.B318

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

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		Bright	L1	L2	L3	ØD2	K	Kl	Z	Ød1
G1/8	- 28	**TC727200**	20	90	36	7	5.5	8	3	8.8
G1/4	- 19	**TC727400**	22	100	40	11	9	12	3	11.8
G3/8	- 19	**TC727480**	22	100	40	12	9	12	3	15.25
G1/2	- 14	**TC727560**	25	125	50	16	12	15	4	19
G3/4	- 14	**TC727700**	28	140	54	20	16	19	4	24.5
G1	- 11	**TC727780**	30	160	60	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	○	○	○	○	◎	◎	○														

PIPE TAP

RECOMMENDED CUTTING CONDITIONS
EMPFOHLENE SCHNEIDKONDITIONEN

					TC728	TC729	TB514	TC727
ISO	VDI 3323	Material Description	HB	HRc	Vc (m/min.)			
P	1	Non-alloy steel	125				15-20	
	2		190	13	15-20		15-20	15-20
	3		250	25	12-18			12-18
	4		270	28	10-15			10-15
	5		300	32				
	6	Low alloy steel	180	10	10-15	10-15		10-15
	7		275	29	10-15	10-15		10-15
	8		300	32		6-10		
	9		350	38		3-5		
M	12	Stainless steel	200	15			7-10	
	13		240	23			5-8	
	14		180	10		4-6	4-6	
K	17	Nodular cast iron	160	3	10-15			10-15
	18		250	25	5-8			5-8
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		10-15			10-15
	26	Copper and Copper Alloys (Bronze / Brass)	110		25-35			25-35
	27		90		8-12			8-12

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