



Leading Through Innovation

HSS-PM

SYNCHRO TAP

Synchro Gewindebohrer

- For High Speed Tapping on Rigid CNC Machine
- Für Hochgeschwindigkeits-Gewindebohren auf starren CNC-Maschinen

For High Speed Tapping on Rigid CNC Machine



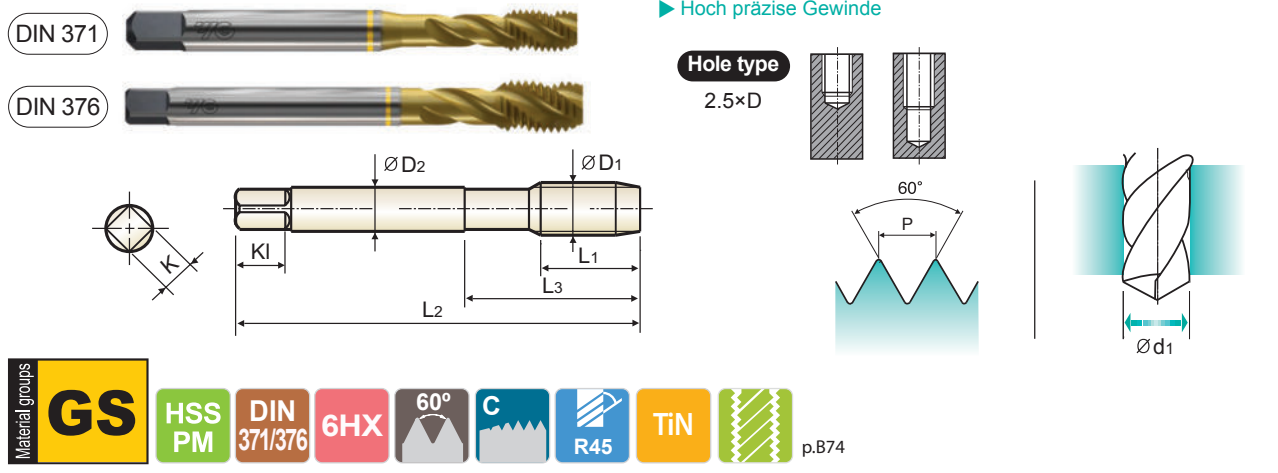
	Max 2.0xD blind/Through Hole		Max 3.0xD Blind/Through Hole		Max 3.0D Blind/Through Hole		Max 2.5xD Blind Hole		Max 3.0xD Through Hole		Max 2.0xD Blind Hole		Max 3.0xD Through Hole		Max 3.0xD Blind/Through Hole
HSS-PM															
C		C		E	C	B	C	C	C						
Straight Flute		Cold Forming		Cold Forming	Spiral Flute	Spiral Point	Straight Flute	Straight Flute	Cold Forming						
-		-		-	R45	-	-	-	-						
TKS35 (p.B64)		TTS37 (p.B66)		TTS39 (p.B68)	TTS41-IC (p.B69)	TTS42-RCP (p.B70)	TKS43-IC (p.B71)	TKS44-RCP (p.B72)	TTS45-RCP (p.B73)						
															M
	TKS36 (p.B65)		TTS38 (p.B67)												MF
															UNC
															UNF
															BSW
															G(BSP)
															EG-M
															EG-UNC
															EG-UNF
TiCN		TiN		TiN	TiN	TiN	TiCN	TiCN	TiN						
○	○	⊙	⊙	⊙	⊙	⊙	○	○	⊙	1					
○	○	⊙	⊙	⊙	⊙	⊙	○	○	⊙	2					
○	○	⊙	⊙	⊙	⊙	⊙	○	○	⊙	3					
○	○	⊙	⊙	⊙	⊙	⊙	○	○	⊙	4					
										5					
○	○	⊙	⊙	⊙	⊙	⊙	○	○	⊙	6	P				
○	○	⊙	⊙	⊙	⊙	⊙	○	○	⊙	7					
										8					
										9					
										10					
										11					
		⊙	⊙	⊙	⊙	⊙			⊙	12					
		⊙	⊙	⊙	⊙	⊙			⊙	13	M				
		⊙	⊙	⊙	○	○			⊙	14					
⊙	⊙				○	○	⊙	⊙		15					
⊙	⊙						⊙	⊙		16					
⊙	⊙				⊙	⊙	⊙	⊙		17	K				
⊙	⊙						⊙	⊙		18					
○	○						○	○		19					
○	○						○	○		20					
		⊙	⊙	⊙					⊙	21					
		⊙	⊙	⊙					⊙	22					
○	○	⊙	⊙	⊙	⊙	⊙	○	○	⊙	23					
○	○	⊙	⊙	⊙	⊙	⊙	○	○	⊙	24					
○	○	○	○	○	⊙	⊙	○	○	○	25	N				
					⊙	⊙				26					
		⊙	⊙	⊙	○	○			⊙	27					
										28					
										29					
										30					
										31					
										32					
										33					
										34	S				
										35					
										36					
										37					
										38					
										39	H				
										40					
										41					

M ISO Metric Coarse Threads DIN 13

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

Machine taps
Maschinengewindebohrer

- ▶ Coated HSS-PM (Powder Metallurgy) Taps for high-speed tapping on rigid CNC machines or equivalent machines
 - ▶ Up to 3 times faster in tapping compared to conventional taps
 - ▶ For high-speed synchro tapping, synchro holder for increasing tool life and thread quality is recommended
 - ▶ High precision threads
- ▶ Beschichtete HSS-PM-Gewindebohrer zum Hochgeschwindigkeitsgewindebohren auf starren CNC-Maschinen oder gleichwertige Maschinen
 - ▶ Bis zu dreimal schnelleres Gewindeschneiden als bei herkömmlichen Gewindebohrern
 - ▶ Beim Hochgeschwindigkeits-Gewindebohren wird die Verwendung eines Synchrofutters zur Erhöhung der Werkzeugstandzeit und der Gewindequalität empfohlen
 - ▶ Hoch präzise Gewinde



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	TiN	L1	L2	L3	ØD2	K	K1	Z	Ød1
M3	× 0.5	TTS31206	6	56	18	3.5	2.7	6	3	2.5
M4	× 0.7	TTS31246	7	63	21	4.5	3.4	6	3	3.3
M5	× 0.8	TTS31286	8	70	25	6	4.9	8	3	4.2
M6	× 1.0	TTS31316	10	80	30	6	4.9	8	3	5.0
M8	× 1.25	TTS31366	13	90	35	8	6.2	9	3	6.8
M10	× 1.5	TTS31426	15	100	39	10	8	11	3	8.5
M12	× 1.75	TTS31506	18	110	44	9	7	10	3	10.2
M14	× 2.0	TTS31546	20	110	44	11	9	12	3	12.0
M16	× 2.0	TTS31606	20	110	44	12	9	12	3	14.0
M18	× 2.5	TTS31656	25	125	50	14	11	14	4	15.5
M20	× 2.5	TTS31706	25	140	54	16	12	15	4	17.5

- ▶ DIN 371 (M3-M10) and DIN 376 (M12-M20)
- ▶ Coating (TiAlN) is available on your request.

◎ : Excellent ○ : Good

ISO	P										M				K						
Material Description	Non-alloy steel					Low alloy steel				High alloy 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	◎	◎	◎	◎		◎	◎					◎	◎	◎		◎		◎			

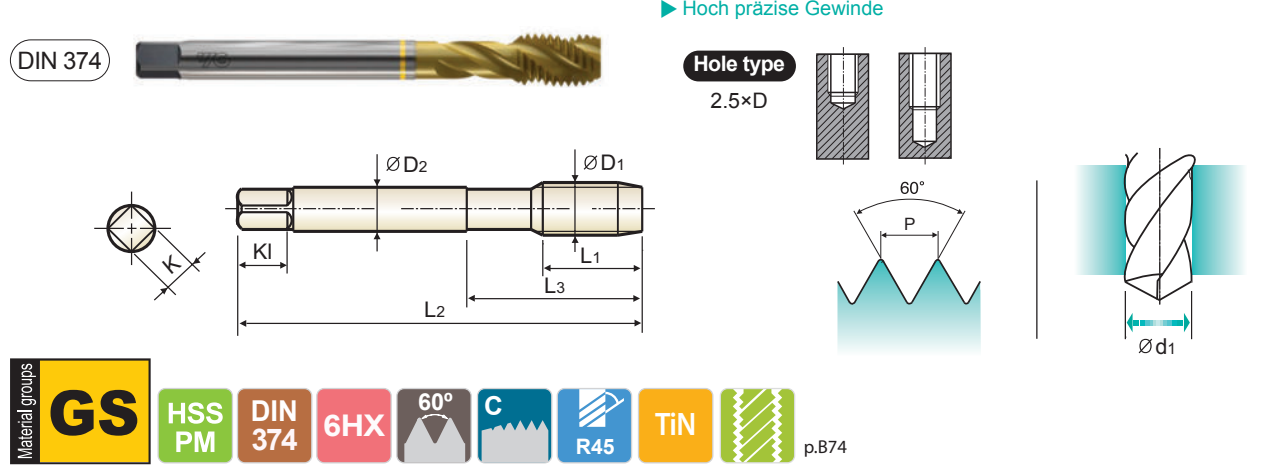
ISO	N										S					H							
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast Iron		Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27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

MF ISO Metric Fine Threads DIN 13

Metrisches ISO-Feingewinde DIN 13
ISO MÉTRIQUE PAS FINS DIN13
ISO Metrico passo fine DIN 13

Machine taps
Maschinengewindebohrer

- ▶ Coated HSS-PM (Powder Metallurgy) Taps for high-speed tapping on rigid CNC machines or equivalent machines
 - ▶ Up to 3 times faster in tapping compared to conventional taps
 - ▶ For high-speed synchro tapping, synchro holder for increasing tool life and thread quality is recommended
 - ▶ High precision threads
- ▶ Beschichtete HSS-PM-Gewindebohrer zum Hochgeschwindigkeitsgewindebohren auf starren CNC-Maschinen oder gleichwertige Maschinen
 - ▶ Bis zu dreimal schnelleres Gewindeschneiden als bei herkömmlichen Gewindebohrern
 - ▶ Beim Hochgeschwindigkeits-Gewindebohren wird die Verwendung eines Synchrofutters zur Erhöhung der Werkzeugstandzeit und der Gewindequalität empfohlen
 - ▶ Hoch präzise Gewinde



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	TiN	L1	L2	L3	ØD2	K	K1	Z	Ød1
M8	× 1.0	TTS32376	10	90	36	6	4.9	8	3	7.0
M10	× 1.25	TTS32436	13	100	40	7	5.5	8	3	8.75
M10	× 1.0	TTS32446	10	90	40	7	5.5	8	3	9.0
M12	× 1.25	TTS32526	13	100	40	9	7	10	3	10.75
M12	× 1.5	TTS32516	15	100	40	9	7	10	3	10.5
M14	× 1.5	TTS32556	15	100	40	11	9	12	3	12.5
M16	× 1.5	TTS32616	15	100	40	12	9	12	3	14.5
M18	× 1.5	TTS32676	17	110	44	14	11	14	4	16.5
M20	× 1.5	TTS32726	17	125	50	16	12	15	4	18.5

- ▶ Coating (TiAlN) is available on your request.

◎ : Excellent ○ : Good

ISO	P										M				K						
Material Description	Non-alloy steel					Low alloy steel				High alloy 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	◎	◎	◎	◎		◎	◎					◎	◎	○		○		◎			

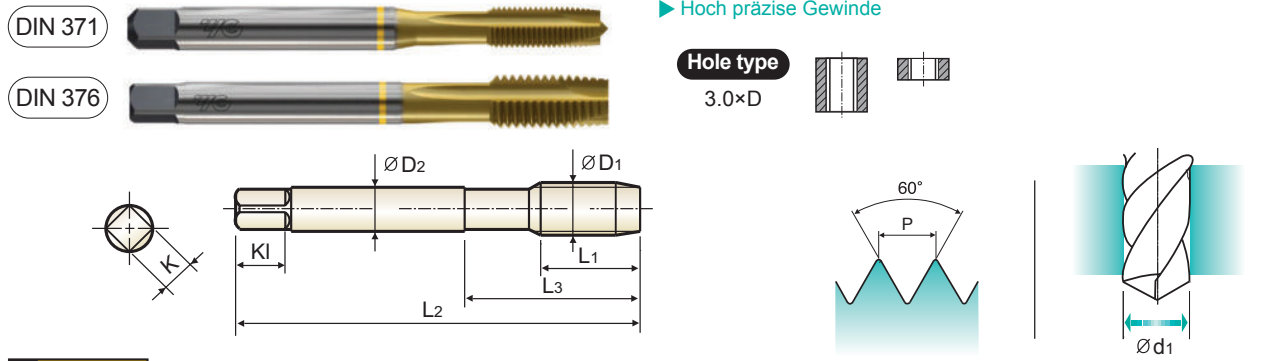
ISO	N										S						H				
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys				Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron		
VDI 3323	21	22	23	24	25	26	27	28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

M ISO Metric Coarse Threads DIN 13

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

Machine taps
Maschinengewindebohrer

- ▶ Coated HSS-PM (Powder Metallurgy) Taps for high-speed tapping on rigid CNC machines or equivalent machines
 - ▶ Up to 3 times faster in tapping compared to conventional taps
 - ▶ For high-speed synchro tapping, synchro holder for increasing tool life and thread quality is recommended
 - ▶ High precision threads
- ▶ Beschichtete HSS-PM-Gewindebohrer zum Hochgeschwindigkeitsgewindebohren auf starren CNC-Maschinen oder gleichwertige Maschinen
 - ▶ Bis zu dreimal schnelleres Gewindeschneiden als bei herkömmlichen Gewindebohrern
 - ▶ Beim Hochgeschwindigkeits-Gewindebohren wird die Verwendung eines Synchrofutters zur Erhöhung der Werkzeugstandzeit und der Gewindequalität empfohlen
 - ▶ Hoch präzise Gewinde



Material groups: **GS** **HSS PM** **DIN 371/376** **6HX** **60°** **B** **TiN** p.B74

Recommended ToolHolder: **SYNCHROTAPPING CHUCK** Plain Shank

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	TiN	L1	L2	L3	ØD2	K	KI	Z	Ød1
M3	× 0.5	TTS33206	5	56	18	3.5	2.7	6	3	2.5
M4	× 0.7	TTS33246	7	63	21	4.5	3.4	6	3	3.3
M5	× 0.8	TTS33286	8	70	25	6	4.9	8	3	4.2
M6	× 1.0	TTS33316	10	80	30	6	4.9	8	3	5
M8	× 1.25	TTS33366	13	90	35	8	6.2	9	3	6.8
M10	× 1.5	TTS33426	15	100	39	10	8	11	3	8.5
M12	× 1.75	TTS33506	18	110	44	9	7	10	4	10.2
M14	× 2.0	TTS33546	20	110	44	11	9	12	4	12
M16	× 2.0	TTS33606	20	110	44	12	9	12	4	14
M18	× 2.5	TTS33656	25	125	50	14	11	14	4	15.5
M20	× 2.5	TTS33706	25	140	54	16	12	15	4	17.5

- ▶ DIN 371 (M3-M10) and DIN 376 (M12-M20)
- ▶ Coating (TiAlN) is available on your request.

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

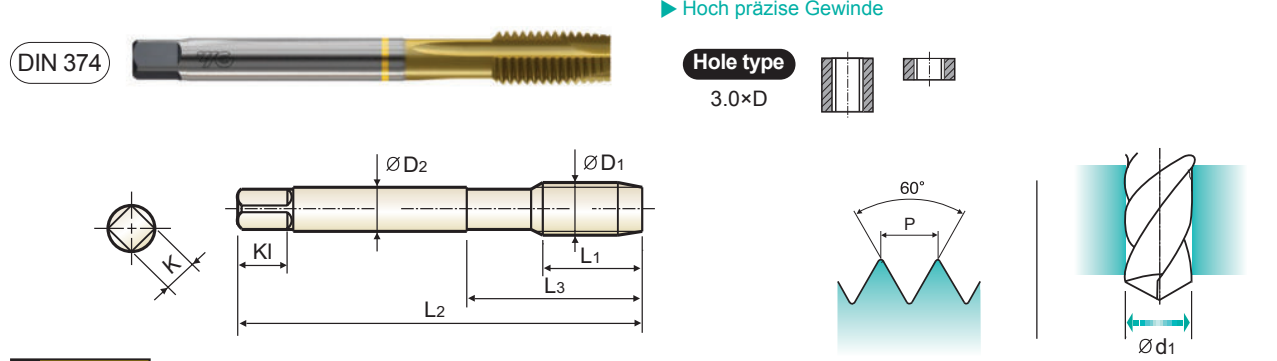
ISO	N										S					H				
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38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

MF ISO Metric Fine Threads DIN 13

Metrisches ISO-Feingewinde DIN 13
ISO MÉTRIQUE PAS FINS DIN13
ISO Metrico passo fine DIN 13

Machine taps
Maschinengewindebohrer

- ▶ Coated HSS-PM (Powder Metallurgy) Taps for high-speed tapping on rigid CNC machines or equivalent machines
 - ▶ Up to 3 times faster in tapping compared to conventional taps
 - ▶ For high-speed synchro tapping, synchro holder for increasing tool life and thread quality is recommended
 - ▶ High precision threads
- ▶ Beschichtete HSS-PM-Gewindebohrer zum Hochgeschwindigkeitsgewindebohren auf starren CNC-Maschinen oder gleichwertige Maschinen
 - ▶ Bis zu dreimal schnelleres Gewindeschneiden als bei herkömmlichen Gewindebohrern
 - ▶ Beim Hochgeschwindigkeits-Gewindebohren wird die Verwendung eines Synchrofutters zur Erhöhung der Werkzeugstandzeit und der Gewindequalität empfohlen
 - ▶ Hoch präzise Gewinde



Material groups: **GS** **HSS PM** **DIN 374** **6HX** **60°** **B** **TiN** p.B74

Recommended ToolHolder: **SYNCHROTAPPING CHUCK** Plain Shank

SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	No. of Flute	Tapping Drill Diameter
ØD1	P	TiN	L1	L2	L3	ØD2	K	KI	Z	Ød1
M8	× 1.0	TTS34376	10	90	36	6	4.9	8	3	7.0
M10	× 1.25	TTS34436	13	100	40	7	5.5	8	3	8.75
M10	× 1.0	TTS34446	10	90	40	7	5.5	8	3	9.0
M12	× 1.5	TTS34516	15	100	40	9	7	10	4	10.5
M12	× 1.25	TTS34526	13	100	40	9	7	10	4	10.75
M14	× 1.5	TTS34556	15	100	40	11	9	12	4	12.5
M16	× 1.5	TTS34616	15	100	40	12	9	12	4	14.5
M18	× 1.5	TTS34676	17	110	44	14	11	14	4	16.5
M20	× 1.5	TTS34726	17	125	50	16	12	15	4	18.5

- ▶ Coating (TiAlN) is available on your request.

ISO	P										M					K				
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel					Stainless steel				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	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				
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎



SYNCHRO TAP

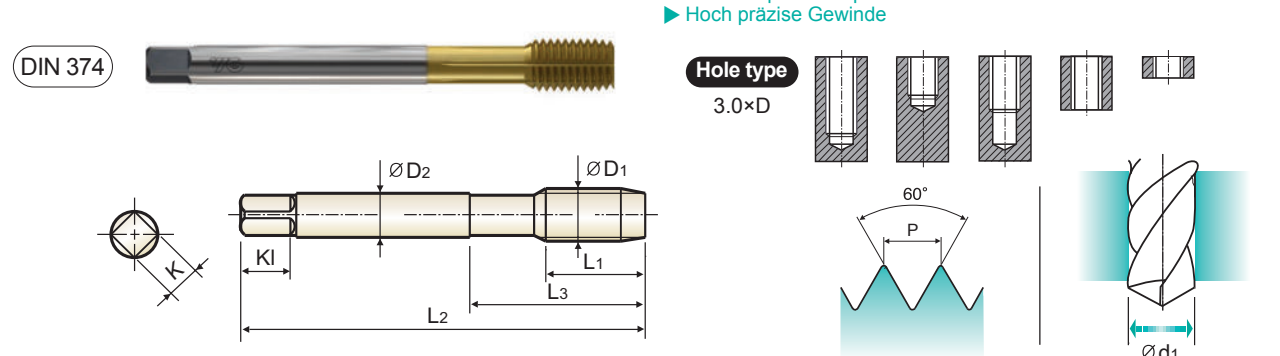
TTS38 SERIES

MF **ISO Metric Fine Threads DIN 13**

- 🇩🇪 **Metrisches ISO-Feingewinde DIN 13**
- 🇫🇷 **ISO MÉTRIQUE PAS FINS DIN13**
- 🇮🇹 **ISO Metrico passo fine DIN 13**

Machine taps
Maschinengewindebohrer

- ▶ Coated HSS-PM (Powder Metallurgy) Taps for high-speed tapping on rigid CNC machines or equivalent machines
- ▶ Up to 3 times faster in tapping compared to conventional taps
- ▶ For high-speed synchro tapping, synchro holder for increasing tool life and thread quality is recommended
- ▶ High precision threads



Material groups **GV** **HSS PM** **DIN 374** **6HX** **60°** **C** **TiN**  p.B74

										Unit : mm
SIZE	Pitch	EDP No.	Thread Length	Overall Length	Neck Length	Shank Diameter	Square Size	Square Length	Number of Oil Groove	Tapping Drill Diameter
ØD ₁	P	TiN	L ₁	L ₂	L ₃	ØD ₂	K	Kl	Z	Ød ₁
M8	× 1.0	TTS38376	10	90	36	6	4.9	8	6	7.5
M10	× 1.25	TTS38436	13	100	40	7	5.5	8	6	9.4
M10	× 1.0	TTS38446	10	90	40	7	5.5	8	6	9.5
M12	× 1.25	TTS38526	13	100	40	9	7	10	6	11.4
M12	× 1.5	TTS38516	15	100	40	9	7	10	6	11.25
M14	× 1.5	TTS38556	15	100	40	11	9	12	8	13.25
M16	× 1.5	TTS38616	15	100	40	12	9	12	8	15.25
M18	× 1.5	TTS38676	17	110	44	14	11	14	8	17.25
M20	× 1.5	TTS38726	17	125	50	16	12	15	8	19.25

► Coating (TiAlN) is available on your request.

[illegible]



SYNCHRO TAP

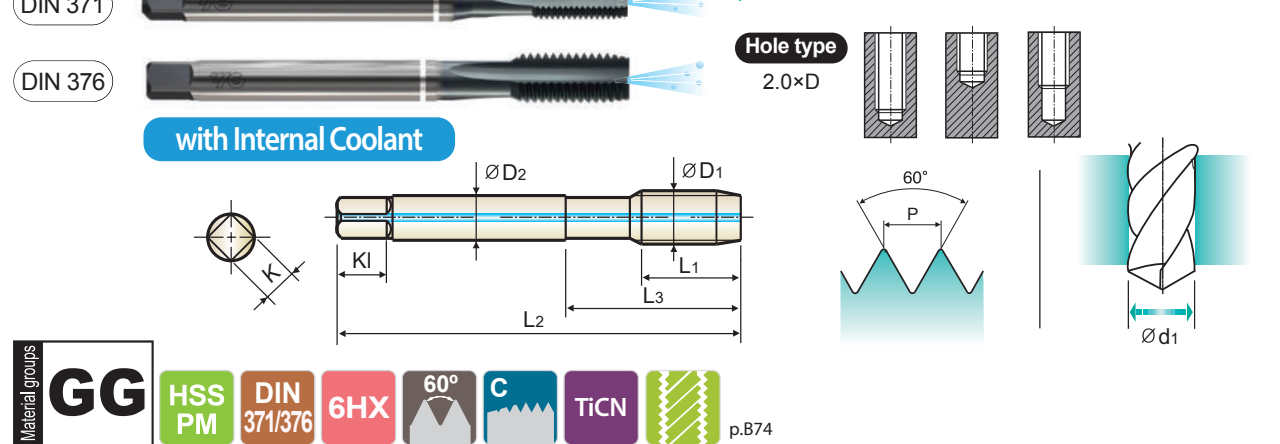
TKS43-IC SERIES

M **ISO Metric Coarse Threads DIN 13**

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

Machine taps
Maschinengewindebohrer

- ▶ Coated HSS-PM (Powder Metallurgy) Taps for high-speed tapping on rigid CNC machines or equivalent machines
 - ▶ Up to 3 times faster in tapping compared to conventional taps
 - ▶ For high-speed synchro tapping, synchro holder for increasing tool life and thread quality is recommended
 - ▶ High precision threads



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	TICN	L1	L2	L3	ØD2	K	Kl	Z	Ød1
M6	× 1.0	TKS43316IC	10	80	30	6	4.9	8	3	5.0
M8	× 1.25	TKS43366IC	13	90	35	8	6.2	9	3	6.8
M10	× 1.5	TKS43426IC	15	100	39	10	8	11	4	8.5
M12	× 1.75	TKS43506IC	18	110	44	9	7	10	4	10.2
M14	× 2.0	TKS43546IC	20	110	52	11	9	12	4	12.0
M16	× 2.0	TKS43606IC	20	110	52	12	9	12	4	14.0
M18	× 2.5	TKS43656IC	25	125	66	14	11	14	4	15.5
M20	× 2.5	TKS43706IC	25	140	72	16	12	15	4	17.5

- ▶ DIN 371 (M6-M10) and DIN 376 (M12-M20)
- ▶ Coating (TiAlN) is available on your request.

[illegible]



THREAD MILL						TTS31,TTS32	TTS33,TTS34	TKS35,TKS36	TTS37,TTS38	TTS39
SYNCHRO TAP	ISO	VDI 3323	Material Description	HB	HRC	Vc (m/min.)				
PRIME TAP	P	1	Non-alloy steel	125		41-46	41-46	41-46	41-46	30-35
		2		190	13	41-46	41-46	41-46	41-46	41-46
		3		250	25	35-40	35-40	35-40	35-40	35-40
4		270		28	28-33	28-33	28-33	28-33	28-33	
5		300		32						
6		Low alloy steel	180	10	28-33	28-33	28-33	28-33	28-33	
7			275	29	28-33	28-33	28-33	28-33	28-33	
COMBO TAP	M	12	Stainless steel	200	15	18-23	18-23		18-23	18-23
13		240		23	13-18	13-18		13-18	13-18	
14		180		10	10-14	10-14		10-14	10-14	
YG TAP STEEL	K	15	Grey cast iron	180	10	28-33	28-33	28-33		
16		260		26			28-33			
YG TAP CHIP BREAKER		17	Nodular cast iron	160	3	28-33	28-33	28-33		
		18		250	25			28-33		
YG TAP INOX		19	Malleable cast iron	130				28-33		
		20		230	21			28-33		
YG TAP CAST IRON	N	21	Aluminum- wrought alloy	60					28-33	28-33
		22		100					28-33	28-33
		23	Aluminum- cast, alloyed	75		41-46	41-46	30-35	41-46	41-46
24		90			41-46	41-46	30-35	41-46	41-46	
25		130			30-35	30-35	30-35	30-35	30-35	
YG TAP Ti Ni		26	Copper and Copper Alloys (Bronze / Brass)	110		45-50	45-50			
		27		90						
		28		100		25-30	25-30		25-30	25-30
YG TAP ALU										

YG TAP FORMING						TTS41-IC	TTS42-RCP	TKS43-IC	TKS44-RCP	TTS45-RCP
YG TAP GENERAL						Vc (m/min.)				
PIPE TAP	ISO	VDI 3323	Material Description	HB	HRc					
STI TAP	P	1	Non-alloy steel	125		41-57	41-57	41-57	41-57	41-57
		2		190	13	41-57	41-57	41-57	41-57	41-57
		3		250	25	35-50	35-50	35-50	35-50	35-50
4		270		28	28-41	28-41	28-41	28-41	28-41	
5		300		32						
6		Low alloy steel	180	10	28-41	28-41	28-41	28-41	28-41	
7			275	29	28-41	28-41	28-41	28-41	28-41	
NUT TAP	M	12	Stainless steel	200	15	18-28	18-28			18-28
		13		240	23	13-22	13-22			13-22
		14		180	10	10-17	10-17			10-17
	K	15	Grey cast iron	180	10	28-41	28-41	28-41	28-41	
		16		260	26			28-41	28-41	
		17	Nodular cast iron	160	3	28-41	28-41	28-41	28-41	
		18		250	25			28-41	28-41	
		19	Malleable cast iron	130				28-41	28-41	
		20		230	21			28-41	28-41	
	N	21	Aluminum-wrought alloy	60						28-41
		22		100						28-41
		23	Aluminum-cast, alloyed	75		41-57	41-57	30-43	30-43	41-57
		24		90		41-57	41-57	30-43	30-43	41-57
		25		130		30-43	30-43	30-43	30-43	30-43
		26	Copper and Copper Alloys (Bronze / Brass)	110		45-62	45-62			
27		90								
28		100			25-37	25-37			25-37	