

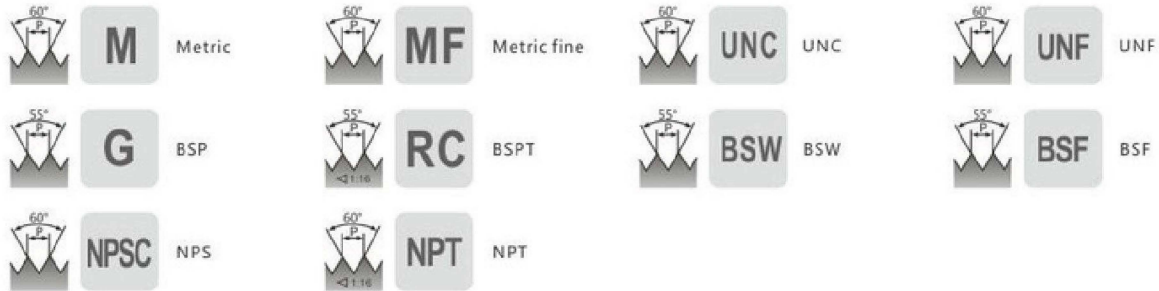
DHC
ThreadingMaster®



A complete Supplier Of Threading Tool Systems

Icons legend

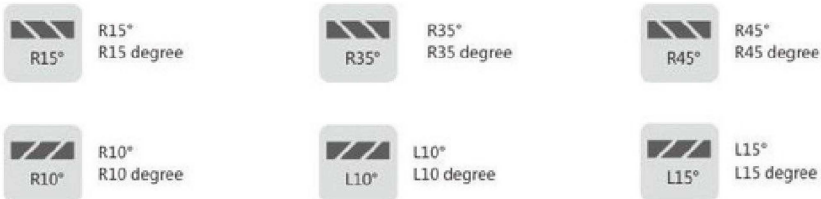
Thread type



Thread tolerance



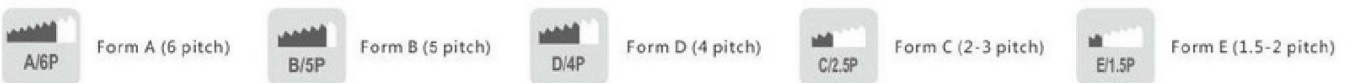
Spiral angle



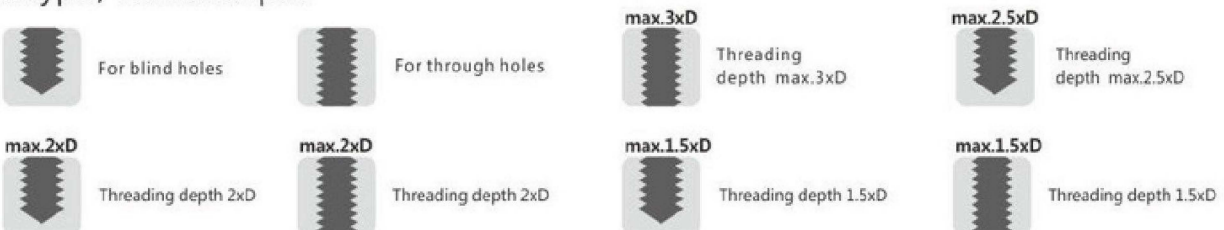
Cutting direction



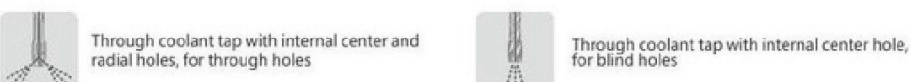
Chamfer forms



Hole type / Thread depth



Internal coolant



Icons legend

Stock status



Ready To Ship taps



Semi-finished taps



custom tap without stock

Tool material



High Speed Steel



3% Vanadium HSS



5% Cobalt HSS



powder metallurgy HSS



super powder metallurgy HSS

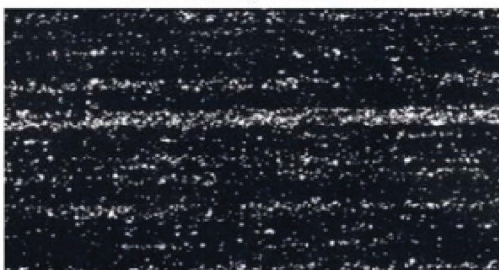
Standardisation categories for HSS

DIN ISO 11054 - Cutting tools

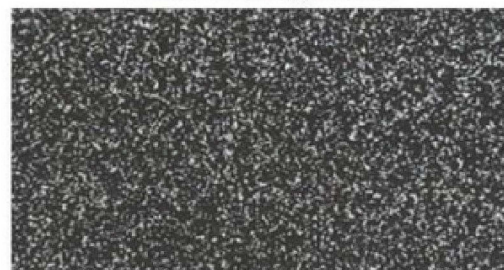
Manufacturing processes	Steel category	Chemical composition Class
Conventional high speed steels	HSS	High speed steel with less than 4.5%Co and less than 2.6%V
	HSS-E	High speed steel with min.4.5% Co or min. 2.6%V
Powder Metallurgical high speed steels	HSS-PM	High speed steel with less than 4.5% Co and less than 2.6% V
	HSS-E-PM	High speed steel with min.4.5% Co or min 2.6%V

Comparison of carbide distribution and car-bide size (M= 100x)

Conventionally cast material



Powder-metallurgy material



Powder Metallurgy steel has small, evenly distributed carbides

Surface treatment



Bright(uncoated)



Titanium Nitride Coating (gold-yellow)



Titanium Carbon Nitride Coating (Gray)



Titanium Aluminum Nitride Coating (Black)

TiN	TiN-coating yields a hardness of approx. 2400HV and also a heat resistant up to approx. 600°C. The current coating is an excellent all-round coating for normal applications. Colour : Golden Yellow. Coefficient of friction against steel : 0.4
TiCN	TiCN takes place of TiN when the conditions require the coating to have a different hardness and toughness. 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 : 0.2
TiAlN	TiAlN has a hardness of approx.3,300 HV and is heat resistant up to approx. 800°C. Machining at high temperatures with insufficient cooling, or at high speed cutting. Colour : Greyish Black. Coefficient of friction against steel : 0.5

SELECTION GUIDE

Hole type / Thread depth		max.2.5xD				
Tool material		HSSE PM	HSSE PM	HSSE PM	HSSE PM	HSSE Co
Thread Tolerance		6H	2B	OH	2B	6H
Spiral angle		R45°	R45°	R45°	R45°	R45°
Chamfer forms		Form C	Form C	Form C	Form C	Form C
Cutting direction		RH	RH	RH	RH	RH
Thread type	M	Page 18		Page 29		Page 39
	MF	Page 18		Page 29		Page 40
	UNC, UNF		Page 27		Page 33	
	BSW, BSF					
	PIPE(G,Rc,NPS,NPT)					
Surface treatment		TIN TiCN TiAlN	TIN TiCN TiAlN	TIN TiCN TiAlN	TIN TiCN TiAlN	TIN TiCN TiAlN
Taps standard		DIN371/376/374	DIN371/376/374	JIS	JIS	DIN371/376 DIN374
						

● Recommended ○ Suitable

ISO 513	Material	Group	Application	N/mm²						
P	Steel	P.1	Free cutting steel	200 - 400	●	●	●	●	●	●
		P.2	Construction steel, case hardening steel	350 - 700	●	●	●	●	●	●
		P.3	Carbon steel, low Alloyed steel	350 - 850	●	●	●	●	●	●
		P.4	Alloyed steel, heat treated steel	500 - 850	●	●	●	●	●	●
		P.5	Alloyed steel, heat treated steel	850 - 1100	●	●	●	●	○	○
		P.6	Alloyed steel, high strength steel	1100 - 1400	○	○	○	○		
M	Stainless steel	M.1	Ferritic, martensitic	< 850	●	●	●	●	●	●
		M.2	Austenitic	< 850	●	●	●	●	●	●
		M.3	Ferritic-Austenitic (Duplex)	< 1100	●	●	●	●		
K	Cast iron	K.1	Grey cast iron	< 450						
		K.2	Nodular cast iron	< 850						
		K.3	Malleable cast iron	< 850						
N	Aluminium alloys	N.1	Aluminium wrought alloys	< 500						
		N.2	Aluminium cast alloys 7%Si≤12%	< 500	●	●	●	●	●	●
		N.3	Aluminium cast alloys 12%Si≤17%	< 600	○	○	○	○	○	○
S	Titanium alloys	S.1	Titanium alloys	< 900						
	Nickel alloys	S.2	Nickel alloys	< 1100						
H	Hardened materials	H.1	Alloyed steel, hardness HRC 44-55	-						
		H.2	Alloyed steel, hardness HRC 56-62	-						

 max.2.5xD									
HSSE Co	HSSE Co	HSSE Co	HSSE Co	HSSE Co	HSSE Co	HSSE Co	HSSE Co	HSSE Co	HSSE Co
2B	OH	2B	6H	6H	6H	6H	OH	OH	6H
R45°	R45°	R45°	L45°	R45°	R35°	R35°	R35°	R35°	R35°
Form C	Form C	Form C	Form C	Form C	Form C	Form C	Form C	Form C	Form C
RH	RH	RH	LH	RH	RH	RH	RH	RH	RH
	Page 59		Page 47	Page 53	Page 41		Page 60	Page 66	Page 56
	Page 59					Page 42	Page 60		
Page 50		Page 63							
TIN TiCN TiAlN	TIN TiCN TiAlN	TIN TiCN TiAlN	TIN TiCN TiAlN		TIN TiCN	TIN TiCN	TIN TiCN	TIN TiCN	TIN TiCN
DIN371/376/374	JIS	JIS	DIN371/376	DIN371/376	DIN371/376	DIN374	JIS	JIS Extra-Long	DIN Extra-Long
									
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○	○	○	○	○	○	○	○	○	○

SELECTION GUIDE

Hole type / Thread depth		max.2xD					
Tool material		HSSE PM	HSSE PM	HSSE PM	HSSE PM	HSSE Co	HSSE Co
Thread Tolerance		6HX	6HX	6H	OH	6H	6H
Spiral angle		R15°	R10°	R15°	R15°	R15°	R15°
Chamfer forms		Form C	Form C	Form C	Form C	Form C	Form C
Cutting direction		RH	RH	RH	RH	RH	RH
Thread type	M	Page 21	Page 22	Page 19	Page 30	Page 43	
	MF						Page 44
	UNC, UNF						
	BSW, BSF						
	PIPE(G,Rc,NPS,NPT)						
Surface treatment		TiCN TiAlN	TiCN TiAlN	TiCN TiAlN	TiCN TiAlN	TiN TiCN TiAlN	TiN TiCN TiAlN
Taps standard		DIN371/376	DIN371/376	DIN371/376	JIS	DIN371/376	DIN374
							

● Recommended ○ Suitable

ISO 513	Material	Group	Application	N/mm²						
P	Steel	P.1	Free cutting steel	200 - 400						
		P.2	Construction steel, case hardening steel	350 - 700						
		P.3	Carbon steel, low Alloyed steel	350 - 850						
		P.4	Alloyed steel, heat treated steel	500 - 850						
		P.5	Alloyed steel, heat treated steel	850 - 1100		●	●	●	●	
		P.6	Alloyed steel, high strength steel	1100 - 1400	●	○	○			
M	Stainless steel	M.1	Ferritic, martensitic	< 850						
		M.2	Austenitic	< 850						
		M.3	Ferritic-Austenitic (Duplex)	< 1100						
K	Cast iron	K.1	Grey cast iron	< 450		●	●	●	●	
		K.2	Nodular cast iron	< 850		●	●	●	●	
		K.3	Malleable cast iron	< 850		●	●			
N	Aluminium alloys	N.1	Aluminium wrought alloys	< 500						
		N.2	Aluminium cast alloys 7%Si≤12%	< 500						
		N.3	Aluminium cast alloys 12%Si≤17%	< 600						
S	Titanium alloys	S.1	Titanium alloys	< 900	●					
	Nickel alloys	S.2	Nickel alloys	< 1100		●				
H	Hardened materials	H.1	Alloyed steel, hardness HRC 44-55	-						
		H.2	Alloyed steel, hardness HRC 56-62	-						

max.2xD						max.3xD			
HSSE Co	HSSE Co	HSSE Co	HSSE Co	HSSE Co	HSSE	HSSE PM	HSSE PM	HSSE PM	HSSE PM
6H	2B	OH	2B	6H	H2	6H	6H	6HX	6HX
R15°	R15°	R15°	R15°	R35°	R35°		L15°	L15°	L10°
Form C	Form C	Form C	Form C	Form C	Form C	Form B	Form B	Form B	Form B
RH	RH	RH	RH	RH	RH	RH	RH	RH	RH
Page 48		Page 61			Page 69	Page 17	Page 20	Page 21	Page 22
		Page 61			Page 69	Page 17			
	Page 52		Page 65						
				Page 54					
TiN TiCN TiAlN	TiN TiCN TiAlN	TiN TiCN TiAlN	TiN TiCN TiAlN	TiN	TiN	TiN TiCN TiAlN	TiCN TiAlN	TiCN TiAlN	TiCN TiAlN
DIN371/376	DIN371/376/374	JIS	JIS	DIN5156	ISO529	DIN371/376/374	DIN371/376	DIN371/376	DIN371/376
									
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SELECTION GUIDE

Hole type / Thread depth		max.3xD					
Tool material		HSSE PM	HSSE PM	HSSE PM	HSSE PM	HSSE Co	HSSE Co
Thread Tolerance		2B	OH	OH	2B	6H	6H
Spiral angle				L15°			
Chamfer forms		Form B	Form B	Form B	Form B	Form B	Form B
Cutting direction		RH	RH	RH	RH	RH	RH
Thread type	M		Page 28	Page 31		Page 37	
	MF		Page 28			Page 37	Page 38
	UNC, UNF	Page 26			Page 32		
	BSW, BSF						
	PIPE(G,Rc,NPS,NPT)						
Surface treatment		TIN T1CN T1AIN	TIN T1CN T1AIN	T1CN T1AIN	TIN T1CN T1AIN	TIN T1CN	TIN T1CN
Taps standard		DIN371/376/374	JIS	JIS	JIS	DIN371/376	DIN374
							

● Recommended ○ Suitable

ISO 513	Material	Group	Application	N/mm²						
P	Steel	P.1	Free cutting steel	200 - 400	●	●	●	●	●	●
		P.2	Construction steel, case hardening steel	350 - 700	●	●	●	●	●	●
		P.3	Carbon steel, low Alloyed steel	350 - 850	●	●	●	●	●	●
		P.4	Alloyed steel, heat treated steel	500 - 850	●	●	●	●	●	●
		P.5	Alloyed steel, heat treated steel	850 - 1100	●	●	●	●	○	○
		P.6	Alloyed steel, high strength steel	1100 - 1400	○	○	○	○		
M	Stainless steel	M.1	Ferritic, martensitic	< 850	●	●	●	●	●	●
		M.2	Austenitic	< 850	●	●	●	●	●	●
		M.3	Ferritic-Austenitic (Duplex)	< 1100	●	●		●		
K	Cast iron	K.1	Grey cast iron	< 450			●			
		K.2	Nodular cast iron	< 850			●			
		K.3	Malleable cast iron	< 850			●			
N	Aluminium alloys	N.1	Aluminium wrought alloys	< 500						
		N.2	Aluminium cast alloys 7%Si≤12%	< 500	●	●	●	●	●	●
		N.3	Aluminium cast alloys 12%Si≤17%	< 600	○	○	●	○	○	○
S	Titanium alloys	S.1	Titanium alloys	< 900	○	○		○		
	Nickel alloys	S.2	Nickel alloys	< 1100						
H	Hardened materials	H.1	Alloyed steel, hardness HRC 44-55	-						
		H.2	Alloyed steel, hardness HRC 56-62	-						

max.3xD									
HSSE Co	HSSE Co	HSSE Co	HSSE Co	HSSE Co	HSSE Co	HSSE Co	HSSE Co	HSSE	HSSE Co
6H	6H	2B	OH	2B	OH	6H	6H	H2	6H
Form B	Form B	Form B	Form B	Form B	Form B	Form B	Form B	Form B	Form B
LH	RH	RH	RH	RH	RH	RH	RH	RH	RH
Page 47	Page 48		Page 58		Page 66	Page 56		Page 68	Page 53
			Page 58					Page 68	
		Page 49		Page 62					
							Page 54		
TIN TiCN TiAlN	TIN TiCN TiAlN	TIN TiCN	TIN TiCN	TIN TiCN	TIN TiCN	TIN TiCN	TIN TiCN	TIN	TIN
DIN371/376	DIN371/376	DIN371/376/374	JIS	JIS	JIS Extra-Long	DIN Extra-Long	DIN5156	ISO529	DIN371/376
									
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○	○	○	○	○	○	○	○	○	○

SELECTION GUIDE

Hole type / Thread depth		max.2xD				
Tool material		HSSE XPM	HSSE PM	HSSE Co	HSSE Co	HSSE Co
Thread Tolerance		6HX	6HX	6H	6H	6H
Spiral angle						
Chamfer forms		Form C	Form C	Form D C	Form D C	Form D
Cutting direction		RH	RH	RH	RH	RH
Thread type	M	Page 25	Page 23	Page 45		Page 57
	MF		Page 23	Page 45	Page 46	Page 57
	UNC, UNF					
	BSW, BSF					
	PIPE(G,Rc,NPS,NPT)				Page 54	
Surface treatment		TiCN TiAlN	TiCN TiAlN	TiN TiCN	TiN TiCN	TiN TiCN
Taps standard		DIN	DIN371/376	DIN371/376	DIN374	DIN5156
						

● Recommended ○ Suitable

ISO 513	Material	Group	Application	N/mm²					
P	Steel	P.1	Free cutting steel	200 - 400			●	●	●
		P.2	Construction steel, case hardening steel	350 - 700			●	●	●
		P.3	Carbon steel, low Alloyed steel	350 - 850			●	●	●
		P.4	Alloyed steel, heat treated steel	500 - 850			●	●	●
		P.5	Alloyed steel, heat treated steel	850 - 1100					
		P.6	Alloyed steel, high strength steel	1100 - 1400	●				
M	Stainless steel	M.1	Ferritic, martensitic	< 850					
		M.2	Austenitic	< 850					
		M.3	Ferritic-Austenitic (Duplex)	< 1100					
K	Cast iron	K.1	Grey cast iron	< 450		●	●	●	●
		K.2	Nodular cast iron	< 850		●	●	●	●
		K.3	Malleable cast iron	< 850	●	●	○	○	○
N	Aluminium alloys	N.1	Aluminium wrought alloys	< 500					
		N.2	Aluminium cast alloys 7%Si≤12%	< 500					
		N.3	Aluminium cast alloys 12%Si≤17%	< 600					
S	Titanium alloys	S.1	Titanium alloys	< 900					
	Nickel alloys	S.2	Nickel alloys	< 1100					
H	Hardened materials	H.1	Alloyed steel, hardness HRC 44-55	-	●				
		H.2	Alloyed steel, hardness HRC 56-62	-					

  max.1.5xD					  max.2.5xD			
HSSE	HSSE	HSSE	HSSE	HSSE	HSSE PM	HSSE PM	HSS	HSSE Co
H2	H2	H2	2B	2B	RH	6HX	6g	6H
Form D C	Form D C	Form D	Form D	Form D	Form D C	Form D C		Form B C
RH	RH	LH	RH	RH				RH
Page 70	Page 72	Page 72			Page 34	Page 35	Page 76	Page 77
Page 71					Page 34	Page 35	Page 76	
			Page 73					
				Page 73				
					TiN TiCN TiAlN	TiN TiCN TiAlN		 TiN TiCN TiAlN
ISO529		ISO529	ISO529	ISO529	JIS	DIN	DIN223	DIN338 DIN371/376
								
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					○	○		

SELECTION GUIDE

Hole type / Thread depth		  max.2xD			
Tool material		HSSE PM	HSSE	HSSE	HSSE
Thread Tolerance		6HX	H2	6H	6H
Spiral angle					
Chamfer forms		Form A D C	Form A D C	Form A D C	Form A C
Cutting direction		RH	RH	RH	RH
Thread type	M	Page 24	Page 74	Page 75	
	MF				Page 75
	UNC, UNF				
	BSW, BSF				
	PIPE(G,Rc,NPS,NPT)				
Surface treatment		  			
Taps standard		DIN352	ISO529	DIN352	DIN2181
					
● Recommended ○ Suitable					
Application	N/mm²				
Free cutting steel	200 - 400		●	●	●
Construction steel, case hardening steel	350 - 700		●	●	●
Carbon steel , low Alloyed steel	350 - 850		●	●	●
Alloyed steel, heat treated steel	500 - 850		●	●	●
Alloyed steel, heat treated steel	850 - 1100	●		○	○
Alloyed steel, high strength steel	1100 - 1400	●			
Ferritic,martensitic	< 850				
Austenitic	< 850				
Ferritic-Austenitic (Duplex)	< 1100				
Grey cast iron	< 450	●	●	●	●
Nodular cast iron	< 850	●	●	●	●
Malleable cast iron	< 850	●		○	○
Aluminium wrought alloys	< 500				
Aluminium cast alloys 7%<Si≤12%	< 500				
Aluminium cast alloys 12%<Si≤17%	< 600				
Titanium alloys	< 900	○			
Nickel alloys	< 1100				
Alloyed steel, hardness HRC 44-55	-				
Alloyed steel, hardness HRC 56-62	-				

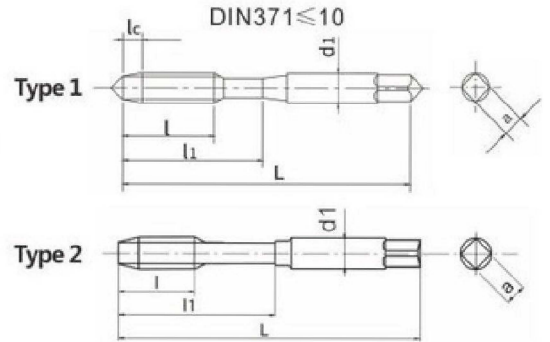
High Performance HSSE-PM Coating Machine Tap Series



High performance matrix materials, optimized cutting structure, and suitable surface treatment provide you with an efficient, durable, and reliable tapping experience

-
- Custom Thread Tolerance Zones(4H、 6G、 7G 、 6H+0.1 etc.)
 - Custom taps with internal coolant  
 - Custom taps with colored ring

DIN 371 Spiral Point Machine Taps with reinforced shank



material **HSSE PM**

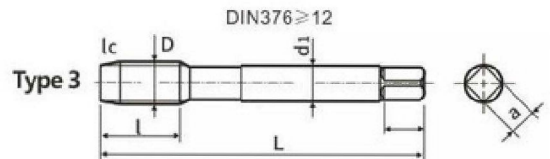
surface treatment

TiN **TiCN** **TiAlN**

Unit: mm

Code	Size	P	T	L	l	l1	k	d1	a	Flute	d0	Stock
SC612001	M2	0.4	6H	45	8	13	5P	2.8	2.1	3	1.6	■
SC612002	M2.5	0.45	6H	50	9	15		2.8	2.1		2.1	
SC612003	M3	0.5	6H	56	11	18		3.5	2.7		2.5	
SC612004	M4	0.7	6H	63	13	21		4.5	3.4		3.3	
SC612005	M5	0.8	6H	70	16	25		6	4.9		4.2	
SC612006	M6	1	6H	80	19	30		6	4.9		5	
SC612007	M8	1.25	6H	90	22	35		8	6.2		6.8	
SC612008	MF8*1	1	6H	90	22	35		8	6.2		7	
SC612009	M10	1.5	6H	100	24	39		10	8		8.5	
SC612010	MF10*1	1	6H	90	16	39		10	8		9	
SC612011	MF10*1.25	1.25	6H	100	24	39		10	8		8.8	

DIN 376/374 Spiral Point Machine Taps with reduced shank



material **HSSE PM**

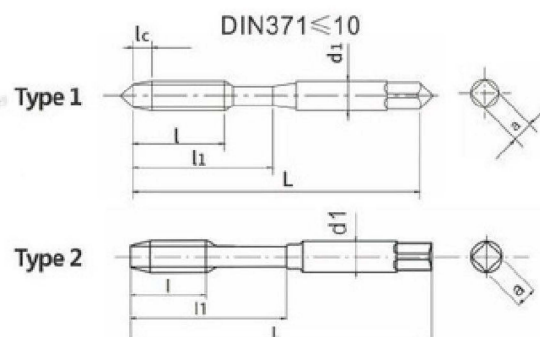
surface treatment

TiN **TiCN** **TiAlN**

Unit: mm

Code	Size	P	T	L	l	k	d1	a	Flute	d0	Stock
SC612101	M12	1.75	6H	110	28	5P	9	7	3	10.3	■
SC612102	MF12*1	1	6H	100	18		9	7		11	
SC612103	MF12*1.25	1.25	6H	100	28		9	7		10.8	
SC612104	MF12*1.5	1.5	6H	100	28		9	7		10.5	
SC612105	M14	2	6H	110	30		11	9		12	
SC612106	MF14*1.5	1.5	6H	100	30		11	9		12.5	
SC612107	M16	2	6H	110	32		12	9		14	
SC612108	MF16*1.5	1.5	6H	100	32		12	9		14.5	
SC612109	M18	2.5	6H	125	37		14	11	4	15.5	
SC612110	MF18*1.5	1.5	6H	110	25		14	11		16.5	
SC612111	M20	2.5	6H	140	37		16	12		17.5	
SC612112	MF20*1.5	1.5	6H	125	25		16	12		18.5	
SC612113	M22	2.5	6H	140	38		18	14.5		19.5	
SC612114	MF22*1.5	1.5	6H	125	25		18	14.5		20.5	
SC612115	M24	3	6H	160	45		18	14.5		21	
SC612116	MF24*1.5	1.5	6H	140	30		18	14.5		22.5	

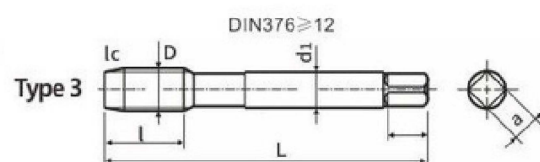
DIN 371 R45° Spiral Flute Machine Taps with reinforced shank



Unit: mm

Code	Size	P	T	L	l	l1	k	d1	a	Flute	d0	Stock
SC512001	M2	0.4	6H	45	6	13	2.5P	2.8	2.1	3	1.6	■
SC512002	M2.5	0.45	6H	50	6	15		2.8	2.1		2.1	
SC512003	M3	0.5	6H	56	6	18		3.5	2.7		2.5	
SC512004	M4	0.7	6H	63	8	21		4.5	3.4		3.3	
SC512005	M5	0.8	6H	70	9	25		6	4.9		4.2	
SC512006	M6	1	6H	80	11	30		6	4.9		5	
SC512007	M8	1.25	6H	90	14	35		8	6.2		6.8	
SC512008	MF8*1	1	6H	90	14	35		8	6.2		7	
SC512009	M10	1.5	6H	100	16	39		10	8		8.5	
SC512010	MF10*1	1	6H	90	16	39		10	8		9	
SC512011	MF10*1.25	1.25	6H	100	16	39		10	8		8.8	

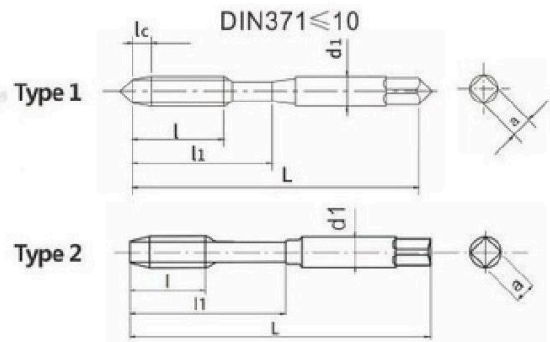
DIN 376/374 R45° Spiral Flute Machine Taps with reduced shank



Unit: mm

Code	Size	P	T	L	L	k	d1	a	Flute	d0	Stock
SC512101	M12	1.75	6H	110	18	2.5P	9	7	3	10.3	■
SC512102	MF12*1	1	6H	100	18		9	7		11	
SC512103	MF12*1.25	1.25	6H	100	18		9	7		10.8	
SC512104	MF12*1.5	1.5	6H	100	20		9	7		10.5	
SC512105	M14	2	6H	110	20		11	9		12	
SC512106	MF14*1.25	1.5	6H	100	20		11	9		12.5	
SC512107	M16	2	6H	110	20		12	9	4	14	
SC512108	MF16*1.5	1.5	6H	100	25		12	9		14.5	
SC512109	M18	2.5	6H	125	25		14	11		15.5	
SC512110	MF18*1.5	1.5	6H	110	25		14	11		16.5	
SC512111	M20	2.5	6H	140	25		16	12		17.5	
SC512112	M20*1.5	1.5	6H	125	25		16	12		18.5	
SC512113	M22	2.5	6H	140	25		18	14.5		19.5	
SC512114	MF22*1.5	1.5	6H	125	25		18	14.5		20.5	
SC512115	M24	3	6H	160	30		18	14.5		21	
SC512116	MF24*1.5	1.5	6H	140	30		18	14.5		22.5	

DIN 371 R45° Spiral Flute Machine Taps with reinforced shank



material

HSSE
PM

surface treatment

TiN

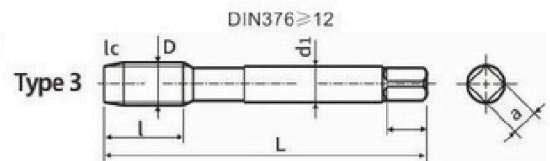
TiCN

TiAlN

Unit: mm

Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SC512001-E	M2	0.4	6H	45	6	13	2.5P	2.8	2.1	3	1.6	Special
SC512002-E	M2.5	0.45	6H	50	6	15		2.8	2.1		2.1	
SC512003-E	M3	0.5	6H	56	6	18		3.5	2.7		2.5	
SC512004-E	M4	0.7	6H	63	8	21		4.5	3.4		3.3	
SC512005-E	M5	0.8	6H	70	9	25		6	4.9		4.2	
SC512006-E	M6	1	6H	80	11	30		6	4.9		5	
SC512007-E	M8	1.25	6H	90	14	35		8	6.2		6.8	
SC512008-E	MF8*1	1	6H	90	14	35		8	6.2		7	
SC512009-E	M10	1.5	6H	100	16	39		10	8		8.5	
SC512010-E	MF10*1	1	6H	90	16	39		10	8		9	
SC512011-E	MF10*1.25	1.25	6H	100	16	39		10	8		8.8	

DIN 376/374 R45° Spiral Flute Machine Taps with reduced shank



material

HSSE
PM

surface treatment

TiN

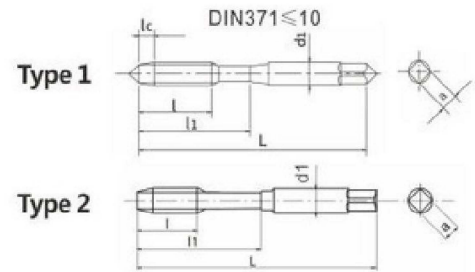
TiCN

TiAlN

Unit: mm

Code	Size	P	T	L	I	lc	d1	a	Flute	d0	Stock
SC512101-E	M12	1.75	6H	110	18	2.5P	9	7	3	10.3	Special
SC512102-E	MF12*1	1	6H	100	18		9	7		11	
SC512103-E	MF12*1.25	1.25	6H	100	18		9	7		10.8	
SC512104-E	MF12*1.5	1.5	6H	100	20		9	7		10.5	
SC512105-E	M14	2	6H	110	20		11	9		12	
SC512106-E	MF14*1.25	1.5	6H	100	20		11	9		12.5	
SC512107-E	M16	2	6H	110	20		12	9	4	14	
SC512108-E	MF16*1.5	1.5	6H	100	25		12	9		14.5	
SC512109-E	M18	2.5	6H	125	25		14	11		15.5	
SC512110-E	MF18*1.5	1.5	6H	110	25		14	11		16.5	
SC512111-E	M20	2.5	6H	140	25		16	12		17.5	
SC512112-E	MF20*1.5	1.5	6H	125	25		16	12		18.5	
SC512113-E	M22	2.5	6H	140	25		18	14.5		19.5	
SC512114-E	MF22*1.5	1.5	6H	125	25		18	14.5		20.5	
SC512115-E	M24	3	6H	160	30		18	14.5		21	
SC512116-E	MF24*1.5	1.5	6H	140	30		18	14.5		22.5	

DIN 371 R15° Spiral Flute Machine Taps with reinforced shank



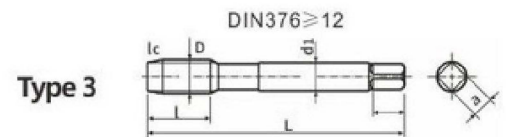
material **HSSE PM**

surface treatment **TICN** **TiAIN**

Unit: mm

Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SC512501	M3	0.5	6H	56	6	18	2.5P	3.5	2.7	3	2.5	■
SC512502	M4	0.7		63	8	21		4.5	3.4		3.3	
SC512503	M5	0.8		70	9	25		6	4.9		4.2	
SC512504	M6	1		80	11	30		6	4.9		5	
SC512505	M8	1.25		90	14	35		8	6.2		6.8	
SC512521	M8*1	1		90	14	35		8	6.2		7	
SC512506	M10	1.5		100	16	39		10	8		8.5	
SC512522	M10*1	1		90	16	39		10	8		9	
SC512523	M10*1.25	1.25		100	16	39		10	8		8.8	

DIN 376/374 R15° Spiral Flute Machine Taps with reduced shank



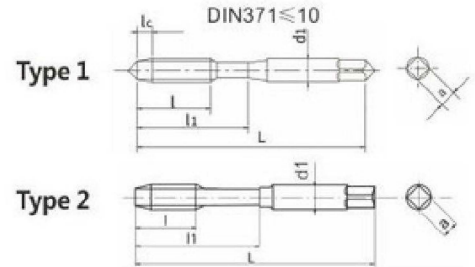
material **HSSE PM**

surface treatment **TICN** **TiAIN**

Unit: mm

Code	Size	P	T	L	I	lc	d1	a	Flute	d0	Stock
SC512507	M12	1.75	6H	110	18	2.5P	9	7	3	10.3	■
SC512524	M12*1	1		100	18		9	7		11	
SC512525	M12*1.25	1.25		100	18		9	7		10.8	
SC512526	M12*1.5	1.5		100	18		9	7		10.5	
SC512508	M14	2		110	20		11	9		12	
SC512527	M14*1.5	1.5		100	20		11	9		12.5	
SC512509	M16	2		110	20		12	9	4	14	
SC512528	M16*1.5	1.5		100	20		12	9		14.5	
SC512510	M18	2.5		125	25		14	11		15.5	
SC512529	M18*1.5	1.5		110	25		14	11		16.5	
SC512511	M20	2.5		140	25		16	12		17.5	
SC512530	M20*1.5	1.5		125	25		16	12		18.5	
SC512512	M22	2.5		140	25		18	14.5		19.5	
SC512531	M22*1.5	1.5		125	25		18	14.5		20.5	
SC512513	M24	3		160	30		18	14.5		21	
SC512532	M24*1.5	1.5		140	30		18	14.5		22.5	

DIN 371 Left-hand Spiral Flute Right Cutting Machine Taps



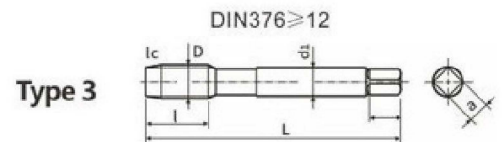
material **HSSE PM**

surface treatment **TICN TiAIN**

Unit: mm

Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SC512901	M3	0.5	6H	56	11	18	5P	3.5	2.7	3	2.5	■
SC512902	M4	0.7		63	13	21		4.5	3.4		3.3	
SC512903	M5	0.8		70	16	25		6	4.9		4.2	
SC512904	M6	1		80	19	30		6	4.9		5	
SC512905	M8	1.25		90	22	5		8	6.2		6.8	
SC512921	M8*1	1		90	22	35		8	6.2		7	
SC512906	M10	1.5		100	24	39		10	8		8.5	
SC512922	M10*1	1		90	16	39		10	8		9	
SC512923	M10*1.25	1.25		100	24	39		10	8		8.8	

DIN 376/374 Left-hand Spiral Flute Right Cutting Machine Taps



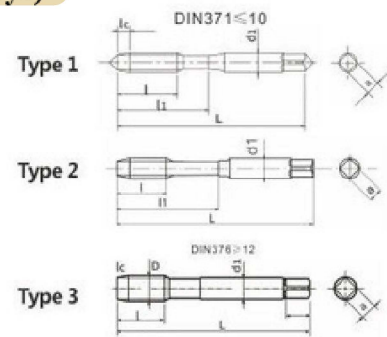
material **HSSE PM**

surface treatment **TICN TiAIN**

Unit: mm

Code	Size	P	T	L	I	lc	d1	a	Flute	d0	Stock
SC512907	M12	1.75	6H	110	28	5P	9	7	3	10.3	■
SC512924	M12*1	1		100	18		9	7		11	
SC512925	M12*1.25	1.25		100	28		9	7		10.8	
SC512926	M12*1.5	1.5		100	28		9	7		10.5	
SC512908	M14	2		110	30		11	9		12	
SC512927	M14*1.5	1.5		100	30		11	9		12.5	
SC512909	M16	2		110	32		12	9	4	14	
SC512928	M16*1.5	1.5		100	32		12	9		14.5	
SC512910	M18	2.5		125	37		14	11		15.5	
SC512929	M18*1.5	1.5		110	25		14	11		16.5	
SC512911	M20	2.5		140	37		16	12		17.5	
SC512930	M20*1.5	1.5		125	25		16	12		18.5	
SC512912	M22	2.5		140	38		18	14.5		19.5	
SC512931	M22*1.5	1.5		125	25		18	14.5		20.5	
SC512913	M24	3		160	45		18	14.5		21	
SC512932	M24*1.5	1.5		140	30		18	14.5		22.5	

DIN 371/376 R15° Spiral Flute Machine Taps (For Titanium alloys)



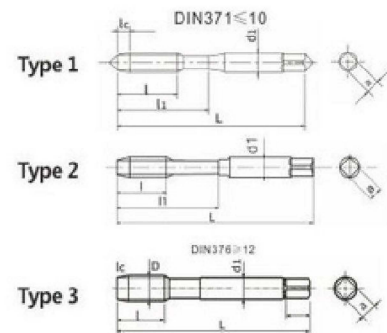
material **HSSE PM**

surface treatment **TiCN TiAlN**

Unit: mm

Code	Size	P	T	L	I	II	lc	d1	a	Flute	d0	Stock
SC512501-Ti	DIN371 M3	0.5	6HX	56	6	18	2.5P	3.5	2.7	3	2.5	■
SC512502-Ti	DIN371 M4	0.7		63	8	21		4.5	3.4		3.3	
SC512503-Ti	DIN371 M5	0.8		70	9	25		6	4.9		4.2	
SC512504-Ti	DIN371 M6	1		80	11	30		6	4.9		5	
SC512505-Ti	DIN371 M8	1.25		90	14	35		8	6.2		6.8	
SC512506-Ti	DIN371 M10	1.5		100	16	39		10	8		8.5	
SC512507-Ti	DIN376 M12	1.75		110	18	/		9	7	10.3		
SC512508-Ti	DIN376 M14	2		110	20			11	9	12		
SC512509-Ti	DIN376 M16	2		110	20			12	9	14		
SC512510-Ti	DIN376 M18	2.5		125	25			14	11	15.5		
SC512511-Ti	DIN376 M20	2.5		140	25			16	12	17.5		

DIN 371/376 Left Spiral Flute Right Cutting Machine Taps(For Titanium alloys)



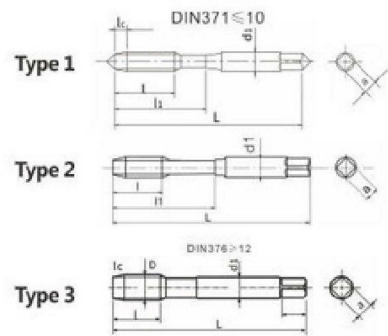
material **HSSE PM**

surface treatment **TiCN TiAlN**

Unit: mm

Code	Size	P	T	L	I	II	lc	d1	a	Flute	d0	Stock
SC512901-Ti	DIN371 M3	0.5	6HX	56	11	18	5P	3.5	2.7	3	2.5	■
SC512902-Ti	DIN371 M4	0.7		63	13	21		4.5	3.4		3.3	
SC512903-Ti	DIN371 M5	0.8		70	16	25		6	4.9		4.2	
SC512904-Ti	DIN371 M6	1		80	19	30		6	4.9		5	
SC512905-Ti	DIN371 M8	1.25		90	22	35		8	5.2		6.8	
SC512906-Ti	DIN371 M10	1.5		100	24	39		10	8		8.5	
SC512907-Ti	DIN376 M12	1.75		110	28	/		9	7	4	10.3	
SC512908-Ti	DIN376 M14	2		110	30			11	9		12	
SC512909-Ti	DIN376 M16	2		110	32			12	9		14	
SC512910-Ti	DIN376 M18	2.5		125	37			14	11		15.5	
SC512911-Ti	DIN376 M20	2.5		140	37			16	12		17.5	

DIN 371/376 R10° Spiral Flute Machine Taps(For Nickel alloys)



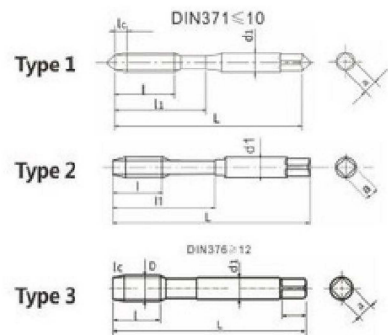
material **HSSE PM**

surface treatment **TiCN** **TiAlN**

Unit: mm

Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SC512501-Ni	DIN371 M3	0.5	6HX	56	6	18	2.5P	3.5	2.7	3	2.5	■
SC512502-Ni	DIN371 M4	0.7		63	8	21		4.5	3.4		3.3	
SC512503-Ni	DIN371 M5	0.8		70	9	25		6	4.9		4.2	
SC512504-Ni	DIN371 M6	1		80	11	30		6	4.9		5	
SC512505-Ni	DIN371 M8	1.25		90	14	35		8	6.2		6.8	
SC512506-Ni	DIN371 M10	1.5		100	16	39		10	8		8.5	
SC512507-Ni	DIN376 M12	1.75		110	18	/		9	7	10.3		
SC512508-Ni	DIN376 M14	2		110	20			11	9	12		
SC512509-Ni	DIN376 M16	2		110	20			12	9	14		
SC512510-Ni	DIN376 M18	2.5		125	25			14	11	15.5		
SC512511-Ni	DIN376 M20	2.5		140	25			16	12	17.5		

DIN 371/376 Left Spiral Flute Right Cutting Machine Taps(For Nickel alloys)



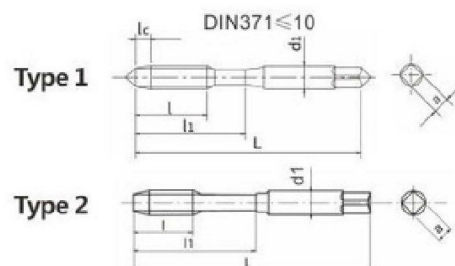
material **HSSE PM**

surface treatment **TiCN** **TiAlN**

Unit: mm

Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SC512901-Ni	DIN371 M3	0.5	6HX	56	11	18	5P	3.5	2.7	3	2.5	■
SC512902-Ni	DIN371 M4	0.7		63	13	21		4.5	3.4		3.3	
SC512903-Ni	DIN371 M5	0.8		70	16	25		6	4.9		4.2	
SC512904-Ni	DIN371 M6	1		80	19	30		6	4.9		5	
SC512905-Ni	DIN371 M8	1.25		90	22	35		8	6.2		6.8	
SC512906-Ni	DIN371 M10	1.5		100	24	39		10	8		8.5	
SC512907-Ni	DIN376 M12	1.75		110	28	/		9	7	10.3		
SC512908-Ni	DIN376 M14	2		110	30			11	9	12		
SC512909-Ni	DIN376 M16	2		110	32			12	9	14		
SC512910-Ni	DIN376 M18	2.5		125	37			14	11	15.5		
SC512911-Ni	DIN376 M20	2.5		140	37			16	12	17.5		

DIN 371 Straight Flute Machine Taps with reinforced shank(For Cast Iron)



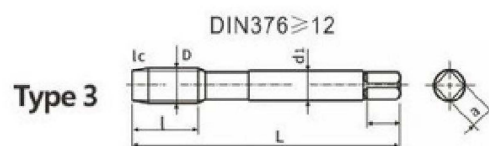
Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SC812003-Ci	M3	0.5	6HX	56	11	18	2.5P	3.5	2.7	3	2.5	■
SC812004-Ci	M4	0.7		63	13	21		4.5	3.4		3.3	
SC812005-Ci	M5	0.8		70	16	25		6	4.9		4.2	
SC812006-Ci	M6	1		80	19	30		6	4.9		5	
SC812007-Ci	M8	1.25		90	22	35		8	6.2	4	6.8	
SC812008-Ci	M8*1	1		90	22	35		8	6.2		7	
SC812009-Ci	M10	1.5		100	24	39		10	8		8.5	
SC812010-Ci	M10*1	1		90	16	39		10	8		9	
SC812011-Ci	M10*1.25	1.25		100	24	39		10	8		8.8	

material
HSSE
PM

surface treatment
TiCN
TiAlN

Unit: mm

DIN 376/374 Straight Flute Machine Taps with reduced shank(For Cast iron)



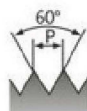
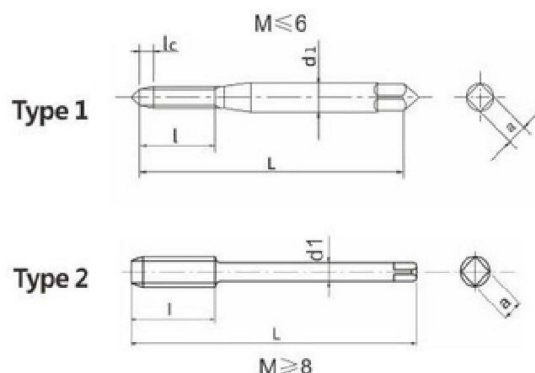
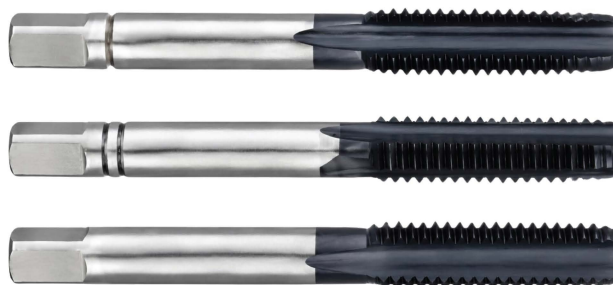
Code	Size	P	T	L	I	lc	d1	a	Flute	d0	Stock
SC812106-Ci	M12	1.75	6HX	110	28	2.5P	9	7	4	10.3	■
SC812130-Ci	MF12*1	1		100	18		9	7		11	
SC812131-Ci	MF12*1.25	1.25		100	28		9	7		10.8	
SC812132-Ci	MF12*1.5	1.5		100	28		9	7		10.5	
SC812107-Ci	M14	2		110	30		11	9		12	
SC812135-Ci	MF14*1.5	1.5		100	30		11	9		12.5	
SC812108-Ci	MF16	2		110	32		12	9		14	
SC812137-Ci	MF16*1.5	1.5		100	32		12	9		14.5	
SC812109-Ci	MF18	2.5		125	37		14	11		15.5	
SC812139-Ci	MF18*1.5	1.5		110	25		14	11		16.5	
SC812110-Ci	M20	2.5		140	37		16	12		17.5	
SC812141-Ci	MF20*1.5	1.5		125	25		16	12		18.5	
SC812111-Ci	M22	2.5		140	38		18	14.5		19.5	
SC812144-Ci	MF22*1.5	1.5		125	25		18	14.5		20.5	
SC812112-Ci	M24	3		160	45		18	14.5		21	
SC812147-Ci	MF24*1.5	1.5		140	30		18	14.5		22.5	

material
HSSE
PM

surface treatment
TiCN
TiAlN

Unit: mm

DIN352 Set of 3 Straight Flute Taps (HRC40)



M

6HX

A/6P

D/4P

C/2.5P

max.2xD

RH

material HSSE PM

surface treatment

TIN

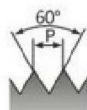
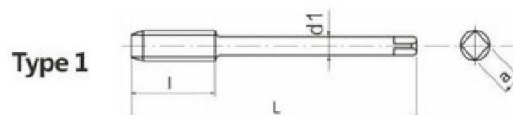
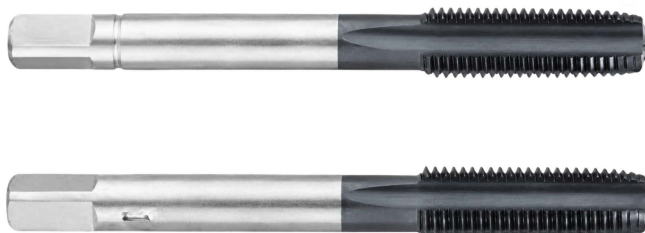
TICN

TIAlN

Unit: mm

Code	Size	P	L	I	Nr1	Nr2	F	d1	a	Flute	d0	Stock
SC812201	M3	0.5	40	14	6P	4P	2P	3.5	2.7	3	2.5	■
SC812202	M4	0.7	45	15				4.5	3.4		3.3	
SC812203	M5	0.8	50	18				6	4.9		4.5	
SC812204	M6	1	56	22				6	4.9		5	
SC812205	M8	1.25	63	22				6	4.9	4	6.8	
SC812206	M10	1.5	70	24				7	5.5		8.5	
SC812207	M12	1.75	75	28				9	7		10.2	
SC812208	M14	2	80	30				11	9		12	
SC812209	M16	2	80	32				12	9		14	
SC812210	M18	2.5	95	37				14	11		15.5	
SC812211	M20	2.5	95	37				16	12		17.5	

DIN Set of 2 Straight flute taps(HRC40)



MF

6HX

A/6P

C/2.5P

max.2xD

RH

material HSSE PM

surface treatment

TIN

TICN

TIAlN

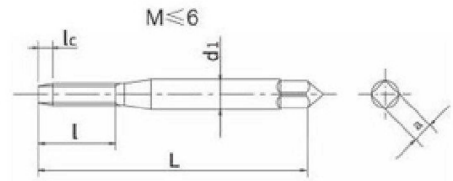
Unit: mm

Code	Size	P	L	I	Nr1	F	d1	a	Flute	d0	Stock
SC812215	MF8*1	1	63	22	6P	2P	6	4.9	4	7	■
SC812216	MF10*1	1	70	24			7	5.5		9	
SC812217	MF10*1.25	1.25	70	24			7	5.5		8.8	
SC812218	MF12*1	1	75	22			9	7		11	
SC812219	MF12*1.25	1.25	75	28			9	7		10.8	
SC812220	MF12*1.5	1.5	75	28			9	7		10.5	
SC812221	MF14*1	1	80	22			11	9		13	
SC812222	MF14*1.5	1.5	80	30			11	9		12.5	
SC812223	MF16*1	1	80	22			12	9		15	
SC812224	MF16*1.5	1.5	80	32			12	9		14.5	
SC812225	MF18*1	1	95	22			14	11		17	
SC812226	MF18*1.5	1.5	95	37			14	11		16.5	
SC812227	MF20*1	1	95	22			16	12		19	
SC812228	MF20*1.5	1.5	95	37			16	12		18.5	

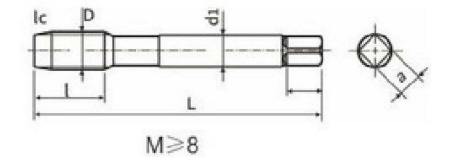
DIN Super PM Straight Flute Machine Taps (HRC52)



Type 1



Type 2



material HSSE XPM

surface treatment TiCN TiAlN

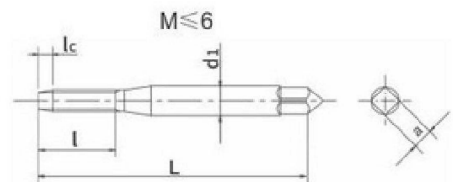
Unit: mm

Code	Size	P	T	L	I	lc	d1	a	Flute	d0	Stock
SC812001	M3	0.5	6HX	46	11	2.5P	3.5	2.7	4	2.5	■
SC812002	M4	0.7	6HX	52	13		4.5	3.4		3.3	
SC812003	M5	0.8	6HX	60	16		6	4.9		4.2	
SC812004	M6	1	6HX	62	19		6	4.9		5	
SC812005	M8	1.25	6HX	70	22		6	4.9	5	6.8	
SC812006	M10	1.5	6HX	75	24		7	5.5		8.5	
SC812007	M12	1.75	6HX	82	29		9	7		10.3	
SC812008	M14	2	6HX	88	30		11	9		12	
SC812009	M16	2	6HX	95	32		12	9		14	
SC812010	M18	2.5	6HX	100	37		14	11		15.5	
SC812011	M20	2.5	6HX	105	37		16	12		17.5	

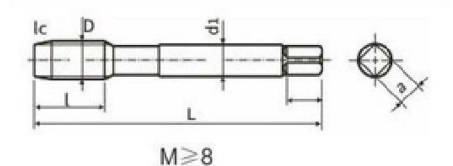
JIS Super PM Straight Flute Machine Taps(HRC52)



Type 1



Type 2



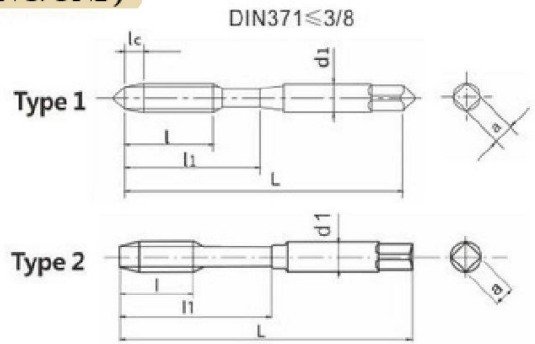
material HSSE XPM

surface treatment TiCN TiAlN

Unit: mm

Code	Size	P	T	L	I	lc	d1	a	Flute	d0	Stock
SC813001	M3	0.5	6HX	46	11	2.5P	4	3.2	4	2.5	■
SC813002	M4	0.7	6HX	52	13		5	4		3.3	
SC813003	M5	0.8	6HX	60	16		5.5	4.5		4.2	
SC813004	M6	1	6HX	62	19		6	4.5		5	
SC813005	M8	1.25	6HX	70	22		6.2	5	5	6.8	
SC813006	M10	1.5	6HX	75	24		7	5.5		8.5	
SC813007	M12	1.75	6HX	82	29		8.5	6.5		10.3	
SC813008	M14	2	6HX	88	30		10.5	8		12	
SC813009	M16	2	6HX	95	32		12.5	10		14	
SC813010	M18	2.5	6HX	100	37		14	11		15.5	
SC813011	M20	2.5	6HX	105	37		15	12		17.5	

≈ DIN 371 Spiral Point Machine Taps with reinforced shank(UNC/UNF)



UNC

UNF

max.3xD

2B

B/SP

RH

material

HSSE
PM

surface treatment

TiN

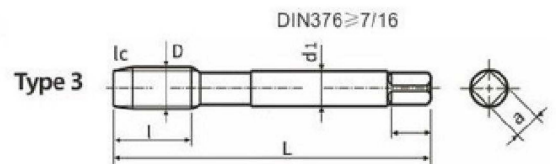
TiCN

TiAlN

Unit: mm

Code	Size	P	T	L	I	I1	lc	d1	a	Flute	d0	Stock
SC622001	No4-40UNC	0.635	2B	56	11	18	5P	3.5	2.7	3	2.30	■
SC622002	No5-40UNC	0.635	2B	56	11	18		3.5	2.7		2.60	
SC622003	No6-32UNC	0.794	2B	56	12	20		4	3		2.80	
SC622004	No6-40UNF	0.635	2B	56	12	20		4	3		2.90	
SC622005	No8-32UNC	0.794	2B	63	13	21		4.5	3.4		3.40	
SC622006	No8-36UNF	0.706	2B	63	13	21		4.5	3.4		3.50	
SC622007	No10-24UNC	1.058	2B	70	16	24		6	4.9		3.90	
SC622008	No10-32UNF	0.794	2B	70	16	24		6	4.9		4.10	
SC622009	No12-24UNC	1.058	2B	80	17	25		6	4.9		4.50	
SC622010	No12-28UNF	0.907	2B	80	17	25		6	4.9		4.60	
SC622011	1/4-20UNC	1.27	2B	80	19	29		7	5.5		5.10	
SC622012	1/4-28UNF	0.907	2B	80	19	29		7	5.5		5.50	
SC622013	5/16-18UNC	1.411	2B	90	22	37		8	6.2		6.60	
SC622014	5/16-24UNF	1.058	2B	90	22	37		8	6.2		6.90	
SC622015	3/8-16UNC	1.588	2B	100	24	41		10	8		8.00	
SC622016	3/8-24UNF	1.058	2B	100	24	41		10	8		8.50	

≈ DIN376/374 Spiral Point Machine Taps with reduced shank(UNC/UNF)



UNC

UNF

max.3xD

2B

B/SP

RH

material

HSSE
PM

surface treatment

TiN

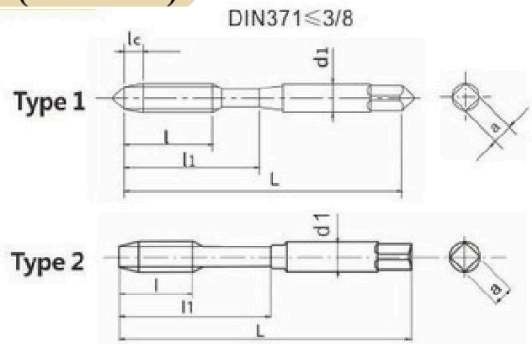
TiCN

TiAlN

Unit: mm

Code	Size	P	T	L	I	lc	d1	a	Flute	d0	Stock
SC622101	7/16-14UNC	1.814	2B	100	25	5P	8	6.2	3	9.40	■
SC622102	7/16-20UNF	1.27	2B	100	25		8	6.2		9.90	
SC622103	1/2-13UNC	1.954	2B	110	28		9	7		10.80	
SC622104	1/2-20UNF	1.27	2B	110	28		9	7		11.50	
SC622105	9/16-12UNC	2.117	2B	110	30		11	9		12.20	
SC622106	9/16-18UNF	1.411	2B	110	30		11	9		12.90	
SC622107	5/8-11UNC	2.309	2B	110	32		12	9	4	13.60	
SC622108	5/8-18UNF	1.411	2B	110	32		12	9		14.50	
SC622109	3/4-10UNC	2.54	2B	125	37		14	11		16.5	
SC622110	3/4-16UNF	1.588	2B	125	37		14	11		17.5	
SC622111	7/8-9UNC	2.822	2B	140	38		18	14.5		19.5	
SC622112	7/8-14UNF	1.814	2B	140	38		18	14.5		20.5	
SC622113	1"-8UNC	3.175	2B	160	45		20	16		22.3	
SC622114	1"-12UNF	2.117	2B	160	45		20	16		23.3	

≈ DIN 371 R45° Spiral Flute Machine Taps with reinforced shank(UNC/UNF)



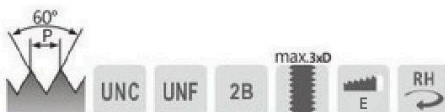
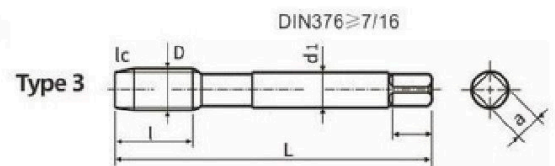
material HSSE PM

surface treatment TiN TiCN TiAlN

Unit: mm

Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SC522001	No4-40UNC	0.635	2B	56	6	18	2.5P	3.5	2.7	3	2.30	Special
SC522002	No5-40UNC	0.635	2B	56	6	18		3.5	2.7		2.60	
SC522003	No6-32UNC	0.794	2B	56	7	20		4	3		2.80	
SC522004	No6-40UNF	0.635	2B	56	7	20		4	3		2.90	
SC522005	No8-32UNC	0.794	2B	63	7	21		4.5	3.4		3.40	
SC522006	No8-36UNF	0.706	2B	63	7	21		4.5	3.4		3.50	
SC522007	No10-24UNC	1.058	2B	70	10	24		6	4.9		3.90	
SC522008	No10-32UNF	0.794	2B	70	10	24		6	4.9		4.10	
SC522009	No12-24UNC	1.058	2B	80	10	24		6	4.9		4.50	
SC522010	No12-28UNF	0.907	2B	80	10	24		6	4.9		4.60	
SC522011-E	1/4-20UNC	1.27	2B	80	12	29		7	5.5		5.10	
SC522012-E	1/4-28UNF	0.907	2B	80	12	29		7	5.5		5.50	
SC522013-E	5/16-18UNC	1.411	2B	90	14	37		8	6.2		6.60	
SC522014-E	5/16-24UNF	1.058	2B	90	14	37		8	6.2		6.90	
SC522015-E	3/8-16UNC	1.588	2B	100	16	41		10	8		8.00	
SC522016-E	3/8-24UNF	1.058	2B	100	16	41		10	8		8.50	

≈ DIN 376/374 R45° Spiral Flute Machine Taps with reduced shank(UNC/UNF)



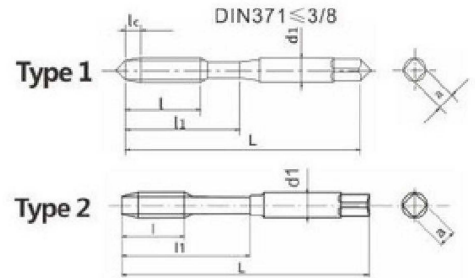
material HSSE PM

surface treatment TiN TiCN TiAlN

Unit: mm

Code	Size	P	T	L	I	lc	d1	a	Flute	d0	Stock
SC522101-E	7/16-14UNC	1.814	2B	100	18	2.5P	8	6.2	3	9.40	Special
SC522102-E	7/16-20UNF	1.27	2B	100	18		8	6.2		9.90	
SC522103-E	1/2-13UNC	1.954	2B	110	19		9	7		10.80	
SC522104-E	1/2-20UNF	1.27	2B	110	19		9	7		11.50	
SC522105-E	9/16-12UNC	2.117	2B	110	21		11	9		12.20	
SC522106-E	9/16-18UNF	1.411	2B	110	21		11	9		12.90	
SC522107-E	5/8-11UNC	2.309	2B	110	23		12	9		13.60	
SC522108-E	5/8-18UNF	1.411	2B	110	23		12	9		14.50	
SC522109-E	3/4-10UNC	2.54	2B	125	25		14	11	4	16.5	
SC522110-E	3/4-16UNF	1.588	2B	125	25		14	11		17.5	
SC522111-E	7/8-9UNC	2.822	2B	140	28		18	14.5		19.5	
SC522112-E	7/8-14UNF	1.814	2B	140	28		18	14.5		20.5	
SC522113-E	1"-8UNC	3.175	2B	160	31		20	16		22.3	
SC522114-E	1"-12UNF	2.117	2B	160	31		20	16		23.3	

≈ DIN 371 R45° Spiral Flute Machine Taps with reinforced shank(UNC/UNF)



60°

P

max.2.5xD

UNC

UNF

2B

R45°

max.2.5xD

0.2.5P

RH

material

HSSE

PM

surface treatment

TiN

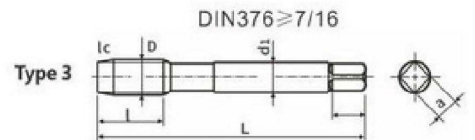
TiCN

TiAlN

Unit: mm

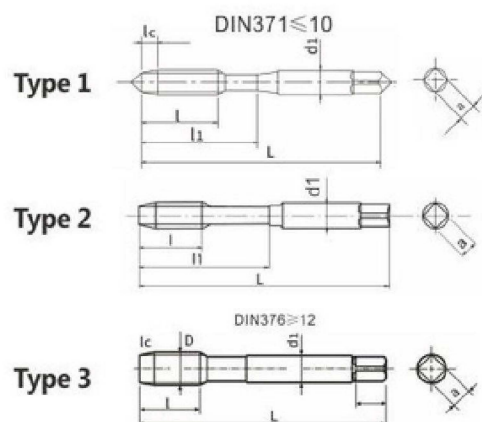
Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SC522001	No4-40UNC	0.635	2B	56	6	18	2.5P	3.5	2.7	3	2.30	■
SC522002	No5-40UNC	0.635	2B	56	6	18		3.5	2.7		2.60	
SC522003	No6-32UNC	0.794	2B	56	7	20		4	3		2.80	
SC522004	No6-40UNF	0.635	2B	56	7	20		4	3		2.90	
SC522005	No8-32UNC	0.794	2B	63	7	21		4.5	3.4		3.40	
SC522006	No8-36UNF	0.706	2B	63	7	21		4.5	3.4		3.50	
SC522007	No10-24UNC	1.058	2B	70	10	24		6	4.9		3.90	
SC522008	No10-32UNF	0.794	2B	70	10	24		6	4.9		4.10	
SC522009	No12-24UNC	1.058	2B	80	10	24		6	4.9		4.50	
SC522010	No12-28UNF	0.907	2B	80	10	24		6	4.9		4.60	
SC522011	¼-20UNC	1.27	2B	80	12	29		7	5.5		5.10	
SC522012	¼-28UNF	0.907	2B	80	12	29		7	5.5		5.50	
SC522013	5/16-18UNC	1.411	2B	90	14	37		8	6.2		6.60	
SC522014	5/16-24UNF	1.058	2B	90	14	37		8	6.2		6.90	
SC522015	3/8-16UNC	1.588	2B	100	16	41		10	8		8.00	
SC522016	3/8-24UNF	1.058	2B	100	16	41		10	8		8.50	

≈ DIN 376/374 R45° Spiral Flute Machine Taps with reduced shank(UNC/UNF)



        Unit: mm											
Code	Size	P	T	L	I	lc	d1	a	Flute	d0	Stock
SC522101	7/16-14UNC	1.814	2B	100	18	2.5P	8	6.2	3	9.40	■
SC522102	7/16-20UNF	1.27	2B	100	18		8	6.2		9.90	
SC522103	1/2-13UNC	1.954	2B	110	19		9	7		10.80	
SC522104	1/2-20UNF	1.27	2B	110	19		9	7		11.50	
SC522105	9/16-12UNC	2.117	2B	110	21		11	9		12.20	
SC522106	9/16-18UNF	1.411	2B	110	21		11	9		12.90	
SC522107	5/8-11UNC	2.309	2B	110	23		12	9		13.60	
SC522108	5/8-18UNF	1.411	2B	110	23		12	9		14.50	
SC522109	3/4-10UNC	2.54	2B	125	25		14	11	4	16.5	
SC522110	3/4-16UNF	1.588	2B	125	25		14	11		17.5	
SC522111	7/8-9UNC	2.822	2B	140	28		18	14.5		19.5	
SC522112	7/8-14UNF	1.814	2B	140	28		18	14.5		20.5	
SC522113	1"-8UNC	3.175	2B	160	31		20	16		22.3	
SC522114	1"-12UNF	2.117	2B	160	31		20	16		23.3	

DIN2174 Forming Thread Machine Taps



M

MF

6HX



C2.5P

D4P

RH

material

HSSE
PM

surface treatment

TIN

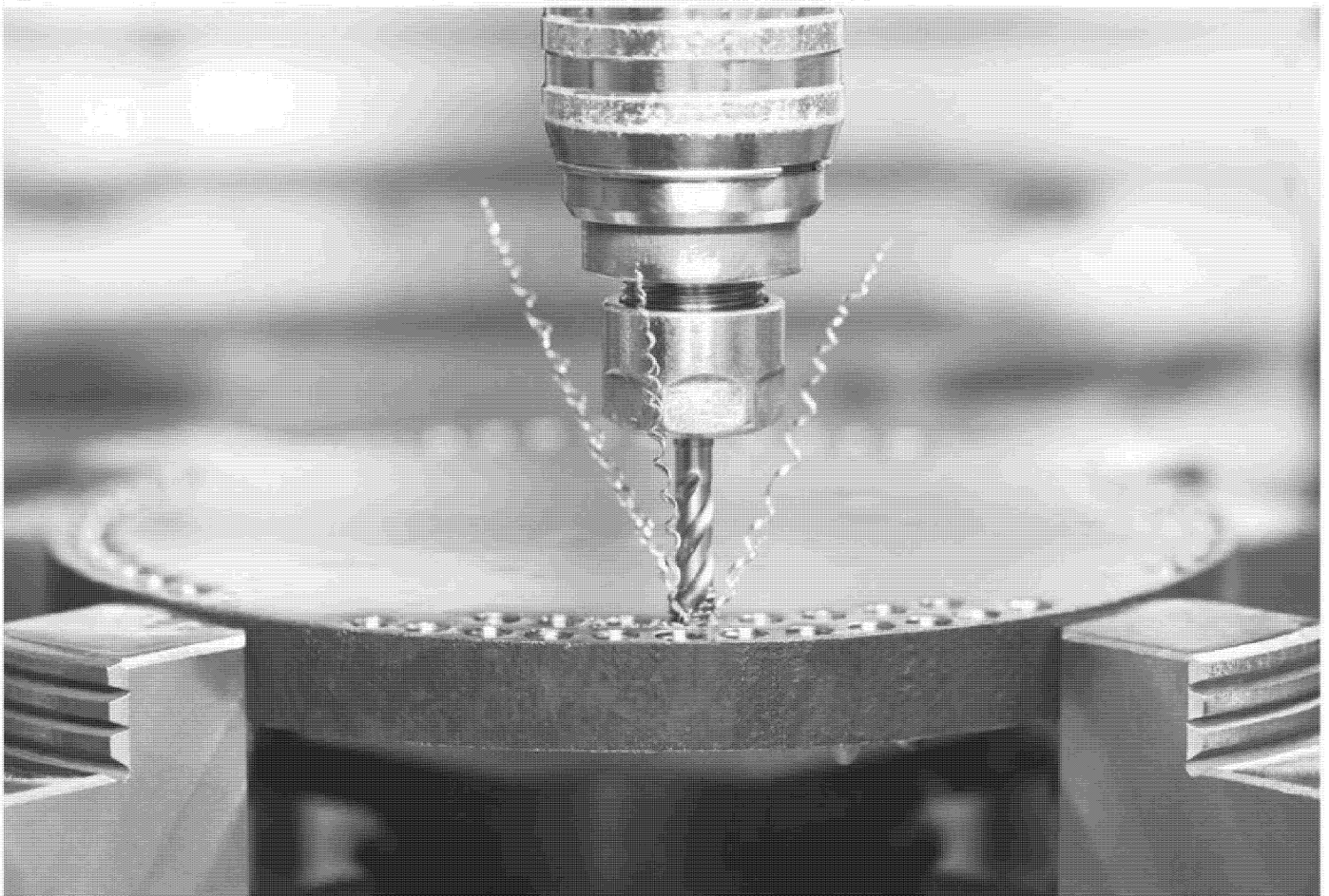
TiCN

TiAlN

Unit: mm

Code	Size	P	T	L	I	Blind	Through	d1	a	d0	Stock
SC712001	M2	0.4	6HX	45	8	2P	4P	2.8	2.1	1.85	■
SC712002	M2.5	0.45		50	9			2.8	2.1	2.33	
SC712003	M3	0.5		56	10			3.5	2.7	2.8	
SC712004	M4	0.7		63	12			4.5	3.4	3.7	
SC712005	M5	0.8		70	14			6	4.9	4.65	
SC712006	M6	1		80	16			6	4.9	5.55	
SC712007	M8	1.25		90	17			8	6.2	7.45	
SC712008	M8*1	1		90	17			8	6.2	7.55	
SC712009	M10	1.5		100	20			10	8	9.35	
SC712010	M10*1	1		100	20			10	8	9.55	
SC712011	M10*1.25	1.25		100	20			10	8	9.45	
SC712012	M12	1.75		110	24			9	7	11.2	
SC712013	M12*1	1		110	24			9	7	11.55	
SC712014	M12*1.25	1.25		110	24			9	7	11.45	
SC712015	M12*1.5	1.5		110	24			9	7	11.35	
SC712016	M14	2		110	26			11	9	13.1	
SC712019	M14*1.5	1.5		110	26			11	9	13.35	
SC712020	M16	2		110	26			12	9	15.1	
SC712022	M16*1.5	1.5		110	26			12	9	15.35	

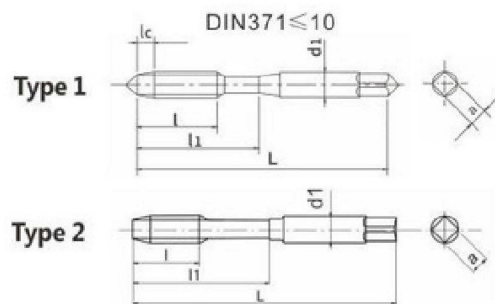
Cobalt HSS Machine Tap Series



High performance matrix materials, optimized cutting structure, and suitable surface treatment provide you with an efficient, durable, and reliable tapping experience

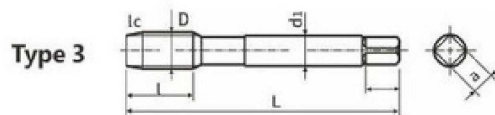
- Custom Thread Tolerance Zones(4H、 6G、 7G 、 6H+0.1 etc.)
- Custom taps with colored ring

DIN 371 Spiral Point Machine Taps with reinforced shank



Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SA612001	M2	0.4	6H	45	8	13	5P	2.8	2.1	3	1.6	■
SA612002	M2.5	0.45	6H	50	9	15		2.8	2.1		2.1	
SA612003	M3	0.5	6H	56	11	18		3.5	2.7		2.5	
SA612004	M4	0.7	6H	63	13	21		4.5	3.4		3.3	
SA612005	M5	0.8	6H	70	16	25		6	4.9		4.2	
SA612006	M6	1	6H	80	19	30		6	4.9		5	
SA612007	M8	1.25	6H	90	22	35		8	6.2		6.8	
SA612008	M8*1	1	6H	90	22	35		8	6.2		7	
SA612009	M10	1.5	6H	100	24	39		10	8		8.5	
SA612010	M10*1	1	6H	90	16	39		10	8		9	
SA612011	M10*1.25	1.25	6H	100	24	39		10	8		8.8	

DIN376 Spiral Point Machine Taps with reduced shank

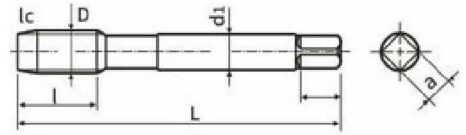


Code	Size	P	T	L	I	lc	d1	a	Flute	d0	Stock
SA612101	M4	0.7	6H	63	13	5P	2.8	2.1	3	3.3	■
SA612102	M5	0.8	6H	70	16		3.5	2.7		4.2	
SA612103	M6	1	6H	80	19		4.5	3.4		5.0	
SA612104	M8	1.25	6H	90	22		6	4.9		6.8	
SA612105	M10	1.5	6H	100	24		7	5.5		8.5	
SA612106	M12	1.75	6H	110	28		9	7		10.3	
SA612107	M14	2	6H	110	30		11	9	4	12.0	
SA612108	M16	2	6H	110	32		12	9		14.0	
SA612109	M18	2.5	6H	125	37		14	11		15.5	
SA612110	M20	2.5	6H	140	37		16	12		17.5	
SA612111	M22	2.5	6H	140	38		18	14.5		19.5	
SA612112	M24	3	6H	160	45		18	14.5		21.0	
SA612113	M27	3	6H	160	45		20	16		24	
SA612114	M30	3.5	6H	180	48		22	18		26.5	
SA612115	M33	3.5	6H	180	51		25	20		29.5	
SA612116	M36	4	6H	200	57		28	22		32	

DIN374 Spiral Point Machine Taps with reduced shank



Type 3



material **HSSE Co**

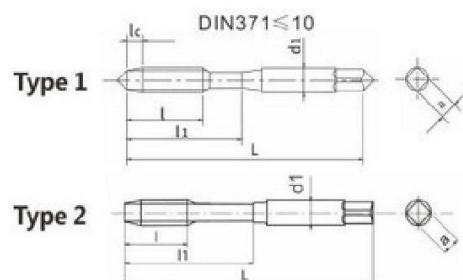
surface treatment

TiN **TiCN** **TiAlN**

Unit: mm

Code	Size	P	T	L	I	lc	d1	a	Flute	d0	Stock
SA612121	MF4*0.5	0.5	6H	63	10	5P	2.8	2.1	3	3.5	■
SA612122	MF5*0.5	0.5	6H	70	11		3.5	2.7		4.5	
SA612123	MF6*0.5	0.5	6H	80	13		4.5	3.4		5.5	
SA612124	MF6*0.75	0.75	6H	80	13		4.5	3.4		5.3	
SA612125	MF8*0.75	0.75	6H	80	14		6	4.9		7.3	
SA612126	MF8*1	1	6H	90	22		6	4.9		7.0	
SA612127	MF10*0.75	0.75	6H	90	16		7	5.5		9.3	
SA612128	MF10*1	1	6H	90	16		7	5.5		9.0	
SA612129	MF10*1.25	1.25	6H	100	24		7	5.5		8.8	
SA612130	MF12*1	1	6H	100	18		9	7		11.0	
SA612131	MF12*1.25	1.25	6H	100	28		9	7		10.8	
SA612132	MF12*1.5	1.5	6H	100	28		9	7		10.5	
SA612133	MF14*1	1	6H	100	20		11	9		13.0	
SA612134	MF14*1.25	1.25	6H	100	30		11	9		12.8	
SA612135	MF14*1.5	1.5	6H	100	30		11	9		12.5	
SA612136	MF16*1	1	6H	100	20		12	9		15.0	
SA612137	MF16*1.5	1.5	6H	100	32		12	9		14.5	
SA612138	MF18*1	1	6H	110	25		14	11	4	17.0	
SA612139	MF18*1.5	1.5	6H	110	25		14	11		16.5	
SA612140	MF20*1	1	6H	125	25		16	12		19.0	
SA612141	MF20*1.5	1.5	6H	125	25		16	12		18.5	
SA612142	MF20*2	2	6H	140	37		16	12		18.0	
SA612143	MF22*1	1	6H	125	25		18	14.5		21.0	
SA612144	MF22*1.5	1.5	6H	125	25		18	14.5		20.5	
SA612145	MF22*2	2	6H	140	38		18	14.5		20.0	
SA612146	MF24*1	1	6H	140	28		18	14.5		23.0	
SA612147	MF24*1.5	1.5	6H	140	28		18	14.5		22.5	
SA612148	MF24*2	2	6H	140	45		18	14.5		22.0	
SA612149	MF27*1	1	6H	140	28		20	16		26	
SA612150	MF27*1.5	1.5	6H	140	28		20	16		25.5	
SA612151	MF27*2	2	6H	140	45		20	16		25	
SA612152	MF30*1	1	6H	150	28		22	18		29	
SA612153	MF30*1.5	1.5	6H	150	28		22	18		28.5	
SA612154	MF30*2	2	6H	150	28		22	18		28	
SA612155	MF30*3	3	6H	180	48		22	18		27	
SA612156	MF33*1.5	1.5	6H	160	28		25	20		31.5	
SA612157	MF33*2	2	6H	160	28		25	20		31	
SA612158	MF33*3	3	6H	180	51		25	20		30	
SA612159	MF36*1.5	1.5	6H	170	30		28	22		34.5	
SA612160	MF36*2	2	6H	170	30		28	22		34	
SA612161	MF36*3	3	6H	200	57		28	22		33	

DIN 371 R45°Spiral Flute Machine Taps with reinforced shank



material HSSE Co

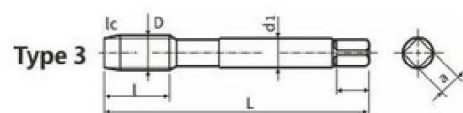
surface treatment

TiN TiCN TiAlN

Unit: mm

Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SA512001	M2	0.4	6H	45	6	13	2.5P	2.8	2.1	3	1.6	■
SA512002	M2.5	0.45	6H	50	6	15		2.8	2.1		2.1	
SA512003	M3	0.5	6H	56	6	18		3.5	2.7		2.5	
SA512004	M4	0.7	6H	63	8	21		4.5	3.4		3.3	
SA512005	M5	0.8	6H	70	9	25		6	4.9		4.2	
SA512006	M6	1	6H	80	11	30		6	4.9		5	
SA512007	M8	1.25	6H	90	14	35		8	6.2		6.8	
SA512008	MF8*1	1	6H	90	14	35		8	6.2		7	
SA512009	M10	1.5	6H	100	16	39		10	8		8.5	
SA512010	MF10*1	1	6H	90	16	39		10	8		9	
SA512011	MF10*1.25	1.25	6H	100	16	39		10	8		8.8	

DIN376 R45°Spiral Flute Machine Taps with reduced shank



material HSSE Co

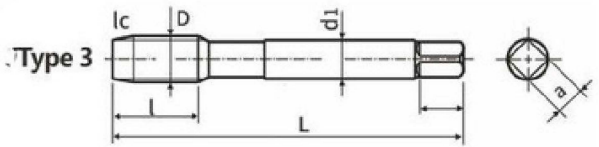
surface treatment

TiN TiCN TiAlN

Unit: mm

Code	Size	P	T	L	I	lc	d1	a	Flute	d0	Stock
SA512101	M4	0.7	6H	63	8	2.5P	2.8	2.1	3	3.3	■
SA512102	M5	0.8	6H	70	9		3.5	2.7		4.2	
SA512103	M6	1	6H	80	11		4.5	3.4		5.0	
SA512104	M8	1.25	6H	90	14		6	4.9		6.8	
SA512105	M10	1.5	6H	100	16		7	5.5		8.5	
SA512106	M12	1.75	6H	110	18		9	7		10.3	
SA512107	M14	2	6H	110	20		11	9		12.0	
SA512108	M16	2	6H	110	20		12	9		14.0	
SA512109	M18	2.5	6H	125	25		14	11	4	15.5	
SA512110	M20	2.5	6H	140	25		16	12		17.5	
SA512111	M22	2.5	6H	140	25		18	14.5		19.5	
SA512112	M24	3	6H	160	30		18	14.5		21.0	
SA512113	M27	3	6H	160	30		20	16		24	
SA512114	M30	3.5	6H	180	35		22	18		26.5	
SA512115	M33	3.5	6H	180	35		25	20		29.5	
SA512116	M36	4	6H	200	40		28	22		32	

DIN374 R45°Spiral Flute Machine Taps with reduced shank



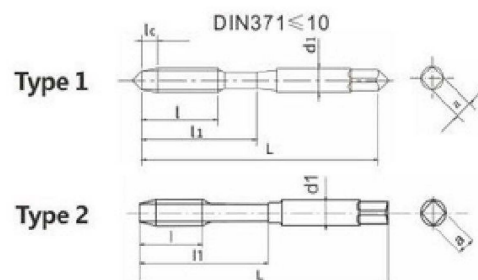
material **HSSE Co**

surface treatment **TiN TiCN TiAIN**

Unit: mm

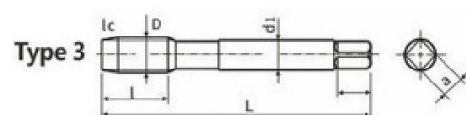
Code	Size	P	T	L	I	lc	d1	a	Flute	d0	Stock
SA512121	MF4*0.5	0.5	6H	63	8	2.5P	2.8	2.1	3	3.5	■
SA512122	MF5*0.5	0.5	6H	70	9		3.5	2.7		4.5	
SA512123	MF6*0.5	0.5	6H	80	11		4.5	3.4		5.5	
SA512124	MF6*0.75	0.75	6H	80	11		4.5	3.4		5.3	
SA512125	MF8*0.75	0.75	6H	80	14		6	4.9		7.3	
SA512126	MF8*1	1	6H	90	14		6	4.9		7.0	
SA512127	MF10*0.75	0.75	6H	90	16		7	5.5		9.3	
SA512128	MF10*1	1	6H	90	16		7	5.5		9.0	
SA512129	MF10*1.25	1.25	6H	100	16		7	5.5		8.8	
SA512130	MF12*1	1.5	6H	100	18		9	7		11.0	
SA512131	MF12*1.25	1	6H	100	18		9	7		10.8	
SA512132	MF12*1.5	1.25	6H	100	18		9	7		10.5	
SA512133	MF14*1	1.5	6H	100	20		11	9		13.0	
SA512134	MF14*1.25	1	6H	100	20		11	9		12.8	
SA512135	MF14*1.5	1.5	6H	100	20		11	9		12.5	
SA512136	MF16*1	1	6H	100	20		12	9		15.0	
SA512137	MF16*1.5	1.5	6H	100	20		12	9		14.5	
SA512138	MF18*1	1	6H	110	25		14	11		17.0	
SA512139	MF18*1.5	1.5	6H	110	25		14	11		16.5	
SA512140	MF20*1	1	6H	125	25		16	12		19.0	
SA512141	MF20*1.5	1.5	6H	125	25		16	12		18.5	
SA512142	MF20*2	2	6H	140	25	2.5P	16	12	4	18.0	
SA512143	MF22*1	1	6H	125	25		16	14.5		21.0	
SA512144	MF22*1.5	1.5	6H	125	25		18	14.5		20.5	
SA512145	MF22*2	2	6H	140	25		18	14.5		20.0	
SA512146	MF24*1	1	6H	140	25		18	14.5		23.0	
SA512147	MF24*1.5	1.5	6H	140	25		18	14.5		22.5	
SA512148	MF24*2	2	6H	140	25		18	14.5		22.0	
SA512149	MF27*1	1	6H	140	28		20	16		26	
SA512150	MF27*1.5	1.5	6H	140	28		20	16		25.5	
SA512151	MF27*2	2	6H	140	28		20	16		25	
SA512152	MF30*1	1	6H	150	28		22	18		29	
SA512153	MF30*1.5	1.5	6H	150	28		22	18		28.5	
SA512154	MF30*2	2	6H	150	28		22	18		28	
SA512155	MF30*3	3	6H	180	35		22	18		27	
SA512156	MF33*1.5	1.5	6H	160	28		25	20		31.5	
SA512157	MF33*2	2	6H	160	28		25	20		31	
SA512158	MF33*3	3	6H	180	35		25	20		30	
SA512159	MF36*1.5	1.5	6H	170	30		28	22		34.5	
SA512160	MF36*2	2	6H	170	30		28	22		34	
SA512161	MF36*3	3	6H	200	40		28	22		33	

DIN 371 R35° Spiral Flute Machine Taps with reinforced shank



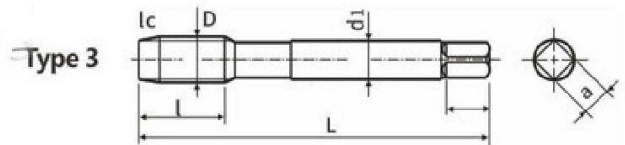
Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SA512301	M2	0.4	6H	45	6	13	2.5P	2.8	2.1	3	1.6	■
SA512302	M2.5	0.45	6H	50	6	15		2.8	2.1		2.1	
SA512303	M3	0.5	6H	56	6	18		3.5	2.7		2.5	
SA512304	M4	0.7	6H	63	8	21		4.5	3.4		3.3	
SA512305	M5	0.8	6H	70	9	25		6	4.9		4.2	
SA512306	M6	1	6H	80	11	30		6	4.9		5	
SA512307	M8	1.25	6H	90	14	35		8	6.2		6.8	
SA512308	MF8*1	1	6H	90	14	35		8	6.2		7	
SA512309	M10	1.5	6H	100	16	39		10	8		8.5	
SA512310	MF10*1	1	6H	90	16	39		10	8		9	
SA512311	MF10*1.25	1.25	6H	100	16	39		10	8		8.8	

DIN376 R35° Spiral Flute Machine Taps with reduced shank



Code	Size	P	T	L	I	lc	d1	a	Flute	d0	Stock
SA512401	M4	0.7	6H	63	8	2.5P	2.8	2.1	3	3.3	■
SA512402	M5	0.8	6H	70	9		3.5	2.7		4.2	
SA512403	M6	1	6H	80	11		4.5	3.4		5.0	
SA512404	M8	1.25	6H	90	14		6	4.9		6.8	
SA512405	M10	1.5	6H	100	16		7	5.5		8.5	
SA512406	M12	1.75	6H	110	18		9	7		10.3	
SA512407	M14	2	6H	110	20		11	9		12.0	
SA512408	M16	2	6H	110	20		12	9		14.0	
SA512409	M18	2.5	6H	125	25		114	11	4	15.5	
SA512410	M20	2.5	6H	140	25		16	12		17.5	
SA512411	M22	2.5	6H	140	25		18	14.5		19.5	
SA512412	M24	3	6H	160	30		18	14.5		21.0	
SA512413	M27	3	6H	160	30		20	16		24	
SA512414	M30	3.5	6H	180	35		22	18		26.5	
SA512415	M33	3.5	6H	180	35		25	20		29.5	
SA512416	M36	4	6H	200	40		28	22		32	

DIN374 R35°Spiral Flute Machine Taps with reduced shank



material **HSSE Co**

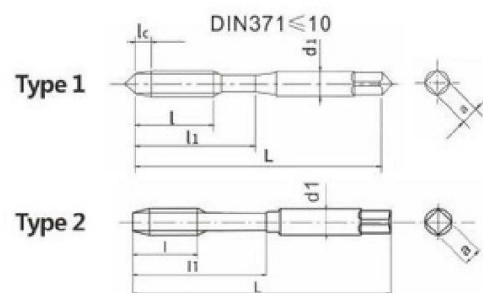
surface treatment



Unit: mm

Code	Size	P	T	L	I	lc	d1	a	Flute	d0	Stock
SA512421	MF4*0.5	0.5	6H	63	8	2.5P	2.8	2.1	3	3.5	■
SA512422	MF5*0.5	0.5	6H	70	9		3.5	2.7		4.5	
SA512423	MF6*0.5	0.5	6H	80	11		4.5	3.4		5.5	
SA512424	MF6*0.75	0.75	6H	80	11		4.5	3.4		5.3	
SA512425	MF8*0.75	0.75	6H	80	14		6	4.9		7.3	
SA512426	MF8*1	1	6H	90	14		6	4.9		7.0	
SA512427	MF10*0.75	0.75	6H	90	16		7	5.5		9.3	
SA512428	MF10*1	1	6H	90	16		7	5.5		9.0	
SA512429	MF10*1.25	1.25	6H	100	16		7	5.5		8.8	
SA512430	MF12*1	1.5	6H	100	18		9	7		11.0	
SA512431	MF12*1.25	1	6H	100	18		9	7		10.8	
SA512432	MF12*1.5	1.25	6H	100	18		9	7		10.5	
SA512433	MF14*1	1.5	6H	100	20		11	9		13.0	
SA512434	MF14*1.25	1	6H	100	20		11	9		12.8	
SA512435	MF14*1.5	1.5	6H	100	20		11	9		12.5	
SA512436	MF16*1	1	6H	100	20		12	9		15.0	
SA512437	MF16*1.5	1.5	6H	100	20		12	9		14.5	
SA512438	MF18*1	1	6H	110	25		14	11	4	17.0	
SA512439	MF18*1.5	1.5	6H	110	25		14	11		16.5	
SA512440	MF20*1	1	6H	125	25		16	12		19.0	
SA512441	MF20*1.5	1.5	6H	125	25		16	12		18.5	
SA512442	MF20*2	2	6H	140	25		16	12		18.0	
SA512443	MF22*1	1	6H	125	25		16	14.5		21.0	
SA512444	MF22*1.5	1.5	6H	125	25		18	14.5		20.5	
SA512445	MF22*2	2	6H	140	25		18	14.5		20.0	
SA512446	MF24*1	1	6H	140	25		18	14.5		23.0	
SA512447	MF24*1.5	1.5	6H	140	25		18	14.5		22.5	
SA512448	MF24*2	2	6H	140	25		18	14.5		22.0	
SA512449	MF27*1	1	6H	140	28		20	16		26	
SA512450	MF27*1.5	1.5	6H	140	28		20	16		25.5	
SA512451	MF27*2	2	6H	140	28		20	16		25	
SA512452	MF30*1	1	6H	150	28		22	18		29	
SA512453	MF30*1.5	1.5	6H	150	28		22	18		28.5	
SA512454	MF30*2	2	6H	150	28		22	18		28	
SA512455	MF30*3	3	6H	180	35		22	18		27	
SA512456	MF33*1.5	1.5	6H	160	28		25	20		31.5	
SA512457	MF33*2	2	6H	160	28		25	20		31	
SA512458	MF33*3	3	6H	180	35		25	20		30	
SA512459	MF36*1.5	1.5	6H	170	30		28	22		34.5	
SA512460	MF36*2	2	6H	170	30		28	22		34	
SA512461	MF36*3	3	6H	200	40		28	22		33	

DIN 371 R15° Spiral Flute Machine Taps with reinforced shank



M

MF

6H

R15°



C2, SP

RH

material

HSSE
Co

surface treatment

TiN

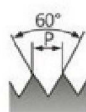
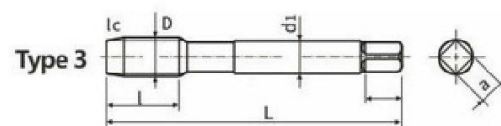
TiCN

TiAlN

Unit: mm

Code	Size	P	T	L	I	II	lc	d1	a	Flute	d0	Stock
SA512501	M2	0.4	6H	45	6	13	2.5P	2.8	2.1	3	1.6	■
SA512502	M2.5	0.45	6H	50	6	15		2.8	2.1		2.1	
SA512503	M3	0.5	6H	56	6	18		3.5	2.7		2.5	
SA512504	M4	0.7	6H	63	8	21		4.5	3.4		3.3	
SA512505	M5	0.8	6H	70	9	25		6	4.9		4.2	
SA512506	M6	1	6H	80	11	30		6	4.9		5	
SA512507	M8	1.25	6H	90	14	35		8	6.2		6.8	
SA512508	MF8*1	1	6H	90	14	35		8	6.2		7	
SA512509	M10	1.5	6H	100	16	39		10	8		8.5	
SA512510	MF10*1	1	6H	90	16	39		10	8		9	
SA512511	MF10*1.25	1.25	6H	100	16	39		10	8		8.8	

DIN376 R15° Spiral Flute Machine Taps with reduced shank



M

6H

R15°

max. 2xD

C2, SP

RH

material

HSSE
Co

surface treatment

TiN

TiCN

TiAlN

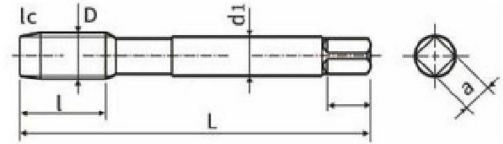
Unit: mm

Code	Size	P	T	L	I	lc	d1	a	Flute	d0	Stock
SA512601	M4	0.7	6H	63	8	2.5P	2.8	2.1	3	3.3	■
SA512602	M5	0.8	6H	70	9		3.5	2.7		4.2	
SA512603	M6	1	6H	80	11		4.5	3.4		5.0	
SA512604	M8	1.25	6H	90	14		6	4.9		6.8	
SA512605	M10	1.5	6H	100	16		7	5.5		8.5	
SA512606	M12	1.75	6H	110	18		9	7		10.3	
SA512607	M14	2	6H	110	20		11	9		12.0	
SA512608	M16	2	6H	110	20		12	9		14.0	
SA512609	M18	2.5	6H	125	25		14	11	4	15.5	
SA512610	M20	2.5	6H	140	25		16	12		17.5	
SA512611	M22	2.5	6H	140	25		18	14.5		19.5	
SA512612	M24	3	6H	160	30		18	14.5		21.0	
SA512613	M27	3	6H	160	30		20	16		24	
SA512614	M30	3.5	6H	180	35		22	18		26.5	
SA512615	M33	3.5	6H	180	35		25	20		29.5	
SA512616	M36	4	6H	200	40		28	22		32	

DIN374 R15°Spiral Flute Machine Taps with reduced shank



Type 3



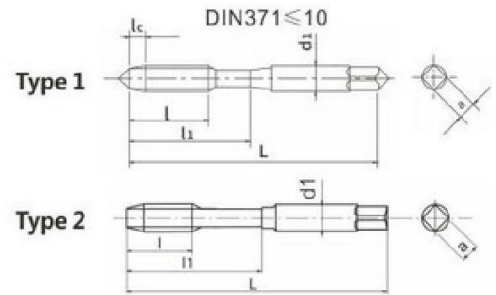
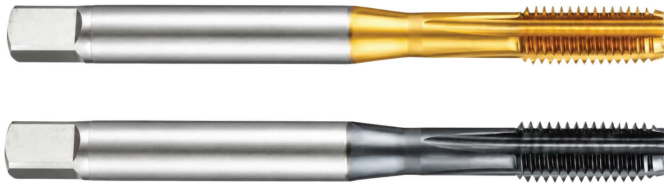
material **HSSE Co**

surface treatment **TIN** **TICN** **TIAlN**

Unit: mm

Code	Size	P	T	L	I	lc	d1	a	Flute	d0	Stock
SA512621	MF4*0.5	0.5	6H	63	8	2.5P	2.8	2.1	3	3.5	■
SA512622	MF5*0.5	0.5	6H	70	9		3.5	2.7		4.5	
SA512623	MF6*0.5	0.5	6H	80	11		4.5	3.4		5.5	
SA512624	MF6*0.75	0.75	6H	80	11		4.5	3.4		5.3	
SA512625	MF8*0.75	0.75	6H	80	14		6	4.9		7.3	
SA512626	MF8*1	1	6H	90	14		6	4.9		7.0	
SA512627	MF10*0.75	0.75	6H	90	16		7	5.5		9.3	
SA512628	MF10*1	1	6H	90	16		7	5.5		9.0	
SA512629	MF10*1.25	1.25	6H	100	16		7	5.5		8.8	
SA512630	MF12*1	1.5	6H	100	18		9	7		11.0	
SA512631	MF12*1.25	1	6H	100	18		9	7		10.8	
SA512632	MF12*1.5	1.25	6H	100	18		9	7		10.5	
SA512633	MF14*1	1.5	6H	100	20		11	9		13.0	
SA512634	MF14*1.25	1	6H	100	20		11	9		12.8	
SA512635	MF14*1.5	1.5	6H	100	20		11	9		12.5	
SA512636	MF16*1	1	6H	100	20		12	9		15.0	
SA512637	MF16*1.5	1.5	6H	100	20		12	9		14.5	
SA512638	MF18*1	1	6H	110	25		14	11	4	17.0	
SA512639	MF18*1.5	1.5	6H	110	25		14	11		16.5	
SA512640	MF20*1	1	6H	125	25		16	12		19.0	
SA512641	MF20*1.5	1.5	6H	125	25		16	12		18.5	
SA512642	MF20*2	2	6H	140	25		16	12		18.0	
SA512643	MF22*1	1	6H	125	25		16	14.5		21.0	
SA512644	MF22*1.5	1.5	6H	125	25		18	14.5		20.5	
SA512645	MF22*2	2	6H	140	25		18	14.5		20.0	
SA512646	MF24*1	1	6H	140	25		18	14.5		23.0	
SA512647	MF24*1.5	1.5	6H	140	25		18	14.5		22.5	
SA512648	MF24*2	2	6H	140	25		18	14.5		22.0	
SA512649	MF27*1	1	6H	140	28		20	16		26	
SA512650	MF27*1.5	1.5	6H	140	28		20	16		25.5	
SA512651	MF27*2	2	6H	140	28		20	16		25	
SA512652	MF30*1	1	6H	150	28		22	18		29	
SA512653	MF30*1.5	1.5	6H	150	28		22	18		28.5	
SA512654	MF30*2	2	6H	150	28		22	18		28	
SA512655	MF30*3	3	6H	180	35		22	18		27	
SA512656	MF33*1.5	1.5	6H	160	28		25	20		31.5	
SA512657	MF33*2	2	6H	160	28		25	20		31	
SA512658	MF33*3	3	6H	180	35		25	20		30	
SA512659	MF36*1.5	1.5	6H	170	30		28	22		34.5	
SA512660	MF36*2	2	6H	170	30		28	22		34	
SA512661	MF36*3	3	6H	200	40		28	22		33	

DIN 371 Straight Flute Machine Taps with reinforced shank





M

MF

6H



C/2.5P

D/4P

RH

material

HSSE

Co

surface treatment

TIN

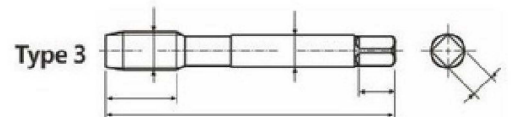
TiCN

TiAlN

Unit: mm

Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SA812001	M2	0.4	6H	45	8	13	2.5P/4P	2.8	2.1	3	1.6	■
SA812002	M2.5	0.45	6H	50	9	15		2.8	2.1		2.1	
SA812003	M3	0.5	6H	56	11	18		3.5	2.7		2.5	
SA812004	M4	0.7	6H	63	13	21		4.5	3.4		3.3	
SA812005	M5	0.8	6H	70	16	25		6	4.9		4.2	
SA812006	M6	1	6H	80	19	30		6	4.9		5	
SA812007	M8	1.25	6H	90	22	35		8	6.2		6.8	
SA812008	MF8*1	1	6H	90	22	35		8	6.2		7	
SA812009	M10	1.5	6H	100	24	39		10	8		8.5	
SA812010	MF10*1	1	6H	90	16	39		10	8		9	
SA812011	MF10*1.25	1.25	6H	100	24	39		10	8		8.8	

DIN376 Straight Flute Machine Taps with reduced shank

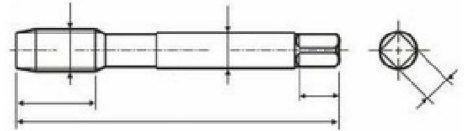


      material  surface treatment    Unit: mm											
Code	Size	P	T	L	I	lc	d1	a	Flute	d0	Stock
SA812101	M4	0.7	6H	63	13	4P	2.8	2.1	3	3.3	■
SA812102	M5	0.8	6H	70	16		3.5	2.7		4.2	
SA812103	M6	1	6H	80	19		4.5	3.4		5.0	
SA812104	M8	1.25	6H	90	22		6	4.9		6.8	
SA812105	M10	1.5	6H	100	24		7	5.5		8.5	
SA812106	M12	1.75	6H	110	28		9	7		10.3	
SA812107	M14	2	6H	110	30		11	9		12.0	
SA812108	M16	2	6H	110	32		12	9		14.0	
SA812109	M18	2.5	6H	125	34		14	11	4	15.5	
SA812110	M20	2.5	6H	140	34		16	12		17.5	
SA812111	M22	2.5	6H	140	34		18	14.5		19.5	
SA812112	M24	3	6H	160	38		18	14.5		21.0	
SA812113	M27	3	6H	160	45		20	16		24	
SA812114	M30	3.5	6H	180	48		22	18		26.5	
SA812115	M33	3.5	6H	180	51		25	20		29.5	
SA812116	M36	4	6H	200	57		28	22		32	

DIN374 Straight Flute Machine Taps with reduced shank



Type 3



MF

6H



material



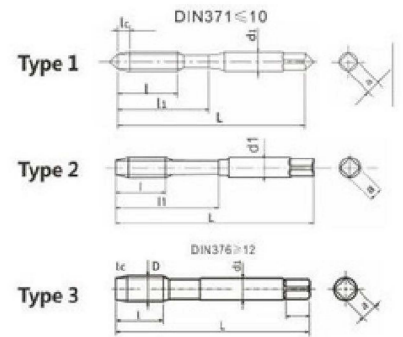
surface treatment



Unit: mm

Code	Size	P	T	L	I	lc	d1	a	Flute	d0	Stock
SA812121	MF4*0.5	0.5	6H	63	10	4P	2.8	2.1	3	3.5	■
SA812122	MF5*0.5	0.5	6H	70	11		3.5	2.7		4.5	
SA812123	MF6*0.5	0.5	6H	80	13		4.5	3.4		5.5	
SA812124	MF6*0.75	0.75	6H	80	13		4.5	3.4		5.3	
SA812125	MF8*0.75	0.75	6H	80	14		6	4.9		7.3	
SA812126	MF8*1	1	6H	90	22		6	4.9		7.0	
SA812127	MF10*0.75	0.75	6H	90	16		7	5.5		9.3	
SA812128	MF10*1	1	6H	90	16		7	5.5		9.0	
SA812129	MF10*1.25	1.25	6H	100	24		7	5.5		8.8	
SA812130	MF12*1	1.5	6H	100	18		9	7		11.0	
SA812131	MF12*1.25	1	6H	100	28		9	7		10.8	
SA812132	MF12*1.5	1.25	6H	100	28		9	7		10.5	
SA812133	MF14*1	1.5	6H	100	20		11	9		13.0	
SA812134	MF14*1.25	1	6H	100	30		11	9		12.8	
SA812135	MF14*1.5	1.5	6H	100	30		11	9		12.5	
SA812136	MF16*1	1	6H	100	20		12	9		15.0	
SA812137	MF16*1.5	1.5	6H	100	32		12	9		14.5	
SA812138	MF18*1	1	6H	110	25		14	11	4	17.0	
SA812139	MF18*1.5	1.5	6H	110	25		14	11		16.5	
SA812140	MF20*1	1	6H	125	25		16	12		19.0	
SA812141	MF20*1.5	1.5	6H	125	25		16	12		18.5	
SA812142	MF20*2	2	6H	140	37		16	12		18.0	
SA812143	MF22*1	1	6H	125	25		16	14.5		21.0	
SA812144	MF22*1.5	1.5	6H	125	25		18	14.5		20.5	
SA812145	MF22*2	2	6H	140	38		18	14.5		20.0	
SA812146	MF24*1	1	6H	140	28		18	14.5		23.0	
SA812147	MF24*1.5	1.5	6H	140	28		18	14.5		22.5	
SA812148	MF24*2	2	6H	140	45		18	14.5		22.0	
SA812149	MF27*1	1	6H	140	28		20	16		26	
SA812150	MF27*1.5	1.5	6H	140	28		20	16		25.5	
SA812151	MF27*2	2	6H	140	45		20	16		25	
SA812152	MF30*1	1	6H	150	28		22	18		29	
SA812153	MF30*1.5	1.5	6H	150	28		22	18		28.5	
SA812154	MF30*2	2	6H	150	28		22	18		28	
SA812155	MF30*3	3	6H	180	45		22	18		27	
SA812156	MF33*1.5	1.5	6H	160	28		25	20		31.5	
SA812157	MF33*2	2	6H	160	28		25	20		31	
SA812158	MF33*3	3	6H	180	51		25	20		30	
SA812159	MF36*1.5	1.5	6H	170	30		28	22		34.5	
SA812160	MF36*2	2	6H	170	30		28	22		34	
SA812161	MF36*3	3	6H	200	57		28	22		33	

DIN371/376 Left Cutting Spiral Point Machine Taps



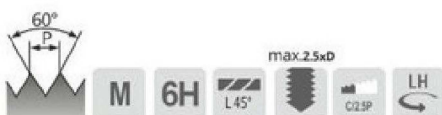
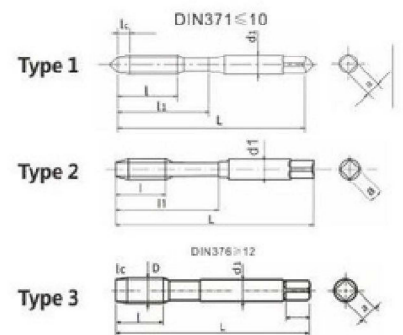
material **HSSE Co**

surface treatment **TiN** **TiCN** **TiAlN**

Unit: mm

Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SA612701	M3 LH	0.5	6H	56	11	18	5P	3.5	2.7	3	2.5	■
SA612702	M4 LH	0.7	6H	63	13	21		4.5	3.4		3.3	
SA612703	M5 LH	0.8	6H	70	16	25		6	4.9		4.2	
SA612704	M6 LH	1	6H	80	19	30		6	4.9		5	
SA612705	M8 LH	1.25	6H	90	22	35		8	6.2		6.8	
SA612706	M10 LH	1.5	6H	100	24	39		10	8		8.5	
SA612707	M12 LH	1.75	6H	110	28	/		9	7	10.3		
SA612708	M14 LH	2	6H	110	30			11	9	12		
SA612709	M16 LH	2	6H	110	32			12	9	14		
SA612710	M18 LH	2.5	6H	125	37			14	11	15.5		
SA612711	M20 LH	2.5	6H	140	37			16	12	17.5		

DIN371/376 Left Cutting L45° Spiral Flute Machine Tap



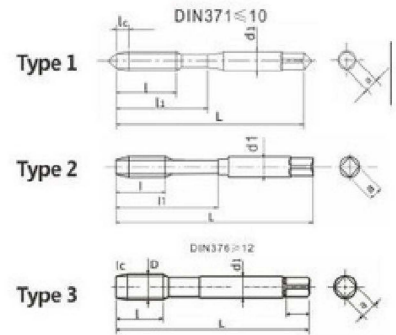
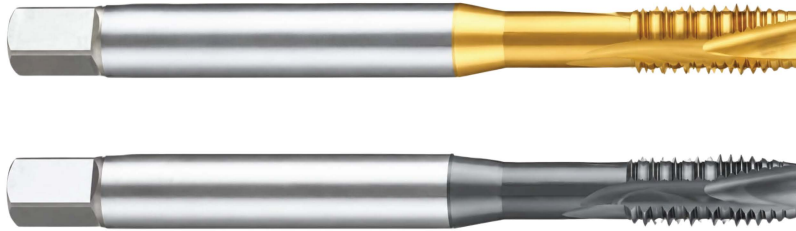
material **HSSE Co**

surface treatment **TiN** **TiCN** **TiAlN**

Unit: mm

Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SA512701	M3 LH	0.5	6H	56	6	18	2.5P	3.5	2.7	3	2.5	■
SA512702	M4 LH	0.7	6H	63	8	21		4.5	3.4		3.3	
SA512703	M5 LH	0.8	6H	70	9	25		6	4.9		4.2	
SA512704	M6 LH	1	6H	80	11	30		6	4.9		5	
SA512705	M8 LH	1.25	6H	90	14	35		8	6.2		6.8	
SA512706	M10 LH	1.5	6H	100	16	39		10	8		8.5	
SA512707	M12 LH	1.75	6H	110	18	/		9	7	10.3		
SA512708	M14 LH	2	6H	110	20			11	9	12		
SA512709	M16 LH	2	6H	110	20			12	9	14		
SA512710	M18 LH	2.5	6H	125	25			14	11	15.5		
SA512711	M20 LH	2.5	6H	140	25		16	12	17.5			

DIN371/376 Spiral Point Machine Taps with alternating teeth



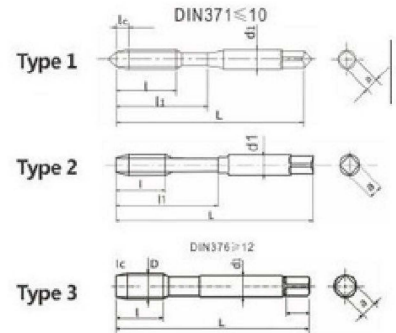
material **HSSE Co**

surface treatment **TiN TiCN TiAlN**

Unit: mm

Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SA692001	M3 AZ	0.5	6H	56	11	18	5P	3.5	2.7	3	2.5	■
SA692002	M4 AZ	0.7	6H	63	13	21		4.5	3.4		3.3	
SA692003	M5 AZ	0.8	6H	70	16	25		6	4.9		4.2	
SA692004	M6 AZ	1	6H	80	19	30		6	4.9		5	
SA692005	M8 AZ	1.25	6H	90	22	35		8	6.2		6.8	
SA692006	M10 AZ	1.5	6H	100	24	39		10	8		8.5	
SA692007	M12 AZ	1.75	6H	110	28	/		9	7	4	10.3	
SA692008	M14 AZ	2	6H	110	30			11	9		12	
SA692009	M16 AZ	2	6H	110	32			12	9		14	
SA692010	M18 AZ	2.5	6H	125	37			14	11		15.5	
SA692011	M20 AZ	2.5	6H	140	37			16	12		17.5	

DIN371/376 R15° Spiral Flute Machine Tap with alternating teeth



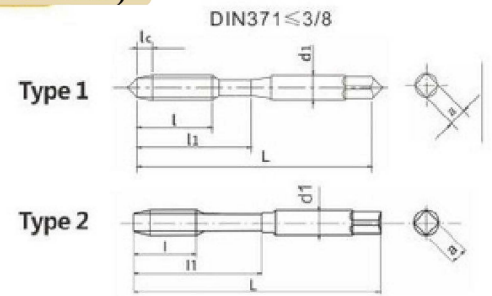
material **HSSE Co**

surface treatment **TiN TiCN TiAlN**

Unit: mm

Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SA592001	M3 AZ	0.5	6H	56	6	18	2.5P	3.5	2.7	3	2.5	■
SA592002	M4 AZ	0.7	6H	63	8	21		4.5	3.4		3.3	
SA592003	M5 AZ	0.8	6H	70	9	25		6	4.9		4.2	
SA592004	M6 AZ	1	6H	80	11	30		6	4.9		5	
SA592005	M8 AZ	1.25	6H	90	14	35		8	6.2		6.8	
SA592006	M10 AZ	1.5	6H	100	16	39		10	8		8.5	
SA592007	M12 AZ	1.75	6H	110	18	/		9	7	10.3		
SA592008	M14 AZ	2	6H	110	20			11	9	12		
SA592009	M16 AZ	2	6H	110	20			12	9	14		
SA592010	M18 AZ	2.5	6H	125	25			14	11	4	15.5	
SA59200	M20 AZ	2.5	6H	140	25	16	12	17.5				

≈DIN 371 Spiral Point Machine Taps with reinforced shank(UNC/UNF)



material HSSE Co

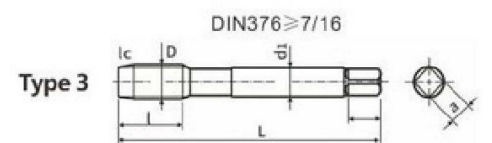
surface treatment

TiN TiCN TiAlN

Unit: mm

Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SA622001	No4-40UNC	0.635	2B	56	11	18	5P	3.5	2.7	3	2.30	■
SA622002	No5-40UNC	0.635	2B	56	11	18		3.5	2.7		2.60	
SA622003	No6-32UNC	0.794	2B	56	12	20		4	3		2.80	
SA622004	No6-40UNF	0.635	2B	56	12	20		4	3		2.90	
SA622005	No8-32UNC	0.794	2B	63	13	21		4.5	3.4		3.40	
SA622006	No8-36UNF	0.706	2B	63	13	21		4.5	3.4		3.50	
SA622007	No10-24UNC	1.058	2B	70	16	24		6	4.9		3.90	
SA622008	No10-32UNF	0.794	2B	70	16	24		6	4.9		4.10	
SA622009	No12-24UNC	1.058	2B	80	17	25		6	4.9		4.50	
SA622010	No12-28UNF	0.907	2B	80	17	25		6	4.9		4.60	
SA622011	1/4-20UNC	1.27	2B	80	19	29		7	5.5		5.10	
SA622012	1/4-28UNF	0.907	2B	80	19	29		7	5.5		5.50	
SA622013	5/16-18UNC	1.411	2B	90	22	37		8	6.2		6.60	
SA622014	5/16-24UNF	1.058	2B	90	22	37		8	6.2		6.90	
SA622015	3/8-16UNC	1.588	2B	100	24	41		10	8		8.00	
SA622016	3/8-24UNF	1.058	2B	100	24	41		10	8		8.50	

≈DIN376/374 Spiral Point Machine Taps with reduced shank(UNC/UNF)



material HSSE Co

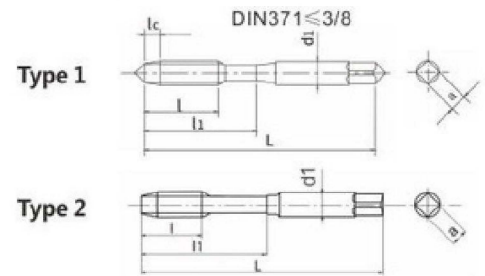
surface treatment

TiN TiCN TiAlN

Unit: mm

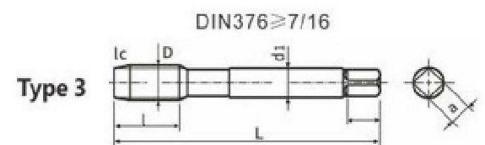
Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SA622101	7/16-14UNC	1.814	2B	100	25	48	5P	8	6.2	3	9.40	■
SA622102	7/16-20UNF	1.27	2B	100	25	48		8	6.2		9.90	
SA622103	1/2-13UNC	1.954	2B	110	29	48		9	7		10.80	
SA622104	1/2-20UNF	1.27	2B	110	29	48		9	7		11.50	
SA622105	9/16-12UNC	2.117	2B	110	30	48		11	9		12.20	
SA622106	9/16-18UNF	1.411	2B	110	30	48		11	9		12.90	
SA622107	5/8-11UNC	2.309	2B	110	32	52		12	9		13.60	
SA622108	5/8-18UNF	1.411	2B	110	32	52		12	9		14.50	
SA622109	3/4-10UNC	2.54	2B	125	37	58		14	11	4	16.5	
SA622110	3/4-16UNF	1.588	2B	125	37	58		14	11		17.5	
SA622111	7/8-9UNC	2.822	2B	140	38	63		18	14.5		19.5	
SA622112	7/8-14UNF	1.814	2B	140	38	63		18	14.5		20.5	
SA622113	1"-8UNC	3.175	2B	160	45	66		20	16		22.3	
SA622114	1"-12UNF	2.117	2B	160	45	66		20	16		23.3	

≈DIN 371 R45° Spiral Flute Machine Taps with reinforced shank(UNC/UNF)



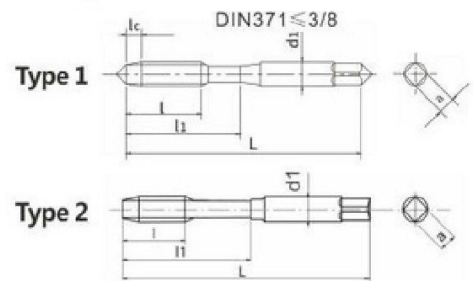
Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SA522001	No4-40UNC	0.635	2B	56	6	18	2.5P	3.5	2.7	3	2.30	■
SA522002	No5-40UNC	0.635	2B	56	6	18		3.5	2.7		2.60	
SA522003	No6-32UNC	0.794	2B	56	7	20		4	3		2.80	
SA522004	No6-40UNF	0.635	2B	56	7	20		4	3		2.90	
SA522005	No8-32UNC	0.794	2B	63	7	21		4.5	3.4		3.40	
SA522006	No8-36UNF	0.706	2B	63	7	21		4.5	3.4		3.50	
SA522007	No10-24UNC	1.058	2B	70	10	24		6	4.9		3.90	
SA522008	No10-32UNF	0.794	2B	70	10	24		6	4.9		4.10	
SA522009	No12-24UNC	1.058	2B	80	10	25		6	4.9		4.50	
SA522010	No12-28UNF	0.907	2B	80	10	25		6	4.9		4.60	
SA522011	1/4-20UNC	1.27	2B	80	12	29		7	5.5		5.10	
SA522012	1/4-28UNF	0.907	2B	80	12	29		7	5.5		5.50	
SA522013	5/16-18UNC	1.411	2B	90	14	37		8	6.2		6.60	
SA522014	5/16-24UNF	1.058	2B	90	14	37		8	6.2		6.90	
SA522015	3/8-16UNC	1.588	2B	100	16	41		10	8		8.00	
SA522016	3/8-24UNF	1.058	2B	100	16	41		10	8		8.50	

≈DIN376/374 R45° Spiral Flute Machine Taps with reduced shank(UNC/UNF)



Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SA522101	7/16-14UNC	1.814	2B	100	18	48	2.5P	8	6.2	3	9.40	■
SA522102	7/16-20UNF	1.27	2B	100	18	48		8	6.2		9.90	
SA522103	1/2-13UNC	1.954	2B	110	19	48		9	7		10.80	
SA522104	1/2-20UNF	1.27	2B	110	19	48		9	7		11.50	
SA522105	9/16-12UNC	2.117	2B	110	21	48		11	9		12.20	
SA522106	9/16-18UNF	1.411	2B	110	21	48		11	9		12.90	
SA522107	5/8-11UNC	2.309	2B	110	23	52		12	9		13.60	
SA522108	5/8-18UNF	1.411	2B	110	23	52		12	9		14.50	
SA522109	3/4-10UNC	2.54	2B	125	25	58		14	11	4	16.5	
SA522110	3/4-16UNF	1.588	2B	125	25	58		14	11		17.5	
SA522111	7/8-9UNC	2.822	2B	140	28	63		18	14.5		19.5	
SA522112	7/8-14UNF	1.814	2B	140	28	63		18	14.5		20.5	
SA522113	1"-8UNC	3.175	2B	160	31	66		20	16		22.3	
SA522114	1"-12UNF	2.117	2B	160	31	66		20	16		23.3	

≈DIN 371 R35° Spiral Flute Machine Taps with reinforced shank(UNC/UNF)



UNC

UNF

2B

R35°

max.2.5xD



RH

material

HSSE
Co

surface treatment

TiN

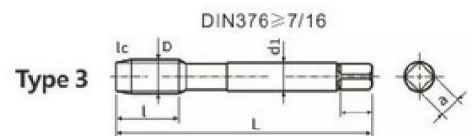
TiCN

TiAlN

Unit: mm

Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SA522301	No4-40UNC	0.635	2B	56	6	18	2.5P	3.5	2.7	3	2.30	■
SA522302	No5-40UNC	0.635	2B	56	6	18		3.5	2.7		2.60	
SA522303	No6-32UNC	0.794	2B	56	7	20		4	3		2.80	
SA522304	No6-40UNF	0.635	2B	56	7	20		4	3		2.90	
SA522305	No8-32UNC	0.794	2B	63	7	21		4.5	3.4		3.40	
SA522306	No8-36UNF	0.706	2B	63	7	21		4.5	3.4		3.50	
SA522307	No10-24UNC	1.058	2B	70	10	24		6	4.9		3.90	
SA522308	No10-32UNF	0.794	2B	70	10	24		6	4.9		4.10	
SA522309	No12-24UNC	1.058	2B	80	10	25		6	4.9		4.50	
SA522310	No12-28UNF	0.907	2B	80	10	25		6	4.9		4.60	
SA522311	1/4-20UNC	1.27	2B	80	12	29		7	5.5		5.10	
SA522312	1/4-28UNF	0.907	2B	80	12	29		7	5.5		5.50	
SA522313	5/16-18UNC	1.411	2B	90	14	37		8	6.2		6.60	
SA522314	5/16-24UNF	1.058	2B	90	14	37		8	6.2		6.90	
SA522315	3/8-16UNC	1.588	2B	100	16	41		10	8		8.00	
SA522316	3/8-24UNF	1.058	2B	100	16	41		10	8		8.50	

≈DIN376/374 R35° Spiral Flute Machine Taps with reduced shank(UNC/UNF)



UNC

UNF

2B

R35°

max.2.5xD



RH

material

HSSE
Co

surface treatment

TiN

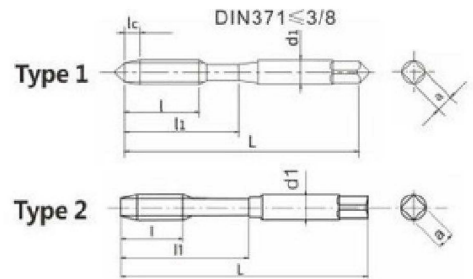
TiCN

TiAlN

Unit: mm

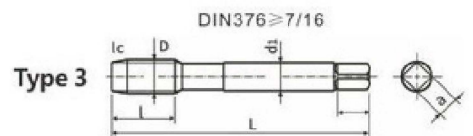
Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SA522401	7/16-14UNC	1.814	2B	100	18	48	2.5P	8	6.2	3	9.40	■
SA522402	7/16-20UNF	1.27	2B	100	18	48		8	6.2		9.90	
SA522403	1/2-13UNC	1.954	2B	110	19	48		9	7		10.80	
SA522404	1/2-20UNF	1.27	2B	110	19	48		9	7		11.50	
SA522405	9/16-12UNC	2.117	2B	110	21	48		11	9		12.20	
SA522406	9/16-18UNF	1.411	2B	110	21	48		11	9		12.90	
SA522407	5/8-11UNC	2.309	2B	110	23	52		12	9		13.60	
SA522408	5/8-18UNF	1.411	2B	110	23	52		12	9		14.50	
SA522409	3/4-10UNC	2.54	2B	125	25	58		14	11	4	16.5	
SA522410	3/4-16UNF	1.588	2B	125	25	58		14	11		17.5	
SA522411	7/8-9UNC	2.822	2B	140	28	63		18	14.5		19.5	
SA522412	7/8-14UNF	1.814	2B	140	28	63		18	14.5		20.5	
SA522413	1"-8UNC	3.175	2B	160	31	66		20	16		22.3	
SA522414	1"-12UNF	2.117	2B	160	31	66		20	16		23.3	

≈DIN 371 R15° Spiral Flute Machine Taps with reinforced shank(UNC/UNF)



    Unit: mm												
Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SA522501	No4-40UNC	0.635	2B	56	6	18	2.5P	3.5	2.7	3	2.30	■
SA522502	No5-40UNC	0.635	2B	56	6	18		3.5	2.7		2.60	
SA522503	No6-32UNC	0.794	2B	56	7	20		4	3		2.80	
SA522504	No6-40UNF	0.635	2B	56	7	20		4	3		2.90	
SA522505	No8-32UNC	0.794	2B	63	7	21		4.5	3.4		3.40	
SA522506	No8-36UNF	0.706	2B	63	7	21		4.5	3.4		3.50	
SA522507	No10-24UNC	1.058	2B	70	10	24		6	4.9		3.90	
SA522508	No10-32UNF	0.794	2B	70	10	24		6	4.9		4.10	
SA522509	No12-24UNC	1.058	2B	80	10	25		6	4.9		4.50	
SA522510	No12-28UNF	0.907	2B	80	10	25		6	4.9		4.60	
SA522511	1/4-20UNC	1.27	2B	80	12	29		7	5.5		5.10	
SA522512	1/4-28UNF	0.907	2B	80	12	29		7	5.5		5.50	
SA522513	5/16-18UNC	1.411	2B	90	14	37		8	6.2		6.60	
SA522514	5/16-24UNF	1.058	2B	90	14	37		8	6.2		6.90	
SA522515	3/8-16UNC	1.588	2B	100	16	41		10	8		8.00	
SA522516	3/8-24UNF	1.058	2B	100	16	41		10	8		8.50	

≈DIN376/374 R15° Spiral Flute Machine Taps with reduced shank(UNC/UNF)



    Unit: mm												
Code	Size	P	T	L	I	l1	lc	d1	a	Flute	d0	Stock
SA522601	7/16-14UNC	1.814	2B	100	18	48	2.5P	8	6.2	3	9.40	■
SA522602	7/16-20UNF	1.27	2B	100	18	48		8	6.2		9.90	
SA522603	1/2-13UNC	1.954	2B	110	19	48		9	7		10.80	
SA522604	1/2-20UNF	1.27	2B	110	19	48		9	7		11.50	
SA522605	9/16-12UNC	2.117	2B	110	21	48		11	9		12.20	
SA522606	9/16-18UNF	1.411	2B	110	21	48		11	9		12.90	
SA522607	5/8-11UNC	2.309	2B	110	23	52		12	9		13.60	
SA522608	5/8-18UNF	1.411	2B	110	23	52		12	9		14.50	
SA522609	3/4-10UNC	2.54	2B	125	25	58		14	11	4	16.5	
SA522610	3/4-16UNF	1.588	2B	125	25	58		14	11		17.5	
SA522611	7/8-9UNC	2.822	2B	140	28	63		18	14.5		19.5	
SA522612	7/8-14UNF	1.814	2B	140	28	63		18	14.5		20.5	
SA522613	1"-8UNC	3.175	2B	160	31	66		20	16		22.3	
SA522614	1"-12UNF	2.117	2B	160	31	66		20	16		23.3	

DIN371/376 R45° Spiral Flute Machine Taps(For Aluminium Wrought Alloys)

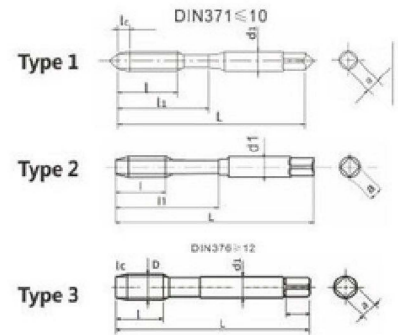


material **HSSE Co**

surface treatment

Unit: mm

Code	Size	P	T	L	I	II	lc	d1	a	Flute	d0	Stock
SA512001-AI	M2	0.4	6H	45	6	13	2.5P	2.8	2.1	2	1.6	■
SA512002-AI	M2.5	0.45	6H	50	6	15		2.8	2.1		2.1	
SA512003-AI	M3	0.5	6H	56	6	18		3.5	2.7		2.5	
SA512004-AI	M4	0.7	6H	63	8	21		4.5	3.4		3.3	
SA512005-AI	M5	0.8	6H	70	9	25		6	4.9		4.2	
SA512006-AI	M6	1	6H	80	11	30		6	4.9		5	
SA512007-AI	M8	1.25	6H	90	14	35		8	6.2		6.8	
SA512009-AI	M10	1.5	6H	100	16	39		10	8		8.5	
SA512106-AI	M12	1.75	6H	110	18	/		9	7	10.3		
SA512107-AI	M14	2	6H	110	20			11	9	12		
SA512108-AI	M16	2	6H	110	20			12	9	14		
SA512109-AI	M18	2.5	6H	125	25			14	11	3	15.5	
SA512110-AI	M20	2.5	6H	140	25			16	12		17.5	



DIN371/376 Spiral Point Machine Taps(For Aluminium Wrought Alloys)

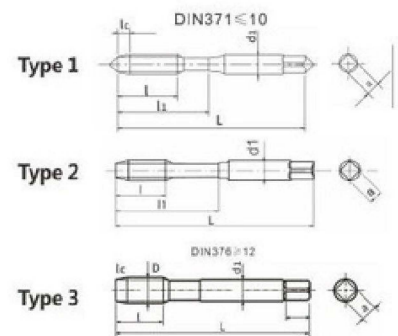


material **HSSE Co**

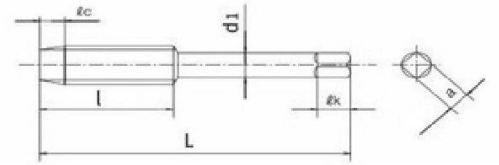
surface treatment

Unit: mm

Code	Size	P	T	L	I	II	lc	d1	a	Flute	d0	Stock	
SA612001-AI	M2	0.4	6H	45	8	13		5P	2.8	2.1	3	1.6	■
SA612002-AI	M2.5	0.45	6H	50	9	15			2.8	2.1		2.1	
SA612003-AI	M3	0.5	6H	56	11	18			3.5	2.7		2.5	
SA612004-AI	M4	0.7	6H	63	13	21			4.5	3.4		3.3	
SA612005-AI	M5	0.8	6H	70	16	25			6	4.9		4.2	
SA612006-AI	M6	1	6H	80	19	30			6	4.9		5	
SA612007-AI	M8	1.25	6H	90	22	35			8	6.2		6.8	
SA612009-AI	M10	1.5	6H	100	24	39			10	8		8.5	
SA612106-AI	M12	1.75	6H	110	28	/			9	7		10.3	
SA612107-AI	M14	2	6H	110	30				11	9		12	
SA612108-AI	M16	2	6H	110	32			12	9	14			
SA612109-AI	M18	2.5	6H	125	37			14	11	4	15.5		
SA612110-AI	M20	2.5	6H	140	37			16	12		17.5		

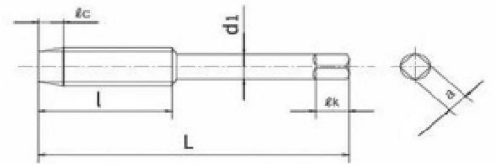


DIN5156 Straight Flute Machine Taps with straight pipe thread



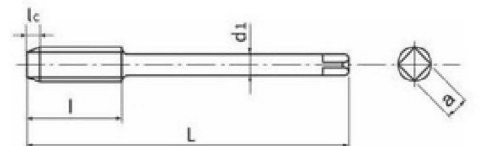
Code	Size	d	Pitch P		L	I	d1	lc	a	Flute	d0	Stock
			No. of teeth/Inch	mm								
SA872001	G 1/16-28	7.723	28	0.907	90	22	6	2.5P	4.9	3	6.7	■
SA872002	G 1/8-28	9.728			90	20	7		5.5		8.7	
SA872003	G 1/4-19	13.157	19	1.337	100	22	11		9	4	11.7	
SA872004	G 3/8-19	16.662			100	22	12		9		15.2	
SA872005	G 1/2-14	20.955	14	1.814	125	25	16		12		19	
SA872006	G 3/4-14	26.411			140	28	20		16		24.5	
SA872007	G 1-11	33.249	11	2.309	160	30	25		20		30.6	

DIN5156 Spiral Flute Machine Taps with straight pipe thread



Code	Size	d	Pitch P		L	I	d1	lc	a	Flute	d0	Stock
			No. of teeth/Inch	mm								
SA572001	G 1/16-28	7.723	28	0.907	90	22	6	2.5P	4.9	3	6.7	■
SA572002	G 1/8-28	9.728			90	20	7		5.5		8.7	
SA572003	G 1/4-19	13.157	19	1.337	100	22	11		9	4	11.7	
SA572004	G 3/8-19	16.662			100	22	12		9		15.2	
SA572005	G 1/2-14	20.955	14	1.814	125	25	16		12		19	
SA572006	G 3/4-14	26.411			140	28	20		16		24.5	
SA572007	G 1-11	33.249	11	2.309	160	30	25		20		30.6	

DIN5156 Spiral Point Machine Taps with straight pipe thread



Code	Size	d	Pitch P		L	I	d1	lc	a	Flute	d0	Stock
			No. of teeth/Inch	mm								
SA672001	G 1/16-28	7.723	28	0.907	90	22	6	2.5P	4.9	3	6.7	■
SA672002	G 1/8-28	9.728			90	20	7		5.5		8.7	
SA672003	G 1/4-19	13.157	19	1.337	100	22	11		9	4	11.7	
SA672004	G 3/8-19	16.662			100	22	12		9		15.2	
SA672005	G 1/2-14	20.955	14	1.814	125	25	16		12		19	
SA672006	G 3/4-14	26.411			140	28	20		16		24.5	
SA672007	G 1-11	33.249	11	2.309	160	30	25		20		30.6	

DIN5156 Straight Flute Machine Taps with taper pipe thread



Code	Size	d	Pitch P		L	I	Ig	lc	d1	a	Flute	Stock
			No. of teeth/Inch	mm								
SA882001	Rc 1/16-28	7.723	28	0.907	90	18	10.1	2.5P	6	4.9	3	■
SA882002	Rc 1/8-28	9.728			90	19	13		7	5.5		
SA882003	Rc 1/4-19	13.157	19	1.337	100	28	21		11	9	4	
SA882004	Rc 3/8-19	16.662			100	28	21		12	9		
SA882005	Rc 1/2-14	20.955	14	1.814	125	35	25		16	12		
SA882006	Rc 3/4-14	26.441			140	35	25		20	16		
SA882007	Rc 1-11	33.249	11	2.309	160	45	32		25	20		

DIN5156 Straight Flute Machine Taps with straight pipe thread



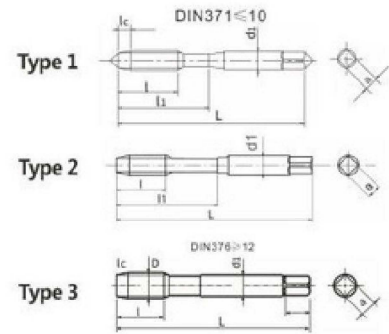
Code	Size	d	Pitch P		L	I	d1	lc	a	Flute		Stock
			No. of teeth/Inch	mm								
SA852001	NPSC 1/8-27	10.242	27	0.941	90	20	7	2.5P	5.5	4	8.7	■
SA852002	NPSC 1/4-18	13.616	18	1.411	100	22	11		9		11.4	
SA852003	NPSC 3/8-18	17.055			100	22	12		9		14.8	
SA852004	NPSC 1/2-14	21.223	14	1.814	125	25	16		12		18.4	
SA852005	NPSC 3/4-14	26.568			140	28	20		16		23.7	
SA852006	NPSC 1-11.5	33.227	11.5	2.209	160	30	25		20		29.8	

DIN5156 Straight Flute Machine Taps with taper pipe thread



Code	Size	Pitch P		L	I	Ig	lc	d1	a	Flute	Stock
		No. of teeth/Inch	mm								
SA862001	NPT 1/16-27	27	0.941	90	18	12.0	2.5P	6.0	4.9	3	■
SA862002	NPT 1/8-27			90	19	12.1		7.0	5.5		
SA862003	NPT 1/4-18	18	1.411	100	28	17.4		11.0	9	4	
SA862004	NPT 3/8-18			100	28	17.6		12.0	9		
SA862005	NPT 1/2-14	14	1.814	125	35	22.9		16.0	12		
SA862006	NPT 3/4-14			140	35	22.9		20.0	16		
SA862007	NPT 1-11.5	11.5	2.209	160	45	27.4		25.0	20		

DIN Extra-long Spiral Point Machine Taps

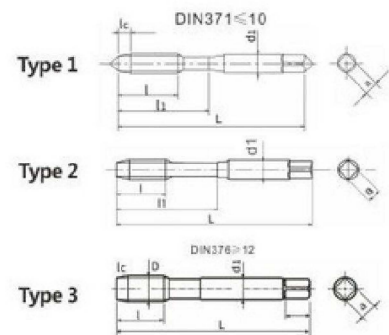


material **HSSE Co** surface treatment **TiN** **TiCN** **TiAlN**

Unit: mm

Code	Size	P	T	L	I	II	lc	d1	a	Flute	d0	Stock
SA612003-LS	M3*100	0.5	6H	100	11	18	5P	3.5	2.7	3	2.5	■
SA612004-LS	M4*125	0.7		125	13	21		4.5	3.4		3.3	
SA612005-LS	M5*140	0.8		140	16	24		6	4.9		4.2	
SA612006-LS	M6*160	1		160	19	29		6	4.9		5	
SA612007-LS	M8*180	1.25		180	22	37		8	6.2		6.8	
SA612009-LS	M10*200	1.5		200	24	41		10	8		8.5	
SA612103-LS	M6*160	1		160	19	/		4.5	3.4		5	
SA612104-LS	M8*180	1.25		160	22			6	4.9		6.8	
SA612105-LS	M10*200	1.5		200	24			7	5.5		8.5	
SA612106-LS	M12*200	1.75		200	26			9	7		10.3	
SA612107-LS	M14*200	2		200	30			11	9		12	
SA612108-LS	M16*200	2		200	32			12	9		14	

DIN Extra-long Spiral Flute Machine Taps

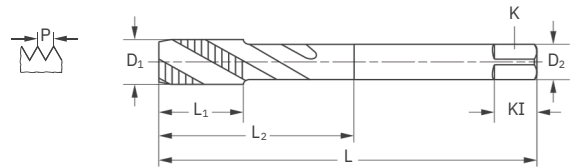
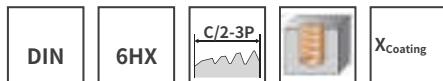


material **HSSE Co** surface treatment **TiN** **TiCN** **TiAlN**

Unit: mm

Code	Size	P	T	L	I	II	lc	d1	a	Flute	d0	Stock
SA512003-LS	M3*100	0.5	6H	100	6	19	2.5P	3.5	2.7	3	2.5	■
SA512004-LS	M4*125	0.7		125	8	21		4.5	3.4		3.3	
SA512005-LS	M5*140	0.8		140	9	24		6	4.9		4.2	
SA512006-LS	M6*160	1		160	11	29		6	4.9		5	
SA512007-LS	M8*180	1.25		180	14	37		8	6.2		6.8	
SA512009-LS	M10*200	1.5		200	16	41		10	8		8.5	
SA512103-LS	M6*160	1		160	11	/		4.5	3.4		5	
SA512104-LS	M8*180	1.25		180	14			6	4.9		6.8	
SA512105-LS	M10*200	1.5		200	16			7	5.5		8.5	
SA512106-LS	M12*200	1.75		200	18			9	7		10.3	
SA512107-LS	M14*200	2		200	20			11	9		12	
SA512108-LS	M16*200	2		200	20			12	9		14	

German Standard HSS-E High-Speed Steel Multi-Purpose XM-SFT DIN HSS-E X Coating Spiral Flute Tap for Multi Purpose

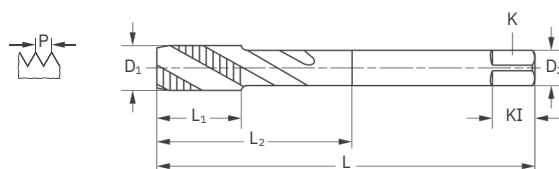
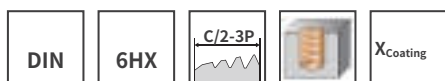


Order number	D ₁	P mm	L mm	D ₂ mm	L ₁ mm	L ₂ mm	K mm	KI mm	N
XM020040045-035SFT	M2	0.4	45	3.5	4	7.6	2.1	5	3
XM025045050-035SFT	M2.5	0.45	50	3.5	4	9.3	2.1	5	3
XM030050056-035SFT	M3	0.5	56	3.5	6	11	2.7	6	3
XM040070063-045SFT	M4	0.7	63	4.5	7	14.8	3.4	6	3
XM050080070-06SFT	M5	0.8	70	6	8	20.7	4.9	8	3
XM060100080-06SFT	M6	1.0	80	6	10	25	4.9	8	3
XM080100090-08SFT	M8	1.0	90	8	12	35	6.2	9	3
XM080125090-08SFT	M8	1.25	90	8	12	35	6.2	9	3
XM100100100-10SFT	M10	1.0	100	10	15	39	8	11	3
XM100125100-10SFT	M10	1.25	100	10	15	39	8	11	3
XM100150100-10SFT	M10	1.5	100	10	15	39	8	11	3
XM120125110-09SFT	M12	1.25	110	9	16	42	7	10	4
XM120150110-09SFT	M12	1.5	110	9	16	42	7	10	4
XM120175110-09SFT	M12	1.75	110	9	16	42	7	10	4
XM140150110-11SFT	M14	1.5	110	11	20	50	9	12	4
XM140200110-11SFT	M14	2.0	110	11	20	50	9	12	4
XM160150110-12SFT	M16	1.5	110	12	20	55	9	12	4
XM160200110-12SFT	M16	2.0	110	12	20	55	9	12	4

SELECT

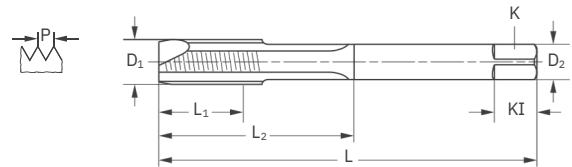
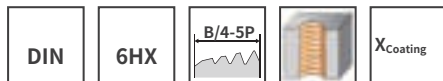
●● Main applications ● Other applications

German Standard HSS-E High-Speed Steel Multipurpose Spiral Tap XM-SFT DIN HSS-E X Coating Spiral Flute Tap for Multi Purpose



Order number	D ₁	P mm	L mm	D ₂ mm	L ₁ mm	L ₂ mm	K mm	KI mm	N
XM180150125-14SFT	M18	1.5	125	14	25	63.5	11	14	4
XM180250125-14SFT	M18	2.5	125	14	25	63.5	11	14	4
XM200150140-16SFT	M20	1.5	140	16	25	70	12	15	4
XM200250140-16SFT	M20	2.5	140	16	25	70	12	15	4
XM220150140-18SFT	M22	1.5	140	18	25	70	14.5	17	4
XM220250140-18SFT	M22	2.5	140	18	25	70	14.5	17	4
XM240200160-18SFT	M24	2.0	160	18	30	80	14.5	17	4
XM240300160-18SFT	M24	3.0	160	18	30	80	14.5	17	4
XM270300160-20SFT	M27	3.0	160	20	30	80	16	19	4
XM300200180-22SFT	M30	2.0	180	22	35	100	18	21	4
XM300350180-22SFT	M30	3.5	180	22	35	90	18	21	4
XM360400200-28SFT	M36	4.0	200	28	40	100	22	25	4
XM420450200-32SFT	M42	4.5	200	32	45	100	27	24	5
XM450450220-36SFT	M45	4.5	220	36	38	135	29	32	4
XM480500250-36SFT	M48	5.0	250	36	40	140	29	32	4
XM520500250-40SFT	M52	5.0	250	40	42	160	32	35	4
XM560550250-40SFT	M56	5.5	250	40	44	170	32	35	4
XM600550280-45SFT	M60	5.5	280	45	46	180	32	35	4

German Standard HSS-E High-Speed Steel Multipurpose Tip Tap XM-POT DIN HSS-E X Coating Spiral Point Tap for Multi Purpose

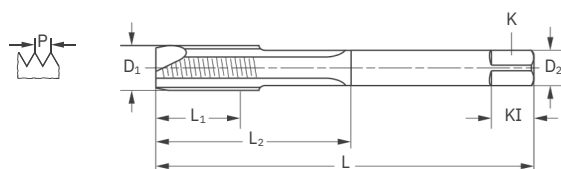
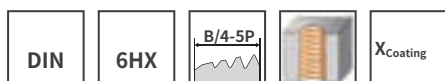


Order number	D ₁	P mm	L mm	D ₂ mm	L ₁ mm	L ₂ mm	K mm	KI mm	N
XM020040045-035POT	M2	0.4	45	3.5	4	10	2.1	5	3
XM025045050-035POT	M2.5	0.45	50	3.5	4	13.5	2.1	5	3
XM030050056-035POT	M3	0.5	56	3.5	9	19	2.7	6	3
XM040070063-045POT	M4	0.7	63	4.5	12	22	3.4	6	3
XM050080070-06POT	M5	0.8	70	6	13	26	4.9	8	3
XM060100080-06POT	M6	1.0	80	6	15	31	4.9	8	3
XM080100090-08POT	M8	1.0	90	8	18	36	6.2	9	3
XM080125090-08POT	M8	1.25	90	8	18	36	6.2	9	3
XM100125100-10POT	M10	1.25	100	10	20	40	8	11	3
XM100150100-10POT	M10	1.5	100	10	20	40	8	11	3
XM120125110-09POT	M12	1.25	110	9	23	43	7	10	4
XM120150110-09POT	M12	1.5	110	9	23	43	7	10	4
XM120175110-09POT	M12	1.75	110	9	23	43	7	10	4
XM140150110-11POT	M14	1.5	110	11	25	50	9	12	4
XM140200110-11POT	M14	2.0	110	11	25	50	9	12	4
XM160150110-12POT	M16	1.5	110	12	25	56	9	12	4
XM160200110-12POT	M16	2.0	110	12	25	56	9	12	4
XM180150125-14POT	M18	1.5	125	14	30	63.5	11	14	4
XM180250125-14POT	M18	2.5	125	14	30	63.5	11	14	4

SELECT

●● Main applications ● Other applications

German Standard HSS-E High-Speed Steel Multipurpose Tip Tap XM-POT DIN HSS-E X Coating Spiral Point Tap for Multi Purpose

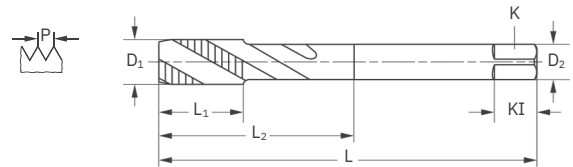
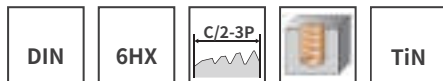
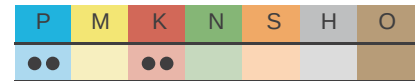


Order number	D ₁	P mm	L mm	D ₂ mm	L ₁ mm	L ₂ mm	K mm	KI mm	N
XM200150140-16POT	M20	1.5	140	16	30	71	12	15	4
XM200250140-16POT	M20	2.5	140	16	30	71	12	15	4
XM220150140-18POT	M22	1.5	140	18	25	70	14.5	17	4
XM220250140-18POT	M22	2.5	140	18	25	70	14.5	17	4
XM240200160-18POT	M24	2.0	160	18	36	80	14.5	17	4
XM240300160-18POT	M24	3.0	160	18	36	80	14.5	17	4
XM270300160-20POT	M27	3.0	160	20	36	80	16	19	4
XM300200180-22POT	M30	2.0	180	22	42	90	18	21	4
XM300350180-22POT	M30	3.5	180	22	42	90	18	21	4
XM360400200-28POT	M36	4.0	200	28	50	120	22	25	5
XM420450200-32POT	M42	4.5	200	32	45	100	27	24	4
XM450450220-36POT	M45	4.5	220	36	38	135	29	32	4
XM480500250-36POT	M48	5.0	250	36	40	140	29	32	4
XM520500250-40POT	M52	5.0	250	40	42	160	32	35	4
XM560550250-40POT	M56	5.5	250	40	44	170	32	35	4
XM600550280-45POT	M60	5.5	280	45	46	180	32	35	4

SELECT

●● Main applications ● Other applications

German Standard HSS-E High-Speed Steel Spiral Taps for Large Components WG-SFT DIN HSS-E TiN Coating Spiral Flute Tap for Large Diameter Holes



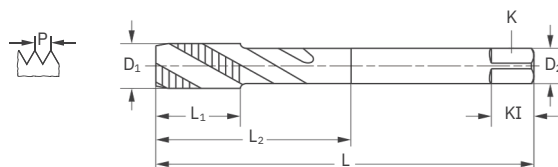
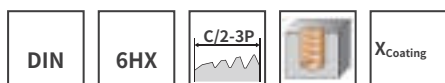
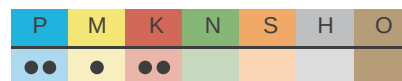
Order number	D ₁	P mm	L mm	D ₂ mm	L ₁ mm	L ₂ mm	K mm	KI mm	N
MNHX300350250-22SFT38	M30	3.5	250	22	35	150	18	21	4
MNHX330200250-25SFT38	M33	2.0	250	25	35	150	20	23	4
MNHX330350250-25SFT38	M33	3.5	250	25	35	150	20	23	4
MNHX360400200-28SFT38	M36	4.0	200	28	40	100	22	25	4
MNHX360400250-28SFT38	M36	4.0	250	28	40	130	22	25	4
MNHX390400300-32SFT38	M39	4.0	300	32	40	180	24	27	4
MNHX420450300-32SFT38	M42	4.5	300	32	45	180	24	27	5
MNHX450450300-36SFT38	M45	4.5	300	36	45	180	29	32	5
XM480500300-36SFT	M48	5.0	300	36	40	140	29	32	4

SELECT

●● Main applications ● Other applications

German Standard HSS-E High-Speed Steel X-Coated Spiral Taps for Large Components

WG-SFT DIN HSS-E X Coating Spiral Flute Tap for Large Diameter Holes



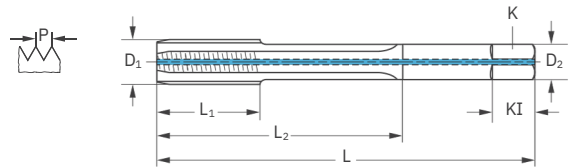
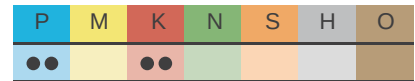
Order number	D ₁	P mm	L mm	D ₂ mm	L ₁ mm	L ₂ mm	K mm	KI mm	N
MNHX300350250-22SFT	M30	3.5	250	22	35	150	18	21	4
MNHX330350250-25SFT	M33	3.5	250	25	35	150	20	23	4
MNHX360400200-28SFT	M36	4.0	200	28	40	100	22	25	4
MNHX360400250-28SFT	M36	4.0	250	28	40	130	22	25	4
MNHX390400300-32SFT	M39	4.0	300	32	40	180	24	27	4
MNHX420450300-32SFT-6H	M42	4.5	300	32	45	180	24	27	5
MNHX420450300-32SFT	M42	4.5	300	32	45	180	24	27	5
MNHX450450300-36SFT-6H	M45	4.5	300	36	45	180	29	32	5
MNHX450450300-36SFT	M45	4.5	300	36	45	180	29	32	5

SELECT

●● Main applications ● Other applications

German Standard HSS-E High-Speed Steel Internal Cooling Straight Flute Tap (Short Chamfer)

MNCS-HT DIN HSS-E TiN Coating Axial Coolant Straight Flute Tap

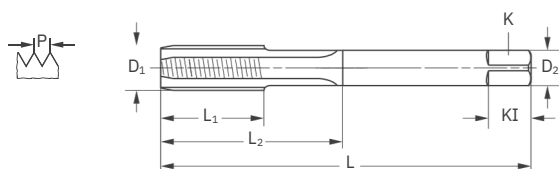
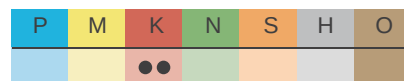


Order number	D ₁	P mm	L mm	D ₂ mm	L ₁ mm	L ₂ mm	K mm	KI mm	N
MNCS050080070-06HT-B	M5	0.8	70	6	13	25	4.9	8	3
MNCS060100080-06HT-B	M6	1.0	80	6	15	30	4.9	8	3
MNCS080125090-08HT-B	M8	1.25	90	8	18	35	6.2	9	4
MNCS100150100-10HT-B	M10	1.5	100	10	20	39	8	11	4
MNCS120175110-09HT-B	M12	1.75	110	9	23	42	7	10	4
MNC120175200-09HT-B	M12	1.75	200	9	23	100	7	10	3
MNCS140200110-12HT-B	M14	2.0	110	12	20	55	9	12	4
MNCS160150110-12HT-B	M16	1.5	110	12	25	55	9	12	4
MNCS160200110-12HT-B	M16	2.0	110	12	25	55	9	12	4
MNCS180150125-16HT-B	M18	1.5	125	16	25	70	12	15	4
MNCS180250125-16HT-B	M18	2.5	125	16	25	70	12	15	4
MNCS200150140-16HT-B	M20	1.5	140	16	30	70	12	15	4
MNCS200250140-16HT-B	M20	2.5	140	16	30	70	12	15	4
MNCS220250140-18HT-B	M22	2.5	140	18	36	80	14.5	17	5
MNCS240300160-18HT-B	M24	3.0	160	18	36	80	14.5	17	4
MNCS270300160-20HT-B	M27	3.0	160	20	36	80	16	19	4
MNCS300350180-22HT-B	M30	3.5	180	22	42	90	18	21	4
MNCS360400200-28HT-B	M36	4.0	200	28	48	100	22	25	5

SELECT

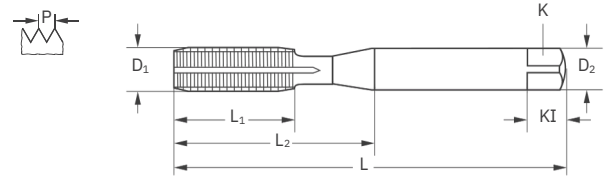
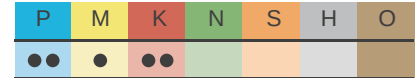
●● Main applications ● Other applications

German Standard HSS-E High-Speed Steel Cast Iron Dedicated Straight Flute Tap QT-HT DIN HSS-E X Coating Straight Flute Tap for Cast Iron



Order number	D ₁	P mm	L mm	D ₂ mm	L ₁ mm	L ₂ mm	K mm	KI mm	N
QTMX030050056-035HT	M3	0.5	56	3.5	11	18	2.7	6	3
QTMX040070063-045HT	M4	0.7	63	4.5	13	21	3.4	6	3
QTMX050080070-06HT	M5	0.8	70	6	15	25	4.9	8	4
QTMX060100080-06HT	M6	1.0	80	6	17	30	4.9	8	4
QTMX080100090-06HT	M8	1.0	90	6	17	36	4.9	8	4
QTMX080125090-08HT	M8	1.25	90	8	20	35	6.2	9	4
QTMX100100090-07HT	M10	1.0	90	7	18	36	5.5	8	4
QTMX100125100-07HT	M10	1.25	100	7	22	40	5.5	8	4
QTMX100150100-10HT	M10	1.5	100	10	22	39	8	11	4
QTMX120125100-09HT	M12	1.25	100	9	22	40	7	10	4
QTMX120150100-09HT	M12	1.5	100	9	22	40	7	10	4
QTMX120175110-09HT	M12	1.75	110	9	24	44	7	10	4
QTMX140150100-09HT	M14	1.5	100	9	22	40	9	12	4
QTMX140200110-11HT	M14	2.0	110	11	26	44	9	12	4
QTMX160150100-12HT	M16	1.5	100	12	22	40	9	12	4
QTMX160200110-12HT	M16	2.0	110	12	27	44	9	12	4
QTMX180250125-14HT	M18	2.5	125	14	30	50	11	14	4
QTMX200150125-16HT	M20	1.5	125	16	25	50	12	15	4
QTMX200250140-16HT	M20	2.5	140	16	32	54	12	15	4

German Standard HSS-PM Powder High-Speed Steel Oil Groove Extrusion Tap RXP-RT DIN HSS-PM X Coating Oil Groove Forming Roll Tap



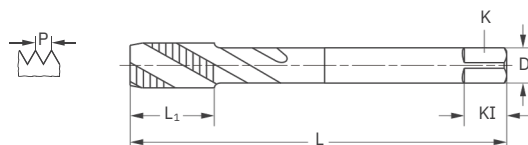
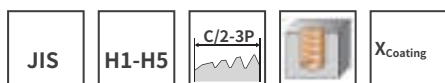
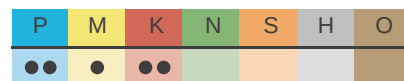
Order number	D ₁	P mm	L mm	D ₂ mm	L ₁ mm	L ₂ mm	K mm	KI mm	N
RXP030050056-035RT	M3	0.5	56	3.5	6	18	2.7	6	5
RXP040070063-045RT	M4	0.7	63	4.5	7	21	3.4	6	5
RXP050080070-06RT	M5	0.8	70	6	8	25	4.9	8	5
RXP060100080-06RT	M6	1.0	80	6	10	30	4.9	8	5
RXP080100090-08RT	M8	1.0	90	8	10	36	4.9	7.8	5
RXP080125090-08RT	M8	1.25	90	8	13	35	6.2	9	5
RXP100125100-07RT	M10	1.25	100	7	13	40	5.5	7.8	6
RXP100150100-10RT	M10	1.5	100	10	15	39	8	11	6
RXP120125100-09RT	M12	1.25	100	9	13	40	7	9.8	6
RXP120150100-09RT	M12	1.5	100	9	15	40	7	9.8	6
RXP120175110-09RT	M12	1.75	110	9	18	44	7	9.8	6
RXP140150100-11RT	M14	1.5	100	11	15	40	9	11.8	8
RXP140200110-11RT	M14	2.0	110	11	20	44	9	11.8	8
RXP160150100-12RT	M16	1.5	100	12	15	40	9	11.8	8
RXP160200110-12RT	M16	2.0	110	12	20	44	9	11.8	8
RXP180150110-14RT	M18	1.5	110	14	17	44	11	13.8	8
RXP200150125-16RT	M20	1.5	125	16	17	50	12	14.8	8
RXP200250125-16RT	M20	2.5	125	16	25	54	12	14.8	8

SELECT

●● Main applications ● Other applications

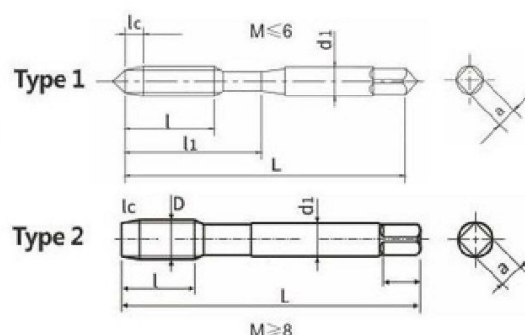
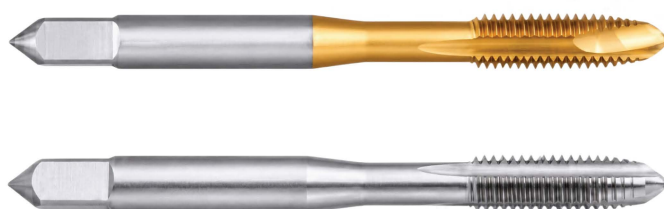
Japanese Standard HSS-E High-Speed Steel Multipurpose American Standard Spiral Tap

XMJ-SFT JIS HSS-E X Coating UNIFIED Spiral Flute Tap for Multi Purpose



Order number	D ₁ -P	LIMIT	L mm	L ₁ mm	D mm	K mm	KI mm	N
XMJ#256C042-03SFT-H1	UNC 2-56	H1	42	9.5	3	2.5	5	2
XMJ#348C044-03SFT-H2	UNC 3-48	H2	44	9.5	3	2.5	5	2
XMJ#440C044-03SFT-H2	UNC 4-40	H2	44	9.5	3	2.5	5	3
XMJ#540C046-04SFT-H2	UNC 5-40	H2	46	11	4	3.2	6	3
XMJ#632C048-04SFT-H2	UNC 6-32	H2	48	13	4	3.2	6	3
XMJ#832C052-05SFT-H2	UNC 8-32	H2	52	13	5	4	7	3
XMJ#1024C060-055SFT-H2	UNC 10-24	H2	60	16	5.5	4.5	7	3
XMJ#1224C060-055SFT-H3	UNC 12-24	H3	60	16	5.5	4.5	7	3
XMJ010420C062-06SFT-H3	UNC 1/4-20	H3	62	19	6	4.5	7	3
XMJ051618C070-061SFT-H3	UNC 5/16-18	H3	70	22	6.1	5	8	3
XMJ030816C075-07SFT-H3	UNC 3/8-16	H3	75	24	7	5.5	8	3
XMJ071614C080-08SFT-H3	UNC 7/16-14	H3	80	25	8	6	9	3
XMJ010213C085-09SFT-H3	UNC 1/2-13	H3	85	29	9	7	10	3
XMJ091612C090-10SFT-H4	UNC 9/16-12	H4	90	30	10.5	8	11	3
XMJ050811C095-12SFT-H4	UNC 5/8-11	H4	95	32	12	9	12	3
XMJ030410C105-14SFT-H4	UNC 3/4-10	H4	105	37	14	11	14	4
XMJ070809C115-17SFT-H5	UNC 7/8-9	H5	115	38	17	13	16	4
XMJ010108C125-20SFT-H5	UNC 1"-8	H5	125	45	20	15	18	4
XMJ101080UN180-22SFT	UN 1-1/8-8	H5	180	40	22	17	20	4
XMJ101040UN180-24SFT	UN 1-1/4-8	H5	180	40	24	19	22	4
XMJ103080UN200-26SFT	UN 1-3/8-8	H5	200	40	26	21	24	4
XMJ101020UN200-30SFT	UN 1-1/2-8	H6	200	40	30	23	26	4
XMJ105080UN200-32SFT	UN 1-5/8-8	H6	200	40	32	26	30	4
XMJ103040UN200-35SFT	UN 1-3/4-8	H6	200	50	35	26	30	4
XMJ107080UN225-38SFT	UN 1-7/8-8	H6	225	50	38	29	32	4
XMJ020108UN225-40SFT	UN 2-8	H6	225	50	40	32	35	4

ISO529 Spiral Point Machine Taps



M MF H2



material

HSSE

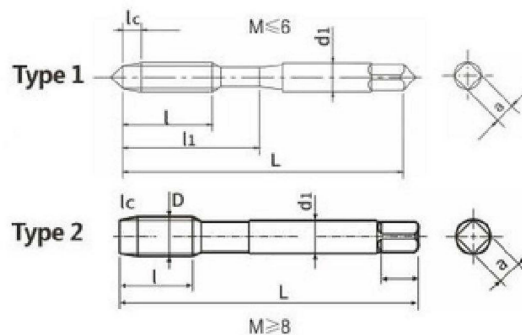
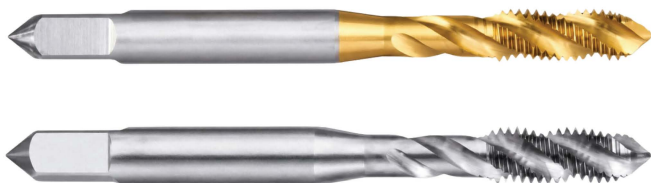
surface treatment

TiN

Unit: mm

Code	Size	P	T	L	I	II	lc	d1	a	Flute	d0	Stock
SZ611001	M3	0.5	H2	48	11	18	5P	3.15	2.5	3	2.5	■
SZ611002	M4	0.7	H2	53	13	21		4	3.15		3.3	
SZ611003	M5	0.8	H2	58	16	25		5	4		4.2	
SZ611004	M6	1	H2	66	19	30		6.3	5		5	
SZ611005	M8	1.25	H2	72	22			6.3	5		6.8	
SZ611006	MF8*1	1	H2	72	22			6.3	5		7	
SZ611007	M10	1.5	H2	80	24			8	6.3		8.5	
SZ611008	MF10*1	1	H2	80	24			8	6.3		9	
SZ611009	MF10*1.25	1.25	H2	80	24			8	6.3		8.8	
SZ611010	M12	1.75	H2	89	29			9	7.1		10.3	
SZ611011	MF12*1	1	H2	80	24			9	7.1		11	
SZ611012	M12*1.25	1.25	H2	89	29			9	7.1		10.8	
SZ611013	M12*1.5	1.5	H2	89	29			9	7.1		10.5	
SZ611014	M14	2	H2	95	30			11.2	9		12	
SZ611015	MF14*1.5	1.5	H2	95	30			11.2	9		12.5	
SZ611016	M16	2	H2	102	32			12.5	10		14	
SZ611017	MF16*1.5	1.5	H2	102	32			12.5	10		14.5	
SZ611018	M18	2.5	H2	112	37			14	11.2	4	15.5	
SZ611019	M18*1.5	1.5	H2	112	37			14	11.2		16.5	
SZ611020	M20	2.5	H2	112	37			14	11.2		17.5	
SZ611021	M20*1.5	1.5	H2	112	37			14	11.2		18.5	
SZ611022	M22	1.5	H2	118	38			16	12.5		19.5	
SZ611023	M22*1.5	1.5	H2	118	38			16	12.5		20.5	
SZ611024	M24	3	H2	130	45			18	14		21	
SZ611025	M24*1.5	1.5	H2	130	45			18	14		22.5	

ISO529 Spiral Point Machine Taps



M MF H2



material



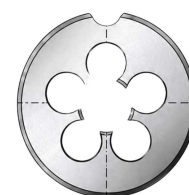
surface treatment



Unit: mm

Code	Size	P	T	L	I	II	lc	d1	a	Flute	d0	Stock
SZ511301	M3	0.5	H2	48	8	18	2.5P	3.15	2.5	3	2.5	■
SZ511302	M4	0.7	H2	53	11	21		4	3.15		3.3	
SZ511303	M5	0.8	H2	58	12	25		5	4		4.2	
SZ511304	M6	1	H2	66	15	30		6.3	5		5	
SZ511305	M8	1.25	H2	72	22			6.3	5		6.8	
SZ511306	MF8*1	1	H2	72	22			6.3	5		7	
SZ511307	M10	1.5	H2	80	24			8	6.3		8.5	
SZ511308	MF10*1	1	H2	80	24			8	6.3		9	
SZ511309	MF10*1.25	1.25	H2	80	24			8	6.3		8.8	
SZ511310	M12	1.75	H2	89	29			9	7.1		10.3	
SZ511311	MF12*1	1	H2	80	24			9	7.1		11	
SZ511312	M12*1.25	1.25	H2	89	29			9	7.1		10.8	
SZ511313	M12*1.5	1.5	H2	89	29			9	7.1		10.5	
SZ511314	M14	2	H2	95	30			11.2	9		12	
SZ511315	MF14*1.5	1.5	H2	95	30			11.2	9		12.5	
SZ511316	M16	2	H2	102	32			12.5	10		14	
SZ511317	MF16*1.5	1.5	H2	102	32			12.5	10		14.5	
SZ511318	M18	2.5	H2	112	37			14	11.2	4	15.5	
SZ511319	M18*1.5	1.5	H2	112	37			14	11.2		16.5	
SZ511320	M20	2.5	H2	112	37			14	11.2		17.5	
SZ511321	M20*1.5	1.5	H2	112	37			14	11.2		18.5	
SZ511322	M22	1.5	H2	118	38			16	12.5		19.5	
SZ511323	M22*1.5	1.5	H2	118	38			16	12.5		20.5	
SZ511324	M24	3	H2	130	45			18	14		21	
SZ511325	M24*1.5	1.5	H2	130	45			18	14		22.5	

DIN EN 22568(DIN 223) Right Hand Round Die



M

6g



material

HSS

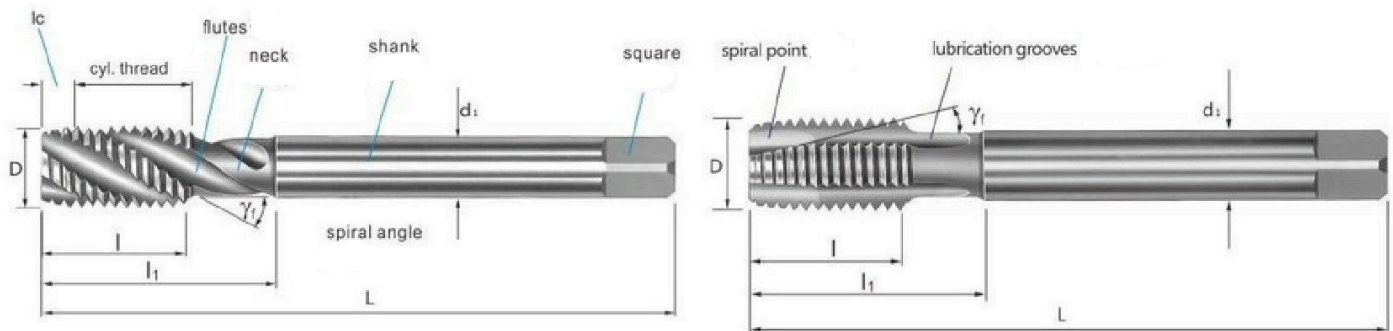
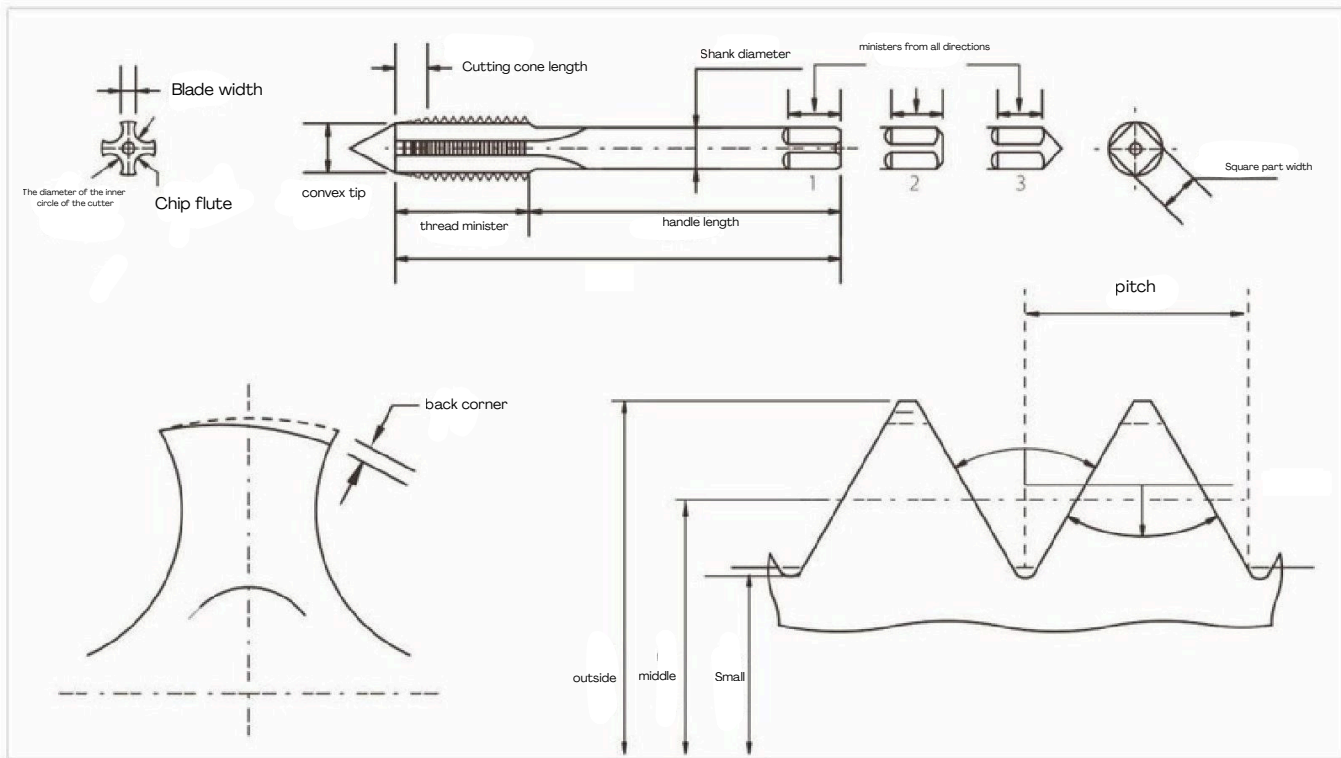
surface treatment

Unit: mm

Code	Size	P	T	D	E	Flute	Stock
SZ912101	M2	0.4	6g	12	3	3	■
SZ912001	M3	0.5		20	5		
SZ912002	M4	0.7		20	5		
SZ912003	M5	0.8		20	7		
SZ912004	M6	1		20	7	4	
SZ912005	M8	1.25		25	9		
SZ912006	M8*1	1		25	9		
SZ912007	M10	1.5		30	11		
SZ912008	M10*1.25	1.25		30	11		
SZ912009	M10*1	1		30	11		
SZ912010	M12	1.75		38	14		
SZ912011	M12*1.5	1.5		38	14		
SZ912012	M12*1.25	1.25		38	14		
SZ912013	M12*1	1		38	14		
SZ912014	M14	2		38	14	5	
SZ912015	M14*1.5	1.5		38	14		
SZ912016	M16	2		45	18		
SZ912017	M16*1.5	1.5		45	18		
SZ912018	M18	2.5		45	18		
SZ912019	M18*1.5	1.5		45	18		
SZ912020	M20	2.5		45	18	6	
SZ912021	M20*1.5	1.5		45	14		
SZ912022	M20*2	2		45	14		
SZ912023	M22*2.5	2.5		45	18		
SZ912024	M24*3	3	55	22			

Threading – General Technical Information

The main structure of the tap



D = nominal diameter
 d_1 = shank diameter
 γ_f = Spiral angle
 l_c = chamfer

l = thread length
 l_1 = thread length + neck length
 a = size of square
 L = overall length

Tap Geometries & Applications

Description	Chips	Description	Chips
Straight Flutes Taps(HT) Straight flutes are the most commonly used type of tap. Suitable for use on most materials, mainly short chipping steel and cast iron.		Spiral Flutes Taps(SFT) Taps with spiral flutes are intended primarily for threading in blind holes. The helical flute transports the chips back away from the cutting edges and out of the hole, thus avoiding packing of chips in the flutes or at the bottom of the hole. In this way, danger of breaking the tap or damaging the thread is minimised.	
Spiral point taps(POT) The tap has a straight fairly shallow flute and is often referred to as a gun nose or spiral point tap. The gun nose or spiral point is designed to drive the chips forward. The relatively shallow flutes ensure that the sectional strength is maximised. They also act to allow lubricant to reach the cutting edges. This type of tap is recommended for threading through holes.		Cold Forming Taps(NRT) Cold forming taps differ from cutting taps in that the thread is produced by plastic deformation of the component material rather than by the traditional cutting action. This means that no chips are produced by their action. The application range is materials with good formability.	

Tolerance class, Tap & Internal thread

Tolerance class, Tap			Tolerance, Internal thread					Application
ISO	DIN	ANSIBS						
ISO 1	4H	3B	4H	5H	—		—	Fit without allowance
ISO 2	6H	2B	4G	5G	6H	—	—	Normal fit
ISO 3	6G	1B	—	—	6G	7H	8H	Fit with large allowance
—	7G	—	—	—	—	7G	8G	Loose fit for following treatment or coating

Recommended Tapping Speed

Tapping Speed

The following machining conditions affect tapping speed: kind of taps, workpieces, number of chamfered threads, materials, hole condition and lubricant. It is necessary to select the suitable tapping speed by paying attention to these conditions. When work material has excellent workability, when there is a little depth of tapping, or when tapping lubricant can be sufficient, select rather higher tapping speed. When workability of work material is unknown, to be safe, try nearly the lowest tapping speed at first, and then increase the speed gradually. Following speed is basically for the cutting condition under the use of cutting oil. In case of water soluble cutting oil, please reduce the speed by 30%.

Work Material		Cutting Speed (m/min)				
		Straight Fluted Tap	Spiral Fluted Tap	Spiral Pointed Tap	Forming Taps	Pipe Thread Tap
Mild Steel-Low Carbon Steel	≤ C0.25%	8 ~ 13	8 ~ 13	15 ~ 25	8 ~ 13	3 ~ 6
Medium Carbon Steel	C0.25 ~ 0.45%	7 ~ 12	7 ~ 12	10 ~ 15	7 ~ 10	3 ~ 6
High Carbon Steel	≥ C0.45%	6 ~ 9	6 ~ 9	8 ~ 13	5 ~ 8	2 ~ 5
Alloy Steel	SCM	7 ~ 12	7 ~ 12	10 ~ 15	5 ~ 8	2 ~ 5
Hardened Steel	25 ~ 45HRC	4 ~ 8	6 ~ 10	8 ~ 12	-	-
Stainless Steel	SUS	4 ~ 7	5 ~ 8	8 ~ 13	5 ~ 10	2 ~ 5
Tool Steel	SKD	6 ~ 9	6 ~ 9	7 ~ 10	-	-
Cast Steel	SC	6 ~ 11	6 ~ 11	10 ~ 15	-	2 ~ 5
Cast Iron	FC	10 ~ 15	-	-	-	2 ~ 5
Ductile Cast Iron	FCD	7 ~ 12	7 ~ 12	10 ~ 20	-	4 ~ 8
Copper	Cu	6 ~ 9	6 ~ 11	7 ~ 12	7 ~ 12	2 ~ 5
Brass-Brass Casting	Bs · BsC	10 ~ 15	10 ~ 20	15 ~ 25	7 ~ 12	5 ~ 10
Bronze-Bronze Casting	PB · PBC	6 ~ 11	6 ~ 11	10 ~ 20	7 ~ 12	6 ~ 11
Aluminum Wrought Steel	AL	10 ~ 20	10 ~ 20	10 ~ 25	7 ~ 12	5 ~ 10
Aluminum Alloy Casting	AC · ADC	10 ~ 15	10 ~ 15	15 ~ 20	12 ~ 20	10 ~ 15
Titanium Alloy		-	3 ~ 5	4 ~ 6	-	-
Nickel Alloy		-	1 ~ 3	2 ~ 4	-	-
High Hardened Steel	40 ~ 50HRC	2 ~ 4	-	-	-	-
High Hardened Steel	50 ~ 55HRC	1 ~ 3	-	-	-	-

Calculation of cutting data

$$n = \frac{V_c \cdot 1000}{D \cdot \pi} [\text{min}^{-1}]$$

$$V_c = \frac{D \cdot \pi \cdot n}{1000} [\text{m/min}]$$

$$M_c = \frac{k_c \cdot P^2 \cdot D}{8000} [\text{Nm}]$$

$$P_c = \frac{M_c \cdot n}{9550 \cdot \eta} [\text{kW}]$$

Speed n in min⁻¹(rpm)

D = Major diameter of thread in mm

V_c = Cutting speed in m/min

Cutting speed V_c in m/min

D = Major diameter of thread in mm

n = Speed in min⁻¹(rpm)

Cutting torque on the tap M_c in Nm

(for tapered threads M, MF, UNC, UNF etc)

k_c = Specific cutting force in N/mm²

P = Thread pitch in mm

D = Major diameter of thread in mm

Machine drive power P_c in kW

M_c = Cutting torque on the tap in Nm

n = Speed in min⁻¹(rpm)

η = Efficiency of the machine

CONVERSION TABLE HARDNESS VS TENSILE STRENGTH

Tensile Strength	Hardness		
R [N/mm ²]	HB Brinell	HRC Rockwell C	HV Vickers
3400	700	68	1008
3120	688	67	955
2960	676	66	920
2890	670	65	885
2770	659	64	850
2240	650	63	826
2190	635	62	797
2140	627	61	772
2100	613	60	746
2050	600	59	720
2010	587	58	693
1970	574	57	666
1930	561	56	646
1890	548	55	623
1850	536	54	604
1810	524	53	585
1780	512	52	567
1730	500	51	549
1680	488	50	528
1630	476	49	513
1590	464	48	497
1560	453	47	482
1520	442	46	468
1480	430	45	453
1440	419	44	440

Tensile Strength	Hardness		
R [N/mm ²]	HB Brinell	HRC Rockwell C	HV Vickers
1400	408	43	427
1360	398	42	416
1320	389	41	404
1300	377	40	391
1260	367	39	381
1230	357	38	371
1190	347	37	357
1150	337	36	345
1120	327	35	332
1100	319	34	323
1060	309	33	314
1040	301	32	304
1010	294	31	296
980	286	30	288
960	279	29	280
940	272	28	273
910	265	27	266
890	259	26	259
870	253	25	253
850	247	24	247
830	241	23	241
810	235	22	235
790	230	21	230
770	225	20	225

THREADING – GENERAL TECHNICAL INFORMATION

Tapping is a complex process and often the last machining operation performed on the workpiece.

Therefore, incorrect or faulty tapping can compromise the quality of the entire workpiece.

Numerous factors influence the process: cutting parameters, drilling parameters, lubrication, machine conditions. The choice of the correct tool is paramount in order to obtain high quality threads.

1. Select the correct design of tap for the component material and type of hole, i.e. through or blind,
2. Ensure the component is securely clamped – lateral movement may cause tap breakage or poor quality threads.
3. Select the correct size of drill from the relevant catalogue page. Always ensure that work hardening of the component material is kept to a minimum.
4. Select the correct cutting speed
5. Use appropriate cutting fluid for correct application.
6. In CNC Applications ensure that the feed value chosen for the program is correct. When using a tapping attachment, 95% to 97% of the pitch is recommended to allow the tap to generate its own pitch.
7. Where possible, hold the tap in a good quality torque limiting tapping attachment, which ensures free axial movement of the tap and presents it squarely to the hole. It also protects the tap from breakage if accidentally ‘bottomed’ in a blind hole.
8. Ensure smooth entry of the tap into the hole, as an uneven feed may cause ‘bell mouching’

The following table summarises the most common problems encountered during tapping and their possible solutions.

Trouble Shooting When Tapping

Problem	Solution
Chipped teeth on tap	• Choose correct tap, with lower rake angle or longer chamfer. • Reduce cutting speed. • Check drilled hole size is not too small. • Check tap alignment and run-out of tap on tapping attachment. • For deep blind holes ($\geq 2,5 \times D$) use taps with back-tapering.
Excessive tap wear	• Improve quality (richer emulsion, neat oil) and quantity (higher pressure) of lubrication. • Use correct tap, with more relief or longer chamfer if possible. • Choose coating suitable for specific application. • Use recommended cutting parameters for specific application.
Chips clogging flutes	• Use tap with lower spiral flute angle. • Choose correct tap with suitable rake angle and relief for specific application. • Use tap with sharp cutting edge (bright tap or vapourised tap).
Poor finish on threaded workpiece	• Check wear on tap. If necessary, sharpen or change tap. • Improve quality and quantity of lubrication. • Choose correct tap with suitable rake angle and relief for specific application. • Use recommended cutting parameters for specific application.

THREADING – GENERAL TECHNICAL INFORMATION

Trouble Shooting When Tapping

Problem	Solution
Built-up-edge	• Choose correct tap with lower rake angle and/or higher relief. • Choose coating suitable for specific application. • Increase cutting speed. • Improve quality and quantity of lubrication.
Tap sticking	• Choose correct tap with lower rake angle and/or higher relief. • Choose coating suitable for specific application. • Increase cutting speed. • Improve quality and quantity of lubrication.
Crater wear	• Choose suitable tap, with base material in HSSE-PM. • Use coated tap. • Improve quality and quantity of lubrication.
Tap breakage	• Check drilled hole size. • Check alignment between tap and drilled hole. • Reduce cutting speed. • On blind holes, check that tapping depth is less than hole depth. • Use tapping attachment with slip clutch. • Use compensated tapping attachment.
Oversized thread	• Check tap tolerance is compatible with requested workpiece (nut) tolerance. • Choose correct tap with suitable rake angle and relief for specific application. • Reduce feed rate (revs x pitch) or use rigid / synchronous tapping attachment. • Reduce cutting speed. • Check tap alignment and that workpiece is fastened steadily. • Remove clogged chips from flutes.
Undersized thread	• Check drilled hole size is not too small. • Check tap tolerance is compatible with requested workpiece (nut) tolerance. • Use coated tap to avoid tap sticking. • On forming taps, use slightly larger drilled hole size. • Check wear on tap. If necessary, sharpen or change tap. • Choose correct tap with higher rake angle and relief. • Use rigid / synchronous tapping attachment. • Improve quality and quantity of lubrication.
Excessive power requirement	• On high strength materials, increase drilled hole size. • Check wear on tap. If necessary, sharpen or change tap. • Choose correct tap with higher rake angle and relief. • Improve quality and quantity of lubrication.

Customer Information

Company:
 Contact:
 Phone:
 E-mail:

Size:
 Article no.:
 Requested QTY.:
 Annual QTY.:

Application information

Machine:

Manufacturer:
 Type:
 Power: kw

☐ horizontal ☐ External
☐ vertical ☐ Internal

Cutting data:

Speed n: rpm
 Cutting speed v_c : m/min

Internal thread:

Thread size:
 Thread tolerance:
 Thread depth:
 Drill hole diameter:
 Drill hole depth:

Spindle adaptation:

MT / ISO taper / HSK / TR / others:
 DIN / ANSI / JIS / others:

Tool holder:

☐ rigid (collet)
☐ Tapping attachment
☐ Tap holder
☐ with internal coolant supply

Workpiece description :

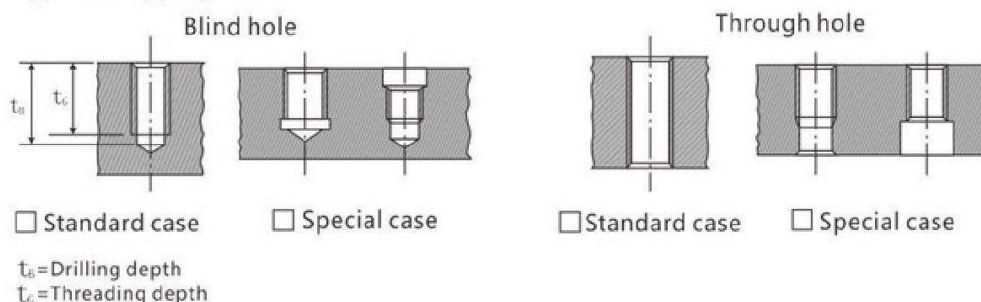
Material/Code no.:
 Condition during work:
 Tensile strength: N/mm²
 Hardness: HRC/HB

☐ short-chipping ☐ long-chipping

Cooling/lubrication:

☐ Oil ☐ Emulsion %
☐ Dry ☐ Others:

Types of tapping holes:

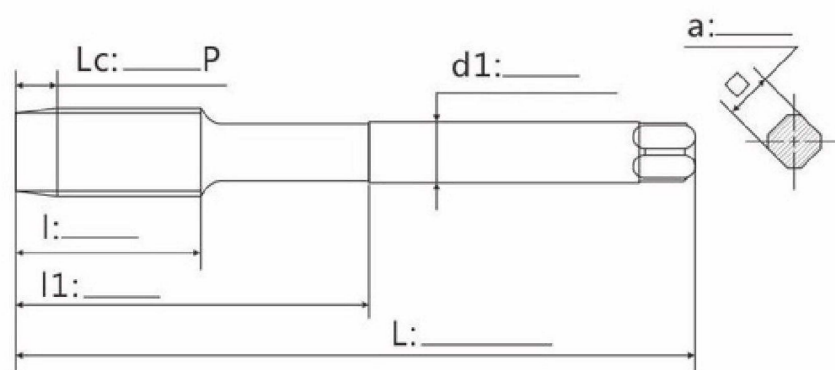


Tap requests

Tap brand:
 Tap type/code no.:
 Tap size:
 Tolerance:
 Tap material:
 Surface treatment:
 Internal coolant:
 Tool life:

Tap type:

☐ Straight flute ☐ Spiral flute ☐ Spiral point ☐ Forming tap ☐ Nuts tap



_ Milling machining, versatile and efficient

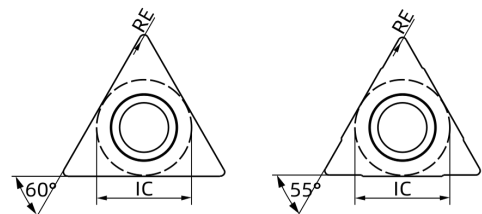
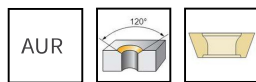
**Thread milling, general purpose, economical and efficient
Connection, Everywhere**



Thread milling cutter inserts



P	M	K	N	S	H	O
●●	●●	●●	●	●	●	●

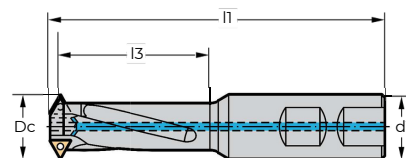
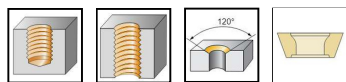


Model	RE mm	mm	inch	U2010
TPGT06T101E-MU1	0.1	1.5-2.9	18-9	●
TPGT06T102E-MU1	0.2	3	8	●
TPGT090201E-MU1	0.1	1.5-2.9	18-9	●
TPGT090202E-MU1	0.2	3.0-4.0	8-6	●
TPGT110201E-MU1	0.1	1.5-2.9	18-9	●
TPGT110202E-MU1	0.2	3.0-4.5	8-6	●
TPGT140301E-MU1	0.1	1.5-2.9	18-9	●
TPGT140302E-MU1	0.2	3.0-5.0	8-5	●
TPGT140304E-MU1	0.4	5.0-6.0	5-4	●
T55G-TPGT090202E-MU1	0.2		11	●
T55G-TPGT140302E-MU1	0.2		11	●

SELECT

●● Main applications ● Other applications

TH series single-row toothed thread end mills

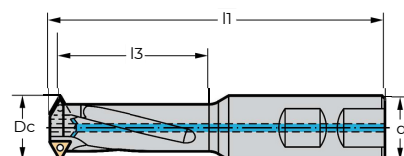
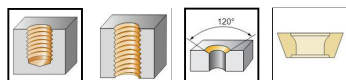


Order number	D_N	P mm	D_C mm	L mm	D_2 mm	Blade model
TH20.052.01.108.C16-TP06	M20	2.5	16	108	16	TPGT06
TH24.055.01.115.C20-TP06	M24	3	19	115	20	TPGT06
TH30.080.01.148.C25-TP09	M30	3.5	24	148	25	TPGT09
TH36.090.01.162.C32-TP09	M36	4	30	162	32	TPGT09
TH42.110.01.180.C32-TP11	M42	4.5	35	180	32	TPGT11
TH48.125.01.208.C40-TP14	M48	5	40	208	40	TPGT14
TH56.150.01.232.C40-TP14	M56	5.5	44	232	40	TPGT14

SELECT

● ● Main applications ● Other applications

WHL series (extended) single-row toothed thread end mills

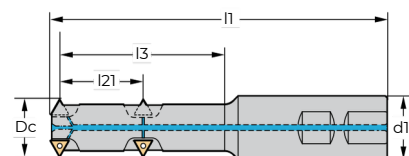
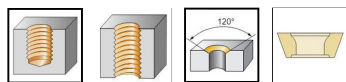
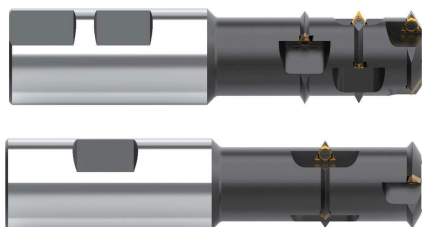


Order number	D_N	P mm	D_C mm	L_1 mm	L_3 mm	D_1 mm	Z	Number of cutting edges	Blade model
WHL30.079.3.02.147.C25-TP09	M30	3.5	24	148	79.5	25	3	3	TPGT09
WHL36.094.3.02.167.C32-TP09	M36	4	29	167	94.5	32	3	3	
WHL42.110.3.02.180.32-TP11	M42	4.5	35	181	110.5	32	3	3	
WHL48.127.3.02.211.C40-TP14	M48	5	40	211	127	40	3	3	

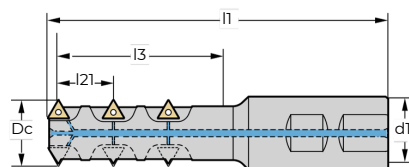
SELECT

●● Main applications ● Other applications

WH series multi-row toothed thread milling cutters



Order number	D_N	P mm	D_C mm	L_2 mm	L_1 mm	L_3 mm	D_1 mm	Z	Number of cutting edges
WH20.033.02.088.C16-TP06	M20	2.5	16.5	88	15	33	16	3	6

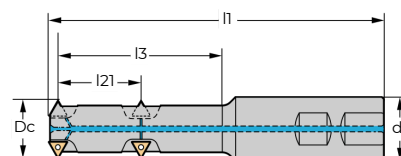
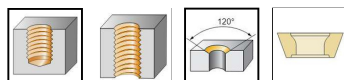
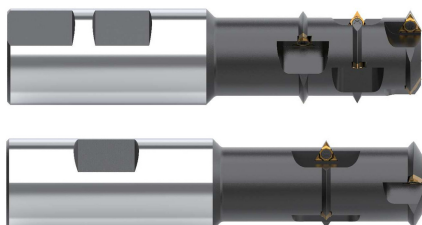


Order number	D_N	P mm	D_C mm	L_2 mm	L_1 mm	L_3 mm	D_1 mm	Z	Number of cutting edges
WH24.039.03.098.C20-TP06	M24	3	19	98	12	39.1	20	3	9
WH30.049.03.117.C25-TP09	M30	3.5	24	117	14	49.5	25	3	9
WH36.058.03.139.C32-TP09	M36	4	29	131	16	58.5	32	3	9
WH42.068.03.139.C32-TP14	M42	4.5	35	139	18	68.5	32	3	9
WH48.079.03.163.C40-TP14	M48	5	40	163	20	79	40	3	9
WH56.091.03.174.C40-TP14	M56	5.5	44	174	22	91	40	3	9
WH64.103.03.185.C40-TP14	M64	6	52	185	24	103	40	4	12

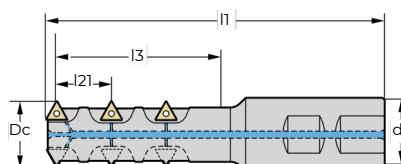
SELECT

● ● Main applications ● Other applications

Multi-row toothed thread end mill WHL series (extended)



Order number	D_N	P mm	D_C mm	L_2 mm	L_1 mm	L_3 mm	D_1 mm	Z	Number of cutting edges
WHL20.043.02.098.C16-TP06	M20	2.5	16.5	98	20	43	16	3	6
WHL24.051.02.110.C20-TP06	M24	3	19	110	24	51	20	3	6
WHL30.064.02.132.C25-TP09	M30	3.5	24	132	31.5	64.5	25	3	6
WHL64.135.02.217.C40-TP14	M64	6	52	217	60	135	40	4	8

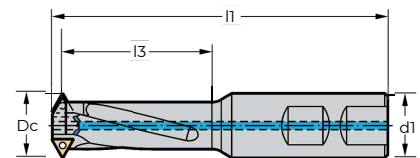
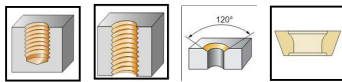


Order number	D_N	P mm	D_C mm	L_2 mm	L_1 mm	L_3 mm	D_1 mm	Z	Number of cutting edges
WHL36.072.03.149.C32-TP09	M36	4	29	149	24	72.1	32	3	9
WHL42.089.03.160.C32-TP11	M42	4.5	35	160	27	89.5	32	3	9
WHL48.103.03.187.C40-TP14	M48	5	40	187	30	103	40	3	9
WHL56.119.03.202.C40-TP14	M56	5.5	44	202	33	119	40	3	9

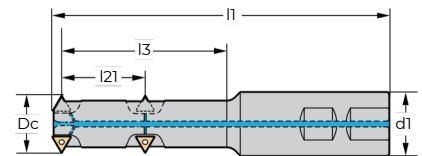
SELECT

● ● Main applications ● Other applications

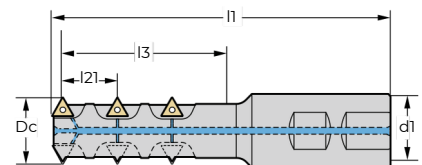
UNC/UNF WHL series multi-row toothed thread end mills



Order number	D_N	P mm	D_C mm	L_2 mm	L_1 mm	L_3 mm	D_1 mm	Z	Number of cutting edges
T2711-16-W16-2-06	UNC 3/4-10	10	15.5	/	41	97	16	2	2



Order number	D_N	P mm	D_C mm	L_2 mm	L_1 mm	L_3 mm	D_1 mm	Z	Number of cutting edges
T2711-16-W16-3-06-2-25.4	UNC 7/8-5	9	16	25.4	67.5	103	16	3	6
T2711-20-W20-3-06-2-25.4	UNC 1-6	8	20	25.4	53.9	113	20	3	6
T2711-26-W25-3-09-2-32.7	UNC 1.1/4-7	7	26	32.7	68	135	25	3	6

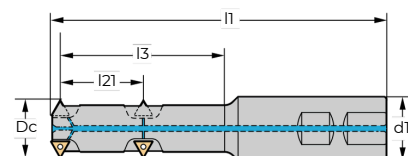
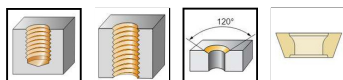


Order number	D_N	P mm	D_C mm	L_2 mm	L_1 mm	L_3 mm	D_1 mm	Z	Number of cutting edges
T2711-31-W32-3-09-3-25.4	UNC1.1/2-6	6	31	25.4	80.7	153	32	3	9

SELECT

●● Main applications ● Other applications

Multi-row toothed thread end mill UNC/UNF WHL series (extended)

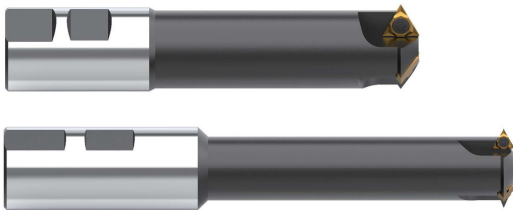


Order number	D_N	P mm	D_C mm	L_{21} mm	L_C mm	L_3 mm	L_1 mm	d_1 mm	Z	Cutting edge quantity	Model
WHL.084.3.02.151.C25-TP09	UNC 1.1/4-7	7	26	32.7	65.3	84	151	25	3	6	TPGT09
WHL.099.3.02.172.C32-TP09	UNC 1.1/2-6	6	31	38.1	76.2	99.8	172	32	3	6	

SELECT

●● Main applications ● Other applications

Tool thread selection: Single-row toothed metric thread



Cutter body model	D mm	Blade	Coarse teeth	Fine teeth
TH20.052.01.108.C16-TP06	16	TPGT06T101	M20/M22	M20X1.5 / M20X2
TH24.055.01.115.C20-TP06	19	TPGT06T101		M22X1.5 / M22X2 / M24X1.5 / M24X2 M25X1.5 / M26X1.5
		TPGT06T102	M24/M27	
TH30.080.01.148.C25-TP09 WHL30.079.3.02.147.C25-TP09	24	TPGT090201		M27X1.5 / M27X2 / M28X1.5 / M28X2 M30X1.5 / M30X2 / M32X1.5 / M32X2 M33X1.5 / M33X2
		TPGT090202	M30/M33	
TH36.090.01.162.C32-TP09 WHL36.094.3.02.167.C32-TP09	30	TPGT090201		M34X1.5 / M35X1.5 / M36X1.5 / M36X2 M38X1.5 / M39X1.5 / M39X2
		TPGT090202	M36/M39	M36X3 / M39X3
TH42.110.01.180.C32-TP11 WHL42.110.3.02.180.C32-TP11	35	TPGT110201		M39X1.5 / M39X2 / M40X1.5 / M40X2 M42X1.5 / M42X2
		TPGT110202	M42/M45	M40X3 / M42X3
TH48.125.01.208.C40-TP14 WHL48.127.3.02.211.C40-TP14	40	TPGT140301		M45X1.5 / M45X2 / M48X2
		TPGT140302	M48/M52	M45X3 / M48X3
TH56.150.01.232.C40-TP14 MH60.01.04.40.R22-TP09	44	TPGT140301		M50X1.5 / M50X2 / M52X1.5 / M52X2 / M56X1.5 M56X2 / M58X1.5 / M60X1.5 / M60X2
		TPGT140302		M50X3 / M52X3 / M56X3 / M60X3
		TPGT140304	M56 / M60	
MH64.01.04.40.R22-TP11	52	TPGT140301		M62X1.5 / M62X2 / M64X2 / M68X1.5 / M68X2
		TPGT140302		M62X3 / M62X4 / M64X3 / M64X4 M68X3 / M68X4
		TPGT140304	M64 / M68	M70X6 / M72X6

Tool thread selection: Multi-row toothed metric thread



Cutter body model	D mm	Pitch P	Blade	Coarse teeth	Fine teeth
	13	2.5 / 2	TPGT06T101	M16 / M17 / M18	M18X2 / M17X2
	13	1.5	TPGT06T101		M16X1.5 / M17X1.5 / M18X1.5
WH20.033.02.088.C16-TP06	16.5	2.5 / 1.5	TPGT06T101	M20 / M22	M20X1.5 / M22X1.5
WHL20.043.02.098.C16-TP06	16.5	2.5 / 2	TPGT06T101	M20 / M22	M20X2 / M22X2
WH24.039.03.098.C20-TP06	19	3 / 1.5	TPGT06T101		M22X1.5 / M24X1.5 / M25X1.5 M26X1.5 / M27X1.5
			TPGT06T102	M24 / M27	
WHL24.051.02.110.C20-TP06	19	3 / 2	TPGT06T101		M24X2 / M25X2 / M27X2
			TPGT06T102	M24 / M27	
WH30.049.03.117.C25-TP09	24	3.5 / 1.5	TPGT090201		M27X1.5 / M28X1.5 / M30X1.5 M32X1.5 / M33X1.5
			TPGT090202	M30/M33	
WHL30.064.02.132.C25-TP09	24	3.5 / 2	TPGT090201		M28X2 / M30X2 / M32X2 / M33X2
			TPGT090202	M30/M33	
WH36.058.03.139.C32-TP09	30	4 / 2	TPGT090201		M36X2 / M39X2 / M40X2 / M42X2
			TPGT090202	M36/ M39	
WHL36.072.03.149.032-TP09	30	4 / 3 / 2 / 1.5	TPGT090201		M35X1.5 / M36X1.5 / M38X1.5 / M39X1.5 M36X2 / M39X2 / M40X2 / M42X2
			TPGT090202	M36/ M39	
WH42.068.03.139.C32-TP14	35	4.5 / 3 / 1.5	TPGT110201		M39X1.5 / M40X1.5 / M42X1.5 / M45X1.5
			TPGT110202	M42/ M45	M42X3 / M45X3
WHL42.089.03.160.C32-TP11	35	4.5 / 3 / 1.5	TPGT110201		M39X1.5 / M40X1.5 / M40X1.5 / M45X1.5
			TPGT110202	M42/ M45	M42X3 / M45X3
WH48.079.03.163.C40-TP14	40	5 / 2	TPGT140301		M45X2 / M48X2 / M50X2 / M52X2 M55X2 / M56X2
			TPGT140302	M48 / M52	
WHL48.103.03.187.C40-TP14	40	5 / 3 / 1.5	TPGT140301		M45X1.5 / M48X1.5 / M50X1.5 / M52X1.5 M55X1.5 / M56X1.5 / M58X1.5 / M60X1.5 M62X1.5 / M64X1.5
			TPGT140302	M48 / M52	M27X1.5 / M28X1.5 / M30X1.5 M32X1.5 / M33X1.5
WH56.091.03.174.C40-TP14	44	5.5	TPGT140304	M56 / M60	
WHL56.119.03.202.C40-TP14	44	5.5	TPGT140304	M56 / M60	
WH64.103.03.185.C40-TP14 WHL64.135.02.217.C40-TP14	52	6 / 3 / 2	TPGT140301		M58X2 / M60X2 / M62X2 / M64X2 M65X2 / M68X2 / M70X2 / M72X2
			TPGT140302		M58X3 / M60X3 / M62X3 / M64X3 M65X3 / M68X3 / M70X3 / M72X3
			TPGT140304	M64 / M68	M70X6 / M72X6

Tool thread selection: Single row of teeth - US standard UN thread



Cutter body model	D mm	Blade	UNC	UNF	UNEF	UN
TH20.052.01.108.C16-TP06	16	TPGT06T101	7/8-9	3/4-16 7/8-14 1-12		7/8-12 , 7/8-16
		TPGT06T102				
TH24.055.01.115.C20-TP06	19	TPGT06T101		1-12 1 1/8-12 1 1/4-12	1 1/16-18	1-16
		TPGT06T102	1-8			1 1/16-8
TH30.080.01.148.C25-TP09 WHL30.079.3.02.147.C25-TP09	24	TPGT090201		1 1/8-12 1 1/4-12	1 1/8-18 1 1/4-18	1 1/8-16 , 1 1/4-16
		TPGT090202	1 1/8-7 1 1/4-7 1 3/8-6			1 1/8-8 , 1 1/4-8
TH36.090.01.162.C32-TP09 WHL36.094.3.02.167.C32-TP09	30	TPGT090201		1 3/8-12 1 1/2-12	1 3/8-18 1 1/2-18	1 3/8-16 , 1 1/2-18
		TPGT090202	1 1/2-6			13/8-8 , 1 1/2-8
TH42.110.01.180.C32-TP11 WHL42.110.3.02.180.C32-TP11	35	TPGT110201			1 5/8-18	1 5/8-12 , 1 5/8-16
		TPGT110202				1 5/8-6 , 1 5/8-8 , 1 3/4-6 , 1 3/4-8
TH48.125.01.208.C40-TP14 WHL48.127.3.02.211.C40-TP14	40	TPGT140301				1 3/4-12 , 1 3/4-16 , 1 7/8-12 1 7/8-16
		TPGT140302				1 7/8-6 , 1 7/8-8
TH56.150.01.232.C40-TP14 MH60.01.04.40.R22-TP09	44	TPGT140301				2-12 , 2-16 , 2 1/8-12 , 2 1/8-16 , 2 1/4-12 , 2 1/4-16 , 2 1/2-12 , 2 1/2-16
		TPGT140302				2-6 , 2-8 , 2 1/8-6 , 2 1/8-8 , 2 1/4-6 , 2 1/4-8 , 2 1/2-6 , 2 1/2-8
		TPGT140304	2-4.5 2 1/4-4.5 2 1/2-4			
MH64.01.04.40.R22-TP11	52	TPGT140301				2 1/2-12 , 2 1/2-16 , 2 3/4-12 , 2 3/4-16 , 3-12 , 3 1/4-16 , 3 1/2-12 , 3 1/4-16
		TPGT140302				2 1/2-6 , 2 1/2-8 , 2 3/4-6 , 2 3/4-8 , 3-6 , 3-8 , 3 1/4-16 , 3 1/4-8 , 3 1/2-6 , 3 1/4-8
		TPGT140304	2 3/4-4 3/4 3 1/4-4 3 1/2-4			

Tool thread selection: Single-row G-thread (BSP)



Cutter body model	D mm	Blade	G
TH30.080.01.148.C25-TP09 WHL30.079.3.02.147.C25-TP09	24	T55G-TPGT090202	G1-11 , G1 1/8-11 , G1 1/4-11
TH36.090.01.162.C32-TP09 WHL36.094.3.02.167.C32-TP09	30	T55G-TPGT090202	G1 1/8-11 , G1 1/4-11 , G1 3/8-11 , G1 1/2-11
TH48.125.01.208.C40-TP14 WHL48.127.3.02.211.C40-TP14	40	T55G-TPGT140302	G1 1/2-11 , G1 3/4-11 , G2-11
TH56.150.01.232.C40-TP14 MH60.01.04.40.R22-TP09	44	T55G-TPGT140302	G1 3/4-11 , G2-11 , G2 1/4-11 , G2 1/2-11 , G3-11

Application information

Adjustable coolant delivery

To ensure ideal chip delivery during blind hole machining, the coolant bolts should be removed.

If through-hole threads are machined, the axial coolant outlet can be sealed.

In this way, all the coolant flows out radially, and the chips are flushed downwards from the holes.

Coolant bolt

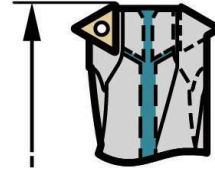


Application information

Tool measurement

After generating the CNC program, the tool must be measured as shown on the right.

Then, the input thread depth will be achieved.



Unavailable length

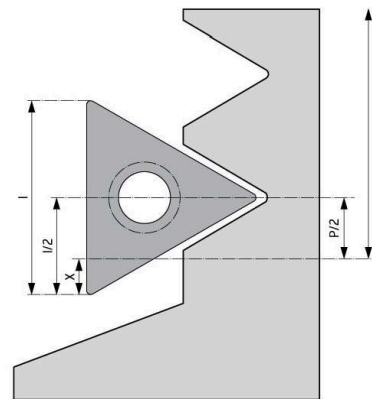
The thread length also includes the final thread comb plus half the pitch strategy.

Because $1/2$ is greater than $P/2$, an "unusable length" (X) is derived, which must be considered during programming.

This "unusable length" is calculated by subtracting half the pitch ($P/2$) from half the blade length ($1/2$).

Example: M36, with TPGT09 thread milling cutter insert.

$$\text{Length } X = 1/2 - P/2 = \frac{9.34\text{mm}}{2} - \frac{4\text{mm}}{2} = 2.67\text{mm}$$

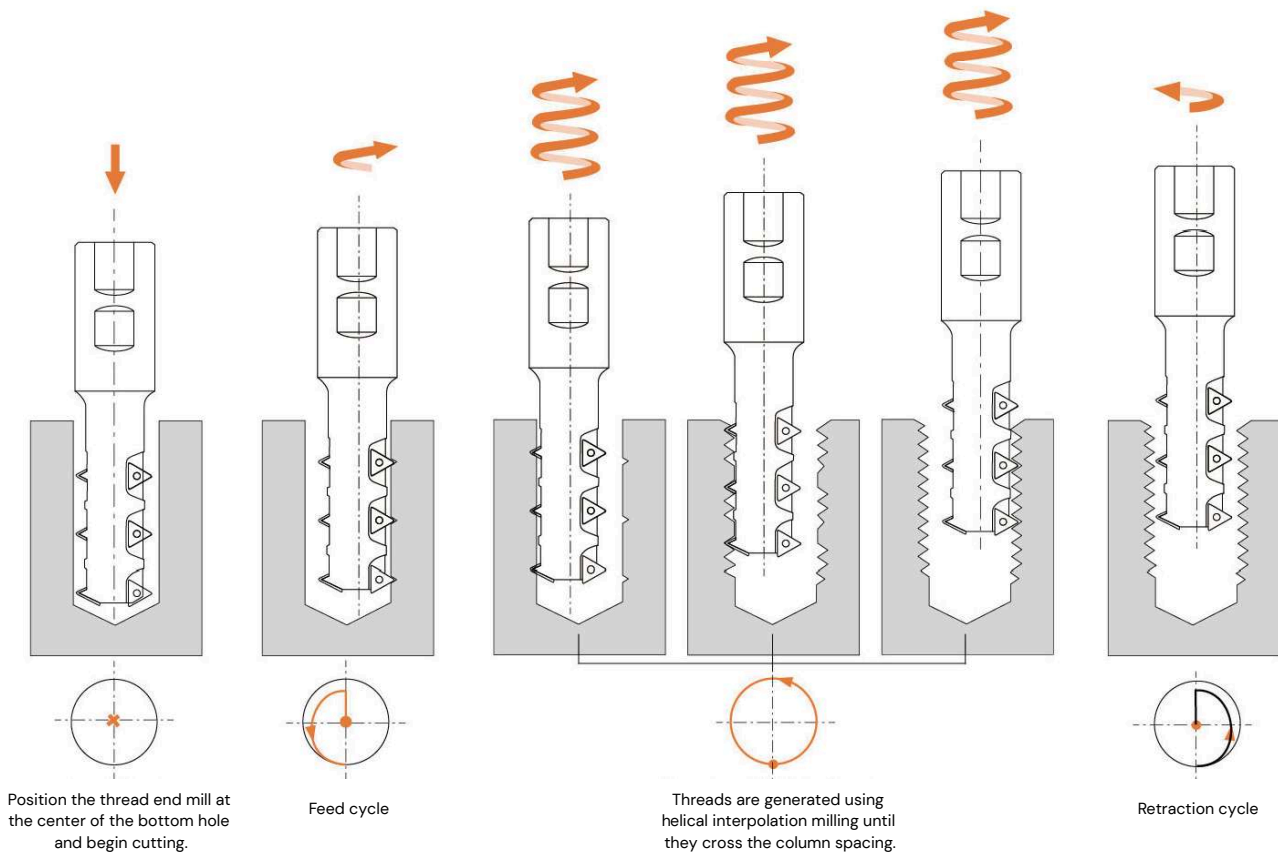


The unusable length of the T271 series products is less than the chamfer length of the tap.

Processing strategy

We recommend using radius programming to machine threads.

No-load cutting can be performed without radius correction.



Radius correction value for thread milling

Metric threads conforming to DIN 13 standard

Thread nominal diameter D_N [mm]	 [mm]	 [mm]	Minimum size H tolerance [mm]	Radius correction Tolerance median 6H tolerance [mm]	Tolerance median 6G tolerance [mm]
≥20	1.5	0.1	-0.05	-0.10	-0.12
	2	0.1	-0.10	-0.15	-0.17
	2.5	0.1	-0.15	-0.20	-0.22
	3	0.2	-0.10	-0.16	-0.19
	3.5	0.2	-0.15	-0.22	-0.24
	4	0.2	-0.20	-0.27	-0.30
	4.5	0.2	-0.25	-0.33	-0.36
	5*	0.2	-0.30	-0.38	-0.42
		0.4	-0.10	-0.18	-0.22
	5.5	0.4	-0.15	-0.24	-0.27
	6	0.4	-0.20	-0.29	-0.33
	8	0.4	-0.40	-0.51	-0.56
	10	0.4	-0.59	-0.71	—

Based on pitch diameter tolerances conforming to DIN ISO 965-1. Applicable from M20 onwards.

*Note: For P=5mm, we recommend a blade radius $r=0.2\text{mm}$!

Please be aware of this when selecting the radius correction value.

UN/UNC/UNF/UNEF threads conforming to ASME B1.1 standards

Thread nominal diameter D_N [inch]	 [mm]	 [mm]	Minimum size [mm]	Radius correction Tolerance median 2B tolerance [mm]	Tolerance median 3B tolerance [mm]
≥7/8"	18	0.1	-0.04	-0.08	-0.07
	16	0.1	-0.06	-0.10	-0.09
	14	0.1	-0.08	-0.12	-0.11
	12	0.1	-0.11	-0.16	-0.15
	9	0.1	-0.18	-0.23	-0.22
	8	0.2	-0.12	-0.17	-0.16
	7	0.2	-0.16	-0.22	-0.21
	6	0.2	-0.22	-0.29	-0.27
	5*	0.2	-0.31	-0.38	-0.36
		0.4	-0.11	-0.18	-0.16
	4.5	0.4	-0.16	-0.24	-0.22
	4	0.4	-0.23	-0.32	-0.30

Based on pitch diameter tolerances conforming to ASME B1.1. Applicable from UNC 7/8 onwards.

*Note: For P = 5 teeth per inch, we recommend a blade radius $r = 0.2\text{ mm}$!

Please be aware of this when selecting the radius correction value.

Radius correction value for thread milling

Pipe threads G (BSP) conforming to DIN EN ISO 228 standard

Thread nominal diameter D_N [Inch]	 [Number of teeth per Inch]	 [mm]	Radius correction	
			Minimum size [mm]	Tolerance median [mm]
$\geq 1" \text{ \& } < 2 \frac{1}{4}"$	11	0.2	-0.11	-0.16
$\geq 2 \frac{1}{4}"$	11	0.2	-0.11	-0.17

Based on pitch diameter tolerances conforming to DIN EN ISO 228. Applicable from $D_N 1"$.

If you subtract the value given in the "Minimum Size" column from the measured tool radius, the thread will be within the lower tolerance range and will typically be too narrow. To mill the thread to the middle tolerance value, subtract the value given in the "Middle Tolerance Value" column from the measured tool radius. The thread will typically be dimensionally accurate after machining.

Example of M36-6H thread	P	4mm
	r	0.2mm
Measured tool radius		14.53mm
Radius correction, tolerance median 6H		-0.27mm
Tool radius to use		=14.26mm

Recommended parameters for thread milling

The given cutting parameters are average standard values.
Adjustments are recommended for special use cases.

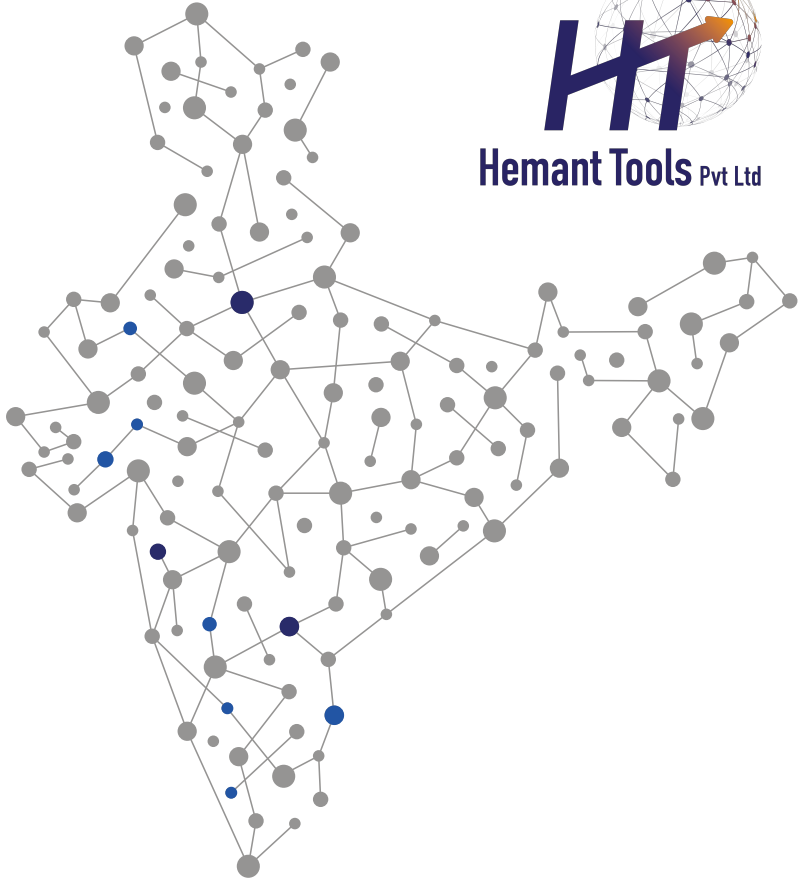
Material group	 = Coolant recommendations E = Emulsion O = Oil Vc = Cutting speed Workpiece material classification and marking letters			Brinell hardness HB	Tensile strength Rm N/mm²	Processing material group	WH				
								Vc [m/min]	fz [mm]		
									Blade size		
									06	09/11/14/22	
P	Non-alloy steel	C≤0.25%	Annealing	125	428	P1	EM	200	0.3	0.4	
		C>0.25 ... ≤0.55%	Annealing	190	639	P2	EM	200	0.3	0.4	
		C>0.25 ... ≤0.55%	Conditioning	210	708	P3	EM	200	0.3	0.4	
		C>0.55%	Annealing	190	639	P4	EM	200	0.3	0.4	
		C>0.55%	Conditioning	300	1013	P5	EM	200	0.3	0.4	
		Free-cutting steel (short chips)	Annealing	220	745	P6	EM	200	0.3	0.4	
	Low alloy steel	Annealing			175	591	P7	EM	200	0.3	0.4
		Conditioning			285	960	P8	EM	200	0.3	0.4
		Conditioning			380	1282	P9	EM	150	0.25	0.35
		Conditioning			430	1477	P10	EM	100	0.2	0.3
	High alloy steel and high alloy tool steel	Annealing			200	675	P11	EM	200	0.3	0.4
		Quenched and Tempered			300	1013	P12	EM	200	0.3	0.4
		Quenched and Tempered			380	1282	P13	EM	150	0.3	0.4
	Stainless steel	Ferrite/Martensite, Annealed			200	675	P14	EM	200	0.25	0.35
		Martensite, Quenched, and Tempered			330	1114	P15	EM	150	0.25	0.35
M	Stainless steel	Austenitic, Quenched			200	675	M1	E	200	0.2	0.3
		Austenitic, precipitation dispersion hardening stainless steel (PH stainless steel)			300	1013	M2	E	150	0.2	0.3
		Austenitic-ferritic duplex stainless steel			230	778	M3	E	80	0.2	0.3
K	Malleable cast iron	Ferrite			200	400	K1	EM	200	0.3	0.4
		Pearlite			260	700	K2	EM	200	0.3	0.4
	Gray cast iron	Low tensile strength			180	200	K3	EM	250	0.3	0.4
		High tensile strength/austenitic			245	350	K4	EM	200	0.3	0.4
	Ductile Iron	Ferrite			155	400	K5	EM	200	0.3	0.4
		Pearlite			265	700	K6	EM	200	0.3	0.4
	GGV(CGI)					230	400	K7	EM	200	0.3

Recommended parameters for thread milling

The given cutting parameters are average standard values.
Adjustments are recommended for special use cases.

Material group	 = Coolant recommendations E = Emulsion O = Oil Vc = Cutting speed Workpiece material classification and marking letters		Brinell hardness HB	Tensile strength Rm N/mm²	Processing material group	WH				
							Vc [m/min]	fz [mm]		
								Blade size 06 09/11/14/22		
N	Forged aluminum alloy	Non-time-sensitive processing		30	-	N1	EM	200	0.3	0.4
		Time-sensitive processing		100	343	N2	EM	200	0.3	0.4
	Forged aluminum alloy	≤12% silicon, non-aging treatment		75	260	N3	EM	200	0.3	0.4
		≤12% silicon, can be aged		90	314	N4	EM	200	0.3	0.4
		>12% silicon, non-aging treatment		130	447	N5	EM	200	0.3	0.4
	Magnesium alloy 3		70	250	N6	A	250	0.3	0.4	
	Copper and copper alloys (bronze/brass)	Non-alloy, electrolytic copper		100	343	N7	EM	200	0.3	0.4
		Brass, bronze, red brass		90	314	N8	EM	200	0.3	0.4
		Copper alloy, short chips		110	382	N9	EM	200	0.3	0.4
		High-strength Ampco alloy		300	1013	N10	EM	50	0.3	0.4
S	Heat resistant alloy	Iron base	Annealing	200	675	S1	E	40	0.25	0.25
			Aging treatment	280	943	S2	E	25	0.15	0.15
		Nickel or cobalt based	Annealing	250	839	S3	E	40	0.25	0.25
			Aging treatment	350	1177	S4	E	25	0.15	0.15
			Casting	320	1076	S5	E	30	0.2	0.2
	Titanium alloy	Pure titanium		200	675	S6	E	40	0.25	0.25
		α-phase and β-phase alloys, aging treatment		375	1262	S7	E	40	0.25	0.25
		tau phase alloy		410	1396	S8	E	30	0.2	0.2
	Tungsten alloy		300	1013	S9	E	40	0.25	0.25	
	Molybdenum alloy		300	1013	S10	E	40	0.25	0.25	
H	Quenched steel	Quenched and tempered		50 HRC	-	H1	MA	45	0.2	0.3
		Quenched and tempered		55 HRC	-	H2	M	-	-	-
		Quenched and tempered		60 HRC	-	H3	M	-	-	-
	Hardened cast iron	Quenched and tempered		55 HRC	-	H4	MA	45	0.2	0.3
O	Thermoplastic	No abrasive filler materials				01	EM	200	0.3	0.4
	Thermoset plastic	No abrasive filler materials				02	EM	150	0.3	0.4
	Fiberglass reinforced plastic	GFRP			03	EM	50	0.3	0.4	
	Carbon fiber reinforced plastic	CFRP			04	EM	50	0.3	0.4	
	Aramid fiber reinforced plastic	AFRP			05	EM	50	0.3	0.4	
	Graphite (Technology)		65 Xiao		06	EM	200	0.3	0.4	

- Coolants that are mixed with water must not be used when processing magnesium alloys.
- Machining can be performed via climb milling, and the given cutting parameters are target values under favorable machining conditions.
- Remedies for vibration: Use indexable inserts with chip breaker grooves; reduce Vc by 25–50% and/or increase fz by 25–50%; radial cutting distribution.



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