










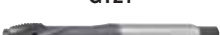
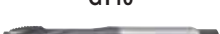








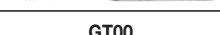
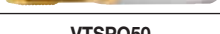
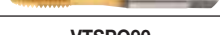



















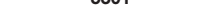
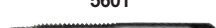
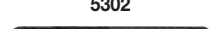
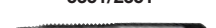



Tapping










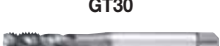


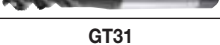
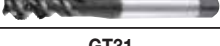








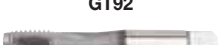


Taps Introduction	V2-V21
Spiral-Point/Left-Hand Spiral-Flute Taps.....	W2-W50
Spiral-Flute Taps	W52-W114
Straight-Flute Taps.....	W116-W156
Forming Taps.....	W158-W182
Pipe Taps.....	W184-W193
Thread Mills.....	W194-W215
High-Performance Taps Application Data	W216-W220
Technical Information	W221-W249
Lightning Service.....	W250-W297

series	hole		thread		coolant		size range min-max	grade/ coating	material				chamfer		helix angle	dimension
	through	blind	cutting	forming	flood	through			carbide	HSS-E-PM	HSS-E	HSS	type	form		
																
 GT20	X		X		X		#2-3/4"	GP6520, GM6515	X				plug	D	L15°	ANSI 302A
 GT20	X		X		X		#6-1/2"	GP6520	X				plug	D	L15°	DIN/ANSI
 GT20	X		X		X		M3-M12	GP6520, GM6515	X				plug	D	L15°	ANSI 302A
 GT20	X		X		X		M3-M42	GP6520, GM6515	X				plug	D	L15°	DIN 371, 374, 376
 GT20	X		X		X		M24-M42	GP6520	X				plug	D	L15°	DIN 376, XL
 GT21	X		X			X	M5-M14	GP6520, GM6515	X				plug	D	L15°	DIN 371, 376
 GT10	X		X		X		M3-M20	WS32MG	X				plug	D	L8°	DIN 371, 376
 GT90	X		X		X		#2-3/4"	WU32MG, WS39MG	X				plug	D	L15°	ANSI 302A
 GT90	X		X		X		M2.5-M12	WU32MG, WS39MG	X				plug	D	L15°	ANSI 302A
 GT14	X		X		X		M3-M12	WN35MG	X				plug	B	0°	DIN 371, 376
 GT60	X		X		X		#2-1"	WS30MG, WS34MG	X				plug	D	L15°	ANSI 302A
 GT60	X		X		X		M2.5-M12	WS30MG, WS34MG	X				plug	D	L15°	ANSI 302A
 GT70	X		X	X			M3-M16	WN48EG		X			plug	B	0°	DIN 371, 376
 GT72	X		X		X		#2-1/2"	WN44EG		X			plug	D	L15°	DIN/ANSI
 GT72	X		X		X		M3-M12	WN44EG		X			plug	D	L15°	DIN/ANSI
 GT00	X		X		X		M3-M20	WP31MG	X				plug	B	0°	DIN 371, 374, 376
 VTSP050	X		X		X		#2-2"	WP42EG, WP49EG, WU41EG, WU40EG		X			plug	B	0°	ANSI 302A
 VTSP090	X		X		X		#4-3/4"	WP42EG, WP49EG		X			plug	B	0°	DIN/ANSI
 VTSP097	X		X			X	1/4-1"	WP42EG		X			plug	B	0°	DIN/ANSI










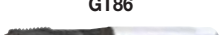

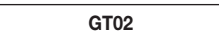
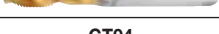





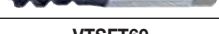


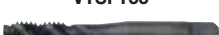



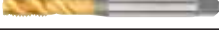
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		Steel < 35 HRC	Steel > 36-48 HRC	PH and Ferritic Stainless Steel < 35 HRC	PH and Ferritic Stainless Steel > 35 HRC	Stainless Steel	Gray Cast Iron	Ductile Cast Iron	Wrought Aluminum	Cast Aluminum	Copper, Copper Alloys	Iron Based	Cobalt Based	Nickel Based	Titanium Alloys	Hardened Steels 49-55 HRC	Hardened Steels 56-68 HRC		
Spiral-Point and Left-Hand Spiral-Flute Taps (continued)																			
	***		***		***		**	*	*		**						W4	W218	
	***		***		***		**	*	*		**						W6	W218	
	***		***		***		**	*	*		**						W7	W217	
	***		***		***		**	*	*		**						W8	W217	
	***		***		***		**	*	*		**						W9	W217	
	***		***		***		**	*	*		**						W10	W217	
												***	***				W11	W217	
												***	***				W12	W218	
												***	***				W14	W217	
														***			W15	W217	
														***			W16	W218	
														***			W18	W217	
								***	*	*							W19	W217	
								***	**								W20	W218	
								***	**								W21	W217	
		***		***	*	*	*					*					W22	W217	
	**	*	*		**	*	**	*	**	**	*						W23	W220	
	**	*	*		**	*	**	*	**	**	*						W27	W220	
	**	*	*		**	*	**	*	**	**	*						W28	W220	

★ ★ ★ ★ ★ ★ series	hole		thread		coolant		size range min-max	grade/ coating	material			chamfer		helix angle	dimension	
	through	blind	cutting	forming	flood	through			carbide	HSS-E-PM	HSS-E	HSS	type			form
																
Spiral-Point and Left-Hand Spiral-Flute Taps (continued)																
 VTSP060	X		X		X		#4-1"	WU41EG, WP49EG			X		plug	B	0°	DIN 371, 376
 VTSP055	X		X		X		M3-M30	WP42EG, WP49EG, WU41EG, WU40EG			X		plug	B	0°	ANSI 302A
 VTSP095	X		X		X		M3-M20	WP42EG, WP49EG			X		plug	B	0°	DIN/ANSI
 VTSP099	X		X			X	M6-M20	WP42EG			X		plug	B	0°	DIN/ANSI
 VTSP065	X		X		X		M2-M36	WP42EG, WP49EG, WU41EG, WU40EG			X		plug	B	0°	DIN 371, 374, 376
 VTSP075	X		X		X		M3-M20	WU41EG, WU40EG			X		plug	B	0°	JIS
 VTSP054	X		X		X		#4-5/8"	WP49EG			X		plug	—	0°	Extend 6"
 VTSP054	X		X		X		#4-1/4"	WP49EG			X		plug	—	0°	Extend 4"
 5301/2301	X		X		X		#0-3/4"	TiCN, TiN, Oxide, Uncoated			X		plug	—	0°	ANSI 302
 5301F	X		X		X		1/4-1"	Uncoated			X		plug	—	0°	ANSI 302
 5301	X		X		X		#6-3/8"	Uncoated			X		plug	—	0°	Extend 6"
 5601	X		X		X		#6-3/4"	Oxide/ Nitride			X		plug	—	0°	ANSI 302
 5302		X	X		X		#0-5/16"	Uncoated			X	bottoming	—	0°	ANSI 302	
 5351/2351	X		X		X		M2-M18	TiCN, TiN, Uncoated			X		plug	—	0°	ANSI 302
 7301	X		X		X		#4-3/4"	Uncoated			X		plug	—	0°	ANSI 302










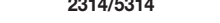

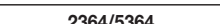


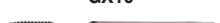











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	Steel < 35 HRC	Steel > 36-48 HRC	PH and Ferritic Stainless Steel < 35 HRC	PH and Ferritic Stainless Steel > 35 HRC	Stainless Steel	Gray Cast Iron	Ductile Cast Iron	Wrought Aluminum	Cast Aluminum	Copper, Copper Alloys	Iron Based	Cobalt Based	Nickel Based	Titanium Alloys	Hardened Steels 49-55 HRC	Hardened Steels 56-68 HRC		
Spiral-Point and Left-Hand Spiral-Flute Taps (continued)																		
	★★	★	★		★★	★	★★	★	★★	★★	★						W29	W220
	★★	★	★		★★	★	★★	★	★★	★★	★						W32	W219
	★★	★	★		★★	★	★★	★	★★	★★	★						W34	W219
	★★	★	★		★★	★	★★	★	★★	★★	★						W35	W219
	★★	★	★		★★	★	★★	★	★★	★★	★						W36	W219
	★★	★	★		★★	★	★★	★	★★	★★	★						W39	W219
	★★	★	★		★★	★	★★	★	★★	★★	★						W41	W220
	★★	★	★		★★	★	★★	★	★★	★★	★						W40	W220
	★		★		★		★	★	★	★							W42	—
	★		★		★		★	★	★	★							W45	—
	★		★		★		★	★	★	★							W46	—
	★		★		★		★	★	★	★							W47	—
	★		★		★		★	★	★	★							W48	—
	★		★		★		★	★	★	★							W49	—
	★	★	★	★	★	★	★	★	★	★							W50	—

series	hole		thread		coolant		size range min-max	grade/ coating	material				chamfer		helix angle	dimension	
	through	blind	cutting	forming	flood	through			carbide	HSS-E-PM	HSS-E	HSS	type	form			
																	
Spiral-Flute Taps																	
 GT30		X	X			X		#2-1"	GP6520, GM6515, GP6505		X			semi-bottom	C	45°	ANSI 302A
 GT30		X	X			X		#6-1/2"	GP6520		X			semi-bottom	C	45°	DIN/ANSI
 GT30		X	X			X		M3-M42	GP6520, GM6515, GP6505		X			semi-bottom	C	45°	DIN 371, 374, 376
 GT30		X	X			X		M24-M42	GP6520		X			semi-bottom	C	45°	DIN 376, XL
 GT30		X	X			X		M3-M16	GP6520, GM6515		X			semi-bottom	C	45°	ANSI 302A
 GT31		X	X				X	1/4-1/2"	GP6520		X			semi-bottom	C	45°	DIN/ANSI
 GT31		X	X				X	M5-M42	GP6520, GM6515		X			semi-bottom	C	45°	DIN 371, 376
 GT31		X	X				X	M24-M42	GP6520		X			semi-bottom	C	45°	DIN 376, XL
 GT32		X	X			X		M5-M16	GP6520		X			bottoming	E	45°	DIN 371, 374, 376
 GT33		X	X				X	M5-M16	GP6520		X			bottoming	E	45°	DIN 371, 374, 376
 GT50		X	X			X		M24-M42	GP6520		X			semi-bottom	C	15°	DIN 376, XL
 GT51		X	X				X	M24-M42	GP6520		X			semi-bottom	C	15°	DIN 376, XL
 GT12		X	X			X		M3-M20	WS32MG		X			semi-bottom	C	10°	DIN 371, 376
 GT92		X	X			X		#2-3/4"	WU32MG, WS39MG		X			3-4 pitches	—	11°	ANSI 302A
 GT92		X	X			X		M2.5-M12	WU32MG, WS39MG		X			3-4 pitches	—	11°	ANSI 302A
 GT94		X	X			X		#4-5/8"	WU32MG, WS39MG		X			bottom	E	11°	ANSI 302A
 GT16		X	X			X		M3-M12	WN35MG		X			semi-bottom	C	30°	DIN 371
 GT62		X	X			X		#2-1"	WS30MG, WS34MG		X			semi-bottom	C	10°	ANSI 302A
 GT62		X	X			X		M2.5-M12	WS30MG, WS34MG		X			semi-bottom	C	10°	ANSI 302A









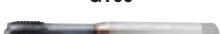
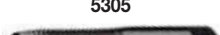
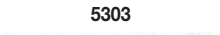
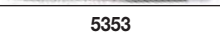
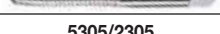



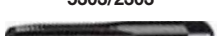
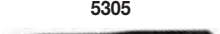

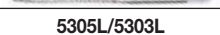
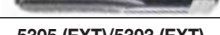





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Steel <35 HRC	Steel >36-48 HRC	PH and Ferritic Stainless Steel <35 HRC	PH and Ferritic Stainless Steel >35 HRC	Stainless Steel	Gray Cast Iron	Ductile Cast Iron	Wrought Aluminum	Cast Aluminum	Copper, Copper Alloys	Iron Based	Cobalt Based	Nickel Based	Titanium Alloys	Hardened Steels 49-55 HRC	Hardened Steels 56-68 HRC	
Spiral-Flute Taps (continued)																
★ ★ ★		★ ★ ★		★ ★ ★		★ ★	★	★		★ ★					W54	W218
★ ★ ★		★ ★ ★		★ ★ ★		★ ★	★	★		★ ★					W56	W218
★ ★ ★		★ ★ ★		★ ★ ★		★ ★	★	★		★ ★					W58	W217
★ ★ ★		★ ★ ★		★ ★ ★		★ ★	★	★		★ ★					W59	W217
★ ★ ★		★ ★ ★		★ ★ ★		★ ★	★	★		★ ★					W57	W217
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★ ★ ★		★ ★ ★		★ ★ ★		★ ★	★	★		★ ★					W61	W217
★ ★ ★		★ ★ ★		★ ★ ★		★ ★	★	★		★ ★					W62	W217
★ ★ ★		★ ★ ★		★ ★ ★		★ ★	★	★		★ ★					W63	W217
★ ★ ★		★ ★ ★		★ ★ ★		★ ★	★	★		★ ★					W64	W217
★ ★ ★		★ ★ ★				★ ★									W65	W217
★ ★ ★		★ ★ ★				★ ★									W67	W217
											★ ★ ★	★ ★ ★			W69	W217
											★ ★ ★	★ ★ ★			W70	W218
											★ ★ ★	★ ★ ★			W72	W217
											★ ★ ★	★ ★ ★			W73	W218
													★ ★ ★		W75	W217
													★ ★ ★		W76	W218
													★ ★ ★		W78	W217

series	hole		thread		coolant		size range	grade/ coating	material			chamfer		helix angle	dimension	
	through	blind	cutting	forming	flood	through			carbide	HSS-E-PM	HSS-E	HSS	type			form
																
Spiral-Flute Taps (continued)																
 GT80		X	X		X		M3-M20	WN48EG			X		semi-bottom	C	45°	DIN 371, 376
 GT82		X	X		X		#2-1/2"	WN44EG			X		semi-bottom	C	45°	DIN/ANSI
 GT82		X	X		X		M3-M12	WN44EG			X		semi-bottom	C	45°	DIN/ANSI
 GT86		X	X		X		#2-1/2"	WN44EG			X		semi-bottom	C	25°	DIN/ANSI
 GT86		X	X		X		M3-M12	WN44EG			X		semi-bottom	C	25°	DIN/ANSI
 GT02		X	X		X		M3-M20	WP31MG		X			semi-bottom	C	25°	DIN 371, 374, 376
 GT04		X	X		X		M3-M20	WH36MG		X			semi-bottom	C	42°	DIN 371, 374, 376
 VTSFT50		X	X		X		#2-2"	WP42EG, WP49EG, WU41EG, WU40EG			X		semi-bottom	C	45°	ANSI 302A
 VTSFT51		X	X		X		#4-3/4"	WP49EG			X		bottoming	E	45°	ANSI 302A
 VTSFT90		X	X		X		#4-3/4"	WP42EG, WP49EG			X		semi-bottom	C	45°	DIN/ANSI
 VTSFT97		X	X			X	1/4-1"	WP42EG			X		semi-bottom	C	45°	DIN/ANSI
 VTSFT60		X	X		X		#4-1"	WU41EG, WP49EG			X		semi-bottom	C	45°	DIN 371, 376
 VTSFT55		X	X		X		M3-M30	WP42EG, WP49EG, WU41EG, WU40EG			X		semi-bottom	C	45°	ANSI 302A
 VTSFT55		X	X		X		M3-M18	WP49EG			X		bottoming	E	45°	ANSI 302A
 VTSFT65		X	X		X		M2-M33	WP42EG, WP49EG, WU41EG, WU40EG			X		semi-bottom	C	45°	DIN 371, 374, 376
 VTSFT65		X	X		X		M3-M20	WP42EG, WP49EG			X		bottoming	E	45°	DIN 371, 374, 376
 VTSFT95		X	X		X		M3-M20	WP42EG, WP49EG			X		semi-bottom	C	45°	DIN/ANSI
 VTSFT99		X	X			X	M6-M20	WP42EG			X		semi-bottom	C	45°	DIN/ANSI
 VTSFT75		X	X		X		M3-M20	WU41EG, WU40EG			X		semi-bottom	C	45°	JIS
 VTSFT54		X	X		X		#4-5/8"	WP49EG			X		semi-bottom	C	45°	Extend 6"










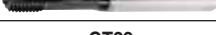

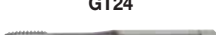
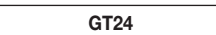







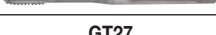

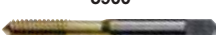

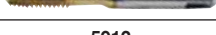

P				M	K		N			S				H		page(s)	recommended cutting parameters
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Steel < 35 HRC	Steel > 36-48 HRC	PH and Ferritic Stainless Steel < 35 HRC	PH and Ferritic Stainless Steel > 35 HRC	Stainless Steel	Gray Cast Iron	Ductile Cast Iron	Wrought Aluminum	Cast Aluminum	Copper, Copper Alloys	Iron Based	Cobalt Based	Nickel Based	Titanium Alloys	Hardened Steels 49-55 HRC	Hardened Steels 56-68 HRC		
Spiral-Flute Taps (continued)																	
							***									W79	W217
							***	**								W80	W218
							***	**								W81	W217
							***	**								W82	W218
							***	**								W83	W217
	**	**	**	*	*	*					*					W84	W217
	**	**	**											***		W85	W217
**	*	*		**	*	**	*	**	**	*						W86	W220
**	*	*		**	*	**	*	**	**	*						W90	W220
**	*	*		**	*	**	*	**	**	*						W92	W220
**	*	*		**	*	**	*	**	**	*						W93	W220
**	*	*		**	*	**	*	**	**	*						W94	W220
**	*	*		**	*	**	*	**	**	*						W97	W219
**	*	*		**	*	**	*	**	**	*						W99	W219
**	*	*		**	*	**	*	**	**	*						W100	W219
**	*	*		**	*	**	*	**	**	*						W102	W219
**	*	*		**	*	**	*	**	**	*						W103	W219
**	*	*		**	*	**	*	**	**	*						W104	W219
**	*	*		**	*	**	*	**	**	*						W105	W219
**	*	*		**	*	**	*	**	**	*						W106	W220

series	hole		thread		coolant		size range min-max	grade/ coating	material			chamfer		helix angle	dimension	
	through	blind	cutting	forming	flood	through			carbide	HSS-E-PM	HSS-E	HSS	type			form
																
Spiral-Flute Taps (continued)																
 VTSFT54		X	X			X	#4-1/4"	WP49EG			X		semi-bottom	C	45°	Extend 4"
 VTSFT54		X	X			X	#4-7/16"	WP49EG			X		bottom	E	45°	Extend 6"
 2314/5314	X		X			X	#4-3/4"	TiN, Uncoated				X	plug	—	45°	ANSI 302A
 2314/5314		X	X			X	#4-3/4"	TiN, Uncoated				X	bottoming	—	45°	ANSI 302A
 2364/5364	X		X			X	M3-M12	TiN, Uncoated				X	plug	—	45°	ANSI 302A
 2364/5364		X	X			X	M3-M12	TiN, Uncoated				X	bottom	—	45°	ANSI 302A
 5344	X		X			X	#10-3/4"	Oxide				X	plug	—	45°	ANSI 302A
 5344		X	X			X	#6-3/4"	Oxide				X	bottom	—	45°	ANSI 302A
Straight-Flute Taps																
 GX10	X	X	X			X	M3-M16	WH16PG	X				semi-bottom	C	0°	DIN 371, 374, 376
 GX35		X	X			X	M6-M16	WK12PG	X				bottoming	E	0°	HA6535
 GX35		X	X			X	M6-M14	WK12PG	X				bottoming	E	0°	DIN 371, 374, 376
 GX47		X	X			X	M6-M10	WN14PG	X				bottoming	E	0°	DIN 371
 GX47		X	X			X	M6-M16	WN14PG	X				bottoming	E	0°	HA6535
 GX50		X	X			X	M4-M14	WK12PG	X				semi-bottom	C	0°	DIN 371, DIN 376
 GT40	X	X	X			X	#10-3/4"	GP6520		X			semi-bottom	C	0°	ANSI 302A
 GT40	X	X	X			X	#6-1/2"	GP6520		X			semi-bottom	C	0°	DIN/ANSI
 GT40	X	X	X			X	M3-M16	GP6520		X			semi-bottom	C	0°	ANSI 302A
 GT40	X	X	X			X	M4-M22	GP6520		X			semi-bottom	C	0°	DIN 371, 376
 GT41	X	X	X			X	1/4-1/2"	GP6520		X			semi-bottom	C	0°	DIN/ANSI
 GT41	X	X	X			X	M4-M20	GP6520		X			semi-bottom	C	0°	DIN 371, 374, 376















P				M	K		N			S				H		page(s)	recommended cutting parameters
1, 2, 3, 4, 6, 7	5, 9, 10, 11	12, 13.1	13.2	14.1, 14.2, 14.3, 14.4	15, 16	17, 18, 19, 20	21	22, 23, 24, 25	26, 27, 28	31, 32	33, 34, 35	36	37	38.1, 38.2, 40.1, 40.2, 41.1	39.1, 41.2		
Steel <35 HRC	Steel >36-48 HRC	PH and Ferritic Stainless Steel <35 HRC	PH and Ferritic Stainless Steel >35 HRC	Stainless Steel	Gray Cast Iron	Ductile Cast Iron	Wrought Aluminum	Cast Aluminum	Copper, Copper Alloys	Iron Based	Cobalt Based	Nickel Based	Titanium Alloys	Hardened Steels 49-55 HRC	Hardened Steels 56-68 HRC		
Spiral-Flute Taps (continued)																	
★★	★	★		★★	★	★★	★	★★	★★	★						W107	W220
★★	★	★		★★	★	★★	★	★★	★★	★						W108	W220
★		★		★		★	★	★	★							W109	—
★		★		★		★	★	★	★							W110	—
★		★		★		★	★	★	★							W111	—
★		★		★		★	★	★	★							W112	—
★		★		★		★	★	★	★							W113	—
★		★		★		★	★	★	★							W114	—
Straight-Flute Taps (continued)																	
														★★★		W118	W216
					★★★	★★★										W119	W216
					★★★	★★★										W120	W216
								★★★								W121	W216
								★★★								W122	W216
					★★★	★★★										W123	W216
					★★★	★★★		★★★	★★							W124	W218
					★★★	★★★		★★★	★★							W125	W218
					★★★	★★★		★★★	★★							W126	W217
					★★★	★★★		★★★	★★							W127	W217
					★★★	★★★		★★★	★★							W128	W218
					★★★	★★★		★★★	★★							W129	W217

series	hole		thread		coolant		size range	grade/ coating	material			chamfer		helix angle	dimension	
	through	blind	cutting	forming	flood	through			carbide	HSS-E-PM	HSS-E	HSS	type			form
																
Straight-Flute Taps (continued)																
 GT42		X	X		X		M5-M20	GP6520		X			bottoming	E	0°	DIN 371, 374, 376
 GT43		X	X			X	M5-M20	GP6520		X			bottoming	E	0°	DIN 371, 374, 376
 GT06	X	X	X		X		M6-M16	WS32MG		X			semi-bottom	C	0°	DIN 371, 374, 376
 5305	X		X		X		#0-12	Oxide, Uncoated				X	taper	—	0°	ANSI 302
 5303	X		X		X		1/4-1-1/2"	Oxide, Uncoated				X	taper	—	0°	ANSI 302
 5353	X		X		X		M2-M36	Uncoated				X	taper	—	0°	ANSI 302
 5305/2305	X		X		X		#0-12	TiCN, TiN, Oxide, Uncoated				X	plug	—	0°	ANSI 302
 5303/2303	X		X		X		1/4-1-1/2"	TiCN, TiN, Oxide, Uncoated				X	plug	—	0°	ANSI 302
 5305/2305		X	X		X		#0-12	TiCN, TiN, Oxide, Uncoated				X	bottom	—	0°	ANSI 302
 5303/2303		X	X		X		1/4-1-1/2"	TiCN, TiN, Oxide, Uncoated				X	bottom	—	0°	ANSI 302
 5305	X	X	X		X		#0-12	Uncoated				X	taper, plug, & bottoming	—	0°	ANSI 302
 5303	X	X	X		X		1/4-1-1/2"	Uncoated				X	taper, plug, & bottoming	—	0°	ANSI 302
 5305L/5303L	X	X	X		X		1/4-3/4"	Uncoated				X	taper, plug, & bottoming	—	0°	ANSI 302
 5305 (EXT)/5303 (EXT)	X	X	X		X		#6-3/8"	Uncoated				X	bottoming	—	0°	ANSI 302
 5353	X		X		X		M1.6-M36	TiCN, TiN, Uncoated				X	plug	—	0°	ANSI 302
 5353	X	X	X		X		M3-M20	Uncoated				X	taper, plug, & bottoming	—	0°	ANSI 302
 5353		X	X		X		M3-M36	TiCN, TiN, Uncoated				X	bottoming	—	0°	ANSI 302
 7305	X	X	X		X		#4-12	Uncoated				X	taper, plug, & bottoming	—	0°	ANSI 302
 7303	X	X	X		X		1/4-1-1/2"	Uncoated				X	taper, plug, & bottoming	—	0°	ANSI 302
 7353	X	X	X		X		M6-M24	Uncoated				X	taper, plug, & bottoming	—	0°	ANSI 302

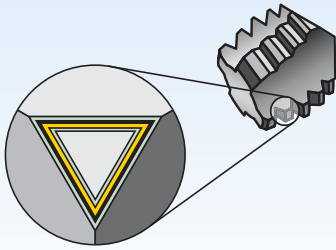
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Steel < 35 HRC	Steel > 36-48 HRC	PH and Ferritic Stainless Steel < 35 HRC	PH and Ferritic Stainless Steel > 35 HRC	Stainless Steel	Gray Cast Iron	Ductile Cast Iron	Wrought Aluminum	Cast Aluminum	Copper, Copper Alloys	Iron Based	Cobalt Based	Nickel Based	Titanium Alloys	Hardened Steels 49-55 HRC	Hardened Steels 56-68 HRC		
Straight-Flute Taps (continued)																	
					★ ★ ★	★ ★ ★		★ ★ ★	★ ★							W130	W217
					★ ★ ★	★ ★ ★		★ ★ ★	★ ★							W131	W217
														★ ★ ★		W132	W217
★		★		★	★	★	★	★	★							W133	—
★		★		★	★	★	★	★	★							W134	—
★		★		★	★	★	★	★	★							W136	—
★		★		★	★	★	★	★	★							W137	—
★		★		★	★	★	★	★	★							W139	—
★		★		★	★	★	★	★	★							W142	—
★		★		★	★	★	★	★	★							W144	—
★		★		★	★	★	★	★	★							W146	—
★		★		★	★	★	★	★	★							W147	—
★	★	★	★	★	★	★	★	★	★							W149	—
★	★	★	★	★	★	★	★	★	★							W150	—
★		★		★	★	★	★	★	★							W151	—
★		★		★	★	★	★	★	★							W153	—
★		★		★	★	★	★	★	★							W152	—
★	★	★	★	★	★	★	★	★	★							W154	—
★	★	★	★	★	★	★	★	★	★							W155	—
★	★	★	★	★	★	★	★	★	★							W156	—

series	hole		thread		coolant		size range min-max	grade/ coating	material			chamfer		helix angle	dimension	
	through	blind	cutting	forming	flood	through			carbide	HSS-E-PM	HSS-E	HSS	type			form
																
Form Taps																
 GX49		X		X		X	M6-M10	WN14PG	X				bottoming	E	—	DIN 374
 GX49		X		X		X	M6-M12	WN14PG	X				bottoming	E	—	HA6535
 GT22	X	X		X	X		M3-M16	WP31MG, WN38MG	X				semi-bottom	C	—	DIN 2174
 GT23	X	X		X		X	M5-M16	WP31MG, WN38MG	X				semi-bottom	C	—	DIN 2174
 GT24	X	X		X	X		#6-3/4"	WU32MG	X				semi-bottom	C	—	DIN/ANSI
 GT24	X	X		X	X		M3-M16	WU32MG	X				semi-bottom	C	—	DIN/ANSI
 GT25	X	X		X		X	1/4-3/4"	WU32MG	X				semi-bottom	C	—	DIN/ANSI
 GT25	X	X		X		X	M6-M16	WU32MG	X				semi-bottom	C	—	DIN/ANSI
 GT26		X		X	X		#0-3/4"	WU32MG	X				bottom	E	—	DIN/ANSI
 GT26		X		X	X		M3-M16	WU32MG	X				bottom	E	—	DIN/ANSI
 GT27		X		X		X	1/4-3/4"	WU32MG	X				bottom	E	—	DIN/ANSI
 GT27		X		X		X	M6-M16	WU32MG	X				bottom	E	—	DIN/ANSI
 5900	X			X	X		#6-1/2"	TiCN, TiN, Uncoated			X		plug	D	—	ANSI 302A
 5910	X			X	X		M6-M10	TiCN, TiN, Uncoated			X		plug	D	—	ANSI 302A
 5912		X		X	X		M4-M12	TiCN, TiN, Uncoated			X		bottoming	E	—	ANSI 302A
 5902		X		X	X		#6-1/2"	TiCN, TiN, Uncoated			X		bottoming	E	—	ANSI 302A
 2500/5500	X			X	X		#4-3/4"	TiN, Uncoated			X		plug	D	—	ANSI 302A
 2502/5502		X		X	X		#0-5/8"	TiCN, TiN, Uncoated			X		bottoming	E	—	ANSI 302A
 2510/5510	X			X	X		M3-M12	TiN, Uncoated			X		plug	D	—	ANSI 302A
 2512/5512		X		X	X		M3-M12	TiCN, TiN, Uncoated			X		bottoming	E	—	ANSI 302A

P				M	K		N			S				H		page(s)	recommended cutting parameters
1, 2, 3, 4, 6, 7	5, 9, 10, 11	12, 13.1	13.2	14.1, 14.2, 14.3, 14.4	15, 16	17, 18, 19, 20	21	22, 23, 24, 25	26, 27, 28	31, 32	33, 34, 35	36	37	38.1, 38.2, 40.1, 40.2, 41.1	39.1, 41.2		
Steel <35 HRC	Steel >36-48 HRC	PH and Ferritic Stainless Steel <35 HRC	PH and Ferritic Stainless Steel >35 HRC	Stainless Steel	Gray Cast Iron	Ductile Cast Iron	Wrought Aluminum	Cast Aluminum	Copper, Copper Alloys	Iron Based	Cobalt Based	Nickel Based	Titanium Alloys	Hardened Steels 49-55 HRC	Hardened Steels 56-68 HRC		
Form Taps (continued)																	
							★★★	★★								W160	W216
							★★★	★★								W161	W216
	★★★						★★★	★★								W162	W217
	★★★						★★★	★★								W163	W217
	★★★			★★												W164	W218
	★★★			★★												W166	W217
	★★★			★★												W167	W218
	★★★			★★												W168	W217
	★★★			★★												W169	W218
	★★★			★★												W171	W217
	★★★			★★												W172	W218
	★★★			★★												W173	W217
	★			★			★	★	★							W174	—
	★			★			★	★	★							W175	—
	★			★			★	★	★							W176	—
	★			★			★	★	★							W177	—
	★			★			★	★	★							W178	—
	★			★			★	★	★							W179	—
	★			★			★	★	★							W181	—
	★			★			★	★	★							W182	—

series	hole		thread		coolant		size range min-max	grade/ coating	material			chamfer		helix angle	dimension	
	through	blind	cutting	forming	flood	through			carbide	HSS-E-PM	HSS-E	HSS	type			form
																
VTSFT80 	X	X	X		X		1/16-1"	WU40EG, WP49EG, WU41EG		X		standard	—	—	ANSI	
VTSTR 	X	X	X		X		1/8-3/4"	WU40EG		X		standard	—	—	ANSI	
2320/5320 	X	X	X		X		1/16-2"	TiN, Oxide, Uncoated			X	standard	—	—	ANSI	
5319 	X	X	X		X		#1/8-2"	Oxide, Uncoated			X	standard	—	—	ANSI	
5321 	X	X	X		X		1/8-1/2"	Uncoated			X	standard	—	—	ANSI	
5820 	X	X	X		X		1/4-1"	Uncoated			X	standard	—	—	ANSI	
5323 	X	X	X		X		1/8-1"	Uncoated			X	standard	—	—	ANSI	
7320 	X	X	X		X		1/8-2"	Uncoated			X	standard	—	—	ANSI	

	P				M	K		N			S				H		page(s)	recommended cutting parameters
	1, 2, 3, 4, 6, 7	5, 9, 10, 11	12, 13.1	13.2	14.1, 14.2, 14.3, 14.4	15, 16	17, 18, 19, 20	21	22, 23, 24, 25	26, 27, 28	31, 32	33, 34, 35	36	37	38.1, 38.2, 40.1, 40.2, 41.1	39.1, 41.2		
	Steel < 35 HRC	Steel > 36-48 HRC	PH and Ferritic Stainless Steel < 35 HRC	PH and Ferritic Stainless Steel > 35 HRC	Stainless Steel	Gray Cast Iron	Ductile Cast Iron	Wrought Aluminum	Cast Aluminum	Copper, Copper Alloys	Iron Based	Cobalt Based	Nickel Based	Titanium Alloys	Hardened Steels 49-55 HRC	Hardened Steels 56-68 HRC		
Pipe Taps (continued)																		
	★★	★	★		★★	★	★★	★	★★	★★	★						W186	W220
	★★					★											W187	W220
	★					★	★	★	★	★							W188	—
	★					★	★	★	★	★							W189	—
	★					★	★	★	★	★							W190	—
	★							★	★	★							W191	—
	★				★	★	★	★	★	★							W192	—
	★	★	★	★	★	★	★	★	★	★							W193	—

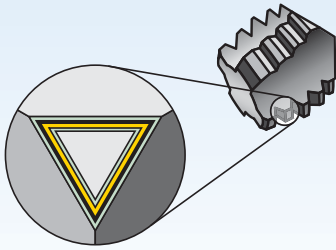


Coatings are designed for optimized tapping performance in specific materials.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous
S	High-Temp Alloys
H	Hardened Materials

wear resistance ← → toughness

Grade	Coating	Grade Description	Material Hardness (HRC)																				
			05	10	15	20	25	30	35	40	45												
WK12PG		PVD coated TiCN and fine grain carbide. Extraordinary wear resistance when tapping cast iron. High-temperature hardness allows long life at up to 4x faster speed than HSS-E-PM taps.																					
			K																				
WN14PG		Coated carbide, PVD two-layer coating over fine-grain carbide. Coating consists of low friction CrC/C over wear-resistant TiN. CrC/C resists galling of non-ferrous materials to the tap. Provides superior performance for tapping cast aluminum and other non-ferrous materials.																					
			N																				
WH16PG		Coated carbide, PVD two-layer coating with heat-resistant TiAlN base layer and low-friction MoS ₂ top layer over carbide substrate. Use in hardened steel 55–63 HRC.																					
			H																				
GP6520		Coated HSS-E-PM, PVD heat- and wear-resistant high-vanadium cobalt powder metal HSS substrate coated with wear-resistant TiCN base layer. Use in steel, cast iron, and cast aluminum with silicon.																					
			P																				
			K																				
GM6515		HSS-E-PM, PVD heat- and wear-resistant high-vanadium cobalt powder metal HSS substrate. Coating consists of low-friction CrC/C over wear-resistant TiN base layer. Use for tapping stainless steel and non-ferrous materials.																					
			M																				
			N																				



Coatings are designed for optimized tapping performance in specific materials.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous
S	High-Temp Alloys
H	Hardened Materials

wear resistance ← → toughness

Grade	Coating	Grade Description	Material Hardness (HRC)																						
			05	10	15	20	25	30	35	40	45														
WN32MG		Coated HSS-E-PM, PVD heat- and wear-resistant high-vanadium cobalt powder metal HSS substrate with high-hardness TiCN coating. Use when tapping heat-treated steel 44-55 HRC and cobalt- or nickel-based heat-resistant alloys.																							
WN35MG		Coated HSS-E-PM, PVD powder metal HSS-E substrate with two-layer coating. TiN base layer and DLC top layer that resists galling of non-ferrous materials to the tap. Use for tapping titanium. Not recommended for steel.																							
WN38MG		Coated HSS-E-PM, PVD powder metal HSS-E substrate with DLC coating. Use for form tapping aluminum. Not recommended for steel.																							
WN44EG		High vanadium HSS-E substrate with a coating consists of low friction CrC/C over wear-resistant TiN base layer. Use for tapping stainless steel and non-ferrous materials.																							
WP42EG		Coated HSS-E substrate with TiCN PVD layer. Use in multiple applications, including steel, stainless steel, ductile cast iron, and cast aluminum. WP42EG is more abrasion-resistant than WU41EG.																							



Tapping Portfolio

Spiral-Point and Left-Hand Spiral-Flute Taps	W2–W50
High-Performance Victory HSS-E-PM Taps	W4–W22
Multipurpose VariTap	W23–W41
Production GUN Taps	W42–W50
Spiral-Flute Taps	W52–W114
High-Performance Victory HSS-E-PM Taps	W54–W85
Multipurpose VariTap	W86–W105
High-Performance VariTap	W106–W108
General Purpose Production Taps	W109–W114
Straight-Flute Taps.....	W116–W156
High-Performance Victory Solid Carbide Taps	W118–W123
High-Performance Victory HSS-E-PM Taps	W124–W132
Hand Taps/Hand Taps Sets	W133–W156
Forming Taps.....	W158–W182
High-Performance Victory Solid Carbide Taps	W160–W161
High-Performance Victory HSS-E-PM Taps	W162–W173
General Purpose Production Taps	W174–W182
Pipe Taps.....	W184–W193
Multipurpose VariTap	W186–W187
General Purpose Production Taps	W188–W193
Thread Mills.....	W194–W215
High-Performance Taps Application Data	W216–W220
Technical Information	W221–W249
Lightning Service.....	W250–W297

Solutions for Through Hole Applications •

WIDIA-GTD™

Spiral-Point and Left-Hand Spiral-Flute



WIDIA-GTD™ offers a wide range of options for tapping through holes in:

- Steel and steel alloys.
- Stainless steel.
- Cast iron.
- Wrought and cast aluminum.
- Nickel-based alloys.
- Titanium alloys.

High-Performance Victory™ HSS-E-PM Taps

- Left-hand spiral flutes to push chips ahead in through holes.
- Offer performance advantages over conventional high-speed steel taps.
- Long tap life at up to 50% higher tapping speed than HSS taps.

Multipurpose VariTap™

- Unique spiral-point geometry provides low tapping torque while pushing chips ahead of the tap in through holes.
- Manufactured from high-vanadium HSS-E to provide long and consistent tool life.
- Ideal for customers who have a variety of materials to machine.

General Purpose Production Taps

- Spiral point GUN™ taps shoot chips ahead of the cutting action to reduce overloading and clogging in flutes, protecting the workpiece.
- Extended life in ductile materials.
- Advanced steam oxide finish and PVD coatings available.



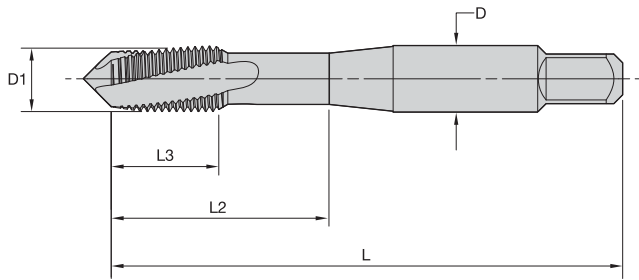
WIDIA
VICTORY

High-Performance Taps

Victory™ Left-Hand Spiral-Flute HSS-E-PM Taps • Through Holes



- GM6515 TiN + CrC/C for stainless steel.
- GP6520 TiCN for steel.

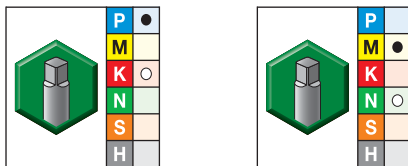


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



■ GT20 • Machine Screw and Fractional • Form D Plug Chamfer • ANSI • For Steel and Stainless Steel



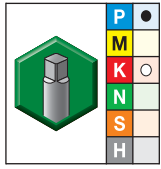
- first choice
- alternate choice

grade GP6520 TiCN		grade GM6515 TiN+CrC/C		inch dimensions					number of flutes	class of fit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
3954966	GT205031	3955273	GT205001	2 - 56	1.75	.44	.49	.141	2	2BX
3954967	GT205032	3955274	GT205002	2 - 56	1.75	.44	.49	.141	2	3BX
3954968	GT205033	3955275	GT205003	4 - 40	1.88	.56	.68	.141	2	2BX
3954969	GT205034	3955276	GT205004	4 - 40	1.88	.56	.68	.141	2	3BX
-	-	3955277	GT205005	5 - 40	1.94	.63	.75	.141	2	3BX
3954970	GT205035	-	-	5 - 40	2.37	.63	.75	.141	2	3BX
3954983	GT205037	3955279	GT205007	6 - 32	2.00	.36	.71	.141	2	3BX
3954971	GT205036	3955278	GT205006	6 - 32	2.00	.36	.71	.141	2	2BX
3954985	GT205039	3955281	GT205009	8 - 32	2.13	.31	.76	.168	2	3BX
3954984	GT205038	3955280	GT205008	8 - 32	2.13	.31	.76	.168	2	2BX
3954998	GT205052	3955294	GT205022	8 - 36	2.13	.31	.76	.168	2	3BX
3954986	GT205040	3955282	GT205010	10 - 24	2.38	.47	.91	.194	3	3BX
3954999	GT205053	3955295	GT205023	10 - 32	2.38	.47	.91	.194	3	2BX
3955000	GT205054	3955296	GT205024	10 - 32	2.38	.47	.91	.194	3	3BX
3954987	GT205041	3955283	GT205011	12 - 24	2.38	.42	.96	.220	3	3BX
3954989	GT205043	3955285	GT205013	1/4 - 20	2.50	.44	1.00	.255	3	3BX
3954988	GT205042	3955284	GT205012	1/4 - 20	2.50	.44	1.00	.255	3	2BX
3955001	GT205055	3955297	GT205025	1/4 - 28	2.50	.44	1.00	.255	3	2BX
3955002	GT205056	3955298	GT205026	1/4 - 28	2.50	.44	1.00	.255	3	3BX
3954991	GT205045	3955287	GT205015	5/16 - 18	2.72	.49	1.13	.318	3	3BX
3954990	GT205044	3955286	GT205014	5/16 - 18	2.72	.49	1.13	.318	3	2BX
3955003	GT205057	3955299	GT205027	5/16 - 24	2.72	.49	1.13	.318	3	3BX
3954992	GT205046	3955288	GT205016	3/8 - 16	2.94	.60	1.27	.381	3	2BX
3954993	GT205047	3955289	GT205017	3/8 - 16	2.94	.60	1.27	.381	3	3BX

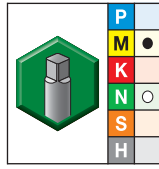
(continued)



(GT20 • Machine Screw and Fractional • Form D Plug Chamfer • ANSI • For Steel and Stainless Steel — continued)



grade GP6520
TiCN



grade GM6515
TiN+CrC/C

● first choice
○ alternate choice

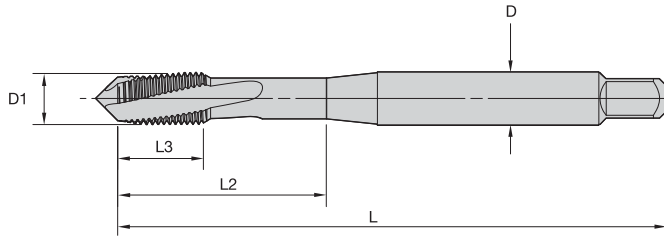
grade GP6520 TiCN		grade GM6515 TiN+CrC/C		inch dimensions					number of flutes	class of fit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
3955004	GT205058	3955300	GT205028	3/8 - 24	2.94	.60	1.27	.381	3	3BX
3954994	GT205048	3955290	GT205018	7/16 - 14	3.16	.71	1.49	.323	3	3BX
3955005	GT205059	3955301	GT205029	7/16 - 20	3.16	.71	1.49	.323	3	3BX
3954995	GT205049	3955291	GT205019	1/2 - 13	3.38	.77	1.74	.367	3	3BX
3955006	GT205060	3955302	GT205030	1/2 - 20	3.38	.77	1.74	.367	3	3BX
3954996	GT205050	3955292	GT205020	5/8 - 11	3.81	.91	1.89	.480	4	3BX
3954997	GT205051	3955293	GT205021	3/4 - 10	4.25	1.00	2.08	.590	4	3BX

High-Performance Taps

Victory™ Left-Hand Spiral-Flute HSS-E-PM Taps • Through Holes



- GP6520 TiCN for steel.

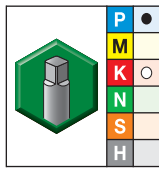


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



■ GT20 • Machine Screw and Fractional • Form D Plug Chamfer • DIN Length ANSI Shank • For Steel



- first choice
- alternate choice

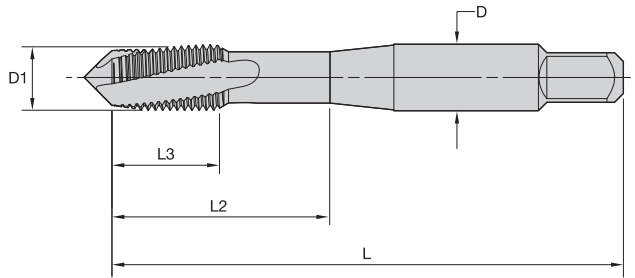
grade GP6520
TiCN

order #	catalog #	D1 TPI	inch dimensions				number of flutes	class of fit
			L	L3	L2	D		
4176835	GT205131	6 - 32	2.20	.40	.79	.141	2	2BX
4176854	GT205140	6 - 40	2.20	.39	.79	.141	2	2BX
4176836	GT205132	8 - 32	2.48	.39	.83	.168	2	2BX
4176837	GT205133	10 - 24	2.76	.39	.98	.194	3	2BX
4176856	GT205142	10 - 32	2.76	.40	.98	.194	3	2BX
4176839	GT205135	1/4 - 20	3.15	.51	1.18	.255	3	3BX
4176858	GT205144	1/4 - 28	3.15	.51	1.18	.255	3	3BX
4176840	GT205136	5/16 - 18	3.54	.55	1.38	.318	3	3BX
4176859	GT205145	5/16 - 24	3.54	.55	1.38	.318	3	3BX
4176841	GT205137	3/8 - 16	3.94	.63	1.53	.381	3	3BX
4176860	GT205146	3/8 - 24	3.94	.63	1.53	.381	3	3BX
4176842	GT205138	7/16 - 14	3.94	.71	1.61	.323	3	3BX
4176861	GT205147	7/16 - 20	3.94	.71	1.61	.323	3	3BX
4176853	GT205139	1/2 - 13	4.33	.79	1.85	.367	3	3BX
4176862	GT205148	1/2 - 20	4.33	.79	1.85	.367	3	3BX

High-Performance Taps



- GM6515 TiN + CrC/C for stainless steel.
- GP6520 TiCN for steel.

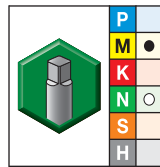
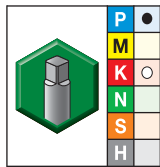


Shank Tolerance

D inch	tolerance h6
0.118–0.236	+0, -.0003
>0.236–0.394	+0, -.0004
>0.394–0.709	+0, -.0004
>0.709–1.181	+0, -.0005
>1.181–1.969	+0, -.0006



■ GT20 • Form D Plug Chamfer • Metric ANSI • For Steel and Stainless Steel



- first choice
- alternate choice

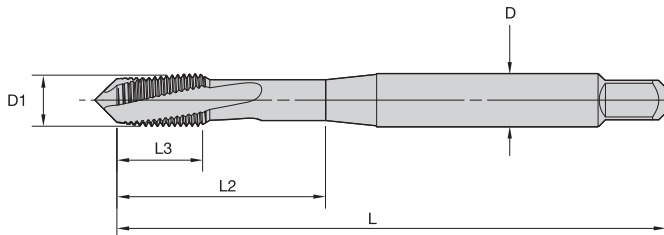
grade GP6520 TiCN		grade GM6515 TiN+CrC/C		inch dimensions					number of flutes	class of fit
order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
3955018	GT205069	3955010	GT205061	M3 X 0,5	1.94	.63	.75	.141	2	6HX
3955019	GT205070	3955011	GT205062	M4 X 0,7	2.13	.32	.76	.168	2	6HX
3955020	GT205071	3955012	GT205063	M5 X 0,8	2.38	.47	.91	.194	2	6HX
3955021	GT205072	3955013	GT205064	M6 X 1	2.50	.46	1.01	.255	3	6HX
3955043	GT205073	3955014	GT205065	M8 X 1	2.72	.48	1.12	.318	3	6HX
3955044	GT205074	3955015	GT205066	M8 X 1,25	2.72	.48	1.12	.318	3	6HX
3955045	GT205075	3955016	GT205067	M10 X 1,5	2.94	.53	1.26	.381	3	6HX
3955046	GT205076	3955017	GT205068	M12 X 1,75	3.38	.77	1.74	.367	3	6HX

High-Performance Taps

High-Performance Taps

Victory™ Left-Hand Spiral-Flute HSS-E-PM Taps • Through Holes

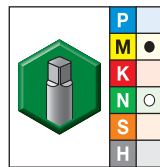
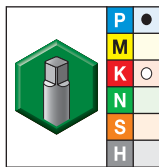
- GM6515 TiN + CrC/C for stainless steel.
- GP6520 TiCN for steel.



Shank Tolerance	
D mm	tolerance h6
>3-6	+0, -0,008
>6-10	+0, -0,009
>10-18	+0, -0,011
>18-30	+0, -0,013
>30-50	+0, -0,016



■ GT20 • Form D Plug Chamfer • Metric DIN 371, 374, and 376 • For Steel and Stainless Steel

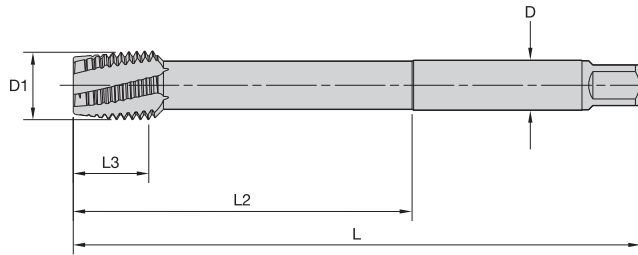


- first choice
- alternate choice

grade GP6520 TiCN		grade GM6515 TiN+CrC/C		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D			
3955084	GT205094	3955047	GT205077	M3 X 0,5	56	8	18	3,5	2	DIN 371	6HX
3955085	GT205095	3955048	GT205078	M4 X 0,7	63	10	21	4,5	2	DIN 371	6HX
3955086	GT205096	3955049	GT205079	M5 X 0,8	70	10	25	6,0	2	DIN 371	6HX
3955087	GT205097	3955050	GT205080	M6 X 1	80	10	30	6,0	3	DIN 371	6HX
3955124	GT205104	3955077	GT205087	M8 X 1	90	13	35	6,0	3	DIN 374	6HX
3955088	GT205098	3955051	GT205081	M8 X 1,25	90	13	35	8,0	3	DIN 371	6HX
3955125	GT205105	3955078	GT205088	M10 X 1	90	10	35	7,0	3	DIN 374	6HX
3955126	GT205106	3955079	GT205089	M10 X 1,25	100	15	39	7,0	3	DIN 374	6HX
3955089	GT205099	3955052	GT205082	M10 X 1,5	100	15	39	10,0	3	DIN 371	6HX
3955127	GT205107	3955080	GT205090	M12 X 1,5	100	15	39	9,0	3	DIN 374	6HX
3955090	GT205100	3955073	GT205083	M12 X 1,75	110	18	44	9,0	3	DIN 376	6HX
3955128	GT205108	3955081	GT205091	M14 X 1,5	100	15	47	11,0	4	DIN 374	6HX
3955091	GT205101	3955074	GT205084	M14 X 2	110	20	52	11,0	4	DIN 376	6HX
3955129	GT205109	3955082	GT205092	M16 X 1,5	100	15	46	12,0	4	DIN 374	6HX
3955092	GT205102	3955075	GT205085	M16 X 2	110	20	51	12,0	4	DIN 376	6HX
3955130	GT205110	3955083	GT205093	M18 X 1,5	110	15	50	14,0	4	DIN 374	6HX
3955123	GT205103	3955076	GT205086	M20 X 2,5	140	25	64	16,0	4	DIN 376	6HX
4033723	GT205111	-	-	M24 X 3	160	30	77	18,0	5	DIN 376	6HX
4033725	GT205113	-	-	M30 X 3,5	180	35	91	22,0	5	DIN 376	6HX
4033726	GT205114	-	-	M33 X 3,5	180	35	100	25,0	5	DIN 376	6HX
4033728	GT205116	-	-	M36 X 4	200	40	110	28,0	6	DIN 376	6HX
4033730	GT205118	-	-	M42 X 4,5	200	45	120	32,0	6	DIN 376	6HX

High-Performance Taps

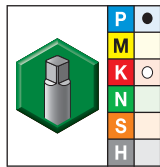
- GP6520 TiCN for steel and cast iron.



Shank Tolerance	
D mm	tolerance h6
12-18	+0, -0,011
20-30	+0, -0,013
32-36	+0, -0,016



- GT20 • Form D Plug Chamfer • Larger Sizes • Metric Extra Long • For Steel and Cast Iron



- first choice
- alternate choice

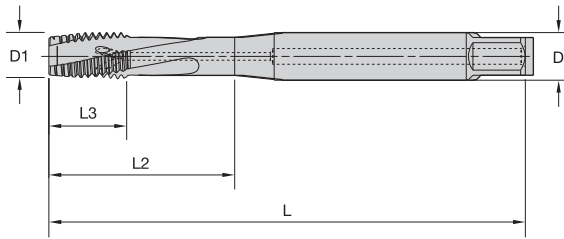
grade GP6520 TiCN		metric dimensions					number of flutes	class of fit
order #	catalog #	D1 size	L	L3	L2	D		
4033765	GT205122	M24 X 3	200	30	120	18,0	5	6HX
4033767	GT205124	M30 X 3,5	250	35	150	22,0	5	6HX
4033768	GT205125	M33 X 3,5	250	35	150	25,0	5	6HX
4033770	GT205127	M36 X 4	250	40	150	28,0	6	6HX
4033772	GT205129	M42 X 4,5	300	45	180	32,0	6	6HX

High-Performance Taps

Victory™ Left-Hand Spiral-Flute HSS-E-PM Taps • Through Holes



- GM6515 TiN + CrC/C for stainless steel.
- GP6520 TiCN for steel.

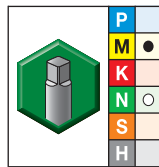
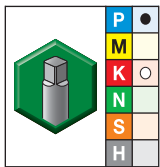


Shank Tolerance

D mm	tolerance h6
>3-6	+0, -0,008
>6-10	+0, -0,009
>10-18	+0, -0,011
>18-30	+0, -0,013
>30-50	+0, -0,016



■ GT21 • Form D Plug Chamfer • Through Coolant • Metric DIN 371 and 376 • For Steel and Stainless Steel



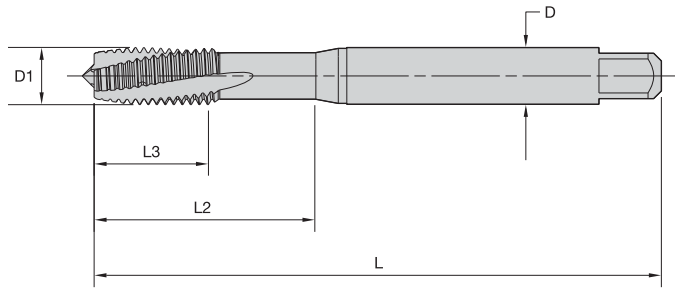
- first choice
- alternate choice

grade GP6520 TiCN		grade GM6515 TiN+CrC/C		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D			
3955054	GT215007	3955038	GT215001	M5 X 0,8	70	10	25	6,0	2	DIN 371	6HX
3955055	GT215008	3955039	GT215002	M6 X 1	80	10	30	6,0	3	DIN 371	6HX
3955056	GT215009	3955040	GT215003	M8 X 1,25	90	13	35	8,0	3	DIN 371	6HX
3955057	GT215010	3955041	GT215004	M10 X 1,5	100	15	39	10,0	3	DIN 371	6HX
3955058	GT215011	3955042	GT215005	M12 X 1,75	110	18	44	9,0	3	DIN 376	6HX
3955059	GT215012	3955053	GT215006	M14 X 2	110	20	52	11,0	4	DIN 376	6HX

High-Performance Taps



- WS32MG TiCN for nickel and nickel alloys.

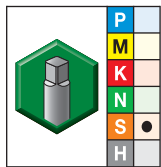


Shank Tolerance

D mm	tolerance h9
1-3	+0, -0,025
>3-6	+0, -0,030
>6-10	+0, -0,036
>10-18	+0, -0,043
>18-30	+0, -0,052



■ GT10 • Form D Plug Chamfer • Metric DIN 371 and 376 • For Nickel and Nickel Alloys



- first choice
- alternate choice

order #	catalog #	grade WS32MG TiCN	metric dimensions				number of flutes	dimension standard	class of fit
			D1 size	L	L3	L2			
4160100	GT105001	M3 X 0,5	56	11	18	3,5	2	DIN 371	6HX
4160101	GT105002	M4 X 0,7	63	13	21	4,5	3	DIN 371	6HX
4160102	GT105003	M5 X 0,8	70	15	25	6,0	3	DIN 371	6HX
4160103	GT105004	M6 X 1	80	17	30	6,0	3	DIN 371	6HX
4160104	GT105005	M8 X 1,25	90	20	35	8,0	3	DIN 371	6HX
4160105	GT105006	M10 X 1,5	100	22	39	10,0	3	DIN 371	6HX
4160106	GT105007	M12 X 1,75	110	24	—	9,0	3	DIN 376	6HX
4160107	GT105008	M14 X 2	110	26	—	11,0	3	DIN 376	6HX
4160108	GT105009	M16 X 2	110	27	—	12,0	3	DIN 376	6HX
4160109	GT105010	M20 X 2,5	140	32	—	16,0	3	DIN 376	6HX

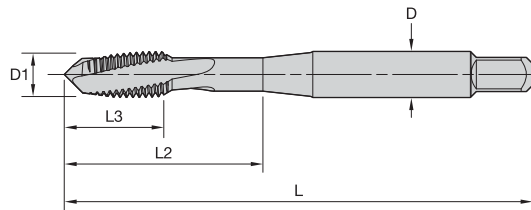
High-Performance Taps

High-Performance Taps

Victory™ Left-Hand Spiral-Flute HSS-E-PM • Through Holes



- WS39MG oxide/nitride for nickel- and cobalt-based alloys.
- WU32MG TiCN for nickel- and cobalt-based alloys.

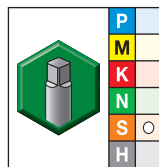
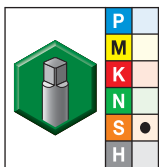


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



■ GT90 • Machine Screw and Fractional • Form D Plug Chamfer • For Nickel- and Cobalt-Based Alloys



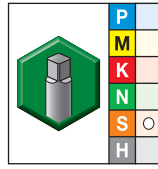
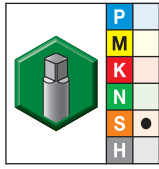
- first choice
- alternate choice

grade WU32MG TiCN		grade WS39MG Nitride/Oxide		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
5705547	GT905067	5705546	GT905001	2 - 56	1.75	.44	.50	.141	2	H2
5705055	GT905068	5705548	GT905002	4 - 40	1.88	.56	.69	.141	2	H2
5705550	GT905069	5705549	GT905003	4 - 40	1.88	.56	.69	.141	2	H3
5705552	GT905070	5705551	GT905004	4 - 40	1.88	.56	.69	.141	2	H4
5705554	GT905071	5705553	GT905005	4 - 48	1.88	.56	.69	.141	2	H2
5705556	GT905072	5705555	GT905006	5 - 40	1.94	.63	.75	.141	3	H2
5705558	GT905073	5705557	GT905007	6 - 32	2.00	.36	.72	.141	3	H2
5705025	GT905074	5705559	GT905008	6 - 32	2.00	.36	.72	.141	3	H3
-		5705560	GT905009	6 - 32	2.00	.36	.72	.141	3	H4
5705562	GT905076	5705561	GT905010	6 - 32	2.00	.36	.72	.141	3	H5
-		5705563	GT905011	6 - 32	2.00	.36	.72	.141	3	H7
5705565	GT905078	5705564	GT905012	6 - 40	2.00	.36	.72	.141	3	H2
5705567	GT905079	5705566	GT905013	8 - 32	2.13	.31	.77	.168	3	H2
5705024	GT905080	5705568	GT905014	8 - 32	2.13	.31	.77	.168	3	H3
5705570	GT905081	5705569	GT905015	8 - 32	2.13	.31	.77	.168	3	H4
5705572	GT905082	5705571	GT905016	8 - 32	2.13	.31	.77	.168	3	H5
-		5705573	GT905017	8 - 32	2.13	.31	.77	.168	3	H6
-		5705574	GT905018	8 - 32	2.13	.31	.77	.168	3	H7
5705501	GT905085	5705059	GT905019	10 - 24	2.38	.47	.92	.194	3	H3
5705503	GT905086	5705502	GT905020	10 - 24	2.38	.47	.92	.194	3	H5
-		5705504	GT905021	10 - 24	2.38	.47	.92	.194	3	H7
5705506	GT905088	5705505	GT905022	10 - 32	2.38	.47	.92	.194	3	H2
5705058	GT905089	5705507	GT905023	10 - 32	2.38	.47	.92	.194	3	H3
5705509	GT905090	5705508	GT905024	10 - 32	2.38	.47	.92	.194	3	H4

(continued)



(GT90 • Machine Screw and Fractional • Form D Plug Chamfer • For Nickel- and Cobalt-Based Alloys — continued)



● first choice
○ alternate choice

grade WU32MG TiCN		grade WS39MG Nitride/Oxide		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
5705541	GT905091	5705540	GT905025	10 - 32	2.38	.47	.92	.194	3	H5
5705543	GT905092	5705542	GT905026	10 - 32	2.38	.47	.92	.194	3	H6
5705545	GT905093	5705544	GT905027	10 - 32	2.38	.47	.92	.194	3	H7
5705062	GT905094	5705584	GT905028	1/4 - 20	2.51	.44	1.02	.255	3	H3
5705586	GT905095	5705585	GT905029	1/4 - 20	2.51	.44	1.02	.255	3	H5
5705588	GT905096	5705587	GT905030	1/4 - 20	2.51	.44	1.02	.255	3	H7
5705061	GT905097	5705060	GT905031	1/4 - 28	2.51	.44	1.02	.255	3	H3
5705591	GT905098	5705589	GT905032	1/4 - 28	2.51	.44	1.02	.255	3	H4
5705594	GT905099	5705593	GT905033	1/4 - 28	2.49	.44	1.02	.255	3	H5
5705596	GT905100	5705595	GT905034	1/4 - 28	2.51	.44	1.02	.255	3	H6
5705598	GT905101	5705597	GT905035	1/4 - 28	2.51	.44	1.02	.255	3	H7
5705054	GT905102	5705629	GT905036	5/16 - 18	2.73	.49	1.15	.318	3	H3
5705631	GT905103	5705630	GT905037	5/16 - 18	2.73	.49	1.15	.318	3	H5
5705633	GT905104	5705632	GT905038	5/16 - 18	2.73	.49	1.15	.318	3	H7
5705053	GT905105	5705634	GT905039	5/16 - 24	2.73	.49	1.15	.318	3	H3
5705636	GT905106	5705635	GT905040	5/16 - 24	2.73	.49	1.15	.318	3	H4
5705638	GT905107	5705637	GT905041	5/16 - 24	2.73	.49	1.15	.318	3	H5
5705640	GT905108	5705639	GT905042	5/16 - 24	2.73	.49	1.15	.318	3	H6
5705642	GT905109	5705641	GT905043	5/16 - 24	2.73	.49	1.15	.318	3	H7
5705615	GT905110	5705057	GT905044	3/8 - 16	2.95	.60	1.28	.381	3	H3
5705617	GT905111	5705616	GT905045	3/8 - 16	2.95	.60	1.28	.381	3	H5
5705619	GT905112	5705618	GT905046	3/8 - 16	2.95	.60	1.28	.381	3	H7
5705056	GT905113	5705620	GT905047	3/8 - 24	2.95	.60	1.28	.381	3	H3
5705622	GT905114	5705621	GT905048	3/8 - 24	2.95	.60	1.28	.381	3	H4
5705624	GT905115	5705623	GT905049	3/8 - 24	2.95	.60	1.28	.381	3	H5
5705626	GT905116	5705625	GT905050	3/8 - 24	2.95	.60	1.28	.381	3	H6
5705628	GT905117	5705627	GT905051	3/8 - 24	2.95	.60	1.28	.381	3	H7
5705647	GT905118	5705646	GT905052	7/16 - 14	3.16	.71	1.49	.323	3	H3
-		5705648	GT905053	7/16 - 14	3.16	.71	1.49	.323	3	H5
5705650	GT905120	5705649	GT905054	7/16 - 20	3.16	.71	1.49	.323	3	H3
5705652	GT905121	5705651	GT905055	7/16 - 20	3.16	.71	1.49	.323	3	H5
5705065	GT905122	5705575	GT905056	1/2 - 13	3.38	.77	1.74	.367	3	H3
5705577	GT905123	5705576	GT905057	1/2 - 13	3.38	.77	1.74	.367	3	H5
5705579	GT905124	5705578	GT905058	1/2 - 13	3.38	.77	1.74	.367	3	H7
5705064	GT905125	5705580	GT905059	1/2 - 20	3.38	.77	1.74	.367	3	H3
5705581	GT905126	5705063	GT905060	1/2 - 20	3.38	.77	1.74	.367	3	H5
5705583	GT905127	5705582	GT905061	1/2 - 20	3.38	.77	1.74	.367	3	H7
5705643	GT905128	5705026	GT905062	5/8 - 11	3.81	.91	1.89	.480	3	H3
5705645	GT905129	5705644	GT905063	5/8 - 18	3.81	.91	1.89	.480	3	H3
5705610	GT905130	5705599	GT905064	3/4 - 10	4.25	1.00	2.08	.590	3	H3
5705612	GT905131	5705611	GT905065	3/4 - 10	4.25	1.00	2.08	.590	3	H5
5705614	GT905132	5705613	GT905066	3/4 - 16	4.25	1.00	2.08	.590	3	H3

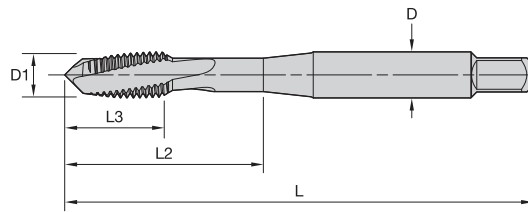
High-Performance Taps

High-Performance Taps

Victory™ Left-Hand Spiral-Flute HSS-E-PM • Through Holes



- WS39MG oxide/nitride for nickel- and cobalt-based alloys.
- WU32MG TiCN for nickel- and cobalt-based alloys.

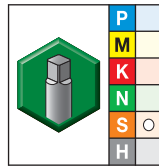
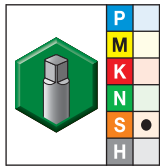


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



■ GT90 • Form D Plug Chamfer • Metric ANSI • For Nickel- and Cobalt-Based Alloys

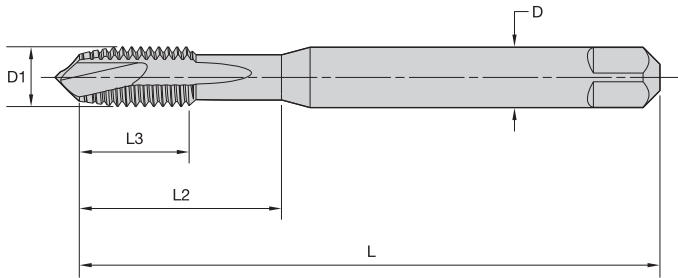


- first choice
- alternate choice

grade WU32MG TiCN		grade WS39MG Nitride/Oxide		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
5705660	GT905146	5705073	GT905133	M2,5 X 0,45	1.81	.50	.56	.141	2	D3
5705071	GT905147	5705662	GT905134	M3 X 0,5	1.94	.63	.75	.141	3	D3
5705661	GT905148	5705072	GT905135	M3,5 X 0,6	1.99	.36	.72	.141	3	D4
-		5705663	GT905136	M4 X 0,7	2.12	.32	.77	.168	3	D4
5705070	GT905149	-		M4 X 0,7	2.12	.36	.77	.168	3	D4
5705068	GT905150	5705069	GT905137	M5 X 0,8	2.38	.47	.92	.194	3	D4
5705067	GT905151	5705664	GT905138	M6 X 1	2.51	.46	1.01	.255	3	D5
-		5705665	GT905139	M7 X 1	2.73	.52	1.16	.318	3	D5
5705667	GT905153	5705666	GT905140	M8 X 1	2.72	.48	1.14	.318	3	D5
5705066	GT905154	5705668	GT905141	M8 X 1,25	2.72	.48	1.14	.318	3	D5
5705654	GT905155	5705653	GT905142	M10 X 1,25	2.94	.53	1.27	.381	3	D5
5705655	GT905156	5705656	GT905143	M10 X 1,5	2.94	.53	1.27	.381	3	D6
5705658	GT905157	5705657	GT905144	M12 X 1,25	3.38	.77	1.74	.367	3	D5
5705074	GT905158	5705659	GT905145	M12 X 1,75	3.38	.77	1.74	.367	3	D6

High-Performance Taps

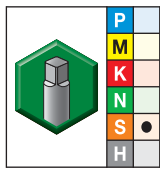
- WN35MG TiN/DLC for titanium and titanium alloys.



Shank Tolerance	
D mm	tolerance h9
1-3	+0, -0,025
>3-6	+0, -0,030
>6-10	+0, -0,036
>10-18	+0, -0,043
>18-30	+0, -0,052



■ GT14 • Form B Plug Chamfer • Metric DIN 371 and 376 • For Titanium and Titanium Alloys



- first choice
- alternate choice

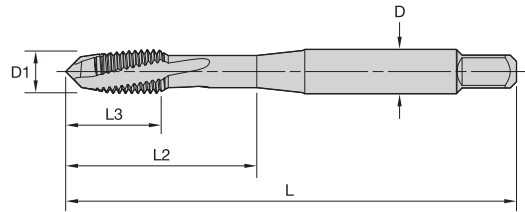
grade WN35MG TiN/DLC		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	D1 size	L	L3	L2	D			
4160093	GT145001	M3 X 0,5	56	11	18	3,5	3	DIN 371	6HX
4160094	GT145002	M4 X 0,7	63	13	21	4,5	3	DIN 371	6HX
4160095	GT145003	M5 X 0,8	70	15	25	6,0	3	DIN 371	6HX
4160096	GT145004	M6 X 1	80	17	30	6,0	3	DIN 371	6HX
4160097	GT145005	M8 X 1,25	90	20	35	8,0	3	DIN 371	6HX
4160098	GT145006	M10 X 1,5	100	22	39	10,0	3	DIN 371	6HX
4160099	GT145007	M12 X 1,75	110	24	—	9,0	3	DIN 376	6HX

High-Performance Taps

Victory™ Left-Hand Spiral-Flute HSS-E-PM Taps • Through Holes



- WS30MG nitride for titanium and titanium alloys.
- WS34MG TiN + CrC/C for titanium and titanium alloys.

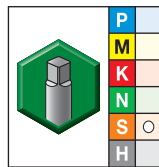
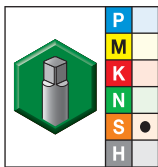


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



■ GT60 • Machine Screw and Fractional • Form D Plug Chamfer • ANSI • For Titanium and Titanium Alloys



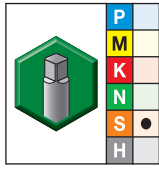
- first choice
- alternate choice

grade WS34MG TiN+CrC/C		grade WS30MG Nitride		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
5562739	GT605006	5562738	GT605005	2 - 56	1.75	.44	.50	.141	2	H2
5562941	GT605008	5562940	GT605007	4 - 40	1.88	.56	.69	.141	2	H2
5562943	GT605010	5562942	GT605009	6 - 32	1.99	.36	.71	.141	3	H2
5562945	GT605012	5562944	GT605011	6 - 32	1.99	.36	.71	.141	3	H3
5562947	GT605014	5562946	GT605013	6 - 40	1.99	.36	.71	.141	3	H2
5562949	GT605016	5562948	GT605015	8 - 32	2.12	.31	.76	.168	3	H2
5562951	GT605018	5562950	GT605017	8 - 32	2.12	.31	.76	.168	3	H3
5562953	GT605020	5562952	GT605019	8 - 36	2.12	.31	.76	.168	3	H2
5562955	GT605022	5562954	GT605021	10 - 24	2.37	.47	.91	.194	3	H3
5562957	GT605024	5562956	GT605023	10 - 32	2.37	.47	.91	.194	3	H2
5562959	GT605026	5562958	GT605025	10 - 32	2.37	.47	.91	.194	3	H3
5562961	GT605028	5562960	GT605027	1/4 - 20	2.50	.44	1.00	.255	3	H3
5562963	GT605030	5562962	GT605029	1/4 - 20	2.50	.44	1.00	.255	3	H5
5562965	GT605032	5562964	GT605031	1/4 - 28	2.50	.44	1.00	.255	3	H3
5562967	GT605034	5562966	GT605033	1/4 - 28	2.50	.44	1.00	.255	3	H4
5562969	GT605036	5562968	GT605035	5/16 - 18	2.72	.49	1.13	.318	3	H3
5562981	GT605038	5562980	GT605037	5/16 - 18	2.72	.49	1.13	.318	3	H5
5562983	GT605040	5562982	GT605039	5/16 - 24	2.72	.49	1.13	.318	3	H3
5562985	GT605042	5562984	GT605041	5/16 - 24	2.72	.49	1.13	.318	3	H4
5562987	GT605044	5562986	GT605043	3/8 - 16	2.93	.59	1.26	.381	3	H3
5562989	GT605046	5562988	GT605045	3/8 - 16	2.93	.59	1.26	.381	3	H5
5562991	GT605048	5562990	GT605047	3/8 - 24	2.93	.59	1.26	.381	3	H3
5562993	GT605050	5562992	GT605049	3/8 - 24	2.93	.59	1.26	.381	3	H4
5562995	GT605052	5562994	GT605051	7/16 - 14	3.16	.71	1.49	.323	3	H3

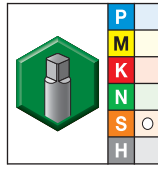
(continued)

High-Performance Taps

(GT60 • Maching Screw and Fractional • Form D Plug Chamfer • ANSI • For Titanium and Titanium Alloys — continued)



grade WS34MG
TiN+CrC/C



grade WS30MG
Nitride

- first choice
- alternate choice

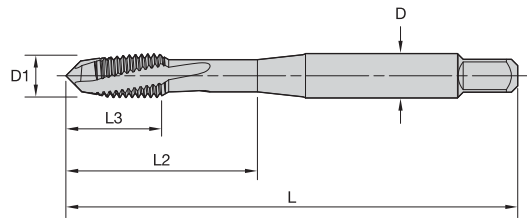
grade WS34MG TiN+CrC/C		grade WS30MG Nitride		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
5562997	GT605054	5562996	GT605053	7/16 - 20	3.16	.71	1.49	.323	3	H3
5562999	GT605056	5562998	GT605055	1/2 - 13	3.38	.77	1.74	.367	3	H3
5563011	GT605058	5563010	GT605057	1/2 - 20	3.38	.77	1.74	.367	3	H3
5563012	GT605059	-	-	9/16 - 18	3.59	.83	1.74	.429	4	H3
5563013	GT605060	-	-	9/16 - 18	3.59	.83	1.74	.429	4	H5
5563014	GT605061	-	-	5/8 - 11	3.81	.91	1.89	.480	4	H3
5563015	GT605062	-	-	5/8 - 18	3.81	.91	1.89	.480	4	H3
5563016	GT605063	-	-	5/8 - 18	3.81	.91	1.89	.480	4	H5
5563017	GT605064	-	-	3/4 - 10	4.25	1.00	2.08	.590	4	H5
5563018	GT605065	-	-	3/4 - 16	4.25	1.00	2.08	.590	4	H3
5563019	GT605066	-	-	3/4 - 16	4.25	1.00	2.08	.590	4	H5
5563020	GT605067	-	-	1 - 8	5.13	1.25	2.58	.800	5	H5

High-Performance Taps

Victory™ Left-Hand Spiral-Flute HSS-E-PM Taps • Through Holes



- WS30MG nitride for titanium and titanium alloys.
- WS34MG TiN + CrC/C for titanium and titanium alloys.

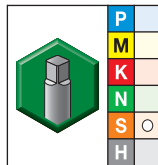
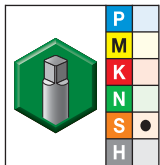


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



■ GT60 • Form D Plug Chamfer • Metric ANSI • For Titanium and Titanium Alloys



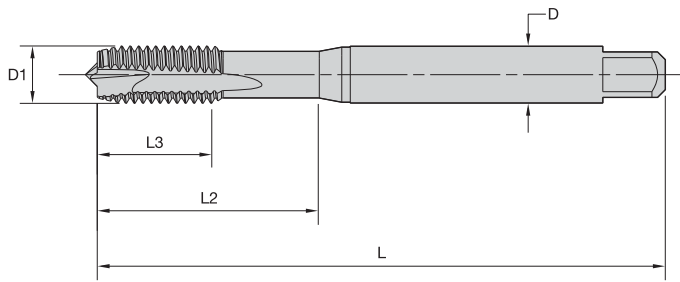
- first choice
- alternate choice

grade WS34MG TiN+CrC/C		grade WS30MG Nitride		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
5563022	GT605504	5563021	GT605503	M2,5 X 0,45	1.81	.49	.56	.141	3	D3
5563024	GT605506	5563023	GT605505	M3 X 0,5	1.94	.63	.75	.141	3	D3
5563026	GT605508	5563025	GT605507	M4 X 0,7	2.12	.32	.76	.168	3	D4
5563028	GT605510	5563027	GT605509	M5 X 0,8	2.37	.47	.91	.194	3	D4
5563040	GT605512	5563029	GT605511	M6 X 1	2.50	.16	1.00	.255	3	D5
5563042	GT605514	5563041	GT605513	M7 X 1	2.73	.52	1.15	.318	3	D5
5563044	GT605516	5563043	GT605515	M8 X 1,25	2.71	.48	1.12	.318	3	D5
5563046	GT605518	5563045	GT605517	M10 X 1,25	2.92	.53	1.26	.381	3	D5
5583927	GT605520	5583926	GT605519	M10 X 1,5	2.92	.53	1.26	.381	3	D6
5583929	GT605522	5583928	GT605521	M12 X 1,75	3.38	.77	1.74	.367	3	D6

High-Performance Taps



- WN48EG DLC for aluminum.

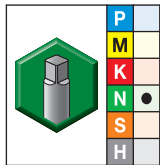


Shank Tolerance

D mm	tolerance h9
1-3	+0, -0,025
3,5-6	+0, -0,030
7-10	+0, -0,036
11-18	+0, -0,043



■ GT70 • Form B Plug Chamfer • Metric DIN 371 and 376 • For Aluminum



- first choice
- alternate choice

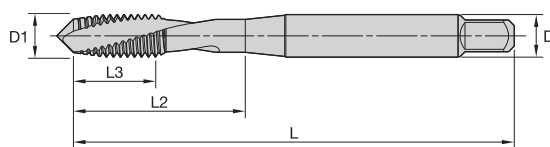
grade WN48EG DLC		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	D1 size	L	L3	L2	D			
4160036	GT705001	M3 X 0,5	56	11	18	3,5	2	DIN 371	6H
4160037	GT705002	M4 X 0,7	63	13	21	4,5	2	DIN 371	6H
4160038	GT705003	M5 X 0,8	70	15	25	6,0	2	DIN 371	6H
4160039	GT705004	M6 X 1	80	17	30	6,0	2	DIN 371	6H
4160040	GT705005	M8 X 1,25	90	20	35	8,0	2	DIN 371	6H
4160041	GT705006	M10 X 1,5	100	22	39	10,0	2	DIN 371	6H
4160042	GT705007	M12 X 1,75	110	24	—	9,0	3	DIN 376	6H
4160063	GT705008	M16 X 2	110	27	—	12,0	3	DIN 376	6H

High-Performance Taps

Victory™ Left-Hand Spiral-Flute HSS-E Taps • Through Holes



- WN44EG TiN + CrC/C for aluminum.

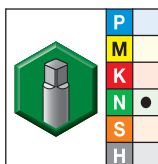


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



■ GT72 • Machine Screw and Fractional • Form D Plug Chamfer • DIN Length ANSI Shank • For Aluminum

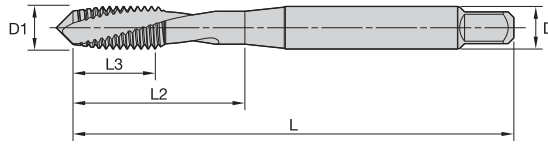


- first choice
- alternate choice

grade WN44EG TiN+CrC/C		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	L2	D		
5690893	GT725010	2 - 56	1.77	.31	.71	.141	2	H2
5690894	GT725011	4 - 40	2.20	.31	.71	.141	2	H2
5690896	GT725012	5 - 40	2.20	.31	.71	.141	2	H2
5690897	GT725013	6 - 32	2.20	.35	.79	.141	2	H3
5690898	GT725014	8 - 32	2.48	.43	.83	.168	2	H3
5690899	GT725015	10 - 24	2.76	.47	.98	.194	2	H3
5690910	GT725016	10 - 32	2.76	.47	.98	.194	2	H3
5690911	GT725017	1/4 - 20	3.15	.59	1.18	.255	2	H3
5690912	GT725018	1/4 - 20	3.15	.59	1.18	.255	2	H5
5690913	GT725019	1/4 - 28	3.15	.59	1.18	.255	2	H3
5690914	GT725020	1/4 - 28	3.15	.59	1.18	.255	2	H4
5690915	GT725021	5/16 - 18	3.54	.59	1.38	.318	2	H3
5690917	GT725022	5/16 - 18	3.54	.59	1.38	.318	2	H5
5690918	GT725023	5/16 - 24	3.54	.59	1.38	.318	2	H3
5690919	GT725024	5/16 - 24	3.54	.59	1.38	.318	2	H4
5690920	GT725025	3/8 - 16	3.94	.75	1.54	.381	2	H3
5690921	GT725026	3/8 - 16	3.94	.75	1.54	.381	2	H5
5690922	GT725027	3/8 - 24	3.94	.75	1.54	.381	2	H3
5690923	GT725028	3/8 - 24	3.94	.75	1.54	.381	2	H4
5690924	GT725029	7/16 - 14	3.94	.71	1.61	.323	3	H3
5690925	GT725030	7/16 - 14	3.94	.71	1.61	.323	3	H5
5690926	GT725031	7/16 - 20	3.94	.71	1.61	.323	3	H3
5690927	GT725032	7/16 - 20	3.94	.71	1.61	.323	3	H5
5690928	GT725033	1/2 - 13	4.33	.91	1.85	.367	3	H4
5690929	GT725034	1/2 - 13	4.33	.91	1.85	.367	3	H5
5690930	GT725035	1/2 - 20	4.33	.91	1.85	.367	3	H3
5690931	GT725036	1/2 - 20	4.33	.91	1.85	.367	3	H5

High-Performance Taps

- WN44EG TiN + CrC/C for aluminum.

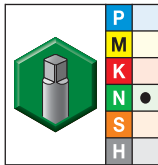


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



■ GT72 • Form D Plug Chamfer • Metric • DIN Length ANSI Shank • For Aluminum

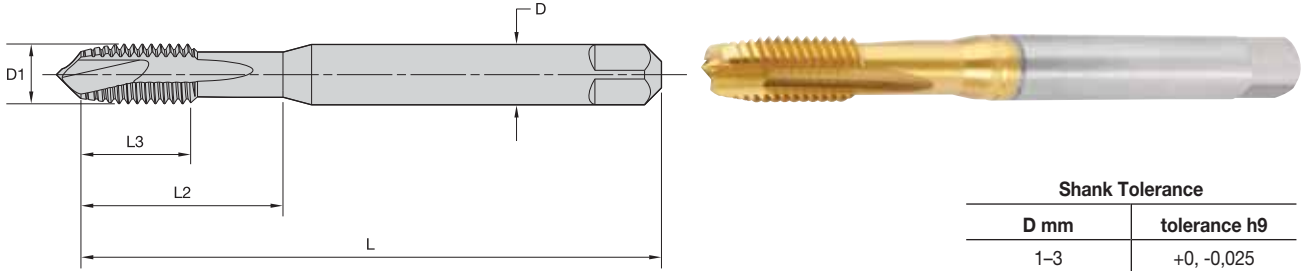


- first choice
- alternate choice

grade WN44EG TiN+CrC/C		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	L2	D		
5690933	GT725037	M3 X 0,5	2.20	.31	.71	.141	2	D3
5690934	GT725038	M3,5 X 0,6	2.20	.35	.79	.141	2	D4
5690935	GT725039	M4 X 0,7	2.48	.43	.83	.168	2	D4
5690936	GT725040	M5 X 0,8	2.76	.47	.98	.194	2	D4
5690937	GT725041	M6 X 1	3.15	.47	1.18	.255	2	D5
5690938	GT725042	M7 X 1	3.54	.59	1.38	.318	2	D5
5690939	GT725043	M8 X 1	3.54	.59	1.38	.318	2	D5
5690940	GT725044	M8 X 1,25	3.54	.59	1.38	.318	2	D5
5690941	GT725045	M10 X 1,25	3.94	.71	1.54	.381	2	D5
5690942	GT725046	M10 X 1,5	3.94	.71	1.54	.381	2	D6
5690943	GT725047	M12 X 1,25	4.33	.83	1.73	.367	3	D6
5690944	GT725048	M12 X 1,5	4.33	.83	1.73	.367	3	D6
5690945	GT725049	M12 X 1,75	4.33	.83	1.73	.367	3	D6

High-Performance Taps

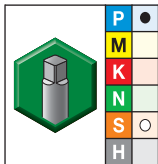
- WP31MG TiN for steel
32–44 HRC.



Shank Tolerance	
D mm	tolerance h9
1–3	+0, -0,025
>3–6	+0, -0,030
>6–10	+0, -0,036
>10–18	+0, -0,043
>18–30	+0, -0,052



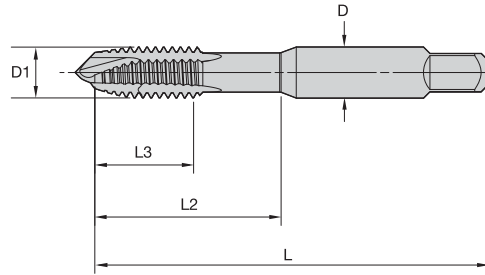
■ GT00 • Form B Plug Chamfer • Metric DIN 371, 374, and 376 • For Hard Steel



- first choice
- alternate choice

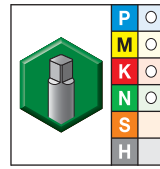
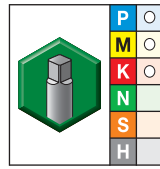
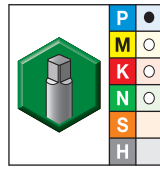
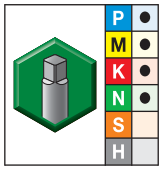
grade WP31MG TiN		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	D1 size	L	L3	L2	D			
4153679	GT005001	M3 X 0,5	56	11	18	3,5	2	DIN 371	6HX
4153680	GT005002	M4 X 0,7	63	13	21	4,5	2	DIN 371	6HX
4153681	GT005003	M5 X 0,8	70	15	25	6,0	2	DIN 371	6HX
4153682	GT005004	M6 X 1	80	17	30	6,0	3	DIN 371	6HX
4153760	GT005012	M8 X 1	90	17	—	6,0	3	DIN 374	6HX
4153753	GT005005	M8 X 1,25	90	20	35	8,0	3	DIN 371	6HX
4153761	GT005013	M10 X 1	90	18	—	7,0	3	DIN 374	6HX
4153762	GT005014	M10 X 1,25	100	22	—	7,0	3	DIN 374	6HX
4153754	GT005006	M10 X 1,5	100	22	39	10,0	3	DIN 371	6HX
4153763	GT005015	M12 X 1,25	100	22	—	9,0	3	DIN 374	6HX
4153764	GT005016	M12 X 1,5	100	22	—	9,0	3	DIN 374	6HX
4153755	GT005007	M12 X 1,75	110	24	—	9,0	3	DIN 376	6HX
4153765	GT005017	M14 X 1,5	100	22	—	11,0	3	DIN 374	6HX
4153756	GT005008	M14 X 2	110	26	—	11,0	3	DIN 376	6HX
4153766	GT005018	M16 X 1,5	100	22	—	12,0	4	DIN 374	6HX
4153757	GT005009	M16 X 2	110	27	—	12,0	4	DIN 376	6HX
4153758	GT005010	M18 X 2	125	30	—	14,0	4	DIN 376	6HX
4153759	GT005011	M20 X 2,5	140	32	—	16,0	4	DIN 376	6HX

- WP42EG TiCN
- WU41EG TiN
- WP49EG oxide
- WU40EG bright



Shank Tolerance	
D inch	tolerance
.141-.635	+0, -.0015
>.635-1.51	+0, -.0020
>1.51-2.01	+0, -.0030

■ VT-SPO • Form B Plug Chamfer • Machine Screw and Fractional • ANSI



- first choice
- alternate choice

grade WP42EG TiCN		grade WU41EG TiN		grade WP49EG Oxide		grade WU40EG Bright		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1	TPI	L	L3	L2		
5357242	VTSP05001	-	-	5357241	VTSP05001	5357243	VTSP05001	2 - 56	1.75	.39	.50	.141	2	H2
-	-	-	-	5357244	VTSP05002	-	-	2 - 56	1.75	.39	.50	.141	2	H3
-	-	-	-	5357245	VTSP05003	-	-	2 - 56	1.75	.39	.50	.141	2	H4
5357247	VTSP05004	-	-	5357246	VTSP05004	5357248	VTSP05004	3 - 48	1.82	.45	.57	.141	2	H2
5357260	VTSP05005	5357261	VTSP05005	5357249	VTSP05005	5357262	VTSP05005	4 - 40	1.88	.51	.69	.141	2	H2
5357264	VTSP05006	-	-	5357263	VTSP05006	5357265	VTSP05006	4 - 40	1.88	.51	.69	.141	2	H3
5357267	VTSP05007	-	-	5357266	VTSP05007	5357268	VTSP05007	4 - 40	1.88	.51	.69	.141	2	H4
5357272	VTSP05008	-	-	5357271	VTSP05008	5357273	VTSP05008	4 - 40	1.88	.51	.69	.141	2	H5
-	-	-	-	5357274	VTSP05009	-	-	4 - 40	1.88	.51	.69	.141	2	H6
5357276	VTSP05010	-	-	5357275	VTSP05010	5357277	VTSP05010	4 - 48	1.88	.51	.69	.141	2	H2
-	-	-	-	5357278	VTSP05011	-	-	4 - 48	1.88	.51	.69	.141	2	H4
5357280	VTSP05012	-	-	5357279	VTSP05012	5357281	VTSP05012	5 - 40	1.94	.58	.75	.141	2	H2
5357283	VTSP05013	-	-	5357282	VTSP05013	5357284	VTSP05013	6 - 32	1.99	.38	.71	.141	2	H2
5357286	VTSP05014	5357287	VTSP05014	5357285	VTSP05014	5357288	VTSP05014	6 - 32	1.99	.38	.71	.141	2	H3
5357290	VTSP05015	-	-	5357289	VTSP05015	5357291	VTSP05015	6 - 32	1.99	.38	.71	.141	2	H4
5357293	VTSP05016	-	-	5357292	VTSP05016	5357294	VTSP05016	6 - 32	1.99	.38	.71	.141	2	H5
5357296	VTSP05017	-	-	5357295	VTSP05017	5357297	VTSP05017	6 - 32	1.99	.38	.71	.141	2	H6
5357299	VTSP05018	-	-	5357298	VTSP05018	5357300	VTSP05018	6 - 32	1.99	.38	.71	.141	2	H7
5365704	VTSP05019	-	-	5365703	VTSP05019	5365705	VTSP05019	6 - 32	1.99	.38	.71	.141	2	H11
5365707	VTSP05020	-	-	5365706	VTSP05020	5365708	VTSP05020	6 - 40	1.99	.38	.71	.141	2	H2
-	-	-	-	5365709	VTSP05021	-	-	6 - 40	1.99	.38	.71	.141	2	H3
5365741	VTSP05022	-	-	5365740	VTSP05022	5365742	VTSP05022	8 - 32	2.12	.38	.76	.168	2	H2
5365744	VTSP05023	5365745	VTSP05023	5365743	VTSP05023	5365746	VTSP05023	8 - 32	2.12	.38	.76	.168	2	H3
5365748	VTSP05024	-	-	5365747	VTSP05024	5365749	VTSP05024	8 - 32	2.12	.38	.76	.168	2	H4

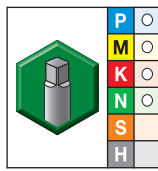
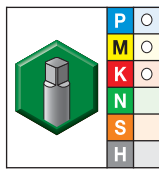
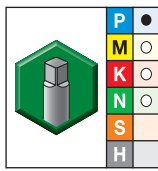
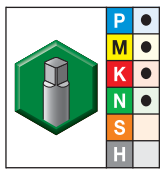
(continued)

Multipurpose Taps

VariTap™ Spiral-Point HSS-E Taps • Through Holes



(VT-SPO • Form B Plug Chamfer • Machine Screw and Fractional • ANSI — continued)



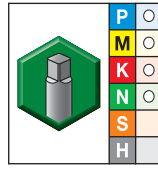
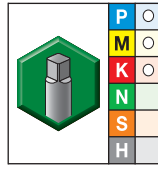
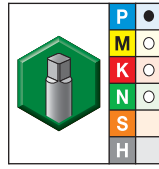
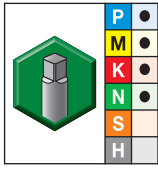
● first choice
○ alternate choice

grade WP42EG TiCN		grade WU41EG TiN		grade WP49EG Oxide		grade WU40EG Bright		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
5365751	VTSP05025	-	-	5365750	VTSP05025	5365752	VTSP05025	8 - 32	2.12	.38	.76	.168	2	H5
5365754	VTSP05026	-	-	5365753	VTSP05026	5365755	VTSP05026	8 - 32	2.12	.38	.76	.168	2	H6
5365758	VTSP05027	-	-	5365757	VTSP05027	5365760	VTSP05027	8 - 32	2.12	.38	.76	.168	2	H7
5365765	VTSP05028	-	-	5365762	VTSP05028	5365767	VTSP05028	8 - 32	2.12	.38	.76	.168	2	H11
5365771	VTSP05029	-	-	5365769	VTSP05029	5365773	VTSP05029	8 - 36	2.11	.38	.76	.168	2	H2
5365776	VTSP05030	5365778	VTSP05030	5365774	VTSP05030	5365780	VTSP05030	10 - 24	2.37	.50	.91	.194	2	H3
-	-	-	-	5365782	VTSP05031	-	-	10 - 24	2.37	.50	.91	.194	2	H4
5365786	VTSP05032	-	-	5365784	VTSP05032	5365788	VTSP05032	10 - 24	2.37	.50	.91	.194	2	H5
-	-	-	-	5365790	VTSP05033	-	-	10 - 24	2.37	.50	.91	.194	2	H6
-	-	-	-	5365792	VTSP05034	-	-	10 - 24	2.37	.50	.91	.194	2	H7
5365796	VTSP05035	-	-	5365794	VTSP05035	5365798	VTSP05035	10 - 24	2.37	.50	.91	.194	2	H11
5365759	VTSP05036	-	-	5365756	VTSP05036	5365761	VTSP05036	10 - 32	2.36	.50	.91	.194	2	H2
5365764	VTSP05037	5365766	VTSP05037	5365763	VTSP05037	5365768	VTSP05037	10 - 32	2.36	.50	.91	.194	2	H3
5365772	VTSP05038	-	-	5365770	VTSP05038	5365775	VTSP05038	10 - 32	2.36	.50	.91	.194	2	H4
5365779	VTSP05039	-	-	5365777	VTSP05039	5365781	VTSP05039	10 - 32	2.36	.50	.91	.194	2	H5
5365785	VTSP05040	-	-	5365783	VTSP05040	5365787	VTSP05040	10 - 32	2.36	.50	.91	.194	2	H6
5365791	VTSP05041	-	-	5365789	VTSP05041	5365793	VTSP05041	10 - 32	2.36	.50	.91	.194	2	H7
5365797	VTSP05042	-	-	5365795	VTSP05042	5365799	VTSP05042	10 - 32	2.36	.50	.91	.194	2	H11
5365801	VTSP05043	-	-	5365800	VTSP05043	5365802	VTSP05043	12 - 24	2.37	.50	.96	.220	2	H3
5365804	VTSP05044	-	-	5365803	VTSP05044	5365805	VTSP05044	12 - 28	2.37	.50	.96	.220	2	H3
5365807	VTSP05045	5365808	VTSP05045	5365806	VTSP05045	5365809	VTSP05045	1/4 - 20	2.50	.63	1.00	.255	3	H3
5365821	VTSP05046	-	-	5365820	VTSP05046	5365822	VTSP05046	1/4 - 20	2.50	.63	1.00	.255	3	H5
5365825	VTSP05047	-	-	5365823	VTSP05047	5365824	VTSP05047	1/4 - 20	2.50	.63	1.00	.255	3	H7
5365827	VTSP05048	-	-	5365826	VTSP05048	5365828	VTSP05048	1/4 - 20	2.50	.63	1.00	.255	3	H11
5365840	VTSP05049	5365841	VTSP05049	5365829	VTSP05049	5365842	VTSP05049	1/4 - 28	2.50	.63	1.00	.255	3	H3
5365844	VTSP05050	-	-	5365843	VTSP05050	5365845	VTSP05050	1/4 - 28	2.50	.63	1.00	.255	3	H4
5365849	VTSP05051	-	-	5365848	VTSP05051	5365920	VTSP05051	1/4 - 28	2.50	.63	1.01	.255	3	H5
5365922	VTSP05052	-	-	5365921	VTSP05052	5365923	VTSP05052	1/4 - 28	2.50	.63	1.01	.255	3	H6
5365925	VTSP05053	-	-	5365924	VTSP05053	5365927	VTSP05053	1/4 - 28	2.50	.63	1.01	.255	3	H7
5365929	VTSP05054	-	-	5365928	VTSP05054	5365930	VTSP05054	1/4 - 28	2.50	.63	1.01	.255	3	H11
5365932	VTSP05055	5365933	VTSP05055	5365931	VTSP05055	5365934	VTSP05055	5/16 - 18	2.72	.69	1.14	.318	3	H3
5365936	VTSP05056	-	-	5365935	VTSP05056	5365937	VTSP05056	5/16 - 18	2.72	.69	1.14	.318	3	H5
5365939	VTSP05057	-	-	5365938	VTSP05057	5365940	VTSP05057	5/16 - 18	2.72	.69	1.14	.318	3	H7
5365942	VTSP05058	-	-	5365941	VTSP05058	5365943	VTSP05058	5/16 - 18	2.72	.69	1.14	.318	3	H11
5365946	VTSP05059	5365947	VTSP05059	5365945	VTSP05059	5365948	VTSP05059	5/16 - 24	2.72	.69	1.14	.318	3	H3
5365960	VTSP05060	-	-	5365949	VTSP05060	5365961	VTSP05060	5/16 - 24	2.72	.69	1.14	.318	3	H4
5365963	VTSP05061	-	-	5365962	VTSP05061	5365964	VTSP05061	5/16 - 24	2.72	.69	1.14	.318	3	H5
5365966	VTSP05062	-	-	5365965	VTSP05062	5365967	VTSP05062	5/16 - 24	2.72	.69	1.14	.318	3	H6
5365969	VTSP05063	-	-	5365968	VTSP05063	5365970	VTSP05063	5/16 - 24	2.72	.69	1.14	.318	3	H7
5365972	VTSP05064	-	-	5365971	VTSP05064	5365973	VTSP05064	5/16 - 24	2.72	.69	1.14	.318	3	H11

(continued)

Multipurpose Taps

(VT-SPO • Form B Plug Chamfer • Machine Screw and Fractional • ANSI — continued)



● first choice
○ alternate choice

grade WP42EG TiCN		grade WU41EG TiN		grade WP49EG Oxide		grade WU40EG Bright		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
5365975	VTSP05065	5365976	VTSP05065	5365974	VTSP05065	5365977	VTSP05065	3/8 - 16	2.94	.75	1.27	.381	3	H3
5366898	VTSP05066	-	-	5366897	VTSP05066	5366899	VTSP05066	3/8 - 16	2.94	.75	1.27	.381	3	H5
5366941	VTSP05067	-	-	5366940	VTSP05067	5366942	VTSP05067	3/8 - 16	2.94	.75	1.27	.381	3	H7
5366944	VTSP05068	-	-	5366943	VTSP05068	5366945	VTSP05068	3/8 - 16	2.94	.75	1.27	.381	3	H11
5366947	VTSP05069	5366948	VTSP05069	5366946	VTSP05069	5366949	VTSP05069	3/8 - 24	2.94	.75	1.27	.381	3	H3
5366951	VTSP05070	-	-	5366950	VTSP05070	5366952	VTSP05070	3/8 - 24	2.94	.75	1.27	.381	3	H4
5366954	VTSP05071	-	-	5366953	VTSP05071	5366955	VTSP05071	3/8 - 24	2.94	.75	1.27	.381	3	H5
5366957	VTSP05072	-	-	5366956	VTSP05072	5366958	VTSP05072	3/8 - 24	2.94	.75	1.27	.381	3	H6
5366960	VTSP05073	-	-	5366959	VTSP05073	5366961	VTSP05073	3/8 - 24	2.94	.75	1.27	.381	3	H7
5366963	VTSP05074	-	-	5366962	VTSP05074	5366964	VTSP05074	3/8 - 24	2.94	.75	1.27	.381	3	H11
5366966	VTSP05075	5366967	VTSP05075	5366965	VTSP05075	5366968	VTSP05075	7/16 - 14	3.16	.88	1.49	.323	3	H3
5366970	VTSP05076	-	-	5366969	VTSP05076	5366971	VTSP05076	7/16 - 14	3.16	.88	1.49	.323	3	H5
5366973	VTSP05077	-	-	5366972	VTSP05077	5366974	VTSP05077	7/16 - 14	3.16	.88	1.49	.323	3	H7
5366976	VTSP05078	-	-	5366975	VTSP05078	5366977	VTSP05078	7/16 - 14	3.16	.88	1.49	.323	3	H11
5366979	VTSP05079	5366980	VTSP05079	5366978	VTSP05079	5366981	VTSP05079	7/16 - 20	3.16	.88	1.49	.323	3	H3
5366983	VTSP05080	-	-	5366982	VTSP05080	5366984	VTSP05080	7/16 - 20	3.16	.88	1.49	.323	3	H5
-	-	-	-	5366036	VTSP05081	-	-	7/16 - 20	3.16	.88	1.49	.323	3	H6
5366038	VTSP05082	-	-	5366037	VTSP05082	5366039	VTSP05082	7/16 - 20	3.16	.88	1.49	.323	3	H7
5366071	VTSP05083	-	-	5366070	VTSP05083	5366073	VTSP05083	7/16 - 20	3.16	.88	1.49	.323	3	H11
5366075	VTSP05084	5366076	VTSP05084	5366074	VTSP05084	5366077	VTSP05084	1/2 - 13	3.38	.94	1.74	.367	3	H3
5366079	VTSP05085	-	-	5366078	VTSP05085	5366080	VTSP05085	1/2 - 13	3.38	.94	1.74	.367	3	H5
5366083	VTSP05086	-	-	5366081	VTSP05086	5366084	VTSP05086	1/2 - 13	3.38	.94	1.74	.367	3	H7
5366086	VTSP05087	-	-	5366085	VTSP05087	5366087	VTSP05087	1/2 - 13	3.38	.94	1.74	.367	3	H11
5366089	VTSP05088	5366110	VTSP05088	5366088	VTSP05088	5366111	VTSP05088	1/2 - 20	3.38	.94	1.74	.367	3	H3
5366113	VTSP05089	-	-	5366112	VTSP05089	5366114	VTSP05089	1/2 - 20	3.38	.94	1.74	.367	3	H5
-	-	-	-	5366115	VTSP05090	-	-	1/2 - 20	3.38	.94	1.74	.367	3	H6
5366117	VTSP05091	-	-	5366116	VTSP05091	5366118	VTSP05091	1/2 - 20	3.38	.94	1.74	.367	3	H7
5366130	VTSP05092	-	-	5366119	VTSP05092	5366131	VTSP05092	1/2 - 20	3.38	.94	1.74	.367	3	H11
5366133	VTSP05093	5366134	VTSP05093	5366132	VTSP05093	5366135	VTSP05093	9/16 - 12	3.59	1.00	1.74	.429	3	H3
5366137	VTSP05094	5366138	VTSP05094	5366136	VTSP05094	5366139	VTSP05094	9/16 - 18	3.59	1.00	1.74	.429	3	H3
5366141	VTSP05095	5366142	VTSP05095	5366140	VTSP05095	5366143	VTSP05095	5/8 - 11	3.81	1.09	1.89	.480	3	H3
5366145	VTSP05096	-	-	5366144	VTSP05096	5366146	VTSP05096	5/8 - 11	3.81	1.09	1.89	.480	3	H5
-	-	-	-	5367003	VTSP05097	-	-	5/8 - 11	3.81	1.09	1.89	.480	3	H7
5367005	VTSP05098	-	-	5367004	VTSP05098	5367006	VTSP05098	5/8 - 18	3.81	1.09	1.89	.480	3	H3
5367008	VTSP05099	-	-	5367007	VTSP05099	5367009	VTSP05099	5/8 - 18	3.81	1.09	1.89	.480	3	H5
-	-	-	-	5367030	VTSP05100	-	-	5/8 - 18	3.81	1.09	1.89	.480	3	H6
5367032	VTSP05101	-	-	5367031	VTSP05101	5367033	VTSP05101	5/8 - 18	3.81	1.09	1.89	.480	3	H7
5367035	VTSP05102	5367036	VTSP05102	5367034	VTSP05102	5367037	VTSP05102	3/4 - 10	4.25	1.22	2.08	.590	3	H3
5367039	VTSP05103	-	-	5367038	VTSP05103	5367060	VTSP05103	3/4 - 10	4.25	1.22	2.08	.590	3	H5
5367062	VTSP05104	5367063	VTSP05104	5367061	VTSP05104	5367064	VTSP05104	3/4 - 16	4.25	1.22	2.08	.590	3	H3

(continued)

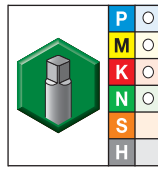
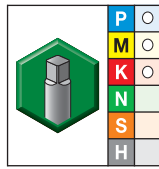
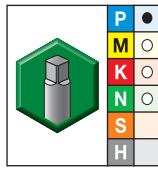
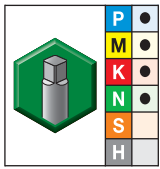
Multipurpose Taps

Multipurpose Taps

VariTap™ Spiral-Point HSS-E Taps • Through Holes



(VT-SPO • Form B Plug Chamfer • Machine Screw and Fractional • ANSI — continued)



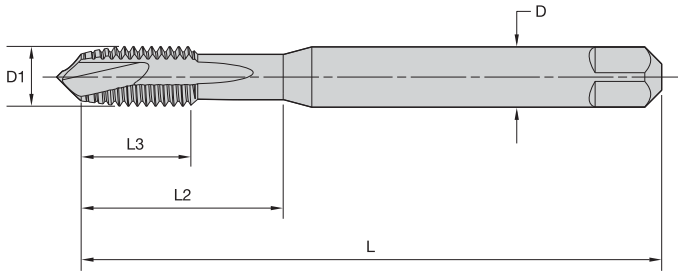
● first choice
○ alternate choice

grade WP42EG TiCN		grade WU41EG TiN		grade WP49EG Oxide		grade WU40EG Bright		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
5367066	VTSP05105	-		5367065	VTSP05105	5367067	VTSP05105	3/4 - 16	4.25	1.22	2.08	.590	3	H5
5367069	VTSP05106	5367070	VTSP05106	5367068	VTSP05106	5367071	VTSP05106	7/8 - 9	4.69	1.34	2.30	.697	3	H4
5367073	VTSP05107	-		5367072	VTSP05107	5367074	VTSP05107	7/8 - 9	4.69	1.34	2.30	.697	3	H5
5367076	VTSP05108	-		5367075	VTSP05108	5367078	VTSP05108	7/8 - 14	4.69	1.34	2.30	.697	3	H4
5366406	VTSP05109	5366407	VTSP05109	5366404	VTSP05109	5366408	VTSP05109	1 - 8	5.13	1.50	2.58	.800	3	H5
5366440	VTSP05110	-		5366409	VTSP05110	5366441	VTSP05110	1 - 12	5.13	1.50	2.58	.800	3	H4
-	-	-		5366442	VTSP05111	-		1 1/8 - 7	5.44	1.71	2.56	.896	4	H6
-	-	-		5366443	VTSP05112	-		1 1/8 - 8	5.44	1.71	2.56	.896	4	H6
-	-	-		5366444	VTSP05113	-		1 1/8 - 12	5.44	1.71	2.56	.896	4	H5
-	-	-		5366445	VTSP05114	-		1 1/4 - 7	5.75	1.71	2.56	1.021	4	H6
-	-	-		5366446	VTSP05115	-		1 1/4 - 8	5.75	1.71	2.56	1.020	4	H6
-	-	-		5366447	VTSP05116	-		1 1/4 - 12	5.75	1.71	2.56	1.021	4	H5
-	-	-		5366448	VTSP05117	-		1 3/8 - 6	6.07	2.00	3.00	1.108	4	H6
-	-	-		5366449	VTSP05118	-		1 3/8 - 8	6.07	2.00	3.00	1.108	4	H6
-	-	-		5366450	VTSP05119	-		1 3/8 - 12	6.07	2.00	3.00	1.108	4	H5
-	-	-		5366451	VTSP05120	-		1 1/2 - 6	6.38	2.00	3.00	1.233	4	H6
-	-	-		5366452	VTSP05121	-		1 1/2 - 8	6.38	2.00	3.00	1.233	4	H6
-	-	-		5366453	VTSP05122	-		1 1/2 - 12	6.38	2.00	3.00	1.233	4	H5
-	-	-		5366454	VTSP05123	-		2 - 4 1/2	7.63	2.67	3.56	1.643	4	H7

NOTE: Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.
VariTap™ for 3B class of fit is suitable for UNJ aerospace internal threading applications.

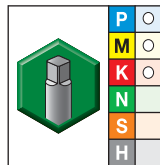
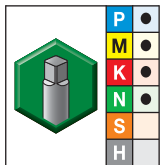


- WP42EG TiCN
- WP49EG oxide



Shank Tolerance	
D inch	tolerance
.141-.635	+0, -.0015
>.635-1.51	+0, -.0020
>1.51-2.01	+0, -.0030

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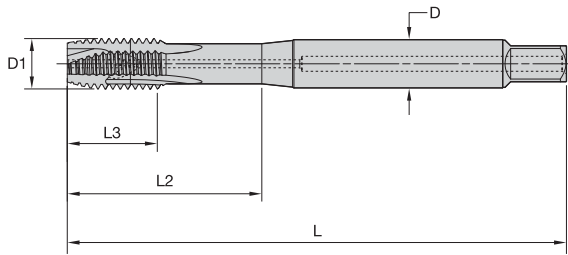


- first choice
- alternate choice

grade WP42EG TiCN		grade WP49EG Oxide		inch dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D			
5366572	VTSP09004	5366571	VTSP09004	4 - 40	2.20	.31	.71	.141	2	DIN-ANSI	2B
5366574	VTSP09005	5366573	VTSP09005	6 - 32	2.20	.35	.79	.141	2	DIN-ANSI	2B
5366576	VTSP09006	5366575	VTSP09006	8 - 32	2.48	.43	.83	.168	2	DIN-ANSI	2B
5366578	VTSP09007	5366577	VTSP09007	10 - 24	2.76	.47	.98	.194	2	DIN-ANSI	2B
5366580	VTSP09008	5366579	VTSP09008	10 - 32	2.75	.47	.98	.194	2	DIN-ANSI	2B
5366582	VTSP09009	5366581	VTSP09009	1/4 - 20	3.15	.59	1.18	.255	3	DIN-ANSI	2B
5366584	VTSP09010	5366583	VTSP09010	1/4 - 28	3.14	.58	1.17	.255	3	DIN-ANSI	2B
5366586	VTSP09011	5366585	VTSP09011	5/16 - 18	3.54	.59	1.38	.318	3	DIN-ANSI	2B
5366588	VTSP09012	5366587	VTSP09012	5/16 - 24	3.54	.59	1.38	.318	3	DIN-ANSI	2B
5366590	VTSP09013	5366589	VTSP09013	3/8 - 16	3.94	.75	1.54	.381	3	DIN-ANSI	2B
5366592	VTSP09014	5366591	VTSP09014	3/8 - 24	3.94	.75	1.54	.381	3	DIN-ANSI	2B
5366594	VTSP09015	5366593	VTSP09015	7/16 - 14	3.94	.71	1.61	.323	3	DIN-ANSI	2B
5366596	VTSP09016	5366595	VTSP09016	7/16 - 20	3.94	.71	1.61	.323	3	DIN-ANSI	2B
5366598	VTSP09017	5366597	VTSP09017	1/2 - 13	4.33	.91	1.85	.367	3	DIN-ANSI	2B
5366600	VTSP09018	5366599	VTSP09018	1/2 - 20	4.33	.91	1.85	.367	3	DIN-ANSI	2B
5366602	VTSP09019	5366601	VTSP09019	5/8 - 11	4.33	.94	2.01	.480	3	DIN-ANSI	2B
5366604	VTSP09020	5366603	VTSP09020	5/8 - 18	4.33	.94	2.01	.480	3	DIN-ANSI	2B
5366606	VTSP09021	5366605	VTSP09021	3/4 - 10	4.92	1.18	2.52	.590	3	DIN-ANSI	2B
5366608	VTSP09022	5366607	VTSP09022	3/4 - 16	4.92	1.18	2.52	.590	3	DIN-ANSI	2B

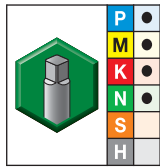
Multipurpose Taps

• WP42EG TiCN



Shank Tolerance	
D inch	tolerance
.141-.635	+0, -.0015
>.635-1.51	+0, -.0020
>1.51-2.01	+0, -.0030

■ VT-SPO • Form B Plug Chamfer • Through Coolant • Fractional • DIN Length ANSI Shank

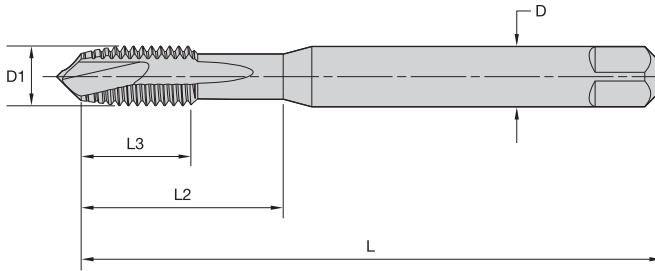


- first choice
- alternate choice

grade WP42EG TiCN		inch dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	D1 TPI	L	L3	L2	D			
5368492	VTSP09705	1/4 - 20	3.15	.59	1.18	.255	3	DIN-ANSI	2B
5368493	VTSP09706	1/4 - 28	3.15	.59	1.18	.255	3	DIN-ANSI	2B
5368494	VTSP09707	5/16 - 18	3.54	.59	1.38	.318	3	DIN-ANSI	2B
5368495	VTSP09708	5/16 - 24	3.54	.59	1.38	.318	3	DIN-ANSI	2B
5368496	VTSP09709	3/8 - 16	3.94	.75	1.54	.381	3	DIN-ANSI	2B
5368497	VTSP09710	3/8 - 24	3.94	.75	1.54	.381	3	DIN-ANSI	2B
5368499	VTSP09711	7/16 - 14	3.94	.71	1.61	.323	3	DIN-ANSI	2B
5368500	VTSP09712	7/16 - 20	3.94	.71	1.61	.323	3	DIN-ANSI	2B
5368501	VTSP09713	1/2 - 13	4.33	.91	1.85	.367	3	DIN-ANSI	2B
5368502	VTSP09714	1/2 - 20	4.33	.91	1.85	.367	3	DIN-ANSI	2B
5368503	VTSP09715	9/16 - 18	4.33	.98	2.09	.429	3	DIN-ANSI	2B
5368504	VTSP09716	5/8 - 11	4.33	.94	2.01	.480	3	DIN-ANSI	2B
5368505	VTSP09717	5/8 - 18	4.33	.94	2.01	.480	3	DIN-ANSI	2B
5368506	VTSP09718	3/4 - 10	4.92	1.18	2.52	.590	3	DIN-ANSI	2B
5368508	VTSP09719	3/4 - 16	4.92	1.18	2.52	.590	3	DIN-ANSI	2B
5368509	VTSP09720	7/8 - 9	5.51	1.34	2.80	.697	3	DIN-ANSI	2B
5368510	VTSP09721	7/8 - 14	5.51	1.34	2.80	.697	3	DIN-ANSI	2B
5368511	VTSP09722	1 - 8	6.30	1.50	3.19	.800	3	DIN-ANSI	2B

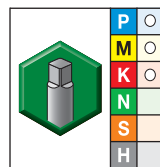
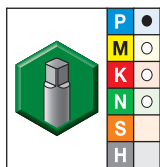
Multipurpose Taps

- WU41EG TiN
- WP49EG oxide



Shank Tolerance	
D mm	tolerance h9
1-3	+0, -0,025
>3-6	+0, -0,030
>6-10	+0, -0,036
>10-18	+0, -0,043
>18-30	+0, -0,052

■ VT-SPO • Form B Plug Chamfer • Machine Screw and Fractional • DIN 371 and 376



- first choice
- alternate choice

grade WU41EG TiN		grade WP49EG Oxide		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D			
5472633	VTSP06005	5387704	VTSP06005	4 - 40	56	8	18	3,5	2	DIN 371	2B
5472635	VTSP06007	5387707	VTSP06007	5 - 40	56	9	20	4,0	2	DIN 371	2B
5472636	VTSP06008	5387708	VTSP06008	6 - 32	56	9	20	4,0	2	DIN 371	2B
5472638	VTSP06010	5387760	VTSP06010	6 - 40	56	9	20	4,0	2	DIN 371	2B
5472639	VTSP06011	5387761	VTSP06011	8 - 32	63	11	21	4,5	2	DIN 371	2B
5472641	VTSP06013	5387763	VTSP06013	10 - 24	70	12	25	6,0	2	DIN 371	2B
5472644	VTSP06014	5387764	VTSP06014	10 - 32	70	12	25	6,0	2	DIN 371	2B
5472646	VTSP06016	5387766	VTSP06016	1/4 - 20	80	15	30	7,0	3	DIN 371	2B
5472647	VTSP06017	5387767	VTSP06017	1/4 - 28	80	15	30	7,0	3	DIN 371	2B
5472649	VTSP06019	5387769	VTSP06019	5/16 - 18	90	15	35	8,0	3	DIN 371	2B
5472650	VTSP06020	5387770	VTSP06020	5/16 - 24	90	15	35	8,0	3	DIN 371	2B
5472652	VTSP06022	5387772	VTSP06022	3/8 - 16	100	19	39	10,0	3	DIN 371	2B
5472653	VTSP06023	5387773	VTSP06023	3/8 - 24	100	19	39	10,0	3	DIN 371	2B
5472655	VTSP06025	5387776	VTSP06025	7/16 - 14	100	18	41	8,0	3	DIN 376	2B
5472656	VTSP06026	5387777	VTSP06026	7/16 - 20	100	18	41	8,0	3	DIN 376	2B
5472658	VTSP06028	5387779	VTSP06028	1/2 - 13	110	23	47	9,0	3	DIN 376	2B
5472659	VTSP06029	5387780	VTSP06029	1/2 - 20	110	23	47	9,0	3	DIN 376	2B
5472661	VTSP06031	5387782	VTSP06031	9/16 - 12	110	25	53	11,0	3	DIN 376	2B
5472662	VTSP06032	5387783	VTSP06032	9/16 - 18	110	25	53	11,0	3	DIN 376	2B
5472663	VTSP06033	5387784	VTSP06033	5/8 - 11	110	24	51	12,0	3	DIN 376	2B

(continued)

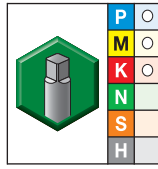
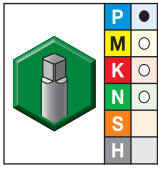
Multipurpose Taps

Multipurpose Taps

VariTap™ Spiral-Point HSS-E Taps • Through Holes



(VT-SPO • Form B Plug Chamfer • Machine Screw and Fractional • DIN 371 and 376 — continued)



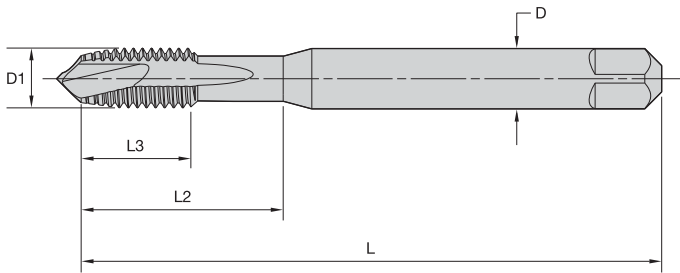
- first choice
- alternate choice

grade WU41EG TiN		grade WP49EG Oxide		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D			
5472664	VTSP06034	5387785	VTSP06034	5/8 - 18	110	24	51	12,0	3	DIN 376	2B
5472665	VTSP06035	5387786	VTSP06035	3/4 - 10	140	30	64	16,0	3	DIN 376	2B
5472666	VTSP06036	5387787	VTSP06036	3/4 - 16	140	30	64	16,0	3	DIN 376	2B
5472667	VTSP06037	5387788	VTSP06037	7/8 - 9	140	34	71	18,0	3	DIN 376	2B
5472668	VTSP06038	5387789	VTSP06038	7/8 - 14	140	34	71	18,0	3	DIN 376	2B
5472669	VTSP06039	5387790	VTSP06039	1 - 8	160	38	81	18,0	3	DIN 376	2B
5472670	VTSP06040	5387791	VTSP06040	1 - 12	160	38	81	18,0	3	DIN 376	2B

Multipurpose Taps



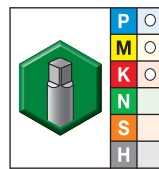
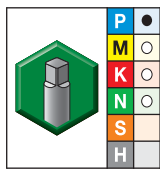
- WU41EG TiN
- WP49EG oxide



Shank Tolerance

D mm	tolerance h9
1-3	+0, -0,025
>3-6	+0, -0,030
>6-10	+0, -0,036
>10-18	+0, -0,043
>18-30	+0, -0,052

■ VT-SPO • Form B Plug Chamfer • UNJC/UNJF • Inch DIN 371 and 376



- first choice
- alternate choice

grade WU41EG TiN		grade WP49EG Oxide		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D			
5472634	VTSP06006	5387705	VTSP06006	4 - 40	56	8	18	3,5	2	DIN 371	3B
5472637	VTSP06009	5387709	VTSP06009	6 - 32	56	9	20	4,0	2	DIN 371	3B
5472640	VTSP06012	5387762	VTSP06012	8 - 32	63	11	21	4,5	2	DIN 371	3B
5472645	VTSP06015	5387765	VTSP06015	10 - 32	70	12	25	6,0	2	DIN 371	3B
5472648	VTSP06018	5387768	VTSP06018	1/4 - 28	80	15	30	7,0	3	DIN 371	3B
5472651	VTSP06021	5387771	VTSP06021	5/16 - 24	90	15	35	8,0	3	DIN 371	3B
5472654	VTSP06024	5387774	VTSP06024	3/8 - 24	100	19	39	10,0	3	DIN 371	3B
5472657	VTSP06027	5387778	VTSP06027	7/16 - 20	100	18	41	8,0	3	DIN 376	3B
5472660	VTSP06030	5387781	VTSP06030	1/2 - 20	110	23	47	9,0	3	DIN 376	3B

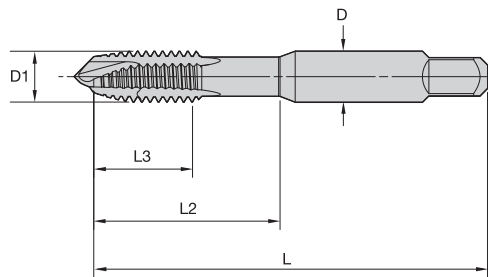
Multipurpose Taps

Multipurpose Taps

VariTap™ Spiral-Point HSS-E Taps • Through Holes

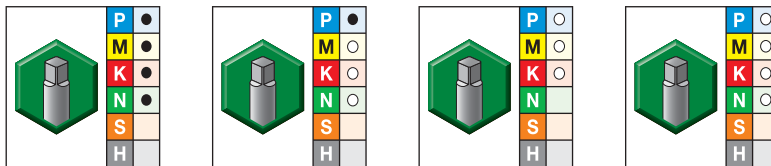


- WP42EG TiCN
- WU41EG TiN
- WP49EG oxide
- WU40EG bright



Shank Tolerance	
D inch	tolerance
0.141–0.635	+0, -.0015
>0.635–1.51	+0, -.0020
>1.51–2.01	+0, -.0030

■ VT-SPO • Form B Plug Chamfer • Metric • ANSI



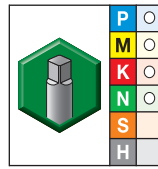
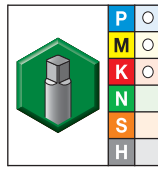
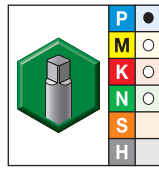
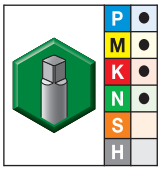
- first choice
- alternate choice

grade WP42EG TiCN		grade WU41EG TiN		grade WP49EG Oxide		grade WU40EG Bright		inch dimensions				number of flutes	pitch diameter limit	
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	L2			D
5362670	VTSP05505	5362671	VTSP05505	5362589	VTSP05505	5362672	VTSP05505	M3 X 0,5	1.94	.58	.75	.141	2	D3
5362674	VTSP05506	-	-	5362673	VTSP05506	-	-	M3 X 0,5	1.94	.58	.75	.141	2	D11
5631641	VTSP05613	5631642	VTSP05613	5631640	VTSP05613	5631643	VTSP05613	M3 X 0,5	1.94	.58	.75	.141	3	D3
5631645	VTSP05614	-	-	5631644	VTSP05614	-	-	M3 X 0,5	1.94	.58	.75	.141	3	D11
5362677	VTSP05507	-	-	5362676	VTSP05507	5362678	VTSP05507	M3,5 X 0,6	1.99	.38	.71	.141	2	D4
5362690	VTSP05508	-	-	5362679	VTSP05508	-	-	M3,5 X 0,6	1.99	.38	.71	.141	2	D11
5631647	VTSP05615	-	-	5631646	VTSP05615	5631648	VTSP05615	M3,5 X 0,6	1.99	.38	.71	.141	3	D4
5631650	VTSP05616	-	-	5631649	VTSP05616	-	-	M3,5 X 0,6	1.99	.38	.71	.141	3	D11
5362692	VTSP05509	5362693	VTSP05509	5362691	VTSP05509	5362694	VTSP05509	M4 X 0,7	2.12	.38	.76	.168	2	D4
5362696	VTSP05510	-	-	5362695	VTSP05510	-	-	M4 X 0,7	2.12	.38	.76	.168	2	D11
5631652	VTSP05617	5631653	VTSP05617	5631651	VTSP05617	5631654	VTSP05617	M4 X 0,7	2.12	.38	.76	.168	3	D4
5631656	VTSP05618	-	-	5631655	VTSP05618	-	-	M4 X 0,7	2.12	.38	.76	.168	3	D11
5362698	VTSP05511	5362699	VTSP05511	5362697	VTSP05511	5362700	VTSP05511	M5 X 0,8	2.37	.50	.91	.194	2	D4
5362702	VTSP05512	-	-	5362701	VTSP05512	-	-	M5 X 0,8	2.37	.50	.91	.194	2	D11
5631659	VTSP05619	5631670	VTSP05619	5631658	VTSP05619	5631671	VTSP05619	M5 X 0,8	2.37	.50	.91	.194	3	D4
5631673	VTSP05620	-	-	5631672	VTSP05620	-	-	M5 X 0,8	2.37	.50	.91	.194	3	D11
5362704	VTSP05513	5362705	VTSP05513	5362703	VTSP05513	5362706	VTSP05513	M6 X 1	2.50	.63	1.00	.255	3	D5
5362708	VTSP05514	-	-	5362707	VTSP05514	-	-	M6 X 1	2.50	.63	1.00	.255	3	D11
5362710	VTSP05515	-	-	5362709	VTSP05515	5362711	VTSP05515	M7 X 1	2.72	.69	1.15	.318	3	D5
5362713	VTSP05516	-	-	5362712	VTSP05516	-	-	M7 X 1	2.72	.69	1.15	.318	3	D11
5362715	VTSP05517	-	-	5362714	VTSP05517	5362716	VTSP05517	M8 X 1	2.71	.69	1.12	.318	3	D5
5362718	VTSP05518	-	-	5362717	VTSP05518	-	-	M8 X 1	2.71	.69	1.12	.318	3	D11
5362722	VTSP05519	5362723	VTSP05519	5362720	VTSP05519	5362724	VTSP05519	M8 X 1,25	2.71	.69	1.13	.318	3	D5
5362728	VTSP05520	-	-	5362727	VTSP05520	-	-	M8 X 1,25	2.71	.69	1.13	.318	3	D11

(continued)

Multipurpose Taps

(VT-SPO • Form B Plug Chamfer • Metric • ANSI — continued)



● first choice
○ alternate choice

grade WP42EG TiCN		grade WU41EG TiN		grade WP49EG Oxide		grade WU40EG Bright		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
5362730	VTSP05521	-	-	5362729	VTSP05521	5362731	VTSP05521	M10 X 1	2.91	.75	1.24	.381	3	D5
5362733	VTSP05522	-	-	5362732	VTSP05522	-	-	M10 X 1	2.91	.75	1.24	.381	3	D11
5367305	VTSP05523	-	-	5367304	VTSP05523	5367306	VTSP05523	M10 X 1,25	2.92	.74	1.25	.381	3	D5
5367308	VTSP05524	-	-	5367307	VTSP05524	-	-	M10 X 1,25	2.92	.74	1.25	.381	3	D11
5367340	VTSP05525	5367341	VTSP05525	5367309	VTSP05525	5367342	VTSP05525	M10 X 1,5	2.92	.75	1.26	.381	3	D6
5367344	VTSP05526	-	-	5367343	VTSP05526	-	-	M10 X 1,5	2.92	.75	1.26	.381	3	D11
5367346	VTSP05527	-	-	5367345	VTSP05527	5367347	VTSP05527	M12 X 1,25	3.38	.94	1.74	.367	3	D6
5367349	VTSP05528	-	-	5367348	VTSP05528	-	-	M12 X 1,25	3.38	.94	1.74	.367	3	D11
5367351	VTSP05529	-	-	5367350	VTSP05529	5367352	VTSP05529	M12 X 1,5	3.38	.94	1.74	.367	3	D6
5367354	VTSP05530	-	-	5367353	VTSP05530	-	-	M12 X 1,5	3.38	.94	1.74	.367	3	D11
5367356	VTSP05531	5367357	VTSP05531	5367355	VTSP05531	5367358	VTSP05531	M12 X 1,75	3.38	.94	1.74	.367	3	D6
5367360	VTSP05532	-	-	5367359	VTSP05532	-	-	M12 X 1,75	3.38	.94	1.74	.367	3	D11
5367362	VTSP05533	-	-	5367361	VTSP05533	5367363	VTSP05533	M14 X 1,5	3.59	1.00	1.74	.429	3	D6
5367365	VTSP05534	-	-	5367364	VTSP05534	5367366	VTSP05534	M14 X 2	3.59	1.00	1.74	.429	3	D7
5366476	VTSP05535	5366477	VTSP05535	5366475	VTSP05535	5366478	VTSP05535	M16 X 1,5	3.81	1.09	1.89	.480	3	D6
5366480	VTSP05536	5366481	VTSP05536	5366479	VTSP05536	5366482	VTSP05536	M16 X 2	3.81	1.09	1.89	.480	3	D7
5366485	VTSP05537	-	-	5366483	VTSP05537	5366486	VTSP05537	M18 X 1,5	4.03	1.09	1.89	.542	3	D6
5366488	VTSP05538	-	-	5366487	VTSP05538	5366489	VTSP05538	M18 X 2,5	4.03	1.22	1.89	.542	3	D7
5366491	VTSP05539	-	-	5366490	VTSP05539	-	-	M20 X 1,5	4.47	1.22	2.08	.652	3	D6
5366493	VTSP05540	-	-	5366492	VTSP05540	-	-	M20 X 2,5	4.47	1.22	2.08	.652	3	D7
-	-	-	-	5366494	VTSP05541	-	-	M22 X 1,5	4.69	1.22	2.30	.697	3	D6
-	-	-	-	5366495	VTSP05542	-	-	M22 X 2,5	4.69	1.22	2.30	.697	3	D7
-	-	-	-	5366496	VTSP05543	-	-	M24 X 2	4.91	1.22	2.30	.760	3	D7
-	-	-	-	5366497	VTSP05544	-	-	M24 X 3	4.91	1.22	2.30	.760	3	D8
-	-	-	-	5366498	VTSP05545	-	-	M27 X 1,5	5.13	1.22	2.50	.896	4	D7
-	-	-	-	5366499	VTSP05546	-	-	M27 X 3	5.13	1.22	2.50	.896	4	0
-	-	-	-	5366510	VTSP05547	-	-	M30 X 1,5	5.44	1.22	2.56	1.021	4	D6
-	-	-	-	5366511	VTSP05548	-	-	M30 X 3,5	5.44	1.22	2.56	1.021	4	D9

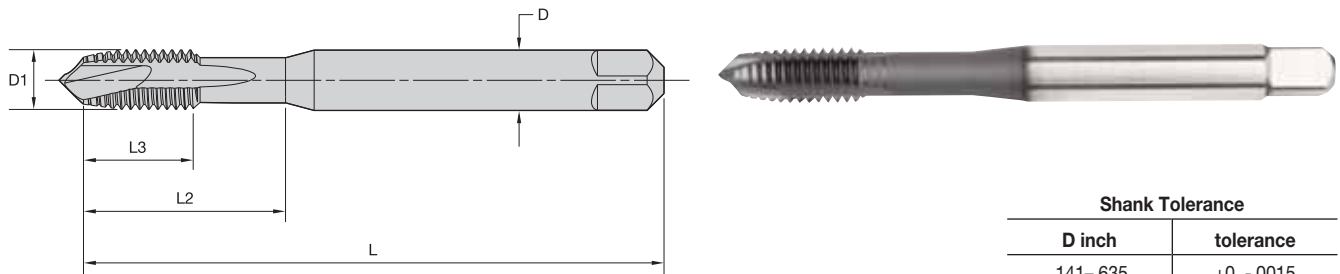
Multipurpose Taps

Multipurpose Taps

VariTap™ Spiral-Point HSS-E Taps • Through Holes

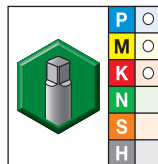
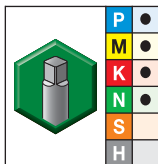


- WP42EG TiCN
- WP49EG oxide



Shank Tolerance	
D inch	tolerance
.141-.635	+0, -.0015
>.635-1.51	+0, -.0020
>1.51-2.01	+0, -.0030

■ VT-SPO • Form B Plug Chamfer • Metric • DIN Length ANSI Shank

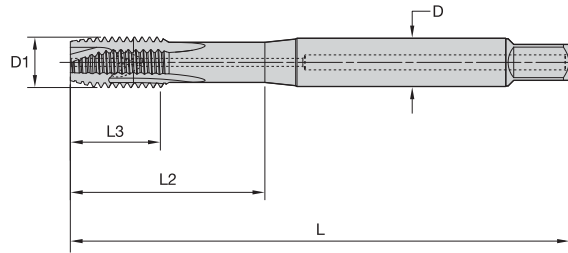


- first choice
- alternate choice

grade WP42EG TiCN		grade WP49EG Oxide		inch dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D			
5368172	VTSP09506	5368171	VTSP09506	M3 X 0,5	2.20	.31	.71	.141	2	DIN-ANSI	6H
5368174	VTSP09507	5368173	VTSP09507	M4 X 0,7	2.48	.43	.83	.168	2	DIN-ANSI	6H
5368176	VTSP09508	5368175	VTSP09508	M5 X 0,8	2.75	.47	.97	.194	2	DIN-ANSI	6H
5368178	VTSP09509	5368177	VTSP09509	M6 X 1	3.15	.47	1.18	.255	3	DIN-ANSI	6H
5368180	VTSP09510	5368179	VTSP09510	M8 X 1,25	3.54	.59	1.37	.318	3	DIN-ANSI	6H
5368182	VTSP09511	5368181	VTSP09511	M10 X 1,25	3.93	.71	1.53	.381	3	DIN-ANSI	6H
5368184	VTSP09512	5368183	VTSP09512	M10 X 1,5	3.94	.71	1.53	.381	3	DIN-ANSI	6H
5368186	VTSP09513	5368185	VTSP09513	M12 X 1,25	4.33	.83	1.73	.367	3	DIN-ANSI	6H
5368188	VTSP09514	5368187	VTSP09514	M12 X 1,5	4.33	.83	1.73	.367	3	DIN-ANSI	6H
5368190	VTSP09515	5368189	VTSP09515	M12 X 1,75	4.33	.83	1.73	.367	3	DIN-ANSI	6H
5368192	VTSP09516	5368191	VTSP09516	M14 X 1,5	4.33	.94	2.05	.429	3	DIN-ANSI	6H
5368195	VTSP09517	5368193	VTSP09517	M14 X 2	4.33	.94	2.05	.429	3	DIN-ANSI	6H
5368197	VTSP09518	5368196	VTSP09518	M16 X 1,5	4.33	.94	2.01	.480	3	DIN-ANSI	6H
5368199	VTSP09519	5368198	VTSP09519	M16 X 2	4.33	.94	2.01	.480	3	DIN-ANSI	6H
5368201	VTSP09520	5368200	VTSP09520	M18 X 1,5	4.92	1.18	2.28	.542	3	DIN-ANSI	6H
5368203	VTSP09521	5368202	VTSP09521	M18 X 2,5	4.92	1.18	2.28	.542	3	DIN-ANSI	6H
5368205	VTSP09522	5368204	VTSP09522	M20 X 1,5	5.51	1.18	2.52	.652	3	DIN-ANSI	6H
5368207	VTSP09523	5368206	VTSP09523	M20 X 2,5	5.51	1.18	2.52	.652	3	DIN-ANSI	6H

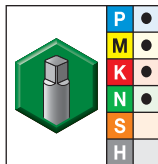
Multipurpose Taps

• WP42EG TiCN



Shank Tolerance	
D inch	tolerance
.141-.635	+0, -.0015
>.635-1.51	+0, -.0020
>1.51-2.01	+0, -.0030

■ VT-SPO • Form B Plug Chamfer • Through Coolant • Metric • DIN Length ANSI Shank



● first choice
○ alternate choice

grade WP42EG TiCN		inch dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	D1 size	L	L3	L2	D			
5368457	VTSP09905	M6 X 1	3.15	.47	1.18	.255	3	DIN-ANSI	6H
5368458	VTSP09906	M8 X 1,25	3.54	.59	1.38	.318	3	DIN-ANSI	6H
5368459	VTSP09907	M10 X 1,25	3.94	.71	1.54	.381	3	DIN-ANSI	6H
5368480	VTSP09908	M10 X 1,5	3.94	.71	1.54	.381	3	DIN-ANSI	6H
5368481	VTSP09909	M12 X 1,25	4.33	.83	1.73	.367	3	DIN-ANSI	6H
5368482	VTSP09910	M12 X 1,5	4.33	.83	1.73	.367	3	DIN-ANSI	6H
5368483	VTSP09911	M12 X 1,75	4.33	.83	1.73	.367	3	DIN-ANSI	6H
5368484	VTSP09912	M14 X 1,5	4.33	.94	2.05	.429	3	DIN-ANSI	6H
5368485	VTSP09913	M14 X 2	4.33	.94	2.05	.429	3	DIN-ANSI	6H
5368486	VTSP09914	M16 X 1,5	4.33	.94	2.01	.480	3	DIN-ANSI	6H
5368487	VTSP09915	M16 X 2	4.33	.94	2.01	.480	3	DIN-ANSI	6H
5368488	VTSP09916	M18 X 1,5	4.92	1.18	2.28	.542	3	DIN-ANSI	6H
5368489	VTSP09917	M18 X 2,5	4.92	1.18	2.28	.542	3	DIN-ANSI	6H
5368490	VTSP09918	M20 X 1,5	5.51	1.18	2.52	.652	3	DIN-ANSI	6H
5368491	VTSP09919	M20 X 2,5	5.51	1.18	2.52	.652	3	DIN-ANSI	6H

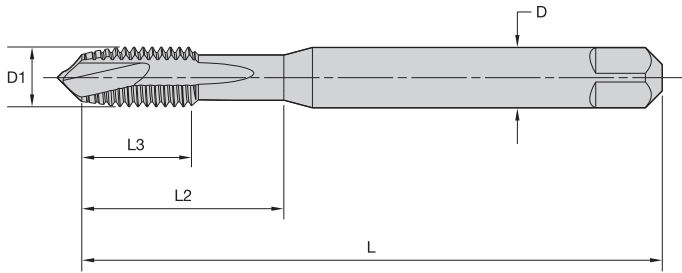
Multipurpose Taps

Multipurpose Taps

VariTap™ Spiral-Point HSS-E Taps • Through Holes

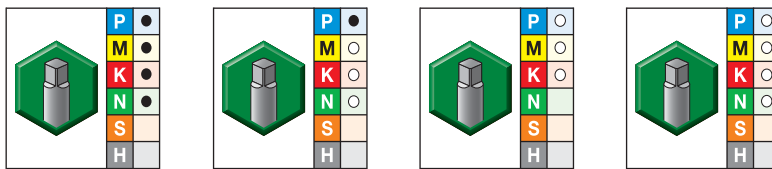


- WU40EG bright
- WU41EG TiN
- WP42EG TiCN
- WP49EG oxide



Shank Tolerance	
D mm	tolerance h9
1-3	+0, -0,025
>3-6	+0, -0,030
>6-10	+0, -0,036
>10-18	+0, -0,043
>18-30	+0, -0,052

■ VT-SPO • Form B Plug Chamfer • Metric DIN 371, 374, and 376



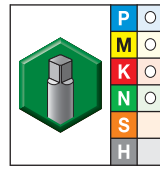
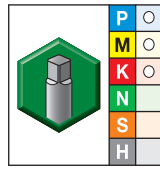
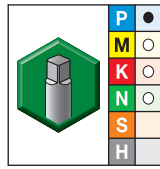
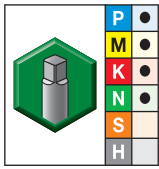
- first choice
- alternate choice

grade WP42EG TiCN		grade WU41EG TiN		grade WP49EG Oxide		grade WU40EG Bright		metric dimensions				number of flutes	dimension standard	class of fit	
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	L2				D
5366647	VTSP06505	5366646	VTSP06505	5366648	VTSP06505	5366649	VTSP06505	M2 X 0,4	45	7	13	2,8	2	DIN 371	6H
-	-	-	-	5366660	VTSP06506	-	-	M2 X 0,4	45	7	13	2,8	2	DIN 371	6G
-	-	-	-	5366661	VTSP06507	-	-	M2,2 X 0,45	45	7	13	2,8	2	DIN 371	6H
-	-	5366662	VTSP06508	5366663	VTSP06508	5366664	VTSP06508	M2,5 X 0,45	50	7	15	2,8	2	DIN 371	6H
-	-	-	-	5366665	VTSP06509	-	-	M2,5 X 0,45	50	7	15	2,8	2	DIN 371	6G
-	-	-	-	5368602	VTSP06545	5368603	VTSP06545	M3 X 0,35	56	8	-	2,2	2	DIN 374	6H
-	-	5368514	VTSP06525	5368515	VTSP06525	5368516	VTSP06525	M3 X 0,5	56	8	-	2,2	2	DIN 376	6H
-	-	-	-	5366670	VTSP06511	-	-	M3 X 0,5	56	8	18	3,5	2	DIN 371	6G
5366667	VTSP06510	5366666	VTSP06510	5366668	VTSP06510	5366669	VTSP06510	M3 X 0,5	56	8	18	3,5	2	DIN 371	6H
-	-	5366671	VTSP06512	5366673	VTSP06512	5366674	VTSP06512	M3,5 X 0,6	56	9	20	4,0	2	DIN 371	6H
-	-	-	-	5368604	VTSP06546	5368605	VTSP06546	M4 X 0,5	63	10	21	2,8	2	DIN 374	6H
-	-	5368517	VTSP06526	5368518	VTSP06526	5368519	VTSP06526	M4 X 0,7	63	10	21	2,8	2	DIN 376	6H
-	-	-	-	5366679	VTSP06514	-	-	M4 X 0,7	63	11	21	4,5	2	DIN 371	6G
5366676	VTSP06513	5366675	VTSP06513	5366677	VTSP06513	5366678	VTSP06513	M4 X 0,7	63	11	21	4,5	2	DIN 371	6H
-	-	-	-	5368606	VTSP06547	5368607	VTSP06547	M5 X 0,5	70	12	25	3,5	2	DIN 374	6H
-	-	5368540	VTSP06527	5368541	VTSP06527	5368542	VTSP06527	M5 X 0,8	70	12	25	3,5	2	DIN 376	6H
-	-	-	-	5366685	VTSP06516	-	-	M5 X 0,8	70	12	25	6,0	2	DIN 371	6G
5366681	VTSP06515	5366680	VTSP06515	5366682	VTSP06515	5366684	VTSP06515	M5 X 0,8	70	12	25	6,0	2	DIN 371	6H
-	-	-	-	5368608	VTSP06548	5368609	VTSP06548	M6 X 0,5	80	12	30	4,5	3	DIN 374	6H
-	-	-	-	5368610	VTSP06549	5368611	VTSP06549	M6 X 0,75	80	12	30	4,5	3	DIN 374	6H
-	-	5368543	VTSP06528	5368544	VTSP06528	5368545	VTSP06528	M6 X 1	80	12	30	4,5	3	DIN 376	6H
5366687	VTSP06517	5366686	VTSP06517	5366688	VTSP06517	5366689	VTSP06517	M6 X 1	80	12	30	6,0	3	DIN 371	6H
-	-	-	-	5366690	VTSP06518	-	-	M6 X 1	80	12	30	6,0	3	DIN 371	6G
-	-	-	-	5368612	VTSP06550	5368613	VTSP06550	M7 X 0,75	80	12	30	5,5	3	DIN 374	6H

(continued)

Multipurpose Taps

(VT-SPO • Form B Plug Chamfer • Metric DIN 371, 374, and 376 – continued)



● first choice
○ alternate choice

grade WP42EG TiCN		grade WU41EG TiN		grade WP49EG Oxide		grade WU40EG Bright		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D			
5366693	VTSP06519	5366692	VTSP06519	5366695	VTSP06519	5366696	VTSP06519	M7 X 1	80	12	30	7,0	3	DIN 371	6H
-	-	-	-	5366697	VTSP06520	-	-	M7 X 1	80	12	30	7,0	3	DIN 371	6G
-	-	-	-	5368614	VTSP06551	5368615	VTSP06551	M8 X 0,75	80	12	30	6,0	3	DIN 374	6H
-	-	-	-	5368616	VTSP06552	5368617	VTSP06552	M8 X 1	90	15	35	6,0	3	DIN 374	6H
-	-	5368546	VTSP06529	5368547	VTSP06529	5368548	VTSP06529	M8 X 1,25	90	15	35	6,0	3	DIN 376	6H
5366700	VTSP06521	5366698	VTSP06521	5366701	VTSP06521	5366703	VTSP06521	M8 X 1,25	90	15	35	8,0	3	DIN 371	6H
-	-	-	-	5366704	VTSP06522	-	-	M8 X 1,25	90	15	35	8,0	3	DIN 371	6G
-	-	-	-	5368618	VTSP06553	5368619	VTSP06553	M10 X 0,75	90	15	35	7,0	3	DIN 374	6H
-	-	-	-	5368620	VTSP06554	5368621	VTSP06554	M10 X 1	90	15	35	7,0	3	DIN 374	6H
-	-	-	-	5368622	VTSP06555	5368623	VTSP06555	M10 X 1,25	100	18	39	7,0	3	DIN 374	6H
-	-	-	-	5366709	VTSP06524	-	-	M10 X 1,5	100	18	39	10,0	3	DIN 371	6G
5366706	VTSP06523	5366705	VTSP06523	5366707	VTSP06523	5366708	VTSP06523	M10 X 1,5	100	18	39	10,0	3	DIN 371	6H
-	-	5368549	VTSP06530	5368550	VTSP06530	5368551	VTSP06530	M10 X 1,5	100	18	39	7,0	3	DIN 376	6H
-	-	-	-	5368624	VTSP06556	5368625	VTSP06556	M11 X 1	90	15	36	8,0	3	DIN 374	6H
-	-	-	-	5368626	VTSP06557	5368627	VTSP06557	M12 X 1	100	21	39	9,0	3	DIN 374	6H
-	-	-	-	5368628	VTSP06558	5368629	VTSP06558	M12 X 1,25	100	21	39	9,0	3	DIN 374	6H
-	-	-	-	5368630	VTSP06559	5368631	VTSP06559	M12 X 1,5	100	21	39	9,0	3	DIN 374	6H
-	-	-	-	5368556	VTSP06532	-	-	M12 X 1,75	110	21	44	9,0	3	DIN 376	6G
5368553	VTSP06531	5368552	VTSP06531	5368554	VTSP06531	5368555	VTSP06531	M12 X 1,75	110	21	44	9,0	3	DIN 376	6H
-	-	-	-	5368632	VTSP06560	5368633	VTSP06560	M14 X 1	100	21	47	11,0	3	DIN 374	6H
-	-	-	-	5368634	VTSP06561	5368635	VTSP06561	M14 X 1,25	100	21	47	11,0	3	DIN 374	6H
-	-	-	-	5368636	VTSP06562	5368637	VTSP06562	M14 X 1,5	100	21	47	11,0	3	DIN 374	6H
5368558	VTSP06533	5368557	VTSP06533	5368559	VTSP06533	5368560	VTSP06533	M14 X 2	110	24	52	11,0	3	DIN 376	6H
-	-	-	-	5368561	VTSP06534	-	-	M14 X 2	110	24	52	11,0	3	DIN 376	6G
-	-	-	-	5368638	VTSP06563	5368639	VTSP06563	M16 X 1	100	21	46	12,0	3	DIN 374	6H
-	-	-	-	5368640	VTSP06564	5368641	VTSP06564	M16 X 1,5	100	21	46	12,0	3	DIN 374	6H
5368563	VTSP06535	5368562	VTSP06535	5368565	VTSP06535	5368566	VTSP06535	M16 X 2	110	24	51	12,0	3	DIN 376	6H
-	-	-	-	5368567	VTSP06536	-	-	M16 X 2	110	24	51	12,0	3	DIN 376	6G
-	-	-	-	5368642	VTSP06565	5368643	VTSP06565	M18 X 1	110	21	50	14,0	3	DIN 374	6H
-	-	-	-	5368683	VTSP06566	5368684	VTSP06566	M18 X 1,5	110	21	50	14,0	3	DIN 374	6H
-	-	-	-	5368685	VTSP06567	5368686	VTSP06567	M18 X 2	125	30	58	14,0	3	DIN 374	6H
5368569	VTSP06537	5368568	VTSP06537	5368570	VTSP06537	5368571	VTSP06537	M18 X 2,5	125	30	58	14,0	3	DIN 376	6H
-	-	-	-	5368687	VTSP06568	5368688	VTSP06568	M20 X 1	125	24	56	16,0	3	DIN 374	6H
-	-	-	-	5368689	VTSP06569	5368690	VTSP06569	M20 X 1,5	125	24	56	16,0	3	DIN 374	6H
-	-	-	-	5368691	VTSP06570	5368692	VTSP06570	M20 X 2	140	30	64	16,0	3	DIN 374	6H
5368573	VTSP06538	5368572	VTSP06538	5368574	VTSP06538	5368575	VTSP06538	M20 X 2,5	140	30	64	16,0	3	DIN 376	6H
-	-	-	-	5368693	VTSP06571	5368694	VTSP06571	M22 X 1,5	125	24	62	18,0	3	DIN 374	6H
-	-	-	-	-	-	5368695	VTSP06572	M22 X 2	140	30	70	18,0	3	DIN 374	6H
5368577	VTSP06539	5368576	VTSP06539	5368578	VTSP06539	5368579	VTSP06539	M22 X 2,5	140	30	70	18,0	3	DIN 376	6H
-	-	-	-	5368696	VTSP06573	5368697	VTSP06573	M24 X 1,5	140	28	67	18,0	3	DIN 374	6H

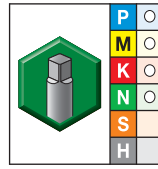
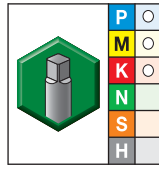
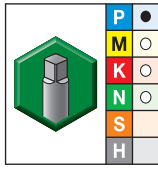
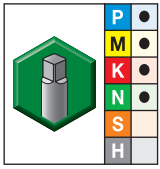
(continued)

Multipurpose Taps

Multipurpose Taps

VariTap™ Spiral-Point HSS-E Taps • Through Holes

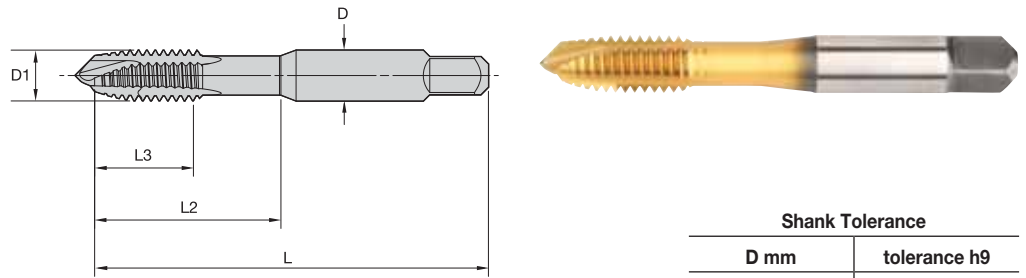
(VT-SPO • Form B Plug Chamfer • Metric DIN 371, 374, and 376 – continued)



● first choice
○ alternate choice

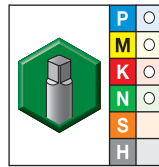
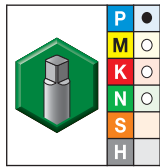
grade WP42EG TiCN		grade WU41EG TiN		grade WP49EG Oxide		grade WU40EG Bright		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D			
-	-	-	-	-	-	5368698	VTSP06574	M24 X 2	140	30	67	18,0	3	DIN 374	6H
5368581	VTSP06540	5368580	VTSP06540	5368582	VTSP06540	5368583	VTSP06540	M24 X 3	160	36	77	18,0	3	DIN 376	6H
-	-	5368584	VTSP06541	5368585	VTSP06541	5368586	VTSP06541	M27 X 3	160	36	82	20,0	4	DIN 376	6H
-	-	-	-	-	-	5368699	VTSP06575	M30 X 2	150	28	80	22,0	4	DIN 374	6H
-	-	5368587	VTSP06542	5368588	VTSP06542	5368589	VTSP06542	M30 X 3,5	180	42	91	22,0	4	DIN 376	6H
-	-	-	-	5368600	VTSP06543	-	-	M33 X 3,5	180	42	100	25,0	4	DIN 376	6H
-	-	-	-	5368601	VTSP06544	-	-	M36 X 4	200	48	110	28,0	4	DIN 376	6H

- WU40EG bright
- WU41EG TiN



Shank Tolerance	
D mm	tolerance h9
1-3	+0, -0,025
>3-6	+0, -0,030
>6-10	+0, -0,036
>10-18	+0, -0,043
>18-30	+0, -0,052

■ VT-SPO • Form B Plug Chamfer • Metric • JIS



- first choice
- alternate choice

grade WU41EG TiN		grade WU40EG Bright		metric dimensions					number of flutes	dimension standard	tap class
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D			
5387861	VTSP07505	5387859	VTSP07505	M3 X 0,5	46	11	19	4,0	2	JIS	ISO 2
5387865	VTSP07506	5387863	VTSP07506	M4 X 0,7	52	13	21	5,0	2	JIS	ISO 2
5387869	VTSP07507	5387867	VTSP07507	M5 X 0,8	60	16	24	5,5	2	JIS	ISO 2
5387873	VTSP07508	5387871	VTSP07508	M6 X 1	62	19	29	6,0	3	JIS	ISO 2
5387877	VTSP07509	5387875	VTSP07509	M8 X 1,25	70	22	37	6,2	3	JIS	ISO 2
5387881	VTSP07510	5387879	VTSP07510	M10 X 1,5	75	24	41	7,0	3	JIS	ISO 2
-		5387883	VTSP07511	M12 X 1,25	82	29	48	8,5	3	JIS	ISO 2
-		5387887	VTSP07513	M12 X 1,5	82	29	48	8,5	3	JIS	ISO 2
-		5387885	VTSP07512	M12 X 1,75	82	29	48	8,5	3	JIS	ISO 2
-		5387891	VTSP07515	M14 X 1,5	88	30	48	10,5	3	JIS	ISO 2
-		5387889	VTSP07514	M14 X 2	88	30	48	10,5	3	JIS	ISO 2
-		5387895	VTSP07517	M16 X 1,5	95	32	52	12,5	3	JIS	ISO 2
-		5387893	VTSP07516	M16 X 2	95	32	52	12,5	3	JIS	ISO 2
-		5387898	VTSP07518	M18 X 2,5	100	37	55	14,0	3	JIS	ISO 2
-		5387900	VTSP07519	M20 X 2,5	105	37	60	15,0	3	JIS	ISO 2

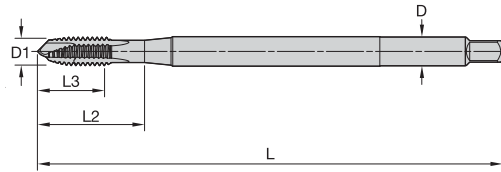
Multipurpose Taps

Multipurpose Taps

VariTap™ Spiral-Point HSS-E Extension Taps • Through Holes • 4" Length



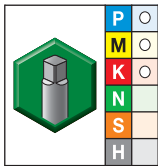
- WP49EG oxide



Shank Tolerance

D inch	tolerance
.141-.635	+0, -.0015
>.635-1.51	+0, -.0020
>1.51-2.01	+0, -.0030

■ VT-SPO • Form B Plug Chamfer • Machine Screw and Fractional • 4" Length • ANSI



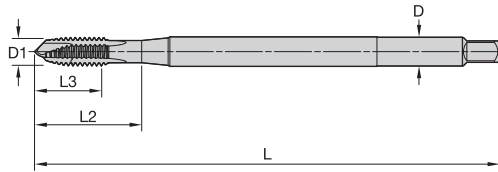
- first choice
- alternate choice

grade WP49EG
Oxide

order #	catalog #	D1 TPI	L	inch dimensions			number of flutes	pitch diameter limit
				L3	L2	D		
5608578	VTSP05419	4 - 40	4.00	.56	.87	.141	2	H2
5608579	VTSP05420	6 - 32	4.00	.38	.71	.141	2	H3
5608580	VTSP05421	8 - 32	4.00	.38	.76	.168	2	H3
5608582	VTSP05422	10 - 24	4.00	.50	.91	.194	2	H3
5608584	VTSP05423	10 - 32	4.00	.50	.91	.194	2	H3
5608585	VTSP05424	1/4 - 20	4.00	.63	1.01	.255	3	H3

Multipurpose Taps

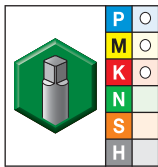
• WP49EG oxide



Shank Tolerance

D inch	tolerance
.141-.635	+0, -.0015
>.635-1.51	+0, -.0020
>1.51-2.01	+0, -.0030

■ VT-SPO • Form B Plug Chamfer • Machine Screw and Fractional • 6" Length • ANSI

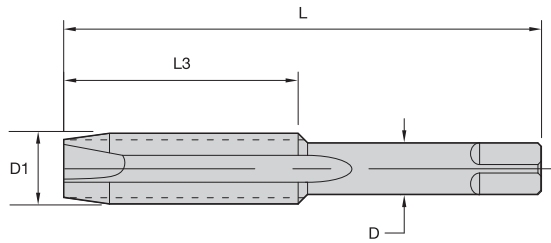


● first choice
○ alternate choice

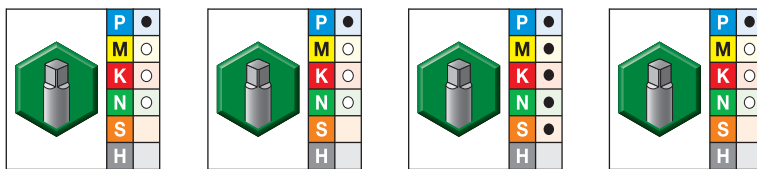
grade WP49EG Oxide		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	L2	D		
5608551	VTSP05403	4 - 40	6.00	.56	.87	.141	2	H2
5608552	VTSP05404	6 - 32	6.00	.38	.71	.168	2	H3
5608553	VTSP05405	8 - 32	6.00	.38	.76	.168	2	H3
5608554	VTSP05406	10 - 24	6.00	.50	.91	.194	2	H3
5608555	VTSP05407	10 - 32	6.00	.50	.91	.194	2	H3
5608556	VTSP05408	1/4 - 20	6.00	.63	1.01	.255	3	H3
5608557	VTSP05409	1/4 - 28	6.00	.63	1.01	.255	3	H3
5608558	VTSP05410	5/16 - 18	6.00	.69	1.13	.318	3	H3
5608559	VTSP05411	5/16 - 24	6.00	.69	1.13	.318	3	H3
5608570	VTSP05412	3/8 - 16	6.00	.75	1.27	.381	3	H3
5608571	VTSP05413	3/8 - 24	6.00	.75	1.27	.381	3	H3
5608572	VTSP05414	7/16 - 14	6.00	.88	1.49	.323	3	H3
5608573	VTSP05415	7/16 - 20	6.00	.88	1.49	.323	3	H3
5608575	VTSP05416	1/2 - 13	6.00	.94	1.74	.367	3	H3
5608576	VTSP05417	1/2 - 20	6.00	.94	1.74	.367	3	H3
5608577	VTSP05418	5/8 - 11	6.00	1.09	1.89	.480	3	H3

Multipurpose Taps

- Series 5301TC • TiCN Coated
- Series 2301 • TiN Coated
- Series 5301S • SH50 Steam Oxide
- Series 5301 • Uncoated



■ Series 5301/2301 • Machine Screw and Fractional Sizes • Plug Chamfer

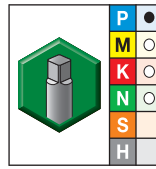
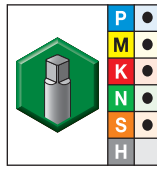
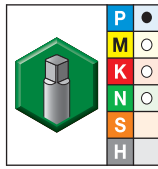
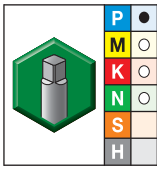


● first choice
○ alternate choice

TiCN		TiN		oxide		uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	D		
2746991	19011	2747016	19001	2750325	13111	2750249	13202	0 - 80	1.63	.31	.141	2	H2
-	-	-	-	-	-	2750251	13201	0 - 80	1.63	.31	.141	2	H1
2972885	19442	-	-	-	-	2750246	13204	1 - 64	1.69	.38	.141	2	H2
3171104	19446	-	-	2750324	13115	2750241	13206	1 - 72	1.69	.38	.141	2	H2
-	-	-	-	-	-	2750243	13205	1 - 72	1.69	.38	.141	2	H1
2746990	19012	2747001	19006	2750321	13117	2867063	13208	2 - 56	1.75	.44	.141	2	H2
-	-	-	-	-	-	2867066	13207	2 - 56	1.75	.44	.141	2	H1
3171107	19449	-	-	-	-	2750238	13211	2 - 64	1.75	.44	.141	2	H2
3171109	19452	2746999	19007	2750319	13119	2750236	13213	3 - 48	1.81	.50	.141	2	H2
3171113	19459	-	-	-	-	2750231	13215	3 - 56	1.81	.50	.141	2	H2
-	-	-	-	2750313	13126	2750230	13217	4 - 36	1.88	.56	.141	2	H2
2746988	19013	2746982	19016	2750316	13123	2750228	13219	4 - 40	1.88	.56	.141	2	H2
3171115	19462	-	-	-	-	2750225	13223	4 - 48	1.88	.56	.141	2	H2
2746986	19014	2746972	19021	2750312	13128	2750220	13225	5 - 40	1.94	.63	.141	2	H2
3171117	19464	-	-	-	-	2750218	13229	5 - 44	1.94	.63	.141	2	H2
-	-	2746946	19036	2750306	13132	2750210	13232	6 - 32	2.00	.69	.141	2	H3
3171119	19467	2746954	19031	2750309	13131	2750212	13231	6 - 32	2.00	.69	.141	2	H2
-	-	-	-	-	-	2750209	13235	6 - 32	2.00	.69	.141	2	H7
2746944	19037	2746942	19038	-	-	2750206	13237	6 - 40	2.00	.69	.141	2	H2
-	-	2746928	19046	2750300	13137	2750199	13242	8 - 32	2.13	.75	.168	2	H3
-	-	2746941	19039	2750302	13136	2750202	13241	8 - 32	2.13	.75	.168	2	H2
-	-	-	-	-	-	2750204	13240	8 - 32	2.13	.75	.168	2	H1
-	-	-	-	-	-	2750195	13244	8 - 32	2.13	.75	.168	2	H7
-	-	-	-	3047408	13139	2750193	13246	8 - 36	2.13	.75	.168	2	H2
2746984	19015	2746913	19056	2750293	13142	2409831	13251	10 - 24	2.38	.88	.194	2	H3
-	-	-	-	2750294	13141	2750190	13250	10 - 24	2.38	.88	.194	2	H2
-	-	-	-	-	-	2750192	13249	10 - 24	2.38	.88	.194	2	H1
-	-	2746897	19071	2750290	13146	2750175	13257	10 - 32	2.38	.88	.194	2	H3

(continued)

(Series 5301/2301 • Machine Screw and Fractional Sizes • Plug Chamfer – continued)

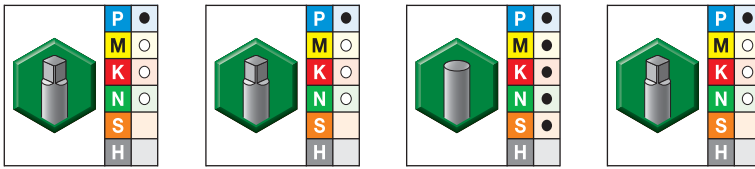


● first choice
○ alternate choice

TICN		TiN		oxide		uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	D		
-	-	2746899	19069	2750291	13145	2750177	13256	10 - 32	2.38	.88	.194	2	H2
-	-	-	-	-	-	2750179	13255	10 - 32	2.38	.88	.194	2	H1
-	-	-	-	-	-	2750165	13260	10 - 32	2.38	.88	.194	2	H7
2746980	19017	2746889	19076	2750287	13148	2750160	13262	12 - 24	2.38	.94	.220	2	H3
3171130	19482	-	-	2750286	13149	2750159	13264	12 - 28	2.38	.94	.220	2	H3
3171133	19485	2746879	19086	2750282	13152	2750152	13270	1/4 - 20	2.50	1.00	.255	2	H3
-	-	2746877	19088	2750280	13154	2750148	13272	1/4 - 20	2.50	1.00	.255	3	H3
-	-	2863790	19079	2750284	13151	2750154	13269	1/4 - 20	2.50	1.00	.255	2	H2
3171132	19484	-	-	-	-	2750156	13268	1/4 - 20	2.50	1.00	.255	2	H1
-	-	2746869	19096	-	-	2750143	13273	1/4 - 20	2.50	1.00	.255	2	H5
-	-	-	-	-	-	2750141	13274	1/4 - 20	2.50	1.00	.255	3	H5
-	-	-	-	2750278	13157	2750132	13278	1/4 - 28	2.50	1.00	.255	2	H2
3171139	19492	2746865	19101	2750277	13158	2750128	13280	1/4 - 28	2.50	1.00	.255	2	H3
-	-	-	-	-	-	2750135	13277	1/4 - 28	2.50	1.00	.255	2	H1
2746978	19018	-	-	-	-	2750129	13279	1/4 - 28	2.50	1.00	.255	3	H2
-	-	-	-	-	-	2750119	13282	1/4 - 28	2.50	1.00	.255	2	H4
-	-	-	-	-	-	2750118	13283	1/4 - 28	2.50	1.00	.255	3	H4
3171138	19490	-	-	-	-	-	-	1/4 - 28	2.50	1.00	.255	3	H2
3171144	19498	1916977	19106	2750276	13164	2750111	13291	5/16 - 18	2.72	1.13	.318	2	H3
2746976	19019	3171095	19384	1830468	13166	2750109	13293	5/16 - 18	2.72	1.13	.318	3	H3
-	-	-	-	-	-	2750115	13289	5/16 - 18	2.72	1.13	.318	2	H1
-	-	-	-	-	-	2750112	13290	5/16 - 18	2.72	1.13	.318	2	H2
-	-	-	-	-	-	2750105	13294	5/16 - 18	2.72	1.13	.318	2	H5
-	-	-	-	-	-	2750103	13295	5/16 - 18	2.72	1.13	.318	3	H5
-	-	2746861	19103	-	-	-	-	5/16 - 18	2.72	1.13	.318	3	H2
3171148	19504	2746857	19108	2750271	13170	2750088	13300	5/16 - 24	2.72	1.13	.318	2	H3
-	-	-	-	-	-	2750094	13298	5/16 - 24	2.72	1.13	.318	2	H2
-	-	-	-	-	-	2750086	13302	5/16 - 24	2.72	1.13	.318	2	H4
2746974	19020	-	-	-	-	2750084	13303	5/16 - 24	2.72	1.13	.318	3	H4
-	-	-	-	-	-	2750082	13305	3/8 - 16	2.94	1.25	.381	3	H1
-	-	-	-	-	-	2750080	13306	3/8 - 16	2.94	1.25	.381	3	H2
3171152	19509	-	-	-	-	2750075	13309	3/8 - 16	2.94	1.25	.381	3	H5
2746970	19022	2746855	19111	2750268	13176	2750078	13307	3/8 - 16	2.94	1.25	.381	3	H3
2746968	19023	2746853	19112	2750266	13180	2750067	13313	3/8 - 24	2.94	1.25	.381	3	H3
-	-	-	-	-	-	2866897	13312	3/8 - 24	2.94	1.25	.381	3	H2
-	-	-	-	-	-	2750066	13315	3/8 - 24	2.94	1.25	.381	3	H4
2746966	19024	1893987	19113	2750264	13183	2750060	13319	7/16 - 14	3.16	1.44	.323	3	H3
-	-	-	-	-	-	2750062	13318	7/16 - 14	3.16	1.44	.323	3	H2
-	-	-	-	-	-	2750058	13320	7/16 - 14	3.16	1.44	.323	3	H5
2746964	19025	2746849	19114	2750262	13185	2750055	13324	7/16 - 20	3.16	1.44	.323	3	H3

Production Taps

(Series 5301/2301 • Machine Screw and Fractional Sizes • Plug Chamfer – continued)

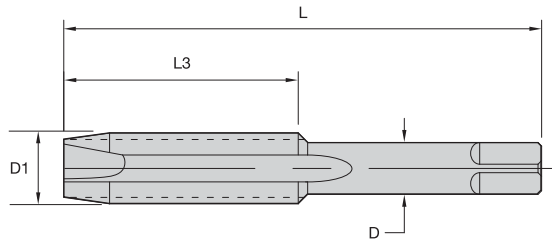
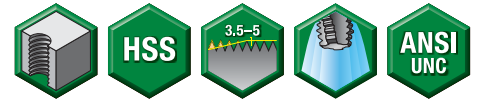


● first choice
○ alternate choice

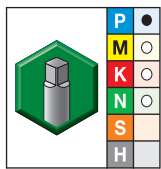
TiCN		TiN		oxide		uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	D		
-	-	-	-	-	-	2750054	13325	7/16 - 20	3.16	1.44	.323	3	H5
2746962	19026	2746847	19116	2750261	13189	2750052	13328	1/2 - 13	3.38	1.66	.367	3	H3
-	-	-	-	-	-	2750053	13327	1/2 - 13	3.38	1.66	.367	3	H2
3171159	19520	-	-	-	-	2750047	13330	1/2 - 13	3.38	1.66	.367	3	H5
3171161	19524	-	-	-	-	2750041	13333	1/2 - 20	3.38	1.66	.367	3	H2
3171162	19525	-	-	-	-	2750039	13336	1/2 - 20	3.38	1.66	.367	3	H5
2746960	19027	2746845	19117	2750259	13193	2750040	13334	1/2 - 20	3.38	1.66	.367	3	H3
2746958	19028	2746843	19118	2750257	13195	2750036	13339	5/8 - 11	3.81	1.81	.480	3	H3
-	-	-	-	-	-	2750032	13340	5/8 - 11	3.81	1.81	.480	3	H5
-	-	-	-	2750255	13199	2750028	13342	5/8 - 18	3.81	1.81	.480	3	H3
-	-	-	-	-	-	2750023	13344	3/4 - 10	4.25	2.00	.590	3	H5
2746956	19029	2746841	19119	2750256	13197	2750024	13343	3/4 - 10	4.25	2.00	.590	3	H3

NOTE: GUN™ taps for 3B class of fit are suitable for UNJ aerospace internal threading applications.
Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.





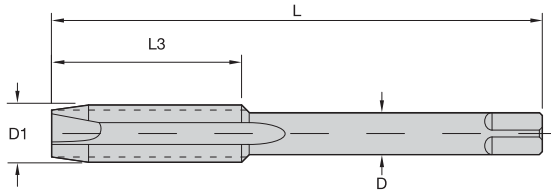
■ Series 5301F • Fractional Sizes • Spiral Point, Plug Chamfer



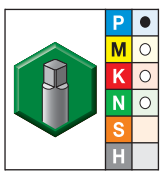
● first choice
○ alternate choice

uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	D1 size	L	L3	D		
2750139	13275	1/4 - 20	2.50	1.00	.255	2	H11
2750101	13296	5/16 - 18	2.72	1.13	.318	2	H11
2750074	13310	3/8 - 16	2.94	1.25	.381	3	H11
2750046	13331	1/2 - 13	3.38	1.66	.367	3	H11
2750029	13341	5/8 - 11	3.81	1.81	.480	3	H11

NOTE: Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.



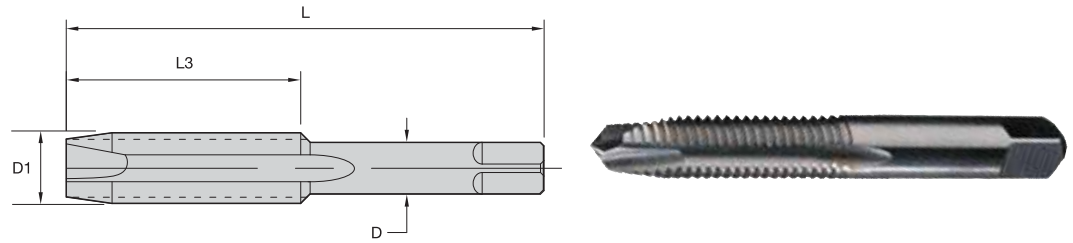
■ Series 5301 • Fractional Sizes • Spiral Point, Plug Chamfer



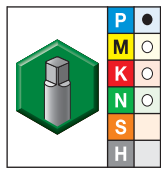
- first choice
- alternate choice

uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	D1 size	L	L3	D		
2747035	18930	6 - 32	6.00	.69	.141	2	H3
2747033	18932	8 - 32	6.00	.75	.168	2	H3
2747031	18934	10 - 24	6.00	.88	.194	2	H3
2747029	18935	10 - 32	6.00	.88	.194	2	H3
2747028	18936	1/4 - 20	6.00	1.00	.255	2	H3
2747026	18937	1/4 - 28	6.00	1.00	.255	2	H3
2747024	18938	5/16 - 18	6.00	1.13	.318	2	H3
2747022	18939	5/16 - 24	6.00	1.13	.318	2	H3
2747020	18940	3/8 - 16	6.00	1.25	.381	3	H3
2747018	18941	3/8 - 24	6.00	1.25	.381	3	H3

NOTE: Also available in Hand Tap Series 5305 and 5303.
 GUN™ taps for 3B class of fit are suitable for UNJ aerospace internal threading applications.
 Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.



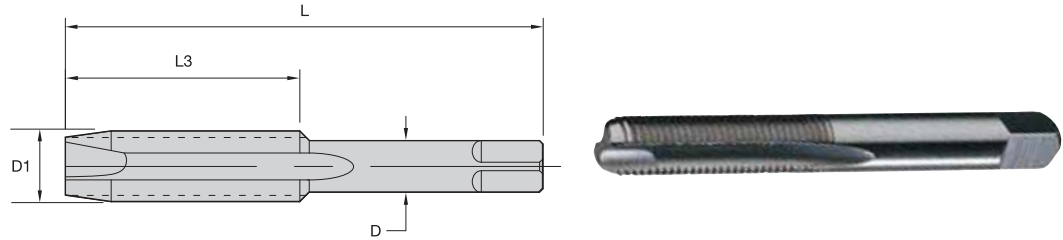
■ Series 5601 • Machine Screw and Fractional • Spiral Point, Plug Chamfer



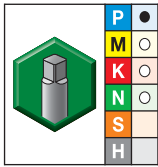
● first choice
○ alternate choice

oxide/nitride		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	D1 size	L	L3	D		
2864368	16802	6 - 32	2.00	.69	.141	3	H3
2747975	16805	8 - 32	2.13	.75	.168	3	H3
2864362	16807	10 - 24	2.38	.88	.194	3	H3
2864359	16809	10 - 32	2.38	.88	.194	3	H3
2864356	16810	1/4 - 20	2.50	1.00	.255	3	H3
2747973	16812	1/4 - 28	2.50	1.00	.255	3	H3
2747971	16814	5/16 - 18	2.72	1.13	.318	3	H3
2747967	16818	3/8 - 16	2.94	1.25	.381	3	H3
2747965	16820	3/8 - 24	2.94	1.25	.381	3	H3
2747959	16826	1/2 - 13	3.38	1.66	.367	3	H3
2747955	16830	5/8 - 11	3.81	1.81	.480	3	H3
2747954	16832	3/4 - 10	4.25	2.00	.590	3	H3

NOTE: GUN™ taps for 3B class of fit are suitable for UNJ aerospace internal threading applications.
Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.



■ Series 5302 • Machine Screw and Fractional • Spiral Point, Bottoming Chamfer



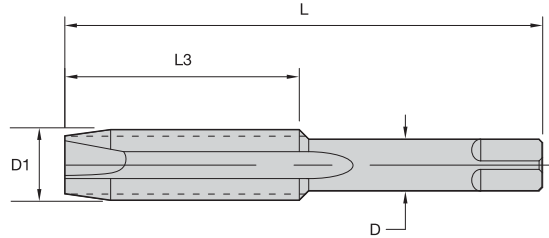
● first choice
○ alternate choice

uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	D1 size	L	L3	D		
2749944	13602	0 - 80	1.63	.31	.141	2	H2
2749943	13606	2 - 56	1.75	.44	.141	2	H2
2749939	13614	4 - 40	1.88	.56	.141	2	H2
2749936	13617	5 - 40	1.94	.63	.141	2	H2
2749935	13619	6 - 32	2.00	.69	.141	2	H2
2749932	13620	6 - 32	2.00	.69	.141	2	H3
2749931	13623	6 - 40	2.00	.69	.141	2	H2
2749926	13625	8 - 32	2.13	.75	.168	2	H2
2749924	13626	8 - 32	2.13	.75	.168	2	H3
2866734	13629	10 - 24	2.38	.88	.194	2	H2
2749920	13630	10 - 24	2.38	.88	.194	2	H3
2749919	13633	10 - 32	2.38	.88	.194	2	H2
2866726	13634	10 - 32	2.38	.88	.194	2	H3
2749916	13636	12 - 24	2.38	.94	.220	2	H3
2749915	13638	1/4 - 20	2.50	1.00	.255	2	H3
2749914	13639	1/4 - 28	2.50	1.00	.255	2	H3
2749912	13641	5/16 - 18	2.72	1.13	.318	2	H3
2749909	13642	5/16 - 24	2.72	1.13	.318	2	H3

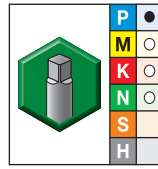
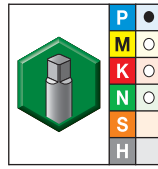
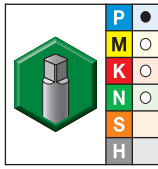
NOTE: Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.

Production Taps

- Series 5351TC • TiCN Coated
- Series 2351 • TiN Coated
- Series 5351 • Uncoated



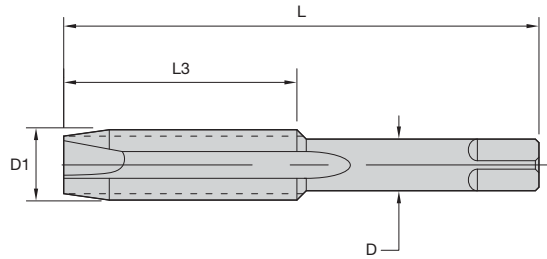
■ Series 5351/2351 • Spiral Point, Plug Chamfer • Metric ANSI



- first choice
- alternate choice

TiCN		TiN		uncoated		inch dimensions			number of flutes	pitch diameter limit	
order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3			D
-	-	-	-	2750018	13367	M2 X 0,4	1.75	.44	.141	2	D3
-	-	-	-	2750017	13369	M2,5 X 0,45	1.81	.50	.141	2	D3
2747014	19002	2746278	19920	2750015	13371	M3 X 0,5	1.94	.63	.141	2	D3
-	-	-	-	2750013	13373	M3,5 X 0,6	2.00	.69	.141	2	D4
-	-	2746276	19921	2750012	13375	M4 X 0,7	2.13	.75	.168	2	D4
-	-	-	-	2750010	13377	M4,5 X 0,75	2.38	.88	.194	2	D4
2747010	19004	2746274	19922	2750009	13379	M5 X 0,8	2.38	.88	.194	2	D4
-	-	2746272	19923	2750005	13381	M6 X 1	2.50	1.00	.255	2	D5
-	-	-	-	2750002	13382	M6,3 X 1	2.50	1.00	.255	2	D5
-	-	-	-	2750000	13383	M7 X 1	2.72	1.13	.318	2	D5
2746997	19008	2746270	19924	2749995	13385	M8 X 1,25	2.72	1.13	.318	2	D5
2746995	19009	2746268	19925	2749991	13389	M10 X 1,5	2.94	1.25	.381	3	D6
-	-	-	-	2749977	13405	M18 X 2,5	4.03	1.81	.542	3	D7
2746993	19010	2746266	19926	-	-	M12 X 1,75	3.38	1.66	.367	3	D6

NOTE: Metric taps for 6H class of fit are suitable for MJ aerospace internal threading applications.
 Metric taps are manufactured to USCTI specifications and dimensions.
 Metric tap blank dimensions are equivalent to inch taps.
 Metric D limits suitable for ISO 6H tolerance class.
 Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 6H class of fit.



■ Series 7301 • Plug Chamfer

uncoated		inch dimensions				class of fit
order #	catalog #	D1 size	L	L3	D	
2750393	12027	4 - 40	1.88	.56	.141	2B
2750391	12030	5 - 40	1.94	.63	.141	2B
2750387	12032	6 - 32	2.00	.69	.141	2B
2750384	12034	8 - 32	2.15	.75	.168	2B
2750381	12036	10 - 24	2.38	.88	.194	2B
2750379	12037	10 - 32	2.38	.88	.194	2B
2750377	12038	12 - 24	2.38	.94	.220	2B
2750375	12040	1/4 - 20	2.50	1.00	.255	2B
2750374	12041	1/4 - 28	2.50	1.00	.255	2B
2750373	12042	5/16 - 18	2.72	1.13	.318	2B
2750371	12043	5/16 - 24	2.72	1.13	.318	2B
2750370	12044	3/8 - 16	2.94	1.25	.381	2B
2750369	12045	3/8 - 24	2.94	1.25	.381	2B
2750367	12046	7/16 - 14	3.16	1.44	.323	2B
2750364	12047	7/16 - 20	3.16	1.44	.323	2B
2750363	12048	1/2 - 13	3.38	1.66	.367	2B
2750360	12049	1/2 - 20	3.38	1.66	.367	2B
2750359	12050	5/8 - 11	3.81	1.81	.480	2B
2750357	12051	5/8 - 18	3.81	1.81	.480	2B
2750356	12052	3/4 - 10	4.25	1.81	.590	2B

Tap into the power of the original.



WIDIA™ VariTap™

A heritage of hard work, innovation, and excellence. That's what makes an original.

Built on a 140-year legacy of providing the industry with the highest quality performance in taps, dies, and gages. Our history propels us to keep delivering the most advanced solutions.

The WIDIA VariTap is the next application of our commitment to innovation.

- Extensive range of sizes, fits, styles, and coatings, equipped with optimized geometry, offering the largest portfolio solution of multipurpose taps available.
- Capable of working with a wide variety of materials.
- Long and consistent tool life leading to lower inventory costs.
- Unique spiral-point geometry provides low tapping torque, while pushing chips ahead of the tap in through holes.
- Superior thread finish.

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WIDIA 

Solutions for Blind Hole Applications •

WIDIA-GTD™

Spiral Flute



WIDIA-GTD™ offers a wide range of options for tapping blind holes in:

- Steel and steel alloys.
- Stainless steel.
- Cast iron.
- Wrought and cast aluminum.
- Nickel-based alloys.
- Titanium alloys.

High-Performance Victory™ HSS-E-PM Taps

- Optimized spiral-flute design enables deep blind holes to be threaded.
- Offer performance advantages over conventional high-speed steel taps.
- Long tap life at up to 50% higher tapping speed than HSS taps.

Multipurpose VariTap™

- Spiral-flute geometry optimized to provide efficient chip ejection in blind holes.
- Manufactured from high-vanadium HSS-E to provide long and consistent tool life.
- Geometry designed to allow tapping of a wide variety of ductile materials: carbon and alloy steels, stainless steels, ductile iron, and cast aluminum.
- Ideal for customers who have a variety of materials to machine.

General Purpose Production Taps

- Versatile spiral-flute design for pulling chips out of the hole.
- Can be used in general machinery or CNC tapping applications.
- Advanced steam oxide finish and high-performance TiN and TiCN coatings with alternate tap coatings available as stock modifications.

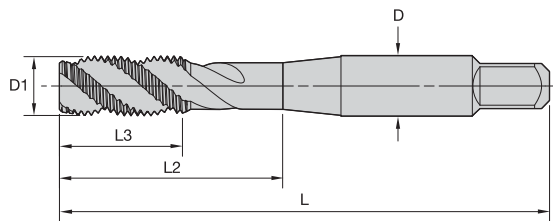


High-Performance Taps

Victory™ Spiral-Flute HSS-E-PM Taps • Blind Holes



- GM6515 TiN + Cr/C for stainless steel.
- GP6520 TiCN for steel.
- GP6505 oxide for steel.

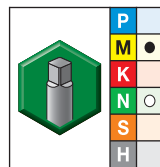
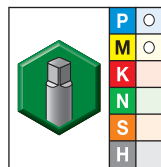
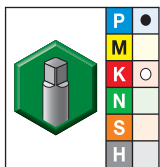


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



■ GT30 • Machine Screw and Fractional • Form C Semi-Bottoming Chamfer • ANSI • For Steel and Stainless Steel



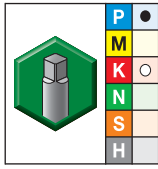
- first choice
- alternate choice

grade GP6520 TiCN		grade GP6505 Oxide		grade GM6515 TiN+CrC/C		inch dimensions					number of flutes	class of fit
order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
3955161	GT305031	-	-	3955131	GT305001	2 - 56	1.75	.44	.49	.141	2	3BX
3955162	GT305032	-	-	3955132	GT305002	4 - 40	1.88	.56	.68	.141	2	2BX
3955163	GT305033	4035106	GT305125	3955133	GT305003	4 - 40	1.88	.56	.68	.141	2	3BX
3955164	GT305034	-	-	3955134	GT305004	6 - 32	1.99	.36	.71	.141	3	2BX
3955165	GT305035	4035107	GT305126	3955135	GT305005	6 - 32	1.99	.36	.71	.141	3	3BX
3955166	GT305036	4035108	GT305127	3955136	GT305006	8 - 32	2.12	.31	.76	.168	3	3BX
3955167	GT305037	4035109	GT305128	3955137	GT305007	10 - 24	2.37	.47	.91	.194	3	3BX
3955192	GT305052	-	-	3955152	GT305022	10 - 32	2.37	.47	.91	.194	3	2BX
3955193	GT305053	4035131	GT305140	3955153	GT305023	10 - 32	2.37	.47	.91	.194	3	3BX
3955168	GT305038	4035110	GT305129	3955138	GT305008	1/4 - 20	2.50	.44	1.01	.255	3	2BX
3955169	GT305039	4035111	GT305130	3955139	GT305009	1/4 - 20	2.50	.44	1.01	.255	3	3BX
3955194	GT305054	4035132	GT305141	3955154	GT305024	1/4 - 28	2.50	.44	1.00	.255	3	2BX
3955195	GT305055	4035133	GT305142	3955155	GT305025	1/4 - 28	2.50	.44	1.00	.255	3	3BX
3955170	GT305040	4035112	GT305131	3955140	GT305010	5/16 - 18	2.72	.49	1.13	.318	3	2BX
3955171	GT305041	4035123	GT305132	3955141	GT305011	5/16 - 18	2.72	.49	1.13	.318	3	3BX
3955196	GT305056	4035134	GT305143	3955156	GT305026	5/16 - 24	2.72	.49	1.13	.318	3	2BX
3955197	GT305057	-	-	3955157	GT305027	5/16 - 24	2.72	.49	1.13	.318	3	3BX
3955172	GT305042	4035124	GT305133	3955142	GT305012	3/8 - 16	2.94	.60	1.27	.381	3	2BX
3955183	GT305043	4035125	GT305134	3955143	GT305013	3/8 - 16	2.94	.60	1.27	.381	3	3BX
3955198	GT305058	-	-	3955158	GT305028	3/8 - 24	2.93	.59	1.26	.381	3	3BX
3955184	GT305044	4035126	GT305135	3955144	GT305014	7/16 - 14	3.16	.71	1.49	.323	5	3BX
3955199	GT305059	4035136	GT305145	3955159	GT305029	7/16 - 20	3.16	.71	1.49	.323	5	3BX
3955185	GT305045	4035127	GT305136	3955145	GT305015	1/2 - 13	3.38	.77	1.74	.367	4	2BX
3955186	GT305046	4035128	GT305137	3955146	GT305016	1/2 - 13	3.38	.77	1.74	.367	4	3BX

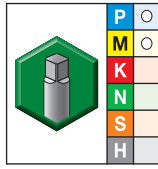
(continued)

High-Performance Taps

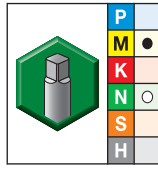
(GT30 • Machine Screw and Fractional • Form C Semi-Bottoming Chamfer • ANSI • For Steel and Stainless Steel — continued)



grade GP6520
TiCN



grade GP6505
Oxide



grade GM6515
TiN+CrC/C

● first choice
○ alternate choice

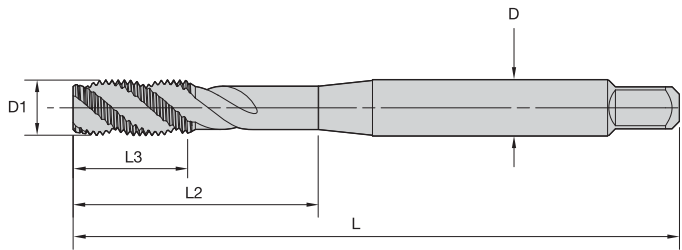
grade GP6520 TiCN		grade GP6505 Oxide		grade GM6515 TiN+CrC/C		inch dimensions					number of flutes	class of fit
order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
3955200	GT305060	4035138	GT305147	3955160	GT305030	1/2 - 20	3.38	.77	1.74	.367	4	3BX
3955188	GT305048	4035129	GT305138	3955148	GT305018	5/8 - 11	3.81	.91	1.89	.480	5	3BX
3955187	GT305047	-		3955147	GT305017	5/8 - 11	3.81	.91	1.89	.480	4	2BX
3955190	GT305050	4035130	GT305139	3955150	GT305020	3/4 - 10	4.25	1.00	2.08	.590	4	3BX
3955189	GT305049	-		3955149	GT305019	3/4 - 10	4.25	1.00	2.08	.590	4	2BX
3955191	GT305051	-		3955151	GT305021	1 - 8	5.13	1.25	2.58	.800	5	3BX

High-Performance Taps

Victory™ Spiral-Flute HSS-E-PM Taps • Blind Holes



- GP6520 TiCN for steel.

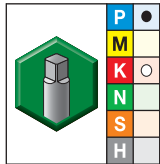


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



- GT30 • Machine Screw and Fractional • Form C Semi-Bottoming Chamfer • DIN Length ANSI Shank
- For Steel

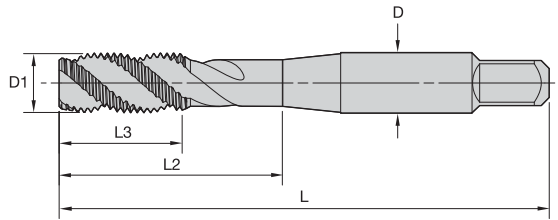


- first choice
- alternate choice

grade GP6520 TiCN		inch dimensions					number of flutes	class of fit
order #	catalog #	D1 TPI	L	L3	L2	D		
4176798	GT305169	6 - 32	2.20	.39	.79	.141	3	2BX
4176877	GT305178	6 - 40	2.20	.39	.79	.141	3	2BX
4176799	GT305170	8 - 32	2.48	.39	.83	.168	3	2BX
4176800	GT305171	10 - 24	2.76	.39	.98	.194	3	2BX
4176879	GT305180	10 - 32	2.76	.40	.99	.194	3	2BX
4176802	GT305173	1/4 - 20	3.15	.51	1.18	.255	3	3BX
4176881	GT305182	1/4 - 28	3.15	.51	1.18	.255	3	3BX
4176873	GT305174	5/16 - 18	3.54	.55	1.38	.318	3	3BX
4176882	GT305183	5/16 - 24	3.54	.55	1.38	.318	3	3BX
4176874	GT305175	3/8 - 16	3.94	.63	1.53	.381	3	3BX
4176883	GT305184	3/8 - 24	3.94	.63	1.53	.381	3	3BX
4176875	GT305176	7/16 - 14	3.94	.71	1.61	.323	4	3BX
4176884	GT305185	7/16 - 20	3.94	.71	1.61	.323	4	3BX
4176876	GT305177	1/2 - 13	4.33	.79	1.85	.367	4	3BX
4176885	GT305186	1/2 - 20	4.33	.79	1.85	.367	4	3BX

High-Performance Taps

- GM6515 TiN + CrC/C for stainless steel.
- GP6520 TiCN for steel.

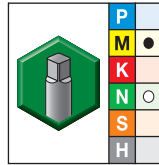
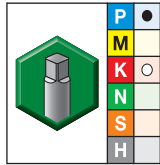


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



■ GT30 • Form C Semi-Bottoming Chamfer • Metric ANSI • For Steel and Stainless Steel



- first choice
- alternate choice

grade GP6520 TiCN		grade GM6515 TiN+CrC/C		inch dimensions					number of flutes	class of fit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
3955069	GT305070	3955060	GT305061	M3 X 0,5	1.94	.63	.75	.141	2	6HX
3955070	GT305071	3955061	GT305062	M4 X 0,7	2.12	.32	.76	.168	3	6HX
3955071	GT305072	3955062	GT305063	M5 X 0,8	2.37	.47	.91	.194	3	6HX
3955072	GT305073	3955063	GT305064	M6 X 1	2.50	.46	1.01	.255	3	6HX
3955093	GT305074	3955064	GT305065	M8 X 1,25	2.71	.48	1.12	.318	3	6HX
3955094	GT305075	3955065	GT305066	M10 X 1,5	2.92	.53	1.26	.381	3	6HX
3955095	GT305076	3955066	GT305067	M12 X 1,75	3.38	.77	1.74	.367	5	6HX
3955096	GT305077	3955067	GT305068	M14 X 2	3.59	.83	1.74	.429	5	6HX
3955097	GT305078	3955068	GT305069	M16 X 2	3.81	.91	1.89	.480	5	6HX

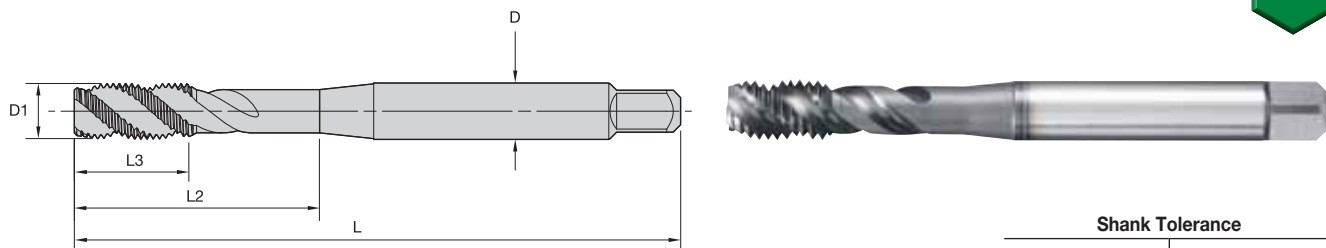
High-Performance Taps

High-Performance Taps

Victory™ Spiral-Flute HSS-E-PM Taps • Blind Holes



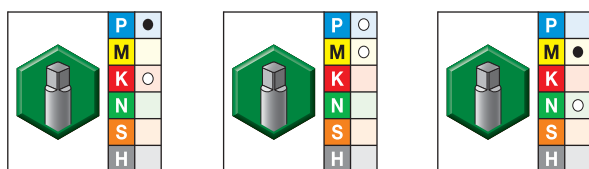
- GM6515 TiN + CrC/C for stainless steel.
- GP6520 TiCN for steel.
- GP6505 oxide for steel.



Shank Tolerance	
D mm	tolerance h6
>3-6	+0, -0,008
>6-10	+0, -0,009
>10-18	+0, -0,011
>18-30	+0, -0,013
>30-50	+0, -0,016



■ GT30 • Form C Semi-Bottoming Chamfer • Metric DIN 371, 374, and 376 • For Steel and Stainless Steel

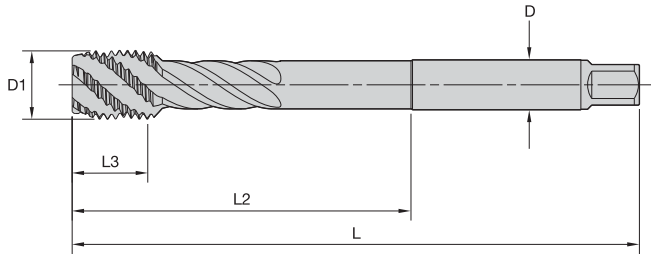


- first choice
- alternate choice

grade GP6520 TiCN		grade GP6505 Oxide		grade GM6515 TiN+CrC/C		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D			
3954929	GT305097	4035066	GT305116	3955098	GT305148	M3 X 0,5	56	8	18	3,5	3	DIN 371	6HX
3954930	GT305098	4035067	GT305117	3955099	GT305079	M4 X 0,7	63	10	21	4,5	3	DIN 371	6HX
3954931	GT305099	4035068	GT305118	3955100	GT305080	M5 X 0,8	70	10	25	6,0	3	DIN 371	6HX
3954932	GT305100	4035069	GT305119	3955101	GT305081	M6 X 1	80	10	30	6,0	3	DIN 371	6HX
3955031	GT305109	-	-	3955110	GT305090	M8 X 1	90	13	35	6,0	3	DIN 374	6HX
3955023	GT305101	4035070	GT305120	3955102	GT305082	M8 X 1,25	90	13	35	8,0	3	DIN 371	6HX
3955032	GT305110	-	-	3955111	GT305091	M10 X 1	90	10	35	7,0	3	DIN 374	6HX
3955033	GT305111	-	-	3955112	GT305092	M10 X 1,25	100	15	39	7,0	3	DIN 374	6HX
3955024	GT305102	4035071	GT305121	3955103	GT305083	M10 X 1,5	100	15	39	10,0	3	DIN 371	6HX
3955034	GT305112	-	-	3955113	GT305093	M12 X 1,5	100	15	39	9,0	4	DIN 374	6HX
3955025	GT305103	4035072	GT305122	3955104	GT305084	M12 X 1,75	110	18	44	9,0	4	DIN 376	6HX
3955035	GT305113	-	-	3955114	GT305094	M14 X 1,5	100	15	47	11,0	4	DIN 374	6HX
3955026	GT305104	4035073	GT305123	3955105	GT305085	M14 X 2	110	20	52	11,0	4	DIN 376	6HX
3955036	GT305114	-	-	3955115	GT305095	M16 X 1,5	100	15	46	12,0	4	DIN 374	6HX
3955027	GT305105	4035074	GT305124	3955106	GT305086	M16 X 2	110	20	51	12,0	4	DIN 376	6HX
3955037	GT305115	-	-	3955116	GT305096	M18 X 1,5	110	15	50	14,0	4	DIN 374	6HX
3955028	GT305106	-	-	3955107	GT305087	M18 X 2,5	125	25	58	14,0	4	DIN 376	6HX
3955029	GT305107	-	-	3955108	GT305088	M22 X 2,5	140	25	70	18,0	4	DIN 376	6HX
3955030	GT305108	-	-	3955109	GT305089	M24 X 3	160	30	77	18,0	5	DIN 376	6HX
4033733	GT305161	-	-	-	-	M24 X 3	160	30	77	18,0	5	DIN 376	6HX
4033735	GT305163	-	-	-	-	M30 X 3,5	180	35	91	22,0	5	DIN 376	6HX
4033736	GT305164	-	-	-	-	M33 X 3,5	180	35	100	25,0	5	DIN 376	6HX
4033738	GT305166	-	-	-	-	M36 X 4	200	40	110	28,0	5	DIN 376	6HX
4033740	GT305168	-	-	-	-	M42 X 4,5	200	45	120	32,0	5	DIN 376	6HX

High-Performance Taps

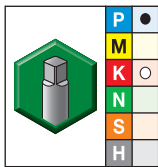
- GP6520 TiCN for steel and cast iron.



Shank Tolerance	
D mm	tolerance h6
12-18	+0, -0,011
20-30	+0, -0,013
32-36	+0, -0,016



■ GT30 • Form C Semi-Bottoming Chamfer • Larger Sizes • Metric Extra Long • For Steel and Cast Iron



- first choice
- alternate choice

grade GP6520 TiCN		metric dimensions					number of flutes	class of fit
order #	catalog #	D1 size	L	L3	L2	D		
4033776	GT305151	M24 X 3	200	30	120	18,0	5	6HX
4033778	GT305153	M30 X 3,5	250	35	150	22,0	5	6HX
4033779	GT305154	M33 X 3,5	250	35	150	25,0	5	6HX
4033781	GT305156	M36 X 4	250	40	150	28,0	5	6HX
4033783	GT305158	M42 X 4,5	300	45	180	32,0	5	6HX

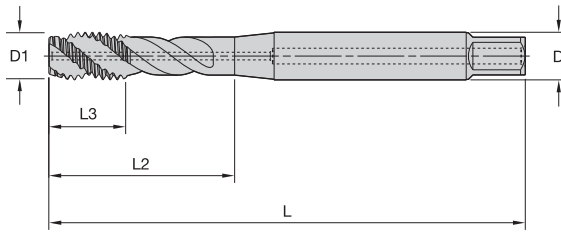
High-Performance Taps

High-Performance Taps

Victory™ Spiral-Flute HSS-E-PM Taps • Blind Holes



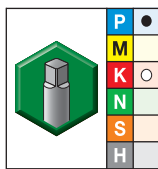
- GP6520 TiCN for steel.



Shank Tolerance	
D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



- GT31 • Fractional • Form C Semi-Bottoming Chamfer • Through Coolant • DIN Length ANSI Shank
- For Steel



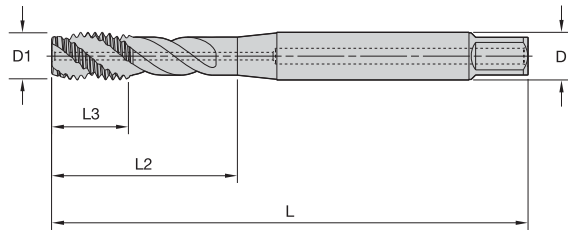
- first choice
- alternate choice

grade GP6520 TiCN		inch dimensions					number of flutes	class of fit
order #	catalog #	D1 TPI	L	L3	L2	D		
4176886	GT315045	1/4 - 20	3.15	.51	1.18	.255	3	3BX
4176891	GT315040	1/4 - 28	3.15	.51	1.18	.255	3	3BX
4176887	GT315036	5/16 - 18	3.54	.55	1.38	.318	3	3BX
4176892	GT315041	5/16 - 24	3.54	.55	1.38	.318	3	3BX
4176888	GT315037	3/8 - 16	3.94	.63	1.53	.381	3	3BX
4176893	GT315042	3/8 - 24	3.94	.63	1.53	.381	3	3BX
4176889	GT315038	7/16 - 14	3.94	.71	1.61	.323	4	3BX
4176894	GT315043	7/16 - 20	3.94	.71	1.61	.323	4	3BX
4176890	GT315039	1/2 - 13	4.33	.79	1.85	.367	4	3BX
4176895	GT315044	1/2 - 20	4.33	.79	1.85	.367	4	3BX

High-Performance Taps



- GM6515 TiN + CrC/C for stainless steel.
- GP6520 TiCN for steel.

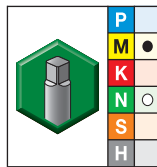
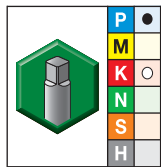


Shank Tolerance

D mm	tolerance h6
>3-6	+0, -0,008
>6-10	+0, -0,009
>10-18	+0, -0,011
>18-30	+0, -0,013
>30-50	+0, -0,016



■ GT31 • Form C Semi-Bottoming Chamfer • Through Coolant • Metric DIN 371 and 376 • For Steel and Stainless Steel



- first choice
- alternate choice

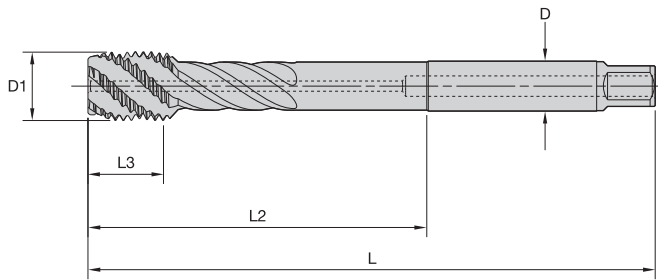
grade GP6520 TiCN		grade GM6515 TiN+CrC/C		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D			
3955349	GT315007	3955343	GT315001	M5 X 0,8	70	10	25	6,0	3	DIN 371	6HX
3955350	GT315008	3955344	GT315002	M6 X 1	80	10	30	6,0	3	DIN 371	6HX
3955351	GT315009	3955345	GT315003	M8 X 1,25	90	13	35	8,0	3	DIN 371	6HX
3955352	GT315010	3955346	GT315004	M10 X 1,5	100	15	39	10,0	3	DIN 371	6HX
3955373	GT315011	3955347	GT315005	M12 X 1,75	110	18	44	9,0	4	DIN 376	6HX
3955374	GT315012	3955348	GT315006	M14 X 2	110	20	52	11,0	4	DIN 376	6HX
5143530	GT315033	-	-	M16 X 2	110	20	51	12,0	4	DIN 376	6HX
5143531	GT315034	-	-	M18 X 2,5	125	25	58	14,0	4	DIN 376	6HX
5143532	GT315035	-	-	M20 X 2,5	140	25	64	16,0	4	DIN 376	6HX
4033744	GT315025	-	-	M24 X 3	160	30	77	18,0	5	DIN 376	6HX
4033746	GT315027	-	-	M30 X 3,5	180	35	91	22,0	5	DIN 376	6HX
4033747	GT315028	-	-	M33 X 3,5	180	35	100	25,0	5	DIN 376	6HX
4033749	GT315030	-	-	M36 X 4	200	40	110	28,0	5	DIN 376	6HX
4033751	GT315032	-	-	M42 X 4,5	200	45	120	32,0	5	DIN 376	6HX

High-Performance Taps

High-Performance Taps

Victory™ Spiral-Flute HSS-E-PM Taps • Blind Holes

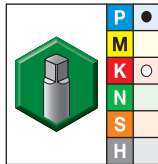
- GP6520 TiCN for steel and cast iron.



Shank Tolerance	
D mm	tolerance h6
12-18	+0, -0,011
20-30	+0, -0,013
32-36	+0, -0,016



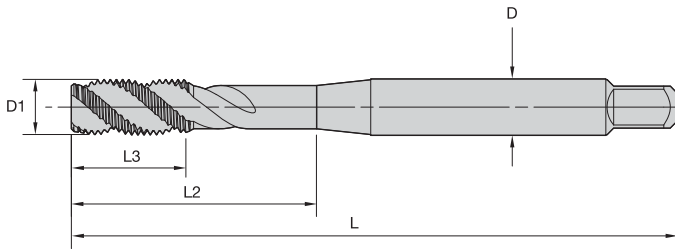
- GT31 • Form C Semi-Bottoming Chamfer • Through Coolant • Larger Sizes • Metric Extra Long
- For Steel and Cast Iron



- first choice
- alternate choice

grade GP6520 TiCN		metric dimensions					number of flutes	class of fit
order #	catalog #	D1 size	L	L3	L2	D		
4033787	GT315014	M24 X 3	200	30	120	18,0	5	6HX
4033789	GT315016	M30 X 3,5	250	35	150	22,0	5	6HX
4033790	GT315017	M33 X 3,5	250	35	150	25,0	5	6HX
4033792	GT315019	M36 X 4	250	40	150	28,0	5	6HX
4033794	GT315021	M42 X 4,5	300	45	180	32,0	5	6HX

- GP6520 TiCN for steel.

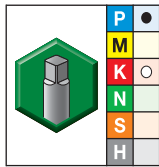


Shank Tolerance

D mm	tolerance h6
>3-6	+0, -0,008
>6-10	+0, -0,009
>10-18	+0, -0,011
>18-30	+0, -0,013
>30-50	+0, -0,016



■ GT32 • Form E Bottoming Chamfer • Metric DIN 371, 374, and 376 • For Steel



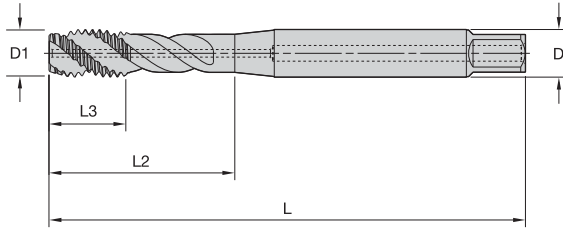
- first choice
- alternate choice

grade GP6520 TiCN		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	D1 size	L	L3	L2	D			
4153906	GT325001	M5 X 0,8	70	10	25	6,0	3	DIN 371	6HX
4153907	GT325002	M6 X 1	80	10	30	6,0	3	DIN 371	6HX
4153908	GT325003	M8 X 1,25	90	13	35	8,0	3	DIN 371	6HX
4153909	GT325004	M10 X 1,5	100	15	39	10,0	3	DIN 371	6HX
4153912	GT325007	M12 X 1,5	100	15	39	9,0	4	DIN 374	6HX
4153910	GT325005	M12 X 1,75	110	18	44	9,0	4	DIN 376	6HX
4153953	GT325008	M14 X 1,5	100	15	47	11,0	4	DIN 374	6HX
4153911	GT325006	M14 X 2	110	20	52	11,0	4	DIN 376	6HX
4153954	GT325009	M16 X 1,5	100	15	46	12,0	4	DIN 374	6HX

High-Performance Taps

Victory™ Spiral-Flute HSS-E-PM Taps • Threading Close to the Bottom in a Blind Hole

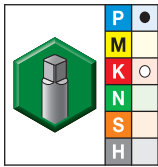
- GP6520 TiCN for steel.



Shank Tolerance	
D mm	tolerance h6
>3-6	+0, -0,008
>6-10	+0, -0,009
>10-18	+0, -0,011
>18-30	+0, -0,013
>30-50	+0, -0,016



- GT33 • Form E Bottoming Chamfer • Through Coolant • Metric DIN 371, 374, and 376 • For Steel

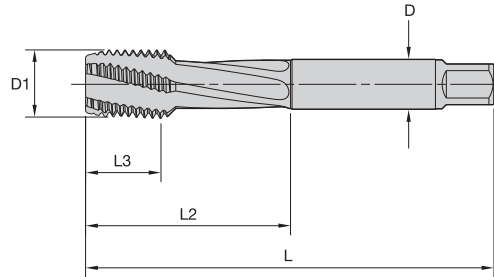


- first choice
- alternate choice

grade GP6520 TiCN		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	D1 size	L	L3	L2	D			
4153955	GT335001	M5 X 0,8	70	10	25	6,0	3	DIN 371	6HX
4153956	GT335002	M6 X 1	80	10	30	6,0	3	DIN 371	6HX
4153957	GT335003	M8 X 1,25	90	13	35	8,0	3	DIN 371	6HX
4153958	GT335004	M10 X 1,5	100	15	39	10,0	3	DIN 371	6HX
4153961	GT335007	M12 X 1,5	100	15	39	9,0	4	DIN 374	6HX
4153959	GT335005	M12 X 1,75	110	18	44	9,0	4	DIN 376	6HX
4153962	GT335008	M14 X 1,5	100	15	47	11,0	4	DIN 374	6HX
4153960	GT335006	M14 X 2	110	20	52	11,0	4	DIN 376	6HX
4153963	GT335009	M16 X 1,5	100	15	46	12,0	4	DIN 374	6HX

High-Performance Taps

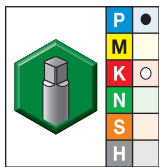
- GP6520 TiCN for steel and cast iron.



Shank Tolerance	
D mm	tolerance h6
12-18	+0, -0,011
20-30	+0, -0,013
32-36	+0, -0,016



- GT50 • Form C Semi-Bottoming Chamfer • Larger Sizes • Metric DIN 376 • For Steel and Cast Iron



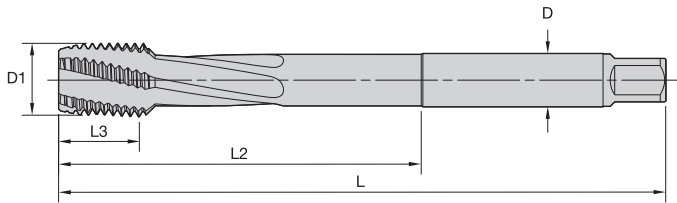
- first choice
- alternate choice

grade GP6520 TiCN		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	D1 size	L	L3	L2	D			
4154254	GT505001	M24 X 3	160	30	77	18,0	4	DIN 376	6HX
4154255	GT505002	M30 X 3,5	180	35	91	22,0	5	DIN 376	6HX
4154256	GT505003	M33 X 3,5	180	35	100	25,0	5	DIN 376	6HX
4154257	GT505004	M36 X 4	200	40	110	28,0	5	DIN 376	6HX
4154258	GT505005	M42 X 4,5	200	45	120	32,0	6	DIN 376	6HX

High-Performance Taps

Victory™ Spiral-Flute HSS-E-PM Taps • Blind Holes

- GP6520 TiCN for steel and cast iron.

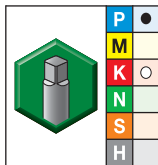


Shank Tolerance

D mm	tolerance h6
12-18	+0, -0,011
20-30	+0, -0,013
32-36	+0, -0,016



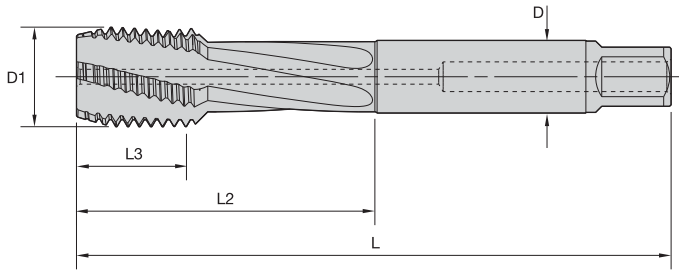
- GT50 • Form C Semi-Bottoming Chamfer • Larger Sizes • Metric Extra Long • For Steel and Cast Iron



- first choice
- alternate choice

grade GP6520 TiCN		metric dimensions					number of flutes	class of fit
order #	catalog #	D1 size	L	L3	L2	D		
4154259	GT505006	M24 X 3	200	30	120	18,0	4	6HX
4154260	GT505007	M30 X 3,5	250	35	150	22,0	5	6HX
4154261	GT505008	M33 X 3,5	250	35	150	25,0	5	6HX
4154262	GT505009	M36 X 4	250	40	150	28,0	5	6HX
4154263	GT505010	M42 X 4,5	300	45	180	32,0	6	6HX

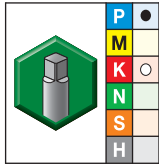
- GP6520 TiCN for steel and cast iron.



Shank Tolerance	
D mm	tolerance h6
12-18	+0, -0,011
20-30	+0, -0,013
32-36	+0, -0,016



- GT51 • Form C Semi-Bottoming Chamfer • Through Coolant • Larger Sizes • Metric DIN 376 • For Steel and Cast Iron



- first choice
- alternate choice

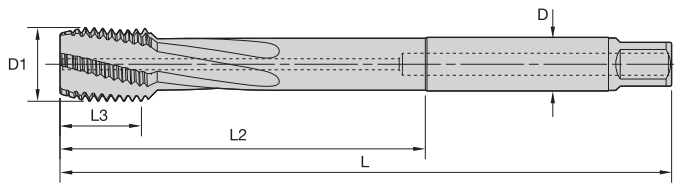
grade GP6520 TiCN		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	D1 size	L	L3	L2	D			
4154264	GT515001	M24 X 3	160	30	77	18,0	4	DIN 376	6HX
4154265	GT515002	M30 X 3,5	180	35	91	22,0	5	DIN 376	6HX
4154266	GT515003	M33 X 3,5	180	35	100	25,0	5	DIN 376	6HX
4154267	GT515004	M36 X 4	200	40	110	28,0	5	DIN 376	6HX
4154268	GT515005	M42 X 4,5	200	45	120	32,0	6	DIN 376	6HX

High-Performance Taps

Victory™ Spiral-Flute HSS-E-PM Taps • Blind Holes



- GP6520 TiCN for tapping steel and cast iron.

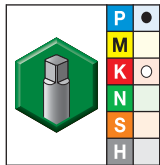


Shank Tolerance

D mm	tolerance h6
12-18	+0, -0,011
20-30	+0, -0,013
32-36	+0, -0,016



- GT51 • Form C Semi-Bottoming Chamfer • Through Coolant • Larger Sizes • Metric Extra Long • For Steel and Cast Iron



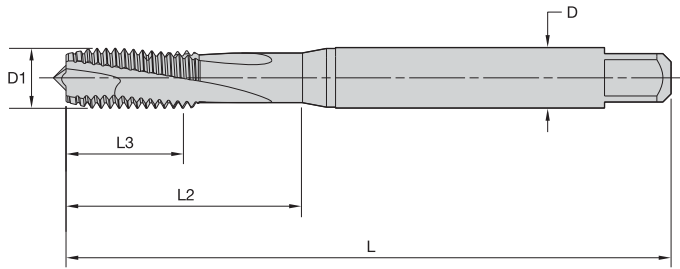
- first choice
- alternate choice

grade GP6520 TiCN		metric dimensions					number of flutes	class of fit
order #	catalog #	D1 size	L	L3	L2	D		
4154269	GT515006	M24 X 3	200	30	120	18,0	4	6HX
4154270	GT515007	M30 X 3,5	250	35	150	22,0	5	6HX
4154271	GT515008	M33 X 3,5	250	35	150	25,0	5	6HX
4154272	GT515009	M36 X 4	250	40	150	28,0	5	6HX
4154273	GT515010	M42 X 4,5	300	45	180	32,0	6	6HX

High-Performance Taps



- WS32MG TiCN for nickel and nickel alloys.

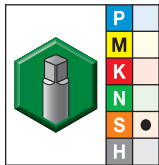


Shank Tolerance

D mm	tolerance h9
1-3	+0, -0,025
>3-6	+0, -0,030
>6-10	+0, -0,036
>10-18	+0, -0,043
>18-30	+0, -0,052



■ GT12 • Form C Semi-Bottoming Chamfer • Metric DIN 371 and 376 • For Nickel and Nickel Alloys



grade WS32MG
TiCN

- first choice
- alternate choice

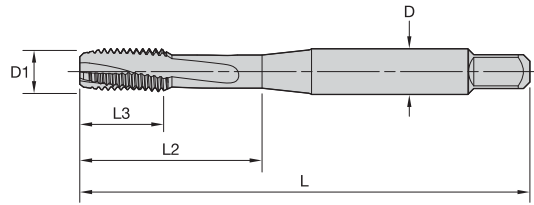
order #	catalog #	D1 size	metric dimensions				number of flutes	dimension standard	class of fit
			L	L3	L2	D			
4159636	GT125001	M3 X 0,5	56	11	18	3,5	2	DIN 371	6HX
4159637	GT125002	M4 X 0,7	63	13	21	4,5	3	DIN 371	6HX
4159638	GT125003	M5 X 0,8	70	15	25	6,0	3	DIN 371	6HX
4159639	GT125004	M6 X 1	80	17	30	6,0	3	DIN 371	6HX
4159640	GT125005	M8 X 1,25	90	20	35	8,0	3	DIN 371	6HX
4159641	GT125006	M10 X 1,5	100	22	39	10,0	3	DIN 371	6HX
4159642	GT125007	M12 X 1,75	110	24	—	9,0	3	DIN 376	6HX
4159663	GT125008	M14 X 2	110	26	—	11,0	3	DIN 376	6HX
4159664	GT125009	M16 X 2	110	27	—	12,0	3	DIN 376	6HX
4159665	GT125010	M20 X 2,5	140	32	—	16,0	3	DIN 376	6HX

High-Performance Taps

Victory™ Spiral-Flute HSS-E-PM Taps • Blind Holes



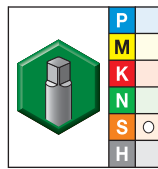
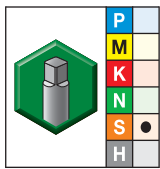
- WS39MG oxide/nitride for nickel- and cobalt-based alloys.
- WU32MG TiCN for nickel- and cobalt-based alloys.



Shank Tolerance	
D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



■ GT92 • Machine Screw and Fractional • 3-4 Pitches Chamfer • For Nickel- and Cobalt-Based Alloys



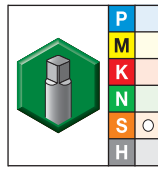
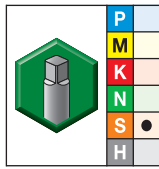
- first choice
- alternate choice

grade WU32MG TiCN		grade WS39MG Nitride/Oxide		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
5708145	GT925069	5708144	GT925001	2 - 56	1.75	.44	.50	.141	3	H2
5708147	GT925070	5708146	GT925002	3 - 48	1.81	.50	.56	.141	3	H2
5705280	GT925071	5708148	GT925003	4 - 40	1.88	.56	.69	.141	3	H2
5708149	GT925072	5705219	GT925004	4 - 40	1.88	.56	.69	.141	3	H3
-		5708160	GT925005	4 - 40	1.88	.56	.69	.141	3	H5
5708162	GT925074	5708161	GT925006	4 - 48	1.88	.56	.69	.141	3	H2
-		5708163	GT925007	5 - 40	1.95	.63	.76	.141	3	H2
5708165	GT925076	5708164	GT925008	6 - 32	1.99	.36	.71	.141	3	H2
5705279	GT925077	5708166	GT925009	6 - 32	1.99	.36	.71	.141	3	H3
5708168	GT925078	5708167	GT925010	6 - 32	2.03	.36	.71	.141	3	H4
-		5708169	GT925011	6 - 32	2.03	.36	.71	.141	3	H5
5708171	GT925080	5708170	GT925012	6 - 32	2.03	.36	.71	.141	3	H7
-		5708172	GT925013	6 - 40	2.03	.36	.71	.141	3	H2
5708174	GT925082	5708173	GT925014	8 - 32	2.16	.31	.76	.168	3	H2
5705278	GT925083	5708175	GT925015	8 - 32	2.12	.31	.76	.168	3	H3
-		5708176	GT925016	8 - 32	2.16	.31	.76	.168	3	H4
-		5708177	GT925017	8 - 32	2.16	.31	.76	.168	3	H5
-		5708178	GT925018	8 - 32	2.16	.31	.76	.168	3	H6
-		5708179	GT925019	8 - 32	2.16	.31	.76	.168	3	H7
5705277	GT925088	5708014	GT925020	10 - 24	2.37	.47	.91	.194	3	H3
-		5708015	GT925021	10 - 24	2.42	.47	.91	.194	3	H7
5708017	GT925090	5708016	GT925022	10 - 32	2.37	.47	.91	.194	3	H2
5705276	GT925091	5708018	GT925023	10 - 32	2.37	.47	.91	.194	3	H3
5708140	GT925092	5708019	GT925024	10 - 32	2.42	.47	.91	.194	3	H4

(continued)



(GT92 • Machine Screw and Fractional • 3-4 Pitches Chamfer • For Nickel- and Cobalt-Based Alloys — continued)



- first choice
- alternate choice

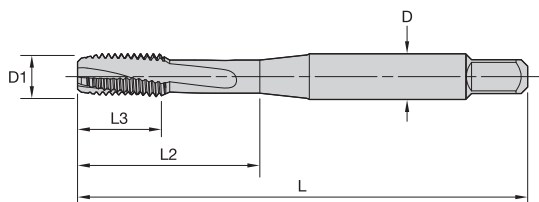
grade WU32MG TiCN		grade WS39MG Nitride/Oxide		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
-		5708141	GT925025	10 - 32	2.42	.47	.91	.194	3	H5
-		5708142	GT925026	10 - 32	2.42	.47	.91	.194	3	H6
-		5708143	GT925027	10 - 32	2.42	.47	.91	.194	3	H7
5705275	GT925096	5708201	GT925028	1/4 - 20	2.50	.44	1.00	.255	3	H3
5708205	GT925097	5708203	GT925029	1/4 - 20	2.50	.44	1.00	.255	3	H5
-		5708207	GT925030	1/4 - 20	2.50	.44	1.00	.255	3	H7
5705274	GT925099	5708209	GT925031	1/4 - 28	2.50	.44	1.00	.255	3	H3
-		5708211	GT925032	1/4 - 28	2.50	.44	1.00	.255	3	H4
-		5708213	GT925033	1/4 - 28	2.50	.44	1.00	.255	3	H5
-		5708215	GT925034	1/4 - 28	2.50	.44	1.00	.255	3	H6
-		5705217	GT925035	1/4 - 28	2.50	.44	1.00	.255	3	H7
5705273	GT925104	5708261	GT925036	5/16 - 18	2.72	.49	1.13	.318	3	H3
5708265	GT925105	5708263	GT925037	5/16 - 18	2.72	.49	1.13	.318	3	H5
-		5708267	GT925038	5/16 - 18	2.72	.49	1.13	.318	3	H7
5708271	GT925107	5708269	GT925039	5/16 - 24	2.72	.49	1.13	.318	3	H3
5708275	GT925108	5708273	GT925040	5/16 - 24	2.72	.49	1.13	.318	3	H4
-		5708277	GT925041	5/16 - 24	2.72	.49	1.13	.318	3	H5
-		5708279	GT925042	5/16 - 24	2.72	.49	1.13	.318	3	H6
-		5708281	GT925043	5/16 - 24	2.72	.49	1.13	.318	3	H7
5705272	GT925112	5708227	GT925044	3/8 - 16	2.94	.60	1.27	.381	3	H3
5708241	GT925113	5708229	GT925045	3/8 - 16	2.94	.60	1.27	.381	3	H5
5708245	GT925114	5708243	GT925046	3/8 - 16	2.94	.60	1.27	.381	3	H7
5705270	GT925115	5705218	GT925047	3/8 - 24	2.40	.60	1.27	.381	3	H3
5708249	GT925116	5708247	GT925048	3/8 - 24	2.94	.60	1.27	.381	3	H4
5708253	GT925117	5708251	GT925049	3/8 - 24	2.94	.60	1.27	.381	3	H5
-		5708255	GT925050	3/8 - 24	2.94	.60	1.27	.381	3	H6
5708259	GT925119	5708257	GT925051	3/8 - 24	2.94	.60	1.27	.381	3	H7
5708307	GT925120	5708305	GT925052	7/16 - 14	3.16	.71	1.49	.323	3	H3
-		5708309	GT925053	7/16 - 14	3.16	.71	1.49	.323	3	H5
5708313	GT925122	5708311	GT925054	7/16 - 20	3.16	.71	1.49	.323	3	H3
5708317	GT925123	5708315	GT925055	7/16 - 20	3.16	.71	1.49	.323	3	H5
5705282	GT925124	5708190	GT925056	1/2 - 13	3.38	.77	1.74	.367	3	H3
5708192	GT925125	5708191	GT925057	1/2 - 13	3.38	.77	1.74	.367	3	H5
-		5708193	GT925058	1/2 - 13	3.38	.77	1.74	.367	3	H7
5705281	GT925127	5708194	GT925059	1/2 - 20	3.38	.77	1.74	.367	3	H3
5708197	GT925128	5708196	GT925060	1/2 - 20	3.38	.77	1.74	.367	3	H5
5708199	GT925129	5708198	GT925061	1/2 - 20	3.38	.77	1.74	.367	3	H7
5708285	GT925130	5708283	GT925062	5/8 - 11	3.81	.91	1.89	.480	3	H3
5708289	GT925131	5708287	GT925063	5/8 - 11	3.81	1.31	1.89	.480	3	H5
5708303	GT925132	5708301	GT925064	5/8 - 18	3.81	1.31	1.89	.480	3	H3
5708219	GT925133	5708217	GT925065	3/4 - 10	4.25	1.59	2.08	.590	3	H3
-		5708221	GT925066	3/4 - 10	4.25	1.00	2.08	.590	3	H5
-		5708223	GT925067	3/4 - 16	4.25	1.00	2.08	.590	3	H3
-		5708225	GT925068	3/4 - 16	4.25	1.00	2.08	.590	3	H5

High-Performance Taps

Victory™ Spiral-Flute HSS-E-PM Taps • Blind Holes



- WS39MG oxide/nitride for nickel- and cobalt-based alloys.
- WU32MG TiCN for nickel- and cobalt-based alloys.

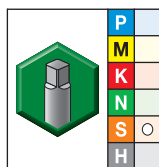
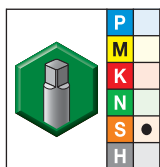


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



■ GT92 • 3-4 Pitches Chamfer • Metric ANSI • For Nickel- and Cobalt-Based Alloys

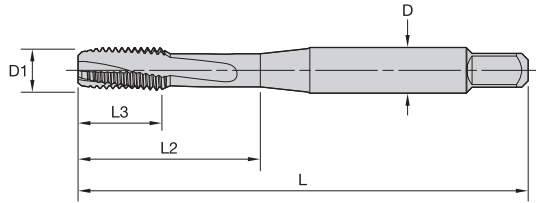


- first choice
- alternate choice

grade WU32MG TiCN		grade WS39MG Nitride/Oxide		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
5708331	GT925150	5708329	GT925137	M2,5 X 0,45	1.81	.50	.56	.141	3	D3
5705285	GT925151	5708335	GT925138	M3 X 0,5	1.94	.63	.75	.141	3	D3
-		5708333	GT925139	M3,5 X 0,6	1.99	.36	.71	.141	3	D4
-		5708337	GT925140	M4 X 0,7	2.12	.32	.76	.168	3	D4
-		5708339	GT925141	M5 X 0,8	2.37	.47	.91	.194	3	D4
5705286	GT925155	5708341	GT925142	M6 X 1	2.50	.46	1.00	.255	3	D5
5708345	GT925156	5708343	GT925143	M7 X 1	2.72	.52	1.15	.318	3	D5
-		5708347	GT925144	M8 X 1	2.70	.48	1.12	.318	3	D5
5708361	GT925158	5708349	GT925145	M8 X 1,25	2.70	.48	1.12	.318	3	D5
5708321	GT925159	5708319	GT925146	M10 X 1,25	2.92	.53	1.26	.381	3	D5
5705283	GT925160	5708323	GT925147	M10 X 1,5	2.92	.53	1.26	.381	3	D6
-		5708325	GT925148	M12 X 1,25	3.38	.77	1.74	.367	3	D5
5705284	GT925162	5708327	GT925149	M12 X 1,75	3.38	.77	1.74	.367	3	D6

High-Performance Taps

- WS39MG oxide/nitride for nickel- and cobalt-based alloys.
- WU32MG TiCN for nickel- and cobalt-based alloys.

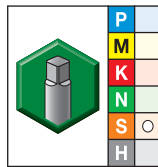
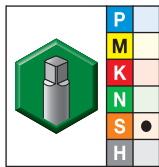


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



■ GT94 • Machine Screw and Fractional • Form E Bottoming Chamfer • For Nickel- and Cobalt-Based Alloys



- first choice
- alternate choice

grade WU32MG TiCN		grade WS39MG Nitride/Oxide		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
5705939	GT945037	5705938	GT945001	4 - 40	1.88	.56	.70	.141	3	H2
5705981	GT945038	5705980	GT945002	4 - 40	1.88	.56	.69	.141	3	H3
-		5705982	GT945003	5 - 40	1.95	.63	.76	.141	3	H2
-		5705983	GT945004	6 - 32	2.03	.36	.71	.141	3	H2
5705985	GT945041	5705984	GT945005	6 - 32	1.99	.36	.71	.141	3	H3
-		5705986	GT945006	6 - 32	2.03	.36	.71	.141	3	H4
-		5705987	GT945007	6 - 32	2.03	.36	.71	.141	3	H5
5705989	GT945044	5705988	GT945008	8 - 32	2.12	.31	.76	.168	3	H3
5705992	GT945045	5705991	GT945009	8 - 32	2.16	.31	.76	.168	3	H5
5705933	GT945046	5705932	GT945010	10 - 24	2.42	.47	.91	.194	3	H3
-		5705934	GT945011	10 - 24	2.42	.47	.91	.194	3	H5
5705936	GT945048	5705935	GT945012	10 - 32	2.37	.47	.91	.194	3	H3
-		5705937	GT945013	10 - 32	2.42	.47	.91	.194	3	H5
5705996	GT945050	5705995	GT945014	1/4 - 20	2.50	.44	1.00	.255	3	H3
5705997	GT945051	5703872	GT945015	1/4 - 20	2.50	.44	1.00	.255	3	H5
5705998	GT945052	5703871	GT945016	1/4 - 28	2.50	.44	1.00	.255	3	H3
5705999	GT945053	5703873	GT945017	1/4 - 28	2.50	.44	1.00	.255	3	H4
5706011	GT945054	5706010	GT945018	1/4 - 28	2.50	.44	1.00	.255	3	H5
5706020	GT945055	5706019	GT945019	5/16 - 18	2.72	.49	1.13	.318	3	H3
5706022	GT945056	5706021	GT945020	5/16 - 18	2.72	.49	1.13	.318	3	H5
5706024	GT945057	5706023	GT945021	5/16 - 24	2.72	.49	1.13	.318	3	H3
5706026	GT945058	5706025	GT945022	5/16 - 24	2.72	.49	1.13	.318	3	H4
-		5706027	GT945023	5/16 - 24	2.72	.49	1.13	.318	3	H5
5706013	GT945060	5706012	GT945024	3/8 - 16	2.94	.60	1.27	.381	3	H3

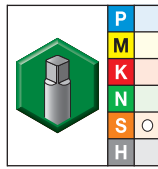
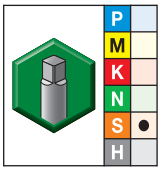
(continued)

High-Performance Taps

Victory™ Spiral-Flute HSS-E-PM Taps • Blind Holes



(GT94 • Machine Screw and Fractional • Form E Bottoming Chamfer • For Nickel- and Cobalt-Based Alloys — continued)



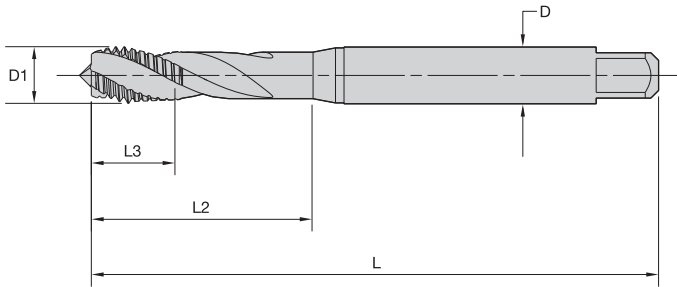
- first choice
- alternate choice

grade WU32MG TiCN		grade WS39MG Nitride/Oxide		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
5706015	GT945061	5706014	GT945025	3/8 - 16	2.94	.60	1.27	.381	3	H5
5706017	GT945062	5706016	GT945026	3/8 - 24	2.94	.60	1.27	.381	3	H3
-		5706018	GT945027	3/8 - 24	2.94	.60	1.27	.381	3	H4
-		5706034	GT945028	7/16 - 14	3.16	.71	1.49	.323	3	H3
-		5706035	GT945029	7/16 - 14	3.16	.71	1.49	.323	3	H5
5706037	GT945066	5706036	GT945030	7/16 - 20	3.16	.71	1.49	.323	3	H3
5706039	GT945067	5706038	GT945031	7/16 - 20	3.16	.71	1.49	.323	3	H5
-		5705993	GT945032	1/2 - 13	3.38	.77	1.74	.367	3	H5
-		5705994	GT945033	1/2 - 20	3.38	.77	1.74	.367	3	H3
5706029	GT945070	5706028	GT945034	5/8 - 11	3.81	.91	1.89	.480	3	H3
5706031	GT945071	5706030	GT945035	5/8 - 11	3.81	.91	1.89	.480	3	H5
5706033	GT945072	5706032	GT945036	5/8 - 18	3.81	.91	1.89	.480	3	H3

High-Performance Taps



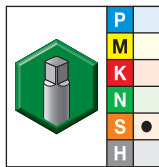
- WN35MG TiN/DLC for titanium and titanium alloys.



Shank Tolerance	
D mm	tolerance h9
1-3	+0, -0,025
>3-6	+0, -0,030
>6-10	+0, -0,036
>10-18	+0, -0,043
>18-30	+0, -0,052



■ GT16 • Form C Semi-Bottoming Chamfer • Metric DIN 371 • For Titanium and Titanium Alloys



- first choice
- alternate choice

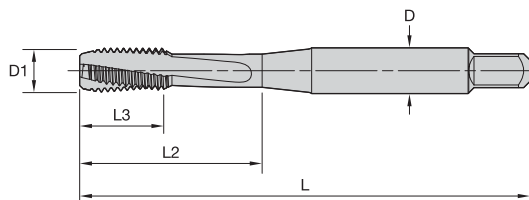
order #	catalog #	grade WN35MG TiN/DLC	metric dimensions				D	number of flutes	dimension standard	class of fit
			D1 size	L	L3	L2				
4160437	GT165001	M3 X 0,5	56	6	18	3,5	3	DIN 371	6HX	
4160438	GT165002	M4 X 0,7	63	7	21	4,5	3	DIN 371	6HX	
4160439	GT165003	M5 X 0,8	70	8	25	6,0	3	DIN 371	6HX	
4160440	GT165004	M6 X 1	80	10	30	6,0	3	DIN 371	6HX	
4160441	GT165005	M8 X 1,25	90	14	35	8,0	3	DIN 371	6HX	
4160442	GT165006	M10 X 1,5	100	16	39	10,0	3	DIN 371	6HX	
4160523	GT165007	M12 X 1,75	110	18	44	12,0	3	DIN 371	6HX	

High-Performance Taps

Victory™ Spiral-Flute HSS-E-PM Taps • Blind Holes



- WS30MG nitride for titanium and titanium alloys.
- WS34MG TiN + CrC/C for titanium and titanium alloys.

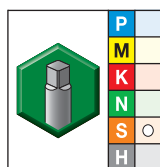
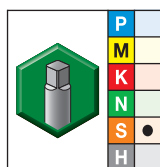


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



■ GT62 • Machine Screw and Fractional • Form C Semi-Bottoming Chamfer • ANSI • For Titanium and Titanium Alloys



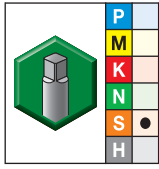
- first choice
- alternate choice

grade WS34MG TiN+CrC/C		grade WS30MG Nitride		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
5565064	GT625006	5565063	GT625005	2 - 56	1.75	.44	.50	.141	3	H2
5565067	GT625008	5565065	GT625007	4 - 40	1.88	.56	.69	.142	3	H2
5565069	GT625010	5565068	GT625009	6 - 32	1.99	.36	.71	.141	3	H2
5565131	GT625012	5565130	GT625011	6 - 32	1.99	.36	.71	.141	3	H3
5565133	GT625014	5565132	GT625013	6 - 40	1.99	.36	.71	.141	3	H2
5565135	GT625016	5565134	GT625015	8 - 32	2.12	.31	.77	.168	3	H2
5565138	GT625018	5565137	GT625017	8 - 32	2.12	.31	.77	.168	3	H3
5565140	GT625020	5565139	GT625019	8 - 36	2.12	.31	.77	.168	3	H2
5565142	GT625022	5565141	GT625021	10 - 24	2.37	.47	.92	.194	3	H3
5565144	GT625024	5565143	GT625023	10 - 32	2.37	.47	.91	.194	3	H2
5565146	GT625026	5565145	GT625025	10 - 32	2.37	.47	.91	.194	3	H3
5565148	GT625028	5565147	GT625027	1/4 - 20	2.50	.44	1.01	.255	3	H3
5565150	GT625030	5565149	GT625029	1/4 - 20	2.50	.44	1.00	.255	3	H5
5565152	GT625032	5565151	GT625031	1/4 - 28	2.50	.44	1.01	.255	3	H3
5565154	GT625034	5565153	GT625033	1/4 - 28	2.50	.44	1.01	.255	3	H4
5565156	GT625036	5565155	GT625035	1/4 - 28	2.50	.44	1.01	.255	3	H5
5565158	GT625038	5565157	GT625037	5/16 - 18	2.72	.49	1.13	.318	3	H3
5565160	GT625040	5565159	GT625039	5/16 - 18	2.72	.49	1.13	.318	3	H5
5565163	GT625042	5565161	GT625041	5/16 - 24	2.72	.49	1.13	.318	3	H3
5565165	GT625044	5565164	GT625043	5/16 - 24	2.72	.49	1.13	.318	3	H4
5565167	GT625046	5565166	GT625045	3/8 - 16	2.93	.59	1.26	.381	3	H3
5565169	GT625048	5565168	GT625047	3/8 - 16	2.93	.59	1.26	.381	3	H5
5565191	GT625050	5565190	GT625049	3/8 - 24	2.93	.59	1.26	.381	3	H3
5565193	GT625052	5565192	GT625051	3/8 - 24	2.93	.59	1.26	.381	3	H4

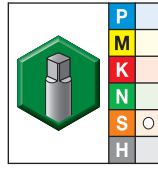
(continued)

High-Performance Taps

(GT62 • Machine Screw and Fractional • Form C Semi-Bottoming Chamfer • ANSI • For Titanium and Titanium Alloys – continued)



grade WS34MG
TiN+CrC/C



grade WS30MG
Nitride

- first choice
- alternate choice

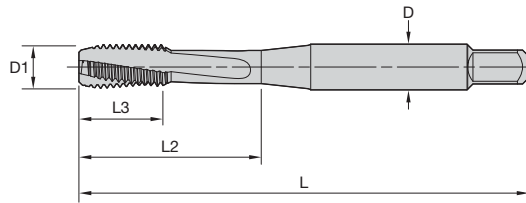
grade WS34MG TiN+CrC/C		grade WS30MG Nitride		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
5565195	GT625054	5565194	GT625053	7/16 - 14	3.16	.71	1.49	.323	3	H3
5565197	GT625056	5565196	GT625055	7/16 - 14	3.16	.71	1.49	.323	3	H5
5565199	GT625058	5565198	GT625057	7/16 - 20	3.16	.71	1.49	.323	3	H3
5565201	GT625060	5565200	GT625059	7/16 - 20	3.16	.71	1.49	.323	3	H5
5565203	GT625062	5565202	GT625061	1/2 - 13	3.38	.77	1.74	.367	3	H3
5565205	GT625064	5565204	GT625063	1/2 - 13	3.38	.77	1.74	.367	3	H5
5565207	GT625066	5565206	GT625065	1/2 - 20	3.38	.77	1.74	.367	3	H3
5565209	GT625068	5565208	GT625067	1/2 - 20	3.38	.77	1.74	.367	3	H5
5565210	GT625069	-		9/16 - 18	3.59	.83	1.74	.429	4	H3
5565211	GT625070	-		9/16 - 18	3.59	.83	1.74	.429	4	H5
5565212	GT625071	-		5/8 - 11	3.81	.91	1.89	.480	4	H3
5565213	GT625072	-		5/8 - 18	3.81	.91	1.89	.480	4	H3
5565214	GT625073	-		5/8 - 18	3.81	.91	1.89	.480	4	H5
5565215	GT625074	-		3/4 - 10	4.25	1.00	2.08	.590	4	H5
5565216	GT625075	-		3/4 - 16	4.25	1.00	2.08	.590	4	H3
5565217	GT625076	-		3/4 - 16	4.25	1.00	2.08	.590	4	H5
5565218	GT625077	-		1 - 8	5.12	1.25	2.58	.800	4	H5

High-Performance Taps

Victory™ Spiral-Flute HSS-E-PM Taps • Blind Holes



- WS30MG nitride for titanium and titanium alloys.
- WS34MG TiN + CrC/C for titanium and titanium alloys.

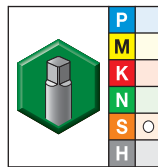
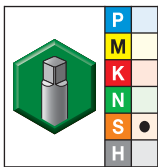


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



■ GT62 • Form C Semi-Bottoming Chamfer • Metric ANSI • For Titanium and Titanium Alloys



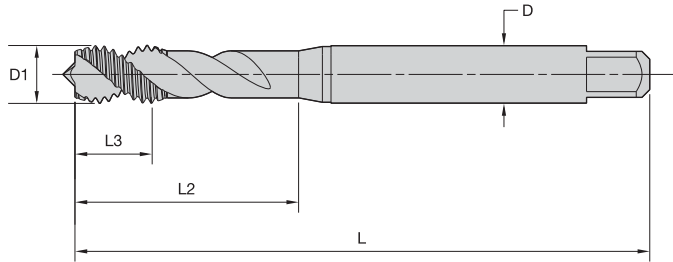
- first choice
- alternate choice

grade WS34MG TiN+CrC/C		grade WS30MG Nitride		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
5565220	GT625504	5565219	GT625503	M2,5 X 0,45	1.81	.50	.56	.141	3	D3
5565222	GT625506	5565221	GT625505	M3 X 0,5	1.94	.63	.75	.141	3	D3
5565224	GT625508	5565223	GT625507	M4 X 0,7	2.12	.32	.76	.168	3	D4
5565226	GT625510	5565225	GT625509	M5 X 0,8	2.37	.46	.91	.194	3	D4
5565228	GT625512	5565227	GT625511	M6 X 1	2.50	.46	1.00	.255	3	D5
5565230	GT625514	5565229	GT625513	M7 X 1	2.72	.52	1.15	.318	3	D5
5565232	GT625516	5565231	GT625515	M8 X 1,25	2.70	.48	1.12	.318	3	D5
5565234	GT625518	5565233	GT625517	M10 X 1,25	2.93	.53	1.26	.381	3	D5
5565236	GT625520	5565235	GT625519	M10 X 1,5	2.93	.53	1.26	.381	3	D6
5565238	GT625522	5565237	GT625521	M12 X 1,75	3.38	.77	1.74	.367	3	D6

High-Performance Taps



- WN48EG DLC for aluminum.

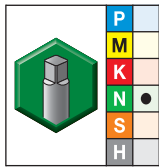


Shank Tolerance

D mm	tolerance h9
1-3	+0, -0,025
3,5-6	+0, -0,030
7-10	+0, -0,036
11-18	+0, -0,043



■ GT80 • Form C Semi-Bottoming Chamfer • Metric DIN 371 and 376 • For Aluminum



- first choice
- alternate choice

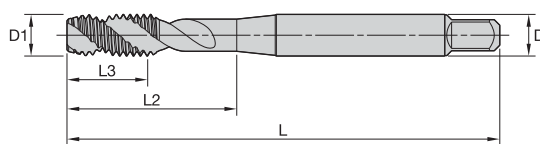
grade WN48EG DLC		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	D1 size	L	L3	L2	D			
4160054	GT805001	M3 X 0,5	56	6	18	3,5	2	DIN 371	6H
4160055	GT805002	M4 X 0,7	63	7	21	4,5	2	DIN 371	6H
4160056	GT805003	M5 X 0,8	70	8	25	6,0	2	DIN 371	6H
4160057	GT805004	M6 X 1	80	10	30	6,0	2	DIN 371	6H
4160058	GT805005	M8 X 1,25	90	14	35	8,0	2	DIN 371	6H
4160059	GT805006	M10 X 1,5	100	16	39	10,0	2	DIN 371	6H
4160060	GT805007	M12 X 1,75	110	18	—	9,0	3	DIN 376	6H
4160061	GT805008	M16 X 2	110	22	—	12,0	3	DIN 376	6H
4160062	GT805009	M20 X 2,5	140	25	—	16,0	3	DIN 376	6H

High-Performance Taps

Victory™ Spiral-Flute HSS-E Taps • Blind Holes



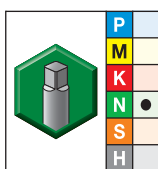
- WN44EG TiN + CrC/C for aluminum.



Shank Tolerance	
D inch	tolerance
.141-.635	+0, -.0015
>.635-1.51	+0, -.0020
>1.51-2.01	+0, -.0030



- GT82 • Machine Screw and Fractional • Form C Semi-Bottoming Chamfer • DIN Length ANSI Shank
- For Aluminum

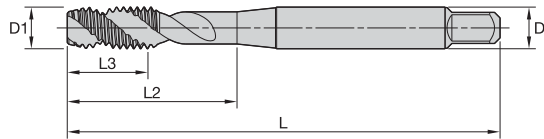


- first choice
- alternate choice

grade WN44EG TiN+CrC/C		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	L2	D		
5690761	GT825010	2 - 56	1.77	.31	.71	.141	2	H2
5690762	GT825011	4 - 40	2.20	.31	.71	.141	2	H2
5690765	GT825012	5 - 40	2.20	.31	.71	.141	2	H2
5690766	GT825013	6 - 32	2.20	.35	.79	.141	2	H3
5690767	GT825014	8 - 32	2.48	.43	.83	.168	2	H3
5690768	GT825015	10 - 24	2.76	.47	.98	.194	2	H3
5690769	GT825016	10 - 32	2.76	.47	.98	.194	2	H3
5690780	GT825017	1/4 - 20	3.15	.59	1.18	.255	2	H3
5690781	GT825018	1/4 - 20	3.15	.59	1.18	.255	2	H5
5690782	GT825019	1/4 - 28	3.15	.59	1.18	.255	2	H3
5690783	GT825020	1/4 - 28	3.15	.59	1.18	.255	2	H4
5690784	GT825021	5/16 - 18	3.54	.59	1.38	.318	2	H3
5690785	GT825022	5/16 - 18	3.54	.59	1.38	.318	2	H5
5690786	GT825023	5/16 - 24	3.54	.59	1.38	.318	2	H3
5690787	GT825024	5/16 - 24	3.54	.59	1.38	.318	2	H4
5690788	GT825025	3/8 - 16	3.94	.75	1.54	.381	2	H3
5690789	GT825026	3/8 - 16	3.94	.75	1.54	.381	2	H5
5690790	GT825027	3/8 - 24	3.94	.75	1.54	.381	2	H3
5690791	GT825028	3/8 - 24	3.94	.75	1.54	.381	2	H4
5690792	GT825029	7/16 - 14	3.94	.71	1.61	.323	3	H3
5690793	GT825030	7/16 - 14	3.94	.71	1.61	.323	3	H5
5690795	GT825031	7/16 - 20	3.94	.71	1.61	.323	3	H3
5690796	GT825032	7/16 - 20	3.94	.71	1.61	.323	3	H5
5690797	GT825033	1/2 - 13	4.33	.91	1.85	.367	3	H4
5690798	GT825034	1/2 - 13	4.33	.91	1.85	.367	3	H5
5690799	GT825035	1/2 - 20	4.33	.91	1.85	.367	3	H3
5690800	GT825036	1/2 - 20	4.33	.91	1.85	.367	3	H5

High-Performance Taps

- WN44EG TiN + CrC/C for aluminum.

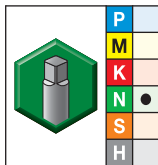


Shank Tolerance

D inch	tolerance
.141-.635	+0, -.0015
>.635-1.51	+0, -.0020
>1.51-2.01	+0, -.0030



- GT82 • Form C Semi-Bottoming Chamfer • Metric • DIN Length ANSI Shank • For Aluminum



- first choice
- alternate choice

grade WN44EG TiN+CrC/C		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	L2	D		
5690801	GT825037	M3 X 0,5	2.20	.31	.71	.141	2	D3
5690802	GT825038	M3,5 X 0,6	2.20	.35	.79	.141	2	D4
5690803	GT825039	M4 X 0,7	2.48	.43	.83	.168	2	D4
5690804	GT825040	M5 X 0,8	2.76	.47	.98	.194	2	D4
5690805	GT825041	M6 X 1	3.15	.47	1.18	.255	2	D5
5690806	GT825042	M7 X 1	3.54	.59	1.38	.318	2	D5
5690807	GT825043	M8 X 1	3.54	.59	1.38	.318	2	D5
5690808	GT825044	M8 X 1,25	3.54	.59	1.38	.318	2	D5
5690809	GT825045	M10 X 1,25	3.94	.71	1.54	.381	2	D5
5690810	GT825046	M10 X 1,5	3.94	.71	1.54	.381	2	D6
5690811	GT825047	M12 X 1,25	4.33	.83	1.73	.367	3	D6
5690812	GT825048	M12 X 1,5	4.33	.83	1.73	.367	3	D6
5690813	GT825049	M12 X 1,75	4.33	.83	1.73	.367	3	D6

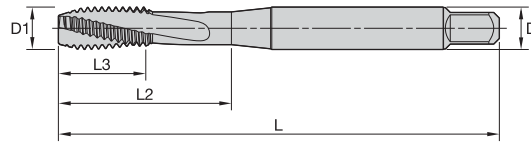
High-Performance Taps

High-Performance Taps

Victory™ Spiral-Flute HSS-E Taps • Blind Holes



- WN44EG TiN + CrC/C for aluminum.

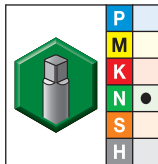


Shank Tolerance

D inch	tolerance
.141-.635	+0, -.0015
>.635-1.51	+0, -.0020
>1.51-2.01	+0, -.0030



- GT86 • Machine Screw and Fractional • Form C Semi-Bottoming Chamfer • DIN Length ANSI Shank
- For Aluminum

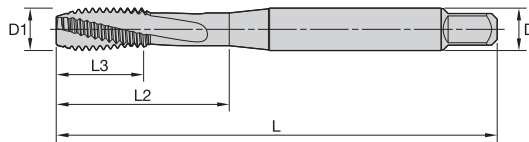


- first choice
- alternate choice

grade WN44EG TiN+CrC/C		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	L2	D		
5690817	GT865010	2 - 56	1.77	.31	.71	.141	3	H2
5690818	GT865011	4 - 40	2.20	.31	.71	.141	3	H2
5690819	GT865012	5 - 40	2.20	.31	.71	.141	3	H2
5690840	GT865013	6 - 32	2.20	.35	.79	.141	3	H3
5690841	GT865014	8 - 32	2.48	.43	.83	.168	3	H3
5690842	GT865015	10 - 24	2.76	.47	.98	.194	3	H3
5690843	GT865016	10 - 32	2.76	.47	.98	.194	3	H3
5690844	GT865017	1/4 - 20	3.15	.59	1.18	.255	3	H3
5690845	GT865018	1/4 - 20	3.15	.59	1.18	.255	3	H5
5690846	GT865019	1/4 - 28	3.15	.59	1.18	.255	3	H3
5690847	GT865020	1/4 - 28	3.15	.59	1.18	.255	3	H4
5690849	GT865021	5/16 - 18	3.54	.59	1.38	.318	3	H3
5690850	GT865022	5/16 - 18	3.54	.59	1.38	.318	3	H5
5690851	GT865023	5/16 - 24	3.54	.59	1.38	.318	3	H3
5690852	GT865024	5/16 - 24	3.54	.59	1.38	.318	3	H4
5690853	GT865025	3/8 - 16	3.94	.75	1.54	.381	3	H3
5690854	GT865026	3/8 - 16	3.94	.75	1.54	.381	3	H5
5690855	GT865027	3/8 - 24	3.94	.75	1.54	.381	3	H3
5690856	GT865028	3/8 - 24	3.94	.75	1.54	.381	3	H4
5690857	GT865029	7/16 - 14	3.94	.71	1.61	.323	3	H3
5690858	GT865030	7/16 - 14	3.94	.71	1.61	.323	3	H5
5690859	GT865031	7/16 - 20	3.94	.71	1.61	.323	3	H3
5690860	GT865032	7/16 - 20	3.94	.71	1.61	.323	3	H5
5690861	GT865033	1/2 - 13	4.33	.91	1.85	.367	3	H4
5690862	GT865034	1/2 - 13	4.33	.91	1.85	.367	3	H5
5690863	GT865035	1/2 - 20	4.33	.91	1.85	.367	3	H3
5690864	GT865036	1/2 - 20	4.33	.91	1.85	.367	3	H5

High-Performance Taps

- WN44EG TiN + CrC/C for aluminum.

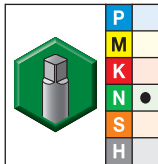


Shank Tolerance

D inch	tolerance
.141-.635	+0, -.0015
>.635-1.51	+0, -.0020
>1.51-2.01	+0, -.0030



■ GT86 • Form C Semi-Bottoming Chamfer • Metric • DIN Length ANSI Shank • For Aluminum



- first choice
- alternate choice

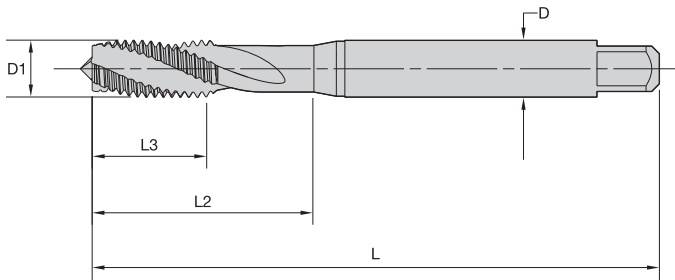
grade WN44EG TiN+CrC/C		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	L2	D		
5690865	GT865037	M3 X 0,5	2.20	.31	.71	.141	3	D3
5690866	GT865038	M3,5 X 0,6	2.20	.35	.79	.141	3	D4
5690867	GT865039	M4 X 0,7	2.48	.43	.83	.168	3	D4
5690868	GT865040	M5 X 0,8	2.76	.47	.98	.194	3	D4
5690869	GT865041	M6 X 1	3.15	.47	1.18	.255	3	D5
5690880	GT865042	M7 X 1	3.54	.59	1.38	.318	3	D5
5690881	GT865043	M8 X 1	3.54	.59	1.38	.318	3	D5
5690882	GT865044	M8 X 1,25	3.54	.59	1.38	.318	3	D5
5690883	GT865045	M10 X 1,25	3.94	.71	1.54	.381	3	D5
5690884	GT865046	M10 X 1,5	3.94	.71	1.54	.381	3	D6
5690885	GT865047	M12 X 1,25	4.33	.83	1.73	.367	3	D6
5690886	GT865048	M12 X 1,5	4.33	.83	1.73	.367	3	D6
5690887	GT865049	M12 X 1,75	4.33	.83	1.73	.367	3	D6

High-Performance Taps

High-Performance Taps

Victory™ Spiral-Flute HSS-E-PM Taps • Blind Holes

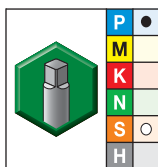
- WP31MG TiN for steel
32–44 HRC.



Shank Tolerance	
D mm	tolerance h9
1–3	+0, -0,025
>3–6	+0, -0,030
>6–10	+0, -0,036
>10–18	+0, -0,043
>18–30	+0, -0,052



■ GT02 • Form C Semi-Bottoming Chamfer • Metric DIN 371, 374, and 376 • For Hard Steel

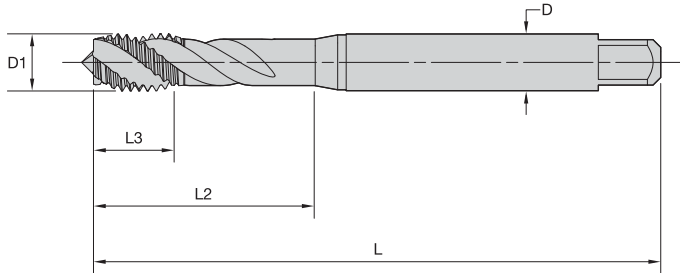


- first choice
- alternate choice

grade WP31MG TiN		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	D1 size	L	L3	L2	D			
4152638	GT025001	M3 X 0,5	56	11	18	3,5	3	DIN 371	6H
4152639	GT025002	M4 X 0,7	63	13	21	4,5	3	DIN 371	6H
4152640	GT025003	M5 X 0,8	70	15	25	6,0	3	DIN 371	6H
4152641	GT025004	M6 X 1	80	17	30	6,0	3	DIN 371	6H
4152709	GT025012	M8 X 1	90	17	—	6,0	3	DIN 374	6H
4152642	GT025005	M8 X 1,25	90	20	35	8,0	3	DIN 371	6H
4152710	GT025013	M10 X 1	90	18	—	7,0	3	DIN 374	6H
4152711	GT025014	M10 X 1,25	100	22	—	7,0	3	DIN 374	6H
4152703	GT025006	M10 X 1,5	100	22	39	10,0	3	DIN 371	6H
4152712	GT025015	M12 X 1,25	100	22	—	9,0	3	DIN 374	6H
4152713	GT025016	M12 X 1,5	100	22	—	9,0	3	DIN 374	6H
4152704	GT025007	M12 X 1,75	110	24	44	12,0	3	DIN 376	6H
4152714	GT025017	M14 X 1,5	100	22	—	11,0	3	DIN 374	6H
4152705	GT025008	M14 X 2	110	26	52	11,0	3	DIN 376	6H
4152715	GT025018	M16 X 1,5	100	22	—	12,0	3	DIN 374	6H
4152706	GT025009	M16 X 2	110	27	—	12,0	3	DIN 376	6H
4152707	GT025010	M18 X 2	125	30	—	14,0	4	DIN 376	6H
4152708	GT025011	M20 X 2,5	140	32	—	16,0	4	DIN 376	6H

High-Performance Taps

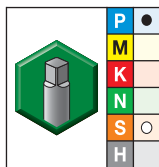
- WH36MG TiAlN/MoS₂ for steel 32–44 HRC (3 x D).



Shank Tolerance	
D mm	tolerance h9
1–3	+0, -0,025
>3–6	+0, -0,030
>6–10	+0, -0,036
>10–18	+0, -0,043
>18–30	+0, -0,052



■ GT04 • Form C Semi-Bottoming Chamfer • Metric DIN 371, 374, and 376 • For Hard Steel



- first choice
- alternate choice

grade WH36MG TiN+MoS ₂		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	D1 size	L	L3	L2	D			
4158471	GT045001	M3 X 0,5	56	6	18	3,5	3	DIN 371	6H
4158472	GT045002	M4 X 0,7	63	7	21	4,5	3	DIN 371	6H
4158763	GT045003	M5 X 0,8	70	8	25	6,0	3	DIN 371	6H
4158764	GT045004	M6 X 1	80	10	30	6,0	3	DIN 371	6H
4158772	GT045012	M8 X 1	90	10	—	6,0	3	DIN 374	6H
4158765	GT045005	M8 X 1,25	90	14	35	8,0	3	DIN 371	6H
4158773	GT045013	M10 X 1	90	10	—	7,0	3	DIN 374	6H
4158774	GT045014	M10 X 1,25	100	16	—	7,0	3	DIN 374	6H
4158766	GT045006	M10 X 1,5	100	16	39	10,0	3	DIN 371	6H
4158775	GT045015	M12 X 1,25	100	15	—	9,0	4	DIN 374	6H
4158776	GT045016	M12 X 1,5	100	15	—	9,0	4	DIN 374	6H
4158767	GT045007	M12 X 1,75	110	18	—	9,0	4	DIN 376	6H
4158777	GT045017	M14 X 1,5	100	15	—	11,0	4	DIN 374	6H
4158768	GT045008	M14 X 2	110	20	—	11,0	4	DIN 376	6H
4158778	GT045018	M16 X 1,5	100	15	—	12,0	4	DIN 374	6H
4158769	GT045009	M16 X 2	110	22	—	12,0	4	DIN 376	6H
4158770	GT045010	M18 X 2,5	125	25	—	14,0	4	DIN 376	6H
4158771	GT045011	M20 X 2,5	140	25	—	16,0	4	DIN 376	6H

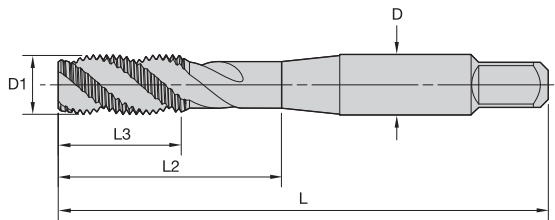
High-Performance Taps

Multipurpose Taps

VariTap™ Spiral-Flute HSS-E Taps • Blind Holes

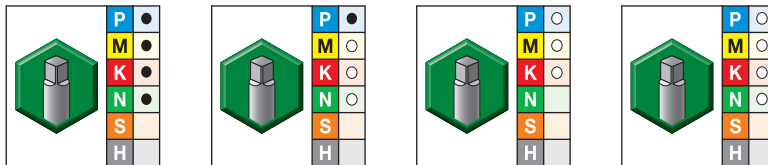


- WP42EG TiCN
- WU41EG TiN
- WP49EG oxide
- WU40EG bright



Shank Tolerance	
D inch	tolerance
.141-.635	+0, -.0015
>.635-1.51	+0, -.0020
>1.51-2.01	+0, -.0030

■ VT-SFT • Form C Semi-Bottoming Chamfer • Machine Screw and Fractional • ANSI



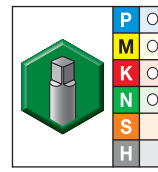
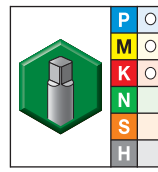
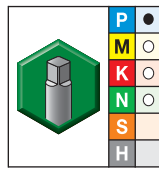
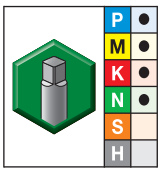
- first choice
- alternate choice

grade WP42EG TiCN		grade WU41EG TiN		grade WP49EG Oxide		grade WU40EG Bright		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
5356669	VTSFT5001	-	-	5356668	VTSFT5001	5356730	VTSFT5001	2 - 56	1.76	.40	.50	.141	2	H2
5356732	VTSFT5002	-	-	5356731	VTSFT5002	5356733	VTSFT5002	3 - 48	1.82	.46	.57	.141	2	H2
5356736	VTSFT5003	5356735	VTSFT5003	5356734	VTSFT5003	5356737	VTSFT5003	4 - 40	1.88	.52	.70	.141	2	H2
5356739	VTSFT5004	-	-	5356738	VTSFT5004	5356740	VTSFT5004	4 - 40	1.88	.52	.70	.141	2	H3
5356742	VTSFT5005	-	-	5356741	VTSFT5005	5356743	VTSFT5005	4 - 40	1.88	.52	.70	.141	2	H4
5356745	VTSFT5006	-	-	5356744	VTSFT5006	5356746	VTSFT5006	4 - 40	1.88	.52	.70	.141	2	H5
-	-	-	-	5356747	VTSFT5007	-	-	4 - 40	1.88	.52	.70	.141	2	H6
5356749	VTSFT5008	-	-	5356748	VTSFT5008	5356750	VTSFT5008	4 - 48	1.88	.53	.70	.141	2	H2
5356753	VTSFT5009	5356752	VTSFT5009	5356751	VTSFT5009	5356754	VTSFT5009	5 - 40	1.95	.59	.76	.141	2	H2
5356756	VTSFT5010	-	-	5356755	VTSFT5010	5356757	VTSFT5010	6 - 32	2.00	.39	.72	.141	2	H2
5356760	VTSFT5011	5356759	VTSFT5011	5356758	VTSFT5011	5356761	VTSFT5011	6 - 32	2.00	.39	.72	.141	2	H3
-	-	-	-	5356762	VTSFT5012	-	-	6 - 32	2.00	.39	.72	.141	2	H4
5356764	VTSFT5013	-	-	5356763	VTSFT5013	5356765	VTSFT5013	6 - 32	2.00	.39	.72	.141	2	H5
5356767	VTSFT5014	-	-	5356766	VTSFT5014	5356768	VTSFT5014	6 - 32	2.00	.39	.72	.141	2	H7
5356770	VTSFT5015	-	-	5356769	VTSFT5015	5356771	VTSFT5015	6 - 32	2.00	.39	.72	.141	2	H11
5356773	VTSFT5016	-	-	5356772	VTSFT5016	5356774	VTSFT5016	6 - 40	2.00	.39	.72	.141	2	H2
-	-	-	-	5356775	VTSFT5017	-	-	6 - 40	2.00	.39	.72	.141	2	H3
5357304	VTSFT5018	-	-	5357303	VTSFT5018	5357305	VTSFT5018	8 - 32	2.13	.38	.77	.168	3	H2
5357308	VTSFT5019	5357307	VTSFT5019	5357306	VTSFT5019	5357309	VTSFT5019	8 - 32	2.13	.38	.77	.168	3	H3
-	-	-	-	5357370	VTSFT5020	-	-	8 - 32	2.13	.38	.77	.168	3	H4
5357372	VTSFT5021	-	-	5357371	VTSFT5021	5357373	VTSFT5021	8 - 32	2.13	.38	.77	.168	3	H5
-	-	-	-	5357374	VTSFT5022	-	-	8 - 32	2.13	.38	.77	.168	3	H6
5357376	VTSFT5023	-	-	5357375	VTSFT5023	5357377	VTSFT5023	8 - 32	2.13	.38	.77	.168	3	H7
5357379	VTSFT5024	-	-	5357378	VTSFT5024	5357380	VTSFT5024	8 - 32	2.13	.38	.77	.168	3	H11

(continued)

Multipurpose Taps

(VT-SFT • Form C Semi-Bottoming Chamfer • Machine Screw and Fractional • ANSI — continued)



● first choice
○ alternate choice

grade WP42EG TiCN		grade WU41EG TiN		grade WP49EG Oxide		grade WU40EG Bright		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
-	-	-	-	5357381	VTSFT5025	-	-	8 - 36	2.13	.38	.77	.168	3	H3
-	-	-	-	5357382	VTSFT5026	-	-	10 - 24	2.38	.50	.92	.194	3	H2
5357385	VTSFT5027	5357384	VTSFT5027	5357383	VTSFT5027	5357386	VTSFT5027	10 - 24	2.38	.50	.92	.194	3	H3
-	-	-	-	5357387	VTSFT5028	-	-	10 - 24	2.38	.50	.92	.194	3	H4
5357389	VTSFT5029	-	-	5357388	VTSFT5029	5357390	VTSFT5029	10 - 24	2.38	.50	.92	.194	3	H5
-	-	-	-	5357391	VTSFT5030	-	-	10 - 24	2.38	.50	.92	.194	3	H7
5357393	VTSFT5031	-	-	5357392	VTSFT5031	5357394	VTSFT5031	10 - 24	2.38	.50	.92	.194	3	H11
5357396	VTSFT5032	-	-	5357395	VTSFT5032	5357397	VTSFT5032	10 - 32	2.38	.50	.92	.194	3	H2
5357400	VTSFT5033	5357399	VTSFT5033	5357398	VTSFT5033	5357401	VTSFT5033	10 - 32	2.38	.50	.92	.194	3	H3
-	-	-	-	5357402	VTSFT5034	-	-	10 - 32	2.38	.50	.92	.194	3	H4
5357404	VTSFT5035	-	-	5357403	VTSFT5035	5357405	VTSFT5035	10 - 32	2.37	.50	.91	.194	3	H5
-	-	-	-	5357406	VTSFT5036	-	-	10 - 32	2.38	.50	.92	.194	3	H6
5357408	VTSFT5037	-	-	5357407	VTSFT5037	5357409	VTSFT5037	10 - 32	2.38	.50	.92	.194	3	H7
5357431	VTSFT5038	-	-	5357430	VTSFT5038	5357432	VTSFT5038	10 - 32	2.38	.50	.92	.194	3	H11
5364106	VTSFT5039	-	-	5364105	VTSFT5039	5364107	VTSFT5039	12 - 24	2.43	.50	.96	.220	3	H3
5364109	VTSFT5040	-	-	5364108	VTSFT5040	5364450	VTSFT5040	12 - 28	2.43	.50	.96	.220	3	H3
5364453	VTSFT5041	5364452	VTSFT5041	5364451	VTSFT5041	5364454	VTSFT5041	1/4 - 20	2.50	.63	1.00	.255	3	H3
5364456	VTSFT5042	-	-	5364455	VTSFT5042	5364457	VTSFT5042	1/4 - 20	2.50	.63	1.00	.255	3	H5
5364459	VTSFT5043	-	-	5364458	VTSFT5043	5364480	VTSFT5043	1/4 - 20	2.50	.63	1.00	.255	3	H7
5364482	VTSFT5044	-	-	5364481	VTSFT5044	5364483	VTSFT5044	1/4 - 20	2.50	.63	1.00	.255	3	H11
5364486	VTSFT5045	5364485	VTSFT5045	5364484	VTSFT5045	5364487	VTSFT5045	1/4 - 28	2.49	.62	1.00	.255	3	H3
5364489	VTSFT5046	-	-	5364488	VTSFT5046	5364490	VTSFT5046	1/4 - 28	2.49	.62	1.00	.255	3	H4
5364492	VTSFT5047	-	-	5364491	VTSFT5047	5364493	VTSFT5047	1/4 - 28	2.49	.62	1.00	.255	3	H5
-	-	-	-	5364494	VTSFT5048	-	-	1/4 - 28	2.49	.62	1.00	.255	3	H6
5364496	VTSFT5049	-	-	5364495	VTSFT5049	5364498	VTSFT5049	1/4 - 28	2.49	.62	1.00	.255	3	H7
5364500	VTSFT5050	-	-	5364499	VTSFT5050	5364501	VTSFT5050	1/4 - 28	2.49	.62	1.00	.255	3	H11
5364504	VTSFT5051	5364503	VTSFT5051	5364502	VTSFT5051	5364505	VTSFT5051	5/16 - 18	2.72	.69	1.13	.318	3	H3
5364507	VTSFT5052	-	-	5364506	VTSFT5052	5364508	VTSFT5052	5/16 - 18	2.72	.69	1.13	.318	3	H5
5364510	VTSFT5053	-	-	5364509	VTSFT5053	5364511	VTSFT5053	5/16 - 18	2.72	.69	1.13	.318	3	H7
5364513	VTSFT5054	-	-	5364512	VTSFT5054	5364514	VTSFT5054	5/16 - 18	2.72	.69	1.13	.318	3	H11
5364517	VTSFT5055	5364516	VTSFT5055	5364515	VTSFT5055	5364518	VTSFT5055	5/16 - 24	2.71	.68	1.13	.318	3	H3
5364530	VTSFT5056	-	-	5364519	VTSFT5056	5364531	VTSFT5056	5/16 - 24	2.71	.68	1.13	.318	3	H4
5364533	VTSFT5057	-	-	5364532	VTSFT5057	5364534	VTSFT5057	5/16 - 24	2.71	.68	1.13	.318	3	H5
5364536	VTSFT5058	-	-	5364535	VTSFT5058	5364537	VTSFT5058	5/16 - 24	2.71	.68	1.12	.318	3	H6
5364539	VTSFT5059	-	-	5364538	VTSFT5059	5364540	VTSFT5059	5/16 - 24	2.71	.68	1.12	.318	3	H7
5364542	VTSFT5060	-	-	5364541	VTSFT5060	5364543	VTSFT5060	5/16 - 24	2.71	.68	1.12	.318	3	H11
5364546	VTSFT5061	5364545	VTSFT5061	5364544	VTSFT5061	5364548	VTSFT5061	3/8 - 16	2.94	.75	1.27	.381	3	H3
5364550	VTSFT5062	-	-	5364549	VTSFT5062	5364551	VTSFT5062	3/8 - 16	2.94	.75	1.27	.381	3	H5
5364554	VTSFT5063	-	-	5364553	VTSFT5063	5364555	VTSFT5063	3/8 - 16	2.94	.75	1.27	.381	3	H7
5364557	VTSFT5064	-	-	5364556	VTSFT5064	5364558	VTSFT5064	3/8 - 16	2.93	.75	1.27	.381	3	H11

(continued)

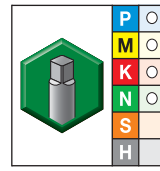
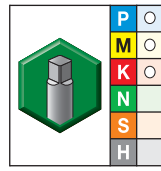
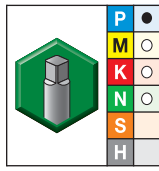
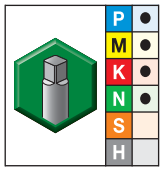
Multipurpose Taps

Multipurpose Taps

VariTap™ Spiral-Flute HSS-E Taps • Blind Holes



(VT-SFT • Form C Semi-Bottoming Chamfer • Machine Screw and Fractional • ANSI — continued)



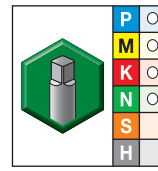
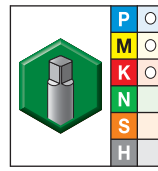
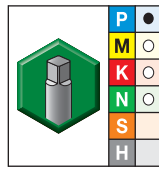
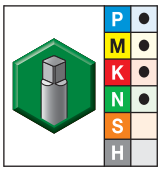
● first choice
○ alternate choice

grade WP42EG TiCN		grade WU41EG TiN		grade WP49EG Oxide		grade WU40EG Bright		inch dimensions					number of flutes	pitch diam limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
5364561	VTSFT5065	5364560	VTSFT5065	5364559	VTSFT5065	5364562	VTSFT5065	3/8 - 24	2.92	.74	1.25	.381	3	H3
5364564	VTSFT5066	-	-	5364563	VTSFT5066	5364565	VTSFT5066	3/8 - 24	2.92	.74	1.25	.381	3	H4
5364567	VTSFT5067	-	-	5364566	VTSFT5067	5364568	VTSFT5067	3/8 - 24	2.92	.74	1.25	.381	3	H5
-	-	-	-	5364569	VTSFT5068	-	-	3/8 - 24	2.92	.74	1.25	.381	3	H6
5364571	VTSFT5069	-	-	5364570	VTSFT5069	5364572	VTSFT5069	3/8 - 24	2.92	.74	1.25	.381	3	H7
5364574	VTSFT5070	-	-	5364573	VTSFT5070	5364575	VTSFT5070	3/8 - 24	2.92	.74	1.25	.381	3	H11
5364579	VTSFT5071	5364578	VTSFT5071	5364577	VTSFT5071	5364600	VTSFT5071	7/16 - 14	3.16	.88	1.42	.323	3	H3
5364602	VTSFT5072	-	-	5364601	VTSFT5072	5364603	VTSFT5072	7/16 - 14	3.16	.88	1.42	.323	3	H5
5364605	VTSFT5073	-	-	5364604	VTSFT5073	5364606	VTSFT5073	7/16 - 14	3.16	.88	1.42	.323	3	H7
5364608	VTSFT5074	-	-	5364607	VTSFT5074	5364609	VTSFT5074	7/16 - 14	3.16	.88	1.42	.323	3	H11
5364612	VTSFT5075	5364611	VTSFT5075	5364610	VTSFT5075	5364613	VTSFT5075	7/16 - 20	3.16	.88	1.42	.323	3	H3
5364615	VTSFT5076	-	-	5364614	VTSFT5076	5364616	VTSFT5076	7/16 - 20	3.16	.88	1.42	.323	3	H5
-	-	-	-	5364617	VTSFT5077	-	-	7/16 - 20	3.16	.88	1.42	.323	3	H6
5364619	VTSFT5078	-	-	5364618	VTSFT5078	5364620	VTSFT5078	7/16 - 20	3.16	.88	1.42	.323	3	H7
5364622	VTSFT5079	-	-	5364621	VTSFT5079	5364623	VTSFT5079	7/16 - 20	3.16	.88	1.42	.323	3	H11
5364626	VTSFT5080	5364625	VTSFT5080	5364624	VTSFT5080	5364627	VTSFT5080	1/2 - 13	3.38	.94	1.65	.367	3	H3
5364629	VTSFT5081	-	-	5364628	VTSFT5081	5364630	VTSFT5081	1/2 - 13	3.38	.94	1.65	.367	3	H5
5364632	VTSFT5082	-	-	5364631	VTSFT5082	5364633	VTSFT5082	1/2 - 13	3.38	.94	1.65	.367	3	H7
5364635	VTSFT5083	-	-	5364634	VTSFT5083	5364636	VTSFT5083	1/2 - 13	3.38	.94	1.65	.367	3	H11
5364639	VTSFT5084	5364638	VTSFT5084	5364637	VTSFT5084	5364640	VTSFT5084	1/2 - 20	3.38	.94	1.65	.367	3	H3
5364642	VTSFT5085	-	-	5364641	VTSFT5085	5364643	VTSFT5085	1/2 - 20	3.38	.94	1.65	.367	3	H5
-	-	-	-	5364644	VTSFT5086	-	-	1/2 - 20	3.38	.94	1.65	.367	3	H6
5364646	VTSFT5087	-	-	5364645	VTSFT5087	5364647	VTSFT5087	1/2 - 20	3.38	.94	1.74	.367	3	H7
5364649	VTSFT5088	-	-	5364648	VTSFT5088	5364670	VTSFT5088	1/2 - 20	3.38	.94	1.74	.367	3	H11
5364673	VTSFT5089	5364672	VTSFT5089	5364671	VTSFT5089	5364674	VTSFT5089	9/16 - 12	3.59	1.00	1.74	.429	3	H3
-	-	-	-	5364675	VTSFT5090	5364676	VTSFT5090	9/16 - 12	3.59	1.00	1.74	.429	3	H5
5364679	VTSFT5091	5364678	VTSFT5091	5364677	VTSFT5091	5364680	VTSFT5091	9/16 - 18	3.59	1.00	1.74	.429	3	H3
-	-	-	-	5364681	VTSFT5092	5364682	VTSFT5092	9/16 - 18	3.59	1.00	1.74	.429	3	H5
5364685	VTSFT5093	5364684	VTSFT5093	5364683	VTSFT5093	5364686	VTSFT5093	5/8 - 11	3.81	2.00	1.89	.480	3	H3
5364688	VTSFT5094	-	-	5364687	VTSFT5094	5364689	VTSFT5094	5/8 - 11	3.81	1.09	1.89	.480	3	H5
-	-	-	-	5364690	VTSFT5095	-	-	5/8 - 11	3.81	1.09	1.89	.480	3	H7
5364693	VTSFT5096	5364692	VTSFT5096	5364691	VTSFT5096	5364694	VTSFT5096	5/8 - 18	3.81	1.09	1.89	.480	3	H3
-	-	-	-	5364695	VTSFT5097	5364696	VTSFT5097	5/8 - 18	3.81	1.09	1.89	.480	3	H5
-	-	-	-	5364697	VTSFT5098	-	-	5/8 - 18	3.81	1.09	1.89	.480	3	H6
-	-	-	-	5364698	VTSFT5099	-	-	5/8 - 18	3.81	1.09	1.89	.480	3	H7
5364701	VTSFT5100	5364700	VTSFT5100	5364699	VTSFT5100	5364702	VTSFT5100	3/4 - 10	4.25	1.22	2.08	.590	4	H3
5364704	VTSFT5101	-	-	5364703	VTSFT5101	5364705	VTSFT5101	3/4 - 10	4.25	1.22	2.08	.590	4	H5
5364708	VTSFT5102	5364707	VTSFT5102	5364706	VTSFT5102	5364709	VTSFT5102	3/4 - 16	4.25	1.22	2.08	.590	4	H3
5364711	VTSFT5103	-	-	5364710	VTSFT5103	5364712	VTSFT5103	3/4 - 16	4.25	1.22	2.08	.590	4	H5
-	-	-	-	5364713	VTSFT5104	-	-	3/4 - 16	4.25	1.22	2.08	.590	4	H7

(continued)

Multipurpose Taps

(VT-SFT • Form C Semi-Bottoming Chamfer • Machine Screw and Fractional • ANSI — continued)

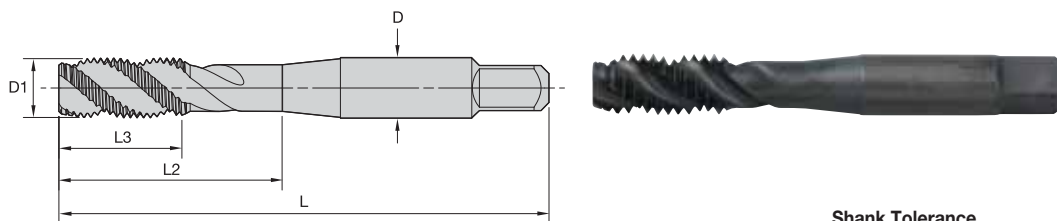


● first choice
○ alternate choice

grade WP42EG TiCN		grade WU41EG TiN		grade WP49EG Oxide		grade WU40EG Bright		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 TPI	L	L3	L2	D		
5364716	VTSFT5105	5364715	VTSFT5105	5364714	VTSFT5105	5364717	VTSFT5105	7/8 - 9	4.69	1.34	2.30	.697	4	H4
5364719	VTSFT5106	-	-	5364718	VTSFT5106	5364720	VTSFT5106	7/8 - 9	4.69	1.34	2.30	.697	4	H5
5364723	VTSFT5107	5364722	VTSFT5107	5364721	VTSFT5107	5364724	VTSFT5107	7/8 - 14	4.69	1.34	2.30	.697	4	H4
5364727	VTSFT5108	5364725	VTSFT5108	5364726	VTSFT5108	5364728	VTSFT5108	1 - 8	5.13	1.50	2.58	.800	4	H5
5364740	VTSFT5109	-	-	5364729	VTSFT5109	5364741	VTSFT5109	1 - 12	5.13	1.50	2.58	.800	4	H4
-	-	-	-	5364742	VTSFT5110	-	-	1 1/8 - 7	5.44	1.71	2.56	.896	4	H6
-	-	-	-	5364744	VTSFT5111	-	-	1 1/8 - 8	5.44	1.71	2.56	.896	4	H6
-	-	-	-	5364743	VTSFT5112	-	-	1 1/8 - 12	5.44	1.71	2.56	.896	4	H5
-	-	-	-	5364746	VTSFT5113	5364745	VTSFT5113	1 1/4 - 7	5.75	1.71	2.56	1.021	4	H6
-	-	-	-	5364747	VTSFT5114	-	-	1 1/4 - 12	5.75	1.71	2.56	1.021	4	H5
-	-	-	-	5364748	VTSFT5115	-	-	1 1/4 - 8	5.75	1.71	2.56	1.021	4	H6
-	-	-	-	5364749	VTSFT5116	-	-	1 3/8 - 6	6.06	2.00	3.00	1.108	5	H6
-	-	-	-	5364750	VTSFT5117	-	-	1 3/8 - 12	6.06	2.00	3.00	1.108	5	H5
-	-	-	-	5364751	VTSFT5118	-	-	1 3/8 - 8	6.06	2.00	3.00	1.108	5	H6
-	-	-	-	5364752	VTSFT5119	-	-	1 1/2 - 6	6.38	2.00	3.00	1.233	5	H6
-	-	-	-	5364754	VTSFT5120	-	-	1 1/2 - 8	6.38	2.00	3.00	1.233	5	H6
-	-	-	-	5364753	VTSFT5121	-	-	1 1/2 - 12	6.38	2.00	3.00	1.233	5	H5
-	-	-	-	5364755	VTSFT5122	-	-	1 3/4 - 5	7.00	2.40	3.19	1.429	5	H7
-	-	-	-	-	-	5364756	VTSFT5123	2 - 4 1/2	7.63	2.67	3.56	1.643	5	H7

NOTE: Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.
VariTap for 3B class of fit is suitable for UNJ aerospace internal threading applications.

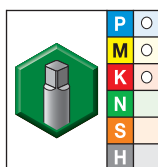
• WP49EG oxide



Shank Tolerance

D inch	tolerance
.141-.635	+0, -.0015
>.635-1.51	+0, -.0020
>1.51-2.01	+0, -.0030

■ VT-SFT • Form E Bottoming Chamfer • Machine Screw and Fractional • ANSI



● first choice
○ alternate choice

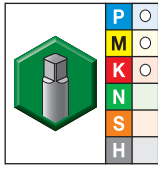
grade WP49EG
Oxide

order #	catalog #	D1 TPI	inch dimensions				number of flutes	pitch diameter limit
			L	L3	L2	D		
5390145	VTSFT5130	4 - 40	1.88	.51	.69	.141	2	H2
5390146	VTSFT5131	4 - 40	1.88	.51	.69	.141	2	H3
5390147	VTSFT5132	4 - 40	1.88	.51	.69	.141	2	H5
5390148	VTSFT5133	5 - 40	1.94	.58	.75	.141	2	H2
5390149	VTSFT5134	6 - 32	1.99	.38	.71	.141	2	H2
5390220	VTSFT5135	6 - 32	1.99	.38	.71	.141	2	H3
5390221	VTSFT5136	6 - 32	1.99	.38	.71	.141	2	H5
5390222	VTSFT5137	6 - 40	1.99	.37	.71	.141	2	H2
5390223	VTSFT5138	6 - 40	1.99	.37	.71	.141	2	H3
5390224	VTSFT5139	8 - 32	2.12	.38	.76	.168	3	H2
5390225	VTSFT5140	8 - 32	2.12	.38	.76	.168	3	H3
5390226	VTSFT5141	8 - 32	2.12	.38	.76	.168	3	H5
5390227	VTSFT5142	10 - 24	2.37	.50	.91	.194	3	H3
5390228	VTSFT5143	10 - 24	2.37	.50	.91	.194	3	H5
5390229	VTSFT5144	10 - 32	2.36	.49	.91	.194	3	H3
5390230	VTSFT5145	10 - 32	2.36	.49	.91	.194	3	H5
5390231	VTSFT5146	1/4 - 20	2.50	.63	1.00	.255	3	H3
5390232	VTSFT5147	1/4 - 20	2.50	.63	1.00	.255	3	H5
5390233	VTSFT5148	1/4 - 28	2.49	.62	1.00	.255	3	H3
5390234	VTSFT5149	1/4 - 28	2.49	.62	1.00	.255	3	H5
5390235	VTSFT5150	5/16 - 18	2.72	.69	1.13	.318	3	H3
5390236	VTSFT5151	5/16 - 18	2.72	.69	1.13	.318	3	H5
5390237	VTSFT5152	5/16 - 24	2.71	.68	1.13	.318	3	H3
5390238	VTSFT5153	5/16 - 24	2.71	.68	1.12	.318	3	H5

(continued)

Multipurpose Taps

(VT-SFT • Form E Bottoming Chamfer • Machine Screw and Fractional • ANSI — continued)



● first choice
○ alternate choice

grade WP49EG Oxide		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	L2	D		
5390239	VTSFT5154	3/8 - 16	2.94	.75	1.27	.381	3	H3
5390240	VTSFT5155	3/8 - 16	2.94	.75	1.27	.381	3	H5
5390241	VTSFT5156	3/8 - 24	2.92	.74	1.25	.381	3	H3
5390242	VTSFT5157	3/8 - 24	2.92	.74	1.25	.381	3	H4
5390243	VTSFT5158	3/8 - 24	2.92	.74	1.25	.381	3	H5
5390244	VTSFT5159	7/16 - 14	3.16	.88	1.49	.323	3	H3
5390245	VTSFT5160	7/16 - 14	3.16	.88	1.49	.323	3	H5
5390246	VTSFT5161	7/16 - 20	3.16	.88	1.49	.323	3	H3
5390247	VTSFT5162	7/16 - 20	3.16	.88	1.49	.323	3	H5
5390248	VTSFT5163	1/2 - 13	3.38	.94	1.74	.367	3	H3
5390249	VTSFT5164	1/2 - 13	3.38	.94	1.74	.367	3	H5
5390260	VTSFT5165	1/2 - 20	3.38	.94	1.74	.367	3	H3
5390261	VTSFT5166	9/16 - 12	3.59	1.00	1.74	.429	3	H3
5390262	VTSFT5167	9/16 - 18	3.59	1.00	1.74	.429	3	H3
5390263	VTSFT5168	5/8 - 11	3.81	1.09	1.89	.480	3	H3
5390264	VTSFT5169	5/8 - 11	3.81	1.09	1.89	.480	3	H5
5390265	VTSFT5170	5/8 - 18	3.81	1.09	1.89	.480	3	H3
5390266	VTSFT5171	5/8 - 18	3.81	1.09	1.89	.480	3	H5
5390267	VTSFT5172	3/4 - 10	4.25	1.22	2.08	.590	4	H3
5390268	VTSFT5173	3/4 - 16	4.25	1.22	2.08	.590	4	H3

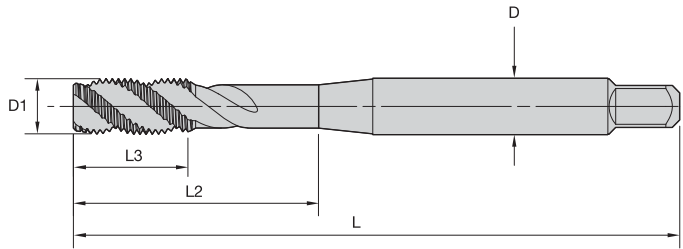
NOTE: Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit. VariTap for 3B class of fit is suitable for UNJ aerospace internal threading applications.

Multipurpose Taps

VariTap™ Spiral-Flute HSS-E Taps • Blind Holes

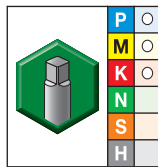
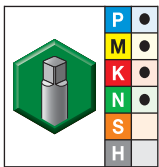


- WP42EG TiCN
- WP49EG oxide



Shank Tolerance	
D inch	tolerance
0.141-0.635	+0, -.0015
>0.635-1.51	+0, -.0020
>1.51-2.01	+0, -.0030

■ VT-SFT • Form C Semi-Bottoming Chamfer • Machine Screw and Fractional • DIN Length ANSI Shank

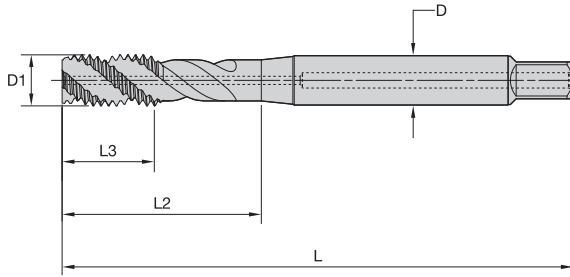


- first choice
- alternate choice

grade WP42EG TiCN		grade WP49EG Oxide		inch dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D			
5436673	VTSFT9008	5436672	VTSFT9008	4 - 40	2.20	.31	.71	.141	2	DIN-ANSI	2B
5436675	VTSFT9009	5436674	VTSFT9009	6 - 32	2.20	.35	.79	.141	2	DIN-ANSI	2B
5436677	VTSFT9010	5436676	VTSFT9010	8 - 32	2.48	.43	.83	.168	3	DIN-ANSI	2B
5436679	VTSFT9011	5436678	VTSFT9011	10 - 24	2.76	.47	.99	.194	3	DIN-ANSI	2B
5436701	VTSFT9012	5436700	VTSFT9012	10 - 32	2.75	.47	.98	.194	3	DIN-ANSI	2B
5436703	VTSFT9013	5436702	VTSFT9013	1/4 - 20	3.15	.59	1.18	.255	3	DIN-ANSI	2B
5436705	VTSFT9014	5436704	VTSFT9014	1/4 - 28	3.14	.58	1.17	.255	3	DIN-ANSI	2B
5436707	VTSFT9015	5436706	VTSFT9015	5/16 - 18	3.54	.59	1.38	.318	3	DIN-ANSI	2B
5436709	VTSFT9016	5436708	VTSFT9016	5/16 - 24	3.53	.58	1.37	.318	3	DIN-ANSI	2B
5436721	VTSFT9017	5436720	VTSFT9017	3/8 - 16	3.94	.75	1.54	.381	3	DIN-ANSI	2B
5436723	VTSFT9018	5436722	VTSFT9018	3/8 - 24	3.92	.73	1.52	.381	3	DIN-ANSI	2B
5436725	VTSFT9019	5436724	VTSFT9019	7/16 - 14	3.94	.71	1.61	.323	3	DIN-ANSI	2B
5436727	VTSFT9020	5436726	VTSFT9020	7/16 - 20	3.94	.71	1.61	.323	3	DIN-ANSI	2B
5436729	VTSFT9021	5436728	VTSFT9021	1/2 - 13	4.33	.91	1.85	.367	3	DIN-ANSI	2B
5436731	VTSFT9022	5436730	VTSFT9022	1/2 - 20	4.33	.91	1.85	.367	3	DIN-ANSI	2B
5436733	VTSFT9023	5436732	VTSFT9023	5/8 - 11	4.33	.94	2.01	.480	3	DIN-ANSI	2B
5436735	VTSFT9024	5436734	VTSFT9024	5/8 - 18	4.33	.94	2.01	.480	3	DIN-ANSI	2B
5436737	VTSFT9025	5436736	VTSFT9025	3/4 - 10	4.92	1.18	2.52	.590	3	DIN-ANSI	2B
5436739	VTSFT9026	5436738	VTSFT9026	3/4 - 16	4.92	1.18	2.52	.590	3	DIN-ANSI	2B

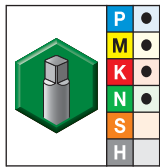
Multipurpose Taps

• WP42EG TiCN



Shank Tolerance	
D inch	tolerance
0.141-0.635	+0, -.0015
>0.635-1.51	+0, -.0020
>1.51-2.01	+0, -.0030

■ VT-SFT • Form C Semi-Bottoming Chamfer • Through Coolant • Fractional • DIN Length ANSI Shank

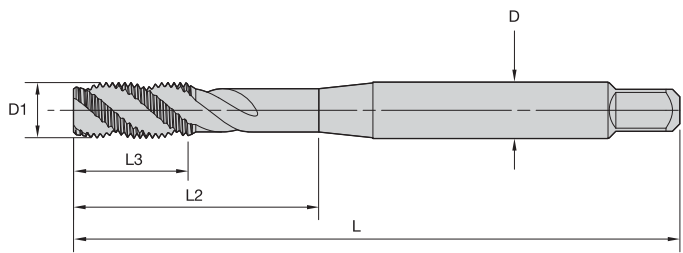


● first choice
○ alternate choice

grade WP42EG TiCN		inch dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	D1 TPI	L	L3	L2	D			
5436357	VTSFT9762	1/4 - 20	3.15	.59	1.18	.255	3	DIN-ANSI	2B
5436358	VTSFT9763	1/4 - 28	3.15	.59	1.18	.255	3	DIN-ANSI	2B
5436359	VTSFT9764	5/16 - 18	3.54	.59	1.38	.318	3	DIN-ANSI	2B
5436460	VTSFT9765	5/16 - 24	3.54	.59	1.38	.318	3	DIN-ANSI	2B
5436461	VTSFT9766	3/8 - 16	3.94	.75	1.54	.381	3	DIN-ANSI	2B
5436462	VTSFT9767	3/8 - 24	3.94	.75	1.54	.381	3	DIN-ANSI	2B
5436463	VTSFT9768	7/16 - 14	3.94	.71	1.61	.323	3	DIN-ANSI	2B
5436464	VTSFT9769	7/16 - 20	3.94	.71	1.61	.323	3	DIN-ANSI	2B
5436465	VTSFT9770	1/2 - 13	3.94	.91	1.85	.367	3	DIN-ANSI	2B
5436466	VTSFT9771	1/2 - 20	4.33	.91	1.85	.367	3	DIN-ANSI	2B
5436467	VTSFT9772	9/16 - 18	4.33	.98	2.09	.429	3	DIN-ANSI	2B
5436468	VTSFT9773	5/8 - 11	4.33	.94	2.01	.480	3	DIN-ANSI	2B
5436469	VTSFT9774	5/8 - 18	4.33	.94	2.01	.480	3	DIN-ANSI	2B
5436470	VTSFT9775	3/4 - 10	4.92	1.18	2.52	.590	4	DIN-ANSI	2B
5436471	VTSFT9776	3/4 - 16	4.92	1.18	2.52	.590	4	DIN-ANSI	2B
5436472	VTSFT9777	7/8 - 9	5.51	1.34	2.80	.697	4	DIN-ANSI	2B
5436473	VTSFT9778	7/8 - 14	5.51	1.34	2.80	.697	4	DIN-ANSI	2B
5436474	VTSFT9779	1 - 8	6.30	1.50	3.19	.800	4	DIN-ANSI	2B

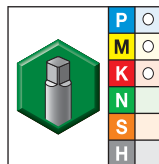
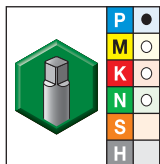
Multipurpose Taps

- WU41EG TiN
- WP49EG oxide



Shank Tolerance	
D mm	tolerance h9
1-3	+0, -0,025
>3-6	+0, -0,030
>6-10	+0, -0,036
>10-18	+0, -0,043
>18-30	+0, -0,052

■ VT-SFT • Form C Semi-Bottoming Chamfer • Machine Screw and Fractional • DIN 371 and 376



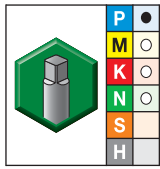
- first choice
- alternate choice

grade WU41EG TiN		grade WP49EG Oxide		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D			
5472587	VTSFT6005	5387487	VTSFT6005	4 - 40	56	8	18	3,5	2	DIN 371	2B
5472589	VTSFT6007	5387489	VTSFT6007	5 - 40	56	9	20	4,0	2	DIN 371	2B
5472600	VTSFT6008	5387640	VTSFT6008	6 - 32	56	9	20	4,0	2	DIN 371	2B
5472602	VTSFT6010	5387642	VTSFT6010	6 - 40	56	9	20	4,0	2	DIN 371	2B
5472603	VTSFT6011	5387643	VTSFT6011	8 - 32	63	11	21	4,5	3	DIN 371	2B
5472605	VTSFT6013	5387645	VTSFT6013	10 - 24	70	12	25	6,0	3	DIN 371	2B
5472606	VTSFT6014	5387646	VTSFT6014	10 - 32	70	12	25	6,0	3	DIN 371	2B
5472608	VTSFT6016	5387648	VTSFT6016	1/4 - 20	80	15	30	7,0	3	DIN 371	2B
5472609	VTSFT6017	5387649	VTSFT6017	1/4 - 28	80	15	30	7,0	3	DIN 371	2B
5472611	VTSFT6019	5387651	VTSFT6019	5/16 - 18	90	15	35	8,0	3	DIN 371	2B
5472612	VTSFT6020	5387652	VTSFT6020	5/16 - 24	90	15	35	8,0	3	DIN 371	2B
5472614	VTSFT6022	5387654	VTSFT6022	3/8 - 16	100	19	39	10,0	3	DIN 371	2B
5472615	VTSFT6023	5387655	VTSFT6023	3/8 - 24	100	19	39	10,0	3	DIN 371	2B
5472617	VTSFT6025	5387657	VTSFT6025	7/16 - 14	100	18	41	8,0	3	DIN 376	2B
5472618	VTSFT6026	5387658	VTSFT6026	7/16 - 20	100	18	41	8,0	3	DIN 376	2B
5472620	VTSFT6028	5387670	VTSFT6028	1/2 - 13	110	23	40	9,0	3	DIN 376	2B
5472621	VTSFT6029	5387671	VTSFT6029	1/2 - 20	110	23	40	9,0	3	DIN 376	2B
5472623	VTSFT6031	5387673	VTSFT6031	9/16 - 12	110	25	32	11,0	3	DIN 376	2B
5472624	VTSFT6032	5387674	VTSFT6032	9/16 - 18	110	25	32	11,0	3	DIN 376	2B
5472625	VTSFT6033	5387675	VTSFT6033	5/8 - 11	110	24	35	12,0	3	DIN 376	2B

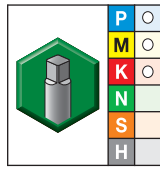
(continued)

Multipurpose Taps

(VT-SFT • Form C Semi-Bottoming Chamfer • Machine Screw and Fractional • DIN 371 and 376 — continued)



grade WU41EG
TiN

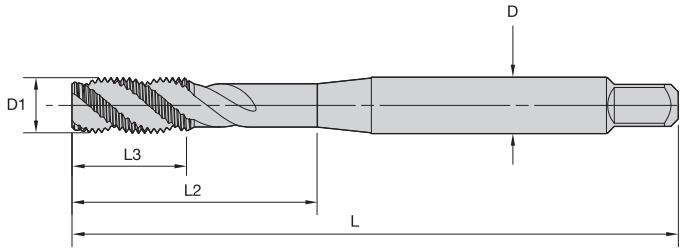


grade WP49EG
Oxide

- first choice
- alternate choice

order #	catalog #	order #	catalog #	metric dimensions					number of flutes	dimension standard	class of fit
				D1 size	L	L3	L2	D			
5472626	VTSFT6034	5387676	VTSFT6034	5/8 - 18	110	24	35	12,0	3	DIN 376	2B
5472627	VTSFT6035	5387677	VTSFT6035	3/4 - 10	140	30	46	16,0	4	DIN 376	2B
5472628	VTSFT6036	5387678	VTSFT6036	3/4 - 16	140	30	46	16,0	4	DIN 376	2B
5472629	VTSFT6037	5387679	VTSFT6037	7/8 - 9	140	34	35	18,0	4	DIN 376	2B
5472630	VTSFT6038	5387700	VTSFT6038	7/8 - 14	140	34	35	18,0	4	DIN 376	2B
5472631	VTSFT6039	5387701	VTSFT6039	1 - 8	160	38	41	18,0	4	DIN 376	2B
5472632	VTSFT6040	5387702	VTSFT6040	1 - 12	160	38	41	18,0	4	DIN 376	2B

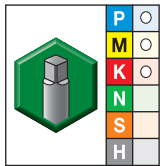
- WP49EG oxide



Shank Tolerance

D mm	tolerance h9
1-3	+0, -0,025
>3-6	+0, -0,030
>6-10	+0, -0,036
>10-18	+0, -0,043
>18-30	+0, -0,052

■ VT-SFT • Form C Semi-Bottoming Chamfer • UNJC/UNJF • Inch DIN 371 and 376

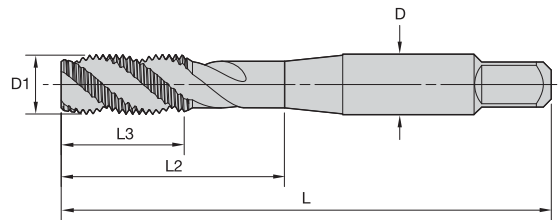


- first choice
- alternate choice

grade WP49EG Oxide		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	D1 size	L	L3	L2	D			
5387488	VTSFT6006	4 - 40	56	8	18	3,5	2	DIN 371	3B
5387641	VTSFT6009	6 - 32	56	9	20	4,0	2	DIN 371	3B
5387644	VTSFT6012	8 - 32	63	11	21	4,5	3	DIN 371	3B
5387647	VTSFT6015	10 - 32	70	12	25	6,0	3	DIN 371	3B
5387650	VTSFT6018	1/4 - 28	80	15	30	7,0	3	DIN 371	3B
5387653	VTSFT6021	5/16 - 24	90	15	35	8,0	3	DIN 371	3B
5387656	VTSFT6024	3/8 - 24	100	19	39	10,0	3	DIN 371	3B
5387659	VTSFT6027	7/16 - 20	100	18	41	8,0	3	DIN 376	3B
5387672	VTSFT6030	1/2 - 20	110	23	40	9,0	3	DIN 376	3B

Multipurpose Taps

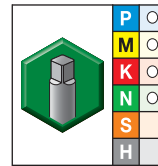
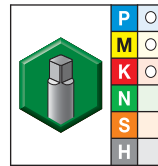
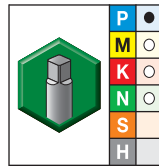
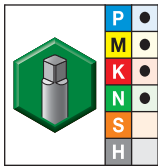
- WP42EG TiCN
- WU41EG TiN
- WP49EG oxide
- WU40EG bright



Shank Tolerance

D inch	tolerance
.141-.635	+0, -.0015
>.635-1.51	+0, -.0020
>1.51-2.01	+0, -.0030

■ VT-SFT • Form C Semi-Bottoming Chamfer • Metric • ANSI

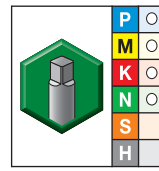
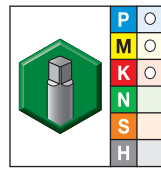
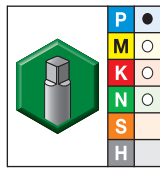
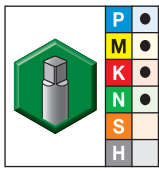


- first choice
- alternate choice

grade WP42EG TiCN		grade WU41EG TiN		grade WP49EG Oxide		grade WU40EG Bright		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
5357033	VTSFT5505	5357034	VTSFT5505	5357031	VTSFT5505	5357035	VTSFT5505	M3 X 0,5	1.94	.58	.75	.141	2	D3
5357037	VTSFT5506	-	-	5357036	VTSFT5506	-	-	M3 X 0,5	1.94	.58	.75	.141	2	D11
5357039	VTSFT5507	5357050	VTSFT5507	5357038	VTSFT5507	5357051	VTSFT5507	M3,5 X 0,6	1.99	.38	.71	.141	2	D4
5357053	VTSFT5508	-	-	5357052	VTSFT5508	-	-	M3,5 X 0,6	1.99	.38	.71	.141	2	D11
5357055	VTSFT5509	5357056	VTSFT5509	5357054	VTSFT5509	5357057	VTSFT5509	M4 X 0,7	2.12	.38	.76	.168	3	D4
5357059	VTSFT5510	-	-	5357058	VTSFT5510	-	-	M4 X 0,7	2.12	.38	.76	.168	3	D11
5357061	VTSFT5511	5357062	VTSFT5511	5357060	VTSFT5511	5357063	VTSFT5511	M5 X 0,8	2.37	.50	.91	.194	3	D4
5357066	VTSFT5512	-	-	5357064	VTSFT5512	-	-	M5 X 0,8	2.37	.50	.91	.194	3	D11
5357068	VTSFT5513	5357069	VTSFT5513	5357067	VTSFT5513	5357080	VTSFT5513	M6 X 1	2.50	.63	1.01	.255	3	D5
5357083	VTSFT5514	-	-	5357082	VTSFT5514	-	-	M6 X 1	2.50	.63	1.01	.255	3	D11
5357085	VTSFT5515	5357086	VTSFT5515	5357084	VTSFT5515	5357087	VTSFT5515	M7 X 1	2.73	.69	1.15	.318	3	D5
5357089	VTSFT5516	-	-	5357088	VTSFT5516	-	-	M7 X 1	2.73	.69	1.15	.318	3	D11
5357101	VTSFT5517	5357102	VTSFT5517	5357100	VTSFT5517	5357103	VTSFT5517	M8 X 1	2.71	.69	1.12	.318	3	D5
5357105	VTSFT5518	-	-	5357104	VTSFT5518	-	-	M8 X 1	2.71	.69	1.12	.318	3	D11
5357107	VTSFT5519	5357108	VTSFT5519	5357106	VTSFT5519	5357120	VTSFT5519	M8 X 1,25	2.71	.69	1.12	.318	3	D5
5357123	VTSFT5520	-	-	5357121	VTSFT5520	-	-	M8 X 1,25	2.71	.69	1.12	.318	3	D11
5365567	VTSFT5521	-	-	5365566	VTSFT5521	5365568	VTSFT5521	M10 X 1	2.91	.74	1.24	.381	3	D5
5365590	VTSFT5522	-	-	5365569	VTSFT5522	-	-	M10 X 1	2.91	.74	1.24	.381	3	D11
5365592	VTSFT5523	5365593	VTSFT5523	5365591	VTSFT5523	5365594	VTSFT5523	M10 X 1,25	2.92	.74	1.25	.381	3	D5
5365596	VTSFT5524	-	-	5365595	VTSFT5524	-	-	M10 X 1,25	2.92	.74	1.25	.381	3	D11
5365598	VTSFT5525	5365599	VTSFT5525	5365597	VTSFT5525	5365610	VTSFT5525	M10 X 1,5	2.92	.75	1.26	.381	3	D6
5365612	VTSFT5526	-	-	5365611	VTSFT5526	-	-	M10 X 1,5	2.92	.75	1.25	.381	3	D11
5365614	VTSFT5527	5365615	VTSFT5527	5365613	VTSFT5527	5365616	VTSFT5527	M12 X 1,25	3.38	.94	1.74	.367	3	D5
5365618	VTSFT5528	-	-	5365617	VTSFT5528	-	-	M12 X 1,25	3.38	.94	1.74	.367	3	D11

(continued)

(VT-SFT • Form C Semi-Bottoming Chamfer • Metric • ANSI – continued)

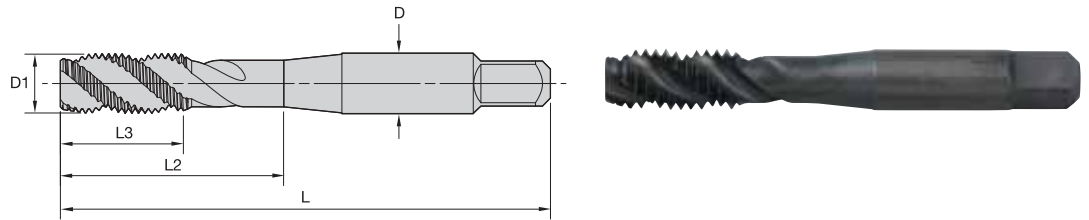


● first choice
○ alternate choice

grade WP42EG TiCN		grade WU41EG TiN		grade WP49EG Oxide		grade WU40EG Bright		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
5365621	VTSFT5529	-	-	5365619	VTSFT5529	5365622	VTSFT5529	M12 X 1,5	3.38	.94	1.74	.367	3	D6
5365624	VTSFT5530	-	-	5365623	VTSFT5530	-	-	M12 X 1,5	3.38	.94	1.74	.367	3	D11
5365626	VTSFT5531	5365627	VTSFT5531	5365625	VTSFT5531	5365628	VTSFT5531	M12 X 1,75	3.38	.94	1.74	.367	3	D6
5365630	VTSFT5532	-	-	5365629	VTSFT5532	-	-	M12 X 1,75	3.38	.94	1.74	.367	3	D11
5365632	VTSFT5533	-	-	5365631	VTSFT5533	5365633	VTSFT5533	M14 X 1,5	3.59	1.00	1.74	.429	3	D6
-	-	-	-	-	-	5365634	VTSFT5534	M14 X 1,5	3.59	1.00	1.74	.429	3	D7
5365636	VTSFT5535	-	-	5365635	VTSFT5535	-	-	M14 X 2	3.59	1.00	1.74	.429	3	D7
5365638	VTSFT5536	-	-	5365637	VTSFT5536	5365639	VTSFT5536	M16 X 1,5	3.81	1.09	1.89	.480	3	D6
5365641	VTSFT5537	-	-	5365640	VTSFT5537	5365642	VTSFT5537	M16 X 2	3.81	1.09	1.89	.480	3	D7
5365644	VTSFT5538	-	-	5365643	VTSFT5538	5365645	VTSFT5538	M18 X 1,5	4.03	1.09	1.89	.542	4	D6
5365647	VTSFT5539	-	-	5365646	VTSFT5539	5365648	VTSFT5539	M18 X 2,5	4.03	1.09	1.89	.542	4	D7
5365650	VTSFT5540	-	-	5365649	VTSFT5540	-	-	M20 X 1,5	4.47	1.22	2.08	.652	4	D6
5365652	VTSFT5541	-	-	5365651	VTSFT5541	-	-	M20 X 2,5	4.47	1.22	2.08	.652	4	D7
-	-	-	-	5365653	VTSFT5542	-	-	M22 X 1,5	4.69	1.34	2.30	.697	4	D6
-	-	-	-	5365654	VTSFT5543	-	-	M22 X 2,5	4.69	1.34	2.30	.697	4	D7
-	-	-	-	5365655	VTSFT5544	-	-	M24 X 1,5	4.91	1.34	2.30	.760	4	D6
-	-	-	-	5365656	VTSFT5545	-	-	M24 X 3	4.91	1.34	2.30	.760	4	D8
-	-	-	-	5365657	VTSFT5546	-	-	M27 X 1,5	5.13	1.50	2.50	.896	4	D7
-	-	-	-	5365658	VTSFT5547	-	-	M27 X 3	5.13	1.50	2.50	.896	4	D8
-	-	-	-	5365659	VTSFT5548	-	-	M30 X 1,5	5.44	1.71	2.56	1.021	4	D6
-	-	-	-	5365660	VTSFT5549	-	-	M30 X 3,5	5.44	1.71	2.56	1.021	4	D9

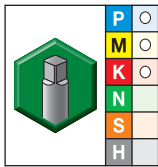
NOTE: Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 6H class of fit. VariTap for 6H class of fit is suitable for MJ aerospace internal threading applications.

• WP49EG oxide



Shank Tolerance	
D inch	tolerance
.141-.635	+0, -.0015
>.635-1.51	+0, -.0020
>1.51-2.01	+0, -.0030

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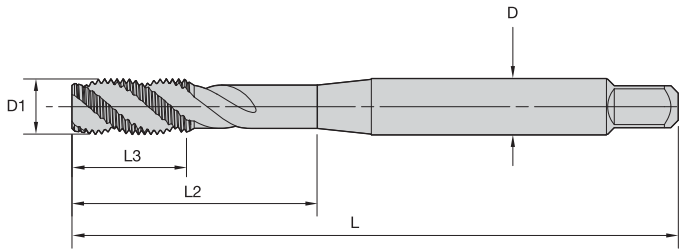
● first choice
○ alternate choice

grade WP49EG Oxide		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	D1 size	L	L3	L2	D		
5400155	VTSFT5550	M3 X 0,5	1.94	.58	.75	.141	2	D3
5400156	VTSFT5551	M3,5 X 0,6	2.00	.38	.71	.141	2	D4
5400157	VTSFT5552	M4 X 0,7	2.13	.38	.76	.168	3	D4
5400158	VTSFT5553	M5 X 0,8	2.38	.50	.91	.194	3	D4
5400159	VTSFT5554	M6 X 1	2.50	.63	1.00	.255	3	D5
5400230	VTSFT5555	M7 X 1	2.72	.69	1.15	.318	3	D5
5400232	VTSFT5557	M8 X 1	2.72	.69	1.12	.318	3	D5
5400231	VTSFT5556	M8 X 1,25	2.72	.69	1.12	.318	3	D5
5400234	VTSFT5559	M10 X 1,25	2.94	.75	1.26	.381	3	D5
5400233	VTSFT5558	M10 X 1,5	2.94	.75	1.26	.381	3	D6
5400237	VTSFT5562	M12 X 1,25	3.38	.94	1.74	.367	3	D5
5400236	VTSFT5561	M12 X 1,5	3.38	.94	1.74	.367	3	D6
5400235	VTSFT5560	M12 X 1,75	3.38	.94	1.74	.367	3	D6
5400239	VTSFT5564	M14 X 1,5	3.59	1.00	1.74	.429	3	D6
5400238	VTSFT5563	M14 X 2	3.59	1.00	1.74	.429	3	D7
5400241	VTSFT5566	M16 X 1,5	3.81	1.09	1.89	.480	3	D6
5400240	VTSFT5565	M16 X 2	3.81	1.09	1.89	.480	3	D7
5400242	VTSFT5567	M18 X 1,5	4.03	1.09	1.89	.542	4	D6

NOTE: Refer to tables on pages W231-W232 for the recommended pitch diameter limit for 6H class of fit. VariTap for 6H class of fit is suitable for MJ aerospace internal threading applications.

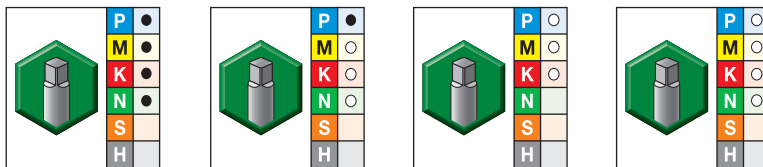
Multipurpose Taps

- WP42EG TiCN
- WU41EG TiN
- WP49EG oxide
- WU40EG bright



Shank Tolerance	
D mm	tolerance h9
1-3	+0, -0,025
>3-6	+0, -0,030
>6-10	+0, -0,036
>10-18	+0, -0,043
>18-30	+0, -0,052

■ VT-SFT • Form C Semi-Bottoming Chamfer • Metric DIN 371, 374, and 376

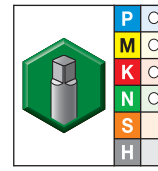
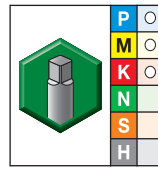
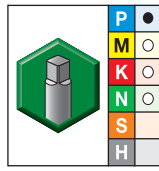
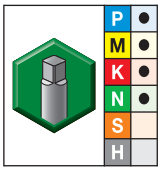


- first choice
- alternate choice

grade WP42EG TiCN		grade WU41EG TiN		grade WP49EG Oxide		grade WU40EG Bright		metric dimensions				number of flutes	dimension standard	class of fit	
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	L2				D
5368703	VTSFT6506	5368702	VTSFT6506	5368704	VTSFT6506	5368705	VTSFT6506	M2 X 0,4	45	7	13	2,8	2	DIN 371	6H
-	-	-	-	5368706	VTSFT6507	-	-	M2 X 0,4	45	7	13	2,8	2	DIN 371	6G
-	-	-	-	5368707	VTSFT6508	-	-	M2,2 X 0,45	45	7	13	2,8	2	DIN 371	6H
-	-	5368708	VTSFT6509	5368709	VTSFT6509	5368720	VTSFT6509	M2,5 X 0,45	50	7	15	2,8	2	DIN 371	6H
-	-	-	-	5368721	VTSFT6510	-	-	M2,5 X 0,45	50	7	15	2,8	2	DIN 371	6G
-	-	-	-	5402138	VTSFT6545	-	-	M3 X 0,35	56	8	-	2,2	2	DIN 374	6H
-	-	-	-	5368726	VTSFT6512	-	-	M3 X 0,5	56	8	18	3,5	2	DIN 371	6G
-	-	-	-	5402227	VTSFT6525	5402228	VTSFT6525	M3 X 0,5	56	8	-	2,2	2	DIN 376	6H
5368723	VTSFT6511	5368722	VTSFT6511	5368724	VTSFT6511	5368725	VTSFT6511	M3 X 0,5	56	8	18	3,5	2	DIN 371	6H
-	-	5368727	VTSFT6513	5368728	VTSFT6513	5368729	VTSFT6513	M3,5 X 0,6	56	9	20	4,0	2	DIN 371	6H
-	-	-	-	5402139	VTSFT6546	5402180	VTSFT6546	M4 X 0,5	63	10	21	2,8	3	DIN 374	6H
-	-	-	-	5368734	VTSFT6515	-	-	M4 X 0,7	63	11	21	4,5	3	DIN 371	6G
-	-	-	-	5402229	VTSFT6526	5402250	VTSFT6526	M4 X 0,7	63	10	21	2,8	3	DIN 376	6H
5368731	VTSFT6514	5368730	VTSFT6514	5368732	VTSFT6514	5368733	VTSFT6514	M4 X 0,7	63	11	21	4,5	3	DIN 371	6H
-	-	-	-	5402181	VTSFT6547	5402182	VTSFT6547	M5 X 0,5	70	12	25	3,5	3	DIN 374	6H
-	-	-	-	5368739	VTSFT6517	-	-	M5 X 0,8	70	12	25	6,0	3	DIN 371	6G
-	-	-	-	5402251	VTSFT6527	5402252	VTSFT6527	M5 X 0,8	70	12	25	3,5	3	DIN 376	6H
5368736	VTSFT6516	5368735	VTSFT6516	5368737	VTSFT6516	5368738	VTSFT6516	M5 X 0,8	70	12	25	6,0	3	DIN 371	6H
-	-	-	-	5402183	VTSFT6548	-	-	M6 X 0,5	80	12	30	4,5	3	DIN 374	6H
-	-	-	-	5402185	VTSFT6549	5402184	VTSFT6549	M6 X 0,75	80	12	30	4,5	3	DIN 374	6H
5368741	VTSFT6518	5368740	VTSFT6518	5368742	VTSFT6518	5368743	VTSFT6518	M6 X 1	80	12	30	6,0	3	DIN 371	6H
-	-	-	-	5402253	VTSFT6528	5402254	VTSFT6528	M6 X 1	80	12	30	4,5	3	DIN 376	6H
-	-	-	-	5368744	VTSFT6519	-	-	M6 X 1	80	12	30	6,0	3	DIN 371	6G
-	-	-	-	5368745	VTSFT6520	5368746	VTSFT6520	M7 X 1	80	12	30	7,0	3	DIN 371	6H

(continued)

(VT-SFT • Form C Semi-Bottoming Chamfer • Metric DIN 371, 374, and 376 — continued)



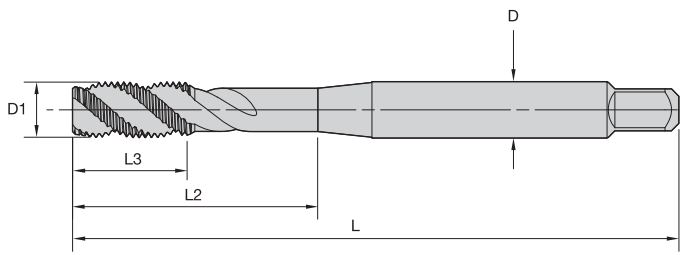
● first choice
○ alternate choice

grade WP42EG TiCN		grade WU41EG TiN		grade WP49EG Oxide		grade WU40EG Bright		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D			
-	-	-	-	5402186	VTSFT6550	5402187	VTSFT6550	M8 X 0,75	80	12	30	6,0	3	DIN 374	6H
5402188	VTSFT6551	-	-	5402189	VTSFT6551	5402190	VTSFT6551	M8 X 1	90	15	35	6,0	3	DIN 374	6H
-	-	-	-	5368752	VTSFT6522	-	-	M8 X 1,25	90	15	35	8,0	3	DIN 371	6G
-	-	-	-	5402255	VTSFT6529	5402256	VTSFT6529	M8 X 1,25	90	15	35	6,0	3	DIN 376	6H
5368749	VTSFT6521	5368748	VTSFT6521	5368750	VTSFT6521	5368751	VTSFT6521	M8 X 1,25	90	15	35	8,0	3	DIN 371	6H
-	-	-	-	-	-	5402191	VTSFT6552	M10 X 0,75	90	15	35	7,0	3	DIN 374	6H
-	-	-	-	5402192	VTSFT6553	5402193	VTSFT6553	M10 X 1	90	15	35	7,0	3	DIN 374	6H
5402194	VTSFT6554	-	-	5402195	VTSFT6554	5402196	VTSFT6554	M10 X 1,25	100	18	39	7,0	3	DIN 374	6H
5368754	VTSFT6523	5368753	VTSFT6523	5368755	VTSFT6523	5368756	VTSFT6523	M10 X 1,5	100	18	39	10,0	3	DIN 371	6H
-	-	-	-	5368757	VTSFT6524	-	-	M10 X 1,5	100	18	39	10,0	3	DIN 371	6G
-	-	-	-	5402257	VTSFT6530	5402258	VTSFT6530	M10 X 1,5	100	18	39	7,0	3	DIN 376	6H
-	-	-	-	5402197	VTSFT6555	5402198	VTSFT6555	M12 X 1	100	21	39	9,0	3	DIN 374	6H
-	-	-	-	5402199	VTSFT6556	5402200	VTSFT6556	M12 X 1,25	100	21	39	9,0	3	DIN 374	6H
5402201	VTSFT6557	-	-	5402202	VTSFT6557	5402203	VTSFT6557	M12 X 1,5	100	21	39	9,0	3	DIN 374	6H
-	-	-	-	5402263	VTSFT6532	-	-	M12 X 1,75	110	21	44	9,0	3	DIN 376	6G
5402260	VTSFT6531	5402259	VTSFT6531	5402261	VTSFT6531	5402262	VTSFT6531	M12 X 1,75	110	21	44	9,0	3	DIN 376	6H
-	-	-	-	-	-	5402204	VTSFT6558	M14 X 1	100	21	47	11,0	3	DIN 374	6H
-	-	-	-	-	-	5402205	VTSFT6559	M14 X 1,25	100	21	47	11,0	3	DIN 374	6H
5402206	VTSFT6560	-	-	5402207	VTSFT6560	5402208	VTSFT6560	M14 X 1,5	100	21	47	11,0	3	DIN 374	6H
-	-	-	-	5402268	VTSFT6534	-	-	M14 X 2	110	24	52	11,0	3	DIN 376	6G
5402265	VTSFT6533	5402264	VTSFT6533	5402266	VTSFT6533	5402267	VTSFT6533	M14 X 2	110	24	52	11,0	3	DIN 376	6H
-	-	-	-	-	-	5402209	VTSFT6561	M16 X 1	100	21	46	12,0	3	DIN 374	6H
-	-	-	-	5402210	VTSFT6562	5402211	VTSFT6562	M16 X 1,5	100	21	46	12,0	3	DIN 374	6H
-	-	-	-	5402272	VTSFT6536	-	-	M16 X 2	110	24	51	12,0	3	DIN 376	6G
-	-	5402269	VTSFT6535	5402270	VTSFT6535	5402271	VTSFT6535	M16 X 2	110	24	51	12,0	3	DIN 376	6H
-	-	-	-	-	-	5402212	VTSFT6563	M18 X 1	110	21	50	14,0	4	DIN 374	6H
-	-	-	-	5402214	VTSFT6564	5402213	VTSFT6564	M18 X 1,5	110	21	50	14,0	4	DIN 374	6H
-	-	-	-	-	-	5402215	VTSFT6565	M18 X 2	125	30	58	14,0	4	DIN 374	6H
-	-	5402273	VTSFT6537	5402274	VTSFT6537	5402275	VTSFT6537	M18 X 2,5	125	30	58	14,0	4	DIN 376	6H
-	-	-	-	-	-	5402216	VTSFT6566	M20 X 1	125	24	56	16,0	4	DIN 374	6H
-	-	-	-	5402217	VTSFT6567	5402218	VTSFT6567	M20 X 1,5	125	24	56	16,0	4	DIN 374	6H
-	-	-	-	-	-	5402219	VTSFT6568	M20 X 2	140	30	64	16,0	4	DIN 374	6H
-	-	5402276	VTSFT6538	5402277	VTSFT6538	5402278	VTSFT6538	M20 X 2,5	140	30	64	16,0	4	DIN 376	6H
-	-	-	-	5402220	VTSFT6569	5402221	VTSFT6569	M22 X 1,5	125	24	62	18,0	4	DIN 374	6H
-	-	-	-	-	-	5402222	VTSFT6570	M22 X 2	140	30	70	18,0	4	DIN 374	6H
-	-	5402279	VTSFT6539	5402280	VTSFT6539	5402281	VTSFT6539	M22 X 2,5	140	30	70	18,0	4	DIN 376	6H
-	-	-	-	5402223	VTSFT6571	5402224	VTSFT6571	M24 X 1,5	140	28	67	18,0	4	DIN 374	6H
-	-	-	-	-	-	5402225	VTSFT6572	M24 X 2	140	28	67	18,0	4	DIN 374	6H
-	-	5402282	VTSFT6540	5402283	VTSFT6540	5402284	VTSFT6540	M24 X 3	160	36	77	18,0	4	DIN 376	6H
-	-	5402285	VTSFT6541	5402286	VTSFT6541	5402287	VTSFT6541	M27 X 3	160	36	82	20,0	4	DIN 376	6H
-	-	-	-	-	-	5402226	VTSFT6573	M30 X 2	150	28	80	22,0	2	DIN 374	6H
-	-	5402288	VTSFT6542	5402289	VTSFT6542	5402290	VTSFT6542	M30 X 3,5	180	42	91	22,0	4	DIN 376	6H
-	-	-	-	5402291	VTSFT6543	5402292	VTSFT6543	M33 X 3,5	180	42	100	25,0	4	DIN 376	6H
-	-	-	-	5402293	VTSFT6544	5402294	VTSFT6544	M36 X 4	200	48	110	28,0	5	DIN 376	6H

Multipurpose Taps

VariTap™ Spiral-Flute HSS-E Taps • Blind Holes

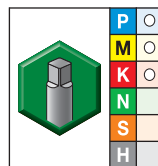
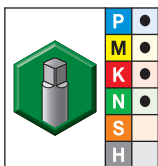
- WP42EG TiCN
- WP49EG oxide



Shank Tolerance

D mm	tolerance h9
1-3	+0, -0,025
>3-6	+0, -0,030
>6-10	+0, -0,036
>10-18	+0, -0,043
>18-30	+0, -0,052

■ VT-SFT • Form E Bottoming Chamfer • Metric DIN 371, 374, and 376

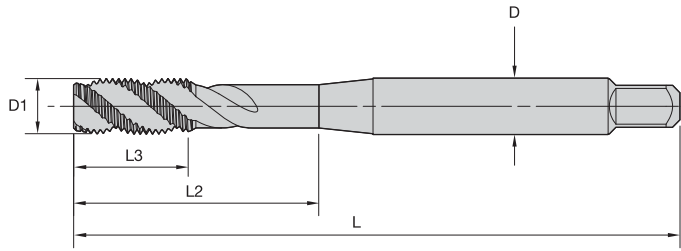


- first choice
- alternate choice

grade WP42EG TiCN		grade WP49EG Oxide		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D			
5387434	VTSFT6574	5387435	VTSFT6574	M3 X 0,5	56	8	18	3,5	2	DIN 371	6H
5387436	VTSFT6575	5387437	VTSFT6575	M4 X 0,7	63	11	21	4,5	3	DIN 371	6H
5387438	VTSFT6576	5387439	VTSFT6576	M5 X 0,8	70	12	25	6,0	3	DIN 371	6H
5387460	VTSFT6577	5387461	VTSFT6577	M6 X 1	80	12	30	6,0	3	DIN 371	6H
5387475	VTSFT6585	5387476	VTSFT6585	M8 X 1	90	15	35	6,0	3	DIN 374	6H
5387462	VTSFT6578	5387463	VTSFT6578	M8 X 1,25	90	15	35	8,0	3	DIN 371	6H
5387477	VTSFT6586	5387478	VTSFT6586	M10 X 1,25	100	18	39	7,0	3	DIN 374	6H
5387464	VTSFT6579	5387465	VTSFT6579	M10 X 1,5	100	18	39	10,0	3	DIN 371	6H
5387479	VTSFT6587	5387481	VTSFT6587	M12 X 1,5	100	21	39	9,0	3	DIN 374	6H
5387466	VTSFT6580	5387467	VTSFT6580	M12 X 1,75	110	21	44	9,0	3	DIN 376	6H
5387482	VTSFT6588	5387483	VTSFT6588	M14 X 1,5	100	21	47	11,0	3	DIN 374	6H
5387468	VTSFT6581	5387469	VTSFT6581	M14 X 2	110	24	52	11,0	3	DIN 376	6H
-		5387470	VTSFT6582	M16 X 2	110	24	51	12,0	3	DIN 376	6H
5387471	VTSFT6583	5387472	VTSFT6583	M18 X 2,5	125	30	58	14,0	4	DIN 376	6H
5387473	VTSFT6584	5387474	VTSFT6584	M20 X 2,5	140	30	64	16,0	4	DIN 376	6H

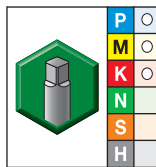
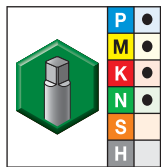
Multipurpose Taps

- WP42EG TiCN
- WP49EG oxide



Shank Tolerance	
D inch	tolerance
.141-.635	+0, -.0015
>.635-1.51	+0, -.0020
>1.51-2.01	+0, -.0030

■ VT-SFT • Form C Semi-Bottoming Chamfer • Metric • DIN Length ANSI Shank

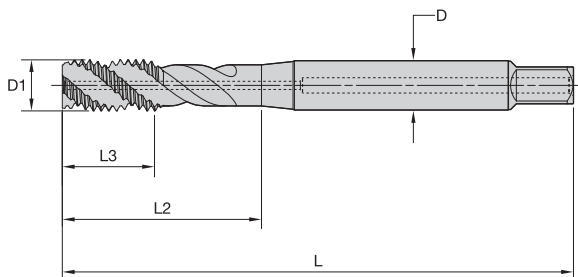


- first choice
- alternate choice

grade WP42EG TiCN		grade WP49EG Oxide		inch dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D			
5436522	VTSFT9504	5436521	VTSFT9504	M3 X 0,5	2.20	.31	.71	.141	2	DIN-ANSI	6H
5436524	VTSFT9505	5436523	VTSFT9505	M4 X 0,7	2.48	.43	.83	.168	3	DIN-ANSI	6H
5436526	VTSFT9506	5436525	VTSFT9506	M5 X 0,8	2.75	.47	.97	.194	3	DIN-ANSI	6H
5436528	VTSFT9507	5436527	VTSFT9507	M6 X 1	3.15	.47	1.18	.255	3	DIN-ANSI	6H
5436540	VTSFT9508	5436529	VTSFT9508	M8 X 1,25	3.54	.58	1.37	.318	3	DIN-ANSI	6H
5436542	VTSFT9509	5436541	VTSFT9509	M10 X 1,25	3.93	.70	1.53	.381	3	DIN-ANSI	6H
5436544	VTSFT9510	5436543	VTSFT9510	M10 X 1,5	3.94	.71	1.53	.381	3	DIN-ANSI	6H
5436546	VTSFT9511	5436545	VTSFT9511	M12 X 1,25	4.33	.83	1.73	.367	3	DIN-ANSI	6H
5436548	VTSFT9512	5436547	VTSFT9512	M12 X 1,5	4.33	.83	1.73	.367	3	DIN-ANSI	6H
5436550	VTSFT9513	5436549	VTSFT9513	M12 X 1,75	4.33	.83	1.73	.367	3	DIN-ANSI	6H
5436552	VTSFT9514	5436551	VTSFT9514	M14 X 1,5	4.33	.94	2.05	.429	3	DIN-ANSI	6H
5436554	VTSFT9515	5436553	VTSFT9515	M14 X 2	4.33	.94	2.05	.429	3	DIN-ANSI	6H
5436556	VTSFT9516	5436555	VTSFT9516	M16 X 1,5	4.33	.94	2.01	.480	3	DIN-ANSI	6H
5436558	VTSFT9517	5436557	VTSFT9517	M16 X 2	4.33	.94	2.01	.480	3	DIN-ANSI	6H
5436560	VTSFT9518	5436559	VTSFT9518	M18 X 1,5	4.92	1.18	2.28	.542	4	DIN-ANSI	6H
5436562	VTSFT9519	5436561	VTSFT9519	M18 X 2,5	4.92	1.18	2.28	.542	4	DIN-ANSI	6H
5436564	VTSFT9520	5436563	VTSFT9520	M20 X 1,5	5.51	1.18	2.52	.652	4	DIN-ANSI	6H
5436566	VTSFT9521	5436565	VTSFT9521	M20 X 2,5	5.51	1.18	2.52	.652	4	DIN-ANSI	6H

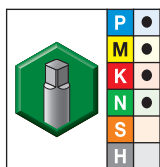
Multipurpose Taps

• WP42EG TiCN



Shank Tolerance	
D inch	tolerance
0.141-0.635	+0, -.0015
>0.635-1.51	+0, -.0020
>1.51-2.01	+0, -.0030

■ VT-SFT • Form C Semi-Bottoming Chamfer • Through Coolant • Metric • DIN Length ANSI Shank

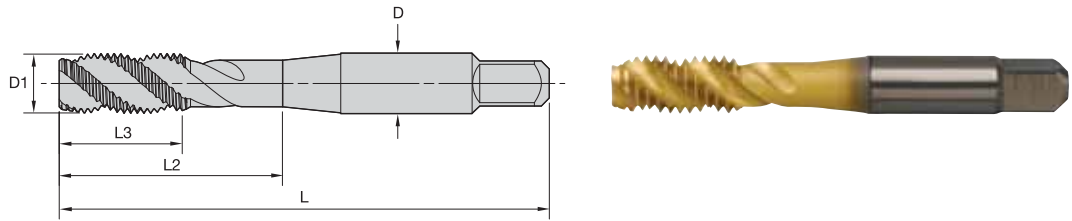


● first choice
○ alternate choice

grade WP42EG TiCN		inch dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	D1 size	L	L3	L2	D			
5436475	VTSFT9925	M6 X 1	3.15	.47	1.18	.255	3	DIN-ANSI	6H
5436476	VTSFT9926	M8 X 1,25	3.54	.59	1.38	.318	3	DIN-ANSI	6H
5436477	VTSFT9927	M10 X 1,25	3.94	.71	1.54	.381	3	DIN-ANSI	6H
5436478	VTSFT9928	M10 X 1,5	3.94	.71	1.53	.381	3	DIN-ANSI	6H
5436479	VTSFT9929	M12 X 1,25	4.33	.83	1.73	.367	3	DIN-ANSI	6H
5436480	VTSFT9930	M12 X 1,5	4.33	.83	1.73	.367	3	DIN-ANSI	6H
5436481	VTSFT9931	M12 X 1,75	4.33	.83	1.73	.367	3	DIN-ANSI	6H
5436482	VTSFT9932	M14 X 1,5	4.33	.94	2.05	.429	3	DIN-ANSI	6H
5436483	VTSFT9933	M14 X 2	4.33	.94	2.05	.429	3	DIN-ANSI	6H
5436484	VTSFT9934	M16 X 1,5	4.33	.94	2.01	.480	3	DIN-ANSI	6H
5436485	VTSFT9935	M16 X 2	4.33	.94	2.01	.480	3	DIN-ANSI	6H
5436486	VTSFT9936	M18 X 1,5	4.92	1.18	2.28	.542	4	DIN-ANSI	6H
5436487	VTSFT9937	M18 X 2,5	4.92	1.18	2.28	.542	4	DIN-ANSI	6H
5436488	VTSFT9938	M20 X 1,5	5.51	1.18	2.52	.652	4	DIN-ANSI	6H
5436489	VTSFT9939	M20 X 2,5	5.51	1.18	2.52	.652	4	DIN-ANSI	6H

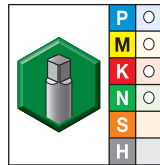
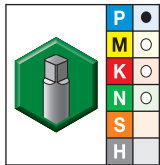
Multipurpose Taps

- WU41EG TiN
- WU40EG bright



Shank Tolerance	
D mm	tolerance h9
1-3	+0, -0,025
>3-6	+0, -0,030
>6-10	+0, -0,036
>10-18	+0, -0,043
>18-30	+0, -0,052

■ VT-SFT • Form C Semi-Bottoming Chamfer • Metric • JIS



- first choice
- alternate choice

grade WU41EG TiN		grade WU40EG Bright		metric dimensions					number of flutes	dimension standard	tap class
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D			
5398709	VTSFT7505	5398708	VTSFT7505	M3 X 0,5	46	11	19	4,0	2	JIS	ISO 2
5398791	VTSFT7506	5398790	VTSFT7506	M4 X 0,7	52	13	21	5,0	3	JIS	ISO 2
5398793	VTSFT7507	5398792	VTSFT7507	M5 X 0,8	60	16	24	5,5	3	JIS	ISO 2
5398795	VTSFT7508	5398794	VTSFT7508	M6 X 1	62	19	29	6,0	3	JIS	ISO 2
5398797	VTSFT7509	5398796	VTSFT7509	M8 X 1,25	70	22	37	6,2	3	JIS	ISO 2
5398799	VTSFT7510	5398798	VTSFT7510	M10 X 1,5	75	24	41	7,0	3	JIS	ISO 2
-		5398800	VTSFT7511	M12 X 1,25	82	29	48	8,5	3	JIS	ISO 2
-		5398802	VTSFT7513	M12 X 1,5	82	29	48	8,5	3	JIS	ISO 2
-		5398801	VTSFT7512	M12 X 1,75	82	29	48	8,5	3	JIS	ISO 2
-		5398804	VTSFT7515	M14 X 1,5	88	30	48	10,5	3	JIS	ISO 2
-		5398803	VTSFT7514	M14 X 2	88	30	48	10,5	3	JIS	ISO 2
-		5398806	VTSFT7517	M16 X 1,5	95	32	52	12,5	3	JIS	ISO 2
-		5398805	VTSFT7516	M16 X 2	95	32	52	12,5	3	JIS	ISO 2
-		5398807	VTSFT7518	M18 X 2,5	100	37	55	14,0	4	JIS	ISO 2
-		5398808	VTSFT7519	M20 X 2,5	105	37	60	15,0	4	JIS	ISO 2

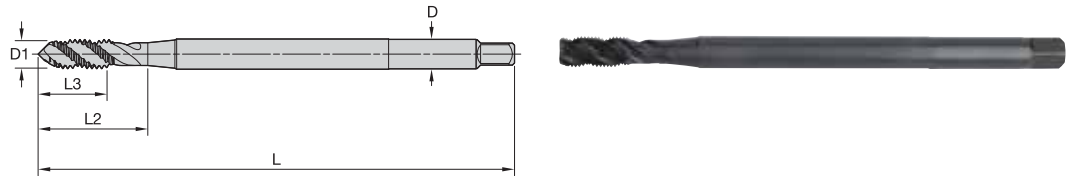
Multipurpose Taps

High-Performance Taps

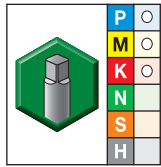
VariTap™ Spiral-Flute HSS-E Extension Taps • Blind Holes • 6" Length



- WP49EG oxide



■ VT-SFT • Form C Semi-Bottoming Chamfer • Machine Screw and Fractional • 6" Length • ANSI



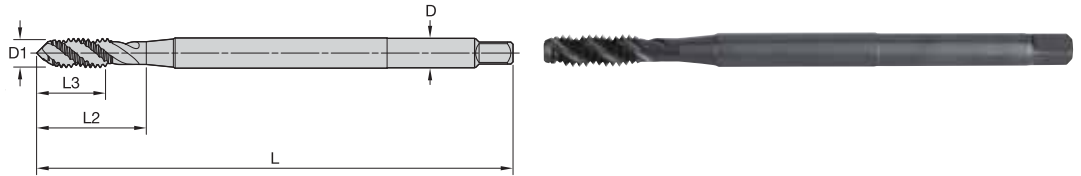
- first choice
- alternate choice

grade WP49EG Oxide		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	L2	D		
5601929	VTSFT-TC5403	4 - 40	6.00	.56	.87	.141	2	H2
5602110	VTSFT-TC5404	6 - 32	6.00	.38	.71	.141	2	H3
5602111	VTSFT-TC5405	8 - 32	6.00	.38	.76	.168	3	H3
5602112	VTSFT-TC5406	10 - 24	6.00	.50	.91	.194	3	H3
5602113	VTSFT-TC5407	10 - 32	6.00	.50	.91	.194	3	H3
5602114	VTSFT-TC5408	1/4 20	6.00	.63	1.00	.255	3	H3
5602115	VTSFT-TC5409	1/4 - 28	6.00	.63	1.01	.255	3	H3
5602116	VTSFT-TC5410	5/16 - 18	6.00	.69	1.13	.318	3	H3
5602117	VTSFT-TC5411	5/16 - 24	6.00	.69	1.13	.318	3	H3
5602118	VTSFT-TC5412	3/8 - 16	6.00	.75	1.27	.381	3	H3
5602119	VTSFT-TC5413	3/8 - 24	6.00	.75	1.26	.381	3	H3
5602120	VTSFT-TC5414	7/16 - 14	6.00	.88	1.49	.323	3	H3
5602121	VTSFT-TC5415	7/16 - 20	6.00	.88	1.49	.323	3	H3
5602122	VTSFT-TC5416	1/2 - 13	6.00	.94	1.74	.367	3	H3
5602123	VTSFT-TC5417	1/2 - 20	6.00	.94	1.74	.367	3	H3
5602124	VTSFT-TC5418	5/8 - 11	6.00	1.09	1.89	.480	3	H3

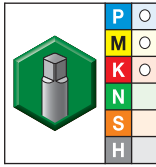
High-Performance Taps



• WP49EG oxide



■ VT-SFT • Form C Semi-Bottoming Chamfer • Machine Screw and Fractional • 4" Length • ANSI



● first choice
○ alternate choice

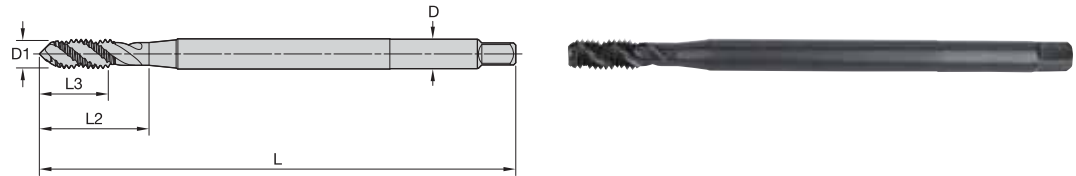
grade WP49EG Oxide		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	L2	D		
5602125	VTSFT-TC5419	4 - 40	4.00	.56	.87	.141	2	H2
5602126	VTSFT-TC5420	6 - 32	4.00	.38	.71	.141	2	H3
5602127	VTSFT-TC5421	8 - 32	4.00	.38	.76	.168	3	H3
5602128	VTSFT-TC5422	10 - 24	4.00	.50	.91	.194	3	H3
5602129	VTSFT-TC5423	10 - 32	4.00	.50	.91	.194	3	H3
5602130	VTSFT-TC5424	1/4 20	4.00	.63	1.00	.255	3	H3

High-Performance Taps

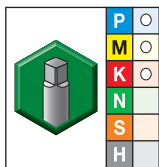
VariTap™ Spiral-Flute HSS-E Extension Taps • Blind Holes • 6" Length



- WP49EG oxide



■ VT-SFT • Form E Bottoming Chamfer • Machine Screw and Fractional • 6" Length • ANSI

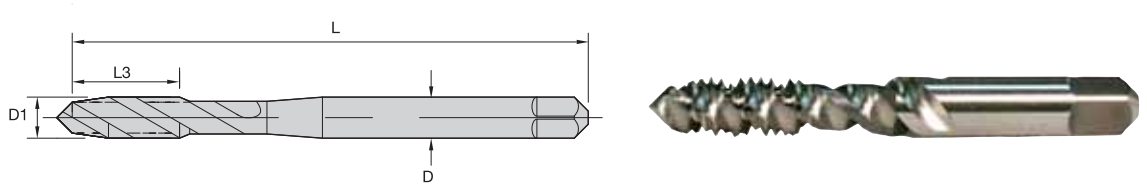


- first choice
- alternate choice

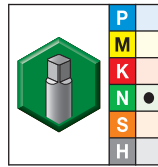
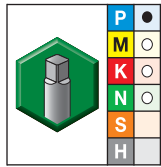
grade WP49EG Oxide		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	L2	D		
5602131	VTSFT-TC5425	4 - 40	6.00	.56	.87	.141	2	H2
5602132	VTSFT-TC5426	6 - 32	6.00	.38	.71	.141	2	H3
5602133	VTSFT-TC5427	8 - 32	6.00	.38	.76	.168	3	H3
5602134	VTSFT-TC5428	10 - 32	6.00	.50	.91	.194	3	H3
5602135	VTSFT-TC5429	1/4 - 20	6.00	.63	1.00	.255	3	H3
5602136	VTSFT-TC5430	1/4 - 28	6.00	.63	1.01	.255	3	H3
5602137	VTSFT-TC5431	5/16 - 18	6.00	.69	1.13	.318	3	H3
5602138	VTSFT-TC5432	3/8 - 16	6.00	.75	1.27	.381	3	H3
5602139	VTSFT-TC5433	3/8 - 24	6.00	.75	1.26	.381	3	H3
5602140	VTSFT-TC5434	7/16 - 14	6.00	.88	1.49	.323	3	H3

High-Performance Taps

- Series 5314TC • TiCN Coated
- Series 2314 • TiN Coated
- Series 5314 • Uncoated



■ Series 2314/5314 • Machine Screw and Fractional • Plug Chamfer

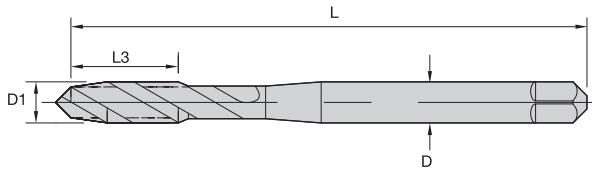


- first choice
- alternate choice

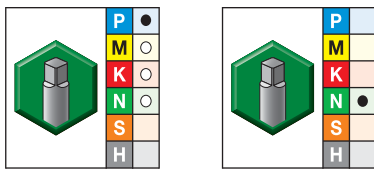
TiN		uncoated		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
2746484	19619	2748377	16003	4 - 40	1.88	.56	—	.141	2	H2
—	—	2748372	16005	5 - 40	1.94	.63	—	.141	2	H2
2746480	19622	2748369	16007	6 - 32	2.00	.38	.69	.141	2	H3
2746474	19626	2748366	16009	8 - 32	2.13	.38	.75	.168	3	H3
2746470	19628	2748363	16011	10 - 24	2.38	.50	.88	.194	3	H3
2746476	19624	2748360	16013	10 - 32	2.38	.50	.88	.194	3	H3
—	—	2748355	16015	12 - 24	2.38	.50	.94	.220	3	H3
2746464	19632	2748352	16017	1/4 - 20	2.50	.63	1.00	.255	3	H3
2746460	19634	2748348	16021	1/4 - 28	2.50	.63	1.00	.255	3	H3
2746458	19636	2748342	16023	5/16 - 18	2.72	.69	1.12	.318	3	H3
2746454	19638	2748336	16027	5/16 - 24	2.72	.69	1.12	.318	3	H3
2746450	19641	2748335	16029	3/8 - 16	2.94	.75	1.25	.381	3	H3
2746447	19643	2748332	16033	3/8 - 24	2.94	.75	1.25	.381	3	H3
2746437	19646	2748328	16035	7/16 - 14	3.16	.88	—	.323	3	H3
—	—	2748323	16037	7/16 - 20	3.16	.88	—	.323	3	H3
2746433	19648	2748318	16039	1/2 - 13	3.38	.94	—	.367	3	H3
—	—	2748315	16041	1/2 - 20	3.38	.94	—	.367	3	H3
—	—	2748311	16047	5/8 - 11	3.81	1.09	—	.480	4	H3
—	—	2748307	16051	3/4 - 10	4.25	1.22	—	.590	4	H3

NOTE: Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.

- Series 5314TC • TiCN Coated
- Series 2314 • TiN Coated
- Series 5314 • Uncoated



■ Series 2314/5314 • Machine Screw and Fractional • Bottoming Chamfer

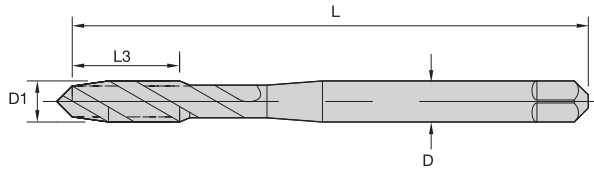


- first choice
- alternate choice

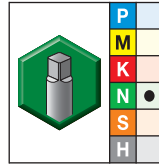
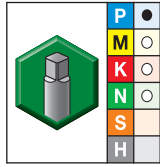
TiN		uncoated		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
2746482	19621	2748375	16004	4 - 40	1.88	.56	—	.141	2	H2
—	—	2748370	16006	5 - 40	1.94	.56	—	.141	2	H2
2746478	19623	2748367	16008	6 - 32	2.00	.38	.69	.141	2	H3
2746472	19627	3083563	16010	8 - 32	2.13	.38	.75	.168	3	H3
2746468	19629	2748361	16012	10 - 24	2.38	.50	.88	.194	3	H3
2746466	19631	2748356	16014	10 - 32	2.38	.50	.88	.194	3	H3
—	—	2748353	16016	12 - 24	2.38	.50	.94	.220	3	H3
2746462	19633	2748351	16018	1/4 - 20	2.50	.63	1.00	.255	3	H3
2746427	19651	1775500	16022	1/4 - 28	2.50	.63	1.00	.255	3	H3
2746456	19637	2748339	16024	5/16 - 18	2.72	.69	1.12	.318	3	H3
2746452	19639	3012779	16028	5/16 - 24	2.72	.69	1.12	.318	3	H3
2746448	19642	3083460	16030	3/8 - 16	2.94	.75	1.25	.381	3	H3
2746439	19644	2748329	16034	3/8 - 24	2.94	.75	1.25	.381	3	H3
2746435	19647	2748325	16036	7/16 - 14	3.16	.88	—	.323	3	H3
—	—	2748321	16038	7/16 - 20	3.16	.88	—	.323	3	H3
2746431	19649	2748317	16040	1/2 - 13	3.38	.94	—	.367	3	H3
—	—	2748314	16042	1/2 - 20	3.38	.94	—	.367	3	H3
—	—	2748309	16048	5/8 - 11	3.81	1.09	—	.480	4	H3
—	—	3083458	16052	3/4 - 10	4.25	1.22	—	.590	4	H3

NOTE: Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.

- Series 5364TC • TiCN Coated
- Series 2364 • TiN Coated
- Series 5364 • Uncoated



■ Series 2364/5364 • Plug Chamfer • Metric ANSI



- first choice
- alternate choice

TiN		uncoated		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 size	L	L2	L3	D		
2746264	19927	2748302	16053	M3 X 0,5	1.94	—	.31	.141	2	D3
2746260	19929	2748297	16057	M4 X 0,7	2.13	.75	.38	.168	3	D4
—	—	2748295	16061	M5 X 0,8	2.38	.88	.50	.194	3	D4
2746252	19933	2748291	16063	M6 X 1	2.50	1.00	.63	.255	3	D5
2746248	19935	2748285	16069	M8 X 1,25	2.72	1.12	.69	.318	3	D5
—	—	2746915	19054	M8 X 1,25	2.72	1.12	.69	.318	3	D5
2746244	19937	2748281	16071	M10 X 1,5	2.94	1.25	.75	.381	3	D6
2746240	19939	2748273	16073	M12 X 1,75	3.38	—	.94	.367	3	D6

NOTE: Metric D limits are suitable for ISO 6H tolerance class.
 Metric taps are manufactured to USCTI specifications and dimensions.
 Metric tap blank dimensions are equivalent to inch taps.
 Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 6H class of fit.

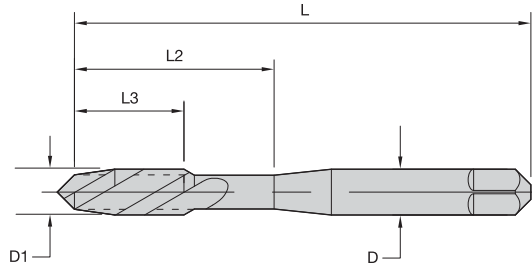
Production Taps

Spiral-Flute Taps • Blind Holes in General Machining Applications

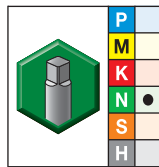
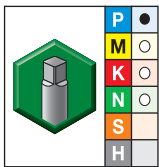
Series 5364TC • TiCN Coated

Series 2364 • TiN Coated

Series 5364 • Uncoated



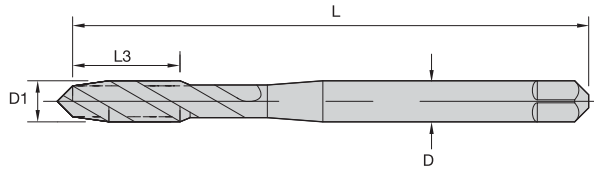
Series 2364/5364 • Bottoming Chamfer • Metric ANSI



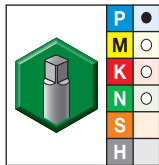
● first choice
○ alternate choice

TiN		uncoated		inch dimensions					number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 size	L	L2	L3	D		
2746262	19928	2748300	16054	M3 X 0,5	1.94	—	.31	.141	2	D3
2746258	19930	2748296	16058	M4 X 0,7	2.13	.75	.38	.168	3	D4
2746254	19932	2748293	16062	M5 X 0,8	2.38	.88	.50	.194	3	D4
2746250	19934	2748288	16064	M6 X 1	2.50	.75	.38	.255	3	D5
2746246	19936	2748284	16070	M8 X 1,25	2.72	1.12	.69	.318	3	D5
2746242	19938	2748275	16072	M10 X 1,5	2.94	1.25	.75	.381	3	D6
2746238	19940	2748271	16074	M12 X 1,75	3.38	—	.94	.367	3	D6

NOTE: Metric D limits are suitable for ISO 6H tolerance class.
Metric taps are manufactured to USCT1 specifications and dimensions.
Metric tap blank dimensions are equivalent to inch taps.



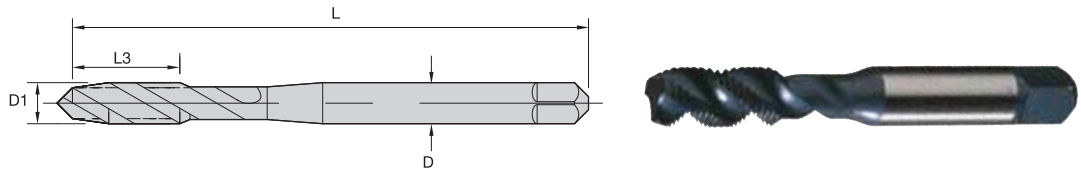
■ Series 5344 • Machine Screw and Fractional • Plug Chamfer



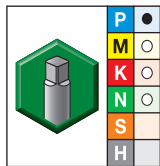
- first choice
- alternate choice

oxide		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	D1 size	L	L3	D		
2748044	16507	10 - 32	2.38	.50	.194	3	H3
2748040	16509	1/4 - 20	2.50	.63	.255	3	H3
2748037	16511	1/4 - 28	2.50	.63	.255	3	H3
2748032	16513	5/16 - 18	2.72	.69	.318	3	H3
2748024	16517	3/8 - 16	2.94	.75	.381	3	H3
2748012	16523	7/16 - 20	3.17	1.44	.323	3	H3
2748008	16525	1/2 - 13	3.38	.94	.367	3	H3
2748000	16533	5/8 - 11	3.81	1.09	.480	4	H3
2747997	16537	3/4 - 10	4.25	1.22	.590	4	H3

NOTE: Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.



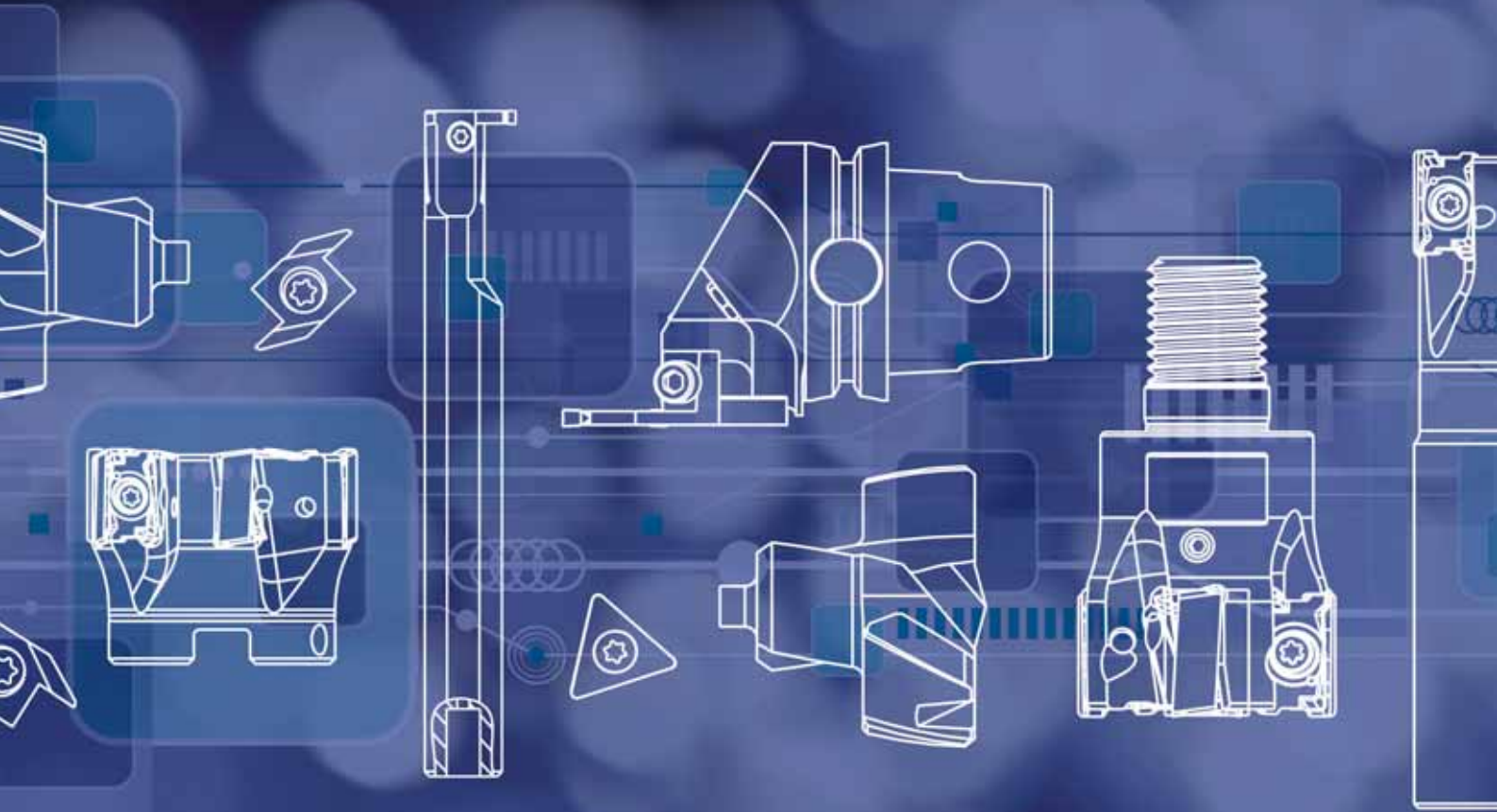
■ Series 5344 • Machine Screw and Fractional • Bottoming Chamfer



- first choice
- alternate choice

oxide		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	D1 size	L	L3	D		
2748054	16502	6 - 32	2.00	.38	.141	3	H3
2748050	16504	8 - 32	2.13	.38	.168	3	H3
2748046	16506	10 - 24	2.38	.50	.194	3	H3
2748042	16508	10 - 32	2.38	.50	.194	3	H3
2748038	16510	1/4 - 20	2.50	.63	.255	3	H3
2748030	16514	5/16 - 18	2.72	.69	.318	3	H3
2748026	16516	5/16 - 24	2.72	.69	.318	3	H3
2748022	16518	3/8 - 16	2.94	.75	.381	3	H3
2748018	16520	3/8 - 24	2.94	.75	.381	3	H3
2748014	16522	7/16 - 14	3.16	.88	.323	3	H3
2748011	16524	7/16 - 20	3.17	1.44	.232	3	H3
2748006	16526	1/2 - 13	3.38	.94	.367	3	H3
2748002	16528	1/2 - 20	3.38	1.66	.367	3	H3
2747998	16534	5/8 - 11	3.81	1.09	.480	4	H3
2747995	16538	3/4 - 10	4.25	1.22	.590	4	H3

NOTE: Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.



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Being as productive and profitable as possible is your fundamental goal. With the addition of NOVO™ to your team, your goal can be achieved. NOVO possesses powerful digital tools that link together process planning, inventory availability and purchase, cost-per-part management, and productivity improvements.

NOVO can ensure you have the right tools on your machines, in the right sequence. Resulting in flawless execution that accelerates every job, and maximizes every shift. widia.com/novo

01

THE DIGITAL SOURCE FOR DELIVERING SMART MACHINING SOLUTIONS

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NOVO™ 

Solutions for Through and Blind Hole Applications •

WIDIA-GTD™

Straight Flute



WIDIA-GTD™ offers a wide range of straight-flute options for tapping through and blind holes in:

- Steel and steel alloys.
- Stainless steel.
- Cast iron.
- Aluminum.

High-Performance Victory™ Solid Carbide Taps

- Straight flute designed for outstanding tool life in cast iron, aluminum, and hardened materials.
- Manufactured with fine-grain micrograin carbide for exceptional wear life.
- Ideal for long production runs where fewer tool changes mean greater productivity.
- Runs up to 4x faster and lasts up to 4x longer than conventional high-speed steel taps.
- Excellent thread quality and tap performance.

High-Performance Victory™ HSS-E-PM Taps

- Straight-flute taps store chips in hole or are flushed out with internal coolant.
- Manufactured from powdered metal high-speed steel coated for thread cutting in cast iron and aluminum.
- Offer performance advantages over conventional high-speed steel taps.
- Long tap life at up to 50% higher tapping speed than HSS taps.

General Purpose Production Taps

- Straight-flute taps manufactured with HSS for use in through and blind hole applications.
- Multiple chamfer options.
- Can be used in general machinery or CNC tapping applications.
- Store chips in their flutes during threading, which protects the workpiece.

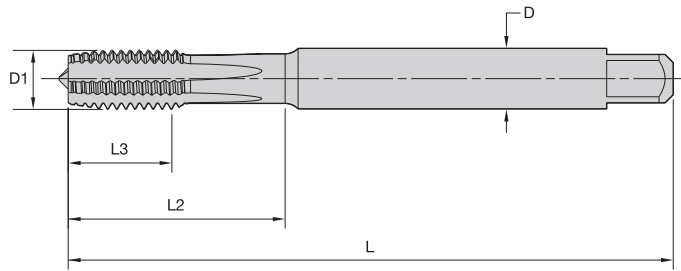


High-Performance Taps

Victory™ Straight-Flute Carbide Taps • Blind and Through Holes



- WH16PG TiAlN/MoS₂ for steel 55–63 HRC.

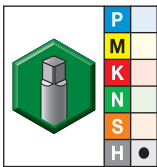


Shank Tolerance

D mm	tolerance h6
1–3	+0, -0,025
3,5–6	+0, -0,030
7–10	+0, -0,036
11–18	+0, -0,043



■ GX10 • Form C Semi-Bottoming Chamfer • Metric DIN 371, 374, and 376 • For Hard Steel

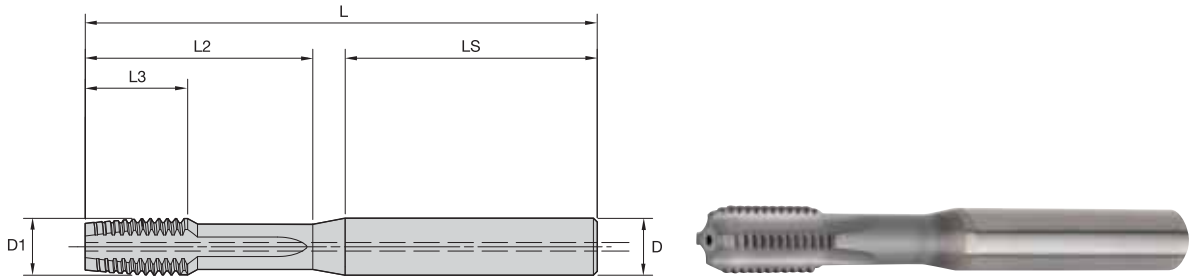


- first choice
- alternate choice

grade WH16PG TiAlN+MoS ₂		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	D1 size	L	L3	L2	D			
4158323	GX105001	M3 X 0,5	63	6	18	4,5	4	DIN 371	6HX
4158324	GX105002	M4 X 0,7	63	8	20	4,5	4	DIN 371	6HX
4158325	GX105003	M5 X 0,8	70	10	26	6,0	4	DIN 371	6HX
4158326	GX105004	M6 X 1	80	12	28	6,0	4	DIN 371	6HX
4158331	GX105009	M8 X 1	90	15	35	8,0	5	DIN 374	6HX
4158327	GX105005	M8 X 1,25	90	15	35	8,0	5	DIN 371	6HX
4158332	GX105010	M10 X 1	100	18	38	10,0	5	DIN 374	6HX
4158328	GX105006	M10 X 1,5	100	18	38	10,0	5	DIN 371	6HX
4158333	GX105011	M12 X 1,5	110	21	41	12,0	5	DIN 374	6HX
4158329	GX105007	M12 X 1,75	110	21	41	12,0	5	DIN 376	6HX
4158334	GX105012	M14 X 1,5	110	24	44	14,0	5	DIN 374	6HX
4158330	GX105008	M14 X 2	110	24	44	14,0	6	DIN 376	6HX
4158335	GX105013	M16 X 1,5	110	24	44	16,0	5	DIN 374	6HX

High-Performance Taps

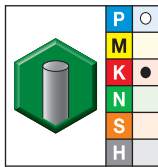
• WK12PG TiCN for cast iron.



Shank Tolerance	
D	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-16	+0, -0,011



■ GX35 • Form E Bottoming Chamfer • Through Coolant M6 and Larger • Metric • For Cast Iron



● first choice
○ alternate choice

grade WK12PG TiCN		metric dimensions						number of flutes	class of fit
order #	catalog #	D1 size	L	L3	L2	LS	D		
5551152	GX352733	M6 X 1	70	12	24	42	6,0	4	6HX
5551153	GX352734	M8 X 1,25	80	15	32	43	8,0	4	6HX
5551154	GX352735	M10 X 1,5	90	18	40	44	10,0	4	6HX
5551156	GX352738	M12 X 1,5	100	21	48	46	12,0	4	6HX
5551155	GX352737	M12 X 1,75	100	21	48	46	12,0	4	6HX
5551159	GX352740	M14 X 1,5	110	24	56	52	12,0	4	6HX
5551157	GX352739	M14 X 2	110	24	56	52	12,0	4	6HX
5551160	GX352741	M16 X 2	110	24	64	44	14,0	4	6HX

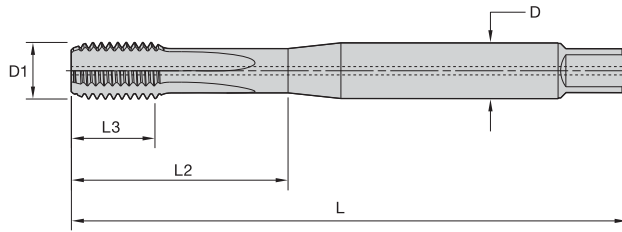
High-Performance Taps

High-Performance Taps

Victory™ Solid Carbide Straight-Flute Taps • Blind Holes



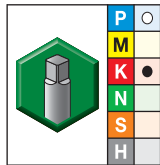
- WK12PG TiCN for cast iron.



Shank Tolerance	
D mm	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-16	+0, -0,011



- GX35 • Form E Bottoming Chamfer • Through Coolant • Metric • For Cast Iron

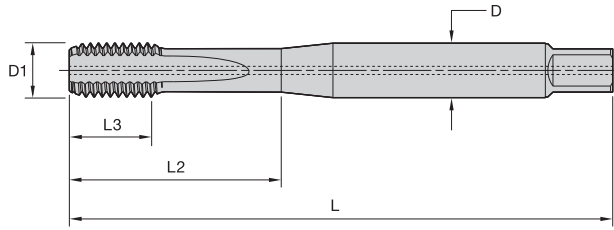


- first choice
- alternate choice

grade WK12PG TiCN		metric dimensions					number of flutes	class of fit
order #	catalog #	D1 size	L	L3	L2	D		
5520825	GX355006	M6 X 1	80	10	30	6,0	4	6HX
5520826	GX355007	M7 X 1	80	10	30	7,0	4	6HX
5520827	GX355008	M8 X 1,25	90	13	35	8,0	4	6HX
5520828	GX355009	M9 X 1,25	90	13	35	9,0	4	6HX
5520830	GX355101	M10 X 1	90	10	35	7,0	4	6HX
5520831	GX355102	M10 X 1,25	100	15	39	7,0	4	6HX
5520829	GX355010	M10 X 1,5	100	15	39	10,0	4	6HX
5520834	GX355121	M12 X 1,25	100	15	39	9,0	4	6HX
5520835	GX355122	M12 X 1,50	100	15	39	9,0	4	6HX
5520833	GX355012	M12 X 1,75	110	18	44	9,0	4	6HX
5520837	GX355141	M14 X 1,25	100	15	47	11,0	4	6HX
5520838	GX355142	M14 X 1,5	100	15	47	11,0	4	6HX
5520836	GX355014	M14 X 2	110	20	52	11,0	4	6HX

High-Performance Taps

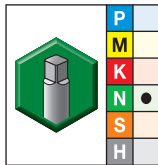
• WN14PG TiN + Cr/C for aluminum.



Shank Tolerance	
D	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-16	+0, -0,011



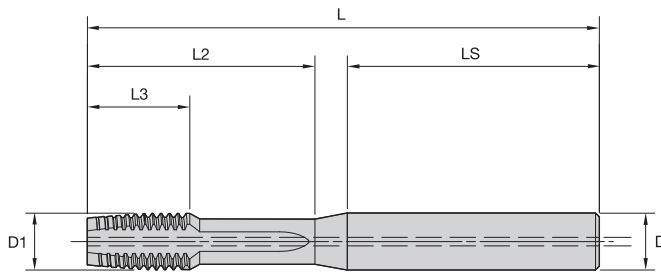
■ GX47 • Form E Bottoming Chamfer • Through Coolant • Metric • For Aluminum



- first choice
- alternate choice

grade WN14PG TiN+Cr/C		metric dimensions					number of flutes	class of fit
order #	catalog #	D1 size	L	L3	L2	D		
5520839	GX475006	M6 X 1	80	10	30	6,0	3	6HX
5520840	GX475008	M8 X 1,25	90	10	35	8,0	3	6HX
5520841	GX475010	M10 X 1,5	100	15	39	10,0	3	6HX

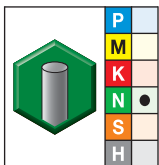
- WN14PG TiN + CrC/C for aluminum.



Shank Tolerance	
D mm	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-16	+0, -0,011



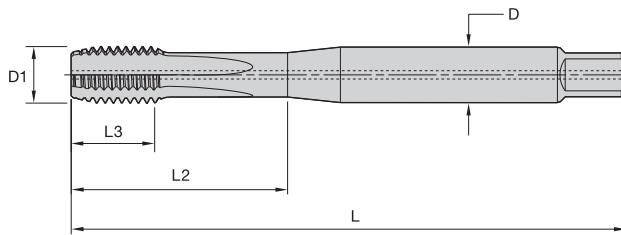
- GX47 • Form E Bottoming Chamfer • Through Coolant • Metric • For Aluminum



- first choice
- alternate choice

grade WN14PG TiN+CrC/C		metric dimensions						number of flutes	class of fit
order #	catalog #	D1 size	L	L3	L2	LS	D		
5551161	GX472866	M6 X 1	70	12	24	42	6,0	3	6HX
5551162	GX472867	M8 X 1,25	80	15	32	43	8,0	3	6HX
5551163	GX472868	M10 X 1,5	90	18	40	44	10,0	3	6HX
5551164	GX472872	M12 X 1,5	100	21	48	46	12,0	3	6HX
5551165	GX472870	M12 X 1,75	100	21	48	46	12,0	3	6HX
5551166	GX472874	M14 X 1,5	110	24	56	52	12,0	4	6HX
5551167	GX472873	M14 X 2	110	24	56	52	12,0	4	6HX
5551168	GX472875	M16 X 2	110	24	64	44	14,0	4	6HX

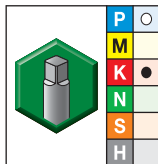
- WK12PG TiCN for cast iron.



Shank Tolerance	
D mm	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-16	+0, -0,011



- GX50 • Form C Semi-Bottoming Chamfer • Through Coolant M6 and Larger • Metric • For Cast Iron



- first choice
- alternate choice

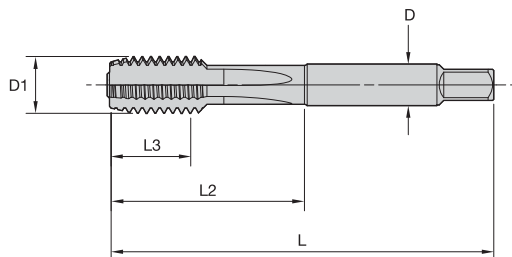
grade WK12PG TiCN		metric dimensions					number of flutes	class of fit
order #	catalog #	D1 size	L	L3	L2	D		
5520817	GX505004	M4 X 0,7	63	10	21	4,5	3	6HX
5520818	GX505005	M5 X 0,8	70	10	25	6,0	3	6HX
5520819	GX505006	M6 X 1	80	10	30	6,0	4	6HX
5520820	GX505008	M8 X 1,25	90	13	35	8,0	4	6HX
5520822	GX505010	M10 X 1,5	100	15	39	10,0	4	6HX
5520823	GX505012	M12 X 1,75	110	18	44	9,0	4	6HX
5520824	GX505014	M14 X 2	110	20	52	11,0	4	6HX

High-Performance Taps

Victory™ Straight-Flute HSS-E-PM Taps • Through and Blind Holes



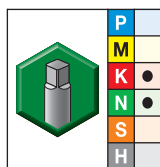
- GP6520 TiCN for cast iron and cast aluminum.



Shank Tolerance	
D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



- GT40 • Machine Screw and Fractional • Form C Semi-Bottoming Chamfer • ANSI • For Cast Iron and Cast Aluminum

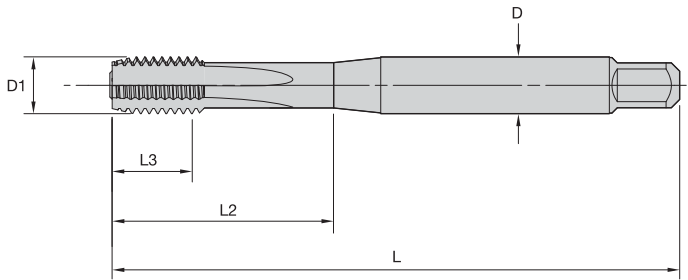


- first choice
- alternate choice

grade GP6520 TiCN		inch dimensions					number of flutes	class of fit
order #	catalog #	D1 size	L	L3	L2	D		
4035535	GT405012	10 - 24	2.37	.47	.91	.194	4	3BX
4035536	GT405013	10 - 32	2.36	.47	.91	.194	4	3BX
4035537	GT405014	1/4 - 20	2.50	.44	1.01	.255	4	2BX
4035538	GT405015	1/4 - 20	2.50	.44	1.01	.255	4	3BX
4035539	GT405016	1/4 - 28	2.49	.43	1.00	.255	4	2BX
4035540	GT405017	1/4 - 28	2.49	.43	1.00	.255	4	3BX
4035541	GT405018	5/16 - 18	2.72	.49	1.13	.318	4	2BX
4035542	GT405019	5/16 - 18	2.72	.49	1.13	.318	4	3BX
4035563	GT405020	5/16 - 24	2.71	.48	1.13	.318	4	3BX
4035564	GT405021	3/8 - 16	2.94	.60	1.27	.381	4	2BX
4035565	GT405022	3/8 - 16	2.94	.60	1.27	.381	4	3BX
4035566	GT405023	3/8 - 24	2.92	.58	1.25	.381	4	3BX
4035567	GT405024	7/16 - 14	3.16	.71	1.49	.323	4	3BX
4035568	GT405025	7/16 - 20	3.16	.71	1.49	.323	4	3BX
4035569	GT405026	1/2 - 13	3.38	.77	1.74	.367	4	3BX
4035570	GT405027	1/2 - 20	3.38	.77	1.74	.367	4	3BX
4035571	GT405028	5/8 - 11	3.81	.91	1.89	.480	4	3BX
4035572	GT405029	3/4 - 10	4.25	1.00	2.08	.590	4	3BX

High-Performance Taps

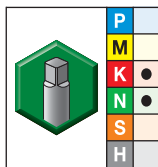
- GP6520 TiCN for cast iron and cast aluminum.



Shank Tolerance	
D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



- GT40 • Machine Screw and Fractional • Form C Semi-Bottoming Chamfer • DIN Length ANSI Shank
- For Cast Iron and Cast Aluminum



- first choice
- alternate choice

grade GP6520 TiCN		inch dimensions					number of flutes	class of fit
order #	catalog #	D1 TPI	L	L3	L2	D		
4157922	GT405039	6 - 32	2.20	.39	.79	.141	3	2BX
4157931	GT405048	6 - 40	2.20	.40	.79	.141	3	2BX
4157923	GT405040	8 - 32	2.48	.39	.83	.168	3	2BX
4157924	GT405041	10 - 24	2.76	.39	.98	.194	3	2BX
4157933	GT405050	10 - 32	2.76	.40	.98	.194	3	2BX
4157926	GT405043	1/4 - 20	3.15	.51	1.18	.255	3	3BX
4157935	GT405052	1/4 - 28	3.15	.51	1.18	.255	3	3BX
4157927	GT405044	5/16 - 18	3.54	.55	1.38	.318	4	3BX
4157936	GT405053	5/16 - 24	3.54	.55	1.38	.318	4	3BX
4157928	GT405045	3/8 - 16	3.94	.63	1.53	.381	4	3BX
4157937	GT405054	3/8 - 24	3.94	.63	1.53	.381	4	3BX
4157929	GT405046	7/16 - 14	3.94	.71	1.61	.323	4	3BX
4157938	GT405055	7/16 - 20	3.94	.71	1.61	.323	4	3BX
4157930	GT405047	1/2 - 13	4.33	.79	1.85	.367	4	3BX
4157939	GT405056	1/2 - 20	4.33	.79	1.85	.367	4	3BX

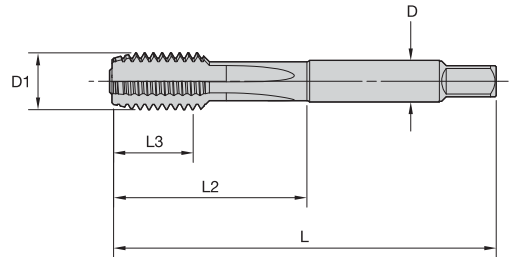
High-Performance Taps

High-Performance Taps

Victory™ Straight-Flute HSS-E-PM Taps • Through and Blind Holes



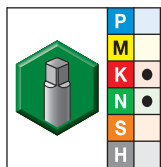
- GP6520 TiCN for cast iron and cast aluminum.



Shank Tolerance	
D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



■ GT40 • Form C Semi-Bottoming Chamfer • Metric ANSI • For Cast Iron and Cast Aluminum



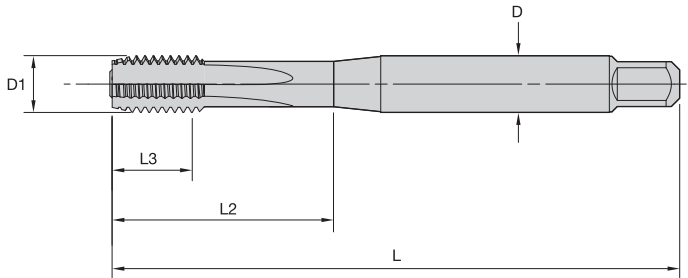
- first choice
- alternate choice

grade GP6520 TiCN		inch dimensions					number of flutes	class of fit
order #	catalog #	D1 size	L	L3	L2	D		
4035576	GT405030	M3 X 0,5	1.94	.63	.75	.141	3	6HX
4035577	GT405031	M4 X 0,7	2.12	.32	.76	.168	3	6HX
4035578	GT405032	M5 X 0,8	2.37	.47	.91	.194	3	6HX
4035579	GT405033	M6 X 1	2.50	.46	1.01	.255	4	6HX
4035580	GT405034	M8 X 1,25	2.71	.48	1.13	.318	4	6HX
4035581	GT405035	M10 X 1,5	2.92	.53	1.26	.381	4	6HX
4035582	GT405036	M12 X 1,75	3.38	.77	1.74	.367	4	6HX
4035583	GT405037	M14 X 2	3.59	.83	1.74	.429	4	6HX
4035584	GT405038	M16 X 2	3.81	.91	1.89	.480	4	6HX

High-Performance Taps



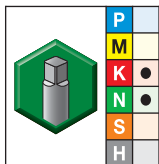
- GP6520 TiCN for cast iron and cast aluminum.



Shank Tolerance	
D mm	tolerance h6
>3-6	+0, -0,008
>6-10	+0, -0,009
>10-18	+0, -0,011
>18-30	+0, -0,013
>30-50	+0, -0,016



- GT40 • Form C Semi-Bottoming Chamfer • Metric DIN 371, 374, and 376 • For Cast Iron and Cast Aluminum



- first choice
- alternate choice

grade GP6520 TiCN		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	D1 size	L	L3	L2	D			
4033699	GT405001	M4 X 0,7	63	10	21	4,5	3	DIN 371	6HX
4033700	GT405002	M5 X 0,8	70	10	25	6,0	3	DIN 371	6HX
4033701	GT405003	M6 X 1	80	10	30	6,0	4	DIN 371	6HX
4033702	GT405004	M8 X 1,25	90	13	35	8,0	4	DIN 371	6HX
4033753	GT405005	M10 X 1,5	100	15	39	10,0	4	DIN 371	6HX
5408066	GT405057	M12 X 1,5	100	15	39	9,0	4	DIN 374	6HX
4033754	GT405006	M12 X 1,75	110	18	44	9,0	4	DIN 376	6HX
5408067	GT405058	M14 X 1,5	100	15	47	11,0	4	DIN 374	6HX
4033755	GT405007	M14 X 2	110	20	52	11,0	4	DIN 376	6HX
5408068	GT405059	M16 X 1,5	100	15	46	12,0	4	DIN 374	6HX
4033756	GT405008	M16 X 2	110	20	51	12,0	4	DIN 376	6HX
4033757	GT405009	M18 X 2,5	125	25	58	14,0	4	DIN 376	6HX
4033758	GT405010	M20 X 2,5	140	25	64	16,0	4	DIN 376	6HX
4033759	GT405011	M22 X 2,5	140	25	70	18,0	4	DIN 376	6HX

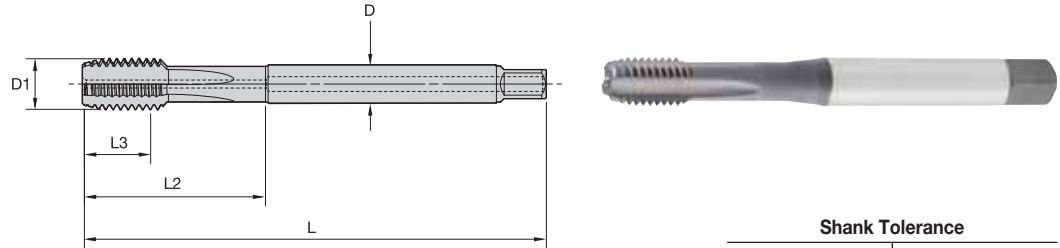
High-Performance Taps

High-Performance Taps

Victory™ Straight-Flute HSS-E-PM Taps • Through and Blind Holes



- GP6520 TiCN for cast iron and cast aluminum.

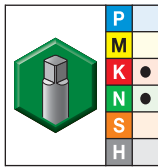


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



- GT41 • Fractional • Form C Semi-Bottoming Chamfer • DIN Length ANSI Shank • Through Coolant
- For Cast Iron and Cast Aluminum

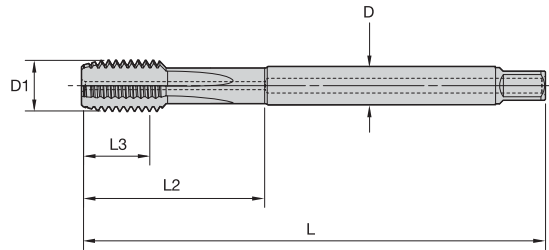


- first choice
- alternate choice

grade GP6520 TiCN		inch dimensions					number of flutes	class of fit
order #	catalog #	D1 TPI	L	L3	L2	D		
4157940	GT415011	1/4 - 20	3.15	.51	1.18	.255	4	3BX
4157945	GT415016	1/4 - 28	3.15	.51	1.18	.255	4	3BX
4157941	GT415012	5/16 - 18	3.54	.55	1.38	.318	4	3BX
4157946	GT415017	5/16 - 24	3.54	.55	1.38	.318	4	3BX
4157942	GT415013	3/8 - 16	3.94	.63	1.53	.381	4	3BX
4157947	GT415018	3/8 - 24	3.94	.63	1.53	.381	4	3BX
4157943	GT415014	7/16 - 14	3.94	.71	1.61	.323	4	3BX
4157948	GT415019	7/16 - 20	3.94	.71	1.61	.323	4	3BX
4157944	GT415015	1/2 - 13	4.33	.79	1.85	.367	4	3BX
4157949	GT415020	1/2 - 20	4.33	.79	1.85	.367	4	3BX

High-Performance Taps

- GP6520 TiCN for cast iron and cast aluminum.

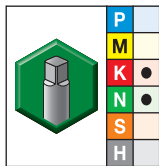


Shank Tolerance

D mm	tolerance h6
>3-6	+0, -0,008
>6-10	+0, -0,009
>10-18	+0, -0,011
>18-30	+0, -0,013
>30-50	+0, -0,016



- GT41 • Form C Semi-Bottoming Chamfer • Through Coolant • Metric DIN 371, 374, and 376 • For Cast Iron and Cast Aluminum



- first choice
- alternate choice

grade GP6520 TiCN		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	D1 size	L	L3	L2	D			
4033659	GT415001	M4 X 0,7	63	10	21	4,5	3	DIN 371	6HX
4033660	GT415002	M5 X 0,8	70	10	25	6,0	3	DIN 371	6HX
4033661	GT415003	M6 X 1	80	10	30	6,0	4	DIN 371	6HX
4033662	GT415004	M8 X 1,25	90	13	35	8,0	4	DIN 371	6HX
4033813	GT415005	M10 X 1,5	100	15	39	10,0	4	DIN 371	6HX
5408069	GT415021	M12 X 1,5	100	15	39	9,0	4	DIN 374	6HX
4033814	GT415006	M12 X 1,75	110	18	44	9,0	4	DIN 376	6HX
5408400	GT415022	M14 X 1,5	100	15	47	11,0	4	DIN 374	6HX
4033815	GT415007	M14 X 2	110	20	52	11,0	4	DIN 376	6HX
5408401	GT415023	M16 X 1,5	100	15	46	12,0	4	DIN 374	6HX
4033816	GT415008	M16 X 2	110	20	51	12,0	4	DIN 376	6HX
4033817	GT415009	M18 X 2,5	125	25	58	14,0	4	DIN 376	6HX
4033818	GT415010	M20 X 2,5	140	25	64	16,0	4	DIN 376	6HX

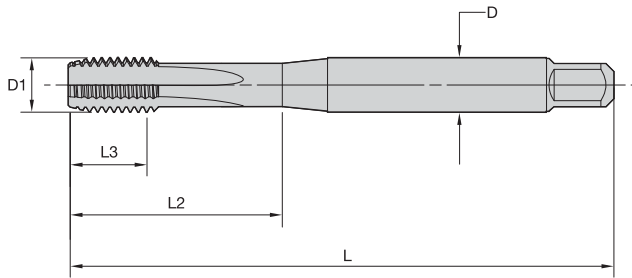
High-Performance Taps

High-Performance Taps

Victory™ Straight-Flute HSS-E-PM Taps • Threading Close to the Bottom in Blind Holes



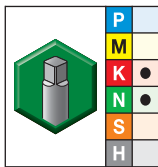
- GP6520 TiCN for cast iron and cast aluminum.



Shank Tolerance	
D mm	tolerance h6
>3-6	+0, -0,008
>6-10	+0, -0,009
>10-18	+0, -0,011
>18-30	+0, -0,013
>30-50	+0, -0,016



■ GT42 • Form E Bottoming Chamfer • Metric DIN 371, 374, and 376 • For Cast Iron and Cast Aluminum

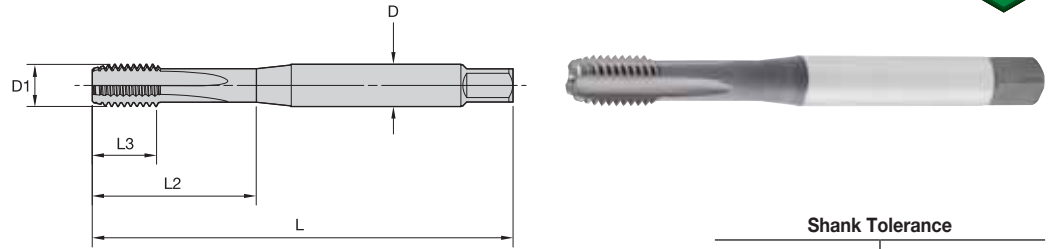


- first choice
- alternate choice

grade GP6520 TiCN		metric dimensions					number of flutes	dimension standard	class of fit
order #	catalog #	D1 size	L	L3	L2	D			
4154274	GT425001	M5 X 0,8	70	10	25	6,0	3	DIN 371	6HX
4154275	GT425002	M6 X 1	80	10	30	6,0	4	DIN 371	6HX
4154276	GT425003	M8 X 1,25	90	13	35	8,0	4	DIN 371	6HX
4154277	GT425004	M10 X 1,5	100	15	39	10,0	4	DIN 371	6HX
4154280	GT425007	M12 X 1,5	100	15	39	9,0	4	DIN 374	6HX
4154278	GT425005	M12 X 1,75	110	18	44	9,0	4	DIN 376	6HX
4154281	GT425008	M14 X 1,5	100	15	47	11,0	4	DIN 374	6HX
4154279	GT425006	M14 X 2	110	20	52	11,0	4	DIN 376	6HX
4154282	GT425009	M16 X 1,5	100	15	46	12,0	4	DIN 374	6HX
5408402	GT425010	M16 X 2	110	20	51	12,0	4	DIN 376	6HX
5408403	GT425011	M18 X 2,5	125	25	58	14,0	4	DIN 376	6HX
5408404	GT425012	M20 X 2,5	140	25	64	16,0	4	DIN 376	6HX

High-Performance Taps

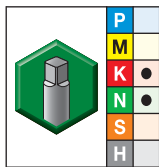
- GP6520 TiCN for cast iron and cast aluminum.



Shank Tolerance	
D mm	tolerance h6
>3-6	+0, -0,008
>6-10	+0, -0,009
>10-18	+0, -0,011
>18-30	+0, -0,013
>30-50	+0, -0,016



- GT43 • Form E Bottoming Chamfer • Through Coolant • Metric DIN 371, 374, and 376 • For Cast Iron and Cast Aluminum



- first choice
- alternate choice

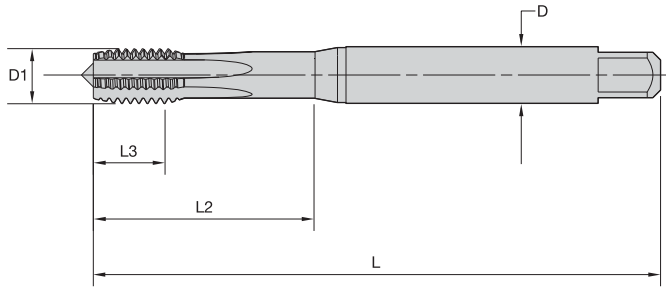
order #	catalog #	D1 size	metric dimensions				D	number of flutes	dimension standard	class of fit
			L	L3	L2					
4154283	GT435001	M5 X 0,8	70	10	25	6,0	3	DIN 371	6HX	
4154284	GT435002	M6 X 1	80	10	30	6,0	4	DIN 371	6HX	
4154285	GT435003	M8 X 1,25	90	13	35	8,0	4	DIN 371	6HX	
4154286	GT435004	M10 X 1,5	100	15	39	10,0	4	DIN 371	6HX	
4154289	GT435007	M12 X 1,5	100	15	39	9,0	4	DIN 374	6HX	
4154287	GT435005	M12 X 1,75	110	18	44	9,0	4	DIN 376	6HX	
4154290	GT435008	M14 X 1,5	100	15	47	11,0	4	DIN 374	6HX	
4154288	GT435006	M14 X 2	110	20	52	11,0	4	DIN 376	6HX	
4154291	GT435009	M16 X 1,5	100	15	46	12,0	4	DIN 374	6HX	
5408405	GT435010	M16 X 2	110	20	51	12,0	4	DIN 376	6HX	
5408406	GT435011	M18 X 2,5	125	25	58	14,0	4	DIN 376	6HX	
5408407	GT435012	M20 X 2,5	140	25	64	16,0	4	DIN 376	6HX	

High-Performance Taps

High-Performance Taps

Victory™ Straight-Flute HSS-E-PM Taps • Blind and Through Holes

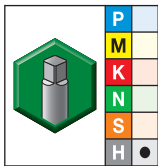
- WS32MG TiCN for steel 44–55 HRC.



Shank Tolerance	
D mm	tolerance h9
1–3	+0, -0,025
>3–6	+0, -0,030
>6–10	+0, -0,036
>10–18	+0, -0,043
>18–30	+0, -0,052



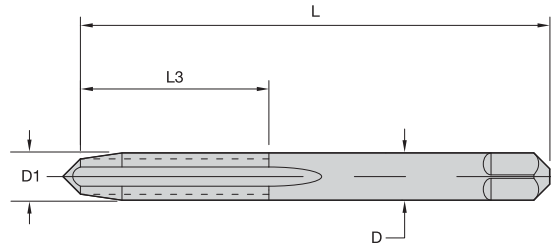
■ GT06 • Form C Semi-Bottoming Chamfer • Metric DIN 371, 374, and 376 • For Hard Steel



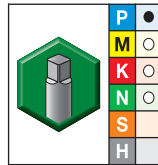
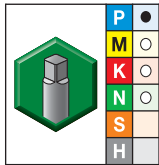
- first choice
- alternate choice

order #	catalog #	grade WS32MG TiCN	metric dimensions				D	number of flutes	dimension standard	class of fit
			D1 size	L	L3	L2				
4159915	GT065003	M6 X 1	80	10	30	6,0	4	DIN 371	6HX	
4159918	GT065006	M8 X 1	90	10	35	8,0	5	DIN 374	6HX	
4159913	GT065001	M8 X 1,25	90	14	35	8,0	5	DIN 371	6HX	
4159919	GT065007	M10 X 1	90	10	35	10,0	5	DIN 374	6HX	
4159914	GT065002	M10 X 1,5	100	16	39	10,0	5	DIN 371	6HX	
4159920	GT065008	M12 X 1,5	100	15	—	9,0	5	DIN 374	6HX	
4159916	GT065004	M12 X 1,75	110	18	—	9,0	5	DIN 376	6HX	
4159921	GT065009	M14 X 1,5	100	15	—	11,0	6	DIN 374	6HX	
4159922	GT065010	M16 X 1,5	100	15	—	12,0	6	DIN 374	6HX	
4159917	GT065005	M16 X 2	110	22	—	12,0	6	DIN 376	6HX	

High-Performance Taps



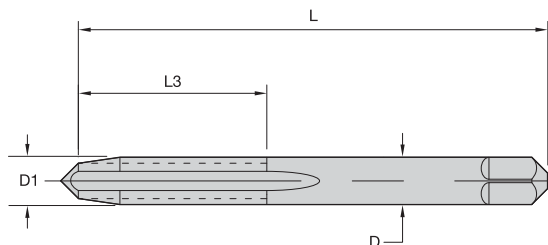
■ Series 5305 • Machine Screw Sizes • Taper Chamfer



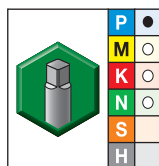
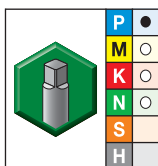
● first choice
○ alternate choice

oxide		uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 size	L	L3	D		
-		2748991	15102	0 - 80	1.63	.31	.141	2	H1
-		2748975	15114	1 - 64	1.69	.38	.141	2	H1
-		2748964	15120	1 - 72	1.69	.38	.141	2	H1
-		2748956	15128	2 - 56	1.75	.44	.141	3	H1
-		2748951	15134	2 - 56	1.75	.44	.141	3	H2
-		2748935	15144	2 - 64	1.75	.44	.141	3	H2
-		2748925	15156	3 - 48	1.81	.50	.141	3	H2
-		2748913	15166	3 - 56	1.81	.50	.141	3	H2
2709836	19563	2748887	15184	4 - 40	1.88	.56	.141	3	H2
-		2748869	15196	4 - 48	1.88	.56	.141	3	H2
-		2865323	15209	5 - 40	1.94	.63	.141	3	H2
-		2748858	15220	5 - 44	1.94	.63	.141	3	H2
-		2865295	15225	6 - 32	2.00	.69	.141	3	H1
-		2748845	15231	6 - 32	2.00	.69	.141	3	H2
-		2748827	15257	6 - 40	2.00	.69	.141	3	H2
2709816	19573	2865268	15237	6 - 32	2.00	.69	.141	3	H3
-		2748806	15275	8 - 32	2.13	.75	.168	4	H2
-		2748764	15301	8 - 36	2.13	.75	.168	4	H2
2709810	19583	2748787	15283	8 - 32	2.13	.75	.168	4	H3
-		2748708	15344	10 - 32	2.38	.88	.194	4	H1
-		2748747	15320	10 - 24	2.38	.88	.194	4	H2
-		2748694	15352	10 - 32	2.38	.88	.194	4	H2
2709804	19597	2748738	15327	10 - 24	2.38	.88	.194	4	H3
2709796	19613	2748679	15360	10 - 32	2.38	.88	.194	4	H3
-		2748645	15383	12 - 24	2.38	.94	.220	4	H3
-		2748631	15390	12 - 28	2.38	.94	.220	4	H3

NOTE: Hand taps for 3B class of fit are suitable for UNJ aerospace internal threading applications.
Refer to tables on pages W231-232 for the recommended pitch diameter limit for 2B or 3B class of fit.



■ Series 5303 • Fractional Sizes • Taper Chamfer



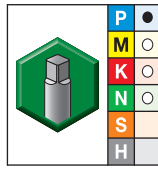
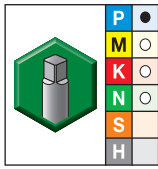
● first choice
○ alternate choice

oxide		uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 size	L	L3	D		
-		2749838	14010	1/4 - 20	2.50	1.00	.255	4	H1
-		2749832	14015	1/4 - 20	2.50	1.00	.255	4	H2
2709949	19167	3139335	14022	1/4 - 20	2.50	1.00	.255	4	H3
2709942	19208	2749775	14055	1/4 - 28	2.50	1.00	.255	4	H3
2709937	19237	2749737	14092	5/16 - 18	2.72	1.13	.318	4	H3
-		2749689	14122	5/16 - 24	2.72	1.13	.318	4	H3
2709923	19278	2749651	14157	3/8 - 16	2.94	1.25	.381	4	H3
3177076	19304	2749611	14190	3/8 - 24	2.94	1.25	.381	4	H3
-		2749586	14221	7/16 - 14	3.16	1.44	.323	4	H3
-		2749568	14246	7/16 - 20	3.16	1.44	.323	4	H3
2709916	19354	2749543	14281	1/2 - 13	3.38	1.66	.367	4	H3
2709909	19377	2749514	14308	1/2 - 20	3.38	1.66	.367	4	H3
-		3139336	14338	9/16 - 12	3.59	1.66	.429	4	H3
-		2749476	14356	9/16 - 18	3.59	1.66	.429	4	H3
2709902	19407	2749460	14379	5/8 - 11	3.81	1.81	.480	4	H3
-		2749432	14402	5/8 - 18	3.81	1.81	.480	4	H3
-		2749406	14423	11/16 - 11	4.03	1.06	.542	4	H3
-		2749400	14427	11/16 - 16	4.03	1.06	.542	4	H3
2709895	19443	2749394	14448	3/4 - 10	4.25	2.00	.590	4	H3
-		2749374	14471	3/4 - 16	4.25	2.00	.590	4	H3
-		2749356	14499	7/8 - 9	4.69	2.22	.697	4	H4
-		2749340	14516	7/8 - 14	4.69	2.22	.697	4	H4
-		2749327	14544	1 - 8	5.13	2.50	.800	4	H4
-		2749308	14557	1 - 12	5.13	2.50	.800	4	H4

(continued)

Production Taps

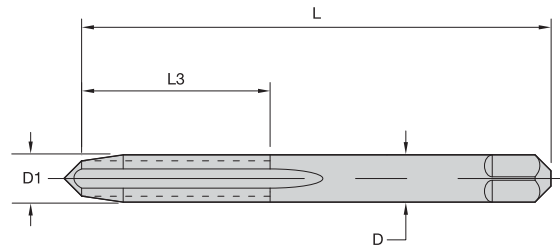
(Series 5303 • Fractional Sizes • Taper Chamfer — continued)



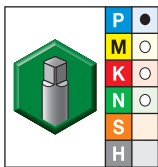
- first choice
- alternate choice

oxide		uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	D1 size	L	L3	D		
-		2749294	14568	1 - 14	5.13	2.50	.800	4	H4
-		2749281	14594	1 1/8 - 7	5.44	2.56	.896	4	H4
-		2749274	14603	1 1/8 - 12	5.44	2.56	.896	4	H4
-		2749265	14612	1 1/4 - 7	5.75	2.56	1.021	4	H4
-		3171056	14620	1 1/4 - 12	5.75	2.56	1.021	6	H4
-		3012774	14632	1 3/8 - 6	6.06	3.00	1.108	4	H4
-		3171057	14640	1 3/8 - 12	6.06	3.00	1.108	6	H4
-		2749241	14645	1 1/2 - 6	6.38	3.00	1.233	4	H4
-		3012776	14653	1 1/2 - 12	6.38	3.00	1.233	6	H4

NOTE: Hand taps for 3B class of fit are suitable for UNJ aerospace internal threading applications.
Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.



■ Series 5353 • Taper Chamfer • Metric ANSI



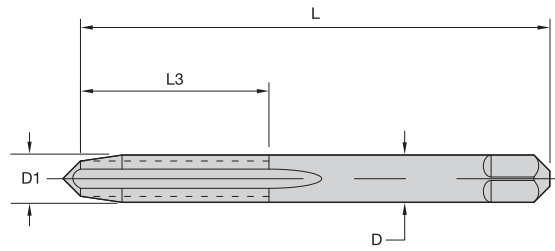
● first choice
○ alternate choice

uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	D1 size	L	L3	D		
2749221	14725	M2 X 0,4	1.75	.44	.141	3	D3
2749207	14741	M3 X 0,5	1.94	.63	.141	3	D3
2749197	14757	M4 X 0,7	2.13	.75	.168	4	D4
2749189	14773	M5 X 0,8	2.38	.88	.194	4	D4
2749161	14797	M8 X 1,25	2.72	1.13	.318	4	D5
2749152	14813	M10 X 1,5	2.94	1.25	.381	4	D6
2749144	14829	M12 X 1,75	3.38	1.66	.367	4	D6
2749134	14845	M14 X 2	3.59	1.66	.429	4	D7
2749123	14861	M16 X 2	3.81	1.81	.480	4	D7
2749117	14877	M18 X 2,5	4.03	1.06	.542	4	D7
2749106	14893	M20 X 2,5	4.47	2.00	.652	4	D7
2749096	14909	M24 X 3	4.91	2.22	.760	4	D8
2749086	14925	M30 X 3,5	5.44	2.56	1.021	4	D9
2749077	14941	M36 X 4	6.06	3.00	1.233	4	D9

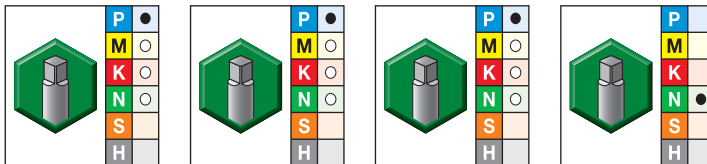
NOTE: Metric taps for 6H class of fit are suitable for MJ aerospace internal threading applications.
Metric taps are manufactured to USCT1 specifications and dimensions.
Metric tap blank dimensions are equivalent to inch taps.
Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 6H class of fit.

Production Taps

- Series 5305TC • TiCN Coated
- Series 2305 • TiN Coated
- Series 5305S • SH50 Steam Oxide
- Series 5305 • Uncoated



■ Series 5305/2305 • Machine Screw Sizes • Plug Chamfer

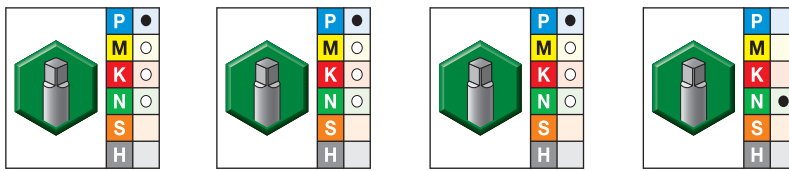


● first choice
○ alternate choice

TiCN		TiN		oxide		uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	D		
-	-	-	-	-	-	2748988	15103	0 - 80	1.63	.31	.141	2	H1
2746839	19121	2746715	19202	-	-	2748979	15107	0 - 80	1.63	.31	.141	2	H2
-	-	-	-	-	-	2748972	15115	1 - 64	1.69	.38	.141	2	H1
-	-	-	-	-	-	2748966	15118	1 - 64	1.69	.38	.141	2	H2
-	-	-	-	-	-	2748963	15121	1 - 72	1.69	.38	.141	2	H1
-	-	-	-	-	-	2748959	15125	1 - 72	1.69	.38	.141	2	H2
-	-	-	-	-	-	2865450	15129	2 - 56	1.75	.44	.141	3	H1
2746837	19122	2040972	19207	-	-	2748950	15135	2 - 56	1.75	.44	.141	3	H2
-	-	-	-	-	-	2748943	15138	2 - 56	1.75	.44	.141	2	H2
-	-	-	-	-	-	2748933	15145	2 - 64	1.75	.44	.141	3	H2
-	-	-	-	-	-	2748924	15157	3 - 48	1.81	.50	.141	3	H2
-	-	2748614	15433	-	-	2748916	15160	3 - 48	1.81	.50	.141	2	H2
-	-	-	-	-	-	2748911	15167	3 - 56	1.81	.50	.141	3	H2
2746835	19123	2041049	19211	2709830	19565	2748885	15185	4 - 40	1.88	.56	.141	3	H2
-	-	-	-	-	-	2748878	15189	4 - 40	1.88	.56	.141	2	H2
-	-	-	-	-	-	2748867	15197	4 - 48	1.88	.56	.141	3	H2
2746833	19124	2746697	19216	-	-	2865319	15210	5 - 40	1.94	.63	.141	3	H2
-	-	2748606	15437	-	-	2865310	15214	5 - 40	1.94	.63	.141	2	H2
-	-	-	-	-	-	2748855	15221	5 - 44	1.94	.63	.141	3	H2
2748850	15224	-	-	2746500	19575	2748843	15238	6 - 32	2.00	.69	.141	3	H3
-	-	-	-	-	-	2865292	15226	6 - 32	2.00	.69	.141	3	H1
-	-	2041051	19221	-	-	2865279	15232	6 - 32	2.00	.69	.141	3	H2
-	-	-	-	-	-	2865271	15235	6 - 32	2.00	.69	.141	2	H2
-	-	-	-	-	-	2748836	15245	6 - 32	2.00	.69	.141	2	H3

(continued)

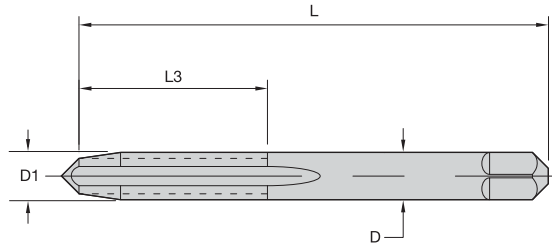
(Series 5305/2305 • Machine Screw Sizes • Plug Chamfer — continued)



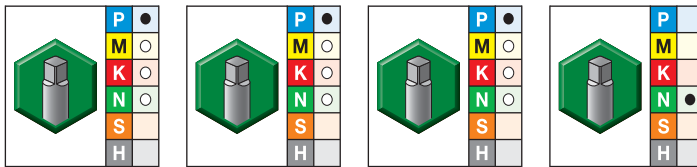
● first choice
○ alternate choice

TiCN		TiN		oxide		uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	D		
-	-	-	-	-	-	2748825	15258	6 - 40	2.00	.69	.141	3	H2
-	-	-	-	-	-	2748816	15262	6 - 40	2.00	.69	.141	2	H2
-	-	-	-	-	-	2748813	15268	8 - 32	2.13	.75	.168	4	H1
2748810	15270	-	-	2746492	19585	2748785	15284	8 - 32	2.13	.75	.168	4	H3
-	-	2463623	19226	-	-	2748804	15276	8 - 32	2.13	.75	.168	4	H2
-	-	-	-	-	-	2748800	15279	8 - 32	2.13	.75	.168	2	H2
-	-	-	-	-	-	2748792	15281	8 - 32	2.13	.75	.168	3	H2
-	-	-	-	-	-	2748774	15291	8 - 32	2.13	.75	.168	2	H3
-	-	2748598	15442	-	-	2748768	15293	8 - 32	2.13	.75	.168	3	H3
-	-	-	-	-	-	2748766	15295	8 - 32	2.13	.75	.168	4	H7
-	-	-	-	-	-	2748761	15302	8 - 36	2.13	.75	.168	4	H2
-	-	-	-	-	-	2748749	15314	10 - 24	2.38	.88	.194	4	H1
-	-	-	-	-	-	2748746	15321	10 - 24	2.38	.88	.194	4	H2
-	-	-	-	-	-	2748740	15324	10 - 24	2.38	.88	.194	2	H2
2746831	19126	2603956	19231	2746490	19600	2748736	15328	10 - 24	2.38	.88	.194	4	H3
-	-	-	-	-	-	2748730	15335	10 - 24	2.38	.88	.194	2	H3
-	-	2748595	15444	-	-	2748726	15337	10 - 24	2.38	.88	.194	3	H3
-	-	-	-	-	-	2748706	15345	10 - 32	2.38	.88	.194	4	H1
2748697	15348	2622811	19236	2746486	19615	2748678	15361	10 - 32	2.38	.88	.194	4	H3
-	-	-	-	-	-	2748692	15353	10 - 32	2.38	.88	.194	4	H2
-	-	-	-	-	-	2748684	15356	10 - 32	2.38	.88	.194	2	H2
-	-	-	-	-	-	2748681	15358	10 - 32	2.38	.88	.194	3	H2
-	-	-	-	-	-	2748666	15368	10 - 32	2.38	.88	.194	2	H3
-	-	2748585	15450	-	-	2748662	15370	10 - 32	2.38	.88	.194	3	H3
2746830	19127	2746663	19241	-	-	2748643	15384	12 - 24	2.38	.94	.220	4	H3
-	-	-	-	-	-	2748628	15391	12 - 28	2.38	.94	.220	4	H3

NOTE: Hand taps for 3B class of fit are suitable for UNJ aerospace internal threading applications.
Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.



■ Series 5303/2303 • Fractional Sizes • Plug Chamfer



● first choice
○ alternate choice

TiCN		TiN		oxide		uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	D		
2749839	14009	2463627	19247	2863727	19170	2957247	14023	1/4 - 20	2.50	1.00	.255	4	H3
-	-	-	-	-	-	2749837	14011	1/4 - 20	2.50	1.00	.255	4	H1
-	-	-	-	-	-	2749830	14016	1/4 - 20	2.50	1.00	.255	4	H2
-	-	-	-	-	-	3180806	14020	1/4 - 20	2.50	1.00	.255	3	H2
-	-	2748577	15453	-	-	3102009	14030	1/4 - 20	2.50	1.00	.255	2	H3
-	-	3171060	15454	-	-	2749802	14032	1/4 - 20	2.50	1.00	.255	3	H3
-	-	-	-	-	-	2749795	14036	1/4 - 20	2.50	1.00	.255	4	H5
-	-	-	-	-	-	2749791	14039	1/4 - 20	2.50	1.00	.255	3	H5
-	-	-	-	-	-	2749787	14041	1/4 - 20	2.50	1.00	.255	4	H11
-	-	-	-	-	-	2749780	14052	1/4 - 28	2.50	1.00	.255	4	H2
-	-	-	-	-	-	2749777	14053	1/4 - 28	2.50	1.00	.255	4	H2
-	-	-	-	-	-	2749772	14056	1/4 - 28	2.50	1.00	.255	4	H3
2746827	19128	2463629	19253	2746703	19210	-	-	1/4 - 28	2.50	1.00	.255	4	H3
-	-	-	-	-	-	2749759	14063	1/4 - 28	2.50	1.00	.255	2	H3
-	-	2748574	15456	-	-	2749757	14065	1/4 - 28	2.50	1.00	.255	3	H3
-	-	-	-	-	-	2749751	14067	1/4 - 28	2.50	1.00	.255	4	H4
-	-	-	-	-	-	2749744	14082	5/16 - 18	2.72	1.13	.318	4	H1
-	-	-	-	-	-	2435312	14087	5/16 - 18	2.72	1.13	.318	4	H2
2746826	19129	2746637	19258	2746665	19240	2749734	14093	5/16 - 18	2.72	1.13	.318	4	H3
-	-	-	-	-	-	3102021	14100	5/16 - 18	2.72	1.13	.318	2	H3
-	-	2748569	15459	-	-	-	-	5/16 - 18	2.72	1.13	.318	2	H3
-	-	2710689	15460	-	-	-	-	5/16 - 18	2.72	1.13	.318	3	H3
-	-	-	-	-	-	2749714	14102	5/16 - 18	2.72	1.13	.318	3	H3
-	-	-	-	-	-	2749709	14104	5/16 - 18	2.72	1.13	.318	4	H5
-	-	-	-	-	-	2749695	14109	5/16 - 18	2.72	1.13	.318	4	H11
-	-	-	-	-	-	2749694	14113	5/16 - 24	2.72	1.13	.318	4	H1
-	-	-	-	-	-	2749691	14118	5/16 - 24	2.72	1.13	.318	4	H2
2746824	19131	2746631	19263	2746635	19260	2749686	14123	5/16 - 24	2.72	1.13	.318	4	H3

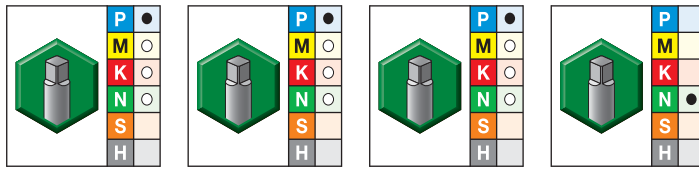
(continued)

Production Taps

Hand Taps • Through or Blind Holes in General Machining Applications



(Series 5303/2303 • Fractional Sizes • Plug Chamfer — continued)



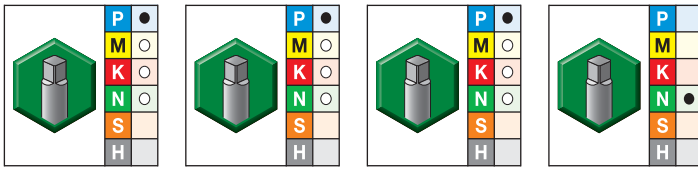
● first choice
○ alternate choice

TiCN		TiN		oxide		uncoated		inch dimensions			number of flutes	pitch diameter limit	
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3			D
-	-	2748566	15462	-	-	1295391	14130	5/16 - 24	2.72	1.13	.318	3	H3
-	-	-	-	-	-	2749666	14133	5/16 - 24	2.72	1.13	.318	4	H4
-	-	2746625	19268	2746615	19280	2749649	14158	3/8 - 16	2.94	1.25	.381	4	H3
2746822	19132	-	-	-	-	-	-	3/8 - 16	2.94	1.25	.381	4	H3
-	-	2748563	15464	-	-	2749635	14165	3/8 - 16	2.94	1.25	.381	3	H3
-	-	-	-	-	-	2749629	14169	3/8 - 16	2.94	1.25	.381	4	H5
-	-	-	-	-	-	2749617	14174	3/8 - 16	2.94	1.25	.381	4	H11
-	-	-	-	-	-	2749659	14147	3/8 - 16	2.94	1.25	.381	4	H1
-	-	-	-	-	-	2749655	14152	3/8 - 16	2.94	1.25	.381	4	H2
-	-	2748560	15466	-	-	2749595	14198	3/8 - 24	2.94	1.25	.381	3	H3
-	-	-	-	-	-	2749591	14201	3/8 - 24	2.94	1.25	.381	4	H4
-	-	-	-	-	-	2749613	14185	3/8 - 24	2.94	1.25	.381	4	H2
-	-	2746621	19273	-	-	2749609	14191	3/8 - 24	2.94	1.25	.381	4	H3
2746820	19134	-	-	3177077	19305	-	-	3/8 - 24	2.94	1.25	.381	4	H3
-	-	-	-	-	-	2749572	14232	7/16 - 14	3.16	1.44	.323	4	H5
-	-	2746617	19277	-	-	2749584	14222	7/16 - 14	3.16	1.44	.323	4	H3
2746818	19135	-	-	-	-	-	-	7/16 - 14	3.16	1.44	.323	4	H3
-	-	2748558	15467	-	-	-	-	7/16 - 14	3.16	1.44	.323	3	H3
-	-	-	-	-	-	2749573	14229	7/16 - 14	3.16	1.44	.323	3	H3
-	-	2746611	19283	-	-	1951473	14247	7/16 - 20	3.16	1.44	.323	4	H3
2746816	19136	-	-	-	-	-	-	7/16 - 20	3.16	1.44	.323	4	H3
-	-	-	-	-	-	2749550	14256	7/16 - 20	3.16	1.44	.323	4	H5
-	-	2748552	15469	-	-	2749530	14289	1/2 - 13	3.38	1.66	.367	3	H3
-	-	-	-	-	-	2957246	14293	1/2 - 13	3.38	1.66	.367	4	H5
-	-	-	-	-	-	2749519	14297	1/2 - 13	3.38	1.66	.367	4	H11
-	-	-	-	-	-	2866262	14274	1/2 - 13	3.38	1.66	.367	4	H1
2746814	19137	2746605	19291	2746576	19360	2415661	14282	1/2 - 13	3.38	1.66	.367	4	H3
-	-	2748550	15470	-	-	2749493	14316	1/2 - 20	3.38	1.66	.367	3	H3
-	-	-	-	-	-	2749491	14319	1/2 - 20	3.38	1.66	.367	4	H5
-	-	-	-	-	-	2749517	14301	1/2 - 20	3.38	1.66	.367	4	H1
-	-	-	-	-	-	2749513	14309	1/2 - 20	3.38	1.66	.367	4	H3
2746812	19138	2746595	19297	2746568	19375	-	-	1/2 - 20	3.38	1.66	.367	4	H3
-	-	-	-	-	-	2866187	14339	9/16 - 12	3.59	1.66	.429	4	H3
-	-	-	-	-	-	2749481	14346	9/16 - 12	3.59	1.66	.429	4	H5
-	-	-	-	-	-	2749463	14364	9/16 - 18	3.59	1.66	.429	4	H5
-	-	-	-	-	-	2749478	14353	9/16 - 18	3.59	1.66	.429	4	H2
-	-	-	-	-	-	2749475	14357	9/16 - 18	3.59	1.66	.429	4	H3
-	-	-	-	-	-	2749444	14388	5/8 - 11	3.81	1.81	.480	4	H5
-	-	-	-	-	-	2749461	14378	5/8 - 11	3.81	1.81	.480	4	H2
2746810	19139	2863589	19307	2746564	19410	2749458	14380	5/8 - 11	3.81	1.81	.480	4	H3

(continued)

Production Taps

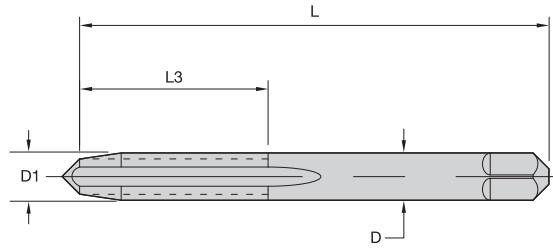
(Series 5303/2303 • Fractional Sizes • Plug Chamfer — continued)



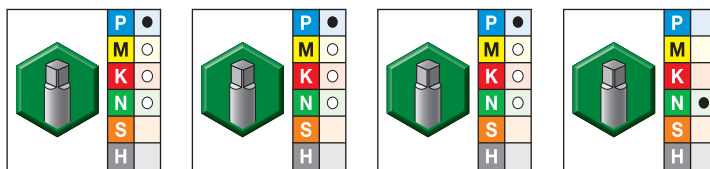
● first choice
○ alternate choice

TiCN		TiN		oxide		uncoated		inch dimensions			number of flutes	pitch diameter limit	
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3			D
-	-	-	-	-	-	2749414	14411	5/8 - 18	3.81	1.81	.480	4	H5
-	-	-	-	-	-	2749434	14400	5/8 - 18	3.81	1.81	.480	4	H2
-	-	2746592	19317	-	-	2749431	14403	5/8 - 18	3.81	1.81	.480	4	H3
2746808	19140	-	-	-	-	-	-	5/8 - 18	3.81	1.81	.480	4	H3
-	-	-	-	-	-	2749405	14424	11/16 - 11	4.03	1.06	.542	4	H3
-	-	-	-	-	-	2749397	14428	11/16 - 16	4.03	1.06	.542	4	H3
-	-	-	-	2746560	19445	-	-	3/4 - 10	4.25	2.00	.590	4	H3
-	-	2746588	19327	-	-	-	-	3/4 - 10	4.25	2.00	.590	4	H3
2746806	19141	-	-	-	-	-	-	3/4 - 10	4.25	2.00	.590	4	H3
-	-	-	-	-	-	2749379	14457	3/4 - 10	4.25	2.00	.590	4	H5
-	-	-	-	-	-	2749392	14449	3/4 - 10	4.25	2.00	.590	4	H3
-	-	-	-	-	-	1825322	14472	3/4 - 16	4.25	2.00	.590	4	H3
-	-	-	-	-	-	2710849	14479	3/4 - 16	4.25	2.00	.590	4	H4
-	-	-	-	2746556	19455	-	-	3/4 - 16	4.25	2.00	.590	4	H3
-	-	2746584	19337	-	-	-	-	3/4 - 16	4.25	2.00	.590	4	H3
2746804	19142	-	-	-	-	-	-	3/4 - 16	4.25	2.00	.590	4	H3
-	-	-	-	-	-	2749359	14482	3/4 - 16	4.25	2.00	.590	4	H5
-	-	-	-	2709889	19465	-	-	7/8 - 9	4.69	2.22	.697	4	H4
-	-	-	-	-	-	2749342	14508	7/8 - 9	4.69	2.22	.697	4	H6
-	-	-	-	-	-	2749354	14500	7/8 - 9	4.69	2.22	.697	4	H4
-	-	2863567	19347	-	-	-	-	7/8 - 9	4.69	2.22	.697	4	H4
-	-	2746578	19357	-	-	-	-	7/8 - 14	4.69	2.22	.697	4	H4
-	-	-	-	-	-	2749329	14524	7/8 - 14	4.69	2.22	.697	4	H6
-	-	-	-	-	-	2749338	14517	7/8 - 14	4.69	2.22	.697	4	H4
-	-	-	-	2709874	19475	-	-	1 - 8	5.13	2.50	.800	4	H4
-	-	2746572	19367	-	-	-	-	1 - 8	5.13	2.50	.800	4	H4
-	-	-	-	-	-	2749311	14553	1 - 8	5.13	2.50	.800	4	H6
-	-	-	-	-	-	2749326	14545	1 - 8	5.13	2.50	.800	4	H4
-	-	-	-	-	-	2749305	14558	1 - 12	5.13	2.50	.800	4	H4
-	-	-	-	-	-	2749292	14569	1 - 14	5.13	2.50	.800	4	H4
-	-	-	-	-	-	2749297	14567	1 - 14	5.13	2.50	.800	4	H2
-	-	-	-	-	-	2749280	14595	1 1/8 - 7	5.44	2.56	.896	4	H4
-	-	-	-	-	-	2749271	14604	1 1/8 - 12	5.44	2.56	.896	4	H4
-	-	-	-	-	-	2749263	14613	1 1/4 - 7	5.75	2.56	1.021	4	H4
-	-	-	-	-	-	2749258	14621	1 1/4 - 12	5.75	2.56	1.021	6	H4
-	-	-	-	-	-	2749252	14633	1 3/8 - 6	6.06	3.00	1.108	4	H4
-	-	-	-	-	-	2749247	14641	1 3/8 - 12	6.06	3.00	1.108	6	H4
-	-	-	-	-	-	3012775	14646	1 1/2 - 6	6.38	3.00	1.233	4	H4
-	-	-	-	-	-	2749234	14654	1 1/2 - 12	6.38	3.00	1.233	6	H4

- Series 5305TC • TiCN Coated
- Series 2305 • TiN Coated
- Series 5305S • SH50 Steam Oxide
- Series 5305 • Uncoated



■ Series 5305/2305 • Machine Screw Sizes • Bottoming Chamfer



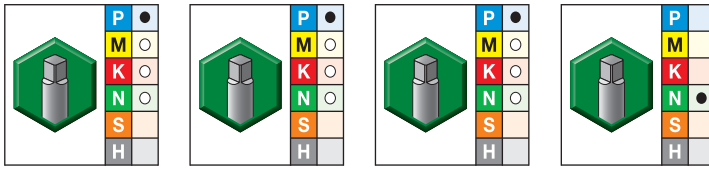
● first choice
○ alternate choice

TiCN		TiN		oxide		uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	D		
-	-	-	-	-	-	2748985	15104	0 - 80	1.63	.31	.141	2	H1
2863721	19174	2746711	19204	-	-	2748977	15108	0 - 80	1.63	.31	.141	2	H2
-	-	-	-	-	-	2748970	15116	1 - 64	1.69	.38	.141	2	H1
-	-	-	-	-	-	2748962	15122	1 - 72	1.69	.38	.141	2	H1
-	-	-	-	-	-	3049563	15126	1 - 72	1.69	.38	.141	2	H2
-	-	-	-	-	-	2748955	15130	2 - 56	1.75	.44	.141	3	H1
3171079	19175	-	-	-	-	2748947	15136	2 - 56	1.75	.44	.141	3	H2
-	-	-	-	-	-	2748942	15139	2 - 56	1.75	.44	.141	2	H2
-	-	-	-	-	-	2748930	15146	2 - 64	1.75	.44	.141	3	H2
-	-	-	-	-	-	2748920	15158	3 - 48	1.81	.50	.141	3	H2
-	-	2748616	15432	-	-	2748914	15161	3 - 48	1.81	.50	.141	2	H2
-	-	-	-	-	-	2748906	15168	3 - 56	1.81	.50	.141	3	H2
2746756	19176	2041050	19213	2709823	19570	2748882	15186	4 - 40	1.88	.56	.141	3	H2
-	-	2748612	15434	-	-	2748876	15190	4 - 40	1.88	.56	.141	2	H2
-	-	-	-	-	-	2748864	15198	4 - 48	1.88	.56	.141	3	H2
2746754	19177	2746695	19218	-	-	2865316	15211	5 - 40	1.94	.63	.141	3	H2
-	-	2748607	15436	-	-	3177073	15215	5 - 40	1.94	.63	.141	2	H2
-	-	-	-	-	-	2748852	15222	5 - 44	1.94	.63	.141	3	H2
-	-	-	-	-	-	2865289	15227	6 - 32	2.00	.69	.141	3	H1
-	-	2041052	19223	-	-	2865277	15233	6 - 32	2.00	.69	.141	3	H2
-	-	-	-	-	-	2891496	15236	6 - 32	2.00	.69	.141	2	H2
2746752	19178	-	-	2746494	19580	2748840	15239	6 - 32	2.00	.69	.141	3	H3
-	-	2748604	15438	-	-	2748835	15246	6 - 32	2.00	.69	.141	2	H3
-	-	-	-	-	-	2748820	15259	6 - 40	2.00	.69	.141	3	H2

(continued)

Production Taps

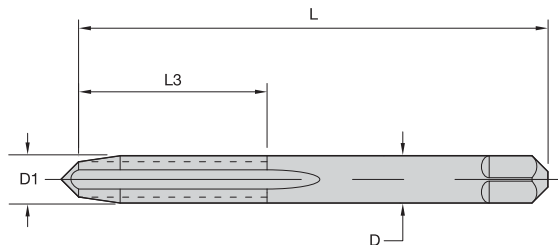
(Series 5305/2305 • Machine Screw Sizes • Bottoming Chamfer — continued)



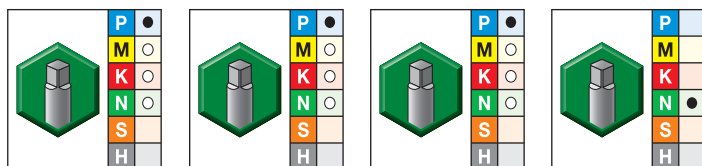
● first choice
○ alternate choice

TiCN		TiN		oxide		uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	D		
-	-	-	-	-	-	2748811	15269	8 - 32	2.13	.75	.168	4	H1
-	-	1773455	19228	-	-	2748803	15277	8 - 32	2.13	.75	.168	4	H2
-	-	-	-	-	-	2748795	15280	8 - 32	2.13	.75	.168	2	H2
-	-	-	-	-	-	2748791	15282	8 - 32	2.13	.75	.168	3	H2
2746750	19179	-	-	2863495	19590	2748781	15285	8 - 32	2.13	.75	.168	4	H3
-	-	-	-	-	-	2748773	15292	8 - 32	2.13	.75	.168	2	H3
-	-	-	-	-	-	2969917	15294	8 - 32	2.13	.75	.168	3	H3
2709451	19860	-	-	-	-	-	-	8 - 32	2.13	.75	.168	4	H3
-	-	-	-	-	-	2748758	15303	8 - 36	2.13	.75	.168	4	H2
2746747	19181	2603957	19233	2746488	19605	2748733	15329	10 - 24	2.38	.88	.194	4	H3
-	-	-	-	-	-	2748728	15336	10 - 24	2.38	.88	.194	2	H3
-	-	2748597	15443	-	-	2748722	15338	10 - 24	2.38	.88	.194	3	H3
-	-	-	-	-	-	2748744	15322	10 - 24	2.38	.88	.194	4	H2
-	-	-	-	-	-	2748689	15354	10 - 32	2.38	.88	.194	4	H2
-	-	-	-	-	-	2748682	15357	10 - 32	2.38	.88	.194	2	H2
-	-	2748592	15446	-	-	2748680	15359	10 - 32	2.38	.88	.194	3	H2
2746745	19182	2622812	19238	2863477	19620	2748675	15362	10 - 32	2.38	.88	.194	4	H3
-	-	2748593	15445	-	-	2748663	15369	10 - 32	2.38	.88	.194	2	H3
-	-	2748590	15447	-	-	2748661	15371	10 - 32	2.38	.88	.194	3	H3
-	-	-	-	-	-	2748702	15346	10 - 32	2.38	.88	.194	4	H1
2746743	19183	2746661	19243	-	-	2748641	15385	12 - 24	2.38	.94	.220	4	H3
-	-	-	-	-	-	2748624	15392	12 - 28	2.38	.94	.220	4	H3

NOTE: Hand taps for 3B class of fit are suitable for UNJ aerospace internal threading applications.
Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.



■ Series 5303/2303 • Fractional Sizes • Bottoming Chamfer



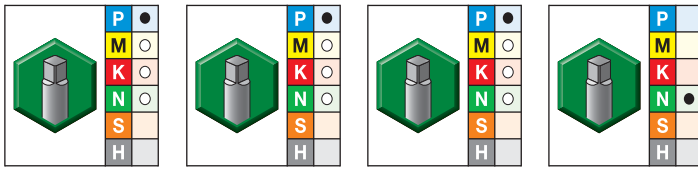
● first choice
○ alternate choice

TiCN		TiN		oxide		uncoated		inch dimensions			number of flutes	pitch diameter limit	
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3			D
-	-	-	-	-	-	2749836	14012	1/4 - 20	2.50	1.00	.255	4	H1
-	-	-	-	-	-	2749826	14017	1/4 - 20	2.50	1.00	.255	4	H2
2746741	19184	2463628	19251	2746748	19180	2749818	14024	1/4 - 20	2.50	1.00	.255	4	H3
-	-	-	-	-	-	2749805	14031	1/4 - 20	2.50	1.00	.255	2	H3
-	-	-	-	-	-	2749800	14033	1/4 - 20	2.50	1.00	.255	3	H3
-	-	-	-	-	-	2749793	14037	1/4 - 20	2.50	1.00	.255	4	H5
2746739	19185	2463630	19256	2746691	19220	2749766	14057	1/4 - 28	2.50	1.00	.255	4	H3
-	-	-	-	-	-	2749758	14064	1/4 - 28	2.50	1.00	.255	2	H3
-	-	2748576	15455	-	-	2749755	14066	1/4 - 28	2.50	1.00	.255	3	H3
-	-	-	-	-	-	1854370	14068	1/4 - 28	2.50	1.00	.255	4	H4
-	-	-	-	-	-	2749742	14083	5/16 - 18	2.72	1.13	.318	4	H1
-	-	-	-	-	-	2749739	14088	5/16 - 18	2.72	1.13	.318	4	H2
2746737	19186	2746633	19261	2746657	19245	2749732	14094	5/16 - 18	2.72	1.13	.318	4	H3
-	-	2748573	15457	-	-	2749716	14101	5/16 - 18	2.72	1.13	.318	2	H3
-	-	2748571	15458	-	-	2749712	14103	5/16 - 18	2.72	1.13	.318	3	H3
-	-	-	-	-	-	2749706	14105	5/16 - 18	2.72	1.13	.318	4	H5
2746735	19187	2746627	19266	2746629	19265	2038474	14124	5/16 - 24	2.72	1.13	.318	4	H3
-	-	2748568	15461	-	-	2749669	14131	5/16 - 24	2.72	1.13	.318	3	H3
-	-	-	-	-	-	2749662	14134	5/16 - 24	2.72	1.13	.318	4	H4
-	-	-	-	-	-	2749656	14148	3/8 - 16	2.94	1.25	.381	4	H1
-	-	-	-	-	-	2749652	14153	3/8 - 16	2.94	1.25	.381	4	H2
2746733	19188	2746623	19271	2746609	19285	2749647	14159	3/8 - 16	2.94	1.25	.381	4	H3
-	-	2748565	15463	-	-	2749633	14166	3/8 - 16	2.94	1.25	.381	3	H3
-	-	-	-	-	-	2749625	14170	3/8 - 16	2.94	1.25	.381	4	H5
2746731	19189	2746619	19275	2746593	19310	1951472	14192	3/8 - 24	2.94	1.25	.381	4	H3
-	-	2748561	15465	-	-	2749593	14199	3/8 - 24	2.94	1.25	.381	3	H3
-	-	-	-	-	-	2749589	14202	3/8 - 24	2.94	1.25	.381	4	H4
2746729	19191	2746613	19281	-	-	2749582	14223	7/16 - 14	3.16	1.44	.323	4	H3

(continued)

Production Taps

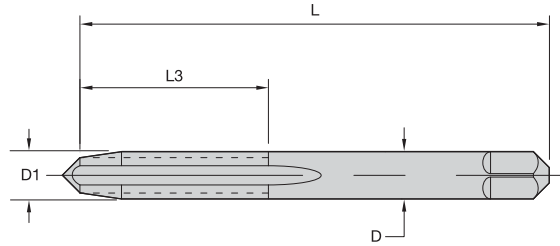
(Series 5303/2303 • Fractional Sizes • Bottoming Chamfer — continued)



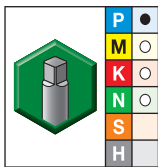
● first choice
○ alternate choice

TiCN		TiN		oxide		uncoated		inch dimensions			number of flutes	pitch diameter limit	
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3			D
-	-	-	-	-	-	2749570	14233	7/16 - 14	3.16	1.44	.323	4	H5
2746727	19192	2746607	19287	-	-	2038865	14248	7/16 - 20	3.16	1.44	.323	4	H3
-	-	-	-	-	-	2749548	14257	7/16 - 20	3.16	1.44	.323	4	H5
-	-	-	-	-	-	2749545	14275	1/2 - 13	3.38	1.66	.367	4	H1
2746725	19193	2746601	19293	2746580	19355	2749540	14283	1/2 - 13	3.38	1.66	.367	4	H3
-	-	2748556	15468	-	-	2749526	14290	1/2 - 13	3.38	1.66	.367	3	H3
-	-	-	-	-	-	2749520	14294	1/2 - 13	3.38	1.66	.367	4	H5
2746723	19194	3113801	19303	2746566	19380	1951476	14310	1/2 - 20	3.38	1.66	.367	4	H3
-	-	-	-	-	-	2866184	14340	9/16 - 12	3.59	1.66	.429	4	H3
-	-	-	-	-	-	2749474	14358	9/16 - 18	3.59	1.66	.429	4	H3
2746721	19197	2863585	19313	2746562	19415	2749456	14381	5/8 - 11	3.81	1.81	.480	4	H3
-	-	-	-	-	-	2749441	14389	5/8 - 11	3.81	1.81	.480	4	H5
2746719	19198	2746590	19323	-	-	2749428	14404	5/8 - 18	3.81	1.81	.480	4	H3
-	-	-	-	-	-	2749411	14412	5/8 - 18	3.81	1.81	.480	4	H5
-	-	-	-	-	-	2749403	14425	11/16 - 11	4.03	1.06	.542	4	H3
-	-	-	-	-	-	2749396	14429	11/16 - 16	4.03	1.06	.542	4	H3
2746717	19199	2746586	19333	2746558	19450	3180808	14450	3/4 - 10	4.25	2.00	.590	4	H3
-	-	-	-	-	-	2749376	14458	3/4 - 10	4.25	2.00	.590	4	H5
-	-	2863572	19343	2746553	19460	2749370	14473	3/4 - 16	4.25	2.00	.590	4	H3
-	-	-	-	-	-	2749358	14483	3/4 - 16	4.25	2.00	.590	4	H5
-	-	2746582	19353	2709881	19470	2749352	14501	7/8 - 9	4.69	2.22	.697	4	H4
-	-	2746574	19363	-	-	2749336	14518	7/8 - 14	4.69	2.22	.697	4	H4
-	-	2746570	19373	2709867	19480	2749324	14546	1 - 8	5.13	2.50	.800	4	H4
-	-	-	-	-	-	3006761	14559	1 - 12	5.13	2.50	.800	4	H4
-	-	-	-	-	-	3180807	14570	1 - 14	5.13	2.50	.800	4	H4
-	-	-	-	-	-	2749278	14596	1 1/8 - 7	5.44	2.56	.896	4	H4
-	-	-	-	-	-	2749269	14605	1 1/8 - 12	5.44	2.56	.896	4	H4
-	-	-	-	-	-	2749261	14614	1 1/4 - 7	5.75	2.56	1.021	4	H4
-	-	-	-	-	-	2749256	14622	1 1/4 - 12	5.75	2.56	1.021	6	H4
-	-	-	-	-	-	2749251	14634	1 3/8 - 6	6.06	3.00	1.108	4	H4
-	-	-	-	-	-	2749246	14642	1 3/8 - 12	6.06	3.00	1.108	6	H4
-	-	-	-	-	-	2749240	14647	1 1/2 - 6	6.38	3.00	1.233	4	H4
-	-	-	-	-	-	2749233	14655	1 1/2 - 12	6.38	3.00	1.233	6	H4

NOTE: Hand taps for 3B class of fit are suitable for UNJ aerospace internal threading applications.
Refer to tables on pages W231-W232 for the recommended pitch diameter limit for 2B or 3B class of fit.



■ Series 5305 • Machine Screw Sizes • Sets of One Each Taper, Plug, and Bottoming Chamfer

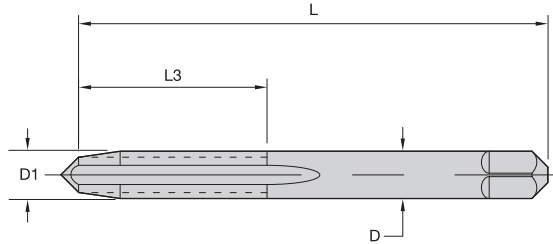


● first choice
○ alternate choice

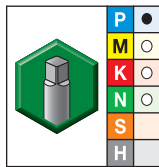
uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	D1 size	L	L3	D		
2748981	15105	0 - 80	1.63	.31	.141	2	H1
2748968	15117	1 - 64	1.69	.38	.141	2	H1
2748961	15123	1 - 72	1.69	.38	.141	2	H1
2748945	15137	2 - 56	1.75	.44	.141	3	H2
2748928	15147	2 - 64	1.75	.44	.141	3	H2
2748918	15159	3 - 48	1.81	.50	.141	3	H2
2748902	15169	3 - 56	1.81	.50	.141	3	H2
2748880	15187	4 - 40	1.88	.56	.141	3	H2
2748863	15199	4 - 48	1.88	.56	.141	3	H2
2865313	15212	5 - 40	1.94	.63	.141	3	H2
2748851	15223	5 - 44	1.94	.63	.141	3	H2
2865286	15228	6 - 32	2.00	.69	.141	3	H1
2865274	15234	6 - 32	2.00	.69	.141	3	H2
2748838	15240	6 - 32	2.00	.69	.141	3	H3
2748818	15260	6 - 40	2.00	.69	.141	3	H2
2748801	15278	8 - 32	2.13	.75	.168	4	H2
2865185	15286	8 - 32	2.13	.75	.168	4	H3
2748756	15304	8 - 36	2.13	.75	.168	4	H2
2748743	15323	10 - 24	2.38	.88	.194	4	H2
2748731	15330	10 - 24	2.38	.88	.194	4	H3
2748685	15355	10 - 32	2.38	.88	.194	4	H2
2748670	15363	10 - 32	2.38	.88	.194	4	H3
2748637	15386	12 - 24	2.38	.94	.220	4	H3
2748623	15393	12 - 28	2.38	.94	.220	4	H3

NOTE: Hand taps for 3B class of fit are suitable for UNJ aerospace internal threading applications.
Tap sets include one of each: taper, plug, and bottoming chamfer.
Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.

Production Taps



■ Series 5303 • Fractional Sizes • Sets of One Each Taper, Plug, and Bottoming Chamfer

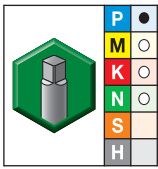


● first choice
○ alternate choice

uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	D1 size	L	L3	D		
2749834	14013	1/4 - 20	2.50	1.00	.255	4	H1
2749824	14018	1/4 - 20	2.50	1.00	.255	4	H2
2749815	14025	1/4 - 20	2.50	1.00	.255	4	H3
2749764	14058	1/4 - 28	2.50	1.00	.255	4	H3
2749729	14095	5/16 - 18	2.72	1.13	.318	4	H3
2749680	14125	5/16 - 24	2.72	1.13	.318	4	H3
2749644	14160	3/8 - 16	2.94	1.25	.381	4	H3
2749605	14193	3/8 - 24	2.94	1.25	.381	4	H3
2749581	14224	7/16 - 14	3.16	1.44	.323	4	H3
2749560	14249	7/16 - 20	3.16	1.44	.323	4	H3
2749538	14284	1/2 - 13	3.38	1.66	.367	4	H3
2749503	14311	1/2 - 20	3.38	1.66	.367	4	H3
2749488	14341	9/16 - 12	3.59	1.66	.429	4	H3
2749472	14359	9/16 - 18	3.59	1.66	.429	4	H3
2749454	14382	5/8 - 11	3.81	1.81	.480	4	H3
2749426	14405	5/8 - 18	3.81	1.81	.480	4	H3
2749402	14426	11/16 - 11	4.03	1.06	.542	4	H3
2749388	14451	3/4 - 10	4.25	2.00	.590	4	H3
2749368	14474	3/4 - 16	4.25	2.00	.590	4	H3
2749350	14502	7/8 - 9	4.69	2.22	.697	4	H4
2749335	14519	7/8 - 14	4.69	2.22	.697	4	H4
2749320	14547	1 - 8	5.13	2.50	.800	4	H4
3303777	14560	1 - 12	5.13	2.50	.800	4	H4
2749288	14571	1 - 14	5.13	2.50	.800	4	H4

(continued)

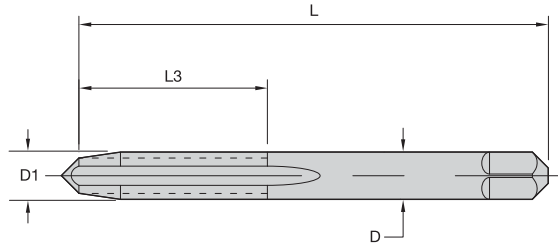
(Series 5303 • Fractional Sizes • Sets of One Each Taper, Plug, and Bottoming Chamfer — continued)



● first choice
○ alternate choice

uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	D1 size	L	L3	D		
2749275	14597	1 1/8 - 7	5.44	2.56	.896	4	H4
2749267	14606	1 1/8 - 12	5.44	2.56	.896	4	H4
2749260	14615	1 1/4 - 7	5.75	2.56	1.021	4	H4
2749254	14623	1 1/4 - 12	5.75	2.56	1.021	6	H4
2749249	14635	1 3/8 - 6	6.06	3.00	1.108	4	H4
2749243	14643	1 3/8 - 12	6.06	3.00	1.108	6	H4
2749237	14648	1 1/2 - 6	6.38	3.00	1.233	4	H4
2749231	14656	1 1/2 - 12	6.38	3.00	1.233	6	H4

NOTE: Hand taps for 3B class of fit are suitable for UNJ aerospace internal threading applications.
Tap sets include one of each: taper, plug, and bottoming chamfer.
Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.

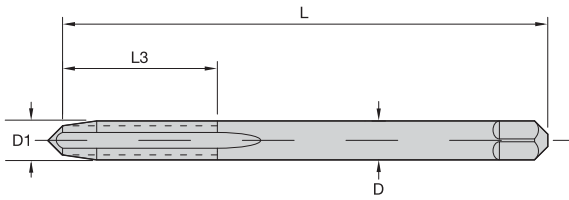


- first choice
- alternate choice

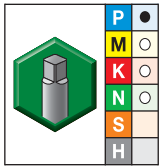
■ Series 5305L/5303L • Fractional Sizes • Sets of One Each Taper, Plug, and Bottoming Chamfer and Sets

taper chamfer 7-10 pitch		plug chamfer 3-5 pitch		full bottom 1-2 pitch		taper and plug bottoming set		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 TPI	L	L3	D		
2749814	14026	2749813	14027	2749811	14028	2749810	14029	1/4 - 20	2.50	1.00	.255	4	H3
-	-	3171054	14060	-	-	-	-	1/4 - 28	2.50	1.00	.255	4	H3
2749727	14096	2749724	14097	2749721	14098	2749719	14099	5/16 - 18	2.72	1.13	.318	4	H3
2749679	14126	2749677	14127	2749675	14128	2749674	14129	5/16 - 24	2.72	1.13	.318	4	H3
2749642	14161	2749639	14162	2749637	14163	2749636	14164	3/8 - 16	2.94	1.25	.381	4	H3
2749603	14194	2749601	14195	2749599	14196	2749597	14197	3/8 - 24	2.94	1.25	.381	4	H3
2749580	14225	-	-	-	-	-	-	7/16 - 14	3.16	1.44	.323	4	H3
3171055	14250	2749557	14251	2749554	14252	-	-	7/16 - 20	3.16	1.44	.323	4	H3
2866246	14285	2749535	14286	2749533	14287	2749531	14288	1/2 - 13	3.38	1.66	.367	4	H3
2749502	14312	2749499	14313	2749497	14314	2749495	14315	1/2 - 20	3.38	1.66	.367	4	H3
2749470	14360	-	-	-	-	-	-	9/16 - 18	3.59	1.66	.429	4	H3
2749451	14383	2749449	14384	2749447	14385	-	-	5/8 - 11	3.81	1.81	.480	4	H3
2749424	14406	2749421	14407	2749420	14408	-	-	5/8 - 18	3.81	1.81	.480	4	H3
2749386	14452	2749384	14453	2749382	14454	-	-	3/4 - 10	4.25	2.00	.590	4	H3
2749367	14475	2749365	14476	2749363	14477	-	-	3/4 - 16	4.25	2.00	.590	4	H3

Production Taps



■ Series 5305(EXT)/5303(EXT) • Machine Screw and Fractional • Bottoming Chamfer

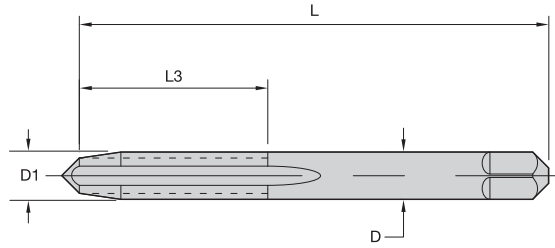


- first choice
- alternate choice

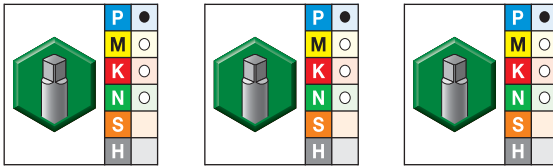
uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	D		
2747076	18828	6 - 32	6.00	.69	.141	3	H3
2747037	18892	8 - 32	6.00	.75	.168	4	H3
2747072	18834	10 - 24	6.00	.88	.194	4	H3
2747069	18837	10 - 32	6.00	.88	.194	4	H3
2747065	18840	1/4 - 20	6.00	1.00	.255	4	H3
2747061	18843	1/4 - 28	6.00	1.00	.255	4	H3
2747057	18846	5/16 - 18	6.00	.67	.318	4	H3
1779890	18849	5/16 - 24	6.00	.59	.318	4	H3
2747049	18852	3/8 - 16	6.00	1.25	.381	4	H3
2747047	18855	3/8 - 24	6.00	1.25	.381	4	H3

NOTE: Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.





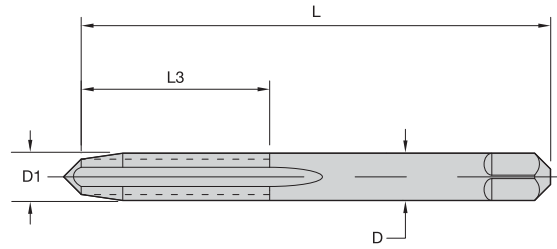
■ Series 5353 • Plug Chamfer • Metric ANSI



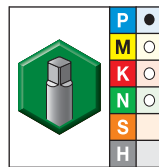
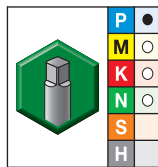
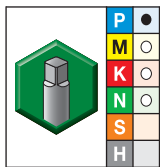
● first choice
○ alternate choice

TICN		TiN		uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	D		
-	-	-	-	2749224	14718	M1,6 X 0,35	1.63	.31	.141	2	D3
-	-	-	-	2749219	14726	M2 X 0,4	1.75	.44	.141	3	D3
-	-	-	-	2749210	14734	M2,5 X 0,45	1.81	.50	.141	3	D3
3171081	19217	3111251	15471	2749205	14742	M3 X 0,5	1.94	.63	.141	3	D3
-	-	-	-	2749199	14750	M3,5 X 0,6	2.00	.69	.141	3	D4
2746693	19219	2748549	15473	2749194	14758	M4 X 0,7	2.13	.75	.168	4	D4
-	-	-	-	2749191	14766	M4,5 X 0,75	2.38	.88	.194	4	D4
2746687	19222	2863245	19906	2749186	14774	M5 X 0,8	2.38	.88	.194	4	D4
2746683	19224	-	-	2749177	14782	M6 X 1	2.50	1.00	.255	4	D5
-	-	-	-	2749167	14790	M7 X 1	2.72	1.13	.318	4	D5
2746681	19225	2746288	19912	2749160	14798	M8 X 1,25	2.72	1.13	.318	4	D5
2746677	19227	2746284	19915	2749151	14814	M10 X 1,5	2.94	1.25	.381	4	D6
3005011	19229	2746209	19955	2749141	14830	M12 X 1,75	3.38	1.66	.367	4	D6
-	-	-	-	2749284	14586	M14 X 1,25	3.59	1.66	.429	4	H4
-	-	-	-	2749131	14846	M14 X 2	3.59	1.66	.429	4	D7
-	-	-	-	3012777	14862	M16 X 2	3.81	1.81	.480	4	D7
-	-	-	-	2749282	14590	M18 X 1,5	4.03	1.81	.542	4	H4
-	-	-	-	2749113	14878	M18 X 2,5	4.03	1.06	.542	4	D7
-	-	-	-	2749104	14894	M20 X 2,5	4.47	2.00	.652	4	D7
-	-	-	-	2749094	14910	M24 X 3	4.91	2.22	.760	4	D8
-	-	-	-	2749084	14926	M30 X 3,5	5.44	2.56	1.021	4	D9
-	-	-	-	2749076	14942	M36 X 4	6.06	3.00	1.233	4	D9

NOTE: Metric taps for 6H class of fit are suitable for MJ aerospace internal threading applications.
Metric taps are manufactured to USCTI specifications and dimensions.
Metric tap blank dimensions are equivalent to inch taps.
Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 6H class of fit.



■ Series 5353 • Bottoming Chamfer • Metric ANSI

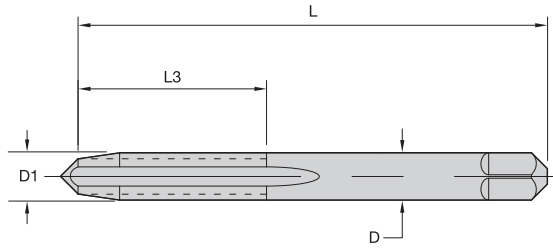


● first choice
○ alternate choice

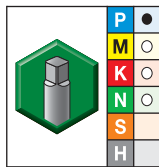
TiCN		TiN		uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	D		
2896313	19201	3044179	15472	2749204	14743	M3 X 0,5	1.94	.63	.141	3	D3
2746713	19203	2978979	15474	-	-	M4 X 0,7	2.13	.75	.168	4	D4
2746709	19205	2746294	19907	2749182	14775	M5 X 0,8	2.38	.88	.194	4	D4
2746707	19206	-	-	-	-	M6 X 1	2.50	1.00	.255	4	D5
2746701	19212	-	-	-	-	M8 X 1,25	2.72	1.13	.318	4	D5
2746699	19214	2746282	19916	-	-	M10 X 1,5	2.94	1.25	.381	4	D6
3171080	19215	-	-	-	-	M12 X 1,75	3.38	1.66	.367	4	D6
-	-	-	-	2749127	14847	M14 X 2	3.59	1.66	.429	4	D7
-	-	-	-	2749122	14863	M16 X 2	3.81	1.81	.480	4	D7
-	-	-	-	2749102	14895	M20 X 2,5	4.47	2.00	.652	4	D7
-	-	-	-	2749093	14911	M24 X 3	4.91	2.22	.760	4	D8
-	-	-	-	2749081	14927	M30 X 3,5	5.44	2.56	1.021	4	D9
-	-	-	-	2749073	14943	M36 X 4	6.06	3.00	1.233	4	D9

NOTE: Metric taps for 6H class of fit are suitable for MJ aerospace internal threading applications.
Metric taps are manufactured to USCTI specifications and dimensions.
Metric tap blank dimensions are equivalent to inch taps.
Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 6H class of fit.

Production Taps



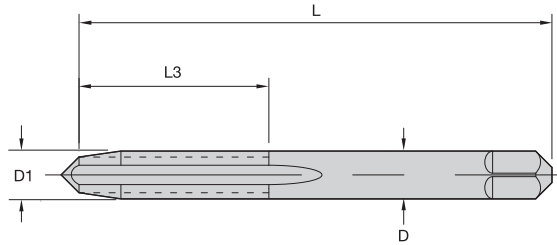
■ Series 5353 • Sets of One Each, Taper, Plug, Bottoming Chamfer • Metric ANSI



● first choice
○ alternate choice

uncoated		inch dimensions				number of flutes	pitch diameter limit
order #	catalog #	D1 size	L	L3	D		
2749202	14744	M3 X 0,5	1.94	.63	.141	3	D3
2749192	14760	M4 X 0,7	2.13	.75	.168	4	D4
2749181	14777	M5 X 0,8	2.38	.88	.194	4	D4
2749171	14784	M6 X 1	2.50	1.00	.255	4	D5
2749153	14800	M8 X 1,25	2.72	1.13	.318	4	D5
2749145	14816	M10 X 1,5	2.94	1.25	.381	4	D6
2749136	14832	M12 X 1,75	3.38	1.66	.367	4	D6
2749125	14848	M14 X 2	3.59	1.66	.429	4	D7
2749119	14864	M16 X 2	3.81	1.81	.480	4	D7
2749099	14896	M20 X 2,5	4.47	2.00	.652	4	D7

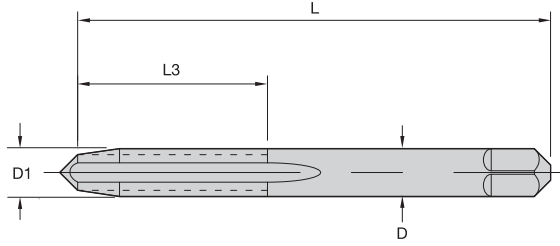
NOTE: Metric taps for 6H class of fit are suitable for MJ aerospace internal threading applications.
Metric taps are manufactured to USCT1 specifications and dimensions.
Metric tap blank dimensions are equivalent to inch taps.
Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 6H class of fit.



- first choice
- alternate choice

■ Series 7305 • Machine Screw • Taper, Plug, Bottoming Chamfer, and Sets

taper chamfer 7-10 pitch		plug chamfer 3-5 pitch		full bottom 1-2 pitch		taper and plug bottoming set		D1 size	L	L3	D	class of fit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #					
2751095	11516	2751092	11517	2751090	11518	2751086	11519	4 - 40	2	.56	.141	2B
2751081	11524	2751080	11525	2751079	11526	2751077	11527	5 - 40	2	.63	.141	2B
2751075	11528	2751073	11529	2751071	11530	2751070	11531	6 - 32	2	.69	.141	2B
-	-	2751068	11537	-	-	-	-	6 - 40	2	.69	.141	2B
2751066	11540	2751064	11541	2751060	11542	2751058	11543	8 - 32	2	.75	.168	2B
-	-	2751056	11545	-	-	-	-	8 - 36	2	.75	.168	2B
2751055	11548	2751053	11549	2751051	11550	2751048	11551	10 - 24	2	.88	.194	2B
2751047	11552	2751045	11553	2751043	11554	2885052	11555	10 - 32	2	.88	.194	2B
2751041	11556	2751040	11557	2751037	11558	2751036	11559	12 - 24	2	.94	.220	2B
-	-	2751034	11561	-	-	-	-	12 - 28	2	.94	.220	2B

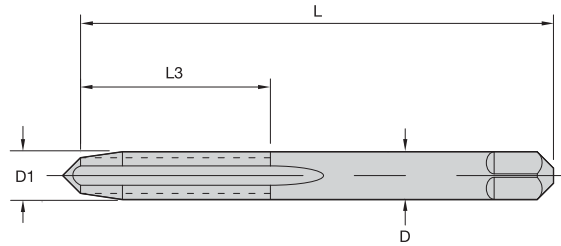


- first choice
- alternate choice

■ Series 7303 • Fractional • Taper, Plug, Bottoming Chamfer, and Sets

taper chamfer 7-10 pitch		plug chamfer 3-5 pitch		full bottom 1-2 pitch		taper and plug bottoming set		inch dimensions				class of fit
order #	catalog #	order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	D	
2751033	11584	2867820	11585	2751031	11586	2751030	11587	3/16 - 24	2	.88	.194	2B
2751027	11596	2751025	11597	2751023	11598	2751020	11599	1/4 - 20	3	1.00	.255	2B
2751019	11600	2751015	11601	2751013	11602	2751011	11603	1/4 - 28	3	1.00	.255	2B
2751010	11604	2751008	11605	2751007	11606	2751004	11607	5/16 - 18	3	1.13	.318	2B
2751002	11608	2751001	11609	2750999	11610	2750998	11611	5/16 - 24	3	1.13	.318	2B
2750996	11612	2750995	11613	2750993	11614	2750991	11615	3/8 - 16	3	1.25	.381	2B
2750990	11616	2750988	11617	2750986	11618	2750985	11619	3/8 - 24	3	1.25	.381	2B
2750984	11620	2750983	11621	2750980	11622	2750975	11623	7/16 - 14	3	1.44	.323	2B
2750972	11624	2750969	11625	2750967	11626	2750965	11627	7/16 - 20	3	1.44	.323	2B
2750962	11628	2750959	11629	2750957	11630	2750953	11631	1/2 - 13	3	1.66	.367	2B
2750951	11632	2750948	11633	2750946	11634	2750945	11635	1/2 - 20	3	1.66	.367	2B
2750943	11636	2750941	11637	2750940	11638	2750939	11639	9/16 - 12	4	1.66	.429	2B
2750937	11640	2750935	11641	2750933	11642	2750932	11643	9/16 - 18	4	1.66	.429	2B
2750928	11644	2750926	11645	2750923	11646	2750920	11647	5/8 - 11	4	1.81	.480	2B
2750918	11648	2750917	11649	2750916	11650	-	-	5/8 - 18	3	1.25	.381	2B
-	-	-	-	-	-	2750915	11651	5/8 - 18	4	1.81	.480	2B
2750912	11652	2750910	11653	2750907	11654	2750906	11655	3/4 - 10	4	2.00	.590	2B
2750904	11656	2750902	11657	2750901	11658	2750900	11659	3/4 - 16	4	2.00	.590	2B
2750898	11660	2750896	11661	2750895	11662	2750893	11663	7/8 - 9	5	2.22	.697	2B
2750892	11664	2750888	11665	2750886	11666	2750885	11667	7/8 - 14	5	2.22	.697	2B
2750883	11668	2750882	11669	2750880	11670	2750879	11671	1 - 8	5	2.50	.800	2B
2750878	11672	-	-	2750875	11674	2750873	11675	1 - 12	5	2.50	.800	2B
2750871	11676	2750868	11677	2750867	11678	2750865	11679	1 - 14	5	2.50	.800	2B
2750862	11680	2750857	11681	2750856	11682	2750854	11683	1 1/8 - 7	5	2.56	.896	2B
-	-	2750852	11685	2750848	11686	-	-	1 1/8 - 8	5	2.56	.896	2B
2750843	11688	2750841	11689	2750838	11690	-	-	1 1/8 - 12	5	2.56	.896	2B
2750835	11692	2750834	11693	2750832	11694	2750831	11695	1 1/4 - 7	6	2.56	1.021	2B
2750827	11696	2750824	11697	2750822	11698	-	-	1 1/4 - 8	6	2.56	1.021	2B
2750812	11700	2750809	11701	2750807	11702	-	-	1 1/4 - 12	6	2.56	1.021	2B
2750780	11716	2750778	11717	2750777	11718	2750776	11719	1 1/2 - 6	6	3.00	1.233	2B
-	-	2750770	11721	2750667	11722	-	-	1 1/2 - 8	6	3.00	1.233	2B
2750621	11724	-	-	2750617	11726	-	-	1 1/2 - 12	6	3.00	1.233	2B

- Constructed from select high-speed steel.
- Ground thread straight-flute design for sharp cutting action.
- Ideal for hand and power tapping for through or blind holes.
- 6H class of fit maintenance pitch diameter tolerances for longer life.
- Industrial-quality taps at maintenance prices.



- first choice
- alternate choice

■ Series 7353 • Plug Chamfer • Metric ANSI

uncoated		inch dimensions				number of flutes
order #	catalog #	D1 size	L	L3	D	
2750421	11900	M6 X 1	2.50	1.00	.255	6H
2750420	11901	M8 X 1,25	2.72	1.13	.318	6H
2750418	11902	M10 X 1,5	2.94	1.25	.381	6H
2750415	11903	M12 X 1,75	3.38	1.66	.367	6H
2750412	11904	M14 X 1,25	3.59	1.66	.429	6H
2750410	11905	M14 X 2	3.59	1.66	.429	6H
2750409	11906	M16 X 2	3.81	1.81	.480	6H
2750407	11907	M18 X 1,5	4.03	1.59	.542	6H
2750406	11908	M18 X 2,5	4.03	1.59	.542	6H
2750402	11909	M20 X 2,5	4.47	2.00	.652	6H
2750400	11910	M22 X 2,5	4.69	2.22	.697	6H
2750397	11911	M24 X 3	4.91	2.22	.760	6H

NOTE: Metric taps are manufactured to USCTI specifications and dimensions.
Metric tap blank dimensions are equivalent to inch taps.

Reconditioning Services

Anyone can regrind our tools — but only we can recondition them

WIDIA™ Reconditioning Services optimize the value of metalcutting tools throughout their entire lifecycle by giving like-new performance — with rapid turnaround time — so tools are always on hand and perform just like new.

To use WIDIA tool reconditioning services, contact your authorized WIDIA distributor to get started.

Global Reconditioning Network



To locate a reconditioning center near you, visit widia.com/services.



Solutions for Forming Threads in Through and Blind Hole Applications •

WIDIA-GTD™

Forming Taps



WIDIA-GTD™ offers a wide range of forming tap options for tapping through and blind holes in:

- Steel and steel alloys.
- Stainless steel.
- Aluminum.

High-Performance Victory™ Solid Carbide Taps

- Advanced forming geometries designed for superior tap performance in aluminum.
- Manufactured with fine-grain micrograin carbide for exceptional wear life.
- Ideal for long production runs where fewer tool changes mean greater productivity.
- Runs up to 4x faster and lasts up to 4x longer than conventional high-speed steel taps.
- Excellent thread quality and tap performance.

High-Performance Victory™ HSS-E-PM Taps

- Manufactured from powdered metal high-speed steel coated for thread forming in steel, stainless steel, and aluminum.
- High hardness provides superior wear resistance.
- Offer performance advantages over conventional high-speed steel taps.
- Long tap life at up to 50% higher tapping speed than HSS taps.
- Standard coolant-fed options for longer tool life.

General Purpose Production Taps

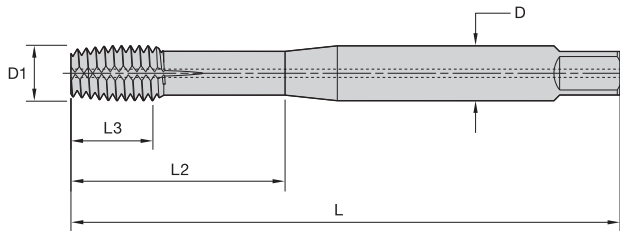
- TRU-LEDE™ Fe taps made from vanadium high-speed steel for extending wear life and better part finish in ductile materials.
- TRU-LEDE™ tap made from HSS for use in general machining applications.
- Plug and bottoming entry tapers for form tapping without troublesome chips that clog and break taps.



High-Performance Taps

Victory™ Solid Carbide Forming Taps • Blind Holes

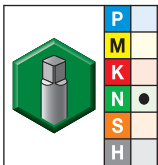
- WN14PG TiN + CrC/C for aluminum.



Shank Tolerance	
D mm	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-16	+0, -0,011



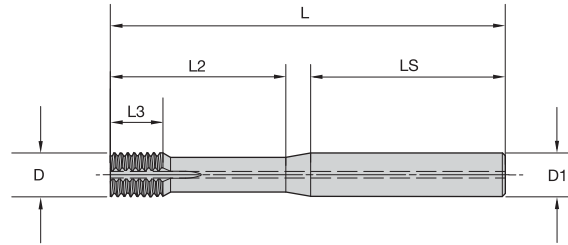
■ GX49 • Form E Bottoming Entry Taper • Through Coolant • Metric • For Aluminum



- first choice
- alternate choice

grade WN14PG TiN+CrC/C		metric dimensions					number of lube grooves	class of fit
order #	catalog #	D1 size	L	L3	L2	D		
5520842	GX495006	M6 X 1	80	10	30	6,0	2	6HX
5520843	GX495008	M8 X 1,25	90	13	35	8,0	2	6HX
5520844	GX495010	M10 X 1,5	100	15	39	10,0	3	6HX

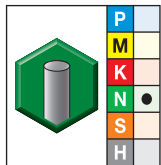
• WN14PG TiN + CrC/C for aluminum.



Shank Tolerance	
D	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-16	+0, -0,011



■ GX49 • Form E Bottoming Entry Taper • Through Coolant • Metric • For Aluminum



● first choice
○ alternate choice

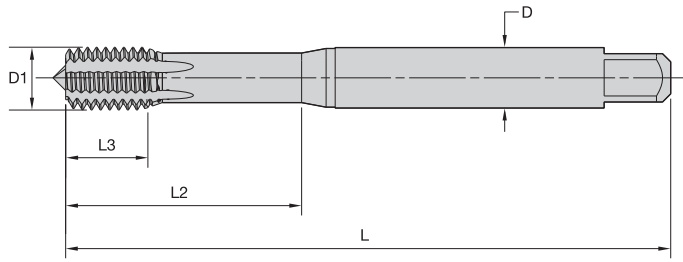
grade WN14PG TiN+CrC/C		metric dimensions						number of lube grooves	class of fit
order #	catalog #	D1 size	L	L3	L2	LS	D		
5551169	GX492908	M6 X 1	70	8	24	42	6,0	2	6HX
5551170	GX492909	M8 X 1,25	80	10	32	43	8,0	2	6HX
5551171	GX492911	M10 X 1,5	90	12	40	44	10,0	3	6HX
5551173	GX492915	M12 X 1,5	100	14	48	46	12,0	3	6HX
5551172	GX492914	M12 X 1,75	100	14	48	46	12,0	3	6HX

High-Performance Taps

Victory™ Forming Taps HSS-E-PM • Blind and Through Holes



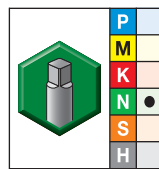
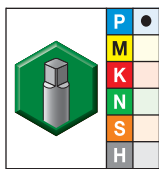
- WP31MG TiN for steel.
- WN38MG DLC for aluminum.



Shank Tolerance	
D mm	tolerance h9
1-3	+0, -0,025
>3-6	+0, -0,030
>6-10	+0, -0,036
>10-18	+0, -0,043
>18-30	+0, -0,052



■ GT22 • Form C Semi-Bottoming Entry Taper • Metric DIN 2174 • For Steel and Aluminum

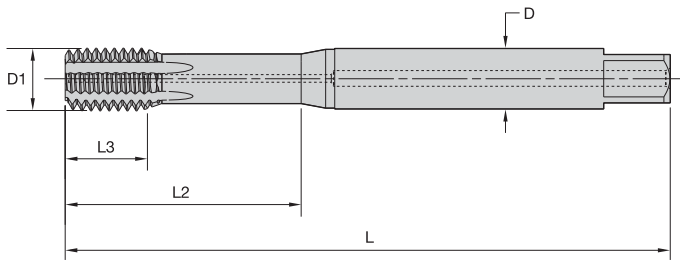


- first choice
- alternate choice

grade WP31MG TiN		grade WN38MG DLC		metric dimensions					dimension standard	class of fit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
4158495	GT225016	4154671	GT225001	M3 X 0,5	56	6	18	3,5	DIN 2174	6HX
4158496	GT225017	4154672	GT225002	M4 X 0,7	63	7	21	4,5	DIN 2174	6HX
4158497	GT225018	4154673	GT225003	M5 X 0,8	70	8	25	6,0	DIN 2174	6HX
4158498	GT225019	4154674	GT225004	M6 X 1	80	10	30	6,0	DIN 2174	6HX
4158513	GT225024	4154679	GT225009	M8 X 1	90	10	35	8,0	DIN 2174	6HX
4158499	GT225020	4154675	GT225005	M8 X 1,25	90	14	35	8,0	DIN 2174	6HX
4158514	GT225025	4154680	GT225010	M10 X 1	90	10	35	10,0	DIN 2174	6HX
4158515	GT225026	4154681	GT225011	M10 X 1,25	100	16	39	10,0	DIN 2174	6HX
4158500	GT225021	4154676	GT225006	M10 X 1,5	100	16	39	10,0	DIN 2174	6HX
4158516	GT225027	4154682	GT225012	M12 X 1,25	100	15	—	9,0	DIN 2174	6HX
4158517	GT225028	4154683	GT225013	M12 X 1,5	100	15	—	9,0	DIN 2174	6HX
4158501	GT225022	4154677	GT225007	M12 X 1,75	110	18	—	9,0	DIN 2174	6HX
4158518	GT225029	4154684	GT225014	M14 X 1,5	100	15	—	11,0	DIN 2174	6HX
4158519	GT225030	4154685	GT225015	M16 X 1,5	100	15	—	12,0	DIN 2174	6HX
4158502	GT225023	4154678	GT225008	M16 X 2	110	22	—	12,0	DIN 2174	6HX

High-Performance Taps

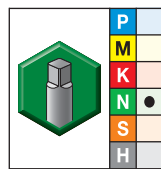
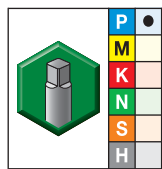
- WP31MG TiN for steel.
- WN38MG DLC for aluminum.



Shank Tolerance	
D mm	tolerance h9
1-3	+0, -0,025
>3-6	+0, -0,030
>6-10	+0, -0,036
>10-18	+0, -0,043
>18-30	+0, -0,052



■ GT23 • Form C Semi-Bottoming Entry Taper • Through Coolant • Metric DIN 2174 • For Steel and Aluminum



- first choice
- alternate choice

grade WP31MG TiN		grade WN38MG DLC		metric dimensions					dimension standard	class of fit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
4159965	GT235012	4159522	GT235001	M5 X 0,8	70	8	25	6,0	DIN 2174	6HX
4159966	GT235013	4159644	GT235002	M6 X 1	80	10	30	6,0	DIN 2174	6HX
4159971	GT235018	4159649	GT235007	M8 X 1	90	10	35	8,0	DIN 2174	6HX
4159967	GT235014	4159645	GT235003	M8 X 1,25	90	14	35	8,0	DIN 2174	6HX
4159972	GT235019	4159650	GT235008	M10 X 1	90	10	35	10,0	DIN 2174	6HX
4159968	GT235015	4159646	GT235004	M10 X 1,5	100	16	39	10,0	DIN 2174	6HX
4159993	GT235020	4159651	GT235009	M12 X 1,5	100	15	—	9,0	DIN 2174	6HX
4159969	GT235016	4159647	GT235005	M12 X 1,75	110	18	—	9,0	DIN 2174	6HX
4159994	GT235021	4159652	GT235010	M14 X 1,5	100	15	—	11,0	DIN 2174	6HX
4159995	GT235022	4159653	GT235011	M16 X 1,5	100	15	—	12,0	DIN 2174	6HX
4159970	GT235017	4159648	GT235006	M16 X 2	110	22	—	12,0	DIN 2174	6HX

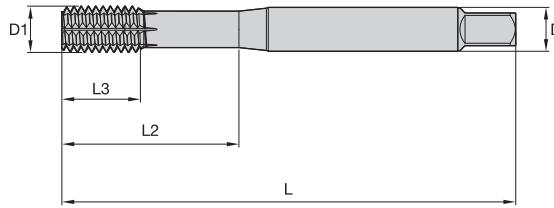
High-Performance Taps

High-Performance Taps

Victory™ Forming Taps HSS-E-PM • Blind and Through Holes



- WU32MG TiCN for steel and stainless steel.

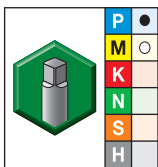


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



- GT24 • Form C Semi-Bottoming Entry Taper • Machine Screw and Fractional • DIN Length ANSI Shank
- For Steel and Stainless Steel



- first choice
- alternate choice

grade WU32MG
TiCN

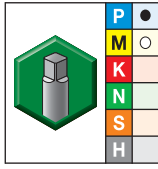
inch dimensions

order #	catalog #	D1 TPI	L	L3	L2	D	number of lube grooves	pitch diameter limit
5944876	GT245001	6 - 32	2.22	.41	.81	.141	2	H3
5944877	GT245002	6 - 32	2.22	.41	.81	.141	2	H5
5944878	GT245003	8 - 32	2.48	.39	.83	.168	4	H3
5944879	GT245004	8 - 32	2.48	.39	.83	.168	4	H5
5944880	GT245005	10 - 24	2.78	.39	1.01	.194	4	H4
5944971	GT245006	10 - 24	2.78	.39	1.01	.194	4	H6
5944972	GT245007	10 - 32	2.77	.39	1.00	.194	4	H4
5944973	GT245008	10 - 32	2.77	.39	1.00	.194	4	H6
5944974	GT245009	1/4 - 20	3.18	.51	1.22	.255	4	H4
5944975	GT245010	1/4 - 20	3.18	.51	1.21	.255	4	H6
5944976	GT245011	1/4 - 28	3.16	.51	1.20	.255	4	H4
5944977	GT245012	1/4 - 28	3.16	.51	1.20	.255	4	H6
5944978	GT245013	5/16 - 18	3.58	.55	1.42	.318	4	H5
5944979	GT245014	5/16 - 18	3.58	.55	1.42	.318	4	H7
5944980	GT245015	5/16 - 24	3.56	.55	1.40	.318	4	H5
5944981	GT245016	5/16 - 24	3.56	.55	1.38	.318	4	H7
5944982	GT245017	3/8 - 16	3.98	.63	1.54	.381	6	H5
5944983	GT245018	3/8 - 16	3.98	.63	1.54	.381	6	H7
5944984	GT245019	3/8 - 24	3.95	.63	1.54	.381	6	H5
5944985	GT245020	3/8 - 24	3.94	.63	1.54	.381	6	H7
5944986	GT245021	7/16 - 14	3.94	.71	1.61	.323	6	H5
5944987	GT245022	7/16 - 14	3.94	.71	1.61	.323	6	H7
5944988	GT245023	7/16 - 20	3.94	.71	1.61	.323	6	H5
5944989	GT245024	7/16 - 20	3.94	.71	1.61	.323	6	H7

(continued)

High-Performance Taps

(GT24 • Form C Semi-Bottoming Entry Taper • Machine Screw and Fractional • DIN Length ANSI Shank • For Steel and Stainless Steel — continued)



● first choice
○ alternate choice

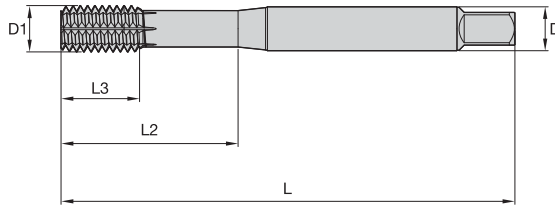
grade WU32MG TiCN		inch dimensions					number of lube grooves	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	L2	D		
5944990	GT245025	1/2 - 13	4.33	.79	1.85	.367	6	H5
5945001	GT245026	1/2 - 13	4.33	.79	1.85	.367	6	H7
5945002	GT245027	1/2 - 20	4.33	.79	1.85	.367	6	H5
5945003	GT245028	1/2 - 20	4.33	.79	1.85	.367	6	H7
5945004	GT245029	5/8 - 11	4.33	.91	2.01	.480	6	H7
5945005	GT245030	5/8 - 11	4.33	.91	2.01	.480	6	H10
5945006	GT245031	5/8 - 18	4.33	.91	2.01	.480	6	H7
5945007	GT245032	5/8 - 18	4.33	.91	2.01	.480	6	H10
5945008	GT245033	3/4 - 10	4.92	.98	2.52	.590	6	H7
5945009	GT245034	3/4 - 10	4.92	.98	2.52	.590	6	H10
5945010	GT245035	3/4 - 16	4.92	.98	2.52	.590	6	H7
5945011	GT245036	3/4 - 16	4.92	.98	2.52	.590	6	H10

High-Performance Taps

Victory™ Forming Taps HSS-E-PM • Blind and Through Holes



- WU32MG TiCN for steel and stainless steel.

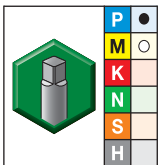


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
>.236-.394	+0, -.0004
>.394-.709	+0, -.0004
>.709-1.181	+0, -.0005
>1.181-1.969	+0, -.0006



- GT24 • Form C Semi-Bottoming Entry Taper • Metric • DIN Length ANSI Shank • For Steel and Stainless Steel

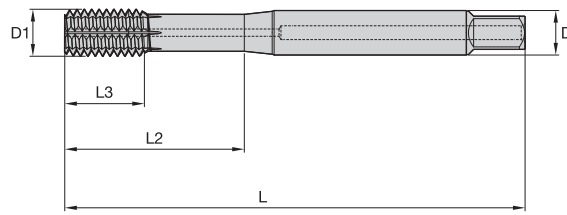


- first choice
- alternate choice

grade WU32MG TiCN		inch dimensions					number of lube grooves	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	L2	D		
5945012	GT245037	M3 X 0,5	2.20	.39	.79	.141	2	D5
5945013	GT245038	M3,5 X 0,6	2.20	.39	.79	.141	2	D6
5945014	GT245039	M4 X 0,7	2.48	.39	.83	.168	4	D6
5945015	GT245040	M5 X 0,8	2.76	.39	.98	.194	4	D7
5945016	GT245041	M6 X 1	3.15	.51	1.18	.255	4	D8
5945017	GT245042	M7 X 1	3.15	.51	1.18	.318	4	D9
5945018	GT245043	M8 X 1	3.54	.55	1.38	.318	6	D9
5945019	GT245044	M8 X 1,25	3.54	.55	1.38	.318	6	D9
5945020	GT245045	M10 X 1,25	3.94	.63	1.53	.381	6	D9
5945021	GT245046	M10 X 1,5	3.94	.63	1.54	.381	6	D10
5945022	GT245047	M12 X 1,25	4.33	.71	1.73	.367	6	D9
5945023	GT245048	M12 X 1,5	4.33	.71	1.73	.367	6	D9
5945024	GT245049	M12 X 1,75	4.33	.71	1.73	.367	6	D11
5945025	GT245050	M14 X 1,5	4.33	.79	2.05	.429	6	D11
5945026	GT245051	M14 X 2	4.33	.79	2.05	.429	6	D12
5945027	GT245052	M16 X 1,5	4.33	.79	2.01	.480	6	D11
5945028	GT245053	M16 X 2	4.33	.79	2.01	.480	6	D12

High-Performance Taps

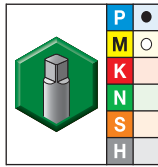
- WU32MG TiCN for steel and stainless steel.



Shank Tolerance	
D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



- GT25 • Form C Semi-Bottoming Entry Taper • Through Coolant • Fractional • DIN Length ANSI Shank
- For Steel and Stainless Steel



- first choice
- alternate choice

grade WU32MG TiCN		inch dimensions					number of lube grooves	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	L2	D		
5945029	GT255001	1/4 - 20	3.15	.51	1.18	.255	4	H4
5945030	GT255002	1/4 - 20	3.15	.51	1.18	.255	4	H6
5945031	GT255003	1/4 - 28	3.15	.51	1.18	.255	4	H4
5945032	GT255004	1/4 - 28	3.15	.51	1.18	.255	4	H6
5945033	GT255005	5/16 - 18	3.54	.55	1.38	.318	6	H5
5945034	GT255006	5/16 - 18	3.54	.55	1.38	.318	6	H7
5945035	GT255007	5/16 - 24	3.54	.55	1.38	.318	6	H5
5945036	GT255008	5/16 - 24	3.54	.55	1.38	.318	6	H7
5945037	GT255009	3/8 - 16	3.94	.63	1.54	.381	6	H5
5945038	GT255010	3/8 - 16	3.94	.63	1.54	.381	6	H7
5945039	GT255011	3/8 - 24	3.94	.63	1.54	.381	6	H5
5945040	GT255012	3/8 - 24	3.94	.63	1.54	.381	6	H7
5945041	GT255013	7/16 - 14	3.94	.71	1.61	.323	6	H5
5945042	GT255014	7/16 - 14	3.94	.71	1.61	.323	6	H7
5945043	GT255015	7/16 - 20	3.94	.71	1.61	.323	6	H5
5945044	GT255016	7/16 - 20	3.94	.71	1.61	.323	6	H7
5945045	GT255017	1/2 - 13	4.33	.79	1.85	.367	6	H5
5945046	GT255018	1/2 - 13	4.33	.79	1.85	.367	6	H7
5945047	GT255019	1/2 - 20	4.33	.79	1.85	.367	6	H5
5945048	GT255020	1/2 - 20	4.33	.79	1.85	.367	6	H7
5945049	GT255021	5/8 - 11	4.33	.79	2.01	.480	6	H7
5945050	GT255022	5/8 - 11	4.33	.79	2.01	.480	6	H10
5945051	GT255023	5/8 - 18	4.33	.79	2.01	.480	6	H7
5945052	GT255024	5/8 - 18	4.33	.79	2.01	.480	6	H10
5945053	GT255025	3/4 - 10	4.92	.98	2.52	.590	6	H7
5945054	GT255026	3/4 - 10	4.92	.98	2.52	.590	6	H10
5945055	GT255027	3/4 - 16	4.92	.98	2.52	.590	6	H7
5945056	GT255028	3/4 - 16	4.92	.98	2.52	.590	6	H10

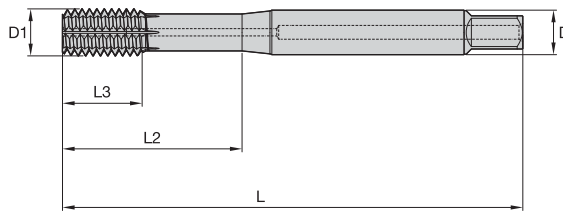
High-Performance Taps

High-Performance Taps

Victory™ Forming Taps HSS-E-PM • Blind and Through Holes



- WU32MG TiCN for steel and stainless steel.

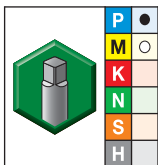


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
>.236-.394	+0, -.0004
>.394-.709	+0, -.0004
>.709-1.181	+0, -.0005
>1.181-1.969	+0, -.0006



- GT25 • Form C Semi-Bottoming Entry Taper • Through Coolant • Metric • DIN Length ANSI Shank
- For Steel and Stainless Steel

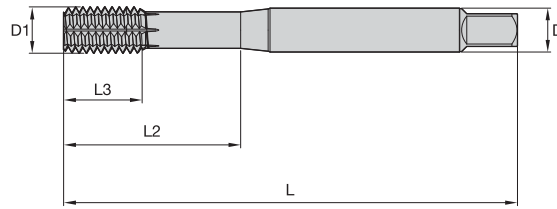


- first choice
- alternate choice

grade WU32MG TiCN		inch dimensions					number of lube grooves	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	L2	D		
5945057	GT255029	M6 X 1	3.15	.51	1.18	.255	4	D8
5945058	GT255030	M7 X 1	3.15	.51	1.18	.318	4	D9
5945059	GT255031	M8 X 1	3.54	.55	1.38	.318	6	D9
5945060	GT255032	M8 X 1,25	3.54	.55	1.38	.318	6	D9
5945071	GT255033	M10 X 1,25	3.94	.63	1.54	.381	6	D9
5945072	GT255034	M10 X 1,5	3.94	.63	1.54	.381	6	D10
5945073	GT255035	M12 X 1,25	4.33	.71	1.73	.367	6	D9
5945074	GT255036	M12 X 1,5	4.33	.71	1.73	.367	6	D9
5945075	GT255037	M12 X 1,75	4.33	.71	1.73	.367	6	D11
5945076	GT255038	M14 X 1,5	4.33	.79	2.05	.429	6	D11
5945077	GT255039	M14 X 2	4.33	.79	2.05	.429	6	D12
5945078	GT255040	M16 X 1,5	4.33	.79	2.01	.480	6	D11
5945079	GT255041	M16 X 2	4.33	.79	2.01	.480	6	D12

High-Performance Taps

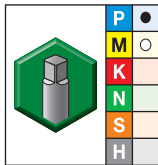
- WU32MG TiCN for steel and stainless steel.



Shank Tolerance	
D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



- GT26 • Form E Bottoming Entry Taper • Machine Screw and Fractional • DIN Length ANSI Shank
- For Steel and Stainless Steel



- first choice
- alternate choice

grade WU32MG TiCN		inch dimensions					number of lube grooves	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	L2	D		
5945080	GT265001	0 - 80	1.63	.31	.37	.141	0	H2
5945091	GT265002	2 - 56	1.75	.44	.50	.141	0	H3
5945092	GT265003	3 - 48	1.97	.39	.71	.141	0	H3
5945093	GT265004	3 - 56	1.97	.39	.71	.141	0	H3
5945094	GT265005	4 - 40	2.20	.39	.71	.141	0	H3
5945095	GT265006	4 - 40	2.20	.39	.71	.141	0	H5
5945096	GT265007	4 - 48	2.20	.39	.71	.141	0	H3
5945097	GT265008	4 - 48	2.20	.39	.71	.141	0	H5
5945098	GT265009	5 - 40	2.20	.39	.79	.141	2	H5
5945099	GT265010	6 - 32	2.21	.39	.79	.141	2	H3
5945100	GT265011	6 - 32	2.21	.39	.79	.141	2	H5
5945101	GT265012	8 - 32	2.48	.39	.83	.168	4	H3
5945102	GT265013	8 - 32	2.48	.39	.83	.168	4	H5
5945103	GT265014	10 - 24	2.76	.39	.98	.194	4	H4
5945104	GT265015	10 - 24	2.76	.39	.98	.194	4	H6
5945105	GT265016	10 - 32	2.76	.39	.98	.194	4	H4
5945106	GT265017	10 - 32	2.76	.39	.98	.194	4	H6
5945107	GT265018	1/4 - 20	3.15	.51	1.18	.255	4	H4
5945108	GT265019	1/4 - 20	3.15	.51	1.18	.255	4	H6
5945109	GT265020	1/4 - 28	3.15	.51	1.18	.255	4	H4
5945110	GT265021	1/4 - 28	3.15	.51	1.18	.255	4	H6
5945111	GT265022	5/16 - 18	3.54	.55	1.38	.318	6	H5
5945112	GT265023	5/16 - 18	3.54	.55	1.38	.318	6	H7
5945113	GT265024	5/16 - 24	3.54	.55	1.38	.318	6	H5

(continued)

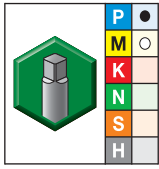
High-Performance Taps

High-Performance Taps

Victory™ Forming Taps HSS-E-PM • Blind Holes



(GT26 • Form E Bottoming Entry Taper • Machine Screw and Fractional • DIN Length ANSI Shank • For Steel and Stainless Steel — continued)

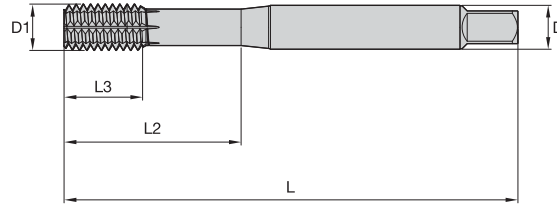


● first choice
○ alternate choice

grade WU32MG TiCN		inch dimensions					number of lube grooves	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	L2	D		
5945114	GT265025	5/16 - 24	3.54	.55	1.38	.318	6	H7
5945115	GT265026	3/8 - 16	3.94	.63	1.54	.381	6	H5
5945116	GT265027	3/8 - 16	3.94	.63	1.54	.381	6	H7
5945117	GT265028	3/8 - 24	3.94	.63	1.54	.381	6	H5
5945118	GT265029	3/8 - 24	3.94	.63	1.54	.381	6	H7
5945119	GT265030	7/16 - 14	3.94	.71	1.61	.323	6	H5
5945120	GT265031	7/16 - 14	3.94	.71	1.61	.323	6	H7
5945121	GT265032	7/16 - 20	3.94	.71	1.61	.323	6	H5
5945122	GT265033	7/16 - 20	3.94	.71	1.61	.323	6	H7
5945123	GT265034	1/2 - 13	4.33	.79	1.85	.367	6	H5
5945124	GT265035	1/2 - 13	4.33	.79	1.85	.367	6	H7
5945125	GT265036	1/2 - 20	4.33	.79	1.85	.367	6	H5
5945126	GT265037	1/2 - 20	4.33	.79	1.85	.367	6	H7
5945127	GT265038	5/8 - 11	4.33	.79	2.01	.480	6	H7
5945128	GT265039	5/8 - 11	4.33	.79	2.01	.480	6	H10
5945129	GT265040	5/8 - 18	4.33	.79	2.01	.480	6	H7
5945130	GT265041	5/8 - 18	4.33	.79	2.01	.480	6	H10
5945131	GT265042	3/4 - 10	4.92	.98	2.52	.590	6	H7
5945132	GT265043	3/4 - 10	4.92	.98	2.52	.590	6	H10
5945133	GT265044	3/4 - 16	4.92	.98	2.52	.590	6	H7
5945134	GT265045	3/4 - 16	4.92	.98	2.52	.590	6	H10

High-Performance Taps

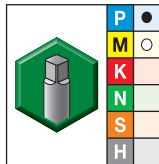
- WU32MG TiCN for steel and stainless steel.



Shank Tolerance	
D inch	tolerance h6
.118-.236	+0, -.0003
>.236-.394	+0, -.0004
>.394-.709	+0, -.0004
>.709-1.181	+0, -.0005
>1.181-1.969	+0, -.0006



■ GT26 • Form E Bottoming Entry Taper • Metric • DIN Length ANSI Shank • For Steel and Stainless Steel



- first choice
- alternate choice

order #	catalog #	grade WU32MG TiCN	D1 TPI	inch dimensions			number of lube grooves	pitch diameter limit
				L	L3	L2		
5945135	GT265046	●	M3 X 0,5	2.20	.39	.79	.141	2 D5
5945136	GT265047	○	M3,5 X 0,6	2.20	.39	.79	.141	2 D6
5945137	GT265048	●	M4 X 0,7	2.48	.39	.83	.168	4 D6
5945138	GT265049	○	M5 X 0,8	2.76	.39	.98	.194	4 D7
5945139	GT265050	●	M6 X 1	3.15	.51	1.18	.255	4 D8
5945140	GT265051	○	M7 X 1	3.15	.51	1.18	.318	4 D9
5945141	GT265052	●	M8 X 1	3.54	.55	1.38	.318	6 D9
5945142	GT265053	○	M8 X 1,25	3.54	.55	1.38	.318	6 D9
5945143	GT265054	●	M10 X 1,25	3.94	.63	1.53	.381	6 D9
5945144	GT265055	○	M10 X 1,5	3.94	.63	1.54	.381	6 D10
5945145	GT265056	●	M12 X 1,25	4.33	.71	1.73	.367	6 D9
5945146	GT265057	○	M12 X 1,5	4.33	.71	1.73	.367	6 D9
5945147	GT265058	●	M12 X 1,75	4.33	.71	1.73	.367	6 D11
5945148	GT265059	○	M14 X 1,5	4.33	.79	2.05	.429	6 D11
5945149	GT265060	●	M14 X 2	4.33	.79	2.05	.429	6 D12
5945150	GT265061	○	M16 X 1,5	4.33	.79	2.01	.480	6 D11
5945151	GT265062	●	M16 X 2	4.33	.79	2.01	.480	6 D12

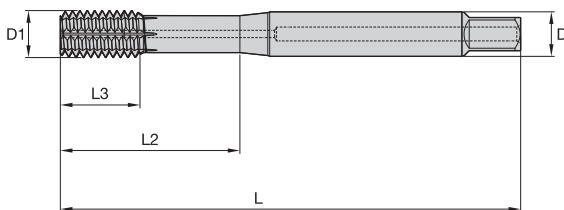
High-Performance Taps

High-Performance Taps

Victory™ Forming Taps HSS-E-PM • Blind Holes



- WU32MG TiCN for steel and stainless steel.

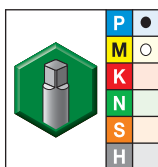


Shank Tolerance

D inch	tolerance h6
.118-.236	+0, -.0003
.236-.394	+0, -.0004
.394-.709	+0, -.0004
.709-1.181	+0, -.0005
1.181-1.969	+0, -.0006



- GT27 • Form E Bottoming Entry Taper • Through Coolant • Fractional • DIN Length ANSI Shank
- For Steel and Stainless Steel

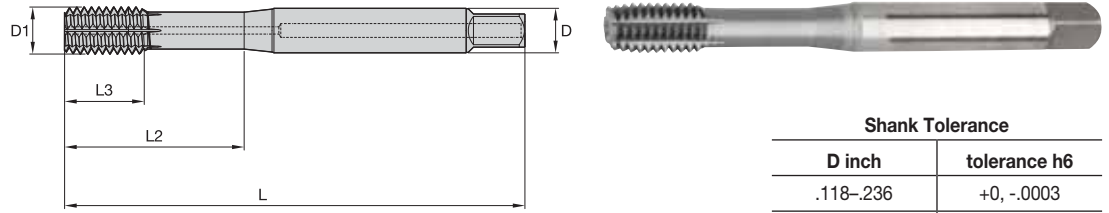


- first choice
- alternate choice

grade WU32MG TiCN		inch dimensions					number of lube grooves	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	L2	D		
5944922	GT275001	1/4 - 20	3.15	.51	1.18	.255	4	H4
5944923	GT275002	1/4 - 20	3.15	.51	1.18	.255	4	H6
5944924	GT275003	1/4 - 28	3.15	.51	1.18	.255	4	H4
5944925	GT275004	1/4 - 28	3.15	.51	1.18	.255	4	H6
5944926	GT275005	5/16 - 18	3.54	.55	1.38	.318	6	H5
5944927	GT275006	5/16 - 18	3.54	.55	1.38	.318	6	H7
5944928	GT275007	5/16 - 24	3.54	.55	1.38	.318	6	H5
5944929	GT275008	5/16 - 24	3.54	.55	1.38	.318	6	H7
5944930	GT275009	3/8 - 16	3.94	.63	1.54	.381	6	H5
5945171	GT275010	3/8 - 16	3.94	.63	1.54	.381	6	H7
5945172	GT275011	3/8 - 24	3.94	.63	1.54	.381	6	H5
5945173	GT275012	3/8 - 24	3.94	.63	1.54	.381	6	H7
5945174	GT275013	7/16 - 14	3.94	.71	1.61	.323	6	H5
5945175	GT275014	7/16 - 14	3.94	.71	1.61	.323	6	H7
5945176	GT275015	7/16 - 20	3.94	.71	1.61	.323	6	H5
5945177	GT275016	7/16 - 20	3.94	.71	1.61	.323	6	H7
5945178	GT275017	1/2 - 13	4.33	.79	1.85	.367	6	H5
5945179	GT275018	1/2 - 13	4.33	.79	1.85	.367	6	H7
5945180	GT275019	1/2 - 20	4.33	.79	1.85	.367	6	H5
5945181	GT275020	1/2 - 20	4.33	.79	1.85	.367	6	H7
5945182	GT275021	5/8 - 11	4.33	.79	2.01	.480	6	H7
5945183	GT275022	5/8 - 11	4.33	.79	2.01	.480	6	H10
5945184	GT275023	5/8 - 18	4.33	.79	2.01	.480	6	H7
5945185	GT275024	5/8 - 18	4.33	.79	2.01	.480	6	H10
5945186	GT275025	3/4 - 10	4.92	.98	2.52	.590	6	H7
5945187	GT275026	3/4 - 10	4.92	.98	2.52	.590	6	H10
5945188	GT275027	3/4 - 16	4.92	.98	2.52	.590	6	H7
5945189	GT275028	3/4 - 16	4.92	.98	2.52	.590	6	H10

High-Performance Taps

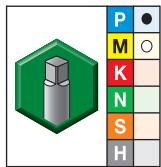
- WU32MG TiCN for steel and stainless steel.



Shank Tolerance	
D inch	tolerance h6
.118-.236	+0, -.0003
>.236-.394	+0, -.0004
>.394-.709	+0, -.0004
>.709-1.181	+0, -.0005
>1.181-1.969	+0, -.0006



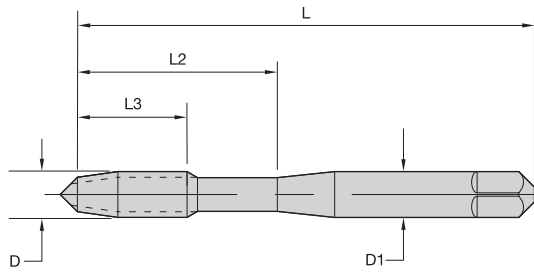
■ **GT27 • Form E Bottoming Entry Taper • Through Coolant • Metric • DIN Length ANSI Shank • For Steel and Stainless Steel**



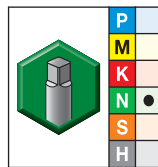
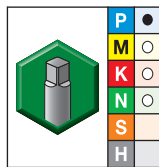
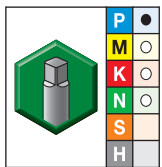
- first choice
- alternate choice

grade WU32MG TiCN		inch dimensions					number of lube grooves	pitch diameter limit
order #	catalog #	D1 TPI	L	L3	L2	D		
5945190	GT275029	M6 X 1	3.15	.51	1.18	.255	4	D8
5945191	GT275030	M7 X 1	3.15	.51	1.18	.318	4	D9
5945192	GT275031	M8 X 1	3.54	.55	1.38	.318	6	D9
5945193	GT275032	M8 X 1,25	3.54	.55	1.38	.318	6	D9
5945194	GT275033	M10 X 1,25	3.94	.63	1.54	.381	6	D9
5945195	GT275034	M10 X 1,5	3.94	.63	1.54	.381	6	D10
5945196	GT275035	M12 X 1,25	4.33	.71	1.73	.367	6	D9
5945197	GT275036	M12 X 1,5	4.33	.71	1.73	.367	6	D9
5945198	GT275037	M12 X 1,75	4.33	.71	1.73	.367	6	D11
5945199	GT275038	M14 X 1,5	4.33	.79	2.05	.429	6	D11
5945200	GT275039	M14 X 2	4.33	.79	2.05	.429	6	D12
5945211	GT275040	M16 X 1,5	4.33	.79	2.01	.480	6	D11
5945212	GT275041	M16 X 2	4.33	.79	2.01	.480	6	D12

High-Performance Taps



■ Series 5900 • Machine Screw and Fractional • Plug Entry Taper

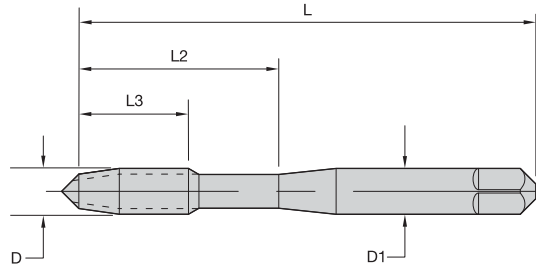
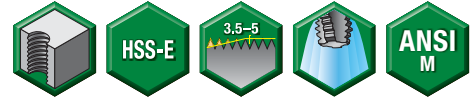


● first choice
○ alternate choice

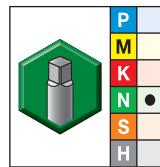
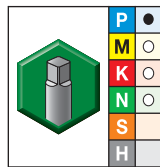
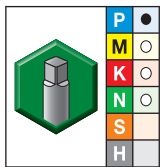
TiCN		TiN		uncoated		inch dimensions					number of lube grooves	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
—	—	—	—	2747479	18202	6 - 32	2.00	.38	.69	.141	4	H5
2747215	18703	2747338	18303	2747477	18203	6 - 32	2.00	.38	.69	.141	4	H3
2747210	18706	—	—	2747471	18206	6 - 40	2.00	.38	.69	.141	4	H3
—	—	—	—	2747461	18210	8 - 32	2.13	.38	.75	.168	4	H5
—	—	2747322	18311	2747459	18211	8 - 32	2.13	.38	.75	.168	4	H3
2747188	18717	2747311	18317	2747447	18217	10 - 24	2.38	.50	.88	.194	4	H4
—	—	2747306	18320	2747441	18220	10 - 32	2.38	.50	.88	.194	4	H6
2747180	18721	3171069	18321	2747439	18221	10 - 32	2.38	.50	.88	.194	4	H4
—	—	—	—	2747437	18224	12 - 24	2.38	.50	.94	.220	4	H4
2747174	18728	2747296	18328	2747427	18228	1/4 - 20	2.50	.63	1.00	.255	4	H6
—	—	2747293	18329	2747425	18229	1/4 - 20	2.50	.63	1.00	.255	4	H4
—	—	2747288	18332	2747419	18232	1/4 - 28	2.50	.63	1.00	.255	4	H6
2747165	18733	—	—	2747417	18233	1/4 - 28	2.50	.63	1.00	.255	4	H4
2747156	18737	2747277	18337	2747409	18237	5/16 - 18	2.72	.69	1.13	.318	4	H5
—	—	2747273	18341	2747401	18241	5/16 - 24	2.72	.69	1.13	.318	4	H5
2747141	18745	2747265	18345	2747391	18245	3/8 - 16	2.94	.75	1.25	.381	4	H5
—	—	—	—	2747378	18252	1/2 - 13	3.38	.94	—	.367	4	H5

NOTE: Form taps require a larger drilled hole size prior to tapping than corresponding cutting taps.
Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.

Production Taps



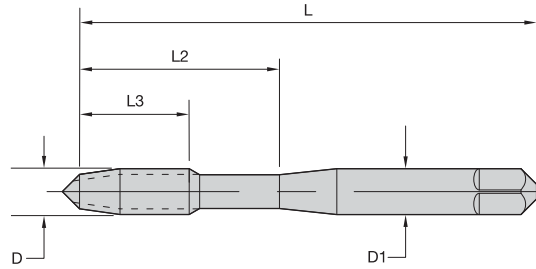
■ Series 5910 • Plug Entry Taper • Metric ANSI



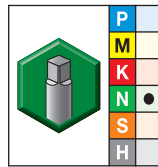
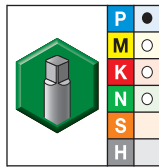
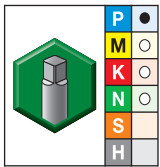
● first choice
○ alternate choice

TiCN		TiN		uncoated		inch dimensions					number of lube grooves	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
2747101	18760	2747236	18360	2747360	18260	M6 X 1	64	16	25	6,5	4	D8
2747096	18762	2747232	18362	2747355	18262	M8 X 1,25	69	17	29	8,1	4	D9
2747092	18764	2747228	18364	2747351	18264	M10 X 1,5	75	19	32	9,7	4	D10

NOTE: Metric taps are manufactured to USCTI specifications and dimensions.
Metric tap blank dimensions are equivalent to inch taps.
Form taps require a larger drilled hole size prior to tapping than corresponding cutting taps.



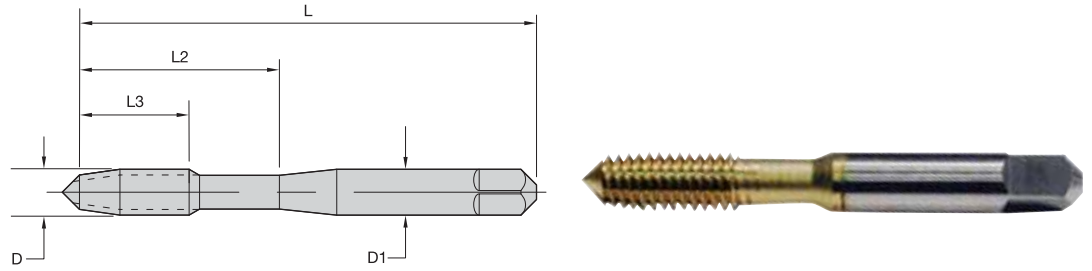
■ Series 5912 • Bottom Entry Taper • Metric ANSI



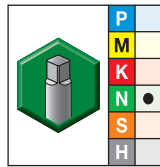
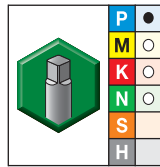
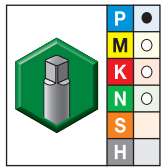
● first choice
○ alternate choice

TiCN		TiN		uncoated		inch dimensions				number of lube grooves	pitch diameter limit	
order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	L2			D
2747120	18755	2747246	18355	—	—	M4 X 0,7	54	10	19	4,3	4	D6
2747117	18757	2747241	18357	2747367	18257	M5 X 0,8	60	13	22	4,9	4	D7
2747113	18759	2747238	18359	2747364	18259	M6 X 1	64	16	25	6,5	4	D8
—	—	—	—	2747357	18261	M8 X 1,25	69	17	28	8,1	4	D9
2747099	18761	2747233	18361	—	—	M8 X 1,25	69	17	29	8,1	4	D9
2747090	18765	—	—	2747347	18265	M12 X 1,75	86	24	—	9,3	4	D11

NOTE: Metric taps are manufactured to USCTI specifications and dimensions.
Metric tap blank dimensions are equivalent to inch taps.
Form taps require a larger drilled hole size prior to tapping than corresponding cutting taps.



■ Series 5902 • Machine Screw and Fractional • Bottom Entry Taper



● first choice
○ alternate choice

TiCN		TiN		uncoated		inch dimensions					number of lube grooves	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
2747222	18700	2747344	18300	2747485	18200	6 - 32	2.00	.38	.69	.141	4	H3
2747220	18701	2747342	18301	2747483	18201	6 - 32	2.00	.38	.69	.141	4	H5
—		2747328	18308	2747467	18208	8 - 32	2.13	.38	.75	.168	4	H5
2747204	18709	2747326	18309	2747463	18209	8 - 32	2.13	.38	.75	.168	4	H3
2747198	18712	—		2747457	18212	8 - 36	2.13	.38	.75	.168	4	H3
2747194	18714	—		2747453	18214	10 - 24	2.38	.50	.88	.194	4	H6
2747192	18715	3171068	18315	2747451	18215	10 - 24	2.38	.50	.88	.194	4	H4
2747186	18718	2747310	18318	2747445	18218	10 - 32	2.38	.50	.88	.194	4	H6
2747184	18719	2747308	18319	2747443	18219	10 - 32	2.38	.50	.88	.194	4	H4
3171071	18723	—		3324580	18223	12 - 24	2.38	.50	.94	.220	4	H4
2747179	18726	2747300	18326	2747433	18226	1/4 - 20	2.50	.63	1.00	.255	4	H4
2747177	18727	2747298	18327	2747431	18227	1/4 - 20	2.50	.63	1.00	.255	4	H6
2747170	18730	2747291	18330	2747423	18230	1/4 - 28	2.50	.63	1.00	.255	4	H6
2747169	18731	2747289	18331	2747421	18231	1/4 - 28	2.50	.63	1.00	.255	4	H4
2747162	18734	—		2747415	18234	5/16 - 18	2.72	.69	1.13	.318	4	H5
2747160	18735	—		2747413	18235	5/16 - 18	2.72	.69	1.13	.318	4	H7
—		2747271	18342	2747399	18242	3/8 - 16	2.94	.75	1.25	.381	4	H5
2747145	18743	2747269	18343	2747397	18243	3/8 - 16	2.94	.75	1.25	.381	4	H7
2747133	18749	2747257	18349	2747383	18249	1/2 - 13	3.38	.94	—	.367	4	H7
2747131	18750	—		2747381	18250	1/2 - 13	3.38	.94	—	.367	4	H5

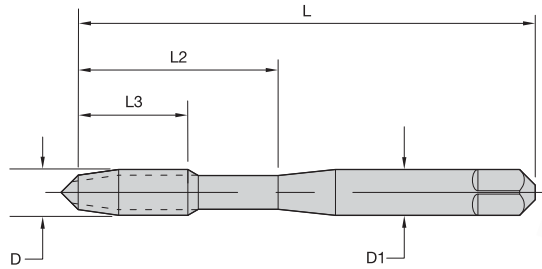
NOTE: Form taps require a larger drilled hole size prior to tapping than corresponding cutting taps.
Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.

Production Taps

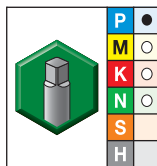
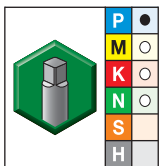
TRU-LEDE™ Forming Taps • Through Holes in General Machining Applications



- Series 2500TiN • TiN Coated
- Series 5500 • Uncoated



Series 2500/5500 • Machine Screw and Fractional • Plug Entry Taper



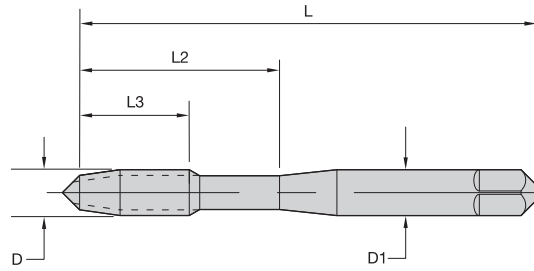
- first choice
- alternate choice

TiN		uncoated		inch dimensions					number of lube grooves	pitch diameter limit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
2746344	19821	2864322	17000	4 - 40	1.88	.31	.56	.141	—	H3
—	—	2864319	17001	4 - 40	1.88	.31	.56	.141	—	H5
—	—	2864313	17004	5 - 40	1.94	.31	.63	.141	4	H3
2746342	19822	2864310	17008	6 - 32	2.00	.38	.69	.141	4	H3
—	—	2864307	17009	6 - 32	2.00	.38	.69	.141	4	H5
2746338	19824	2864298	17013	8 - 32	2.13	.38	.75	.168	4	H3
2746336	19826	—	—	8 - 32	2.13	.38	.75	.168	4	H5
2746333	19827	1295731	17018	10 - 24	2.38	.50	.88	.194	4	H4
2746331	19828	1295732	17020	10 - 32	2.38	.50	.88	.194	4	H4
2746327	19841	2747916	17027	1/4 - 20	2.50	.63	1.00	.255	4	H4
2746325	19842	2747910	17030	1/4 - 28	2.50	.63	1.00	.255	4	H4
2746324	19846	—	—	5/16 - 18	2.72	.69	1.13	.318	4	H5
—	—	2747904	17033	5/16 - 18	2.72	.69	1.13	.318	4	H5
—	—	2747898	17036	5/16 - 24	2.72	.69	1.13	.318	4	H5
2746322	19847	2747892	17039	3/8 - 16	2.94	.75	1.25	.381	4	H5
—	—	2747886	17042	3/8 - 24	2.94	.75	—	.323	4	H8
—	—	2747882	17049	1/2 - 13	3.38	.94	—	.367	4	H5
—	—	2747878	17051	1/2 - 20	3.38	.94	—	.367	4	H5
—	—	2747876	17053	5/8 - 11	3.81	1.09	—	.480	6	H7
—	—	2747872	17057	3/4 - 10	4.25	1.22	—	.590	6	H7

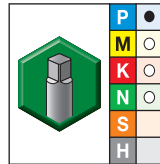
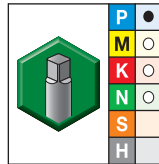
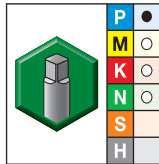
NOTE: Form taps require a larger drilled hole size prior to tapping than corresponding cutting taps.
Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.

Production Taps

- Series 2502TiN • TiN Coated
- Series 5502 • Uncoated
- Series 5502TC • TiCN Coated



■ Series 2502/5502 • Machine Screw and Fractional • Bottoming Entry Taper

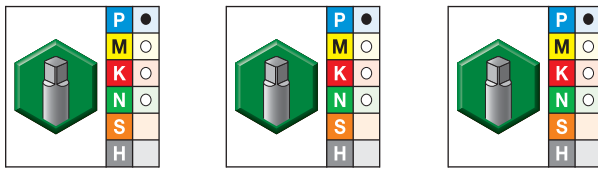


- first choice
- alternate choice

TiCN		TiN		uncoated		inch dimensions					number of lube grooves	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
2746547	19500	2746349	19816	2747635	17200	0 - 80	1.63	.31	—	.141	0	H2
—	—	—	—	2747633	17201	0 - 80	1.63	.31	—	.141	0	H3
2746541	19506	2746347	19817	2747623	17206	2 - 56	1.75	.44	—	.141	0	H2
—	—	—	—	2747621	17207	2 - 56	1.75	.44	—	.141	0	H3
—	—	—	—	2747615	17210	3 - 48	1.81	.50	—	.141	0	H2
2746539	19514	2746320	19849	2747609	17214	4 - 40	1.88	.31	.56	.141	0	H3
—	—	—	—	2747607	17215	4 - 40	1.88	.31	.56	.141	0	H5
—	—	2746318	19851	2747601	17218	5 - 40	1.94	.31	.63	.141	4	H3
—	—	—	—	2747600	17219	5 - 40	1.94	.31	.63	.141	4	H5
2746535	19522	2746315	19852	2747598	17222	6 - 32	2.00	.38	.69	.141	4	H3
2746533	19523	2746313	19856	2747595	17223	6 - 32	2.00	.38	.69	.141	4	H5
2746531	19527	2746311	19857	2747588	17227	8 - 32	2.13	.38	.75	.168	4	H3
2746530	19528	2746309	19861	2747584	17228	8 - 32	2.13	.38	.75	.168	4	H5
2746528	19532	2746307	19862	2747576	17232	10 - 24	2.38	.50	.88	.194	4	H4
—	—	—	—	2747574	17233	10 - 24	2.38	.50	.88	.194	4	H6
2746526	19535	2746305	19866	2747569	17235	10 - 32	2.38	.50	.88	.194	4	H4
—	—	—	—	2747568	17236	10 - 32	2.38	.50	.88	.194	4	H6
—	—	—	—	2747566	17238	12 - 24	2.38	.50	.94	.220	4	H4
2746524	19542	2746304	19869	2747561	17242	1/4 - 20	2.50	.63	1.00	.255	4	H4
—	—	—	—	2747559	17243	1/4 - 20	2.50	.63	1.00	.255	4	H6
2746522	19545	2746302	19871	2747554	17245	1/4 - 28	2.50	.63	1.00	.255	4	H4
—	—	2746300	19872	—	—	5/16 - 18	2.72	.69	1.13	.318	4	H5
—	—	—	—	2747547	17249	5/16 - 18	2.72	.69	1.13	.318	4	H7
—	—	—	—	2747549	17248	5/16 - 18	2.72	.69	1.13	.318	4	H5

(continued)

(Series 2502/5502 • Machine Screw and Fractional • Bottoming Entry Taper — continued)

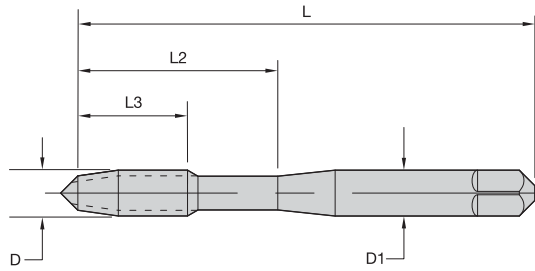
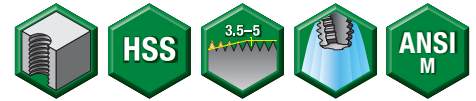


● first choice
○ alternate choice

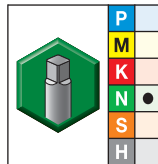
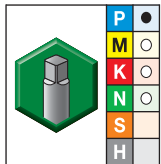
TiCN		TiN		uncoated		inch dimensions					number of lube grooves	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
-	-	-	-	2747535	17255	3/8 - 16	2.94	.75	1.25	.381	4	H7
2746516	19554	2746298	19873	2747537	17254	3/8 - 16	2.94	.75	1.25	.381	4	H5
-	-	2746296	19874	2747534	17257	3/8 - 24	2.94	.75	1.25	.381	4	H5
-	-	-	-	2747528	17265	1/2 - 13	3.38	.94	-	.367	4	H8
-	-	2896309	19875	2747530	17264	1/2 - 13	3.38	.94	-	.367	4	H5
-	-	-	-	2747524	17266	1/2 - 20	3.38	.94	-	.367	4	H5
-	-	-	-	2747499	17280	5/8 - 11	3.81	1.09	-	.480	6	H7

NOTE: Form taps require a larger drilled hole size prior to tapping than corresponding cutting taps.
Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 2B or 3B class of fit.

- Series 2510 • TiN Coated
- Series 5510 • Uncoated



■ Series 2510/5510 • Plug Entry Taper • Metric ANSI

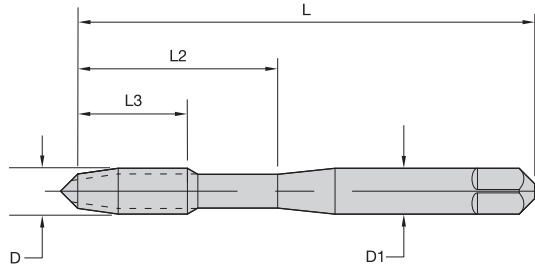


- first choice
- alternate choice

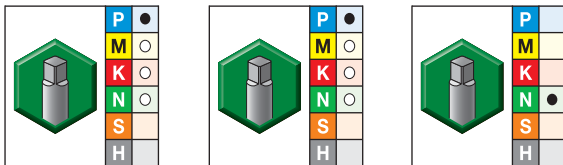
TiN		uncoated		inch dimensions					number of lube grooves	pitch diameter limit
order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
2746236	19941	2747866	17082	M3 X 0,5	1.94	.31	.63	.141	4	D5
2746234	19942	2747864	17084	M4 X 0,7	2.13	.38	.75	.168	4	D6
2746232	19943	2747862	17086	M5 X 0,8	2.38	.50	.88	.194	4	D7
2746231	19944	2747860	17087	M6 X 1	2.50	.63	1.00	.255	4	D8
2746229	19945	2747858	17090	M8 X 1,25	2.72	.69	1.13	.318	4	D9
2746227	19946	-	-	M10 X 1,5	2.94	.75	1.25	.381	4	D10
2746225	19947	-	-	M12 X 1,75	3.38	.94	-	.367	4	D11

NOTE: Metric taps are manufactured to USCTI specifications and dimensions.
Metric tap blank dimensions are equivalent to inch taps.
Form taps require a larger drilled hole size prior to tapping than corresponding cutting taps.
Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 6H class of fit.

- Series 2512 • TiN Coated
- Series 5512TC • TiCN Coated
- Series 5512 • Uncoated



■ Series 2512/5512 • Bottom Entry Taper • Metric ANSI



- first choice
- alternate choice

TiCN		TiN		uncoated		inch dimensions					number of lube grooves	pitch diameter limit
order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	L2	D		
2746510	19567	2746223	19948	2747522	17267	M3 X 0,5	1.94	.31	.63	.141	4	D5
2746508	19569	2746221	19949	2747518	17269	M4 X 0,7	2.13	.38	.75	.168	4	D6
2746506	19571	2746219	19950	2747515	17271	M5 X 0,8	2.38	.50	.88	.194	4	D7
2746504	19572	2746217	19951	2747513	17272	M6 X 1	2.50	.63	1.00	.255	4	D8
2746502	19574	2746215	19952	2747509	17275	M8 X 1,25	2.72	.69	1.13	.318	4	D9
2746498	19576	2746213	19953	2747505	17276	M10 X 1,5	2.94	.75	1.25	.381	4	D10
-		2746211	19954	2747501	17277	M12 X 1,75	3.38	.94	-	.367	4	D11

NOTE: Metric taps are manufactured to USCTI specifications and dimensions.
 Metric tap blank dimensions are equivalent to inch taps.
 Form taps require a larger drilled hole size prior to tapping than corresponding cutting taps.
 Refer to tables on pages W231–W232 for the recommended pitch diameter limit for 6H class of fit.

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Pipe Taps

WIDIA-GTD[™] options for tapping pipe threads in:

- Steel and steel alloys.
- Stainless steel.
- Cast iron.
- Aluminum.

Multipurpose VariTap™

- Slow helix spiral-flute design for tapping steel and stainless steel.
- Straight-flute design for tapping mold steels and cast iron.
- NPT and NPTF thread forms with standard projections and chamfers.
- Manufactured from high-vanadium HSS-E to provide long and consistent life.
- Ideal for customers who have a variety of materials to machine.

General Purpose Production Taps

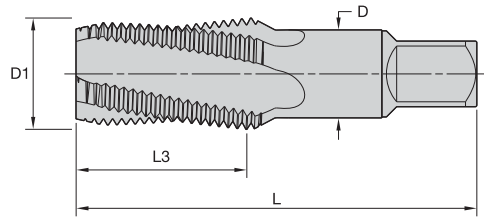
- Manufactured from select high-speed steel.
- NPT/ANPT and NPTF taper pipe taps with standard projections available with straight and slow helix spiral-flute designs for tapping ductile materials.
- Standard interrupted thread design to reduce drag while taper pipe threading.
- NPS and NPSF straight pipe taps available with straight-flute design for tapping ductile materials.



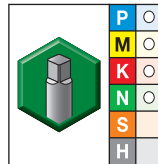
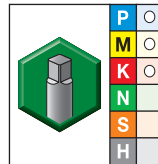
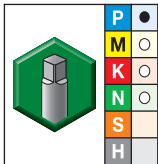
Multipurpose Taps

VariTap™ Spiral-Flute HSS-E Pipe Taps

- WU41EG TiN
- WP49EG oxide
- WU40EG bright



■ VT-SFT • Standard Chamfer • Standard Projection

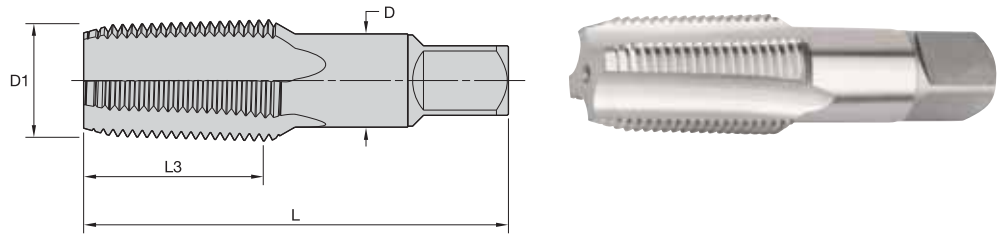


- first choice
- alternate choice

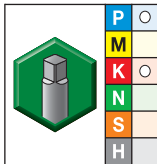
grade WU41EG TiN		grade WP49EG Oxide		grade WU40EG Bright		D1 TPI	L	L3	D	number of flutes	thread series
order #	catalog #	order #	catalog #	order #	catalog #						
5629600	VTSFT8001	5629359	VTSFT8001	5629601	VTSFT8001	1/16 - 27	2.13	.69	.313	4	NPT
5629618	VTSFT8501	5629617	VTSFT8501	5629619	VTSFT8501	1/16 - 27	2.13	.69	.313	4	NPTF
5629603	VTSFT8002	5629602	VTSFT8002	5629604	VTSFT8002	1/8 - 27	2.13	.75	.313	4	NPT
5629621	VTSFT8502	5629620	VTSFT8502	5629622	VTSFT8502	1/8 - 27	2.13	.75	.313	4	NPTF
5629606	VTSFT8003	5629605	VTSFT8003	5629607	VTSFT8003	1/8 - 27	2.13	.75	.438	4	NPT
5629624	VTSFT8503	5629623	VTSFT8503	5629625	VTSFT8503	1/8 - 27	2.13	.75	.438	4	NPTF
5629609	VTSFT8004	5629608	VTSFT8004	5629610	VTSFT8004	1/4 - 18	2.44	1.03	.563	4	NPT
5629627	VTSFT8504	5629626	VTSFT8504	5629628	VTSFT8504	1/4 - 18	2.44	1.03	.563	4	NPTF
5629612	VTSFT8005	5629611	VTSFT8005	5629613	VTSFT8005	3/8 - 18	2.56	1.03	.700	4	NPT
5629640	VTSFT8505	5629629	VTSFT8505	5629641	VTSFT8505	3/8 - 18	2.56	1.03	.700	4	NPTF
5629615	VTSFT8006	5629614	VTSFT8006	5629616	VTSFT8006	1/2 - 14	3.13	1.38	.688	4	NPT
5629643	VTSFT8506	5629642	VTSFT8506	5629644	VTSFT8506	1/2 - 14	3.13	1.38	.688	4	NPTF
5629836	VTSFT8007	5629835	VTSFT8007	5629837	VTSFT8007	3/4 - 14	3.25	1.38	.906	4	NPT
5629871	VTSFT8507	5629861	VTSFT8507	5629881	VTSFT8507	3/4 - 14	3.25	1.38	.906	4	NPTF
5629839	VTSFT8008	5629838	VTSFT8008	5629860	VTSFT8008	1 - 11 1/2	3.75	1.75	1.125	4	NPT
5629890	VTSFT8508	5629889	VTSFT8508	5629891	VTSFT8508	1 - 11 1/2	3.75	1.75	1.125	4	NPTF

Multipurpose Taps

- WU40EG bright



■ VT-STR • Standard Chamfer • Standard Projection



grade WU40EG
Bright

- first choice
- alternate choice

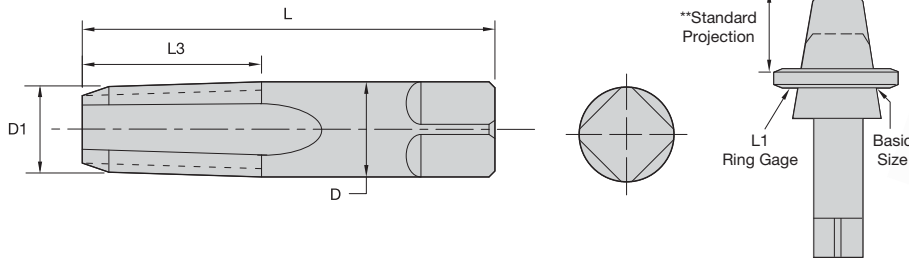
order #	catalog #	D1 TPI	L	L3	D	number of flutes	thread series
5629646	VTSTR8001	1/8 - 27	2.13	.75	.313	4	NPT
5629647	VTSTR8002	1/4 - 18	2.44	1.03	.563	4	NPT
5629648	VTSTR8003	3/8 - 18	2.56	1.03	.700	4	NPT
5629649	VTSTR8004	1/2 - 14	3.13	1.38	.688	4	NPT
5629904	VTSTR8005	3/4 - 14	3.25	1.38	.906	5	NPT

Production Taps

NPT/ANPT and NPTF Production Taper Pipe Taps



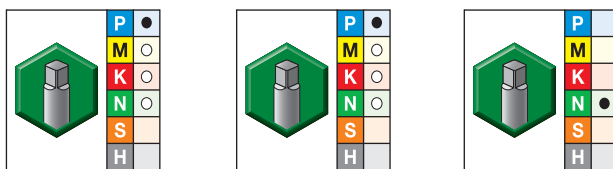
- Series 2320 • TiN Coated
- Series 5320S • SH50 Steam Oxide
- Series 5320 • Uncoated



Features and Benefits:

- Manufactured from select high-speed steel.
- Ground thread pipe taps are standard in American Standard Pipe Form (NPT) and American Standard Dryseal Pipe Thread Form (NPTF).
- NPT threads require the use of a sealer, such as Teflon® tape or pipe compound.
- NPTF dryseal threads give a pressure-tight joint without the use of a sealer.
- The nominal size of a pipe tap is that of the pipe fitting to be tapped, not the actual size of the tap; thread taper is 3/4" per foot.
- Alternate tap coatings are available as stock modifications.

■ Series 2320/5320 • Standard Chamfer • Standard Projection

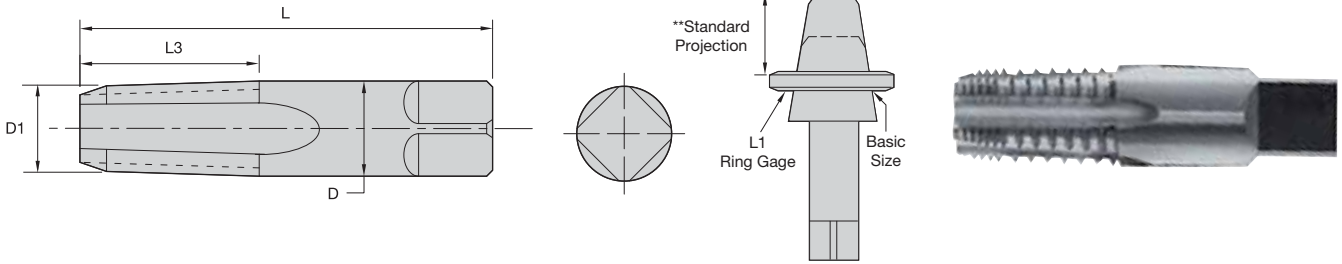


- first choice
- alternate choice

TiN		oxide		uncoated		inch dimensions				number of flutes	thread series
order #	catalog #	order #	catalog #	order #	catalog #	D1 size	L	L3	D		
2746411	19698	2746417	19690	3139338	16201	1/16 - 27	2.13	.69	.313	4	NPT/ANPT
2746415	19691	-	-	2748216	16203	1/16 - 27	2.13	.69	.313	4	NPTF
2603958	19707	-	-	2873746	16204	1/8 - 27	2.13	.75	.313	4	NPT/ANPT
2746397	19712	2746413	19695	2748210	16205	1/8 - 27	2.13	.75	.438	4	NPT/ANPT
2746407	19701	-	-	2748206	16209	1/8 - 27	2.13	.75	.313	4	NPTF
2746405	19702	-	-	2748203	16210	1/8 - 27	2.13	.75	.438	4	NPTF
2622810	19728	2746399	19710	2748199	16212	1/4 - 18	2.44	1.06	.563	4	NPT/ANPT
2746393	19721	-	-	2748193	16215	1/4 - 18	2.44	1.06	.563	4	NPTF
2746380	19738	2746386	19730	2748189	16217	3/8 - 18	2.56	1.06	.700	4	NPT/ANPT
-	-	-	-	2748185	16220	3/8 - 18	2.56	1.06	.700	4	NPTF
2746382	19736	-	-	-	-	3/8 - 18	2.56	1.25	.700	4	NPTF
2746373	19746	-	-	2748177	16225	1/2 - 14	3.13	1.66	.687	4	NPTF
2603959	19748	2746378	19740	2748181	16222	1/2 - 14	3.13	1.66	.687	4	NPT/ANPT
2746361	19766	-	-	2748169	16230	3/4 - 14	3.25	1.38	.906	5	NPTF
2746359	19768	2746366	19760	2748173	16227	3/4 - 14	3.25	1.38	.906	5	NPT/ANPT
2746357	19776	-	-	2748159	16235	1 - 11 1/2	3.75	1.75	1.125	5	NPTF
2746355	19778	-	-	2748165	16232	1 - 11 1/2	3.75	1.75	1.125	5	NPT/ANPT
-	-	-	-	2748153	16239	1 1/4 - 11 1/2	4.00	1.75	1.313	5	NPTF
-	-	-	-	2748155	16237	1 1/4 - 11 1/2	4.00	1.75	1.313	5	NPT/ANPT
-	-	-	-	2748147	16242	1 1/2 - 11 1/2	4.25	3.00	1.500	7	NPTF
-	-	-	-	2748151	16240	1 1/2 - 11 1/2	4.25	3.00	1.500	7	NPT/ANPT
-	-	-	-	2748143	16245	2 - 11 1/2	4.25	1.75	1.875	7	NPTF
-	-	-	-	2748145	16243	2 - 11 1/2	4.25	1.75	1.875	7	NPT/ANPT

** Pipe tap projection is the distance the small end of the tap projects through an American National Standard NPTF Thin Ring Gage.
 NOTE: ANPT Taps marked NPT may be used for NPT and ANPT applications.
 For gage measurement projection, see technical page W226.

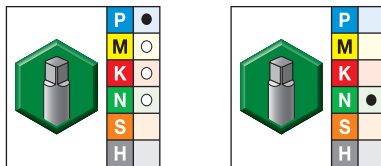
- Series 5319S • SH50 Steam Oxide
- Series 5319 • Uncoated



Features and Benefits:

- Manufactured from select high-speed steel.
- Interrupted threads to reduce drag while taper pipe threading.
- Use where chip disposal is a concern.
- Odd number of flutes standard.
- NPT threads require the use of a sealer, such as Teflon® tape or pipe compound.
- NPTF dryseal threads give a pressure-tight joint without the use of a sealer.

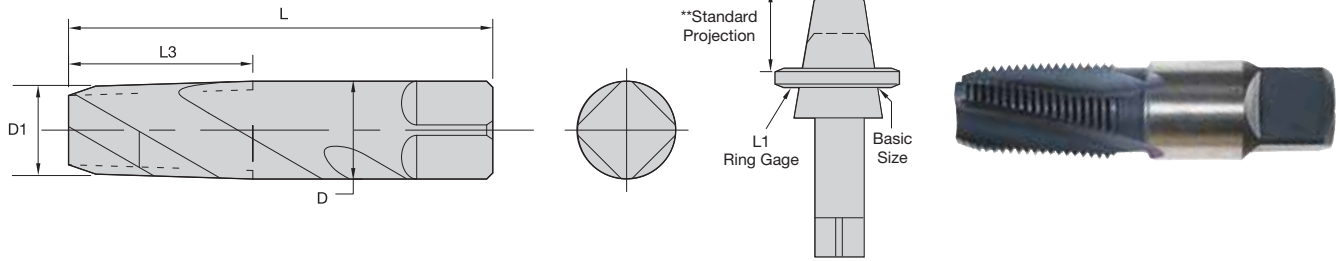
■ **Series 5319 • Standard Pipe Chamfer • Standard Projection**



- first choice
- alternate choice

oxide		uncoated		inch dimensions				number of flutes	thread series
order #	catalog #	order #	catalog #	D1 size	L	L3	D		
-	-	2748270	16101	1/8 - 27	2.13	.75	.313	5	NPT/ANPT
2746429	19650	1854963	16102	1/8 - 27	2.13	.75	.438	5	NPT/ANPT
-	-	2748264	16103	1/8 - 27	2.13	.75	.313	5	NPTF
-	-	2748262	16104	1/8 - 27	2.13	.75	.438	5	NPTF
2746425	19655	2748259	16105	1/4 - 18	2.44	1.06	.563	5	NPT/ANPT
-	-	2748257	16106	1/4 - 18	2.44	1.06	.563	5	NPTF
2746423	19656	2748255	16107	3/8 - 18	2.56	1.06	.700	5	NPT/ANPT
-	-	3175997	16108	3/8 - 18	2.56	1.06	.700	5	NPTF
2746421	19665	2748250	16109	1/2 - 14	3.13	1.66	.688	5	NPT/ANPT
-	-	2748247	16110	1/2 - 14	3.13	1.66	.688	5	NPTF
2746419	19675	2748244	16111	3/4 - 14	3.25	1.38	.906	5	NPT/ANPT
-	-	2748238	16112	3/4 - 14	3.25	1.38	.906	5	NPTF
-	-	2748237	16113	1 - 11 1/2	3.75	1.75	1.125	5	NPT/ANPT
-	-	2748234	16114	1 - 11 1/2	3.75	1.75	1.125	5	NPTF
-	-	2864744	16115	1 1/4 - 11 1/2	4.00	1.75	1.313	5	NPT/ANPT
-	-	2748230	16117	1 1/2 - 11 1/2	4.25	3.00	1.500	7	NPT/ANPT
-	-	2748225	16118	2 - 11 1/2	4.25	1.75	1.875	7	NPT/ANPT

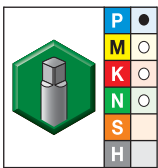
** Pipe tap projection is the distance the small end of the tap projects through an American National Standard NPTF Thin Ring Gage.
NOTE: NPT taps may be used for ANPT applications.
For gage measurement projection, see technical page W226.



Features and Benefits:

- Manufactured from select tap high-speed steel.
- Ground threads standard in American Standard Pipe Form (NPT) and American Standard Dryseal Pipe Form (NPTF).
- NPT threads require the use of a sealer, such as Teflon® tape or pipe compound.
- NPTF dryseal threads give a pressure-tight joint without the use of a sealer.
- Uncoated taps standard; coatings available as a stock modification.
- Spiral flutes lift chips out of the tapped hole reducing stop lines.
- Most effective in materials that produce long, stringy chips.

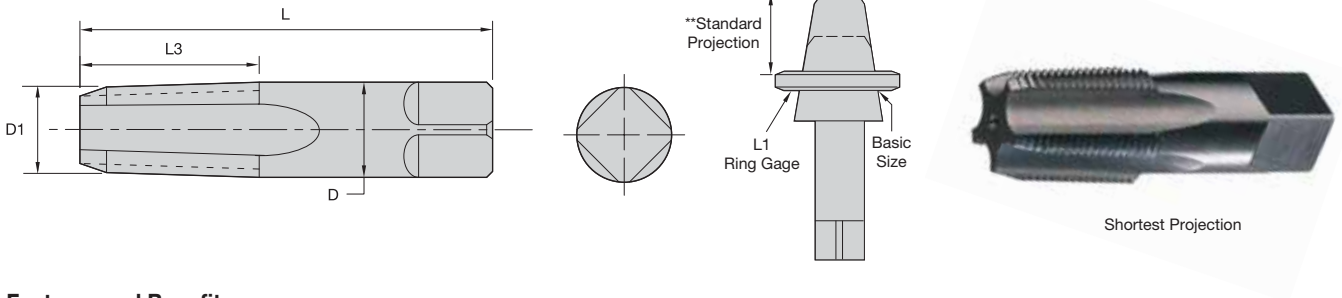
■ Series 5321 • Standard Pipe Chamfer • Standard Projection



- first choice
- alternate choice

uncoated		inch dimensions				number of flutes	thread series
order #	catalog #	D1 size	L	L3	D		
2748109	16281	1/8 - 27	2.13	.75	.438	4	NPT/ANPT
2956027	16283	1/4 - 18	2.44	1.06	.563	4	NPT/ANPT
2748101	16284	1/4 - 18	2.44	1.06	.563	4	NPTF
2864545	16285	3/8 - 18	2.56	1.06	.700	4	NPT/ANPT
2748099	16286	3/8 - 18	2.56	1.06	.700	4	NPTF
2956026	16287	1/2 - 14	3.13	1.66	.688	4	NPT/ANPT

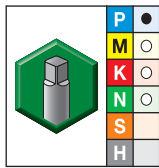
** Pipe tap projection is the distance the small end of the tap projects through an American National Standard NPTF Thin Ring Gage.
NOTE: NPT taps may be used for ANPT applications.
For gage measurement projection, see technical page W226.



Features and Benefits:

- Manufactured from select high-speed steel.
- Ground thread pipe taps are standard in American Standard Pipe Form (NPT) and American Standard Dryseal Pipe Thread Form (NPTF).
- NPT threads require the use of a sealer, such as Teflon® tape or pipe compound.
- NPTF dryseal threads give a pressure-tight joint without the use of a sealer.
- Uncoated taps standard; coatings available as specials.
- Hook designed for use in ductile materials that produce long, continuous chips.

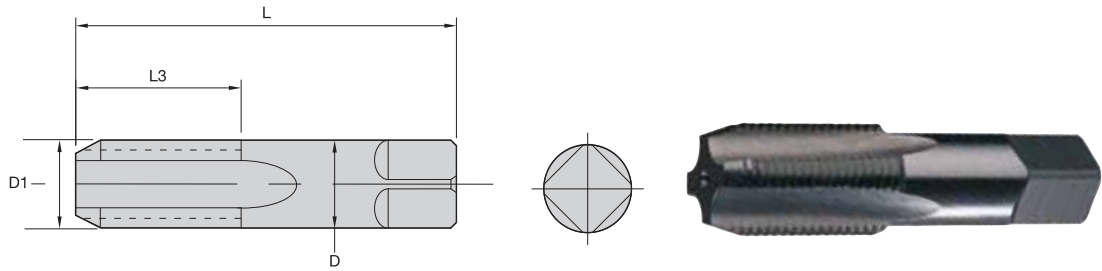
■ Series 5820 • Standard Pipe Chamfer • Standard Projection



- first choice
- alternate choice

uncoated		inch dimensions				number of flutes	thread series
order #	catalog #	D1 size	L	L3	D		
2748196	16213	1/4 - 18	2.44	1.06	.563	4	NPT/ANPT
2748187	16218	3/8 - 18	2.56	1.06	.700	4	NPT/ANPT
2748179	16223	1/2 - 14	3.13	1.66	.688	4	NPT/ANPT
2748171	16228	3/4 - 14	3.25	1.38	.906	5	NPT/ANPT
2748163	16233	1 - 11 1/2	3.75	1.75	1.125	5	NPT/ANPT

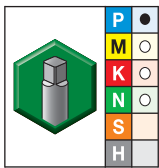
** Pipe tap projection is the distance the small end of the tap projects through an American National Standard NPTF Thin Ring Gage.
NOTE: NPT taps may be used for ANPT applications.
For gage measurement projection, see technical page W226.



Features and Benefits:

- Manufactured from select tap high-speed steel.
- Ground thread pipe taps are standard in American National Standard Straight Pipe (NPS) thread form and American National Standard Dryseal Straight Pipe (NPSF) thread form.
- NPS threads are suitable for tapping holes or couplings for low pressure work when used with a sealer; also suitable for NPSC and NPSM work.
- NPSF dryseal taps are intended for low pressure work, such as fuel and oil lines where a sealer is not used.
- Dryseal threads give a low-pressure, pressure-tight joint without the use of a sealer.

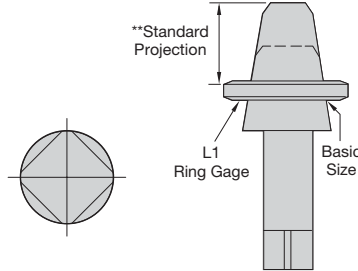
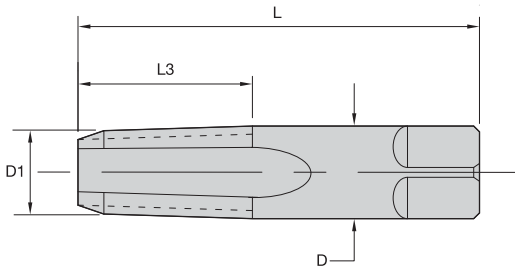
■ **Series 5323 • Modified Bottoming Chamfer**



- first choice
- alternate choice

uncoated		inch dimensions				number of flutes	thread series
order #	catalog #	D1 size	L	L3	D		
2748090	16351	1/8 - 27	2.13	.75	.313	4	NPS
2748088	16352	1/8 - 27	2.13	.75	.438	4	NPS
2748086	16353	1/8 - 27	2.13	.75	.313	4	NPSF
2748084	16354	1/8 - 27	2.13	.75	.438	4	NPSF
2748082	16355	1/4 - 18	2.44	1.06	.563	4	NPS
2748080	16356	1/4 - 18	2.44	1.06	.563	4	NPSF
2748078	16357	3/8 - 18	2.56	1.06	.700	4	NPS
2748076	16358	3/8 - 18	2.56	1.06	.700	4	NPSF
2748074	16359	1/2 - 14	3.13	1.66	.688	4	NPS
2748072	16360	1/2 - 14	3.13	1.66	.688	4	NPSF
2748070	16361	3/4 - 14	3.25	1.38	.906	5	NPS
2748068	16362	3/4 - 14	3.25	1.38	.906	5	NPSF
2748066	16363	1 - 11 1/2	3.75	1.75	1.125	5	NPS

Production Taps



Features and Benefits:

- Manufactured from select high-speed steel.
- American Standard Pipe Tap (NPT) thread form with a taper of 3/4" per foot.
- Made for the most difficult maintenance applications.
- Use for hand tapping or tapping under power.
- Furnished with 2-1/2-3-1/2 pitches chamfered.
- Standard projection.

- first choice
- alternate choice

■ Series 7320 • Standard Chamfer 2-1/2-3-1/2 Pitches

uncoated		inch dimensions				thread series
order #	catalog #	D1 size	L	L3	D	
2750443	11800	1/8 - 27	2.13	.75	.313	NPT
2750441	11801	1/8 - 27	2.13	.75	.438	NPT
2750437	11802	1/4 - 18	2.44	1.06	.563	NPT
2750435	11803	3/8 - 18	2.56	1.06	.700	NPT
2750431	11804	1/2 - 14	3.13	1.38	.688	NPT
2750430	11805	3/4 - 14	3.25	1.38	.906	NPT
2750428	11806	1 - 11 1/2	3.75	1.75	1.125	NPT
2750426	11807	1 1/4 - 11 1/2	4.00	1.75	1.313	NPT
2750425	11808	1 1/2 - 11 1/2	4.25	1.75	1.500	NPT
2750423	11809	2 - 11 1/2	4.50	1.75	1.875	NPT

Maintenance Pipe Taps

Thread Mills •
WIDIA-GTD™



Thread Mills

Our solid thread mills are designed to be the highest quality thread milling solution.

- Cut up to 63 HRC.
- Improved overall thread quality.

Optimized flute design

Better chip evacuation.

Carbide substrate

Higher heat resistance,
higher speed.



Various multilayer coatings

Extremely high wear resistance,
longer tool life.

Cylindrical h6 shank

Low runout, higher
quality threads.

Unmatched Capabilities

- Capable of easily cutting most difficult materials.
- Carbide grades make threading easier and reduce machining times.
- High-quality internal and external threading on 3-axis CNC machines.
- Thread mills make interrupted cuts and short chips.
- Design offers a range of benefits to improve overall thread quality.
- Short, easily evacuated chips generate less heat and friction, so there is a lower risk of damage to threading.





















Choose WIDIA-GTD™ Thread Mills

- Greater versatility than competitive products.
- Optimum surface quality for an excellent end product.
- Designed to eliminate chipping issues.
- No need to reverse the spindle.
- Fewer machining problems means more production safety.















Victory™ GTM Series HP Solid Carbide Thread Mills • Metric

- ★ Good
- ★★ Better
- ★★★ Best

GTM Series Solid Thread Milling • Metric	series	size range	hole	operation	coolant	grade	shank
		(inch and metric)					
	GTM11	M3–M20				WU13PV	6535 HA
	GTM21	M5–M16				WU12PV	6535 HA
	GTM31	M4–M16				WU12PV	6535 HA
	GTM41	M6–M24				WU16PV	6535 HA
	GTM41LH	M6–M12				WU16PV	6535 HA

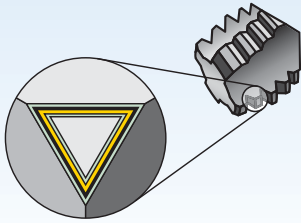
Victory GTM Series HP Solid Carbide Thread Mills • Inch

- ★ Good
- ★★ Better
- ★★★ Best

GTM Series Solid Thread Milling • Inch	series	size range	hole	operation	coolant	grade	shank
		(inch and metric)					
	GTM21	#10–5/8"				WU12PV	6535 HA
	GTM31	1/4–5/8"				WU12PV	6535 HA
	GTM41	1/4–3/4"				WU16PV	6535 HA

P				M	K		N			S				H		page(s)	recommended cutting parameters
1, 2, 3, 4, 6, 7	5, 9, 10, 11	12, 13.1	13.2	14.1, 14.2, 14.3, 14.4	15, 16, 17, 18, 19	20	21	22, 23, 24, 25	26, 27, 28	31, 32	33, 34, 35	36	37	38.1, 38.2, 40.1, 40.2, 41.1	39.1, 41.2		
Steel <35 HRC	Steel 36-48 HRC	PH and Ferritic Stainless Steel <35 HRC	PH and Ferritic Stainless Steel >35 HRC	Stainless Steel	Cast Iron		Wrought Aluminum	Cast Aluminum	Copper, Copper Alloys	Iron Based	Cobalt Based	Nickel Based	Titanium Alloys	Hardened Steels 49-55 HRC	Hardened Steels 56-68 HRC		
★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★	★	★	★			W199	W208
★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★			W201	W208
					★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★							W203	W209
★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★					★ ★ ★	★ ★ ★	W205	W210
										★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	W206	W210

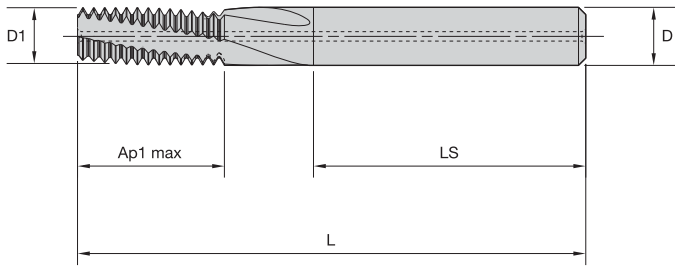
P				M	K		N			S				H		page(s)	recommended cutting parameters
1, 2, 3, 4, 6, 7	5, 9, 10, 11	12, 13.1	13.2	14.1, 14.2, 14.3, 14.4	15, 16, 17, 18, 19	20	21	22, 23, 24, 25	26, 27, 28	31, 32	33, 34, 35	36	37	38.1, 38.2, 40.1, 40.2, 41.1	39.1, 41.2		
Steel <35 HRC	Steel 36-48 HRC	PH and Ferritic Stainless Steel <35 HRC	PH and Ferritic Stainless Steel >35 HRC	Stainless Steel	Cast Iron		Wrought Aluminum	Cast Aluminum	Copper, Copper Alloys	Iron Based	Cobalt Based	Nickel Based	Titanium Alloys	Hardened Steels 49-55 HRC	Hardened Steels 56-68 HRC		
★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★			W200	W207
					★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★							W202	W208
★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★					★ ★ ★	★ ★ ★	W204	W209



Coatings are designed for optimized tapping performance in specific materials.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous
S	High-Temp Alloys
H	Hardened Materials

Grade	Coating	Grade Description	wear resistance ← → toughness																				
				05	10	15	20	25	30	35	40	45											
WU12PV		Coated carbide. PVD fine-grain carbide substrate with high-hardness TiCN coating. Universal grade for thread milling most materials.	P																				
			M																				
			K																				
			N																				
			S																				
			H																				
WU13PV		Coated carbide. PVD carbide substrate with heat-resistant TiAlN coating. Universal grade for thread milling most materials.	P																				
			M																				
			K																				
			N																				
			S																				
			H																				
WU16PV		Coated carbide. PVD two-layer coating with heat-resistant TiAlN base layer and low-friction MoS ₂ top layer over carbide substrate. Use for thread milling most materials, including high-hardness materials.	P																				
			M																				
			K																				
			N																				
			S																				
			H																				

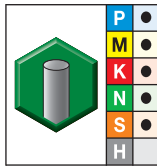


Shank Tolerance

D mm	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-18	+0, -0,011
20-30	+0, -0,013



■ GTM11 • Through Coolant • Metric and Metric Fine



grade WU13PV
TiAlN

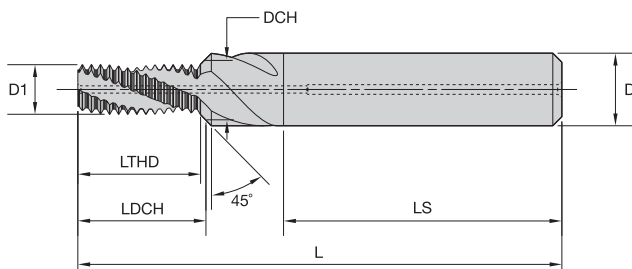
- first choice
- alternate choice

order #	catalog #	metric dimensions						cutting edges
		D1 size	D1	Ap1 max	L	LS	D	
4138391	GTM115001	M3X0.5	2,4	6	42	28	4,0	3
4138502	GTM115012	M4X0.5	3,4	8	55	36	6,0	3
4138392	GTM115002	M4X0.7	3,2	9	55	36	6,0	3
4138503	GTM115013	M5X0.5	4,3	10	55	36	6,0	3
4138493	GTM115003	M5X0.8	4,0	11	55	36	6,0	3
4138504	GTM115014	M6X0.75	5,0	12	55	36	6,0	3
4138494	GTM115004	M6X1	4,8	12	55	36	6,0	3
4138505	GTM115015	M8X0.75	5,9	17	63	36	6,0	3
4138506	GTM115016	M8X1	5,9	16	63	36	6,0	3
4138495	GTM115005	M8X1.25	5,9	17	63	36	6,0	3
4138507	GTM115017	M10X1	7,9	20	70	36	8,0	3
4138496	GTM115006	M10X1.5	7,9	20	70	36	8,0	3
4138508	GTM115018	M12X1	9,9	24	80	40	10,0	4
4138509	GTM115019	M12X1.5	9,9	25	80	40	10,0	4
4138497	GTM115007	M12X1.75	9,9	25	80	40	10,0	4
4138510	GTM115020	M14X1.5	9,9	29	80	40	10,0	4
4138498	GTM115008	M14X2	11,6	29	90	45	12,0	4
4138511	GTM115021	M16X1.5	11,9	32	90	45	12,0	4
4138499	GTM115009	M16X2	11,9	33	90	45	12,0	4
4138512	GTM115022	M18X1.5	13,9	37	90	45	14,0	4
4138500	GTM115010	M18X2.5	13,9	39	90	45	14,0	4
4138513	GTM115023	M20X1.5	13,9	41	90	45	14,0	4
4138501	GTM115011	M20X2.5	13,9	41	90	45	14,0	4

High-Performance Thread Mills

High-Performance Thread Mills

Victory™ Solid Carbide Thread Mills • Blind and Through Holes

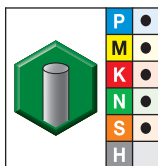


Shank Tolerance

D mm	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-18	+0, -0,011
20-30	+0, -0,013



■ GTM21 • Through Coolant • Inch UNC and UNF



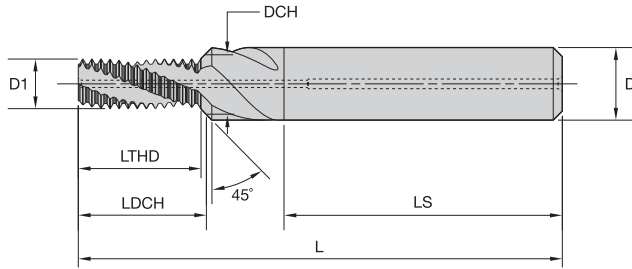
● first choice
○ alternate choice

grade WU12PV
TiCN

metric dimensions

order #	catalog #	D1 TPI	D1	DCH	LTHD	LDCH	L	LS	D	cutting edges
4138537	GTM215024	#10-32	3,8	5,13	9,95	10,53	55	36	6,0	3
4138530	GTM215017	1/4-20	4,7	6,65	13,36	14,23	62	36	8,0	3
4138538	GTM215025	1/4-28	5,2	6,65	13,19	13,84	62	36	8,0	3
4138531	GTM215018	5/16-18	6,2	8,25	16,26	17,19	74	40	10,0	3
4138539	GTM215026	5/16-24	6,6	8,25	16,44	17,15	74	40	10,0	3
4138532	GTM215019	3/8-16	7,7	9,83	19,89	20,85	80	45	12,0	3
4138540	GTM215027	3/8-24	8,2	9,83	19,62	20,31	80	45	12,0	3
4138533	GTM215020	7/16-14	9,0	11,43	22,72	23,79	80	45	12,0	3
4138541	GTM215028	7/16-20	9,6	11,43	22,28	23,08	80	45	12,0	3
4138534	GTM215021	1/2-13	10,4	13,00	26,43	27,60	90	45	14,0	4
4138542	GTM215029	1/2-20	11,1	13,00	26,10	26,89	90	45	14,0	4
4138535	GTM215022	9/16-12	11,8	14,61	30,75	31,99	100	48	16,0	4
4138543	GTM215030	9/16-18	12,5	14,61	28,99	29,88	100	48	16,0	4
4138536	GTM215023	5/8-11	13,1	16,18	33,54	34,89	102	48	18,0	4
4138544	GTM215031	5/8-18	14,1	16,18	33,24	34,09	102	48	18,0	4

High-Performance Thread Mills

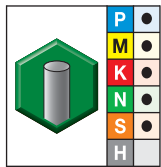


Shank Tolerance

D mm	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-18	+0, -0,011
20-30	+0, -0,013



■ GTM21 • Through Coolant • Metric and Metric Fine



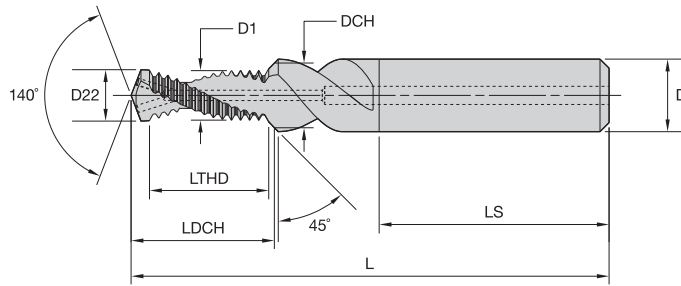
- first choice
- alternate choice

grade WU12PV TiCN		metric dimensions								cutting edges
order #	catalog #	D1 size	D1	DCH	LTHD	LDCH	L	LS	D	
4138514	GTM215001	M5X0.8	4,0	5,30	10,82	11,40	55	36	6,0	3
4138521	GTM215008	M6X0.75	5,0	6,30	12,40	12,97	62	36	8,0	3
4138515	GTM215002	M6X1	4,8	6,30	12,52	13,19	62	36	8,0	3
4138522	GTM215009	M8X1	6,7	8,30	16,53	17,23	74	40	10,0	3
4138516	GTM215003	M8X1.25	6,5	8,30	16,91	17,71	74	40	10,0	3
4138523	GTM215010	M10X1	8,7	10,30	20,55	21,23	80	45	12,0	3
4138524	GTM215011	M10X1.25	8,4	10,30	20,67	21,50	80	45	12,0	3
4138517	GTM215004	M10X1.5	8,2	10,30	20,29	21,22	80	45	12,0	3
4138525	GTM215012	M12X1	10,6	12,30	24,56	25,27	90	45	14,0	4
4138526	GTM215013	M12X1.25	10,4	12,30	24,43	25,24	90	45	14,0	4
4138527	GTM215014	M12X1.5	10,1	12,30	24,80	25,76	90	45	14,0	4
4138518	GTM215005	M12X1.75	9,9	12,30	25,42	26,48	90	45	14,0	4
4138528	GTM215015	M14X1.5	12,1	14,30	29,31	30,25	100	48	16,0	4
4138519	GTM215006	M14X2	11,6	14,30	29,05	30,24	100	48	16,0	4
4138529	GTM215016	M16X1.5	14,0	16,30	32,31	33,30	102	48	18,0	4
4138520	GTM215007	M16X2	13,6	16,30	33,05	34,24	102	48	18,0	4

High-Performance Thread Mills

High-Performance Thread Mills

Victory™ Solid Carbide Thread Mills • Blind and Through Holes

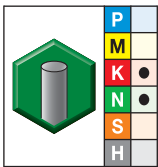


Shank Tolerance

D mm	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-18	+0, -0,011
20-30	+0, -0,013



■ GTM31 • Through Coolant • Inch UNC and UNF



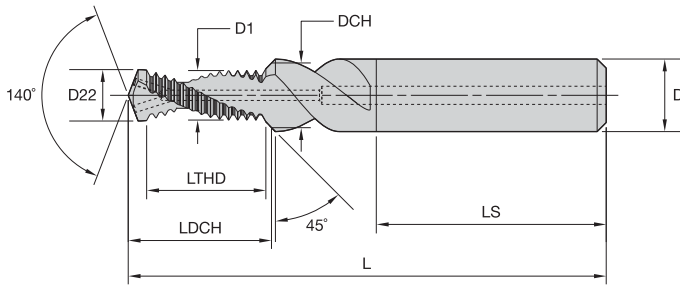
- first choice
- alternate choice

grade WU12PV
TiCN

metric dimensions

order #	catalog #	D1 TPI	D1	D22	DCH	LTHD	LDCH	L	LS	D	cutting edges
4138561	GTM315021	1/4-20	4,9	5,2	6,65	12,80	15,87	62	36	8,0	2
4138568	GTM315028	1/4-28	5,3	5,5	6,65	12,79	15,35	62	36	8,0	2
4138562	GTM315023	5/16-18	6,3	6,6	8,25	15,63	19,19	74	40	10,0	2
4138569	GTM315030	5/16-24	6,6	6,9	8,25	15,98	19,07	74	40	10,0	2
4138563	GTM315017	3/8-16	7,7	8,0	9,83	19,16	23,25	79	45	12,0	2
4138570	GTM315024	3/8-24	8,2	8,5	9,83	19,16	22,54	79	45	12,0	2
4138564	GTM315018	7/16-14	9,0	9,4	11,43	21,89	26,58	79	45	12,0	2
4138571	GTM315025	7/16-20	9,6	9,9	11,43	21,72	25,69	79	45	12,0	2
4138565	GTM315019	1/2-13	10,4	10,8	13,00	25,52	30,71	89	45	14,0	2
4138572	GTM315026	1/2-20	11,1	11,5	13,00	25,55	29,82	89	45	14,0	2
4138566	GTM315020	9/16-12	11,8	12,3	14,61	27,66	33,37	102	48	16,0	2
4138573	GTM315027	9/16-18	12,5	12,9	14,61	28,37	33,15	102	48	16,0	2
4138567	GTM315022	5/8-11	13,1	13,5	16,18	30,14	36,40	102	48	18,0	2
4138574	GTM315029	5/8-18	14,1	14,5	16,18	31,21	36,25	102	48	18,0	2

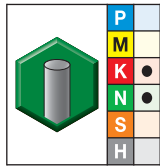
High-Performance Thread Mills



Shank Tolerance	
D mm	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-18	+0, -0,011
20-30	+0, -0,013



■ GTM31 • Through Coolant • Metric and Metric Fine



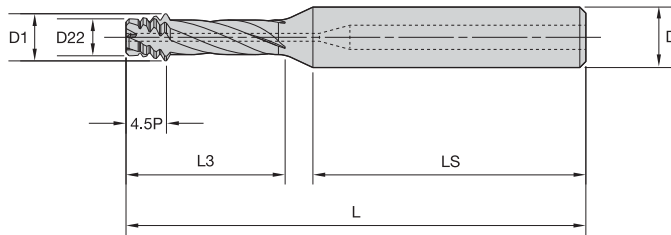
- first choice
- alternate choice

order #	catalog #	metric dimensions									cutting edges
		D1 size	D1	D22	DCH	LTHD	LDCH	L	LS	D	
4138545	GTM315001	M4X0.7	3,2	3,3	4,30	7,74	9,59	49	36	6,0	2
4138546	GTM315002	M5X0.8	4,0	4,2	5,30	9,65	11,82	55	36	6,0	2
4138553	GTM315009	M6X0.75	5,1	5,3	6,30	12,07	14,37	62	36	8,0	2
4138547	GTM315003	M6X1	4,8	5,0	6,30	12,06	14,69	62	36	8,0	2
4138554	GTM315010	M8X1	6,8	7,0	8,30	16,09	19,10	74	40	10,0	2
4138548	GTM315004	M8X1.25	6,5	6,8	8,30	15,08	18,42	74	40	10,0	2
4138555	GTM315011	M10X1	8,7	9,0	10,30	20,11	23,52	79	45	12,0	2
4138556	GTM315012	M10X1.25	8,4	8,8	10,30	20,11	23,87	79	45	12,0	2
4138549	GTM315005	M10X1.5	8,2	8,5	10,30	19,59	23,65	79	45	12,0	2
4138557	GTM315013	M12X1.25	10,4	10,8	12,30	23,88	28,00	89	45	14,0	2
4138558	GTM315014	M12X1.5	10,2	10,5	12,30	24,12	28,57	89	45	14,0	2
4138550	GTM315006	M12X1.75	9,9	10,3	12,30	22,86	27,63	89	45	14,0	2
4138559	GTM315015	M14X1.5	12,1	12,5	14,30	27,14	31,98	102	48	16,0	2
4138551	GTM315007	M14X2	11,6	12,0	14,30	28,12	33,62	102	48	16,0	2
4138560	GTM315016	M16X1.5	14,1	14,5	16,30	31,65	36,87	102	48	18,0	2
4138552	GTM315008	M16X2	13,6	14,0	16,30	32,13	38,00	102	48	18,0	2

High-Performance Thread Mills

High-Performance Thread Mills

Victory™ Solid Carbide Thread Mills • Blind and Through Holes

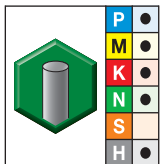


Shank Tolerance

D mm	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-18	+0, -0,011
20-30	+0, -0,013



■ GTM41 • Through Coolant • Right Hand • Inch UNC and UNF



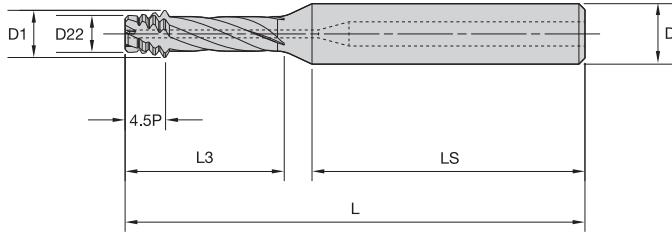
- first choice
- alternate choice

grade WU16PV
TiAlN+MoS₂

metric dimensions

order #	catalog #	D1 TPI	D1	D22	L3	L	LS	D	cutting edges
4138610	GTM415025	1/4-20	4,64	3,34	17,00	60	36	8,0	3
4138617	GTM415033	1/4-28	4,66	3,62	17,00	60	36	8,0	3
4138611	GTM415026	5/16-18	5,64	4,12	21,90	76	40	10,0	4
4138618	GTM415034	5/16-24	5,64	4,48	21,90	76	40	10,0	4
4138612	GTM415027	3/8-16	7,16	5,42	26,30	76	40	10,0	4
4138619	GTM415035	3/8-24	7,14	6,00	26,30	76	40	10,0	4
4138613	GTM415028	7/16-14	8,47	6,49	31,00	86	45	12,0	4
4138620	GTM415036	7/16-20	8,45	7,06	33,00	86	45	12,0	4
4138606	GTM415029	1/2-13	10,08	7,95	33,40	86	45	12,0	4
4138615	GTM415037	1/2-20	8,45	7,06	33,00	86	45	12,0	4
4138614	GTM415030	9/16-12	11,28	8,98	41,00	98	48	16,0	4
4138621	GTM415038	9/16-18	11,27	9,72	41,00	98	48	16,0	4
4138607	GTM415031	5/8-11	12,89	10,40	42,00	98	48	16,0	4
4138616	GTM415039	5/8-18	12,38	10,83	42,00	98	48	16,0	4
4138608	GTM415032	3/4-10	15,50	12,77	51,30	111	50	20,0	5
4138609	GTM415040	3/4-16	15,38	13,65	51,30	111	50	20,0	5

High-Performance Thread Mills

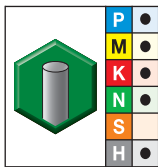


Shank Tolerance

D mm	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-18	+0, -0,011
20-30	+0, -0,013



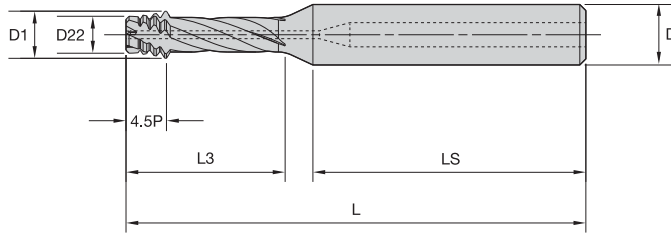
■ GTM41 • Through Coolant • Right Hand • Metric and Metric Fine



● first choice
○ alternate choice

grade WU16PV TiAlN+MoS ₂		metric dimensions							cutting edges
order #	catalog #	D1 size	D1	D22	L3	L	LS	D	
4138576	GTM415001	M6X1	4,51	3,41	16,5	60	36	8,0	3
4138578	GTM415002	M7X1	4,51	3,41	16,5	60	36	8,0	3
4138592	GTM415014	M8X1	6,23	5,13	21,9	71	40	10,0	4
4138580	GTM415003	M8X1.25	6,23	4,91	21,9	71	40	10,0	4
4138593	GTM415015	M9X1	6,23	5,13	21,9	71	40	10,0	4
4138582	GTM415004	M9X1.25	6,23	4,91	21,9	71	40	10,0	4
4138594	GTM415016	M10X1	6,23	5,13	21,9	71	40	10,0	4
4138595	GTM415013	M10X1.25	6,23	4,91	21,9	71	40	10,0	4
4138584	GTM415005	M10X1.5	7,75	6,11	26,3	76	40	10,0	4
4138586	GTM415006	M11X1.5	7,75	6,11	26,3	76	40	10,0	4
4138596	GTM415017	M12X1	9,15	8,06	30,0	86	45	12,0	4
4138598	GTM415007	M12X1.5	7,75	6,11	26,3	76	40	10,0	4
4138587	GTM415008	M12X1.75	9,16	7,21	32,4	86	45	12,0	4
4138599	GTM415018	M14X1	9,15	8,06	30,0	86	45	12,0	4
4138600	GTM415019	M14X1.5	10,83	9,15	37,4	98	48	16,0	4
4138588	GTM415009	M14X2	11,08	8,91	41,0	98	48	16,0	4
4138601	GTM415020	M16X1.5	10,83	9,15	37,4	98	48	16,0	4
4138589	GTM415010	M16X2	11,08	8,91	41,0	98	48	16,0	4
4138602	GTM415021	M18X1.5	14,83	13,15	47,0	98	48	16,0	4
4138590	GTM415011	M18X2.5	14,38	11,71	51,3	111	50	20,0	5
4138603	GTM415022	M20X1.5	14,83	13,15	47,0	98	48	16,0	4
4138591	GTM415012	M20X2.5	14,38	11,71	51,3	111	50	20,0	5
4138604	GTM415023	M22X1.5	18,23	16,55	56,0	111	50	20,0	5
4138605	GTM415024	M24X1.5	18,23	16,55	56,0	111	50	20,0	5

High-Performance Thread Mills

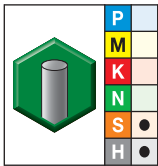


Shank Tolerance

D mm	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-18	+0, -0,011
20-30	+0, -0,013



■ GTM41 • Through Coolant • Left Hand • Metric and Metric Fine





● first choice
○ alternate choice

grade WU16PV
TiAlN+MoS₂

order #	catalog #	D1 size	metric dimensions						cutting edges
			D1	D22	L3	L	LS	D	
4138575	GTM415041	M6X1	4,51	3,41	16,5	60	36	8,0	3
4138577	GTM415042	M7X1	4,51	3,41	16,5	60	36	8,0	3
4138579	GTM415043	M8X1.25	6,23	4,91	21,9	71	40	10,0	4
4138581	GTM415044	M9X1.25	6,23	4,91	21,9	71	40	10,0	4
4138583	GTM415045	M10X1.5	7,75	6,11	26,3	76	40	10,0	4
4138585	GTM415046	M11X1.5	7,75	6,11	26,3	76	40	10,0	4
4138597	GTM415047	M12X1.5	9,17	7,21	32,4	86	45	12,0	4

■ GTM11 and GTM21 • Inch

		 Thread Mill GTM11						 Thread Mill • Chamfer GTM21					
		Cutting Speed – vc Range – SFM			Feed/Tooth by Diameter			Cutting Speed – vc Range – SFM			Feed/Tooth by Diameter		
Material Group		min	Starting Value	max		<.375	>.375	min	Starting Value	max		<.375	>.375
P	1	300	380	490	inch	.002	.003	460	610	790	inch	.002	.004
	2	300	380	490	inch	.002	.003	460	610	790	inch	.002	.004
	3	130	160	230	inch	.001	.001	230	300	390	inch	.001	.001
	4	–	–	–	–	–	–	230	300	390	inch	.001	.001
	5	200	260	330	inch	.002	.002	230	300	390	inch	.002	.003
	6	–	–	–	–	–	–	–	–	–	–	–	–
M	1	200	260	330	inch	.002	.002	230	300	390	inch	.002	.003
	2	200	260	330	inch	.002	.002	230	300	390	inch	.002	.003
	3	–	–	–	–	–	–	–	–	–	–	–	–
K	1	390	490	660	inch	.002	.004	430	560	720	inch	.002	.004
	2	390	490	660	inch	.002	.004	430	560	720	inch	.002	.004
	3	300	380	490	inch	.002	.003	360	460	590	inch	.002	.003
N	1	660	740	820	inch	.002	.002	890	980	1080	inch	.003	.006
	2	560	620	690	inch	.002	.002	520	570	620	inch	.003	.006
	3	820	900	980	inch	.003	.004	890	980	1080	inch	.003	.006
	4	820	900	980	inch	.003	.004	890	980	1080	inch	.003	.006
	5	890	980	1080	inch	.005	.005	820	900	980	inch	.004	.008
	6	560	620	690	inch	.002	.002	300	330	360	inch	.004	.008
S	1	200	260	330	inch	.002	.002	230	300	390	inch	.002	.003
	2	160	210	260	inch	.001	.002	160	200	260	inch	.001	.002
	3	160	210	260	inch	.001	.002	160	200	260	inch	.001	.002
	4	160	210	260	inch	.001	.002	160	200	260	inch	.001	.002

■ GTM11 and GTM21 • Metric


Material Group		Thread Mill GTM11						Thread Mill • Chamfer GTM21					
		Cutting Speed – vc Range – m/min			Feed/Tooth by Diameter			Cutting Speed – vc Range – m/min			Feed/Tooth by Diameter		
		min	Starting Value	max		<10mm	>10mm	min	Starting Value	max		<10mm	>10mm
P	1	90	115	150	mm	0,05	0,08	140	185	240	mm	0,06	0,10
	2	90	115	150	mm	0,05	0,08	140	185	240	mm	0,06	0,10
	3	40	50	70	mm	0,02	0,03	70	90	120	mm	0,03	0,04
	4	–	–	–	–	–	–	70	90	120	mm	0,03	0,04
	5	60	80	100	mm	0,04	0,06	70	90	120	mm	0,05	0,08
	6	–	–	–	–	–	–	–	–	–	–	–	–
M	1	60	80	100	mm	0,04	0,06	70	90	120	mm	0,05	0,08
	2	60	80	100	mm	0,04	0,06	70	90	120	mm	0,05	0,08
	3	–	–	–	–	–	–	–	–	–	–	–	–
K	1	120	150	200	mm	0,06	0,10	130	170	220	mm	0,06	0,11
	2	120	150	200	mm	0,06	0,10	130	170	220	mm	0,06	0,11
	3	90	115	150	mm	0,05	0,07	110	140	180	mm	0,05	0,07
N	1	200	225	250	mm	0,05	0,06	270	300	330	mm	0,08	0,16
	2	170	190	210	mm	0,04	0,05	160	175	190	mm	0,08	0,16
	3	250	275	300	mm	0,07	0,09	270	300	330	mm	0,08	0,16
	4	250	275	300	mm	0,07	0,09	270	300	330	mm	0,08	0,16
	5	270	300	330	mm	0,12	0,13	250	275	300	mm	0,11	0,20
	6	170	190	210	mm	0,05	0,06	90	100	110	mm	0,11	0,20
S	1	60	80	100	mm	0,04	0,06	70	90	120	mm	0,05	0,08
	2	50	65	80	mm	0,03	0,04	50	60	80	mm	0,03	0,05
	3	50	65	80	mm	0,03	0,04	50	60	80	mm	0,03	0,05
	4	50	65	80	mm	0,03	0,04	50	60	80	mm	0,03	0,05

■ GTM31 • Inch

Material Group		Drill • Chamfer • Thread Mill GTM31										
		Cutting Speed – vc Range – SFM			Drilling			Milling				
					Recommended Feed by Diameter			Feed/Tooth by Diameter				
min	Starting Value	max		<.250	.250–.375	.375–.625		<.250	.250–.375	.375–.625		
K	1	430	570	750	IPR	.004	.006	.012	inch	.002	.003	.004
N	1	890	980	1080	IPR	.006	.010	.013	inch	.002	.003	.005
	2	460	490	560	IPR	.006	.010	.013	inch	.002	.003	.005
	4	890	980	1080	IPR	.006	.010	.013	inch	.002	.003	.005
	5	360	390	430	IPR	.005	.008	.013	inch	.002	.003	.005

High-Performance Thread Mills

■ **GTM31 • Metric**




Drill • Chamfer • Thread Mill GTM31

Material Group		Cutting Speed – vc Range – m/min			Drilling			Milling				
					Recommended Feed by Diameter			Feed/Tooth by Diameter				
		min	Starting Value	max		<6mm	6–10mm	10–16mm		<6mm	6–10mm	10–16mm
K	1	130	175	230	mm/r	0,10	0,16	0,30	mm	0,05	0,07	0,10
N	1	270	300	330	mm/r	0,15	0,25	0,34	mm	0,06	0,08	0,12
	2	140	150	170	mm/r	0,15	0,25	0,34	mm	0,06	0,08	0,12
	4	270	300	330	mm/r	0,15	0,25	0,34	mm	0,06	0,08	0,12
	5	110	120	130	mm/r	0,12	0,20	0,32	mm	0,06	0,08	0,12

NOTE: For thread depths over 2 x D up to 3 x D, reduce speed and feed by 25%.

■ **Universal Thread Mills • GTM41 • Inch**



Mill • Chamfer • Thread Mill GTM41

Material Group		TM Style	Grade	Cutting Speed – vc Range – SFM			Feed/Tooth by Diameter		
				min	Starting Value	max		< .375	> .375
P	1	GTM41 R	KCU36	560	740	950	inch	.002	.003
	2	GTM41 R	KCU36	560	740	950	inch	.002	.003
	3	GTM41 R	KCU36	390	490	660	inch	.001	.002
	4	GTM41 R	KCU36	330	410	520	inch	.001	.002
	5	GTM41 R	KCU36	390	490	660	inch	.001	.002
	6	GTM41 R	KCU36	200	260	330	inch	.001	.002
M	1	GTM41 R	KCU36	390	490	660	inch	.001	.002
	2	GTM41 R	KCU36	390	490	660	inch	.001	.002
	3	GTM41 R	KCU36	390	490	660	inch	.001	.002
K	1	GTM41 R	KCU36	620	820	1080	inch	.002	.004
	2	GTM41 R	KCU36	620	820	1080	inch	.002	.004
	3	GTM41 R	KCU36	460	610	790	inch	.002	.003
N	1	-	-	-	-	-	-	-	-
	2	GTM41 R	KCU36	590	750	980	inch	.002	.003
	3	-	-	-	-	-	-	-	-
	4	GTM41 R	KCU36	690	900	1180	inch	.002	.003
	5	-	-	-	-	-	-	-	-
	6	GTM41 R	KCU36	690	900	1180	inch	.002	.003
S	1	GTM41 L	KCU36	390	490	660	inch	.001	.002
	2	GTM41 L	KCU36	160	200	260	inch	.001	.001
	3	GTM41 L	KCU36	160	200	260	inch	.001	.001
	4	GTM41 L	KCU36	230	300	390	inch	.001	.001
H	1	GTM41	KCU36	260	330	430	inch	.001	.002
	2	GTM41	KCU36	260	330	430	inch	.001	.002
	3	GTM41	KCU36	160	210	260	inch	.001	.001
	4	GTM41	KCU36	160	210	260	inch	.001	.001

NOTE: For thread depths over 2 x D up to 3 x D, reduce speed and feed by 25%.

■ Universal Thread Mills • GTM41 • Metric



Mill • Chamfer • Thread Mill GTM41

Material Group		TM Style	Grade	Cutting Speed – vc Range – m/min			Feed/Tooth by Diameter		
				min	Starting Value	max		< 10mm	>10mm
P	1	GTM41 R	WU16PV	170	225	290	mm	0,05	0,08
	2	GTM41 R	WU16PV	170	225	290	mm	0,05	0,08
	3	GTM41 R	WU16PV	120	150	200	mm	0,03	0,05
	4	GTM41 R	WU16PV	100	125	160	mm	0,03	0,05
	5	GTM41 R	WU16PV	120	150	200	mm	0,03	0,04
	6	GTM41 R	WU16PV	60	80	100	mm	0,03	0,04
M	1	GTM41 R	WU16PV	120	150	200	mm	0,03	0,04
	2	GTM41 R	WU16PV	120	150	200	mm	0,03	0,04
	3	GTM41 R	WU16PV	120	150	200	mm	0,03	0,04
K	1	GTM41 R	WU16PV	190	250	330	mm	0,06	0,10
	2	GTM41 R	WU16PV	190	250	330	mm	0,06	0,10
	3	GTM41 R	WU16PV	140	185	240	mm	0,04	0,07
N	1	–	–	–	–	–	–	–	–
	2	GTM41 R	WU16PV	180	230	300	mm	0,06	0,07
	3	–	–	–	–	–	–	–	–
	4	GTM41 R	WU16PV	210	275	360	mm	0,06	0,07
	5	–	–	–	–	–	–	–	–
	6	GTM41 R	WU16PV	210	275	360	mm	0,06	0,07
S	1	GTM41 L	WU16PV	120	150	200	mm	0,025	0,045
	2	GTM41 L	WU16PV	50	60	80	mm	0,015	0,025
	3	GTM41 L	WU16PV	50	60	80	mm	0,015	0,025
	4	GTM41 L	WU16PV	70	90	120	mm	0,025	0,035
H	1	GTM41	WU16PV	80	100	130	mm	0,030	0,050
	2	GTM41	WU16PV	80	100	130	mm	0,030	0,050
	3	GTM41	WU16PV	50	65	80	mm	0,020	0,030
	4	GTM41	WU16PV	50	65	80	mm	0,020	0,030

NOTE: For thread depths over 2 x D up to 3 x D, reduce speed and feed by 25%.

Thread Milling Methods

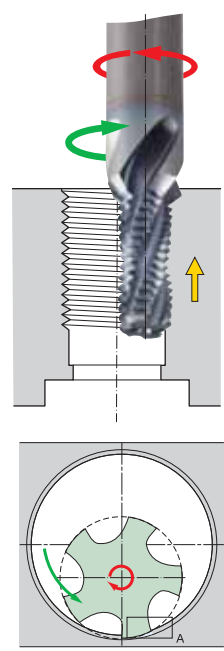
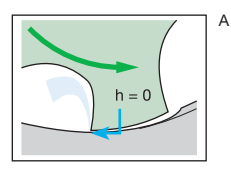
Climb Milling

Properties:

- Tool rotation direction clockwise
- Tool moves counterclockwise
- Pitch upwards

Right-hand thread

Climb milling is always when the cutting edge goes out of the material with a chip thickness $h = 0$



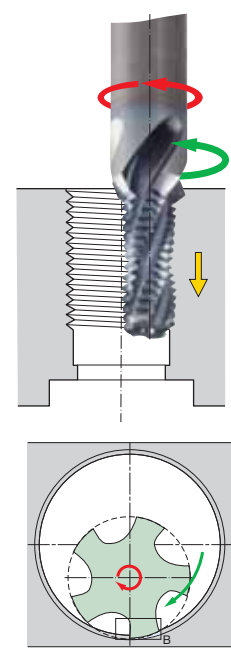
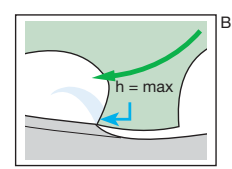
Conventional Milling

Properties:

- Tool rotation direction clockwise
- Tool moves clockwise
- Pitch downwards

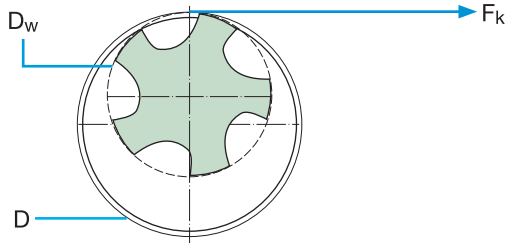
Right-hand thread

Conventional milling is always when the cutting edge goes out of the material with a chip thickness $h = \text{max}$



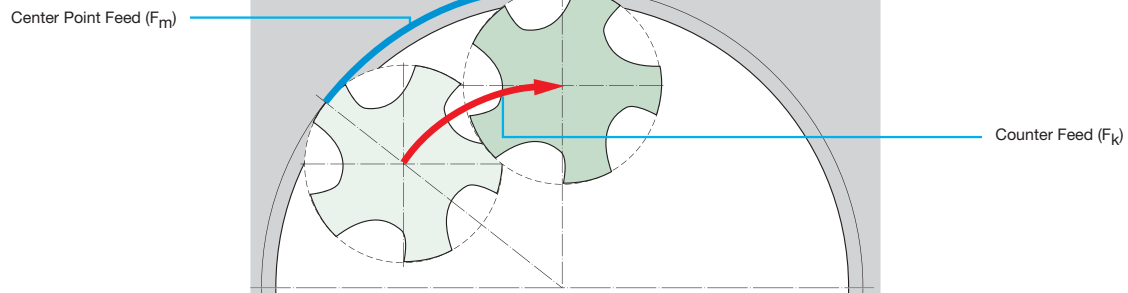
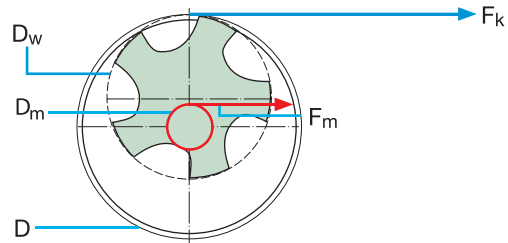
Counter Feed F_k

$$F_k = n \cdot f_z \cdot Z \text{ [mm/min]}$$



Center Point Feed F_m

$$F_m = \frac{F_k \cdot (D - D_w)}{D} \text{ [mm/min]}$$



- D_w = Tool diameter [mm]
- n = RPM [min^{-1}]
- f_z = Feed per tooth [mm]
- Z = Number of teeth on tool (radial)
- D = Nominal diameter of thread = Diameter of external contour [mm]
- D_m = Diameter of the center point ($D - D_w$) [mm]

Thread Mill GTM21

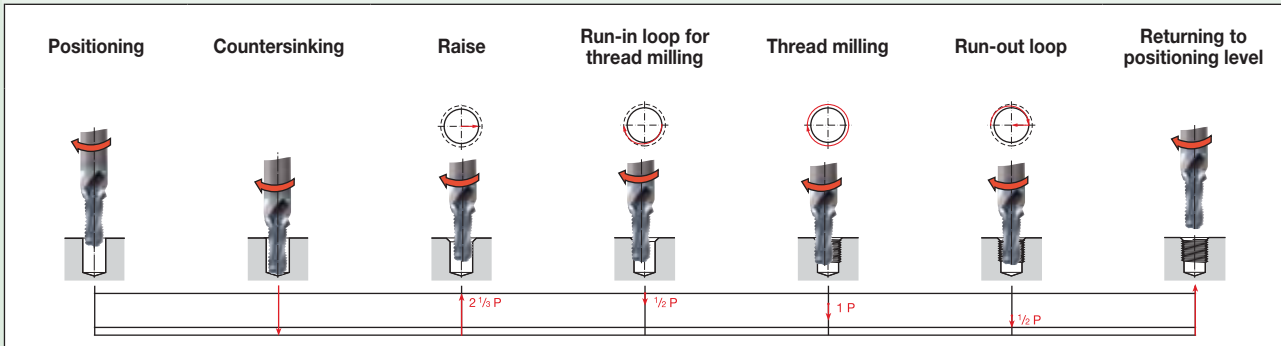
Preparation

Drilling of thread hole

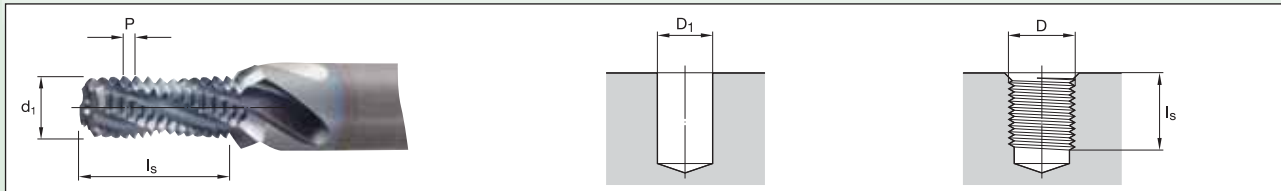
Process Principle

Countersinking, thread milling (conventional milling)

Cycle



Required Specification Values



Example

Size — M10-6H Thread diameter D 10mm Pitch 1,5mm Core hole diameter D ₁ 8,5mm Material — Cast aluminum Grade — WU12PV	Tool — GTM21 Catalog number GTM215004 Number of teeth Z 3 Tool diameter d ₁ 8,2mm* Tool radius compensation k ¹ 0,1mm** Tool radius to be programmed ² 4mm*** Countersink depth l _s 21,2mm Cutting speed v _c 250 m/min Feed (countersinking) f _s 0,3 mm/U Feed (milling) f _z 0,09 mm/tooth	$N = \frac{v_c \cdot 1000}{d_1 \cdot \pi} \quad S = 9709$
		$v_s = f_s \cdot n \quad F = 2913 \text{ (countersinking)}$
		$v_f = f_z \cdot Z \cdot n \quad F = 2622 \text{ (contour)}$
		$v_f = \frac{v_f \text{ contour} \cdot (D - d_1)}{D} \quad F = 472 \text{ (center point)}$

*(measured on the cutting part) ***(0.01 x D) ***((1/2 d₁ - k)

Program to DIN 66025 (conventional milling, on the contour, incremental)

Positioning the tool	N 10 G 54 G 90 G 00 X... Y... Z 2 S 9709 T01 ² M03
Advancing tool to full thread depth	N 20 G 91 Z-21.200
Countersinking	N 30 G 01 Z-2 F 2913 (countersink)
Raise	N 40 G 00 Z 3.450
Moving sideways to the starting point	N 50 G 42 G01 X 4.250 F 1311 (milling, 1/2 contour) [F 236] ³ (milling, 1/2 center point)
Run-in loop in arc	N 60 G 02 X-9.25 Y 0.000 Z-0.750 I-4.625 J 0
Thread milling	N 70 G 02 X 0 Y 0 Z-1.500 I 5 J 0.000 F2622 [F 472] ³ (center point)
Run-out loop in arc	N 80 G 02 X 9.25 Y 0.000 Z-0.750 I 4.625 J 0
Exit	N 90 G 40 G 01 X-4.25
Retracting tool to positioning level	N 100 G 90 G 00 Z 2

Cutting time t_H

1.4 seconds

NOTES:

- The cutter radius measured over the tooth crests of the threaded part must be reduced by the amount of the cutter radius compensation. This is necessary to achieve a depth of cut to the middle of the 6H/ISO2 nut tolerance. Please note, however, that this also depends on the radial deflection of the tool (tensile strength of the material, projecting length of the tool).
- The cutter radius to be programmed is normally included in the tool memory.
- The feed values in brackets must be used for controllers, which do not calculate the center point feed themselves.

Drill Thread Mill GTM41 • Right Hand

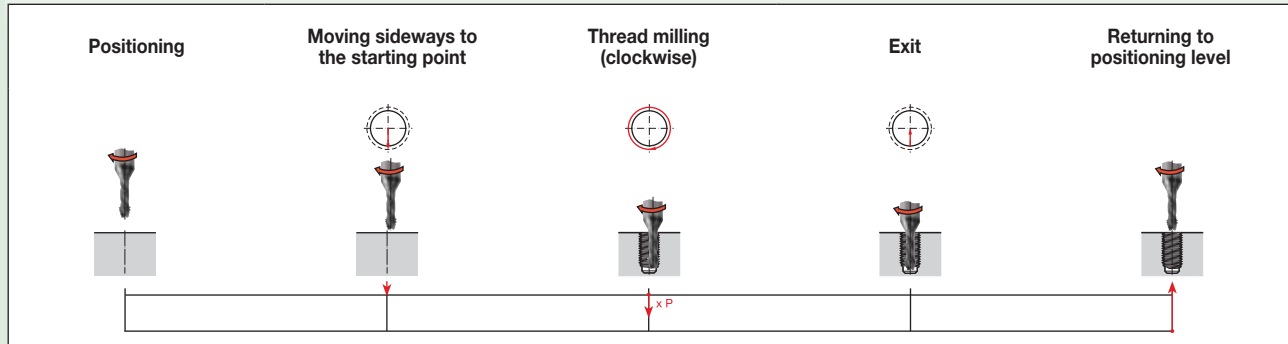
Preparation

None

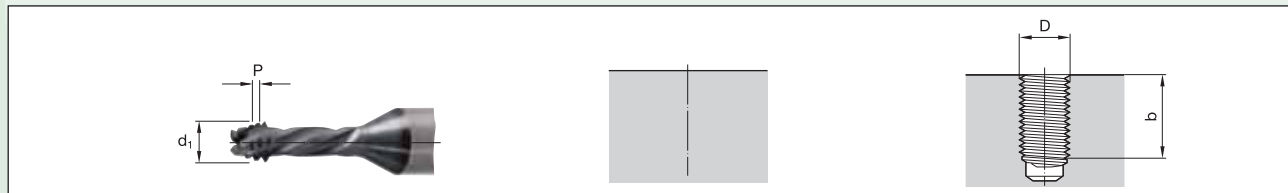
Process Principle

Milling thread and core hole, countersinking (conventional milling)

Cycle



Required Specification Values



Example

<p>Size — M10-6H Thread diameter D 10mm Pitch 1,5mm Core hole diameter D₁ 8,5mm Material — Hard steel, 50 HRC Grade — WU16PV</p>	<p>Tool — GTM41 Right Hand Catalog number GTM415005 Number of teeth Z 4 Tool diameter d₁ 7,75mm* Tool radius compensation k¹ 0,08mm** Tool radius to be programmed² 3,795mm*** Thread depth b 20mm Cutting speed v_c 100 m/min Feed (milling) f_z 0,04 mm/tooth Number of turns⁵ 17</p>	$N = \frac{V_c \cdot 1000}{d_1 \cdot \pi} \quad S = 4109$ $v_f = f_z \cdot Z \cdot n \quad F = \frac{657}{(\text{contour})}$ $N = \frac{v_f \text{ contour} \cdot (D - d_1)}{D} \quad F = \frac{148}{(\text{center point})}$
<p>*(measured on the cutting part)</p>	<p>** (0.01 x D; adjust to application)</p>	<p>*** (1/2 d₁ - k)</p>

Program to DIN 66025 (conventional milling, on the contour, incremental)

Positioning the tool	N 10 G 54 G 90 G 00 X... Y... Z 1.500 S 4109 T01 ² M03 ⁶
Incremental programming	N 20 G 91
Moving sideways to the starting point	N 30 G 42 G 01 X 0 Y-5 F 657 (contour) [F 148] ⁴ (center point)
Thread milling	N 40 G 02 X 0 Y 0 Z-1.500 I 0 J 5.000
Repeat thread milling	... ⁵
Exit	N 50 G 40 G 01 X 0 Y 5
Retracting tool to positioning level	N 70 G 90 G 00 Z 2

Cutting time t_h

51.6 seconds

NOTES:

- ¹ The cutter radius measured over the tooth crests of the threaded part must be reduced by the amount of the cutter radius compensation. This is necessary to achieve a depth of cut to the middle of the 6H/ISO2 nut tolerance. Please note, however, that this also depends on the radial deflection of the tool (tensile strength of the material, projecting length of the tool).
- ² The cutter radius to be programmed is normally included in the tool memory.
- ³ The thread depth b must be divisible by the thread pitch P.
- ⁴ The feed values in brackets must be used for controllers, which do not calculate the center point feed themselves.
- ⁵ Set N40 must be repeated with the number of threads. Repetitions N = thread depth b/pitch P (rounded up to the nearest integer).

Drill Thread Mill GTM41 • Left Hand

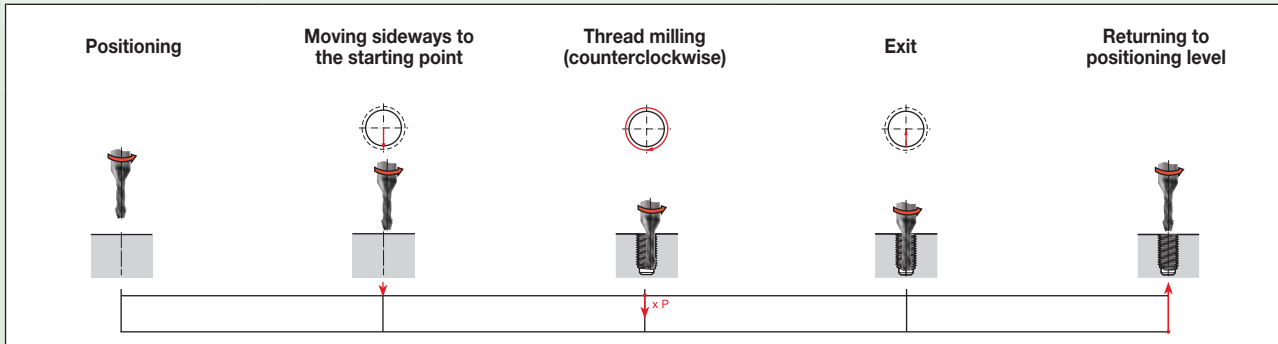
Preparation

None

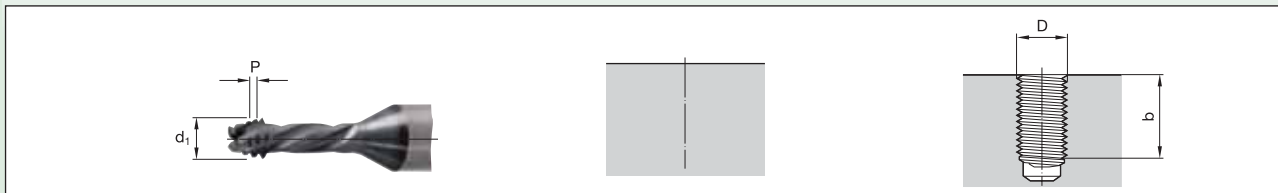
Process Principle

Milling thread and core hole, countersinking (climb milling)

Cycle



Required Specification Values



Example

Size — M10-6H Thread diameter D 10mm Pitch 1,5mm Core hole diameter D ₁ 8,5mm Material — TiAl6V4 titanium Grade — WU16PV	Tool — GTM41 Left Hand Catalog number GTM415005 Number of teeth Z 4 Tool diameter d ₁ 7,75mm* Tool radius compensation k ¹ 0,08mm** Tool radius to be programmed ² 3,795mm*** Thread depth b 20mm Cutting speed v _c 100 m/min Feed (milling) f _z 0,03 mm/tooth Number of turns ⁵ 17	$N = \frac{v_c \cdot 1000}{d_1 \cdot \pi} \quad S = 4109$ $v_f = f_z \cdot Z \cdot n \quad F = \frac{493}{(\text{contour})}$ $N = \frac{v_f \text{ contour} \cdot (D - d_1)}{D} \quad F = 111 \quad (\text{center point})$
*(measured on the cutting part)	**(0.01 x D)	***((1/2 d ₁ - k)

Program to DIN 66025 (climb milling, on the contour, incremental)

Positioning the tool	N 10 G 54 G 90 G 00 X... Y... Z 1.500 S 4109 T01 ² M04
Incremental programming	N 20 G 91
Moving sideways to the starting point	N 30 G 42 G 01 X 0 Y-5 F 493 (contour) [F 111] ⁴ (center point)
Thread milling	N 40 G 02 X 0 Y 0 Z-1.500 I 0 J 5.000
Repeat thread milling	... ⁵
Exit	N 50 G 40 G 01 X 0 Y 5
Retracting tool to positioning level	N 70 G 90 G 00 Z 2

Cutting time t_h

68.8 seconds

NOTES:

- The cutter radius measured over the tooth crests of the threaded part must be reduced by the amount of the cutter radius compensation. This is necessary to achieve a depth of cut to the middle of the 6H/ISO2 nut tolerance. Please note, however, that this also depends on the radial deflection of the tool (tensile strength of the material, projecting length of the tool).
- The cutter radius to be programmed is normally included in the tool memory.
- The thread depth b must be divisible by the thread pitch P.
- The feed values in brackets must be used for controllers, which do not calculate the center point feed themselves.
- Set N40 must be repeated with the number of threads. Repetitions N = thread depth b/pitch P (rounded up to the nearest integer).

Drill Thread Mill GTM31

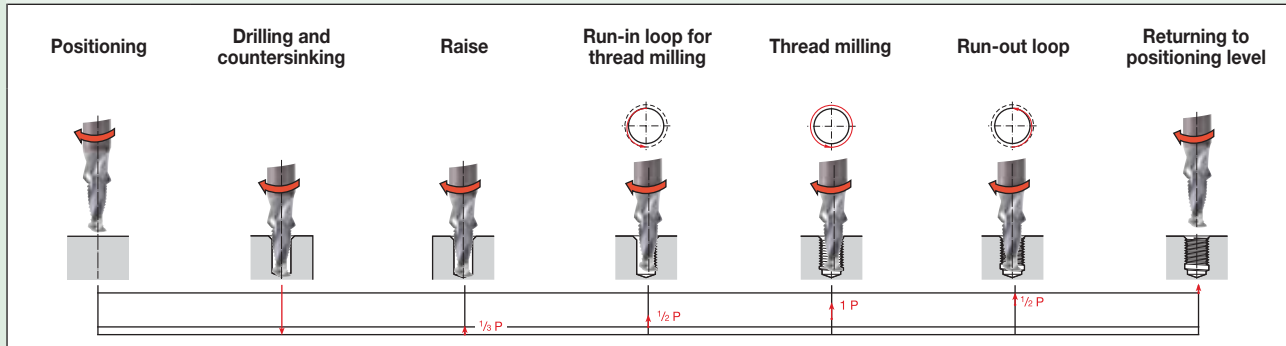
Preparation

Drilling of thread hole

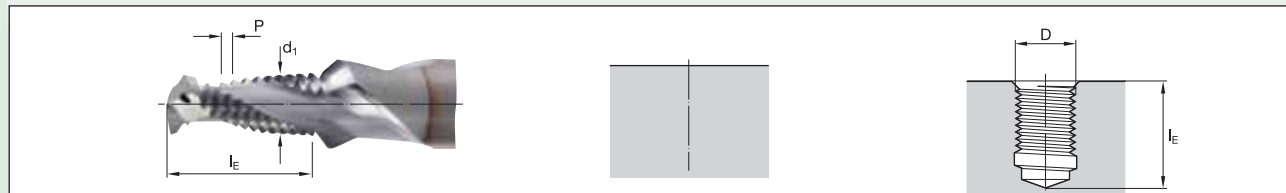
Process Principle

Drilling, countersinking, thread milling (climb milling)

Cycle



Required Specification Values



Example

<p>Size — M10-6H</p> <p>Thread diameter D 10mm</p> <p>Pitch 1,5mm</p> <p>Core hole diameter D₁ 8,5mm</p> <p>Material — Gray cast iron</p> <p>Grade — WU12PV</p>	<p>Tool — GTM31</p> <p>Catalog number GTM315005</p> <p>Number of teeth Z 2</p> <p>Tool diameter d₁ 8,2mm*</p> <p>Tool radius compensation k¹ 0,1mm**</p> <p>Tool radius to be programmed² 4mm***</p> <p>Countersink depth l_S 19,11mm</p> <p>Cutting speed v_C 250 m/min</p> <p>Feed (countersinking) f_S 0,25 mm/U</p> <p>Feed (milling) f_Z 0,1 mm/tooth</p>	$N = \frac{v_c \cdot 1000}{d_1 \cdot \pi} \quad S = 9709$ $v_s = f_s \cdot n \quad F = 2427 \text{ (drilling, countersinking)}$ $v_f = f_z \cdot Z \cdot n \quad F = 1942 \text{ (contour)}$ $v_f = \frac{v_f \text{ contour} \cdot (D - d_1)}{D} \quad F = 350 \text{ (center point)}$
<p>*(measured on the cutting part)</p>	<p>** (0.01 x D)</p>	<p>*** (1/2 d₁ - k)</p>

Program to DIN 66025 (climb milling, on the contour, incremental)

Positioning the tool	N 10 G 54 G 90 G 00 X... Y... Z 2 S 9709 T01 ² M03
Drilling and countersinking	N 20 G 91 G 01 Z-21.110 F 2427 (drill, countersink)
Raise	N 30 G 01 Z 0.500
Moving sideways to the starting point	N 40 G 41 Y-4.250 F 971 (milling, 1/2 contour) [F 175] ³ (1/2 center point)
Run-in loop in arc	N 50 G 03 X 0 Y 9.250 Z 0.750 I 0 J 4.625
Thread milling	N 60 G 03 X 0 Y 0 Z 1.500 I 0 J -5.000
Run-out loop in arc	N 70 G 03 X 0 Y-9.250 Z 0.750 I 0 J- 4.625 F1942 [F 350] ³ (center point)
Exit	N 80 G 00 G 40 X 0 Y 4.250
Retracting tool to positioning level	N 90 G 90 Z 2

Cutting time t_h

2.3 seconds

NOTES:

- ¹ The cutter radius measured over the tooth crests of the threaded part must be reduced by the amount of the cutter radius compensation. This is necessary to achieve a depth of cut to the middle of the 6H/ISO2 nut tolerance. Please note, however, that this also depends on the radial deflection of the tool (tensile strength of the material, projecting length of the tool).
- ² The cutter radius to be programmed is normally included in the tool memory.
- ³ The feed values in brackets must be used for controllers, which do not calculate the center point feed themselves.

■ Carbide Taps • Metric



Material Group	 Through Holes						 Blind Holes				
	Tap Style	Grade	Range – m/min			Tap Style	Grade	Range – m/min			
			min	Starting Value	max			min	Starting Value	max	
P	P0	GX32, GX38	GP4535	60	100	130	GX33, GX39	GP4535	50	70	90
	P1	GX32, GX38	GP4535	60	90	120	GX33, GX39	GP4535	40	60	80
	P2	GX32, GX38	GP4535	50	85	110	GX33, GX39	GP4535	40	60	80
	P3	GX32, GX38	GP4535	50	80	100	GX33, GX39	GP4535	40	60	80
K	K1	GX34, GX50	WK12PG	70	105	140	GX35, GX50	WK12PG	50	70	90
	K2	GX34, GX50	WK12PG	60	100	130	GX35, GX50	WK12PG	50	70	90
	K3	GX34, GX50	WK12PG	60	90	120	GX35, GX50	WK12PG	40	60	80
N	N2	GX46, GX48	WN14PG	80	120	160	GX47, GX49	WN14PG	60	80	100
	N3	GX46, GX48	WN14PG	60	100	130	GX47, GX49	WN14PG	50	70	90
	N4	GX46, GX48	WN14PG	60	90	120	GX47, GX49	WN14PG	40	60	80
H	H3	GX10	WH16PG	1,2	1,5	2,0	GX10	WH16PG	0,8	1,1	1,4
	H4	GX10	WH16PG	0,6	0,8	1,0	GX10	WH16PG	0,4	0,5	0,7

■ Carbide Taps • Inch

Material Group	 Through Holes						 Blind Holes				
	Tap Style	Grade	Range – SFM			Tap Style	Grade	Range – SFM			
			min	Starting Value	max			min	Starting Value	max	
P	P0	GX32, GX38	GP4535	200	330	430	GX33, GX39	GP4535	160	230	300
	P1	GX32, GX38	GP4535	200	300	390	GX33, GX39	GP4535	130	200	260
	P2	GX32, GX38	GP4535	160	280	360	GX33, GX39	GP4535	130	200	260
	P3	GX32, GX38	GP4535	160	260	330	GX33, GX39	GP4535	130	200	260
K	K1	GX34, GX50	WK12PG	230	340	460	GX35, GX50	WK12PG	160	230	300
	K2	GX34, GX50	WK12PG	200	330	430	GX35, GX50	WK12PG	160	230	300
	K3	GX34, GX50	WK12PG	200	300	390	GX35, GX50	WK12PG	130	200	260
N	N2	GX46, GX48	WN14PG	260	390	520	GX47, GX49	WN14PG	200	260	330
	N3	GX46, GX48	WN14PG	200	330	430	GX47, GX49	WN14PG	160	230	300
	N4	GX46, GX48	WN14PG	200	300	390	GX47, GX49	WN14PG	130	200	260
H	H3	GX10	WH16PG	3.8	4.9	6.4	GX10	WH16PG	2.6	3.4	4.5
	H4	GX10	WH16PG	1.9	2.5	3.2	GX10	WH16PG	1.3	1.7	2.2

High-Performance Taps

■ HSS-E-PM Taps • Metric

Material Group		 Through Holes					 Blind Holes				
				Range – m/min					Range – m/min		
		Tap Style	Grade	min	Starting Value	max	Tap Style	Grade	min	Starting Value	max
P	P1	GT20	GP6520	20	30	45	GT30, GT32, GT50	GP6520	14	21	32
		GT24	WU32MG	20	30	45	GT24, GT26	WU32MG	14	21	32
	P2	GT20	GP6520	17	25	38	GT30, GT32, GT50	GP6520	12	18	26
		GT24	WU32MG	17	25	38	GT24, GT26	WU32MG	12	18	26
	P3	GT20	GP6520	12	15	20	GT30, GT32, GT50	GP6520	8	11	14
	P4	GT00	WP31MG	5	6	8	GT02, GT04	WP31MG	3	4	5
	P5	GT20	GP6520	12	15	20	GT30, GT32, GT50	GP6520	8	11	14
P6	GT00	WP31MG	6	8	10	GT02, GT04	WP31MG	4	6	7	
M	M1	GT20	GM6515	12	15	20	GT30, GT32, GT50	GM6515	8	11	14
		GT24	WU32MG	5	8	12	GT24, GT26	WU32MG	4	6	8
	M2	GT20	GM6515	9	12	16	GT30, GT32, GT50	GM6515	6	8	11
M3	GT00	WP31MG	4	5	7	GT02, GT04	WP31MG	3	4	5	
K	K1	GT40	GP6520	27	35	46	GT40, GT42	GP6520	19	25	32
	K2	GT40	GP6520	23	30	39	GT40, GT42	GP6520	16	21	27
N	N1	GT72	WN44EG	33	50	65	GT82, GT86	WN44EG	23	35	46
		GT22	WN48EG	37	55	72	GT22	WN48EG	26	39	50
	N2	GT40	GP6520	30	45	59	GT40, GT42	GP6520	21	32	41
		GT72	WN44EG	30	45	59	GT82, GT86	WN44EG	21	32	41
	N4	GT40	GP6520	7	10	15	GT40, GT42	GP6520	5	7	11
S	S1	GT20	GP6520	8	12	18	GT30, GT32	GP6520	6	8	13
	S2, S3	GT90	WU32MG	3,3	5,0	7,5	GT92, GT94	WU32MG	2,3	3,5	5,3
		GT90	WS39MG	1,7	2,5	3,8	GT92, GT94	WS39MG	1,2	1,8	2,6
	S4	GT60	WS34MG	2,7	4,0	6,0	GT62	WS34MG	1,9	2,8	4,2
GT60		WS30MG	1,3	2,0	3,0	GT62	WS30MG	0,9	1,4	2,1	
H	H1	GT06	WN35MG	1,3	2,0	3,0	GT06	WN35MG	0,9	1,4	2,1
	H2	GT06	WN35MG	1,0	1,5	2,3	GT06	WN35MG	0,7	1,1	1,6

NOTE: Increase speed by up to 25% when using coolant taps (GT21, GT23, GT31, GT33, GT41, GT43, and GT51). Use grade GP6505™ in steels. Use 50% of the recommended speed listed for grade GP6520™.



■ HSS-E-PM Taps • Inch

Material Group		 Through Holes					 Blind Holes				
		Tap Style	Grade	Range – SFM			Tap Style	Grade	Range – SFM		
				min	Starting Value	max			min	Starting Value	max
P	P1	GT20	GP6520	70	100	150	GT30, GT32, GT50	GP6520	50	70	100
		GT24	WU32MG	70	100	150	GT24, GT26	WU32MG	50	70	100
	P2	GT20	GP6520	50	80	120	GT30, GT32, GT50	GP6520	40	60	90
		GT24	WU32MG	50	80	120	GT24, GT26	WU32MG	40	60	90
	P3	GT20	GP6520	40	50	60	GT30, GT32, GT50	GP6520	30	30	40
	P4	GT00	WP31MG	15	20	26	GT02, GT04	WP31MG	11	14	18
	P5	GT20	GP6520	40	50	60	GT30, GT32, GT50	GP6520	30	30	40
P6	GT00	WP31MG	20	30	30	GT02, GT04	WP31MG	10	20	20	
M	M1	GT20	GM6515	40	50	60	GT30, GT32, GT50	GM6515	30	30	40
		GT24	WU32MG	20	30	40	GT24, GT26	WU32MG	10	20	30
	M2	GT20	GM6515	30	40	50	GT30, GT32, GT50	GM6515	20	30	40
M3	GT00	WP31MG	10	20	20	GT02, GT04	WP31MG	10	10	10	
K	K1	GT40	GP6520	90	110	150	GT40, GT42	GP6520	60	80	100
	K2	GT40	GP6520	80	100	130	GT40, GT42	GP6520	50	70	90
N	N1	GT72	WN44EG	110	160	210	GT82, GT86	WN44EG	80	110	150
		GT22	WN48EG	120	180	230	GT22	WN48EG	80	130	160
	N2	GT40	GP6520	100	150	190	GT40, GT42	GP6520	70	100	130
		GT72	WN44EG	100	150	190	GT82, GT86	WN44EG	70	100	130
		GT22	WN38MG	110	160	210	GT22	WN38MG	80	110	150
N4	GT40	GP6520	22	30	49	GT40, GT42	GP6520	15	23	34	
S	S1	GT20	GP6520	30	40	60	GT30, GT32	GP6520	18	28	41
	S2, S3	GT90	WU32MG	11	16	25	GT92, GT94	WU32MG	8	11	17
		GT90	WS39MG	5	10	12	GT92, GT94	WS39MG	4	6	9
	S4	GT60	WS34MG	9	13	20	GT62	WS34MG	6	9	14
GT60		WS30MG	4	7	10	GT62	WS30MG	3	5	7	
H	H1	GT06	WN35MG	4.4	6.6	9.8	GT06	WN35MG	3.1	4.6	6.9
	H2	GT06	WN35MG	3.3	4.9	7.4	GT06	WN35MG	2.3	3.4	5.2

NOTE: Increase speed by up to 25% when using coolant taps (GT21, GT23, GT31, GT33, GT41, GT43, and GT51). Use grade GP6505™ in steels. Use 50% of the recommended speed listed for grade GP6520™.

High-Performance Taps

■ VariTap • HSS-E • Metric

Material Group		 Through Holes					 Blind Holes				
		Tap Style	Grade	Range – m/min			Tap Style	Grade	Range – m/min		
				min	Starting Value	max			min	Starting Value	max
P	P1	VT-SPO	WP42EG, WU41EG	21	27	34	VT-SFT	WP42EG, WU41EG	13	18	26
		VT-SPO	WP49EG, WU40EG	10	14	17	VT-SFT	WP49EG, WU40EG	6	9	13
	P2	VT-SPO	WP42EG, WU41EG	16	21	27	VT-SFT	WP42EG, WU41EG	11	15	22
		VT-SPO	WP49EG, WU40EG	8	11	13	VT-SFT	WP49EG, WU40EG	4	6	9
	P3	VT-SPO	WP42EG, WU41EG	9	12	15	VT-SFT	WP42EG, WU41EG	6	9	13
		VT-SPO	WP49EG, WU40EG	5	6	8	VT-SFT	WP49EG, WU40EG	2	3	4
		VT-STR NPT	WU41EG	5	6	8	VT-STR NPT	WU41EG	5	6	8
	VT-STR NPT	WU40EG	2	3	4	VT-STR NPT	WU40EG	2	3	4	
M	M1	VT-SPO	WP42EG, WU41EG	9	12	15	VT-SFT	WP42EG, WU41EG	6	9	13
		VT-SPO	WP49EG, WU40EG	5	6	8	VT-SFT	WP49EG, WU40EG	2	3	4
		VT-SFT NPT	WU41EG	5	6	8	VT-SFT NPT	WU41EG	5	6	8
		VT-SFT NPT	WP49EG, WU40EG	2	3	4	VT-SFT NPT	WP49EG, WU40EG	2	3	4
	M3	VT-SPO	WP42EG, WU41EG	7	9	11	VT-SFT	WP42EG, WU41EG	4	6	9
		VT-SPO	WP49EG, WU40EG	3	5	6	VT-SFT	WP49EG, WU40EG	2	3	4
K	K1	VT-STR NPT	WU41EG	10	14	17	VT-STR NPT	WU41EG	10	14	17
		VT-STR NPT	WU40EG	6	8	10	VT-STR NPT	WU40EG	6	8	10
	K2	VT-SPO	WP42EG, WU41EG	21	27	34	VT-SFT	WP42EG, WU41EG	13	18	26
		VT-SPO	WP49EG, WU40EG	10	14	17	VT-SFT	WP49EG, WU40EG	6	9	13
N	N1	VT-SPO	WP42EG, WU41EG	34	46	57	VT-SFT	WP42EG, WU41EG	23	34	48
		VT-SPO	WU40EG	17	23	29	VT-SFT	WU40EG	11	15	22
	N2	VT-SPO	WP42EG, WU41EG	30	40	50	VT-SFT	WP42EG, WU41EG	19	27	39
		VT-SPO	WU40EG	15	20	25	VT-SFT	WU40EG	11	15	22
	N4	VT-SPO	WP42EG, WU41EG	7	9	11	VT-SFT	WP42EG, WU41EG	4	6	9
		VT-SPO	WU40EG	3	5	6	VT-SFT	WU40EG	2	3	4

* Grades: WP42EG = TiCN
WU41EG = TiN
WP49EG = oxide
WU40EG = bright

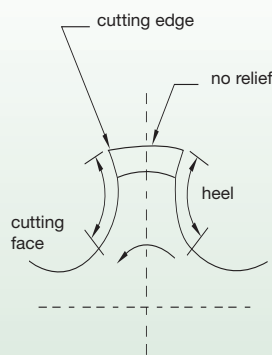
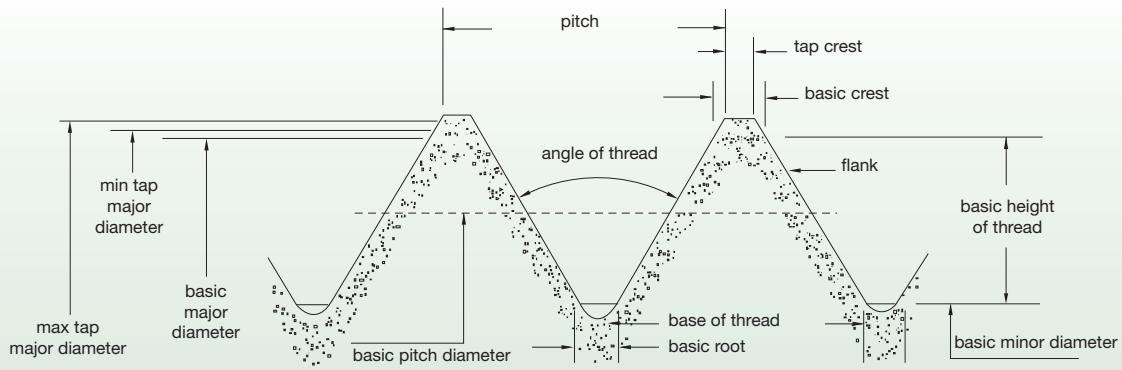
■ VariTap • HSS-E • Inch

Material Group		 Through Holes					 Blind Holes				
		Tap Style	Grade	Range – SFM			Tap Style	Grade	Range – SFM		
				min	Starting Value	max			min	Starting Value	max
P	1	VT-SPO	WP42EG, WU41EG	70	90	110	VT-SFT	WP42EG, WU41EG	40	60	90
		VT-SPO	WP49EG, WU40EG	30	45	60	VT-SFT	WP49EG, WU40EG	20	30	40
	2,3,4,5	VT-SPO	WP42EG, WU41EG	50	70	90	VT-SFT	WP42EG, WU41EG	40	50	70
		VT-SPO	WP49EG, WU40EG	30	35	40	VT-SFT	WP49EG, WU40EG	10	20	30
	6,7,8,10	VT-SPO	WP42EG, WU41EG	30	40	50	VT-SFT	WP42EG, WU41EG	20	30	40
		VT-SPO	WP49EG, WU40EG	20	20	30	VT-SFT	WP49EG, WU40EG	10	10	10
		VT-STR NPT	WU41EG	20	20	30	VT-STR NPT	WU41EG	20	20	30
	VT-STR NPT	WU40EG	10	10	10	VT-STR NPT	WU40EG	10	10	10	
M	14.1, 14.3	VT-SPO	WP42EG, WU41EG	30	40	50	VT-SFT	WP42EG, WU41EG	20	30	40
		VT-SPO	WP49EG, WU40EG	20	20	30	VT-SFT	WP49EG, WU40EG	10	10	10
		VT-SFT NPT	WU41EG	20	20	30	VT-SFT NPT	WU41EG	20	20	30
		VT-SFT NPT	WP49EG, WU40EG	10	10	10	VT-SFT NPT	WP49EG, WU40EG	10	10	10
	14.2	VT-SPO	WP42EG, WU41EG	20	30	40	VT-SFT	WP42EG, WU41EG	10	20	30
		VT-SPO	WP49EG, WU40EG	10	15	20	VT-SFT	WP49EG, WU40EG	7	10	10
K	15,16	VT-STR NPT	WU41EG	30	45	60	VT-STR NPT	WU41EG	30	45	60
		VT-STR NPT	WU40EG	20	25	30	VT-STR NPT	WU40EG	20	25	30
	17,18,19	VT-SPO	WP42EG, WU41EG	70	90	110	VT-SFT	WP42EG, WU41EG	40	60	90
		VT-SPO	WP49EG, WU40EG	30	45	60	VT-SFT	WP49EG, WU40EG	20	30	40
N	21,22	VT-SPO	WP42EG, WU41EG	110	150	190	VT-SFT	WP42EG, WU41EG	80	110	160
		VT-SPO	WU40EG	60	75	90	VT-SFT	WU40EG	40	50	72
	23,24	VT-SPO	WP42EG, WU41EG	100	130	160	VT-SFT	WP42EG, WU41EG	60	90	130
		VT-SPO	WU40EG	50	65	80	VT-SFT	WU40EG	40	50	70
	26,27,28	VT-SPO	WP42EG, WU41EG	23	30	40	VT-SFT	WP42EG, WU41EG	10	20	30
		VT-SPO	WU40EG	10	15	20	VT-SFT	WU40EG	10	10	10

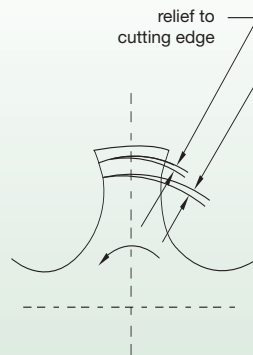
* Grades: WP42EG = TiCN
 WU41EG = TiN
 WP49EG = oxide
 WU40EG = bright

High-Performance Taps

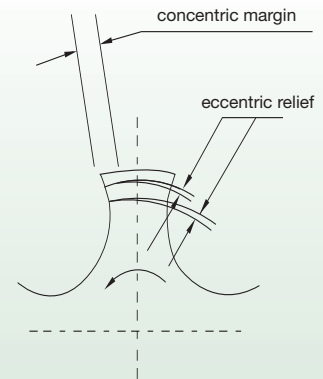




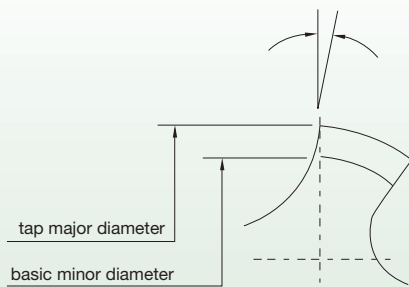
Concentric



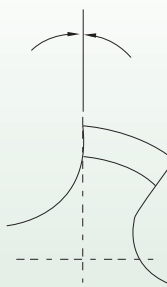
Eccentric Relief



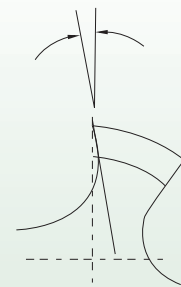
Con-Eccentric Relief



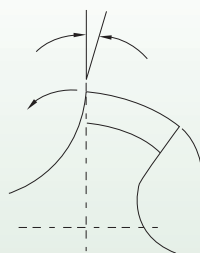
Negative Hook



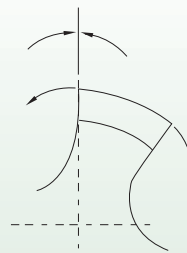
0° Hook



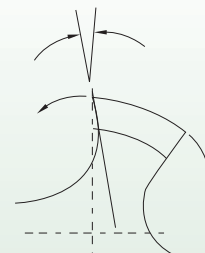
Positive Hook



Negative Rake



Radial Rake

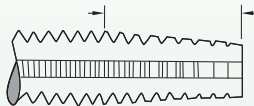


Positive Rake

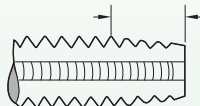
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■ Tap Chamfers • ANSI Taps

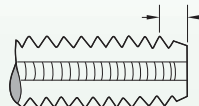
Taper Chamfer
7–10 Pitches



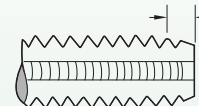
Plug Chamfer
3–5 Pitches



Modified Bottoming Chamfer
2–2.5 Pitches



Full Bottoming Chamfer
1–2 Pitches



Tap Chamfers

Taper (7–10 pitches)

The taper chamfer has the longest standard chamfer ensuring easier starting. It requires less tapping torque because of more working teeth.

Plug (3–5 pitches)

The most common chamfer for use by hand or machine in through or blind holes. This chamfer is more efficient than a bottoming or modified bottoming chamfer.

Semi-Bottom (2–2.5 pitches)

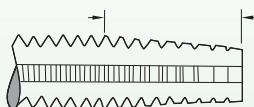
This short chamfer enables threading close to the bottom of blind holes. Due to the slightly longer chamfer and more working teeth, this chamfer is more efficient than a bottoming chamfer.

Bottoming (1–2 pitches)

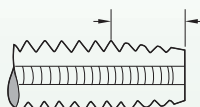
For threading close to the bottom of blind holes, the bottoming chamfer is the least efficient chamfer available.

■ Tap Chamfers • DIN Taps

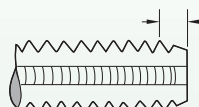
Taper Chamfer
7–10 Pitches



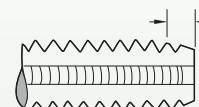
Plug Chamfer
3–5 Pitches



Modified Bottoming Chamfer
2–2.5 Pitches



Full Bottoming Chamfer
1–2 Pitches



Hand Tap Chamfers

Form A (6–8 pitches)

The Form A chamfer has the longest standard chamfer ensuring easier starting. It requires less tapping torque because of more working teeth.

Form B/D (3.5–5 pitches)

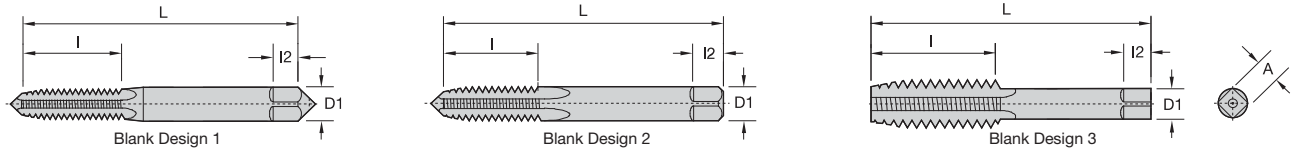
The most common chamfers for use by hand or machine in through or blind holes. Form B applies to spiral-point taps and Form D applies to straight-flute and spiral-flute taps. This chamfer is more efficient than Form E or Form C chamfers.

Form C (2–2.5 pitches)

This short chamfer enables threading close to the bottom of blind holes. Due to the slightly longer chamfer and more working teeth, this chamfer is more efficient than a Form E chamfer.

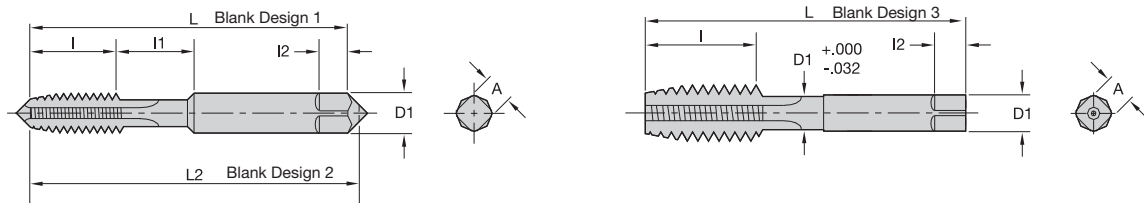
Form E (1.5–2 pitches)

For threading close to the bottom of blind holes, the Form E chamfer is the least efficient chamfer available.



nominal diameter range (in)	machine screw size number (in)	nominal fractional diameter (in)	nominal metric diameter mm (in)	blank design number	overall length L	thread length l	square length l2	shank diameter D1	square size A
.052-.065	0 (.0600)	—	M1.6 (.0630)	1	1.63	.31	.19	.1410	.110
.065-.078	1 (.0730)	—	M1.8 (.0709)	1	1.69	.38	.19	.1410	.110
.078-.091	2 (.0860)	—	M2 (0787), M2.2 (.0866)	1	1.75	.44	.19	.1410	.110
.091-.104	3 (.0990)	—	M2.5 (.0984)	1	1.81	.50	.19	.1410	.110
.104-.117	4 (.1120)	—	—	1	1.88	.56	.19	.1410	.110
.117-.130	5 (.1250)	—	M3 (.1181)	1	1.94	.63	.19	.1410	.110
.130-.145	6 (.1380)	—	M3.5 (.1378)	1	2.00	.69	.19	.1410	.110
.145-.171	8 (.1640)	—	M4 (.1575)	1	2.13	.75	.25	.1680	.131
.171-.197	10 (.1900)	—	M4.5 (.1772), M5 (.1969)	1	2.38	.88	.25	.1940	.152
.197-.223	12 (.2160)	—	—	1	2.38	.94	.28	.2200	.165
.223-.260	—	1/4 (.2500)	M6 (.2362)	2	2.50	1.00	.31	.2550	.191
.260-.323	—	5/16 (.3125)	M7 (.2756), M8 (.3150)	2	2.72	1.13	.38	.3180	.238
.323-.395	—	3/8 (.3750)	M10 (.3937)	2	2.94	1.25	.44	.3810	.286
.395-.448	—	7/16 (.4375)	—	3	3.16	1.44	.41	.3230	.242
.448-.510	—	1/2 (.5000)	M12 (.4724)	3	3.38	1.66	.44	.3670	.275
.510-.573	—	9/16 (.5625)	M14 (.5512)	3	3.59	1.66	.50	.4290	.322
.573-.635	—	5/8 (.6250)	M16 (.6299)	3	3.81	1.81	.56	.4800	.360
.635-.709	—	11/16 (.6875)	M18 (.7087)	3	4.03	1.81	.63	.5420	.406
.709-.760	—	3/4 (.7500)	—	3	4.25	2.00	.69	.5900	.442
.760-.823	—	13/16 (.8125)	M20 (.7874)	3	4.47	2.00	.69	.6520	.489
.823-.885	—	7/8 (.8750)	M22 (.8661)	3	4.69	2.22	.75	.6970	.523
.885-.948	—	15/16 (.9375)	M24 (.9449)	3	4.91	2.22	.75	.7600	.570
.948-1.010	—	1 (1.0000)	M25 (.9843)	3	5.13	2.50	.81	.8000	.600
1.010-1.073	—	1-1/16 (1.0625)	M27 (1.0630)	3	5.13	2.50	.88	.8960	.672
1.073-1.135	—	1-1/8 (1.1250)	—	3	5.44	2.56	.88	.8960	.672
1.135-1.198	—	1-3/16 (1.1875)	M30 (1.1811)	3	5.44	2.56	1.00	1.0210	.766
1.198-1.260	—	1-1/4 (1.2500)	—	3	5.75	2.56	1.00	1.0210	.766
1.260-1.323	—	1-5/16 (1.3125)	M33 (1.2992)	3	5.75	2.56	1.06	1.1080	.831
1.323-1.385	—	1-3/8 (1.3750)	—	3	6.06	3.00	1.06	1.1080	.831
1.358-1.448	—	1-7/16 (1.4375)	M36 (1.4173)	3	6.06	3.00	1.13	1.2330	.925
1.448-1.510	—	1-1/2 (1.5000)	—	3	6.38	3.00	1.13	1.2330	.925
1.510-1.635	—	1-5/8 (1.6250)	M39 (1.5354)	3	6.69	3.19	1.13	1.3050	.979
1.635-1.760	—	1-3/4 (1.7500)	M42 (1.6535)	3	7.00	3.19	1.25	1.4300	1.072
1.760-1.885	—	1-7/8 (1.8750)	—	3	7.31	3.56	1.25	1.5190	1.139
1.885-2.010	—	2 (2.0000)	M48 (1.8898)	3	7.63	3.56	1.38	1.6440	1.233
2.010-2.135	—	2-1/8 (2.1250)	—	3	8.00	3.56	1.38	1.7690	1.327
2.135-2.260	—	2-1/4 (2.2500)	M56 (2.2047)	3	8.25	3.56	1.44	1.8940	1.420
2.260-2.385	—	2-3/8 (2.3750)	—	3	8.50	4.00	1.44	2.0190	1.514
2.385-2.510	—	2-1/2 (2.5000)	—	3	8.75	4.00	1.50	2.1000	1.575
2.510-2.635	—	2-5/8 (2.6250)	M64 (2.5197)	3	8.75	4.00	1.50	2.2250	1.669
2.635-2.760	—	2-3/4 (2.7500)	—	3	9.25	4.00	1.56	2.3500	1.762
2.760-2.885	—	2-7/8 (2.8750)	M72 (2.8346)	3	9.25	4.00	1.56	2.4750	1.856
2.885-3.010	—	3 (3.0000)	—	3	9.75	4.56	1.63	2.5430	1.907
3.010-3.135	—	3-1/8 (3.1250)	—	3	9.75	4.56	1.63	2.6680	2.001
3.135-3.260	—	3-1/4 (3.2500)	M80 (3.1496)	3	10.00	4.56	1.75	2.7930	2.095
3.260-3.385	—	3-3/8 (3.3750)	—	3	10.00	4.56	1.75	2.8830	2.162
3.385-3.510	—	3-1/2 (3.5000)	—	3	10.25	4.94	2.00	3.0080	2.256
3.510-3.635	—	3-5/8 (3.6250)	M90 (3.5433)	3	10.25	4.94	2.00	3.1330	2.350
3.635-3.760	—	3-3/4 (3.7500)	—	3	10.50	5.31	2.13	3.2170	2.413
3.760-3.885	—	3-7/8 (3.8750)	—	3	10.50	5.31	2.13	3.3420	2.506
3.885-4.010	—	4 (4.0000)	M100 (3.9370)	3	10.75	5.31	2.25	3.4670	2.600

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■ General Dimensions

					Tap Dimensions — Inches						
nominal diameter range (in)		machine screw size number (in)	nominal fractional diameter (in)	nominal metric diameter mm (in)	blank design number	overall length L	thread length l	neck length l1	square length l2	shank diameter D1	square size A
.104	.117	4 (.1120)	—	—	1	1.88	.31	.25	.19	.1410	.110
.117	.130	5 (.1250)	—	M3 (.1181)	1	1.94	.31	.31	.19	.1410	.110
.130	.145	6 (.1380)	—	M3.5 (.1378)	1	2.00	.38	.31	.19	.1410	.110
.145	.171	8 (.1640)	—	M4 (.1575)	1	2.13	.38	.38	.25	.1680	.131
.171	.197	10 (.1900)	—	M4.5 (.1772)	1	2.38	.50	.38	.25	.1940	.152
				M5 (.1969)	—	—	—	—	—	—	—
.197	.223	12 (.2160)	—	—	1	2.38	.50	.44	.28	.2200	.165
.223	.260	—	1/4 (.2500)	M6 (.2362)	2	2.50	.63	.38	.31	.2550	.191
.260	.323	—	5/16 (.3125)	M7, M8 (.2756), (.3150)	2	2.72	.69	.44	.38	.3180	.238
.323	.395	—	3/8 (.3750)	M10 (.3937)	2	2.94	.75	.50	.44	.3810	.286
.395	.448	—	7/16 (.4375)	—	3	3.16	.88	—	.41	.3230	.242
.448	.510	—	1/2 (.5000)	M12 (.4724)	3	3.38	.94	—	.44	.3670	.275
.510	.573	—	9/16 (.5625)	M14 (.5541)	3	3.59	1.00	—	.50	.4290	.322
.573	.635	—	5/8 (.6250)	M16 (.6299)	3	3.81	1.09	—	.56	.4800	.360
.635	.709	—	11/16 (.6875)	M18 (.7087)	3	4.03	1.09	—	.63	.5420	.406
.709	.760	—	3/4 (.7500)	—	3	4.25	1.22	—	.69	.5900	.442
.760	.823	—	13/16 (.8125)	M20 (.7874)	3	4.47	1.22	—	.69	.6520	.489
.823	.885	—	7/8 (.8750)	M22 (.8661)	3	4.69	1.34	—	.75	.3670	.523
.885	.948	—	15/16 (.9375)	M24 (.9449)	3	4.91	1.34	—	.75	.7600	.570
.948	1.010	—	1 (1.0000)	M25 (.9843)	3	5.13	1.50	—	.81	.8000	.600

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NOTE: Thread length l is based on a length of 12 pitches of the UNC thread series. Thread length "l" is a minimum value and has no tolerance. When thread length "l" is added to neck length "l1", the total shall be no less than the minimum USCTI Table 302 thread length "l". Unless otherwise specified, all tolerances are in accordance with USCTI Table 302. For eccentricity tolerances, see USCTI Table 317. Table 302 is provided for reference only. WIDIA-GTD™ tap dimensions may differ.

■ Tolerances

element	nominal diameter range (in)	direction	tolerance (in)
length overall — L	.0520–1.0100	plus or minus	.031
	1.0100–4.0100	plus or minus	.063
length of thread — l	.0520–.2230	plus or minus	.047
	.2230–.5100	plus or minus	.063
length of square — l2	.0520–.5100	plus or minus	.094
	1.5100–4.0100	plus or minus	.125
length of shank — d1	.0520–.2230	minus	.0015
	.2230–.6350	minus	.0015
size of square — a	.6350–1.0100	minus	.0020
	1.0100–1.5100	minus	.0020
size of square — a	1.5100–2.0100	minus	.0030
	2.0100–4.0100	minus	.0030
size of square — a	.0520–.5100	minus	.004
	.5100–1.0100	minus	.006
size of square — a	1.0100–2.0100	minus	.008
	2.0100–4.0100	minus	.010

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■ Special Taps

Unless otherwise specified:

Special taps over 1.010–1.510" diameter inclusive, having 14 or more threads per inch or 1,75mm pitch and finer, and sizes over 1.510" diameter with 10 or more threads per inch or 2,5mm pitch and finer, are made to general dimensions shown in USCTI Table 303.

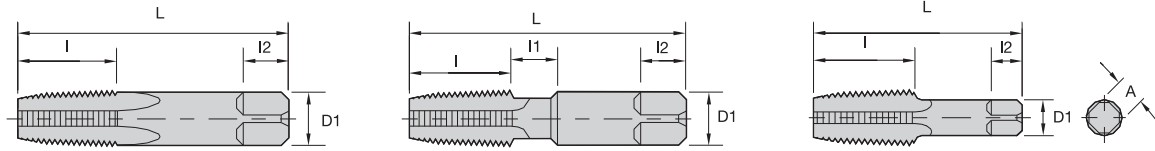
Special tap thread limits are determined using the formulas shown in USCTI Table 331 for Unified Inch Screw Threads and USCTI Table 341 for metric m-profile screw threads.

NOTE:

Tap sizes .395" and smaller have an external center on the thread end (may be removed on bottoming taps). Sizes .125" and smaller have an external center on the shank end. Sizes .224–.395" have truncated partial cone centers on the shank end (length of cone approximately 1/4 of diameter of shank). Sizes over .395" have internal centers on both the thread and shank ends.

For standard thread limits and tolerances for Unified Inch Screw Threads, see USCTI Table 327, and for metric threads, see USCTI Table 337.

For eccentricity tolerances of tap elements, see USCTI Table 317.



■ General Dimensions

nominal size (in)	dimensions (in)					
	overall length L	thread length l	square length l2	shank diameter D1	square size A	optional neck length l1
1/16	2.13	.69	.38	.3125	.234	.375
1/8	2.13	.75	.38	.3125	.234	–
1/8	2.13	.75	.38	.4375	.328	.375
1/4	2.44	1.06	.44	.5625	.421	.375
3/8	2.56	1.06	.50	.7000	.531	.375
1/2	3.13	1.38	.63	.6875	.515	–
3/4	3.25	1.38	.69	.9063	.679	–
1	3.75	1.75	.81	1.1250	.843	–
1-1/4	4.00	1.75	.94	1.3125	.984	–
1-1/2	4.25	1.75	1.00	1.5000	1.125	–
2	4.25	1.75	1.13	1.8750	1.406	–
2-1/2	5.50	2.56	1.25	2.2500	1.687	–
3	6.00	2.63	1.38	2.6250	1.968	–
3-1/2	6.50	2.69	1.50	2.8125	2.108	–
4	6.75	2.75	1.56	3.0000	2.250	–

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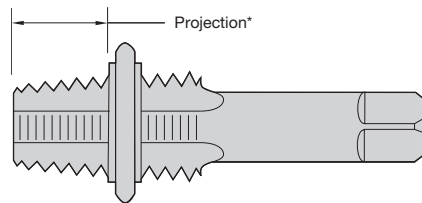
■ Tolerances

element	range	direction	tolerance
length overall – L	1/16–3/4 inc.	plus/minus	.031
	1–4 inc.	plus/minus	.063
length of thread – l	1/16–3/4 inc.	plus/minus	.063
	1–1-1/4 inc.	plus/minus	.094
length of square – l2	1-1/2–4	plus/minus	.125
	1/16–3/4 inc.	plus/minus	.031
diameter of shank – d1	1–4 inc.	plus/minus	.063
	1/16–1/8	minus	.0015
size of square – a	1/4–1 inc.	minus	.0020
	1-1/4–4 inc.	minus	.0030
size of square – a	1/16–1/8	minus	.004
	1/4–3/4 inc.	minus	.006
	1–4 inc.	minus	.008

American National Standard Taper Pipe Thread Form (NPT)

Aeronautical National Taper Pipe Thread Form (ANPT)

Dryseal American National Standard Taper Pipe Thread Form (NPTF)



taper per foot limits

nominal size (in)	threads per inch	projection* (in)	projection tolerance + / -	taper per foot limits		length L1	tap drill size** NPT, ANPT, NPTF
				min	max		
1/16	27	.312	.063	.719	.781	.160	C
1/8	27	.312	.063	.719	.781	.1615	Q
1/4	18	.459	.063	.719	.781	.2278	7/16
3/8	18	.454	.063	.719	.781	.240	9/16
1/2	14	.579	.063	.719	.781	.320	45/64
3/4	14	.565	.063	.719	.781	.339	29/32
1	11-1/2	.678	.094	.719	.781	.400	1-9/64
1-1/4	11-1/2	.686	.094	.719	.781	.420	1-31/64
1-1/2	11-1/2	.699	.094	.719	.781	.420	1-23/32
2	11-1/2	.667	.094	.719	.781	.436	2-3/16
2-1/2	8	.925	.094	.734	.781	.682	2-39/64
3	8	.925	.094	.734	.781	.766	3-15/64
3-1/2	8	.938	.125	.734	.781	.821	—
4	8	.950	.125	.734	.781	.844	—

*Distance from small end of tap projects through L1 taper thread ring gage.

**Recommended size given permits direct tapping without reaming the hole, but only gives a full thread for approximately the L1 length. Reprinted with permission from United States Cutting Tool Institute (USCTI). Published by Kennametal Inc. © 2014. All rights reserved.

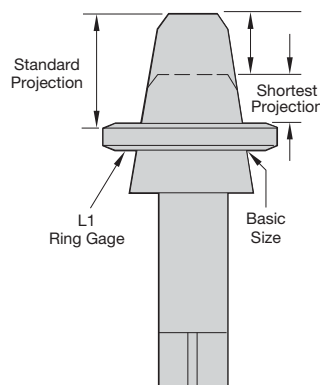
■ Pipe Taps

General-purpose pipe taps are appropriate for threading a wide variety of materials, both ferrous and non-ferrous.

Ground thread pipe taps are standard in American Standard Pipe Form (NPT) and American Standard Dryseal Pipe Form (NPFT). NPT threads require the use of a sealer, like Teflon® tape or pipe compound. Dryseal taps are used to tap fittings, which will give a pressure-tight joint without the use of a sealer.

The nominal size of a pipe tap is that of the pipe fitting to be tapped, not the actual size of the tap. The thread tapers 3/4" per foot.

All pipe taps are furnished with 2-1/2-3-1/2 thread chamfer.

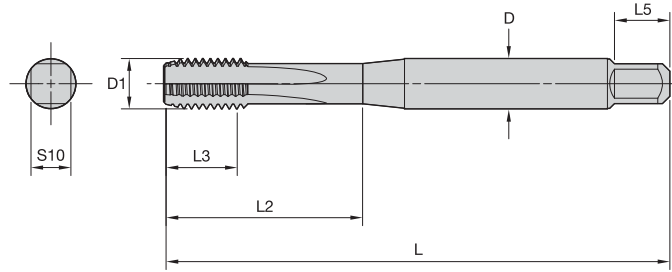


Short projection pipe taps are made with a projection shorter than standard for taper pipe tapping where the depth of tapping is limited.

Special short projection taper pipe taps can be furnished with American National Standard Taper Pipe thread (ANPT) or Dryseal American National Standard Taper Pipe thread (NPTF, PTF-SAE Short, or PTF-SPL Extra Short).

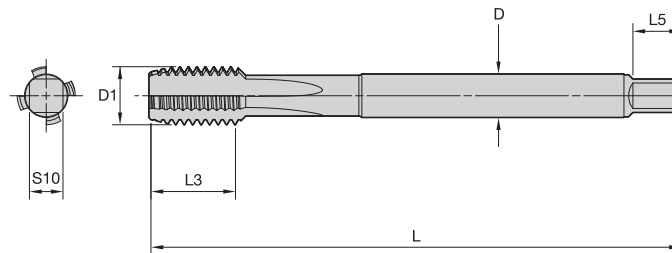
For information on short projection pipe taps and hole preparation for NPT, NPTF, and ANPT internal pipe threads, consult WIDIA-GTD™ Technical Bulletins.

Special short projection pipe taps and left-hand pipe taps are available through Lightning™ Service.



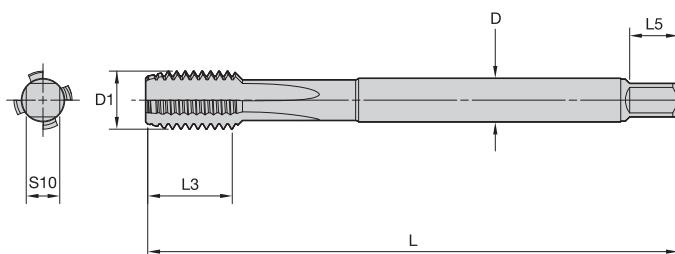
■ **DIN 371**

machine screw size number	nominal fraction diameter (in)	metric dimensions					
		D	L	L3	L2	L5	S10
4	–	3,5	56	8	18	6	2,7
5	–	4,0	56	9	20	6	3,0
6	–	4,0	56	9	20	6	3,0
8	–	4,5	63	11	21	6	3,4
10	–	6,0	70	12	25	8	4,9
–	1/4	7,0	80	15	30	8	5,5
–	5/16	8,0	90	15	35	9	6,2
–	3/8	10,0	100	19	39	11	8,0



■ **DIN 376**

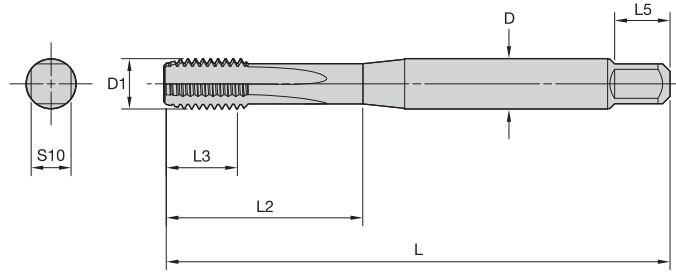
nominal fraction diameter (in)	metric dimensions					
	D	L	L3	L5	S10	
7/16	8	100	18	9	6,2	
1/2	9	110	23	10	7,0	
9/16	11	110	25	12	9,0	
5/8	12	110	24	12	9,0	
3/4	16	140	30	15	12,0	
7/8	18	140	34	17	14,5	
1	18	160	38	17	14,5	



■ DIN 374

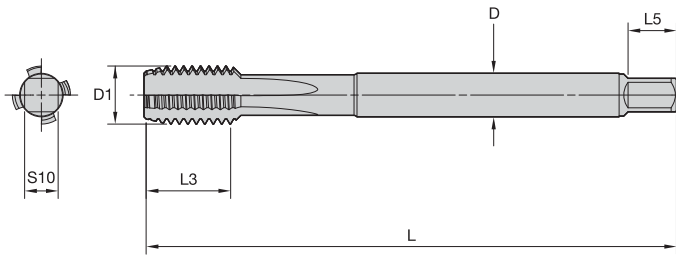
D1	pitch		D	L	metric dimensions		
	minimum	maximum			L3*	L5	S10
M8	0.2	0.75	6	80	18	8	4.9
M8	-	1	6	90	22	8	4.9
M9	0.2	0.75	7	80	18	8	5.5
M9	-	1	7	90	22	8	5.5
M10	0.2	1	7	90	20	8	5.5
M10	-	1.25	7	100	24	8	5.5
M11	0.35	1	8	90	20	9	6.2
M12	0.35	1.5	9	100	22	10	7
M14	0.35	1.5	11	100	22	12	9
M16	0.35	1.5	12	100	22	12	9
M16	-	2	12	110	32	12	9
M18	0.35	1.5	14	110	25	14	11
M18	-	2	14	125	34	14	11
M20	0.35	1.5	16	125	25	15	12
M20	-	2	16	140	34	15	12
M22	0.35	1.5	18	125	25	17	14.5
M22	-	2	18	140	34	17	14.5
M24	0.35	2	18	140	28	17	14.5
M27	0.35	2	20	140	28	19	16
M30	0.35	2	22	150	28	21	18
M30	-	3	22	180	45	21	18

* Maximum



■ JIS Type 2 Metric Coarse

D1	pitch	metric dimensions					
		D	L	L3	L2	L5	S10
M3	0.5	4	46	11	19	6	3.2
M3.5	0.6	4	48	13	20	6	3.2
M4	0.7	5	52	13	21	7	4
M4.5	0.75	5	55	13	21	7	4
M5	0.8	5.5	60	16	24	7	4.5
M6	1	6	62	19	29	7	4.5



■ JIS Type 3 Metric Coarse

D1	pitch	metric dimensions					
		D	L	L3	L5	S10	
M8	1.25	6.2	70	22	8	5	
M9	1.25	7	72	22	8	5.5	
M10	1.5	7	75	24	8	5.5	
M11	1.5	8	80	25	9	6	
M12	1.75	8.5	82	29	9	6.5	
M14	2	10.5	88	30	11	8	
M16	2	12.5	95	32	13	10	
M18	2.5	14	100	37	14	11	
M20	2.5	15	105	37	15	12	
M22	2.5	17	115	38	16	13	
M24	3	19	120	45	18	15	

**Through Holes
Push Chips**



GUN™



LHSF



- GUN™ (spiral point) or LHSF (Left-Hand Spiral Flute).
- Ideal for materials with long chips.

**Blind Holes
Pull Chips**



RHSF



- RHSF (Right-Hand Spiral Flute).
- Ideal for materials with long chips.

**Blind or Through Holes
Store Chips**



STFL



- STFL (Straight Flute).
- Ideal for materials with short chips.

**Blind or Through Holes
No Chips**



Forming Tap



- Forming.
- Ideal for ductile materials <32 HRC.

■ Unified Inch Screw Threads

thread size/pitch	recommended tap limits ¹		internal thread pitch diameter limits		
	class 2B	class 3B	min all classes (Basic)	max class 2B	max class 3B
0-80	H2	H2	0.0519	0.0542	0.0536
1-64	H2	H2	0.0629	0.0655	0.0648
1-72	H2	H2	0.0640	0.0665	0.0659
2-56	H2	H2	0.0744	0.0772	0.0765
2-64	H2	H2	0.0759	0.0786	0.0779
3-48	H3	H2	0.0855	0.0885	0.0877
3-56	H2	H2	0.0874	0.0902	0.0895
4-40	H3	H2	0.0958	0.0991	0.0982
4-48	H3	H2	0.0985	0.1016	0.1008
5-40	H3	H2	0.1088	0.1121	0.1113
5-44	H3	H2	0.1102	0.1134	0.1126
6-32	H3	H2	0.1177	0.1214	0.1204
6-40	H3	H2	0.1218	0.1252	0.1243
8-32	H3	H3	0.1437	0.1475	0.1465
8-36	H3	H3	0.1460	0.1496	0.1487
10-24	H3	H3	0.1629	0.1672	0.1661
10-32	H3	H3	0.1697	0.1736	0.1726
12-24	H3	H3	0.1889	0.1933	0.1922
12-28	H3	H3	0.1928	0.1970	0.1959
1/4-20	H5	H3	0.2175	0.2224	0.2211
1/4-28	H4	H3	0.2268	0.2311	0.2300
5/16-18	H5	H3	0.2764	0.2817	0.2803
5/16-24	H4	H3	0.2854	0.2902	0.2890
3/8-16	H5	H3	0.3344	0.3401	0.3387
3/8-24	H4	H3	0.3479	0.3528	0.3516
7/16-14	H5	H3	0.3911	0.3972	0.3957
7/16-20	H5	H3	0.4050	0.4104	0.4091
1/2-13	H5	H4	0.4500	0.4565	0.4548
1/2-20	H5	H3	0.4675	0.4731	0.4717
9/16-12	H5	H4	0.5084	0.5152	0.5135
9/16-18	H5	H3	0.5264	0.5323	0.5308
5/8-11	H5	H4	0.5660	0.5732	0.5714
5/8-18	H5	H3	0.5889	0.5949	0.5934
3/4-10	H5	H4	0.6850	0.6927	0.6907

¹Tap H limit selected for 3B will also produce thread to 2B.

NOTE: The above recommended taps normally produce the class of thread indicated in average materials when used with reasonable care. However, if the specified tap does not provide a satisfactory gage fit, choose an alternate tap limit.

■ Unified Inch Screw Threads

thread size/pitch	recommended tap limits ¹		internal thread pitch diameter limits		
	class 2B	class 3B	min all classes (Basic)	max class 2B	max class 3B
3/4-16	H5	H4	0.7094	0.7159	0.7143
7/8-9	H6	H4	0.8028	0.8110	0.8089
7/8-14	H6	H4	0.8286	0.8356	0.8339
1"-8	H6	H5	0.9188	0.9276	0.9254
1"-12	H6	H4	0.9459	0.9535	0.9516
1-1/8-7	H8	H6	1.0322	1.0416	1.0393
1-1/8-8	H8	H6	1.0438	1.0528	1.0505
1-1/8-12	H6	H5	1.0709	1.0787	1.0768
1-1/4-7	H8	H6	1.1572	1.1668	1.1644
1-1/4-8	H8	H6	1.1688	1.1780	1.1757
1-1/4-12	H6	H5	1.1959	1.2039	1.2019
1-3/8-6	H8	H6	1.2667	1.2771	1.2745
1-3/8-8	H8	H6	1.2938	1.3031	1.3008
1-3/8-12	H6	H5	1.3209	1.3291	1.3270
1-1/2-6	H8	H6	1.3917	1.4022	1.3996
1-1/2-8	H8	H6	1.4188	1.4283	1.4259
1-1/2-12	H6	H5	1.4459	1.4542	1.4522
1-3/4-5	H8	H7	1.6201	1.6317	1.6288
2-4 1/2	H8	H7	1.8557	1.8681	1.8650

¹Tap H limit selected for 3B will also produce thread to 2B.

■ Tap Recommendations for Class 6H Metric Screw Threads

thread size		recommended tap limit number	internal thread product limits — class 6H			
nominal diameter (mm)	pitch (mm)		pitch diameter (mm)		pitch diameter (in)	
		min	max	min	max	
1,6	0,35	D3	1,373	1,458	.05406	.05740
2	0,4	D3	1,740	1,830	.06850	.07205
2,5	0,45	D3	2,208	2,303	.08693	.09067
3	0,5	D3	2,675	2,775	.10531	.10925
3,5	0,6	D4	3,110	3,222	.12244	.12685
4	0,7	D4	3,545	3,663	.13957	.14421
4,5	0,75	D4	4,013	4,131	.15789	.16264
5	0,8	D4	4,480	4,605	.17638	.18130
6	1	D5	5,350	5,500	.21063	.21654
7	1	D5	6,350	6,500	.25000	.25591
8	1,25	D5	7,188	7,348	.28299	.28929
10	1,5	D6	9,026	9,206	.35535	.36244
12	1,75	D6	10,863	11,063	.42768	.43555
14	2	D7	12,701	12,913	.50004	.50839
16	2	D7	14,701	14,913	.57878	.58713
20	2,5	D7	18,376	18,600	.72346	.73228
24	3	D8	22,051	22,316	.86815	.87858
30	3,5	D9	27,727	28,007	1.09161	1.10264
36	4	D9	33,402	33,702	1.31504	1.32685

Technical Information

In addition to the nominal size and pitch of a tap, there is another important dimensional factor to be considered when selecting a ground thread tap for a given job. This factor is the pitch diameter tap limit, "H" and "L". "H" represents (high) above basic pitch diameter; "L" (low) is below basic pitch diameter. Tap limits have been established to provide a choice in the selection of the tap size best suited to produce the class of thread desired.

Figure 1 illustrates the numbering system and the .0005" diameter increment separation between successive limits. Because the starting point is basic pitch diameter, dividing the limit number by two establishes, in thousandths of an inch, the amount the maximum tap pitch diameter is above basic in the "H" series and the amount the minimum tap pitch diameter is under basic in the "L" series.

Figure 2 illustrates the positioning of the tap limits in relation to the various classes of threads for a 1/4-20 size.

Figure 1

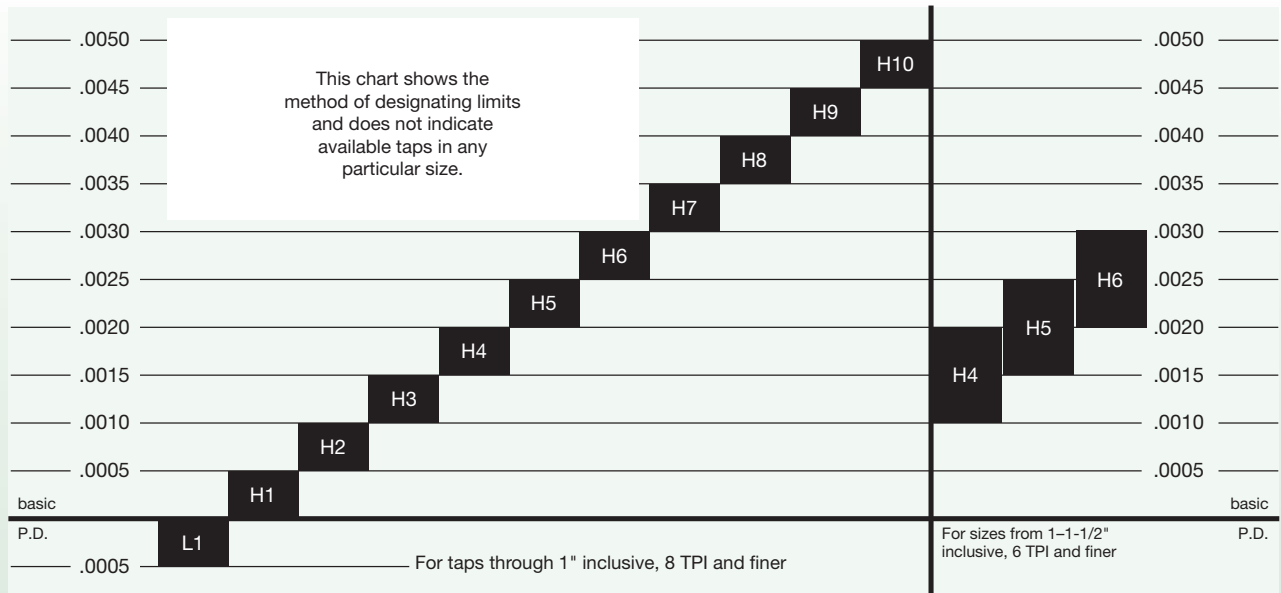
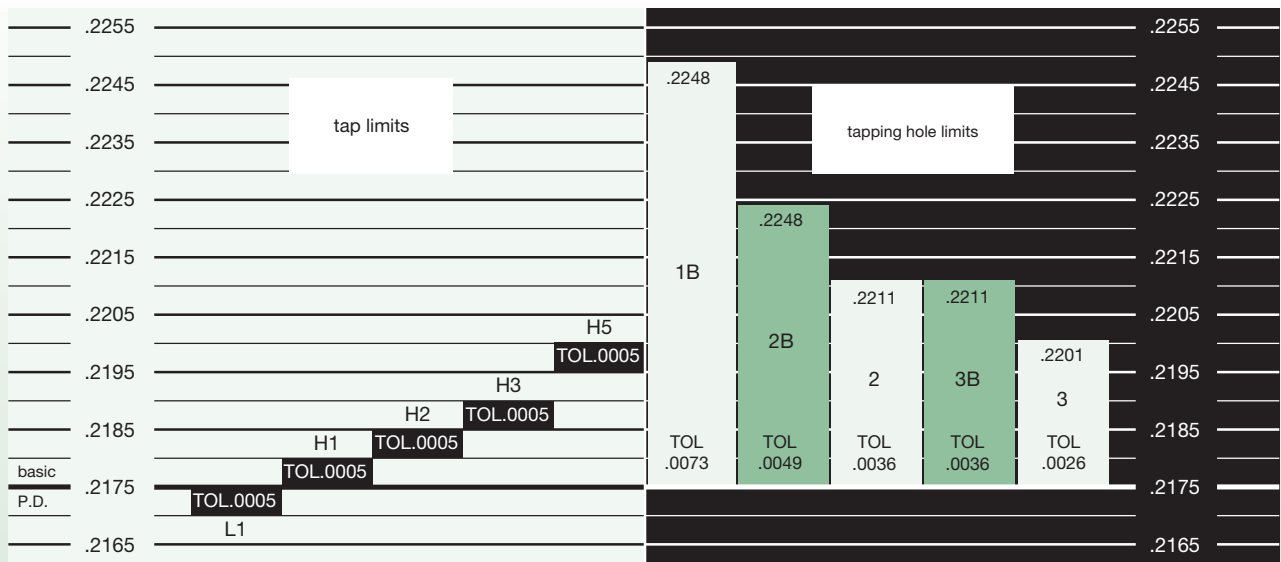
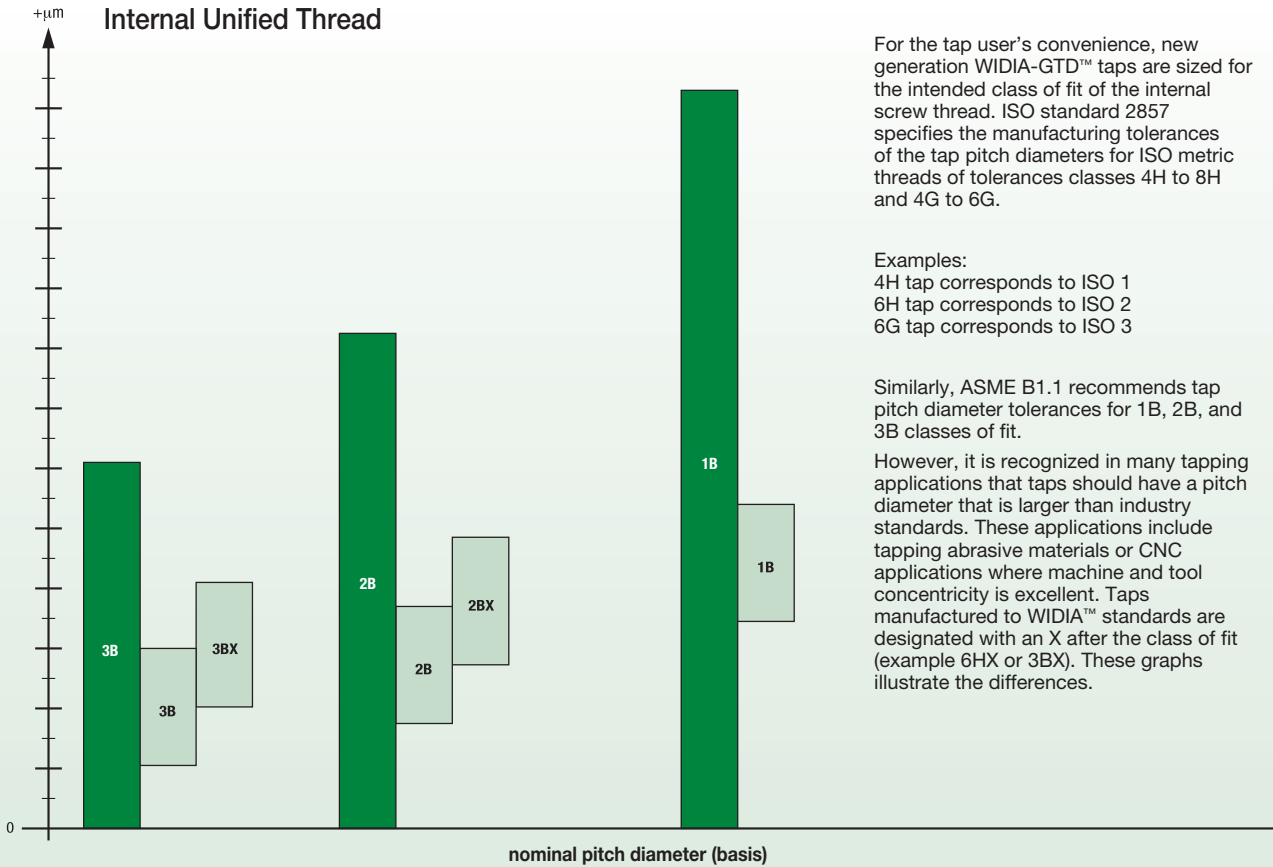


Figure 2

Class of Thread – 1/4-20 UNC and NC



Internal Unified Thread



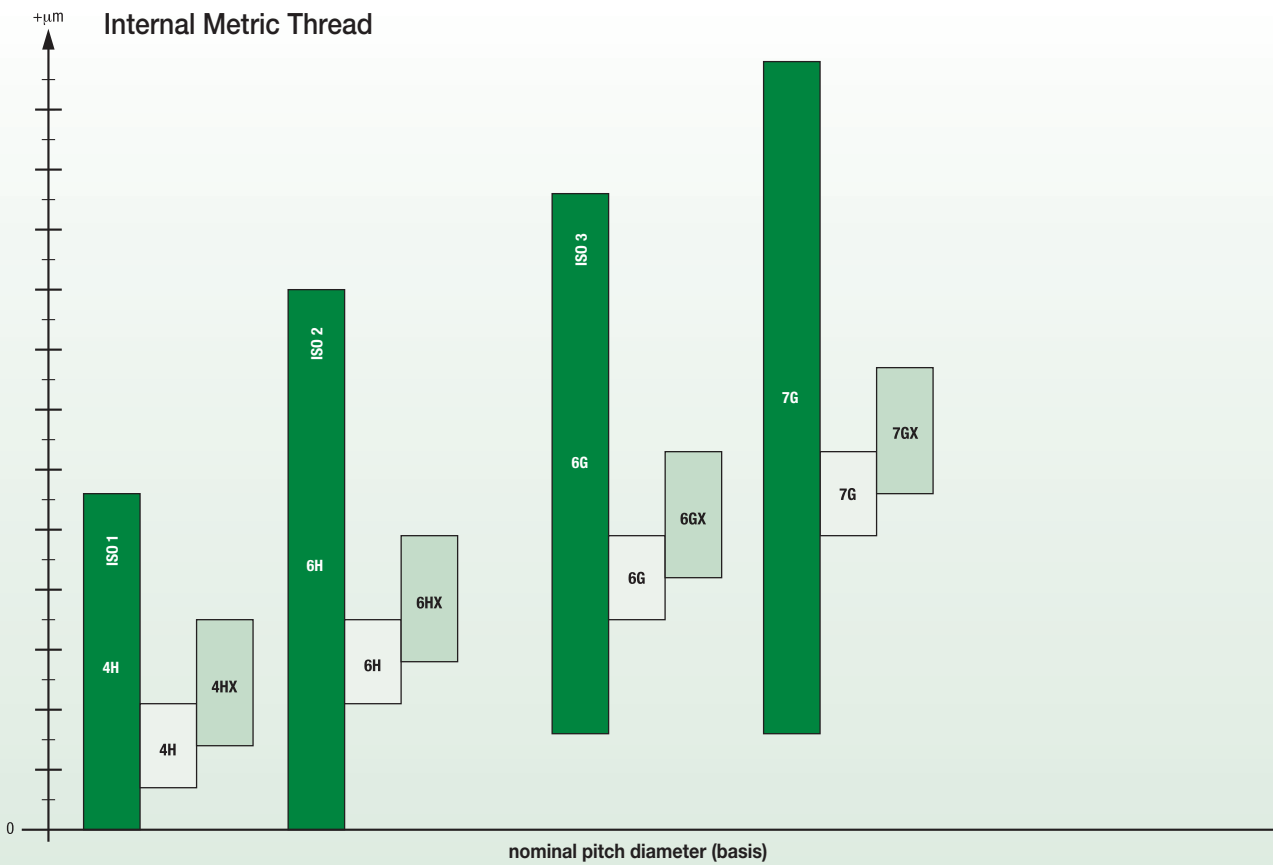
For the tap user's convenience, new generation WIDIA-GTD™ taps are sized for the intended class of fit of the internal screw thread. ISO standard 2857 specifies the manufacturing tolerances of the tap pitch diameters for ISO metric threads of tolerances classes 4H to 8H and 4G to 6G.

Examples:
4H tap corresponds to ISO 1
6H tap corresponds to ISO 2
6G tap corresponds to ISO 3

Similarly, ASME B1.1 recommends tap pitch diameter tolerances for 1B, 2B, and 3B classes of fit.

However, it is recognized in many tapping applications that taps should have a pitch diameter that is larger than industry standards. These applications include tapping abrasive materials or CNC applications where machine and tool concentricity is excellent. Taps manufactured to WIDIA™ standards are designated with an X after the class of fit (example 6HX or 3BX). These graphs illustrate the differences.

Internal Metric Thread



Technical Information

It is generally recognized that, in mass production, it is impossible to reproduce in exact detail the theoretically perfect product as laid out on the drawing board. The allowed slight variation between the theoretically perfect product drawing and each unit of the actual product is called the tolerance.

Allowance

An intentional difference in correlated dimensions of mating parts. It is the minimum clearance or maximum interference between such parts.

Angle of Thread

The angle included between the flanks of the thread measured in an axial plane.

Half Angle of Thread

The angle included between a flank of the thread and the normal (90°) to the axis, measured in an axial plane.

Lead of Thread

The distance a screw thread advances axially in one turn. On a single-thread screw, the lead and pitch are identical. On a double thread, the lead is 2x pitch; on a triple thread, the lead is 3x pitch, etc.

Major Diameter

The largest diameter of a straight-screw thread.

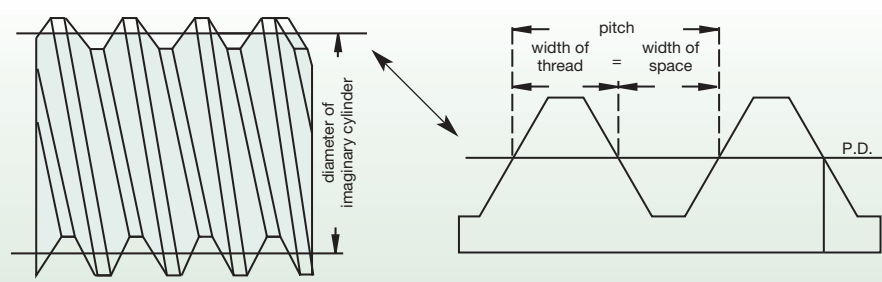
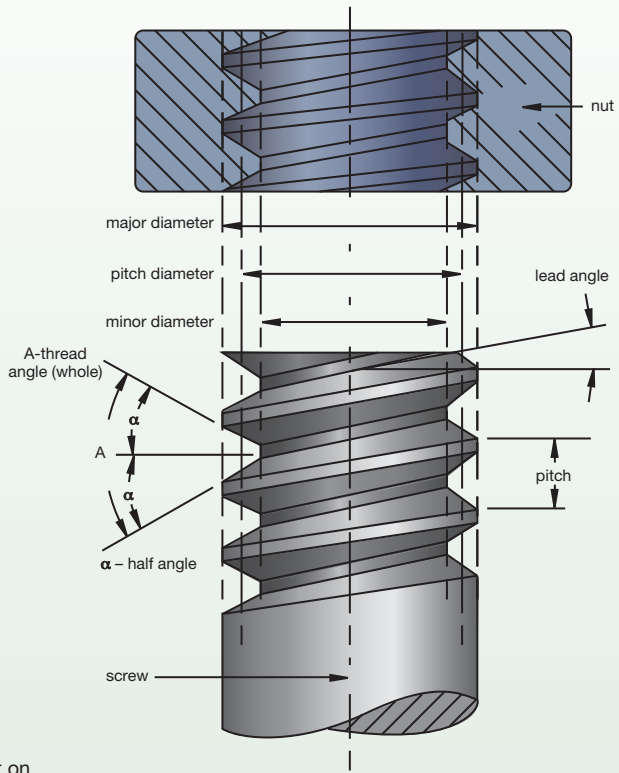
Minor Diameter

The smallest diameter of a straight-screw thread.

Pitch

The distance from a point on a screw thread to a corresponding point on the next thread measured parallel to the axis.

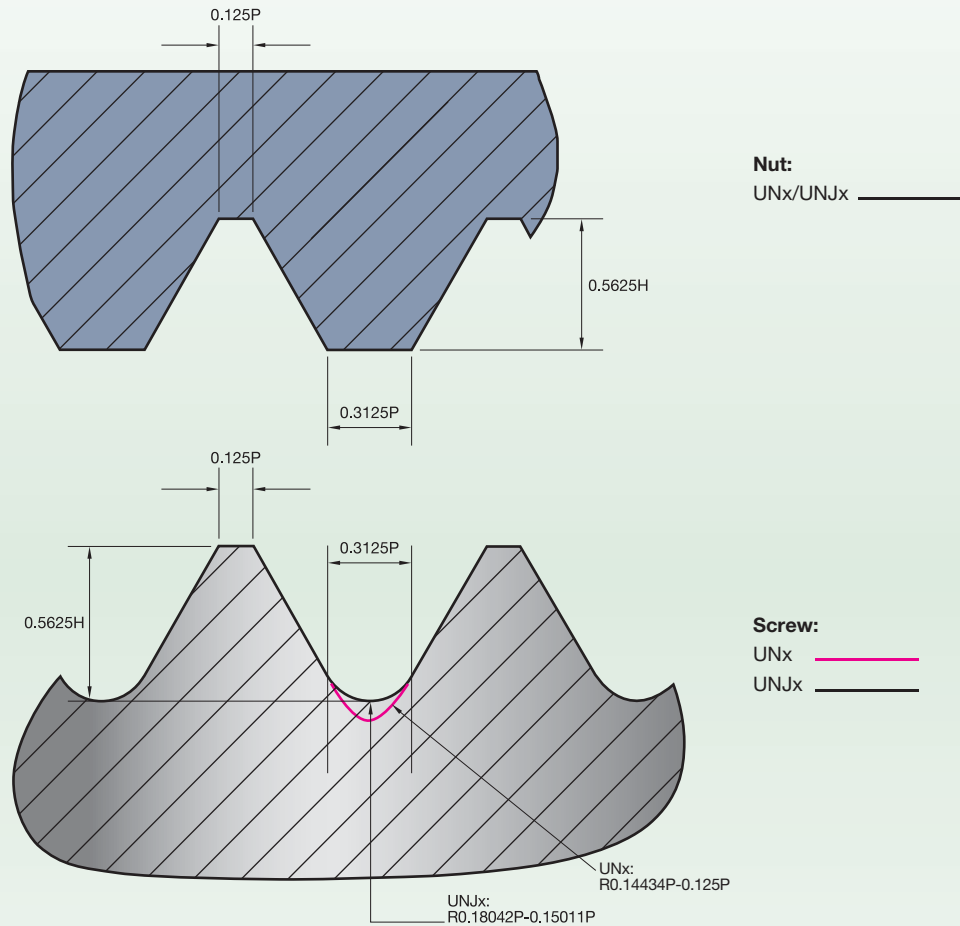
The pitch in inches = $\frac{1}{\text{number of threads per inch}}$



Pitch Diameter

On a straight-screw thread, the diameter of an imaginary cylinder that would pass through the threads at such points as to make equal the width of the threads and the width of the spaces cut by the surface of the cylinder.

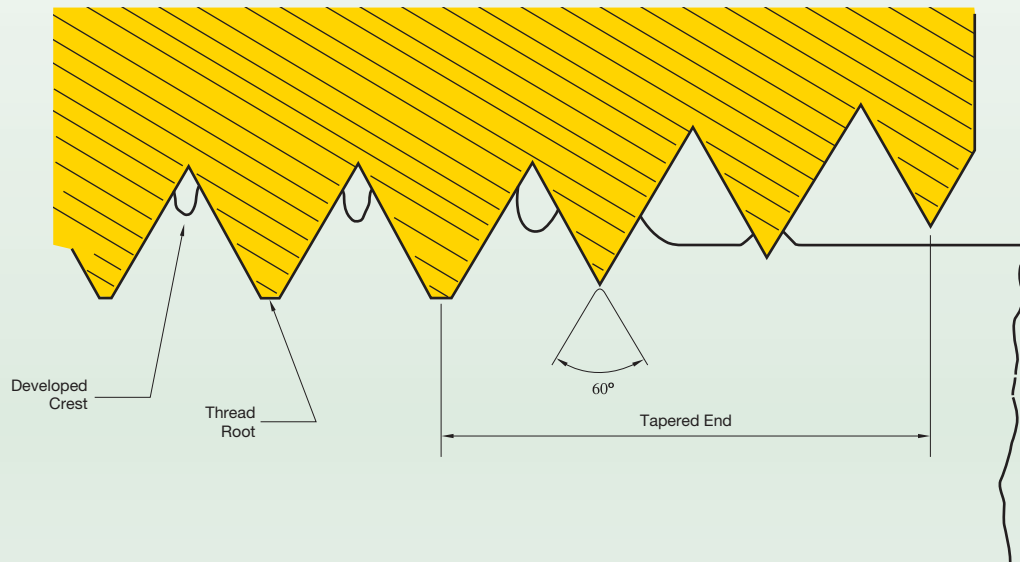
A thread system is available for aerospace and other applications where high fatigue strength is required. The UNJ thread form is defined by ASME B1.15 and is similar to Military Specification MIL-S-8879. Screw thread assemblies consist of external and internal threads. In order to minimize the stress on the external UNJ thread, a controlled root radius is required that is equal to $0.15011P$ to $0.18042P$, where P is the thread pitch. Internal UNJ threads are not required to have a radius at either the major or minor diameters.



Because external UNJ threads must be produced with a defined root radius, standard UN tooling may not be used. However, internal UNF threads may be produced with ground thread UN taps sized to produce the proper class of fit. The tap does not need to be marked with a letter J. Attention must be paid to the tap drill since the minor diameter has to be specified so as to provide clearance with the root radius on the external thread.

For UNJ thread specifications, the reader is referred to ASME B1.15. Please note this standard includes Class 3 and Class 2 UNJ screw threads. However, only Class 3 UNJ threads meet the requirements of Military Specification MIL-S-8879. For Unified Inch (UN) thread specifications, refer to ASME B1.1.

Unlike cutting taps, which remove material, forming taps generate an internal screw thread by displacing material and forming it into the V-shaped thread. A common misconception is that a thread rolling action occurs. Instead, the threads are formed over the tapered entry section of the tap as the tap rotates into the hole. A succession of deeper penetrating lobes over the entry plastically displaces material radially between the tap's thread flanks until the entry length is reached. At this point, the thread is fully formed at the correct thread height.



Forming taps have numerous advantages over cutting taps. The most obvious advantage is that forming taps do not create chips. There are no chip removal problems. Bird nesting is a situation that occurs when chips wrap around the shank of spiral-fluted taps when tapping blind holes in long chipping materials. Forming taps help this to be avoided. Since forming taps avoid this problem, they are stronger and more resistant to breakage. Another misconception is that forming taps produce stronger threads. Although the forming process strain hardens the thread flanks, it has very little effect on the major diameter, the location where internal threads strip.

Forming taps can only be used in ductile materials. Due to increased friction relative to cutting, forming taps require higher torque than cutting taps. In some situations, oil-based lubrications are required, and this might not be convenient on CNC machining centers that use water soluble coolant. In this situation, the lubricant concentration should be increased.

Since forming taps displace material, larger diameter pre-tap holes are required. This is especially important when converting from cutting taps to forming taps. If a cutting tap hole size is used, the displaced material will over-fill the tap's threads and breakage will result. Please consult hole size charts for forming taps.

coating	properties and application	precautions
Titanium Nitride (TiN)	Proprietary TiN coating (hardness 2300 Vickers) offers significantly improved wear life and thread finish, often at higher tapping speeds, in a broad range of materials, especially steels, irons, and plastics. Golden color.	Use with caution in non-ferrous materials such as aluminum because of tendency to gall.
Titanium Carbonitride (TiCN)	Proprietary TiCN coating (hardness 3000 Vickers) is harder, tougher, and more wear resistant than TiN under conditions of moderate cutting temperatures. Like TiN, TiCN may be used at higher cutting speeds in a broad range of materials, especially steels and irons. Blue-gray color.	Use with caution in non-ferrous materials such as aluminum because of tendency to gall. TiAlN is a better choice when used at extreme temperatures.
Titanium Nitride + Chromium Carbide Carbon (TiN + CrC/C)	Proprietary coating (hardness 2300 Vickers) that combines the wear resistance of smooth TiN coating with a lubricious top layer of chromium carbide carbon. Effective in stainless steel and non-ferrous materials including aluminum and titanium. Ideal choice for 300 series stainless steels, wrought, and die cast aluminums. Black/gray color.	Effective in both ferrous and non-ferrous materials.
Titanium Aluminum Nitride (TiAlN)	Nanolayer TiAlN coating (hardness 3300 Vickers) offers improved wear life and thread finish, especially in conditions where high temperatures can be generated. Use for PH stainless steels and nickel-based alloys like INCONEL®. Violet/gray color.	Use with caution in non-ferrous materials because of tendency to gall.
Chromium Nitride (CrN)	CrN is medium hard (hardness 1800 Vickers) and has a lower wear resistance than TiN, TiCN, and TiAlN. However, unlike these coatings, CrN does not gall when used in some non-ferrous work materials. Use for brass, bronze, zinc alloys, and magnesium alloys. Silver color.	Ineffective in ferrous materials.
Nitride (MAXI #1)	Hardened case extends wear life in abrasive materials. Use for aluminum and other non-ferrous materials.	Avoid on taper pipe, fast spiral, and small diameter (<#6) or fine pitch taps due to tendency for thread chipping.
Oxide (SH-50)	Helps prevent galling in ferrous (iron-based) materials. For free machining steel. Use for steels, stainless steels, and irons.	Has a tendency to cause galling in non-ferrous materials such as aluminum.
Nitride and Oxide (SH-47)	Combines the benefits of nitride and oxide surface treatments. For steels, stainless steels, and nickel alloys.	See precautions for nitride and oxide surface treatments.

Technical Information

Factors when trying to determine the best tapping speeds:

- Material to be tapped
- Length of chamfer on tap
- Percentage of full thread to be cut
- Length of hole (depth of thread)
- Pitch of thread
- Cutting fluids
- Machine equipment
- Horizontal or vertical tapping

The best and most efficient operating speeds for taps cannot be calculated with the same certainty, as for many other metalcutting tools.

With other tools, the feed per revolution can be set at any desired point and can be varied as conditions demand. Taps, on the other hand, must always be advanced at a rate equal to one pitch for every revolution. The style of tap may vary the conditions.

For example, with a bottoming tap, the first thread on each land cuts the full height of thread, while, with a taper or starting tap, a number of threads do their share of the cutting before the full height of thread is reached.

The depth of thread also varies, depending on the pitch. The coarser the thread, the greater the advance of the tap per revolution and the greater the amount of material removed.

The method of feeding the tap, and the type of equipment for driving, also influences the permissible speeds. If taps are mechanically fed at the proper rate of advance, they can be operated at higher speeds than if they are required to feed themselves and pull some part of the machine along with them.

Speeds may be modified to take into account any or all of these factors:

- Speeds must be lowered as length of thread increases because, in deep thread holes, the accumulated chips increase friction and interfere with lubrication.
- Bottoming taps must be run slower than plug taps.
- Tapping full height of thread calls for slower speed than if the commercial 75% height only is required.
- Coarse-thread taps in the larger diameters should be run more slowly than fine-thread taps of the same diameters.
- The quantity and quality of cutting fluid may affect the permissible speeds as much as 100%.
- Taper threaded taps, such as pipe taps, should be operated from 1/2–3/4 the speed of a straight thread tap of comparable major diameter.

■ RPM Formulas

SFM = Surface Feet per Minute
RPM = Revolutions per Minute
IPM = Inches per Minute
TPI = Threads per Inch

S m/m = Surface Meters per Minute
 $\pi = 3.1416$
mm/min = millimeters per minute
P = Pitch (1/number of threads per inch)

Inch Sizes

SFM	=	$\frac{\text{RPM} \times \text{tool diameter}}{3.82}$	or	$0.26 \times \text{RPM} \times \text{tool diameter}$
RPM	=	$\frac{3.82 \times \text{SFM}}{\text{tool diameter}}$		
IPM	=	$\frac{\text{RPM}}{\text{TPI}^*}$	or	$*P \times \text{RPM}$

Metric Sizes

S m/m	=	$\frac{p \times \text{tool diameter} \times \text{RPM}}{1000}$
RPM	=	$\frac{\text{mm/m} \times 1000}{p \times \text{tool diameter}}$
mm/min	=	mm P x RPM

■ **UNC/UNF and NPT/NPTF**

tap size	taper pipe taps	surface feet per minute (SFM)																	
		5'	10'	15'	20'	25'	30'	40'	50'	60'	70'	80'	90'	100'	110'	120'	130'	140'	150'
		revolutions per minute (RPM)																	
0	—	318	637	955	1273	1592	1910	2546	3183	3820	4456	5093	5729	6366	7003	7639	8276	8913	9549
1	—	273	546	819	1046	1308	1570	2093	2617	3140	3663	4186	4710	5233	5756	6279	6805	7326	1849
2	—	212	424	637	888	1110	1333	1777	2221	2665	3109	3554	3999	4442	4886	5330	5774	6218	6662
3	—	191	382	573	772	964	1157	1543	1929	2315	2701	3086	3472	3858	4244	4629	5015	5401	5787
4	—	174	347	521	682	853	1023	1364	1705	2046	2387	2728	3069	3411	3751	4092	4434	4775	5115
5	—	147	294	441	611	764	917	1222	1528	1833	2139	2445	2750	3056	3361	3667	3973	4278	4584
6	—	136	273	409	553	691	829	1106	1382	1659	1935	2212	2488	2766	3042	3318	3595	3871	4148
8	—	119	239	358	466	583	699	932	1165	1398	1631	1864	2097	2330	2563	2796	3029	3262	3495
10	—	101	201	302	402	502	603	804	1005	1205	1406	1607	1808	2009	2210	2411	2612	2813	3014
12	—	87	174	260	354	442	531	707	884	1061	1238	1415	1592	1769	1945	2122	2300	2476	2653
1/4	—	76	153	229	306	382	458	611	764	917	1070	1222	1375	1528	1681	1833	1986	2139	2292
5/16	—	62	123	185	245	306	367	489	611	733	856	978	1100	1222	1345	1467	1589	1711	1833
3/8	—	50	101	151	204	255	305	407	509	611	713	815	917	1019	1120	1222	1324	1426	1528
7/16	1/8	43	87	130	175	219	262	349	437	524	611	698	786	873	960	1048	1135	1222	1310
1/2	—	38	76	115	153	191	229	305	382	458	535	611	688	764	840	917	993	1070	1146
9/16	1/4	34	68	102	137	172	206	274	342	410	478	547	616	683	752	820	888	952	1020
5/8	—	32	64	96	122	153	183	244	306	367	428	489	550	611	672	733	794	856	917
11/16	3/8	28	55	83	111	138	167	222	278	333	389	444	500	556	611	667	722	778	833
3/4	—	25	51	76	102	128	153	203	255	305	357	407	458	509	560	611	662	713	764
7/8	1/2	22	43	65	87	109	131	175	218	262	306	350	392	437	480	524	568	611	655
1	—	19	38	57	76	96	115	153	191	230	268	305	344	382	420	458	497	535	573
1-1/8	3/4	17	34	51	68	84	102	136	170	204	238	272	306	340	373	407	441	475	509
1-1/4	—	15	31	46	61	76	92	122	153	183	214	244	275	305	336	367	397	428	458
1-3/8	1	14	28	42	56	69	83	111	139	167	194	222	250	278	306	333	361	389	417
1-1/2	—	13	25	38	51	63	76	102	127	153	178	204	229	255	280	305	331	356	382
1-5/8	—	12	23	35	47	59	71	94	118	141	165	188	212	235	259	282	306	329	353
1-3/4	—	11	22	33	44	55	65	87	109	131	153	175	196	218	240	262	284	306	327
1-7/8	—	10	20	30	41	51	61	81	102	122	143	163	183	204	224	244	265	285	306
2	—	9	19	29	38	48	57	76	96	115	134	153	172	191	210	229	248	267	287

■ **Metric**

metric taps	surface feet per minute (SFM)																	
	5'	10'	15'	20'	25'	30'	40'	50'	60'	70'	80'	90'	10'	110'	120'	130'	140'	150'
	revolutions per minute (RPM)																	
M1	490	979	1469	1959	2449	2938	3918	4897	5877	6856	7836	8815	9795	10774	11754	12733	13713	14692
M2	242	484	725	967	1209	1451	1934	2418	2901	3385	3868	4352	4835	5319	5803	6286	6770	7253
M3	162	324	486	647	809	971	1295	1619	1942	2266	2590	2914	3237	3561	3885	4208	4532	4856
M3.5	138	277	415	554	692	830	1107	1384	1661	1938	2214	2491	2768	3045	3322	3599	3875	4152
M4	122	243	365	487	608	730	973	1217	1460	1703	1946	2190	2433	2676	2920	3163	3406	3650
M5	97	194	291	388	485	582	776	970	1163	1357	1551	1745	1939	2133	2327	2521	2715	2905
M6	81	162	243	324	405	486	647	809	971	1133	1295	1457	1619	1781	1942	2104	2266	2428
M7	69	138	208	277	346	415	554	692	830	969	1107	1246	1384	1522	1661	1799	1938	2076
M8	61	121	182	243	303	364	485	606	728	849	970	1091	1213	1334	1455	1577	1698	1819
M10	48	97	145	194	242	291	388	485	582	679	776	873	970	1067	1163	1260	1357	1454
M12	40	81	121	162	202	243	324	405	486	567	647	728	809	890	971	1052	1133	1214
M14	35	69	104	139	173	208	277	347	416	485	555	624	693	763	832	901	971	1040
M16	30	61	91	121	152	182	243	303	364	424	485	546	606	667	728	788	849	910
M18	27	54	81	108	135	162	216	269	323	377	431	485	539	593	647	700	754	808
M20	24	49	73	97	121	146	194	243	291	340	388	437	485	534	582	631	680	728
M22	22	44	66	88	110	132	176	221	265	309	353	397	441	485	529	573	618	662
M24	20	40	61	81	101	121	162	202	243	283	323	364	404	445	485	526	566	606
M27	18	36	54	72	90	108	144	180	216	252	287	323	359	395	431	467	503	539
M30	16	32	49	65	81	97	129	162	194	226	259	291	323	356	388	420	453	485

Technical Information

Partial List of Solutions to Tapping Problems

application	symptom	common cause	remedy
general	gage out of limits	tap size and gage mismatch	select tap size for gage
	oversize thread	alignment, spindle feed	correct
	oversize at top	runout or alignment	correct
	go gage binds part way	worn tool, tap cuts off lead	replace tap, synchronous holder
	thread shaving	feed error, high axial force	program, synchronous holder
	chipping	high cutting force, worn tap	tap geometry, replace tap
	breakage	chip jamming flutes	tap geometry, tapping depth
	—	worn tool, high torque	replace tap with new tool
	short life, low speed	excessive wear	SC or HSS-E-PM HP taps
steel	birdnest blind hole	long, ductile chips	GT30 GP6505 (oxide), peck feed
	chipping	high material hardness	GT00, GT02 WP31MG (TiN)
	breakage in blind holes	hole depth >2D, chip jamming	GT04 WH36MG (TiN/MoS ₂)
stainless steel	oversize thread, low life	galling	GT20, GT30 GM6515 (TiN-CrC/C)
	short life	work hardened core hole	replace drill
cast iron	excessive wear	abrasion	GT40 GP6520 (TiCN)
aluminum, cast	excessive wear	high silicon	GT40 GP6520 (TiCN)
aluminum, wrought	oversize thread	galling	GT70, GT80 WN48EG (DLC)
nickel, cobalt alloys	short life	high cutting temperature	GT10, GT12 WS32MG (TiCN)
titanium	short life	high cutting temperature	GT14, GT16 WN35MG (TiN-DLC)

Thread Mills

	vibration marks	major crest wear	edge chipping	cone-shaped thread	entry marks
cutting speed	check	reduce	—	—	—
feed per tooth	check	increase	reduce	—	—
workpiece clamping	improve	improve	improve	—	improve
machine tool stability	improve	improve	improve	—	improve
cantilever arm	shorten	shorten	—	—	shorten
helix angle	increase	reduce	—	—	—
radial runout	check	check	—	—	—
coating	—	improve	improve	—	—
milling operation	—	climb mill	climb mill	climb mill	—
line feed/entry ramp	check	check	—	—	improve
coolant pressure	—	check (>20 bar, 290 psi)	check (>20 bar, 290 psi)	—	—

drill size	decimal (in)	drill size	decimal (in)	drill size	decimal (in)	drill size	decimal (in)	drill size	decimal (in)	drill size	decimal (in)
0,30mm	.0118	54	.0550	3,10mm	.1220	5,50mm	.2165	8,50mm	.3346	9/16	.5625
0,32mm	.0126	1,40mm	.0551	1/18	.1250	7/32	.2188	8,60mm	.3386	14,50mm	.5709
80	.0135	1,45mm	.0571	3,20mm	.1260	5,60mm	.2205	R	.3390	37/64	.5781
0,35mm	.0138	1,50mm	.0591	30	.1285	2	.2210	8,70mm	.3425	14,75mm	.5807
79	.0145	53	.0595	3,30mm	.1299	5,70mm	.2244	11/32	.3438	15,00mm	.5906
0,38mm	.0150	1,55mm	.0610	3,40mm	.1339	1	.2280	8,80mm	.3465	19/32	.5938
1/64	.0156	1/16	.0625	29	.1360	5,80mm	.2283	S	.3480	15,25mm	.6004
0,40mm	.0157	1,60mm	.0630	3,50mm	.1378	5,90mm	.2323	8,90mm	.3504	39/64	.6094
78	.0160	52	.0635	28	.1405	A	.2340	9,00mm	.3543	15,50mm	.6102
0,42mm	.0165	1,65mm	.0650	9/64	.1406	15/64	.2344	T	.3580	15,75mm	.6201
0,45mm	.0177	1,70mm	.0669	3,60mm	.1417	6,00mm	.2362	9,10mm	.3583	5/8	.6250
77	.0180	51	.0670	27	.1440	B	.2380	23/64	.3594	16,00mm	.6299
0,48mm	.0189	1,75mm	.0689	3,70mm	.1457	6,10mm	.2402	9,20mm	.3622	16,25mm	.6398
0,50mm	.0197	50	.0700	26	.1470	C	.2420	9,30mm	.3661	41/64	.6406
76	.0200	1,80mm	.0709	25	.1495	6,20mm	.2441	U	.3680	16,50mm	.6496
75	.0210	1,85mm	.0728	3,80mm	.1496	D	.2460	9,40mm	.3701	21/32	.6562
0,55mm	.0217	49	.0730	24	.1520	6,30mm	.2480	9,50mm	.3740	16,75mm	.6594
74	.0225	1,90mm	.0748	3,90mm	.1535	1/4, E	.2500	3/8	.3750	17,00mm	.6693
0,60mm	.0236	48	.0760	23	.1540	6,40mm	.2520	V	.3770	43/64	.6719
73	.0240	1,95mm	.0768	5/32	.1562	6,50mm	.2559	9,60mm	.3780	17,25mm	.6791
0,62mm	.0244	5/64	.0781	22	.1570	F	.2570	9,70mm	.3819	11/16	.6875
72	.0250	47	.0785	4,00mm	.1575	6,60mm	.2598	9,80mm	.3858	17,50mm	.6890
0,65mm	.0256	2,00mm	.0787	21	.1590	G	.2610	W	.3860	45/64	.7031
71	.0260	2,05mm	.0807	20	.1610	6,70mm	.2638	9,90mm	.3898	18,00mm	.7087
0,70mm	.0276	46	.0810	4,10mm	.1614	17/64	.2656	25/64	.3906	23/32	.7188
70	.0280	45	.0820	4,20mm	.1654	H	.2660	10,00mm	.3937	18,50mm	.7283
69	.0292	2,10mm	.0827	19	.1660	6,80mm	.2677	X	.3970	47/64	.7344
0,75mm	.0295	2,15mm	.0846	4,30mm	.1693	6,90mm	.2717	10,20mm	.4016	19,00mm	.7480
68	.0310	44	.0860	18	.1695	I	.2720	Y	.4040	3/4	.7500
1/32	.0312	2,20mm	.0866	11/64	.1719	7,00mm	.2756	13/32	.4062	49/64	.7656
0,80mm	.0315	2,25mm	.0886	17	.1730	J	.2770	Z	.4130	19,50mm	.7677
67	.0320	43	.0890	4,40mm	.1732	7,10mm	.2795	10,50mm	.4134	25/32	.7812
66	.0330	2,30mm	.0906	16	.1770	K	.2810	27/64	.4219	20,00mm	.7874
0,85mm	.0335	2,35mm	.0925	4,50mm	.1772	9/32	.2812	10,80mm	.4252	51/64	.7969
65	.0350	42	.0935	15	.1800	7,20mm	.2835	11,00mm	.4331	20,50mm	.8071
0,90mm	.0354	3/32	.0938	4,60mm	.1811	7,30mm	.2874	7/16	.4375	13/16	.8125
64	.0360	2,40mm	.0945	14	.1820	L	.2900	11,20mm	.4409	21,00mm	.8268
63	.0370	41	.0960	4,70mm, 13	.1850	7,40mm	.2913	11,50mm	.4528	53/64	.8281
0,95mm	.0374	2,45mm	.0965	3/16	.1875	M	.2950	29/64	.4531	27/32	.8438
62	.0380	40	.0980	4,80mm, 12	.1890	7,50mm	.2953	11,80mm	.4646	21,50mm	.8465
61	.0390	2,50mm	.0984	11	.1910	19/64	.2969	15/32	.4688	55/64	.8594
1,00mm	.0394	39	.0995	4,90mm	.1929	7,60mm	.2992	12,00mm	.4724	22,00mm	.8661
60	.0400	38	.1015	10	.1935	N	.3020	12,20mm	.4803	7/8	.8750
59	.0410	2,60mm	.1024	9	.1960	7,70mm	.3031	31/64	.4844	22,50mm	.8858
1,05mm	.0413	37	.1040	5,00mm	.1969	7,80mm	.3071	12,50mm	.4921	57/64	.8906
58	.0420	2,70mm	.1063	8	.1990	7,90mm	.3110	1/2	.5000	23,00mm	.9055
57	.0430	36	.1065	5,10mm	.2008	5/16	.3125	12,80mm	.5039	29/32	.9062
1,10mm	.0433	7/64	.1094	7	.2010	8,00mm	.3150	13,00mm	.5118	59/64	.9219
1,15mm	.0453	35	.1100	13/64	.2031	O	.3160	33/64	.5156	23,50mm	.9252
56	.0465	2,80mm	.1102	6	.2040	8,10mm	.3189	13,20mm	.5197	15/16	.9375
3/64	.0469	34	.1110	5,20mm	.2047	8,20mm	.3228	17/32	.5312	24,00mm	.9449
1,20mm	.0472	33	.1130	5	.2055	P	.3230	13,50mm	.5315	61/64	.9531
1,25mm	.0492	2,90mm	.1142	5,30mm	.2087	8,30mm	.3268	13,80mm	.5433	24,50mm	.9646
1,30mm	.0512	32	.1160	4	.2090	21/64	.3281	35/64	.5469	31/32	.9688
55	.0520	3,00mm	.1181	5,40mm	.2126	8,40mm	.3307	14,00mm	.5512	25,00mm	.9843
1,35mm	.0531	31	.1200	3	.2130	Q	.3320	14,25mm	.5610	63/64	.9844
										1"	1.0000

■ Metric
 ■ Fractional
 ■ Wire gage
 ■ Letter size

Knowing the hardness of the work material to be tapped is essential in selecting the best tap for the job.

10 mm/min ball 3000 kg	120° cone 150 kg	1/16" ball 100 kg	model C	1000 lb per sq. in.	10 mm/min ball 3000 kg	120° cone 150 kg	1/16" ball 100 kg	model C	1000 lb per sq. in.
Brinell	Rockwell C	Rockwell B	Shore Scleroscope	tensile strength	Brinell	Rockwell C	Rockwell B	Shore Scleroscope	tensile strength
800	72	–	100	–	276	30	105	42	136
780	71	–	99	–	269	29	104	41	132
760	70	–	98	–	261	28	103	40	129
745	68	–	97	367	258	27	102	39	127
725	67	–	96	357	255	26	102	39	125
712	66	–	95	350	249	25	101	38	123
682	65	–	93	337	245	24	100	37	119
668	64	–	91	326	240	23	99	36	117
652	63	–	89	318	237	23	99	35	115
626	62	–	87	306	229	22	98	34	113
614	61	–	85	299	224	21	97	33	110
601	60	–	83	292	217	20	96	33	107
590	59	–	81	290	211	19	95	32	104
576	57	–	79	281	206	18	94	32	102
552	56	–	76	270	203	17	94	31	100
545	55	–	75	268	200	16	93	31	98
529	54	–	74	259	196	15	92	30	96
514	53	120	72	254	191	14	92	30	94
502	52	119	70	247	187	13	91	29	92
495	51	119	69	244	185	12	91	29	91
477	49	118	67	233	183	11	90	28	90
461	48	117	66	227	180	10	89	28	89
451	47	117	65	223	175	9	88	27	86
444	46	116	64	219	170	7	87	27	84
427	46	115	62	209	167	6	87	27	82
415	44	115	60	204	165	5	86	26	81
401	43	114	58	196	163	4	85	26	80
388	42	114	57	191	160	3	84	25	78
375	41	113	55	184	156	2	83	25	76
370	40	112	54	182	154	1	82	25	75
362	39	111	53	179	152	–	82	24	74
351	38	111	51	173	150	–	81	24	74
346	37	110	50	170	147	–	80	24	72
341	37	110	49	168	145	–	79	23	71
331	36	109	47	163	143	–	79	23	70
323	35	109	46	158	141	–	78	23	69
311	34	108	46	153	140	–	77	22	69
301	33	107	45	148	135	–	75	22	67
293	32	106	44	144	130	–	72	22	65
285	31	105	43	140	–	–	–	–	–

Technical Information

material number	DIN EN - D	AFNOR - F	BS - UK	JIS
0.6010	GG10	—	Grade 100	FC 100
0.6015	GG15	FGL 150	Grade 150	FC 150
0.6020	GG20	FGL 200	Grade 220	FC 200
0.6025	GG25	FGL 250	Grade 250, 260	FC 250
0.6030	GG30	FGL 300	Grade 300	FC 300
0.6035	GG35	FGL 350	Grade 350	FC 350
0.6655	—	L-NUC 15 6 2	F1	—
0.6656	—	L-NUC 15 6 3	F1	—
0.6660	—	L-NC 20 2	F2	—
0.6661	—	L-NC 20 3	F2	—
0.6676	—	L-NC 30 3	F3	—
0.7040	GGG40	FGS 400-15	Grade 420/12	FCD 400
0.7043	GGG40.3	FGS 370-17	Grade 370/12	FCD 370
0.7050	GGG50	FGS 500-7	Grade 500/7	FCD 500
0.7060	GGG60	FGS 600-3	Grade 600/3	FCD 600
0.7070	GGG70	FGS 700-2	Grade 700/2	FCD 700
0.7080	GGG80	FGS 800-2	Grade 800/2	FCD 800
0.7652	—	S-NM 13 7	S 6	—
0.7660	—	S-NC 20 2	S 2	—
0.7661	—	S-NC 20 3	S 2	—
0.7670	—	S-N 22	S 2 C	—
0.7673	—	S-NM 23 4	S 2 M	—
0.7676	—	S-NC 30 3	S 3	—
0.7677	—	S-NC 30 1	S 3	—
0.8035	GTW35	MB 35-7	W 35-04	FCMW 330
0.8038	—	MB 380-12	—	—
0.8040	GTW40	MB 400-5	W 40-05	FCMW 370
0.8045	GTW45	MB 450-7	W 45-07	FCMWP 440
0.8135	GTS35	MN 350-10	B 35-12	FCMB 340
0.8145	GTS45	MP 50-5	P 45-06	—
0.8155	GTS55	MP 60-3	P 55-04	—
0.8165	GTS65	—	P 65-02	FCMP 540
0.8170	GTS70	MP 70-2	P 70-02	FCMP 690
0.9620	X 260 NiCr 4-2	—	Grade 2 A	—
0.9625	X 330 NiCr 4-2	—	Grade 2 B	—
0.9630	300 CrNiSi 9-5-2	—	Grade 2 C, D, E	—
0.9635	300 CrMo 15-3	—	Grade 3 A, B	—
0.9640	300 CrMoNi 15-2-1	—	Grade 3 A, B	—
0.9645	260 CrMoNi 20-2-1	—	Grade 3 C	—
0.9650	G-X 260 Cr 27	—	Grade 3 D	—
0.9655	300 CrMo 27-1	—	Grade 3 E	—
1.0301	C 10	XC 10	045 M 10040 A 10	S 10 C
1.0401	C 15	XC 12, XC 18	080 M 15	S 15 C
1.0402	C 22	C 22, XC 18, XC 25	1 C 22, 070 M 20	S 20 C, S 2 C
1.0406	C 25	1 C 25	070 M 26	S 25 C
1.0501	C 35	XC 38, 1 C 35	080 M 36, 1 C 35	S 35 C
1.0503	C 45	1 C 45, XC 48 H 1	1 C 45, 080 M 46	S 45 C
1.0511	C 40	1 C 40, XC 42 H 1	080 M 40, 1 C 40	S 40 C
1.0528	C 30	—	1 C 30, XC 32	S 30 C
1.0535	C 55	1 C 55, XC 55 H 1	1 C 55, 070 M 55	S 55 C
1.0540	C 50	1 C 50	1 C 50, 080 M50	S 50 C
1.0570	S355J2G3	E 36-3, E 36-4	Fe 510 D1 FF, 50/35	SM 490 __, SM 520 B
1.0601	C 60	1 C 60, AF 70 C 55	1 C 60, 080 A 67	S 58 C
1.0715	9 SMn 28	S 250	080 M 15, 230 M 07	SUM 22
1.0718	9 SMnPb 28	S 250 Pb	—	SUM 22 L, SUM 23 L
1.0721	10 S 20	13 MF 4, 10 F 1	210 M 15	—
1.0722	10 SPb 20	CC 10 Pb, 10 PbF 2	—	SUM 12
1.0726	35 S 20	35 MF 6	212 M 36	SUM 41
1.0727	45 S 20	45 MF 61, 45 MF 4	212 M 36	SUM 42
1.0728	60 S 20	—	—	—
1.0736	9 SMn 36	S 300	240 M 07	SUM 25
1.0737	9 SMnPb 36	S 300 Pb	—	SUM 24 L
1.1121	Ck 10 (C 10 E)	XC 10	045 M 10, 040 A 10	S 9 Ck, S 10 C
1.1141	Ck 15 (C 15 E)	XC 12, XC 15	080 M 15, 040 A 15	S 15, S 15 Ck
1.1151	C 22 E	2 C 22, XC 18/25	055 M 15	S 20 C, S 20 Ck, S 22 C
1.1157	40 Mn 4	35 M 5, 40 M 5	150 M 36	—
1.1158	C 25 E	2 C 25, XC 25	070 M 26	S 25 C, S 28 C

UNI - I	UNE - E	AISI - US	condition	material group
G 10	FG 10	Class 20 B	U	15
G 15	FG 15	Class 25 B	U	15
G 20	FG 20	Class 30 B	U	16
G 25	FG 25	Class 40 B	U	16
G 30	FG 30	Class 45 B	U	16
G 35	FG 35	Class 50 B	U	16
—	—	—	GG/AU	17
—	—	—	GG/AU	17
—	—	—	GG/AU	17
—	—	—	GG/AU	18
—	—	—	GG/AU	31
GS 400-12	—	Grade 60-40-18	U	17
—	—	—	U	17
GS 500-7	—	Grade 65-45-12	U	17
GS 600-3	—	Grade 80-55-06	U	18
GS 700-2	—	Grade 100-70-03	U	18
GS 800-2	—	Grade 120-90-02	U	18
—	—	—	GGG/AU	17
—	—	—	GGG/AU	17
—	—	—	GGG/AU	18
—	—	—	GGG/AU	17
—	—	—	GGG/AU	17
—	—	—	GGG/AU	31
—	—	—	GGG/AU	31
—	—	—	G	20
W 38-12	—	—	G	19
W 40-05	—	—	G	19
W 45-07	—	—	G	19
B 35-10	Type A	Grade 22010, 32510	G	19
P 45-06	Type E	—	G	19
P 55-04	Type C	—	G	20
P 65-02	—	—	G	20
P 70-02	—	—	G	20
—	—	—	GO	40
—	—	—	GO	40
—	—	—	GO	40
—	—	—	GO	40
—	—	—	GO	40
—	—	—	GO	40
—	—	—	GO	40
—	—	—	GO	40
—	—	—	GO	40
C 10	F. 1511	1010	—	1
C 15, C 16	F. 111	1015	—	1
1 C 22, C 20, C 21	1 C 22, F. 112	1020, 1023	—	1
C 25, 1 C 25	—	1025	var ¹	2-3
C 35, 1 C 35	1 C 35, F. 113	1035	var ¹	2-3
C 45, 1 C 45	1 C 45, F. 114	1045	var ¹	2-3
1 C 40	1 C 40, F. 114.	1040	var ¹	2-3
1 C 30	1 C 30	1030	var ¹	2-3
C 55, 1 C 55	1 C 55	1055	var ¹	4-5
1 C 50	1 C 50	1050	var ¹	2-3
Fe 510 C FN	AE 355 D, Fe 510 D1 FF	—	—	2
C 60, 1 C 60	1 C 60	1060	var ¹	4-5
CF 9 SMn 28, CF 9 M 07	F. 2111	1213	1	—
CF 9 SMnPb 28	F. 2112	12 L 14, 12 L 13	—	1
CF 10 S 20	F. 2121	1102, 1108, 1109	—	1
CF 10 SPb 20	F. 2122	1108, 11 L 08	—	1
CF 35 SMn 10	F. 2131, F. 210.	1141, 1140	var ¹	2-3
CF 44 SMn 28	F. 2133	1146	var ¹	2-3
—	—	1151	var ¹	4-5
CF 9 SMn 36	F. 2113	1215	—	1
CF 9 SMnPb 36	F. 2114	12 L 14	—	1
C10, 2 C 10	F. 1510, C 10	1010	—	1
C 15, C 16	F. 1110, F. 1511	1015	—	1
C 20, C 25	F. 1120	1020, 1023	—	1
—	—	1035, 1041	var ¹	2-3
C 25	F. 1120	1025	var ¹	2-3

material number	DIN EN - D	AFNOR - F	BS - UK	JIS
1.1170	28 Mn 6	28 Mn 6, 35 M 5	28 Mn 6, 150 M 19	SMn 433
1.1178	C 30 E	—	2 C 30, XC 32	S 30 C
1.1181	C 35 E	2 C 35, XC 38 H 1	080 M 36	S 35 C
1.1183	Cf 35	XC 42 TS	080 A 35	S 35 C
1.1186	C 40 E	2 C 40, XC42 H 1	2 C 40, 080 M 40	S 40 C
1.1191	C 45 E	XC 48 H 1, 2 C 45	2 C 45, 080 M 46	S 45 C
1.1193	Cf 45	XC 42 TS	060 A 47	S 45 C
1.1203	C 55 E	2 C 55, XC 55 H 1	2 C 55, 070 M 55	S 55 C
1.1206	C 50 E	2 C 50	2 C 50, 080 M 50	S 50 C
1.1213	Cf 53	42 M 4 TS	060 A 57	S 50 C
1.1221	C 60 E	2 C 60	2 C 60, 060 A 62	S 58 C
1.2241	51 CrV 4	50 CV 4	735 A 51	SUP 10
1.2369	81 MoCrV 42-16	—	—	—
1.3505	100 Cr 6	100 C 6	535 A 99	SUJ 2
1.3520	100 CrMn 6	—	535 A 99	SUJ 3
1.3533	17 NiCrMo 14	16 NCD 13	—	—
1.3536	100 CrMo 7-3	—	—	—
1.3537	100 CrMo 7	100 CD 7	—	SUJ 4
1.3541	X 45 Cr 13	—	—	—
1.3543	X 102 CrMo 17	Z 100 CD 17	—	SUS440 C
1.3551	80 MoCrV 42-16	80 DCV 40	—	—
1.3553	X 82 WMoCrV 6-5-4	Z 85 WDCV 6	BM 2	SKH 51
1.3558	X 75 WCrV 18-4-1	—	BT 1	SKH 2
1.4000	X 6 Cr 13	Z 6 C 13	403 S 17	SUS 410 S
1.4002	X 6 CrAl 13	Z6 CA 13	405 S 17	SUS 405
1.4005	X 12 CrS 13	Z12 CF 13	416 S 21	SUS 416
1.4006	X 12 Cr 13 (X 10 Cr 13)	10 C 13, Z 12 C 13	410 S 21	SUS 410
1.4007	X 35 Cr 14	—	—	SUS 420
1.4016	X 6 Cr 17	Z 8 C 17	430 S 17	SUS 430
1.4021	X 20 Cr 13	Z 20 C 13	420 S 37	SUS 420
1.4024	X 15 Cr 13	—	403 S 17	—
1.4028	X 30 Cr 13	30 C 13, Z 33 C 13	420 S 45	SUS 420
1.4034	X 46 Cr 13	Z 40 C 14	420 S 45	SUS 420
1.4057	X 20 CrNi 17-2	Z 15 CN 16-02	431 S 29	SUS 431
1.4104	X 12 CrMoS 17	Z 10 CF 17	441 S 29	SUS 430 F
1.411	X 90 CrMoV 1	—	—	SUS 440 B
1.4113	X 6 CrMo 17-1	Z 8 CD 17-01	434 S 17	SUS 434
1.4125	X 105 CrMo 17	Z100 CD 17	—	SUS 440 C
1.4301	X 5 CrNi 18-10 (X 4 CrNi 18-10)	Z 6 CN 18-09	304 S 16	SUS 304
1.4303	X 5 CrNi 18-12 (X 4 CrNi 18-12)	Z 8 CN 18-12	305 S 19	—
1.4305	X 10 CrNiS 18-9	Z 10 CNF 18-09	303 S 21	SUS 303
1.4306	X 2 CrNi 19-11	Z 2 CN 18-10	304 S 11	SUS 304 L
1.4307	X 2 CrNi 18-9	Z 3 CN 18-10	304S11	SUS 304 L
1.4310	X 12 CrNi 17-7	Z 11 CN 18-08	301 S 21	SUS 301
1.4311	X 2 CrNiN 18-10	Z 3 CN 18-10 Az	304 S 61	SUS 304 LN
1.4362	X 2 CrNiN 23-4	Z 3 CN 23-04 Az	—	—
1.4372	X 12 CrMnNiN 17-7-5	Z 12 CMN 17-07 Az	—	—
1.4401	X 5 CrNiMo 17-12-2 (X 4 CrNiMo 17-12-2)	Z 6 CND 17-11	316 S 31	SUS 316
1.4404	X 2 CrNiMo 17-13-2 (X 2 CrNiMo 17-12-2)	Z 2 CND 17-12	316 S 11	SUS 316 L
1.4406	X 2 CrNiMoN 17-11-2 (X 2 CrNiMoN 17-11-2)	Z 2 CND 17-11 Az	316 S 62	SUS 316 LN
1.4410	X 2 CrNiMoN 25-7-4	Z 3 CND 25-06 Az	—	—
1.4418	X 4 CrNiMo 16-5	Z 6 CND 16 05 1	—	—
1.4429	X 2 CrNiMoN 17-13-3	Z 2 CND 17-13 Az	—	SUS 316 LN
1.4432	X 2 CrNiMo 17-12-3	Z 3 CND 17-12-03	316 S 13	SUS 316 L
1.4434	X 2 CrNiMoN 17-12-3	Z 3 CND 19-14 Az	—	SUS 317 LN
1.4435	X 2 CrNiMo 18-14-3	Z 2 CND 17-13	316 S 13	SUS 316 L
1.4436	X 5 CrNiMo 17-13-3 (X 4 CrNiMo 17-13-3)	Z 6 CND 17-12	316 S 33	SUS 316
1.4438	X 2 CrNiMo 18-16-4 (X 2 CrNiMo 18-15-4)	Z 2 CND 19-15	317 S 12	SUS 317 L
1.4439	X 2 CrNiMoN 17-13-5	3 CND 18-14-05 Az	—	—
1.4441	X 2 CrNiMo 18-15-3	Z 3 CND 18-14-13	316 S 13	—
1.4460	X 4 CrNiMoN 27-5-2 (X 3 CrNiMoN 27-5-2)	25 CND 27-05 A2	—	SUS 329
1.4462	X 2 CrNiMoN 22-5-3	Z2 CND 22-05 Az	—	—
1.4466	X 1 CrNiMoN 25-22-2 (X 2 CrNiMoN 25-22-2)	—	—	—
1.4504	[X 8 CrNiAl 17-7]	Z 8 CNA 17-07	316 S 111	17-7 PH
1.4510	X 6 CrTi 17 (X 3 CrTi 17)	Z 8 CT 17	—	—
1.4512	X 6 CrTi 12 (X 2 CrTi 12)	Z 3 CT 12	409 S 19	SUH 409
1.4532	X 7 CrNiMoAl 15-7 (X 8 CrNiMoAl 15-7-2)	Z 8 CNDA 15-7	—	—
1.4540	X 4 CrNiCuNb 16-4	Z 6 CNU 17-04	—	SUS 630
1.4541	X 6 CrNiTi 18-10	Z 6 CNT 18-10	321 S 12	SUS 321

UNI - I	UNE - E	AISI - US	condition	material group
28 Mn 6	28 Mn 6, 36 Mn	1330	var ¹	2-3
2 C 30, 080 M 30	2 C 30	—	var ¹	2-3
2 C 35, C 35	2 C 35, C 35 k	—	var ¹	2-3
C 36	C 38 k	1035	var ¹	2-3
2 C 40, C40	2 C 40, C 42 k	1040	var ¹	2-3
2 C 45, C 45	2 C 45, C 45 k	—	var ¹	2-3
C 43	C 42 k	1045	var ¹	2-3
2 C 55, C 55	2 C 55, C 55 k	—	var ¹	4-5
2 C 50, C 50	2 C 50, C 55 k	1050	var ¹	2-3
C 48	C 48 k	1050	var ¹	2-3
2 C 60, C 60	2 C 60	—	var ¹	4-5
50 CrV 4	F.1430	6150	var ¹	6-9
—	—	613	var ¹	10-11
100 Cr 6	—	52100	var ¹	6-9
100 CrMo 7	—	A 485/2	var ¹	6-9
—	—	E-3310	var ¹	6-9
—	—	5120	var ¹	6-9
100 CrMo 7	—	A 485/3	var ¹	6-9
X 45 Cr 13	—	—	var ¹	10-11
X 105 CrMo 17	—	440 C	var ¹	10-11
X 80 MoCrV 44	—	—	var ¹	10-11
X 82 WMoV 6 5	—	M2 regular C	var ¹	10-11
X 75 WCrV 18	—	T 1	var ¹	10-11
X5 Cr 13	—	410 S	FE	12
X 6 CrA 13	—	405	FE	12
X 12 CrS 13	—	416	FE	12
X 12 Cr 13	—	410	MA	12
—	—	420	MA	12
X 8 Cr 17	—	430	FE	12
X 20 Cr 13	—	420	MA	12
—	—	403	MA	12
—	—	420	MA	13.1
—	—	420	MA	13.1
X 15 CrNi 16	—	431	MA	13.1
X 10 CrS 17	—	430 F	MA	13.1
—	—	440 B	MA	13.1
X 8 CrMo 17	—	434	MA	13.1
—	—	440 C	MA	13.1
X 5 CrNi 18 10	—	304	AU	14.1
X 8 CrNi 18 12	—	305	AU	14.1
X 10 CrNiS 18 09	—	303	AU	14.1
X 2 CrNi 18 11	—	304 L	AU	14.1
—	—	304 L	AU	14.1
X 12 CrNi 17 07	—	301	AU	14.1
—	—	304 LN	AU	14.1
—	—	—	DU	14.2
—	—	201	DU	14.2
X 5 CrNiMo 17 12	—	316	AU	14.1
X 2 CrNiMo 17 12	—	316 L	AU	14.1
X 2 CrNiMoN	—	316 LN	AU	14.1
—	—	—	DU	14.2
—	—	—	MA	13.1
X 2 CrNiMoN 17 13	—	316 LN	AU	14.1
—	—	316 L	AU	14.1
—	—	317 LN	AU	14.1
X 2 CrNiMo 17 13	—	316 L	AU	14.1
X 5 CrNiMo 17 13	—	316	AU	14.1
X 2 CrNiMo 18 16	—	317 L	AU	14.1
—	—	—	AU	14.1
—	—	316 LVM	AU	14.1
—	—	329	DU	14.2
—	—	2205	DU	14.2
—	—	310 mod	S-AU	14.3
X 2 CrNiMo 17.12	—	17-7 PH	AU-PH	14.4
—	—	439, 430 Ti	FE	12
—	—	409	FE	12
—	—	632	AU	14.1
—	—	630	AU	14.1
X 6 CrNiTi 18 11	—	321	AU	14.1

material number	DIN EN - D	AFNOR - F	BS - UK	JIS
1.4542	X 5 CrNiCuNb 17-4	Z 6 CNU 17-04, Z 7 CNNb 17-07	—	SUS 630
1.4548	X 5 CrNiCuNb 17-4-4	Z 7 CNNb 17-07	—	SUS 630
1.4550	X 6 CrNiNb 18-10	Z 6 CNNb 18-10	347 S 17	SUS 347
1.4552	GX 5 CrNiNb 19-10 (G-X 5 CrNiNb 18-9)	Z 6 CNNb 18.10 M	347 C 17	SCS 21
1.4567	X 3 CrNiCu 18-9 (X 3 CrNiCu 18-9-4)	Z 3 CNU 18-09 FF	—	—
1.4568	X 7 CrNiAl 17-7	Z 8 CNA 17-7	316 S 111	17-7 PH
1.4571	X 6 CrNiMoTi 17-12-2	Z 6 CNDT 17-12	320 S 31	SUS 316 Ti
1.4573	X 10 CrNiMoTi 18-12	Z 6 CNDT 17-13	320 S 33	—
1.4580	X 6 CrNiMoNb 17-12-2	Z 6 CNDNb 17-12	—	—
1.4581	GX 5 CrNiMoNb 19-11 (G-X 5 CrNiMoNb 18-10)	Z 4 CNDNb 18.12 M	318 C 17	SCS 22
1.4583	X 10 CrNiMoNb 18-12	Z 6 CNDNb 17-13	—	—
1.4713	X 10 CrAl 7	Z 8 CA 7	—	—
1.4718	X 45 CrSi 9-3	Z 45 CS 9	401 S 45	SUH 1
1.4720	X 7 CrTi 12	Z 6 CT 12	—	SUS 409
1.4724	X 10 CrAl 13	Z 10 C 13	403 S 17	SUS 405
1.4731	X 40 CrSiMo 10-2	Z 40 CSD 10	—	SUH 3
1.4742	X 10 CrAl 18	Z 12 CAS 18, Z 10 CAS 18	430 S 17	SUS 430
1.4748	X 85 CrMoV 18-2	Z 85 CDV 18.02	—	—
1.4762	X 10 CrAl 24	Z10 CAS 24	—	SCH446
1.4821	X 20 CrNiSi 25-4	Z 20 CNS 25.04	—	—
1.4828	X 15 CrNiSi 20-12 Z	15 CN 23-13, Z 15 CNS 20-12	309 S 24	SUS 309 S
1.4833	X 7 CrNi 23-14	Z 15 CN 23.13, Z 15 CN 24.13	309 S 16	SUH 309
1.4841	X 15 CrNiSi 25-20	Z 15 CNS 25-20, Z 12 CNS 25-20	310 S 24	SUS310
1.4845	X 12 CrNi 25-21	Z 12 CN 26.21, Z 12 CN 25.20	310 S 31	SUH 310
1.4864	X 12 NiCrSi 36-16	Z 20 NCS 33.16, Z 12 NCS 35.16	—	SUH 330
1.4871	X 53 CrMnNiN 21-9	Z 53 CMN 21.09 Az	349 S 54	SUH 35
1.4873	X 45 CrNiW 18-9	Z 35 CNWS 14.14	331 S 40	SUH 31
1.4875	X 55 CrMnNiN 20-8	Z 55 CMN 20.08 Az	—	—
1.4876	X 10 NiCrAlTi 32-20	Z 8 NC 33.21, Z 8 NC 32.21	—	—
1.487	X 12 CrNiTi 18-9	Z 6 CNT 18.12, Z 6 CNT 18.10	321 S 12, 321 S 51	SUS 321
1.4948	X 6 CrNi 18-11	Z 6 CN 18-09	304 S 51	SUS304
1.5023	38 Si 7	46 S 7	—	—
1.5092	60 SiCr 7	61 SC 7	251 A 61	SUP 7
1.5919	15 CrNi 6	16 NC 6	815 M 17	SNC 15
1.5920	18 CrNi 8	20 NC 6	822 M17	SNCM 616
1.6511	36 CrNiMo 4	36 CrNiMo 4	36 CrNiMo 4, 817 A 37	SNCM 439
1.6580	30 CrNiMo 8	30 CrNiMo 8, 30 CND 8	30 CrNiMo 8	SNCM 630
1.6582	34 CrNiMo 6	34 CrNiMo 6	34 CrNiMo 6, 817 M 40	SNCM 447
1.6587	17 CrNiMo 6	18 NCD 6	820 M 17	SNCM 815
1.7003	38 Cr 2	38 Cr 2	38 Cr 2, 120 M 36	SMn 438
1.7003	46 Cr 2	46 Cr 2, 42 C 2	46 Cr 2, 605 M 36	SMn 443
1.7030	28 Cr 4	30 CD 4	530 A 30	—
1.7033	34 Cr 4	34 Cr 4, 32 C 4	34 Cr 4, 530 A 32	SCr 430
1.7034	37 Cr 4	37 Cr 4, 38 C 4	37 Cr 4, 530 A 36	SCr 435
1.7035	41 Cr 4	41 Cr 4, 42 C 4	41 Cr 4, 530 M 40	41 Cr 4SCr 440
1.7037	34 CrS 4	34 CrS 4, 32 C 4	34 CrS 4, 530 A 32	—
1.7038	37 CrS 4	37 CrS 4, 38 C 4	37 CrS 4, 530 A 36	—
1.7039	41 CrS 4	41 CrS 4, 42 C 4	41 CrS 4, 530 M 40	—
1.7102	54 SiCr 6	51 S 7	251 A 58	SKD12
1.7131	16 MnCr 5	16 MC 5	527 M 17	—
1.7147	20 MnCr 5	20 MC 5	—	SMnC 420
1.7176	55 Cr 3	55 C 3	525 A 60	SUP 9
1.7213	25 CrMoS 4	25 CrMoS 4, 25 CD 4	25 CrMoS 4, 708 A 25	—
1.7218	25 CrMo 4	25 CrMo 4, 25 CD 4	25 CrMo 4, 708 A 25	SCM 430
1.7220	34 CrMo 4	34 CrMo 4, 34 CD 4	34 CrMo 4, 708 A 37	SCM 435
1.7225	42 CrMo 4	42 CrMo 4, 42 CD 4	42 CrMo 4, 708 M 40	SCM440
1.7226	34 CrMoS 4	34 CrMoS 4, 34 CD 4	34 CrMoS 4708 A 37	—
1.7227	42 CrMoS 4	42 CrMoS 4, 42 CD 4	42 CrMoS 4, 708 M 40	—
1.7228	50 CrMo 4	50 CrMo 4	50 CrMo 4, 708 A 47	—
1.7321	20 MoCr 4	—	805 M 20	SNCM 220
1.7325	25 MoCr 4	18 CD 4	—	—
1.7361	32 CrMo 12	30 CD 12	722 M 24	—
1.7701	51 CrMoV 4	51 CDV 4	—	SUP 13
1.8159	51 CrV 4	51 CrV 4, 50 CV 4	51 CrV 4	SUP 10
1.8507	34 CrAlMo 5	—	—	—
1.8509	41 CrAlMo 7	40 CAD 6 12	905 M 39	—
1.8515	31 CrMo 12	30 CD 12	722 M 24	—
1.8523	39 CrMoV 13-9	—	897 M 39	—
1.8550	34 CrAlNi 7	—	—	—

UNI - I	UNE - E	AISI - US	condition	material group
—	—	630	AU-PH	14.4
—	—	630	AU-PH	14.4
X 8 CrNiNb 18 11	—	347	AU	14.1
—	—	—	AU	14.1
—	—	302 HQ	AU	14.1
X 2 CrNiMo 17.12	—	17-07 PH	AU-PH	14.4
X 6 CrNiMoTi 17 12	—	316 Ti	AU	14.1
X 6 CrNiMoTi 17 12	—	(316 Ti)	AU	14.1
X 6 CrNiMoNb 17 12	—	316 Cb	AU	14.1
GX 6 CrNiMoNb 20 11	—	—	AU	14.1
X 6 CrNiMoNb 17 13	—	316 Cb, (318)	AU	14.1
—	—	—	FE	10-11
X 45 CS 8	—	HNV 3	—	31-32
—	—	409	—	31-32
X 10 CrAl 12	X 10 CrAl 13	405	FE	12
—	—	—	—	12
X 8 Cr 17	X 10 CrAl 18	430	—	12
—	—	—	—	31-32
X 16 Cr 26	—	446	—	12
—	X 15 CrNiSi 25 04	—	DU	14.2
—	X 10 CrNiSi 20	309	AU	14.1
X 6 CrNi 23 14	—	309 S	AU	14.1
X 16 CrNiSi 25 20	X 15 CrNiSi 25 20	310	AU	14.1
—	—	310 S	AU	14.1
—	X 12 NiCrSi 36 16	330	—	31-32
—	—	EV 8	—	10
X 45 CrNiW 18 9	—	EV 9	—	31-32
—	—	EV 11	—	31-32
—	X 10 NiCrAlTi 32 20	—	S-AU	31-32
X 6 CrNiTi 18 11	—	321, 321 H	—	31-32
—	—	304H	AU	14.1
—	—	—	var ¹	6-9
60 SiCr 8	F.1442	9260	var ¹	6-9
—	F.1581	4320	var ¹	6-9
16 NiCrMo 12	F.1525	—	var ¹	6-9
36 CrNiMo 4, 39 NiCrMo 3 1	36 CrNiMo 4, 40 NiCrMo 4	—	var ¹	6-9
SNCM 630	30 CrNiMo 8, 32 NiCrMo 16	—	var ¹	6-9
34 CrNiMo 6	34 CrNiMo 6	4340	var ¹	6-9
18 NiCrMo 12	F.1560	—	var ¹	6-9
38 Cr 2	38 Cr 2, 38 Cr 3	—	var ¹	6-9
46 Cr 2	46 Cr 2	—	var ¹	6-9
—	—	—	var ¹	6-9
34 Cr 4	34 Cr 4	5132	var ¹	6-9
37 Cr 4	37 Cr 4, 38 Cr 4	5135	var ¹	6-9
41 Cr 4	41 Cr 4, 42 Cr 4	5140	var ¹	6-9
34 CrS 4	34 CrS 4	—	var ¹	6-9
37 CrS 4	37 Cr 4, 38 Cr 4-1	—	var ¹	6-9
41 CrS 4	41 CrS 4, 42 Cr 4-1	—	var ¹	6-9
48 Si 7	F.1450	9260	var ¹	6-9
16 MnCr 5	F.1516	—	var ¹	6-9
20 MnCr 5	F.1523	—	var ¹	6-9
55 Cr 3	—	5155	var ¹	6-9
25 CrMoS 4, 25 CrMo 4	25 CrMoS 4, 30 CrMo 4-1	—	var ¹	6-9
25 CrMo 4	25 CrMo 4, 30 CrMo 4	4130	var ¹	6-9
34 CrMo 4, 35 CrMo 4	34 CrMo 4, 35 CrMo 4	4137	var ¹	6-9
42 CrMo 4	42 CrMo 4	—	var ¹	6-9
34 CrMoS 4, 35 CrMo 4	34 CrMoS 4, 35 CrMo 4	—	var ¹	6-9
42 CrMoS 4, 42 CrMo 4	42 CrMoS 4, 40 CrMo 4-1	—	var ¹	6-9
50 CrMo 4	50 CrMo 4	4150	var ¹	6-9
16 NiCrMo 2	F.1523	8620	var ¹	6-9
20 NiCrMo 2	—	8625	var ¹	6-9
—	—	—	var ¹	6-9
51 CrMoV 4	—	—	var ¹	6-9
51 CrV 4, 50 CrV 4	51 CrV 4	6150	var ¹	6-9
—	35 CrAlMo 5	A 355/D	var ¹	6-9
41 CrAlMo 7	41 CrAlMo 7	A 355/A	var ¹	6-9
31 CrMo 12	31 CrMo 12	—	var ¹	6-9
36 CrMoV 12	—	—	var ¹	6-9
—	—	A 355/C	var ¹	6-9

WIDIA-GTD™ Lightning™ Service

Rely on the WIDIA™ Lightning Service program to deliver the special taps you need, when and where you need them. Within minutes, we can quote, process, and release your order to the factory.

Lightning Service



Features and Benefits

- Non-standard tap sizes, pitches, PDs, coatings, etc.
- Special taps can be used for tapping steel, cast iron, aluminum, or brass.
- Custom-ordered taps can be designed to thread INCONEL®, titanium, and high-temp alloys.
- Always accurate thread pitch diameters and gage fits.
- Select products available for shipping within 24 hours.

LIGHTNING SERVICE
24 HOUR
SHIPPING

How to Order Special Taps

WIDIA™ leads the industry in quoting technology. Experienced quotation specialists and product engineers use in-house designed software to generate a quote from a customer inquiry and design cutting tools with the requested features, modifications, options, and surface treatments.

Use the following outline when selecting a tap:

1. Determine the tap that meets your cutting tool needs. For assistance, consult the Tap Selection Guide on pages V2–V17.
2. If the style, size, and/or quantity is not listed, consult customer service for a factory quote. WIDIA is fully equipped and ready to design your tool to your unique specifications.

Please use the following guidelines when placing an order:

1. Tap style and required quantity.
2. Catalog number.
3. Size and pitch (nominal diameter and threads per inch or mm pitch).
4. Chamfer (taper, plug, modified bottoming, or bottoming).
5. Surface treatments.
6. Additional features or options.

NOTE: If you do not specify the pitch, number of flutes, and/or chamfer, standard specifications will be applied and shipped uncoated.

Any additional information, such as material to be tapped, type of hole, and any general dimensions, such as overall length and shank diameter, will ensure a correct tap for your application.

Delivery Matrix

■ Surface Treatments

treatment	lead time	price
TiN – Titanium Nitride	3 days	consult customer service
Steam Oxide	2 days	N/C
Nitride	2 days	N/C
Steam Oxide/Nitride	2 days	N/C
TiCN – Titanium Carbonitride	1 week	consult customer service
TiAlN – Titanium Aluminum Nitride	2 weeks	consult customer service
CrN – Chromium Nitride	2 weeks	consult customer service

NOTE: Add to lead time designated for special taps.

■ Common Special Taps and Special Taps from Blanks

sizes	max quantity	lead time
up to 13/16", M20	72 pcs.	1 day
7/8–1", M22–M25	24 pcs.	1 day
1-1/16–2", M27–M48	12 pcs.	1 day
2-1/8–2-1/2", M56	6 pcs.	1 day
larger than 2-1/2"	2 pcs.	1 day
Rp (BSPP), Rc (BSPT), G (BSPF)	47 pcs.	3 days

NOTE: For orders greater than specified maximum quantity, consult customer service.

■ Additional Features and Options

feature/option	lead time
controlled root (minor diameter ±.001")	no additional time
double lead (except form taps)	1 day
triple lead	1 day
interrupted threads, taper or straight, odd number	1 day
external centers removed	no additional time
special marking	no additional time
special VariTap, EM-NI, & EM-TI Taps	2 weeks
STI taps	1 day

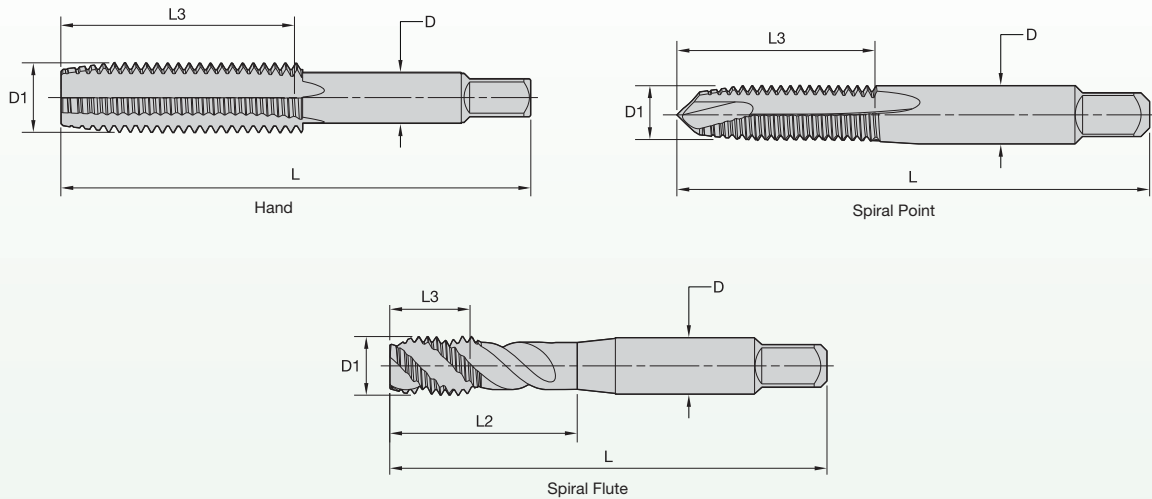
NOTE: Add to lead time designated for special taps.

■ Coating Recommendation Chart

- first choice
- alternate choice

material group	oxide	nitride	TiN	TiCN	TiAlN	CrN
P	○		○	●	○	
M	○		○	○	○	○
K	○	○	○	●	○	
N		○	○	○		
S		○	○	○	●	○
H						
speed (SFM) increase	0%	0%	50%	50%	100%	0%

Common Specials • HSS



style	H-limit	flutes	uncoated taper	uncoated plug	uncoated bottom	L	L3	L2	D
#2 - 56 NC									
Hand	H4	2	-	26002	26003	1.75	0.38	-	0.141
Spiral-Point Gun	H3	2	-	26000	-	1.75	0.38	-	0.141
Spiral-Point Gun	H4	2	-	26004	-	1.75	0.38	-	0.141
Spiral-Point Gun	H5	2	-	26005	-	1.75	0.38	-	0.141
#4 - 32 NS									
Hand	H2	3	-	26008	26009	1.75	0.38	-	0.141
#4 - 40 NC									
Hand	H3	3	-	26017	26018	1.93	0.56	-	0.141
Spiral-Point Gun	H3	2	-	26019	-	1.93	0.56	-	0.141
+0.003 Spiral-Point Gun	H7	2	-	26020	-	1.93	0.56	-	0.141
Fast Spiral-Flute	H3	2	-	26010	-	1.93	0.56	-	0.141
#5 - 40 NC									
Spiral-Point Gun	H5	2	-	26029	-	1.93	0.63	-	0.141
#6 - 32 NC									
Hand	H3	3	-	26035	26036	2.00	0.69	-	0.141
+0.003 Hand	H7	3	-	26039	26040	2.00	0.69	-	0.141
+0.005 Hand	H11	3	-	26043	26044	2.00	0.69	-	0.141
Spiral-Point Gun	H5	2	-	26037	-	2.00	0.69	-	0.141
+0.005 Spiral-Point Gun	H11	2	-	27295	-	2.00	0.69	-	0.141
#6 - 40 NF									
Spiral-Point Gun	H3	2	-	27299	-	2.00	0.69	-	0.141
#6 - 48 NS									
Hand	H2	3	-	27301	27302	2.00	0.69	-	0.141
Spiral-Point Gun	H2	2	-	27299	-	2.00	0.69	-	0.141
#8 - 24 NS									
Hand	H3	4	-	27305	27306	2.13	0.75	-	0.168
#8 - 32 NC									
Hand	H5	4	-	27312	27313	2.13	0.75	-	0.168
+0.003 Hand	H7	4	-	-	27316	-	-	-	-
+0.005 Hand	H11	4	-	27318	27319	2.13	0.75	-	0.168
Spiral-Point Gun	H5	2	-	27314	-	2.13	0.75	-	0.168
+0.005 Spiral-Point Gun	H11	2	-	27320	-	2.13	0.75	-	0.168
#8 - 40 NS									
Hand	H2	4	-	27322	27323	2.13	0.75	-	0.168

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Common Specials • HSS

style	H-limit	flutes	uncoated taper	uncoated plug	uncoated bottom	L	L3	L2	D
#10 - 24 NC									
Hand	H5	4	-	27330	27331	2.38	0.94	-	0.190
+ .003 Hand	H7	4	-	27334	27335	2.38	0.94	-	0.190
+ .005 Hand	H11	4	-	27337	27338	2.38	0.94	-	0.190
Spiral-Point Gun	H5	2	-	27332	-	2.38	0.94	-	0.190
+ .005 Spiral-Point Gun	H11	2	-	27339	-	2.38	0.94	-	0.190
#10 - 28 NS									
Hand	H3	4	-	27341	27342	2.38	0.94	-	0.190
#10 - 30 NS									
Hand	H3	4	-	26045	26046	2.38	0.88	-	0.190
#10 - 32 NF									
Hand	H5	4	-	26050	26051	2.38	0.88	-	0.190
+ .003 Hand	H7	4	-	26054	26055	2.38	0.88	-	0.190
+ .005 Hand	H11	4	-	26057	26058	2.38	0.88	-	0.190
Spiral-Point Gun	H4	2	-	26048	-	2.38	0.88	-	0.190
Spiral-Point Gun	H5	2	-	26052	-	2.38	0.88	-	0.190
+ .005 Spiral-Point Gun	H11	2	-	26059	-	2.38	0.88	-	0.190
#10 - 36 NS									
Hand	H2	4	-	26061	26062	2.38	0.88	-	0.190
#10 - 40 NF									
Hand	H2	4	-	26064	26065	2.38	0.88	-	0.190
Spiral-Point Gun	H2	2	-	26066	-	2.38	0.88	-	0.190
.210 - 36 NS									
Hand	H2	4	-	-	26069	2.50	0.94	-	0.220
#12 - 24 NC									
+ .005 Hand	H11	4	-	27609	27610	2.38	0.94	-	0.220
#12 - 28 NF									
+ .005 Hand	H11	4	27612	27613	27614	2.38	0.94	-	0.220
#12 - 32 NF									
Hand	H3	4	26076	26077	26078	2.38	0.94	-	0.220
#12 - 36 NS									
Hand	H2	4	26080	26081	26082	2.38	0.94	-	0.220
#14 - 20 NS									
Hand	H3	4	-	26084	26085	2.50	0.94	-	0.255
#14 - 24 NS									
Hand	H3	4	-	26087	26088	2.50	0.94	-	0.255
1/4 - 20 NC									
+ .003 Hand	H7	4	-	26093	26094	2.50	1.00	-	0.255
+ .005 Hand	H11	4	27616	-	26096	2.50	1.00	-	0.255
+ .003 Spiral-Point Gun	H3	2	-	26095	-	2.50	1.00	-	0.255
Fast Spiral-Flute	H5	3	-	26089	-	2.50	0.63	1.00	0.255
1/4 - 24 NS									
Hand	H3	4	26097	26098	26099	2.50	1.00	-	0.255
1/4 - 27 NS									
Hand	H3	4	-	26102	26103	2.50	1.00	-	0.255

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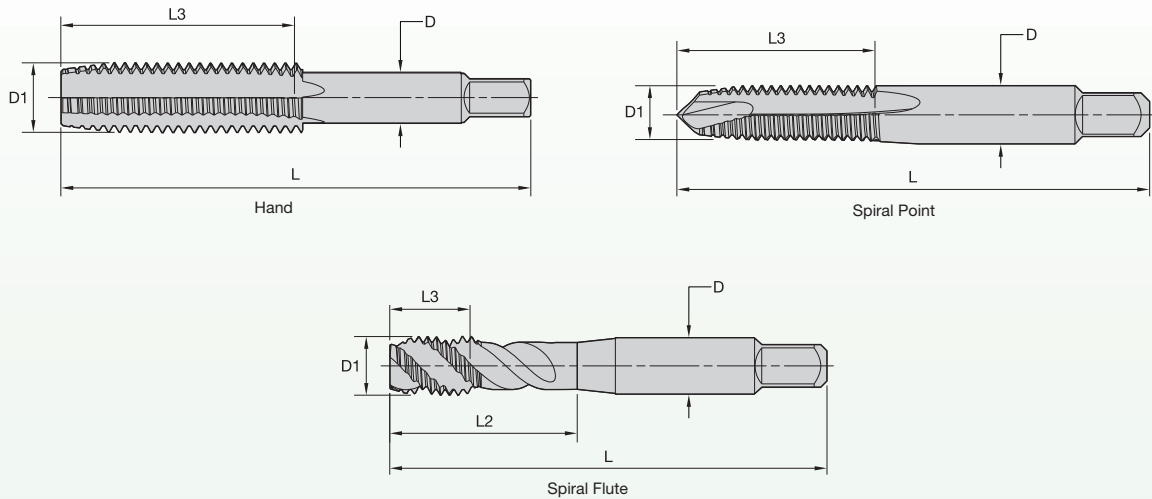
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6	8
9	11
12	23
24	47
48	72

LIGHTNING SERVICE
24 HOUR
SHIPPING

Lightning Service

(continued)

Common Specials • HSS



style	H-limit	flutes	uncoated taper	uncoated plug	uncoated bottom	L	L3	L2	D
1/4 - 28 NF									
Hand	H5	4	-	26106	26107	2.50	1.00	-	0.255
+0.003 Hand	H7	4	-	26110	26111	2.50	1.00	-	0.255
+0.005 Hand	H11	4	-	26113	26114	2.50	1.00	-	0.255
Spiral-Point Gun	H5	2	-	26108	-	2.50	1.00	-	0.255
+0.003 Spiral-Point Gun	H7	2	-	26112	-	2.50	1.00	-	0.255
+0.005 Spiral-Point Gun	H11	2	-	26115	-	2.50	1.00	-	0.255
1/4 - 32 NF									
Hand	H3	4	26116	26117	26118	2.50	1.00	-	0.255
Hand	H5	4	-	26124	26125	2.50	1.00	-	0.255
Spiral-Point Gun	H3	2	-	26122	-	2.50	1.00	-	0.255
1/4 - 36 NS									
Hand	H2	4	-	26127	26128	2.50	1.00	-	0.255
Hand	H3	4	-	26131	26132	2.50	1.00	-	0.255
1/4 - 40 NS									
Hand	H2	4	26134	26135	26136	2.50	1.00	-	0.255
Hand	H3	4	-	26138	26139	2.50	1.00	-	0.255
1/4 - 48 NS									
Hand	H2	4	28393	28394	28395	2.50	1.00	-	0.255
Hand	H3	4	-	26138	26139	2.50	1.00	-	0.255
5/16 - 18 NC									
+0.003 Hand	H7	4	-	26142	26143	2.72	1.13	-	0.318
+0.005 Hand	H11	4	-	-	26145	2.72	1.13	-	0.318
5/16 - 20 NS									
Hand	H3	4	-	26147	26148	2.72	1.13	-	0.318
5/16 - 24 NF									
Hand	H5	4	-	26151	26152	2.72	1.13	-	0.318
Hand	H6	4	-	26155	26156	2.72	1.13	-	0.318
+0.005 Hand	H11	4	-	26157	26158	2.72	1.13	-	0.318
Spiral-Point Gun	H5	2	-	26153	-	2.72	1.13	-	0.318
+0.005 Spiral-Point Gun	H11	2	-	26159	-	2.72	1.13	-	0.318
5/16 - 27 NS									
Hand	H3	4	-	26161	26162	2.72	1.13	-	0.318
5/16 - 28 NS									
Hand	H3	4	-	26164	26165	2.72	1.13	-	0.318

(continued)

(continued)

Common Specials • HSS

style	H-limit	flutes	uncoated taper	uncoated plug	uncoated bottom	L	L3	L2	D
5/16 - 32 NEF									
Hand	H3	4	-	26167	26168	2.72	1.13	-	0.318
Hand	H5	4	-	26171	26172	2.72	1.13	-	0.318
Spiral-Point Gun	H3	2	-	26169	-	2.72	1.13	-	0.318
5/16 - 40 NS									
Hand	H2	4	-	26174	26175	2.72	1.13	-	0.318
3/8 - 16 NC									
+.003 Hand	H7	4	-	26179	26180	2.72	1.13	-	0.318
+.005 Hand	H11	4	-	-	26182	2.72	1.13	-	0.318
Spiral-Point Gun	H3	2	-	26177	-	2.72	1.13	-	0.318
3/8 - 18 NS									
Hand	H3	4	-	26184	26185	2.72	1.13	-	0.318
3/8 - 20 NS									
Hand	H3	4	-	26187	26188	2.72	1.13	-	0.318
3/8 - 24 NC									
Hand	H5	4	-	26193	26194	2.72	1.13	-	0.318
+.003 Hand	H7	4	-	26197	26198	2.72	1.13	-	0.318
+.005 Hand	H11	4	-	26200	26201	2.72	1.13	-	0.318
Spiral-Point Gun	H5	2	-	26195	-	2.72	1.13	-	0.318
+.005 Spiral-Point Gun	H11	2	-	26202	-	2.72	1.13	-	0.318
Fast Spiral-Flute	H5	3	-	26189	-	2.72	0.73	1.39	0.318
3/8 - 27 NS									
Hand	H3	4	-	26205	26206	2.72	1.13	-	0.318
3/8 - 28 NS									
Hand	H3	4	-	26208	26209	2.72	1.13	-	0.318
3/8 - 32 NEF									
Hand	H3	4	-	26211	26212	2.72	1.13	-	0.318
Hand	H5	4	-	26215	26216	2.72	1.13	-	0.318
3/8 - 40 NS									
Hand	H2	4	-	26218	26219	2.72	1.13	-	0.318
Hand	H3	4	-	26220	26221	2.72	1.13	-	0.318
7/16 - 14 NC									
+.005 Hand	H11	4	-	26223	26224	3.16	1.44	-	0.323
+.005 Spiral-Point Gun	H11	3	-	26225	-	3.16	1.44	-	1.323
7/16 - 18 NS									
Hand	H3	4	-	26230	26231	3.16	1.44	-	0.323
7/16 - 20 NF									
Hand	H6	4	-	26233	26234	3.16	1.44	-	0.323
+.005 Hand	H11	4	-	26235	26236	3.16	1.44	-	0.323
7/16 - 24 NS									
Hand	H3	4	-	26239	26240	3.16	1.44	-	0.323
Hand	H5	4	-	26242	26243	3.16	1.44	-	0.323
7/16 - 27 NS									
Hand	H3	4	-	26245	26246	3.16	1.44	-	0.323
7/16 - 28 NEF									
Hand	H3	4	-	26248	26249	3.16	1.44	-	0.323
Hand	H5	4	-	26251	26252	3.16	1.44	-	0.323

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Pricing Based on Order Quantity

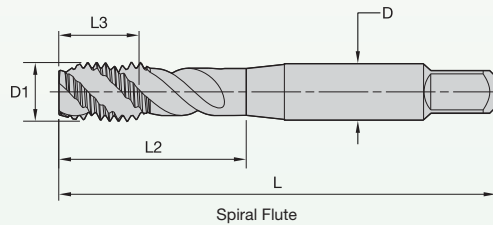
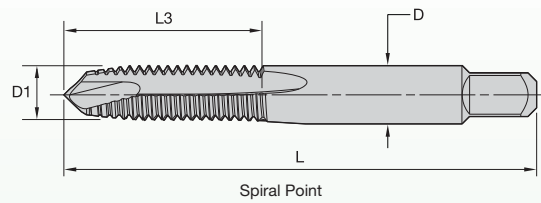
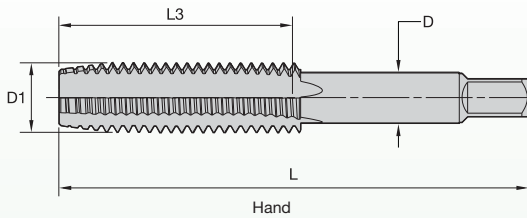
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12	23
24	47
48	72

LIGHTNING SERVICE
24 HOUR
SHIPPING

Lightning Service

(continued)

Common Specials • HSS



style	H-limit	flutes	uncoated taper	uncoated plug	uncoated bottom	L	L3	L2	D
7/16 - 32 NS									
Hand	H3	4	-	26254	26255	3.16	1.44	-	0.323
1/2 - 12 NS									
Hand	H3	4	-	26257	26258	3.38	1.66	-	0.367
1/2 - 13 NC									
+0.003 Hand	H7	4	-	26263	26264	3.38	1.66	-	0.367
+0.005 Hand	H11	4	-	26265	26266	3.38	1.66	-	0.367
1/2 - 14 NS									
Hand	H3	4	-	26269	26270	3.38	1.66	-	0.367
1/2 - 16 NS									
Hand	H3	4	-	26272	26273	3.38	1.66	-	0.367
1/2 - 18 NS									
Hand	H3	4	-	26275	26276	3.38	1.66	-	0.367
1/2 - 20 NF									
+0.003 Hand	H7	4	-	26279	26280	3.38	1.66	-	0.367
+0.005 Hand	H11	4	-	26281	26282	3.38	1.66	-	0.367
+0.005 Spiral-Point Gun	H11	3	-	26283	-	3.38	1.66	-	0.367
1/2 - 24 NS									
Hand	H3	4	-	26285	26286	3.38	1.66	-	0.367
1/2 - 27 NS									
Hand	H3	4	-	26288	26289	3.38	1.66	-	0.367
1/2 - 28 NEF									
Hand	H3	4	-	26291	26292	3.38	1.66	-	0.367
Hand	H5	4	-	26295	26296	3.38	1.66	-	0.367
1/2 - 32 NS									
Hand	H3	6	-	26298	26299	3.38	1.66	-	0.367
1/2 - 40 NS									
Hand	H2	6	-	26301	26302	3.38	1.66	-	0.367
9/16 - 12 NC									
Spiral-Point Gun	H3	3	-	28490	-	3.59	1.66	-	0.429
9/16 - 16 NS									
Hand	H3	4	-	26304	26305	3.59	1.66	-	0.429
9/16 - 18 NF									
Hand	H5	4	-	-	26307	3.59	1.66	-	0.429
+0.005 Hand	H11	4	-	26310	26311	3.59	1.66	-	0.429
Spiral-Point Gun	H5	3	-	26306	-	3.59	1.66	-	0.429

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(continued)

Common Specials • HSS

style	H-limit	flutes	uncoated taper	uncoated plug	uncoated bottom	L	L3	L2	D
9/16 - 20 NS									
Hand	H3	4	-	26314	26315	3.59	1.66	-	0.429
9/16 - 24 NEF									
Hand	H3	4	-	26317	26318	3.59	1.66	-	0.429
Hand	H5	4	-	26320	26321	3.59	1.66	-	0.429
9/16 - 27 NS									
Hand	H3	6	-	26323	26324	3.59	1.66	-	0.429
5/8 - 10 NS									
Hand	H3	4	-	26356	26327	3.81	1.81	-	0.480
5/8 - 11 NC									
+ .005 Hand	H11	4	27627	26331	26332	3.81	1.81	-	0.480
Spiral-Flute	H3	4	-	26328	-	3.81	1.81	-	0.480
5/8 - 12 NS									
Hand	H3	4	-	26335	26336	3.81	1.81	-	0.480
5/8 - 18 NF									
+ .003 Hand	H7	4	-	26347	26348	3.81	1.81	-	0.480
+ .005 Hand	H11	4	-	26349	26350	3.81	1.81	-	0.480
Spiral-Point Gun	H5	3	-	26345	-	3.81	1.81	-	0.480
Spiral-Flute	H5	4	-	26340	-	3.81	1.81	-	0.480
5/8 - 20 NS									
Hand	H3	4	-	26352	26353	3.81	1.81	-	0.480
5/8 - 24 NEF									
Hand	H3	6	-	26355	26356	3.81	1.81	-	0.480
Hand	H5	6	-	26358	26359	3.81	1.81	-	0.480
Spiral-Point Gun	H3	3	-	27630	-	3.81	1.81	-	0.480
5/8 - 28 NS									
Hand	H3	6	-	26364	26365	3.81	1.81	-	0.480
11/16 - 18 NS									
Hand	H3	4	-	26370	26371	4.03	1.81	-	0.542
11/16 - 20 NS									
Hand	H3	6	-	26373	26374	4.03	1.81	-	0.542
11/16 - 24 NEF									
Hand	H3	4	27361	27362	27631	4.03	1.81	-	0.542
Hand	H3	6	-	26376	26377	4.03	1.81	-	0.542
11/16 - 28 NS									
Hand	H3	6	-	26382	26383	4.03	1.81	-	0.542
3/4 - 10 NC									
Hand	H1	4	-	26387	26388	4.25	2.00	-	0.590
+ .005 Hand	H11	4	-	26389	26390	4.25	2.00	-	0.590
+ .005 Spiral-Point Gun	H11	3	-	26391	-	4.25	2.00	-	0.590
Spiral-Flute	H3	4	-	26384	-	4.25	2.00	-	0.590
3/4 - 12 NS									
Hand	H4	4	-	26393	26394	4.25	2.00	-	0.590
3/4 - 16 NF									
Hand	H8	4	-	26406	26407	4.25	2.00	-	0.590
+ .003 Hand	H7	4	-	26403	26404	4.25	2.00	-	0.590
+ .005 Hand	H11	4	-	26408	26409	4.25	2.00	-	0.590
Spiral-Point Gun	H3	3	-	26397	-	4.25	2.00	-	0.590
Spiral-Point Gun	H5	3	-	26398	-	4.25	2.00	-	0.590
Spiral-Flute	H3	4	-	26395	-	4.25	2.00	-	0.590

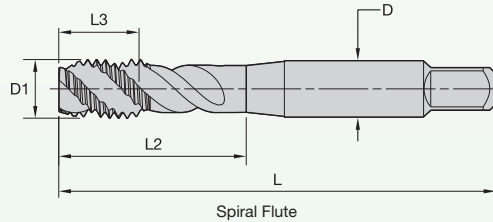
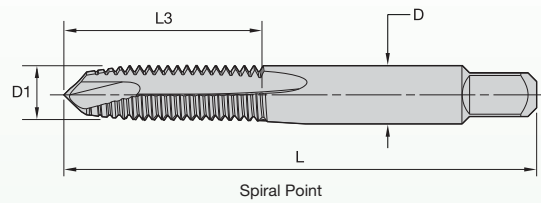
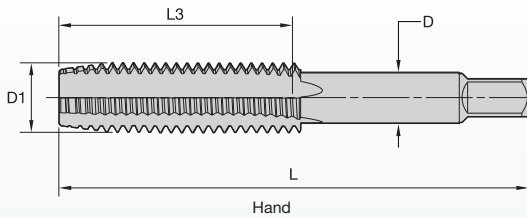
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Pricing Based on Order Quantity	
min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	47
48	72

LIGHTNING SERVICE
24 HOUR
SHIPPING

(continued)

Common Specials • HSS



style	H-limit	flutes	uncoated taper	uncoated plug	uncoated bottom	L	L3	L2	D
3/4 - 18 NS									
Hand	H3	4	-	26411	26412	4.25	2.00	-	0.590
3/4 - 20 NEF									
Hand	H3	6	-	26414	26415	4.25	2.00	-	0.590
Hand	H5	6	-	26417	26418	4.25	2.00	-	0.590
3/4 - 24 NS									
Hand	H3	6	-	26420	26421	4.25	2.00	-	0.590
3/4 - 27 NS									
Hand	H3	6	-	26423	26424	4.25	2.00	-	0.590
13/16 - 10 NS									
Hand	H4	4	-	26425	26426	4.47	2.00	-	0.652
13/16 - 12 NS									
Hand	H4	4	-	26428	26429	4.47	2.00	-	0.652
13/16 - 16 NS									
Hand	H3	4	-	26431	26432	4.47	2.00	-	0.652
13/16 - 18 NS									
Hand	H3	4	-	26434	26435	4.47	2.00	-	0.652
13/16 - 20 NEF									
Hand	H3	6	-	26437	26438	4.47	2.00	-	0.652
Hand	H5	6	-	26440	26441	4.47	2.00	-	0.652
13/16 - 24 NS									
Hand	H3	6	-	26443	26444	4.47	2.00	-	0.652
7/8 - 9 NC									
+.005 Hand	H11	4	-	26448	26449	4.69	2.22	-	0.697
Spiral-Point Gun	H4	3	-	26447	-	4.69	2.22	-	0.697
Spiral-Flute	H3	4	-	26445	-	4.69	2.22	-	0.697
7/8 - 10 NS									
Hand	H4	4	-	26451	26452	4.69	2.22	-	0.697
7/8 - 14 NF									
Hand	H5	4	-	26458	26459	4.69	2.22	-	0.697
Hand	H6	4	-	26461	26462	4.69	2.22	-	0.697
+.005 Hand	H11	4	27639	26463	26464	4.69	2.22	-	0.697
Spiral-Point Gun	H4	3	-	26456	-	4.69	2.22	-	0.697
7/8 - 16 NS									
Hand	H3	4	-	26466	26467	4.69	2.22	-	0.697

(continued)

(continued)

Common Specials • HSS

style	H-limit	flutes	uncoated taper	uncoated plug	uncoated bottom	L	L3	L2	D
7/8 - 18 NS									
Hand	H3	4	-	26469	26470	4.69	2.22	-	0.697
7/8 - 20 NEF									
Hand	H3	6	-	26472	26473	4.69	2.22	-	0.697
Hand	H5	6	-	26475	26476	4.69	2.22	-	0.697
7/8 - 24 NS									
Hand	H3	6	-	26478	26479	4.69	2.22	-	0.697
15/16 - 12 NS									
Hand	H4	4	-	26481	26485	4.69	2.22	-	0.760
15/16 - 16 NS									
Hand	H3	6	-	26487	26488	4.69	2.22	-	0.760
15/16 - 18 NS									
Hand	H3	6	-	26490	26491	4.69	2.22	-	0.760
15/16 - 20 NEF									
Hand	H3	6	-	26493	26494	4.69	2.22	-	0.760
Hand	H5	6	-	26495	26497	4.69	2.22	-	0.760
1 - 8 NC									
+ .005 Hand	H11	4	-	26506	26507	5.13	2.50	-	0.800
Spiral-Point Gun	H4	3	-	26505	-	5.13	2.50	-	0.800
+ .005 Spiral-Point Gun	H11	3	-	26508	-	5.13	2.50	-	0.800
Spiral-Flute	H4	4	-	26501	-	5.13	2.50	-	0.800
1 - 10 NS									
Hand	H4	4	-	26510	26511	5.13	2.50	-	0.800
1 - 12 NS									
Hand	H6	4	-	26513	26514	5.13	2.50	-	0.800
+ .005 Hand	H11	4	-	26516	26517	5.13	2.50	-	0.800
1 - 14 NS									
Hand	H6	4	-	26519	26520	5.13	2.50	-	0.800
+ .005 Hand	H11	4	-	26521	26522	5.13	2.50	-	0.800
1 - 16 NS									
Hand	H3	6	-	26524	26525	5.13	2.50	-	0.800
1 - 18 NS									
Hand	H3	6	-	26527	26528	5.13	2.50	-	0.800
1 - 20 NEF									
Hand	H3	6	-	26530	26531	5.13	2.50	-	0.800
Hand	H5	6	-	26533	26534	5.13	2.50	-	0.800
1-1/16 - 12 NS									
Hand	H4	4	26535	26536	26537	5.13	2.50	-	0.896
Hand	H5	4	-	26539	26540	5.13	2.50	-	0.896
1-1/8 - 8 NS									
Hand	H5	4	-	26563	26564	5.44	2.56	-	0.896
1-1/4 - 8 NS									
Hand	H5	4	-	26629	26630	5.75	2.56	-	1.021
1-1/2 - 8 NS									
Hand	H5	4	-	28638	28639	6.38	3.00	-	1.233
1-3/4 - 12 NS									
Hand	H6	6	-	26776	26777	5.00	2.00	-	1.430

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Pricing Based on Order Quantity

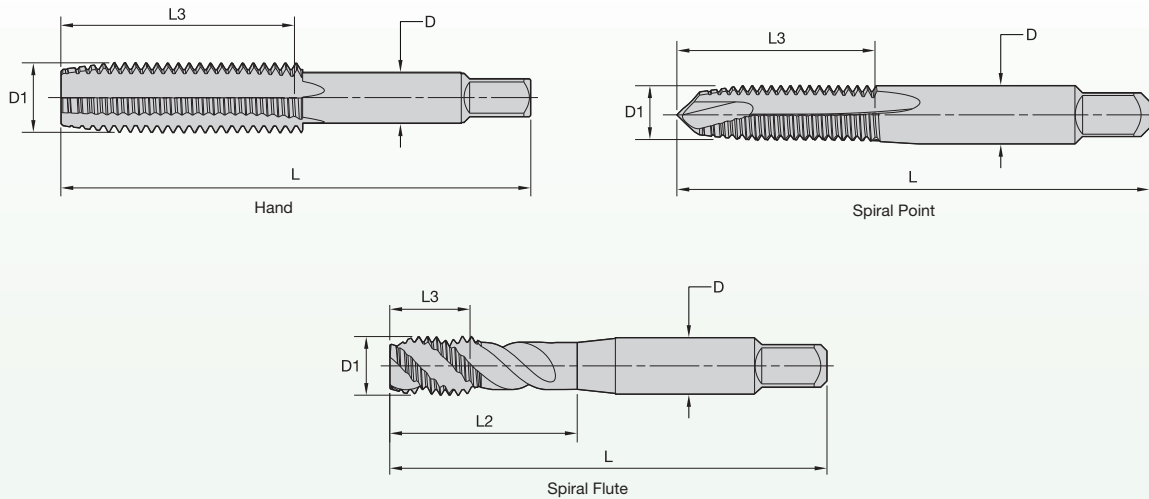
min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	47
48	72

LIGHTNING SERVICE
24 HOUR
SHIPPING

Lightning Service

(continued)

Common Specials • HSS



style	D-limit	flutes	uncoated taper	uncoated plug	uncoated bottom	L	L3	L2	D
M1.8 x 0.35									
6H Hand	D3	2	26877	26878	26879	1.69	0.38	-	0.141
6H Spiral-Point Gun	D3	2	-	26880	-	1.69	0.38	-	0.141
M2.2 x 0.45									
6H Hand	D3	2	26881	26882	26883	1.75	0.44	-	0.141
6H Spiral-Point Gun	D3	2	-	26884	-	-	-	-	-
M2.5 x 0.45									
4H Hand	D1	3	26887	26888	26889	1.81	0.44	-	0.141
6H Hand	D3	3	26885	-	26886	1.81	0.44	-	0.141
4H Spiral-Point Gun	D1	2	-	26890	-	1.81	0.44	-	0.141
M3 x 0.50									
4H Hand	D1	4	26891	26892	26893	1.94	0.63	-	0.141
M3.5 x 0.60									
4H Hand	D1	3	26897	26898	26899	2.00	0.69	-	0.141
6H Hand	D4	3	26895	-	26896	2.00	0.69	-	0.141
+.005 Hand	D11	3	26901	26902	26903	2.00	0.69	-	0.141
M4 x 0.70									
4H Hand	D2	4	26908	26909	26910	2.13	0.75	-	0.168
+.005 Hand	D11	4	26915	26916	26917	2.13	0.75	-	0.168
+.005 Spiral-Point Gun	D11	2	-	26918	-	2.13	0.75	-	0.168
M4.5 x 0.75									
4H Hand	D2	4	26921	26922	26923	2.38	0.88	-	0.194
6H Hand	D4	4	26919	-	26920	2.38	0.88	-	0.194
+.005 Hand	D11	4	26925	26926	26927	2.38	0.88	-	0.194
M5 x .050									
6H Hand	D3	4	26943	26944	26945	2.38	0.94	-	0.194
6H Spiral-Point Gun	D3	2	-	26946	-	2.38	0.94	-	0.194
M5 x 0.80									
4H Hand	D2	4	26932	26933	26934	2.38	0.94	-	0.194
+.005 Hand	D11	4	26936	26937	26938	2.38	0.94	-	0.194
+.005 Spiral-Point Gun	D11	2	-	26942	-	2.38	0.94	-	0.194
M6 x 0.5									
6H Hand	D3	4	26962	26963	26964	2.50	1.00	-	0.255
M6 x .75									
4H Hand	D3	4	26958	26959	26960	2.50	1.00	-	0.255
4H Spiral-Point Gun	D3	2	-	26961	-	2.50	1.00	-	0.255

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Common Specials • HSS

style	D-limit	flutes	uncoated taper	uncoated plug	uncoated bottom	L	L3	L2	D
M6 x 1									
4H Hand	D3	4	26947	26948	26949	2.50	1.00	-	0.255
+ .005 Hand	D11	4	26954	26955	26956	2.50	1.00	-	0.255
+ .005 Spiral-Point Gun	D11	2	-	26957	-	2.50	1.00	-	0.255
M7 x 1									
4H Hand	D3	4	26965	26966	26967	2.72	1.13	-	0.318
+ .005 Hand	D11	4	26972	26973	26974	2.72	1.13	-	0.318
M8 x 0.75									
6H Hand	D5	4	27002	27003	27004	2.72	1.13	-	0.318
M8 x 1									
4H Hand	D3	4	26991	26992	26993	2.72	1.13	-	0.318
6H Hand	D5	4	26987	26988	26989	2.72	1.13	-	0.318
+ .005 Hand	D11	4	26995	26996	26997	2.72	1.13	-	0.318
6H Spiral-Point Gun	D5	2	-	26990	-	2.72	1.13	-	0.318
M8 x 1.25									
4H Hand	D3	4	26976	26977	26978	2.72	1.13	-	0.318
+ .005 Hand	D11	4	26983	26984	26985	2.72	1.13	-	0.318
+ .005 Spiral-Point Gun	D11	2	-	26986	-	2.72	1.13	-	0.318
M10 x 1.0									
6H Hand	D5	4	27034	27035	27036	2.94	1.25	-	0.381
Spark Plug Hand	D3	4	27031	27032	27033	2.94	1.25	-	0.381
6H Spiral-Point Gun	D5	3	-	27040	-	2.94	1.25	-	0.381
M10 x 1.25									
4H Hand	D3	4	27020	27021	27022	2.94	1.25	-	0.381
6H Hand	D5	4	27016	27017	27018	2.94	1.25	-	0.381
+ .005 Hand	D11	4	27027	27028	27029	2.94	1.25	-	0.381
4H Spiral-Point Gun	D3	3	-	27023	-	2.94	1.25	-	0.381
6H Spiral-Point Gun	D5	3	-	27019	-	2.94	1.25	-	0.381
M10 x 1.5									
4H Hand	D3	4	27005	27006	27007	2.94	1.25	-	0.381
+ .005 Hand	D11	4	27012	27013	27041	2.94	1.25	-	0.381
+ .005 Spiral-Point Gun	D11	3	-	27015	-	2.94	1.25	-	0.381
M11 x 1									
6H Hand	D5	4	27045	27046	27047	3.16	1.44	-	0.323
M11 x 1.5									
6H Hand	D6	4	27041	27042	27043	3.16	1.44	-	0.323
6H Spiral-Point Gun	D6	3	-	27044	-	3.16	1.44	-	0.323
M12 x 1									
6H Hand	D	4	27076	27077	27078	3.38	1.66	-	0.367
6H Spiral-Point Gun	D	3	-	27079	-	3.38	1.66	-	0.367
M12 x 1.25									
4H Hand	D3	4	27066	27067	27068	3.38	1.66	-	0.367
6H Hand	D5	4	27062	27063	27064	3.38	1.66	-	0.367
+ .005 Hand	D11	4	27073	27074	27075	3.38	1.66	-	0.367
6H Spiral-Point Gun	D5	3	-	27065	-	3.38	1.66	-	0.367

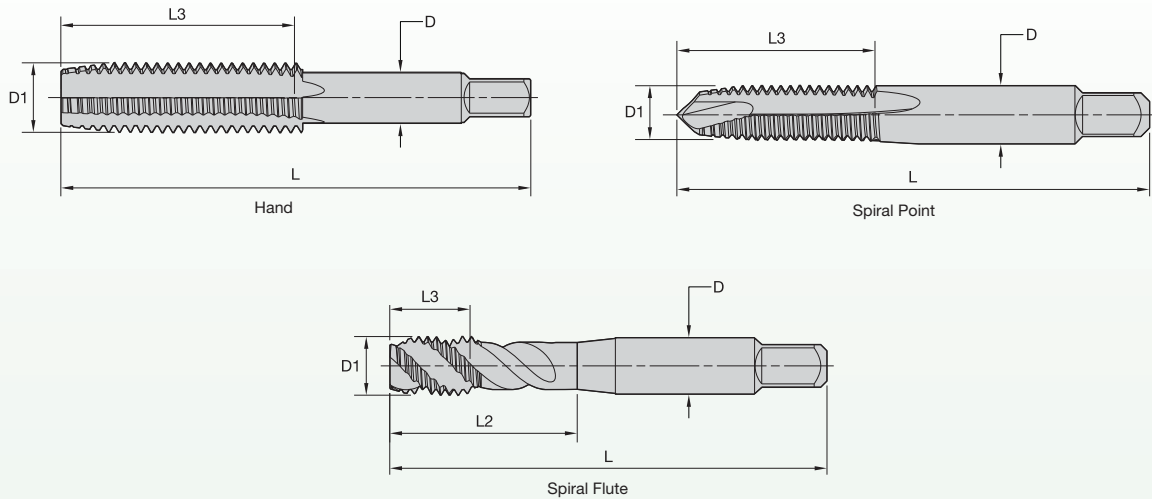
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min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	47
48	72

LIGHTNING SERVICE
24 HOUR
SHIPPING

(continued)

Common Specials • HSS



style	D-limit	flutes	uncoated taper	uncoated plug	uncoated bottom	L	L3	L2	D
M12 x 1.5									
6H Hand	D6	4	27059	27060	27061	3.38	1.66	-	0.367
M12 x 1.75									
4H Hand	D3	4	27048	27049	27050	3.38	1.66	-	0.367
+.005 Hand	D11	4	27055	27056	27057	3.38	1.66	-	0.367
+.005 Spiral-Point Gun	D11	3	-	27058	-	3.38	1.66	-	0.367
M14 x 1									
6H Hand	D5	4	27101	27102	27103	3.59	1.66	-	0.429
M14 x 1.25									
Spark Plug Hand	D4	4	27098	27099	27100	3.59	1.66	-	0.429
M14 x 1.5									
4H Hand	D3	4	27091	27092	27093	3.59	1.66	-	0.429
6H Hand	D6	4	27087	27088	27089	3.59	1.66	-	0.429
6H Spiral-Point Gun	D6	3	-	27090	-	3.59	1.66	-	0.429
M14 x 2									
4H Hand	D3	4	27080	27081	27082	3.59	1.66	-	0.429
M15 x 1									
6H Hand	D5	4	27104	27105	27106	3.81	1.81	-	0.480
M16 x 1.5									
4H Hand	D3	4	27122	27123	27124	3.81	1.81	-	0.480
6H Hand	D6	4	27118	27119	27120	3.81	1.81	-	0.480
6H Spiral-Point Gun	D6	3	-	27121	-	3.81	1.81	-	0.480
M16 x 2									
4H Hand	D4	4	27107	27108	27109	3.81	1.81	-	0.480
+.005 Hand	D11	4	27114	27115	27116	3.81	1.81	-	0.480
M18 x 1									
6H Hand	D5	4	27147	27148	27149	4.03	1.81	-	0.542
M18 x 1.5									
4H Hand	D3	4	27141	27142	27143	4.03	1.81	-	0.542
6H Hand	D6	4	27135	27136	27137	4.03	1.81	-	0.542
Spark Plug Hand	D4	4	27138	27139	27140	4.03	1.81	-	0.542
M18 x 2.5									
4H Hand	D4	4	27129	27130	27131	4.03	1.81	-	0.542
M20 x 1.5									
4H Hand	D3	4	27162	27163	27164	4.47	2.00	-	0.652
6H Hand	D6	4	27159	27160	27161	4.47	2.00	-	0.652
+.005 Hand	D11	4	27168	27169	27170	4.47	2.00	-	0.652

(continued)

(continued)

Common Specials • HSS

style	D-limit	flutes	uncoated taper	uncoated plug	uncoated bottom	L	L3	L2	D
M20 x 2									
4H Hand	D4	4	28816	28817	28818	4.47	2.00	-	0.652
M22 x 1.5									
4H Hand	D3	4	27183	27184	27185	4.69	2.22	-	0.697
6H Hand	D6	4	27180	27181	27182	4.69	2.22	-	0.697
±.005 Hand	D11	4	27189	27190	27191	4.69	2.22	-	0.697
M22 x 2.5									
4H Hand	D4	4	27174	27175	27176	4.69	2.22	-	0.697
6H Hand	D7	4	27171	27172	27173	4.69	2.22	-	0.697
M24 x 1.5									
6H Hand	D6	4	27210	27211	27212	4.91	2.22	-	0.760
M24 x 2									
4H Hand	D4	4	27204	27205	27206	4.91	2.22	-	0.760
6H Hand	D7	4	27201	27202	27203	4.91	2.22	-	0.760
M24 x 3									
4H Hand	D4	4	27192	27193	27194	4.91	2.22	-	0.760
M30 x 1.5									
6H Hand	D6	6	27243	27244	27245	4.00	1.50	-	1.021

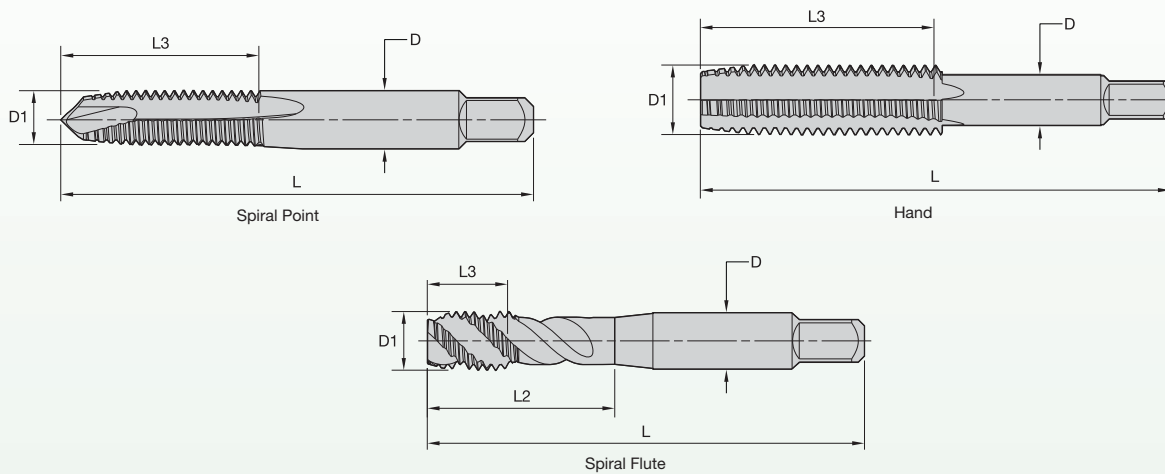
Pricing Based on Order Quantity

min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	47
48	72

LIGHTNING SERVICE
24 HOUR
SHIPPING

Lightning Service

Specials from Blanks • General Applications • HSS



style	uncoated 2-flute	uncoated 3-flute	uncoated 4-flute	uncoated 6-flute	L	L3	L2	D	max H limit	max TPI
#0										
Hand — T, P, B	64250	-	-	-	1.63	0.31	-	0.141	3	100
Spiral-Point Gun — P, B	64350	-	-	-	1.63	0.31	-	0.141	3	100
#1										
Hand — T, P, B	64251	-	-	-	1.69	0.38	-	0.141	4	100
Spiral-Point Gun — P, B	64351	-	-	-	1.69	0.38	-	0.141	4	100
#2										
Hand — T, P, B	64252	64264	-	-	1.75	0.44	-	0.141	4	100
Spiral-Point Gun — P, B	64352	-	-	-	1.75	0.44	-	0.141	4	100
Spiral-Flute 30° — P, B	65160	-	-	-	1.75	0.44	-	0.141	4	100
Spiral-Flute 49° — P, B	65161	-	-	-	1.75	0.44	-	0.141	4	100
#3										
Hand — T, P, B	64253	64265	-	-	1.81	0.50	-	0.141	5	100
Spiral-Point Gun — P, B	64353	-	-	-	1.81	0.50	-	0.141	5	100
Spiral-Flute 30° — P, B	64455	-	-	-	1.81	0.50	-	0.141	5	100
Spiral-Flute 49° — P, B	64466	-	-	-	1.81	0.50	-	0.141	5	100
#4										
Hand — T, P, B	64254	64266	-	-	1.88	0.56	-	0.141	5	100
Spiral-Point Gun — P, B	64354	-	-	-	1.88	0.56	-	0.141	5	100
Spiral-Flute 30° — P, B	64456	-	-	-	1.88	0.56	-	0.141	5	100
Spiral-Flute 49° — P, B	64467	-	-	-	1.88	0.56	-	0.141	5	100
Oversized										
Hand — T, P, B	65730	-	-	-	1.88	0.56	-	0.141	11	100
Spiral-Point Gun — P, B	64735	-	-	-	1.88	0.56	-	0.141	11	100
#5										
Hand — T, P, B	64255	64267	-	-	1.94	0.63	-	0.141	5	100
Spiral-Point Gun — P, B	64355	-	-	-	1.94	0.63	-	0.141	5	100
Spiral-Flute 30° — P, B	64457	-	-	-	1.94	0.63	-	0.141	5	100
Spiral-Flute 49° — P, B	64468	-	-	-	1.94	0.63	-	0.141	5	100
Oversized										
Hand — T, P, B	65731	-	-	-	1.94	0.63	-	0.141	11	100
Spiral-Point Gun — P, B	64736	-	-	-	1.94	0.63	-	0.141	11	100

(continued)

(continued)

Specials from Blanks • General Applications • HSS

style	uncoated 2-flute	uncoated 3-flute	uncoated 4-flute	uncoated 6-flute	L	L3	L2	D	max H limit	max TPI
#6										
Hand — T, P, B	64256	64268	64836	-	2.00	0.69	-	0.141	7	100
Spiral-Point Gun — P, B	64356	64839	-	-	2.00	0.69	-	0.141	7	100
Spiral-Flute 30° — P, B	-	65167	-	-	2.00	0.38	0.69	0.141	7	100
Spiral-Flute 49° — P, B	-	65172	-	-	2.00	0.38	0.69	0.141	7	100
Oversized										
Hand — T, P, B	65732	65735	-	-	2.00	0.69	-	0.141	13	100
Spiral-Point Gun — P, B	64737	65182	-	-	2.00	0.69	-	0.141	13	100
#8										
Hand — T, P, B	64257	64269	64278	-	2.13	0.75	-	0.168	7	100
Spiral-Point Gun — P, B	64357	65193	-	-	2.13	0.75	-	0.168	7	100
Spiral-Flute 30° — P, B	-	65168	-	-	2.13	0.38	0.75	0.168	7	100
Spiral-Flute 49° — P, B	-	64476	-	-	2.13	0.38	0.75	0.168	7	100
Oversized										
Hand — T, P, B	65733	65736	64811	-	2.13	0.75	-	0.168	13	100
Spiral-Point Gun — P, B	64738	65183	-	-	2.13	0.75	-	0.168	-	100
#10										
Hand — T, P, B	64258	64270	64279	-	2.38	0.88	-	0.194	7	100
Spiral-Point Gun — P, B	64358	65142	64840	-	2.38	0.88	-	0.194	7	100
Spiral-Flute 30° — P, B	-	65169	-	-	2.38	0.50	0.88	0.194	7	100
Spiral-Flute 49° — P, B	-	64477	-	-	2.38	0.50	0.88	0.194	7	100
Oversized										
Hand — T, P, B	65734	65737	64812	-	2.38	0.88	-	0.194	13	100
Spiral-Point Gun — P, B	64739	65184	-	-	2.38	0.88	-	0.194	13	100
#12										
Hand — T, P, B	64260	65692	64281	-	2.38	0.94	-	0.220	7	100
Spiral-Point Gun — P, B	64360	65143	-	-	2.38	0.94	-	0.220	7	100
Spiral-Flute 30° — P, B	-	65171	-	-	2.38	0.50	0.94	0.220	7	100
Spiral-Flute 49° — P, B	-	64479	-	-	2.38	0.50	0.94	0.220	7	100
Oversized										
Hand — T, P, B	-	65738	65752	-	2.38	0.94	-	0.220	13	100
Spiral-Point Gun — P, B	64740	-	-	-	2.38	0.94	-	0.220	13	100
1/4"										
Hand — T, P, B	64261	64272	64282	-	2.50	1.00	-	0.255	7	80
Spiral-Point Gun — P, B	64361	64376	64832	-	2.50	1.00	-	0.255	7	80
Spiral-Flute 30° — P, B	-	64470	-	-	2.50	0.63	1.00	0.255	7	80
Spiral-Flute 49° — P, B	-	64480	-	-	2.50	0.63	1.00	0.255	7	80
Oversized										
Hand — T, P, B	-	65739	64813	-	2.50	1.00	-	0.255	13	80
Spiral-Point Gun — P, B	-	64741	65186	-	2.50	1.00	-	0.255	13	80
5/16"										
Hand — T, P, B	64262	64273	64283	-	2.72	1.13	-	0.318	7	80
Spiral-Point Gun — P, B	64362	64377	-	-	2.72	1.13	-	0.318	7	80
Spiral-Flute 30° — P, B	-	64471	-	-	2.72	0.69	1.12	0.318	7	80
Spiral-Flute 49° — P, B	-	64481	-	-	2.72	0.69	1.12	0.318	7	80
Oversized										
Hand — T, P, B	-	65740	64814	-	2.72	1.13	-	0.318	13	80
Spiral-Point Gun — P, B	-	64742	65187	-	2.72	1.13	-	0.318	13	80

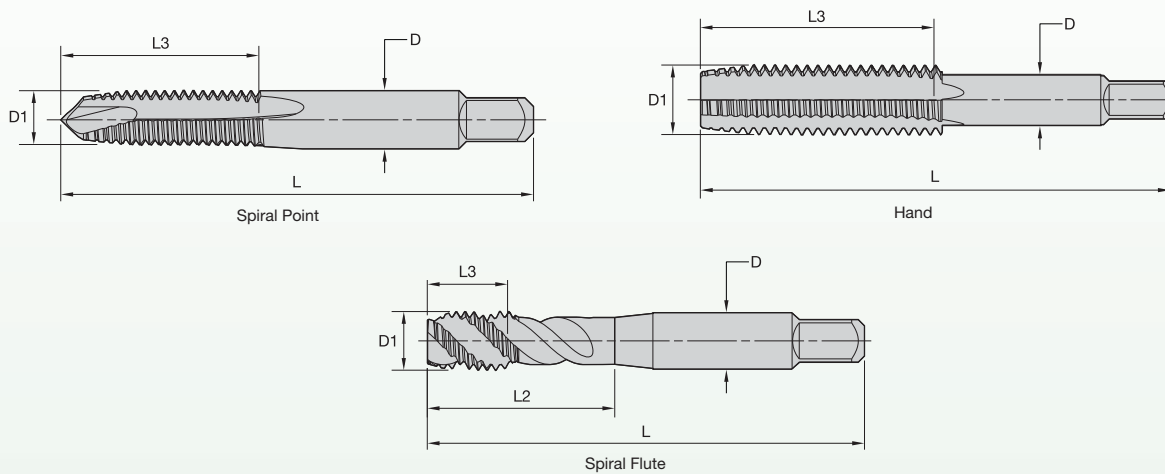
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min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	47
48	72

LIGHTNING SERVICE
24 HOUR
SHIPPING

(continued)

Specials from Blanks • General Applications • HSS



style	uncoated 2-flute	uncoated 3-flute	uncoated 4-flute	uncoated 6-flute	L	L3	L2	D	max H limit	max TPI
3/8"										
Hand — T, P, B	64263	64274	64284	-	2.94	1.25	-	0.381	7	80
Spiral-Point Gun — P, B	64854	64378	-	-	2.94	1.25	-	0.381	7	80
Spiral-Flute 30° — P, B	-	64472	-	-	2.94	0.75	1.25	0.381	7	80
Spiral-Flute 49° — P, B	-	64482	-	-	2.94	0.75	1.25	0.381	7	80
Oversized										
Hand — T, P, B	-	65741	64815	-	2.94	1.25	-	0.381	13	80
Spiral-Point Gun — P, B	-	64767	-	-	2.94	1.25	-	0.381	13	80
7/16"										
Hand — T, P, B	-	64276	64286	-	3.16	1.44	-	0.323	15	80
Spiral-Point Gun — P, B	-	64380	-	-	3.16	1.44	-	0.323	15	80
Spiral-Flute 30° — P, B	-	64474	-	-	3.16	0.88	-	0.323	15	80
Spiral-Flute 49° — P, B	-	64484	-	-	3.16	0.88	-	0.323	15	80
1/2"										
Hand — T, P, B	-	64277	64287	65693	3.38	1.66	-	0.367	15	80
Spiral-Point Gun — P, B	-	64381	-	-	3.38	1.66	-	0.367	15	80
Spiral-Flute 30° — P, B	-	64475	-	-	3.38	0.94	-	0.367	15	80
Spiral-Flute 49° — P, B	-	64485	-	-	3.38	0.94	-	0.367	15	80
9/16"										
Hand — T, P, B	-	65100	64288	65694	3.59	1.66	-	0.429	15	64
Spiral-Point Gun — P, B	-	64382	64826	-	3.59	1.66	-	0.429	15	64
Spiral-Flute 30° — P, B	-	-	64496	-	3.59	1.00	-	0.429	15	64
Spiral-Flute 49° — P, B	-	-	64502	-	3.59	1.00	-	0.429	15	64
5/8"										
Hand — T, P, B	-	65101	64289	65695	3.81	1.81	-	0.480	15	64
Spiral-Point Gun — P, B	-	64383	64838	-	3.81	1.81	-	0.480	15	64
Spiral-Flute 30° — P, B	-	-	64497	-	3.81	1.09	-	0.480	15	64
Spiral-Flute 49° — P, B	-	-	64503	-	3.81	1.09	-	0.480	15	64
11/16"										
Hand — T, P, B	-	-	64290	65696	4.03	1.81	-	0.542	15	64
Spiral-Point Gun — P, B	-	64384	-	-	4.03	1.81	-	0.542	15	64
Spiral-Flute 30° — P, B	-	-	64498	-	4.03	1.09	-	0.542	15	64
Spiral-Flute 49° — P, B	-	-	64504	-	4.03	1.09	-	0.542	15	64

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Specials from Blanks • General Applications • HSS

style	uncoated 2-flute	uncoated 3-flute	uncoated 4-flute	uncoated 6-flute	L	L3	L2	D	max H limit	max TPI
3/4"										
Hand — T, P, B	-	65103	64291	65697	4.25	2.00	-	0.590	15	64
Spiral-Point Gun — P, B	-	64385	64829	-	4.25	2.00	-	0.590	15	64
Spiral-Flute 30° — P, B	-	-	64499	-	4.25	1.22	-	0.590	15	64
Spiral-Flute 49° — P, B	-	-	64505	-	4.25	1.22	-	0.590	15	64
13/16"										
Hand — T, P, B	-	-	64292	65698	4.47	2.00	-	0.652	15	64
Spiral-Point Gun — P, B	-	64386	-	-	4.47	2.00	-	0.652	15	64
Spiral-Flute 30° — P, B	-	-	65690	-	4.47	1.22	-	0.652	15	64
Spiral-Flute 49° — P, B	-	-	65691	-	4.47	1.22	-	0.652	15	64
7/8"										
Hand — T, P, B	-	-	64293	65699	4.69	2.22	-	0.697	15	64
Spiral-Point Gun — P, B	-	64387	-	-	4.69	2.22	-	0.697	15	64
Spiral-Flute 30° — P, B	-	-	64500	-	4.69	1.34	-	0.697	15	64
Spiral-Flute 49° — P, B	-	-	64506	-	4.69	1.34	-	0.697	15	64
15/16"										
Hand — T, P, B	-	-	64294	65700	4.91	2.22	-	0.760	15	64
Spiral-Point Gun — P, B	-	65144	-	-	4.91	2.22	-	0.760	15	64
Spiral-Flute 30° — P, B	-	-	65173	-	4.91	1.34	-	0.760	15	64
Spiral-Flute 49° — P, B	-	-	65174	-	4.91	1.34	-	0.760	15	64
1"										
Hand — T, P, B	-	-	64295	65701	5.13	2.50	-	0.800	15	64
Spiral-Point Gun — P, B	-	64388	-	-	5.13	2.50	-	0.800	15	64
Spiral-Flute 30° — P, B	-	-	64501	-	5.13	1.50	-	0.800	15	64
Spiral-Flute 49° — P, B	-	-	64507	-	5.13	1.50	-	0.800	15	64

style	uncoated 2-flute	uncoated 3-flute	uncoated 4-flute	uncoated 6-flute	L	L3	L2	D	max D limit	pitch min
M1.5										
Hand — T, P, B	65288	-	-	-	1.63	0.31	-	0.141	3	0.30
Spiral-Point Gun — P, B	65381	-	-	-	1.63	0.31	-	0.141	3	0.30
M1.6										
Hand — T, P, B	65708	-	-	-	1.69	0.31	-	0.141	3	0.30
Spiral-Point Gun — P, B	65766	-	-	-	1.69	0.31	-	0.141	3	0.30
M1.8										
Hand — T, P, B	65289	-	-	-	1.69	0.38	-	0.141	4	0.30
Spiral-Point Gun — P, B	65382	-	-	-	1.69	0.38	-	0.141	4	0.30
M2										
Hand — T, P, B	65290	65301	-	-	1.75	0.44	-	0.141	4	0.30
Spiral-Point Gun — P, B	65383	-	-	-	1.75	0.44	-	0.141	4	0.30
Spiral-Flute 30° — P, B	65479	-	-	-	1.75	0.44	-	0.141	4	0.30
Spiral-Flute 49° — P, B	65506	-	-	-	1.75	0.44	-	0.141	4	0.30
M2.2										
Hand — T, P, B	-	65713	-	-	1.75	0.44	-	0.141	4	0.30
Spiral-Point Gun — P, B	65767	-	-	-	1.75	0.44	-	0.141	4	0.30
Spiral-Flute 49° — P, B	65773	-	-	-	1.75	0.44	-	0.141	4	0.30

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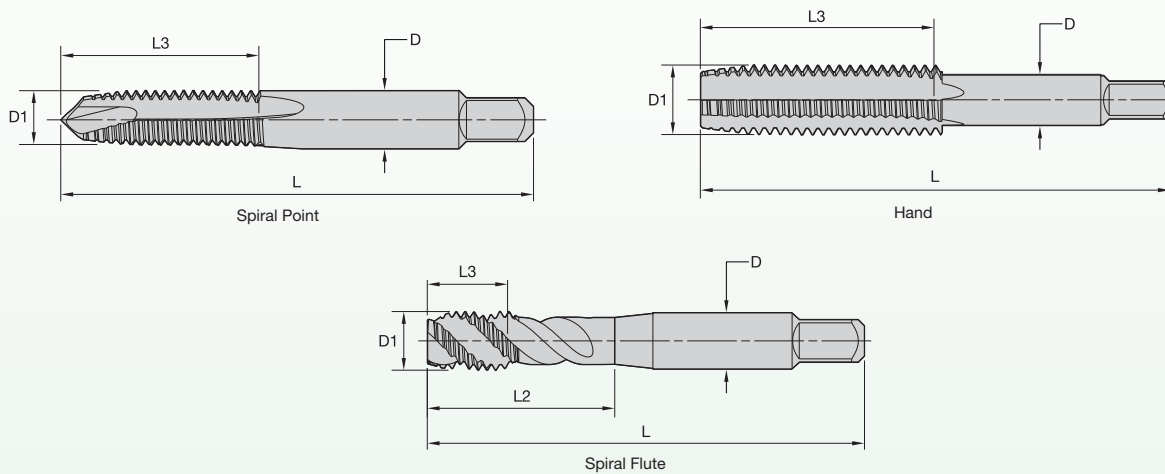
Pricing Based on Order Quantity	
min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	47
48	72

LIGHTNING SERVICE
24 HOUR
SHIPPING

Lightning Service

(continued)

Specials from Blanks • General Applications • HSS



style	uncoated 2-flute	uncoated 3-flute	uncoated 4-flute	uncoated 6-flute	L	L3	L2	D	max D limit	pitch min
M2.5										
Hand — T, P, B	65291	65302	-	-	1.81	0.50	-	0.141	5	0.30
Spiral-Point Gun — P, B	65384	-	-	-	1.81	0.50	-	0.141	5	0.30
Spiral-Flute 30° — P, B	65498	-	-	-	1.81	0.50	-	0.141	5	0.30
Spiral-Flute 49° — P, B	65507	-	-	-	1.81	0.50	-	0.141	5	0.30
M3										
Hand — T, P, B	65292	65303	64852	-	1.94	0.63	-	0.141	5	0.30
Spiral-Point Gun — P, B	65385	-	-	-	1.94	0.63	-	0.141	5	0.30
Spiral-Flute 49° — P, B	65508	-	-	-	1.94	0.63	-	0.141	5	0.30
M3.5										
Hand — T, P, B	65293	65304	65850	-	2.00	0.69	-	0.141	7	0.30
Spiral-Point Gun — P, B	65386	64849	-	-	2.00	0.69	-	0.141	7	0.30
Spiral-Flute 30° — P, B	-	65515	-	-	2.00	0.38	0.69	0.141	7	0.30
Spiral-Flute 49° — P, B	-	65526	-	-	2.00	0.38	0.69	0.141	7	0.30
Oversized										
Hand — T, P, B	-	65783	-	-	2.00	0.69	-	0.141	13	0.30
Spiral-Point Gun — P, B	-	65416	-	-	2.00	0.69	-	0.141	13	0.30
M4										
Hand — T, P, B	65294	65305	65317	-	2.13	0.75	-	0.168	7	0.30
Spiral-Point Gun — P, B	65387	65393	-	-	2.13	0.75	-	0.168	7	0.30
Spiral-Flute 30° — P, B	-	65516	-	-	2.13	0.38	0.75	0.168	7	0.30
Spiral-Flute 49° — P, B	-	65527	-	-	2.13	0.38	0.75	0.168	7	0.30
Oversized										
Hand — T, P, B	-	65784	65433	-	2.13	0.75	-	0.168	13	0.30
Spiral-Point Gun — P, B	65411	-	-	-	2.13	0.75	-	0.168	13	0.30
M4.5										
Hand — T, P, B	-	65306	65318	-	2.38	0.88	-	0.194	7	0.30
Spiral-Point Gun — P, B	65388	65394	-	-	2.38	0.88	-	0.194	7	0.30
Spiral-Flute 30° — P, B	-	65517	-	-	2.38	0.50	0.88	0.194	7	0.30
Spiral-Flute 49° — P, B	-	65528	-	-	2.38	0.50	0.88	0.194	7	0.30
Oversized										
Hand — T, P, B	-	-	65434	-	2.38	0.88	-	0.194	13	0.30

(continued)

(continued)

Specials from Blanks • General Applications • HSS

style	uncoated 2-flute	uncoated 3-flute	uncoated 4-flute	uncoated 6-flute	L	L3	L2	D	max D limit	pitch min
M5										
Hand — T, P, B	64259	64271	64280	—	2.38	0.88	—	0.194	7	0.30
Spiral-Point Gun — P, B	64359	65395	64827	—	2.38	0.88	—	0.194	7	0.30
Spiral-Flute 30° — P, B	—	65518	—	—	2.38	0.50	0.88	0.194	7	0.30
Spiral-Flute 49° — P, B	—	64478	—	—	2.38	0.50	0.88	0.194	7	0.30
Oversized										
Hand — T, P, B	—	65804	65806	—	2.38	0.88	—	0.194	13	0.30
Spiral-Point Gun — P, B	65809	65811	—	—	2.38	0.88	—	0.194	13	0.30
M6										
Hand — T, P, B	65298	65308	65321	—	2.50	1.00	—	0.255	7	0.30
Spiral-Point Gun — P, B	65391	65397	—	—	2.50	1.00	—	0.255	7	0.30
Spiral-Flute 30° — P, B	—	65520	—	—	2.50	0.63	1.00	0.255	7	0.30
Spiral-Flute 49° — P, B	—	65531	—	—	2.50	0.63	1.00	0.255	7	0.30
Oversized										
Hand — T, P, B	—	65436	65787	—	2.50	1.00	—	0.255	13	0.30
Spiral-Point Gun — P, B	—	65414	65420	—	2.50	1.00	—	0.255	13	0.30
M6.3										
Hand — T, P, B	—	65715	65717	—	2.50	1.00	—	0.255	7	0.30
Spiral-Point Gun — P, B	65768	65770	—	—	2.50	1.00	—	0.255	7	0.30
M7										
Hand — T, P, B	65299	65309	65322	—	2.72	1.13	—	0.318	7	0.30
Spiral-Point Gun — P, B	65392	65398	—	—	2.72	1.13	—	0.318	7	0.30
Spiral-Flute 30° — P, B	—	65521	—	—	2.72	0.69	1.12	0.318	7	0.30
Spiral-Flute 49° — P, B	—	65532	—	—	2.72	0.69	1.12	0.318	7	0.30
Oversized										
Hand — T, P, B	—	—	65437	—	2.72	1.13	—	0.318	13	0.30
Spiral-Point Gun — P, B	—	65421	—	—	2.72	1.13	—	0.318	13	0.30
M8										
Hand — T, P, B	65711	65716	65718	—	2.72	1.13	—	0.318	7	0.30
Spiral-Point Gun — P, B	65769	65771	64845	—	2.72	1.13	—	0.318	7	0.30
Spiral-Flute 30° — P, B	—	65775	—	—	2.72	0.69	1.13	0.318	7	0.30
Spiral-Flute 49° — P, B	—	65777	—	—	2.72	0.69	1.13	0.318	7	0.30
Oversized										
Hand — T, P, B	—	65789	65800	—	2.72	1.13	—	0.318	13	0.30
Spiral-Point Gun — P, B	65801	65802	—	—	2.72	1.13	—	0.318	13	0.30
M9										
Hand — T, P, B	65300	65310	65323	—	2.94	1.25	—	0.381	7	0.30
Spiral-Point Gun — P, B	—	65399	—	—	2.94	1.25	—	0.381	7	0.30
Spiral-Flute 30° — P, B	—	65522	—	—	2.94	0.75	1.25	0.381	7	0.30
Spiral-Flute 49° — P, B	—	65533	—	—	2.94	0.75	1.25	0.381	7	0.30
Oversized										
Hand — T, P, B	—	—	65438	—	2.94	1.25	—	0.381	13	0.30

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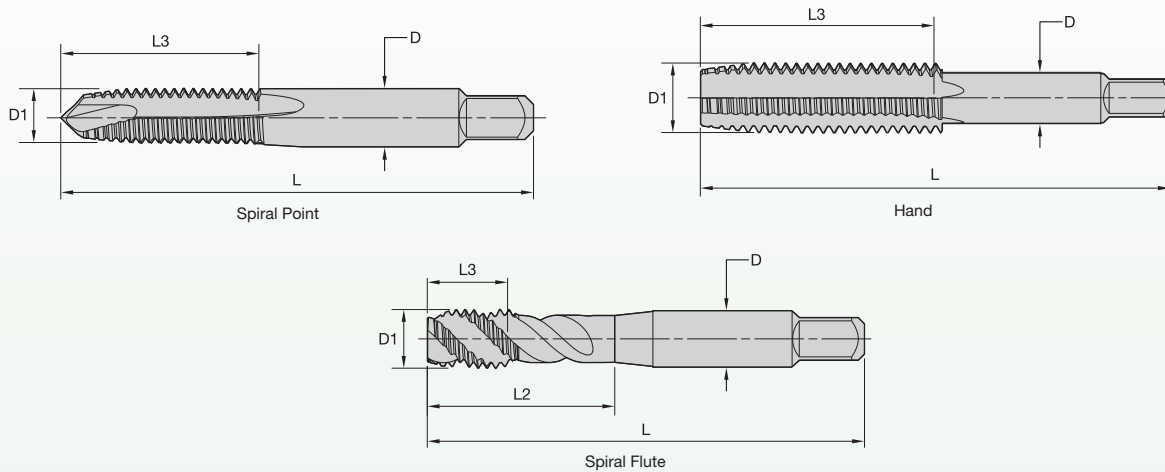
Pricing Based on Order Quantity	
min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	47
48	72

LIGHTNING SERVICE
24 HOUR
SHIPPING

Lightning Service

(continued)

Specials from Blanks • General Applications • HSS



style	uncoated 2-flute	uncoated 3-flute	uncoated 4-flute	uncoated 6-flute	L	L3	L2	D	max D limit	pitch min
M10										
Hand — T, P, B	65712	64275	64285	-	2.94	1.25	-	0.381	7	0.30
Spiral-Point Gun — P, B	64847	64379	-	-	2.94	1.25	-	0.381	7	0.30
Spiral-Flute 30° — P, B	-	64473	-	-	2.94	0.75	1.25	0.381	7	0.30
Spiral-Flute 49° — P, B	-	64483	-	-	2.94	0.75	1.25	0.381	7	0.30
Oversized										
Hand — T, P, B	-	-	65808	-	2.94	1.25	-	0.381	13	0.30
Spiral-Point Gun — P, B	-	65813	-	-	2.94	1.25	-	0.381	13	0.30
M11										
Hand — T, P, B	-	65312	65325	-	3.16	1.44	-	0.323	15	0.30
Spiral-Point Gun — P, B	-	65401	-	-	3.16	1.44	-	0.323	15	0.30
Spiral-Flute 49° — P, B	-	65535	-	-	3.16	0.94	-	0.323	15	0.30
M12										
Hand — T, P, B	-	65313	65326	65719	3.38	1.66	-	0.367	15	0.30
Spiral-Point Gun — P, B	-	65402	-	-	3.38	1.66	-	0.367	15	0.30
Spiral-Flute 30° — P, B	-	65525	-	-	3.38	0.94	-	0.367	15	0.30
Spiral-Flute 49° — P, B	-	65536	-	-	3.38	0.94	-	0.367	15	0.30
M14										
Hand — T, P, B	-	65314	65327	65720	3.59	1.66	-	0.429	15	0.40
Spiral-Point Gun — P, B	-	65403	-	-	3.59	1.66	-	0.429	15	0.40
Spiral-Flute 30° — P, B	-	-	65537	-	3.59	1.00	-	0.429	15	0.40
Spiral-Flute 49° — P, B	-	-	65543	-	3.59	1.00	-	0.429	15	0.40
M15										
Hand — T, P, B	-	-	64831	-	3.81	1.81	-	0.480	15	0.40
Spiral-Point Gun — P, B	-	-	-	-	3.81	1.81	-	0.480	15	0.40
M16										
Hand — T, P, B	-	65315	65328	65721	3.81	1.81	-	0.480	15	0.40
Spiral-Point Gun — P, B	-	65404	64828	-	3.81	1.81	-	0.480	15	0.40
Spiral-Flute 30° — P, B	-	-	65538	-	3.81	1.09	-	0.480	15	0.40
Spiral-Flute 49° — P, B	-	-	65544	-	3.81	1.09	-	0.480	15	0.40
M18										
Hand — T, P, B	-	65316	65329	65722	4.03	1.81	-	0.542	15	0.40
Spiral-Point Gun — P, B	-	65405	64833	-	4.03	1.81	-	0.542	15	0.40
Spiral-Flute 30° — P, B	-	-	65539	-	4.03	1.09	-	0.542	15	0.40
Spiral-Flute 49° — P, B	-	-	65545	-	4.03	1.09	-	0.542	15	0.40

(continued)

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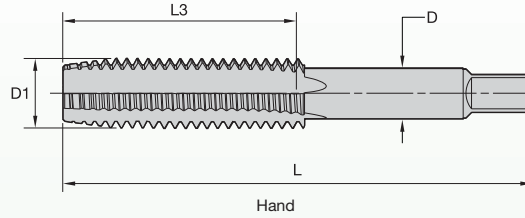
Specials from Blanks • General Applications • HSS

style	uncoated 2-flute	uncoated 3-flute	uncoated 4-flute	uncoated 6-flute	L	L3	L2	D	max D limit	pitch min
M20										
Hand — T, P, B	-	-	65330	65723	4.47	2.00	-	0.652	15	0.40
Spiral-Point Gun — P, B	-	65406	-	-	4.47	2.00	-	0.652	15	0.40
Spiral-Flute 30° — P, B	-	-	65778	-	4.47	1.22	-	0.652	15	0.40
Spiral-Flute 49° — P, B	-	-	65779	-	4.47	1.22	-	0.652	15	0.40
M22										
Hand — T, P, B	-	-	65331	65724	4.69	2.22	-	0.697	15	0.40
Spiral-Point Gun — P, B	-	65407	-	-	4.69	2.22	-	0.697	15	0.40
Spiral-Flute 30° — P, B	-	-	65540	-	4.69	1.34	-	0.697	15	0.40
Spiral-Flute 49° — P, B	-	-	65546	-	4.69	1.34	-	0.697	15	0.40
M24										
Hand — T, P, B	-	-	65332	65725	4.91	2.22	-	0.760	15	0.40
Spiral-Point Gun — P, B	-	65408	-	-	4.91	2.22	-	0.760	15	0.40
Spiral-Flute 30° — P, B	-	-	65541	-	4.91	1.34	-	0.760	15	0.40
Spiral-Flute 49° — P, B	-	-	65547	-	4.91	1.34	-	0.760	15	0.40
M25										
Hand — T, P, B	-	-	65333	65726	5.10	2.50	-	0.800	15	0.40
Spiral-Point Gun — P, B	-	65409	-	-	5.13	2.50	-	0.800	15	0.40

min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	47
48	72

LIGHTNING SERVICE
24 HOUR
SHIPPING

Specials from Blanks • Large Sizes • HSS



style	uncoated 4-flute	uncoated 6-flute	uncoated 8-flute	uncoated 10-flute	L	L3	D	max H limit	min TPI	max TPI
1-1/16"										
Hand – T, P, B – Long	64296	65702	-	-	5.13	2.50	0.896	21	-	13
Hand – T, P, B – Short	-	64297	-	-	4.00	1.50	0.896	21	14	55
1-1/8"										
Hand – T, P, B – Long	64298	65703	-	-	5.44	2.56	0.896	21	-	13
Hand – T, P, B – Short	64835	64299	-	-	4.00	1.50	0.896	21	14	55
1-3/16"										
Hand – T, P, B – Long	64300	64306	-	-	5.44	2.56	1.021	21	-	13
Hand – T, P, B – Short	-	64307	-	-	4.00	1.50	1.021	21	14	55
1-1/4"										
Hand – T, P, B – Long	64301	64308	-	-	5.75	2.56	1.021	21	-	13
Hand – T, P, B – Short	-	64309	-	-	4.00	1.50	1.021	21	14	55
1-5/16"										
Hand – T, P, B – Long	64302	64310	-	-	5.75	2.56	1.108	21	-	13
Hand – T, P, B – Short	-	64311	-	-	4.00	1.50	1.108	21	14	55
1-3/8"										
Hand – T, P, B – Long	64303	64312	-	-	6.06	3.00	1.108	21	-	13
Hand – T, P, B – Short	-	64313	-	-	4.00	1.50	1.108	21	14	55
1-7/16"										
Hand – T, P, B – Long	64304	65704	-	-	6.06	3.00	1.233	21	-	13
Hand – T, P, B – Short	-	64315	-	-	4.00	1.50	1.233	21	14	55
1-1/2"										
Hand – T, P, B – Long	64305	64316	-	-	6.38	3.00	1.233	21	-	13
Hand – T, P, B – Short	-	64317	-	-	4.00	1.50	1.233	21	14	55
1-9/16"										
Hand – T, P, B – Short	-	65104	-	-	5.00	2.00	1.305	21	10	55
1-5/8"										
Hand – T, P, B – Long	-	64318	-	-	6.69	3.19	1.305	21	-	9
Hand – T, P, B – Short	-	64334	-	-	5.00	2.00	1.305	21	10	55
1-11/16"										
Hand – T, P, B – Short	-	64105	-	-	5.00	2.00	1.403	21	10	55
1-3/4"										
Hand – T, P, B – Long	-	64319	-	-	7.00	3.19	1.403	21	-	9
Hand – T, P, B – Short	-	64335	-	-	5.00	2.00	1.403	21	10	55
1-13/16"										
Hand – T, P, B – Short	-	65106	-	-	5.00	2.00	1.519	21	10	55
1-7/8"										
Hand – T, P, B – Long	-	64320	65107	-	7.31	3.56	1.519	21	-	9
Hand – T, P, B – Short	-	64336	65108	-	5.00	2.00	1.519	21	10	55
2"										
Hand – T, P, B – Long	-	64321	65109	-	7.63	3.56	1.644	21	-	9
Hand – T, P, B – Short	-	64337	64841	-	5.00	2.00	1.644	21	10	55
2-1/8"										
Hand – T, P, B – Long	-	64322	-	-	8.00	3.56	1.769	21	-	9
Hand – T, P, B – Short	-	64338	65112	-	5.25	2.00	1.769	21	10	47
2-1/4"										
Hand – T, P, B – Long	-	64323	65113	-	8.25	3.56	1.894	21	-	9
Hand – T, P, B – Short	-	64339	65114	-	5.25	2.00	1.894	21	10	47

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Specials from Blanks • Large Sizes • HSS

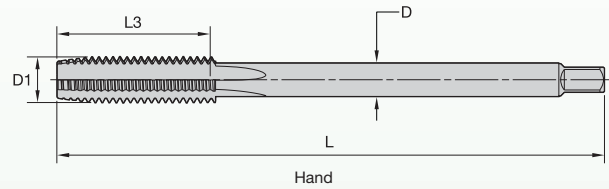
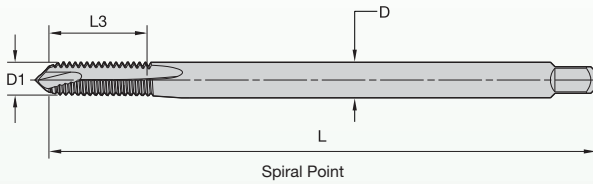
style	uncoated 4-flute	uncoated 6-flute	uncoated 8-flute	uncoated 10-flute	L	L3	D	max H limit	min TPI	max TPI
2-3/8"										
Hand – T, P, B – Long	-	64324	-	-	8.50	4.00	2.019	21	-	9
Hand – T, P, B – Short	-	64340	65116	-	5.25	2.00	2.019	21	10	47
2-1/2"										
Hand – T, P, B – Long	-	64325	65117	-	8.75	4.00	2.100	21	-	9
Hand – T, P, B – Short	-	64341	65118	-	5.25	2.00	2.100	21	10	47
2-5/8"										
Hand – T, P, B – Long	-	64326	65119	-	8.75	4.00	2.225	21	-	9
Hand – T, P, B – Short	-	63942	65120	-	5.50	2.00	2.100	21	10	47
2-3/4"										
Hand – T, P, B – Long	-	64327	-	65121	9.25	4.00	2.350	21	-	9
Hand – T, P, B – Short	-	64642	-	65122	5.50	2.00	2.100	21	10	47
style	uncoated 4-flute	uncoated 6-flute	uncoated 8-flute	uncoated 10-flute	L	L3	D	max D limit	pitch min	pitch max
M27										
Hand – T, P, B – Long	65334	65727	-	-	5.13	2.50	0.896	21	-	2
Hand – T, P, B – Short	-	65340	-	-	4.00	1.50	0.896	21	0.50	3
M28										
Hand – T, P, B – Long	65335	65728	-	-	5.44	2.56	0.896	21	-	2
Hand – T, P, B – Short	-	65341	-	-	4.00	1.50	0.896	21	0.50	3
M30										
Hand – T, P, B – Long	65336	65342	-	-	5.44	2.56	1.021	21	-	2
Hand – T, P, B – Short	-	65343	-	-	4.00	1.50	1.021	21	0.50	3
M33										
Hand – T, P, B – Long	65337	65344	-	-	5.75	2.56	1.108	21	-	2
Hand – T, P, B – Short	-	65345	-	-	4.00	1.50	1.108	21	0.50	3
M36										
Hand – T, P, B – Long	65338	65729	-	-	6.06	3.00	1.108	21	-	2
Hand – T, P, B – Short	-	65346	-	-	4.00	1.50	1.108	21	0.50	3
M38										
Hand – T, P, B – Long	65339	65347	-	-	6.38	3.00	1.233	21	-	2
Hand – T, P, B – Short	-	65348	-	-	4.00	1.50	1.233	21	0.50	3
M39										
Hand – T, P, B – Long	-	65349	-	-	6.69	3.19	1.305	21	-	3
Hand – T, P, B – Short	-	65350	-	-	5.00	2.00	1.305	21	0.50	3
M42										
Hand – T, P, B – Long	-	64856	-	-	7.00	3.19	1.430	21	-	3
M45										
Hand – T, P, B – Long	-	65351	65362	-	7.31	3.56	1.519	21	-	3
Hand – T, P, B – Short	-	65352	-	-	5.00	2.00	1.519	21	0.50	3
M48										
Hand – T, P, B – Long	-	65353	65364	-	7.63	3.56	1.644	21	-	3
Hand – T, P, B – Short	-	65354	-	-	5.00	2.00	1.644	21	0.50	3
M56										
Hand – T, P, B – Long	-	65355	65366	-	8.25	3.56	1.894	21	-	3
Hand – T, P, B – Short	-	65356	-	-	5.25	2.00	1.894	21	0.60	3
M64										
Hand – T, P, B – Long	-	65357	65368	-	8.75	4.00	2.250	21	-	3
Hand – T, P, B – Short	-	65358	-	-	5.50	2.00	2.100	21	0.60	3

Pricing Based on Order Quantity

min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	47
48	72

LIGHTNING SERVICE
24 HOUR
SHIPPING

Specials from Blanks • Extended Length • HSS



style	uncoated 4" OAL	uncoated 6" OAL	uncoated 8" OAL	uncoated 10" OAL	L3	D	max H limit	max TPI
#6								
Hand – T, P, B – 2FL	65814	65815	-	-	0.69	0.141	13	100
Hand – T, P, B – 3FL	65214	64575	-	-	0.69	0.141	13	100
Hand – T, P, B – 4FL	67184	-	-	-	0.69	0.141	13	100
Spiral-Point Gun – P, B – 2FL	65206	64566	-	-	0.69	0.141	13	100
#8								
Hand – T, P, B – 2FL	65816	65817	-	-	0.75	0.168	13	100
Hand – T, P, B – 3FL	65826	65827	-	-	0.75	0.168	13	100
Hand – T, P, B – 4FL	65215	65202	-	-	0.75	0.168	13	100
Spiral-Point Gun – P, B – 2FL	65207	64567	-	-	0.75	0.168	13	100
Spiral-Point Gun – P, B – 3FL	65211	65225	-	-	0.75	0.168	13	100
#10								
Hand – T, P, B – 2FL	65818	65819	-	-	0.88	0.194	13	100
Hand – T, P, B – 3FL	65828	65829	-	-	0.88	0.194	13	100
Hand – T, P, B – 4FL	65216	64577	-	-	0.88	0.194	13	100
Spiral-Point Gun – P, B – 2FL	65208	64568	-	-	0.88	0.194	13	100
Spiral-Point Gun – P, B – 3FL	65212	-	-	-	0.88	0.194	13	100
1/4"								
Hand – T, P, B – 2FL	-	65820	65821	-	1.00	0.255	13	80
Hand – T, P, B – 3FL	-	65830	65831	-	1.00	0.255	13	80
Hand – T, P, B – 4FL	-	65230	65254	-	1.00	0.255	13	80
Spiral-Point Gun – P, B – 2FL	-	64570	65238	65262	1.00	0.255	13	80
Spiral-Point Gun – P, B – 3FL	-	65228	65246	-	1.00	0.255	13	80
Small Shank								
Hand – T, P, B – 2FL	67208	67211	-	-	1.00	0.185	13	80
Hand – T, P, B – 3FL	67209	67212	-	-	1.00	0.185	13	80
Hand – T, P, B – 4FL	67210	67213	-	-	1.00	0.185	13	80
Spiral-Point Gun – P, B – 2FL	67293	67296	-	-	1.00	0.185	13	80
Spiral-Point Gun – P, B – 3FL	67294	67297	-	-	1.00	0.185	13	80
5/16"								
Hand – T, P, B – 2FL	-	65823	65824	-	1.13	0.318	13	80
Hand – T, P, B – 3FL	-	65833	65834	65835	1.13	0.318	13	80
Hand – T, P, B – 4FL	-	67231	65255	65279	1.13	0.318	13	80
Spiral-Point Gun – P, B – 2FL	-	64571	65239	-	1.13	0.318	13	80
Spiral-Point Gun – P, B – 3FL	-	65229	65247	-	1.13	0.318	13	80
Small Shank								
Hand – T, P, B – 2FL	67226	67229	-	-	1.13	0.240	13	80
Hand – T, P, B – 3FL	67227	67230	-	-	1.13	0.240	13	80
Hand – T, P, B – 4FL	67228	-	-	-	1.13	0.240	13	80
Spiral-Point Gun – P, B – 2FL	67317	67320	-	-	1.25	0.240	13	80
Spiral-Point Gun – P, B – 3FL	67318	67321	-	-	1.25	0.240	13	80

(continued)

(continued)

Specials from Blanks • Extended Length • HSS

style	uncoated 4" OAL	uncoated 6" OAL	uncoated 8" OAL	uncoated 10" OAL	L3	D	max H limit	max TPI
3/8"								
Hand — T, P, B — 2FL	-	67259	-	-	1.25	0.381	13	80
Hand — T, P, B — 3FL	-	65836	65837	-	1.25	0.381	13	80
Hand — T, P, B — 4FL	-	65232	65256	65280	1.25	0.381	13	80
Spiral-Point Gun — P, B — 3FL	-	64572	65248	65272	1.25	0.381	13	80
Small Shank								
Hand — T, P, B — 2FL	67253	67256	-	-	1.25	0.275	13	80
Hand — T, P, B — 3FL	67254	67257	-	-	1.25	0.275	13	80
Hand — T, P, B — 4FL	67255	67258	-	-	1.25	0.275	13	80
Spiral-Point Gun — P, B — 2FL	67358	67361	-	-	1.25	0.275	13	80
Spiral-Point Gun — P, B — 3FL	67359	67362	-	-	1.25	0.275	13	80
7/16"								
Hand — T, P, B — 3FL	-	65839	-	-	1.44	0.323	15	80
Hand — T, P, B — 4FL	-	65234	65258	65282	1.44	0.323	15	80
Spiral-Point Gun — P, B — 3FL	-	65269	65250	65274	1.44	0.323	15	80
1/2"								
Hand — T, P, B — 3FL	-	65842	65843	-	1.66	0.367	15	80
Hand — T, P, B — 4FL	-	65235	65259	65283	1.66	0.367	15	80
Spiral-Point Gun — P, B — 3FL	-	64574	65251	65275	1.66	0.367	15	80
5/8"								
Hand — T, P, B — 3FL	-	65845	65846	65847	1.81	0.480	15	64
Hand — T, P, B — 4FL	-	65236	65260	65284	1.81	0.480	15	64
Spiral-Point Gun — P, B — 3FL	-	65268	65252	65276	1.81	0.480	15	64
3/4"								
Hand — T, P, B — 3FL	-	65848	65849	65850	2.00	0.590	15	64
Hand — T, P, B — 4FL	-	65237	65261	65285	2.00	0.590	15	64
Spiral-Point Gun — P, B — 3FL	-	65267	65253	65277	2.00	0.590	15	64

(continued)

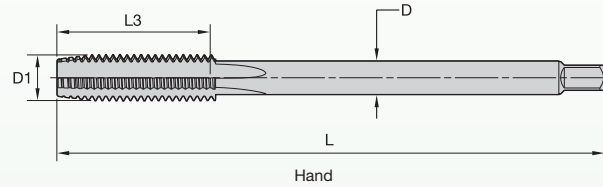
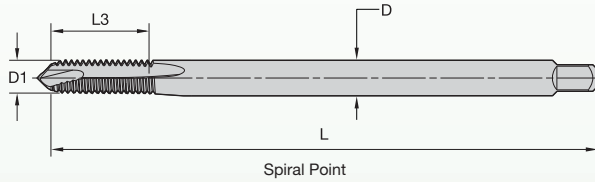
Pricing Based on Order Quantity	
min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	48

LIGHTNING SERVICE
24 HOUR
SHIPPING

Lightning Service

(continued)

Specials from Blanks • Extended Length • HSS



style	uncoated 4" OAL	uncoated 6" OAL	uncoated 8" OAL	uncoated 10" OAL	L3	D	max D limit	pitch min
M3.5								
Hand – T, P, B – 2FL	65871	-	-	-	0.69	0.141	13	0.30
Hand – T, P, B – 3FL	65491	-	-	-	0.69	0.141	13	0.30
Hand – T, P, B – 4FL	67188	67189	-	-	0.69	0.141	13	0.30
Spiral-Point Gun – P, B – 3FL	65470	-	-	-	0.69	0.141	13	0.30
M4								
Hand – T, P, B – 2FL	65873	65874	-	-	0.75	0.168	13	0.30
Hand – T, P, B – 3FL	-	65890	-	-	0.75	0.168	13	0.30
Hand – T, P, B – 4FL	-	65495	-	-	0.75	0.168	13	0.30
Spiral-Point Gun – P, B – 2FL	65450	65453	-	-	0.75	0.168	13	0.30
Spiral-Point Gun – P, B – 3FL	65471	-	-	-	0.75	0.168	13	0.30
M4.5								
Spiral-Point Gun – P, B – 3FL	65472	-	-	-	0.88	0.194	13	0.30
M5								
Hand – T, P, B – 3FL	65917	65918	-	-	0.88	0.194	13	0.30
Hand – T, P, B – 4FL	65919	65920	-	-	0.88	0.194	13	0.30
Spiral-Point Gun – P, B – 2FL	-	64569	-	-	0.88	0.194	13	0.30
Spiral-Point Gun – P, B – 3FL	65213	65227	-	-	0.88	0.194	13	0.30
M6								
Hand – T, P, B – 2FL	-	65877	-	65895	1.00	0.255	13	0.30
Hand – T, P, B – 3FL	-	65893	-	65581	1.00	0.255	13	0.30
Hand – T, P, B – 4FL	-	65571	-	-	1.00	0.255	13	0.30
Spiral-Point Gun – P, B – 2FL	-	65455	-	-	1.00	0.255	13	0.30
Spiral-Point Gun – P, B – 3FL	-	65476	65481	65486	1.00	0.255	13	0.30
Small Shank								
Hand – T, P, B – 2FL	67217	67220	-	-	1.00	0.185	13	0.30
Hand – T, P, B – 3FL	67218	67221	-	-	1.00	0.185	13	0.30
Hand – T, P, B – 4FL	67219	67222	-	-	1.00	0.185	13	0.30
Spiral-Point Gun – P, B – 2FL	67305	67308	-	-	1.00	0.185	13	0.30
Spiral-Point Gun – P, B – 3FL	67306	67309	-	-	1.00	0.185	13	0.30
M6.3								
Spiral-Point Gun – P, B – 3FL	-	65458	-	-	1.00	0.255	13	0.30
M7								
Spiral-Point Gun – P, B – 3FL	-	65477	-	-	1.13	0.318	13	0.30
Small Shank								
Hand – T, P, B – 2FL	67235	67238	-	-	1.13	0.240	13	0.30
Hand – T, P, B – 3FL	67236	67239	-	-	1.13	0.240	13	0.30
Hand – T, P, B – 4FL	67237	67240	-	-	1.13	0.240	13	0.30
Spiral-Point Gun – P, B – 2FL	67328	67331	-	-	1.13	0.240	13	0.30
Spiral-Point Gun – P, B – 3FL	67329	67332	-	-	1.13	0.240	13	0.30

(continued)

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Specials from Blanks • Extended Length • HSS

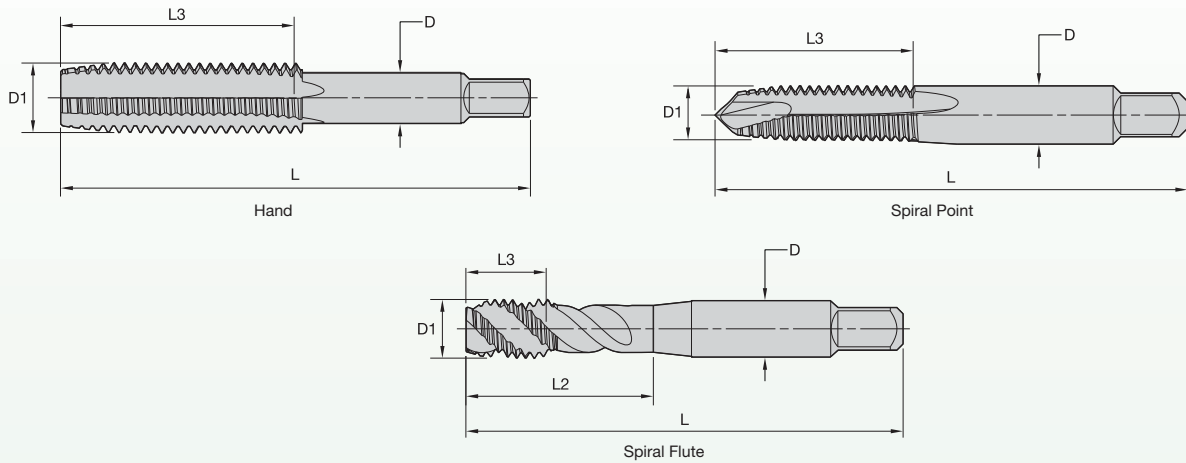
style	uncoated 4" OAL	uncoated 6" OAL	uncoated 8" OAL	uncoated 10" OAL	L3	D	max D limit	pitch min
M8								
Hand – T, P, B – 2FL	-	-	65887	-	1.13	0.318	13	0.30
Hand – T, P, B – 3FL	-	65902	65903	65904	1.13	0.318	13	0.30
Hand – T, P, B – 4FL	-	65859	65860	65861	1.13	0.318	13	0.30
Spiral-Point Gun – P, B – 3FL	-	65464	65466	65678	1.13	0.318	13	0.30
Small Shank								
Hand – T, P, B – 2FL	67244	67247	-	-	1.13	0.240	13	0.30
Hand – T, P, B – 3FL	67245	67248	-	-	1.13	0.240	13	0.30
Hand – T, P, B – 4FL	67246	67249	-	-	1.13	0.240	13	0.30
Spiral-Point Gun – P, B – 2FL	67343	67346	-	-	1.13	0.240	13	0.30
Spiral-Point Gun – P, B – 3FL	67344	67347	-	-	1.13	0.240	13	0.30
M9								
Hand – T, P, B – 2FL	-	67269	-	-	1.25	0.381	13	0.30
Spiral-Point Gun – P, B – 3FL	-	65457	-	-	1.25	0.381	13	0.30
Small Shank								
Hand – T, P, B – 2FL	67263	67266	-	-	1.25	0.275	13	0.30
Hand – T, P, B – 3FL	67264	67267	-	-	1.25	0.275	13	0.30
Hand – T, P, B – 4FL	67265	67268	-	-	1.25	0.275	13	0.30
Spiral-Point Gun – P, B – 2FL	67373	67376	-	-	1.25	0.275	13	0.30
Spiral-Point Gun – P, B – 3FL	67374	67377	-	-	1.25	0.275	13	0.30
M10								
Hand – T, P, B – 2FL	-	67279	-	-	1.25	0.381	13	0.30
Hand – T, P, B – 3FL	-	65905	65906	65907	1.25	0.381	13	0.30
Hand – T, P, B – 4FL	-	65233	65257	65281	1.25	0.381	13	0.30
Spiral-Point Gun – P, B – 3FL	-	64573	65249	65273	1.25	0.381	13	0.30
Small Shank								
Hand – T, P, B – 2FL	67273	67276	-	-	1.25	0.275	13	0.30
Hand – T, P, B – 3FL	67274	67277	-	-	1.25	0.275	13	0.30
Hand – T, P, B – 4FL	67275	67278	-	-	1.25	0.275	13	0.30
Spiral-Point Gun – P, B – 2FL	67388	67391	-	-	1.25	0.275	13	0.30
Spiral-Point Gun – P, B – 3FL	67389	67392	-	-	1.25	0.275	13	0.30
M11								
Hand – T, P, B – 3FL	-	65865	-	-	1.44	0.323	15	0.40
Hand – T, P, B – 4FL	-	65911	65912	65910	1.44	0.323	15	0.40
Spiral-Point Gun – P, B – 3FL	-	65681	-	-	1.44	0.323	15	0.40
M12								
Hand – T, P, B – 3FL	-	65908	65909	65584	1.44	0.367	15	0.40
Hand – T, P, B – 4FL	-	65574	65579	-	1.44	0.367	15	0.40
Spiral-Point Gun – P, B – 3FL	-	65468	65485	65490	1.44	0.367	15	0.40
M16								
Hand – T, P, B – 3FL	-	65868	65869	65870	1.81	0.480	15	0.40
Hand – T, P, B – 4FL	-	65914	65915	65916	1.81	0.480	15	0.40
Spiral-Point Gun – P, B – 3FL	-	65480	65485	65490	1.81	0.480	15	0.40

min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	48

LIGHTNING SERVICE
24 HOUR
SHIPPING

Lightning Service

Specials from Blanks • STI • HSS



style	uncoated 2-flute	uncoated 3-flute	uncoated 4-flute	L	L3	L2	D	max H limit
2 - 56 NC								
Hand – T, P, B	67604	65286	–	1.75	0.56	–	0.141	5
Spiral-Point Gun – P, B	66291	67660	–	1.75	0.56	–	0.141	5
Spiral-Flute 30° – P, B	67701	–	–	1.75	–	–	0.141	5
Spiral-Flute 49° – P, B	68281	–	–	1.75	–	–	0.141	5
3 - 48 NC								
Hand – T, P, B	67605	65287	67606	2.00	0.63	–	0.141	5
Spiral-Point Gun – P, B	66292	67661	–	2.00	0.63	–	0.141	5
Spiral-Flute 30° – P, B	67702	67703	–	2.00	–	–	0.141	5
Spiral-Flute 49° – P, B	68282	68283	–	2.00	–	–	0.141	5
3 - 56 NF								
Hand – T, P, B	–	68376	–	–	–	–	0.141	5
Spiral-Point Gun – P, B	68333	–	–	–	–	–	0.141	5
4 - 40 NC								
Hand – T, P, B	67607	64616	67608	2.00	0.69	–	0.141	7
Spiral-Point Gun – P, B	66293	67662	–	2.00	0.69	–	0.141	7
Spiral-Flute 30° – P, B	67704	67705	–	2.00	–	–	0.141	7
Spiral-Flute 49° – P, B	68284	68285	–	2.00	–	–	0.141	7
4 - 48 NF								
Hand – T, P, B	–	68315	–	2.00	0.69	–	0.141	7
Spiral-Point Gun – P, B	72015	–	–	2.00	0.69	–	0.141	7
5 - 40 NC								
Hand – T, P, B	67609	64617	67610	2.13	0.75	–	0.168	7
Spiral-Point Gun – P, B	66294	67663	–	2.13	0.75	–	0.168	7
Spiral-Flute 30° – P, B	67706	67707	–	2.13	–	–	0.168	7
Spiral-Flute 49° – P, B	68286	68287	–	2.13	–	–	0.168	7
6 - 32 NC								
Hand – T, P, B	67611	64618	67612	2.38	0.88	–	0.194	7
Spiral-Point Gun – P, B	66295	67664	–	2.38	0.88	–	0.194	7
Spiral-Flute 30° – P, B	67708	68472	–	2.38	0.69	0.88	0.194	7
Spiral-Flute 49° – P, B	68288	68317	–	2.38	0.69	0.88	0.194	7
6 - 40 NF								
Hand – T, P, B	–	68316	–	2.38	0.88	–	0.194	7
Spiral-Point Gun – P, B	68323	–	–	2.38	0.88	–	0.194	7
Spiral-Flute 49° – P, B	–	68411	–	2.38	0.69	0.88	0.194	7
8 - 32 NC								
Hand – T, P, B	64830	65147	67613	2.38	0.94	–	0.220	7
Spiral-Point Gun – P, B	66296	67665	67666	2.38	0.94	–	0.220	7
Spiral-Flute 30° – P, B	–	67709	–	2.38	0.75	0.94	0.220	7
Spiral-Flute 49° – P, B	–	68289	–	2.38	0.75	0.94	0.220	7

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Specials from Blanks • STI • HSS

style	uncoated 2-flute	uncoated 3-flute	uncoated 4-flute	L	L3	L2	D	max H limit
8 - 36 NF								
Hand — T, P, B	67614	66281	67615	2.38	0.94	-	0.220	7
Spiral-Point Gun — P, B	66297	67667	67668	2.38	0.94	-	0.220	7
Spiral-Flute 30° — P, B	-	67710	-	2.38	0.75	0.94	0.220	7
Spiral-Flute 49° — P, B	-	68290	-	2.38	0.75	0.94	0.220	7
10 - 24 NC								
Hand — T, P, B	67616	64619	67617	2.50	1.00	-	0.255	7
Spiral-Point Gun — P, B	64653	67669	67670	2.50	1.00	-	0.255	7
Spiral-Flute 30° — P, B	-	67711	-	2.50	0.88	1.00	0.255	7
Spiral-Flute 49° — P, B	-	68291	-	2.50	0.88	1.00	0.255	7
10 - 32 NF								
Hand — T, P, B	67619	66282	67620	2.50	1.00	-	0.255	7
Spiral-Point Gun — P, B	66298	67671	67672	2.50	1.00	-	0.255	7
Spiral-Flute 30° — P, B	-	67712	-	2.50	0.88	1.00	0.255	7
Spiral-Flute 49° — P, B	-	68292	-	2.50	0.88	1.00	0.255	7
1/4 - 20 NC								
Hand — T, P, B	67622	64621	67623	2.72	1.13	-	0.318	7
Spiral-Point Gun — P, B	64655	67673	67674	2.72	1.13	-	0.318	7
Spiral-Flute 30° — P, B	-	67713	-	2.72	0.63	1.00	0.318	7
Spiral-Flute 49° — P, B	-	68293	-	2.72	0.63	1.00	0.318	7
1/4 - 28 NF								
Hand — T, P, B	67625	66283	67626	2.72	1.13	-	0.318	7
Spiral-Point Gun — P, B	66299	67675	67676	2.72	1.13	-	0.318	7
Spiral-Flute 30° — P, B	-	67714	-	2.72	0.63	1.00	0.318	7
Spiral-Flute 49° — P, B	-	68294	-	2.72	0.63	1.00	0.318	7
5/16 - 18 NC								
Hand — T, P, B	67628	67629	64630	2.94	1.25	-	0.381	7
Spiral-Point Gun — P, B	67677	64655	67678	2.94	1.25	-	0.381	7
Spiral-Flute 30° — P, B	-	67715	-	2.94	1.12	1.25	0.381	7
Spiral-Flute 49° — P, B	-	68295	-	2.94	1.12	1.25	0.381	7
5/16 - 24 NF								
Hand — T, P, B	67631	67632	66284	2.94	1.25	-	0.381	7
Spiral-Point Gun — P, B	67679	66300	67680	2.94	1.25	-	0.381	7
Spiral-Flute 30° — P, B	-	67716	-	2.94	1.12	1.25	0.381	7
Spiral-Flute 49° — P, B	-	68296	-	2.94	1.12	1.25	0.381	7
3/8 - 16 NC								
Hand — T, P, B	-	67634	64631	3.38	1.66	-	0.367	7
Spiral-Point Gun — P, B	-	64657	67681	3.38	1.66	-	0.367	7
Spiral-Flute 30° — P, B	-	67717	-	3.38	1.25	1.66	0.367	7
Spiral-Flute 49° — P, B	-	68297	-	3.38	1.25	1.66	0.367	7
3/8 - 24 NF								
Hand — T, P, B	-	67636	66285	3.38	1.66	-	0.367	7
Spiral-Point Gun — P, B	-	66301	67682	3.38	1.66	-	0.367	7
Spiral-Flute 30° — P, B	-	67718	-	3.38	1.25	1.66	0.367	7
Spiral-Flute 49° — P, B	-	68298	-	3.38	1.25	1.66	0.367	7

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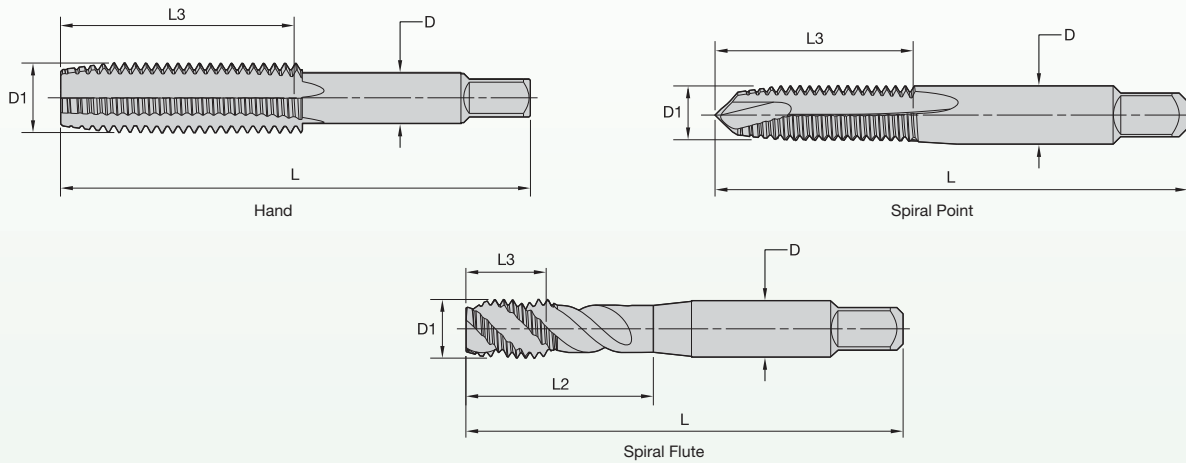
min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	47
48	72

LIGHTNING SERVICE
24 HOUR
SHIPPING

Lightning Service

(continued)

Specials from Blanks • STI • HSS



style	uncoated 2-flute	uncoated 3-flute	uncoated 4-flute	L	L3	L2	D	max H limit
7/16 - 14 NC								
Hand – T, P, B	-	67638	64632	3.59	1.66	-	0.429	15
Spiral-Point Gun – P, B	-	64658	67683	3.59	1.66	-	0.429	15
Spiral-Flute 30° – P, B	-	67719	-	3.59	-	-	0.429	15
Spiral-Flute 49° – P, B	-	68299	-	3.59	-	-	0.429	15
7/16 - 20 NF								
Hand – T, P, B	-	67640	66286	3.59	1.66	-	0.429	15
Spiral-Point Gun – P, B	-	66302	67684	3.59	1.66	-	0.429	15
Spiral-Flute 30° – P, B	-	67720	-	3.59	-	-	0.429	15
Spiral-Flute 49° – P, B	-	68300	-	3.59	-	-	0.429	15
1/2 - 13 NC								
Hand – T, P, B	-	67642	64633	3.81	1.81	-	0.480	15
Spiral-Point Gun – P, B	-	64659	67685	3.81	1.81	-	0.480	15
Spiral-Flute 30° – P, B	-	67721	-	3.81	-	-	0.480	15
Spiral-Flute 49° – P, B	-	68301	-	3.81	-	-	0.480	15
1/2 - 20 NF								
Hand – T, P, B	-	67644	66287	3.81	1.81	-	0.480	15
Spiral-Point Gun – P, B	-	66309	67686	3.81	1.81	-	0.480	15
Spiral-Flute 30° – P, B	-	67722	-	3.81	-	-	0.480	15
Spiral-Flute 49° – P, B	-	68302	-	3.81	-	-	0.480	15
9/16 - 12 NC								
Hand – T, P, B	-	67646	-	3.81	1.81	-	0.480	15
Spiral-Point Gun – P, B	-	67687	67688	3.81	1.81	-	0.480	15
Spiral-Flute 30° – P, B	-	67723	-	3.81	-	-	0.480	15
Spiral-Flute 49° – P, B	-	68303	-	3.81	-	-	0.480	15
9/16 - 18 NF								
Hand – T, P, B	-	67648	66288	3.81	1.81	-	0.480	15
Spiral-Point Gun – P, B	-	67689	67690	3.81	1.81	-	0.480	15
Spiral-Flute 30° – P, B	-	67724	-	3.81	-	-	0.480	15
Spiral-Flute 49° – P, B	-	68304	-	3.81	-	-	0.480	15
5/8 - 11 NC								
Hand – T, P, B	-	67650	64635	4.25	2.00	-	0.590	15
Spiral-Point Gun – P, B	-	67691	67692	4.25	2.00	-	0.590	15
Spiral-Flute 30° – P, B	-	67725	-	4.25	-	-	0.590	15
Spiral-Flute 49° – P, B	-	68305	-	4.25	-	-	0.590	15

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Specials from Blanks • STI • HSS

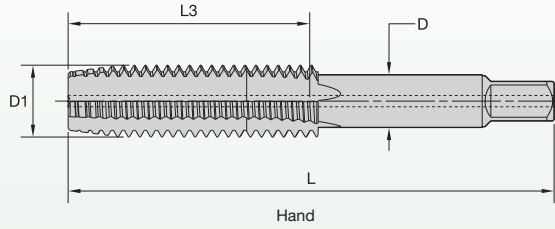
style	uncoated 2-flute	uncoated 3-flute	uncoated 4-flute	L	L3	L2	D	max H limit
5/8 - 18 NF								
Hand — T, P, B	-	67652	66289	4.25	2.00	-	0.590	15
Spiral-Point Gun — P, B	-	67693	67694	4.25	2.00	-	0.590	15
Spiral-Flute 30° — P, B	-	67726	-	4.25	-	-	0.590	15
Spiral-Flute 49° — P, B	-	68306	-	4.25	-	-	0.590	15
3/4 - 10 NC								
Hand — T, P, B	-	67654	64636	4.69	2.22	-	0.697	15
Spiral-Point Gun — P, B	-	67695	67696	4.69	2.22	-	0.697	15
Spiral-Flute 30° — P, B	-	67727	-	4.69	-	-	0.697	15
Spiral-Flute 49° — P, B	-	68307	-	4.69	-	-	0.697	15
3/4 - 16 NF								
Hand — T, P, B	-	67656	66290	4.69	2.22	-	0.697	15
Spiral-Point Gun — P, B	-	67697	67698	4.69	2.22	-	0.697	15
Spiral-Flute 30° — P, B	-	67728	-	4.69	-	-	0.697	15
Spiral-Flute 49° — P, B	-	68308	-	4.69	-	-	0.697	15
7/8 - 9 NC								
Hand — T, P, B	-	-	64638	5.13	2.50	-	0.800	15
7/8 - 14								
Hand — T, P, B	-	67658	-	5.13	2.50	-	0.800	15
Spiral-Point Gun — P, B	-	67699	67700	5.13	2.50	-	0.800	15
Spiral-Flute 30° — P, B	-	67729	-	5.13	2.50	-	0.800	15
Spiral-Flute 49° — P, B	-	68309	-	5.13	2.50	-	0.800	15

min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	47
48	72

LIGHTNING SERVICE
24 HOUR
SHIPPING

Lightning Service

Specials from Blanks • Internal Coolant • HSS



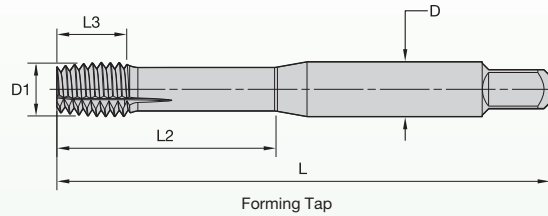
style	uncoated	flutes	L	L3	D	max H limit	max TPI
3/8"							
Hand – Plug or Bottom	65753	3	2.94	0.75	0.381	13	80
7/16"							
Hand – Plug or Bottom	65754	4	3.16	0.88	0.323	13	80
1/2"							
Hand – Plug or Bottom	65755	4	3.38	0.94	0.367	13	80
9/16"							
Hand – Plug or Bottom	65756	4	3.59	1.00	0.429	13	64
5/8"							
Hand – Plug or Bottom	65757	4	3.81	1.09	0.480	13	64
3/4"							
Hand – Plug or Bottom	65758	4	4.25	1.22	0.590	13	64
1"							
Hand – Plug or Bottom	65760	4	5.13	1.50	0.800	13	64

Pricing Based on Order Quantity

min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	47
48	72

LIGHTNING SERVICE
24 HOUR
SHIPPING

Specials from Blanks • Form Taps • HSS



style	uncoated	oil grooves	L	L3	L2	D	max H limit	max TPI
#0								
Plug or Bottom	64508	-	1.63	0.31	-	0.141	7	100
#1								
Plug or Bottom	64509	-	1.69	0.38	-	0.141	7	100
#2								
Plug or Bottom	64510	-	1.75	0.44	-	0.141	11	100
#3								
Plug or Bottom	64511	-	1.81	0.50	-	0.141	11	100
#4								
Plug or Bottom	64512	-	1.88	0.56	-	0.141	11	100
#5								
Plug or Bottom	64513	4	1.94	0.63	-	0.141	11	100
#6								
Plug or Bottom	64514	4	2.00	0.38	0.69	0.141	11	100
#8								
Plug or Bottom	64515	4	2.13	0.38	0.75	0.168	13	100
#10								
Plug or Bottom	64516	4	2.38	0.50	0.88	0.194	13	100
#12								
Plug or Bottom	64518	4	2.38	0.50	0.94	0.220	13	100
1/4"								
Plug or Bottom	64519	4	2.50	0.63	1.00	0.255	13	80
5/16"								
Plug or Bottom	64520	4	2.72	0.69	1.13	0.318	13	80
3/8"								
Plug or Bottom	64521	4	2.94	0.75	1.25	0.381	13	80
7/16"								
Plug or Bottom	64523	4	3.16	0.88	-	0.323	15	80
1/2"								
Plug or Bottom	64524	4	3.38	0.94	-	0.367	15	80
9/16"								
Plug or Bottom	64525	6	3.59	1.00	-	0.429	15	64
5/8"								
Plug or Bottom	64526	6	3.81	1.09	-	0.480	15	64
3/4"								
Plug or Bottom	64527	6	4.25	1.22	-	0.590	15	64
7/8"								
Plug or Bottom	65176	6	4.69	1.33	-	0.697	15	64
1"								
Plug or Bottom	65178	6	5.13	1.50	-	0.800	15	64

(continued)

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Specials from Blanks • Form Taps • HSS

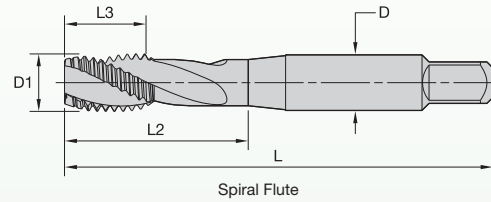
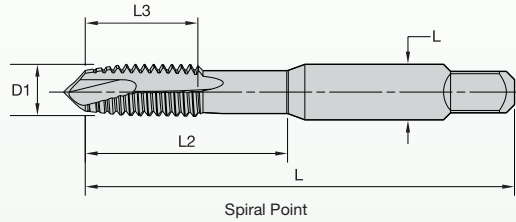
style	uncoated	oil grooves	L	L3	L2	D	max H limit	max TPI
M1.6								
Plug or Bottom	65549	–	1.63	0.31	–	0.141	7	0.3
M1.8								
Plug or Bottom	65550	–	1.69	0.38	–	0.141	7	0.3
M2								
Plug or Bottom	65551	–	1.75	0.44	–	0.141	11	0.3
M2.5								
Plug or Bottom	65552	–	1.81	0.50	–	0.141	11	0.3
M3								
Plug or Bottom	65553	4	1.94	0.63	–	0.141	11	0.3
M3.5								
Plug or Bottom	65554	4	2.00	0.38	0.69	0.141	11	0.3
M4								
Plug or Bottom	65555	4	2.13	0.38	0.75	0.168	13	0.3
M4.5								
Plug or Bottom	65556	4	2.38	0.50	0.88	0.194	13	0.3
M5								
Plug or Bottom	64517	4	2.38	0.50	0.88	0.194	13	0.3
M6								
Plug or Bottom	65559	4	2.50	0.63	1.00	0.255	13	0.3
M8								
Plug or Bottom	65560	4	2.72	0.69	1.13	0.318	13	0.3
M9								
Plug or Bottom	65561	4	2.94	0.75	1.25	0.381	13	0.3
M10								
Plug or Bottom	64522	4	2.94	0.75	1.25	0.381	13	0.3
M11								
Plug or Bottom	65563	4	3.16	0.88	–	0.323	15	0.3
M12								
Plug or Bottom	65564	4	3.38	0.94	–	0.367	15	0.3
M14								
Plug or Bottom	65565	6	3.59	1.00	–	0.429	15	0.4
M16								
Plug or Bottom	65566	6	3.81	1.09	–	0.480	15	0.4
M20								
Plug or Bottom	65567	6	4.47	1.31	–	0.652	15	0.4
M22								
Plug or Bottom	65568	6	4.69	1.33	–	0.697	15	0.4
M24								
Plug or Bottom	65569	6	4.91	1.34	–	0.760	15	0.4
M25								
Plug or Bottom	65570	6	5.13	1.50	–	0.800	15	0.4

Pricing Based on Order Quantity

min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	47
48	72

LIGHTNING SERVICE
24 HOUR
SHIPPING

Specials from Blanks • VariTap • HSS-E



style	oxide	flutes	L	L3	L2	D	max H limit	max TPI
#2								
Spiral-Point Gun – Plug	83000	2	1.750	0.440	–	0.141	13	100
#3								
Spiral-Point Gun – Plug	83001	2	1.810	0.500	–	0.141	13	100
#4								
Spiral-Point Gun – Plug	83002	2	1.880	0.340	0.560	0.141	13	100
Spiral-Flute – Modified Bottom	83016	2	1.880	0.310	0.560	0.141	13	100
Extended-Length								
Spiral-Point Gun – Plug	83032	2	6.000	0.340	0.560	0.141	13	100
Spiral-Flute – Modified Bottom	83043	2	6.000	0.340	0.560	0.141	13	100
#5								
Spiral-Point Gun – Plug	83003	3	1.940	0.370	0.620	0.141	13	100
Spiral-Flute – Modified Bottom	83017	3	1.940	0.190	0.620	0.141	13	100
#6								
Spiral-Point Gun – Plug	83004	3	2.000	0.390	0.810	0.141	13	100
Spiral-Flute – Modified Bottom	83018	3	2.000	0.260	0.810	0.141	13	100
Extended-Length								
Spiral-Point Gun – Plug	83033	3	6.000	0.390	0.810	0.141	13	100
Spiral-Flute – Modified Bottom	83044	3	6.000	0.390	0.810	0.141	13	100
#8								
Spiral-Point Gun – Plug	83005	3	2.000	0.430	0.870	0.168	13	100
Spiral-Flute – Modified Bottom	83019	3	2.000	0.260	0.870	0.168	13	100
Extended-Length								
Spiral-Point Gun – Plug	83034	3	6.000	0.430	0.870	0.168	13	100
Spiral-Flute – Modified Bottom	83045	3	6.000	0.430	0.870	0.168	13	100
#10								
Spiral-Point Gun – Plug	83006	3	2.380	0.510	1.060	0.194	13	100
Spiral-Flute – Modified Bottom	83020	3	2.380	0.330	1.060	0.194	13	100
Extended-Length								
Spiral-Point Gun – Plug	83035	3	6.000	0.510	1.060	0.194	13	100
Spiral-Flute – Modified Bottom	83046	3	6.000	0.510	1.060	0.194	13	100
#12								
Spiral-Point Gun – Plug	83007	3	2.380	0.550	1.120	0.220	13	100
Spiral-Flute – Modified Bottom	83021	3	2.380	0.340	1.120	0.220	13	100
1/4"								
Spiral-Point Gun – Plug	83008	3	2.500	0.560	1.230	0.255	13	80
Spiral-Flute – Modified Bottom	83022	3	2.500	0.400	1.230	0.255	13	80
Extended-Length								
Spiral-Point Gun – Plug	83036	3	6.000	0.560	1.230	0.255	13	80
Spiral-Flute – Modified Bottom	83047	3	6.000	0.560	1.230	0.255	13	80

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Specials from Blanks • VariTap • HSS-E

style	oxide	flutes	L	L3	L2	D	max H limit	max TPI
5/16"								
Spiral-Point Gun – Plug	83009	3	2.720	0.630	1.390	0.318	13	80
Spiral-Flute – Modified Bottom	83023	3	2.720	0.430	1.390	0.318	13	80
Extended-Length								
Spiral-Point Gun – Plug	83037	3	6.000	0.630	1.390	0.318	13	80
Spiral-Flute – Modified Bottom	83048	3	6.000	0.630	1.390	0.318	13	80
3/8"								
Spiral-Point Gun – Plug	83010	3	2.940	0.710	1.550	0.381	13	80
Spiral-Flute – Modified Bottom	83024	3	2.940	0.510	1.550	0.381	13	80
Extended-Length								
Spiral-Point Gun – Plug	83038	3	6.000	0.710	1.550	0.381	13	80
Spiral-Flute – Modified Bottom	83049	3	6.000	0.710	1.550	0.381	13	80
7/16"								
Spiral-Point Gun – Plug	83011	3	3.160	0.880	–	0.323	15	80
Spiral-Flute – Modified Bottom	83025	3	3.160	0.500	–	0.323	15	80
Extended-Length								
Spiral-Point Gun – Plug	83039	3	6.000	0.880	–	0.323	15	80
Spiral-Flute – Modified Bottom	83050	3	6.000	0.880	–	0.323	15	80
1/2"								
Spiral-Point Gun – Plug	83012	3	3.380	0.920	–	0.367	15	80
Spiral-Flute – Modified Bottom	83026	3	3.380	0.570	–	0.367	15	80
Extended-Length								
Spiral-Point Gun – Plug	83040	3	6.000	0.920	–	0.367	15	80
Spiral-Flute – Modified Bottom	83051	3	6.000	0.920	–	0.367	15	80
9/16"								
Spiral-Point Gun – Plug	83013	3	3.590	0.980	–	0.429	15	64
Spiral-Flute – Modified Bottom	83027	3	3.590	0.630	–	0.429	15	64
5/8"								
Spiral-Point Gun – Plug	83014	3	3.810	1.060	–	0.480	15	64
Spiral-Flute – Modified Bottom	83028	3	3.810	0.690	–	0.480	15	64
11/16"								
Spiral-Point Gun – Plug	84844	3	4.031	1.250	–	0.542	15	64
Spiral-Flute – Modified Bottom	64843	3	4.031	0.610	–	0.542	15	64
3/4"								
Spiral-Point Gun – Plug	83015	3	4.250	1.210	–	0.590	15	64
Spiral-Flute – Modified Bottom	83029	4	4.250	0.760	–	0.590	15	64
style	oxide	flutes	L	L3	L2	D	max D limit	pitch min
M2								
Spiral-Point Gun – Plug	68488	2	1.750	0.440	–	0.141	11	0.30
M2.5								
Spiral-Point Gun – Plug	68438	2	1.810	0.500	–	0.141	11	0.30
M3								
Spiral-Point Gun – Plug	83052	3	1.940	0.370	0.620	0.141	13	0.30
Spiral-Flute – Modified Bottom	83070	3	1.940	0.190	0.620	0.141	13	0.30
M3.5								
Spiral-Point Gun – Plug	83053	3	2.000	0.390	0.810	0.141	13	0.30
Spiral-Flute – Modified Bottom	83071	3	2.000	0.260	0.810	0.141	13	0.30

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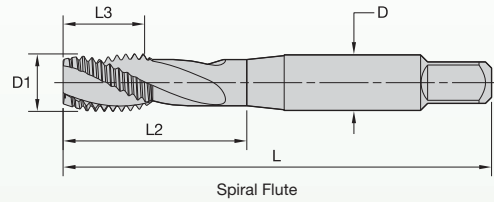
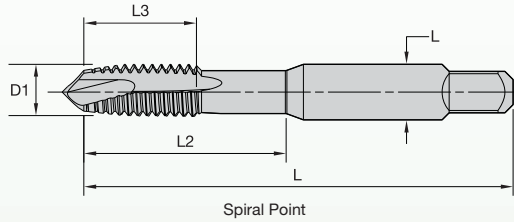
Pricing Based on Order Quantity

min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	47
48	72

Five day lead time.

(continued)

Specials from Blanks • VariTap • HSS-E



style	oxide	flutes	L	L3	L2	D	max D limit	pitch min
M4								
Spiral-Point Gun – Plug	83054	3	2.130	0.430	0.870	0.168	13	0.30
Spiral-Flute – Modified Bottom	83072	3	2.130	0.260	0.870	0.168	13	0.30
Extended-Length								
Spiral-Flute – Modified Bottom	83163	3	6.000	0.430	0.870	0.168	13	0.30
M5								
Spiral-Point Gun – Plug	83055	–	2.380	0.510	1.060	0.194	13	0.30
Spiral-Flute – Modified Bottom	–	–	–	–	–	–	13	0.30
Extended-Length								
Spiral-Point Gun – Plug	83040	–	6.000	0.510	1.060	0.194	13	0.30
Spiral-Flute – Modified Bottom	72159	–	6.000	0.510	1.060	0.194	13	0.30
M6								
Spiral-Point Gun – Plug	83056	3	2.500	0.560	1.230	0.255	13	0.30
Spiral-Flute – Modified Bottom	83074	3	2.500	0.400	1.230	0.255	13	0.30
Extended-Length								
Spiral-Point Gun – Plug	83179	3	6.000	0.560	1.230	0.255	13	0.30
Spiral-Flute – Modified Bottom	68489	3	6.000	0.560	1.230	0.255	13	0.30
M7								
Spiral-Point Gun – Plug	83057	3	2.720	0.630	1.390	0.318	13	0.30
Spiral-Flute – Modified Bottom	83075	3	2.720	0.430	1.390	0.318	13	0.30
Extended-Length								
Spiral-Flute – Modified Bottom	68490	3	6.000	0.630	1.390	0.318	13	0.30
M8								
Spiral-Point Gun – Plug	83058	3	2.720	0.630	1.390	0.318	13	0.30
Spiral-Flute – Modified Bottom	83076	3	2.720	0.430	1.390	0.318	13	0.30
Extended-Length								
Spiral-Point Gun – Plug	68312	3	6.000	0.630	1.390	0.318	13	0.30
Spiral-Flute – Modified Bottom	83149	3	6.000	0.630	1.390	0.318	13	0.30
M9								
Spiral-Point Gun – Plug	72214	3	2.940	0.710	1.550	0.381	13	0.30
Spiral-Flute – 2-1/2 to 3-1/2 Pitches	68480	3	2.940	0.510	1.550	0.381	13	0.30
Extended-Length								
Spiral-Flute – Modified Bottom	68491	3	6.000	0.710	1.550	0.381	13	0.30
M10								
Spiral-Point Gun – Plug	83060	3	2.940	0.710	1.550	0.381	13	0.30
Spiral-Flute – Modified Bottom	83078	3	2.940	0.510	1.550	0.381	13	0.30
Extended-Length								
Spiral-Point Gun – Plug	68313	3	6.000	0.710	1.550	0.381	13	0.30
Spiral-Flute – Modified Bottom	83155	3	6.000	0.710	1.550	0.381	13	0.30

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Specials from Blanks • VariTap • HSS-E

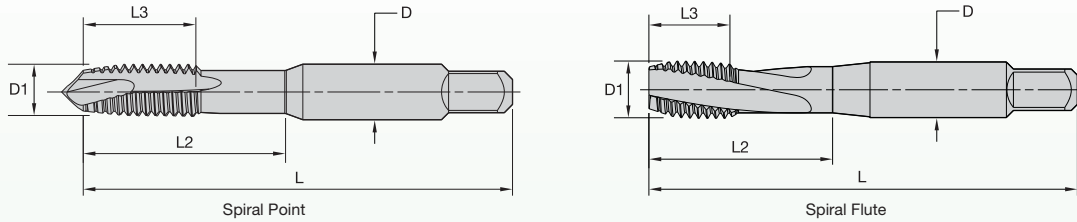
style	oxide	flutes	L	L3	L2	D	max D limit	pitch min
M11								
Spiral-Point Gun – Plug	72136	3	3.160	0.880	–	0.323	13	0.30
Spiral-Flute – Modified Bottom	83176	3	3.160	0.500	–	0.323	13	0.30
Extended-Length								
Spiral-Flute – Modified Bottom	68492	3	6.000	0.880	–	0.323	13	0.30
M12								
Spiral-Point Gun – Plug	83062	3	3.380	0.920	–	0.367	15	0.30
Spiral-Flute – Modified Bottom	83080	3	3.380	0.570	–	0.367	15	0.30
Extended-Length								
Spiral-Flute – Modified Bottom	68493	3	6.000	0.920	–	0.367	15	0.30
M12.5								
Extended-Length								
Spiral-Flute – Modified Bottom	68494	3	6.000	0.920	–	0.367	15	0.30
M14								
Spiral-Point Gun – Plug	83064	3	3.590	0.980	–	0.429	15	0.40
Spiral-Flute – Modified Bottom	83082	3	3.590	0.630	–	0.429	15	0.40
M15								
Spiral-Point Gun – Plug	83199	3	3.810	1.060	–	0.480	15	0.40
M16								
Spiral-Point Gun – Plug	83066	3	3.810	1.060	–	0.480	15	0.40
Spiral-Flute – Modified Bottom	83084	3	3.810	0.690	–	0.480	15	0.40
M18								
Spiral-Point Gun – Plug	83068	3	4.030	1.070	–	0.542	15	0.40
Spiral-Flute – Modified Bottom	83086	3	4.030	0.610	–	0.542	15	0.40

Pricing Based on Order Quantity

min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	47
48	72

Five day lead time.

Specials from Blanks • EM-NI • HSS-E-PM



style	oxide nitride	flutes	L	L3	L2	D	max H limit	max TPI
#2								
Spiral-Point Gun – Plug	83104	2	1.75	0.44	–	0.141	13	100
Spiral-Flute – 3 to 4 Pitches	83117	3	1.75	0.44	–	0.141	13	100
#4								
Spiral-Point Gun – Plug	83105	2	1.88	0.34	0.56	0.141	13	100
Spiral-Flute – 3 to 4 Pitches	83118	3	1.88	0.34	0.56	0.141	13	100
#5								
Spiral-Point Gun – Plug	83106	3	1.94	0.37	0.62	0.141	13	100
Spiral-Flute – 3 to 4 Pitches	83119	3	1.94	0.37	0.62	0.141	13	100
#6								
Spiral-Point Gun – Plug	83107	3	2.00	0.39	0.81	0.141	13	100
Spiral-Flute – 3 to 4 Pitches	83120	3	2.00	0.39	0.81	0.141	13	100
#8								
Spiral-Point Gun – Plug	83108	3	2.13	0.43	0.87	0.168	13	100
Spiral-Flute – 3 to 4 Pitches	83121	3	2.13	0.43	0.87	0.168	13	100
#10								
Spiral-Point Gun – Plug	83109	3	2.38	0.51	1.06	0.194	13	80
Spiral-Flute – 3 to 4 Pitches	83122	3	2.38	0.51	1.06	0.194	13	80
1/4"								
Spiral-Point Gun – Plug	83110	3	2.50	0.56	1.23	0.255	13	80
Spiral-Flute – 3 to 4 Pitches	83123	3	2.50	0.56	1.23	0.255	13	80
5/16"								
Spiral-Point Gun – Plug	83111	3	2.72	0.63	1.39	0.318	13	80
Spiral-Flute – 3 to 4 Pitches	83124	3	2.72	0.63	1.39	0.318	13	80
3/8"								
Spiral-Point Gun – Plug	83112	3	2.94	0.71	1.55	0.381	13	80
Spiral-Flute – 3 to 4 Pitches	83125	3	2.94	0.71	1.55	0.381	13	80
7/16"								
Spiral-Point Gun – Plug	83113	3	3.16	0.88	–	0.323	15	80
Spiral-Flute – 3 to 4 Pitches	83126	3	3.16	0.88	–	0.323	15	80
1/2"								
Spiral-Point Gun – Plug	83114	3	3.38	0.92	–	0.367	15	80
Spiral-Flute – 3 to 4 Pitches	83127	3	3.38	0.92	–	0.367	15	80
9/16"								
Spiral-Point Gun – Plug	72009	3	3.59	0.98	–	0.429	15	64
Spiral-Flute – 3 to 4 Pitches	72099	4	3.59	0.98	–	0.429	15	64
5/8"								
Spiral-Point Gun – Plug	83115	3	3.81	1.06	–	0.480	15	64
Spiral-Flute – 3 to 4 Pitches	83128	4	3.81	1.06	–	0.480	15	64
3/4"								
Spiral-Point Gun – Plug	83116	3	4.25	1.21	–	0.590	15	64
Spiral-Flute – 3 to 4 Pitches	83129	4	4.25	1.21	–	0.590	15	64

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Specials from Blanks • EM-NI • HSS-E-PM

style	oxide nitride	flutes	L	L3	L2	D	max D limit	pitch min
M2								
Spiral-Point Gun – Plug	68479	2	1.75	0.44	–	0.141	11	0.30
Spiral-Flute – 3 to 4 Pitches	83177	2	1.75	0.44	–	0.141	13	0.30
M2.2								
Spiral-Point Gun – Plug	68439	2	1.75	0.44	–	0.141	11	0.30
Spiral-Flute – 3 to 4 Pitches	72055	3	1.75	0.44	–	0.141	13	0.30
M2.5								
Spiral-Point Gun – Plug	83200	2	1.81	0.50	–	0.141	11	0.30
M3								
Spiral-Point Gun – Plug	83181	2	1.94	0.37	0.62	0.141	13	0.30
Spiral-Flute – 3 to 4 Pitches	83171	3	1.94	0.37	0.62	0.141	13	0.30
M3.5								
Spiral-Point Gun – Plug	83166	3	2.00	0.39	0.81	0.141	13	0.30
Spiral-Flute – 3 to 4 Pitches	72144	3	2.00	0.39	0.81	0.141	13	0.30
M4								
Spiral-Point Gun – Plug	83180	3	2.13	0.43	0.87	0.168	13	0.30
Spiral-Flute – 3 to 4 Pitches	72119	3	2.13	0.43	0.87	0.168	13	0.30
M5								
Spiral-Point Gun – Plug	83470	3	2.38	0.51	1.06	0.194	13	0.30
Spiral-Flute – 3 to 4 Pitches	72108	3	2.38	0.51	1.06	0.194	13	0.30
M6								
Spiral-Point Gun – Plug	72067	3	2.50	0.56	1.23	0.255	13	0.30
Spiral-Flute – 3 to 4 Pitches	83157	3	2.50	0.56	1.23	0.255	13	0.30
M6.3								
Spiral-Point Gun – Plug	72061	3	2.50	0.56	1.23	0.255	13	0.30
M7								
Spiral-Point Gun – Plug	72075	3	2.72	0.63	1.39	0.318	13	0.30
Spiral-Flute – 3 to 4 Pitches	72143	3	2.72	0.63	1.39	0.318	13	0.30
M8								
Spiral-Point Gun – Plug	83469	3	2.72	0.63	1.39	0.318	13	0.30
Spiral-Flute – 3 to 4 Pitches	83154	3	2.72	0.63	1.39	0.318	13	0.30
M9								
Spiral-Point Gun – Plug	83202	3	2.94	0.71	1.55	0.381	13	0.30
Spiral-Flute – 3 to 4 Pitches	83160	3	2.94	0.71	1.55	0.381	13	0.30
M10								
Spiral-Point Gun – Plug	72083	3	2.94	0.71	1.55	0.381	13	0.30
Spiral-Flute – 3 to 4 Pitches	83158	3	2.94	0.71	1.55	0.381	13	0.30
M11								
Spiral-Point Gun – Plug	83185	3	3.16	0.88	–	0.323	15	0.30
Spiral-Flute – 3 to 4 Pitches	83167	3	3.16	0.88	–	0.323	15	0.30
M12								
Spiral-Point Gun – Plug	72078	3	3.38	0.92	–	0.367	15	0.30
Spiral-Flute – 3 to 4 Pitches	83159	3	3.38	0.92	–	0.367	15	0.30
M14								
Spiral-Point Gun – Plug	72158	3	3.59	0.98	–	0.429	15	0.40
Spiral-Flute – 3 to 4 Pitches	72211	3	3.59	0.98	–	0.429	15	0.40
M16								
Spiral-Point Gun – Plug	83161	3	3.81	1.06	–	0.480	15	0.40
Spiral-Flute – 3 to 4 Pitches	68461	4	3.81	1.06	–	0.480	15	0.40
M18								
Spiral-Flute – 3 to 4 Pitches	72212	4	4.03	1.07	–	0.541	15	0.40

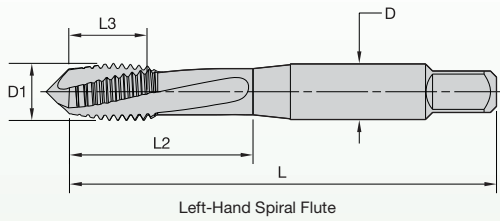
Pricing Based on Order Quantity

min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	47
48	72

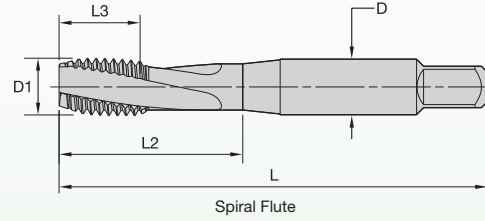
Five day lead time.

Lightning Service

Specials from Blanks • EM-TI • HSS-E-PM



Left-Hand Spiral Flute



Spiral Flute

style	nitride	flutes	L	L3	L2	D	max H limit	max TPI
#4								
LH Spiral-Flute – Plug	83130	3	1.88	0.34	0.56	0.141	13	100
RH Spiral-Flute – 3 to 4 Pitches	83140	3	1.88	0.34	0.56	0.141	13	100
#5								
LH Spiral-Flute – Plug	83131	3	1.94	0.37	0.62	0.141	13	100
RH Spiral-Flute – 3 to 4 Pitches	83102	3	1.94	0.37	0.62	0.141	13	100
#6								
LH Spiral-Flute – Plug	83132	3	2.00	0.39	0.81	0.141	13	100
RH Spiral-Flute – 3 to 4 Pitches	83141	3	2.00	0.39	0.81	0.141	13	100
#8								
LH Spiral-Flute – Plug	83133	3	2.13	0.43	0.87	0.168	13	100
RH Spiral-Flute – 3 to 4 Pitches	83142	3	2.13	0.43	0.87	0.168	13	100
#10								
LH Spiral-Flute – Plug	83134	3	2.38	0.51	1.06	0.194	13	100
RH Spiral-Flute – 3 to 4 Pitches	83143	3	2.38	0.51	1.06	0.194	13	100
1/4"								
LH Spiral-Flute – Plug	83135	3	2.50	0.56	1.23	0.255	13	80
RH Spiral-Flute – 3 to 4 Pitches	83144	3	2.50	0.56	1.23	0.255	13	80
5/16"								
LH Spiral-Flute – Plug	83136	3	2.72	0.63	1.39	0.318	13	80
RH Spiral-Flute – 3 to 4 Pitches	83145	3	2.72	0.63	1.39	0.318	13	80
3/8"								
LH Spiral-Flute – Plug	83137	3	2.94	0.71	1.55	0.381	13	80
RH Spiral-Flute – 3 to 4 Pitches	83146	3	2.94	0.71	1.55	0.381	13	80
7/16"								
LH Spiral-Flute – Plug	83138	3	3.16	0.88	–	0.323	15	80
RH Spiral-Flute – 3 to 4 Pitches	83147	3	3.16	0.88	–	0.323	15	80
1/2"								
LH Spiral-Flute – Plug	83139	3	3.38	0.92	–	0.367	15	80
RH Spiral-Flute – 3 to 4 Pitches	83148	3	3.38	0.92	–	0.367	15	80

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Specials from Blanks • EM-TI • HSS-E-PM

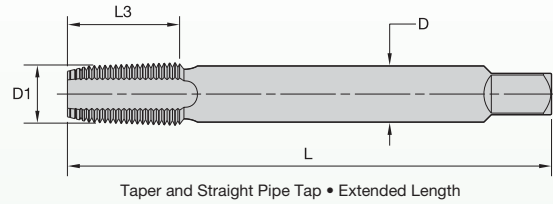
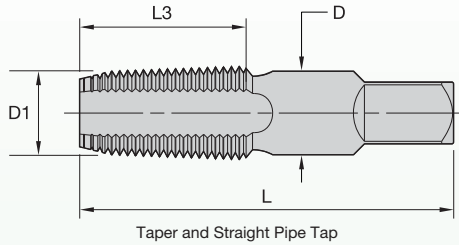
style	nitride	flutes	L	L3	L2	D	max D limit	pitch min
M3								
LH Spiral-Flute – Plug	72017	3	1.94	0.37	0.62	0.141	13	0.30
RH Spiral-Flute – 3 to 4 Pitches	72087	3	1.94	0.37	0.62	0.141	13	0.30
M3.5								
LH Spiral-Flute – Plug	83151	3	2.00	0.39	0.81	0.141	13	0.30
M4								
LH Spiral-Flute – Plug	72059	3	2.13	0.43	0.87	0.168	13	0.30
RH Spiral-Flute – 3 to 4 Pitches	83183	3	2.13	0.43	0.87	0.168	13	0.30
M4.5								
RH Spiral-Flute – 3 to 4 Pitches	83184	3	2.38	0.51	1.06	0.194	13	0.30
M5								
LH Spiral-Flute – Plug	83152	3	2.38	0.51	1.06	0.194	13	0.30
RH Spiral-Flute – 3 to 4 Pitches	83153	3	2.38	0.51	1.06	0.194	13	0.30
M6								
LH Spiral-Flute – Plug	83165	3	2.50	0.56	1.23	0.255	13	0.30
RH Spiral-Flute – 3 to 4 Pitches	83150	3	2.50	0.56	1.23	0.255	13	0.30
M8								
RH Spiral-Flute – 3 to 4 Pitches	68353	3	–	–	–	–	13	0.30
M10								
LH Spiral-Flute – Plug	83156	3	2.94	0.71	1.55	0.381	13	0.30
RH Spiral-Flute – 3 to 4 Pitches	83468	3	2.94	0.71	1.55	0.381	13	0.30
M12								
LH Spiral-Flute – Plug	83170	3	3.38	0.92	–	0.367	15	0.30
RH Spiral-Flute – 3 to 4 Pitches	83162	3	3.38	0.92	–	0.367	15	0.30

Pricing Based on Order Quantity

min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	47
48	72

Five day lead time.

Specials from Blanks • National Pipe • HSS



style	uncoated	flutes	L	L3	D	projection min	shipping
1/16 - 27							
NPT	64687	4	2.13	0.69	0.380	0.136	24 Hours
NPT Interrupted	65638	3	2.13	0.69	0.380	0.136	48 Hours
NPTF	66225	4	2.13	0.69	0.380	0.136	24 Hours
NPTF Interrupted	65662	3	2.13	0.69	0.380	0.136	48 Hours
NPS	64718	4	2.13	0.69	0.380	-	24 Hours
NPSF	65982	4	2.13	0.69	0.380	-	24 Hours
1/8 - 27							
NPT	64688	4	2.13	0.75	0.438	0.136	24 Hours
NPT Small Shank	64689	4	2.13	0.75	0.313	0.136	24 Hours
Extended-Length NPT	64729	4	6.00	0.75	0.380	0.136	48 Hours
NPT Interrupted	65639	5	2.13	0.75	0.438	0.136	48 Hours
NPT Interrupted Small Shank	65640	5	2.13	0.75	0.313	0.136	48 Hours
Extended-Length NPT Interrupted	65672	5	6.00	0.75	0.380	0.136	72 Hours
NPTF	66226	4	2.13	0.75	0.438	0.136	24 Hours
NPTF Small Shank	66227	4	2.13	0.75	0.313	0.136	24 Hours
Extended-Length NPTF	65942	4	6.00	0.75	0.380	0.136	48 Hours
NPTF Interrupted	65663	5	2.13	0.75	0.438	0.136	48 Hours
NPTF Interrupted Small Shank	65664	5	2.13	0.75	0.313	0.136	48 Hours
Extended-Length NPTF Interrupted	65924	5	6.00	0.75	0.380	0.136	72 Hours
NPS	64720	4	2.13	0.75	0.438	-	24 Hours
NPS Small Shank	64719	4	2.13	0.75	0.313	-	24 Hours
NPSF	65984	4	2.13	0.75	0.438	-	24 Hours
NPSF Small Shank	65983	4	2.13	0.75	0.313	-	24 Hours
1/4 - 18							
NPT	64690	4	2.44	1.06	0.563	0.221	24 Hours
Extended-Length NPT	64730	4	6.00	1.06	0.438	0.221	48 Hours
NPT Interrupted	65641	5	2.44	1.06	0.563	0.221	48 Hours
Extended-Length NPT Interrupted	65673	5	6.00	1.06	0.438	0.221	72 Hours
NPTF	66228	4	2.44	1.06	0.563	0.221	24 Hours
Extended-Length NPTF	65943	4	6.00	1.06	0.438	0.221	48 Hours
NPTF Interrupted	65665	5	2.44	1.06	0.563	0.221	48 Hours
Extended-Length NPTF Interrupted	65925	5	6.00	1.06	0.438	0.221	72 Hours
NPS	64721	4	2.44	1.06	0.563	-	24 Hours
NPSF	65985	4	2.44	1.06	0.563	-	24 Hours
3/8 - 18							
NPT	64691	4	2.56	1.06	0.700	0.221	24 Hours
Extended-Length NPT	64731	4	6.00	1.06	0.700	0.221	48 Hours
NPT Interrupted	65642	5	2.56	1.06	0.700	0.221	48 Hours
Extended-Length NPT Interrupted	65674	5	6.00	1.06	0.700	0.221	72 Hours
NPTF	66229	4	2.56	1.06	0.700	0.221	24 Hours
Extended-Length NPTF	65944	4	6.00	1.06	0.700	0.221	48 Hours
NPTF Interrupted	65666	5	2.56	1.06	0.700	0.221	48 Hours
Extended-Length NPTF Interrupted	65926	5	6.00	1.06	0.700	0.221	72 Hours
NPS	64722	4	2.56	1.06	0.700	-	24 Hours
NPSF	65986	4	2.56	1.06	0.700	-	24 Hours

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Specials from Blanks • National Pipe • HSS

style	uncoated	flutes	L	L3	D	projection min	shipping
1/2 - 14							
NPT	64692	4	3.13	1.38	0.688	0.285	24 Hours
Extended-Length NPT	64732	4	6.00	1.38	0.688	0.285	48 Hours
NPT Interrupted	65643	5	3.13	1.38	0.688	0.285	48 Hours
Extended-Length NPT Interrupted	65675	5	6.00	1.38	0.688	0.285	72 Hours
NPTF	66230	4	3.13	1.38	0.688	0.285	24 Hours
Extended-Length NPTF	65945	4	6.00	1.38	0.688	0.285	48 Hours
NPTF Interrupted	65667	5	3.13	1.38	0.688	0.285	48 Hours
Extended-Length NPTF Interrupted	65927	5	6.00	1.38	0.688	0.285	72 Hours
NPS	64723	4	3.13	1.38	0.688	-	24 Hours
NPSF	65987	4	3.13	1.38	0.688	-	24 Hours
3/4 - 14							
NPT	64706	5	3.25	1.38	0.906	0.285	24 Hours
Extended-Length NPT	64733	5	6.00	1.38	0.906	0.285	48 Hours
NPT Interrupted	65632	5	3.25	1.38	0.906	0.285	48 Hours
Extended-Length NPT Interrupted	65676	5	6.00	1.38	0.906	0.285	72 Hours
NPTF	66231	5	3.25	1.38	0.906	0.285	24 Hours
Extended-Length NPTF	65946	5	6.00	1.38	0.906	0.285	48 Hours
NPTF Interrupted	65668	5	3.25	1.38	0.906	0.285	48 Hours
Extended-Length NPTF Interrupted	65928	5	6.00	1.38	0.906	0.285	72 Hours
NPS	64724	5	3.25	1.38	0.906	-	24 Hours
NPSF	65988	5	3.25	1.38	0.906	-	24 Hours
1 - 11-1/2							
NPT	64707	5	3.75	1.75	1.125	0.360	24 Hours
NPT Interrupted	65633	5	3.75	1.75	1.125	0.360	48 Hours
Extended-Length NPT	64734	5	6.00	1.75	1.125	0.360	48 Hours
Extended-Length NPT Interrupted	65677	5	6.00	1.75	1.125	0.360	72 Hours
NPTF	66232	5	3.75	1.75	1.125	0.360	24 Hours
NPTF Interrupted	65669	5	3.75	1.75	1.125	0.360	48 Hours
Extended-Length NPTF	65947	5	6.00	1.75	1.125	0.360	48 Hours
Extended-Length NPTF Interrupted	65929	5	6.00	1.75	1.125	0.360	72 Hours
NPS	64725	5	3.75	1.75	1.125	-	24 Hours
NPSF	65989	5	3.75	1.75	1.125	-	24 Hours
1-1/4 - 11-1/2							
NPT	64708	5	4.00	1.75	1.313	0.368	24 Hours
NPT Interrupted	65634	5	4.00	1.75	1.313	0.368	48 Hours
NPTF	66233	5	4.00	1.75	1.313	0.368	24 Hours
NPTF Interrupted	65670	5	4.00	1.75	1.313	0.368	48 Hours
NPS	64726	5	4.00	1.75	1.313	-	24 Hours
NPSF	65990	5	4.00	1.75	1.313	-	24 Hours

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Standard Length

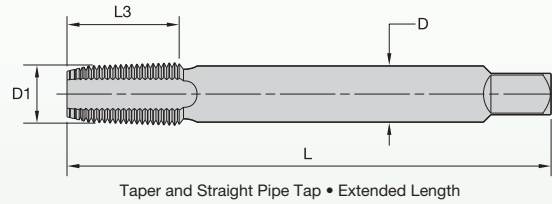
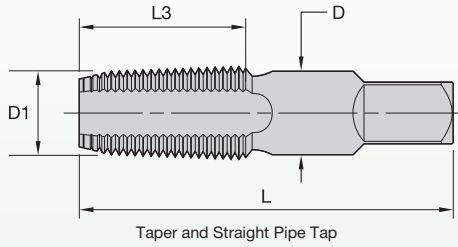
Pricing Based on Order Quantity	
min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	48

Extended Length

Pricing Based on Order Quantity	
min	max
1	1
2	2
3	5
6	8
9	11
12	24

(continued)

Specials from Blanks • National Pipe • HSS



style	uncoated	flutes	L	L3	D	projection min	shipping
1-1/2 - 11-1/2							
NPT	64713	7	4.25	1.75	1.500	0.381	24 Hours
NPT Interrupted	65635	7	4.25	1.75	1.500	0.381	48 Hours
NPTF	66234	7	4.25	1.75	1.500	0.381	24 Hours
NPTF Interrupted	65671	7	4.25	1.75	1.500	0.381	48 Hours
NPS	64727	7	4.25	1.75	1.500	-	24 Hours
NPSF	65991	7	4.25	1.75	1.500	-	24 Hours
2 - 11-1/2							
NPT	64714	7	4.50	1.75	1.880	0.349	24 Hours
NPT Interrupted	65636	7	4.50	1.75	1.880	0.349	48 Hours
NPTF	66235	7	4.50	1.75	1.880	0.349	24 Hours
NPTF Interrupted	66261	7	4.50	1.75	1.880	0.349	48 Hours
NPSF	65992	7	4.50	1.75	1.880	-	24 Hours
2-1/2 - 8							
NPT	64715	7	5.50	2.56	2.250	0.488	24 Hours
NPT Interrupted	65637	7	5.50	2.56	2.250	0.488	48 Hours
NPTF	66236	7	5.50	2.56	2.250	0.488	24 Hours
3-1/2 - 8							
NPT	64716	7	6.00	2.63	2.630	0.488	24 Hours
NPT Interrupted	65644	7	6.00	2.63	2.630	0.488	48 Hours
NPTF Interrupted	66263	7	6.00	2.63	2.630	0.488	48 Hours
3-1/2 - 8							
NPT	64717	9	6.50	2.69	2.813	0.500	24 Hours
NPT Interrupted	65645	9	6.50	2.69	2.813	0.500	48 Hours
4 - 8							
NPT	65181	9	6.75	2.75	3.000	0.512	24 Hours

Standard Length

Pricing Based on Order Quantity

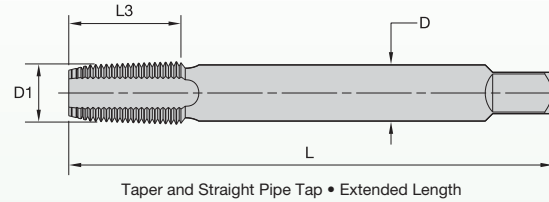
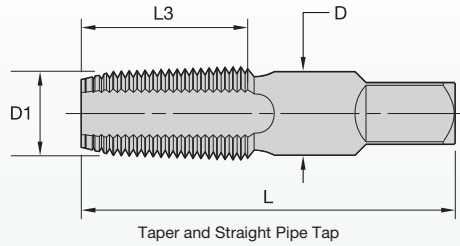
min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	48

Extended Length

Pricing Based on Order Quantity

min	max
1	1
2	2
3	5
6	8
9	11
12	24

Specials from Blanks • ISO (British Whitworth) Pipe Taps • HSS



style	uncoated 3-flute	uncoated 4-flute	uncoated 5-flute	uncoated 7-flute	L	L3	D	shipping
1/16 - 28								
Taper Rc (BSPT)	-	66240	66246	-	2.13	0.69	0.313	72 Hours
Taper Rc (BSPT) Interrupted	66266	-	-	-	2.13	0.69	0.313	96 Hours
Straight G (BSPF)	-	65993	-	-	2.13	0.69	0.313	72 Hours
Straight Rp (BSPP)	-	72161	-	-	2.13	0.69	0.313	72 Hours
1/8 - 28								
Taper Rc (BSPT)	-	66241	66247	-	2.13	0.75	0.438	72 Hours
Taper Rc (BSPT) Small Shank	-	66242	66248	-	2.13	0.75	0.313	72 Hours
Ext-Lgth Taper Rc (BSPT)	-	65954	-	-	6.00	0.75	0.438	72 Hours
Taper Rc (BSPT) Interrupted	-	-	66267	-	2.13	0.75	0.438	96 Hours
Taper Rc (BSPT) SS Interrupted	-	-	66268	-	2.13	0.75	0.313	96 Hours
Ext-Lgth Taper Rc (BSPT) Int.	-	-	65936	-	6.00	0.75	0.438	96 Hours
Straight G (BSPF)	-	65995	-	-	2.13	0.75	0.438	72 Hours
Straight G (BSPF) SS	-	65994	-	-	2.13	0.75	0.313	72 Hours
Straight Rp (BSPP)	-	72163	-	-	2.13	0.75	0.438	72 Hours
Straight Rp (BSPP) SS	-	72162	-	-	2.13	0.75	0.313	72 Hours
1/4 - 19								
Taper Rc (BSPT)	-	66243	66249	-	2.44	1.06	0.563	72 Hours
Ext-Lgth Taper Rc (BSPT)	-	65955	-	-	6.00	1.06	0.563	72 Hours
Taper Rc (BSPT) Interrupted	-	-	66269	-	2.44	1.06	0.563	96 Hours
Ext-Lgth Taper Rc (BSPT) Int.	-	-	65937	-	6.00	1.06	0.563	96 Hours
Straight G (BSPF)	-	65996	-	-	2.44	1.06	0.563	72 Hours
Straight Rp (BSPP)	-	72164	-	-	2.44	1.06	0.563	72 Hours
3/8 - 19								
Taper Rc (BSPT)	-	66244	-	-	2.56	1.06	0.700	72 Hours
Ext-Lgth Taper Rc (BSPT)	-	65956	-	-	6.00	1.06	0.700	72 Hours
Taper Rc (BSPT) Interrupted	-	-	66270	-	2.56	1.06	0.700	96 Hours
Ext-Lgth Taper Rc (BSPT) Int.	-	-	65938	-	6.00	1.06	0.700	96 Hours
Straight G (BSPF)	-	65997	-	-	2.56	1.06	0.700	72 Hours
Straight Rp (BSPP)	-	72165	-	-	2.56	1.06	0.700	72 Hours
1/2 - 14								
Taper Rc (BSPT)	-	66245	66251	-	3.13	1.38	0.688	72 Hours
Ext-Lgth Taper Rc (BSPT)	-	65957	-	-	6.00	1.38	0.688	72 Hours
Taper Rc (BSPT) Interrupted	-	-	66271	-	3.13	1.38	0.688	96 Hours
Ext-Lgth Taper Rc (BSPT) Int.	-	-	65939	-	6.00	1.38	0.688	96 Hours
Straight G (BSPF)	-	65998	-	-	3.13	1.38	0.688	72 Hours

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Specials from Blanks • ISO (British Whitworth) Pipe Taps • HSS

style	uncoated 3-flute	uncoated 4-flute	uncoated 5-flute	uncoated 7-flute	L	L3	D	shipping
Straight Rp (BSPP)	-	72166	-	-	3.13	1.38	0.688	72 Hours
3/4 - 14								
Taper Rc (BSPT)	-	-	66252	-	3.25	1.38	0.906	72 Hours
Ext-Lgth Taper Rc (BSPT)	-	-	65958	-	6.00	1.38	0.906	72 Hours
Taper Rc (BSPT) Interrupted	-	-	66272	-	3.25	1.38	0.906	96 Hours
Ext-Lgth Taper Rc (BSPT) Int.	-	-	65940	-	6.00	1.38	0.906	96 Hours
Straight G (BSPF)	-	-	65999	-	3.25	1.38	0.906	72 Hours
Straight Rp (BSPP)	-	-	72167	-	3.25	1.38	0.906	72 Hours
1 - 11								
Taper Rc (BSPT)	-	-	66253	-	3.75	1.75	1.125	72 Hours
Ext-Lgth Taper Rc (BSPT)	-	-	65959	-	6.00	1.75	1.125	72 Hours
Taper Rc (BSPT) Interrupted	-	-	66273	-	3.75	1.75	1.125	96 Hours
Ext-Lgth Taper Rc (BSPT) Int.	-	-	65941	-	6.00	1.75	1.125	96 Hours
Straight G (BSPF)	-	-	65153	-	3.75	1.75	1.125	72 Hours
Straight Rp (BSPP)	-	-	72168	-	3.75	1.75	1.125	72 Hours
1-1/4 - 11								
Taper Rc (BSPT)	-	-	66254	-	4.00	1.75	1.313	72 Hours
Taper Rc (BSPT) Interrupted	-	-	66274	-	4.00	1.75	1.313	96 Hours
Straight G (BSPF)	-	-	65154	-	4.00	1.75	1.313	72 Hours
Straight Rp (BSPP)	-	-	72169	-	4.00	1.75	1.313	72 Hours
1-1/2 - 11								
Taper Rc (BSPT)	-	-	-	66255	4.25	1.75	1.500	72 Hours
Taper Rc (BSPT) Interrupted	-	-	-	66275	4.25	1.75	1.500	96 Hours
Straight G (BSPF)	-	-	-	65155	4.25	1.75	1.500	72 Hours
Straight Rp (BSPP)	-	-	-	72170	4.25	1.75	1.500	72 Hours
2 - 11								
Taper Rc (BSPT)	-	-	-	66256	4.50	1.75	1.875	72 Hours
Taper Rc (BSPT) Interrupted	-	-	-	66276	4.50	1.75	1.875	96 Hours
Straight G (BSPF)	-	-	-	65156	4.50	1.75	1.875	72 Hours
Straight Rp (BSPP)	-	-	-	72171	4.50	1.75	1.875	72 Hours
2-1/2 - 11								
Taper Rc (BSPT)	-	-	-	66257	5.50	2.56	2.250	72 Hours
3 - 11								
Taper Rc (BSPT)	-	-	-	66258	6.00	2.63	2.625	72 Hours

Standard Length

Pricing Based on Order Quantity	
min	max
1	1
2	2
3	5
6	8
9	11
12	23
24	48

Extended Length

Pricing Based on Order Quantity	
min	max
1	1
2	2
3	5
6	8
9	11
12	24