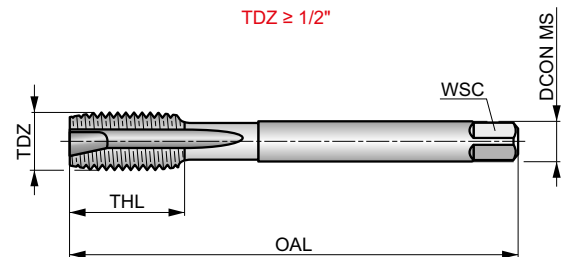
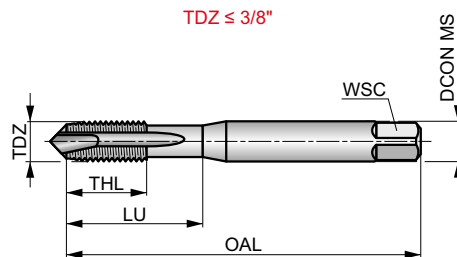


**E539****DORMER****HSS Spiral Point Machine Tap, BSF, ISO Standard**

Machine tap with spiral point suited for through holes only. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding.

	ISO 529	Medium
	2.5×D	HSS
B 3.5-5		



Workpiece material group suitability and starting values for cutting speed (m/min).

P1.1 ▣11	P1.2 ▣12	P1.3 ▣14	P2.1 ▣9	P2.2 ▣8	P2.3 ▣7	P3.1 ▣8	P3.2 ▣6	P4.1 ▣5	P4.2 ▣4	M1.1 ▣7	M1.2 ▣6	M2.1 ▣6	M2.2 ▣5
M3.1 ▣5	M3.2 ▣4	M3.3 ▣3	M4.1 ▣2	K1.1 ▣9	K1.2 ▣6	K1.3 ▣4	K2.1 ▣12	K2.2 ▣9	K3.1 ▣10	K3.2 ▣6	K4.1 ▣9	K4.2 ▣5	K5.1 ▣11
K5.2 ▣7													

Product	TDZ	TPI	TD	OAL	THL	DCON MS	WSC	NOF	PHD	LU
			[mm]	[mm]	[mm]	[mm]	[mm]		[mm]	[mm]
E5391/4	1/4	26	6.350	66.0	14	6.30	5.00	3	5.30	26.00
E5395/16	5/16	22	7.940	72.0	18	8.00	6.30	3	6.80	29.00
E5393/8	3/8	20	9.530	80.0	20	10.00	8.00	3	8.30	32.00
E5391/2	1/2	16	12.700	89.0	23	9.00	7.10	3	11.00	—



WMG (WORK MATERIAL GROUP)

ISO group	WMG (Work Material Group)			Hardness (HB or HRC)	Ultimate Tensile Strength (MPa)	
P	P1	P1.1	Free machining steel (carbon steels with increased machinability)	Sulfurized	< 240 HB	≤ 830
		P1.2		Sulfurized and phosphorized	< 180 HB	≤ 620
		P1.3		Sulfurized/phosphorized and leaded	< 180 HB	≤ 620
	P2	P2.1	Plain carbon steel (steels comprised of mainly iron and carbon)	Containing <0.25 % C	< 180 HB	≤ 620
		P2.2		Containing <0.55 % C	< 240 HB	≤ 830
		P2.3		Containing >0.55 % C	< 300 HB	≤ 1030
	P3	P3.1	Alloy steel (carbon steels with an alloying content ≤ 10%)	Annealed	< 180 HB	≤ 620
		P3.2		Hardened and tempered	180 – 260 HB	> 620 ≤ 900
		P3.3			260 – 360 HB	> 900 ≤ 1240
P4	P4.1	Tool steel (special alloy steel for tools, dies and molds)	Annealed	< 26 HRC	≤ 900	
	P4.2		Hardened and tempered	26 – 39 HRC	> 900 ≤ 1240	
	P4.3			39 – 45 HRC	> 1240 ≤ 1450	
M	M1	M1.1	Ferritic stainless steel (straight chromium non-hardenable alloys)		< 160 HB	≤ 520
		M1.2			160 – 220 HB	> 520 ≤ 700
	M2	M2.1	Martensitic stainless steel (straight chromium hardenable alloys)	Annealed	< 200 HB	≤ 670
		M2.2		Quenched and tempered	200 – 280 HB	> 670 ≤ 950
	M3	M2.3	Austenitic stainless steel (chromium-nickel and chromium-nickel-manganese alloys)	Precipitation-hardened	280 – 380 HB	> 950 ≤ 1300
		M3.1			< 200 HB	≤ 750
		M3.2			200 – 260 HB	> 750 ≤ 870
	M4	M3.3	Austenitic-ferritic (DUPLEX) or super-austenitic stainless steel		260 – 300 HB	> 870 ≤ 1040
		M4.1			< 300 HB	≤ 990
M4.2				300 – 380 HB	≤ 1320	
K	K1	K1.1	Gray iron or Automotive Gray iron (GG) (iron-carbon castings with a lamellar graphite microstructure)	Ferritic or ferritic-pearlitic	< 180 HB	≤ 190
		K1.2		Ferritic-pearlitic or pearlitic	180 – 240 HB	> 190 ≤ 310
		K1.3		Pearlitic	240 – 280 HB	> 310 ≤ 390
	K2	K2.1	Malleable iron (GTS/GTW) (iron-carbon castings with a graphite-free microstructure)	Ferritic	< 160 HB	≤ 400
		K2.2		Ferritic or pearlitic	160 – 200 HB	> 400 ≤ 550
		K2.3		Pearlitic	200 – 240 HB	> 550 ≤ 660
	K3	K3.1	Ductile iron (GGG) (iron-carbon castings with a nodular graphite microstructure)	Ferritic	< 180 HB	≤ 560
		K3.2		Ferritic or pearlitic	180 – 220 HB	> 560 ≤ 680
		K3.3		Pearlitic	220 – 260 HB	> 680 ≤ 800
K4	K4.1	Austenitic gray iron (ASTM A436) (iron-carbon alloy castings with an austenitic lamellar graphite microstructure)		< 180 HB	≤ 190	
	K4.2			< 240 HB	≤ 740	
	K4.3		Austempered ductile iron (ASTM A897) (iron-carbon alloy castings with an ausferrite microstructure)	< 280 HB	> 840 ≤ 980	
K4.4	280 – 320 HB	> 980 ≤ 1130				
K4.5	320 – 360 HB	> 1130 ≤ 1280				
K5	K5.1	Compacted graphite iron CGI (ASTM A842) (iron-carbon castings with a vermicular graphite structure)	Ferritic	< 180 HB	≤ 400	
	K5.2		Ferritic-pearlitic	180 – 220 HB	> 400 ≤ 450	
	K5.3		Pearlitic	220 – 260 HB	> 450 ≤ 500	
N	N1	N1.1	Commercially pure wrought aluminium		< 60 HB	≤ 240
		N1.2		Half hard tempered	60 – 100 HB	> 240 ≤ 400
		N1.3			Full hard tempered	100 – 150 HB
	N2	N2.1	Cast aluminium alloys		< 75 HB	≤ 240
		N2.2		75 – 90 HB	> 240 ≤ 270	
		N2.3		90 – 140 HB	> 270 ≤ 440	
	N3	N3.1	Free-cutting copper-alloys materials with excellent machining properties		–	–
		N3.2		Short-chip copper-alloys with good to moderate machining properties	–	–
		N3.3		Electrolytic copper and long-chip copper-alloys with moderate to poor machining properties	–	–
N4	N4.1	Thermoplastic polymers		–	–	
	N4.2		Thermosetting polymers	–	–	
	N4.3		Reinforced polymers or composites	–	–	
N5	N5.1	Graphite		–	–	
S	S1	S1.1	Titanium or titanium alloys		< 200 HB	≤ 660
		S1.2		200 – 280 HB	> 660 ≤ 950	
		S1.3		280 – 360 HB	> 950 ≤ 1200	
	S2	S2.1	Fe-based high-temperature alloys		< 200 HB	≤ 690
		S2.2		200 – 280 HB	> 690 ≤ 970	
	S3	S3.1	Ni-based high-temperature alloys		< 280 HB	≤ 940
		S3.2		280 – 360 HB	> 940 ≤ 1200	
	S4	S4.1	Co-based high-temperature alloys		< 240 HB	≤ 800
		S4.2		240 – 320 HB	> 800 ≤ 1070	
H	H1	H1.1	Chilled cast iron		< 440 HB	–
	H2	H2.1	Hardened cast iron		< 55 HRC	–
		H2.2		> 55 HRC	–	
	H3	H3.1	Hardened steel <55 HRC		< 51 HRC	–
		H3.2		51 – 55 HRC	–	
	H4	H4.1	Hardened steel >55 HRC		55 – 59 HRC	–
		H4.2		> 59 HRC	–	