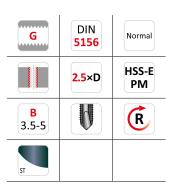
EP41

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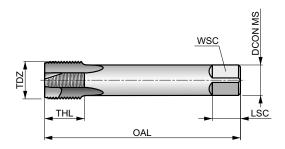


HSS-E-PM Spiral Point Machine Tap, G(BSP), DIN Standard

Machine tap with spiral point suited for through holes only. Steam tempered surface acts to retain cutting fluid and prevent chip to tool welding. The reduced shank increases the reach of the tap.



P1.1



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

M3.1

M3.2

M2.2

M2.1

Z 22	1 6	1 4	1 0	∠ 9	■8	∠ 6 ∠ 10	0 ∠ 8	∠ 9	∠ 7	∠ 7	∠ 6	∠ 5
M4.1	K1.1	K1.2	K1.3	K2.1	K2.2	K3.1	K4.1	K4.2	K5.1	K5.2		
4	1 3	1 10	Z 7	1 16	1 3	■ 14 ■ 10	13	 9	1 5	1 11		
		TD7	TDI	TD	041	TIII	DCON MC	· WCC	ıcc		NOF	DIID
Product		TDZ	TPI	TD	OAI	L THL	DCON MS	S WSC	LSC		NOF	PHD
				[mm]	[mm]	[mm]	[mm]	[mm]	[mm]			[mm]
EP411/8		1/8	28	9.728	3 90.0	0 18	7.00	5.50	8		3	8.80
EP411/4		1/4	19	13.15	7 100.	.0 21	11.00	9.00	12		3	11.80
EP413/8		3/8	19	16.66	2 100.	.0 21	12.00	9.00	12		4	15.25
EP411/2		1/2	14	20.95	5 125.	.0 24	16.00	12.00	15		4	19.00
EP415/8		5/8	14	22.91	1 125.	.0 24	18.00	14.50	17		4	21.00
EP413/4		3/4	14	26.44	1 140.	.0 28	20.00	16.00	19		4	24.50
EP417/8		7/8	14	30.20	1 150.	.0 28	22.00	18.00	21		4	28.25
EP411		1″	11	33.24	9 160.	.0 30	25.00	20.00	23		4	30.75

M1.1

P3.3

WMG (WORK MATERIAL GROUP)

ISO group		WMG	i (Work Material Group)		Hardness (HB or HRC)	Ultimate Tensile Streng (MPa)	
		P1.1		Sulfurized	< 240 HB	≤ 830	
P	P1	P1.2	Free machining steel	Sulfurized and phosphorized	< 180 HB	≤ 620	
		P1.3	(carbon steels with increased machinability)	Sulfurized/phosphorized and leaded	< 180 HB	≤ 620	
		P2.1		Containing < 0.25 % C	< 180 HB	≤ 620	
	00		Plain carbon steel				
_	P2	P2.2	(steels comprised of mainly iron and carbon)	Containing < 0.55 % C	< 240 HB	≤ 830	
P		P2.3		Containing >0.55 % C	< 300 HB	≤ 1030	
		P3.1	Alla	Annealed	< 180 HB	≤ 620	
P	P3	P3.2	Alloy steel	Hardan Landson and	180 - 260 HB	> 620 ≤ 900	
		P3.3	(carbon steels with an alloying content ≤ 10%)	Hardened and tempered	260 - 360 HB	> 900 ≤ 1240	
		P4.1 P4.2		Annealed	< 26 HRC	≤ 900	
D	P4		Tool steel	ranicaca	26 – 39 HRC	> 900 ≤ 1240	
ľ	74		(special alloy steel for tools, dies and molds)	Hardened and tempered			
		P4.3		39 – 45 HRC	> 1240 ≤ 145		
M	M1	M1.1	Ferritic stainless steel	< 160 HB	≤ 520		
		M1.2	(straight chromium non-hardenable alloys)		160 – 220 HB	> 520 ≤ 700	
		M2.1	L	< 200 HB	≤ 670		
М	M2	M2.2	Martensitic stainless steel	Quenched and tempered	200 - 280 HB	> 670 ≤ 950	
	IVIZ	M2.3	(straight chromium hardenable alloys)	Precipitation-hardened	280 – 380 HB	> 950 ≤ 1300	
				rrecipitation naraenea			
A M		M3.1	Austenitic stainless steel		< 200 HB	≤ 750	
M M	M3	M3.2	(chromium-nickel and chromium-nickel-manganese alloys)	200 – 260 HB	> 750 ≤ 870		
		M3.3	(amonium meter and emonium meter manganese anoys)	260 - 300 HB	> 870 ≤ 104		
		M4.1	Austenitic-ferritic (DUPLEX) or super-austenitic stainless steel		< 300 HB	≤ 990	
M	M4	M4.2	Precipitation hardening austenitic stainless steel		300 – 380 HB	≤ 1320	
			· · · · · · · · · · · · · · · · · · ·				
		K1.1	Gray iron or Automotive Gray iron (GG)	Ferritic or ferritic-pearlitic	< 180 HB	≤ 190	
K	K1	K1.2	(iron-carbon castings with a lamellar graphite microstructure)	Ferritic-pearlictic or pearlitic	180 – 240 HB	> 190 ≤ 310	
		K1.3	thou carbon castings with a famenal graphite initiostructure)	Pearlitic	240 - 280 HB	> 310 ≤ 390	
		K2.1		Ferritic	< 160 HB	≤ 400	
V	V2		Malleable iron (GTS/GTW)	Ferritic or pearlitic	160 – 200 HB		
, n	K2	K2.2	(iron-carbon castings with a graphite-free microstructure)	·		> 400 ≤ 550	
		K2.3		Pearlitic	200 – 240 HB	> 550 ≤ 660	
		K3.1	Puetila iron (CCC)	Ferritic	< 180 HB	≤ 560	
K	K3	K3.2	Ductile iron (GGG) (iron-carbon castings with a nodular graphite microstructure)	Ferritic or pearlitic	180 - 220 HB	> 560 ≤ 680	
		K3.3	(non-carbon castings with a nodular graphite inicrostructure)	rings with a nodular graphite microstructure) Pearlitic			
,			Austenitic gray iron (ASTM A436)		220 – 260 HB	> 680 ≤ 800	
		K4.1	(iron-carbon alloy castings with an austenitic lamellar graphite microstructure)	< 180 HB	≤ 190		
K	K4	K4.2	Austenitic ductile iron (ASTM A439 or ASTM A571) (iron-carbon alloy castings with an austenitic nodular graphite microstructure)		< 240 HB	≤ 740	
		K4.3			< 280 HB	> 840 ≤ 980	
		K4.4	Austempered ductile iron (ASTM A897)				
		K4.5	(iron-carbon alloy castings with an ausferrite microstructure)		280 – 320 HB 320 – 360 HB	> 980 ≤ 1130 > 1130 ≤ 128	
	K5			Favritic			
		K5.1 K5.2	Compacted graphite iron CGI (ASTM A842)	Ferritic	< 180 HB	≤ 400	
K			(iron-carbon castings with a vermicular graphite structure)	Ferritic-pearlitic	180 – 220 HB	> 400 ≤ 450	
		K5.3	, , , , , , , , , , , , , , , , , , , ,	Pearlitic	220 – 260 HB	> 450 ≤ 500	
		N1.1	Commercially pure wrought aluminium		< 60 HB	≤ 240	
N	N1	N1.2		Half hard tempered	60 - 100 HB	> 240 ≤ 400	
		N1.3	Wrought aluminium alloys	Full hard tempered	100 – 150 HB	> 400 ≤ 590	
		N2.1		pereu	< 75 HB	≤ 240	
	Na		Cost aluminium allum				
N	N2	N2.2	Cast aluminium alloys	75 – 90 HB	> 240 ≤ 270		
		N2.3			90 – 140 HB	> 270 ≤ 440	
		N3.1	Free-cutting copper-alloys materials with excellent machining properties	-	-		
N	N3	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 properti	_	_		
			Thermoplastic polymers	_	_		
N	N4	N4.2	Thermosetting polymers		_	_	
		N4.3	Reinforced polymers or composites		_	_	
Al	N5		Graphite	_	_		
IN	13		orapinic .				
		S1.1	The state of the s	< 200 HB	≤ 660		
S	S1	S1.2	Titanium or titanium alloys	200 – 280 HB	> 660 ≤ 950		
		S1.3		280 – 360 HB	> 950 ≤ 120		
	(2	S2.1	Fo based high temperature allow-		< 200 HB	≤ 690	
2	S2	S2.2	Fe-based high-temperature alloys		200 - 280 HB	> 690 ≤ 970	
		S3.1		< 280 HB	≤ 940		
S	S3	\$3.2	Ni-based high-temperature alloys	280 – 360 HB	> 940 ≤ 120		
S	S4	S4.1	Co-based high-temperature alloys	< 240 HB	≤ 800		
		\$4.2	· ' '	240 – 320 HB	> 800 ≤ 107		
Н	H1	H1.1	Chilled cast iron		< 440 HB	-	
,,	шэ	H2.1	Hardanad cast ivan		< 55 HRC	-	
Н	H2	H2.2	Hardened cast iron	> 55 HRC	_		
		H3.1		< 51 HRC	_		
Н	H3		Hardened steel <55 HRC				
		H3.2			51 – 55 HRC	_	
		H4.1	Hardened steel >55 HRC		55 – 59 HRC	-	
Н	4						