

Tool material

Solid Carbide

Surface



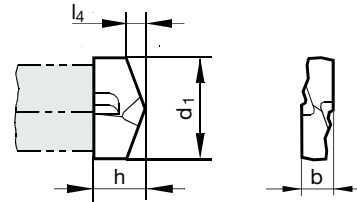
P	Steel
M	Stainless steel
K	Cast iron
N	Aluminum
S	Titanium alloys
H	Hardened steel

●=Optimal

○=Limited

web thinning $\geq \varnothing 16.000$ • relieved cone • main cutting edge form concave • clamping screws art. no. 1071 included

cast and AlSi-alloys



Speeds and feeds information on pg. 559

d1 mm	inch	l4 mm	b mm	h mm	Code no.	EDP #
16.000		3.000	4.500	8.000	16.000	9027470160000
16.500		3.100	4.500	8.000	16.500	9027470165000
17.000		3.100	4.500	8.000	17.000	9027470170000
17.070	43/64	3.200	4.500	8.000	17.070	9027470170700
17.500		3.200	4.500	8.000	17.500	9027470175000
18.000		3.300	5.000	8.000	18.000	9027470180000
18.260	23/32	3.400	5.000	8.000	18.260	9027470182600
18.650	47/64	3.400	5.000	8.000	18.650	9027470186500
19.000		3.500	5.000	8.000	19.000	9027470190000
19.050	3/4	3.500	5.000	8.000	19.050	9027470190500
19.250		3.600	5.000	8.000	19.250	9027470192500
19.450	49/64	3.600	5.000	8.000	19.450	9027470194500
19.500		3.600	5.000	8.000	19.500	9027470195000
19.840	25/32	3.700	5.000	8.000	19.840	9027470198400
20.000		3.700	5.000	8.000	20.000	9027470200000
20.500		3.800	5.500	8.800	20.500	9027470205000
20.640	13/16	3.800	5.500	8.800	20.640	9027470206400
21.000		3.900	5.500	8.800	21.000	9027470210000
21.030	53/64	3.900	5.500	8.800	21.030	9027470210300
21.430	27/32	3.900	5.500	8.800	21.430	9027470214300
21.830	55/64	4.000	5.500	8.800	21.830	9027470218300
22.000		4.100	5.500	8.800	22.000	9027470220000
23.000		4.200	6.300	10.000	23.000	9027470230000
23.420	59/64	4.300	6.300	10.000	23.420	9027470234200
23.500		4.300	6.300	10.000	23.500	9027470235000
24.000		4.400	6.300	10.000	24.000	9027470240000
24.210	61/64	4.500	6.300	10.000	24.210	9027470242100
24.500		4.500	6.300	10.000	24.500	9027470245000
25.000	63/64	4.600	6.300	10.000	25.000	9027470250000
25.500		4.700	6.300	10.000	25.500	9027470255000
26.000		4.800	7.300	11.600	26.000	9027470260000
26.500		4.900	7.300	11.600	26.500	9027470265000
27.000		5.000	7.300	11.600	27.000	9027470270000
27.500		5.100	7.300	11.600	27.500	9027470275000
28.000		5.100	7.300	11.600	28.000	9027470280000
29.500		5.400	7.300	11.600	29.500	9027470295000
30.000		5.500	8.500	13.600	30.000	9027470300000
30.500		5.600	8.500	13.600	30.500	9027470305000
31.000		5.700	8.500	13.600	31.000	9027470310000
31.500		5.800	8.500	13.600	31.500	9027470315000
32.000		5.900	8.500	13.600	32.000	9027470320000
32.500		6.000	8.500	13.600	32.500	9027470325000
33.000		6.100	8.500	13.600	33.000	9027470330000

d1 mm	inch	l4 mm	b mm	h mm	Code no.	EDP #
33.500		6.100	8.500	13.600	33.500	9027470335000
34.000		6.200	8.500	13.600	34.000	9027470340000
34.500		6.300	8.500	13.600	34.500	9027470345000
35.000		6.400	10.000	16.000	35.000	9027470350000
36.000		6.600	10.000	16.000	36.000	9027470360000
37.000		6.800	10.000	16.000	37.000	9027470370000
39.000		7.100	10.000	16.000	39.000	9027470390000
40.000		7.300	10.000	16.000	40.000	9027470400000

Material group	Hardness		SFM	Feed Rate - IPR									
	HRC	BHN		1/16 in. 1.590 mm	1/8 in. 3.170 mm	1/4 in. 6.350 mm	3/8 in. 9.520 mm	1/2 in. 12.700 mm	5/8 in. 15.870 mm	3/4 in. 19.050 mm	1 in. 25.400 mm	1 1/4 in. 31.750 mm	1 1/2 in. 38.100 mm
Common structural steels	-	≤ 150											
	≤ 32	≤ 301											
Free-cutting steels	≤ 25	≤ 255											
	≤ 32	≤ 301	235		0.0040	0.0065	0.0080	0.0100					
Unalloyed heat-treatable steels	≤ 20	≤ 220											
	≤ 25	≤ 255	210		0.0040	0.0065	0.0080	0.0100					
	≤ 32	≤ 301	120		0.0030	0.0050	0.0065	0.0080					
Alloyed heat-treatable steels	≤ 32	≤ 301	145		0.0030	0.0050	0.0065	0.0080					
	≤ 43	≤ 402	120		0.0025	0.0040	0.0050	0.0065					
Unalloyed case hardened steels	≤ 25	≤ 255											
Alloyed case hardened steels	≤ 32	≤ 301	130		0.0030	0.0050	0.0065	0.0080					
	≤ 43	≤ 402	100		0.0025	0.0040	0.0050	0.0065					
Nitriding steels	≤ 32	≤ 301	120		0.0030	0.0050	0.0065	0.0080					
	≤ 43	≤ 402	85		0.0025	0.0040	0.0050	0.0065					
Tool steels	≤ 25	≤ 255	145		0.0030	0.0050	0.0065	0.0080					
	≤ 43	≤ 402	85		0.0025	0.0040	0.0050	0.0065					
High speed steels	≤ 43	≤ 402	85		0.0025	0.0040	0.0050	0.0065					
Spring steels	≤ 38	≤ 354											
Hardened steels	≤ 48	≤ 460											
	≤ 66	-											
Stainless steels, sulphured	≤ 28	≤ 273	120		0.0030	0.0050	0.0065	0.0080					
austenitic	≤ 36	≤ 337											
martensitic	≤ 46	≤ 435	100		0.0025	0.0040	0.0050	0.0065					
Cast iron	≤ 23	≤ 242	295		0.0050	0.0080	0.0100	0.0125					
	≤ 38	≤ 354	235		0.0050	0.0080	0.0100	0.0125					
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	260		0.0050	0.0080	0.0100	0.0125					
	≤ 38	≤ 354	185		0.0050	0.0080	0.0100	0.0125					
Chilled cast iron	≤ 38	≤ 354	60		0.0025	0.0040	0.0050	0.0065					
New cast materials GGV	≤ 20	≤ 220											
	≤ 32	≤ 301											
New cast materials ADI	≤ 32	≤ 301											
	≤ 43	≤ 402											
Special alloys	≤ 54	≤ 549											
Ti and Ti-alloys	≤ 25	≤ 255											
	≤ 43	≤ 402											
Aluminium and Al-alloys	-	≤ 120											
Al wrought alloys	-	≤ 200											
Al cast alloys ≤ 10 % Si	-	≤ 180	560		0.0065	0.0100	0.0125	0.0160					
≤ 24 % Si	-	≤ 180	460		0.0040	0.0065	0.0080	0.0100					
Magnesium alloys	-	≤ 120											
Copper, low-alloyed	-	≤ 150	295		0.0040	0.0065	0.0080	0.0100					
Brass, short-chipping	-	≤ 180											
long-chipping	-	≤ 180	340		0.0065	0.0080	0.0100	0.0100					
Bronze, short-chipping	-	≤ 180											
	≤ 25	≤ 255											
Bronze, long-chipping	≤ 25	≤ 255	235		0.0030	0.0050	0.0065	0.0080					
	≤ 32	≤ 301	185		0.0030	0.0050	0.0065	0.0080					
Duroplastics			145		0.0030	0.0050	0.0065	0.0080					
Thermoplastics													
Reinforced plastics - Kevlar													
Reinforced plastics - GFK / CFK													

Material group	Hardness		SFM	Feed Rate - IPR					
	HRC	BHN		≤16.000 mm	41/64 - 25/32 in. 16.001 - 20.000 mm	51/64 - 31/32 in. 20.001 - 25.000 mm	63/64 - 1 17/64 in. 25.001 - 31.500 mm	1 1/4 - 1 9/16 in. 31.501 - 40.000 mm	1 37/64 - 1 61/64 in. 40.001 - 50.000 mm
Common structural steels	-	≤ 150							
	≤ 32	≤ 301							
Free-cutting steels	≤ 25	≤ 255							
	≤ 32	≤ 301							
Unalloyed heat-treatable steels	≤ 20	≤ 220							
	≤ 25	≤ 255							
	≤ 32	≤ 301							
Alloyed heat-treatable steels	≤ 32	≤ 301							
	≤ 43	≤ 402							
Unalloyed case hardened steels	≤ 25	≤ 255							
Alloyed case hardened steels	≤ 32	≤ 301							
	≤ 43	≤ 402							
Nitriding steels	≤ 32	≤ 301							
	≤ 43	≤ 402							
Tool steels	≤ 25	≤ 255							
	≤ 43	≤ 402							
High speed steels	≤ 43	≤ 402							
Spring steels	≤ 38	≤ 354							
Cast iron	≤ 23	≤ 242	325	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
	≤ 38	≤ 354	260	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	260	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
	≤ 38	≤ 354	230	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Chilled cast iron	≤ 38	≤ 354	35	0.0040	0.0050	0.0065	0.0065	0.0080	0.0100
New cast materials GGV	≤ 20	≤ 220							
	≤ 32	≤ 301							
New cast materials ADI	≤ 32	≤ 301							
	≤ 43	≤ 402							
Special alloys	≤ 54	≤ 549							
Ti and Ti-alloys	≤ 25	≤ 255							
	≤ 43	≤ 402							
Aluminium and Al-alloys	-	≤ 120	660	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Al wrought alloys	-	≤ 200	595	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Al cast alloys ≤ 10 % Si	-	≤ 180	490	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
≤ 24 % Si	-	≤ 180	390	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Magnesium alloys	-	≤ 120	590	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Copper, low-alloyed	-	≤ 150	225	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Brass, short-chipping	-	≤ 180	585	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
long-chipping	-	≤ 180	390	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Bronze, short-chipping	-	≤ 180	230	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
	≤ 25	≤ 255	160	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Bronze, long-chipping	≤ 25	≤ 255	145	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
	≤ 32	≤ 301	115	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Duroplastics			165	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Thermoplastics			165	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Reinforced plastics - Kevlar			165	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Reinforced plastics - GFK / CFK			165	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200

Material group	Hardness		SFM	Feed Rate - IPR					
	HRC	BHN		≤16.000 mm	41/64 - 25/32 in. 16.001 - 20.000 mm	51/64 - 31/32 in. 20.001 - 25.000 mm	63/64 - 1 17/64 in. 25.001 - 31.500 mm	1 1/4 - 1 9/16 in. 31.501 - 40.000 mm	1 37/64 - 1 61/64 in. 40.001 - 50.000 mm
Common structural steels	-	≤ 150							
	≤ 32	≤ 301							
Free-cutting steels	≤ 25	≤ 255							
	≤ 32	≤ 301							
Unalloyed heat-treatable steels	≤ 20	≤ 220							
	≤ 25	≤ 255							
	≤ 32	≤ 301							
Alloyed heat-treatable steels	≤ 32	≤ 301							
	≤ 43	≤ 402							
Unalloyed case hardened steels	≤ 25	≤ 255							
Alloyed case hardened steels	≤ 32	≤ 301							
	≤ 43	≤ 402							
Nitriding steels	≤ 32	≤ 301							
	≤ 43	≤ 402							
Tool steels	≤ 25	≤ 255							
	≤ 43	≤ 402							
High speed steels	≤ 43	≤ 402							
Spring steels	≤ 38	≤ 354							
Cast iron	≤ 23	≤ 242	295	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
	≤ 38	≤ 354	230	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	230	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
	≤ 38	≤ 354	195	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Chilled cast iron	≤ 38	≤ 354	35	0.0040	0.0050	0.0065	0.0065	0.0080	0.0100
New cast materials GGV	≤ 20	≤ 220							
	≤ 32	≤ 301							
New cast materials ADI	≤ 32	≤ 301							
	≤ 43	≤ 402							
Special alloys	≤ 54	≤ 549							
Ti and Ti-alloys	≤ 25	≤ 255							
	≤ 43	≤ 402							
Aluminium and Al-alloys	-	≤ 120	595	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Al wrought alloys	-	≤ 200	595	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Al cast alloys ≤ 10 % Si	-	≤ 180	455	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
≤ 24 % Si	-	≤ 180	355	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Magnesium alloys	-	≤ 120	590	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
Copper, low-alloyed	-	≤ 150	230	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Brass, short-chipping	-	≤ 180	585	0.0125	0.0160	0.0200	0.0200	0.0250	0.0315
long-chipping	-	≤ 180	390	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Bronze, short-chipping	-	≤ 180	230	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
	≤ 25	≤ 255	160	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Bronze, long-chipping	≤ 25	≤ 255	145	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
	≤ 32	≤ 301	115	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Duroplastics			165	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Thermoplastics			165	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Reinforced plastics - Kevlar			165	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Reinforced plastics - GFK / CFK			165	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200

Material group	Hardness		SFM	Feed Rate - IPR					
	HRC	BHN		≤16.000 mm	41/64 - 25/32 in. 16.001 - 20.000 mm	51/64 - 31/32 in. 20.001 - 25.000 mm	63/64 - 1 17/64 in. 25.001 - 31.500 mm	1 1/4 - 1 9/16 in. 31.501 - 40.000 mm	1 37/64 - 1 61/64 in. 40.001 - 50.000 mm
Common structural steels	-	≤ 150							
	≤ 32	≤ 301							
Free-cutting steels	≤ 25	≤ 255							
	≤ 32	≤ 301							
Unalloyed heat-treatable steels	≤ 20	≤ 220							
	≤ 25	≤ 255							
	≤ 32	≤ 301							
Alloyed heat-treatable steels	≤ 32	≤ 301							
	≤ 43	≤ 402							
Unalloyed case hardened steels	≤ 25	≤ 255							
Alloyed case hardened steels	≤ 32	≤ 301							
	≤ 43	≤ 402							
Nitriding steels	≤ 32	≤ 301							
	≤ 43	≤ 402							
Tool steels	≤ 25	≤ 255							
	≤ 43	≤ 402							
High speed steels	≤ 43	≤ 402							
Spring steels	≤ 38	≤ 354							
Cast iron	≤ 23	≤ 242	295	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
	≤ 38	≤ 354	230	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Spheroidal graphite iron and malleable cast iron	≤ 23	≤ 242	230	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
	≤ 38	≤ 354	195	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Chilled cast iron	≤ 38	≤ 354	35	0.0040	0.0050	0.0065	0.0065	0.0080	0.0100
New cast materials GGV	≤ 20	≤ 220							
	≤ 32	≤ 301							
New cast materials ADI	≤ 32	≤ 301							
	≤ 43	≤ 402							
Special alloys	≤ 54	≤ 549							
Ti and Ti-alloys	≤ 25	≤ 255							
	≤ 43	≤ 402							
Aluminium and Al-alloys	-	≤ 120	595	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Al wrought alloys	-	≤ 200	595	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Al cast alloys ≤ 10 % Si	-	≤ 180	455	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
≤ 24 % Si	-	≤ 180	355	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Magnesium alloys	-	≤ 120	590	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
Copper, low-alloyed	-	≤ 150	230	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Brass, short-chipping	-	≤ 180	585	0.0100	0.0125	0.0160	0.0160	0.0200	0.0250
long-chipping	-	≤ 180	390	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Bronze, short-chipping	-	≤ 180	230	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
	≤ 25	≤ 255	160	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
Bronze, long-chipping	≤ 25	≤ 255	145	0.0080	0.0100	0.0125	0.0125	0.0160	0.0200
	≤ 32	≤ 301	115	0.0065	0.0080	0.0100	0.0100	0.0125	0.0160
Duroplastics			165	0.0065	0.0080	0.0100	0.0100	0.0125	0.0160
Thermoplastics			165	0.0065	0.0080	0.0100	0.0100	0.0125	0.0160
Reinforced plastics - Kevlar			165	0.0065	0.0080	0.0100	0.0100	0.0125	0.0160
Reinforced plastics - GFK / CFK			165	0.0065	0.0080	0.0100	0.0100	0.0125	0.0160

Note: When drilling from solid with #5248 holder, spot drilling (>140° point angle to a depth