



Tool material

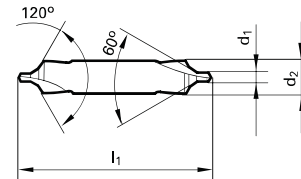
HSS

Surface



P	Steel	●	web thinning $\geq \varnothing 2.380$
M	Stainless steel	○	• relieved cone
K	Cast iron	●	• for center holes form B to US standards
N	Aluminum	●	
S	Titanium alloys	○	
H	Hardened steel		

●=Optimal
○=Limited



Speeds and feeds information on pg. 510

Diameter (d1)		Size	d2 mm	l1 mm	EDP #
inch	mm				
0.0469	1.19	11	3.18	32.00	9005950011900
0.0626	1.59	12	4.76	48.00	9005950015900
0.0937	2.38	13	6.35	51.00	9005950023800
0.1094	2.78	14	7.94	54.00	9005950027800
0.1563	3.97	15	11.11	70.00	9005950039700
0.1874	4.76	16	12.70	76.00	9005950047600
0.2189	5.56	17	15.88	83.00	9005950055600
0.2500	6.35	18	19.05	89.00	9005950063500

Diameter (d1)		Size	d2 mm	l1 mm	EDP #
inch	mm				

Material group	Hardness		SFM	Feed Rate - IPR								
	HRc	Bhn		.5 mm	1.0 mm	2.0 mm	2.5 mm	3.15 mm	4.0 mm	5.0 mm	6.3 mm	8 mm
Common structural steels	- ≤ 32	≤ 150 ≤ 301	100 80	0.0003 0.0003	0.0006 0.0006	0.0016 0.0016	0.0020 0.0020	0.0025 0.0025	0.0031 0.0031	0.0031 0.0031	0.0039 0.0039	0.0049 0.0049
Free-cutting steels	≤ 25 ≤ 32	≤ 255 ≤ 301	100 100	0.0003 0.0003	0.0006 0.0006	0.0016 0.0016	0.0020 0.0020	0.0025 0.0025	0.0031 0.0031	0.0031 0.0031	0.0039 0.0039	0.0049 0.0049
Unalloyed heat-treatable steels	≤ 20 ≤ 25 ≤ 32	≤ 220 ≤ 255 ≤ 301	80 65 65	0.0003 0.0003 0.0003	0.0006 0.0006 0.0005	0.0016 0.0016 0.0013	0.0020 0.0020 0.0016	0.0025 0.0025 0.0020	0.0031 0.0031 0.0025	0.0031 0.0031 0.0025	0.0039 0.0039 0.0031	0.0049 0.0049 0.0039
Alloyed heat-treatable steels	≤ 32 ≤ 43	≤ 301 ≤ 402	50 25	0.0003 0.0003	0.0006 0.0005	0.0016 0.0013	0.0020 0.0016	0.0025 0.0020	0.0031 0.0025	0.0031 0.0025	0.0039 0.0031	0.0049 0.0039
Unalloyed case hardened steels	≤ 25	≤ 255	80	0.0004	0.0006	0.0020	0.0025	0.0031	0.0039	0.0039	0.0049	0.0063
Alloyed case hardened steels	≤ 32 ≤ 43	≤ 301 ≤ 402	50 25	0.0003 0.0003	0.0006 0.0005	0.0016 0.0013	0.0020 0.0016	0.0025 0.0020	0.0031 0.0025	0.0031 0.0025	0.0039 0.0031	0.0049 0.0039
Nitriding steels	≤ 32 ≤ 43	≤ 301 ≤ 402	35 25	0.0003 0.0003	0.0006 0.0005	0.0016 0.0013	0.0020 0.0016	0.0025 0.0020	0.0031 0.0025	0.0031 0.0025	0.0039 0.0031	0.0049 0.0039
Tool steels	≤ 25 ≤ 43	≤ 255 ≤ 402	35 20	0.0003 0.0003	0.0005 0.0005	0.0013 0.0013	0.0016 0.0016	0.0020 0.0020	0.0025 0.0025	0.0025 0.0025	0.0031 0.0031	0.0039 0.0039
High speed steels	≤ 43	≤ 402	20	0.0003	0.0005	0.0013	0.0016	0.0020	0.0025	0.0025	0.0031	0.0039
Spring steels	≤ 38	≤ 354	15	0.0002	0.0003	0.0010	0.0013	0.0016	0.0020	0.0020	0.0025	0.0031
Hardened steels	≤ 48 ≤ 66	≤ 460 -										
Stainless steels, sulphured austenitic martensitic	≤ 28 ≤ 36 ≤ 46	≤ 273 ≤ 337 ≤ 435	35 25 20	0.0003 0.0003 0.0003	0.0005 0.0005 0.0005	0.0013 0.0013 0.0013	0.0016 0.0016 0.0016	0.0020 0.0020 0.0020	0.0025 0.0025 0.0025	0.0025 0.0025 0.0025	0.0031 0.0031 0.0031	0.0039 0.0039 0.0039
Cast iron	≤ 23 ≤ 38	≤ 242 ≤ 354	65 65	0.0005 0.0004	0.0007 0.0006	0.0025 0.0020	0.0031 0.0025	0.0039 0.0031	0.0049 0.0039	0.0049 0.0039	0.0063 0.0049	0.0079 0.0063
Spheroidal graphite iron and malleable cast iron	≤ 23 ≤ 38	≤ 242 ≤ 354	80 65	0.0005 0.0004	0.0007 0.0006	0.0025 0.0020	0.0031 0.0025	0.0039 0.0031	0.0049 0.0039	0.0049 0.0039	0.0063 0.0049	0.0079 0.0063
Chilled cast iron	≤ 38	≤ 354										
New cast materials GGV	≤ 20 ≤ 32	≤ 220 ≤ 301										
New cast materials ADI	≤ 32 ≤ 43	≤ 301 ≤ 402										
Special alloys	≤ 54	≤ 549	10	0.0002	0.0002	0.0008	0.0010	0.0013	0.0016	0.0016	0.0020	0.0025
Ti and Ti-alloys	≤ 25 ≤ 43	≤ 255 ≤ 402	15 15	0.0002 0.0002	0.0003 0.0003	0.0010 0.0010	0.0013 0.0013	0.0016 0.0016	0.0020 0.0020	0.0020 0.0020	0.0025 0.0025	0.0031 0.0031
Aluminium and Al-alloys	-	≤ 120	230	0.0006	0.0008	0.0031	0.0039	0.0049	0.0063	0.0063	0.0079	0.0098
Al wrought alloys	-	≤ 200	230	0.0006	0.0008	0.0031	0.0039	0.0049	0.0063	0.0063	0.0079	0.0098
Al cast alloys ≤ 10 % Si ≤ 24 % Si	- -	≤ 180 ≤ 180	130 130	0.0005 0.0005	0.0007 0.0007	0.0025 0.0025	0.0031 0.0031	0.0039 0.0039	0.0049 0.0049	0.0049 0.0049	0.0063 0.0063	0.0079 0.0079
Magnesium alloys	-	≤ 120	195	0.0005	0.0007	0.0025	0.0031	0.0039	0.0049	0.0049	0.0063	0.0079
Copper, low-alloyed	-	≤ 150	165	0.0004	0.0006	0.0020	0.0025	0.0031	0.0039	0.0039	0.0049	0.0063
Brass, short-chipping long-chipping	- -	≤ 180 ≤ 180	195 130	0.0004 0.0004	0.0006 0.0006	0.0020 0.0020	0.0025 0.0025	0.0031 0.0031	0.0039 0.0039	0.0039 0.0039	0.0049 0.0049	0.0063 0.0063
Bronze, short-chipping	-	≤ 180	100	0.0003	0.0006	0.0016	0.0020	0.0025	0.0031	0.0031	0.0039	0.0049
Bronze, long-chipping	≤ 25 ≤ 32	≤ 255 ≤ 301	80 50	0.0003 0.0003	0.0006 0.0006	0.0016 0.0016	0.0020 0.0020	0.0025 0.0025	0.0031 0.0031	0.0031 0.0031	0.0039 0.0039	0.0049 0.0049
Duroplastics Thermoplastics Reinforced plastics - Kevlar Reinforced plastics - GFK / CFK			50 80	0.0003 0.0004	0.0006 0.0006	0.0016 0.0020	0.0020 0.0025	0.0025 0.0031	0.0031 0.0039	0.0031 0.0039	0.0039 0.0049	0.0049 0.0063