

Series # 551

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	- ≤ 32	≤ 150 ≤ 301	90			0.0080 0.0065	0.0100 0.0080	0.0125 0.0100	0.0125 0.0100	0.0140 0.0110	0.0160 0.0125		
Free-cutting steels	≤ 25 ≤ 32	≤ 255 ≤ 301	90			0.0080 0.0065	0.0100 0.0080	0.0125 0.0100	0.0125 0.0100	0.0140 0.0110	0.0160 0.0125		
Unalloyed heat-treatable steels	≤ 20 ≤ 25 ≤ 32	≤ 220 ≤ 255 ≤ 301	90			0.0065 0.0065	0.0080 0.0080	0.0100 0.0100	0.0100 0.0100	0.0110 0.0110	0.0125 0.0125		
Alloyed heat-treatable steels	≤ 32 ≤ 43	≤ 301 ≤ 402											
Unalloyed case hardened steels	≤ 25	≤ 255	90			0.0080	0.0100	0.0125	0.0125	0.0140	0.0160		
Alloyed case hardened steels	≤ 32 ≤ 43	≤ 301 ≤ 402											
Nitriding steels	≤ 32 ≤ 43	≤ 301 ≤ 402											
Tool steels	≤ 25 ≤ 43	≤ 255 ≤ 402	45			0.0050	0.0065	0.0080	0.0080	0.0090	0.0100		
High speed steels	≤ 43	≤ 402											
Spring steels	≤ 38	≤ 354											
Hardened steels	≤ 48 ≤ 66	≤ 460 -											
Stainless steels, sulphured austenitic martensitic	≤ 28 ≤ 36 ≤ 46	≤ 273 ≤ 337 ≤ 435											
Cast iron	≤ 23 ≤ 38	≤ 242 ≤ 354	90			0.0080 0.0080	0.0100 0.0100	0.0125 0.0125	0.0125 0.0125	0.0140 0.0140	0.0160 0.0160		
Spheroidal graphite iron and malleable cast iron	≤ 23 ≤ 38	≤ 242 ≤ 354	70			0.0080 0.0080	0.0100 0.0100	0.0125 0.0125	0.0125 0.0125	0.0140 0.0140	0.0160 0.0160		
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											
Ti and Ti-alloys	≤ 25 ≤ 43	≤ 255 ≤ 402											
Aluminium and Al-alloys	-	≤ 120											
Al wrought alloys	-	≤ 200											
Al cast alloys ≤ 10 % Si ≤ 24 % Si	-	≤ 180 ≤ 180	180			0.0100 0.0080	0.0125 0.0100	0.0160 0.0125	0.0160 0.0125	0.0180 0.0140	0.0200 0.0160		
Magnesium alloys	-	≤ 120											
Copper, low-alloyed	-	≤ 150	90			0.0065	0.0080	0.0100	0.0100	0.0110	0.0125		
Brass, short-chipping long-chipping	- -	≤ 180 ≤ 180	110			0.0065	0.0080	0.0100	0.0100	0.0110	0.0125		
Bronze, short-chipping	-	≤ 180											
Bronze, long-chipping	≤ 25 ≤ 32	≤ 255 ≤ 301	70			0.0050	0.0065	0.0080	0.0080	0.0090	0.0100		
Duroplastics Thermoplastics Reinforced plastics - Kevlar Reinforced plastics - GFK / CFK			45			0.0050	0.0065	0.0080	0.0080	0.0090	0.0100		

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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	- ≤ 32	≤ 150 ≤ 301	115	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	0.0140			
Free-cutting steels	≤ 25 ≤ 32	≤ 255 ≤ 301	115	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	0.0140			
Unalloyed heat-treatable steels	≤ 20 ≤ 25 ≤ 32	≤ 220 ≤ 255 ≤ 301	115	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100	0.0110			
Alloyed heat-treatable steels	≤ 32 ≤ 43	≤ 301 ≤ 402											
Unalloyed case hardened steels	≤ 25	≤ 255	115	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	0.0140			
Alloyed case hardened steels	≤ 32 ≤ 43	≤ 301 ≤ 402											
Nitriding steels	≤ 32 ≤ 43	≤ 301 ≤ 402											
Tool steels	≤ 25 ≤ 43	≤ 255 ≤ 402	55	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	0.0090			
High speed steels	≤ 43	≤ 402											
Spring steels	≤ 38	≤ 354											
Hardened steels	≤ 48 ≤ 66	≤ 460 -											
Stainless steels, sulphured austenitic martensitic	≤ 28 ≤ 36 ≤ 46	≤ 273 ≤ 337 ≤ 435											
Cast iron	≤ 23 ≤ 38	≤ 242 ≤ 354	115	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	0.0140			
Spheroidal graphite iron and malleable cast iron	≤ 23 ≤ 38	≤ 242 ≤ 354	100	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	0.0140			
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											
Ti and Ti-alloys	≤ 25 ≤ 43	≤ 255 ≤ 402											
Aluminium and Al-alloys	-	≤ 120	295	0.0020	0.0065	0.0100	0.0125	0.0160	0.0160	0.0180			
Al wrought alloys	-	≤ 200	295	0.0020	0.0065	0.0100	0.0125	0.0160	0.0160	0.0180			
Al cast alloys ≤ 10 % Si ≤ 24 % Si	-	≤ 180 ≤ 180	225	0.0020	0.0065	0.0100	0.0125	0.0160	0.0160	0.0180			
Magnesium alloys	-	≤ 120	295	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	0.0140			
Copper, low-alloyed	-	≤ 150	115	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100	0.0110			
Brass, short-chipping long-chipping	- -	≤ 180 ≤ 180	145	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100	0.0110			
Bronze, short-chipping	-	≤ 180	115	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	0.0090			
Bronze, long-chipping	≤ 25 ≤ 32	≤ 255 ≤ 301	90	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	0.0090			
Duroplastics Thermoplastics Reinforced plastics - Kevlar Reinforced plastics - GFK / CFK			55	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	0.0090	0.0110		