

Using These Tables. The Speeds & Feeds listed below are conservative recommendations for initial setup. In actual use, depending on the machining environment and workpiece material, significantly higher speeds and feeds may be achievable. Using the below as a starting point, cutting speed/feed can be gradually adjusted upwards until the optimum settings per application are found. Questions? Contact us by telephone at (800) 776-6170.

Series # 5536 - Taper Length (10xD) GU 500 DZ

Material group	Hardness	SFM	Feed Rate - IPR									
			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. 24.400 mm	1 1/4 in. 31.750 mm	1 1/2 in. 38.100 mm
Common structural steels	≤100 Bhn	95	0.0007	0.003	0.005	0.007	0.008	0.01	•	•	•	•
	>260 Bhn	75	0.0006	0.002	0.004	0.006	0.006	0.008	•	•	•	•
Free-cutting steels	≤24 Rc	105	0.0007	0.003	0.005	0.007	0.008	0.01	•	•	•	•
	>24-30 Rc	85	0.0007	0.003	0.005	0.007	0.008	0.01	•	•	•	•
Unalloyed heat-treatable steels	≤16 Rc	85	0.0007	0.003	0.005	0.007	0.008	0.01	•	•	•	•
	16-24 Rc	75	0.0007	0.003	0.005	0.007	0.008	0.01	•	•	•	•
	24-30 Rc	45	0.0006	0.002	0.004	0.006	0.006	0.008	•	•	•	•
Alloyed heat-treatable steels	24-30 Rc	40	0.0005	0.0015	0.002	0.0045	0.005	0.006	•	•	•	•
	>30-38 Rc	35	0.0004	0.001	0.002	0.004	0.004	0.005	•	•	•	•
Unalloyed case hardened steels	≤230 Bhn	85	0.0007	0.003	0.005	0.007	0.008	0.01	•	•	•	•
Alloyed case hardened steels	24-30 Rc	40	0.0005	0.0015	0.002	0.0045	0.005	0.006	•	•	•	•
	>30-38 Rc	35	0.0004	0.001	0.002	0.004	0.004	0.005	•	•	•	•
Nitriding steels	≥24-30 Rc	40	0.0005	0.0015	0.002	0.0045	0.005	0.006	•	•	•	•
	≥30-38 Rc	25	0.0004	0.001	0.002	0.004	0.004	0.005	•	•	•	•
Tool steels	≤24 Rc	40	0.0005	0.0015	0.002	0.0045	0.005	0.006	•	•	•	•
	>24-30 Rc	30	0.0004	0.001	0.002	0.004	0.004	0.005	•	•	•	•
High speed steels	≥14-30 Rc	30	0.0004	0.001	0.002	0.004	0.004	0.005	•	•	•	•
Spring steels	≤330 Bhn	•	•	•	•	•	•	•	•	•	•	•
Stainless steels, sulphured	≤24 Rc	40	0.0005	0.0015	0.002	0.0045	0.005	0.006	•	•	•	•
	austenitic	25	0.0005	0.0015	0.002	0.0045	0.005	0.006	•	•	•	•
	martensitic	35	0.0005	0.0015	0.002	0.0045	0.005	0.006	•	•	•	•
Hardened steels	≤40-48 Rc	•	•	•	•	•	•	•	•	•	•	•
	>48-60 Rc	•	•	•	•	•	•	•	•	•	•	•
Special alloys	≤38 Rc	•	•	•	•	•	•	•	•	•	•	•
Cast iron	≤240 Bhn	95	0.001	0.004	0.006	0.01	0.01	0.012	•	•	•	•
	<300 Bhn	75	0.001	0.004	0.006	0.01	0.01	0.012	•	•	•	•
Spheroidal graphite iron and malleable cast iron	≤240 Bhn	85	0.001	0.004	0.006	0.01	0.01	0.012	•	•	•	•
	<300 Bhn	60	0.001	0.004	0.006	0.01	0.01	0.012	•	•	•	•
Chilled cast iron	≤350 Bhn	•	•	•	•	•	•	•	•	•	•	•
Ti and Ti-alloys	≤24 Rc	•	•	•	•	•	•	•	•	•	•	•
	>24-38 Rc	•	•	•	•	•	•	•	•	•	•	•
Aluminium and Al-alloys	≤120 Bhn	150	0.001	0.005	0.008	0.012	0.012	0.016	•	•	•	•
Al wrought alloys	≤150 Bhn	150	0.001	0.005	0.008	0.012	0.012	0.016	•	•	•	•
Al cast alloys ≤ 10 % Si	≤200 Bhn	180	0.001	0.005	0.008	0.012	0.012	0.016	•	•	•	•
	> 10 % Si	150	0.001	0.004	0.006	0.01	0.01	0.012	•	•	•	•
Magnesium alloys	≤150 Bhn	150	0.001	0.004	0.006	0.01	0.01	0.012	•	•	•	•
Copper, low-alloyed	≤120 Bhn	70	0.001	0.003	0.005	0.008	0.008	0.01	•	•	•	•
Brass, short-chipping	≤200 Bhn	150	0.001	0.003	0.005	0.008	0.008	0.01	•	•	•	•
	long-chipping	85	0.001	0.003	0.005	0.008	0.008	0.01	•	•	•	•
Bronze, short-chipping	≤200 Bhn	105	0.0007	0.002	0.004	0.006	0.006	0.008	•	•	•	•
	long-chipping	75	0.0007	0.002	0.004	0.006	0.006	0.008	•	•	•	•
Duroplastics	-	55	0.0007	0.002	0.004	0.006	0.006	0.008	•	•	•	•
Thermoplastics	-	35	0.0007	0.002	0.004	0.006	0.006	0.008	•	•	•	•
Reinforced plastics - Kevlar	-	•	•	•	•	•	•	•	•	•	•	•
Reinforced plastics - GFK / CFK	-	•	•	•	•	•	•	•	•	•	•	•

Series # 5524 - Stub Length (3xD) GU 500 DZ

Material group	Hardness	SFM	Feed Rate - IPR									
			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	≤100 Bhn	130	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	•	•	•	•
	>100-260 Bhn	100	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100	•	•	•	•
Free-cutting steels	≤24 Rc	155	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	•	•	•	•
	>24-30 Rc	125	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	•	•	•	•
Unalloyed heat-treatable steels	≤16 Rc	130	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	•	•	•	•
	16-24 Rc	100	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	•	•	•	•
	24-30 Rc	65	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100	•	•	•	•
Alloyed heat-treatable steels	24-30 Rc	55	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	•	•	•	•
	>30-38 Rc	35	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065	•	•	•	•
Unalloyed case hardened steels	≤230 Bhn	100	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	•	•	•	•
Alloyed case hardened steels	24-30 Rc	50	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	•	•	•	•
	>30-38 Rc	35	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065	•	•	•	•
Nitriding steels	≥24-30 Rc	45	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	•	•	•	•
	≥30-38 Rc	35	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065	•	•	•	•
Tool steels	≤24 Rc	55	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	•	•	•	•
	>24-30 Rc	30	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065	•	•	•	•
High speed steels	≥14-30 Rc	30	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065	•	•	•	•
Spring steels	≤330 Bhn	•	•	•	•	•	•	•	•	•	•	•
Stainless steels, sulphured	≤24 Rc	50	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	•	•	•	•
	austenitic	35	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	•	•	•	•
	martensitic	45	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	•	•	•	•
Hardened steels	≤40-48 Rc	•	•	•	•	•	•	•	•	•	•	•
	>48-60 Rc	•	•	•	•	•	•	•	•	•	•	•
Special alloys	≤38 Rc	•	•	•	•	•	•	•	•	•	•	•
Cast iron	≤240 Bhn	115	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	•	•	•	•
	<300 Bhn	90	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	•	•	•	•
Spheroidal graphite iron and malleable cast iron	≤240 Bhn	100	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	•	•	•	•
	<300 Bhn	80	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	•	•	•	•
Chilled cast iron	≤350 Bhn	•	•	•	•	•	•	•	•	•	•	•
Ti and Ti-alloys	≤24 Rc	•	•	•	•	•	•	•	•	•	•	•
	>24-38 Rc	•	•	•	•	•	•	•	•	•	•	•
Aluminium and Al-alloys	≤120 Bhn	180	0.0020	0.0065	0.0100	0.0125	0.0160	0.0160	•	•	•	•
Al wrought alloys	≤150 Bhn	180	0.0020	0.0065	0.0100	0.0125	0.0160	0.0160	•	•	•	•
Al cast alloys ≤ 10 % Si	≤200 Bhn	230	0.0020	0.0065	0.0100	0.0125	0.0160	0.0160	•	•	•	•
	> 10 % Si	185	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	•	•	•	•
Magnesium alloys	≤150 Bhn	205	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125	•	•	•	•
Copper, low-alloyed	≤120 Bhn	80	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100	•	•	•	•
Brass, short-chipping	≤200 Bhn	165	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100	•	•	•	•
	long-chipping	100	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100	•	•	•	•
Bronze, short-chipping	≤200 Bhn	130	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	•	•	•	•
	>200-260 Bhn	75	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	•	•	•	•
Bronze, long-chipping	≤24 Rc	100	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	•	•	•	•
	>24-30 Rc	75	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	•	•	•	•
Duroplastics	-	65	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	•	•	•	•
Thermoplastics	-	65	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080	•	•	•	•
Reinforced plastics - Kevlar	-	•	•	•	•	•	•	•	•	•	•	•
Reinforced plastics - GFK / CFK	-	•	•	•	•	•	•	•	•	•	•	•