

General Machining Guidelines

Milling

Workpiece Material	Application	Cutting Speed fpm(m/min)	Chip Load (ipt)
Aluminum (5-8% Si) (356, 308, 242, 208)	Rough Milling	2000-5000 (610-1525)	0.010-0.020 (.254-.508)
Aluminum (5-8% Si) (356, 308, 242, 208)	Finish Milling	2000-6000 (610-1830)	0.005-0.010 (.127-.254)
Aluminum Cast (8-12% Si) (354, 357, 380)	Rough Milling	1500-4000 (460-1220)	0.007-0.015 (.178-.381)
Aluminum Cast (8-12% Si) (354, 357, 380)	Finish Milling	1500-5000 (460-1525)	0.004-0.008 (.102-.204)
Aluminum Cast (12-18% Si) (390)	Rough Milling	1000-2000 (305-610)	0.005-0.010 (.127-.254)
Aluminum Cast (12-18% Si) (390)	Finish Milling	1000-3000 (305-915)	0.002-0.006 (.050-.150)
Copper	Milling	750-1500 (230-460)	0.001-0.008 (.025-.200)
Bronze	Milling	900-1350 (275-410)	0.003-0.008 (.076-.200)
Brass	Milling	2000-4000 (610-1220)	0.001-0.008 (.025-.200)
Babbitt	Milling	700-1100 (210-335)	0.003-0.010 (.076-.254)
Carbon	Milling	500-2000 (150-610)	0.0003-0.012 (.008-.305)
Unfilled Plastic	Milling	1000-4000 (305-1220)	0.003-0.020 (.076-.508)
Glass Fiber Material	Milling	750-1500 (230-460)	0.001-0.010 (.025-.254)
Carbon Fiber Materials	Milling	500-2000 (150-610)	0.003-0.015 (.076-.381)
Green Ceramic Materials	Milling	500-1500 (150-460)	0.002-0.010 (.050-.254)
Wood	Milling	3300-9800 (1000-3000)	0.004-0.030 (.102-.762)

Turning

Workpiece Material	Application	Cutting Speed fpm(m/min)	Chip Load (ipt)
Aluminum (5-8% Si) (356, 308, 242, 208)	Rough Turning	2000-5000 (610-1525)	0.010-0.025 (.254-.635)
Aluminum (5-8% Si) (356, 308, 242, 208)	Finish Turning	2000-6000 (610-1830)	0.005-0.010 (.127-.254)
Aluminum Cast (8-12% Si) (354, 357, 380)	Rough Turning	1500-4000 (460-1220)	0.007-0.020 (.178-.508)
Aluminum Cast (8-12% Si) (354, 357, 380)	Finish Turning	1500-5000 (460-1525)	0.004-0.008 (.102-.204)
Aluminum Cast (12-18% Si) (390)	Rough Turning	1000-2000 (305-610)	0.005-0.010 (.127-.254)
Aluminum Cast (12-18% Si) (390)	Finish Turning	1000-3000 (305-915)	0.002-0.006 (.050-.150)
Copper	Turning	750-1500 (230-460)	0.003-0.010 (.076-.254)
Bronze	Turning	900-1350 (275-410)	0.003-0.010 (.076-.254)
Brass	Turning	2000-4000 (610-1220)	0.003-0.015 (.076-.381)
Babbitt	Turning	700-1100 (210-335)	0.003-0.010 (.076-.254)
Carbon	Turning	500-2000 (150-610)	0.005-0.015 (.127-.381)
Unfilled Plastic	Turning	1000-4000 (305-1220)	0.003-0.020 (.076-.508)
Glass Fiber Material	Turning	750-1500 (230-460)	0.001-0.015 (.025-.381)
Carbon Fiber Materials	Turning	500-2000 (150-610)	0.003-0.020 (.076-.508)
Green Ceramic Materials	Turning	500-1500 (150-460)	0.002-0.020 (.050-.508)
Wood	Turning	3300-9800 (1000-3000)	0.004-0.030 (.102-.762)

Drilling

Workpiece Material	Application	Cutting Speed fpm(m/min)	Chip Load (ipt)
Aluminum (5-8% Si) (356, 308, 242, 208)	Drilling	2000-6000 (610-1830)	0.001-0.010 (.025-.254)
Aluminum Cast (8-12% Si) (354, 357, 380)	Drilling	1500-5000 (460-1525)	0.001-0.010 (.025-.254)
Aluminum Cast (12-18% Si) (390)	Drilling	1000-3000 (305-915)	0.001-0.010 (.025-.254)
Copper	Drilling	750-1500 (230-460)	0.001-0.010 (.025-.254)
Bronze	Drilling	900-1350 (275-410)	0.001-0.010 (.025-.254)
Brass	Drilling	2000-4000 (610-1220)	0.001-0.010 (.025-.254)
Babbitt	Drilling	700-1100 (210-335)	0.001-0.010 (.025-.254)
Carbon	Drilling	500-2000 (150-610)	0.001-0.010 (.025-.254)
Unfilled Plastic	Drilling	1000-4000 (305-1220)	0.001-0.010 (.025-.254)
Glass Fiber Material	Drilling	750-1500 (230-460)	0.001-0.010 (.025-.254)
Carbon Fiber Materials	Drilling	500-2000 (150-610)	0.001-0.010 (.025-.254)
Green Ceramic Materials	Drilling	500-1500 (150-460)	0.001-0.010 (.025-.254)
Wood	Drilling	3300-9800 (1000-3000)	0.003-0.025 (.076-.635)