

# DIAbide Cutting Data: Milling Parameters

Endmill Diameter	Starting Parameters – Graphite, Hard Carbon			
	RPM n	Cutting Speed Vc	Operation	Feed Rate per Tooth fz
1/64	20,000 - 40,000	80 - 160	Finish	0.0002 - 0.0005
1/32	18,000 - 40,000	150 - 325	Finish	0.0005 - 0.001
1/16	12,000 - 40,000	200 - 650	General	0.001 - 0.002
			Finish	0.0005 - 0.001
1/8	6,000 - 40,000	200 - 1,300	General	0.001 - 0.002
			Finish	0.0005 - 0.001
3/16	4,000 - 40,000	200 - 1,950	General	0.001 - 0.002
			Finish	0.0005 - 0.001
1/4	3,000 - 36,700	200 - 2,450	General	0.002 - 0.004
			Finish	0.001 - 0.002
5/16	2,500 - 31,800	200 - 2,600	General	0.002 - 0.004
			Finish	0.001 - 0.002
3/8	2,000 - 28,500	200 - 2,800	General	0.003 - 0.005
			Finish	0.001 - 0.003
1/2	1,500 - 23,000	200 - 3,000	General	0.003 - 0.005
			Finish	0.001 - 0.003

Endmill Diameter	Starting Parameters – Glass Fiber Filled Plastics			
	RPM n	Cutting Speed Vc	Operation	Feed Rate per Tooth fz
1/64	—	—	—	—
1/32	—	—	—	—
1/16	3,700 - 7,300	60 - 120	General	0.001 - 0.002
	5,200 - 10,400	85 - 170	Finish	0.0005 - 0.001
1/8	3,600 - 7,300	120 - 240	General	0.0005 - 0.001
	5,200 - 9,200	170 - 300	Finish	0.00025 - .0005
3/16	4,100 - 7,100	200 - 350	General	0.001 - 0.002
	6,100 - 10,200	300 - 500	Finish	0.0005 - 0.001
1/4	4,600 - 6,900	300 - 450	General	0.001 - 0.002
	5,300 - 8,400	350 - 550	Finish	0.0005 - 0.001
5/16	4,300 - 6,100	350 - 500	General	0.001 - 0.002
	4,300 - 7,300	350 - 600	Finish	0.0005 - 0.001
3/8	4,100 - 5,600	400 - 550	General	0.002 - 0.004
	3,500 - 6,600	350 - 650	Finish	0.001 - 0.002
1/2	3,400 - 4,600	450 - 600	General	0.002 - 0.004
	2,600 - 5,700	350 - 750	Finish	0.001 - 0.002

Endmill Diameter	Starting Parameters – Green Ceramics, Green Carbide, Powder Filled and Thermoset Plastics			
	RPM n	Cutting Speed Vc	Operation	Feed Rate per Tooth fz
1/64	6,100 - 20,000	25 - 80	Finish	0.0002 - 0.0005
1/32	6,100 - 20,000	50 - 160	Finish	0.0005 - 0.001
1/16	6,100 - 20,000	100 - 325	General	0.001 - 0.002
			Finish	0.0005 - 0.001
1/8	4,600 - 16,000	150 - 500	General	0.001 - 0.002
			Finish	0.0005 - 0.001
3/16	4,100 - 15,000	200 - 750	General	0.001 - 0.002
			Finish	0.0005 - 0.001
1/4	3,050 - 12,000	200 - 750	General	0.002 - 0.004
			Finish	0.001 - 0.002
5/16	2,400 - 11,000	200 - 900	General	0.002 - 0.004
			Finish	0.001 - 0.002
3/8	2,000 - 11,200	200 - 1,00	General	0.003 - 0.005
			Finish	0.001 - 0.003
1/2	1,500 - 10,000	200 - 1,300	General	0.003 - 0.005
			Finish	0.001 - 0.003

## Machining Graphite:

DIAbide diamond tools are a perfect match for machining graphite moldforms for EDM. The abrasive nature of EDM graphite grades severely limit the life of carbide tools, and PCD diamond tools are not available in the configurations required for detailed moldmaking. Tools with diamond on the surface wear longer and have a lower coefficient of friction. These characteristics provide substantial benefit to the machining operation.

Because diamond tools last much longer – 15 to 50x the life of carbide – they:

- Easily pay for themselves
- Greatly reduce the number of tool changes, increasing productivity
- Allow for longer periods of unattended machining
- Improve the dimensional consistency of the machined parts
- Eliminate changing tools mid-cut