

Diamond Coated Carbide End Mills



Applications

Machining of graphite, non-ferrous metals and other highly abrasive materials

Machining of deep pockets in the above materials where maximum rigidity and surface finish are essential

Availability

Inch & metric sizes

Two and four flute mills

Ball nose, standard end mill, regular length, long reach and corner radius with neck

Features

High hardness, excellent wear resistance to maximize tool life

PVD diamond coated film over the carbide yields a highly bonded smooth surface for superior surface finishes

Manufactured to precision dimensional accuracies for minimum tool to tool variations

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Recommended Parameters for Graphite Machining

(When Using Diamond Coated Tools)

Graphite is a material that is relatively easy to machine, but it is very abrasive which makes it very hard on tungsten carbide. This makes it a perfect candidate to machine with diamond. In fact, diamond coated end mills last 12–20 times as long as tungsten carbide when machining graphite – sometimes even longer.

Diamond coated cutting tools have a very wide operating range from 200 to over 2,000 surface feet per minute. This provides an opportunity for significant productivity increases.

You will see from the chart below that in machining graphite, it is not necessary to have a “high speed” mill

to derive benefits from diamond, but generally speaking the higher the speed, the more the benefit. We usually suggest keeping the feeds and speeds the same as what you are currently using for comparison purposes, then increasing the speeds to realize productivity gains.

DIAMOND COATED END MILLS				
End Mill Diameter (Inches)	Machine Speed (Rpm)	Cutting Speed (Sfm)	Feed Rate (Fpt)	Operation (General / Finish)
1/64	20,000 – 60,000	80 – 245	.0002 – .0005	FINISH
1/32	16,000 – 60,000	130 – 500	.0005 – .0010	FINISH
1/16	10,000 – 60,000	160 – 1,000	.0010 – .0020	GENERAL
			.0005 – .0010	FINISH
1/8	6,000 – 60,000	200 – 2,000	.0010 – .0020	GENERAL
			.0005 – .0010	FINISH
3/16	4,000 – 60,000	200 – 3,000	.0010 – .0020	GENERAL
			.0005 – .0010	FINISH
1/4	3,000 – 50,000	200 – 3,300	.0020 – .0040	GENERAL
			.0010 – .0020	FINISH
5/16	2,500 – 42,000	200 – 3,400	.0020 – .0040	GENERAL
			.0010 – .0020	FINISH
3/8	2,000 – 36,000	200 – 3,500	.0030 – .0050	GENERAL
			.0010 – .0030	FINISH
1/2	1,500 – 30,000	200 – 4,000	.0030 – .0050	GENERAL
			.0010 – .0030	FINISH

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For instant pricing use our online catalog at
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