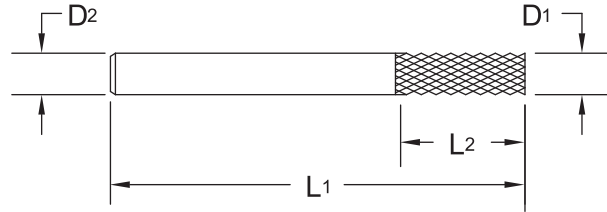


CERAedge® Coated Routers

Series 230CE/231CE



Diamond Grind

- Designed for routing of glass-reinforced printed circuit boards, phenolic-epoxy, composites and other highly abrasive materials.
- Ultra fine micrograin carbide.

Series 230CE

Down Cut
Safe End



Series 231CE

Down Cut
End Mill Type Point



Series 231BCE

Down Cut
Bur End Point



Series 231DCE

Down Cut
Drill Point



Series 230CE		Series 231CE		Diameter			Shank		OAL		Flute Length	
Tool No.	EDP	Tool No.	EDP	D1			D2		L1		L2	
				Inch	mm	Decimal	Inch	mm	Inch	mm	Inch	mm
23011810CE	90839	23111810CE	91047		3.0	.1181		3.0		38		12.5
23012500CE	90845	23112500CE	91071	1/8		.1250	1/8		1-1/2		1/2	
23018750CE	90847	23118750CE	91082	3/16		.1875	3/16		2		5/8	
23019680CE	90850	23119680CE	91094		5.0	.1968		5.0		51		16.0
23023620CE	90853	23123620CE	91106		6.0	.2362		6.0		51		19.0
23025010CE	90859	23125010CE	91130	1/4		.2500	1/4		2-1/2		3/4	

Series 231BCE		Series 231DCE		Diameter			Shank		OAL		Flute Length	
Tool No.	EDP	Tool No.	EDP	D1			D2		L1		L2	
				Inch	mm	Decimal	Inch	mm	Inch	mm	Inch	mm
23111810BCE	91050	23111810DCE	91053		3.0	.1181		3.0		38		12.5
23112500BCE	91074	23112500DCE	91077	1/8		.1250	1/8		1-1/2		1/2	
23118750BCE	91085	23118750DCE	91088	3/16		.1875	3/16		2		5/8	
23119680BCE	91097	23119680DCE	91100		5.0	.1968		5.0		51		16.0
23123620BCE	91109	23123620DCE	91112		6.0	.2362		6.0		51		19.0
23125010BCE	91133	23125010DCE	91136	1/4		.2500	1/4		2-1/2		3/4	

Routers are available with color coded depth setting rings upon request for 1/8" shanks.



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CERAedge® Coated Routers

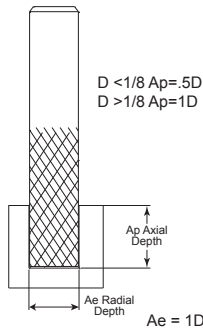
Diamond Grind Routers

Series 230CE / 231CE

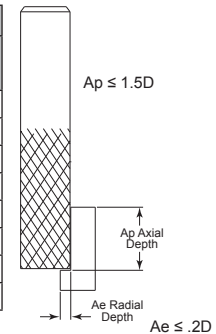
Series 231BCE / 231DCE

Recommended Cutting Data - Inch

Slotting 300 (Sfm)			Slotting 600 (Sfm)		
Tool Diameter	RPM	IPM	Tool Diameter	RPM	IPM
1/32	36000	29	1/32	73000	58
3/64	24000	24	3/64	48000	48
1/16	18000	27	1/16	36000	54
3/32	12000	24	3/32	24000	48
1/8	9100	22	1/8	18000	45
3/16	6100	18	3/16	12000	36
1/4	4500	16	1/4	9000	32
5/16	3600	14	5/16	7000	28



Side Milling 400 (Sfm)			Side Milling 900 (Sfm)		
Tool Diameter	RPM	IPM	Tool Diameter	RPM	IPM
1/32	48000	39	1/32	90000	72
3/64	32000	32	3/64	73000	73
1/16	24000	36	1/16	55000	83
3/32	16000	32	3/32	36000	72
1/8	12000	30	1/8	27000	68
3/16	8100	24	3/16	18000	54
1/4	6100	21	1/4	13000	46
5/16	4800	19	5/16	11000	44

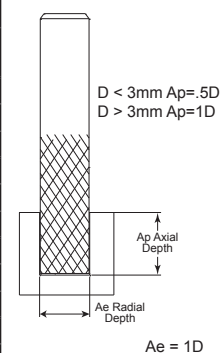


** Tool must have end grind in order to slot.

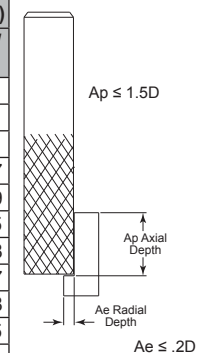
Note: The parameters in this table are for common material thickness of 1/4". You must use the Radial Depth (Ae) of 20% or less for Side Milling. For best surface finish conventional mill is recommended. Higher feed rates are possible but surface finish may change.

Recommended Cutting Data - Metric

Slotting 90 (m/min)			Slotting 182 (m/min)		
Tool Diameter	RPM	mm/min	Tool Diameter	RPM	mm/min
0.8	35000	141	0.8	72000	289
1	28000	226	1	57000	463
1.2	23000	306	1.2	48000	627
1.5	18000	376	1.5	38000	771
1.6	17000	388	1.6	36000	795
2	14000	423	2	28000	868
2.4	11000	447	2.4	24000	916
3	9400	480	3	19000	984
5	5600	395	5	11000	810
6	4700	423	6	9600	868
8	3500	353	8	7200	723



Side Milling 120(m/min)			Side Milling 240 (m/min)		
Tool Diameter	RPM	mm/min	Tool Diameter	RPM	mm/min
0.8	47000	190	0.8	95000	381
1	38000	305	1	76000	610
1.2	31000	413	1.2	63000	826
1.5	25000	508	1.5	50000	1017
1.6	23000	524	1.6	47000	1049
2	19000	572	2	38000	1145
2.4	15000	604	2.4	31000	1208
3	12000	648	3	25000	1297
5	7600	534	5	15000	1068
6	6300	572	6	12000	1145
8	4700	477	8	9500	954



** Tool must have end grind in order to slot.

Note: The parameters in this table are for common material thickness of 6mm. You must use the Radial Depth (Ae) of 20% or less for Side Milling. For best surface finish conventional mill is recommended. Higher feed rates are possible but surface finish may change.

ISO 9001:2008 Certified
Made in USA

Safety Note

Always wear the appropriate personal protective equipment such as safety glasses and protective clothing when using solid carbide or HSS cutting tools. Machines should be fully guarded.

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.