



XEPEC

TECHNOLOGY CO.,LTD.

www.deburringtechnologies.com

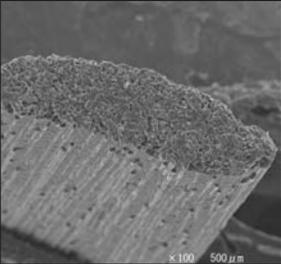
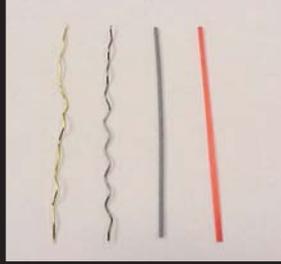
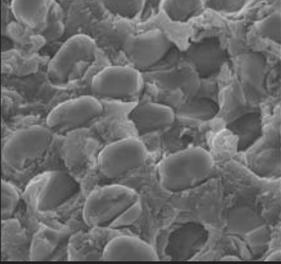
CERAMIC FIBER DEBURRING & SURFACE FINISH SOLUTIONS



Product Catalog 2013

The Difference

Frequently Asked Questions



What makes XEBEC® Ceramic Fiber so unique?

Each fine alumina fiber rod is made by binding together 1000 alumina fiber filaments (ALF), each only several μm in diameter. The tips are the actual cutting edges so there is no damage to the peripheral area of the part.

Self-sharpening tips lead to superior grinding performance. End-to-end solid abrasive rod material assures consistent performance.

Unlike brass wire, steel wire and abrasive impregnated nylon brush filaments, the unique design of the XEBEC® fiber rod allows it to maintain its shape with no deformation even after repeated use. This leads to consistent performance time after time.

What is the largest burr size?

up to 1.0 mm with the blue brush.

Does it deform the work piece or change part dimensions? Not if used correctly. The white or blue brush can remove tool marks if desired.

What kind of material will this work on? Anything from plastic to High-Temp alloys.

Does it work on hardened material? Yes, up to 57 Rc.

With or without coolant? Coolant isn't required but will help improve surface finish and tool life.

Pressure? Pressure is a variable of the depth of cut, more depth of cut will result in more aggressive deburring and surface finishing.

How much pressure should I put on the brush? Depth of cut should range from .020 to .060 (0.5 to 1.5mm). Do not place excessive load or force on the brush. Use of the floating holder is highly recommended for most consistent performance and optimal tool life.

How do I adjust the brush for wear or tool pressure? As the brush wears and the fiber length decreases, use the set screws in the sleeve to adjust the fiber projection to the optimal length. In addition to adjusting depth of cut, a shorter bristle projection from the holder will result in more aggressive deburring action.

What is the purpose of the sleeve? The sleeve serves as a holder for the cutting fiber brush and allows the exposed length of the fiber rods to be adjusted in order to achieve optimal grinding performance. A shorter projection will result in more aggressive grinding action where as a longer length will provide greater flexibility of the cutting fibers.

How do I run it? The preferred method is CNC equipment. Any machine tool and some hand tools are usable.

What is the best method to hold the brush? Collet chucks are the preferred method of holding the sleeve shank.

Can I run it on a powered hand drill? Yes, but depth control and horizontal orientation cannot be regulated, resulting in premature tool life.

How many RPMs do I need for cross-hole deburring brushes? Minimum of 15,000 on the 1.5mm brush. Minimum of 8,000 on all others.

Does the orientation of the tool to the burr matter? Yes. It is best for the brush cutter path to be in the opposite direction of the cutting tool that created the burr.

Can you surface finish with a cutting fiber brush? Yes.

When do I begin to spin the cross-hole deburring brush? Never rotate cross-hole deburring brush outside of hole. The fibers will break and could cause injury to the operator. See page 7 for more information.

Can I use this cross-hole deburring brush in a power tool? Yes, but depth control and horizontal orientation cannot be regulated, resulting in premature tool life.

What makes the XEBEC® cross hole deburring stones better than other stones? They are self sharpening and have consistent grain structure. In addition they deburr cross holes that are often not accessible with other tools.

Can these be used by hand or better suited in a machine? They work well on both applications.

What's the difference between colors? Blue is the stiffest and most aggressive, followed by white, red and then pink.

Is there cutting action on all sides of the fiber brush? No, only the tips of the brushes cut. The entire surface of deburring stones have cutting action.



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Floating Holder for machining operations

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Cross-Hole deburring brushes

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Cross-Hole Deburring ceramic stones

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Meister Finish Ceramic Sticks stick, rod & pencil types heat resistant & diamond for polishing

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Kit Convenience variety & specific kits

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Operating Parameters deburring brushes & ceramic stones

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USE IT ON	Machining Centers, Custom Machines, Drilling Machines & Robots.	Machining Centers, Robots, NC Lathe, Hand Grinders	High Speed Rotary Tools, Robots, Machining Centers	Flat Surfaces, Radiuses, Ribs, Bosses, Various Molds
IDEAL FOR	Fine Deburring & Surface Finishing of a Wide Variety of Materials	Polishing, Grinding, Point Processing, Narrow Areas, Scale Removal, Contouring	Improved Surface Finish, No Cracking or Chipping, No Clogging	Precision Polishing, Fine Deburring, Removing EDM Scales
BEST PRODUCT	<p>Deburring Brushes</p> 	<p>Cross-Hole Deburring</p> 	<p>Ceramic Fiber Points</p> 	<p>Meister Finish Ceramic Sticks</p> 

SURFACE DEBURRING AND FINISHING BRUSHES

Use on machining centers, robots, custom machines and drilling machines – EASY TO AUTOMATE.

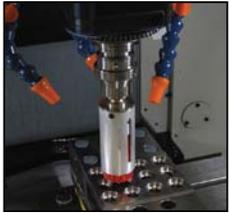
Superior grinding performance due to the self-sharpening action of the cutting edge of the fine alumina fiber rod tips.

The continuous cutting edge provides consistent grinding performance.

Simultaneously deburr and finish edges.

Improve surface finish in reduced cycle time!

Ideal for fine deburring and surface finishing of a wide variety of parts and materials up to 57 Rc.



Machining Center



Robot

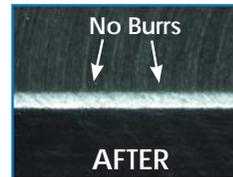
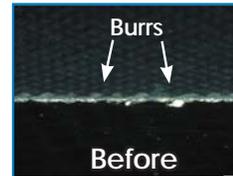


Custom Machine

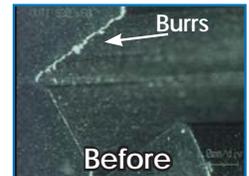
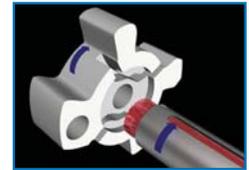
Application

- Deburring of fine burrs where the base thickness is 1mm (.040") or less after machine processing and finishing of edges.
- Fine deburring of surfaces, edges, radiuses and small diameter bores.
- Precision parts such as automotive engine parts that must be deburred while maintaining edge quality with out secondary burrs.
- Grinding and finishing of flat surfaces and uneven surfaces.

Results of an Oil Pan



Results of a Rotor



What's the difference besides color?

The **PINK** is softer and more flexible than the white and red versions. It results in no change in part dimensions or features. It is best used for detailed deburring of smaller more intricate parts or soft metals without breaking edges. Ideal for deburring small bores Ø0.3MM.

The **RED** is more flexible and will conform to slight work piece variations. It is best used on burrs that are ≤ 0.1mm (.0039") in thickness or materials that are < 45 Rc.

The **WHITE** is more rigid and has more aggressive grinding action that will provide longer tool life, run at higher speeds and it is best suited for harder materials. Because of its rigidity, it is not best suited for interruptions and uneven surfaces.

The **BLUE** is the most aggressive cutting fiber, three to four times more aggressive than white. It can handle burrs up to 0.5mm when the burr is vertical to the brush tip and 1mm when the burr is horizontal to the brush tip.

Brush

EDP Number	Part Number	Fiber Rod	Color	Brush Diameter		Brush Length		Sleeve Required for Brush	Max RPM
				mm	inch	mm	inch		
30013	A13-CB15M	A13	PINK	15	.591	50	1.969	S15M	6,000
30006	A11-CB06M	A11	RED	6	.236	30	1.181	S06M	10,000
30005	A11-CB15M	A11	RED	15	.591	50	1.969	S15M	6,000
30004	A11-CB25M	A11	RED	25	.984	75	2.953	S25M	5,000
30003	A11-CB40M	A11	RED	40	1.575	75	2.953	S40M	3,000
30002	A11-CB60M	A11	RED	60	2.362	75	2.953	S60M	2,000
30001	A11-CB100M	A11	RED	100	3.937	75	2.953	S100M	1,200
30012	A21-CB06M	A21	WHITE	6	.236	30	1.181	S06M	10,000
30011	A21-CB15M	A21	WHITE	15	.591	50	1.969	S15M	6,000
30010	A21-CB25M	A21	WHITE	25	.984	75	2.953	S25M	5,000
30009	A21-CB40M	A21	WHITE	40	1.575	75	2.953	S40M	3,000
30008	A21-CB60M	A21	WHITE	60	2.362	75	2.953	S60M	2,000
30007	A21-CB100M	A21	WHITE	100	3.937	75	2.953	S100M	1,200
30021	A31-CB06M	A31	BLUE	6	.236	30	1.181	S06M	10,000
30020	A31-CB15M	A31	BLUE	15	.591	50	1.969	S15M	6,000
30019	A31-CB25M	A31	BLUE	25	.984	75	2.953	S25M	5,000
30018	A31-CB40M	A31	BLUE	40	1.575	75	2.953	S40M	3,000
30017	A31-CB60M	A31	BLUE	60	2.362	75	2.953	S60M	2,000
30016	A31-CB100M	A31	BLUE	100	3.937	75	2.953	S100M	1,200



Sleeves (Reusable sleeves are required in order to hold deburring brushes)

EDP Number	Part Number	Shank				Sleeve External Diameter		Overall Length	
		Diameter		Length		mm	inch	mm	inch
		mm	inch	mm	inch				
40007	S15M-P NEW!	6	0.236	29	1.142	18	.709	90	3.543
40006	S06M	6	0.236	29	1.142	10	.394	70	2.756
40005	S15M	6	0.236	29	1.142	18	.709	90	3.543
40004	S25M	8	0.315	30	1.181	30	1.181	140	5.511
40003	S40M	8	0.315	30	1.181	45	1.771	140	5.511
40002	S60M	12	0.472	35	1.378	65	2.559	150	5.906
40001	S100M	16	0.630	40	1.575	110	4.330	162	6.378



MATERIAL		End-Milling	Face-Milling	Casting & Forging
Plastics		PINK		
Aluminum		RED		
Steel		WHITE		
Cast Iron		BLUE		

Brush Selection

When selecting a deburring brush, first take into consideration the size of the burr and the work piece material. Blue is the most aggressive & can handle the largest burrs. White is the next aggressive followed by red and pink.

Because each application is unique, final choice in selection of deburring brush is dependent upon burr size & your surface finish requirement. More information available on pages 13 and 14.

FLOATING HOLDER FOR MACHINING OPERATIONS

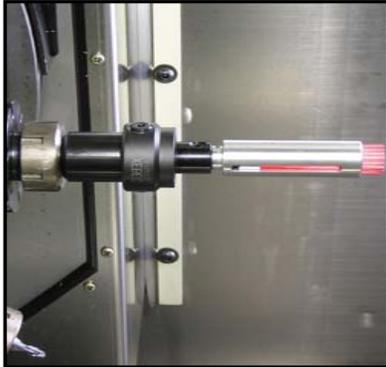
Provides consistently higher quality, automated process control and longer tool life.

The deburring & surface finishing brush floats on the work piece under constant pressure (depth of cut) due to an internal spring

in the floating holder. The pressure can be adjusted by using various spring tensions.

The maximum stroke length of the holder is .236 (6mm). Excellent choice for CNC milling operations.

Floating holder can be used (with included bushing) on brushes ranging from 6mm to 40mm in size.
(Currently not available for 60mm & 100mm)



Multi-Tasking Machine



Drilling Machine

Application

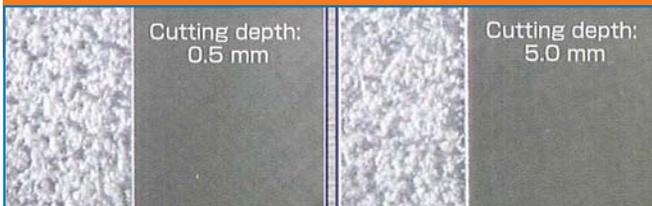
The floating holder assures repeatability in the manufacturing process by controlling the amount of pressure exerted on the work piece. As the bristles wear, the floating holder ensures that the brush fibers are contacting the part constantly thereby reducing time to manually adjust the fiber length. Not only are manufacturing process more constant, tool life is extended. Floating holders are well suited for machining centers, drilling machines, NC lathes, robots and other machine tools.

EDP Number	Part Number	Description	Axial Float		Gage Length		Shank Diameter		Matching Brush Sleeve EDP
			mm	inch	mm	inch	mm	inch	
50002	FH-ST12	Straight Shank	6	.236	60.5	2.382	12	.472	40003, 40004, 40005, 40006

IMPROVES BRUSH LIFE & SURFACE FINISH

WITH FLOATING HOLDER

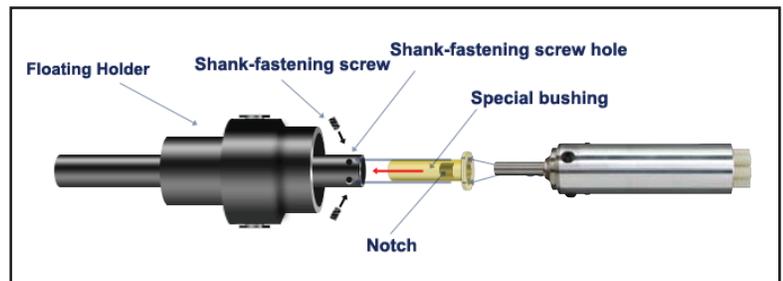
Change in cutting depth is absorbed by the floating function. Stable finishing assured even when cutting depth varies greatly.



:: Bushing included for 6mm and 15mm brushes ::

WITHOUT FLOATING HOLDER

The change in cutting depth is directly reflected in the finished condition.



CROSS-HOLE DEBURRING

CERAMIC STONE



The tool head is made of Alumina Fiber abrasive stone. Cutting edges are exposed over the entire surface.

Flexible shaft allows soft contact with the work piece.

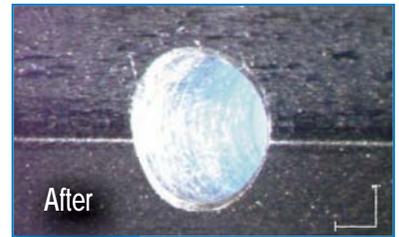
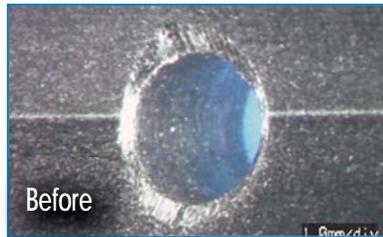
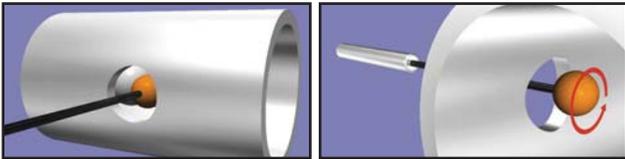
Efficient removal of fine burrs where the base thickness is 0.2 mm or less after machining.

Ideal for point processing of cross-hole fine deburring. *(Point processing removes only fine cross-hole burrs; no secondary burrs generated.)*

Can be used in a machining center, NC lathe, robot, etc. or with hand grinder for manual deburring.

Application

- This tool can be used not only with a machining center but also with a hand grinder for manual deburring.
- Point Processing (Insert from Primary Processing Hole)
- Contouring (Insert from Secondary Processing Hole)

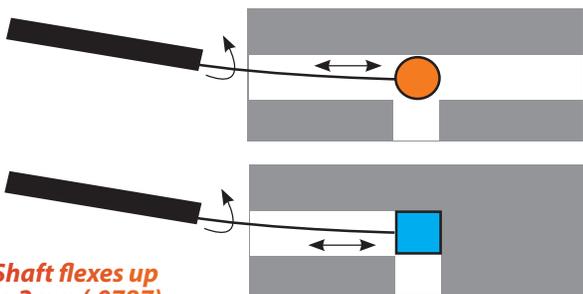
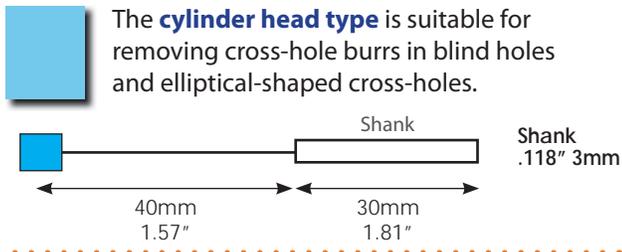
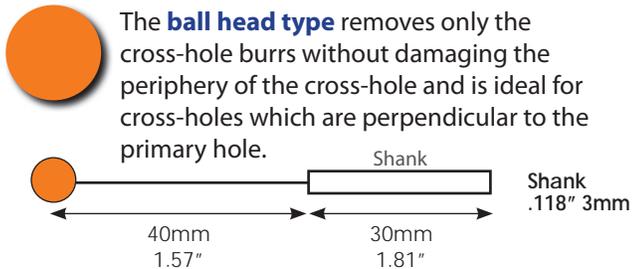


Head Size Selection

- For point processing through primary hole, select a head size slightly larger than the diameter of the cross-hole.
- If a smaller head is used, it may deflect into the secondary cross-hole and result in tool breakage.

Head Types

Shaft: 1.5ø x 40 mm Shank: 3ø x 30 mm



Shaft flexes up to 2mm (.0787)

EDP Number	Part Number	Grit	Grit Color	Head Shape Type	Head Size		Max RPM
					mm	inch	
10001	CH-PB-3B	#800	BLUE	Ball	3	.118	15,000
10002	CH-PB-4B				4	.157	13,000
10003	CH-PB-5B				5	.197	12,000
10004	CH-PB-6B				6	.236	10,000
10005	CH-PB-3R			Cylinder	3 x 3	.118 x .118	15,000
10006	CH-PB-4R				4 x 4	.157 x .157	13,000
10007	CH-PB-5R				5 x 5	.197 x .197	12,000
10008	CH-PO-3B	#400	ORANGE	Ball	3	.118	15,000
10009	CH-PO-4B				4	.157	13,000
10010	CH-PO-5B				5	.197	12,000
10011	CH-PO-6B				6	.236	10,000
10012	CH-PO-3R			Cylinder	3 x 3	.118 x .118	15,000
10013	CH-PO-4R				4 x 4	.157 x .157	13,000
10014	CH-PO-5R				5 x 5	.197 x .197	12,000
10015	CH-PM-3B	#220	GRAY	Ball	3	.118	15,000
10016	CH-PM-4B				4	.157	13,000
10017	CH-PM-5B				5	.197	12,000
10018	CH-PM-6B				6	.236	10,000
10027	CH-PM-10B				10	.393	7,000
10019	CH-PM-3R			Cylinder	3 x 3	.118 x .118	15,000
10020	CH-PM-4R				4 x 4	.157 x .157	13,000
10021	CH-PM-5R				5 x 5	.197 x .197	12,000

CROSS-HOLE DEBURRING

DEBURRING BRUSH 3.5 - 20mm

Powerful tip grinding with "XEBEC® Cutting Fibers" in rods made of Alumina Fiber abrasive stone.

Centrifugal force spreads out the rods and efficiently removes fine burrs in cylinders.

Can also be used for polishing or scale removal on inner wall surfaces of cylinders.

Target Bore Diameter in Primary Processing		EDP Number	Part Number	Brush Diameter		Overall Length		Shank Length		Shank Size		Max RPM
mm	inch			mm	inch	mm	inch	mm	inch	mm	inch	
3.5 - 5ø	.140 - .197	20007	CH-A12-1.5M	1.5	.060	120	4.724	70	2.756	3	.118	20,000
5 - 8ø	.197 - .315	20001	CH-A12-3M	3	.118	120	4.724	70	2.756	3	.118	12,000
		20004	CH-A12-3L			170	6.693	120	4.724	4	.158	12,000
8 - 10ø	.315 - .394	20002	CH-A12-5M	5	.197	120	4.724	70	2.756	6	.232	12,000
		20005	CH-A12-5L			170	6.693	120	4.724	6	.232	12,000
10 - 20ø	.394 - .787	20003	CH-A12-7M	7	.276	120	4.724	70	2.756	6	.232	12,000
		20006	CH-A12-7L			170	6.693	120	4.724	8	.315	12,000

NEW! Blue Brushes

Target Bore Diameter in Primary Processing		EDP Number	Part Number	Brush Diameter		Overall Length		Shank Length		Shank Size		Max RPM
mm	inch			mm	inch	mm	inch	mm	inch	mm	inch	
5 - 8ø	.197 - .315	20008	CH-A33-3M	3	.118	130	5.12	70	2.756	3	.118	12,000
		20012	CH-A33-3L			180	7.09	120	4.724	4	.158	12,000
8 - 10ø	.315 - .394	20009	CH-A33-5M	5	.197	130	5.12	70	2.756	6	.232	12,000
		20013	CH-A33-5L			180	7.09	120	4.724	6	.232	12,000
10 - 14ø	.394 - .551	20010	CH-A33-7M	7	.276	130	5.12	70	2.756	6	.232	12,000
		20014	CH-A33-7L			180	7.09	120	4.724	8	.315	12,000
14 - 20ø	.551 - .787	20011	CH-A33-11M	11	.433	130	5.12	70	2.756	12	.472	10,000
		20015	CH-A33-11L			180	7.09	120	4.724	12	.472	10,000

Application

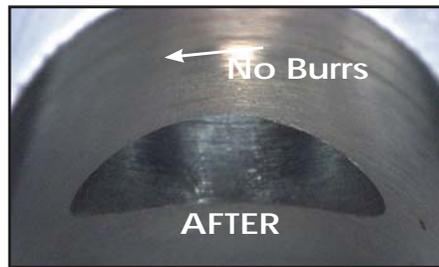
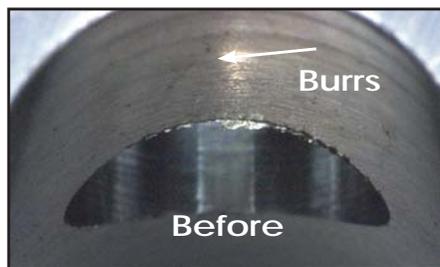
- Recommended operating parameters 8,000 - 10,000 RPM (12,000 Max) at 12 to 15 inches per minute.
- Removal of fine burrs (base thickness is 0.1mm (.0039") or less) generated around cross-holes.
- Polishing of inner wall surfaces of cylinders such as screw holes and removing EDM scale.
- Polishing the bottom surface of dead-end holes.
- Product is not well suited for interruptions and bores/cylinders with threads as the rapidly-rotating fibers may break when abruptly meeting obstacles.
- 1.5mm parameters: minimum 15,000 RPM, recommended 18,000 RPM, maximum 20,000 RPM, feed rate 7 inches per minute.

Operating Precautions

Select the brush diameter that corresponds to the diameter of the hole to be processed. **ALWAYS** insert the brush tip into the bore **BEFORE** rotating the tool. Using the wrong size tool or rotating the tool outside of the bore can result in tool breakage and possible injury to the operator.

Tool Mounting & Precautions

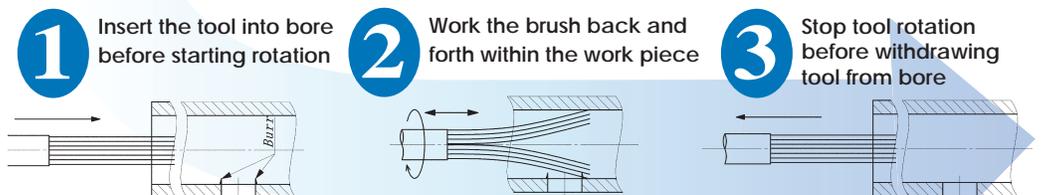
When mounting the tool in a machine spindle, insert the tool shank into the chuck up to the marking on the tool shank 30mm from the tool end. Make certain that the tool is held tightly. Should the operator notice any unusual tool vibration during operation, stop the tool immediately or tool breakage may occur.



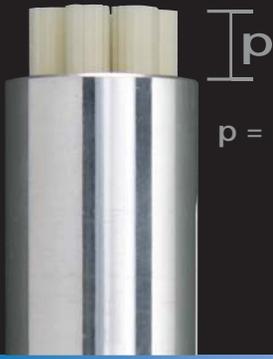
Tip of rod effectively removes burrs under rotational/centrifugal force.

First, insert the tip of the tool into the bore and then start rotation.

EASY AS 1.2.3



For effective deburring, repeat steps 1 to 3 from opposite side of the work piece.



p = brush projection

CROSS-HOLE DEBURRING

DEBURRING BRUSH FLARE
MAXIMUM BORE DIAMETER
& BRUSH PROJECTION



15mm Brush	MAX RPM	Brush Projection (p)				Sleeve Required for Brush
		30mm	40mm	45mm	50mm	
		1.181"	1.574"	1.771"	1.968"	
A11-CB15M RED	6000 rpm	1.023"	1.771"	2.165"	2.362"	40005
	5000 rpm	0.984"	1.417"	1.574"	1.968"	
	4000 rpm	0.826"	1.062"	1.062"	1.062"	
A21-CB15M WHITE	6000 rpm	0.984"	1.417"	1.811"	2.283"	
	5000 rpm	0.866"	1.062"	1.062"	1.417"	
	4000 rpm	0.826"	0.866"	0.866"	0.905"	

25mm Brush	MAX RPM	Brush Projection (p)						Sleeve Required for Brush
		30mm	40mm	45mm	50mm	60mm	70mm	
		1.181"	1.574"	1.771"	1.968"	2.362"	2.755"	
A11-CB25M RED	5000 rpm	1.574"	2.519"	3.346"	4.173"	-	-	40004
	4000 rpm	1.456"	1.771"	2.874"	3.385"	4.724"	-	
	3000 rpm	1.377"	1.692"	2.204"	2.992"	4.094"	4.724"	
A21-CB25M WHITE	5000 rpm	1.377"	1.771"	2.755"	2.755"	4.015"	-	
	4000 rpm	1.299"	1.653"	2.244"	2.244"	2.992"	3.661"	
	3000 rpm	1.259"	1.456"	1.811"	1.811"	2.362"	2.559"	

40mm Brush	MAX RPM	Brush Projection (p)						Sleeve Required for Brush
		30mm	40mm	45mm	50mm	60mm	70mm	
		1.181"	1.574"	1.771"	1.968"	2.362"	2.755"	
A11-CB40M RED	4000 rpm	-	-	3.700"	4.330"	-	-	40003
	3000 rpm	1.968"	2.401"	2.874"	3.346"	4.842"	-	
	2000 rpm	1.811"	2.165"	2.283"	2.559"	3.425"	4.330"	
	1000 rpm	1.771"	1.850"	1.929"	1.968"	2.047"	2.086"	
A21-CB40M WHITE	4000 rpm	-	-	2.755"	3.267"	-	-	
	3000 rpm	1.850"	2.125"	2.440"	2.716"	3.543"	4.527"	
	2000 rpm	1.771"	1.929"	2.165"	2.244"	2.559"	2.834"	
	1000 rpm	1.692"	1.732"	1.732"	1.732"	1.771"	1.811"	

MEISTER FINISH

CERAMIC FIBER STICKS

XEBEC® Ceramic fiber material eliminates cracking, chipping, and breaking.

No clogging means finishes are uniform.

Braided structure of the rod-type deburrs and polishes with both sides without splitting.

Can be used with electric, air, and ultrasonic tools for greater polishing efficiency.

Can shape or form to suit specific application with diamond file.

Sticks have straight line fiber structure where only the tip cuts.

... Many more sizes available upon request ...

Dimensions (mm)			RED	WHITE	BLUE	BLACK	ORANGE	LIGHT BROWN	DARK BROWN	VIOLET
w	h	l	#1200	#1000	#800	#600	#400	#300	#220	#120
0.5	4	100	AR-0504M 70043	AW-0504M 70049	AB-0504M 70017	AP-0504M 70061	AO-0504M 70067	AL-0504M 70073	AD-0504M 70010	-
0.5	6	100	AR-0506M 70045	AW-0506M 70052	AB-0506M 70057	AP-0506M 70063	AO-0506M 70069	AL-0506M 70080	AD-0506M 70085	-
0.5	10	100	AR-0510M 70047	AW-0510M 70054	AB-0510M 70059	AP-0510M 70065	AO-0510M 70071	AL-0510M 70082	AD-0510M 70087	-
0.8	4	100	AR-0804M 70091	AW-0804M 70096	AB-0804M 70077	AP-0804M 70105	AO-0804M 70620	AL-0804M 70076	AD-0804M 70014	-
1	1	100	AR-1001M 70127	AW-1001M 70135	AB-1001M 70141	AP-1001M 70148	AO-1001M 70155	AL-1001M 70337	AD-1001M 70167	-
1	2	100	AR-1002M 70128	AW-1002M 70012	AB-1002M 70142	AP-1002M 70621	AO-1002M 70019	AL-1002M 70161	AD-1002M 70050	AV-1002M 70173
1	4	100	AR-1004M 70001	AW-1004M 70002	AB-1004M 70003	AP-1004M 70004	AO-1004M 70005	AL-1004M 70006	AD-1004M 70007	AV-1004M 70008
1	6	100	AR-1006M 70025	AW-1006M 70026	AB-1006M 70027	AP-1006M 70028	AO-1006M 70029	AL-1006M 70030	AD-1006M 70031	AV-1006M 70032
1	10	100	AR-1010M 70133	AW-1010M 70018	AB-1010M 70078	AP-1010M 70153	AO-1010M 70016	AL-1010M 70013	AD-1010M 70075	AV-1010M 70178
2	4	100	AR-2004M 70235	AW-2004M 70242	AB-2004M 70249	AP-2004M 70256	AO-2004M 70263	AL-2004M 70270	AD-2004M 70277	AV-2004M 70283
2	6	100	AR-2006M 70237	AW-2006M 70244	AB-2006M 70251	AP-2006M 70258	AO-2006M 70265	AL-2006M 70272	AD-2006M 70279	AV-2006M 70285
3	4	100	AR-3004M 70289	AW-3004M 70295	AB-3004M 70301	AP-3004M 70307	AO-3004M 70313	AL-3004M 70319	AD-3004M 70325	AV-3004M 70331
3	6	100	AR-3006M 70291	AW-3006M 70297	AB-3006M 70303	AP-3006M 70309	AO-3006M 70315	AL-3006M 70321	AD-3006M 70327	AV-3006M 70333

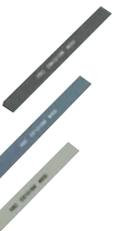


XEBEC® Heat Resistant Stick Type

Ceramic Abrasives

- Excellent heat resistance.
- Doesn't soften.
- Outstanding efficiency.
- Attach to an ultrasonic polisher for optimal performance.

Dimensions (mm)			RED #1200	BLUE #800	DARK BROWN #220	VIOLET #120
T	W	L				
1	4	100	HR-1004M 70683	HB-1004M 70705	HD-1004M 70706	HV-1004M 70690
1	6	100	HR-1006M 70684	HB-1006M 70686	HD-1006M 70688	HV-1006M 70691
1	10	100	HR-1010M 70685	HB-1010M 70687	HD-1010M 70689	HV-1010M 70692
2	4	100	HR-2004M 70693	HB-2004M 70696	HD-2004M 70699	HV-2004M 70702
2	6	100	HR-2006M 70694	HB-2006M 70697	HD-2006M 70700	HV-2006M 70703
2	10	100	HR-2010M 70695	HB-2010M 70698	HD-2010M 70701	HV-2010M 70704



XEBEC® Diamond Stick Type

for Polishing

- Best solution for EDM scale removal for maximum productivity
- Attach to an ultrasonic polisher for optimal performance

Dimensions (mm)			BLACK #200	BLUEGREEN #400	GRAY #800
W	H	L			
1	4	100	DM1004M 70900	DF1004M 70901	DS1004M 70902
1	6	100	DM1006M 70903	DF1006M 70905	DS1006M 70907
1	10	100	DM1010M 70904	DF1010M 70906	DS1010M 70908

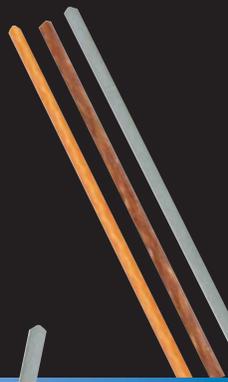
Precise polishing of surfaces, curves, ribs, bosses for the mold and die industry.

Efficient at removing EDM scales. Can be used in narrow areas where common abrasive stones cannot reach or be used because of breakage.

High finishing efficiency can be achieved without clogging even with the most difficult materials such as aluminum, copper, brass and bronze.

Use on complex shapes where uniform finishing could not be previously attained.

MEISTER FINISH CERAMIC FIBER RODS



Dimensions (mm)		RED #1200	WHITE #1000	BLUE #800	BLACK #600	ORANGE #400	LIGHT BROWN #300	Gray #220
Diameter	Overall Length							
1	50	PR-10S 70626	PW-10S 70628	PB-10S 70630	PP-10S 70632	PO-10S 70634	PL-10S 70636	PM-10S 70638
1	100	PR-10M 70627	PW-10M 70629	PB-10M 70631	PP-10M 70633	PO-10M 70635	PL-10M 70637	PM-10M 70639
1.5	50	PR-15S 70614	PW-15S 70640	PB-15S 70642	PP-15S 70615	PO-15S 70644	PL-15S 70646	PM-15S 70648
1.5	100	PR-15M 70625	PW-15M 70641	PB-15M 70643	PP-15M 70624	PO-15M 70645	PL-15M 70647	PM-15M 70649
2	50	PR-20S 70650	PW-20S 70652	PB-20S 70654	PP-20S 70656	PO-20S 70658	PL-20S 70660	PM-20S 70662
2	100	PR-20M 70651	PW-20M 70653	PB-20M 70655	PP-20M 70657	PO-20M 70659	PL-20M 70661	PM-20M 70663
2.34	50	PR-234S 70616	PW-234S 70672	PB-234S 70617	PP-234S 70675	PO-234S 70677	PL-234S 70618	PM-234S 70619
2.34	100	PR-234M 70671	PW-234M 70673	PB-234M 70674	PP-234M 70676	PO-234M 70678	PL-234M 70679	PM-234M 70680
3	50	PR-30S 70600	PW-30S 70601	PB-30S 70602	PP-30S 70603	PO-30S 70604	PL-30S 70605	PM-30S 70606
3	100	PR-30M 70613	PW-30M 70612	PB-30M 70611	PP-30M 70610	PO-30M 70609	PL-30M 70607	PM-30M 70608
3	150	PR-30L 70664	PW-30L 70665	PB-30L 70666	PP-30L 70667	PO-30L 70668	PL-30L 70669	PM-30L 70670

XEBEC® Diamond Rod Type

for Polishing

- Best solution for EDM scale removal for maximum productivity.
- Attach to an ultrasonic polisher for optimal performance.

Dimensions (mm)

Ø	Overall Length	BLUEGREEN #400
3	50	PDF30S 70909
3	100	PDF30M 70910

Pencil Rod Fiber & Holder

- For fine detail work in small features.

XEBEC® Meister Finish Pencil Type Blue (800g) is more aggressive than red (1200g)

Part Number	EDP Number	Grit	Color	T		W		L		Pencil Holder	Quantity Per Pack
				mm	inch	mm	inch	mm	inch		
A-R-0505S	70950	#1200	Red	0.5	.019	0.5	.019	50	1.969	PCL05	3 stones
A-R-0909S	70951	#1200	Red	0.9	.036	0.9	.036	50	1.969	PCL09	3 stones
A-B-0505S	70952	#800	Blue	0.5	.019	0.5	.019	50	1.969	PCL05	3 stones
A-B-0909S	70953	#800	Blue	0.9	.036	0.9	.036	50	1.969	PCL09	3 stones

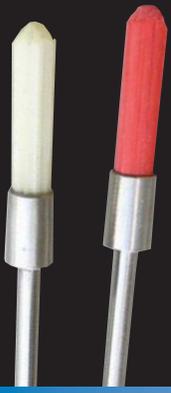
XEBEC® Pencil Type Holder

Part Number	EDP Number	Color	Description	Quantity Per Pack
PCL05	70960	Black	Pencil Holder for AR-0505S, AB-0505S	1 holder
PCL09	70961	Navy	Pencil Holder for AR-0909S, AB-0909S	1 holder

XEBEC® Meister Finish Holder

Part Number	EDP Number	Color	W		Quantity Per Pack
			mm	inch	
SSH-4	70962	Blue	4	.157	1 holder
SSH-6	70963	Blue	6	.236	1 holder
SSH-10	70964	Blue	10	.393	1 holder





DEBURRING BRUSHES

FOR HAND-HELD OPERATIONS & SMALL PART MACHINING

The tips of the fine alumina fiber rods have superior grinding force.

Can greatly improve surface finish in a short time.

Less clogging due to the self-sharpening action of the fiber rod tips.

Can be used in dry or wet applications.

Consistent rigidity results uniform and fine finish.

Superior Grinding Abilities!

Application

- EDM scale removal from molds.
- Modifying molds.
- Deburring after forming of precision parts.
- Deburring after machining of precision parts.
- Surface finishing
(removing post-processing marks and scales)
- Removing tool marks after end milling.
- Used in CNC machining applications for small areas or to follow cutting tool paths to remove tool marks.



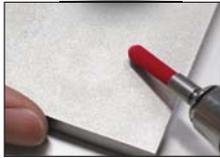
Before



After



Quick Deburring



EDM Scale Removal

Performance

Polishing Flat Surfaces

Attach to a hand tool and apply brush to work surface at approximately a 45° angle. Apply as constant a load as possible and keep the depth of cut to a minimum (under 1mm).

Truing/Dressing

Press the tip of the rotating brush against abrasive paper mounted onto a board to adjust the form of the brush.

Dry/Wet Applications

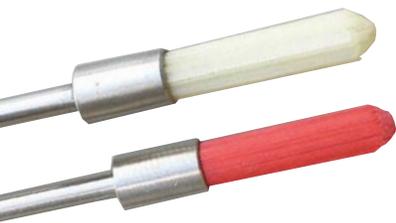
The brush can be used for both dry and wet applications.

Polishing Edges & Deburring Uneven Areas

When polishing edges and deburring uneven areas, work with lower revolutions and a lighter load. DO NOT apply excessive pressure on the edges with the sides of the fiber rods.

Bristle Length

With usage over time, the overall length of the fine alumina fiber rods (bristle length) will shorten, resulting in more grinding power but less flexibility. Adjust the grinding action and flexibility by decreasing the load (depth of cut).



EDP Number	Part Number	Fiber Rod	Color	Brush Diameter		Brush Length		Shank Diameter		Overall Length		Shank Length		Max RPM
				mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	
60001	A11-EB06M	A11	Red	6	.236	20	.787	3	.118	58	2.28	28	1.102	12,000
60002	A21-EB06M	A21	White	6	.236	20	.787	3	.118	58	2.28	28	1.102	12,000
30014	A13-EB03M	A13	Pink	3	.118	30	1.181	3	.118	67	2.63	37	1.456	20,000

Mounted Points for high-speed rotating tools

- Cutting edges are continually exposed over the entire surface due to self sharpening alumina fiber ceramic rod.
- Efficient removal of burrs with base thickness up to 0.2mm.
- Works great for any material up to 57 Rc such as tool steel & high temp. alloys.
- Shape the tip for specific applications.

EDP Number	Part Number	Head Diameter		Head Length		Shank Size		Grit	Max RPM
		mm	inch	mm	inch	mm	inch		
60003	AX-PM-5RF	5	.196	8	.315	∅ 3 x 30	.118 x 1.181	#220	30,000



60003



60004



60005



XEBEC® Kit

KIT EDP	EDP	Description	FOUND ON PAGE
80003	1	10011 CH-PO-6B 400G SPHERE STONE	6
	2	10015 CH-PM-3B 220G SPHERE STONE	
	3	30011 A21-CB15M DEBURRING BRUSH WHITE	4
	4	40005 S15M CORRESPONDING SLEEVE	
	5	20001 CH-A12-3M C-H FIBER BRUSH	7
	6	30014 A13-EB03M CUTTING TOOL	11
	7	60002 A21-EB06M GRINDER TOOL WHITE	
	8	60004 AX-PM-3R CERAMIC FIBER MOUNTED POINT	
	9	70003 AB-1004M MEISTER STICK (BLUE, 1.0X4X100)	9
	10	70050 AD-1002M MEISTER STICK (DARK BROWN, 1.0X2X100)	

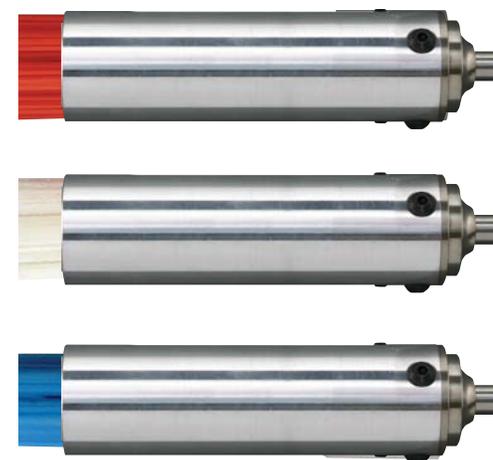
Deburring Brush Starter Kits

Kits for 6mm thru 40mm Available and Offer Significant Savings FOR EXAMPLE

KIT EDP	EDP	Description	FOUND ON PAGE
80015	30005	15mm Red Brush A11-CB15M	4 & 5
	40005	15mm Sleeve S15M	
	50002	Floating Holder	

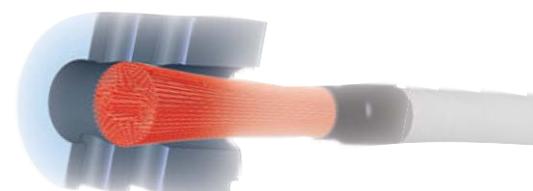
KIT EDP	EDP	Description	FOUND ON PAGE
80025	30011	15mm White Brush A21-CB15M	4 & 5
	40005	15mm Sleeve S15M	
	50002	Floating Holder	

KIT EDP	EDP	Description	FOUND ON PAGE
80035	30020	15mm Blue Brush A31-CB15M	4 & 5
	40005	15mm Sleeve S15M	
	50002	Floating Holder	



Cross-Hole Deburring Kit 5-20mm

KIT EDP	EDP	Description	Range		FOUND ON PAGE
			mm	inch	
80040	20001	CH-A12-3M	5-8	.196-.315	7
	20002	CH-A12-5M	8-10	.315-.394	
	20003	CH-A12-7M	10-20	.394-.787	



OPERATING PARAMETERS

surface deburring BRUSHES

BRUSH DIAMETER <i>can be run dry or with coolant</i>		6mm	15mm
PART MATERIAL	AISI	● A11-CB06M ● A31-CB06M ○ A21-CB06M	● A13-CB15M ○ A21-CB15M ● A11-CB15M ● A31-CB15M
Aluminum / Castings	1000 - 3000	● ● 8000 RPM - 30 IPM	● ● 3525 RPM - 30 IPM
Aluminum / Castings	5052 - 6061	○ ● 8500 RPM - 35 IPM	○ ● 3650 RPM - 35 IPM
Copper / Brass	C93200 - B-148-52	● ● 7500 RPM - 30 IPM	● ● 3225 RPM - 30 IPM
Plastics	Nylon / Delrin	● ● 7000 RPM - 30 IPM	● ● 3000 RPM - 30 IPM
Carbon Steel / Alloys	1010 - 1060	○ ● 9000 RPM - 42 IPM	○ ● 3875 RPM - 42 IPM
Low Alloy Steel	S1 - O2 - 4140 - 5150	○ ● 9000 RPM - 35 IPM	○ ● 3875 RPM - 35 IPM
High Alloy Steel	H11 - T15 - M42	○ ● 9000 RPM - 30 IPM	○ ● 3875 RPM - 30 IPM
Stainless Steel / Castings	403 - 405 - 17-4 PH	○ ● 8500 RPM - 35 IPM	○ ● 3650 RPM - 35 IPM
300 Series Stainless	304 - 316	○ ● 8000 RPM - 40 IPM	○ ● 3525 RPM - 40 IPM
Cast Iron - Gray & Nodular	All	○ ● 9000 RPM - 42 IPM	○ ● 3875 RPM - 42 IPM
White / Hardened Cast Iron	All	○ ● 8500 RPM - 35 IPM	○ ● 3650 RPM - 35 IPM
Titanium	TiAL6V4 - 6V6AL2Sn	○ ● 7000 RPM - 30 IPM	○ ● 3000 RPM - 30 IPM
High Temp Alloys	Inconel - Hastelloy	○ ● 8500 RPM - 35 IPM	○ ● 3650 RPM - 35 IPM
BRUSH PROJECTION "INITIAL SET-UP"		5/16" - 3/8"	3/8" - 9/16"

ceramic STONES

PART MATERIAL	DESCRIPTION	3mm STONE ● ● ●
Aluminum / Castings	1000 - 3000	● 12000 RPM
Aluminum / Castings	5052 - 6061	● 13000 RPM
Copper / Brass	C93200 - B-148-52	● 12000 RPM
Carbon Steel / Alloys	1010 - 1060	● 13500 RPM
Low Alloy Steel	S1 - O2 - 4140 - 5150	● 13700 RPM
High Alloy Steel	H11 - T15 - M42	● 13900 RPM
Stainless Steel / Castings	403 - 405 - 17-4 PH	● 13500 RPM
300 Series Stainless	304 - 316	● 12200 RPM
Cast Iron - Gray & Nodular	All	● 13200 RPM
White / Hardened Cast Iron	All	● 14500 RPM
Titanium	TiAL6V4 - 6V6AL2Sn	● 14000 RPM
High Temp Alloys	Inconel - Hastelloy	● 14500 RPM
MAXIMUM RPM		15,000

recommended speeds & feeds

25mm	40mm	60mm	100mm
A11-CB25M A21-CB25M A31-CB25M	A11-CB40M A31-CB40M A21-CB40M	A11-CB60M A31-CB60M A21-CB60M	A11-CB100M A31-CB100M A21-CB100M
2050 RPM - 30 IPM	1275 RPM - 30 IPM	850 RPM - 30 IPM	515 RPM - 30 IPM
2175 RPM - 35 IPM	1350 RPM - 35 IPM	900 RPM - 35 IPM	550 RPM - 35 IPM
1950 RPM - 30 IPM	1225 RPM - 30 IPM	800 RPM - 30 IPM	485 RPM - 30 IPM
1800 RPM - 30 IPM	1125 RPM - 30 IPM	750 RPM - 30 IPM	450 RPM - 30 IPM
2325 RPM - 42 IPM	1450 RPM - 42 IPM	975 RPM - 42 IPM	580 RPM - 42 IPM
2325 RPM - 35 IPM	1450 RPM - 35 IPM	975 RPM - 35 IPM	580 RPM - 35 IPM
2325 RPM - 30 IPM	1450 RPM - 30 IPM	975 RPM - 30 IPM	580 RPM - 30 IPM
2175 RPM - 35 IPM	1350 RPM - 35 IPM	900 RPM - 35 IPM	550 RPM - 35 IPM
2050 RPM - 40 IPM	1275 RPM - 40 IPM	850 RPM - 40 IPM	515 RPM - 40 IPM
2325 RPM - 42 IPM	1450 RPM - 42 IPM	975 RPM - 42 IPM	580 RPM - 42 IPM
2175 RPM - 35 IPM	1350 RPM - 35 IPM	900 RPM - 35 IPM	550 RPM - 35 IPM
1800 RPM - 30 IPM	1125 RPM - 30 IPM	750 RPM - 30 IPM	450 RPM - 30 IPM
2175 RPM - 35 IPM	1350 RPM - 35 IPM	900 RPM - 35 IPM	550 RPM - 35 IPM
1/2" - 5/8"	1/2" - 5/8"	1/2" - 3/4"	1/2" - 3/4"

Key for Cutting Fiber

- A-11 Series Recommended
 - A-21 Series Recommended
 - A-11 Primary A-21 Secondary
 - A-21 Primary A-11 Secondary
 - When burs are 0.5mm vertical to brush tip or 1.0 mm horizontal to brush tip
- Note: Tool selection being partially dependent on burr size & material hardness.

The RPM and feed rates shown to the left are suggested starting points for the materials and brush sizes listed. Speeds and/or feeds may be adjusted according to material hardness, severity of the burr, desired cycle time, and tool life. Recommended depth of cut is .020" - .060".

recommended speeds & feeds

4mm STONE 	5mm STONE 	6mm STONE
9100 RPM	7000 RPM	6100 RPM
9900 RPM	7600 RPM	6600 RPM
9100 RPM	7000 RPM	6100 RPM
10200 RPM	7800 RPM	6800 RPM
10300 RPM	8000 RPM	7000 RPM
10400 RPM	8200 RPM	7200 RPM
10200 RPM	8000 RPM	7000 RPM
9300 RPM	7200 RPM	6200 RPM
9900 RPM	7600 RPM	6600 RPM
11000 RPM	8700 RPM	7600 RPM
10500 RPM	8200 RPM	7300 RPM
11000 RPM	8700 RPM	7600 RPM
13,000	12,000	10,000

Key for Ceramic Stone

- 220 Grit Equivalent
- 400 Grit Equivalent
- 800 Grit Equivalent

Select stone diameter according to the size of the cross hole. Stone size should be smaller than the main bore and at least 25% larger than the cross hole diameter. Do not displace the shaft of the tool more than 2mm. Stones may be dressed with a diamond honing stone.

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About

Deburring Technologies, LLC is the North American partner for XEBEC® deburring products. XEBEC® Technology, LTD is a well respected Japanese company who introduced these innovative ceramic fiber products to Japan in the 1990s. Manufactured in an ISO 9001 certified facility, we are pleased to now make these revolutionary products readily available to the North American marketplace.

XEBEC® products utilize a unique process which produces brushes, sticks and stones of solid ceramic fibers. Unlike competitive products there are no filler materials to clog or degrade during the part manufacturing process. In addition, the cutting action of XEBEC® products is designed not to change the dimensional characteristics of the work piece.



**COMMITTED TO INDEPENDENT
TECHNICAL MANUFACTURER'S
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NEW TECHNICAL HOT LINE 800-434-9775

www.deburringtechnologies.com

SAFETY WARNING Cutting fiber brushes and stones are cutting tools and are often rotated at high speeds with a power tool or in a machine tool. They should never be operated at higher than the maximum speeds listed. When using these tools, safety glasses and gloves should be worn. Breathing the dust created by using these products for prolonged periods of time should be avoided. TEST TOOL POLICY Due to the unique design of Xebec products, we have achieved optimal success when Deburring Technologies technical personnel assist in the selection of proper tool and operating parameters. Provided our representative has reviewed an application and provided processing recommendations, we are pleased to provide reasonable quantities of test product with a "Guaranteed Trial" purchase order. Such product will be invoiced and is payable per our normal NET – 30 DAY terms. Should the product not perform as promised, simply contact us for a return authorization within forty five (45) days of purchase with a written report of how the product failed to meet the promised performance. Once we have received and inspected the product we will issue full credit for the returned product. All returns for other than guaranteed trial performance must be received within thirty (30) days from date of purchase and be received in new condition in the original packaging. Once we have received and inspected the product we will issue full credit for the returned product.