

FEATURES

- Powerful tip grinding with "XEBEC Brush" bristles made of ceramic fiber filaments.
- Burrs are completely removed without damaging periphery or breaking the edge pattern.
- Centrifugal force generated by rotation efficiently removes cross hole fine burrs in cylinders.
 - Precision removal of all fine burrs where the base thickness is 0.1mm or less after machine processing.
- Also can be used for polishing or scale removal on inner wall surfaces of cylinders.
 - Polishing the bottom surface of dead-end holes

SPECIFICATIONS

Brush Color: Red, White, Blue

Recommended Burr Size: base thickness is 0.1mm or less after machine processing

Crosshole Diameter: **0.14 to 0.79 inches** (Crosshole diameter cannot exceed 50% of primary bore diameter.) Maximum Depth: **5.9 inches** (Depths greater than 5.9 inches require special order brush collar and shank)



Always operate within the recommended range of maximum speed of rotation, depth of cut and feed rate.

PRECAUTIONS FOR USE

Do not exceed the maximum rotation speed for use.

Operating above the maximum rotation speed may result in tool breakage.

Ensure any dust or debris generated during processing is collected, and work area is kept clean.

Even if there is no abnormal condition observed in the test run, stop use immediately if an abnormality is observed.

Do not use the tool at an unreasonable angle or under excessive pressure.

Do not use the tool in any place with risk of fire or explosion.

Do not grind with, alter or fabricate the shaft.

CONDUCT A TEST

Conduct a test run for 1 minute or more before starting the operation and 3 minutes or more after changing a tool. Check for any abnormality including excessive vibration or looseness in the mounting place of the tool.

OPERATOR SAFETY MEASURES

Use Protective Gear Always wear protective goggles, gloves and masks when operating the tool or entering the work area. Wear long sleeves, tight cuffs, and clothing to minimize skin exposure.

Take Precaution Be cautious in surrounding area. Use of machines at high speed can cause flying debris within the work area. Dust or debris generated by operating process could be hazordous.



WARNING!

Use caution and follow all safety measures at all times. Failure to do so could result in injury. A tool or a part of a tool may crack, drop off, distort or break. Broken pieces of a tool or grinding dust may stick into skin or eyes and cause injury.



How to Use



- **1.** Insert the Brush while at rest. Rotating brush outside cylinder may damage brush or injure operator.
- **2.** Rotate the tool past the crosshole. (Rotate in both CW and CCW directions for best results.)
- **3.** Process, pulling the brush back past crosshole to prevent burrs from laying flat against the interior.
- **4.** If required, process bore again, pushing the brush forward past the crosshole and then back.
- 5 Stop brush rotation. Remove the brush while at rest.

ADDITIONAL PRECAUTIONS FOR USE

Follow all safety precations. Failure to do so may cause dangerous breakage of the brush fiber rods, tools, part deformation, damage and/or injury.

- 1. Ensure proper brush diameter based on cylinder diameter (See table on following page)
- 2. Do not initiate tool rotatation until the front end is inserted inside the cylinder to be worked.

Below cases may cause the fiber rod to break



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L1

Selection

Target Bore	Brush (D:	Brush Size (D3)		L1 Overall Length		L4 Brush Length		D1 Shank Diameter		D2 Diameter	Aggressiveness Less		Max RPM	D3	•	< 7	1	
Diameter	ММ	INCHES	ММ	INCHES	мм	INCHES	ММ	INCHES	мм	INCHES	Red	Blue						
0.140 - 0.197" (3.5 - 5 mm)	1.5 mm	0.060	120	4.724	50	1.969	3	0.118	2.5	0.098	20007 CH-A12-1.5M	-	20,000					
0.197 - 0.315" (5 - 8 mm)		n 0.118	130	5.118	60	2.362	3	0.118	118 558 118 558		20001 CH-A12-3M-TL	-					L4	
			180	7.087			4	0.158			20004 CH-A12-3L-TL	-						
	3mm		130	5.118			3	0.118		4	0.157	-	20008 CH-A33-3M	12,000			 _'	<u> </u>
			180	7.087			4	0.158			-	20012 CH-A33-3L						
0.315 - 0.394" (8 - 10 mm)			130	5.118							20002 CH-A12-5M-TL	-			*	D2		
	5mm	nm 0.197	180	7.087	60	2.362		6 0.232	2 6	0.236	20005 CH-A12-5L-TL	-	12,000					
			130	5.118			362 6				-	20009 CH-A33-5M						
			180	7.087								20013 CH-A33-5L						
0.394 - 0.551" (10 - 14 mm)		7 mm 0.276	130	5.118	- 60	2.362	6	0.232	.232		20003 CH-A12-7M-TL	-		<u>D1</u>	\ >	/ <	_	
	7mm		180	7.087			8	8 0.315	0.315	0	8 0.315	20006 CH-A12-7L-TL	-	12 000				
			130	5.118			2.362 6 8	6	0.232	8		-	20010 CH-A33-7M	12,000				
			180	7.087				8	0.315			-	20014 CH-A33-7L					
0.551 - 0.787" (14 - 20 mm)			130 5.118	20018 CH-A12-11M														
	11 mm	1 mm 0.433	180	7.087	60	2.362	IZ	0.472	12	0.472	20017 CH-A12-11L		12,000					
			130	5.118			10	0.470			-	20011 CH-A33-11M						
			180	7.087			12	0.472			-	20015 CH-A33-11L						

Custom Extra-Long Crosshole Brushes are available for depths exceeding 5.9 inches. This is a Special Order item consisting of brush collar and shank. Contact Customer Service for details.

ADDITIONAL LEARNING RESOURCES AVAILABLE ON OUR WEBSITE

3D Files (STEP, DXF), Dimensional Drawings and Safety Data Sheets (SDS)

deburringtechnologies.com/technical

Produ

Product Demonstration Videos deburringtechnologies.com/video

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Linked in 📃 YouTube



Choosing Color and Size

Choosing Brush Diameter

Target Bore	0.140-0.197"	0.197-0.315"	0.315-0.394"	0.394-0.551"	0.551-0.787"
Diameter	(3.5 - 5 mm)	(5 - 8 mm)	(8 - 10 mm)	(10 - 14 mm)	(14 - 20 mm)
Brush Size	1.5 mm	3 mm	5 mm	7 mm	11 mm

Choosing Brush Color

Brush Color	Red	Blue				
Aggressiveness	Least <	> Most				
Workpiece	Resin	General steel				
Material	Copper/Brass	Stainless steel				
	Aluminum					
		Heat-resistant steel				
		Cast-iron				
		Hard-to-cut material				
Burr	Micro fine burrs					
Inickness	Burr root thickness up to 0.0					
Target Finish	4 Ra or better	Up to 4 Ra				

Suggested Starting Parameters

Feed Rate

12 to 15 IPM (inches/min)

Starting Speed (RPM)

	Red	Blue
1.5 mm	9,000-11,000	-
3 mm	7,000-10,000	7,500-9,000
5 mm	8,000-10,000	7,500-8,000
7 mm	7,000-9,000	6,500-8,000
11 mm	6,000-7,500	6,500-8,000

Making Adjustments

Maximizing Deburring Operation

- 1 Increase RPM to the maximum allowed
- 2 Decrease feed rate in 10% increments
- **3** Do not change original parameters, but increase number of passes
- 4 Try a more aggressive brush color that will increase grinding power

Maximizing Tool Life

- 1 Decrease RPM in 10% increments
- 2 Increase feed rate by 10% increments
- **3** Try another brush color A11 Red or A32 Blue with the same parameters



- > It will Extend Tool Life
- Improves Surface Finish

Increase Grinding Power

Feed Rate	Rotational Speed	Depth of Cut			
\checkmark	\wedge	\checkmark			

Decrease Grinding Power

Feed Rate	Rotational Speed	Depth of Cut
\land	\checkmark	\sim