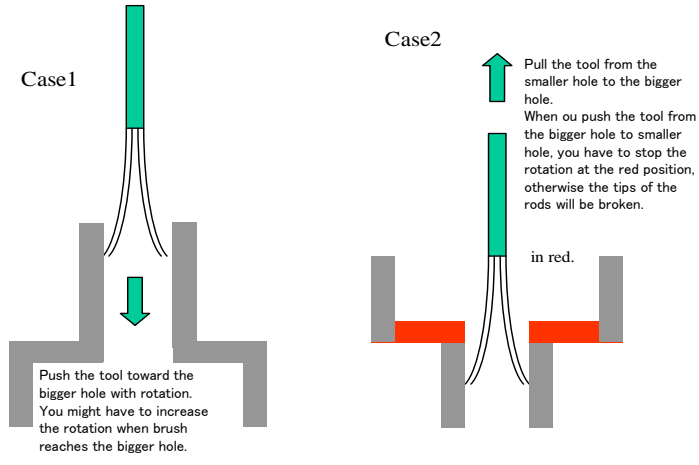


Know-how Applications of Xebec Deburring Tools

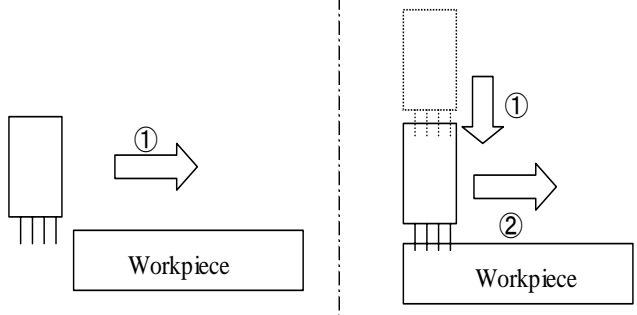
We would like to share Xebec Deburring tools know-how applications with you. These are real applications of domestic customers. Please be noted that we do not guarantee these performances, but we hope these help you to find solutions or hints for your customers. Should you have questions, feel free to contact me.

	XEBEC Product	XEBEC Code	Description of occurrence	Problems	Countermeasure	Picture
1	Cross-Hole Deburring Tool Alumina Fiber Rod Type	CH-A12-3M~ALL Kinds	Cross-hole deburring of Cylinder with steps inside	the bristles are stuck at the gap and broke off	Always stop rotation before the step and move to the different size of hole and restart rotation.	<1>
2	Cutting Fiber	White Brush	Shank breaks in deburring process	Excessive load added to shank	Change tool approaches to minimize the pressure.	<2>
3	Cross-Hole Deburring Tool Alumina Fiber Rod Type	ALL CH Alumina Kinds	Inner wall polish or cross-hole near the cylinder entrance	Very difficult to process	Attach a dummy workpiece, so the cylinder entrance can be polished, or burrs near entrance can be removed.	<3>
4	Cross-Hole Deburring Tool Ceramic Stone Type	Column Type	Inner wall polish with Cross-Hole Deburring Tool Ceramic Stone Type			<4>
5	Cutting Fiber	Cutting Fiber bigger thanφ15	complete automation with specialized machine	Re-adjustment of brush protrusion was regularly necessary. Thus it was not complete automation.	Z axis with pneumatic drive goes down till it gets certain pressure so even when a brush gets shorter, you do not need to adjust brush length. Side wall prevent brush from spreading when rotating.	<5>
6	Cutting Fiber	All type	Easy specialized machine	high cost for specialized machine.	You can internally and easily make specialized machine with drilling machine and dust collector.	<6>
7	Cross-Hole Deburring Tool Alumina Fiber Rod Type	All type	Removing dust inside of hole	You are not sure if dust has gone by air blow. Or you do not want to use cutting tools to ensure it because cutting tools might cut inner wall	You can propose Rod type to those end users since Rod type does not cut or rough inner wall.	
8	Cross-Hole Deburring Tool Ceramic Stone	All type	Electro-coating Ceramic stone type	Customers want to enjoy the flexible shaft to deburr bigger	By electro-coating the ceramic stone, you can deburr bigger burr.	
9	Cutting Fiber	Cutting Fiber φ 15, 25	Deburring after using bigger face milling cutter	①cycle time gets longer due to the brush size(φ100 is the biggest)	Making special holder (at customer's) can hold many brushes. For example, making holder of φ150 that can hold 6 pcs of φ25 brush. (*XEBEC do not provide a special holder)	<9>
10	Cross-Hole Deburring Tool Ceramic Stone Type	Ball type	Polishing runner part of mold	It is difficult to polish runner parts because of its radius shape.	You can easily polish radius shape with Ceramic type and reciprocation handy machine like NSK	<10>
11	Cutting Fiber	All type(except φ 6)	Cross hole deburring with Cutting fiber	Secondary hole and end face of primary hole is too close to use Cross hole deburring tool rod type	Using Cutting fiber with a shaft to open it up as an umbrella. You can safely reach to the secondary hole that is very near by the end face of primary hole	<11>
12	Cutting Fiber	All type	Removing dust on cutting tools and band saw	Dust sometimes sticks to tools	You can use cutting fiber as tool cleaner without damaging cutting blade.	
13	Cutting Fiber	All type(except φ 6)	Preventing brush from leaning by load pressure	Brush lean to inner diameter direction due to load pressure	Special cover prevents the brush from leaning. As a result it helps to keep the point of holding of the brush lower to keep grinding power stable.	<13>
14	Cross-Hole Deburring Tool Alumina Fiber Rod Type	All type	To understand change of tip position in a longitudinal direction when a brush open up	It is difficult to understand change of tip position in a longitudinal direction when a brush open up	Using the formula below, you can tell the tip of the fiber position. $(L \times L) - (R - r) \times (R - r) = (L - H) \times (L - H)$ For example, primary hole size is φ 20mm and the brush is φ 7mm, then $(50 \times 50) - (10 - 3.5) \times (10 - 3.5) = (50 - H) \times (50 - H)$ $49.57 = 50 - H$ $H = 0.43\text{mm}$	<14>

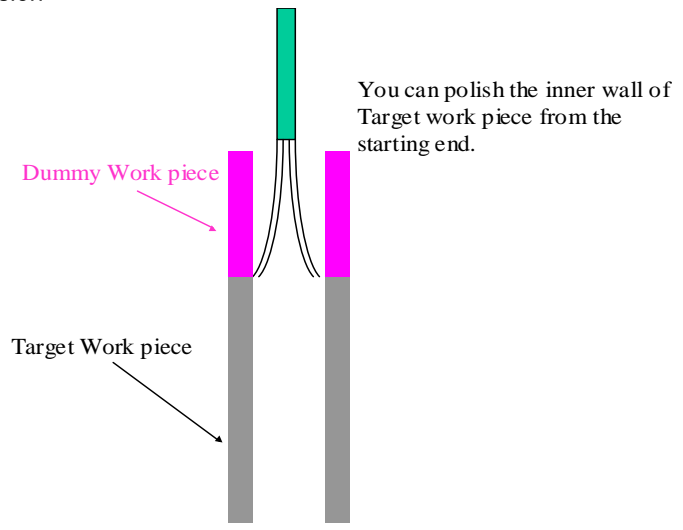
<1>CH cylinder with internal steps



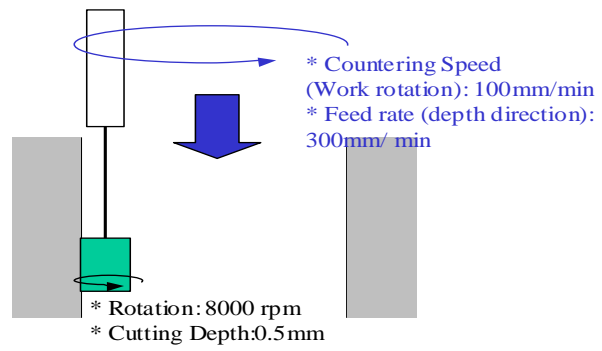
<2> CF Shank break



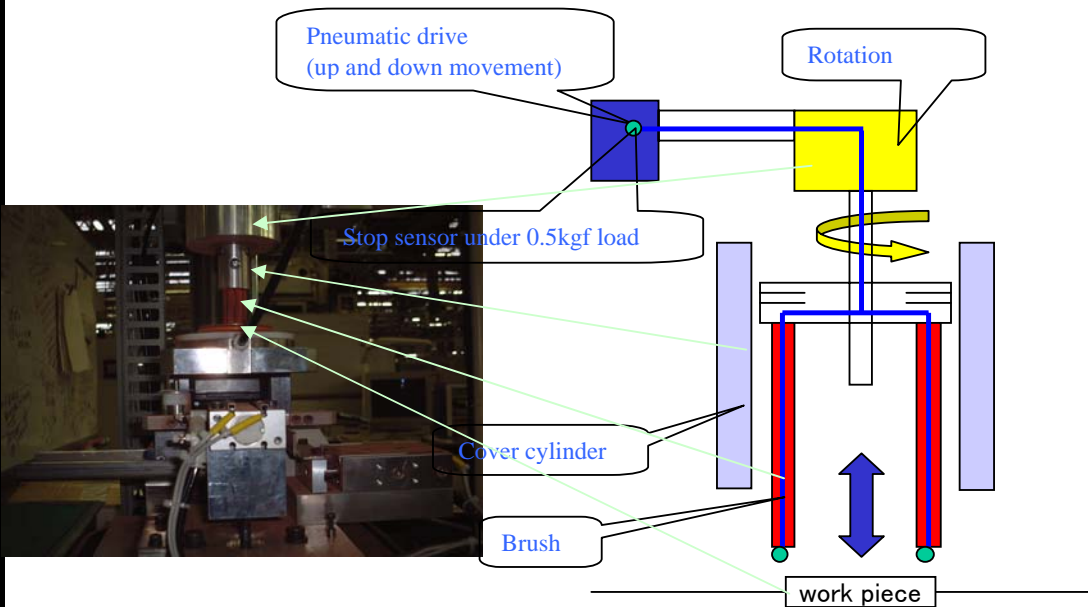
<3> Dummy work for reach extension



<4> Innerwall polish with CH Ceramic Stone Type

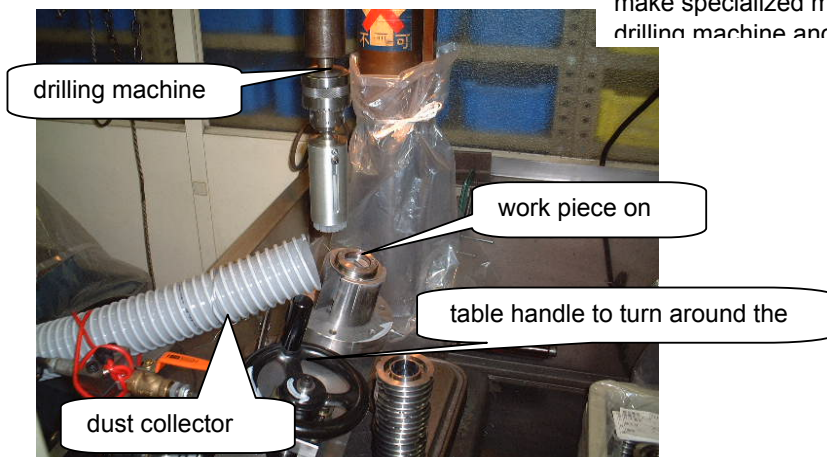


<5> complete automation with specialized machine

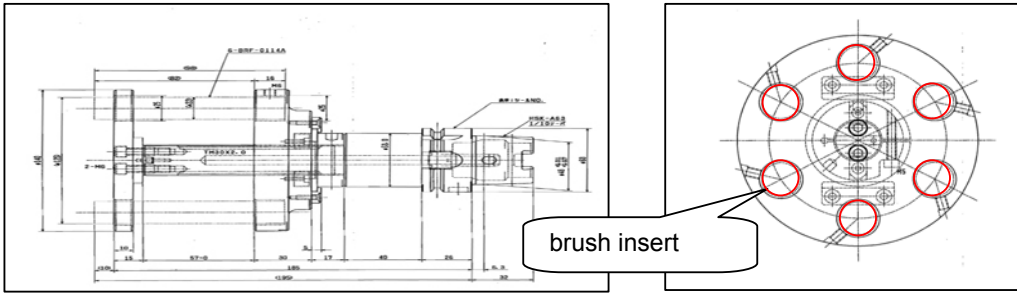


<6> Easy specialized machine

You can internally and easily make specialized machine with drilling machine and dust



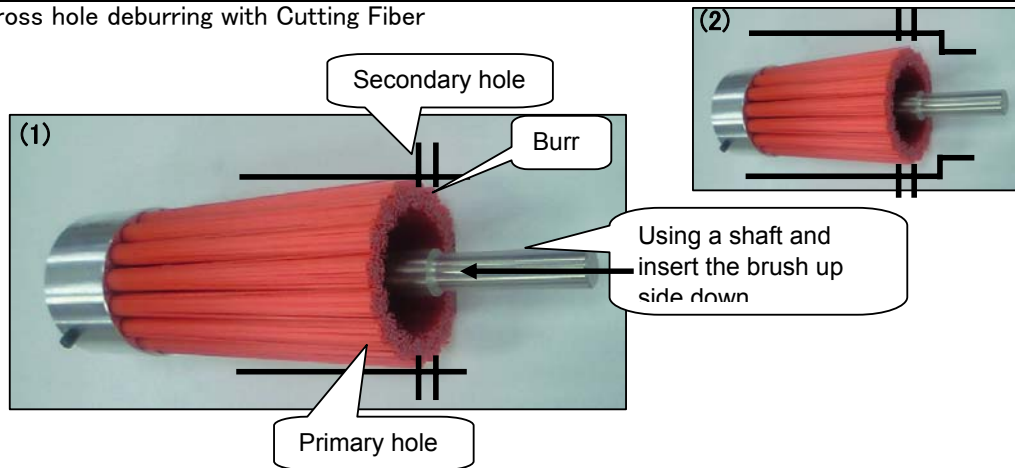
<9>Deburring after using bigger face milling cutter



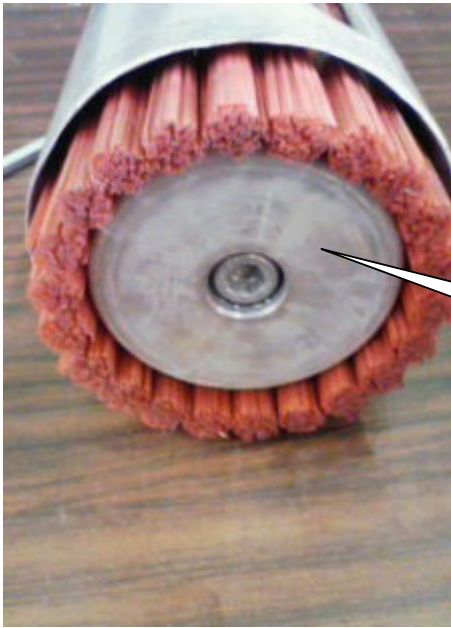
<10>Polishing runner part of mold



<11>Cross hole deburring with Cutting Fiber

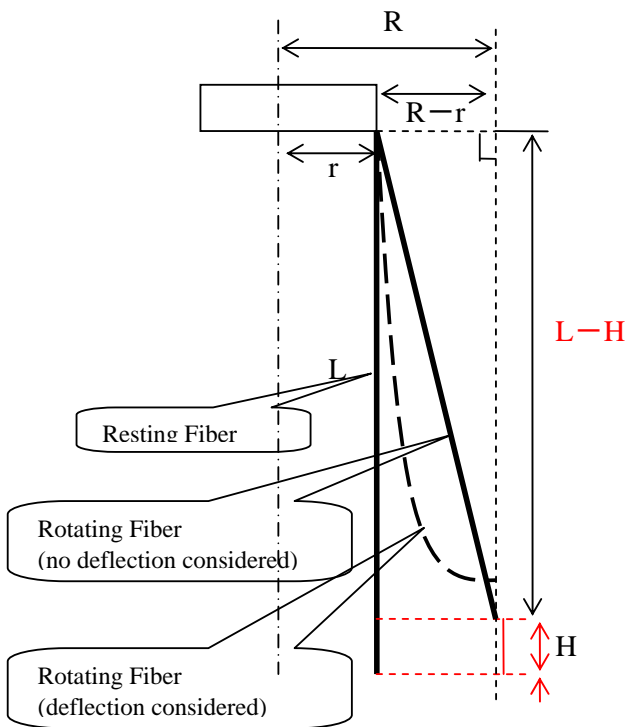


<13> Preventing brush from leaning by load pressure



Special cover to brush keep

<14> To understand change of tip position in a longitudinal direction when a brush open up



$$(L \times L) - (R-r) \times (R-r) = (L-H) \times (L-H)$$

considering deflection, $H_{real} \geq H$