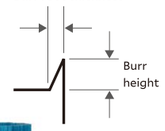
XEBEC Brush™ Surface Patented

Ideal for deburring, cutter mark removal and surface polishing

Applicable burr size
Burr root thickness of 0.2 mm or less (burrs of this size can be removed with fingernails)

Burr root thickness



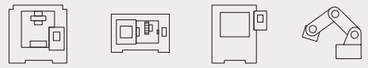
Video (YouTube)

Tool composition

Brush and Sleeve are sold separately.
Assemble Brush and Sleeve before use.

Applicable equipment

This tool can be mounted on equipment shown below:



Brush

Brush (Color)	Product code	Brush diameter (mm)	Bristle length ℓ (mm)	Matching Sleeve	Fig
A13 (Pink)	A13-CB06M	φ 6	30	S06M	1
	A13-CB15M	φ 15	50	S15M-P	1
A11 (Red)	A11-CB06M	φ 6	30	S06M	1
	A11-CB15M	φ 15	50	S15M-P	1
	A11-CB25M	φ 25	75	S25M	1
	A11-CB40M	φ 40	75	S40M-SD10	1
	A11-CB60M	φ 60	75	S60M	1
	A11-CB100M	φ 100	75	S100M	1
A21 (White)	A21-CB06M	φ 6	30	S06M	1
	A21-CB15M	φ 15	50	S15M-P	1
	A21-CB25M	φ 25	75	S25M	1
	A21-CB40M	φ 40	75	S40M-SD10	1
	A21-CB60M	φ 60	75	S60M	1
	A21-CB100M	φ 100	75	S100M	1
A32 (Blue)	A32-CB06M	φ 6	30	S06M	1
	A32-CB15M	φ 15	50	S15M-P	1
	A32-CB25M	φ 25	75	S25M	1
	A32-CB40M	φ 40	75	S40M-SD10	1
	A32-CB60M	φ 60	75	S60M	1
	A32-CB100M	φ 100	75	S100M	1

* Bristle bundles are embedded in line on the periphery (except for the A13/A11/A21/A32-CB06M).
* The Brush size is approximate as the tip expands by rotating.
* Brushes with the diameter larger than φ100 are available by special orders. Please refer to the page 10.

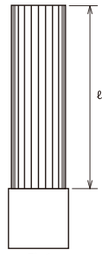


Fig1

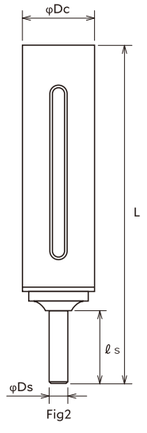


Fig2

Sleeve

Product code	Brush diameter (mm)	External diameter Dc (mm)	Shank diameter Ds (mm)	Overall length L (mm)	Shank length ℓs (mm)	Matching Brush	Fig
S06M	φ 6	φ 10	φ 6	70	29	A13/A11/A21/A32-CB06M	2
S15M-P	φ 15	φ 18.5	φ 6	90	29	A13/A11/A21/A32-CB15M	2
S25M	φ 25	φ 30	φ 8	140	30	A11/A21/A32-CB25M	2
S40M-SD10	φ 40	φ 45	φ 10	140	30	A11/A21/A32-CB40M	2
S60M	φ 60	φ 65	φ 12	150	35	A11/A21/A32-CB60M	2
S100M	φ 100	φ 110	φ 16	162	40	A11/A21/A32-CB100M	2

*When in use, the length of the brush projection is added to the overall length of a sleeve.
*The external cylinder of the S15M-P is made of Fiber-Reinforced Plastic (FRP).

See P. 39 to select Brush color

Applications

Deburring automation with high consistency

Cylinder Head

Material : Aluminum
Previous process : Face milling
Tool : A11-CB100M

Before

Abrasive impregnated nylon brush was used. It was time-consuming and not effective enough to remove all burrs.

After

All burrs are removed by high grinding power. Quality is stabilized. The cycle time is shortened by high feed rate.

Polishing Automation

Metal Mold

Material : Hard-to-cut material
Previous process : End milling
Tool : A11-CB25M

Before

40 minutes manual polishing per workpiece. Received complaints from customers for uneven quality.

After

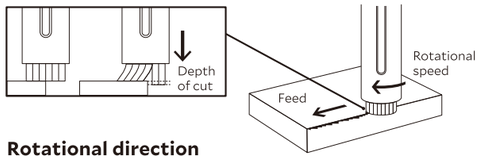
Shortened the polishing time to one minute per workpiece by automation. Improved and uniform polishing quality.

How to use

Processing conditions

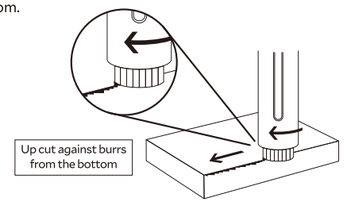
Rotational speed

Recommended parameters differ depending on the Brush size.
Refer to the chart below for the standard machining conditions of each Brush size.



Rotational direction

Set the rotational direction so that the Brush pushes upward against the burrs from the bottom.



Feed rate

Burr root thickness (removable with fingernails)	0.05mm (Can be bent easily)	4000mm/min
	0.1mm (Can be bent)	2500mm/min
Cutter mark removal, polishing		250 - 850mm/min

Depth of cut

Vertical burrs	Burrs that are formed while end milling and drilling. Vertical to the Brush tip.	0.5mm
Horizontal burrs	Burrs that are formed while face milling. Parallel to the Brush tip.	1.0mm
Cutter mark removal, polishing		0.3 - 0.5mm

Machining Parameters

Standard Machining Parameters

Product code	Rotational speed (min-1)			Depth of cut (mm)			Feed rate (mm/min)			Brush projection (mm)	
	Deburring	Cutter mark removal, polishing	Maximum	Vertical burrs	Horizontal burrs	Cutter mark removal, polishing	Burr root thickness 0.05mm	Burr root thickness 0.1mm	Cutter mark removal, Polishing	Deburring	Cutter mark removal, Polishing
A13-CB06M, A11-CB06M, A21-CB06M	8000	10000	10000	0.5	0.5	0.3	4000	2500	250	10	10
A32-CB06M	8000	10000	10000	0.3	0.3	0.3	4000	2500	250	10	10
A13-CB15M	4800	6000	6000	1.0	1.0	0.5	4000	2500	450	10	10
A11-CB15M, A21-CB15M, A32-CB15M	4800	6000	6000	0.5	1.0	0.5	4000	2500	450	10	10
A11-CB25M, A21-CB25M, A32-CB25M	4000	5000	5000	0.5	1.0	0.5	4000	2500	700	15	10
A11-CB40M, A21-CB40M, A32-CB40M	2400	3000	3000	0.5	1.0	0.5	4000	2500	800	15	10
A11-CB60M, A21-CB60M, A32-CB60M	1600	2000	2000	0.5	1.0	0.5	4000	2500	850	15	10
A11-CB100M, A21-CB100M, A32-CB100M	960	1200	1200	0.5	1.0	0.5	4000	2500	850	15	10

* Workpiece made of plastics may deform or discolor, depending on the material characteristics. If the workpiece deforms, reducing the rotational speed to approximately 10 % of the standard machining condition may solve the problem.

Instruction manual