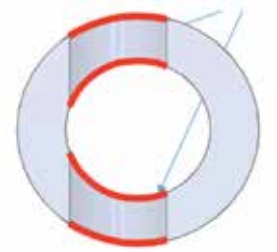
XEBEC®
Deburring Technologies, LLC

✓ Uniform edge shape
✓ Faster operating time
✓ Longer tool life

www.deburringtechnologies.com

Applicable Areas



Four edges processed in one approach

Up to the ratio between the primary and secondary hole is 1:1

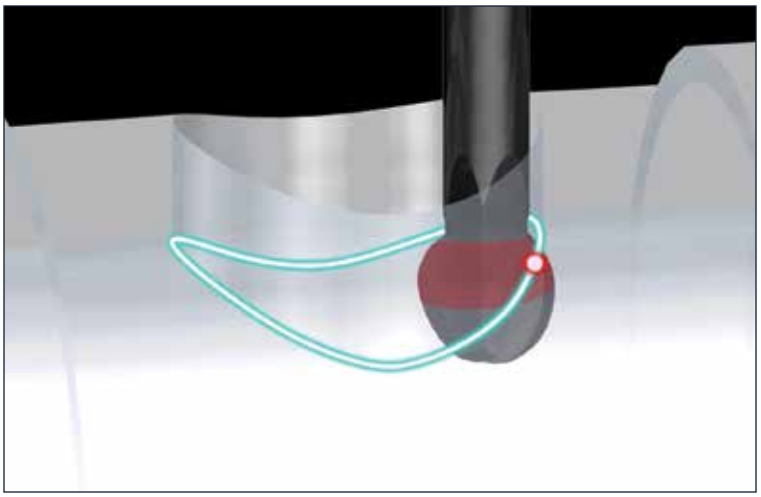
Off-center hole

Planar hole

Features

Xebec Path

- Consistent deburring amounts result in a uniform edge shape
- Faster operating time thanks to the unique cutter design
- Entirety of the cutting blade is used providing a longer tool life

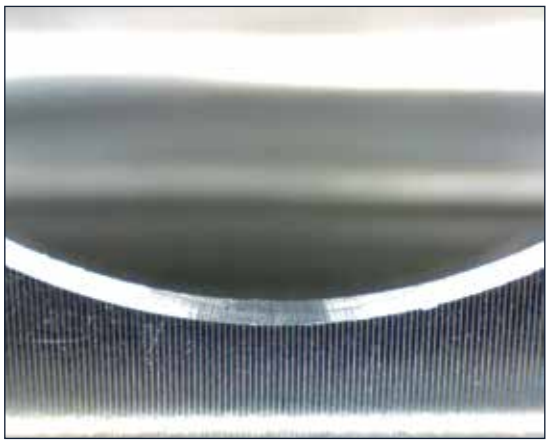


= Range of Blade Use

Xebec Back Burr Cutter

- Micro-grain cemented carbide is sharp & long lasting
- Highly heat-resistant AlTiCrN coating supports materials from non-ferrous to difficult to cut
- Helical blade provides a cleaner cutting edge and prevents secondary burrs

Before



After

Content of Xebec Path

- Path data is provided by the set as shown in figure 1 -3
- Point group data is generated based on ◓
- Optimal path data is generated by Xebec's innovative software
- For use in machining center, 1 set of path data consists of: 40 kinds of paths; 2 edges (upper and lower), 2 modes (incremental and absolute) and 2 rotation directions (up and down). For each of the 8 types, 5 deburring amounts are provided. 1 CD contains 1 set of path data
- For us in combined lathe, 20 xyz axis and 10 xzc axis files are provided.

Product Code	Cutter Ø (mm)	Deburring Amount (mm) 1	2	3	4	5	Allowable Cumulative Error (mm)
XC-08-A	0.8	0.02	0.04	0.06	0.08	0.10	0.03
XC-13-A	1.3	0.04	0.06	0.08	0.10	0.12	0.05
XC-18-A/B	1.8	0.07	0.09	0.11	0.13	0.15	0.08
XC-28-A/B	2.8	0.08	0.11	0.14	0.17	0.20	0.10
XC-38-A/B	3.8	0.09	0.13	0.17	0.21	0.25	0.12
XC-48-A/B	4.8	0.10	0.15	0.20	0.25	0.30	0.15
XC-58-A/B	5.8	0.10	0.15	0.20	0.25	0.30	0.18

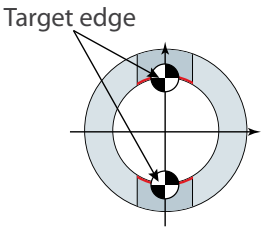


figure 1

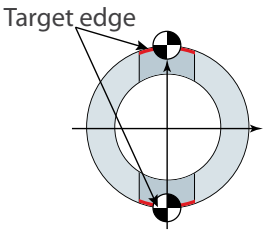


figure 2

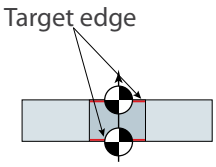
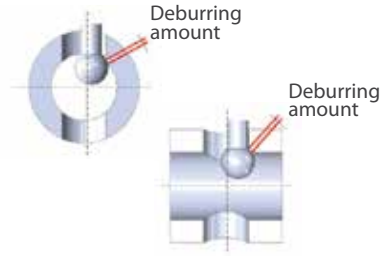


figure 3



Standard Processing Conditions

Product Code	Feed per rev (fn) (mm/rev)	Spindle Speed (n) (mm^{-1})	Table Feed (Vf) (mm/min)
XC-08-A	0.03	43000	1300
XC-13-A	0.03	27000	800
XC-18-A	0.03	19500	580
XC-28-A	0.08	12500	1000
XC-38-A	0.13	9200	1200
XC-48-A	0.15	7200	1100
XC-58-C	0.15	6000	900
XC-18-B	0.05	9700	480
XC-28-B	0.10	6200	620
XC-38-B	0.10	4600	460
XC-48-B	0.10	3600	360
XC-58-B	0.10	3000	300

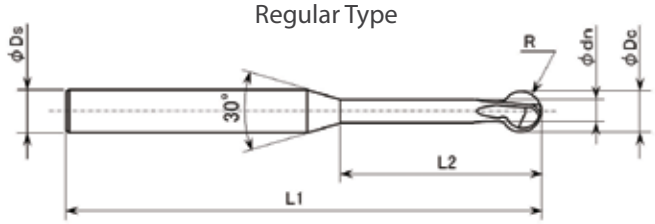
- The spindle speed and table feed are rough standards for initial processing
- If an abnormal vibration or noise occurs, or the spindle speed and /or table feed fail to meet the standard conditions listed in the table, lower the spindle speed and table feed at an equal rate

Precautions

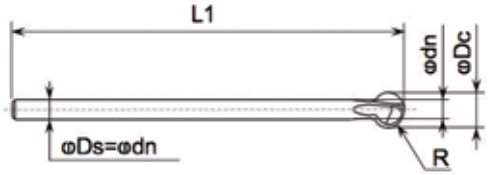
- Can be mounted on machining center (XYZ-axis) and combined lathee (XZY or ZXC-axis)
- Use while making the processing error of the hole position as small as possible

Back Burr Cutter

Regular Type



Straight Type

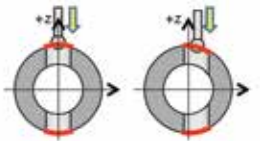
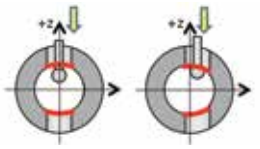
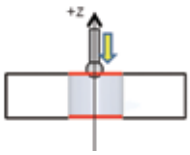
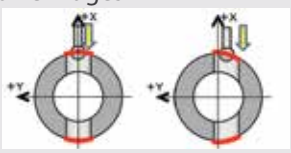
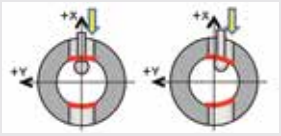
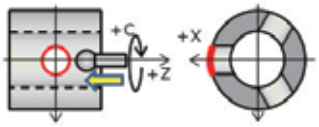
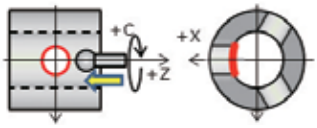


	EDP Number	Part Number	R (mm)	Ø Dc (mm)	Ødn (mm)	L2 (mm)	L1 (mm)	ØDs (mm)	Price
Neck Down Shank	51000	XC-08-A	0.4	0.8	0.48	5	60	3.0	$158.30
	51001	XC-13-A	0.65	1.3	0.78	8	60	3.0	$142.89
	51002	XC-18-A	0.9	1.8	1.1	10	60	3.0	$126.92
	51003	XC-28-A	1.4	2.8	1.7	15	70	4.0	$136.72
	51004	XC-38-A	1.9	3.8	2.4	20	70	4.0	$141.49
	51005	XC-48-A	2.4	4.8	3.0	25	70	6.0	$151.29
	51006	XC-58-A	2.9	5.8	3.5	30	70	6.0	$159.42
Straight Shank	51007	XC-18-B	0.9	1.8	1.1	-	50	1.1	$186.88
	51008	XC-28-B	1.4	2.8	1.7	-	70	1.7	$195.00
	51009	XC-38-B	1.9	3.8	2.4	-	85	2.4	$203.13
	51010	XC-48-B	2.4	4.8	3.0	-	105	3.0	$219.38
	51011	XC-58-B	2.9	5.8	3.5	-	120	3.5	$235.63

- Sharp and long lasting mirco-grained cemented carbide
- Highly heat-resistant AlTiCrN coating ideal for a range of materials from non-ferrous to difficult to cut
- Helical blade providing a cleaner cutting edge and prevents secondary burrs

Please Note:
This cutter is for NC machines only. Never use it as a hand tool because the cutter may break and cause injury. Processing with a cutter of the wrong size may cause breakage of the product, tools or machinery. Make sure to verify the dimensions before use. Make sure that the run-out of the cutting edge is less than 0.01mm before beginning to process.

Back Burr Cutter & Path Corresponding Chart

Machine Type	Deburring Location	Order Code Request Sheet
3 - Axis Simultaneous Control Machining Center (XYZ axis)	**Type A:** Outer Diameter, Upper & Lower Edges Burr location Cutter direction 	Website
	Type B: Inner Diameter, Upper & Lower Edges Burr location Cutter direction 	Brochure or Website
	Type C: Planar Hole, Front & Back Edges Burr location Cutter direction 	Website
3 - Axis Simultaneous Combined Lathe (XZY axis)	**Type AY:** Outer Diameter, Upper & Lower Edges Burr location Cutter direction 	Website
	Type BY: Inner Diameter, Upper & Lower Edges Burr location Cutter direction 	Brochure or Website
3 - Axis Simultaneous Combined Lathe (XZC axis)	**Type AC:** Outer Diameter, Orthogonal or off-center crosshole *(Polar coordinate interpolation required)* Burr location Cutter direction 	Website
	Type BC: Inner Diameter, Orthogonal or off-center crosshole *(Polar coordinate interpolation required)* Burr location Cutter direction 	Website

How to Order

1 Fill out the order code request sheet on pages 6 & 7, or print the order form on our website, and email to sales@deburringtechnologies.com or fax to 937-482-4011

2 It will be determined if a path can be generated. Them, you will receive an order code and cutter diameter.

3 Order the Xebec Back Burr Cutter and Path with the product code.

4 It will be determined if a path can be generated. Them, you will receive an order code and cutter diameter.

Type BY Order Form

This form is used to confirm the dimensions of deburring areas and whether or not point group data can be generated. If a path can be generated then the path order code and optimal cutter diameter will sent to the customer.

How to Order

This form is for edges on an orthogonal crosshole, being processed with a 3-axis simultaneous combined lathe (XZY-axis). Make sure the form type matches burr locations.

Guidelines for Generating a Path

Orthogonal Crosshole: Supports secondary hole diameter of 1mm or more. The primary processing hole diameter to secondary hole diameter can be up to 1:1

Off-Center Crosshole: Supports secondary hole diameter of 1 or more. Supports on amount of shift that does not cause the primary hole to be broken.

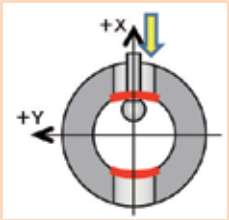
*This process is not applicable if either the primary or seconday hole is a female screw of the material surface.

*There is the possibility a path cannot be generated for certain hole combinations.

Caution

Make sure to enter accurate values. The Xebec Path for Back Burr Cutter is generated based on these values and if erroneous values are entered, an incorrect path will be generated which will **cause a workpiece, cutter or machine to break.** Xebec Technology is not responsible for any damage caused in such cases.

Type BY: Inner Diameter, Upper/Lower Edges



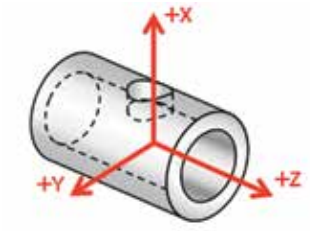
Orthogonal or off-center crossing

Burr location
Cutter direction

Enter dimensions in the boxes below

Fill in all Spaces. For "0", enter "0". Enter up the 3rd decimal. Check whether + or -.

Axial Composition



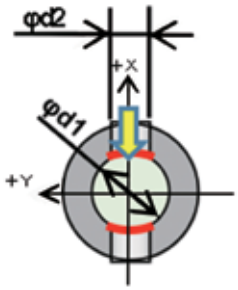
Check the axial composition and check the box on diameter or radius mode. Point group data is generated at XZY-axis.

Controlling Mode

- ☐ Diameter mode
- ☐ Radius mode

Hole Diameters

Burr location
Cutter direction



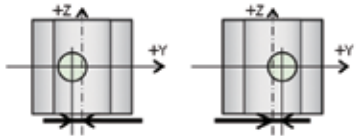
Enter an aimed value

Primary Hole (Ød1) ☐.☐☐☐ mm

Secondary Hole (Ød2) ☐.☐☐☐ mm

Secondary Hole Position

Check the position of the primary hole at ZY-planar. Enter the position of the secondary hole in regards to the primary hole. **Be careful of the +/- direction.**



If the secondary hole is on-center to the primary hole: e=0mm
If the secondary hole is off-center to the left of the primary hole: e=-□mm
If the secondary hole is off-center to the right of the primary hole: e=+□mm

Amount of shift e ☐ + ☐ – ☐.☐☐☐ mm

Customer Information and Confirmation of Path Use Conditions

Please check both boxes. An order cannot be placed unless the following boxes are filled out.

☐ I agree to not use any tools besides the XEBEC Back Burr Cutter when using the XEBEC Path.

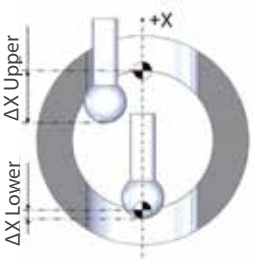
☐ I agree that XEBEC Technology has granted the authority to use the XEBEC Path for Back Burr Cutter and that I will not hand over or distribute this data outside the company.

Company name	Department	Name
Email	Phone	Fax

Xebec Technology Use Only Order Code Contact Sheet

Xebec Technology will give the order code for the XEBEC Path and tool diameter of he XEBEC Back Burr Cutter based on the workpiece dimensions filled in the Order Code Request Sheet. **Please order with the following code after confirming the path use conditions and tool interference.**

XEBEC Path Order Code	
ΔX Upper (mm)	
ΔX Lower (mm)	
XEBEC Back Burr Cutter Diameter	
Back Burr Cutter Product Code	
Reason for disapproval (Only if path generation is disapproved)	



Caution

The tool interference in vertical direction has not been confirmed. Check the cutter length and ΔX (maximum amount of descent) and make sure to confirm there is not tool interference from the processing environment (jig, holder, workpiece, etc.) Then select the appropriate cutter from the catalog. Only the optimal tool diameter is selected according to the workpiece dimensions filled in on the Order Code Request Sheet. **Δ**X (maximum amount of descent) is the furthest the tool will fall from the starting point until the deburring operation is complete.

Type B Order Form

This form is used to confirm the dimensions of deburring areas and whether or not point group data can be generated. If a path can be generated then the path order code and optimal cutter diameter will sent to the customer.

How to Order

This form is for edges on the inner diameterof the orthogonal crossholes. Make sure the form type matches burr locations.

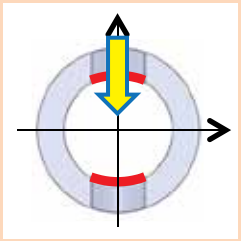
Guidelines for Generating a Path

Orthogonal Crosshole: Supports secondary hole diameter of 1mm or more. The primary processing hole diameter to secondary hole diameter can be up to 1:1
Off-Center Crosshole: Supports secondary hole diameter of 1 or more. Supports on amount of shift that does not cause the primary hole to be broken.
*This process is not applicable if either the primary or seconday hole is a female screw of the material surface.
*There is the possibility a path cannot be generated for certain hole combinations.

Caution

Make sure to enter accurate values. The Xebec Path for Back Burr Cutter is generated based on these values and if erroneous values are entered, an incorrect path will be generated which will **cause a workpiece, cutter or machine to break.** Xebec Technology is not responsible for any damage caused in such cases.

Type B: Inner Diameter, Upper/Lower Edges



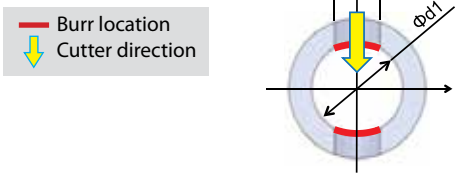
Orthogonal or off-center crossing

Burr location
Cutter direction

Enter dimensions in the boxes below

Fill in all Spaces. For "0", enter "0". Enter up the 3rd decimal. Check whether + or -.

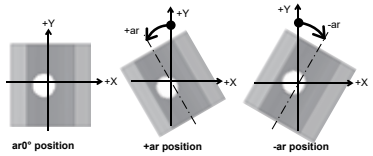
Hole Diameters



Primary Hole (Ød1) □.□□□ mm
Secondary Hole (Ød2) □.□□□ mm

Primary Hole Position

Check the position of the primary hole to an XY plane in the machine. Enter the angle of the primary hole in regards to the Y axis. **Be careful of the +/- direction.**

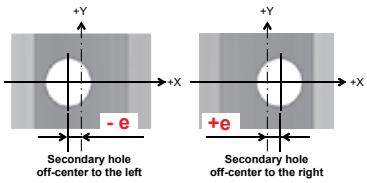


If parallel to the Y axis: ar=0°
Orientation in the CCW direction with the +Y axis as the starting point: ar=+□°
Orientation in the CW direction with the +Y as the starting point: ar=-□°

Primary hole angle orientation ar □ + □ − □.□□□°

Secondary Hole Position

Check the position of the secondary hole in regards to the primary hole in the ar0° position. **Be careful of the +/- direction.**



If the secondary hole is on-center to the primary hole: e=0mm
If the secondary hole is off-center to the left of the primary hole: e=-□mm
If the secondary hole is off-center to the right of the primary hole: e=+□mm

Amount of shift e □ + □ − □.□□□ mm

Customer Information and Confirmation of Path Use Conditions

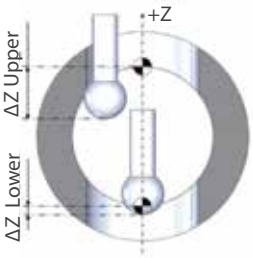
Please check both boxes. An order cannot be placed unless the following boxes are filled out.
□ I agree to not use any tools besides the XEBEC Back Burr Cutter when using the XEBEC Path.
□ I agree that XEBEC Technology has granted the authority to use the XEBEC Path for Back Burr Cutter and that I will not hand over or distribute this data outside the company.

Company name	Department	Name
Email	Phone	Fax

Xebec Technology Use Only Order Code Contact Sheet

Xebec Technology will give the order code for the XEBEC Path and tool diameter of the XEBEC Back Burr Cutter based on the workpiece dimensions filled in the Order Code Request Sheet. **Please order with the following code after confirming the path use conditions and tool interference.**

XEBEC Path Order Code	
ΔZ Upper (mm)	
ΔZ Lower (mm)	
XEBEC Back Burr Cutter Diameter	
Back Burr Cutter Product Code	
Reason for disapproval (Only if path generation is disapproved)	



Caution

The tool interference in vertical direction has not been confirmed. Check the cutter length and ΔZ (maximum amount of descent) and make sure to confirm there is not tool interference from the processing environment (jig, holder, workpiece, etc.) Then select the appropriate cutter from the catalog. Only the optimal tool diameter is selected according to the workpiece dimensions filled in on the Order Code Request Sheet. ΔZ (maximum amount of descent) is the furthest the tool will fall from the starting point until the deburring operation is complete.

Ceramic Fiber Deburring & Surface Finish Solutions

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XEB-BackBurrCutter