

Combined Lathe (XZY axis) XEBEC Back Burr Cutter and Path Order Code (LBP-02)

This sheet is used to confirm the dimensions of deburring areas and to confirm whether or not point group data (Name : XEBEC Path for Back Burr Cutter) can be generated. If a path can be generated then the path order code and optimal cutter diameter will be notified to a customer.

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

[Restrictions for generating a path]

- Orthogonal Crosshole** Supports secondary hole diameter of $\Phi 1\text{mm}$ 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 $\Phi 1\text{mm}$ or more. Supports an amount of shift that does not cause the primary hole to be broken.

* This process is not applicable if either the primary or secondary hole is a female screw or 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 cases such as this.

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

3. Hole Diameters Enter the position of the secondary hole in regards to the primary hole. Be careful of the +/- direction.

4. 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.

Customer Information and Confirmation of Path Use Conditions

Please check the 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: _____ Dept: _____ Name: _____
Phone: _____ E-mail: _____ (FAX): _____

Order Code Contact Sheet

XEBEC Technology will inform 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 order code after confirming the path use conditions and tool interference.

XEBEC Path Order Code No.	
ΔX Upper (mm)	
ΔX Lower (mm)	
XEBEC Back Burr Cutter Diameter	Product Code
Φ	
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 no 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.
- ΔX (maximum amount of descent) is the furthest the tool will fall from the starting point until the deburring operation is complete.

XEBEC Path for Back Burr Cutter Corresponding Chart

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

*XEBEC Website <http://www.xebec-tech.com>

How to order

STEP 1 User	STEP 2 Local Distributor	STEP 3 User	STEP 4 Local Distributor
Fill out the order code request sheet at the back and email or fax to a local distributor.	It will be determined if a path can be generated. Then, you will be notified an order code and cutter diameter.	Order the XEBEC Back Burr Cutter and Path with the product code.	A CD with the Path data and Cutter will be delivered via the distributor.

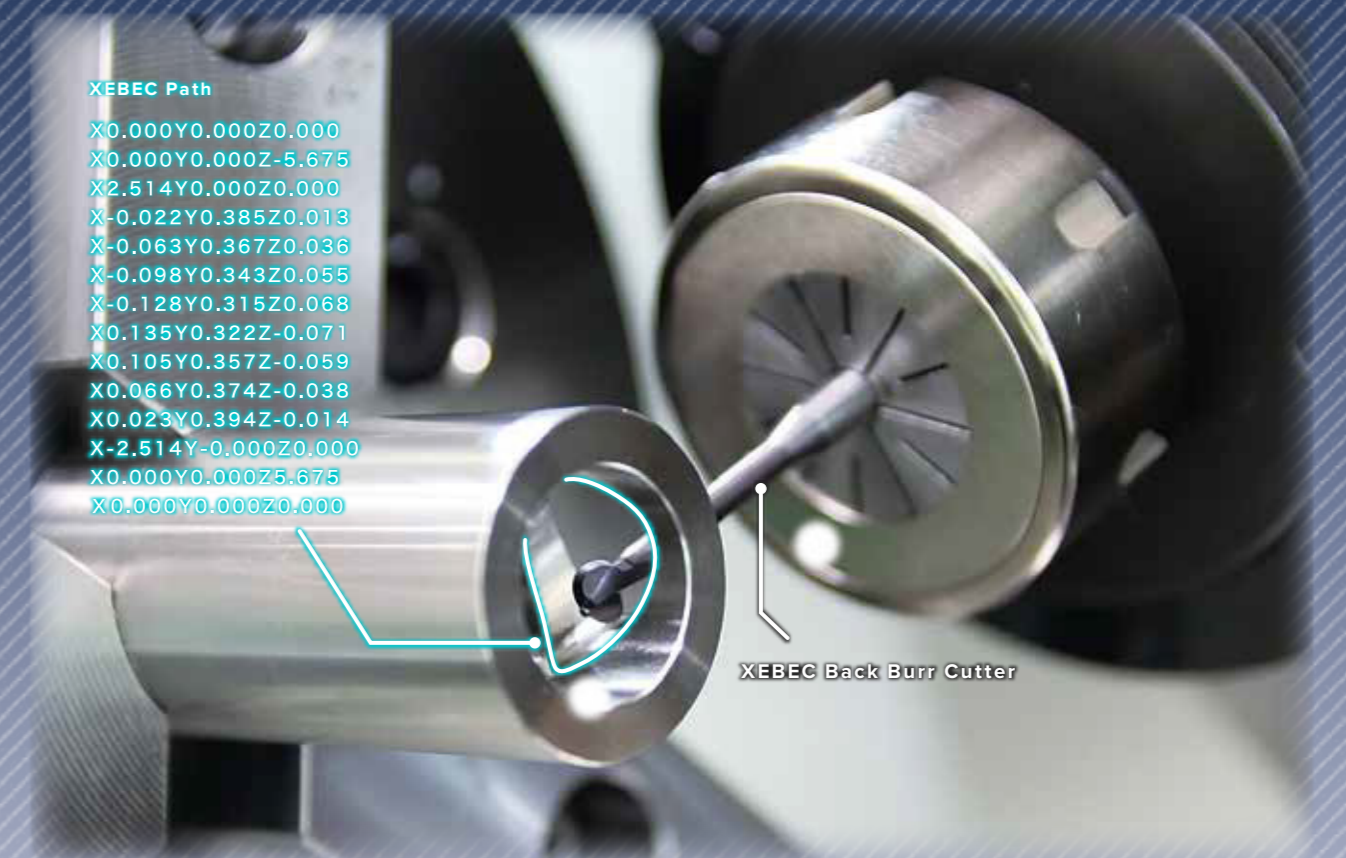
Drill Service (Horley) Ltd Albert Road Horley Surrey RH6 7HR
Tel: 01293 774911 email: sales@drill-service.co.uk

XEBEC

XEBEC Back Burr Cutter and Path™

The reliable CNC back deburring tool with innovative path data

The XEBEC Path plots point data to remove back burrs on a 3D curved edge while shifting the contact point of the spherical cutting edge.



Feature1 Uniform edge shape by consistent deburring amount

Feature2 Faster operating time thanks to the unique cutter design

Feature3 Long tool life by using the entirety of the cutting blade



No. of sheets being submitted: _____

*Enter the number of sheets if more than one sheet will be submitted. (e.g.) If three sheets will be submitted, mark the first as "1/3", the second "2/3" and the third "3/3".

Applicable Areas



Features of XEBEC Back Burr Cutter and Path

XEBEC Path

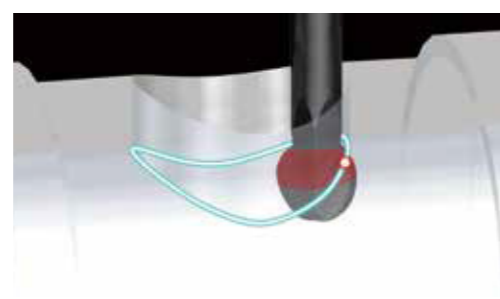
- Uniform edge shape by consistent deburring amount



- Faster operating time thanks to the unique cutter design
- Long tool life by using the entirety of the cutting blade

XEBEC Back Burr Cutter

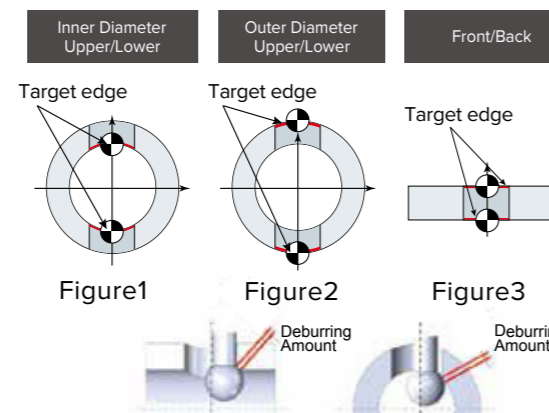
- Micro-grain cemented carbide: Sharp and long lasting
- Highly heat-resistant AlTiCrN coating: Support materials from non-ferrous (e.g. aluminum) to difficult-to-cut materials (e.g. titanium and inconel)
- Helical Blade: Clearer cutting edge and prevent secondary burrs



Range of Blade Use

Content of XEBEC Path

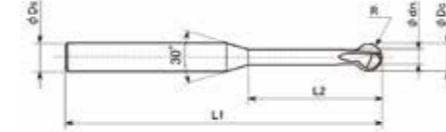
- Path data is provided by the set as shown in Figure 1 through 3.
- Point group data is generated based on
- Optimal path data is generated by XEBEC's innovative software. For use in machining center, 1 set of path data consists of 40 kinds of paths ; 2 edges (upper and lower), 2 modes (incremental 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 use in combined lathe, 20 (xyz axis) and 10 (xzc axis) files are provided.



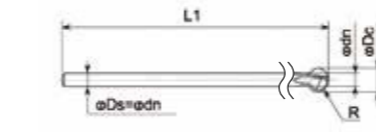
Product Code	Cutter Diameter (mm)	D e burring Amount (mm)					Allowable Cumulative Error (mm)
		(1)	(2)	(3)	(4)	(5)	
XC-08-A	ø0.8	0.02	0.04	0.06	0.08	0.10	0.03
XC-13-A	ø1.3	0.04	0.06	0.06	0.10	0.12	0.05
XC-18-A/B	ø1.8	0.07	0.09	0.06	0.13	0.15	0.08
XC-28-A/B	ø2.8	0.08	0.11	0.06	0.17	0.20	0.10
XC-38-A/B	ø3.8	0.09	0.13	0.06	0.21	0.25	0.12
XC-48-A/B	ø4.8	0.10	0.15	0.06	0.25	0.30	0.15
XC-58-A/B	ø5.8	0.10	0.15	0.06	0.25	0.30	0.18

Specifications

[Regular type(XC-00-A)]



[Straight type(XC-00-B)]



Product Code	R (mm)	øDc (mm)	øDn (mm)	L2 (mm)	L1 (mm)	øDs (mm)	Price
XC-08-A	0.4	0.8	0.48	5	60	3.0	£84.35
XC-13-A	0.65	1.3	0.78	8	60	3.0	£76.52
XC-18-A	0.9	1.8	1.1	10	60	3.0	£67.83
XC-28-A	1.4	2.8	1.7	15	70	4.0	£73.04
XC-38-A	1.9	3.8	2.4	20	70	4.0	£75.65
XC-48-A	2.4	4.8	3.0	25	70	6.0	£80.87
XC-58-A	2.9	5.8	3.5	30	70	6.0	£85.22
XC-18-B	0.9	1.8	1.1	—	50	1.1	£100.00
XC-28-B	1.4	2.8	1.7	—	70	1.7	£104.35
XC-38-B	1.9	3.8	2.4	—	85	2.4	£108.70
XC-48-B	2.4	4.8	3.0	—	105	3.0	£117.39
XC-58-B	2.9	5.8	3.5	—	120	3.5	£126.09

Attention

- This cutter is an exclusive tool for NC machines. Never use it as a hand tool because the cutter may break and cause an injury.
- Processing with a cutter with 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 starting processing.

Standard Processing Conditions

Product Code	Feed per rev (fn) (mm/rev)	Spindle Speed (n) (min ⁻¹)	Table Feed (vt) (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-A	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 lathe (XZY or XZC-axis).
- Please use while making the processing error of the hole position as small as possible.

XEBEC Back Burr Cutter and Path Order Code Request Sheet (Type B : For Inner Diameter Upper and Lower Edges)

MBP-03
XEBEC TECHNOLOGY CO., LTD.

This sheet is used to confirm the dimensions of deburring areas and to confirm whether or not point group data (Name : XEBEC Path for Back Burr Cutter) can be generated. If a path can be generated then the path order code and optimal cutter diameter will be notified to a customer.

- Deburring Location** This sheet is for **edges on the inner diameter of the orthogonal crossholes**. Make sure that the sheet type matches the locations that burrs will be removed.

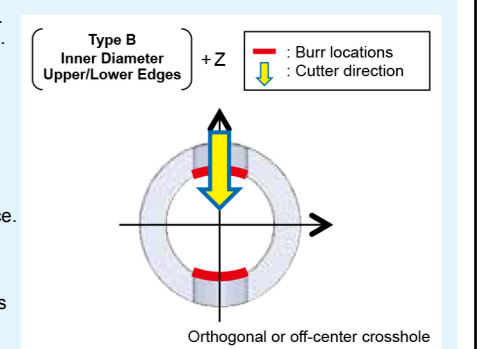
[Restrictions for generating a path]

- Orthogonal Crosshole** Supports secondary hole diameter of $\Phi 1\text{mm}$ 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 $\Phi 1\text{mm}$ or more. Supports an amount of shift that does not cause the primary hole to be broken.

- * This process is not applicable if either the primary or secondary hole is a female screw or the material surface.
- * There is the possibility a path cannot be generated for certain hole combinations.

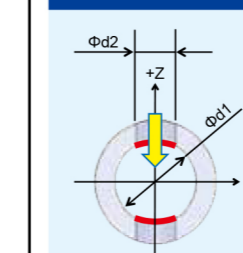
[Caution]

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



- Enter the dimensions in the boxes below. *Fill in all spaces. For "0", enter "0". *Enter up to the 3rd decimal. *Circle whether + or -.

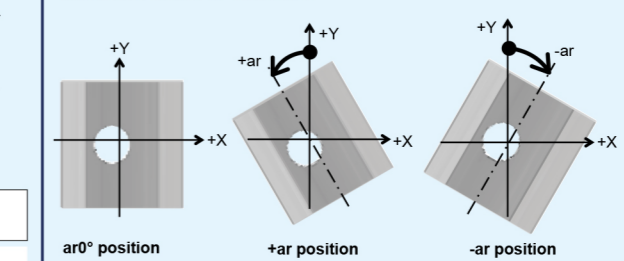
2. Hole Diameters



Burr locations
 Cutter direction
 > Primary hole (øD1) mm
 > Secondary hole (øD2) mm

3. 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.



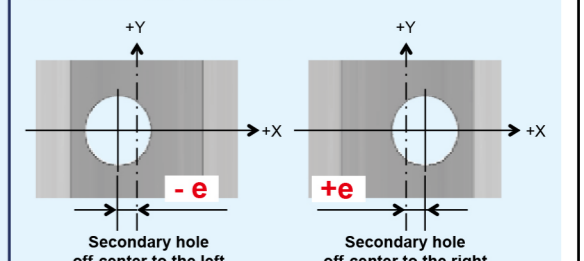
[Primary hole's relationship with the Y axis]

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 axis as the starting point : ar=-□°

> Primary hole angle orientation ar + - °
 *Check the box

4. Secondary Hole Position

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



[Secondary hole's relationship with the primary hole]

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
 *Check the box

Customer Information and Confirmation of Path Use Conditions

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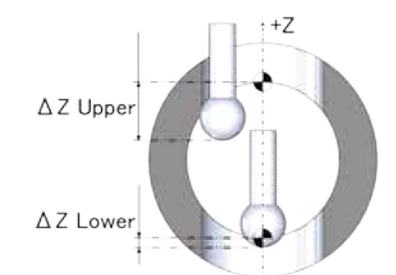
- I agree to not use any tools besides the XEBEC Back Burr Cutter when using the XEBEC Path.
- I agree that XEBEC Technology has granted the authority to use the XEBEC Path for Back Burr Cutter and that I will not hand over or distribute this data outside the company.

Company Name Dept. Name
 Phone: E-mail (FAX)

Order Code Contact Sheet

XEBEC Technology will inform 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 order code after confirming the path use conditions and tool interference.

XEBEC Path Order Code No.	<input type="text"/>
Δ Z Upper (mm)	<input type="text"/>
Δ Z Lower (mm)	<input type="text"/>
XEBEC Back Burr Cutter Diameter	<input type="text"/>
φ	<input type="text"/>
Reason for disapproval (*Only if path generation is disapproved)	<input type="text"/>



[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 no 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.

No. of sheets being submitted

*Enter the number of sheets if more than one sheet will be submitted. (e.g.) If three sheets will be submitted, mark the first as "1/3", the second "2/3" and the third "3/3".