SUGINO

NEW

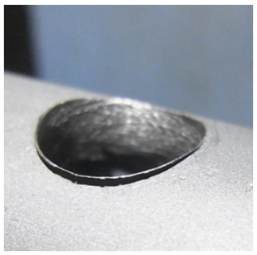
Barriquan®

Built in float

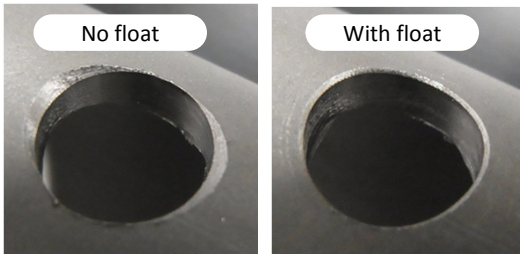
Self-Compensating Deburring Tools

Features

Vertical compensation and variable tension allows for clean and even burr removal



Before burr removal



After burr removal

For Barriquan video please visit us @ www.suginocorp.com

Series

3 tool types are available

BC10-20

Surface deburring (incremental load)

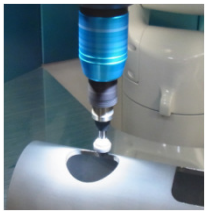
BC10-10

Surface deburring (exchangeable spring load)

BCT10-10

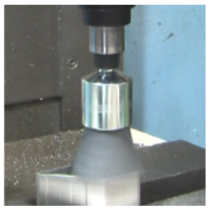
Inverted (underside) deburring

Application Examples



Pipe ports/holes

Casting profile



Brushing applications

Robot applications

Pipe port (underside) deburring

Recommended burr bit configurations:

Specifications

P/N	Dimensions	Weight	Load adjustment	Permissible speed	Float amount	Float direction	Shank size
BC10-20	1 .25”ΦX4.72” (32ΦX120L)	0.84 lbs. (380g)	Incremental 16 stage dial	5000 rpm	0.394” (10mm)		0.78”ΦX1.57” (Φ20X40L)
BC10-10	0.98”ΦX3.94” (25ΦX100L)	0.31 lbs. (140g)	Exchangeable spring	8000 rpm	0.394” (10mm)		0.39”ΦX1.38” (10ΦX35L)
BCT10-10	0.98”ΦX4.33” (25ΦX110L)	0.40 lbs. (180g)	Exchangeable spring	8000 rpm	0.394” (10mm)		0.39”ΦX1.38” (10Φx35L)

Notes

- This product is designed for normal clockwise (right-handed rotation and feed.
- These tools are designed primarily for linear pressure. Damage to the tool could occur if an excessive radial load is applied.
- If coolant is necessary for the deburring operation, please focus the fluid on the burr bit and work piece surface. Excessive coolant on the tool body could likely lead to a future malfunction.

For questions regarding your deburring application contact us at:

Barriquan® Instruction Manual

Manual No. BC0104E

Thank you for choosing our *Barriquan*. Please read this Instruction Manual carefully before using this product and keep this at hand whenever the operator can read. If you have any questions on about this product or in this manual, please feel free to contact us at your nearest office.

1. For Your Safety

For operating this product safely, please read cautions in this Instruction Manual thoroughly and understand them enough before using「*Barriquan*」. There are "safety alert marks" in this manual and it's represented as 「⚠Cautions」. This symbol is used to call your attention to items or operation that should be cautious.

2. Specification

Barriquan is a tool holder for deburring which has a floating structure extendable within the range 10 mm. By this floating structure, the cutter edge can move automatically along the workpiece shape and deburr. Besides, this has another structure which is able to adjust Spring Pre-load depending on the burr.

3. Method of Use

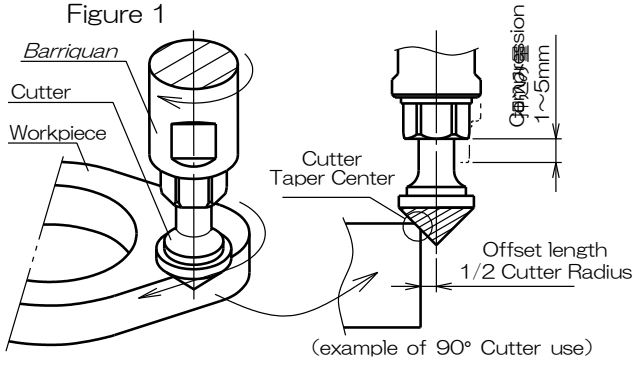
Attach Cutter to φ6 Collet. (Spanner size [nominal]: 10 mm, 13mm) Fastening torque of Collet is 12N·m.

Offset this tool about half of Cutter radius as Cutter taper center can contact the burred part of workpiece. And then, use this tool compressing Cutter about 1～5mm (Figure1). Processing Parameter in Figure 1 will be changed depending on the chosen Cutter. Please set the suitable parameter for the attached Cutter. The maximum number of rotation is 5000min^{-1}. Please do not over this maximum when using this tool.

Please test the workpiece as a trial at first and then process them continually. At the trial test, start the process low parameter (Pre-load and compression amount) and then try gradually higher parameter to achieve the requested finish. Please refer to "3-2. Adjustment for Processing Parameter".

⚠ Caution	At the trial test, start the process low parameter (Pre-load and compression amount) and then try gradually higher parameter to achieve the requested finish. If the parameter is excessive, the floating structure may not work and it leads to the tool broken soon.

Figure 1



3-1. Cautions

⚠ Caution	Please use this holder normal rotation. If using this reverse rotation, Collet may be loosened and it may cause the tool broken.

- For deburring, please use it by Down-Cut. (Figure 2)
- This tool holder is for the front side surface of workpiece. This cannot be used for the backside surface to deburr. (Figure 3)
- When measuring Cutter projection, etc., please check if Collet is projected max. length from Stem If pre-load is weak, Collet may be retracted. In that case, please increase pre-load.
- This tool does not have a floating structure for radial direction. Do not choose Cutter and Cutting method which give excessive load to the directions except axial direction.
- When using cutting fluid, do not pour it to *Barriquan* directly. If the fluid comes inside the tool, it may lead the malfunction.
- Rotate the tool and deburr along workpiece shape. (Do not use this without tool rotation.) If using without tool rotation, floating function does not work and it may lead to the tool broken.
- When attaching this product to tool holder, etc., please do not tighten this too much. In case of excessive fastening, this tool may not work properly.

Figure 2

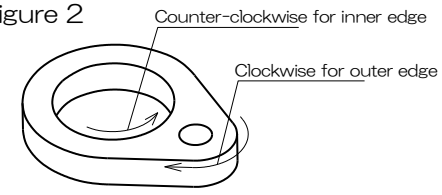
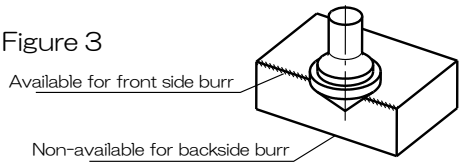


Figure 3



3-2. Adjustment for Cutting Amount

For adjustment of cutting amount, please refer to the below chart and adjust the processing parameter. When making cutting amount bigger, please increase it gradually. For Spring pre-load, please refer to "4. Adjustment for Spring Pre-load".

Processing Parameter	Cutting Amount		
	small	⟷	big
Spindle Speed	low	⟷	high
Feed Rate	fast	⟷	slow
Offset Amount	small	⟷	big
Pre-load	small	⟷	big
Compression Amount	small	⟷	big

4. Adjustment for Pre-load

(1) Spring pre-load can be adjusted to rotate Stem. When rotating, keep pulling Stem to Collet side (Figure 4);

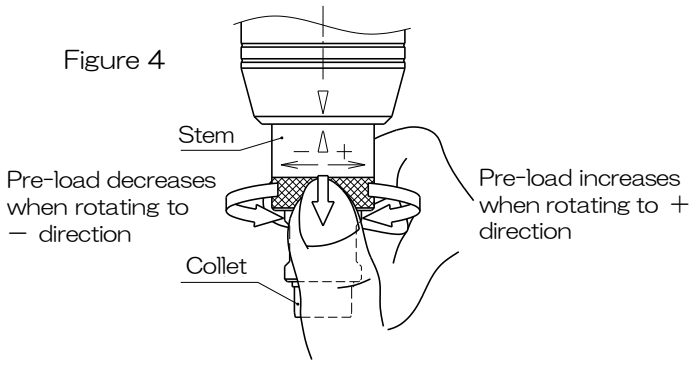
Rotating to "+" direction (clockwise) = pre-load increase
Rotating to "−" direction (counter-clockwise) = pre-load decrease

(2) After adjusting pre-load, please check if Stem is locked and cannot be rotated.

※ For the min. pre-load, rotate Stem to "−" direction as much as possible and then rotate it "+" side and the point where is locked first time, is the min. pre-load.

※ The relationship between the number of Stem rotation and Spring pre-load is as below chart (approx.).

Figure 4



The number of Stem rotation	Pre-load [g]
	Spring (Standard)
0(Min.)	120
1	320
2	520
3	720
4(Max.)	920

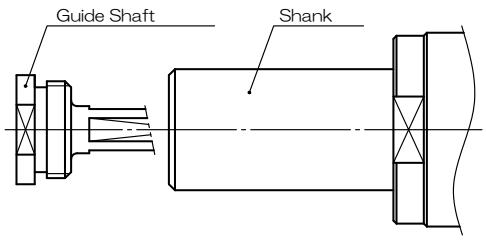
5. Replacement of Spring

When exchanging Spring depending on workpiece material and burr, please follow below procedure to replace it. Spring for exchange is option.

(1) Following the procedure of 「4. Adjustment for Pre-load」, set pre-load the maximum value and then detach Guide Shaft from Shank. (Figure 5)

⚠ Caution	Detach Guide Shaft after setting Pre-load the max. value. If loosening Guide Shaft by force, it may cause the tool broken.

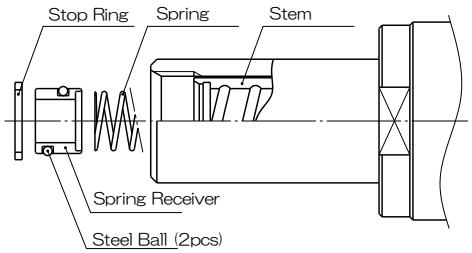
Figure 5



(2) Detach C-shape Stop Ring inside Stem. For detaching, please use the tool for C-shape Stop Ring (for Hole, size: No.1)

(3) After loosening Spring Receiver inside Stem, Spring can be taken off. When detaching Spring Receiver, please pay attention not to lose Steel Ball 2pieces. (Figure 6)

Figure 6

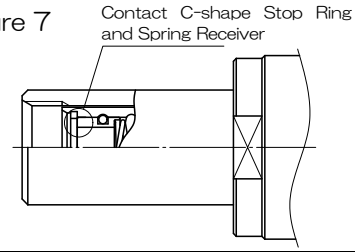


⚠ Caution	Steel Ball 2 pieces are assembled to Spring Receiver. Please be careful not to lose then when it's dismantled.

(4) After Spring is replaced, attach Steel Ball and Spring Receiver to Stem, and then put C-shape Stop Ring. The recessed side of Spring Receiver is toward Spring.

(5) Using Guide Shaft, contact Spring Receiver to C-shape Stop Ring, and then assemble Guide Shaft to Shank. (Figure 7)

Figure 7



⚠ Caution	Before assembling Guide Shaft, Spring Receiver has to be contacted to C-shape Stop Ring. If assembling Guide Shaft by force, it may cause the tool broken.

6. Maintenance

(1) When this holder is maintenance, please follow 「5. Replacement of Spring」 and disassemble (Figure 5~7).

(2) After Stem is cleaned, add Spindle oil (VG10 or less), etc. to sliding surface. (The oil should be low-viscosity.) Then, assemble the tool.

⚠ Caution	If this holder is not used long time, the sliding surface may be stuck and the floating structure does not work properly. After long term of no use, please maintenance the tool at first, and then use it.

Remarks

This tool cannot be guaranteed for all process. Depending on the situation, change the processing parameter and adjust it. We cannot take any responsibility for any loss or consequential damage incurred by using this product.

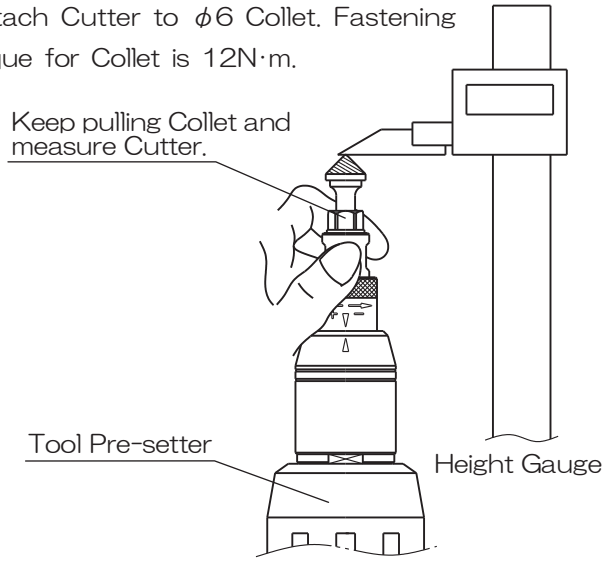
Barriquan®

Important Cautions

Manual No. BC0202E01

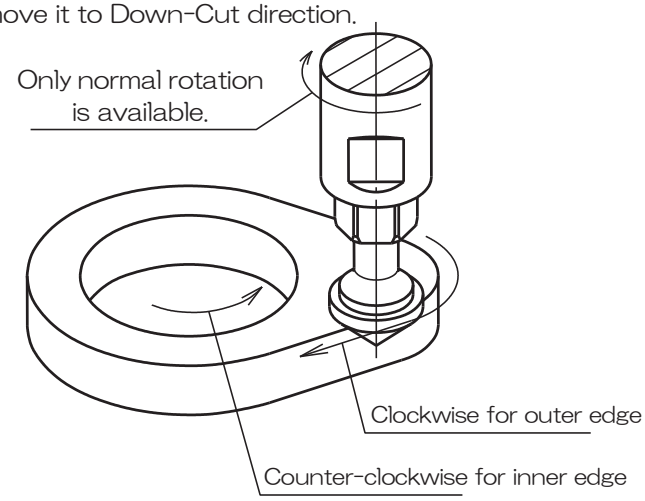
■Measurement for Cutter Projection

Attach Cutter to φ6 Collet. Fastening torque for Collet is 12N·m.

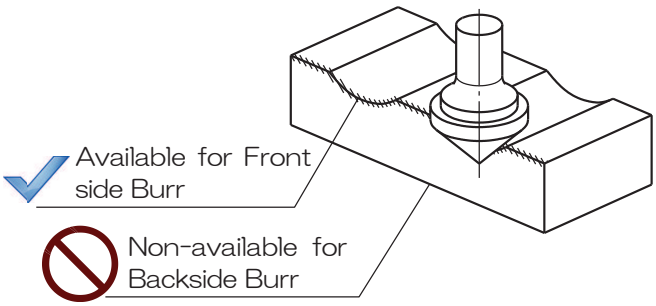


■Movement for Deburring Part

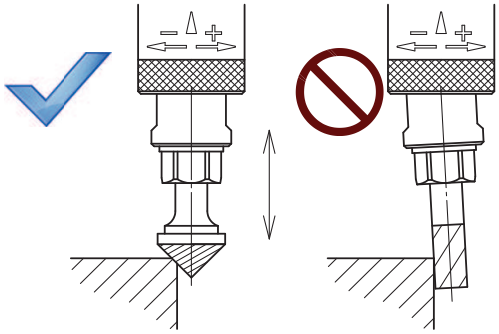
Barriquan must be used by normal rotation, and move it to Down-Cut direction.



■Available area for Deburring



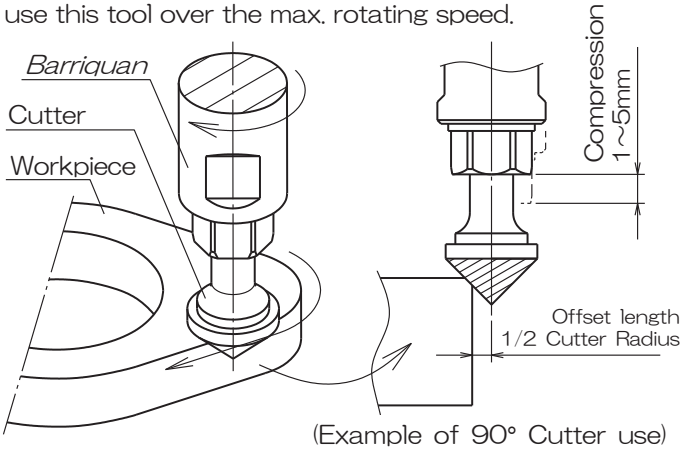
■Cutter Shape



※Do not use the Cutter which needs the load of radial direction excessively.

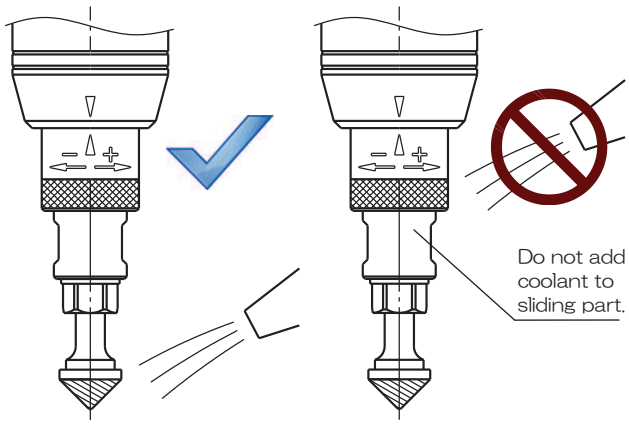
■Processing Parameter (approx.)

The maximum rotating speed is 5000min^{-1}. Do not use this tool over the max. rotating speed.



(Example of 90° Cutter use)

■Coolant



※After using coolant, clean the tool.
If not, the tool will not work properly.