# BACK CHAMFERING UNIT

## BCU

# Eliminate secondary setups and machine precise back chamfers.



**Precision back chamfering and deburring of holes with replaceable cutting blades and simle rapid-feed-retract programming.**



## MACHINE PRECISE BACK CHAMFERS

Positively deburrs the rear of a hole from the front face.

Cutters are mounted within the support pilot – eliminating deflection and chatter – while providing perfectly concentric chamfers.

## ECONOMICAL, EFFICIENT AND EASY-TO-USE

Fast cycle time – measured in seconds. Cutting cycle time is typically less than 5 seconds. Blades can be resharpened 1-2 times and can also be replaced.

**Excellent for large burr removal on tough to machine materials.**
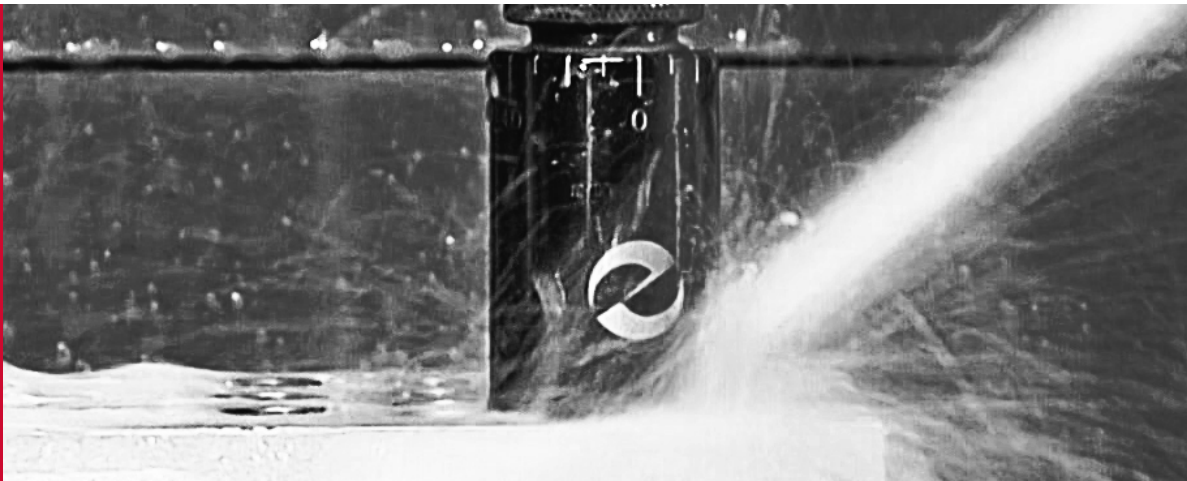
# ELIMINATES SECONDARY SET-UPS

By deburring and back chamfering from the front face, part-flipping, secondary set-ups and additional machines are not required.

# VERSATILITY

Can be used on CNC machining centers, special machines, transfer machines and drill presses.

CNC machine control for chamfer size. 1:1 ratio on diameter. For manual machines, use diameter limiting nut to set diameter. (Do not use limiting nut on CNC machines)

Micro-adjustment for setting of chamfer location.

# CUTTER OPTIONS

**Standard cutters for:**
Low carbon steel, cast iron, aluminum and other non-ferrous materials.
**Premium cutters for:**
Alloy steels, steels Rc 30-45, stainless steel and exotic materials.

Standard cutters machine a 45° chamfer. Special chamfer angles, radii and premium cutters quoted on request.

Standard hole diameters from 0.187″ (4.7mm) to 0.787″ (20mm). Special hole diamters from 0.156″ (4mm) to 0.984″ (25mm).

Standard reaches available are 1″ (25.4mm) and 1.77″ (45mm). Longer lengths quoted on request. Minimum part depth of 0.125″ (3.17mm); special lengths up to 10x diameter.
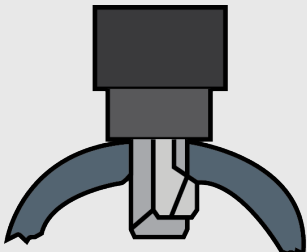
# SPEEDS AND FEEDS

| Material (IPR) | SFM | Feed Rate |
|---|---|---|
| Aluminum | 100 to 150 | 0.006" to 0.012" |
| Cast iron | 50 to 100 | 0.006" to 0.012" |
| Steel | 30 to 80 | 0.006" to 0.012" |
| H.T. steel/exotics | 10 to 30 | 0.006" to 0.012" |

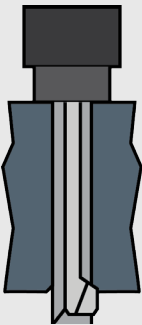## SUITABLE FOR A VARIETY OF SURFACES
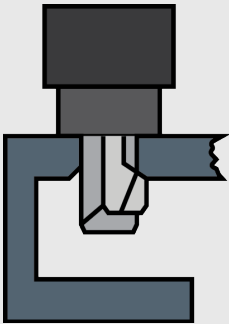


Restricted surfaces



Curved surfaces



Long-reach applications

# BACK CHAMFERING UNIT

## OPERATING PROCEDURE

**1** Set chamfer diameter: Use adjustable collar to set chamfer distance from nosepiece and use the limiting nut* to set the stroke of the tool and thus control chamfer diameter.

**2** Program CNC* to rapid feed BCU into the hole until the part comes in contact with the nose piece.

**3** Program CNC to then feed at 0.006″ to 0.012″ IPR. For smaller diameters, decrease the feed rate below 0.003 IPR. Program CNC to feed forward, not exceeding distance set with limiting nut.*

**4** Program CNC to retract at 3x cutting feed rate until blade is fully returned within pilot.
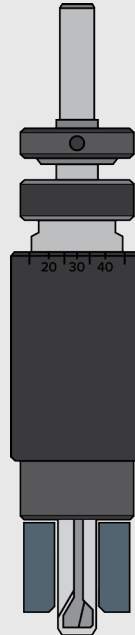
**5** Program CNC to rapid BCU out of the hole.

## EASY TO USE RAPID-FEED-RETRACT PROGRAMMING!

* For manual machines, use diameter limiting nut to set diameter. For CNC machines, back limiting nut way off or remove completely.

# APPLICATION

## Consistent and repeatable...

### THE JOB

**Part Dimensions:**
0.596″ bore
1″ thick

**Part Material:**
4140 Steel

### THE SOLUTION

**Tool Used:**
Pilot: 048P25-1515
Cutter: 048C25-1515A

**Speed:** 513 RPM

**Cut Feed:**
0.010 IPR

**Retract Feed:**
0.030 IPR

### THE RESULTS
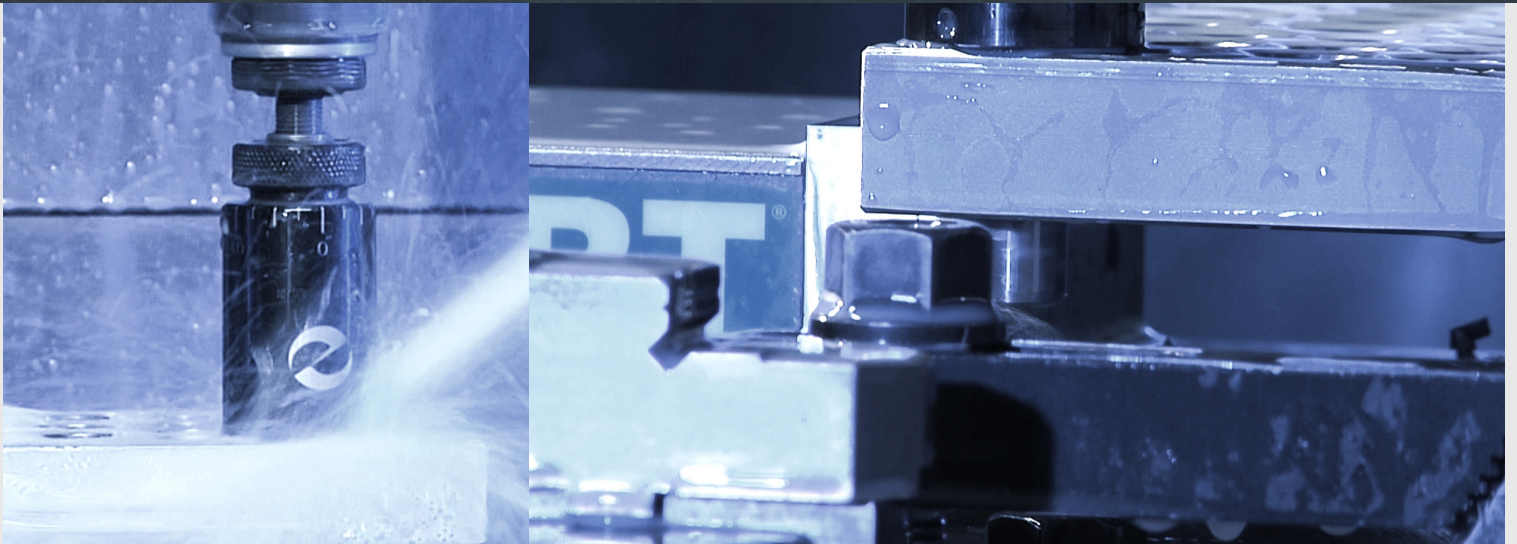
**Machined chamfer:**
0.090″ x 45°

**No flipping or re-fixturing of part.**

**Cycle Time:**
**2.8**SEC.*

* This is cut and retract of cut. Does not included the feed rate used to go into the part up to the contact of the nose piece.

## ...chamfers and deburrs **without flipping the part**.