

Burrless chamfering with the world's first V-shaped blade

## XEBEC Burrless Chamfering Cutter™

"Let's make a chamfering tool that only XEBEC would think of."

At the time, we were looking for additional ways to automate the deburring process and reduce the burden on users. The tools we offered could not provide an exact chamfer. In many cases, users had to alter break edge instructions on drawings to permit edge blending. After much consideration, we came up with the concept of a chamfering tool that does not produce secondary burrs. And settled on the world's first V-shaped blades as the optimal choice for this best-in-category tool.

WINNER 2023

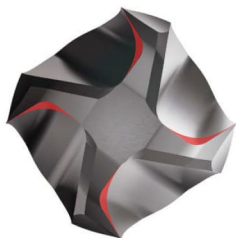


The unique V-shaped blades eliminate the need for deburring after chamfering, reducing man-hours required for deburring, the cost of tools, and machining times.



### Reduction of deburring man-hours

The world's first V-shaped blades (patented) chamfer without creating secondary burrs, eliminating the need for deburring after chamfering.



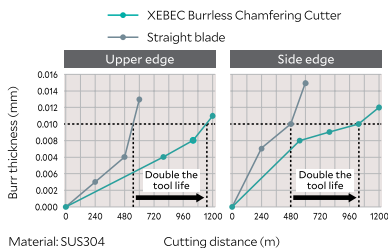
### Reduced machining times

The multi-blade design enables high feed rates for reduced machining time.



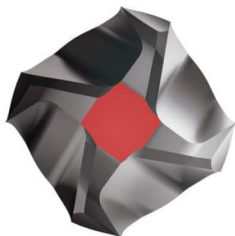
### Reduction of tool costs

This cutter has twice the tool life of conventional chamfering tools.



### Flat tip

Flat tool tip prevents rounding and chipping of the tool tip, reducing tool length measurement errors and improving machining positional accuracy.



# XEBEC Burrless Chamfering Cutter™ Patented

Burrless chamfering with world's first V-shaped blade



VIDEO

## Applicable equipment

This tool can be mounted on equipment shown below.



Machining  
center



Lathe  
(with live tools)

## AlTiCrN coated

P: Steel

M: Stainless steel

K: Cast iron

S: Heat-resistant super alloy

N: Non-ferrous metal

| Product code | Chamfer alignment dia.<br>Dc (mm) | Shank diameter<br>Dcon (mm) | Overall length<br>LF (mm) | Neck length L1 (mm) | Maximum depth of cut<br>APMX (mm) | Cutting angle<br>KAPR (deg.) | Number of blades | Chamfering size (mm) | Fig. |
|--------------|-----------------------------------|-----------------------------|---------------------------|---------------------|-----------------------------------|------------------------------|------------------|----------------------|------|
| XC-C-03-M    | φ2                                | φ6                          | 50                        | 5                   | 1                                 | 45                           | 3                | C0.3 - C0.6          | 18   |
| XC-C-06-M    | φ4                                | φ6                          | 60                        | —                   | 2                                 | 45                           | 4                | C0.7 - C1.5          | 19   |

## Uncoated

N: Non-ferrous metal

O: Resin

| Product code | Chamfer alignment dia.<br>Dc (mm) | Shank diameter<br>Dcon (mm) | Overall length<br>LF (mm) | Neck length L1 (mm) | Maximum depth of cut<br>APMX (mm) | Cutting angle<br>KAPR (deg.) | Number of blades | Chamfering size (mm) | Fig. |
|--------------|-----------------------------------|-----------------------------|---------------------------|---------------------|-----------------------------------|------------------------------|------------------|----------------------|------|
| XC-C-03-N    | φ2                                | φ6                          | 50                        | 5                   | 1                                 | 45                           | 3                | C0.3 - C0.6          | 18   |
| XC-C-06-N    | φ4                                | φ6                          | 60                        | —                   | 2                                 | 45                           | 4                | C0.7 - C1.5          | 19   |

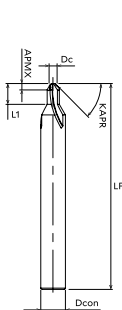


Fig. 18

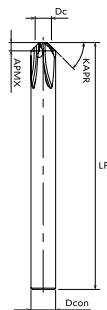
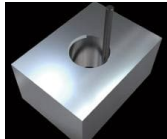


Fig. 19

## Applications

### Automation of chamfering

#### Cooling water pipe block



##### Before

Burrs were formed when chamfering. Manual deburring was required.

##### After

Shortened the chamfering time. Manual deburring is no longer required after chamfering.

Material: SUS304  
Follows: Drilling  
Tool: XC-C-06-M

### Automation of chamfering

#### Machine tool jig



##### Before

Oil stone was used to remove burrs after chamfering. However, it scarred the surface.

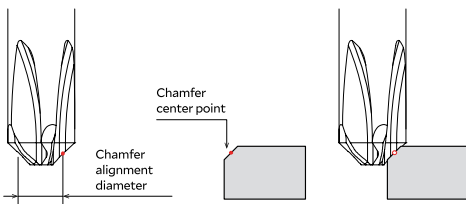
##### After

Oil stone is no longer needed and quality is improved.

Material: S50C  
Follows: End milling  
Tool: XC-C-06-M

## How to use

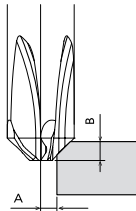
Position the chamfering alignment diameter at the chamfering center point of the workpiece.



## Machining parameters

### Offsets

| Product code | Chamfering size (mm) | Offsets (mm) |      |
|--------------|----------------------|--------------|------|
|              |                      | A            | B    |
| XC-C-03-M/N  | C0.3                 | 0.85         | 0.65 |
|              | C0.4                 | 0.80         | 0.70 |
|              | C0.5                 | 0.75         | 0.75 |
|              | C0.6                 | 0.70         | 0.80 |
|              | C0.7                 | 1.65         | 1.35 |
| XC-C-06-M/N  | C0.8                 | 1.60         | 1.40 |
|              | C0.9                 | 1.55         | 1.45 |
|              | C1.0                 | 1.50         | 1.50 |
|              | C1.1                 | 1.45         | 1.55 |
|              | C1.2                 | 1.40         | 1.60 |
|              | C1.3                 | 1.35         | 1.65 |
|              | C1.4                 | 1.30         | 1.70 |
|              | C1.5                 | 1.25         | 1.75 |



### Starting parameters

| Product code | Workpiece material | Cutting speed (m/min) | Rotational speed (min <sup>-1</sup> ) | Feed rate (mm/min) | Feed per tooth (mm/t) |
|--------------|--------------------|-----------------------|---------------------------------------|--------------------|-----------------------|
| XC-C-03-M    | Steel              | 60 - 100              | 12000                                 | 1800               | 0.05                  |
|              | Stainless steel    | 40 - 80               | 9000                                  | 1350               | 0.05                  |
|              | 64 titanium        | 45 - 60               | 8000                                  | 1200               | 0.05                  |
|              | Inconel            | 20 - 30               | 4000                                  | 600                | 0.05                  |
| XC-C-03-N    | Aluminum alloy     | 200 - 300             | 40000                                 | 6000               | 0.05                  |
|              | Resin              | 60 - 100              | 12000                                 | 1800               | 0.05                  |
| XC-C-06-M    | Steel              | 60 - 100              | 6300                                  | 1260               | 0.05                  |
|              | Stainless steel    | 40 - 80               | 4800                                  | 960                | 0.05                  |
|              | 64 titanium        | 45 - 60               | 4000                                  | 800                | 0.05                  |
|              | Inconel            | 20 - 30               | 2000                                  | 400                | 0.05                  |
| XC-C-06-N    | Aluminum alloy     | 200 - 300             | 20000                                 | 4000               | 0.05                  |
|              | Resin              | 60 - 100              | 6300                                  | 1760               | 0.07                  |



MANUAL