



## Chamfering & deburring

Solid carbide tools  
for machining of the  
hole entry and hole exit



Chip – by Chip – to the Top

# Deburring and chamfering tools

## Overview

Form	Type	Tool material	Surface	Standard	Diameter range (mm)	Catalog no.	Discount group
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### Deburring end mill 60°

	SuperAF-60	Solid Carbide	AlTiN	Stock Std.	4,000 - 12,000	<b>53393</b>	117
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	SuperAF-60	Solid Carbide	AlTiN	Stock Std.	6,000 - 12,000	<b>53394</b>	117
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### Deburring end mill 90°

	SuperAF-90	Solid Carbide	AlTiN	Stock Std.	4,000 - 12,000	<b>53395</b>	117
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	SuperAF-90	Solid Carbide	AlTiN	Stock Std.	4,000 - 12,000	<b>53396</b>	117
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### Deburring end mill 120°


	SuperAF-120	Solid Carbide	AlTiN	Stock Std.	4,000 - 12,000	<b>53397</b>	117
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	SuperAF-120	Solid Carbide	AlTiN	Stock Std.	6,000 - 12,000	<b>53398</b>	117
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### Front/back deburrer 90°

	SuperAD-90	Solid Carbide	AlTiN nano	Stock Std.	3,000 - 12,000	<b>52365</b>	120
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### Deburring forks

	SuperE-U	Solid Carbide	bright	Stock Std.	2,000 - 8,000	<b>52360</b>	120
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**Deburring end mill**  
**Solid carbide tool**  
**for rapid deburring and chamfering**  
**available with chamfer angle**  
**60° / 90° / 120°**

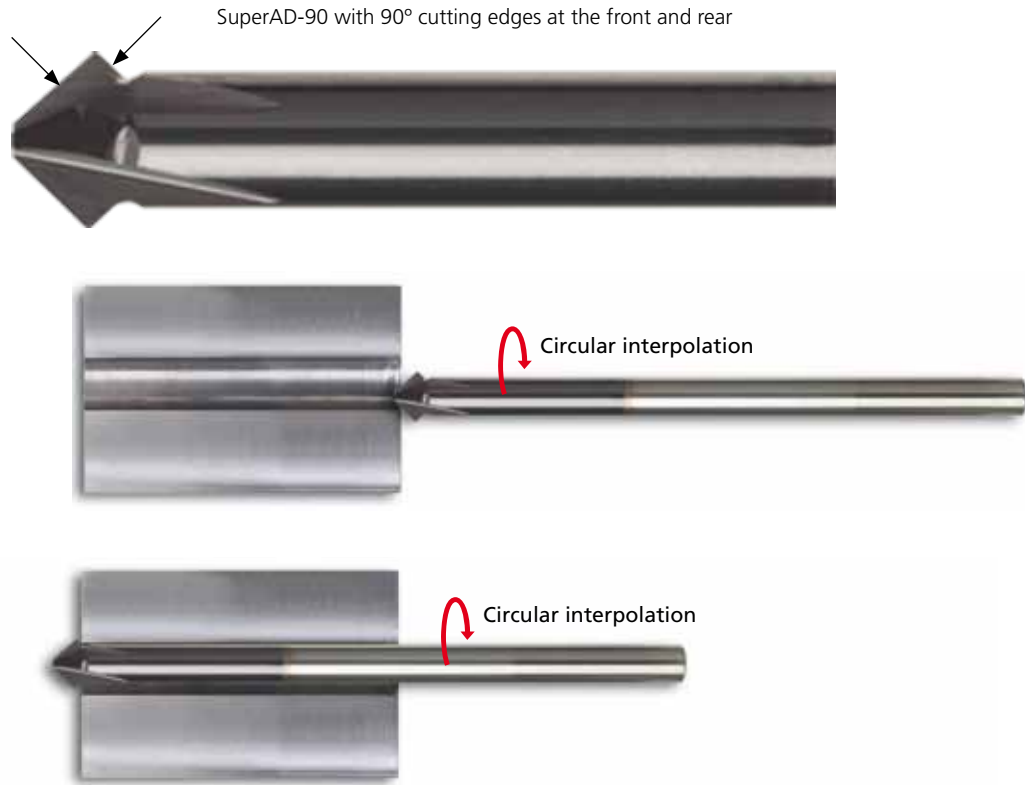


# Front/back deburrer SuperAD-90

## Back deburring for the first time !

The Stock solid carbide SuperAD-90 front/back deburrer with AlTiN nano-coating as a standard tool enables deburring as well as chamfering of hole entry and exit with a 90° angle. SuperAD-90 possesses a milling head with a front and back cutting

region. To deburr or chamfer the tool performs a circular milling movement along the hole edge or contour.



### Cutting parameters for front/back deburrer SuperAD-90

Material group	Tens. strength Hard- MPa (N/mm <sup>2</sup> ) ness	v <sub>c</sub> (m/min)	Feed col. no.
Steels	< 850	120 - 200	71
	850-1200	100 - 180	71
	> 1200	80 - 140	71
Hardened steels	< 54 HRC	60 - 120	71
	54-60 HRC	40 - 80	71
Stainless/acid-resistant steels	< 850	80 - 120	71
Nickel-based alloys	< 1300	30 - 60	71
Ti-alloys	< 1300	50 - 100	71
Cast materials	< 240 HB30	120 - 180	72
	> 240 HB30	100 - 160	72
Al wrought alloys < 3% Si		150 - 250	72
Al cast alloys > 3% Si		100 - 200	72
Magnesium alloys		150 - 250	72
Non-ferrous alloys	< 850	30 - 200	72

### Feed column no. (mm/rev)

Ø	71	72
≤ 3,00	0,060	0,080
4,00	0,100	0,125
5,00	0,100	0,125
6,30	0,125	0,160
8,00	0,160	0,200
10,00	0,200	0,250
12,50	0,200	0,250

### Important:

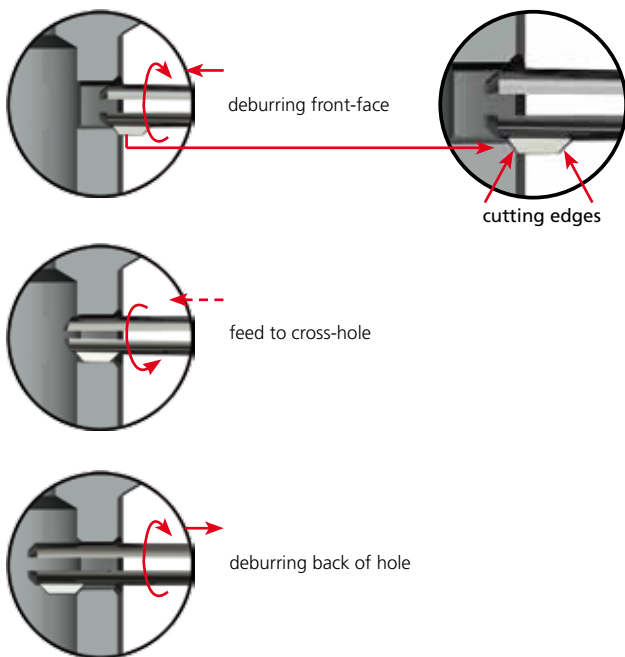
Please note that the cutting parameters are recommendations. They can be adjusted up or down.

# Deburring fork SuperE-U

## Advantages

- cost-efficient, because the standard tool offers considerable cost-savings in comparison with special tooling.
- universal for tooling, milling, turning and robotic applications. In addition, the diameter bridging of 0.25 mm makes it possible to apply the deburring fork in large tolerance holes. Valuable set-up time and set-up costs are eliminated!
- increased productivity, because the deburring fork deburrs automatically with one set-up. Expensive and extensive manual operations are no longer required..

### Operation



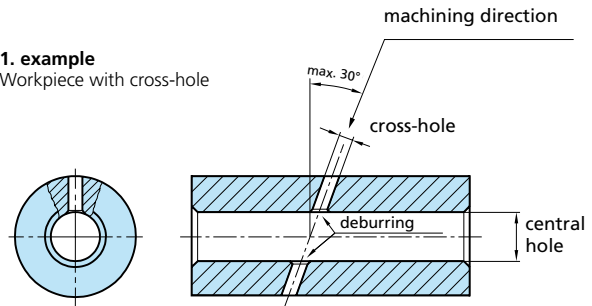
### Step by step:

The automatically internal and external deburring with deburring fork SuperE-U is an easy and cost saving alternative to common, extensive manual operations. Just one tool is required for all machining steps.

### Application examples

#### 1. example

Workpiece with cross-hole

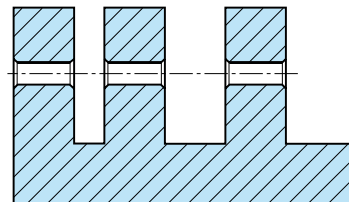


#### Please note when machining workpieces with cross holes:

- the diameter of cross hole must be maximal 35% of the central hole
- the diameter of cross hole must be 40% larger than the cutting length  $l_4$

#### 2. example

Workpiece with multi-interrupted cut



### Universal application:

The new ex-stock deburring fork machines workpieces with one cross-hole as well as workpieces with multi-interrupted cut and produces high quality deburred faces and ends of the hole.

### Important:

Please note, that the cutting parameters are recommendations. They can be adapted to higher and lower cutting parameters.

Diameter range (mm)	$v_c$ m/min	$f_u$ (mm)
$< \varnothing 4$	8 - 10	0,1 - 0,2
$\varnothing 4 - < \varnothing 6$	10 - 14	0,1 - 0,2
$6 - \varnothing 8$	14 - 20	0,1 - 0,2

# Special solutions

## Fax Inquiry / Order simply photo-copy, complete and fax...

 Inquiry

 Order

 SuperE-U

 SuperAD-90

 SuperAF

 Please recommend the optimal tool for the operation described below.

### Drawing of lay-out

**Machining:**
**Deburring**
 Entry

 Exit

 Cross-hole

**Milling**
 Entry, angle \_\_\_\_\_°

 Exit, angle \_\_\_\_\_°

**Workpiece:**

Hole-Ø: \_\_\_\_\_ mm

Hole depth: \_\_\_\_\_ mm

**Cross-hole:**
 no

 yes, to \_\_\_\_\_ mm

**Material/designation:** \_\_\_\_\_

**Machine type:**
 Machining centre

 Turning centre

 others: \_\_\_\_\_

**Shank:**
 HA

 HE

 others: \_\_\_\_\_

**Coolant:**
 internal

 external

 Oil

 Soluble oil

 MQL

**Pressure:** \_\_\_\_\_ bar

**Quantity:** \_\_\_\_\_ l/min

**Company:** \_\_\_\_\_

**Company stamp:** \_\_\_\_\_

**Telephone/fax:** \_\_\_\_\_

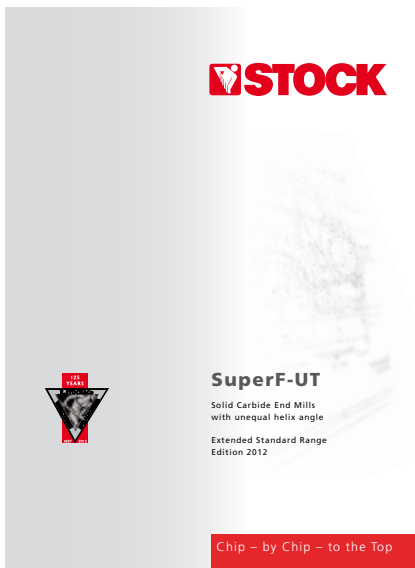
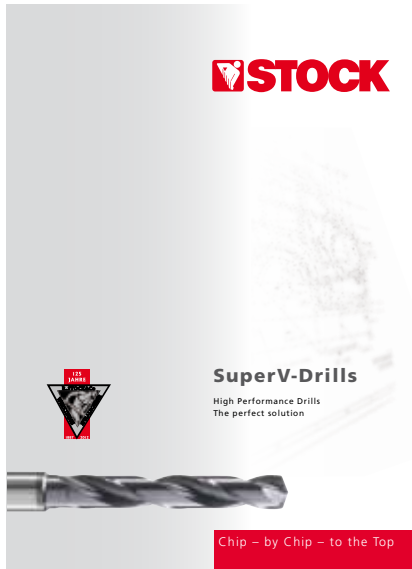
**Contact:** \_\_\_\_\_

**Signature:** \_\_\_\_\_



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- | Coating removal
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