



P R E M I U M

**KNURLING**  
TOOLS

**MARKING**  
TOOLS



As a global leader in knurling technology Hommel+Keller manufactures products of superior quality based on decades of experience, always with the incentive of continuous improvement. Our premium brand, which can look back on a long and proud history, is custom tailored to the requirements of our customers.



Hommel+Keller  
Film new building 2020

# QUICK

## AT THE FOREFRONT!

Tools used in knurling and marking technology always have special requirements with respect to quality, precision, stability and especially technological know-how. QUICK is the high-end brand of Hommel+Keller Präzisionswerkzeuge GmbH for exceptionally precise knurling and marking tools. Because here, design is combined with functionality and innovation with experience.

**FORMING AND CUTTING:** The QUICK product spectrum offers innovative solutions for diverse knurling technology applications. For both form knurling and cut knurling tools, QUICK fulfils the most stringent quality standards and masters even difficult tasks with ease.

**MARKING TOOLS:** New to the program are the QUICK marking tools, which make it possible to mark workpieces with a wide variety of geometries in a matter of seconds. Through single marking segments the marking text can be individually adapted.

**TOOLS IN ACTION:** QUICK is used wherever absolute precision and first-rate surface quality are needed. In the automotive sector, for example, in mechanical engineering, in the manufacture of timepieces and in many other industries. Our selection of knurling profiles will impress you – and your customers, too.

**CONVINCING QUALITY** Precision and premium quality – that is our passion and what motivates us to deliver maximum performance every day. And simultaneously a promise to our customers. Because you are good only if we are. We think ahead, to continuously develop customer-oriented innovations and to find new solutions. Our goal: joint success.

**ANYWHERE IN THE WORLD:** Take advantage of our services: A global sales network and customer proximity, excellent on-site technical support, as well as fast spare parts availability and tool maintenance.

**COMMUNITY:** What makes us special: We not only have excellent technological competence, but also know the needs of our customers very well. For you, that means: Whether in production or processing – at Hommel+Keller you will receive professional service at all times. And you will always find your personal contact person, who will respond to your concerns in a flexible and customer-oriented manner.

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# QUICK PRODUCTFINDER

In knurling technology there are two different processes: **cut knurling** and **form knurling**.

Both processes have their special applications and areas of utilisation (info p. 36).

## Application recommendation cut knurling

**C602:**  
Perfect for challenging visual knurling

**C693:**  
Perfect force distribution for small workpiece

## Application recommendation form knurling:

**F701 / F11:**  
High process stability  
User-friendly handling




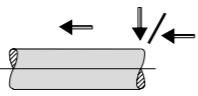
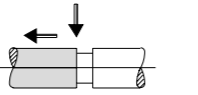
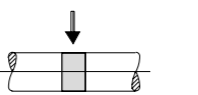
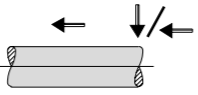
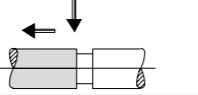
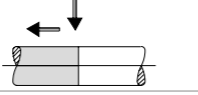
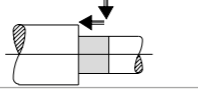
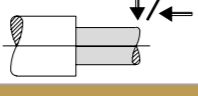
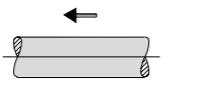
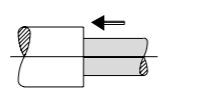
**F712 / F792:**  
Knurling up to a shoulder

**F761:**  
High process stability  
for long workpieces

**F791 / F792:**  
Perfect force distribution  
for small workpiece

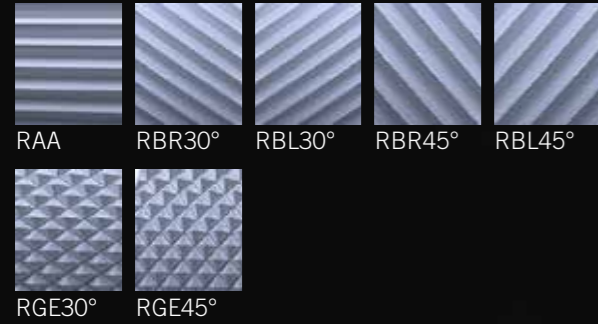
## Application recommendation form and cut knurling

**F791 / F792 / C693:**  
Perfect force distribution  
for small workpiece

| Profile on workpiece (DIN 82)   |   | RAA   | RBL / RBR   | RGE   |
|---|---|---|---|---|
|   |   |  |  |  |
| <b>Cut knurling</b>   |   | <b>Tool selection for cut knurling</b>  |   |   |
|    | Knurling starting at workpiece beginning                    | <b>C601 / C611 / C621</b>   |   | <b>C602 / C612 / C622 / C693</b>  |
|    | Knurling starting in centre of workpiece / after plunge cut |   |   | <b>C602 / C612 / C622</b>   |
| <b>Form knurling</b>  |   | <b>Tool selection for form knurling</b>   |   |   |
|    | Knurling on workpiece centre / without plunge cut           | <b>F701 / F711 / F712 / F751 / F761</b>   |   | <b>F711 / F712 / F751 / F761</b>  |
|   | Knurling starting at workpiece beginning                    | <b>F701 / F711 / F712 / F751 / F761 / F791</b>                                      |   | <b>F711 / F712 / F751 / F761 / F791</b>   |
|  | Knurling starting in centre of workpiece / after plunge cut | <b>F701 / F711 / F712 / F751 / F761</b>   |   | <b>F711 / F712 / F751 / F761</b>  |
|  | Knurling starting on workpiece centre / without plunge cut  | <b>F701 / F711 / F712 / F751 / F761</b>   |   | <b>F711 / F712 / F751 / F761</b>  |
|  | Knurling up to a shoulder                                   | <b>F712</b>   |   | <b>F712</b>   |
|  | Knurling starting at workpiece beginning up to a shoulder   | <b>F712 / F792</b>  |   | <b>F712 / F792</b>  |
| <b>Form and cut knurling</b>  |   | <b>One tool for form and cut knurling with interchangeable jaws.</b>                |   |   |
|  | Knurling starting at workpiece beginning                    | <b>F791 / F792</b>  |   | <b>F791 / F792 / C693</b>   |
|  | Knurling starting at workpiece beginning up to a shoulder   | <b>F792</b>   |   | <b>F792</b>   |

# CUT KNURLING

Possible knurling profiles on the workpiece:



## CUT KNURLING

Cut knurling is a machining process that uses cutting. The material is removed while being supplied at an axial feed rate. This process can therefore also be used for thin-walled or soft materials, as well as hard-to-machine materials.







## ADDED VALUES

- maximum precision and surface quality, therefore especially suitable for visible knurling
- knurling of thin-walled workpieces is possible without deformation
- time savings due to faster cutting speed and feed rate
- machining of virtually all materials, including grey cast iron and plastic
- zero or only minimal alteration of the workpiece diameter
- minimal surface compaction



## OVERVIEW OF CUT KNURLING TOOLS

With the product finder for cut knurling tools you can find your desired QUICK product faster. You receive all relevant tool data, as well as possible profiles, the corresponding knurling wheels and the possible direction of machining at a glance.

| Tool series  | Workpiece Ø [mm] | Profile on workpiece                        | Profile on knurling wheel                                     | Shank [mm]   | Knurling wheel Ø [mm] | Knurling | Knurling profiles                                      |        |        |        |        |
|--|------------------|---|---|--|-----------------------|----------|--|--------|--------|--------|--------|
|  |                  |   |   |  |                       |          | RAA  | RBL    | RBR    | RGE    |        |
| <b>NEW</b><br><br>C601<br>PAGE 8   | 1,5 – 12         | RAA<br>RBR30°<br>RBL30°<br>RBR45°<br>RBL45° | right-hand use:<br>1 x BR30°<br>1 x AA<br>—<br>1 x BL15°<br>— | left-hand use:<br>1 x BL30°<br>—<br>1 x AA<br>—<br>1 x BR15° | 8 / 10 / 12 / 16      | 8.9      | starting at the workpiece                              | ●      | ●      | ●      | —      |
|  | 3 – 50           |   |   |  | 8 / 10 / 12 / 16      | 14.5     | starting after plunge cut                              | ●      | ●      | ●      | —      |
| <b>NEW</b><br><br>C602<br>PAGE 10 | 1,5 – 12         | RGE30°<br>RGE45°                            | 2 x AA<br>1 x BR15° / 1 x BL15°                               |  | 10 / 12 / 16          | 8.9      | starting at the workpiece                              | —      | —      | —      | ●      |
|  | 3 – 50           |   |   |  | 10 / 12 / 16          | 14.5     | starting after plunge cut                              | —      | —      | —      | ●      |
| <br>C611<br>PAGE 12              | 3 – 50           | RAA<br>RBR30°<br>RBL30°<br>RBR45°<br>RBL45° | right-hand use:<br>1 x BR30°<br>1 x AA<br>—<br>1 x BL15°<br>— | left-hand use:<br>1 x BL30°<br>—<br>1 x AA<br>—<br>1 x BR15° | 10 / 12 / 16          | 14.5     | starting at the workpiece                              | ●      | ●      | ●      | —      |
|  | 5 – 250          |   |   |  | 20 / 25               | 21.5     | starting after plunge cut                              | ●      | ●      | ●      | —      |
| <br>C612<br>PAGE 12              | 3 – 50           | RGE30°<br>RGE45°                            | 2 x AA<br>1 x BR15° / 1 x BL15°                               |  | 10 / 12 / 16          | 14.5     | starting at the workpiece                              | —      | —      | —      | ●      |
|  | 5 – 250          |   |   |  | 20 / 25               | 21.5     | starting after plunge cut                              | —      | —      | —      | ●      |
| <br>C621<br>PAGE 14              | 20 – 3000        | RAA<br>RBR30°<br>RBR45°                     | 1 x BR30°<br>1 x AA<br>1 x BL15°                              |  | 27                    | 42       | starting at the workpiece<br>starting after plunge cut | ●<br>● | ●<br>● | ●<br>● | —<br>— |
| <br>C622<br>PAGE 14              | 20 – 1000        | RGE30°<br>RGE45°                            | 2 x AA<br>1 x BR15° / 1 x BL15°                               |  | 40                    | 32       | starting at the workpiece                              | —      | —      | —      | ●      |
|  | 30 – 3000        |   |   |  | 57                    | 42       | starting after plunge cut                              | —      | —      | —      | ●      |

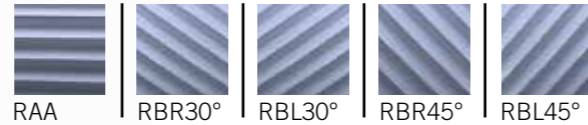
# CUT KNURLING TOOL C601

**DISCONTINUED MODEL**

AVAILABLE UNTIL 2022-06-30



### KNURLING PROFILE ON WORKPIECE (DIN 82):



### SELECTION OF KNURLING WHEELS (DIN 403):

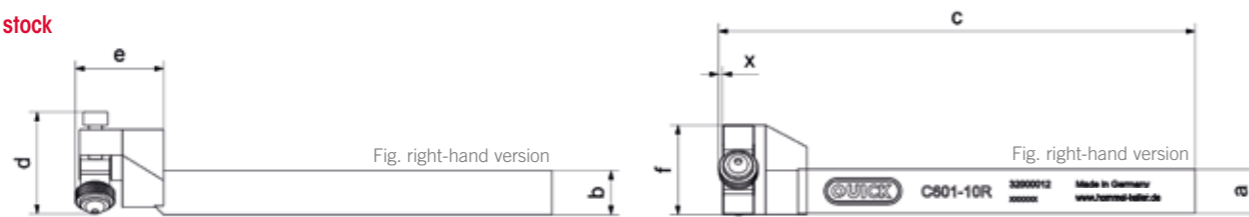
|                |       |    |    |       |       |
|----------------|-------|----|----|-------|-------|
| RIGHT-HAND USE | BR30° | AA | —  | BL15° | —     |
| LEFT-HAND USE  | BL30° | —  | AA | —     | BR15° |

## PRODUCT FEATURES

- developed for minimal installation space and maximum stability
- designed for smallest workpiece diameters
- user-friendly handling

| Item no. (right-hand version)                | Item no. (left-hand version) | Model   | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] | Dimensions [mm] |    |     |      |    |      |     |  |
|--|------------------------------|---------|------------------|---------------------------------|-----------------|----|-----|------|----|------|-----|--|
|  |                              |         |                  |                                 | a               | b  | c   | d    | e  | f    | x   |  |
| 32000012 <input checked="" type="checkbox"/> | 32000011                     | C601-10 | 1.5 – 12         | 8.9 x 2.5 x 4                   | 10              | 10 | 108 | 23.5 | 20 | 20.3 | 0.8 |  |
| 32000014 <input checked="" type="checkbox"/> | 32000013                     | C601-12 | 1.5 – 12         | 8.9 x 2.5 x 4                   | 12              | 12 | 108 | 23.5 | 20 | 22   | 0.8 |  |

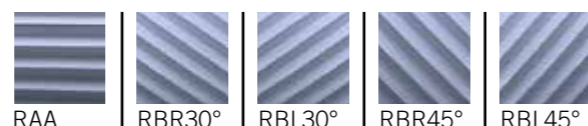
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# NEW CUT KNURLING TOOL C601



### KNURLING PROFILE ON WORKPIECE (DIN 82):



### SELECTION OF KNURLING WHEELS (DIN 403):

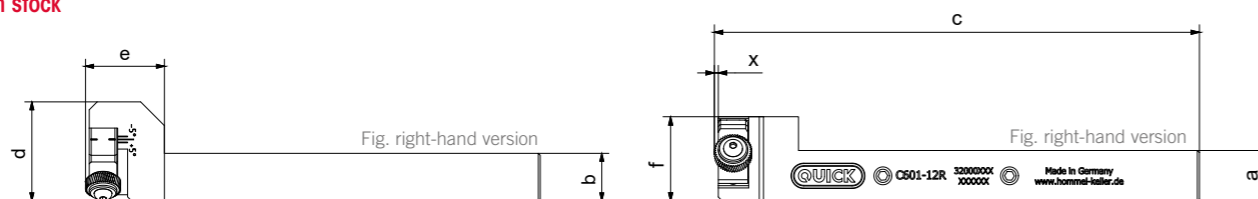
|                |       |    |    |       |       |
|----------------|-------|----|----|-------|-------|
| RIGHT-HAND USE | BR30° | AA | —  | BL15° | —     |
| LEFT-HAND USE  | BL30° | —  | AA | —     | BR15° |

## PRODUCT FEATURES

- optimized for swiss type lathe applications
- knurl carrier are flush with outer edge of shank
- smaller design - reduced height of the tool head
- optimized tool positioning: upper edge of shank = center height
- improved stability through optimization of the interfaces
- designed for smallest workpiece diameters
- user-friendly handling

| Item no. (right-hand version)                | Item no. (left-hand version) | Model   | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] | Dimensions [mm] |    |     |    |    |    |      |  |
|--|------------------------------|---------|------------------|---------------------------------|-----------------|----|-----|----|----|----|------|--|
|  |                              |         |                  |                                 | a               | b  | c   | d  | e  | f  | x    |  |
| 32000357 <input checked="" type="checkbox"/> | 32000356                     | C601-08 | 1.5 – 12         | 8.9 x 2.5 x 4                   | 8               | 10 | 115 | 25 | 20 | 18 | 0.9  |  |
| 32000319 <input checked="" type="checkbox"/> | 32000318                     | C601-10 | 1.5 – 12         | 8.9 x 2.5 x 4                   | 10              | 10 | 115 | 25 | 20 | 18 | 0.9  |  |
| 32000291 <input checked="" type="checkbox"/> | 32000292                     | C601-12 | 1.5 – 12         | 8.9 x 2.5 x 4                   | 12              | 12 | 115 | 25 | 20 | 20 | 0.9  |  |
| 32000293 <input checked="" type="checkbox"/> | 32000294                     | C601-16 | 1.5 – 12         | 8.9 x 2.5 x 4                   | 16              | 12 | 115 | 25 | 20 | 24 | 0.9  |  |
| 32000358 <input checked="" type="checkbox"/> | 32000359                     | C601-08 | 3 – 50           | 14.5 x 3 x 5                    | 8               | 10 | 120 | 25 | 25 | 18 | 1.75 |  |
| 32000289 <input checked="" type="checkbox"/> | 32000288                     | C601-10 | 3 – 50           | 14.5 x 3 x 5                    | 10              | 10 | 120 | 25 | 25 | 18 | 1.75 |  |
| 32000028 <input checked="" type="checkbox"/> | 32000243                     | C601-12 | 3 – 50           | 14.5 x 3 x 5                    | 12              | 12 | 120 | 25 | 25 | 20 | 1.75 |  |
| 32000023 <input checked="" type="checkbox"/> | 32000022                     | C601-16 | 3 – 50           | 14.5 x 3 x 5                    | 16              | 12 | 120 | 25 | 25 | 24 | 1.75 |  |

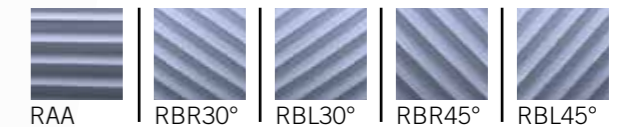
Available from stock



# NEW CUT KNURLING TOOL C601



### KNURLING PROFILE ON WORKPIECE (DIN 82):



### SELECTION OF KNURLING WHEELS (DIN 403):

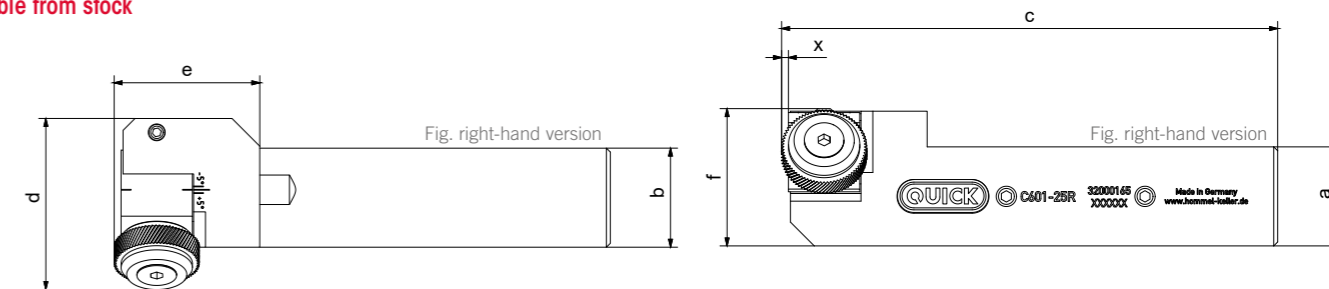
|                |       |    |    |       |       |
|----------------|-------|----|----|-------|-------|
| RIGHT-HAND USE | BR30° | AA | —  | BL15° | —     |
| LEFT-HAND USE  | BL30° | —  | AA | —     | BR15° |

## PRODUCT FEATURES

- developed for minimal installation space and maximum stability
- designed for smallest workpiece diameters
- user-friendly handling

| Item no. (right-hand version)                | Item no. (left-hand version) | Model   | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] | Dimensions [mm] |    |     |      |      |    |      |  |
|--|------------------------------|---------|------------------|---------------------------------|-----------------|----|-----|------|------|----|------|--|
|  |                              |         |                  |                                 | a               | b  | c   | d    | e    | f  | x    |  |
| 32000032 <input checked="" type="checkbox"/> | 32000093                     | C601-20 | 5 - 250          | 21.5 x 5 x 8                    | 20              | 20 | 125 | 43,2 | 36,8 | 30 | 1.75 |  |
| 32000165 <input checked="" type="checkbox"/> | 32000242                     | C601-25 | 5 - 250          | 21.5 x 5 x 8                    | 25              | 25 | 125 | 43,2 | 36,8 | 30 | 1.75 |  |

Available from stock



## SPARE PARTS C601

### E-KIT C601 - NEW

| Item no.  | Knurling wheel (Ø x w x b) [mm] |
|-----------|---------------------------------|
| 22BHR0506 | 8.9 x 2.5 x 4                   |
| 22BHR0507 | 14.5 x 3 x 5                    |
| 22BHR0508 | 21.5 x 5 x 8                    |



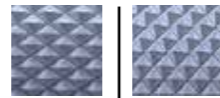
# CUT KNURLING TOOL C602

**DISCONTINUED MODEL**

AVAILABLE UNTIL 2022-06-30



**KNURLING PROFILE ON WORKPIECE (DIN 82):**



RGE30° | RGE45°

**SELECTION OF KNURLING WHEELS (DIN 403):**

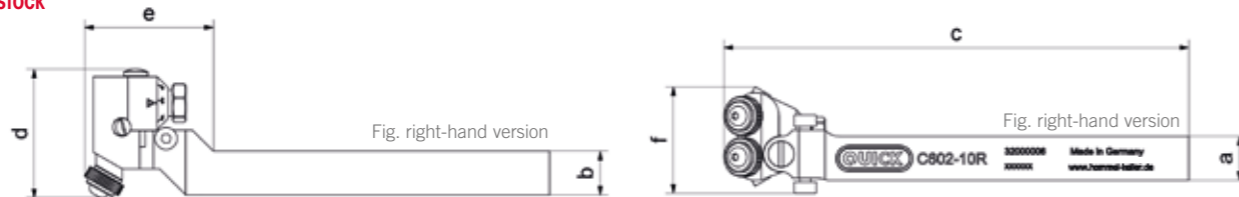
2x AA | 1x BL15°  
1x BR15°

## PRODUCT FEATURES

- developed for minimal installation space and maximum stability
- designed for smallest workpiece diameters
- easy fine adjustment of the knurl carrier

| Order no. (right-hand version)               | Order no. (left-hand version) | Model   | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] | Dimensions [mm] |    |     |      |      |      |
|--|-------------------------------|---------|------------------|---------------------------------|-----------------|----|-----|------|------|------|
|  |                               |         |                  |                                 | a               | b  | c   | d    | e    | f    |
| 32000006 <input checked="" type="checkbox"/> | 32000005                      | C602-10 | 1,5 – 12         | 8.9 x 2.5 x 4                   | 10              | 10 | 106 | 29.7 | 29.4 | 24.3 |
| 32000008 <input checked="" type="checkbox"/> | 32000007                      | C602-12 | 1,5 – 12         | 8.9 x 2.5 x 4                   | 12              | 12 | 106 | 29.7 | 29.4 | 24.3 |

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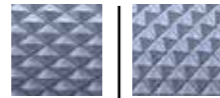


**NEW**

# CUT KNURLING TOOL C602



**KNURLING PROFILE ON WORKPIECE (DIN 82):**



RGE30° | RGE45°

**SELECTION OF KNURLING WHEELS (DIN 403):**

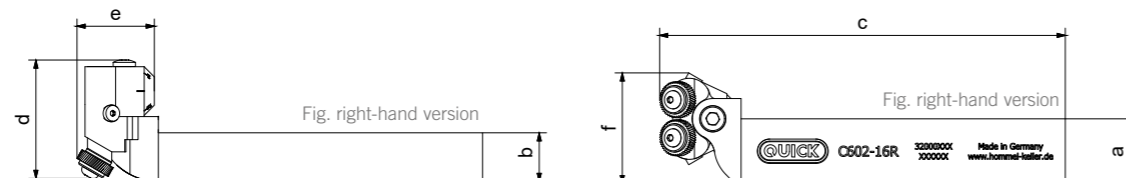
2x AA | 1x BL15°  
1x BR15°

## PRODUCT FEATURES

- optimized for swiss type lathe applications
- knurl carrier are flush with outer edge of shank
- optimized tool positioning: upper edge of shank = center height
- easy fine adjustment of the knurl carrier
- designed for smallest workpiece diameters
- user-friendly handling

| Order no. (right-hand version)               | Order no. (left-hand version) | Model   | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] | Dimensions [mm] |    |     |      |      |      |
|--|-------------------------------|---------|------------------|---------------------------------|-----------------|----|-----|------|------|------|
|  |                               |         |                  |                                 | a               | b  | c   | d    | e    | f    |
| 32000363 <input checked="" type="checkbox"/> | 32000364                      | C602-10 | 1.5 – 12         | 8.9 x 2.5 x 4                   | 10              | 10 | 100 | 30   | 20.2 | 22.7 |
| 32000365 <input checked="" type="checkbox"/> | 32000366                      | C602-12 | 1.5 – 12         | 8.9 x 2.5 x 4                   | 12              | 12 | 100 | 30   | 20.2 | 23.3 |
| 32000244 <input checked="" type="checkbox"/> | 32000245                      | C602-16 | 1.5 – 12         | 8.9 x 2.5 x 4                   | 16              | 12 | 100 | 30   | 20.2 | 27   |
| 32000269 <input checked="" type="checkbox"/> | 32000270                      | C602-10 | 3 – 50           | 14.5 x 3 x 5                    | 10              | 10 | 107 | 31.5 | 27   | 29.5 |
| 32000024 <input checked="" type="checkbox"/> | 32000024                      | C602-12 | 3 – 50           | 14.5 x 3 x 5                    | 12              | 12 | 107 | 31.5 | 27   | 29.5 |
| 32000252 <input checked="" type="checkbox"/> | 32000253                      | C602-16 | 3 – 50           | 14.5 x 3 x 5                    | 16              | 12 | 107 | 31.5 | 27   | 30.7 |

Available from stock

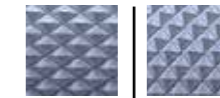


**NEW**

# CUT KNURLING TOOL C602



**KNURLING PROFILE ON WORKPIECE (DIN 82):**



RGE30° | RGE45°

**SELECTION OF KNURLING WHEELS (DIN 403):**

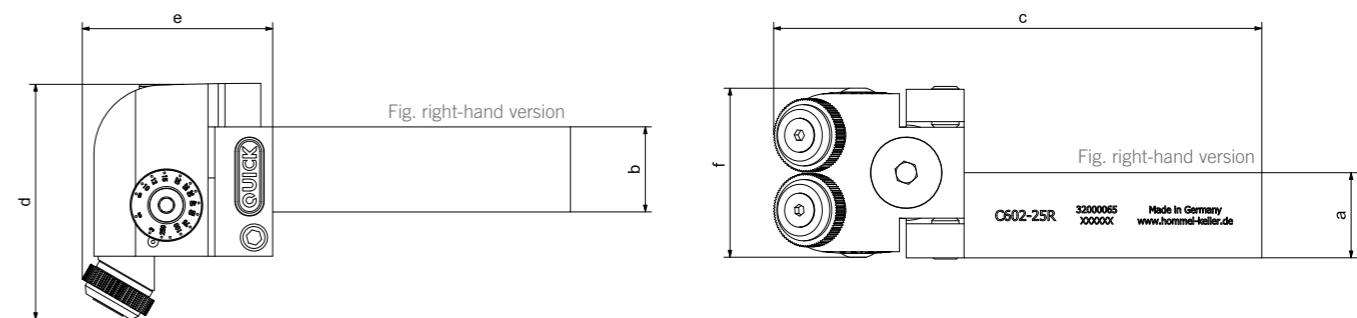
2x AA | 1x BL15°  
1x BR15°

## PRODUCT FEATURES

- developed for minimal installation space and maximum stability
- designed for smallest workpiece diameters
- easy fine adjustment of the knurl carrier

| Item no. (right-hand version)                | Item no. (left-hand version) | Model   | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] | Dimensions [mm] |    |     |      |    |    |
|--|------------------------------|---------|------------------|---------------------------------|-----------------|----|-----|------|----|----|
|  |                              |         |                  |                                 | a               | b  | c   | d    | e  | f  |
| 32000282 <input checked="" type="checkbox"/> | 32000281                     | C602-16 | 5 - 250          | 21.5 x 5 x 8                    | 16              | 20 | 143 | 69.4 | 56 | 50 |
| 32000021 <input checked="" type="checkbox"/> | 32000086                     | C602-20 | 5 - 250          | 21.5 x 5 x 8                    | 20              | 20 | 143 | 69.4 | 56 | 50 |
| 32000065 <input checked="" type="checkbox"/> | 32000087                     | C602-25 | 5 - 250          | 21.5 x 5 x 8                    | 25              | 25 | 143 | 69.4 | 56 | 50 |

Available from stock



## SPARE PARTS C602

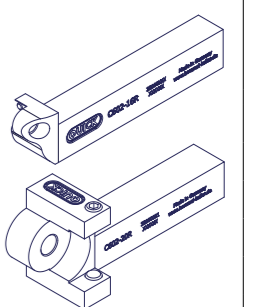
### E-KIT C602

| Item no.  | Knurling wheel (Ø x w x b) [mm] |
|-----------|---------------------------------|
| 22BHR0506 | 8.9 x 2.5 x 4                   |
| 22BHR0507 | 14.5 x 3 x 5                    |
| 22BHR0508 | 21.5 x 5 x 8                    |



### SHANK ASSEMBLED C602 - NEW

| Item no. (right-hand version) | Item no. (left-hand version) | Description   |
|-------------------------------|------------------------------|---------------|
| 22BHR0709                     | 22BHR0710                    | shank 10 x 10 |
| 22BHR0706                     | 22BHR0705                    | shank 12 x 12 |
| 22BHR0658                     | 22BHR0660                    | shank 16 x 12 |
| 22BHR0743                     | 22BHR0742                    | shank 16 x 20 |
| 22BHR0330                     | 22BHR0329                    | shank 20 x 20 |
| 22BHR0342                     | 22BHR0341                    | shank 25 x 25 |



### HEAD ASSEMBLED C602 - NEW

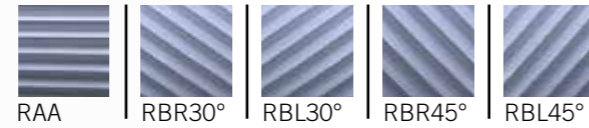
| Item no. (for knurl holder Ø 8,9) | Item no. (for knurl holder Ø 14,5) | Item no. (for knurl holder Ø 21,5) | Description   |
|-----------------------------------|------------------------------------|------------------------------------|---------------|
| 22BHR0662                         | 22BHR0237                          | —                                  | shank 10 x 10 |
| 22BHR0662                         | 22BHR0237                          | —                                  | shank 12 x 12 |
| 22BHR0662                         | 22BHR0237                          | —                                  | shank 16 x 16 |
| —                                 | —                                  | 22BHR0620                          | shank 16 x 20 |
| —                                 | —                                  | 22BHR0620                          | shank 20 x 20 |
| —                                 | —                                  | 22BHR0620                          | shank 25 x 25 |



## CUT KNURLING TOOL C611



### KNURLING PROFILE ON WORKPIECE (DIN 82):



### SELECTION OF KNURLING WHEELS (DIN 403):

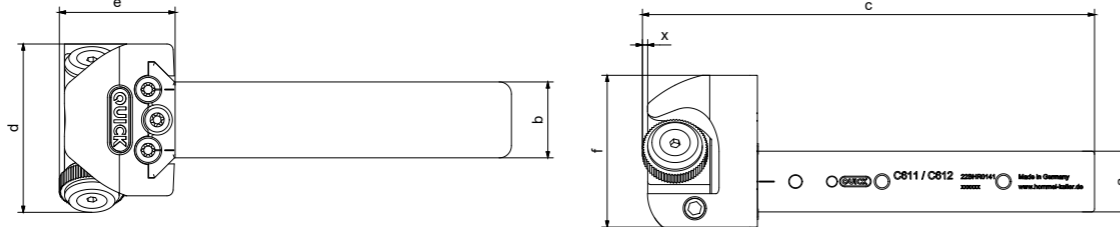
|                |       |    |    |       |       |
|----------------|-------|----|----|-------|-------|
| RIGHT-HAND USE | BR30° | AA | —  | BL15° | —     |
| LEFT-HAND USE  | BL30° | —  | AA | —     | BR15° |

### PRODUCT FEATURES

- adaptable, patented QUICK coolant nozzle
- multifunctional: for use in front of and behind the rotation centre
- flexible shank variation
- head and shank fully exchangeable due to compatible interface
- quick and easy adjustment of the working area with the enclosed setting gauge

| Item no. | Model    | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] | Dimensions [mm] |    |     |      |      |    |     |  |
|----------|----------|------------------|---------------------------------|-----------------|----|-----|------|------|----|-----|--|
|          |          |                  |                                 | a               | b  | c   | d    | e    | f  | x   |  |
| 32000037 | C611-10M | 3 – 50           | 14.5 x 3 x 5                    | 10              | 16 | 106 | 35   | 25.6 | 32 | 1.8 |  |
| 32000038 | C611-12M | 3 – 50           | 14.5 x 3 x 5                    | 12              | 16 | 106 | 35   | 25.6 | 32 | 1.8 |  |
| 32000039 | C611-16M | 3 – 50           | 14.5 x 3 x 5                    | 16              | 16 | 106 | 35   | 25.6 | 32 | 1.8 |  |
| 32000043 | C611-20M | 5 – 250          | 21.5 x 5 x 8                    | 20              | 25 | 149 | 56.5 | 38.3 | 50 | 1.7 |  |
| 32000044 | C611-25M | 5 – 250          | 21.5 x 5 x 8                    | 25              | 25 | 149 | 56.5 | 38.3 | 50 | 1.7 |  |

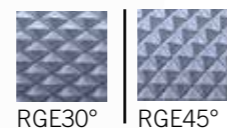
✓ Available from stock



## CUT KNURLING TOOL C612



### KNURLING PROFILE ON WORKPIECE (DIN 82):



### SELECTION OF KNURLING WHEELS (DIN 403):

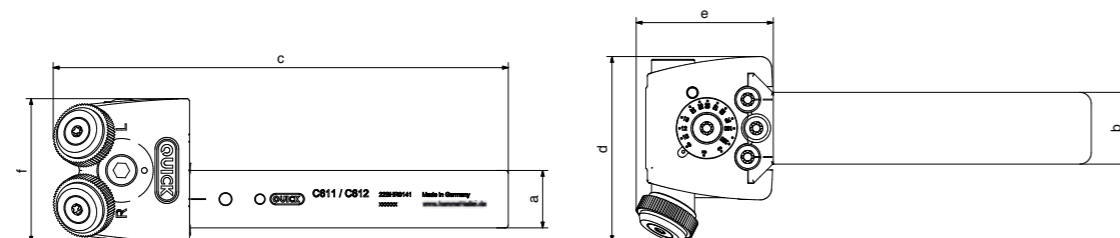
|       |          |          |
|-------|----------|----------|
| 2x AA | 1x BL15° | 1x BR15° |
|-------|----------|----------|

### PRODUCT FEATURES

- adaptable, patented QUICK coolant nozzle
- multifunctional: for use in front of and behind the rotation centre
- flexible shank variation
- head and shank fully exchangeable due to compatible interface
- synchronised knurl holder for adjusting the working range
- quick and easy adjustment of the working area with the enclosed setting gauge

| Item no. | Model    | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] | Dimensions [mm] |    |     |      |      |      |
|----------|----------|------------------|---------------------------------|-----------------|----|-----|------|------|------|
|          |          |                  |                                 | a               | b  | c   | d    | e    | f    |
| 32000034 | C612-10M | 3 – 50           | 14.5 x 3 x 5                    | 10              | 16 | 115 | 36   | 34.7 | 35.8 |
| 32000035 | C612-12M | 3 – 50           | 14.5 x 3 x 5                    | 12              | 16 | 115 | 36   | 34.7 | 35.8 |
| 32000036 | C612-16M | 3 – 50           | 14.5 x 3 x 5                    | 16              | 16 | 115 | 36   | 34.7 | 35.8 |
| 32000041 | C612-20M | 5 – 250          | 21.5 x 5 x 8                    | 20              | 25 | 158 | 64.4 | 47.7 | 50   |
| 32000042 | C612-25M | 5 – 250          | 21.5 x 5 x 8                    | 25              | 25 | 158 | 64.4 | 47.7 | 50   |

✓ Available from stock



## CUT KNURLING TOOL SET C610



### SET consisting of:

- C611-12 (with shank 12 mm x 16 mm)
- C612-16 (with shank 16 mm x 16 mm)
- 1 x shank 10 mm x 16 mm
- coolant nozzle (22BHR0145)

| Item no. | Model | Shank [mm]   | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] |
|----------|-------|--------------|------------------|---------------------------------|
| 32000040 | C611  | 10 / 12 / 16 | 3 – 50           | 14.5 x 3 x 5                    |
|          | C612  |              | 3 – 50           | 14.5 x 3 x 5                    |

### SET consisting of:

- C611-20 (with shank 20 mm x 25 mm)
- C612-25 (with shank 25 mm x 25 mm)
- coolant nozzle (22BHR0136)

| Item no. | Model | Shank [mm] | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] |
|----------|-------|------------|------------------|---------------------------------|
| 32000045 | C611  | 20 / 25    | 5 – 250          | 21.5 x 5 x 8                    |
|          | C612  |            | 5 – 250          | 21.5 x 5 x 8                    |

## SPARE PARTS C611 / C612

### E-KIT C611 / C612

| Item no.  | Knurling wheel (Ø x w x b) [mm] |
|-----------|---------------------------------|
| 22BHR0507 | 14.5 x 3 x 5                    |
| 22BHR0508 | 21.5 x 5 x 8                    |



### COOLANT NOZZLE C611 / C612

| Item no.  | Knurling wheel (Ø x w x b) [mm] |
|-----------|---------------------------------|
| 22BHR0145 | 14.5 x 3 x 5                    |
| 22BHR0136 | 21.5 x 5 x 8                    |



The adjustable coolant nozzle ensures the precise supply of coolant to the workpiece and the knurling wheels.

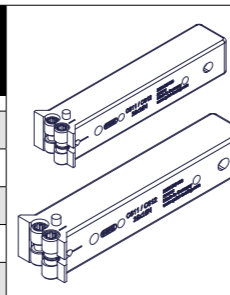
### ADAPTER FOR SWISS TYPE LATHE APPLICATIONS

| Adapter C611 Item no. | Adapter C612 Item no. | Description     |
|-----------------------|-----------------------|-----------------|
| 22BHR0149             | 22BHR0152             | Adapter 10 x 10 |
| 22BHR0148             | 22BHR0151             | Adapter 12 x 12 |
| 22BHR0147             | 22BHR0150             | Adapter 16 x 16 |



### SHANK ASSEMBLED C611 / C612

| Item no.  | Description   |
|-----------|---------------|
| 22BHR0131 | Shank 10 x 16 |
| 22BHR0132 | Shank 12 x 16 |
| 22BHR0133 | Shank 16 x 16 |
| 22BHR0141 | Shank 20 x 25 |
| 22BHR0142 | Shank 25 x 25 |



### HEAD ASSEMBLED

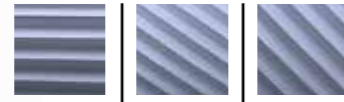
| Head C611 Item no. | Head C612 Item no. | Description   |
|--------------------|--------------------|---------------|
| 22BHR0130          | 22BHR0129          | Shank 10 x 16 |
| 22BHR0130          | 22BHR0129          | Shank 12 x 16 |
| 22BHR0130          | 22BHR0129          | Shank 16 x 16 |
| 22BHR0140          | 22BHR0141          | Shank 20 x 25 |
| 22BHR0140          | 22BHR0141          | Shank 25 x 25 |



## CUT KNURLING TOOL C621



### KNURLING PROFILE ON WORKPIECE (DIN 82):



RAA | RBR30° | RBR45°

### SELECTION OF KNURLING WHEELS (DIN 403):

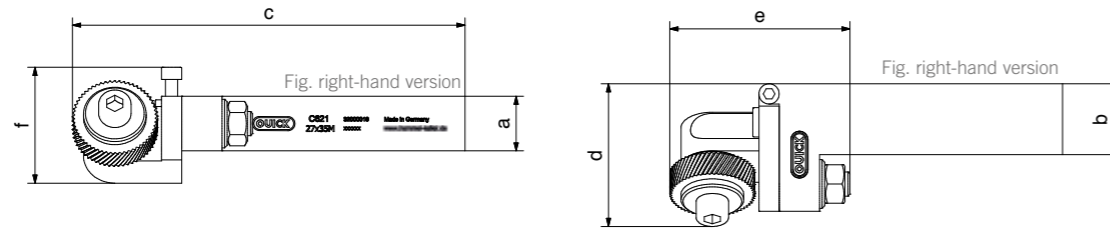
BR30° | AA | BL15°

### PRODUCT FEATURES

- designed for the largest possible workpiece diameter
- ideal for heavy-duty and roll turning lathe etc.
- maximum stability due to solid construction

| Item no.                                     | Model    | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] | Dimensions [mm] |    |     |      |    |      |
|--|----------|------------------|---------------------------------|-----------------|----|-----|------|----|------|
|  |          |                  |                                 | a               | b  | c   | d    | e  | f    |
| 32000018 <input checked="" type="checkbox"/> | C621-27R | 20 - 3000        | 42 x 12 x 18                    | 27              | 35 | 194 | 70.5 | 89 | 57.2 |

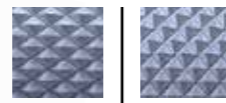
Available from stock



## CUT KNURLING TOOL C622



### KNURLING PROFILE ON WORKPIECE (DIN 82):



RGE30° | RGE45°

### SELECTION OF KNURLING WHEELS (DIN 403):

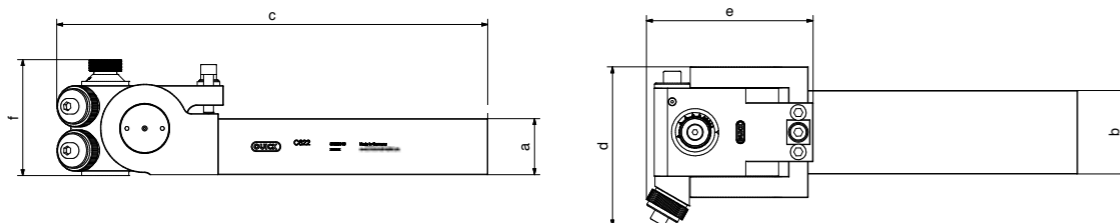
2x AA | 1x BL15°  
1x BR15°

### PRODUCT FEATURES

- designed for the largest possible workpiece diameter
- ideal for heavy-duty and roll turning lathe etc.
- maximum stability due to solid construction
- synchronised knurl carrier for adjusting the working range

| Item no.                                     | Model   | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] | Dimensions [mm] |    |       |       |       |     |
|--|---------|------------------|---------------------------------|-----------------|----|-------|-------|-------|-----|
|  |         |                  |                                 | a               | b  | c     | d     | e     | f   |
| 32000015 <input checked="" type="checkbox"/> | C622-10 | 20 - 1000        | 32 x 8 x 14                     | 40              | 45 | 275.5 | 109   | 115.5 | 79  |
| 32000016 <input checked="" type="checkbox"/> | C622-12 | 30 - 3000        | 42 x 12 x 18                    | 57              | 85 | 438.5 | 161.5 | 169.5 | 118 |

Available from stock



## SPARE PARTS C621 / C622

### E-KIT C621 / C622

| E-KIT 621 Item no. | E-KIT 622 Item no. | Knurling wheel (Ø x w x b) [mm] |
|--------------------|--------------------|---------------------------------|
| —                  | 22BHR0509          | 32 x 8 x 14                     |
| 22BHR0510          | 22BHR0511          | 42 x 12 x 18                    |



## APPLICATION EXAMPLE CUT KNURLING

### C602 VISUAL KNURLING FOR HIGHEST DEMANDS IN DESIGN, OPTICS AND FUNCTIONALITY

PICTURED PROFILE: RGE30° WITH FLATTENED TIPS FOR THE PERFECT HAPTIC



WORKING AREA: 5-250 mm  
KNURLING WHEEL: 2 x AA | 21.5 x 5 x 8

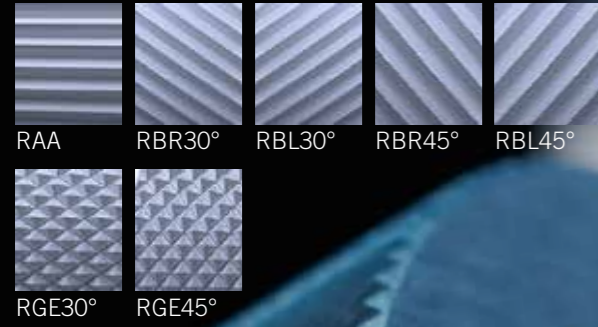


WORKING AREA: 3-50 mm  
KNURLING WHEEL: 2 x AA | 14.5 x 3 x 5

WORKING AREA: 1.5-12 mm  
KNURLING WHEEL: 2 x AA | 8.9 x 2.5 x 4



Possible knurling profiles on the workpiece:



## FORM KNURLING

With form knurling the surface of the workpiece is formed chipless. Cold forming is used to shape the material, which limits its use to materials that are suitable for cold forming.

## ADDED VALUES

- machining of the workpiece by cold forming, which compresses the surface of the workpiece
- knurling is possible up to a workpiece shoulder
- all knurling profiles according to DIN 82 can be produced
- knurling is possible at any position on the workpiece
- knurling of inner and end faces is possible
- conical knurling is possible

## OVERVIEW OF FORM KNURLING TOOLS

With the product finder for form knurling tools you can find your desired QUICK product faster. You receive all relevant tool data, as well as possible profiles, the corresponding knurling wheels and the possible direction of machining at a glance.

| Tool series             | Workpiece Ø [mm] | Profile on workpiece | Profile on knurling wheel | Shank [mm]   | Knurling wheel Ø [mm] | Knurling   | RAA  | RBL | RBR | RGE |
|-------------------------|------------------|----------------------|---------------------------|--------------|-----------------------|--|--|-----|-----|-----|
| <p>F701<br/>PAGE 18</p> | 2.5 – 30         | RAA                  | AA                        | 10 / 12 / 16 | 10 / 15               | Workpiece centre / without plunge cut (radial)       | ●  | ●   | ●   | –   |
|                         | 10 – 50          | RBR30°               | BL30°                     |              |                       | Starting at workpiece beginning                      | ●  | ●   | ●   | –   |
|                         | 8 – 200          | RBL30°               | BR30°                     |              |                       | Starting in centre of workpiece / after plunge cut   | ●  | ●   | ●   | –   |
|                         |                  | RBR45°               | BL45°                     |              | 20 / 25               | 20 / 25  | Starting in centre of workpiece / without plunge cut | ●   | ●   | ●   |
|                         |                  | RBL45°               | BR45°                     |              |                       | Up to a shoulder                                     | –  | –   | –   | –   |
|                         |                  |                      |                           |              |                       | Starting at workpiece beginning up to the collar     | –  | –   | –   | –   |
| <p>F711<br/>PAGE 19</p> | 2.5 – 24         | RAA                  | 2 x AA                    | 10 / 12 / 16 | 10                    | Workpiece centre / without plunge cut (radial)       | ●  | ●   | ●   | ●   |
|                         | 7 – 120          | RBR30°               | 2 x BL30°                 |              |                       | Starting at workpiece beginning                      | ●  | ●   | ●   | ●   |
|                         |                  | RBL30°               | 2 x BR30°                 |              |                       | Starting in centre of workpiece / after plunge cut   | ●  | ●   | ●   | ●   |
|                         |                  | RBR45°               | 2 x BL45°                 |              |                       | Starting in centre of workpiece / without plunge cut | ●  | ●   | ●   | ●   |
|                         |                  | RBL45°               | 2 x BR45°                 |              |                       | Up to a shoulder                                     | –  | –   | –   | –   |
|                         |                  | RGE30°               | 1 x BR30° + 1 x BL30°     | 20 / 25      | 20                    | Starting at workpiece beginning up to the collar     | –  | –   | –   | –   |
|                         |                  | RGE45°               | 1 x BR45° + 1 x BL45°     |              |                       |  | –  | –   | –   | –   |
| <p>F712<br/>PAGE 20</p> | 3.5 – 50         | RAA                  | 2 x AA                    | 8 / 10 / 12  | 9.8                   | Workpiece centre / without plunge cut (radial)       | ●  | ●   | ●   | ●   |
|                         | 7 – 120          | RBR30°               | 2 x BL30°                 |              |                       | Starting at workpiece beginning                      | ●  | ●   | ●   | ●   |
|                         |                  | RBL30°               | 2 x BR30°                 |              |                       | Starting in centre of workpiece / after plunge cut   | ●  | ●   | ●   | ●   |
|                         |                  | RBR45°               | 2 x BL45°                 |              |                       | Starting in centre of workpiece / without plunge cut | ●  | ●   | ●   | ●   |
|                         |                  | RBL45°               | 2 x BR45°                 |              |                       | Up to a shoulder                                     | ●  | ●   | ●   | ●   |
|                         |                  | RGE30°               | 1 x BR30° + 1 x BL30°     | 20 / 25      | 20                    | Starting at workpiece beginning up to the collar     | ●  | ●   | ●   | ●   |
|                         |                  | RGE45°               | 1 x BR45° + 1 x BL45°     |              |                       |  | ●  | ●   | ●   | ●   |
| <p>F751<br/>PAGE 21</p> | 5 – 20*          | RAA                  | 2 x AA                    |              | 10                    | Workpiece centre / without plunge cut (radial)       | ●  | ●   | ●   | ●   |
|                         | 0 – 15           | RBR30°               | 2 x BL30°                 |              |                       | Starting at workpiece beginning                      | ●  | ●   | ●   | ●   |
|                         |                  | RBL30°               | 2 x BR30°                 |              |                       | Starting in centre of workpiece / after plunge cut   | ●  | ●   | ●   | ●   |
|                         |                  | RBR45°               | 2 x BL45°                 |              |                       | Starting in centre of workpiece / without plunge cut | ●  | ●   | ●   | ●   |
|                         |                  | RBL45°               | 2 x BR45°                 |              |                       | Up to a shoulder                                     | –  | –   | –   | –   |
|                         |                  | RGE30°               | 1 x BR30° + 1 x BL30°     | 12           | 15                    | Starting at workpiece beginning up to the collar     | –  | –   | –   | –   |
|                         |                  | RGE45°               | 1 x BR45° + 1 x BL45°     |              |                       |  | –  | –   | –   | –   |
| <p>F761<br/>PAGE 22</p> | 10 – 45          | RAA                  | 2 x AA                    | 20 / 25      | 20 / 25               | Workpiece centre / without plunge cut (radial)       | ●  | ●   | ●   | ●   |
|                         |                  | RBR30°               | 2 x BL30°                 |              |                       | Starting at workpiece beginning                      | ●  | ●   | ●   | ●   |
|                         |                  | RBL30°               | 2 x BR30°                 |              |                       | Starting in centre of workpiece / after plunge cut   | ●  | ●   | ●   | ●   |
|                         |                  | RBR45°               | 2 x BL45°                 |              |                       | Starting in centre of workpiece / without plunge cut | ●  | ●   | ●   | ●   |
|                         |                  | RBL45°               | 2 x BR45°                 |              |                       | Up to a shoulder                                     | –  | –   | –   | –   |
|                         |                  | RGE30°               | 1 x BR30° + 1 x BL30°     |              |                       | Starting at workpiece beginning up to the collar     | –  | –   | –   | –   |
|                         |                  | RGE45°               | 1 x BR45° + 1 x BL45°     |              |                       |  | –  | –   | –   | –   |

\*possibly parameter adjustment is necessary on the machine

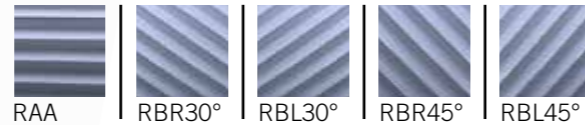
**NEW**



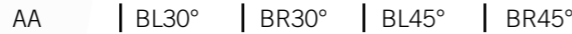
# FORM KNURLING TOOL F701



### KNURLING PROFILE ON WORKPIECE (DIN 82):



### SELECTION OF KNURLING WHEELS (DIN 403):

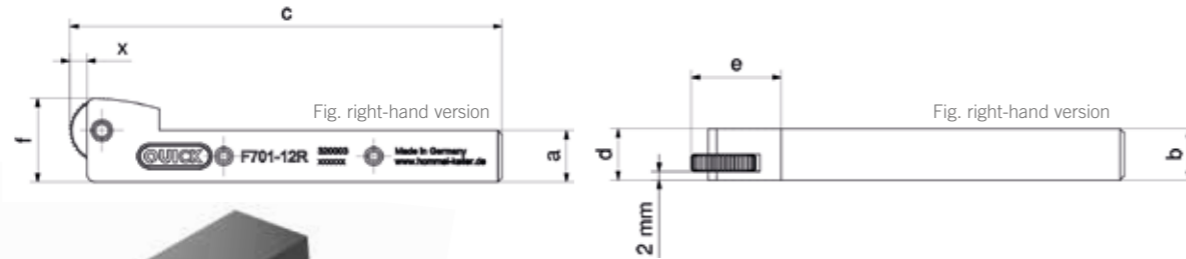


### PRODUCT FEATURES

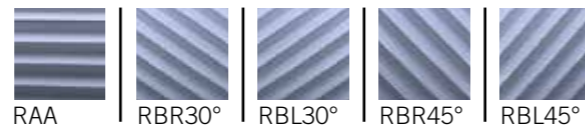
- small, stable and compact for fast, single-wheel use
- firmly defined center height
- adjustment of the axis parallelism possible

| Item no. (right-hand version)                | Item no. (left-hand version) | Model   | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] | Dimensions [mm] |    |     |    |    |      |       |  |
|--|------------------------------|---------|------------------|---------------------------------|-----------------|----|-----|----|----|------|-------|--|
|  |                              |         |                  |                                 | a               | b  | c   | d  | e  | f    | x     |  |
| 32000398 <input checked="" type="checkbox"/> | 32000406                     | F701-10 | 2.5/10-30/50     | 10/15 x 4 x 4                   | 10              | 10 | 101 | 12 | 21 | 18.5 | 1.5/4 |  |
| 32000402 <input checked="" type="checkbox"/> | 32000407                     | F701-12 | 2.5/10-30/50     | 10/15 x 4 x 4                   | 12              | 12 | 101 | 12 | 21 | 19.5 | 1.5/4 |  |
| 32000403 <input checked="" type="checkbox"/> | 32000408                     | F701-16 | 2.5/10-30/50     | 10/15 x 4 x 4                   | 16              | 16 | 101 | 16 | 21 | 23.5 | 1.5/4 |  |

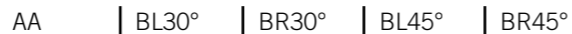
Available from stock



### KNURLING PROFILE ON WORKPIECE (DIN 82):



### SELECTION OF KNURLING WHEELS (DIN 403):

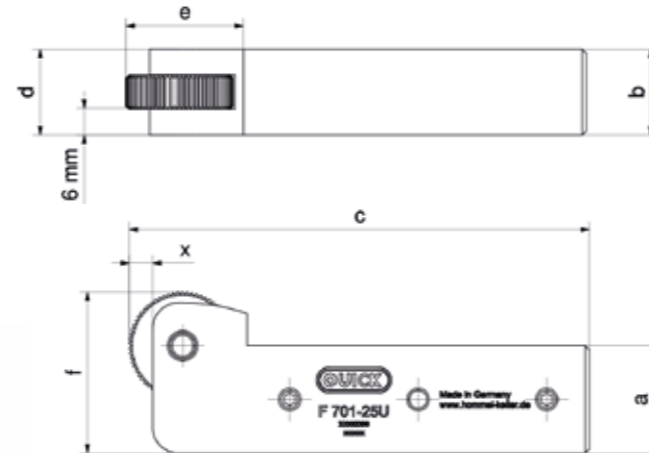


### PRODUCT FEATURES

- stable and compact for fast, single-wheel use
- firmly defined center height
- adjustment of the axis parallelism possible

| Item no.                                     | Model    | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] | Dimensions [mm] |    |       |    |      |      |       |  |
|--|----------|------------------|---------------------------------|-----------------|----|-------|----|------|------|-------|--|
|  |          |                  |                                 | a               | b  | c     | d  | e    | f    | x     |  |
| 32000399 <input checked="" type="checkbox"/> | F701-20U | 8 - 200          | 20/25 x 8 x 6                   | 20              | 20 | 107.5 | 20 | 27.5 | 32.5 | 3/5.5 |  |
| 32000404 <input checked="" type="checkbox"/> | F701-25U | 8 - 200          | 20/25 x 8 x 6                   | 25              | 20 | 107.5 | 20 | 27.5 | 37.5 | 3/5.5 |  |

Available from stock



## SPARE PARTS F701

### PIN F701

| Item no.  | Knurling wheel (Ø x w x b) [mm] | Shank dimensions [mm] |
|-----------|---------------------------------|-----------------------|
| 06TER1015 | 10/15 x 4 x 4                   | 10 x 12 / 12 x 12     |
| 06TER1036 | 10/15 x 4 x 4                   | 16 x 16               |
| 06TER1018 | 20/25 x 8 x 6                   | 20 x 20 / 25 x 20     |



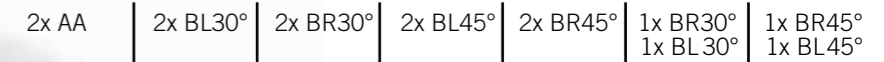
# FORM KNURLING TOOL F711



### KNURLING PROFILE ON WORKPIECE (DIN 82):



### SELECTION OF KNURLING WHEELS (DIN 403):

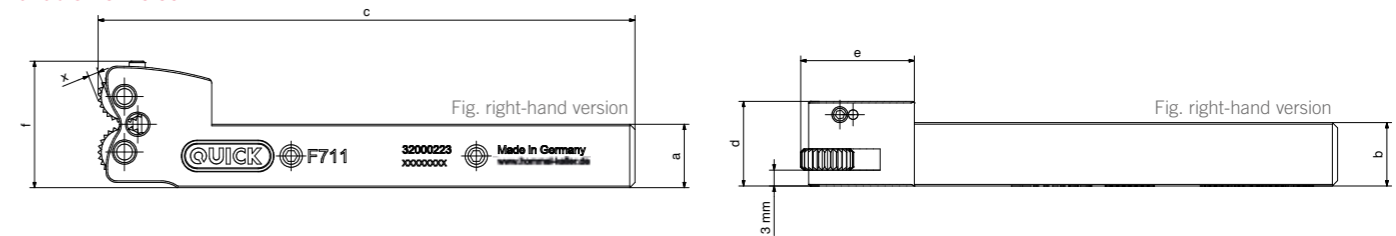


### PRODUCT FEATURES

- all common knurl profiles can be produced
- firmly defined center height
- adjustment of the axis parallelism possible

| Item no. (right-hand version)                | Item no. (left-hand version) | Model   | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] | Dimensions [mm] |    |       |      |      |    |   |  |
|--|------------------------------|---------|------------------|---------------------------------|-----------------|----|-------|------|------|----|---|--|
|  |                              |         |                  |                                 | a               | b  | c     | d    | e    | f  | x |  |
| 32000226 <input checked="" type="checkbox"/> | 32000353                     | F711-10 | 2.5 - 24         | 10 x 4 x 4                      | 10              | 10 | 101.5 | 16.5 | 21.5 | 24 | 2 |  |
| 32000223 <input checked="" type="checkbox"/> | 32000368                     | F711-12 | 2.5 - 24         | 10 x 4 x 4                      | 12              | 12 | 101.5 | 16.5 | 21.5 | 24 | 2 |  |
| 32000367 <input checked="" type="checkbox"/> | 32000369                     | F711-16 | 2.5 - 24         | 10 x 4 x 4                      | 16              | 16 | 101.5 | 16.5 | 21.5 | 24 | 2 |  |

Available from stock

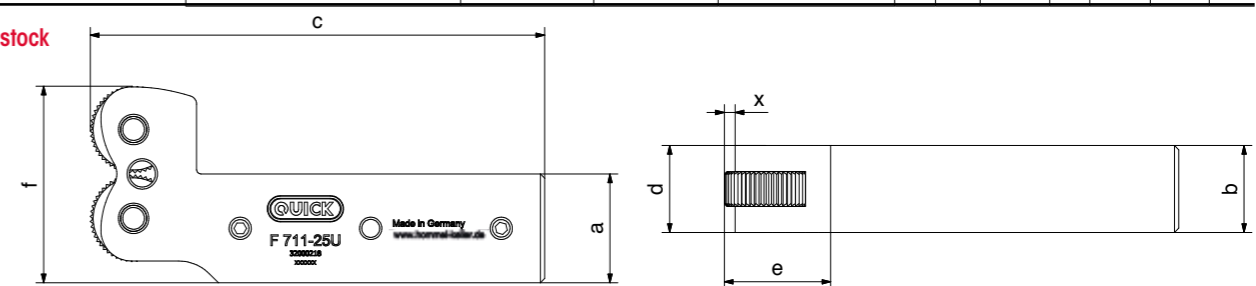


### PRODUCT FEATURES

- all common knurl profiles can be produced
- firmly defined center height
- adjustment of the axis parallelism possible

| Item no.                                     | Model    | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] | Dimensions [mm] |    |       |    |      |      |     |  |
|--|----------|------------------|---------------------------------|-----------------|----|-------|----|------|------|-----|--|
|  |          |                  |                                 | a               | b  | c     | d  | e    | f    | x   |  |
| 32000217 <input checked="" type="checkbox"/> | F711-20U | 7 - 120          | 20 x 8 x 6                      | 20              | 20 | 104.5 | 20 | 24.5 | 40.4 | 2.5 |  |
| 32000218 <input checked="" type="checkbox"/> | F711-25U | 7 - 120          | 20 x 8 x 6                      | 25              | 20 | 104.5 | 20 | 24.5 | 45.2 | 2.5 |  |

Available from stock



## SPARE PARTS F711

### PIN F711

| Item no.  | Knurling wheel (Ø x w x b) [mm] |
|-----------|---------------------------------|
| 06TER1036 | 10 x 4 x 4                      |
| 06TER0965 | 20 x 8 x 6                      |



# FORM KNURLING TOOL F712

**NEW**



### KNURLING PROFILE ON WORKPIECE (DIN 82):



### SELECTION OF KNURLING WHEELS (DIN 403):

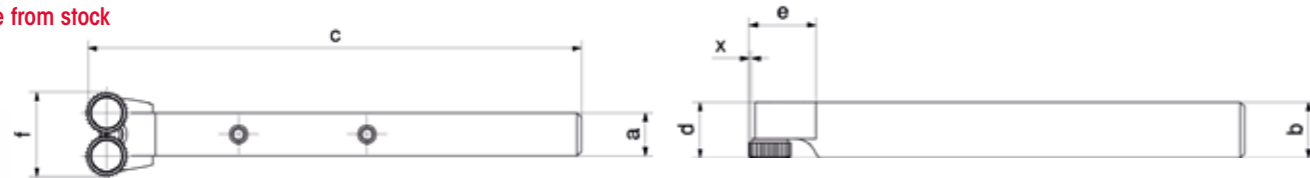
|       |          |          |          |          |                      |                      |
|-------|----------|----------|----------|----------|----------------------|----------------------|
| 2x AA | 2x BL30° | 2x BR30° | 2x BL45° | 2x BR45° | 1x BR30°<br>1x BL30° | 1x BR45°<br>1x BL45° |
|-------|----------|----------|----------|----------|----------------------|----------------------|

### PRODUCT FEATURES

- optimized for swiss type lathe applications
- very small and compact design
- all common knurl profiles can be produced
- knurling up to a shoulder
- firmly defined center height
- adjustment of the axis parallelism possible

| Item no.                                     | Model       | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] | Dimensions [mm] |    |       |    |      |      |   |  |
|--|-------------|------------------|---------------------------------|-----------------|----|-------|----|------|------|---|--|
|  |             |                  |                                 | a               | b  | c     | d  | e    | f    | x |  |
| 32000375 <input checked="" type="checkbox"/> | F712-08U-LD | 3 - 45           | 9,8 x 3,5 x 6A7,5               | 8               | 8  | 115.7 | 13 | 15.7 | 19.8 | 1 |  |
| 32000419 <input checked="" type="checkbox"/> | F712-10U-LD | 3 - 45           | 9,8 x 3,5 x 6A7,5               | 10              | 10 | 115.7 | 13 | 15.7 | 19.8 | 1 |  |
| 32000420 <input checked="" type="checkbox"/> | F712-12U-LD | 3 - 45           | 9,8 x 3,5 x 6A7,5               | 12              | 12 | 115.7 | 13 | 15.7 | 19.8 | 1 |  |

Available from stock



### KNURLING PROFILE ON WORKPIECE (DIN 82):



### SELECTION OF KNURLING WHEELS (DIN 403):

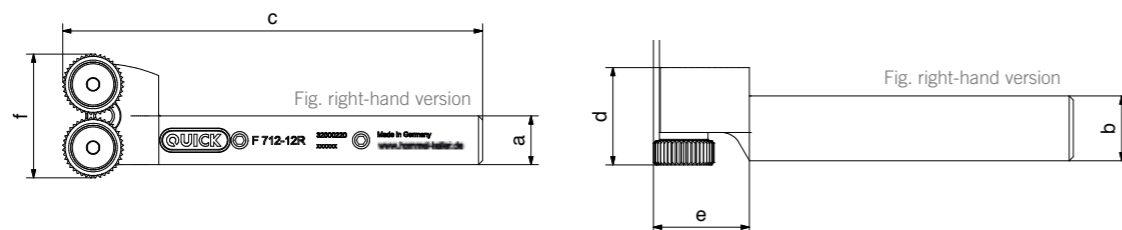
|       |          |          |          |          |                      |                      |
|-------|----------|----------|----------|----------|----------------------|----------------------|
| 2x AA | 2x BL30° | 2x BR30° | 2x BL45° | 2x BR45° | 1x BR30°<br>1x BL30° | 1x BR45°<br>1x BL45° |
|-------|----------|----------|----------|----------|----------------------|----------------------|

### PRODUCT FEATURES

- knurling up to a shoulder
- all common knurl profiles can be produced
- firmly defined center height
- adjustment of the axis parallelism possible

| Item no. (right-hand version)                | Item no. (left-hand version) | Model    | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] | Dimensions [mm] |    |       |      |      |      |     |  |
|--|------------------------------|----------|------------------|---------------------------------|-----------------|----|-------|------|------|------|-----|--|
| a  | b                            | c        | d                | e                               | f               | x  |       |      |      |      |     |  |
| 32000219 <input checked="" type="checkbox"/> | 32000229                     | F712-10  | 3.5 - 50         | 15 x 6 x 6A11                   | 10              | 16 | 104.5 | 24   | 23.7 | 30.6 | 1.5 |  |
| 32000220 <input checked="" type="checkbox"/> | 32000230                     | F712-12  | 3.5 - 50         | 15 x 6 x 6A11                   | 12              | 16 | 104.5 | 24   | 23.7 | 30.6 | 1.5 |  |
| 32000370 <input checked="" type="checkbox"/> | 32000371                     | F712-16  | 3.5 - 50         | 15 x 6 x 6A11                   | 16              | 16 | 104.5 | 24   | 23.7 | 30.6 | 1.5 |  |
| 32000209 <input checked="" type="checkbox"/> |                              | F712-20U | 7 - 120          | 20 x 8 x 6A13                   | 20              | 20 | 104.5 | 26.5 | 24.5 | 40.4 | 2.5 |  |
| 32000210 <input checked="" type="checkbox"/> |                              | F712-25U | 7 - 120          | 20 x 8 x 6A13                   | 25              | 20 | 104.5 | 26.5 | 24.5 | 45.2 | 2.5 |  |

Available from stock



# SPARE PARTS F712

### E-KIT F712

| Item no.  | Knurling wheel (Ø x w x b) [mm] |
|-----------|---------------------------------|
| 22BHR2126 | 9.8 x 3.5 x 6A7.5               |
| 22BHR0548 | 15 x 6 x 6A11                   |
| 22BHR0538 | 20 x 8 x 6A13                   |



# FORM KNURLING TOOL F751



### KNURLING PROFILE ON WORKPIECE (DIN 82):



### SELECTION OF KNURLING WHEELS (DIN 403):

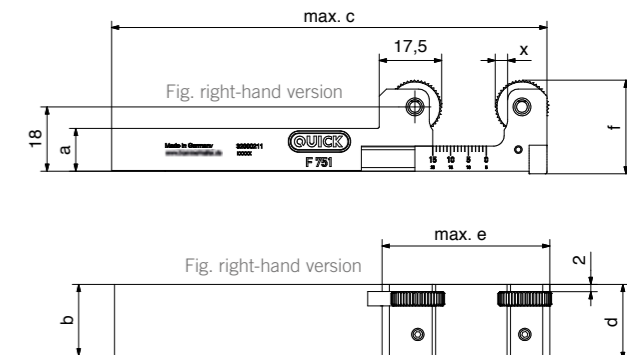
|       |          |          |          |          |                      |                      |
|-------|----------|----------|----------|----------|----------------------|----------------------|
| 2x AA | 2x BL30° | 2x BR30° | 2x BL45° | 2x BR45° | 1x BR30°<br>1x BL30° | 1x BR45°<br>1x BL45° |
|-------|----------|----------|----------|----------|----------------------|----------------------|

### PRODUCT FEATURES

- high process stability due to tangential machining
- optimized for swiss type lathe applications
- eliminates double workplace allocation in the slide unit
- user-friendly handling

| Item no. (right-hand version)                | Model   | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] | Dimensions [mm] |    |          |    |         |    |     |  |
|--|---------|------------------|---------------------------------|-----------------|----|----------|----|---------|----|-----|--|
|  |         |                  |                                 | a               | b  | c        | d  | e       | f  | x   |  |
| 32000211 <input checked="" type="checkbox"/> | F751-12 | 5 - 20           | 10 x 4 x 4                      | 12              | 20 | max. 122 | 21 | max. 47 | 26 | 1   |  |
|  |         | 0 - 15           | 15 x 4 x 4                      |                 |    |          |    |         |    | 3.5 |  |

Available from stock



# SPARE PARTS F751

### PIN F751

| Item no.  | Knurling wheel (Ø x w x b) [mm] |
|-----------|---------------------------------|
| 06TER0964 | 10 / 15 x 4 x 4                 |



# FORM KNURLING TOOL F761

**NEW**



## KNURLING PROFILE ON WORKPIECE (DIN 82):



## SELECTION OF KNURLING WHEELS (DIN 403):

|       |          |          |          |          |                      |                      |
|-------|----------|----------|----------|----------|----------------------|----------------------|
| 2x AA | 2x BL30° | 2x BR30° | 2x BL45° | 2x BR45° | 1x BR30°<br>1x BL30° | 1x BR45°<br>1x BL45° |
|-------|----------|----------|----------|----------|----------------------|----------------------|

## PRODUCT FEATURES

- high process stability to tangential machining
- knurl carrier can be adjusted separately
- force neutralisation due to tangential machining
- easy compensation of out-of-roundness due to special interface
- extension of the working area by exchange of jaws and knurling wheels
- quick and easy adjustment of the working area with the enclosed setting gauge

| Item no.                                     | Model    | Workpiece Ø [mm] | Knurling wheel (Ø x w x b) [mm] | Dimensions [mm] |    |       |    |      |    |     |  |
|--|----------|------------------|---------------------------------|-----------------|----|-------|----|------|----|-----|--|
|  |          |                  |                                 | a               | b  | c     | d  | e    | f  | x   |  |
| 32000354 <input checked="" type="checkbox"/> | F761-20M | 0 – 23           | 15 x 4 x 4                      | 20              | 25 | 148.5 | 30 | 68.5 | 50 | 1.5 |  |
| 32000411 <input checked="" type="checkbox"/> |          | 23 – 44          | 20 x 6 x 6                      |                 |    | 162   |    | 82   | 62 | 3   |  |
| 32000413 <input checked="" type="checkbox"/> | F761-25M | 0 – 23           | 15 x 4 x 4                      | 25              | 25 | 148.5 | 30 | 68.5 | 50 | 1.5 |  |
| 32000412 <input checked="" type="checkbox"/> |          | 23 – 44          | 20 x 6 x 6                      |                 |    | 162   |    | 82   | 62 | 3   |  |

Available from stock

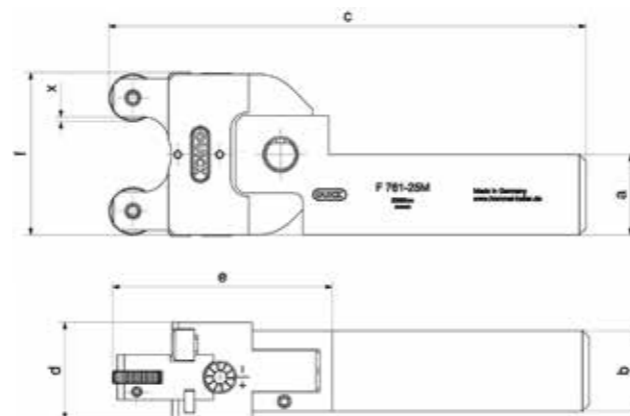
## SPARE PARTS F761

### PIN F761

| Item no.  | Knurling wheel (Ø x w x b) [mm] |  |
|-----------|---------------------------------|--|
| 21BHR1306 | 15 x 4 x 4                      |  |
| 21BHR1459 | 20 x 6 x 6                      |  |

### JAWS F761

| Item no.  | Knurling wheel (Ø x w x b) [mm] |  |
|-----------|---------------------------------|--|
| 22BHR0740 | 15 x 4 x 4                      |  |
| 22BHR0739 | 20 x 6 x 6                      |  |



# APPLICATION EXAMPLE FORM KNURLING

## F701 | F711 TWO PROFILES ON ONE WORKPIECE WITHIN ONE MACHINING PROCESS



PROFILE RBR45°

PROFILE RBL45°



F701 | USE OF TWO TOOLS

KNURLING WHEELS: 1x BL45° | 1x BR45°



F711 | ADJUSTMENT VIA THE Y-AXIS

KNURLING WHEELS: 1x BL45° | 1x BR45°

## F711 | F761 PROFILE RGE



PROFILE RGE30°



F711 | VERY HIGH PROCESS STABILITY

KNURLING WHEELS: 1x BL30° | 1x BR30°



F761 | OPTIMAL FORCE NEUTRALISATION - PERFECT FOR LONG AND THIN-WALLED WORKPIECES

KNURLING WHEELS: 1x BL30° | 1x BR30°

## F701 | F712 PROFILE RAA



PROFILE RAA



F701 | USER-FRIENDLY HANDLING,

VERY HIGH PROCESS STABILITY

KNURLING WHEEL: 1x AA



F712 | PROFILE UP TO A SHOULDER

KNURLING WHEELS: 2x AA

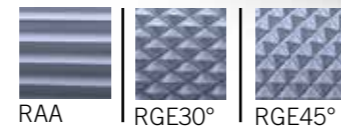
# ONE TOOL FOR FORM KNURLING AND CUT KNURLING

## KNURLING TOOL WITH

KNURLING TOOL  
WITH CUT JAWS:  
**C693**



KNURLING PROFILE ON WORKPIECE (DIN 82) WITH C693:



SELECTION OF KNURLING WHEELS (DIN 403):

1x BR30° | 3x AA | 2x BR15°  
2x BL30° | 1x BL15°

## INTERCHANGEABLE JAWS

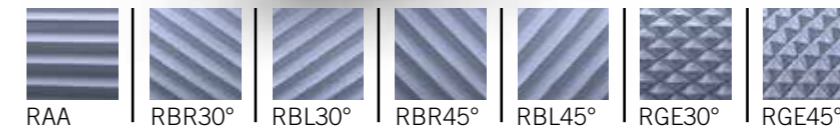
KNURLING TOOL  
WITH FORM JAWS  
**F791**



KNURLING TOOL  
WITH FORM JAWS  
**F792**



KNURLING PROFILE ON WORKPIECE (DIN 82) WITH F791 AND F792:



SELECTION OF KNURLING WHEELS (DIN 403):

3x AA | 3x BL30° | 3x BR30° | 3x BL45° | 3x BR45° | 1x BR30° | 1x BR45°  
2x BL30° | 2x BL45°  
2x BR30° | 2x BR45°  
1x BL30° | 1x BL45° or

### PRODUCT FEATURES

- knurl holders individually adjustable
- maximum process stability
- all knurling processes can be used by exchanging the jaws
- suitable for very small installation spaces due to compact design
- force reduction through three-point machining

### PRODUCT FEATURES F792

- knurling up to a shoulder

| Item no.                                     | Model | Workpiece<br>Ø [mm] | Knurling wheel<br>(Ø x w x b)<br>[mm] | Dimensions [mm]  |    |    |    |    |                  |     |
|--|-------|---------------------|---------------------------------------|------------------|----|----|----|----|------------------|-----|
|  |       |                     |                                       | d <sub>max</sub> | e  | j  | k  | l  | n <sub>max</sub> | x   |
| 32000030 <input checked="" type="checkbox"/> | C693  | 3.5 – 20            | 14.5 x 3 x 5                          | 75               | 57 | 20 | 54 | 20 | 38               | 1.7 |
| 32000029 <input checked="" type="checkbox"/> |       | 5.5 – 35            | 21.5 x 5 x 8                          | 125              | 92 | 35 | 95 | 40 | 69               | 1.7 |
| 32000072 <input checked="" type="checkbox"/> | F791  | 2.6 – 20            | 10 x 4 x 4                            | 75               | 53 | 20 | 54 | 16 | 32               | 1   |
|  |       | 3.5 – 20            | 15 x 4 x 4                            |                  |    |    |    |    |                  | 3.5 |
| 32000206 <input checked="" type="checkbox"/> | F792  | 3.5 – 20            | 15 x 6 x 6A11                         | 75               | 54 | 20 | 54 | 17 | 41               | 1.5 |

Available from stock

Tool is delivered without shank.

## SPARE PARTS

SHANKS C693 (14.5x3x5) / F791 / F792

| Item no.  | Ø „a“<br>[mm] | Bore „i“<br>[mm] | Length „h“<br>[mm] |
|-----------|---------------|------------------|--------------------|
| 22BHR0119 | 15            | 9                | 50                 |
| 22BHR0121 | 20            | 10               | 50                 |
| 22BHR0644 | 22            | 14               | 50                 |
| 22BHR0122 | 25            | 15               | 50                 |

SHANKS C693 (21.5x5x8)

| Item no.  | Ø „a“<br>[mm] | Bore „i“<br>[mm] | Length „h“<br>[mm] |
|-----------|---------------|------------------|--------------------|
| 22BHR0103 | 20            | 10               | 70                 |
| 22BHR0104 | 25            | 15               | 70                 |

INTERCHANGEABLE JAWS

| Item no.  | Description                       | Tool |
|-----------|-----------------------------------|------|
| 22BHR0536 | cut knurling                      | C693 |
| 22BHR0490 | form knurling                     | F791 |
| 22BHR0537 | form knurling<br>up to a shoulder | F792 |

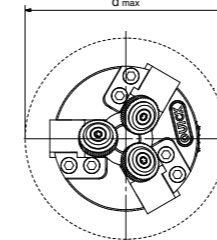
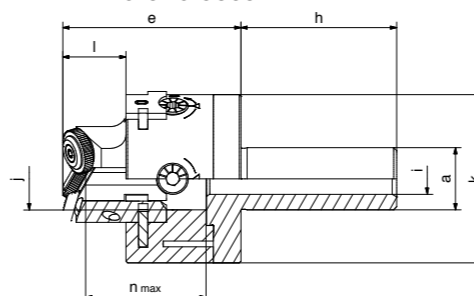
E-KIT

| Item no.<br>C693 | Item no.<br>F792 | Knurling wheel<br>(Ø x w x b)<br>[mm] |
|------------------|------------------|---------------------------------------|
| 22BHR0507        | –                | 14.5 x 3 x 5                          |
| 22BHR0508        | –                | 21.5 x 5 x 8                          |
| –                | 22BHR0548        | 15 x 6 x 6A11                         |

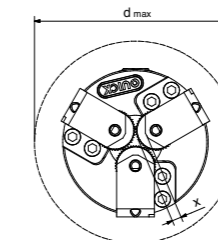
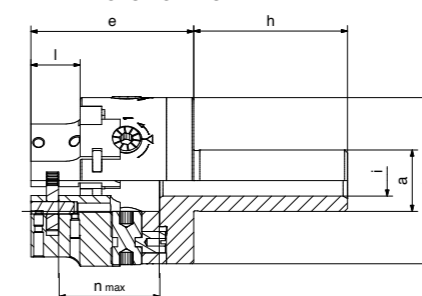
PIN

| Item no.  |
|-----------|
| F791      |
| 21BHR1306 |

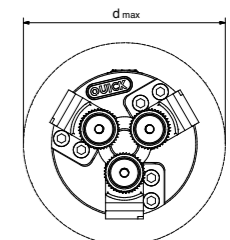
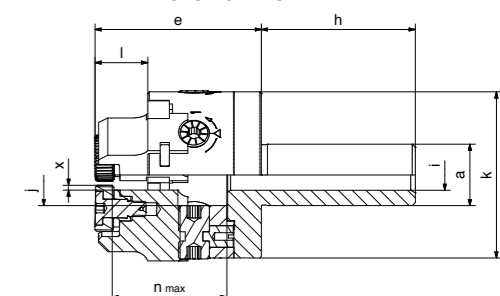
### DIMENSIONS C693



### DIMENSIONS F791



### DIMENSIONS F792





# KNURLING WHEELS

The QUICK knurling wheels listed here are available from stock. Daily updated stock levels are available for you in our trade partner portal on our website ([www.hommel-keller.de](http://www.hommel-keller.de)).

All orders that reach us by 2 pm, will be shipped on the same day.

Of course QUICK knurling wheels with special dimensions and special pitches are available on request.



# OVERVIEW KNURLING WHEELS FORMING



AA

QUICK knurling wheels according to DIN 403 for profiles according to DIN 82, with 45° chamfer, PM

## Profile AA

| Item no. | Product group | Profile | Spiral angel | Ø (mm) | Width (mm) | Bore (mm) | Pitch (mm) |
|----------|---------------|---------|--------------|--------|------------|-----------|------------|
| 42010587 | 130           | AA      | 0            | 9.8    | 3.5        | 6A7.5     | 0.5        |
| 42010588 | 130           | AA      | 0            | 9.8    | 3.5        | 6A7.5     | 0.6        |
| 42010589 | 130           | AA      | 0            | 9.8    | 3.5        | 6A7.5     | 0.8        |
| 42010590 | 130           | AA      | 0            | 9.8    | 3.5        | 6A7.5     | 1.0        |
| 42000838 | 111           | AA      | 0            | 10     | 4          | 4         | 0.3        |
| 42000839 | 111           | AA      | 0            | 10     | 4          | 4         | 0.4        |
| 42000840 | 111           | AA      | 0            | 10     | 4          | 4         | 0.5        |
| 42000841 | 111           | AA      | 0            | 10     | 4          | 4         | 0.6        |
| 42001175 | 111           | AA      | 0            | 10     | 4          | 4         | 0.7        |
| 42000842 | 111           | AA      | 0            | 10     | 4          | 4         | 0.8        |
| 42000843 | 111           | AA      | 0            | 10     | 4          | 4         | 1.0        |
| 42000859 | 111           | AA      | 0            | 15     | 4          | 4         | 0.3        |
| 42000860 | 111           | AA      | 0            | 15     | 4          | 4         | 0.4        |
| 42000861 | 111           | AA      | 0            | 15     | 4          | 4         | 0.5        |
| 42000862 | 111           | AA      | 0            | 15     | 4          | 4         | 0.6        |
| 42001191 | 111           | AA      | 0            | 15     | 4          | 4         | 0.7        |
| 42000863 | 111           | AA      | 0            | 15     | 4          | 4         | 0.8        |
| 42000864 | 111           | AA      | 0            | 15     | 4          | 4         | 1.0        |
| 42000866 | 111           | AA      | 0            | 15     | 4          | 4         | 1.2        |
| 42000975 | 111           | AA      | 0            | 15     | 6          | 6A11      | 0.5        |
| 42001624 | 111           | AA      | 0            | 15     | 6          | 6A11      | 0.6        |
| 42001786 | 111           | AA      | 0            | 15     | 6          | 6A11      | 0.8        |
| 42001941 | 111           | AA      | 0            | 15     | 6          | 6A11      | 1.0        |
| 42010551 | 111           | AA      | 0            | 20     | 6          | 6         | 0.3        |
| 42010552 | 111           | AA      | 0            | 20     | 6          | 6         | 0.4        |
| 42010553 | 111           | AA      | 0            | 20     | 6          | 6         | 0.5        |
| 42010554 | 111           | AA      | 0            | 20     | 6          | 6         | 0.6        |
| 42010555 | 111           | AA      | 0            | 20     | 6          | 6         | 0.7        |
| 42010556 | 111           | AA      | 0            | 20     | 6          | 6         | 0.8        |
| 42000708 | 111           | AA      | 0            | 20     | 6          | 6         | 1.0        |
| 42000870 | 111           | AA      | 0            | 20     | 6          | 6         | 1.2        |
| 42000871 | 111           | AA      | 0            | 20     | 6          | 6         | 1.5        |
| 42010560 | 111           | AA      | 0            | 20     | 6          | 6         | 1.6        |
| 42010561 | 111           | AA      | 0            | 20     | 6          | 6         | 2.0        |
| 42001537 | 111           | AA      | 0            | 20     | 8          | 6         | 0.3        |
| 42001542 | 111           | AA      | 0            | 20     | 8          | 6         | 0.4        |
| 42000929 | 111           | AA      | 0            | 20     | 8          | 6         | 0.5        |
| 42000930 | 111           | AA      | 0            | 20     | 8          | 6         | 0.6        |
| 42000931 | 111           | AA      | 0            | 20     | 8          | 6         | 0.8        |
| 42000943 | 111           | AA      | 0            | 20     | 8          | 6         | 1.0        |
| 42000932 | 111           | AA      | 0            | 20     | 8          | 6         | 1.2        |
| 42000933 | 111           | AA      | 0            | 20     | 8          | 6         | 1.5        |
| 42001539 | 111           | AA      | 0            | 20     | 8          | 6         | 1.6        |
| 42000883 | 111           | AA      | 0            | 20     | 8          | 6         | 2.0        |

## Profile AA

| Item no. | Product group | Profile | Spiral angel | Ø (mm) | Width (mm) | Bore (mm) | Pitch (mm) |
|----------|---------------|---------|--------------|--------|------------|-----------|------------|
| 42001510 | 111           | AA      | 0            | 20     | 8          | 6A13      | 0,5        |
| 42001506 | 111           | AA      | 0            | 20     | 8          | 6A13      | 0,6        |
| 42001507 | 111           | AA      | 0            | 20     | 8          | 6A13      | 0,8        |
| 42000808 | 111           | AA      | 0            | 20     | 8          | 6A13      | 1,0        |
| 42001508 | 111           | AA      | 0            | 20     | 8          | 6A13      | 1,2        |
| 42001509 | 111           | AA      | 0            | 20     | 8          | 6A13      | 1,5        |
| 42001161 | 111           | AA      | 0            | 25     | 8          | 6         | 0,5        |
| 42001157 | 111           | AA      | 0            | 25     | 8          | 6         | 0,6        |
| 42000832 | 111           | AA      | 0            | 25     | 8          | 6         | 0,8        |
| 42000833 | 111           | AA      | 0            | 25     | 8          | 6         | 1,0        |
| 42001158 | 111           | AA      | 0            | 25     | 8          | 6         | 1,2        |
| 42001159 | 111           | AA      | 0            | 25     | 8          | 6         | 1,5        |







# QUICK MARKING TOOL

- Marking workpieces in seconds
- on a wide variety of geometries independent of the workpiece diameter
- changing marking text thanks to interchangeable marking segments
- for machines with small installation space
- marking up to a shoulder

## MARKING TOOL



### PRODUCT FEATURES

- modular shank design
- top edge of shank = centre height
- set screws in shank for correcting alignment
- hardened pin
- exact positioning of the marking on the circumference of the workpiece
- center height corresponds to the first marking point
- marking position individually adjustable

## SPARE PARTS QBW 432

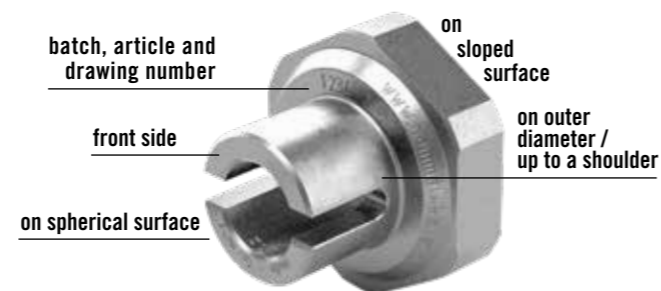
### E-KIT - small version

| Item no.  | Direction |  |
|-----------|-----------|--|
| 22BHR0714 | right     |  |

### E-KIT - big version

| Item no.  | Direction |  |
|-----------|-----------|--|
| 22BHR0713 | right     |  |

### MARKING THE MOST DIFFERENT WORKPIECE GEOMETRIES



## SET QBW 432

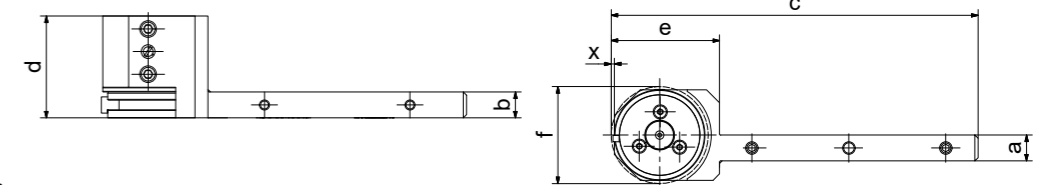
for QBW 432-30 - small version

### SET CONSISTING OF:

- 1 x base shank (solid shank version) tool 432-08R
- 1 x shank adapter 10 mm x 10 mm
- 1 x shank adapter 12 mm x 12 mm
- 1 x shank adapter 16 mm x 16 mm
- 1 x start and end segment
- in high-quality case

Available from stock

| Item no. | Model                         | Dimensions [mm] |    |       |      |      |    |   |
|----------|-------------------------------|-----------------|----|-------|------|------|----|---|
|          |                               | a               | b  | c     | d    | e    | f  | x |
| 32000360 | 432-08R300818                 | 8               | 8  | 113.5 | 31.5 | 33.5 | 30 | 1 |
|          | with shank adapter 10 x 10 mm | 10              | 10 | 113.5 | 31.5 | 33.5 | 30 | 1 |
|          | with shank adapter 12 x 12 mm | 12              | 12 | 113.5 | 31.5 | 33.5 | 30 | 1 |
|          | with shank adapter 16 x 16 mm | 16              | 16 | 113.5 | 31.5 | 33.5 | 31 | 1 |



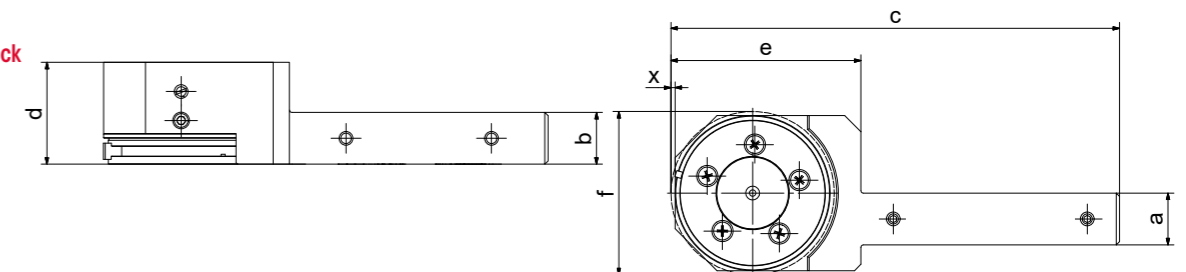
für QBW 432-50 - große Version

### SET CONSISTING OF:

- 1 x base shank (solid shank version) tool 432-16R
- 1 x shank adapter 20 mm x 20 mm
- 1 x shank adapter 25 mm x 25 mm
- 1 x start and end segment
- in high-quality case

Available from stock

| Item no. | Model                         | Dimensions [mm] |    |       |      |      |    |   |
|----------|-------------------------------|-----------------|----|-------|------|------|----|---|
|          |                               | a               | b  | c     | d    | e    | f  | x |
| 32000355 | 432-16R500838                 | 16              | 16 | 138.5 | 31.5 | 58.5 | 50 | 1 |
|          | with shank adapter 20 x 20 mm | 20              | 20 | 138.5 | 31.5 | 58.5 | 50 | 1 |
|          | with shank adapter 25 x 25 mm | 25              | 25 | 138.5 | 31.5 | 58.5 | 50 | 1 |



## APPLICATION EXAMPLE MARKING

MARK YOUR WORKPIECE IN SECONDS.



→ INTEGRATED INTO THE MACHINING PROCESS

INTERCHANGEABLE MARKING TEXT  
MARKING SEGMENTS IMMEDIATELY  
AVAILABLE: A-Z, 0-9, -/.



# MARKING SEGMENT N° 43



SEGMENT ø 30 - small version

| Standard design                  |                       |
|----------------------------------|-----------------------|
| flank angle                      | 90°                   |
| dimension (ø x width x bore, mm) | 30 x 8 x 18           |
| font                             | according to DIN 1451 |



SEGMENT ø 50 - big version

| Standard design                  |                       |
|----------------------------------|-----------------------|
| flank angle                      | 90°                   |
| dimension (ø x width x bore, mm) | 50 x 8 x 38           |
| font                             | according to DIN 1451 |

| Item no.<br>character height<br>2 mm | Item no.<br>character height<br>3 mm | Segments<br>designation     |
|--------------------------------------|--------------------------------------|-----------------------------|
| 75000023                             |                                      | start segment               |
| 75000011                             | 75000013                             | letter A-Z                  |
| 75000059                             | 75000060                             | A                           |
| 75000063                             | 75000089                             | B                           |
| 75000064                             | 75000090                             | C                           |
| 75000065                             | 75000091                             | D                           |
| 75000066                             | 75000092                             | E                           |
| 75000067                             | 75000093                             | F                           |
| 75000068                             | 75000094                             | G                           |
| 75000069                             | 75000095                             | H                           |
| 75000070                             | 75000096                             | I                           |
| 75000071                             | 75000097                             | J                           |
| 75000072                             | 75000098                             | K                           |
| 75000073                             | 75000099                             | L                           |
| 75000074                             | 75000100                             | M                           |
| 75000075                             | 75000101                             | N                           |
| 75000076                             | 75000102                             | O                           |
| 75000077                             | 75000103                             | P                           |
| 75000078                             | 75000104                             | Q                           |
| 75000080                             | 75000105                             | R                           |
| 75000081                             | 75000106                             | S                           |
| 75000082                             | 75000107                             | T                           |
| 75000083                             | 75000108                             | U                           |
| 75000084                             | 75000109                             | V                           |
| 75000085                             | 75000110                             | W                           |
| 75000086                             | 75000111                             | X                           |
| 75000087                             | 75000112                             | Y                           |
| 75000088                             | 75000113                             | Z                           |
| 75000012                             | 75000014                             | numeral set 0-9             |
| 75000164                             | 75000174                             | 0                           |
| 75000165                             | 75000175                             | 1                           |
| 75000166                             | 75000176                             | 2                           |
| 75000167                             | 75000177                             | 3                           |
| 75000168                             | 75000178                             | 4                           |
| 75000169                             | 75000179                             | 5                           |
| 75000170                             | 75000180                             | 6                           |
| 75000171                             | 75000181                             | 7                           |
| 75000172                             | 75000182                             | 8                           |
| 75000173                             | 75000183                             | 9                           |
| 75000040                             |                                      | space segment               |
| 75000015                             | 75000016                             | special character - (Minus) |
| 75000003                             | 75000004                             | special character . (Dot)   |
| 75000005                             | 75000006                             | special character / (Slash) |
| 75000024                             |                                      | end segment                 |

| Item no.<br>character height<br>2 mm | Item no.<br>character height<br>3 mm | Segments<br>designation     |
|--------------------------------------|--------------------------------------|-----------------------------|
| 75000025                             |                                      | start segment               |
| 75000017                             | 75000019                             | letter A-Z                  |
| 75000061                             | 75000062                             | A                           |
| 75000114                             | 75000139                             | B                           |
| 75000115                             | 75000140                             | C                           |
| 75000116                             | 75000141                             | D                           |
| 75000117                             | 75000142                             | E                           |
| 75000118                             | 75000143                             | F                           |
| 75000119                             | 75000144                             | G                           |
| 75000120                             | 75000145                             | H                           |
| 75000121                             | 75000146                             | I                           |
| 75000122                             | 75000147                             | J                           |
| 75000123                             | 75000148                             | K                           |
| 75000124                             | 75000149                             | L                           |
| 75000125                             | 75000150                             | M                           |
| 75000126                             | 75000151                             | N                           |
| 75000127                             | 75000152                             | O                           |
| 75000128                             | 75000153                             | P                           |
| 75000129                             | 75000154                             | Q                           |
| 75000130                             | 75000155                             | R                           |
| 75000131                             | 75000156                             | S                           |
| 75000132                             | 75000157                             | T                           |
| 75000133                             | 75000158                             | U                           |
| 75000134                             | 75000159                             | V                           |
| 75000135                             | 75000160                             | W                           |
| 75000136                             | 75000161                             | X                           |
| 75000137                             | 75000162                             | Y                           |
| 75000138                             | 75000163                             | Z                           |
| 75000018                             | 75000020                             | numeral set 0-9             |
| 75000184                             | 75000194                             | 0                           |
| 75000185                             | 75000195                             | 1                           |
| 75000186                             | 75000196                             | 2                           |
| 75000187                             | 75000197                             | 3                           |
| 75000188                             | 75000198                             | 4                           |
| 75000189                             | 75000199                             | 5                           |
| 75000190                             | 75000200                             | 6                           |
| 75000191                             | 75000201                             | 7                           |
| 75000192                             | 75000202                             | 8                           |
| 75000193                             | 75000203                             | 9                           |
| 75000039                             |                                      | space segment               |
| 75000021                             | 75000022                             | special character - (Minus) |
| 75000007                             | 75000008                             | special character . (Dot)   |
| 75000009                             | 75000010                             | special character / (Slash) |
| 75000026                             |                                      | end segment                 |

# TECHNOLOGY KNURLING

## CUTTING MACHINING

Cut knurling is a machining process that uses cutting.

### Surface treatment - PVD coatings

For cut knurling processes we recommend different PVD coatings, since they can have a positive effect on the tool life of the knurling wheels. The following variants are available on request.

| PVD coating | Colour sample | Suitable for   |
|-------------|---------------|--|
| Q-Dur       |               | Cold-work steel/hot-work steel/<br>high-speed steels/tempering<br>steels (alternative) |
| Q-Blue      |               | Stainless steels/high-speed<br>steels/tempering steels/<br>titanium alloys             |
| Q-Gold      |               | Aluminium and brass alloys   |

## NON-CUTTING MACHINING

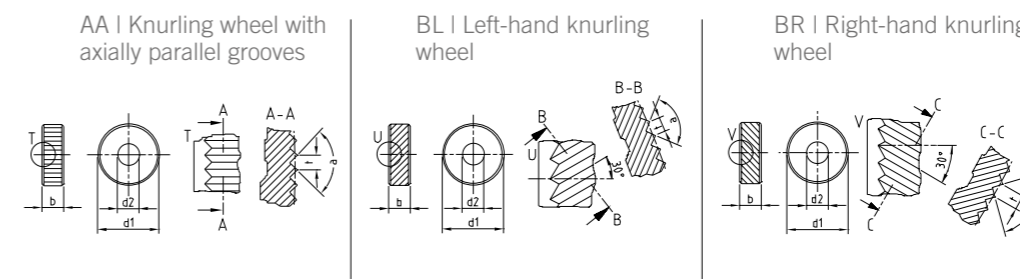
Form knurling is a chipless machining process.

### Surface treatment - TENIFER® salt-bath nitriding heat treatment

For form knurling processes we recommend the TENIFER® method, since the salt-bath nitrocarburising process achieves high surface hardness.

## PROFILES AND PITCHES

DIN 403 describes and specifies the knurling profile on the knurling wheel. DIN 403 defines form knurling types AA, BL, BR und GE. Knurling wheels that deviate from DIN 403 are considered special knurling tools and are custom manufactured by Hommel+Keller based on customer drawings.

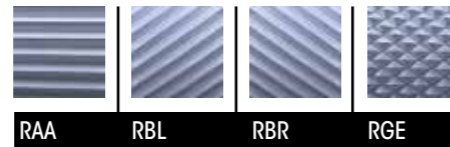


The knurling profile on the knurling wheel according to DIN 403 is based on the desired knurling profile on the workpiece (DIN 82) and the toolholder that is used. The knurling pitch prefers to the distance between tooth crests. The pitches = 0.5/0.6/0.8/1.0/1.2/1.6 are standard according to DIN 403. The Hommel+Keller product spectrum includes other pitches as well.

# PROCESSING CHARACTERISTICS

## CUT KNURLING

Knurling profiles on workpiece DIN 82



### Application:

- cutting process
- material removal at axial feed drive
- machining of thin-walled, soft and hard-to-machine materials is possible
- only cylindrical workpieces can be machined in axial direction
- machining of small diameters is possible
- maximum precision and surface quality, therefore suitable primarily for visible knurling
- a plunge cut is necessary for applying the tool in the middle area of the workpiece
- knurling up to a shoulder is not possible

### Handling:

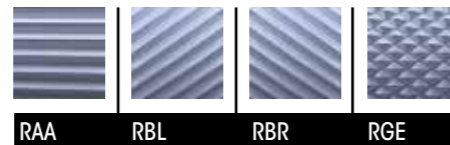
- requires precise tool adjustment and fine adjustment
- requires precise preparation of the workpiece

### Features:

- minimal change in the outer diameter
- minimal surface compaction
- lower strain on machine than in form knurling

## FORM KNURLING

Knurling profiles on workpiece DIN 82



### Application:

- non-cutting forming
- processing of workpieces suitable for cold forming
- all knurling forms and profiles can be manufactured
- suitable for face and knurling within a bore
- knurling up to a shoulder is possible
- tool can be started at any location on the workpiece

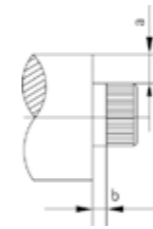
### Handling:

- only minimal preparation of workpiece required
- very easy handling of tool (short setup times)

### Features:

- material displacement increases the outer diameter of the workpiece
- the surface is compacted
- form knurling of small diameters is possible only to a limited extent

# INFLUENCING FACTORS



■ Clearance dimension for cut knurling – workpiece collar

Due to the design-related inclination (30°) of the knurling head and the overhang of the washer, knurling up to a collar is not possible with a cut knurling tool.

Dimension a corresponds to the increase in the step (mm). Dimension b corresponds to the minimum clearance for the respective knurling wheel (Ø specified in mm).

Dimension a is calculated with shoulder-height and 1/2 pitch with a flank angle of 90°.

| a  | b 8,9 | b 14,5 | b 21,5 | b 32 | b 42 |
|----|-------|--------|--------|------|------|
| 1  | 1,0   | 1,3    | 2,0    | 1,5  | 1,8  |
| 2  | 2,5   | 1,8    | 2,6    | 2,5  | 3,0  |
| 3  | 3,0   | 2,2    | 3,0    | 3,1  | 4,3  |
| 4  | 3,0   | 2,6    | 3,8    | 3,8  | 5,7  |
| 5  | 3,0   | 2,8    | 4,5    | 4,5  | 6,7  |
| 6  | 3,0   | 3,1    | 4,7    | 5,1  | 7,5  |
| 7  | 3,0   | 3,1    | 5,0    | 6,2  | 8,1  |
| 8  | 3,0   | 3,1    | 5,3    | 7,6  | 8,6  |
| 9  | 3,0   | 3,1    | 5,3    | 9,4  | 9,1  |
| 10 | 3,0   | 3,1    | 5,3    | 9,8  | 9,5  |
| 11 | 3,0   | 3,1    | 5,3    | 10,4 | 9,8  |
| 12 | 3,0   | 3,1    | 5,3    | 10,6 | 10,1 |
| 13 | 3,0   | 3,1    | 5,3    | 10,8 | 12,2 |
| 14 | 3,0   | 3,1    | 5,3    | 11,1 | 13,1 |
| 15 | 3,0   | 3,1    | 5,3    | 11,1 | 13,6 |
| 16 | 3,0   | 3,1    | 5,3    | 11,1 | 14,1 |
| 17 | 3,0   | 3,1    | 5,3    | 11,1 | 14,4 |
| 18 | 3,0   | 3,1    | 5,3    | 11,1 | 14,6 |
| 19 | 3,0   | 3,1    | 5,3    | 11,1 | 14,8 |

Dimension a = shoulder-height + 1/2 pitch (flank angle 90°)





**QUICK – is a brand  
Hommel+Keller**



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