

zeus  
Special tools  
and interfaces



**FLOYD**

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THE TOOLING SPECIALISTS FOR PRECISION COMPONENT MACHINING

# Special tools

Specially designed for maximum stability and precision



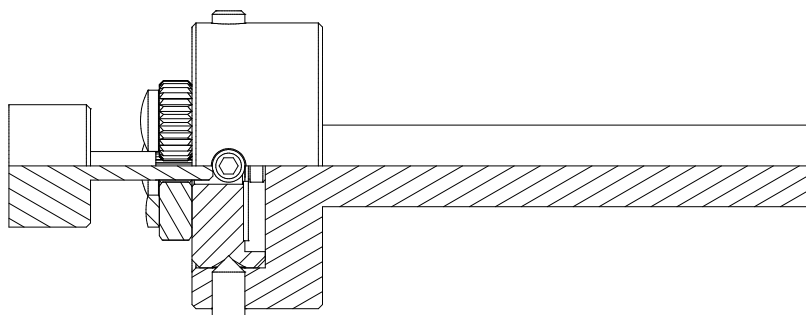
## Series 391



Ø 25 mm



Ø 30 mm



### Knurling profiles on DIN 82 workpiece:

#### Feed knurling



### Selection of knurling wheels:



### Product features:

- No lateral contact pressures – minimum load on the workpiece
- Custom production – designed for workpiece diameter and pitch
- Dimensions correspond to standard for thread-cutting dies
- For use in standardised thread-cutting die holders
- Base shanks are not included in scope of delivery, but are available on request

### Available sizes:

- Ø 25 mm
- Ø 30 mm
- Ø 38 mm
- Ø 45 mm
- Ø 55 mm

# Special tools

## Series 311-xx<sup>o</sup>

Conical knurling  
Face knurling

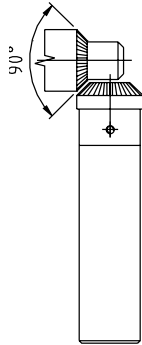
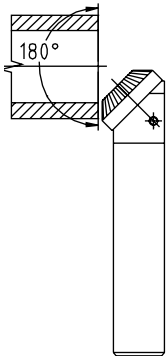
Conical/inner/face knurling  
up to a shoulder



20° - 60°



90°



Knurling profiles on DIN 82 workpiece:

Plunge knurling



Selection of knurling wheels:

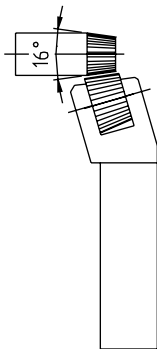


## Series 312-xx<sup>o</sup>

Conical knurling



1° - 60°



Knurling profiles on DIN 82 workpiece:

Plunge knurling



Selection of knurling wheels:

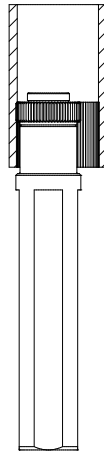


# Special tools



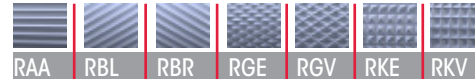
## Series 330

Knurling within a bore



Knurling profiles on DIN 82 workpiece:

**Plunge knurling**



Selection of knurling wheels:



**Feed knurling**

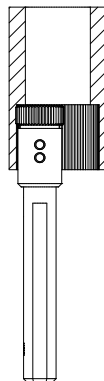


Selection of knurling wheels:



## Series 332

Knurling within a bore up to a shoulder



Knurling profiles on DIN 82 workpiece:

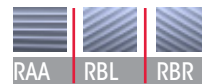
**Plunge knurling**



Selection of knurling wheels:



**Feed knurling**

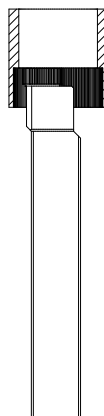


Selection of knurling wheels:



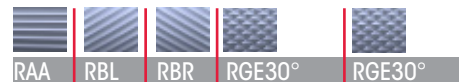
## Series 342

Knurling within a bore up to a shoulder



Knurling profiles on DIN 82 workpiece:

**Plunge knurling**



Selection of knurling wheels:



**Feed knurling**

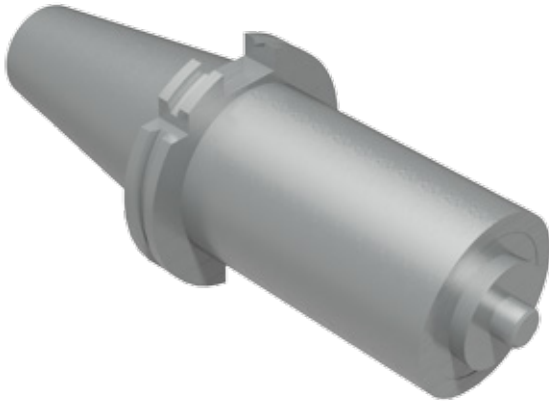


Selection of knurling wheels:



# Special interfaces

## SK



### Characteristics:

- Standardised to DIN 69871 with retention knob
- Torque transmission by means of the friction contact of the taper with low strain
- For larger torques and sudden loads, driving keys are primarily responsible for the transmission
- The driving keys are arranged asymmetrically on the spindle face for clear orientation for the tool
- Easy production
- Self-centring due to steep taper
- High speeds can expand the spindle cone and the resulting centrifugal force can cause axial distortion of the tool
- The centrifugal force distortion reduces the contact surfaces and therefore the frictional transmission of torques

## HSK/HSK-C



### Characteristics:

- Standardised to DIN 69893
- No retention nob
- Smaller (ca. 30%) and lighter (ca. 50%) than the steep taper (SK)
- Faster and easier tool change
- Rigidity 5 to 7 times higher than with steep taper holders due to support on the tool holder over the collar
- Force-closing due to the taper and contact surface
- Form-closing by means of drive slots
- Excellent change accuracy (3 µm)
- Face contact on collar ensures axial wobble accuracy
- Close taper tolerance minimises radial run-out
- HSK-C has a shorter shank with a flatter taper angle

# Special interfaces



## CAPTO® (Sandvik)



### Characteristics:

- Transmission of high torques
- High bending strength
- Central supply of high-pressure cooling lubricant from the machine to the cutting edge
- Balanced and concentric
- Self-centring
- Flexible due to high level of modularity
- High basic stability and accuracy
- Reduced setup time

## VDI



### Characteristics:

- Universal tool system for all production areas
- Tool change within seconds
- Form-closing for reliable torque transmission
- Very short design
- Internal coolant supply is possible
- Presetting of tools outside the machine
- Tool holders in different sizes
- High rigidity

## GRAF holding systems



### Characteristics:

- Tool change within seconds
- Very short design
- Presetting of tools outside the machine
- Tool holders in different sizes
- High rigidity

# Special tools

## Series 161-S

Integrated turret holder  
Expanded work area



Knurling profiles on DIN 82 workpiece:  
**Plunge knurling**



Selection of knurling wheels:

2 x AA	1 x BL30°	1 x BL45°
	1 x BR30°	1 x BR45°

Product features:

- Flexible work area
- Extremely stable design
- Direct machine connection
- Conical application
- Carbide pins

Working area:

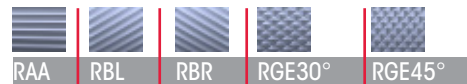
- Ø 0–15 mm

## Series 161-S

Conical knurling  
Adjustable jaws 4–12°



Knurling profiles on DIN 82 workpiece:  
**Plunge/feed knurling**



Selection of knurling wheels:

2 x AA	2 x BL	2 x BR	1 x BL30°	1 x BL45°
			1 x BR30°	1 x BR45°

Product features:

- Adjustable jaws 4–12°
- Star turret holder
- Flexible work area – conical surfaces
- Reduced strain on workpiece and machine
- Knurling head with flexible centring
- Modular shank design
- Carbide pin

Working area:

- Ø 8–36 mm

## Series 161-S

Knurling wheels in special size/form



Knurling profiles on DIN 82 workpiece:  
**Plunge/feed knurling**



Selection of knurling wheels:

2 x AA	2 x (1 x) BL30°/ 1 x (2 x) BR30°	2 x (1 x) BL45°/ 1 x (2 x) BR45°
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Product features:

- HSK holder
- No lateral contact pressure – reduced load
- Centre height adjustable due to synchronous spindle
- Carbide pins

Working area:

- Ø 0–20 mm

# Special tools



## Series 142-S

Special Capto® holder



Knurling profiles on DIN 82 workpiece:  
**Plunge/feed knurling**



**Selection of knurling wheels:**

2 x AA	1 x BL30°	1 x BL45°
	1 x BR30°	1 x BR45°

**Product features:**

- Knurling up to a shoulder
- Capto holder
- Knurling head with flexible centring
- Modularity – application independent
- Carbide pins

**Working area:**

- Ø 10–80 mm

## Series 192-S

Special HSK 32 holder



Knurling profiles on DIN 82 workpiece:  
**Feed knurling**



**Selection of knurling wheels:**

2 x AA	2 x (1 x) BL30° / 1 x (2 x) BR30°	2 x (1 x) BL45° / 1 x (2 x) BR45°
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**Product features:**

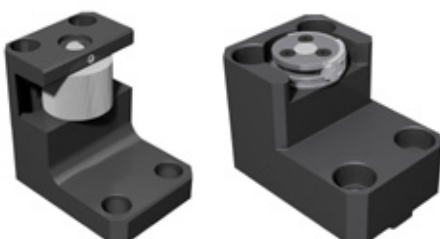
- Knurling up to a shoulder
- HSK holder
- No lateral contact pressure – reduced load
- Modular exchangeable knurl holder jaws
- Suitable for very small workpieces
- Exchangeable shank
- Easy and precise fine adjustment (synchronous)
- Carbide pins/bearing bolts

**Working area:**

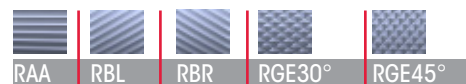
- Ø 4–30 mm

## Form knurling/ marking

Special facing slide head holder



Knurling profiles on DIN 82 workpiece:  
**Plunge/feed knurling**



**Selection of knurling wheels:**

1 x AA	2 x BL	2 x BR	1 x BL30°	1 x BL45°
			1 x BR30°	1 x BR45°

**Product features:**

- Holder for facing slide head
- Special width for custom applications (knurling wheel/marking roll)
- Carbide pins

**Working area:**

- Dependent on facing slide head