



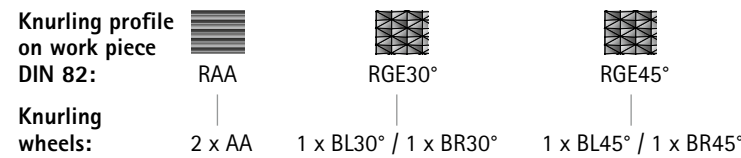
**zeus® FORM KNURLING TOOL 162:**

**THE MINIMALIST – FOR HIGH PRECISION ON TINY WORK PIECES IN LIMITED WORK SPACE!**



- Machine type:** Conventional and CNC – suitable for:
- Swiss type autolathes
  - Automatic short-turning lathes, Universal lathes, Turning- / milling centre
  - Multispindle automatic lathes
  - Rotary indexing machines, Indexing table type machines, Transfer machines (Work piece fix / tool rotating)

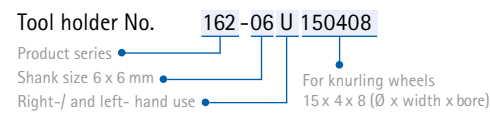
**Application:** Form knurling (non-cutting forming)



- Knurling wheels:**
- Plunge knurling
  - Feed knurling

- Tool direction:**
- Plunge knurling
  - Feed knurling
- Product highlights:**
- Easy adjustment of the knurl holder to work piece diameter and centre height
  - Easy setting of work piece diameter with setting scale
  - Round shank with four flat sides – for an optimal clamping and tool positioning
  - Available on demand: Retooling accessories for knurling to a shoulder
  - Carbide bushings
  - Special surface hardening for increased wear resistance

**ORDER EXAMPLE:**



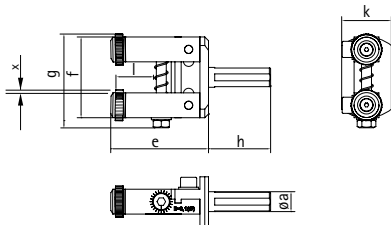
**TOOL TYPES:**

Tool holder No.	Working area	a Ø	e	f	g	h	k	l	x	Knurling wheels	Spare part
	No.	Ø mm	mm	mm	mm	mm	mm	mm	mm	mm (Ø x width x bore)	E-Kit
162-06U150408	1-14,5	6	49	44	51	40	24	21	1,2	15 x 4 x 8	21BHR0504
162-12U150408	1-14,5	12	49	44	51	40	24	21	1,2	15 x 4 x 8	21BHR0504
162-16U250608	3-25	16	76	67	84	50	40	32	2,5	25 x 6 x 8	21BHR0506
162-20U250608	3-25	20	76	67	84	50	40	32	2,5	25 x 6 x 8	21BHR0506
162-22U250608	3-25	22	76	67	84	50	40	32	2,5	25 x 6 x 8	21BHR0506
162-25U250608	3-25	25	76	67	84	50	40	32	2,5	25 x 6 x 8	21BHR0506

Tool holder No.	Working area	a Ø	e	f	g	h	k	l	x	Knurling wheels	Spare part
	No.	Ø mm	mm	mm	mm	mm	mm	mm	mm	mm (Ø x width x bore)	E-Kit
162-85U250608	3-25	3/4"	76	67	84	40	50	21	2,5	25 x 6 x 8	21BHR0506
162-90U250608	3-25	1"	76	67	84	40	50	21	2,5	25 x 6 x 8	21BHR0506

**Note:**  
Please order knurling wheels with chamfer for this tool type. Available versions on page 53-57.



**APPLICATION-ORIENTED TOOL DESIGN:**

Reduced lateral pressure, suitable for small work spaces



**FLEXIBILITY:**

Retooling accessories for knurling to a shoulder



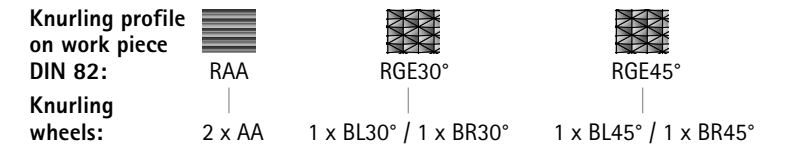
**zeus® FORM KNURLING TOOL 162:**

**THE MINIMALIST – FOR KNURLINGS TO A SHOULDER IN LIMITED WORK SPACES!**



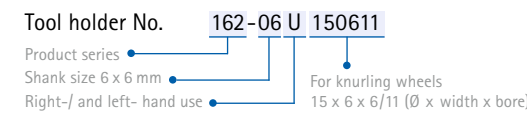
- Machine type:** Conventional and CNC – suitable for:
- Swiss type autolathes
  - Automatic short-turning lathes, Universal lathes, Turning- / milling centre
  - Multispindle automatic lathes
  - Rotary indexing machines, Indexing table type machines, Transfer machines (Work piece fix / tool rotating)

**Application:** Form knurling (non-cutting forming)



- Knurling wheels:**
- Plunge knurling
  - Feed knurling
- Tool direction:**
- Plunge knurling
  - Feed knurling
- Product highlights:**
- Knurling to a shoulder – knurling wheel fixed by a shoulder pin. Fitting of the knurling wheels on the pin adjustable
  - Easy adjustment of the knurl holder to work piece diameter and centre height
  - Easy setting of work piece diameter with setting scale
  - Round shank with four flat sides – for an optimal clamping and tool positioning
  - Special surface hardening for increased wear resistance

**ORDER EXAMPLE:**



**TOOL TYPES:**

Tool holder No.	Working area	a Ø	e	f	g	h	k	l	Knurling wheels	Spare part	Spare part
	Ø mm	mm	mm	mm	mm	mm	mm	mm	mm (Ø x width x bore)	Shoulder pin	Run disc
162-06U150611	1-14	6	49	44	51	40	24	22	15 x 6 x 6/11	06TER0444	21BHR0375
162-12U150611	1-14	12	49	44	51	40	24	22	15 x 6 x 6/11	06TER0444	21BHR0375
162-16U200813	4-27,5	16	76	67	80	50	40	32	20 x 8 x 6/13	06TER0445	21BHR0380
162-20U200813	4-27,5	20	76	67	80	50	40	32	20 x 8 x 6/13	06TER0445	21BHR0380
162-22U200813	4-27,5	22	76	67	80	50	40	32	20 x 8 x 6/13	06TER0445	21BHR0380
162-25U200813	4-27,5	25	76	67	80	50	40	32	20 x 8 x 6/13	06TER0445	21BHR0380

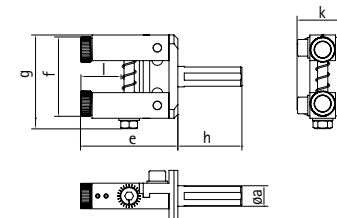
Tool holder No.	Working area	a Ø	e	f	g	h	k	l	Knurling wheels	Spare part	Spare part
	Ø mm	inch	mm	Ø mm	mm	mm	mm	mm	mm (Ø x width x bore)	Shoulder pin	Run disc
162-85U200813	4-27,5	3/4"	76	67	80	50	40	32	20 x 8 x 6/13	06TER0445	21BHR0380
162-90U200813	4-27,5	1"	76	67	80	50	40	32	20 x 8 x 6/13	06TER0445	21BHR0380



06TER0444  
06TER0445



21BHR0375  
21BHR0380



**APPLICATION-ORIENTED TOOL DESIGN:**

Reduced lateral pressure, suitable for small work spaces



**KNURLING TO A SHOULDER:**

Suitable for knurling to a shoulder

