

ZEUS® SPECIAL TOOL 330:



Machine type: Conventional – Centre height to be adjusted. Suitable for:

- Swiss type autolathes
- Automatic short-turning lathes, Universal lathes, Turning-/milling centres
- Multi spindle automatic lathes

Application: Knurling within a bore
Form knurling (non-cutting forming)

Tool direction:

- Plunge knurling: suitable for all knurling profiles, patterns and markings
- Feed knurling: Suitable for RAA, RBL, RBR

Product highlights:

- Round shank with four clamping flats
- Special surface hardening for increased wear resistance

Knurling profile
on work piece
DIN 82:



RAA



RBL



RBR



RGE



RGV



RKE



RKV

Knurling wheels:

AA

BR

BL

GV

GE

KV

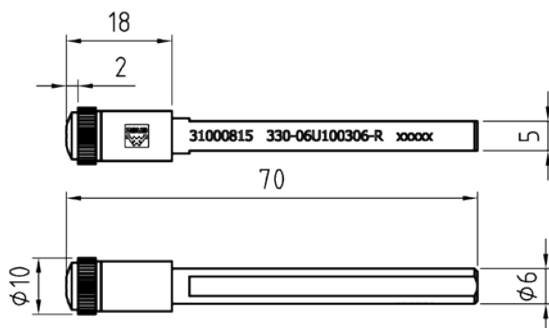
KE

APPLICATION ADVANTAGES:

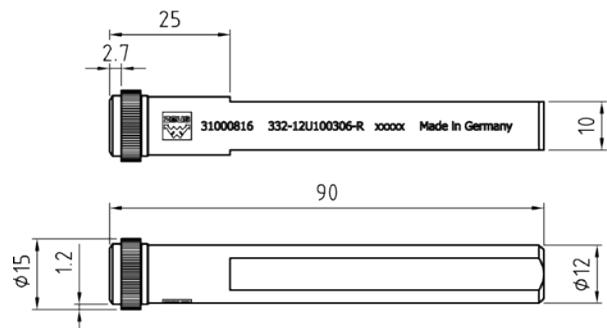
- Suitable for small work spaces
- Easy centering through an optimal seating on the clamping surface
- Easy and fast change of knurling wheel

TOOL TYPES:

■ 330-06U100306-R



■ 330-12U150408-R



ZEUS® SPECIAL TOOL 332:



Machine type: Conventional and CNC – Centre height to be adjusted. Suitable for:

- Swiss type autolathes
- Automatic short-turning lathes, Universal lathes, Turning-/milling centres
- Multi spindle automatic lathes

Application: Knurling within a bore, Knurling to a shoulder
Form knurling (non-cutting forming)

Tool direction:

- Plunge knurling: suitable for all knurling profiles, patterns and markings
- Feed knurling: Suitable for RAA, RBL, RBR

Product highlights:

- Round shank with four clamping flats
- Shoulder pin fixed by a screw
- Special surface hardening for increased wear resistance

**Knurling profile on work piece
DIN 82:**



Knurling wheels: AA BR BL GV GE KV KE

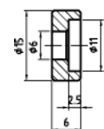
APPLICATION ADVANTAGES:

- Knurling up to a shoulder possible
- Easy centering through an optimal seating on the clamping surface
- Easy and fast change of knurling wheel by loosening the setscrews

TOOL TYPES:

Tool holder No.	Working area Ø mm	a Ø mm	b mm	c mm	f mm	x mm
332-16U150611-R	> Ø 19	16	14	150	16,5	1,4
332-20U150611-R	> Ø 23	20	16	150	19,5	1,4
332-85U150611-R	> Ø 23	19.05	16	150	19,1	1,4
Customer specifications:						

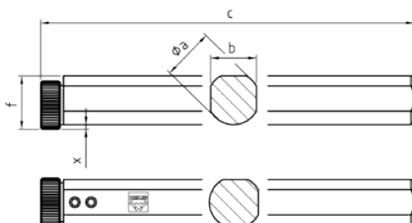
Knurling wheels mm (Ø x Width x Bore)	Spare Part
15x6x6/11	06TER0380
15x6x6/11	06TER0380
15x6x6/11	06TER0380



Knurling wheel
15x6x6/11



06TER0380



ZEUS® SPECIAL TOOL 332:



Machine type: Conventional and CNC – Centre height to be adjusted. Suitable for:

- Swiss type autolathes
- Automatic short-turning lathes, Universal lathes, Turning-/milling centres
- Multi spindle automatic lathes

Application: Knurling within a bore, Knurling to a shoulder
Form knurling (non-cutting forming)

Tool direction:

- Plunge knurling: suitable for all knurling profiles, patterns and markings
- Feed knurling: Suitable for RAA, RBL, RBR

Product highlights:

- Round shank with four clamping flats
- Shoulder pin fixed by a screw
- Special surface hardening for increased wear resistance

Knurling profile on work piece DIN 82:



Knurling wheels: AA BR BL GV GE KV KE

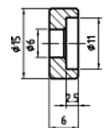
APPLICATION ADVANTAGES:

- Knurling up to a shoulder possible
- Integrated setscrews for clearance angle adjustment
- Easy centering through an optimal seating on the clamping surface
- Four round and standard-square die holders

TOOL TYPES:

Tool holder No.	Working area Ø mm	a Ø mm	b mm	c mm	f mm	x mm
332-22U200813-R	> Ø 26	22	20	160	22,5	1,4
332-25U200813-R	> Ø 28	25	22	180	25	1,4
332-90U200813-R	> Ø 28	25,4	22	180	25	1,4
Customer specifications:						

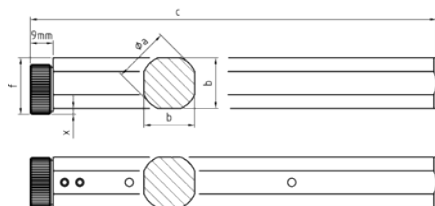
Knurling wheels mm Ø x Width x Bore	Spare Part
20x8x6/13	06TER0383
20x8x6/13	06TER0383
20x8x6/13	06TER0383



Knurling wheel
20x8x6/13



06TER0383



ZEUS® SPECIAL TOOL 340:



Machine type: Conventional and CNC – Centre height to be adjusted. Suitable for:

- Swiss type autolathes
- Automatic short-turning lathes, Universal lathes, Turning-/milling centres
- Multi spindle automatic lathes

Application: Knurling within a bore
Form knurling (non-cutting forming)

Tool direction:

- Plunge knurling
- Feed knurling

Product highlights:

- Round shank with four clamping flats
- Special surface hardening for increased wear resistance

Knurling profile on work piece DIN 82:



RAA



RGE30°



RGE45°

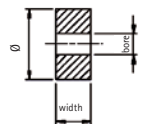
Knurling wheels: 2xAA 1xBL30° / 1xBR30° 1xBL45° / 1xBR45°

APPLICATION ADVANTAGES:

- Suitable for small work spaces
- Easy and fast change of knurling wheel
- Easy centering through an optimal seating on the clamping surface

TOOL TYPES:

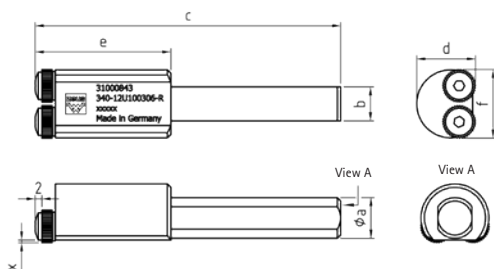
Tool holder No.	Working area Ø mm	a Ø mm	b mm	c mm	d mm	e mm	f mm	x mm	Knurling wheels mm Ø x Width x Bore	Spare Part
340-06U100306-R	> Ø 24	6	5	90	17,5	30	20,6	0,7	10x3x6	21BHR0791
340-12U100306-R	> Ø 24	12	10	70	17,5	40	20,6	0,7	10x3x6	21BHR0791
Customer specifications:										



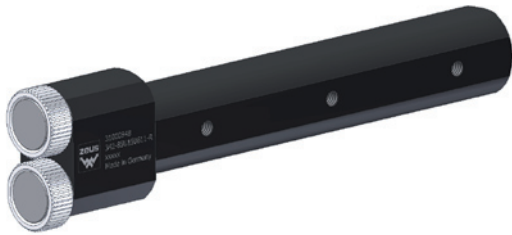
Knurling wheel 10x3x6



21BHR0791



ZEUS® SPECIAL TOOL 342:



Machine type: Conventional and CNC – Centre height to be adjusted. Suitable for:

- Swiss type autolathes
- Automatic short-turning lathes, Universal lathes, Turning-/milling centres
- Multi spindle automatic lathes

Application: Knurling within a bore, Knurling to a shoulder
Form knurling (non-cutting forming)

Tool direction:

- Plunge knurling
- Feed knurling

Product highlights:

- Round shank with four clamping flats
- Special surface hardening for increased wear resistance

**Knurling profile on work piece
DIN 82:**



RAA



RGE30°



RGE45°

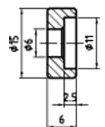
Knurling wheels: 2xAA 1xBL30° / 1xBR30° 1xBL45° / 1xBR45°

APPLICATION ADVANTAGES:

- Easy and fast change of knurling wheel by loosening the shoulder bolts
- Integrated setscrews for clearance angle adjustment

TOOL TYPES:

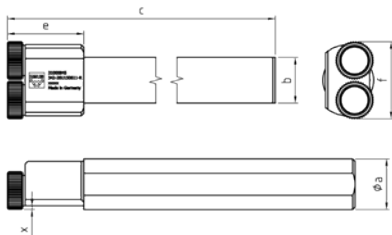
Tool holder No.	Working area Ø mm	a Ø mm	b mm	c mm	e mm	f mm	x mm	Knurling wheels mm Ø x Width x Bore	Spare Part
342-16U150611-R	> Ø 33	16	14	110	30	31	1,4	15x6x6/11	06TER0380
342-20U150611-R	> Ø 33	20	18	150	30	31	1,4	15x6x6/11	06TER0380
342-22U150611-R	> Ø 33	22	20	150	30	31	1,4	15x6x6/11	06TER0380
342-25U150611-R	> Ø 33	25	22	150	30	31	1,4	15x6x6/11	06TER0380
342-85U150611-R	> Ø 33	19,05	17	130	30	31	1,4	15x6x6/11	06TER0380
342-90U150611-R	> Ø 33	25,4	22	150	30	31	1,4	15x6x6/11	06TER0380
Customer specifications:									



Knurling wheel
15x6x6/11



06TER0380



ZEUS® SPECIAL TOOL 311:



Machine type: Conventional and CNC – Centre height integrated. Suitable for:

- Swiss type autolathes
- Automatic short-turning lathes, Universal lathes, Turning-/milling centres
- Multi spindle automatic lathes

Application: Conical knurling, Face knurling
Form knurling (non-cutting forming)

Tool direction: • Plunge knurling

Product highlights:

- Modular shank construction
- Special surface hardening for increased wear resistance

Knurling profile on work piece DIN 82:



Knurling wheels: KAA KBR KBL KGV KGE

APPLICATION ADVANTAGES:

- Modular shank construction for conversion to alternative shank sizes
- Easy and fast change of knurling wheel by means of the safety ring
- Integrated setscrews for clearance angle adjustment

TOOL TYPES:

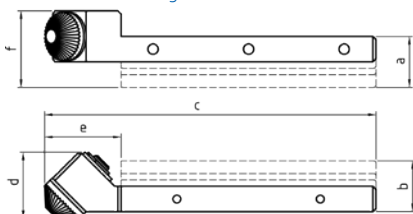
Tool holder No.	a mm	b mm	c mm	d mm	e mm	f mm	Knurling wheels mm
311-08L15-K14-45°	8	8	104	21	24	16	15-K14-6
311-08R15-K14-45°	8	8	104	21	24	16	15-K14-6
311-10L15-K14-45°	10	10	104	21	24	18	15-K14-6
311-10R15-K14-45°	10	10	104	21	24	18	15-K14-6
311-12L15-K14-45°	12	12	104	21	24	20	15-K14-6
311-12R15-K14-45°	12	2	104	21	24	20	15-K14-6
311-16R15-K14-45°	16	16	104	21	24	24	15-K14-6
311-16L15-K14-45°	16	16	104	21	24	24	15-K14-6
Customer specifications:							



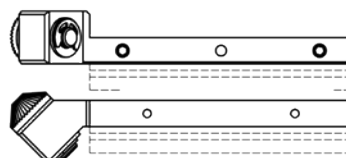
Knurling wheel
15-K14

Note: c, d, e may vary according to specifications of the knurling wheel.

Right-hand version:



Left-hand version:



ZEUS® SPECIAL TOOL 311:



Machine type: Conventional and CNC – Centre height integrated. Suitable for:

- Automatic short-turning lathes, Universal lathes, Turning-/milling centres
- Multi spindle automatic lathes

Application: Conical knurling, Face knurling
Form knurling (non-cutting forming)

Tool direction: • Plunge knurling

Product highlights: • Special surface hardening for increased wear resistance

Knurling profile on work piece DIN 82:



Knurling wheels: KAA KBR KBL KGV KGE

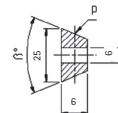
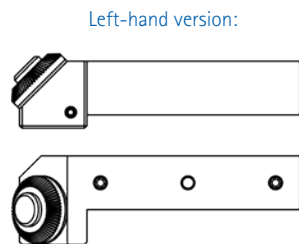
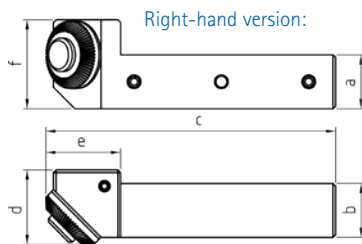
APPLICATION ADVANTAGES:

- Easy and fast change of knurling wheel by loosening the setscrew
- Integrated setscrews for clearance angle adjustment

TOOL TYPES:

Tool holder No.	a mm	b mm	c mm	d mm	e mm	f mm	Knurling wheels mm Ø x Width x Bore	Spare Part
311-20L250606-45°	20	20	108	28	28	33	25x6x6	06TER0363
311-20R250606-45°	20	20	108	28	28	33	25x6x6	06TER0363
311-25L250606-45°	25	25	108	28	28	38	25x6x6	06TER0363
311-25R250606-45°	25	25	108	28	28	38	25x6x6	06TER0363
Customer specifications:								

Note: c, d, e may vary according to specifications of the knurling wheel.



Rändelrad No. 70
Kxx-25x6x6-90°



06TER0363

ZEUS® SPECIAL TOOL 311:



Machine type: Conventional and CNC – Centre height integrated. Suitable for:

- Automatic short-turning lathes, Universal lathes, Turning-/milling centres
- Multi spindle automatic lathes

Application: Conical knurling, Face knurling
Form knurling (non-cutting forming)

Tool direction: • Plunge knurling

Product highlights:

- Shoulder bolt squares up with knurling wheel
- Special surface hardening for increased wear resistance

Knurling profile on work piece DIN 82:



Knurling wheels: KAA KBR KBL KGV KGE

APPLICATION ADVANTAGES:

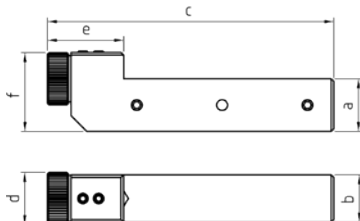
- Easy and fast change of knurling wheel by loosening the setscrew
- Integrated setscrews for clearance angle adjustment

TOOL TYPES:

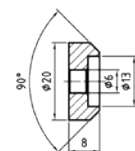
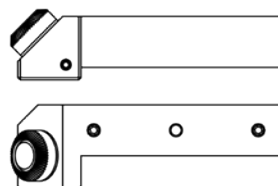
Tool holder No.	a mm	b mm	c mm	d mm	e mm	f mm	Knurling wheels mm Ø x Width x Bore	Spare Part
311-20L20086A13-45°	20	20	108	28	28	33	20x8x6A13	06TER0363
311-20R20086A13-45°	20	20	108	28	28	33	20x8x6A13	06TER0363
311-25L20086A13-45°	25	25	108	28	28	38	20x8x6A13	06TER0363
311-25R20086A13-45°	25	25	108	28	28	38	20x8x6A13	06TER0363
Customer specifications:								

Note: c, d, e may vary according to specifications of the knurling wheel.

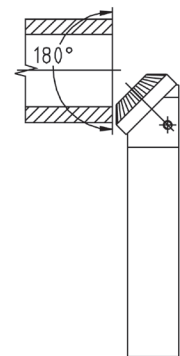
Right-hand version:



Left-hand version:



Knurling wheel No. 70
Kxx-20x8x6A13-90°



ZEUS® SPECIAL TOOL 311:



Machine type: Conventional and CNC – Centre height integrated. Suitable for:

- Automatic short-turning lathes, Universal lathes, Turning-/milling centres
- Multi spindle automatic lathes

Application: Conical knurling, Face knurling
Form knurling (non-cutting forming)

Tool direction: • Plunge knurling

Product highlights:

- Shoulder bolt squares up with knurling wheel
- Special surface hardening for increased wear resistance

**Knurling profile on work piece
DIN 82:**



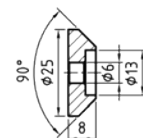
Knurling wheels: KAA KBR KBL KGV KGE

APPLICATION ADVANTAGES:

- Easy and fast change of knurling wheel by loosening the setscrew
- Integrated setscrews for clearance angle adjustment

TOOL TYPES:

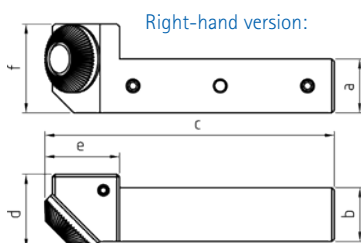
Tool holder No.	a mm	b mm	c mm	d mm	e mm	f mm	Knurling wheels mm Ø x Width x Bore	Spare Part
311-20L25086A13-45°	20	20	109	28	29	33	25x8x6A13	06TER0363
311-20R25086A13-45°	20	20	109	28	29	33	25x8x6A13	06TER0363
311-25L25086A13-45°	25	25	109	28	29	38	25x8x6A13	06TER0363
311-25R25086A13-45°	25	25	109	28	29	38	25x8x6A13	06TER0363
Customer specifications:								



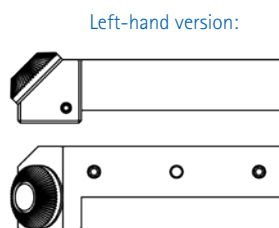
Knurling wheel
No. 70
Kxx-25x8x6A13-90°

06TER0363

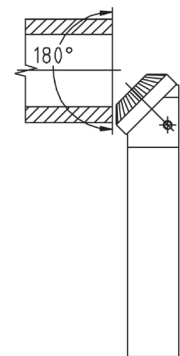
Note: c, d, e may vary according to specifications of the knurling wheel.



Right-hand version:



Left-hand version:



ZEUS® SPECIAL TOOL 311:



Machine type: Conventional and CNC – Centre height integrated. Suitable for:

- Swiss type autolathes
- Automatic short-turning lathes, Universal lathes, Turning-/milling centres
- Multi spindle automatic lathes

Application: Knurling within a bore – (up to a shoulder)
Face knurling
Form knurling (non-cutting forming)

Tool direction:

- Plunge knurling: suitable for all knurling profiles, patterns and markings
- Feed knurling: Suitable for RAA, RBL, RBR

Product highlights:

- Shoulder pin fixed by two screws
- Modular shank construction
- Special surface hardening for increased wear resistance

Knurling profile on work piece DIN 82:



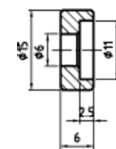
Knurling wheels: AA BR BL GV GE KV KE

APPLICATION ADVANTAGES:

- Knurling within a bore up to a shoulder possible
- Easy and fast change of knurling wheel by loosening the setscrew
- Integrated set screws for clearance angle adjustment
- Modular shank construction for conversion to alternative shank sizes

TOOL TYPES:

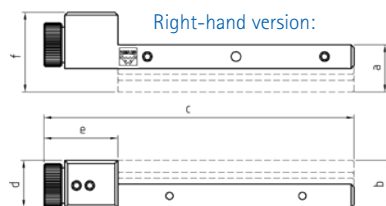
Tool holder No.	a mm	b mm	c mm	d mm	e mm	f mm	Knurling wheels Ø x Width x Bore mm	Spare Part
311-08L150611-90°	8	8	105	16	25	19	15x6x6/11	06TER0380
311-08R150611-90°	8	8	105	16	25	19	15x6x6/11	06TER0380
311-10L150611-90°	10	10	105	16	25	21	15x6x6/11	06TER0380
311-10R150611-90°	10	10	105	16	25	21	15x6x6/11	06TER0380
311-12L150611-90°	12	12	105	16	25	23	15x6x6/11	06TER0380
311-12R150611-90°	12	12	105	16	25	23	15x6x6/11	06TER0380
311-16L150611-90°	16	16	105	16	25	27	15x6x6/11	06TER0380
311-16R150611-90°	16	16	105	16	25	27	15x6x6/11	06TER0380
Customer specifications:								



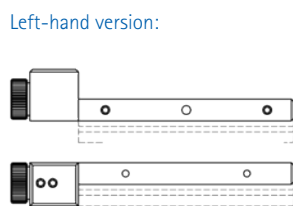
Knurling wheel
No. 70
Kxx-15x6x6A11-90°



06TER0380



Right-hand version:



Left-hand version:

Note: c, d, e may vary according to specifications of the knurling wheel.

ZEUS® SPECIAL TOOL 311:



Machine type: Conventional and CNC – Centre height integrated. Suitable for:

- Automatic short-turning lathes, Universal lathes, Turning-/milling centres
- Multi spindle automatic lathes

Application: Knurling within a bore – (up to a shoulder)
Face knurling
Form knurling (non-cutting forming)

Tool direction:

- Plunge knurling: suitable for all knurling profiles, patterns and markings
- Feed knurling: Suitable for RAA, RBL, RBR

Product highlights:

- Shoulder pin fixed by two screws
- Special surface hardening for increased wear resistance

Knurling profile on work piece
DIN 82:



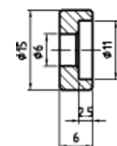
Knurling wheels: AA BR BL GV GE KV KE

APPLICATION ADVANTAGES:

- Knurling within a bore up to a shoulder possible
- Easy and fast change of knurling wheel by loosening the setscrew
- Integrated setscrews for clearance angle adjustment

TOOL TYPES:

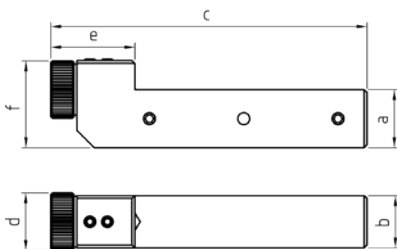
Tool holder No.	a mm	b mm	c mm	d mm	e mm	f mm	Knurling wheels mm Ø x Width x Bore	Spare Part
311-20U200813-90°	20	18	109	20	29	30	20x8x6/13	06TER0383
311-25U200813-90°	25	18	109	20	29	35	20x8x6/13	06TER0383
Customer specifications:								



Knurling wheel
No. 70
20x8x6A13-90°



06TER0383



ZEUS® SPECIAL TOOL 312:



Machine type: Conventional and CNC – Centre height integrated. Suitable for:

- Automatic short-turning lathes, Universal lathes, Turning-/milling centres
- Multi spindle automatic lathes

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

Tool direction: • Plunge knurling

Product highlights: • Special surface hardening for increased wear resistance

Knurling profile on work piece DIN 82:



Knurling wheels: KAA KBR KBL KGV KGE

APPLICATION ADVANTAGES:

- Easy and fast change of knurling wheel by loosening the setscrew
- Integrated setscrews for clearance angle adjustment

TOOL TYPES:

According to machine and application requirements

Enquiry Form:

(Please tick/complete as required)

Required information for tool holder 312 – L/R:

Full angle of work piece: _____°

Holder for CNC ☐ conventional ☐ sliding head autolathe ☐

With CNC / sliding head autolathe: right-turning ☐ or left-turning ☐

Required shank size (a x b): _____ x _____ mm

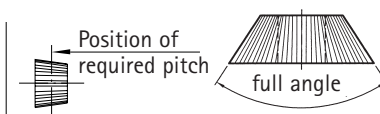
Required information for knurling wheels:

Knurling profile on component: RAA ☐ other profile: _____

Pitch: _____ mm _____ TPI/CP _____ DP

Profile angle: 90° (DIN403) ☐ or other angle: _____

Note:



Please submit work piece drawing!

APPLICATION PARAMETERS zeus® Special tools:

Knurling tool: Special tool
Knurling wheels: GV30° 15x6x4, P. 0,6
Cycle time: 2 sec./piece
Speed rate: 33 m/min
Feed rate: 0,2 mm/rev
Tool life knurling wheel: 66 min/knurling wheel
Performance: 0,24 m²/knurling wheel

