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|  KTR Kupplungstechnik GmbH D-48407 Rheine | CLAMPEX® KTR 150 mounting instructions | | KTR-N 40812 E sheet: 1 edition: 5 |
| | | | |
| | | | |

The **CLAMPEX®** clamping set is a frictionally engaged, detachable shaft - hub connection for cylindrical shafts and bores without feather key.

General Hints

Please read through these mounting instructions carefully before assembling the clamping set. Please pay special attention to the safety instructions!

The mounting instructions are part of your product. Please keep them carefully and close to the clamping set.

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Safety and Advice Hints



DANGER!

Danger of injury to persons.



CAUTION!

Damages on the machine possible.



ATTENTION!

Pointing to important items.

General Hints to Danger



DANGER!

With assembly and disassembly of the clamping set it has to be made sure that the entire drive train is protected against unintentional engagement. You can be seriously hurt by rotating parts. Please make absolutely sure to read through and observe the following safety instructions.

- All operations on and with the clamping set have to be performed taking into account "safety first".
- Please make sure to disengage the power pack before you perform your work at the clamping set.
- Protect the power pack against unintentional engagement, e. g. by providing hints at the place of engagement or removing the fuse for current supply.
- Do not touch the operation area of the machine as long as it is in operation.
- Please protect the rotating drive parts against unintentional touch. Please provide for the necessary protection devices and caps.

Proper Use

You may only assemble and disassemble the clamping set if you

- have carefully read through the mounting instructions and understood them
- and if you are authorized and have proper skills

The clamping set may only be used in accordance with the technical data (see **CLAMPEX®** catalogue). Unauthorized modifications on the clamping set are not admissible. We do not take any warranty for resulting damages. To further develop the product we reserve the right for technical modifications. The **CLAMPEX®** clamping set described in here corresponds to the technical status at the time of printing of these mounting instructions.

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| Schutzvermerk ISO 16016 beachten. | Gezeichnet: 23.06.05 Sha/Hg | Ersatz für: KTR-N 40815 |
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Tolerances, surfaces

A good rotating process is sufficient:

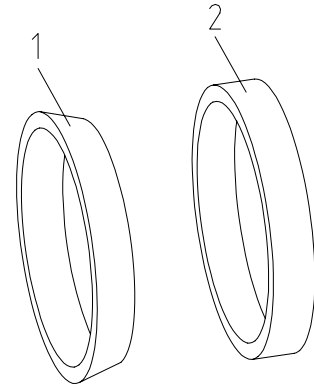
$$Rz \leq 6\mu\text{m}$$

Highest permissible tolerance:

up to $\varnothing 38$ = h8/H7 - shaft/hub
over $\varnothing 38$ = h8/H8 - shaft/hub

Components of CLAMPEX® KTR 150

| Component | Quantity | Designation |
|-----------|----------|------------------|
| 1 | 1 | inner taper ring |
| 2 | 1 | outer taper ring |



picture 1: CLAMPEX® KTR 150



ATTENTION!

Dirty or used clamping elements must be disassembled, cleaned and afterwards oiled with thin-bodied oil (e. g. Castrol 4 in 1 or Klüber Quitsch Ex) before the assembly.

Assembly

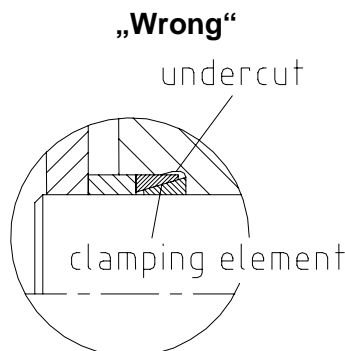
- Check shaft and hub position regarding the permitted tolerance (up to $\varnothing 38$ h8/H7; over $\varnothing 38$ h8/H8).
- Clean the hub bore and the shaft and afterwards oil them with thin-bodied oil (e. g. Castrol 4 in 1 or Klüber Quitsch Ex).



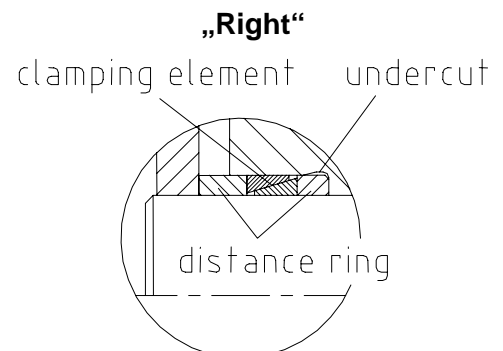
CAUTION!

Do not use oils and greases with molybdenum disulphide or high pressure additions as well as slide grease pastes.

- Push the hub onto the shaft.
- If there is an undercut, please short it out with a distance ring. This can be dropped if the undercut is missing (see pictures 2 and 3).



picture 2: clamping element in the undercut



picture 3: distance ring in the undercut

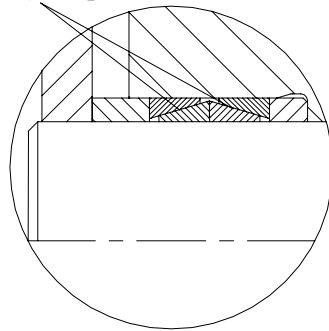
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Assembly

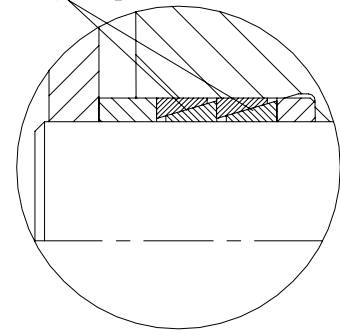
Continuation:

„Wrong“
clamping element



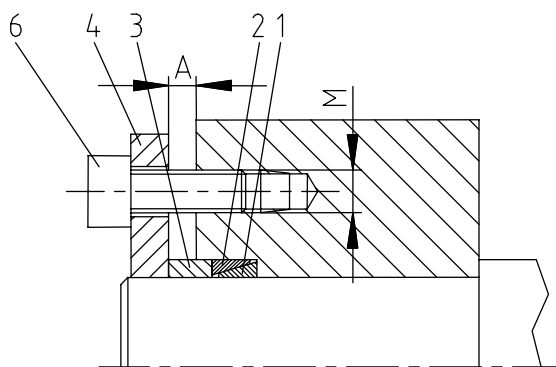
picture 4

„Right“
clamping element

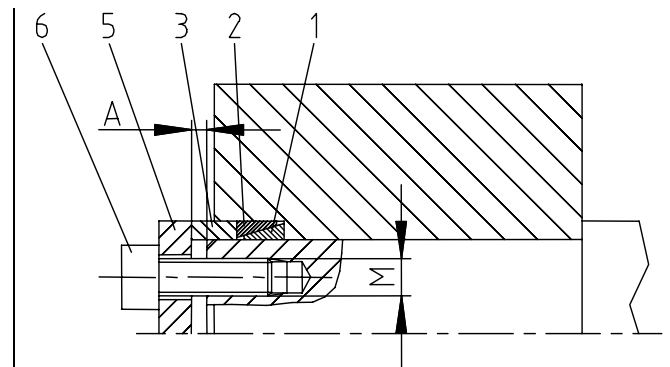


picture 5

- If you assemble several KTR 150 ring pairs (max. 4 rings) please ensure they are assembled as shown (see pictures 4 and 5).
- Observe distance dimension A (see pictures 6 and 7).
- Do not assemble the clamping element in clamping position, consider a slight displaceability.
- You can choose if the pressure flange is used with collar or with distance ring. Please also make sure that there is a slight displaceability.
- Tighten the clamping screws slightly and align the hub.
- Tighten the screws evenly and crosswise with a torque key until reaching the determined tightening torque T_A corresponding to the selected screw size (see table 1). This process must be repeated until the tightening torque T_A is reached with all clamping screws. Check the remaining opening A regarding evenness (see pictures 6 and 7).
- If possible, repeat aforementioned point after test run.



picture 6: **installation form 1**
twisting on hub side



picture 7: **installation form 2**
twisting on shaft side

| Component | Quantity | Designation | Component | Quantity | Designation |
|-----------|----------|------------------|-----------|----------|-------------------------|
| 1 | 1 | inner taper ring | 4 | 1 | pressure flange typ DFN |
| 2 | 1 | outer taper ring | 5 | 1 | pressure flange typ DFW |
| 3 | 1 | distance ring | 6 | 1 | cap screw DIN 912 |

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Assembly

Table 1:

| dimensions M | prestress power F_V and tightening torque T_A with $\mu_{ges.} = 0,14$ | | | | | |
|-----------------|--|--------|--------|------------------------------|------|------|
| | prestress power F_V [N] | | | tightening torque T_A [Nm] | | |
| | 8.8 | 10.9 | 12.9 | 8.8 | 10.9 | 12.9 |
| M3 | 2210 | 3110 | 3730 | 1,34 | 1,89 | 2,25 |
| M4 | 3900 | 5450 | 6550 | 2,9 | 4,1 | 4,9 |
| M5 | 6350 | 8950 | 10700 | 6 | 8,5 | 10 |
| M6 | 9000 | 12600 | 15100 | 10 | 14 | 17 |
| M8 | 16500 | 23200 | 27900 | 25 | 35 | 41 |
| M10 | 26200 | 36900 | 44300 | 49 | 69 | 83 |
| M12 | 38300 | 54000 | 64500 | 86 | 120 | 145 |
| M14 | 52500 | 74000 | 88500 | 135 | 190 | 230 |
| M16 | 73000 | 102000 | 123000 | 210 | 295 | 355 |
| M18 | 88000 | 124000 | 148000 | 290 | 405 | 485 |
| M20 | 114000 | 160000 | 192000 | 410 | 580 | 690 |
| M22 | 141000 | 199000 | 239000 | 550 | 780 | 930 |
| M24 | 164000 | 230000 | 276000 | 710 | 1000 | 1200 |
| M27 | 215000 | 302000 | 363000 | 1050 | 1500 | 1800 |
| M30 | 262000 | 368000 | 442000 | 1450 | 2000 | 2400 |

Disassembly



DANGER!

Loosened or falling drive parts can cause injuries to persons or damages to the machines.

Safe the drive parts before the disassembly.

- Loose all clamping screws evenly one after the other and unscrew them.
- The clamping elements are not self-locking. If the inner and the outer taper rings are still stuck, the detaching process can be started by a slight pressure onto the hub part at several places of the circumference or the hub.
- Remove the detached clamping elements between shaft and hub.



CAUTION!

In case of non-observance of these hints or in case of non-considerance of the operating conditions regarding the selection of the clamping element, the function of the clamping element can be influenced.

Disposal of waste:

Defective clamping elements must be cleaned and scrapped.

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