

**Installation and Operating Instructions for
Cone Clamping Elements Trantorque Mini
for the smallest shaft diameters**

E 03.658e



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Important

Before installation and commissioning of the product takes place, these installation and operating instructions must be read carefully. Notes of caution and hazard warnings are to be paid particular attention to.

These installation and operating instructions apply on condition that the product meets the selection criteria for its proper use. The selection and dimensioning of the product are not the subject of these installation and operating instructions.

If these installation and operating instructions are not observed or are interpreted wrongly, this shall invalidate any product liability and warranty of RINGSPANN GmbH; the same also applies in the case that our product is taken apart or changed.

These installation and operating instructions are to be kept in a safe place and must, in the event of onward delivery of our product - be it individually or as part of a machine - be passed on along with the product so that the user has access to them.

Safety information

- The installation and commissioning of our product may only be carried out by trained personnel.
- Repair work may only be performed by the manufacturer or by authorised RINGSPANN agencies.
- If there is suspected malfunctioning, the product, or the machine into which it is built, must be taken out of operation immediately and RINGSPANN GmbH or an authorised RINGSPANN agency is to be informed.
- The power supply is to be switched off during work on electrical components.
- Rotating parts must be secured by the buyer against unintentional touching.
- In the case of supplies made to a foreign country, the safety regulations applicable in that country are to be taken into consideration.

1. General

1.1 Function:

Trantorque Mini cone clamping elements are internal clamping connections for the backlash-free fastening of hubs on shafts. Torques or axial forces are transmitted from the shaft to the hub via this cone clamping element.

1.2 General safety information:



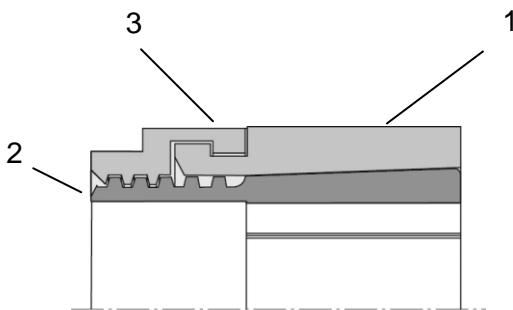
Caution: Danger of injury!

No body parts, hair, articles of clothing or objects of any other kind may be in the area of the rotating clamping element while the shrink disc is rotating.

2. Design and function

The Trantorque Mini cone clamping element consists of three outer segments 1 with an internal cone and a slotted inner ring 2 with an external cone and a hexagon nut 3. The conical rings are drawn against one another through tightening the hexagon nut. Here, the conical surfaces cause radial clamping forces, the level of which is dependent on the torque of the hexagon nut, the cone angle as well as the coefficients of friction at the conical surfaces. The radial clamping forces press the outer segments into the hub borehole and the inner ring onto the shaft, causing friction-locking in the respective contact areas. This means a torque and/or an axial force can be transmitted between the shaft and the hub.

3. Sectional view and parts list



Pos.	Designation
1	Outer segments
2	Inner ring
3	Hexagon nut

4. Intended use

The Trantorque Mini cone clamping elements are intended for installation between the shaft and the hub borehole. They are exclusively designed for the frictional attachment of hubs to shafts for the purpose of transmitting torques and/or axial forces. Use for any other purpose will be deemed improper. RINGSPANN shall not be liable for any damage caused by improper use; the risk shall be borne by the user alone.

5. Impermissible use

The Trantorque Mini cone clamping elements are not suitable:

- For fastening hollow shafts directly onto solid or hollow shafts or
- For use as a torque-limiting safety element.

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6. Condition as delivered

The clamping elements are delivered fully ready for mounting. They are packaged in anti-corrosion paper.

7. Technical prerequisites for reliable operation

In order to ensure the full transmission of the torques and/or axial forces, the **tolerances** at the pressing surfaces may:

- For the shaft and the hub borehole, be within ± 0.04 mm of the borehole "d" or of the external diameter "D".

In addition, the **surfaces** at the pressing areas of the shaft and hub must have a roughness depth between $R_a = 0.8 - 3.2$ μm .

The shaft and hub must be made of **materials** with the following mechanical characteristics:

- Modulus of elasticity ≥ 170 kN/mm²

8. Mounting

8.1 Insert Trantorque Mini into the borehole of the attachment part. The clamping surface (A) of the Trantorque Mini must be completely enclosed here in order for the indicated torque or the indicated axial force to be transmitted (see Fig. 1).

8.2 Put the Trantorque Mini along with the attachment part onto the shaft and position it as desired. When doing so ensure that the shaft is completely enclosed by the shaft clamping surface (B) of the Trantorque Mini (see Fig. 1).

8.3 Hand-tighten the hexagon nut and then use the torque spanner to tighten it to the indicated tightening torque (see table 1).



The shaft and borehole of the component to be mounted must be free from lubricants!



Note:

In order to prevent premature failure of the Trantorque Mini, of the shaft and/or of the component to be mounted:

- Do not apply any lubricants to mount the Trantorque Mini. If it is supplied ready-lubricated, do not make any changes
- Do not apply any impact or striking force in order to move the Trantorque Mini subassembly on the shaft
- Use a torque spanner

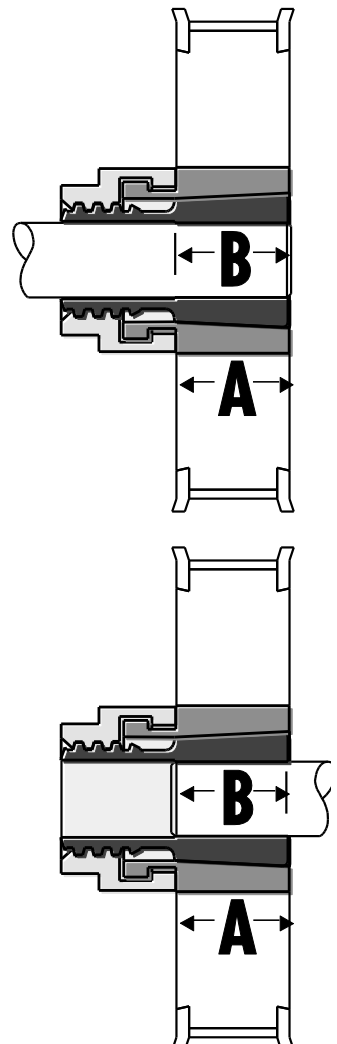


Fig. 1

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9. Dismounting

- 9.1 Loosen the hexagon nut using a jaw or ring spanner and turn it back by hand.
- 9.2 If the clamping element does not come off by itself, use a rubber mallet to lightly hammer against the hexagon nut or hub axially and evenly around the circumference.
- 9.3 If remounting the clamping element, lightly oil it. Do not use oil with molybdenum sulphide or high-pressure additives and do not use grease.

10. Maintenance

The Trantorque Mini cone clamping elements do not require maintenance. During operation however, it is possible for settling to occur in the connection. We therefore recommend checking the tightening of the clamping nut each time the machine undergoes maintenance.

11. Torques M_s

Shaft diameter (mm)	Torque M_s (Nm)
3 to 6	14
7 to 9	28
10 to 12	44
14 to 16	66

Table 1