Installation and Operating Instructions for Rigid Shaft Couplings RWK 500

E 06.694e

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IMPORTANT

Please read these instructions carefully before installing and operating the product. Your particular attention is drawn to the notes on safety.

These installation and operating instructions are valid on condition that the product meets the selection criteria for its proper use. Selection and design of the product is not the subject of these installation and operating instructions.

Disregarding or misinterpreting these installation and operating instructions invalidates any product liability or warranty; the same applies if the product is taken apart or changed.

These installation and operating instructions should be kept in a safe place and should accompany the product if it is passed on to others -either on its own or as part of a machine- to make it accessible to the user.

SAFETY NOTICE

- Installation and operation of this product should only be carried out by skilled personnel.
- Repairs may only be carried out by the manufacturer or accredited agents.
- If a malfunction is indicated, the product or the machine into which it is installed, should be stopped immediately and either we or an accredited agent should be informed.
- Switch off the power supply before commencing work on electrical components.
- Rotating machine elements must be protected by the purchaser to prevent accidental contact.
- Supplies abroad are subject to the safety laws prevailing in those countries.

1. General information

1.1 Function:

RWK 500 Cone Clamping Elements are clamping connection for backlash free fastening of shaft ends. By tightening clamping screws surfaces are pulled together generating radial forces; these forces create a frictional connection between the Cone Clamping Element and the shaft as well as the hub. Torques or axial forces can be transmitted via the Cone Clamping Element to the ends of shafts.

1.2 General safety instructions:

Caution! Danger of injury!
The immediate vicinity of the rotating shrink disc must be kept clear of body parts, hair, clothing and other objects at all times.

2. Configuration and function

RWK 500 Cone Clamping Elements consist of a slotted inner ring 1 with outside cone, a pressure flange 2 with inside cone, a threaded flange 3 with inside cone as well as a number of clamping screws 4. By tightening the clamping screws are drawn against each pressure flange and threaded flange. Radial clamping forces are generated by the conical surfaces which are dependent on the torques of the clamping screws, the cone angel and the friction coefficients at the screws and conical surface. The radial clamping forces press the outer ring into the hub bore and the inner rings onto the shaft and create a friction connection at the respective contact surfaces. In this way, torque and/or axial force can be transmitted between the shaft and the hub.

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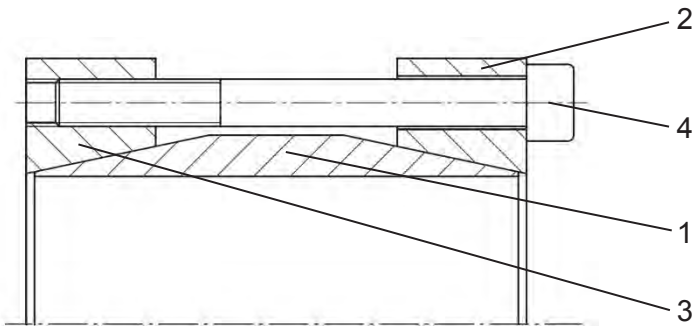
3. Diagram (cross-section) and parts list



Pos.	Nomenclature
1	Inner ring
2	Discharge flange
3	Threaded flange
4	Clamping screw

4. Proper use

The RWK 500 Cone Clamping Elements are intended for installation between two shaft ends. They are intended solely for the friction-tight connection of shafts for the purpose of transmitting torque and axial forces. Use for any other purpose is regarded as improper use. We accept no liability for damages resulting from improper use and associated risks shall be borne by the user.

5. Improper use

The RWK 500 Cone Clamping Elements are not suitable for:

- the direct mounting of hollow shafts to solid shafts or
- as torque-limiting safety devices.

6. Condition as delivered

The clamping elements are wrapped in anti-corrosive packing material.

7. Technical requirements for safe operation

In order to achieve full transmission of torque and/or axial forces, **tolerance** on contact-pressure surfaces

- may not exceed tolerance class h8 for shafts

In addition, pressure-contact **surfaces** on shafts and hubs must have a mean peak-to-valley height R_a < 3,2 µm.
Shaft and hub must be manufactured from **materials** with the following mechanical properties:

- E-module about 170 kN/mm²

The shaft ends must L_1, the load-bearing axial width of the discharge flange or threaded flange, at least overlap.

8. Installation

8.1 Clean the contact surfaces between on the ends of shafts thoroughly.

8.2 Apply a light coat of oil to the clamping element.

Do not use oil which contains molybdenum disulphide or high-pressure additives, and do not use grease!

8.3 Loosen the clamping screws by several revolutions by hand in a crosswise sequence.

8.3 Clamping element to be connected to the shaft ends.

8.4 Tighten diametrically opposed clamping screws by hand whilst aligning the cone clamping element so that the discharge flange and the threaded flanges lie parallel to each other.

8.5 Tighten the clamping screws clockwise with full tightening torque M_s with a torque wrench.

Tighten the clamping screws uniformly ¼ revolution at a time. Repeat the process until no screw turns at the full tightening torque of M_s.

Replace missing or damaged clamping screws with equivalent screws of quality grade 12.9!

9. Disassembly

9.1 Part-release the clamping screws evenly in stages in order to avoid any tilting of the discharge flange and the threaded flange.

Do not remove clamping screws completely from threaded bores under any circumstances, as this poses the risk of injury!

9.7 When working with reusable cone clamping elements, lubricate all contact surfaces, the threads on the clamping screws and the contact surfaces of the screw head with a light coat of oil.

Do not use oil containing molybdenum sulphide or high-pressure additives grease of any kind.

10. Maintenance

RLK 500 Cone Clamping Elements are maintenance-free. However, signs of settling may appear in connections during operation. We therefore recommend checking the tightness of the clamping screws each time maintenance is performed on the machine.

11. Tightening torque M_s

Size d x D [mm]	Clamping screws	Tightening torque M_s [Nm]
14 x 45	M 6	16
15 x 45	M 6	16
16 x 45	M 6	16
17 x 45	M 6	16
18 x 50	M 6	16
19 x 50	M 6	16
20 x 50	M 6	16
22 x 55	M 6	16
24 x 55	M 6	16
25 x 55	M 6	16
28 x 60	M 6	16
30 x 60	M 6	16
32 x 75	M 8	37
35 x 75	M 8	37
38 x 75	M 8	37
40 x 75	M 8	37
42 x 85	M 8	37
45 x 85	M 8	37
48 x 90	M 8	37
50 x 90	M 8	37
55 x 95	M 8	37
60 x 100	M 8	37
65 x 105	M 8	37
70 x 115	M 10	73
75 x 120	M 10	73
80 x 125	M 10	73
90 x 135	M 10	73
100 x 155	M 12	126