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Repair Instructions

Rotary Joints Series DQ / DQL ND 150

1 General information

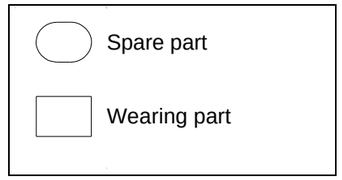
- Repair work is required during preventive maintenance, or when leaks are detected at the rotary joint housing, or when the oil level in the cooling unit KE / KEW changes. Repair work may only be performed by trained staff.
- Prior to repair work, let off the oil from the heat carrier and cooling circuits and dismantle the hoses.
- Remove the screws at the K flange and dismount the rotary joint from the roller.

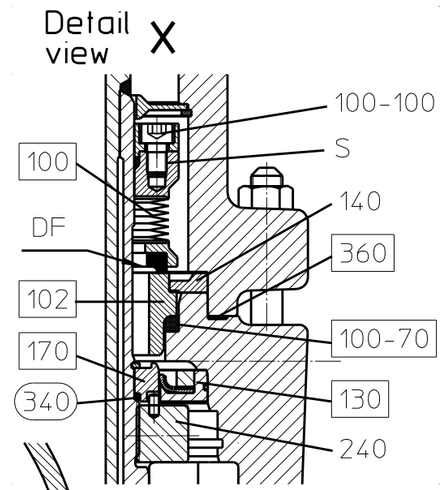
2 Dismantling the rotary joint

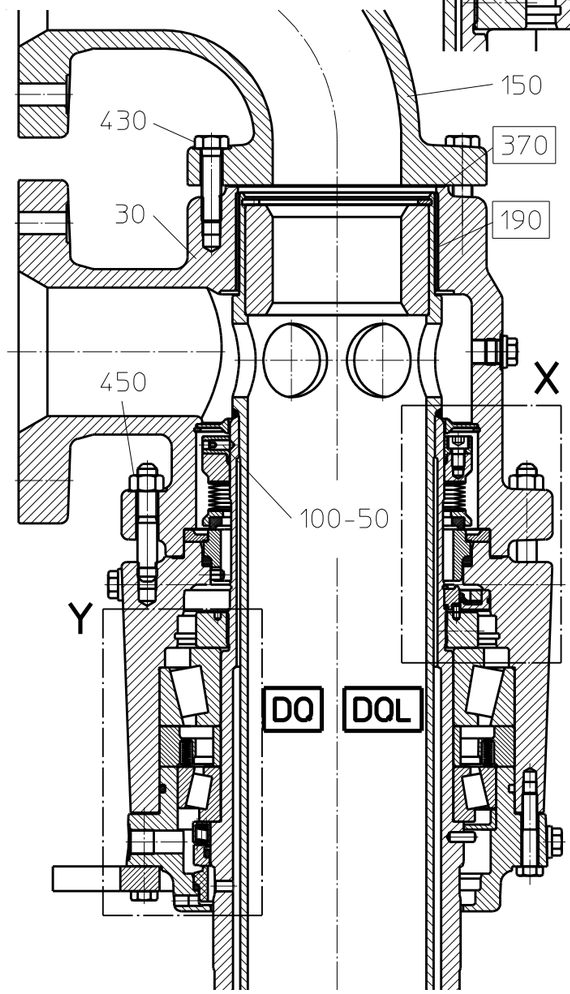
- Place the rotary joint vertically.
- Loosen the screw connections 430 and 450, dismantle elbow 150, main housing 30 and flat packings 360 and 370 - make sure not to damage the internal parts!
- Loosen screws 100-100 and dismantle set screws 100-50.
  Slightly turn and pull off packing unit - **if unit cannot be removed this way:**
  Use threaded blind hole S to pull with threaded rod, flat steel piece and nuts. Evenly tighten the nuts in order to avoid damage.
- Dismantle holding disk 140.
- Carefully loosen screws 400 and 410 and centrically remove cover 120 (slightly spring-loaded) - make sure not to damage internal parts.
- Dismantle bearing housing 40 - **DQL:** pull off securing ring and shaft sleeve 170.
- Remove grooved nut 240 and tapered roller bearing 200 and 202 with distancer and fitting rings from rotor - the nut is easier removed if force F is applied at bearing 200 in order to relieve springs 270.

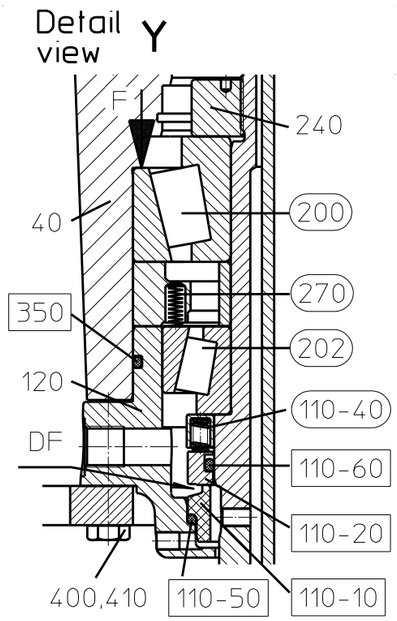
3 Evaluating the parts

- The quality of the sealing surfaces DF of axial face seals 100 and 110 is of particular importance. When new, they are lapped - **repair** of **sealing surfaces DF** is only possible if they are carefully lapped and when the **wear tolerance** at the coal parts is **at least 1.5 mm!**
  Carefully remove deposits. If this is not possible, replace the sealing parts in question.
  Information on replacing sealing parts:
  - Replace counter ring 110-10 as per detail Y: (not DQL)
    Carefully pull the counter ring out of cover 120, using a suitable tool (e.g. hook). Apply force evenly (use hook at different points). Clean the cover inside - particularly the O-ring seat.
    Mount O-Ring 110-50 to counter ring 110-10. Use a soft holder to push the unit down in order to avoid damage to the sealing surface DF! Make sure to use at least a protective piece.
    Apply the press-down force at the center. Observe the correct alignment of locking pin and groove. The process is complete when you feel a slight counterforce.
  - Replace rotating ring 110-20 as per detail Y: (not DQL)
    Remove rotating ring 110-20, O-ring 110-60 and springs 110-40, check and replace, if necessary. Clean O-ring seat and spring area.
  - Replace counter ring 102 as per detail X :
    Push out counter ring by means of suitable tool (e.g. pin and hammer). Apply force evenly (use pins at different points) and watch out for position of locking pin.
    Remove profile ring 100-70 with screw driver - clean sealing surface.
    Mount profile ring 100-70 to counter ring 102. Use a soft holder to push the unit down in order to avoid damage to the sealing surface DF! Make sure to use at least a protective piece. Apply the press-down force at the center in order to ensure minimum run-out tolerance at sealing surface DF.
    Maximum run-out tolerance ± 0,05 mm.
    Observe position of locking pin.
    The process is complete when holding disk 140 evenly contacts the surface of bearing housing 30.
- Always replace flat packings 360, 370, profile sealing 100-70 and O-rings 350, 110-50, 110-60.
- Clean or replace tapered roller bearings 200 and 202, depending on condition.
  DQL: new lubrication of bearing 200 (480 ccm) and bearing 202 (240 ccm).
  Required **lubricant quality:** Lubcon **TURMO TEMP LP 5002** by Lubricant Consult GmbH (phone.: ++49-6109-62018).
  Can with 1 kg grease with Maier ordering no.: 3118219
- Remove deposits from rotor and housing parts by means of sand paper (grain 300).
  DQL: also check sealing surface at shaft sleeve 170. Repair or replace. Always replace shaft seal 130.
- **Rotary joint version B2** : Reducing bushing 190 with grooves in running surface must be replaced.









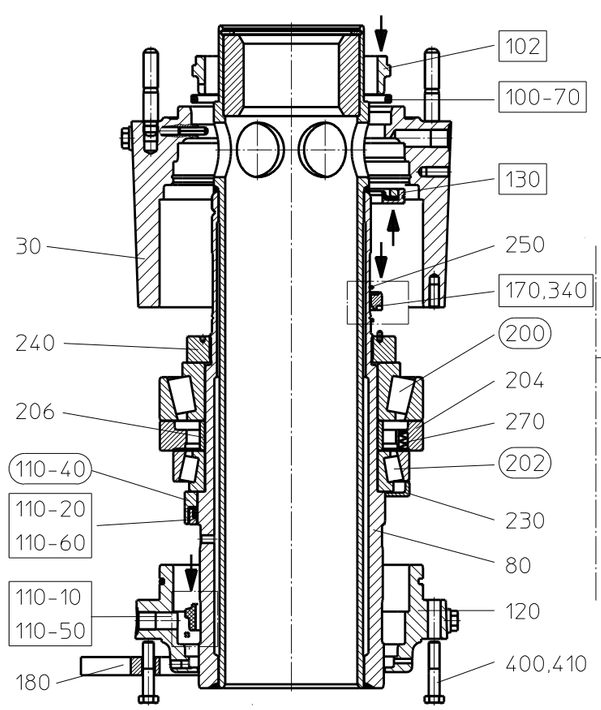
4 Mounting the rotary joint

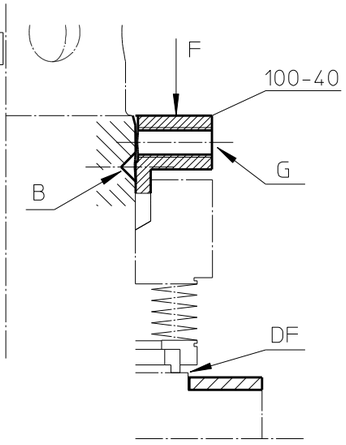
When you have completed the work described in section 3, you are ready to reassemble the rotary joint.

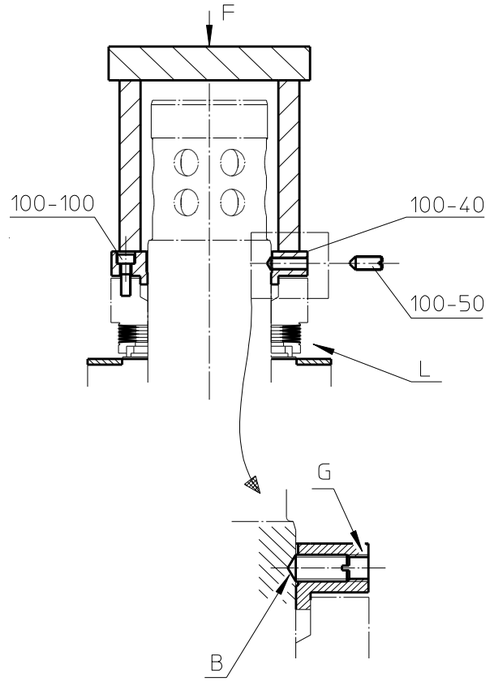
- Mount tapered roller bearings 200 and 202 with fitting ring 206, distancer 204 and springs 270 to rotor 80. Pretension the springs via the outer ring of bearing 200 in order to facilitate tightening of the visible grooved nut 240. Secure the tightened grooved nut with both set screws!
- **DQL :** Mount shaft sleeve 170 with O-ring 340 to rotor and secure with holding ring 250.
- Carefully place the pre-assembled bearing housing 30 (with counter ring 102, profile ring 100-70 (DQL: and shaft sealing ring 130)into position.
- **DQ :** Place springs 110-40 into carrier ring and mount rotating ring 110-20 and O-ring 110-60 to rotor.
- Mount cover 120 (**DQ:** with mounted counter ring 110-10 and O-ring 350 / **DQL:** with labyrinth ring 230) to bearing housing with screws 400,410 and locking bracket 180 to bearing housing 30.
- Clean sealing surface DF at counter ring 102 with solvent (free of residue) and place holding disk 140 onto bearing housing.
- Align rotating sealing unit 100 at thread G with B and mount it to rotor until it contacts the sealing surface DF.
  Pretension sealing unit with assembly force F in such a way that thread G and B are flush - **never press the bellow lamellas to the block!** Tighten threaded bolts 100-50. Place screws 100-100 into position and evenly tighten them in several rounds (not cross-wise).
- Place flat packing 360 onto bearing housing and mount main housing 30 (rotary joint version B2: with pre-assembled reducing bush 190) with screw connection 450.
- Place flat packing 370 to main housing and mount elbow 150 with screw connection 430.

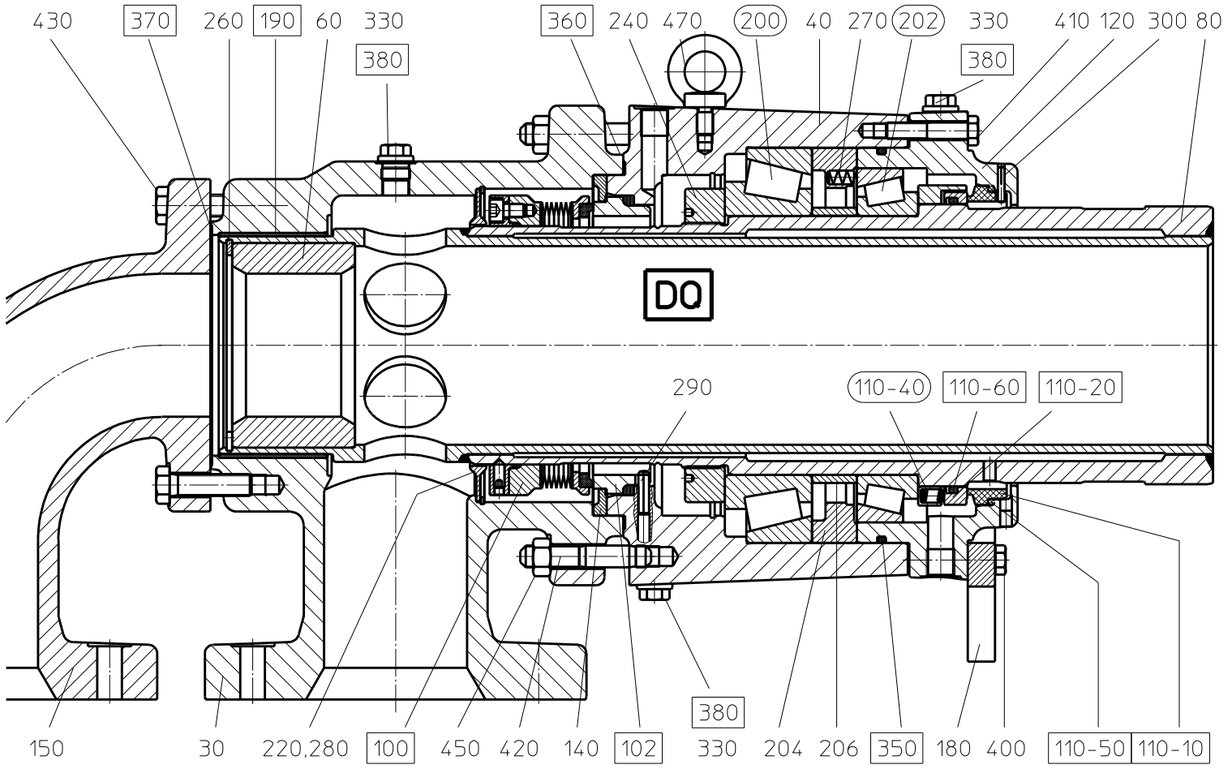
5 Spare parts recommendation

We recommend stocking the spear and wearing parts mentioned above. When placing orders, always specify the part number and the complete type designation of the rotary joint (according to the type designation plate on the unit).

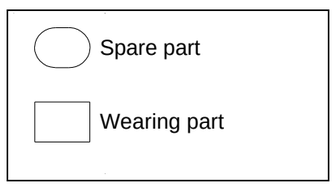


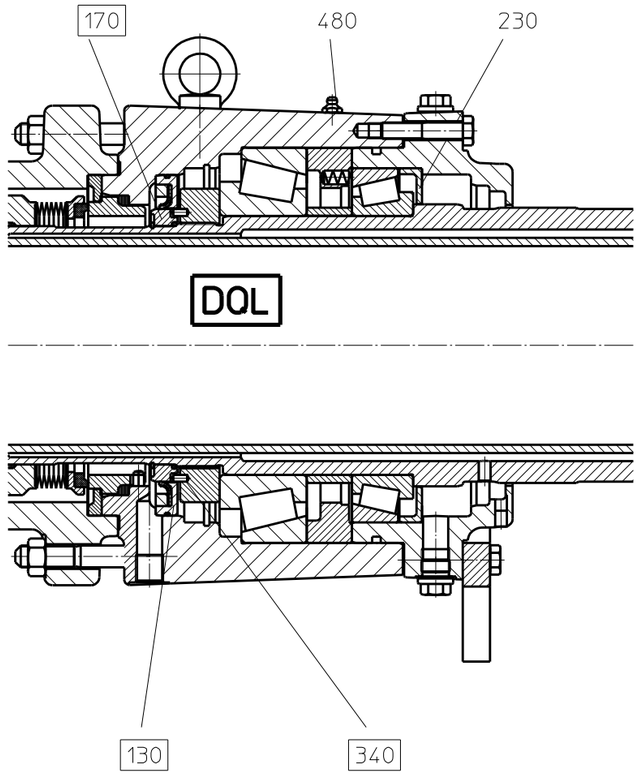






Part #	Description	Spare part (S) Wearing part (W)
100	Complete rotating sealing unit with profile ring 100-70	W
102	Counter ring primary AFS	W
110-10	Counter ring secondary AFS	W
110-20	Rotating ring secondary AFS	W
110-40	Pressure spring (z=8)	S
110-50	O-ring 1	W
110-60	O-ring 2	W
130	Shaft seal	W
170	Shaft sleeve	W
190	Reducing bush	W
200	Tapered roller bearing	S
202	Tapered roller bearing	S
340	O-ring 3	W
350	O-ring 4	W
360	Flat packing 1	W
370	Flat packing 2	W
380	Sealing ring	W





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