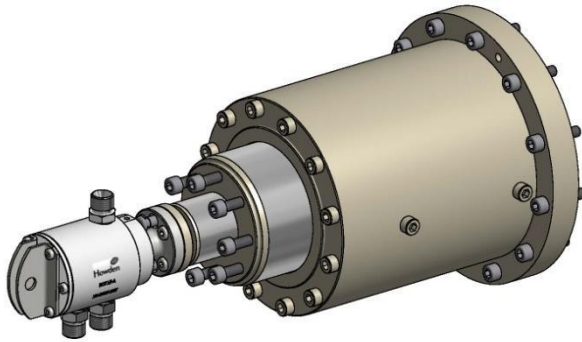


New procedure for alignment of the rotating oil seal



New mounting instruction to achieve even better alignment of the rotating oil seal.

New optimized tolerance ensures a better alignment of the rotating oil seal.

Howden Engineers have improved the tolerance of the copper gasket and flanges.

This ensures a smoother and more accurate mounting which results in a more precise alignment of the rotating oil seal to the hydraulic cylinder.

As a consequence we have updated our installation instructions for our Customers and Technical Advisors.

Instruction

Mounting

1. Anneal the copper gasket by means of a soft gas burner to 550 °C (glowing red), then quench the gasket in water. Clean the gasket for mill scales before mounting.

! **NOTICE!** Dismount the pilot valve retaining cover including the O-ring at the pilot valve housing of the hydraulic cylinder before mounting the rotating oil seal.

2. Mount the rotating oil seal on the pilot valve with the copper gasket between the shaft flange of the rotating seal and the pilot valve flange; see Figure 1.

Make sure that the flange match-marks (A-A) and the pilot valve holes in the copper gasket align and secure with four screws and two tight-fitting bolts.

See Step 1 in Figure 4 below (initial setting, hand tight approx. 0.4-0.9 mm (0.016" - 0.035") between flanges and equal all around).

New unused copper gasket is approx. 2 mm (0.08") thick.

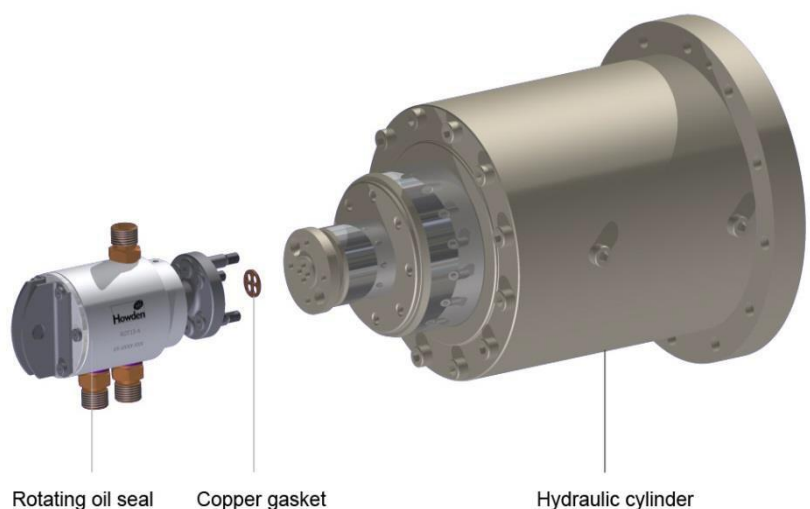


Figure 1

Alignment

- Using the supplied special adapted allen key (item 101 in Figure 2), pre-align by tightening the four screws to compress the copper gasket so that the gap between the flanges is reduced by $\sim 0,1\text{mm}$ ($0.004''$) compared to gap measured after initial setting.

See step 2 in Figure 4 below.

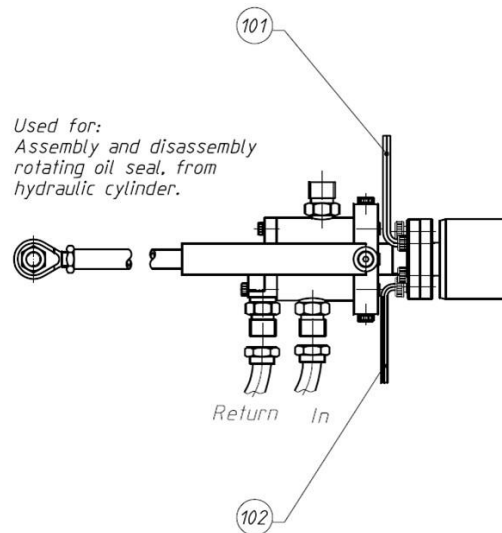


Figure 2

Final alignment

- Final alignment (misalignment less than $0.05\text{-}0.02\text{mm}$ ($0.002''\text{-}0.0008''$)) is done by means of a dial indicator that is located on the diffuser for measurement of the end cover of the rotating oil seal as shown in Figure 4.

Maximum inaccuracy 0.05mm ($0.002''$).

See step 3 in Figure 4 below.

NOTICE! Keep the rotating oil seal stationary during hub rotation. This way any misalignment between the rotating oil seal surface and the shaft will have no effect on the alignment.

When mounting a replacement copper gasket: Prior to making the final alignment ensure the hydraulic cylinder run-out is less than 0.25mm ($0.010''$)

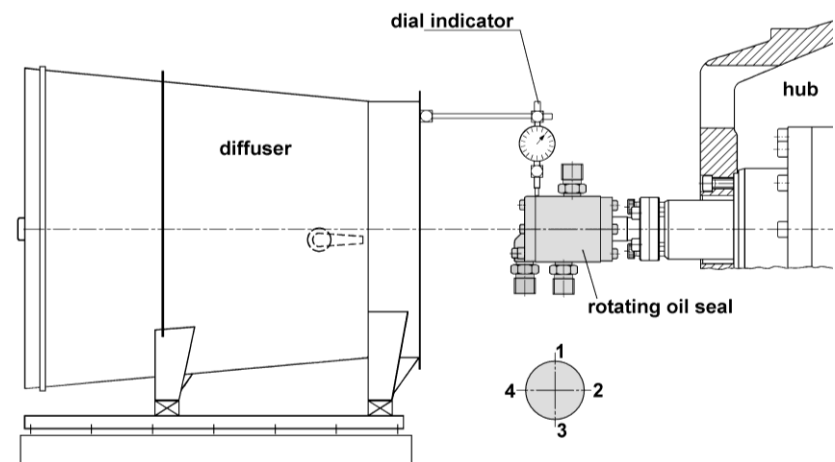
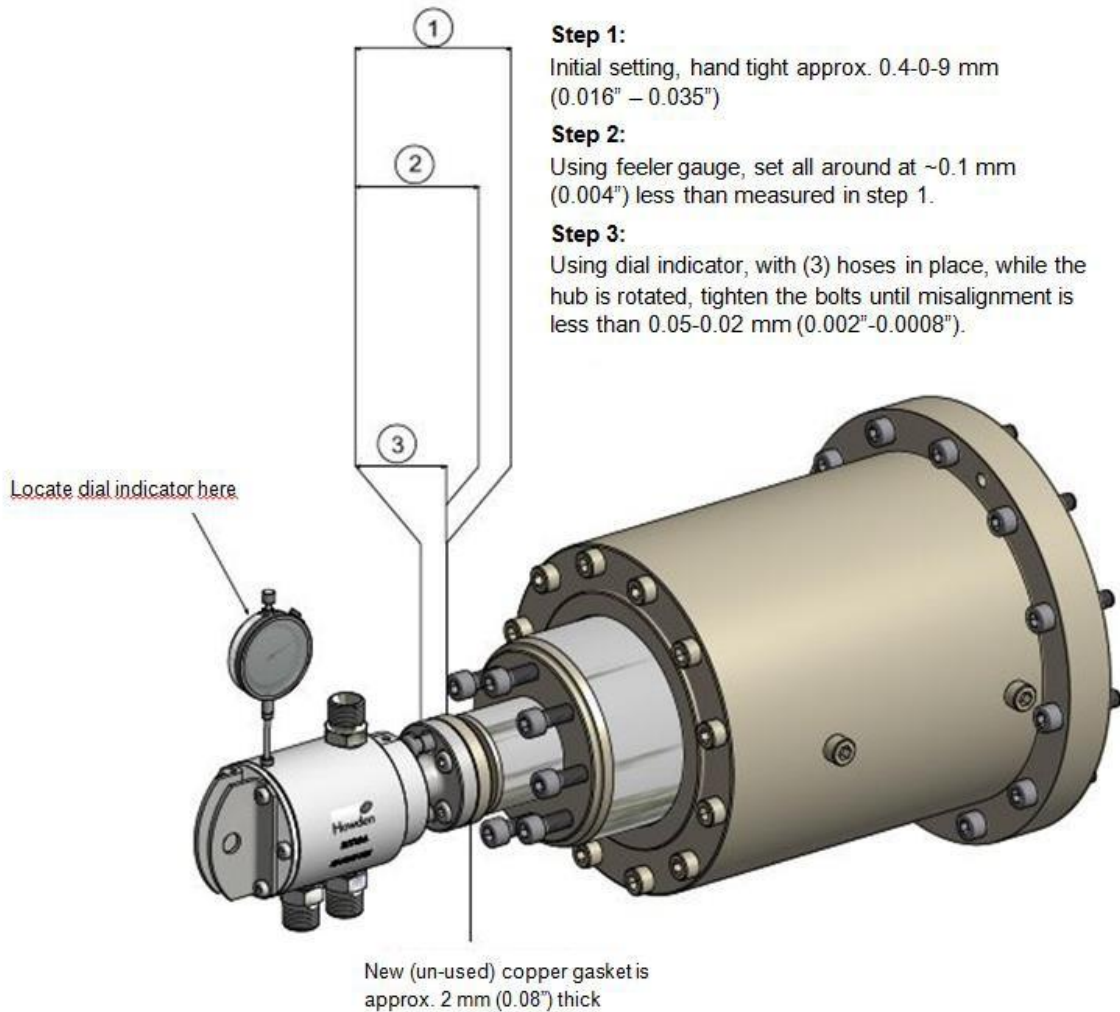


Figure 3

Instruction



NOTICE! If the gap between the flanges is reduced more than 0.3 mm (0.012") during the alignment process (**step 3**) without meeting the requirements for acceptable misalignment, then attempt should be stopped. Otherwise there is a risk that the screws will be over-tightened. Dismount the oil seal and remount with a new copper gasket and start from step 1 again.

Figure 4

For more information please **contact your local Howden office.**

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