

INSTALLATION OF MECHANICAL SEAL ON PUMP (SINGLE INSIDE MOUNTED SEAL)

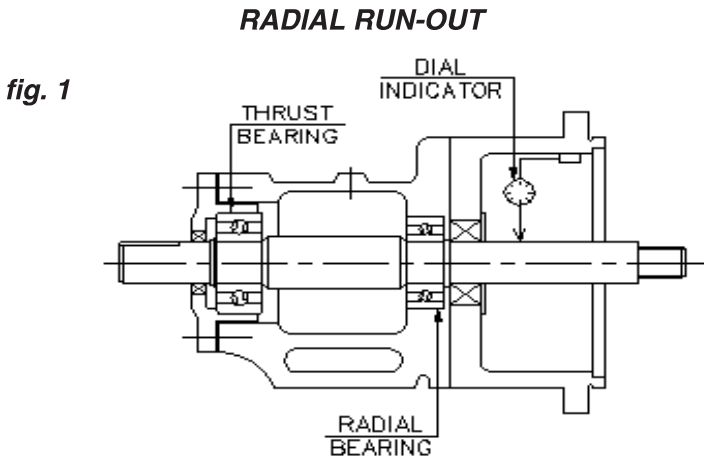
Equipment Inspection

Before installing a seal, a thorough inspection of the equipment should be made.

A. Equipment Alignment

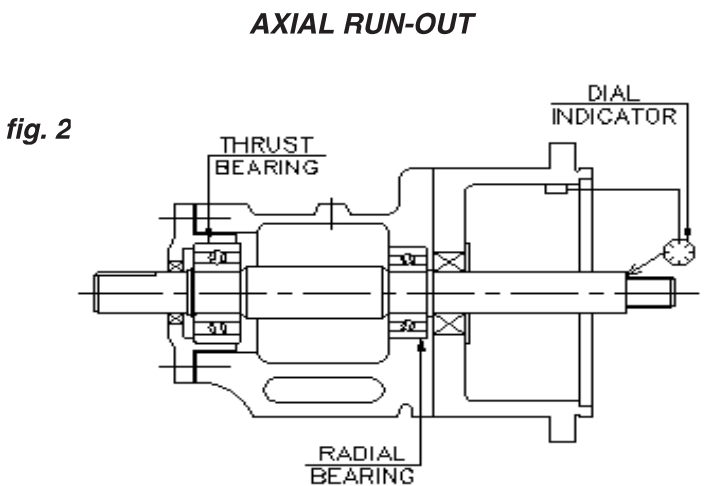
1) Radial Movement of shaft

It can be checked using a dial indicator while turning the shaft by hand, the total indicator readout should be within 0.08mm at the seal end. (Ref. fig. 1)



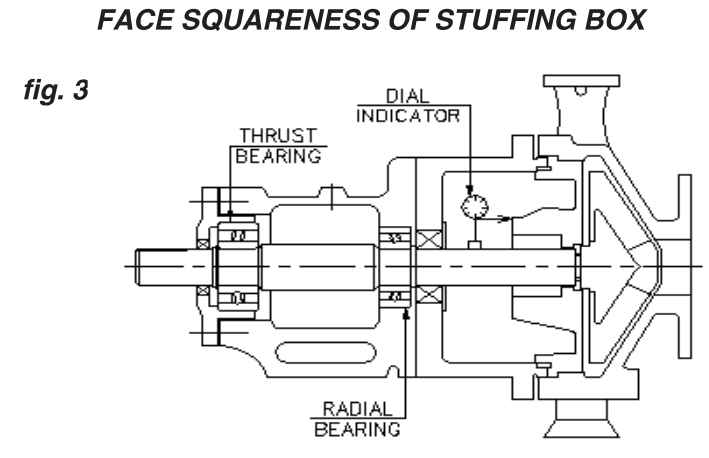
2) Axial Movement of shaft

It can be checked using a dial indicator. The total indicator readout should be within 0.2mm (Ref fig. 2)



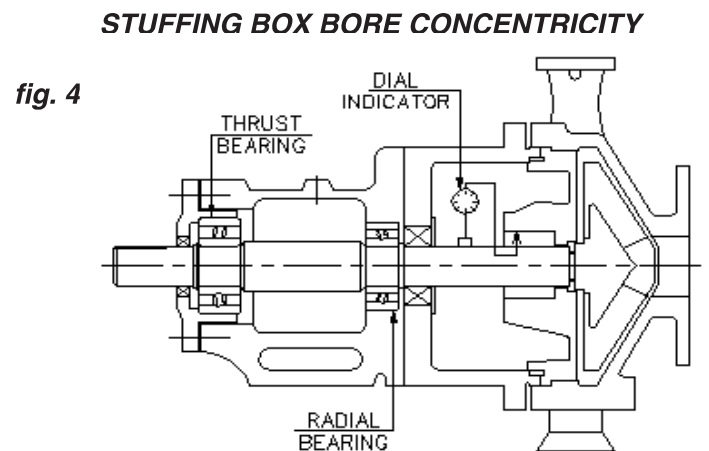
3) Stuffing Box Face Squareness

It can be checked using a dial indicator with the pump stuffing box cover bolted in place. The total indicator readout should be within 0.05mm of shaft size. (Ref. fig. 3)



4) Stuffing Box Bore Concentricity

It can be checked using a dial indicator. The stuffing box bore should be concentric to the shaft, within 0.1mm (Ref. fig. 4)



B. Condition Of The Equipment

1. Stuffing Box

- a) Must be clean
- b) The stuffing box face must be free of sharp edges.
- c) For double ended pump, check the pump case facings for alignment, so that the gasket can seal properly.

2. Shaft Sleeve

- a) Must be free of sharp edge or burrs. Polish them with emery cloth until smooth. if necessary.
- b) Deep scratches on shaft or sleeve to be removed in the areas over which the secondary seal will travel or sit.
- c) A chamfer on the end of the shaft or sleeve is necessary.
- d) The shaft must have the finish as recommended for the particular type of seal

3. Design Of The Equipment

- a) There must be sufficient depth inside and outside the stuffing box, in accordance with the assembly drg. of the seal.
- b) The radial clearance between the stuffing box and shaft must be in accordance with the assembly drg. of the seal.

Installation Of The Seal Assembly

1. Keep the seal assembly clean and protected. If the faces contain protective covering, leave the covering on until the last possible moment. Always cover the faces with a clean cloth.
2. Check the secondary seal.
3. Check the set screws on either the rotary unit or the drive collar of the seal assembly.

Assembly Of Mechanical seal

- a) ensure the pump shaft sleeve and impeller in normal operating position. Apply blueing ink to the sleeve and then draw a reference mark on the sleeve directly below the stuffing box face.
- b) Disassemble the pump until the stuffing box and shaft are accessible.

c) Draw another mark (second marking) on the sleeve, taking reference of installation dimension mentioned in G. A. drg.

d) Install rotary unit (compression unit), as shown in G.A. drg. on the second marking .

e) Tighten the grub screws & check for free movement (compression) of the rotary unit.

f) Fit stationary sheet in the Gland Plate & tighten on the stuffing box face.

g) Assemble the pump. Ensure gland gasket is in proper place & tighten the gland plate with equal force.

Equipment Start-up Procedure

1. After installation of mechanical seal & assembly of the pump, check the shaft for free movement.

If the shaft is jammed due to seal, then, reinstall the seal.

2. Connect all the auxiliary system, necessary for environmental control and longer life of the seal. Activate the auxiliary systems before the start-up & continue even after the switch off.

3. There should be no abnormal noise from the stuffing box.

4. Excessive heat should not be generated. This may indicate stationary parts contacting the rotating shaft or rotating seal parts contacting the housing of the equipment.

5. Observe the vibration and any other equipment abnormality.

6. If anything appears abnormal, stop equipment immediately.

7. Prior to start-up, vent the stuffing box until all trapped air is released. Open all suction and discharge valves.

Check for leaks.

8. After start-up, check around stuffing box area for leakage.