Installation Tips

Rod Seals

Before installing seals, the following should be observed:

- Make sure the rod has a lead in chamfer, if not, use an installation tool.
- Chamfer or round sharp edges.
- Cover screw threads.
- Carefully clean all parts making sure any machining debris are removed.
- Grease or oil housings for seals and rods to aid installation.
- Do not use sharp tools to fit seals.

Installation into a split housing:

Installation into a split housing is relatively simple. The shape of the seal corresponds to the housing it is to be fitted in. The seal should not be allowed to twist when fitted.

When fitting the rod into the housing, the seal will need to be sized. If the rod has a long enough chamfer it will probably be suitable for this. If not, a sizing sleeve should be used.

Installation into a closed housing:

For seals manufactured from polyurethane, nitrile or similar elastomer a fitting tool is recommended.

Where a fitting tool is not available or suitable the seal should form into a kidney shape. The seal should have no sharp bends.

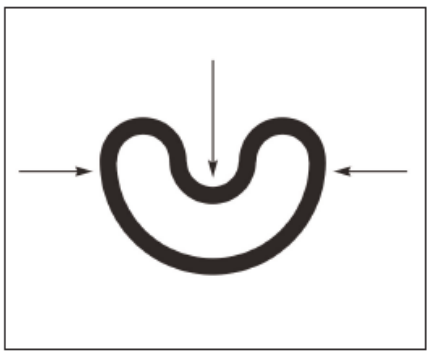

Fig.1 Deforming the seal

Insert the seal into the groove, then apply pressure to the kidney shape as indicated by the arrow in Fig.2.

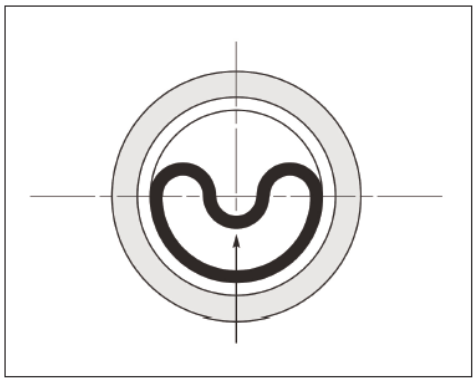

Fig.2 Inserting the seal into the housing

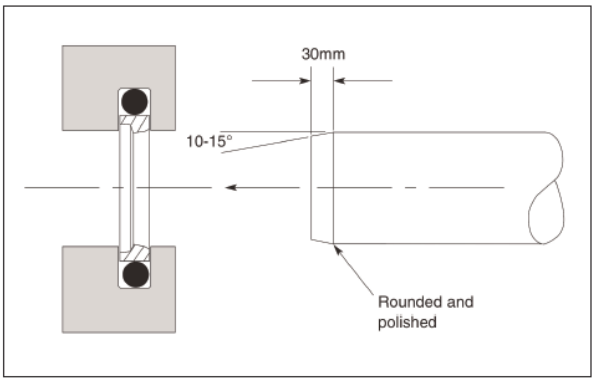

Fig.3 Resizing the seal

When the seal is in the housing, reshape by hand. Finally, resize the seal using either the rod itself, provided it has a sufficiently long chamfer, or a mandrel manufactured from a polymer material with good sliding properties. It should have a chamfer of 10-15° over 30mm.

Piston Seals

Before installing seals, the following should be observed:

- Make sure the cylinder has a lead in chamfer, if not, use an installation sleeve.
- Chamfer or round sharp edges.
- Cover screw threads.
- Carefully clean all parts making sure any machining debris are removed.
- Grease or oil housings for seals and rods to aid installation.
- Do not use sharp tools to fit seals.

Installation into a split housing.

Installation into a split housing is relatively simple. The shape of the seal corresponds to the housing it is to be fitted in. The seal should not be allowed to twist when fitted.

When fitting the rod into the housing, the seal will need to be sized. If the cylinder has a long enough chamfer it will probably be suitable for this. If not, a sizing sleeve should be used.

Installation into a closed housing.

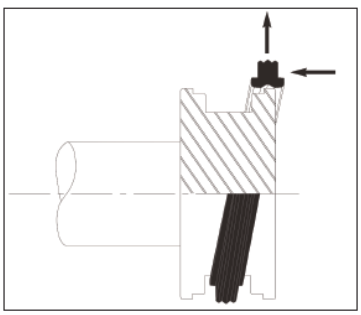

Fig.4a Stretching the energiser over the piston

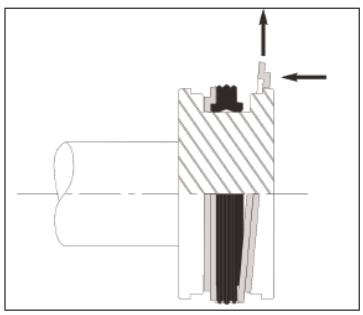

Fig 4b Fitting the back-up over piston

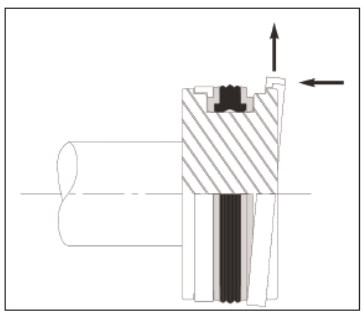

Fig. 4c Fitting the wear ring over the piston

Installation of polyurethane and nitrile rubber seals are relatively straight forward. These will generally stretch over the piston and slot into the groove with no further adjustment required.

The installation of PTFE seals though will require the use of installation aids.

PTFE seals can be installed easier if they are heated up in oil or water to between 80°C to 100°C

Do not use tools with sharp edges to stretch the seals.

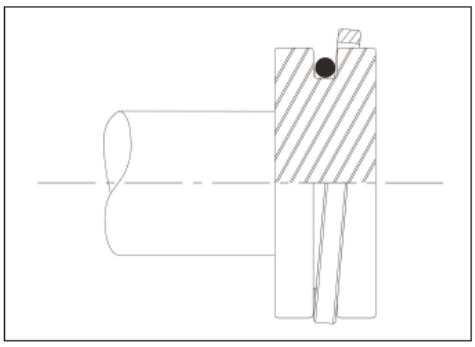

Fig.5 Stretching the seal over the piston.

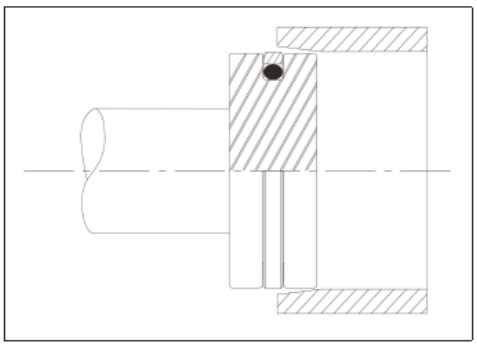

Fig.6 Sizing the seal.

For the series production installation of PTFE piston seals, the use of installation tools is recommended. These parts should be manufactured from a polymer material with good sliding properties.