

SYNTHETIC RUBBER OIL SEALS

The efficiency of a unit is dependent upon its oil seals. It is therefore expedient to treat oil seals with the utmost care.

Storage

Ideally, seals should be stored in a dust free atmosphere at a temperature of between 10–21°C. Pressure must never be allowed to bear on the lips of the seals since this will cause distortion. It is particularly important to remember this when storing seals for long periods.

Fitment

Before assembly, seals should be carefully examined and wiped with a cloth moistened with clean oil to remove any foreign matter. If the lip of the seal is damaged, even by the slightest scratch, it should be discarded. Below is given the normal method of fitting a synthetic rubber seal.

1. Examine the shaft on which the seal is to be fitted for roughness or burrs, especially along the edges of keyways, screw threads or splines over which the seal must be passed.
2. Inspect the housing in which the seal is to be inserted for roughness, etc. The leading edge of the housing should be slightly chamfered to provide a lead-in for the seal.
3. Smear the lips of the seal with clean grease.
4. Insert the seal, lip side towards the oil, into the housing **before** fitting the shaft. Where this is not possible, extra care should be taken not to damage the lip of the seal on the shaft. Ensure that the seal enters the housing recess "squarely".

In cases where the surface of the shaft over which the lip of the seal must pass is liable to cut the lip, it is good practice to use a fitting sleeve with a lead-on taper having an internal diameter a few thousandths of an inch greater than the shaft. Where a sleeve is not available, a sheet of shim steel (or shim copper) should be wrapped around the shaft, and then smeared with grease.

When passing the seal along the shaft, or entering the shaft in the seal as the case may be, a slight twisting movement should be employed to reduce the risk of damaging the lip.

IMPORTANT. The seal should at no time during the assembly of the component, be allowed to support the weight of the shaft or housing, since this will cause the seal to be distorted.

Metal cased seals

The fitting instructions given above apply equally to metal cased seals. However, metal cased seals cannot usually be inserted into the housings with ease. For this reason, a press fitted with a suitable ram adapter must be used. The diameter of the ram should be fractionally less than the outside diameter of the seal. Where a press is not available, the seal may be fitted with the aid of a short length of metal tube whose diameter is slightly less than the outside diameter of the seal. By means of gentle hammer blows applied uniformly around the edge of the tube, the seal may be driven into place. Under no circumstances should the hammer blows be applied directly to the seal casing.

It is recommended that the outside edge of the seal is lightly coated with jointing compound before entering it into the housing.

NEEDLE ROLLER BEARINGS

Fitment

Do not wipe the grease from the outside of needle bearing. Keep needle bearings clean.

Use an arbor press, do not hammer against end of bearing. The bearing should always be pressed in using the special mandrel, the shoulder on which will have a concave face, so as to avoid pressing on the inner edges of the lip of the needle bearing.

Place the end of the needle bearing which is stamped against the shoulder of the mandrel, the unstamped end of the needle bearing will lead into the housing bore.