

## Installation

During installation it is imperative that all the seal parts are kept clean and free of dirt. Dirt particles on the seal faces or O-Rings can cause instant leakage and even damage the seal faces.

All DEPAC seal shipments contain installation and operating instructions with corresponding drawings for the seal. Operating instructions should obviously be read and appropriate measures should be taken before installing a seal. Most important is that the installation dimensions are checked in comparison to the related dimensions of the equipment.

## Corners

O-Rings or other elastomers, which for installation reasons need to slide over edges, are very sensitive and should be protected. Therefore all edges on sleeves or shaft recesses, over which seals are to be pushed, have to be clean of burrs and should be chamfered to no less than  $25$  to  $30^\circ \times 3$  mm (0,12").

## Face protection

Single seals are supplied by DEPAC with a special wax protective coating on the faces which should be removed completely. The wax leaves an oily film on the face, which is useful when starting the seal. However, no dust or dirt particles should be allowed to stick to the film. This can cause leakage or damage to the faces.

## Secondary seals

For the lubrication of secondary seals like O-Rings, etc. silicon grease or silicon oil should be used during installation. Conventional mineral oils are to be avoided since some elastomers might not be resistant to them. Special care should be taken that rubber bellow seals are to be installed with soapy water as opposed to oil or grease.

## Set screws

For set screws, which tighten the seal to the shaft or sleeve, and for connecting bolts, which tighten the seal gland to the equipment housing, an anti loosening agent such as Loctite 241 should be applied.

To avoid axial movement of seals on the shaft or sleeve under pressure conditions at or above 15 bar (225 PSI), DEPAC recommends drilling the shaft/sleeve where the set screws are to be tightened. Please ask your DEPAC representative for further information.

## Welded bellows/Rolled bellows

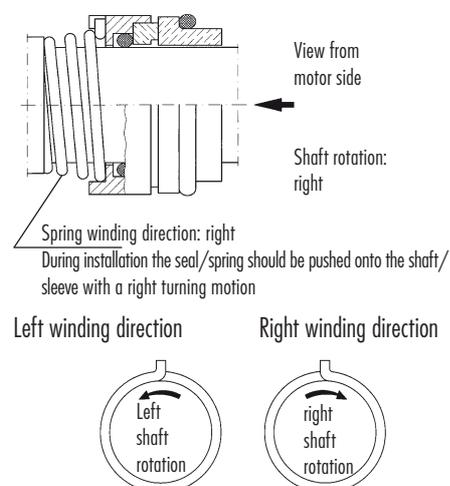
Please note that welded and rolled bellows seals are not to be over compressed during installation! If this happens, a pressure set occurs which reduces the calculated spring rate and causes the seal to fail. These seals have to be assembled with a mounting tool, which bridges the bellows. This enables the thrust applied to the seal during installation to be transferred to the connecting part without damaging the bellows. Mounting tools are either delivered with the seal or should be prepared accordingly.

## Double seals

It is of utmost importance that the barrier chamber is vented. DEPAC seals of the series 321, 326 and 365 have special venting devices incorporated, which should be used accordingly. In all situations, dry running of the seal must be avoided since this would result in seal failure due to overheating.

## Springs

Attention! If single springs (conical springs) are used, the direction of spring winding has to correspond with the direction of the shaft rotation (exceptions are rubber bellow seals). For this reason it is important at the time of seal selection, to check if the seal's direction of rotation is dependent or independent. The following drawings clearly show the necessary spring winding direction in relation to the direction of the shaft rotation.



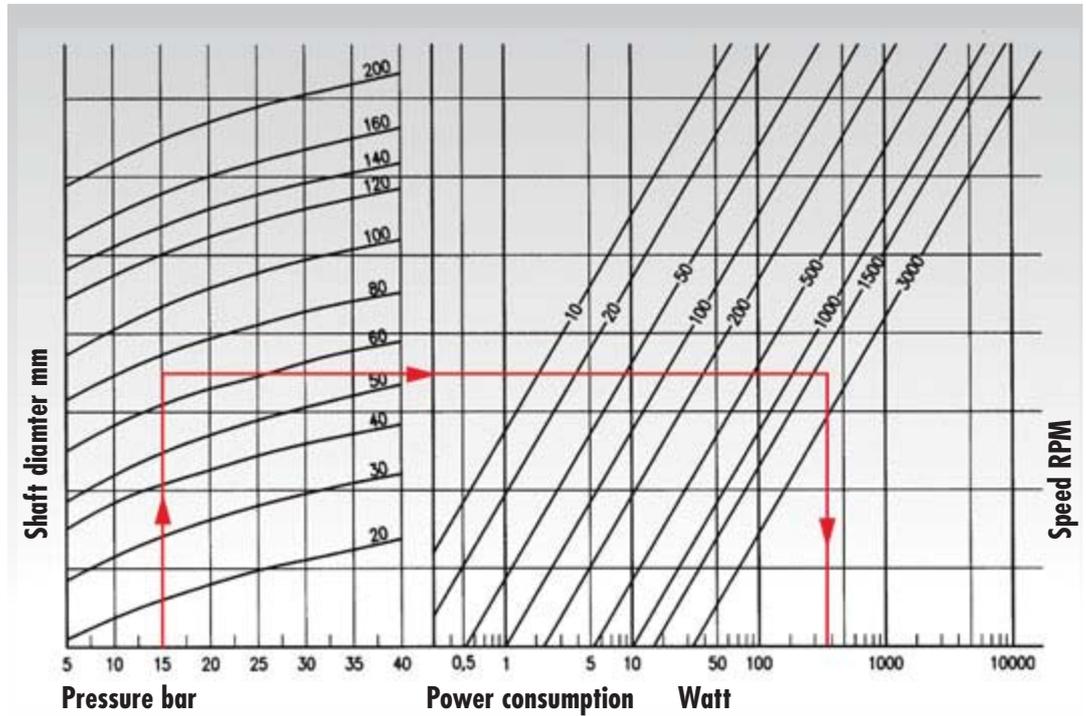
If possible, a set of small springs equally spaced around the seal face should be preferred and selected. Please also note that sinus, "super sinus" or waver springs are only available with a relative steep spring rate. With the wear of the seal faces, the seal quickly loses the spring force it needs and therefore its potential service life is artificially reduced.

## POWER CONSUMPTION OF PRESSURE BALANCED SEAL FACES

### Example from Data:

Pressure = 15 bar (225 PSI)  
 Shaft diameter = 70 mm (2")  
 Speed = 2000 RPM

**Power consumption: appr. 380 W**



## LEAKAGE OF PRESSURE BALANCED SEALS

### Example from Data:

Pressure = 16 bar (240 PSI)  
 Shaft diameter = 80 mm (3 1/8")  
 Speed = 3000 RPM

**Leakage: appr. 7 ml/h**

