

Information for the installation of mechanical seals



Please read these hints carefully. In case of confusion please contact METAX Kupplungs- und Dichtungstechnik GmbH.

Mechanical seals are first-class worked and proved machine elements, whose handling needs special skill. The instruction for safety at work, prevention of accidents, the handling with hazardous substances and the intended use are to be noted.

Working at mechanical seals should only take place at stagnation, without pressure and in a cool off condition. No reconstructions or alteration should be resolved on the mechanical seal (failure of the seal, lost of the guarantee). Only use original spare parts of the manufacturer.

Reparation should, for your own safety, be done by METAX.

General important fitting steps

- The mounting area has to be cleaned carefully.
- Check installation and connection measures according installation drawing or data sheet, edges and shoulders over which the mechanical seal has to be pushed must be planed 3x30° and rounded off.
- Check the shaft's concentricity to the seal chamber and do not exceed the following values:
 - $\varnothing 50\text{ mm}$: max. 0,05 mm
 - > $\varnothing 50\text{ mm}</math> and $\leq \varnothing 160\text{ mm}</math>: max. 0,08 mm$$
 - > $\varnothing 160\text{ mm}</math>: 0,12 mm$
- The permissible values of run-out tolerance according to the speed are:
 - $n = 750\text{ min}^{-1}$: 0,2 mm
 - $n = 1500\text{ min}^{-1}$: 0,1 mm
 - $n = 3000\text{ min}^{-1}$: 0,025 mm
- Check axial shaft movement and strive for values $\pm 0,05\text{ mm}$.
- Inspect seat for the secondary seals on shaft sleeve and seal plate for damages.
- Avoid damages on sealing faces and secondary seals.
- Never put down rotary and stationary seal rings on the sealing surface.
- Secondary seals and their seats have to be greased with oil or silicon grease.

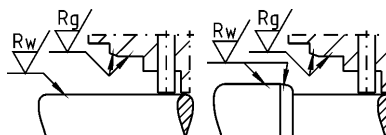
Attention! Elastomeric parts made of Ethylene Propylene rubber (EPDM) may never get in contact with mineral oil lubricants. Use Silicon grease or soft soap!

- Mount solid PTFE-O-rings slowly and using low force.
- ① Check perfect fit of spring and belonging parts!
- ② Do not compress metal bellow to block.
- ③ Pure-graphite seals may not be deformed, risk of break!
- Setscrews with cup point as well as pure-graphite seals may be used once only.
- ④ Mechanical seals with elastomeric bellows may be assembled only with low surface tension water (add on fluid). Push the bellow with screwing motions onto the shaft.
- Never apply lubricant onto the sealing faces, assemble absolutely dry, dust free and clean.
- The steps of assembly and disassembly of mechanical seals depends on the design of the machine. Assemble parts parallel and constant onto the respective seat.
- Pay attention to the correct spring's direction of winding when using a mechanical seal with a single spring. Looking from the stationary seal ring, a clockwise rotating shaft requires a right-hand spring.
- If mechanical seals with setscrews with cup point are used as carrier, the setscrew has to be locked with screw locking glue.

Roughness of surfaces according to EN 12756

Recommended average roughness Ra:

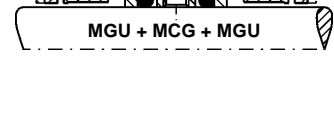
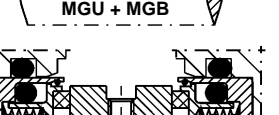
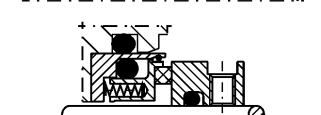
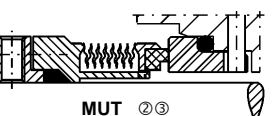
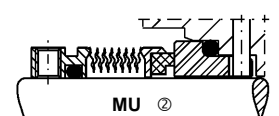
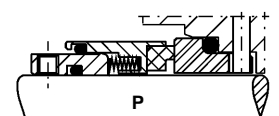
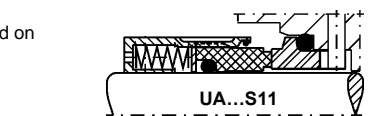
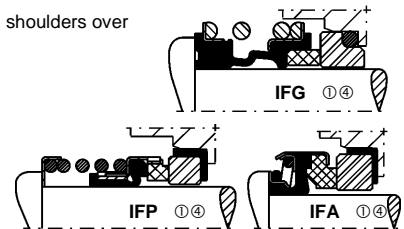
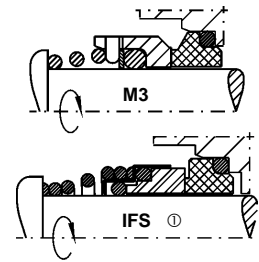
For elastomers	$R_w = 0,8\ \mu\text{m}$	$R_g = 2,5\ \mu\text{m}$
Non-elastomers or optional use of elastomers	$R_w = 0,2\ \mu\text{m}$	$R_g = 1,6\ \mu\text{m}$



Instructions for operation

A properly operated mechanical seal requires no maintenance but is subject to a certain wear. Before putting into operation evacuate the compartment of the seal carefully. Make sure the seal is completely immersed in liquid (or there will be a risk of dry running). If the seal requires a certain direction of rotation, pay attention to the correct polarity of the driving motor.

The technical data are maximum values and cannot be used at the same time.



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