



ADVANCED SEALING TECHNOLOGY INSTALLATION INSTRUCTIONS

AST 60 SEAL (1.437-2.500 inch)

The seal must be installed in accordance with these instructions, the equipment manufacturer's instructions, and plant safety requirements. If you are in doubt about any phase of installing this mechanical seal, stop the installation and get assistance. The decision to use any AST mechanical seal in a particular service is the customer's responsibility. If the pumped fluid is hazardous or toxic, appropriate precautions must be taken to contain any seal leakage.

PREPARATION

1. Follow plant safety regulations prior to equipment disassembly:
 - lock out motor and valves
 - wear designated personal safety equipment
 - relieve any pressure in the system
 - consult plant MSDS files for hazardous material precautions
2. Disassemble the pump in accordance with manufacturer's instructions so the seal can be installed over the end of the shaft.
3. The shaft or sleeve diameter must be within $+ .000/- .002$ inch of nominal size. The shaft must be smooth (32μ inch R_a) and free from nicks, grooves, and corrosion. Replace the sleeve or shaft if worn. Remove all sharp edges and burrs from shaft keyways, threads, and edges where the O-ring will slide.
4. Maximum shaft runout at seal chamber face is $.002$ inch FIM. To measure, mount dial indicator on seal chamber and indicate shaft while rotating shaft.
5. Maximum axial movement of shaft (end play) is $.005$ inch FIM. To measure, mount dial indicator on shaft and indicate seal chamber face while moving shaft axially.
6. The seal chamber face must be smooth (63μ inch R_a) and free of nicks, burrs, and corrosion.
7. Maximum out-of-squareness of the seal chamber face to the shaft is $.002$ inch FIM, ($.003$ inch FIM for shaft size > 3 inch). To measure, mount dial indicator on shaft and indicate seal chamber face while rotating shaft.
8. If the seal gland is piloted to the seal chamber, the register surface must be concentric to the shaft within $.005$ inch FIM.
9. The O-ring elastomer installed in the seal is identified on the seal drawing. There may also be an alternate set of O-rings packaged with the seal. Determine what O-ring elastomer is suitable for your application by consulting an O-ring compatibility table. Be sure the correct O-rings for your application are installed in the seal.

INSTALLATION

These instructions are for installation in a back pullout end-suction centrifugal pump. If you are installing the seal in a different type of equipment, steps describing pump components and assembly sequence may vary.

1. After you have determined that the pump is in good condition and ready for seal installation, install the back cover on the pump. Use layout dye and scribe a mark on the shaft exactly at the seal chamber face. Then, remove the back cover.
2. When an AST L-shape or T-shape stationary is mounted nose in, the seal face extends $3/16$ inch ($.188$) into the seal chamber. Measure $1 \frac{15}{16}$ inch (1.937) from the scribe mark and mark the shaft to locate the back of the AST 60 rotary unit. If an L-shape stationary is used nose out, install the rotary unit $1 \frac{11}{16}$ inch (1.687) from the seal chamber face.

When an O-ring mount stationary is used, the location of the stationary seal face must be determined in relation to the seal chamber face. The back of the AST 60 rotary unit must be located $1 \frac{3}{4}$ inch (1.750) from the stationary face. Scribe a mark at this location.

3. Slide the gland and stationary over the shaft and position them near the bearing housing.
4. Lubricate the shaft sparingly with silicone lubricant (supplied with the rotary unit) or with other lubricant compatible with the O-rings and your machinery and product. Do not use petroleum lubricants on EP O-rings.
5. Slide the AST 60 rotary unit onto the shaft and locate the back of the rotary unit at the scribe mark. Tighten the set screws evenly and securely to lock the rotary unit in position.
6. Reassemble the pump. Seal faces should be clean and dry. Clean faces of both seal rings with denatured alcohol and a clean lint-free wiper if necessary.
7. Slide the gland over the gland studs and check that the rotary unit is compressed approximately $1/8$ inch when the gland is held against the stuffing box face. This will confirm that the seal is at the correct operating length.
8. Make sure the stationary is centered over the shaft and tighten the gland nuts evenly in a diagonal sequence. To prevent stationary face distortion, do not over-tighten.

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