



SERIES 'HE' PUMP

SEAL REPLACEMENT FOR SINGLE MECHANICAL SEAL MODELS

SAFETY PRECAUTIONS BEFORE STARTING PUMP

1. Read operating instructions and instructions supplied with chemicals to be used.
2. Refer to Chemical Resistance Data Chart for compatibility of materials with solution to be used.
3. Note temperature and pressure limitations.
4. Personnel operating pump should always wear suitable protective clothing: face mask or goggles, apron and gloves.
5. All piping must be supported and aligned independently of the pump.
6. Always close valves slowly to avoid hydraulic shock.
7. Ensure that all fittings and connections are properly tightened.

BEFORE CHANGING APPLICATION OR PERFORMING MAINTENANCE

1. Wear protective clothing as described in item 4 above.
2. Flush pump thoroughly with a neutralizing solution to prevent possible harm to personnel.
3. Verify compatibility of materials as stated in item 2 in section entitled "**BEFORE STARTING PUMP**".

TO REMOVE SUCTION CASING

Remove the six 3/8-16 x 3/4" long hex bolts that hold the suction casing to the support casing. Pull suction casing forward to release it from the "O"-ring seal.

When replacing suction casing and "O"-ring, tighten the casing bolts in an alternating pattern.

TO REPLACE SINGLE MECHANICAL SEAL

1. Remove suction casing as described. Mechanical seal is located inside the sleeve of the support casing.
2. Remove cap nut stud from center of impeller.
3. Remove four 5/16-18 x 1" hex head bolts located on inside wall of motor connecting bracket.
4. Impeller and support casing will come off the motor together. If assembly cannot be taken off by hand, insert a 1/2-13 hex bolt approximately 3" long into the threaded end of the impeller. Bolt will contact end of motor shaft and continual tightening will pull impeller off motor shaft. Remove hex bolt after impeller has been taken off motor shaft.
5. Insert a 1/4" diameter rod into side of hole of mechanical seal spacer and unthread spacer from the impeller sleeve through the support casing.
6. Mechanical seal ceramic seat can be removed from counterbore at end of support casing by using a piece of plastic pipe that will fit into the end of the support casing. Push the ceramic seat to force it out of its seat.

7. Flat washer and key must be left on motor shaft.
8. Lubricate ceramic seat cup before installing:
Viton: oil, (10W) or water. Use of non-petroleum products (silicone, etc.) may cause problems with chemical solution.

EPDM: glycerine or water. Use of petroleum product will react with EPDM and prevent proper sealing.

Place support casing into hot water for approximately 5 minutes so that seat recess will expand. Insert ceramic seat and elastomer cup into bottom of support casing sleeve. Use a piece of plastic pipe to push the ceramic seat to bottom of recess. Do not use metal or objects that will scratch the lapped face of the ceramic seat. Check for squareness.

9. Lubricate impeller sleeve as indicated in Section 8. Slide impeller sleeve through ceramic seat leaving a 1/8" clearance between back of impeller and surface of support casing. Slide carbon washer and bellows assembly over impeller sleeve and slide down to the ceramic seat. We recommend our seal tool be used to push the seal assembly (Part No. 44-2730). This insures proper preload on seal faces. Place spring and spring holder on impeller sleeve. Wrap 1 or 2 layers of TFE tape on threads of impeller sleeve. Assemble mechanical seal spacer on impeller until end of spacer is flush with end of sleeve. Lubricate motor shaft with lightweight petroleum oil.

10. Slide impeller assembly on motor shaft aligning key on motor shaft with keyway in impeller sleeve. Assemble support casing to motor connecting bracket with four 5/16-18 x 1" hex head machine screws with flat washer.

Do not tighten screws until operation 13. Remove temporary 1/8 inch spacers if used in step 9.

11. Install cap nut stud and "O"-ring into end of impeller and turn in until end of cap nut stud is flush with impeller face. (55 inch-pounds of torque).
12. **IMPORTANT:** Insert a 1/4" diameter steel rod into hole in side of mechanical seal spacer and turn the spacer until it backs up to the steel washer at the end of the motor shaft.

CAUTION: Do not force spacer against flat washer.

13. Tighten hex head screws on support casing.
14. Replace suction casing as described in section entitled "**TO REMOVE SUCTION CASING**".
15. To check proper pump assembly, put a torque wrench on cap nut. It should require approximately 8 inch-pounds to turn it.

NOTE: It is recommended that a new seal be installed whenever the impeller has been removed from the pump.