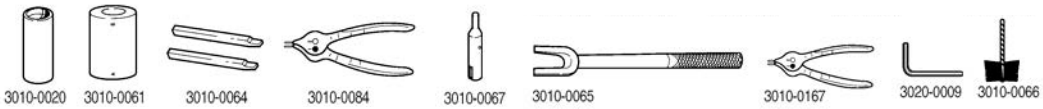
Repair Instructions

Recommended repair tools for use with these instructions:



Always flush pump with water, or neutralizing agent, before servicing.

Pump Housing Disassembly (All Models)

In most cases, seal replacement requires disassembly of only the pump half of the unit.

NOTE: Instructions following in italics describe procedures for the polypropylene centrifugal pumps when different than the cast iron pumps.

1. Remove the four casing cap screws with 9/16" box end wrench. Tap pump casing on discharge port with rubber hammer, if necessary, to break loose from mounting flange. Check inside of pump casing including suction port.

If badly eroded [or damaged], pump casing should be replaced. Remove o-ring and discard. O-ring should always be replaced. [Using a 1/2" wrench, remove the six bolts from the front. Also remove the 5/16" screw from the rear near the outlet port.]

2. To remove the impeller nut, clamp the flange in a vise and insert a large screwdriver or file (at least 10" long) into impeller vanes to prevent impeller from turning when loosening nut. Use a socket wrench (3/4" for Series 9000C or 5/8" for Series 9200C and 9400C) to remove the impeller nut by turning it counterclockwise (Fig. A). [Use 7/8" deep socket wrench to remove plastic seal nut, then 9/16" deep socket to remove metal jam nut, rubber gasket and washer.]
3. Once the nut [and washer] is removed, place a screwdriver on each side (Fig. B) behind the impeller and pry away from the mounting flange. Remove woodruff key from the shaft (for Series 9000 only). Remove o-ring from the mounting flange. NOTE: Fig. B shows 9000C gear flange. The same general procedure applies for the other pumps.

Pump Seal Removal

1. Lightly lubricate shaft for easier removal of seal. Using two screwdrivers positioned opposite each other, pry the rotary portion of the seal from the shaft (Fig. C).
2. [Remove plastic back cover flange. Knock seal out from back with a hammer and screwdriver.]
3. Remove stationary seat and boot by prying out with two small screwdrivers in manner similar to impeller removal.

   (Caution: The seal will be damaged by removal in this manner. A new seal and rubber gasket MUST be used when pump is reassembled.)

Cleanup Of Pump Housing

1. Using the circular bottle-type wire brush with air or hand drill, clean the discharge port, suction port and the sealing areas of the o-ring on the pump casing and mounting flange. [The last step should not be performed on the polypropylene models.]
2. After wire brush cleaning, it is recommended that the pump casing and mounting flange be further cleaned in a solvent tank to remove rust and corrosion particles.

Pump Shaft and Bearing Assembly Removal and Replacement

1. While the pump is disassembled (see the Pump Housing Disassembly section), the driven pulley on the pump shaft must be removed. Remove the large retainer ring in pump bearing bore on the pulley side of housing. Press out the shaft and bearing assembly from the pump side using an arbor press.
2. Bearings must be pressed off each end of shaft and replaced in the same manner. NOTE: Shaft diameter between bearings is larger.
3. For reassembly, reverse the order of instructions.

Seal Replacement/Pump Housing Reassembly

NOTE: Reassemble if drive end is not to be repaired.

Be extremely careful with the new seal. Take special care not to scratch the lapped sealing faces of the rotary washer and stationary seat.

1. Lubricate seal cavity in mounting flange with WD-40, LPS or equivalent.
2. Install the stationary portion of the mechanical seal by sliding over the shaft with the ceramic side out.

IMPORTANT: Make sure the seal cavity is clean and lubricated. Never run the sealing faces dry.

3. To seat the seal in the seal cavity, use a piece of 3/4" PVC pipe 4" to 6" in length. Press it in firmly and squarely.
4. To install the rotary portion of the mechanical seal, place it over the shaft with the carbon side facing in, and press until it bottoms out against the stationary portion (Fig. D).
5. Insert key into shaft key slot. Place impeller on shaft. Put [washer, jam nut and gasket] impeller nut on shaft end, and using a large screwdriver or file in the impeller vanes for support, tighten impeller nut securely.
6. Install o-ring on mounting flange. Replace o-ring if worn or damaged.
7. Place pump casing on mounting flange, insert and tighten bolts evenly.