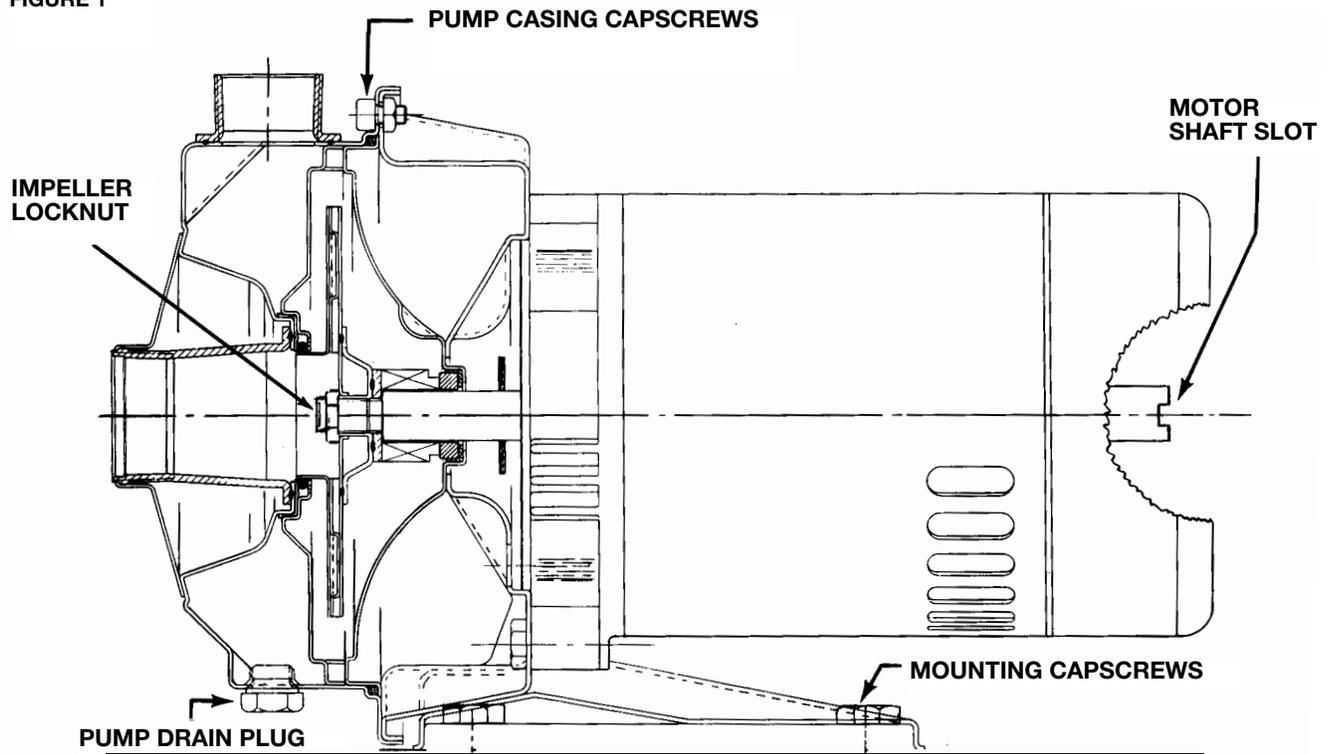


FIGURE 1



# Replacement Seal Instructions for Series 3530 Centrifugal Pumps



**SAFETY INSTRUCTIONS**

This safety alert symbol will be used in this manual to draw attention to safety related instructions. When used, the safety alert symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN A SAFETY HAZARD.

**NOTE:** For additional information and instructions refer to the Installation Operation & Service Instructions Manual supplied with your pump, or obtain a copy from your local Bell & Gossett representative.

## SERVICE INSTRUCTIONS



### **WARNING: Unexpected Start Up Hazard**

Disconnect and lockout power before servicing. Failure to follow these instructions could result in serious personal injury or death.

1. Close valves on suction and discharge sides of pump. (If no valves have been installed, it will be necessary to drain the system.)



### **CAUTION: Extreme Temperature Hazard**

Allow pump temperature to reach acceptable level before proceeding. Open drain valve, do not proceed until liquid stops coming out of drain valve. If liquid does not stop flowing from drain valve isolation valves are not sealing and should be repaired before proceeding. After liquid stops flowing from drain valve, leave drain valve open and continue. Remove the drain plug located on the bottom of the pump housing. Do not reinstall plug or close drain valve until reassembly is completed. Failure to follow these instructions could result in moderate personal injury or property damage.

2. Remove the capscrews holding the pump foot to the floor/base. Loosen all 8 capscrews holding the motor bracket to the pump casing, do not remove. Start to pull the motor assembly out of the pump casing. Remove the 8 pump casing capscrews and remove the motor assembly.



### **WARNING: Excessive System Pressure Hazard**

Make certain the internal pressure is relieved before continuing. Failure to follow these instructions could result in serious personal injury or death and property damage.

3. Remove the shaft cover from the back of the motor to expose the slot in the motor shaft. (Depending on motor manufacturer, the shaft cover may be a button plug or a total cover.) Impeller removal on pumps without impeller locknuts: The impeller hub must be heated to break the adhesive bond so the impeller can be removed from the motor shaft. Using a propane torch, heat the impeller hub from the inside of the impeller eye, Figure 4. With a glove on one hand, grip the impeller O.D. and turn counterclockwise while holding the motor shaft with a large screwdriver, Figure 5. Remove the impeller, the seal spring, the seal head (use a screwdriver if necessary), and the coverplate. Impeller removal for pumps with impeller lockout: While holding the motor shaft with a large screwdriver remove the impeller locknut and then the impeller. The locknut adhesive may cause the impeller to be hard to remove. If so, heat can be applied.



**FIGURE 4 – Heat impeller hub to break adhesive bond.**



**FIGURE 5 – Remove impeller.**

4. Remove the seal insert and the seal cup from the coverplate.
5. Thoroughly clean the shaft and the coverplate seat area. Inspect for surface damage like pitting, corrosion, nicks or scratches. Replace if necessary.
6. Lubricate the shaft and the coverplate seat with soapy water (do not use petroleum lubricant). Install a new seal cup and seal stationary seat into the coverplate.

**NOTE:** Install the indentation side of the stationary seat into the cup.

7. Install coverplate onto motor bracket and install rotating seal assembly.

**NOTE:** Place replacement seal on as far as possible by hand. Then, using a screwdriver, press down firmly all around the outer edge of the top compression ring until the seal is tight against the face of the seal stationary seat.

8. Install the seal spring and then the impeller. While holding the motor shaft, turn the impeller clockwise until the hub is tight against the shaft shoulder. Do not exceed 10 ft.-lbs. of torque. The impeller locknut must be installed using Loctite Retaining Compound 609 or equivalent. The shaft and locknut threads must be clean, dry and free of oils and grease before applying the retaining compound. Apply the retaining compound to the shaft threads and to the impeller locknut threads. Torque locknut to 10 ft.-lbs.

**IMPORTANT:** The retaining compound must be allowed to cure for at least 30 minutes before the pump is put back into service.

Inspect coverplate O-ring, suction eye O-ring and drain and vent plug O-rings for nicks or cuts. Replace if necessary.

**NOTE:** With a Viton® seal changeout kit, all O-rings must be replaced with the provided Viton® O-rings.

9. Assemble motor to pump casing and tighten the 8 pump casing capscrews. Tighten the pump casing capscrews in a star pattern, do not tighten in a circular pattern. Torque casing capscrews 12 ft.-lbs. Replace the motor shaft cover.
10. Replace mounting capscrews. Replace drain and vent plugs, close drain valve. Check for proper motor rotation.
11. Open isolation valves, inspect coverplate O-ring and mechanical seal for leaks. If not leaking, return pump to service.

For further information, contact ITT Bell & Gossett, 8200 N. Austin Avenue, Morton Grove, IL 60053, Phone (847) 966-3700 – Facsimile (847) 966-9052.

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