

INSTALLATION INSTRUCTIONS FOR ULTRASEAL 151 CARTRIDGE SEAL

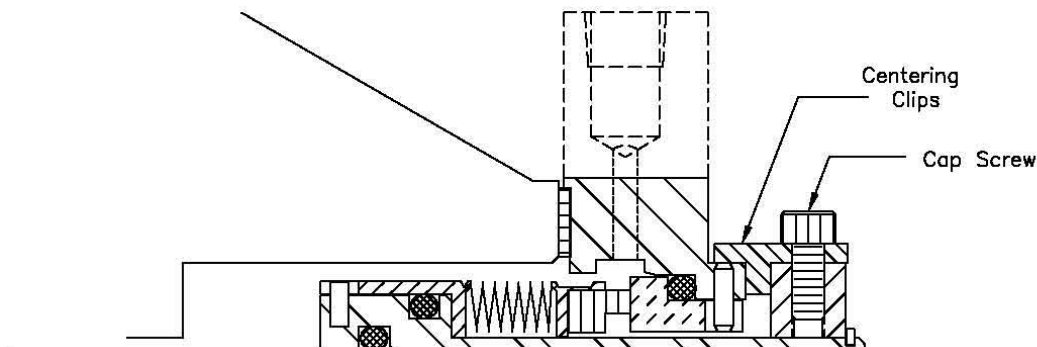
A. Prepare Pump for Seal Installation

1. Clean pump parts: a) Shaft, b) Shaft Sleeve, c) Stuffing Box Plate, d) Pump Frame, e) Impeller
2. Inspect and de-burr pump parts:
 - a. Replace shaft or shaft sleeve if worn in secondary sealing area under o-rings.
 - b. Remove all burrs that would cut secondary seals or cause misalignment. (Pay attention to old set screw marks)
 - c. Check shaft run out, end play, stuffing box face misalignment, and condition of bearings. Replace if necessary.

B. Installation of the Seal

1. Check to see that the cap screws holding centering clips are tight.
2. Slide the seal on the shaft making sure that the set screws are engaged in the sleeve without touching the shaft.
3. Make all necessary pump connections and alignments. Hook up appropriate tangential flush port depending on shaft rotation. Plug other flush port. (Connect flush in the direction of shaft rotation, if the shaft is rotating clockwise; connect the flush with arrow pointing clockwise.)
4. Tighten the gland bolts evenly.
5. Apply pressure by hand on the outboard end of the seal, not the gland, so that the centering clips are bottomed out.
6. Tighten the set screws on the lock collar.
7. Remove centering clips.
8. Turn shaft by hand to see if there is any metal to metal contact between the sleeve and the seal. If this exists then replace the centering clips and loosen and retighten gland bolts.
9. Recheck and open flush lines.
10. The pump is ready to start.

<u>Seal Size</u>	<u>Gland Bolt Torque Value</u>
1 to 1-3/8"	15 – 20 ft-lbs.
1-1/2 to 2"	25 – 30 ft-lbs.
2-1/8 to 3-1/4"	30 – 35 ft-lbs.
3-3/8" to 5"	40 – 45 ft-lbs.



*NOTE: Cap screws holding spacers may be located in close areas with the pump frame. If this occurs the cap screws may be loosened and tightened by hand. This will aid in their removal and if necessary the rotary face can turn with the shaft after step #6.