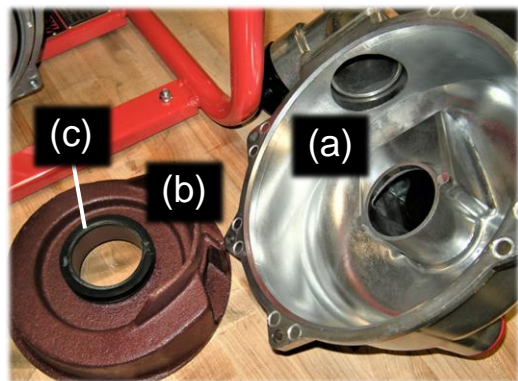


## MECHANICAL SEAL REMOVAL AND INSTALLATION

### Removal:

1. Remove the six casing bolts while holding the casing in place by hand since it may separate suddenly.
2. Remove components, casing (a), volute (b) with volute packing (c) and set aside.



3. Remove the impeller by first rotating it counter clockwise until you feel the engine come to its compression stroke and stop. Using a hard plastic mallet, swiftly strike the end of one of the impeller veins hard CCW to break it free from the engine shaft and then turn it CCW by hand to remove it.
4. Save any adjustment liners that may be found when the impeller is removed, they need to be installed again during reassembly. They may be stuck in the threaded blind hole of the impeller.



## MECHANICAL SEAL REMOVAL AND INSTALLATION

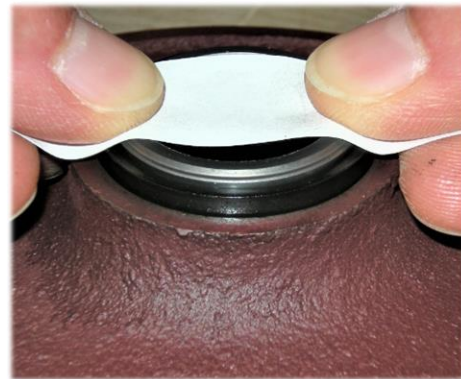
### Removal Continued:

5. Pry and remove the worn mechanical seal half with rubber backing from behind of the impeller.  
**Note:** Clean the bore/seating surfaces of any dirt, oxidation etc. with a scotch pad or the like in preparation for new seal halves installation.
6. Pry and pull the worn mechanical seal half with rubber backing from the rear pump casing cover.



### Installation:

7. Place rubber backed end of new mechanical seal half into the rear pump casing cover, firmly press evenly until it's fully seated.  
**Note:** Avoid touching carbon seal surfaces with bare fingers.  
**Note:** Not required but if inserting seal halves is difficult, a light coat of RTV silicone may be applied to the rubber surfaces to ease installation, allow curing if possible but not required.
8. With the carbon surface facing outward/away from the impeller and covered by a clean strip of paper or cloth to avoid contaminating the seal surface, install the new mechanical seal half by pushing firmly and evenly on outer edge all around until fully seated into the back of impeller.

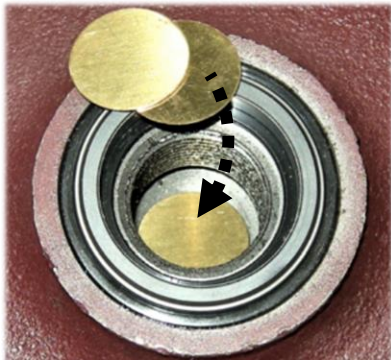


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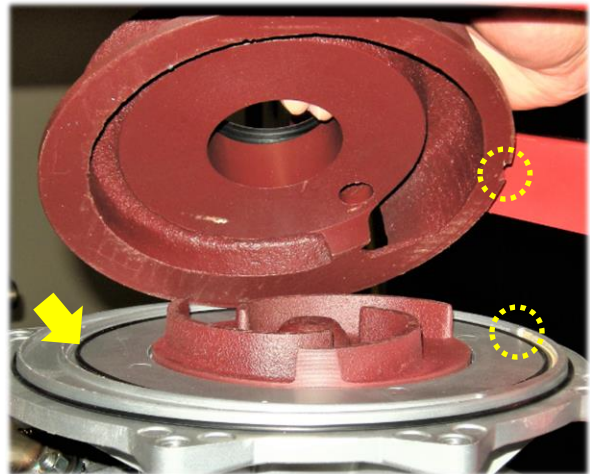
## MECHANICAL SEAL REMOVAL AND INSTALLATION

### Installation Continued:

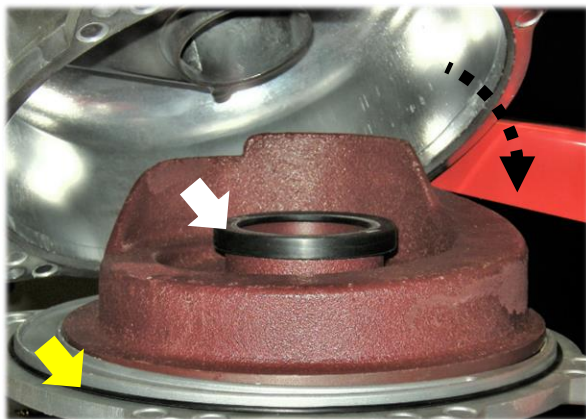
9. If any adjustment liners are used, insert them back into the threaded blind hole of the impeller. Carefully align and screw the impeller back onto the engine threaded shaft and hand tighten only.



10. Tilt the pump all the way back and install the rear pump casing O-ring, Ref. Yellow arrow, align the notch at the bottom of the volute with the tap at the bottom of the rear pump casing and install the volute, Ref. Yellow circles.



11. Install the volute packing, Ref. White arrow. Install rear casing O-ring, Ref. Yellow arrow. Secure the front pump casing to the rear pump casing using the six casing bolts initially removed.



12. Torque the six casing bolts to 13 to 15 ft-lbs in a crisscross pattern.

