

# SERVICE BULLETIN 002



## Shaft Seal removal for 1XP Pumps

To remove the old style shaft seal from the 1XP pump, the following steps can be used.

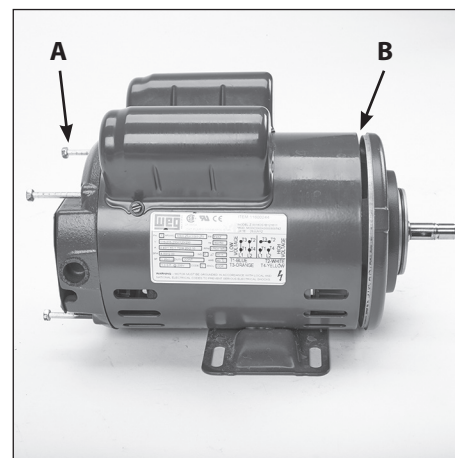
### Pump Removal

1. Use a 4mm allen wrench to separate pump from motor by removing four (4) M6x75 button head screws from bearing cover. Pull entire pump from motor.
2. Next use a screwdriver to remove retaining ring from motor shaft holding the cam, slide cam off of motor shaft and remove woodruff key.
3. After seal replacement, refer to service manual for reassembly.



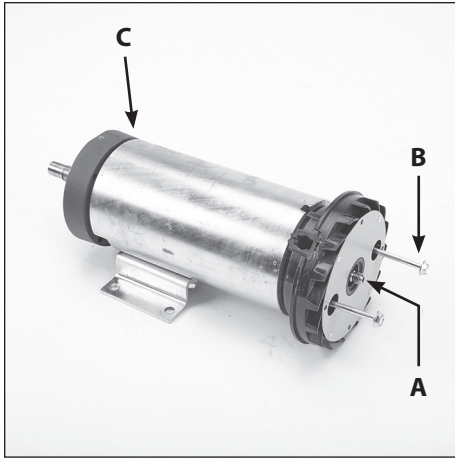
### Removal of shaft seal from AC motor unit

1. Mark front end bell with a marker onto the main motor housing for alignment upon reassembly.
2. Use an 8mm socket to remove the bolts (item A) from rear cover of motor (bolts go all the way through and thread into front end bell).
3. Use two flat tip screw drivers to remove front end bell (item B). Lightly tap motor shaft from rear to separate.
4. Tap, press, or gently pry out the shaft seal out with small flat screw driver from the inside and then remove shaft seal.
5. Remove slinger o-ring that is behind seal.
6. Reassemble motor, torque the four (4) bolts to 30 in/lbs.



**Notice: Do not grease the outside of seal that comes in contact with motor housing**

7. Replace slinger o-ring into area behind seal location. Do Not Lubricate.
8. To install new shaft seal, first place a small amount of grease on shaft portion of seal between the sealing lips. Position the new seal over shaft and place a 1-1/8" size (Deep) Socket onto seal and tap firmly until seated properly in bell housing.



### Removal of shaft seal from DC motor unit

1. Mark front end bell with a marker onto the main motor housing for alignment upon reassembly.

2. Use a flat head screw driver to remove clips over brushes. Remove brushes.

**Note: color of wire for re-assembly.**

3. Use a small flat tip screwdriver to remove fan cover by lightly prying bottom of shroud.

4. Use an 11mm socket to remove fan nut (item A) (**left hand thread**). Hold fan in place by hand with thick gloves.

5. Use an 8mm socket to remove two (2) bolts (item B) (bolts go all the way through and thread into front end bell).

6. Remove rear end bell.

7. Remove front end bell. Using two flat tip screw drivers to help aide in removing end bell (item C) or light tap or press motor shaft from rear to separate.

8. Tap, press, or gently pry out the shaft seal out with small flat screw driver from the inside and then remove shaft seal.

9. Remove slinger o-ring that is behind seal.

10. Reassemble motor, torque the two (2) bolts to 25 in/lbs.

11. Replace slinger o-ring into area behind seal location. Do Not Lubricate.

12. To install new shaft seal, first place a small amount of grease on shaft portion of seal between the sealing lips, lightly oil outside surface of seal. Position the new seal over shaft and place a 1-1/8" size (Deep) Socket onto seal and tap firmly until seated properly in bell housing.