

**Tools needed:**  
 Small snap ring pliers  
 4" length of 3/8 copper tubing  
 1/2" Nut driver or 3/4" wooden dowel  
 .004" Feeler gauge

**Pump & parts removal:**

1. Remove the front cover (1) and save the three bronze bolts(2)
2. Remove the Impeller rotor (4) and blades (5).
3. Using a pair of snap ring pliers, remove the snap ring (6) from the motor shaft
4. Remove and save the two bolts (9) and lock washers (10) that affix the pump to the motor(12)
5. Pull the pump (8) from the shaft A spring, brass insert and hard black spacer/seal (7) should fall out. Make sure the slinger(11) stays on the shaft.
6. Dig out the White ceramic disk and black seal (7) in the housing.

**Step 1:** Insert the white ceramic & black rubber seal of 69089 – Moisten with Simple Green or soap and insert into the Pump(8). Be sure that the seal is seated correctly and pushed all the way down into the pump. A 1/2" nut driver or 3/4" wooden dowel can be used to seat the seal. Run your finger around the seal when seated, it should be flush with the casting (Fig 1 & 2)

**Note:** The white ceramic has a groove on one side. Ensure the grooved side is facing down onto the seal. The ceramic spacer must be installed at the same time as the seal.



Fig. 1

Fig. 2

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Fig. 3

**Step 2:** Place the pump (8) carefully onto motor shaft and secure it to the motor (12) with the 2 hex bolts(9) and 2 lockwashers(10) using a wrench (Fig 3). Double check to make sure that you don't install the pump upside down. Refer to Exploded diagram on on pg 1.



Fig. 4

**Step 3:** Moisten the hard black spacer/seal with simple green or soap and install it onto motor shaft. Gently "Seat" the spacer/seal using a tube to ensure it bottoms out in the pump..Be sure the seal is facing the proper direction as shown in (Fig 4).



Fig. 5

**Step 4:** Attach the spring to the brass portion of the Seal Assy (7) by twisting the LARGE END of the spring on to the brass.



Fig. 6

**Step 5:** By hand, gently place the brass & spring onto motor shaft and twist it until you feel it aligned with the spacer/seal below it. This seats the seal and the brass over it. You should feel it seat when the seal is aligned properly.

**Step 6:** Using snap ring pliers, place the snap ring (6) onto motor shaft. Using a 3/8" piece of copper tubing press firmly down on the snap ring and set it onto place on the groove in the shaft.

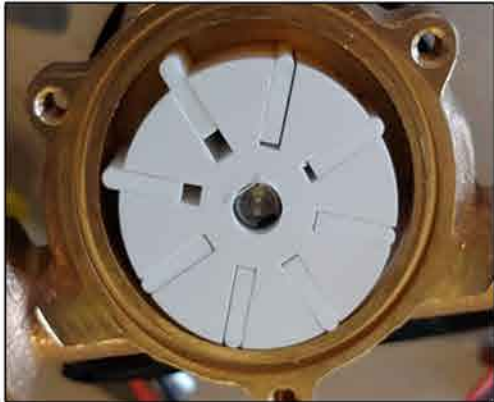




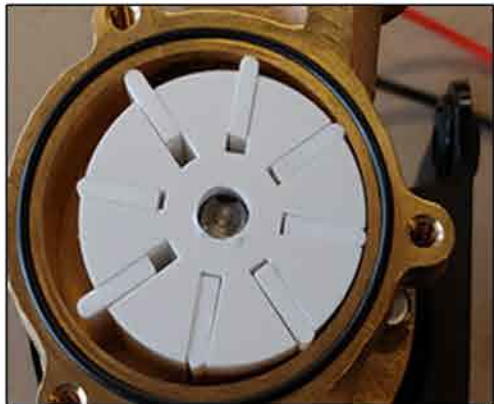
Rotor smooth side up

**Step 7:** Place Rotor (4) onto motor shaft making sure the insert is aligned with the flat portion of the shaft and “smooth” side of the rotor is facing UP

Rotor down side



**Step 8:** Place 8 Vane Pump Blades (5) into rotor slots being certain the rounded edge of the blade is facing out as shown



**Step 9:** Install the O-ring(3)

**Adjusting the casting and alignment of Rotor (Fig 15 & 16)**

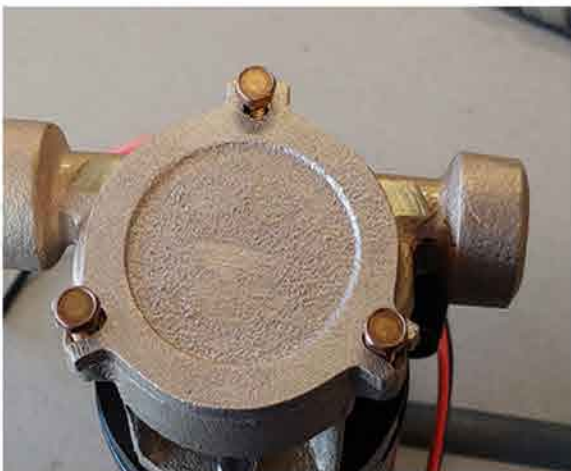


Fig. 15



Fig. 16

**Step 10:** Using the .004 Feeler Gauge, check the fit of the rotor in the casting. Move the feeler gauge between the rotor and casting (Fig 15) It should be tight but enough that the feeler gauge can move between the rotor and casting. To ADJUST the alignment, tighten/loosen the bolts holding the casting to the motor (Fig 16) This may take some time too get the proper feel for a good alignment



**Step 11:** Place the pump cover plate(1) on and tighten the three bronze bolts(2)

**This concludes the P-10 Master Kit installation.**