



**FE PETRO<sup>®</sup>**

**Franklin Fueling Systems**

# **High Capacity PMA**

## **Replacement Instructions**

# Important Safety Messages

FE Petro equipment is designed to be installed in association with volatile hydrocarbon liquids such as gasoline and diesel fuel. Installing or working on this equipment means working in an environment in which these highly flammable liquids may be present. **Working in such a hazardous environment presents a risk of severe injury or death if these instructions and standard industry practices are not followed. Read and follow all instructions thoroughly before installing or working on this, or any other related equipment.**

As you read this guide, please be aware of the following symbols and their meanings:

**Warning**  This symbol identifies a warning. A warning sign will appear in the text of this document when a potentially hazardous situation may arise if the instructions that follow are not adhered to closely. A potentially hazardous situation may involve the possibility of severe bodily harm or even death.

**Caution**  This is a caution symbol. A caution sign will appear in the text of this document when a potentially hazardous environmental situation may arise if the instructions that follow are not adhered to closely. A potentially hazardous environmental situation may involve the leakage of fuel from equipment that could severely harm the environment.

**Warning**  **Follow all applicable codes governing the installation and servicing of this product and the entire system. Always lock out and tag electrical circuit breakers while installing or servicing this equipment and related equipment. A potentially lethal electrical shock hazard and the possibility of an explosion or fire from a spark can result if the electrical circuit breakers are accidentally turned on during installation or servicing. Do not smoke while working on or near this equipment, and use only non-sparking tools.**

**Warning**  **Before entering a containment sump, check for the presence of hydrocarbon vapors. If these vapors are inhaled they could cause dizziness or unconsciousness, and, if ignited, hydrocarbon vapors could explode causing serious injury or death. Electronic and electrical petroleum monitoring equipment is often housed in containment sumps designed to trap hazardous liquid spills and prevent contamination of the environment, and, as a consequence, containment sumps can trap dangerous amounts of hydrocarbon vapors. If these vapor levels reach unsafe amounts, ventilate the sump with fresh air. While working in the sump, periodically check the atmosphere in the sump, if vapors reach unsafe levels, exit the sump and ventilate it before continuing work. Always have a second person standing by for assistance when working in, or around, a containment sump.**

**Warning**  **Follow all federal, state, and local laws governing the installation of this product and its associated systems. When no other regulations apply, follow NFPA codes 30, 30A, and 70 from the National Fire Protection Association. Failure to follow these codes could result in severe injury, death, serious property damage, and/or environmental contamination.**

**Warning**  **Always secure the work area from moving vehicles. The equipment in this manual is usually mounted underground, so reduced visibility puts service personnel working on this equipment in danger from moving vehicles entering the work area. To help eliminate these unsafe conditions, secure the area by using a service truck to block access to the work environment, or by using any other reasonable means available to ensure the safety of service personnel.**

**Warning**  **FE Petro's PMAs are designed for use with motor fuels, and they are UL listed for blend concentrations of:**

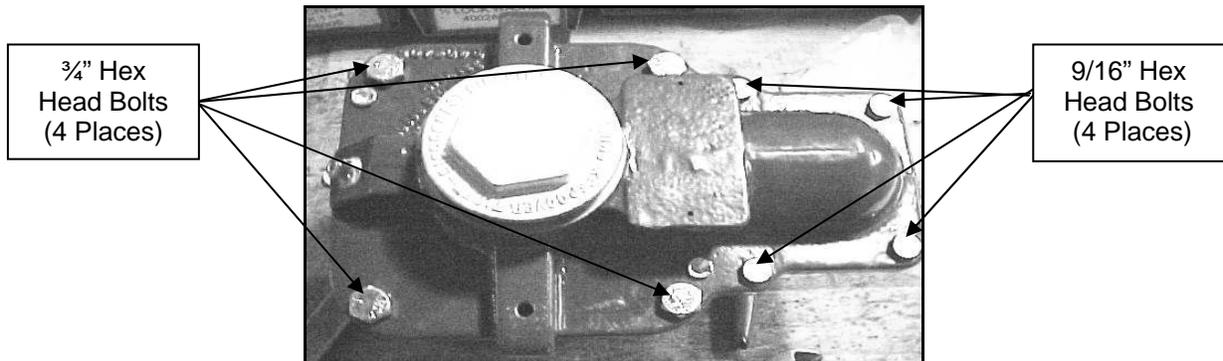
Standard Models	AG (Alcohol/Gasoline) Models
0% - 10% ethanol with gasoline	0% - 10% ethanol with gasoline
20% MTBE with 80% gasoline	20% MTBE with 80% gasoline
20% ETBE with 80% gasoline	20% ETBE with 80% gasoline
17% TAME with 83% gasoline	17% TAME with 83% gasoline

Other motor fuels that may be used with the PMA are diesel, fuel oil, avgas, jet fuel, or kerosene. The maximum liquid viscosity for a product is 70 S.S.U. at 60° F.

Using our PMA in liquids other than those mentioned above has not been tested. The reaction of other liquids with seals and wetted surfaces of the pump is unknown. A hazardous situation may result from using other liquids with our pump.

## Procedure

1. Disconnect power to the submersible pump at the electrical supply box.
2. Tag and lock out electrical circuit breakers so they are not turned on accidentally.
3. Remove the (4)  $\frac{3}{4}$ " hex head and (4)  $\frac{9}{16}$ " hex head bolts (see Figure 1) to disconnect the extractable head from the stationary manifold.



**Figure 1**

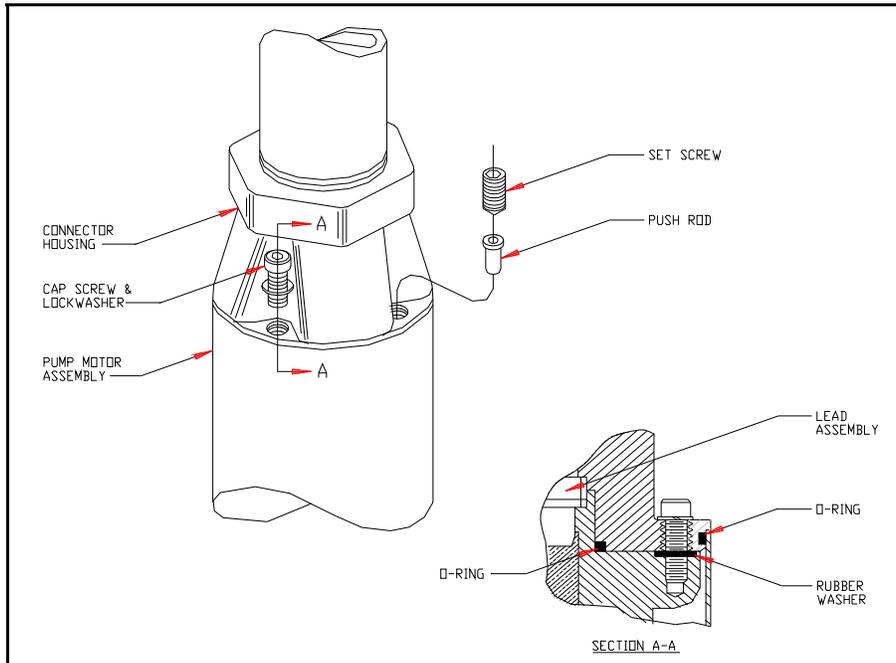
4. Using both eyebolts, carefully remove the extractable portion of the pump with a hoist (see Figure 2). Care must be taken when removing the extractable to ensure the PMA does not get caught on the bottom of the riser. Once the extractable is removed, carefully lay the entire assembly down.



**Figure 2**

5. Remove and discard (4) socket head cap screws and lockwashers (see Figure 3).
6. Insert (2) push rods and (2)  $\frac{1}{2}$ -13 X 1" long headless set screws into holes in discharge housing opposite each other (See Figure 3).
7. Turn set screws clockwise until pressure is felt; then alternately turn each setscrew until PMA is free of connector housing.

**Note:** Push rods and setscrews shown in Figure 3 are used for removal of the PMA only. They do not need to be removed from the PMA that is being replaced.



**Figure 3**

8. Install new O-rings and rubber washers, applying a coat of grease to each (see Figure 3 Section A-A).

**Note:** Prior to installing the new PMA, verify it is the correct model for the STP. The length of a PMA3 is 33" and the length of a PMA5 is 39". FE Petro manufactures a replacement PMA for Red Jacket Pumps that is identified with the suffix RJ on the PMA model number (i.e. PMA5-RJ) and the models are not interchangeable.

9. Attach new PMA to discharge housing making sure "keyed" lead assembly plug properly mates to PMA male pins.
10. Using the steel roll pin as a guide, attach the PMA to the motor housing.
11. Install (4) new cap screws and lockwashers through motor housing.
12. Start all (4) cap screws finger tight, while being careful to keep the unit straight and properly positioned. Using a cross-pattern tightening procedure for the cap screws, tighten the cap screws.

**Note:** Failure to push the PMA up snug against the discharge casting prior to tightening the cap screws, or failure to use a cross-pattern while tightening the bolts could break the discharge casting, or strip the threads in the PMA.

13. Using the hoist, reinstall the extractable into the storage tank. Install the bolts and lockwashers into the extractable head (see Figure 1) and tighten.
14. Connect power to the submersible pump at the electrical supply box.
15. Test proper operation by dispensing product into calibration can.
16. Visually check for leaks on the manifold head during and after pump operation.

**Note:** If any leaks are observed, immediately shut the pump off at the dispenser and at the load center, tag and lock out the circuit breaker, and repair the leaks. Repeat steps 13 and 15 to verify that the leaks have been eliminated.