

RED JACKET NO. 223-024-5

SEALING & PRESSURE REGULATING KIT INSTALLATION INSTRUCTIONS

Included in the Part #RE400-012-5 Red Jacket Line Pressure Kit (to be used with the PPM 4000 line and probe monitoring system) is a specially designed functional element (223-025-5), check valve (144-183-5), packer-manifold seal (076-382-1), product line transducer assembly (RE400-117-5), and an accumulator (RE101-054-5) to be installed in Red Jacket submersible pumps manufactured after 1963.

NOTICE We recommend installing this equipment **BEFORE** installing the PPM 4000 control unit to avoid possible pump shutdown due to loss of line pressure.

WARNING **ALL AIR MUST BE OUT OF THE SYSTEM FOR THE ELECTRONIC LEAK DETECTION SYSTEM TO WORK PROPERLY.** Before installing components in the pump, fill the system with product by running the pump and delivering product from each dispenser (starting with the farthest from the pump and working to the pump) until air is removed from the system.

1. Disconnect power to pump at the load center.
2. Remove syphon system, if present.
3. Remove pumping unit. (See Figure 1)
4. Remove old O-ring underneath the leak detector port from packer. (See Figure 2B)
5. Examine O-ring gland for corrosion roughness. Clean with a wire brush, if necessary.
6. Install new packer-manifold seal provided in kit with the retaining lip (wider edge) facing up against the packer.
7. Examine packer-manifold seat (see Figure 2A) for corrosion roughness, nicks, scratches, etc. If found to be rough, smooth with fine emery paper.

WARNING Seat must be smooth and nick-free to provide proper sealing between packer and manifold. If not, manifold may have to be replaced.

8. Replace packer (extractable portion) to original position reversing order of Figure 1.
9. Remove functional element by removing two cap screws. Take out old O-rings.
10. Remove existing check valve and spring.
11. Replace with silver/gray check valve and spring. Smaller end of spring should rest on check valve hub.
12. Place new O-rings (3) on new functional element and mating surface of packer.
13. Carefully replace new functional element by tightening two cap screws (removed earlier).

CAUTION **MAKE SURE BOTH FITTINGS ARE TIGHT TO PREVENT POSSIBLE LEAK INTO THE GROUND AND/OR WATER SEE PAGE INSIDE THE TANK.**

14. Reconnect power to pump at load center.
15. Clear remaining air from system as follows:
 - A. Turn on dispenser that is farthest from submersible pump but do not open nozzle. Wait four or five minutes or more. Look for leaks on parts worked on.
 - B. Shut off pump and allow to stand four or five minutes. Then start pump again and open nozzle farthest from submersible pump.
 - C. Continue to flow enough gasoline (about 20 to 30 gallons) to pump ALL air from the system.
16. Observe any fluid seepage from functional element area to insure tightness.
17. Replace new or existing syphon tube, if necessary.

CAUTION Make sure that a syphon check valve, Part No. 188-079, (not included in this kit) is used when installing a syphon system.
18. In testing the new components, we recommend utilizing a sample test fixture installed in the dispenser shear valve as shown in Figure 3.

The pump should be started and a few gallons of product dispensed to remove any air which may have entered the system while installing the test fixture. The pump should then be restarted to pressurize the system. Full line pressure (approximately 26 psi) will register on the gauge. Turn the pump off and the pressure should drop to 11 to 15 psi and hold utilizing the new precision functional element. This indicates that everything is working properly.

CAUTION If pressure does NOT hold, do not install the PPM 4000 line and probe monitoring system. The PPM 4000 would sense the loss of pressure and shut down the system, restricting total flow of product through the submersible pump. First, locate the area of pressure loss and correct problem.* Then, install PPM 4000 to avoid this potential problem.

* If a slow pressure drop exists in the underground piping, it can be caused by thermal contraction, or by a leak in the system. To determine if the pressure drop is caused by thermal contraction, with a pressure gauge installed in the dispenser shear valve, start the submersible pump and dispense 20 to 30 gallons from the system.

- a. Turn off the pump and after the pressure relief action has occurred per normal operation of the pump, record the pressure reading as indicated on the

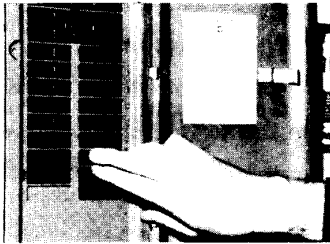
gauge. It should be noted that the built-in pressure relief valve in the newly designed functional element (223-025-5) will allow the pressure to drop 11 to 15 psi and hold.

- b. With the pump off, wait approximately 3 minutes and record the discharge line pressure again as indicated on the pressure gauge. (Figures A and B constitute the first set of readings.)

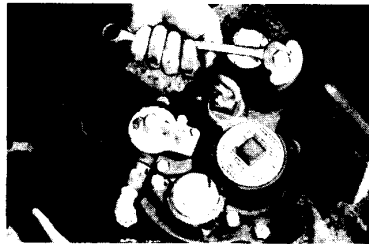
Start the pump and allow it to run for approximately 2 minutes. Repeat A and B above to acquire the second set of readings.

Repeat this procedure until you have recorded approximately 6 or 7 sets of readings (approx. 30 minutes) being sure that you do not dispense product at any time during this exercise. If the pressure drop experience was due to thermal contraction, B reading will become closer to A reading each time until at the end of approximately 30 minutes there will be no drop in line pressure from A reading to B reading about 3 minutes later.

However, with a leak in the system readings, A and B will probably not become any closer regardless of the amount of readings taken.



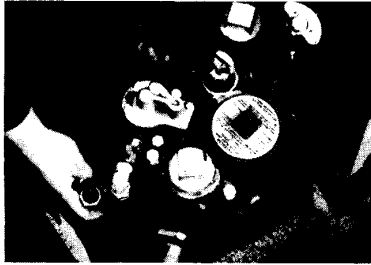
1. ALWAYS DISCONNECT the power.



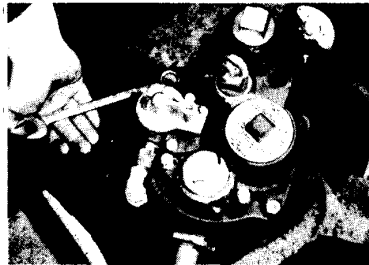
2. Backout bayonet electrical disconnect bolt.



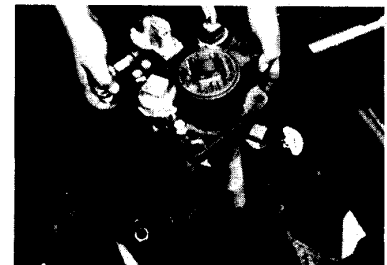
3. Swing electrical connector aside.



4. IF SYPHON SYSTEM: disconnect syphon.



5. Remove the two lockdown bolts.



6. Lift unit. Replace unit by reversing these steps.

CAUTION Do not damage surface above discharge port. "O" ring below leak detector port seals on this surface.

FIGURE 1

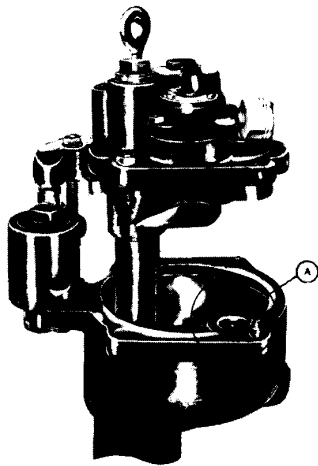


FIGURE 2A

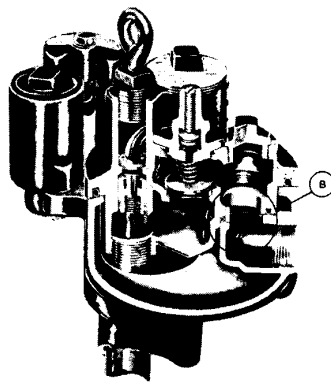


FIGURE 2B

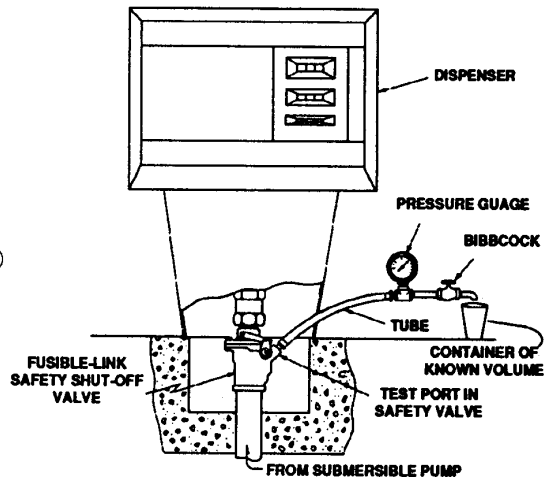


FIGURE 3



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