



**Vaporless Manufacturing, Inc.
Quality Petroleum Equipment
Solutions for Over 20 Years**

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Adjustment of Vmi Leak Detector

Certain piping conditions may affect the ability of any leak detector to find a leak. They include high head pressures and high bleed-backs. High bleed-back may occur due to dips in the lines, stubbing for future dispensers, long pipe runs, and extremely flexible pipe.

Bleed-back can be interpreted as energy coming back on the leak detector and trying to force the leak detector open. When a leak detector initially is installed and the line pressure is zero psi, the leak detector is in the reset position. When the pump starts, the leak detector allows approximately 1.5 gallon per minute to pass through. In this position, the line is being filled with product and the pressure in the line is slowly rising.

With the line filled with product, the pump still running, the line starts to expand as a balloon might. The expansion of the line is creating energy that is being forced back onto the leak detector piston.

Naturally, steel pipe has less expansion than fiberglass pipe, and much less expansion than flexible pipe.

Air pockets in the line also raise the bleed-back level, so every effort should be made to eliminate those air pockets by purging the line.

If a **Vmi** leak detector fails to find a 3 GPH leak, the leak detector is not staying at the leak sense position, but instead is going through to full flow.

If, when testing the leak detector, the pressure gauge shows a starting pressure of 0 psi and continues to pump operating pressure without hesitating at leak search pressure, the piston assembly may not have completely reset. If this occurs 2 times in a row; you should (1) turn the pump off, (2) bleed the line pressure to 0 psi, (3) remove the vent line, (4) push the piston assembly down. Turn the pump on and re-test the leak detector to assure it finds a leak. Perform at least 2 additional tests to ensure the leak detector is resetting on its own.

If, when testing the leak detector, it hesitates at leak search pressure but does not hold in leak search position, an adjustment to the piston assembly may be made. The purpose is to make the leak detector more sensitive to a leak.

To adjust the leak detector first remove the vent line and fitting from the top of the 99 LD-2000 or LD-2200 leak detector (99 LD-3000 remove the cap). You will now be looking at the top of the piston assembly.

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With a 7/16-inch socket (99 LD-3000 requires a 5/8-inch socket), turn the nut no more than 3 seconds as if looking at an analog clock dial face in a **clock-wise direction**. **(NEVER TURN COUNTER CLOCK-WISE!)**

Re-test the leak detector and note step through time.

If a 3 GPH leak is not detected, perform another adjustment and re-test.

You may have to perform this adjustment several times before the leak detector slows down and detects the leak.

To explain what is occurring during the adjustment you should know that the piston assembly consists of a piston, hollow shaft, spring, and metering poppet. While turning the retaining nut of this assembly, you are turning the whole assembly. The metering poppet is what contacts the metering pin of the leak detector while in the reset position and the leak search position.

The metering pin will never move. By changing the position of the metering poppet to the pin, the flow rate will change when adjusting. This also changes the step through time of the leak detector.

By adjusting to find a 3 GPH leak, we are reducing flow into the line to make the leak detector more sensitive to finding a leak.

You may notice that when performing the adjustment, the step through time may start to speed up. The slowest position may be 180 degrees from the fastest position. If the time is speeding up, continue the adjustment and you will see the leak detector start to slow down.

Always test for a 3 GPH leak after each adjustment. Always adjust in a clock-wise direction.

If this is the first time you have attempted to adjust a **Vmi** leak detector, we ask that you call **(800 367-0185)** for Vaporless technical assistance.