

NOTICE

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- Contact TLS Systems Technical Support for additional troubleshooting information at 800-323-1799.

Contractor Certification Requirements

Veeder-Root requires the following minimum training certifications for contractors who will troubleshoot the equipment discussed in this manual:

Installer Certification: Contractors holding valid Installer Certification are approved to perform wiring and conduit routing, equipment mounting, probe and sensor installation, tank and line preparation, and line leak detector installation.

Safety Warnings

FAILURE TO COMPLY WITH THE FOLLOWING WARNINGS AND SAFETY PRECAUTIONS COULD RESULT IN SERIOUS INJURY OR DEATH, AND COULD CAUSE DAMAGE TO PROPERTY AND THE ENVIRONMENT.

EXPLOSIVE: Fuels and their vapors are extremely explosive if ignited.

FLAMMABLE: Fuels and their vapors are extremely flammable.

ELECTRICITY: High voltage exists in, and is supplied to, the device. A potential shock hazard exists.

TURN POWER OFF: Live power to a device creates a potential shock hazard. Turn Off power to the device and associated accessories when servicing the unit.

WARNING: Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

READ ALL RELATED MANUALS: Knowledge of all related procedures before you begin work is important. Read and understand all manuals thoroughly. If you do not understand a procedure, ask someone who does.

This system operates near highly combustible fuel storage tanks.










To ensure proper installation, operation, and continued safe use of this product:

1. Read and follow all instructions in this manual, including all safety warnings.
2. Have equipment installed by a contractor trained in its proper installation and in compliance with all applicable codes including: National Electrical Codes 70 and 30A; federal, state, and local codes; and other applicable safety codes.
3. Before installing pipe threads apply an adequate amount of fresh, UL classified for petroleum, non-setting thread sealant. For E85AG applications, Loctite 564 is recommended for all field serviceable pipe threads.
4. When servicing unit, use non-sparking tools and use caution when removing or installing equipment to avoid generating a spark.
5. Substitution of components may impair intrinsic safety.
6. Do not modify or use service parts other than those provided by Veeder-Root.

Quick Troubleshooting Guide

Safety Precautions

The following safety symbols are used throughout this manual to alert you to important safety hazards and precautions.

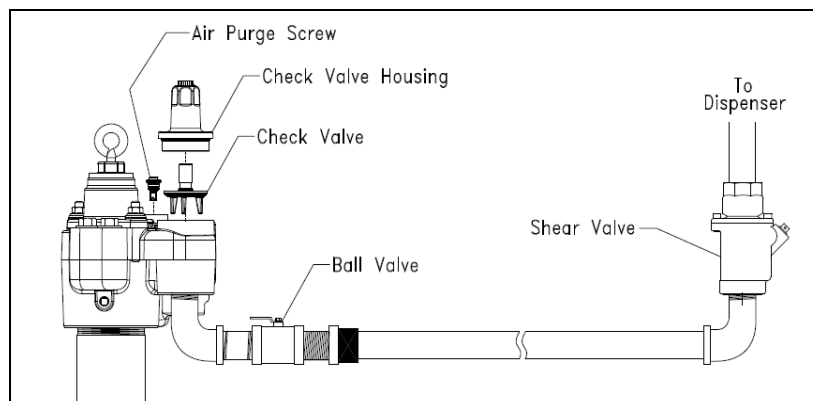
 <p>EXPLOSIVE Fuels and their vapors are extremely explosive if ignited.</p>	 <p>FLAMMABLE Fuels and their vapors are extremely flammable.</p>
 <p>ELECTRICITY High voltage exists in, and is supplied to, the device. A potential shock hazard exists.</p>	 <p>TURN POWER OFF Live power to a device creates a potential shock hazard. Turn Off power to the device and associated accessories when servicing the unit.</p>
 <p>WARNING Indicates a hazardous situation which, if not avoided, could result in death or serious injury.</p>	 <p>WEAR EYE PROTECTION Wear eye protection when working with pressurized fuel lines to avoid possible eye injury.</p>
 <p>USE SAFETY BARRICADES Unauthorized people or vehicles in the work area are dangerous. Always use safety cones or barricades, safety tape, and your vehicle to block the work area.</p>	 <p>APPROVED CONTAINERS Use nonbreakable, clearly marked containers, suitable for collecting and transporting hazardous fuels during service.</p>
 <p>READ ALL RELATED MANUALS Knowledge of all related procedures before you begin work is important. Read and understand all manuals thoroughly. If you do not understand a procedure, ask someone who does.</p>	

Issue: Pressure in line drops slowly and/or FX Leak Detectors nuisance trip, PLLD equipped sites alarm with Gross Fails, 0.1 GPH Fails, or 0.2 GPH Fails.

On-Site Information: Determine the reason for the service call. If equipped with FX Mechanical Leak Detectors, determine the frequency and time of day that the slow flow condition occurs. If site is equipped with PLLD, retrieve and review Line Leak History report to determine frequency, timing, and type of line leak alarms. This information will be required for discussion with Technical Support.

Safety Precautions: Review The Red Jacket Submersible Turbine Pump Installation Manual (577013-830 or D042-153 or 577014-049) for Safety Precautions, Warnings and detailed procedures.

Related Manuals: 577014-341, 577014-342, 577014-344



Quick Troubleshooting Guide

Troubleshooting Steps:

1. Verify that all air has been purged from the system (reference pump installation manuals); if not resolve.
2. Conduct a visual site inspection for any external leakage (dispenser pans/sumps, STP sumps, etc.).
3. Determine location of pressure loss:
 - Install a pressure gauge in the line that runs to the dispenser (dispenser side of the ball valve) (reference shear/impact valve owner's manual) and in the line on the pump side of the ball valve.
 - With the ball valve open, turn on the submersible pump and allow the running pressure to stabilize (in the event that ball valve is not installed, actuate the lock down screw to isolate the pump from the line).
 - Turn the pump off and record the pressure drop once, every 60 seconds for 5 minutes (document in Table 1 below).
 - Turn the submersible pump on and allow the running pressure to stabilize.
 - Shut the ball valve in the submersible sump.
 - Turn the pump off and record the pressure drop for both gauges once, every 60 seconds for 5 minutes.
4. When the temperature of the product in the tank is higher than the air or ground temperature, determine if pressure loss is the result of "Thermal Contraction" of the fuel:
 - Open the ball valve located at the outlet of the submersible pump.
 - Turn the pump on and allow the running pressure to stabilize.
 - Turn the pump off and record the pressure drop once, every 60 seconds (document in Table 1 below).
 - Repeat the two steps above, 5 times.
 - Review the data to determine if the pressure drop DECREASES on each subsequent test.
 - If the pressure drop decreases after each test, the problem is "Thermal Contraction". Contact Technical Support (U.S. only: 800.323.1799) for possible corrective measures.
 - If the pressure drop remains constant, see the Troubleshooting the Submersible Turbine Pump for Pressure Loss guide
5. When the pressure drop occurs ONLY in the line from the ball valve to the dispenser:
 - a. Check for leaks in the dispensers and associated lines downstream of the ball valve:
 - Inside the dispenser
 - Under the dispenser
 - Around the pump
 - In the piping system
 - b. Repair leaks and run tests outlined above.
6. If pressure drop still occurs, contact Technical Support (U.S. only: 800.323.1799) for additional troubleshooting procedures. Please make certain to have all pressure data collected available!

Table 1. Pressure Drop Test Measurements

Time (Seconds)	Test 1 PSI	Test 2 PSI	Test 3 PSI	Test 4 PSI
60				
120				
180				
240				
300				