

The Red Jacket Mid-Range Check Valve Kit

Installation Guide



Notice

Veeder-Root makes no warranty of any kind with regard to this publication, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

Veeder-Root shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this publication.

Veeder-Root reserves the right to change system options or features, or the information contained in this publication.

This publication contains proprietary information which is protected by copyright. All rights reserved. No part of this publication may be photocopied, reproduced, or translated to another language without the prior written consent of Veeder-Root.

Contact Red Jacket Technical Support for additional troubleshooting information at 800-323-1799.

DAMAGE GOODS/LOST EQUIPMENT

Thoroughly examine all components and units as soon as they are received. If any cartons are damaged or missing, write a complete and detailed description of the damage or shortage on the face of the freight bill. The carrier's agent must verify the inspection and sign the description. Refuse only the damaged product, not the entire shipment.

VR must be notified of any damages and/or shortages within 30 days of receipt of the shipment, as stated in our Terms and Conditions.

VEEDER-ROOT'S PREFERRED CARRIER

1. Fax Bill of Lading to V/R Customer Service at 800-234-5350.
2. Call V/R Customer Service at 800-873-3313 with the specific part numbers and quantities that were received damaged or lost.
3. VR will file the claim with the carrier and replace the damaged/missing product at no charge to the customer. Customer Service will work with production facility to have the replacement product shipped as soon as possible.

CUSTOMER'S PREFERRED CARRIER

1. Customer files claim with carrier.
2. Customer may submit a replacement purchase order. Customer Service will work with production facility to have the replacement product shipped as soon as possible.
3. If "lost" equipment is delivered at a later date and is not needed, VR will allow a Return to Stock without a restocking fee.
4. VR will NOT be responsible for any compensation when a customer chooses their own carrier.

RETURN SHIPPING








For the parts return procedure, please follow the instructions in the "General Returned Goods Policy" pages of the "Policies and Literature" section of the Veeder-Root North American Red Jacket Mechanical Products Price Book. Veeder-Root will not accept any return product without a Return Goods Authorization (RGA) number clearly printed on the outside of the package.







Contents

Safety Precautions	1
Warnings and Instructions	2
IMPORTANT SAFETY INFORMATION	2
PRELIMINARY PRECAUTIONS	2
Read the Manual	2
Follow the Regulations	2
Prevent Explosions and Fires	2
Working Alone	2
Working With Electricity Safely	2
Hazardous Materials	2
REQUIREMENTS FOR USE.....	3
OPERATING PRECAUTIONS	3
Replacing the Check Valve Assembly	4
Kits Required:	4
Procedure:	4
Related Manuals	5

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 Heed the adjacent instructions to avoid equipment damage or personal injury.</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>
 <p>WEAR EYE PROTECTION Wear eye protection when working with pressurized fuel lines to avoid possible eye injury.</p>	

 WARNING	
    	<p>This product operates in the highly combustible atmosphere of a gasoline storage tank. FAILURE TO COMPLY WITH THE FOLLOWING WARNINGS AND SAFETY PRECAUTIONS COULD CAUSE DAMAGE TO PROPERTY, ENVIRONMENT, RESULTING IN SERIOUS INJURY OR DEATH.</p> <ol style="list-style-type: none"> 1. All installation work must comply with the latest issue of the National Electrical Code (NFPA 70), the Code for Motor Fuel Dispensing Facilities and Repair Garages (NFPA 30A), and any European, national, state, and local code requirements that apply. 2. Turn off, tag, and lockout power to the STP before connecting or servicing the STP. 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 threads¹. 4. When servicing unit, use non-sparking tools and use caution when removing or installing equipment to avoid generating a spark. 5. To protect yourself and others from serious injury, death, or substantial property damage, carefully read and follow all warnings and instructions in this manual.

In addition to the specified torque values noted in this manual, when properly tightened, all flanged fittings should have metal-to-metal contact.

¹For the E85 AG Product, the interface connection to the 2" NPT Discharge Port on the manifold was evaluated with steel piping during the UL Listing evaluation and therefore, this material should be used when installing this product. All materials must be fully compatible with the products being stored.

Warnings and Instructions

IMPORTANT SAFETY INFORMATION

This section introduces the hazards and safety precautions associated with installing, inspecting, maintaining or servicing this product. Before performing any task on this product, read this safety information and the applicable sections in this manual, where additional hazards and safety precautions for your task will be found. Fire, explosion, electrical shock or pressure release could occur and cause death or serious injury, if these safe service procedures are not followed.

PRELIMINARY PRECAUTIONS

You are working in a potentially dangerous environment of flammable fuels, vapors, and high voltage or pressures. Only trained or authorized individuals knowledgeable in the related procedures should install, inspect, maintain or service this equipment.

Read the Manual

Read, understand and follow this manual and any other labels or related materials supplied with this equipment. If you do not understand a procedure, call 1-800-323-1799 to locate a qualified technician. It is imperative to your safety and the safety of others to understand the procedures before beginning work. **Make sure your employees and any service contractors read and follow the instructions.**

Follow the Regulations

Applicable information is available in National Fire Protection Association (NFPA) 30A; *Code for Motor Fuel Dispensing Facilities and Repair Garages*, NFPA 70; *National Electrical Code* (NEC), Occupational Safety and Hazard Association (OSHA) regulations and federal, state, and local codes. All these regulations must be followed. Failure to install, inspect, maintain or service this equipment in accordance with these codes, regulations and standards may lead to legal citations with penalties or affect the safe use and operation of the equipment.

Prevent Explosions and Fires

Fuels and their vapors will explode or burn, if ignited. Spilled or leaking fuels cause vapors. Even filling customer tanks will cause potentially dangerous vapors in the vicinity of the dispenser or island.

Working Alone

It is highly recommended that someone who is capable of rendering first aid be present during servicing. Familiarize yourself with Cardiopulmonary Resuscitation (CPR) methods, if you work with or around high voltages. This information is available from the American Red Cross. Always advise the station personnel about where you will be working, and caution them not to activate power while you are working on the equipment. Use the OSHA Lockout/Tagout procedures. If you are not familiar with this requirement, refer to OSHA documentation.

Working With Electricity Safely

Ensure that you use safe and established practices in working with electrical devices. Poorly wired devices may cause a fire, explosion or electrical shock. Ensure that grounding connections are properly made. Ensure that you do not pinch wires when replacing covers. Follow OSHA Lockout/Tagout requirements. Station employees and service contractors need to understand and comply with this program completely to ensure safety while the equipment is down. Before you start work, know the location of the Emergency Power Cutoff Switch (the E-STOP). This switch cuts off power to all fueling equipment and submerged turbine pumps and is to be used in the event of an emergency. The buttons on the console at the cashier's station WILL NOT shut off electrical power to the pump/dispenser. This means that even if you press a button on the console labeled EMERGENCY STOP, ALL STOP, PUMP STOP, or something similar, fuel may continue to flow uncontrolled.

Hazardous Materials

Some materials may present a health hazard if not handled correctly. Ensure that you clean hands after handling equipment. Do not place any equipment in the mouth.

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

FIRE HAZARD! Do **NOT** use **power tools** (Class I Division I and Class I Division II) during the installation or maintenance of equipment. Sparking could ignite fuel or vapors, resulting in fire.

CHEMICAL EXPOSURE HAZARD! Wear appropriate **safety equipment** during installation or maintenance of equipment. Avoid exposure to fuel and vapors. Prolonged exposure to fuel may cause severe skin irritations and possible burns.

REQUIREMENTS FOR USE

- The Red Jacket is designed for use only at facilities dispensing motor fuels.
- Application of The Red Jacket must be consistent with NFPA Code 30A, OSHA regulations, and federal, state and local fire codes, and other applicable local regulations.
- The selection of any Veeder-Root product must be based upon physical specifications and limitations and the product's compatibility with the materials to be handled. Veeder-Root makes no warranty of fitness for a particular purpose.
- All Veeder-Root products should be used in accordance with applicable federal, state and local laws, ordinances and regulations.

OPERATING PRECAUTIONS

- **NO SMOKING.** Extinguish all open flames and pilot lights, such as on RV appliances.
- **TURN OFF** cell phones and other electronic devices to avoid distractions while fueling.
- **GASOLINE CAN BE HARMFUL OR FATAL IF SWALLOWED.** Long-term exposure may cause cancer. Keep eyes and skin away from liquid gasoline and gasoline vapors. Avoid prolonged breathing of gasoline vapors.

Replacing the Check Valve Assembly



WARNING! Disconnect, lock out, and tag power at the panel before starting to service the pump.



When servicing equipment, use non-sparking tools and use caution when removing or installing equipment to avoid generating a spark.

Kits Required:

- Check Valve Housing Kit (P/N 410152-004), or
- Check Valve Kit (P/N 410153-004) and Hardware/Seal Kit (E85AG) (P/N 410154-001)

Procedure:

1. If a ball valve is installed down line from the pump, close it.
2. Remove and save the protective plug over the service screw and turn the screw clockwise (see Figure 1). As the screw approaches its bottom position, you will hear the system depressurizing. Continue turning the screw until it can go no further. When the screw is all the way down, backoff the screw 4 turns to lift the check valve and let the fuel drain out of the manifold's hydraulic cavities. Continue to turn the screw counterclockwise until you hear the check valve drop down into position.
3. Unscrew the check valve housing. Lift the spring and check valve out of the manifold. Discard the o-ring from the housing and from the check valve.

NOTE: If replacing the check valve o-ring, avoid twisting or rotating the o-ring as it is being installed on the check valve.

4. Get the new check valve and spring from the kit. If you have the Check valve housing kit, get the new housing and o-ring (2.609" ID x 0.139" wide) from the kit, if you only have the check valve kit, get a new 2.609" ID x 0.139" wide housing o-ring from the hardware/seal kit.
5. Lubricate the new housing o-ring and the new 1.859" ID x 0.139" wide o-ring on the check valve with petroleum jelly.
6. With its lubricated o-ring in place, insert the check valve onto its seat in the manifold, and place the new spring over the check valve (see Figure 1). Place the check valve housing with o-ring over the spring and check valve and screw it in hand tight. Torque the housing to 40 - 50 ft-lbs (54 - 67 N•m).
7. Replace the protective plug over the service screw and fully thread into place to ensure a good seal.
8. Open the air purge screw 2 - 3 turns counterclockwise (see Figure 1).



CAUTION! The air purge screw is retained by a hitch pin to limit travel. Do not attempt to rotate beyond 3 turns.

9. Turn the pump on and let it run for about 2 minutes to purge air from the manifold's hydraulic cavities. While the pump is still running, turn the air purge screw clockwise until it is completely closed.
10. If applicable, open the ball valve down line from the pump.

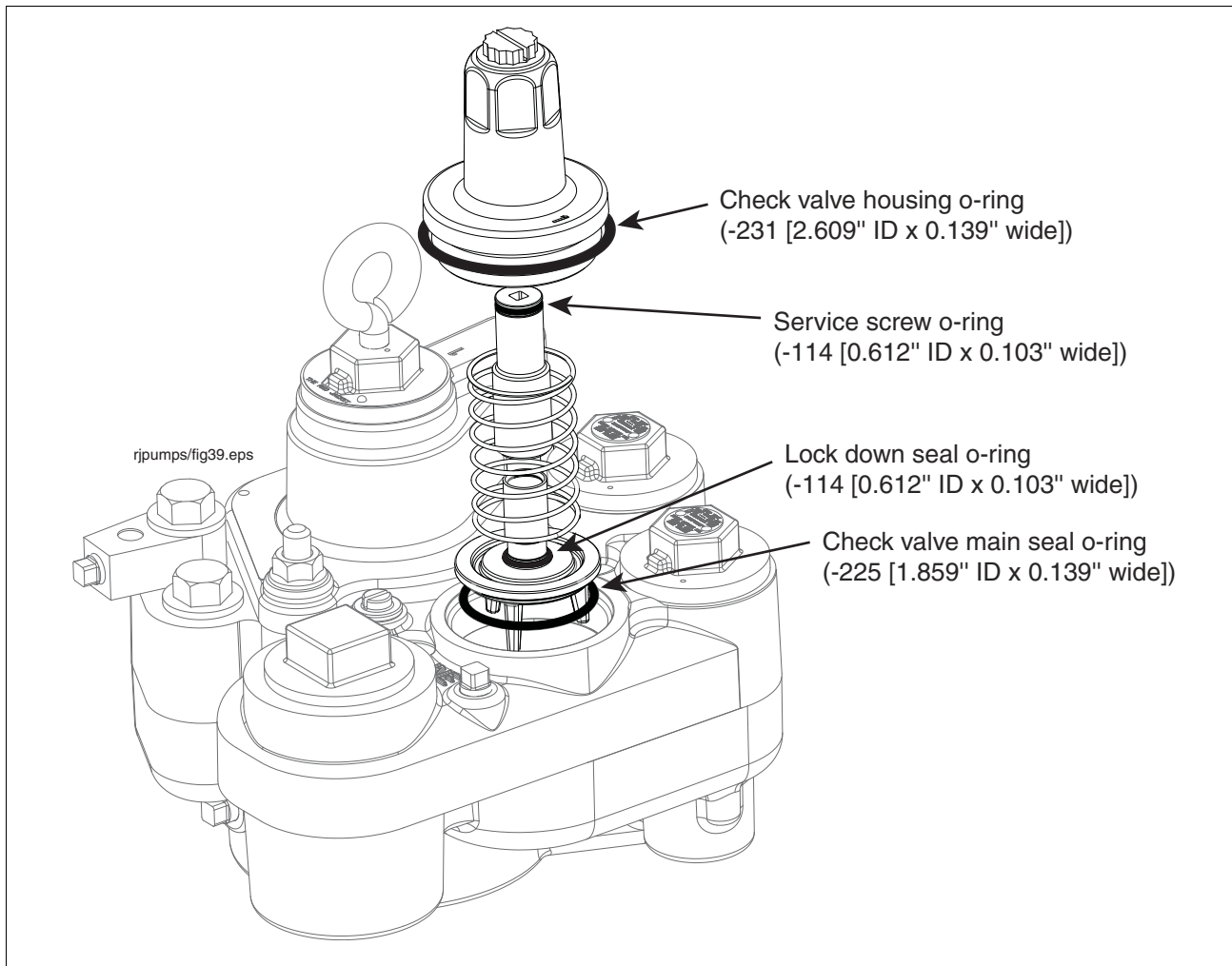


Figure 1. Inserting Check valve assembly into manifold

Related Manuals

For applications using PLLD installed into The Red Jacket product, please refer to the latest revision of the Application Guide (577013-465) and the Site Prep and Installation Guide (576013-902).

For customers who choose to replace the standard check valve (410022-001) with the Mid-Range check valve (410022-004) for line manifolded applications, the Mid-Range valve must ONLY be installed into the Master pump; the Slave pump MUST always contain the Hi-Pressure Check Valve (410022-002) and the User Defined piping setting MUST be selected (please refer to the appropriate TLS manual for programming instructions).

