

ECII/RegO Products

Operating Instructions for A8560 & A8570 Series Multiport Pressure Relief Valve Manifold

Suitable for use on LP-Gas

Maximum Allowable Pressure 25 bar

WARNING: Installation, usage and maintenance of this product must be in compliance with all Engineered Controls International, Inc. instructions as well as requirements and provisions of national and local standards, codes, regulations and laws.

Inspection and maintenance on a periodic basis is essential. Installation and maintenance should be performed only by qualified personnel.

Be sure all instructions are read and understood before installation, operation and maintenance. These instructions must be passed along to the end user of the product.

CAUTION: Contact or inhalation of liquid propane, ammonia and their vapors can cause serious injury or death! LP-Gas must be released outdoors in air currents that will insure dispersion to prevent exposure to people and livestock. LP-Gas must be kept far enough from any open flame or other source of ignition to prevent fire or explosion! LP-Gas is heavier than air and will not disperse or evaporate rapidly if released in still air.

Installation

Extra Tank Openings

In many cases, the installation of a MultiPort® results in one or more empty flanged openings in the container which were formerly occupied by individual flanged relief valves. These extra openings can either be sealed off or used for extra withdrawal capabilities. Openings can be sealed with properly sized and rated blind flanges. Extra threaded openings can be provided by using a screwed reducing flange with the required thread size. MultiPort® Container Connections - See Figure 1

1. A8560 Series manifolds have a flat faced flange with a 6-5/8" bolt circle diameter. This is a standard 3" flange but the port diameter is 4". The mating flange on the container must also have a 4" port diameter. The proper gasket part # 7564-48 is furnished with each manifold.

2. A8570 Series manifolds have a 1/16" raised face flange with a 7 7/8" bolt circle diameter. This is a standard 4" flange. The proper gasket part # 7565-48, is furnished with each manifold.

3. MultiPort® manifolds are usually installed on either a man hole cover plate or a welding neck flange.

4. The manifold should be mounted in a position where the hand wheel is easy to read and operate.

5. Bolt studs and nuts should be used to install the manifold. These bolt studs and nuts should be 3/4" - 10 alloy steel 193-66 grade B-7.

6. For manhole cover plates - use (8) 3 -1/2" long bolt studs - available as kit # 7560-56, if not available locally. See Figure 2.

7. For welding neck flanges - use (8) 4-1/4" long bold studs – available as kit #7560-55, if not available locally. See figure 3.

8. Tighten the bolt studs and nuts gradually in an alternate and opposite sequence around the diameter. Follow the sequence shown in Figure 4.

9. Limit the height of the vent stack to a minimum. Be sure to include the approximate overall height of the Multiport when determining the overall height of the vent required above the top of the container.

10. Secure the vent stacks firmly to each other midway or at the top to break the wind velocity between the stacks and to reduce the tendency to vibrate or oscillate. This may be accomplished by inserting a wooden block between the stacks and clamping them together at this point.

11. For normal operation with all relief valves in place, the bleeder valves located below each manifold port should be turned

counter-clockwise until fully back-seated. Keep the bleeder valves in this position during normal operation. See Figure 5

12. Leak test and pressure test the system per national, local, codes and standards.

13. After the container is pressurized, check the seal of the flange make up by applying a non-corrosive leak detection solution. If bubbles appear, tighten the bolts until the flange seals. If this does not work, the flanged surface needs to be checked.

14. There is an arrow directly below the hand wheel on the manifold body. For normal operation with all relief valves in place, the hand wheel should be turned so the arrow on the body is midway between any two (2) adjacent numbers on the hand wheel. In this position, all four relief valves are available to provide extra relief capacity if necessary. See Figure 5.

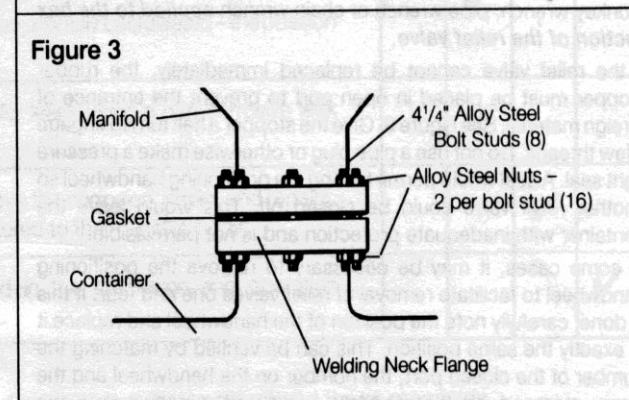
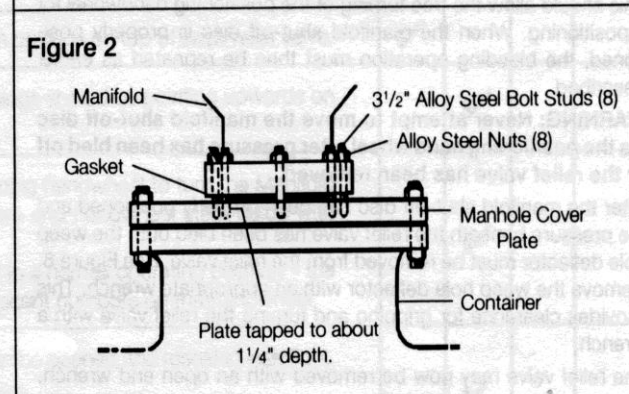
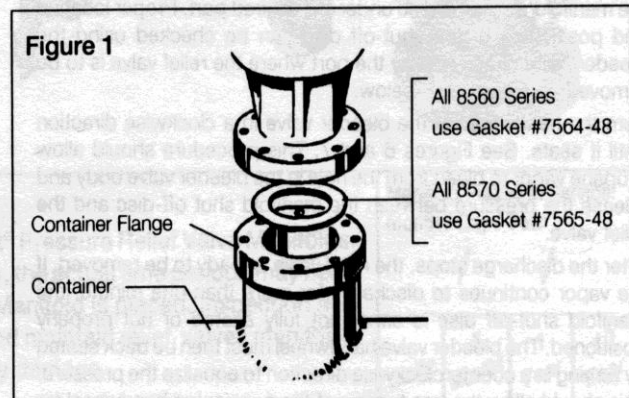
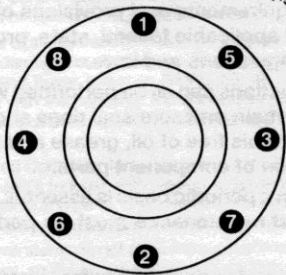


Figure 4



Tighten bolt studs and nuts gradually in an alternate and opposite sequence around the diameter. Follow numerical sequence shown.

Figure 5

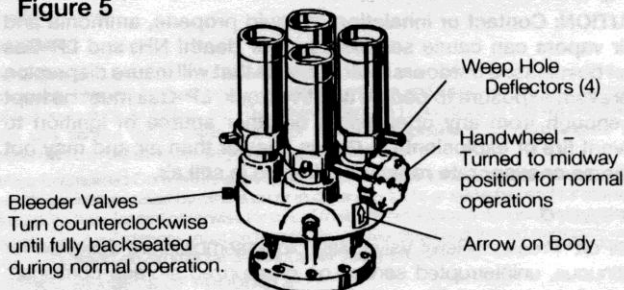
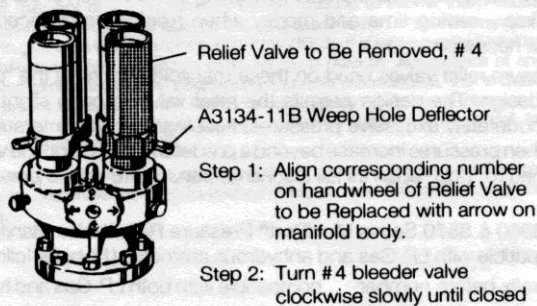
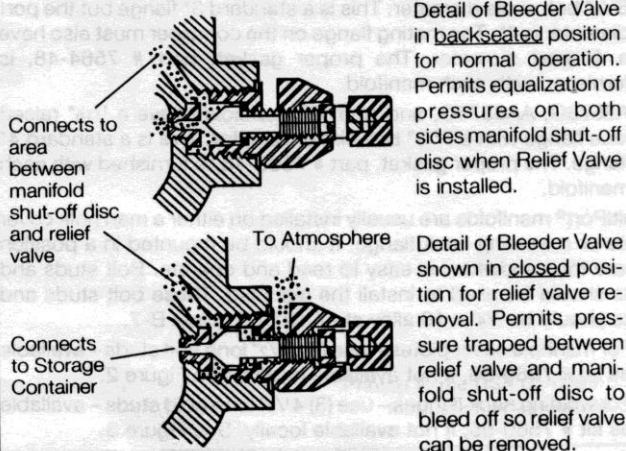


Figure 6



Do not attempt to move positioning handwheel after pressure has been bled off.

Figure 7 - Bleeder Valve Detail



Operation:

MultiPort® Pressure Relief Valve Manifold Assemblies are designed for continuous, uninterrupted service on pressurized storage containers with flanged openings. These manifolds permit servicing or replacement of any one of the pressure relief valves while the container is under pressure. The container does not need to be evacuated. A hand wheel on the manifold is designed to selectively close off the entrance port to the relief valve being removed without interrupting the operation of the other relief valves - saving time and money when relief valve replacement becomes necessary.

The pressure relief valves used on these manifolds are all of the "pop-action" design. The design permits the relief valve to open slightly to relieve moderately excessive pressures, keeping fluid waste to a minimum. When pressures increase beyond a predetermined point, the valve is designed to "pop" open its full discharge capacity to relieve pressure quickly.

RegO® A8560 & A8570 Series MultiPort® Pressure Relief Valve Manifolds are compatible with LP-Gas and anhydrous ammonia (NH₃) as follows:

A prefix before number compatible with both LP-Gas and NH₃.

AA prefix before number compatible with NH₃ only.

Relief Valve Removal

NOTE: Before beginning relief valve removal or inspection, be sure protective eye wear and gloves are worn. Do not look directly into the relief valves at any time because they may discharge and cause bodily injury. No more than one relief valve may be removed from the manifold at any one time.

1. The relief valve ports are numbered clockwise from the positioning hand wheel. The one at the left of the hand wheel is number one (1) and the one at the right is number four (4). Note the number of the manifold body port into which the relief valve to be removed is threaded.

2. Turn the positioning hand wheel until the number on the hand wheel which corresponds to the number of the relief valve to be removed is in line with the arrow on the manifold body directly below the hand wheel. See Figure 6. This procedure should position the manifold's shut-off disc under the desired port.

3. Proper location and positioning of the shut-off disc can be checked using the bleeder valve directly below the port where the relief valve is to be removed - as instructed below.

4. Turn the hand wheel of the bleeder valve in a clockwise direction until it seats. See Figures 6 and 7. This procedure should allow propane vapor to bleed from the hole in the bleeder valve body and release the pressure between the manifold shut off-disc and the relief valve.

5. After the discharge stops, the relief valve is ready to be removed. If the vapor continues to discharge for more than one minute, the manifold shut-off disc is either not fully seated or not properly positioned.

6. The bleeding operation must then be repeated for each port as earlier described.

WARNING: Never attempt to move the manifold shut-off disc via the positioning hand wheel after pressure has been bled off or the relief valve has been removed.

7. After the manifold shut-off disc has been properly positioned and the pressure beneath the relief valve has been bled out, the weep hole deflector must be removed from the relief valve. See Figure 8.

8. Remove the weep hole deflector with an appropriate wrench. This provides clearance for gripping and turning the relief valve with a wrench.

9. The relief valve may now be removed with an open end wrench, monkey wrench, pipe wrench or chain wrench **applied to the hex section of the relief valve.**

10. If the relief valve cannot be replaced immediately, the rubber stopper must be placed in open port to prevent the entrance of foreign material. See Figure 9. Give the stopper a half turn to engage a few threads. Do not use a pipe plug or otherwise make a pressure tight seal. A seal would permit turning the positioning hand wheel so another relief valve could be closed off. This would leave the container with inadequate protection and is not permissible.

11. In some cases, it may be necessary to remove the positioning hand wheel to facilitate removal of relief valves one and four. If this is done, carefully note the position of the hand wheel and replace it in exactly the same position. This can be verified by matching the number of the closed port, the number on the hand wheel and the arrow stamped on the manifold body pad directly below the hand wheel.

Relief Valve Replacement

1. Before installation, apply a suitable non-hardening pipe compound to the male thread of the relief valve.
NOTE: Do not apply compound to the female thread in the manifold port.

2. Using the same wrench on the hex section of the relief valve, screw the replacement relief valve into the open port. Tighten down with sufficient torque to provide a leak-tight seal.

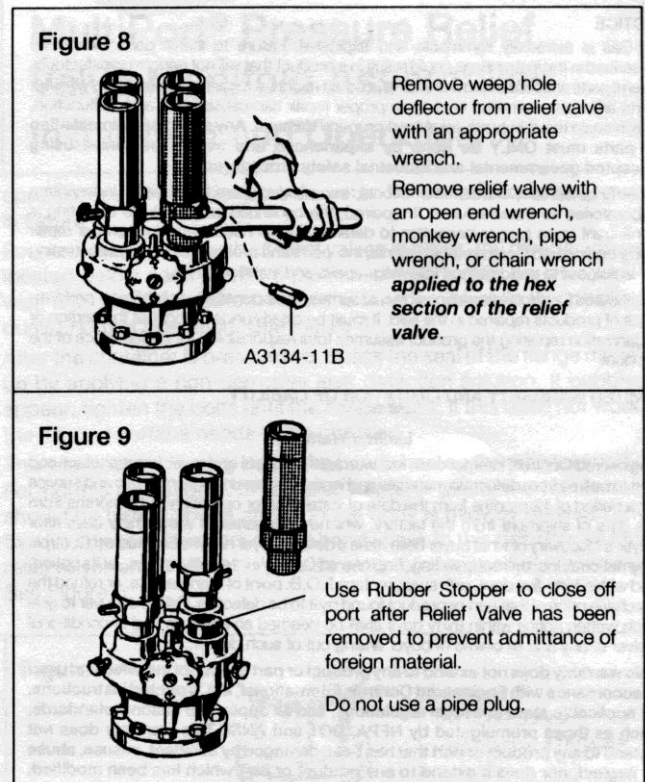
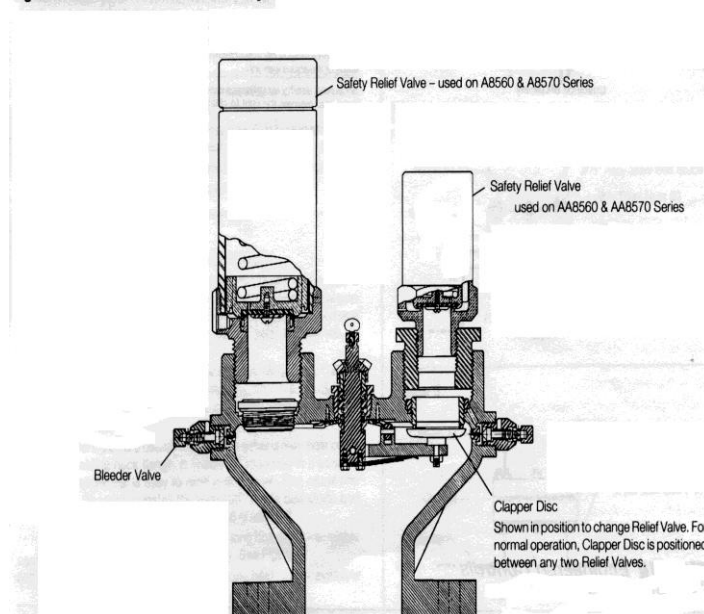
3. Apply pipe compound to the male threads of the weep hole deflector and install it into the outermost tapped opening of the relief valve. Be sure the remaining two openings are plugged. The deflector must be installed so that the large angle bore points up.

4. Turn the small hand wheel of the bleeder valve located below the replaced relief valve counterclockwise until it is fully back seated. This procedure will allow pressure to equalize between the manifold shut-off disc and the relief valve.

5. The positioning hand wheel should now be free to turn.
Note: During normal use, with all relief valves properly in place, it is recommended that the hand wheel be turned so that the manifold shut-off disc is positioned between any two relief valves. This is accomplished by positioning the hand wheel so the arrow on the manifold body points between any two numbers on the hand wheel. This will provide extra relief capacity so that all of the relief valves can function if necessary.

6. Check the connection of the replaced relief valve and manifold with a high quality leak detecting solution. If bubbles appear there is a leak. The connection must be leak-tight.

Figure 9: Relief Valve Manifold Assembly



Hazards:

- Do not remove a relief valve from the manifold until the operating lever is rotated to the proper position and the bleeder valve is fully turned (clockwise) until seats.
- Install only ECII pressure relief valves suitable for use in the Duo Port.
- Never uncouple the valve connections until all pressure is bled from the lines.

General Warning:

All ECII products are mechanical devices that will eventually become inoperative due to wear contaminants, corrosion, and aging components. Periodic inspection and maintenance are essential. The safe useful life of this product can vary greatly depending on the environment it is exposed to, and the inspection/maintenance program that is used. For more information refer to RegO Products L-500 catalog or www.regoproducts.com.

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