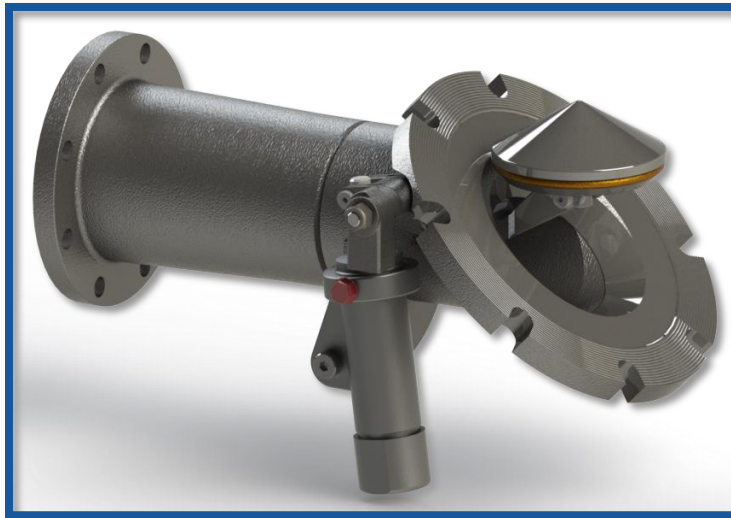




## 45 Deg TTMA Bottom and Top Valves Owner's Manual GQ81300 and GQ81350

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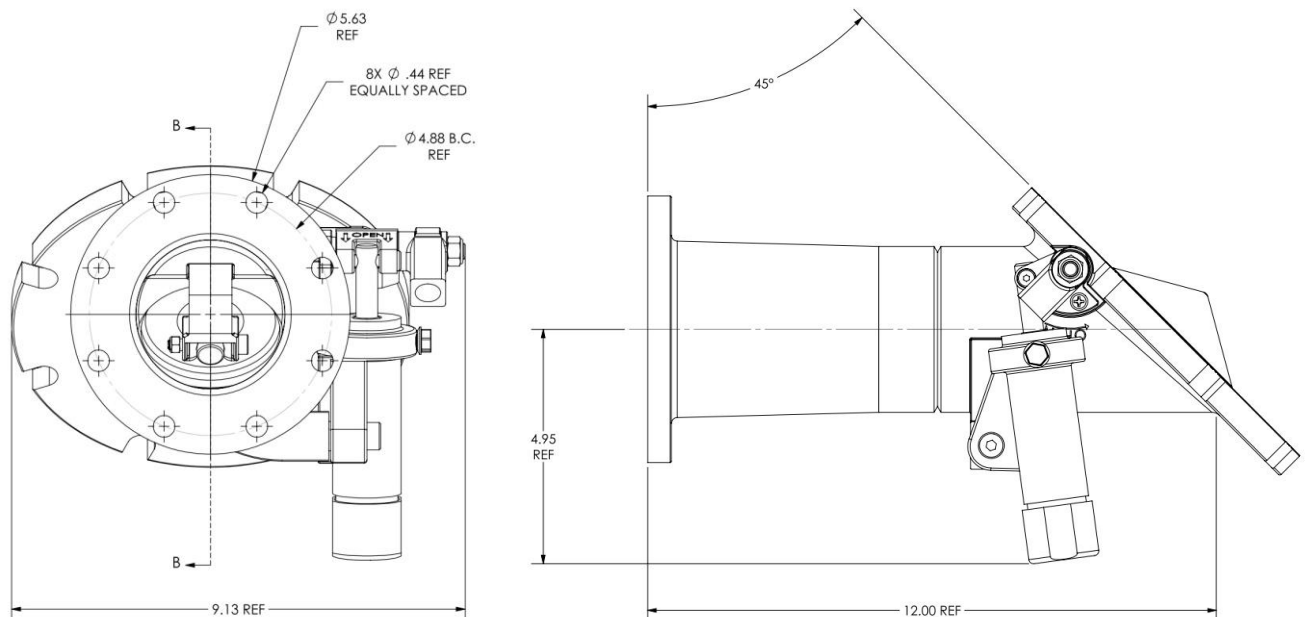
Bottom outlet discharge valve top venting valve approved for use on DOT 407 and Non-Code tank trailers transporting food or liquids.

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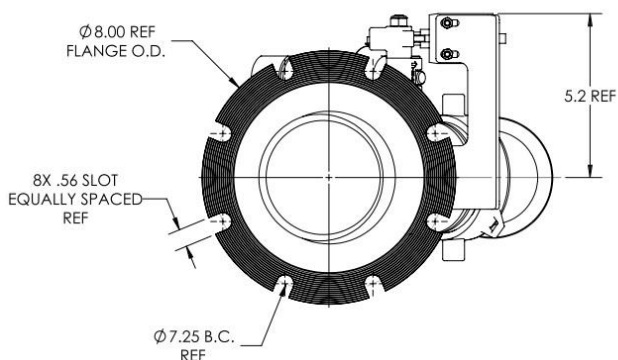
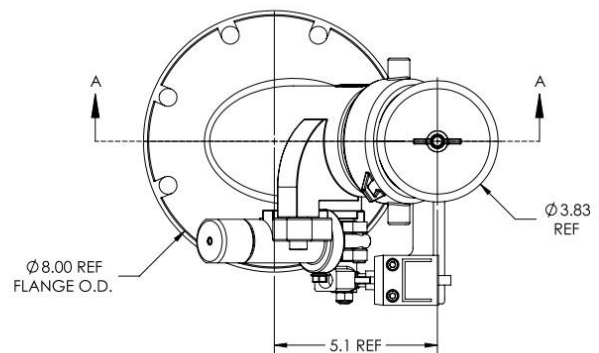
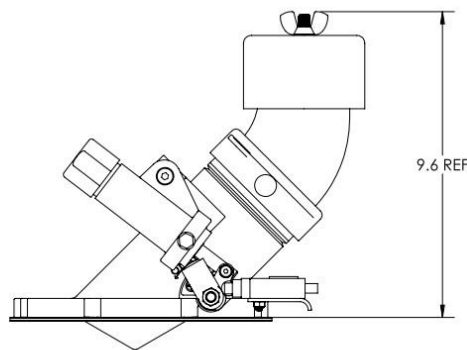
## Technical Data for GQ81300

- 1) Overall length : 12"
- 2) Design pressure (MAWP) : 58 PSIG
- 3) All components constructed from corrosion resistant 316 Stainless Steel
- 4) Mounts to standard 6" TTMA sump with 7.25" bolt circle
- 5) Outlet flange made to 3" TTMA standard
- 6) 1/8" NPT hydraulic connection
- 7) Designed raised face with serrations in accordance with ASME B16.5 to ensure proper gasket seal
- 8) Cone poppet for piercing congealed product
- 9) Tef-O-Sil seals (Teflon™ encapsulated O-ring)
- 10) Constructed from castings made in the USA
- 11) Valve meets CFR Title 49, ADR Section 6, and ASME Section VIII design requirements for Bottom Outlet Valves



## Technical Data for GQ81350

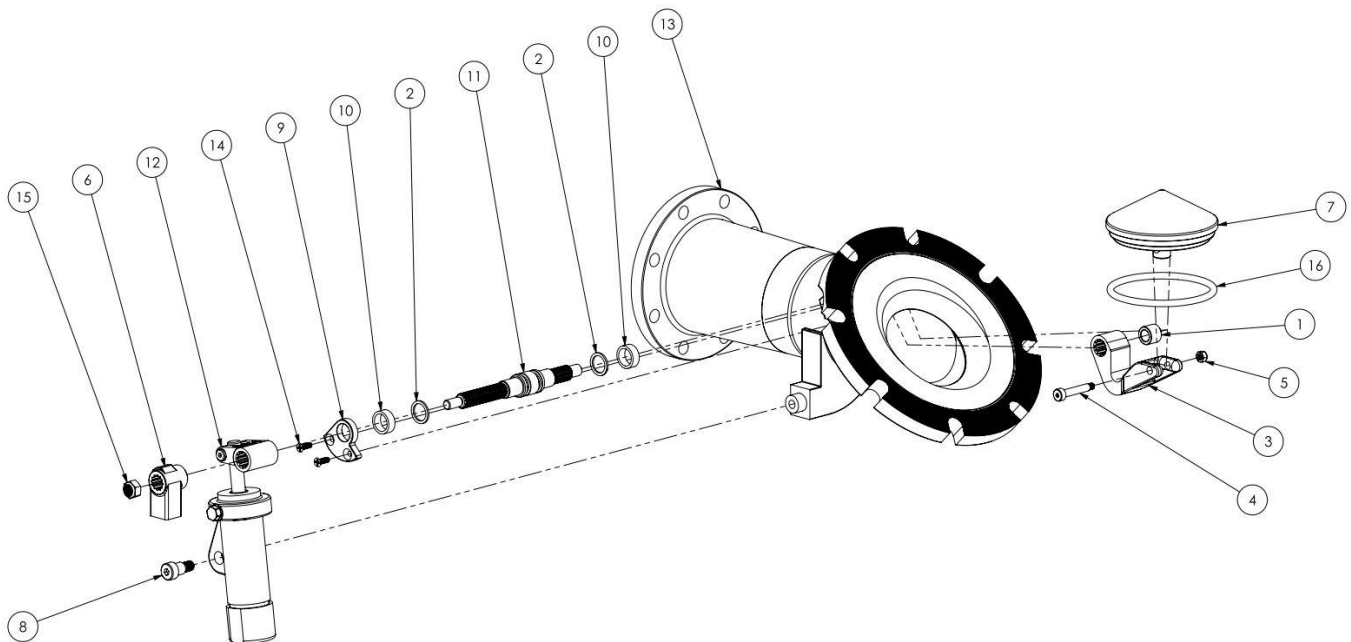
- 1) Overall height : 9.6"
- 2) Design pressure (MAWP) : 58 PSIG
- 3) All components constructed from corrosion resistant 316 Stainless Steel
- 4) Mounts to standard 6" TTMA sump with 7.25" bolt circle
- 5) 1/8" NPT hydraulic connection
- 6) Designed raised face with serrations in accordance with ASME B16.5 to ensure proper gasket seal
- 7) Cone poppet for piercing congealed product
- 8) Tef-O-Sil seals (Teflon™ encapsulated O-ring)
- 9) Constructed from castings made in the USA
- 10) Valve meets CFR Title 49, ADR Section 6, and ASME Section VIII design requirements for Bottom Outlet Valves



## Exploded View of Product

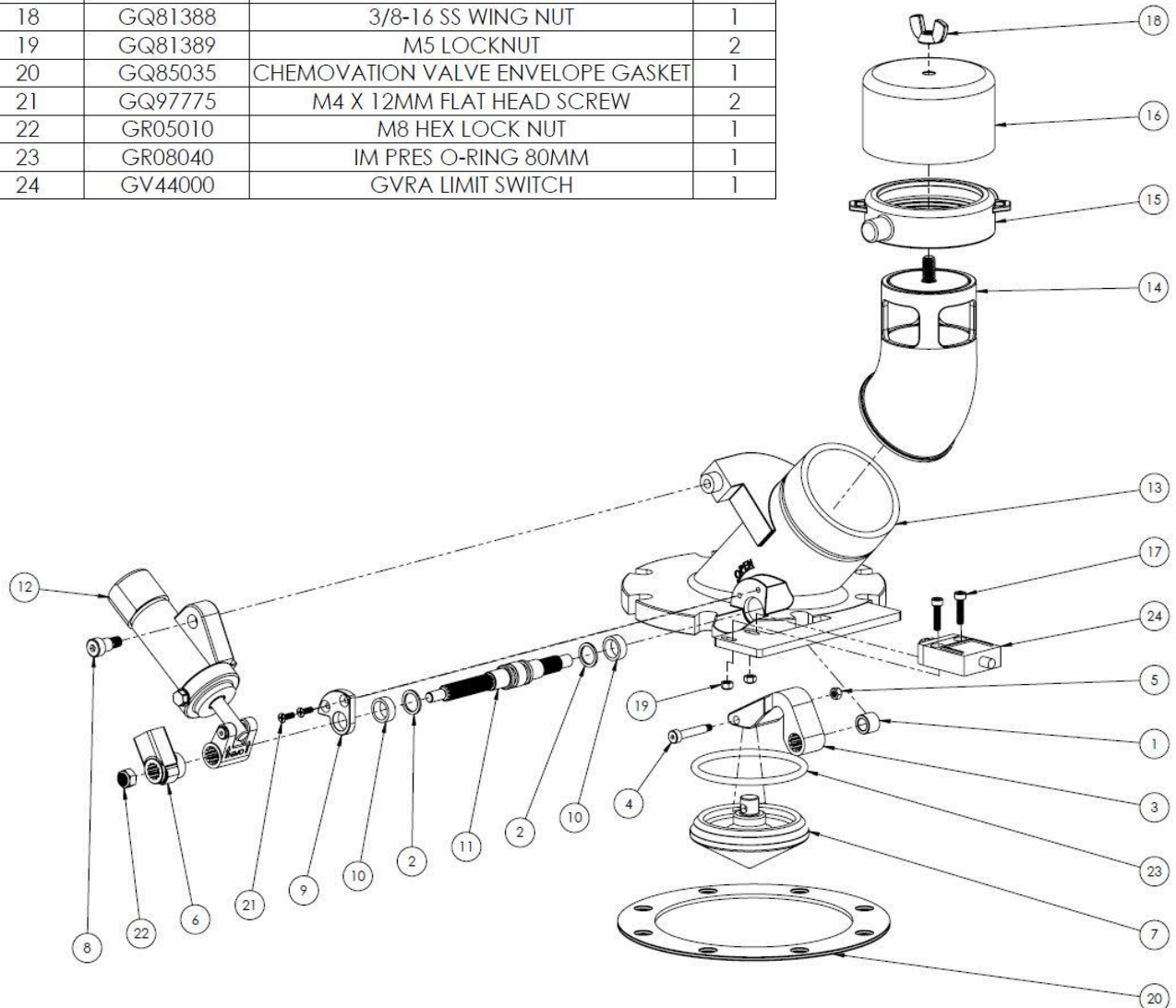
### GQ81300

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GQ60190	BOV BUSHING	1
2	GQ60202	OUTLET SHAFT VITON EXT O-RING	2
3	GQ80319	CENTER LINK	1
4	GQ80331	M5 X 30MM SHOULDER BOLT	1
5	GQ80332	M5 LOCK NUT W/ NYLON INSERT	1
6	GQ80338	HANDLE G2	1
7	GQ80350	TAPERED STOPPER, MACHINED	1
8	GQ80380	M8 X 10MM SHOULDER BOLT	1
9	GQ80455	SHAFT RETAINER G2	1
10	GQ80475	TEFLON BUSHING	2
11	GQ80485	FLAPPER HANDLE SHAFT G2	1
12	GQ80602	HTV HYDRAULIC ASSY G3	1
13	GQ81310	45 DEG TTMA FULL FLOW, MACHINED	1
14	GQ97775	M4 X 12MM FLAT HEAD SCREW	2
15	GR05010	M8 HEX LOCK NUT	1
16	GR08040	IM PRES O-RING 80MM	1



# GQ81350

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GQ60190	BOV BUSHING	1
2	GQ60202	OUTLET SHAFT VITON EXT O-RING	2
3	GQ80319	CENTER LINK	1
4	GQ80331	M5 X 30MM SHOULDER BOLT	1
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7	GQ80350	TAPERED STOPPER, MACHINED	1
8	GQ80380	M8 X 10MM SHOULDER BOLT	1
9	GQ80455	SHAFT RETAINER G2	1
10	GQ80475	TEFLON BUSHING	2
11	GQ80485	FLAPPER HANDLE SHAFT G2 SS	1
12	GQ80602	HTV HYDRAULIC ASSY G3	1
13	GQ81360	45 DEG TTMA TOP VALVE WELDMENT	1
14	GQ81370	TOP VALVE 45 DEG ELBOW WELDMENT	1
15	GQ81380	3" NPT TOP VALVE SWIVEL CAP	1
16	GQ81386	45 DEG TOP VALVE RAIN COVER	1
17	GQ81387	M5 X 20 SHCS	2
18	GQ81388	3/8-16 SS WING NUT	1
19	GQ81389	M5 LOCKNUT	2
20	GQ85035	CHEMOVATION VALVE ENVELOPE GASKET	1
21	GQ97775	M4 X 12MM FLAT HEAD SCREW	2
22	GR05010	M8 HEX LOCK NUT	1
23	GR08040	IM PRES O-RING 80MM	1
24	GV44000	GVRA LIMIT SWITCH	1





# Safety

## General Safety Information



**WARNING:** All Safety regulations must be followed during the operation of this product. Follow maintenance instructions as set forth in this manual to avoid serious injury. Do not attempt to disassemble the device unless you have been properly trained by a Girard Equipment representative.

## Product Storage

- Temperature Range: -40° F +250° F
- Humidity Range: N/A
- Altitude Range: N/A

Store device upright, in its original container, to maintain a dust-free environment. We recommend that stored valves be retested every six months. The initial test date will be listed on the valve certificate.

## Product Handling

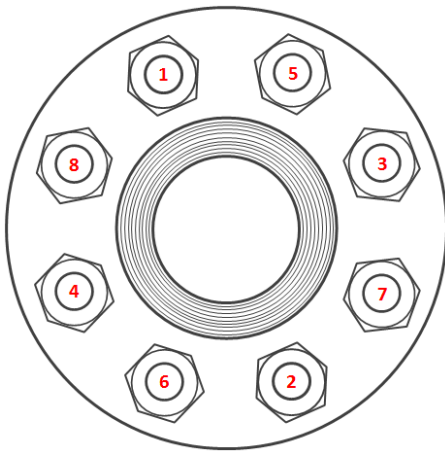
Follow OSHA practices for lifting of heavy objects.

## Disposal Requirements

No Special Requirements.

## Installation Instructions

- 1) Remove valve from packaging.
- 2) Insert new, clean gasket.
- 3) Align the valve with the TTMA mounting flange at the bottom (or top) of the tank.
- 4) Girard Equipment recommends using new, non-lubricated Stainless Steel studs and nuts to bolt device to tank container.



Torque Value: **50** Ft/Lbs. of torque +/- 7.5 Ft/Lbs.

*Note:* This is a guideline; customer needs to perform their own torque study.



## Operation Instructions

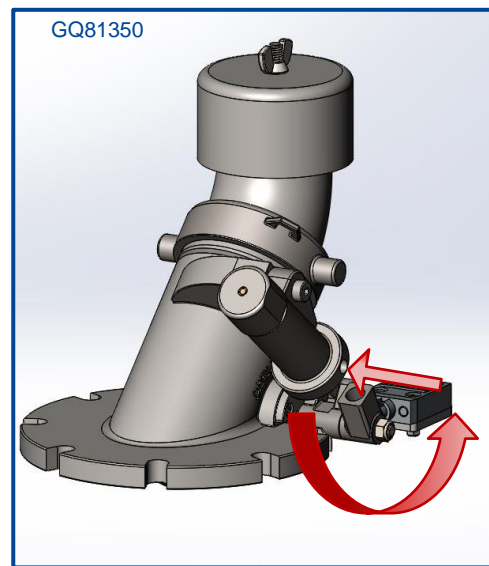
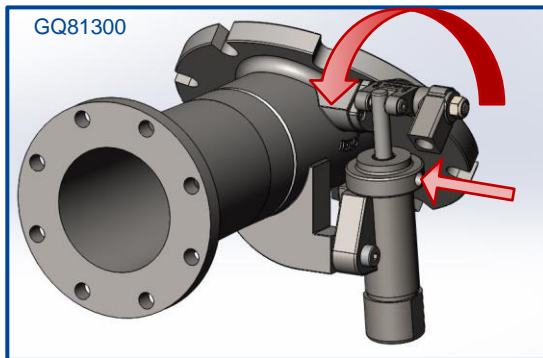
*Note:* It is the responsibility of all persons performing the operation of the valve to read and understand this procedure before starting work. **This valve is NOT equipped with secondary and tertiary shut-offs, which may be required depending on the regulations associated with the tank.** Before using a Girard valve with a hydraulic actuator installed, follow the procedure for bleeding hydraulic lines located under the maintenance section of this manual.



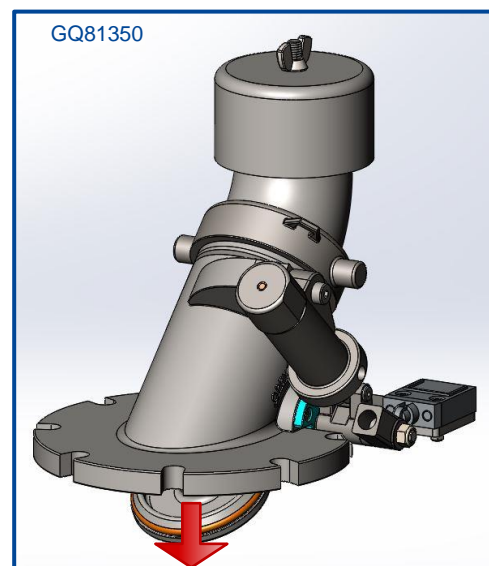
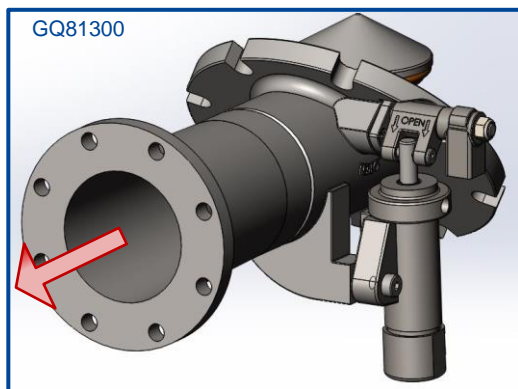
### Unloading procedure for GQ81300 (other models may differ)

**CAUTION:** Do not pressurize tank prior to opening internal valve

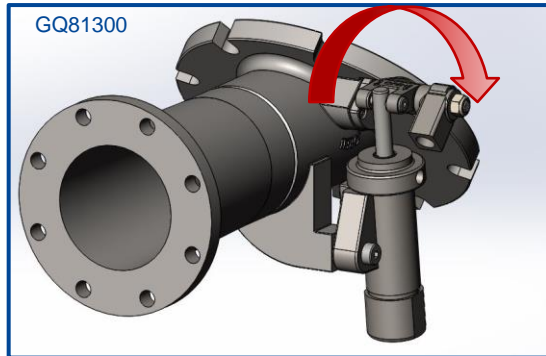
- 1) Ensure that additional closures have been opened
- 2) Connect discharge hose to outlet
- 3) Open Bottom Valve (GQ81300) and Top Valve (GQ81350) by pressurizing the hydraulic actuator



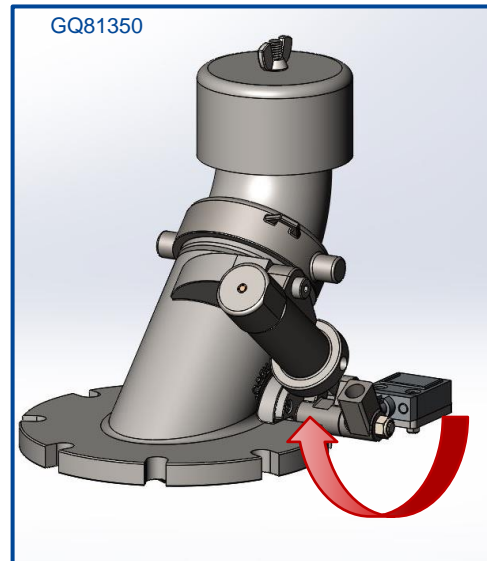
- 4) Top Valve (GQ81350) will open to vent and Bottom Valve (GQ81300) will unload



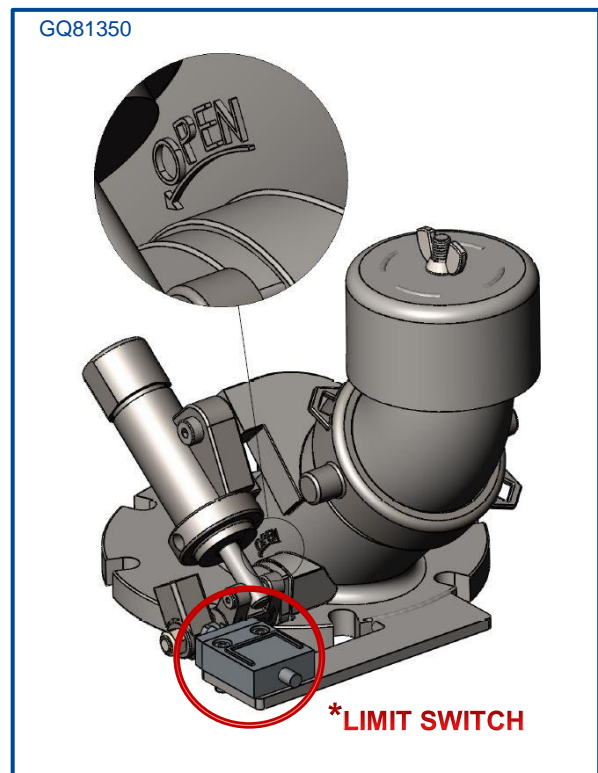
- 5) When finished unloading, re-close the Bottom Valve (GQ81300) and Top Valve (GQ81350) by relieving pressure from the hydraulic actuators



- 6) Visually check that the valve is in the “CLOSED” position before continuing  
\*Top Valve (GQ81350) includes a limit switch to indicate when the valve is closed




- 7) Valve can also be operated manually by disconnecting the hydraulic line and pushing the handle to the “OPEN” position  
\*\*Hydraulic return spring will close the valves



## Loading precautions

Before loading the tank container, ensure that all closures are in the “CLOSED” position and that the cap is installed.

## Maintenance Instructions

 **Warning:** Do not attempt to disassemble this device unless you have been properly trained by a Girard Equipment representative. Follow all installation, maintenance and repair instructions to avoid injury.

### O-ring and Gasket Maintenance

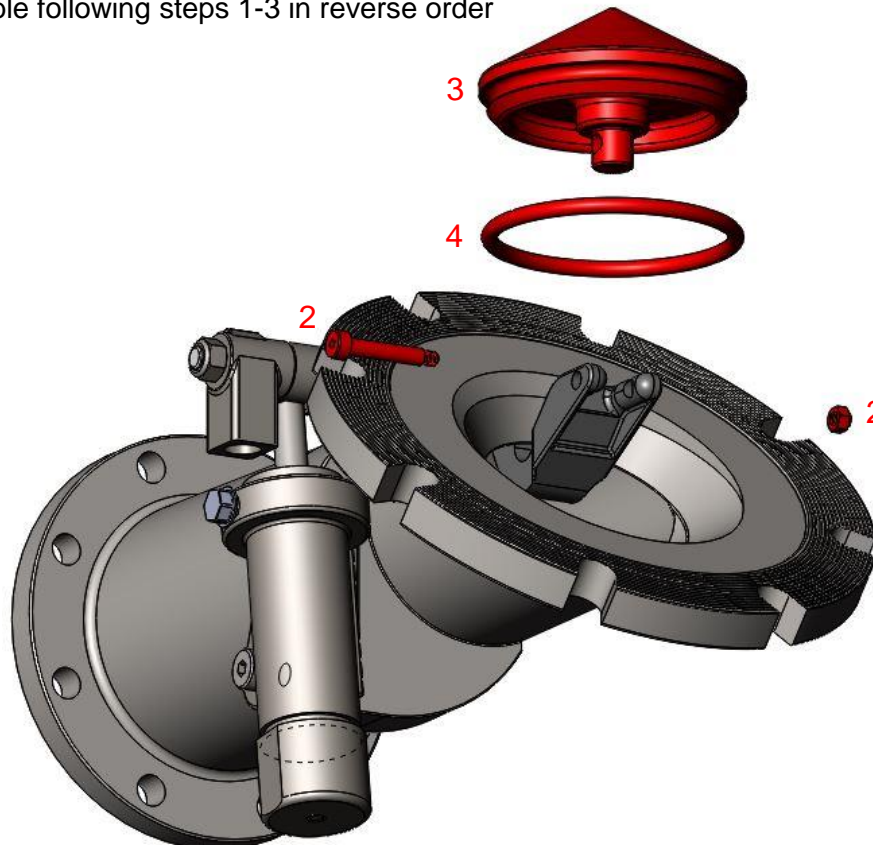
All soft goods should be replaced at time of regular maintenance and requalification.

### Preparation

Before performing maintenance on any part of the valve, open and close the main poppet to relieve any built up pressure.

### To Replace the Poppet O-ring (GQ81300 and GQ81350)

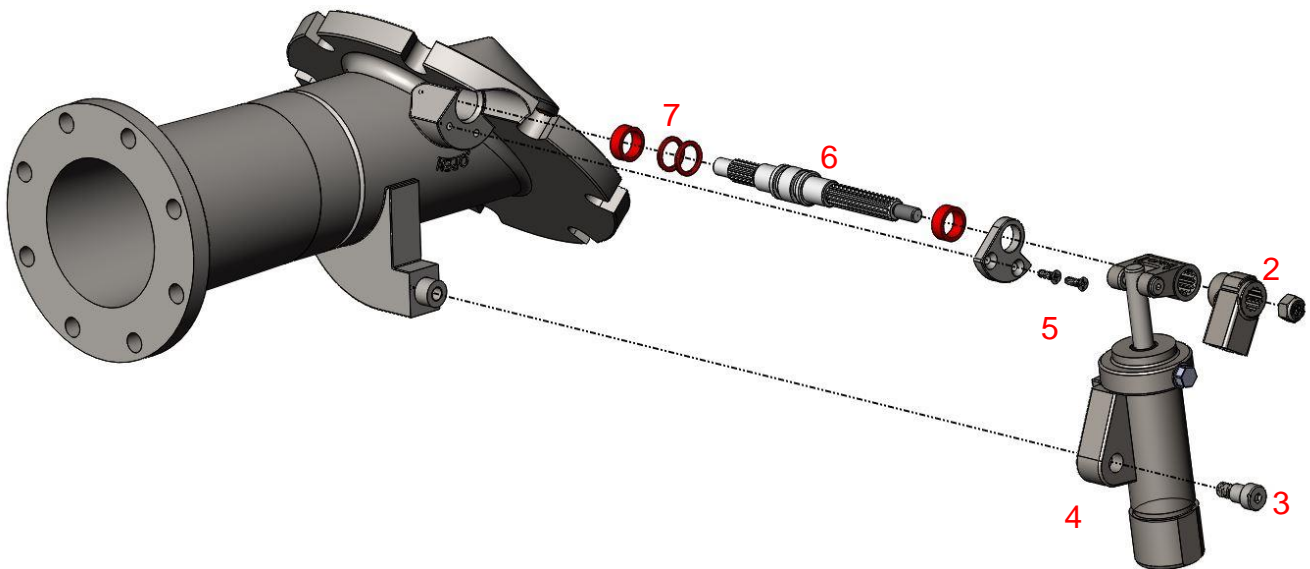
- 1) Pressurize the hydraulic actuator to fully open the valve so the poppet O-ring is fully exposed
- 2) Using a 3MM hex key and 8MM wrench, loosen and remove the shoulder bolt and locknut from the poppet/center link assembly
- 3) Remove the poppet from the center link and away from the valve
- 4) Remove and replace the O-ring on the poppet
- 5) Re-assemble following steps 1-3 in reverse order



## To Replace the Flapper Handle Shaft O-rings (GQ81300 and GQ81350)

\*For GQ81350, follow instructions for removing the Limit Switch before proceeding

- 1) Relieve tension on the poppet (apply a small amount of pressure to the HTV cylinder)
- 2) Using a 13MM wrench, loosen and remove the locknut and handle from the shaft
- 3) Using a 5MM hex key, loosen and remove the fastener holding the actuator to the main body
- 4) Remove the actuator assembly from the shaft
- 5) Loosen and remove the flat head screws from the shaft retainer
- 6) Remove the shaft retainer and flapper handle shaft with O-rings and bushings
- 7) Remove and replace the O-rings (and bushings if necessary)
- 8) Re-assemble following steps 1-6 in reverse order



## For HTV Hydraulic Assembly Maintenance

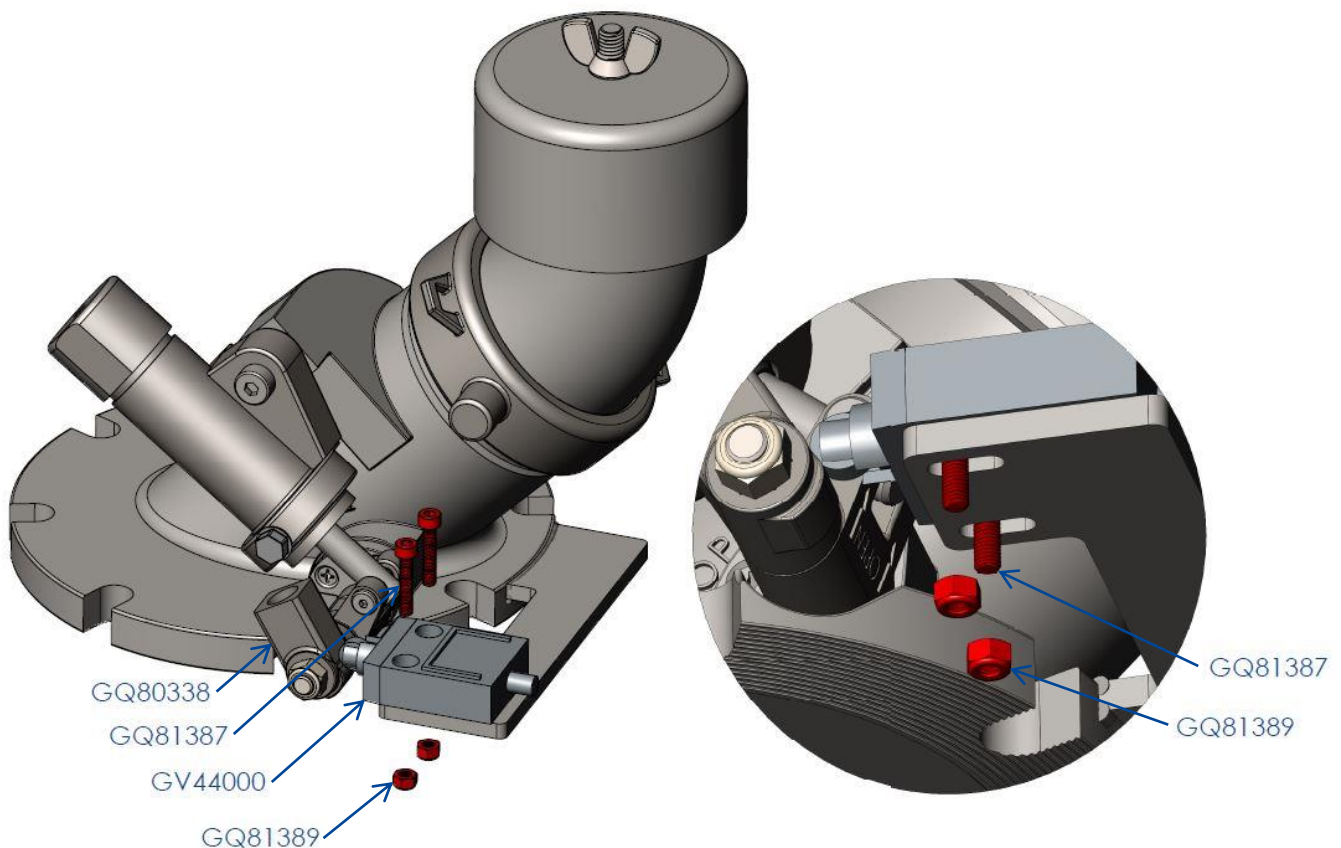
Please refer to the Hydraulic Assembly Kit Repair Manual (GQ80615)

## To Adjust and/or Replace the Limit Switch (GQ81350 ONLY)

- 1) Using a 4MM hex key and 8MM open ended wrench, loosen the Lock Nuts (GQ81389) and Cap Screws (GQ81387) until the Limit Switch (GV44000) moves freely on the bracket.
- 2) Position Limit Switch (GV44000) on the bracket so the roller is just contacting the Handle (GQ80338). To reduce the possibility of damage to the device, a sheet of paper can be used to produce a gap of .003".

*When the valve opens, the Handle will rotate and depress the Limit Switch roller*

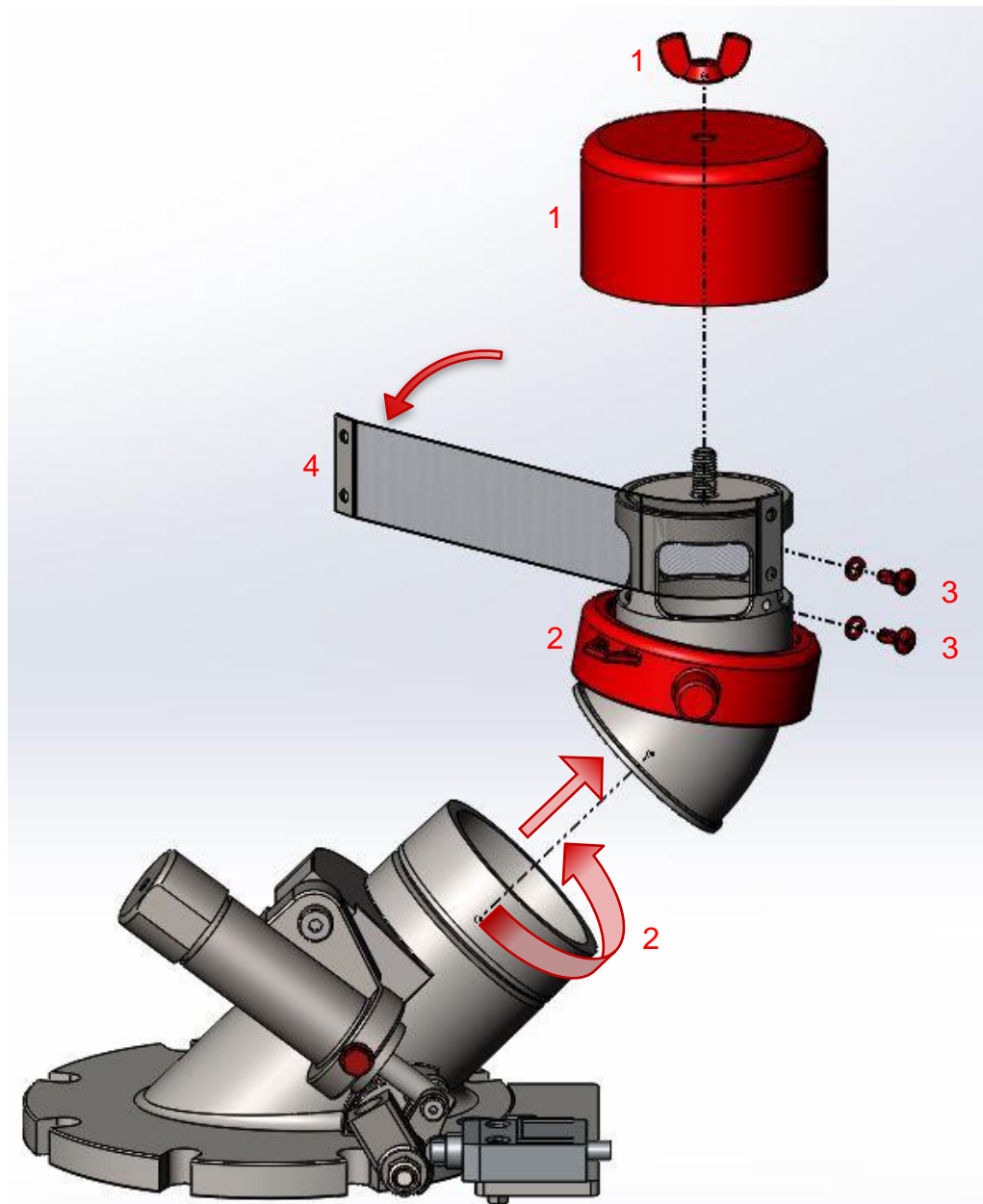
- 3) To remove the Limit Switch (GV44000), follow Step 1 to loosen and remove the fasteners, and disconnect the wiring.
- 4) Connect wiring to new Limit Switch and mount to the bracket using the fasteners from Step 1. Adjust the position of the Limit Switch by following Step 2.





### To Remove the 45 Deg Elbow and Replace the Screen Filter (GQ81350 ONLY)

- 1) Loosen and remove the Wing Nut (GQ81388) and remove the Rain Cover (GQ81386).
- 2) Using a Girard Spanner Wrench, loosen the 3" NPT Swivel Cap (GQ81380) to remove the 45 Deg Elbow (GQ81370).
- 3) Using a phillips head screw driver, loosen and remove the 2 Pan Head Screws and the 2 Split Lock Washers.
- 4) Unwrap the Screen Filter (GQ81383) and replace.
- 5) Re-assemble following steps 1-4 in reverse order



## Manufacturer's Recommendations for Bleeding of Hydraulic Lines

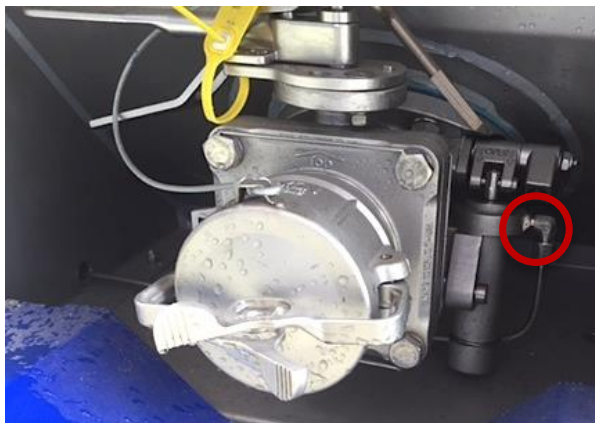
### Bleeding of Hydraulic Lines

All air must be bled from the hydraulic lines before hydraulic device is used.

- 1) Remove vent plug from hydraulic pump and fill reservoir with hydraulic fluid  
(Girard recommends using Mobil DTE 24 or 25 Hydraulic Oil)



- 2) Disconnect hydraulic line from device(s) and purge, one at a time, starting at the lowest point



Bottom Outlet Valve (Lowest Point)

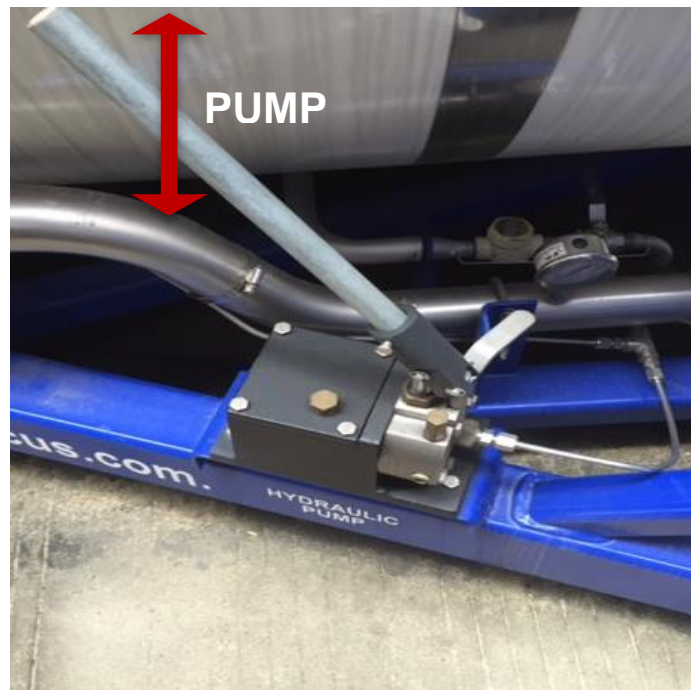


Fusible Link (Lowest Point)





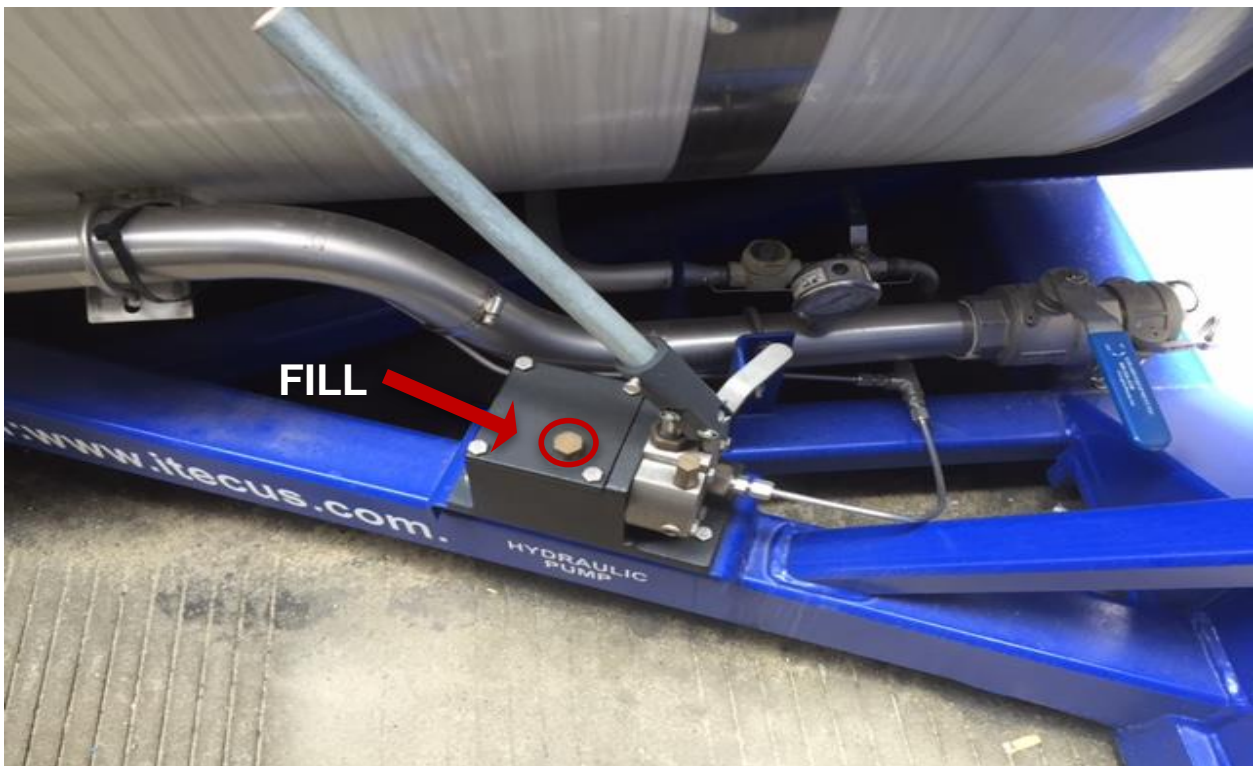
- 3) One person should operate the pump while the other person monitors the end of the hydraulic line



- 4) Pump hydraulic fluid through hydraulic line using the hydraulic pump



**Note:** Fill reservoir as necessary



- 5) Continue pumping until a steady stream of hydraulic fluid comes from the end of the line (no air bubbles)



- 6) Once air is completely purged from the system, reconnect hydraulic line to hydraulic cylinder or valve
- 7) Repeat with remaining hydraulic lines, working from the lowest point and proceeding to the highest point

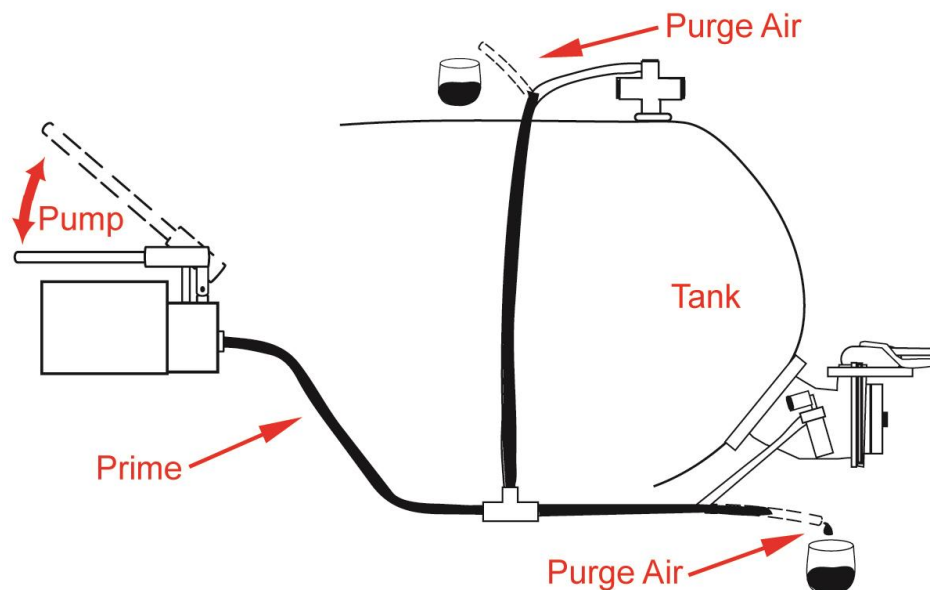




- 8) Top off reservoir with hydraulic fluid and reinstall vent plug  
(Girard recommends using Mobil DTE 24 or 25 Hydraulic Oil)



**Note:** It should take 5-7 pumps on average to open both valves in series. More than 10 pumps means the system is not properly charged and you will need to repeat steps to purge system (air is still in system).



Note: Hydraulic pump will only function correctly when all trapped air is removed from the hydraulic lines across the entire system.

## Test Instructions

Refer to test instructions in EN14433:2008 section 8.3

## Troubleshooting & Repair Guide

### **If device doesn't seal properly:**

1. Wipe sealing area with clean rag.
2. Install new gasket or O-ring.
3. If problem cannot be corrected, contact a Girard Equipment representative.

## Replacement Parts

### **Replacement Parts for GQ81300**

O-rings:	GQ60202, GR08040
Bushings:	GQ80475, GQ60190
Gaskets:	GQ85035
Additional:	GQ80485, GQ80338

### **Replacement Parts for GQ81350**

O-rings:	GQ60202, GR08040
Bushings:	GQ80475, GQ60190
Gaskets:	GQ85035
Additional:	GQ81383, GQ80485, GQ80338

\*For additional materials and options, contact Girard Equipment's Engineering Department

## Warranty

All goods manufactured by Girard Equipment, Inc. from “genuine” Girard parts are warranted to be free from defects and will be replaced free of charge if failure occurs within 60 months of date of shipment, provided that these parts have been used in accordance with seller’s recommendations. Our liability in any case shall be limited to the sale price of the product and will not extend to any consequential damage.

## Contact Information



4360 Old Dixie Hwy  
Vero Beach, FL 32967  
(908) 862-6300

[www.GirardEquip.com](http://www.GirardEquip.com)

