



3" TankFlo Valve

Owner's Manual

GQ80300, GQ80500, GQ81000



Bottom outlet discharge valve approved for use on ISO tank trailers transporting dangerous goods or liquid chemicals.

Table of Contents

Technical Data..... 3

Exploded View of Product 4

Safety 7

 General Safety Information 7

 Product Storage..... 7

 Product Handling 7

 Disposal Requirements 7

Installation Instructions 8

Operation Instructions..... 9

Maintenance Instructions 11

 O-ring and Gasket Maintenance 11

 To Replace Outlet Spiggot Seat O-ring 11

 To Replace Butterfly Shaft O-ring 12

 To Replace the Poppet O-ring 13

 To Replace the Flapper Handle Shaft O-rings 14

 To Replace Flap Support Stem O-rings..... 15

 For Bleeding of Hydraulic Lines..... 16

Test Instructions 21

Troubleshooting & Repair Guide 21

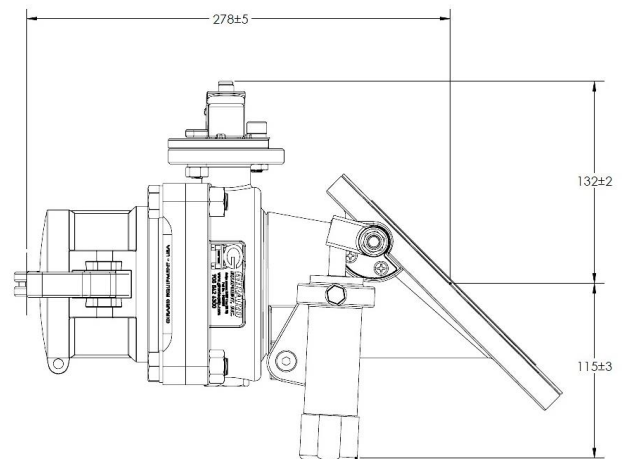
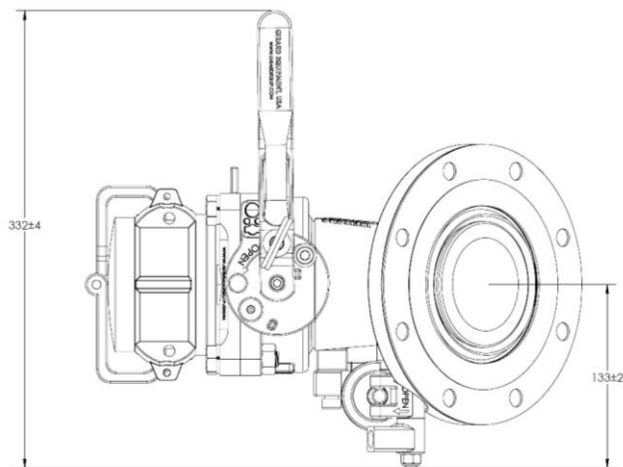
Replacement Parts..... 21

Warranty..... 22

Contact Information..... 22

Technical Data

- 1) EN 14433 type approval # BVCT 0970010/M-2
- 2) Overall height : 9.6"
- 3) Design pressure (MAWP) : 4 bar (58 psi)
- 4) All components constructed from corrosion resistant 316 Stainless Steel
- 5) Mounts to ISO tank, 8 hole 8" flange with 7" bolt circle
- 6) Designed raised face with serrations in accordance with ASME B16.5 to ensure proper gasket seal
- 7) Tef-O-Sil seals (Teflon™ encapsulated O-ring)
- 8) Constructed from castings made in the USA
- 9) Footvalve design meets ASME Section VIII design requirements

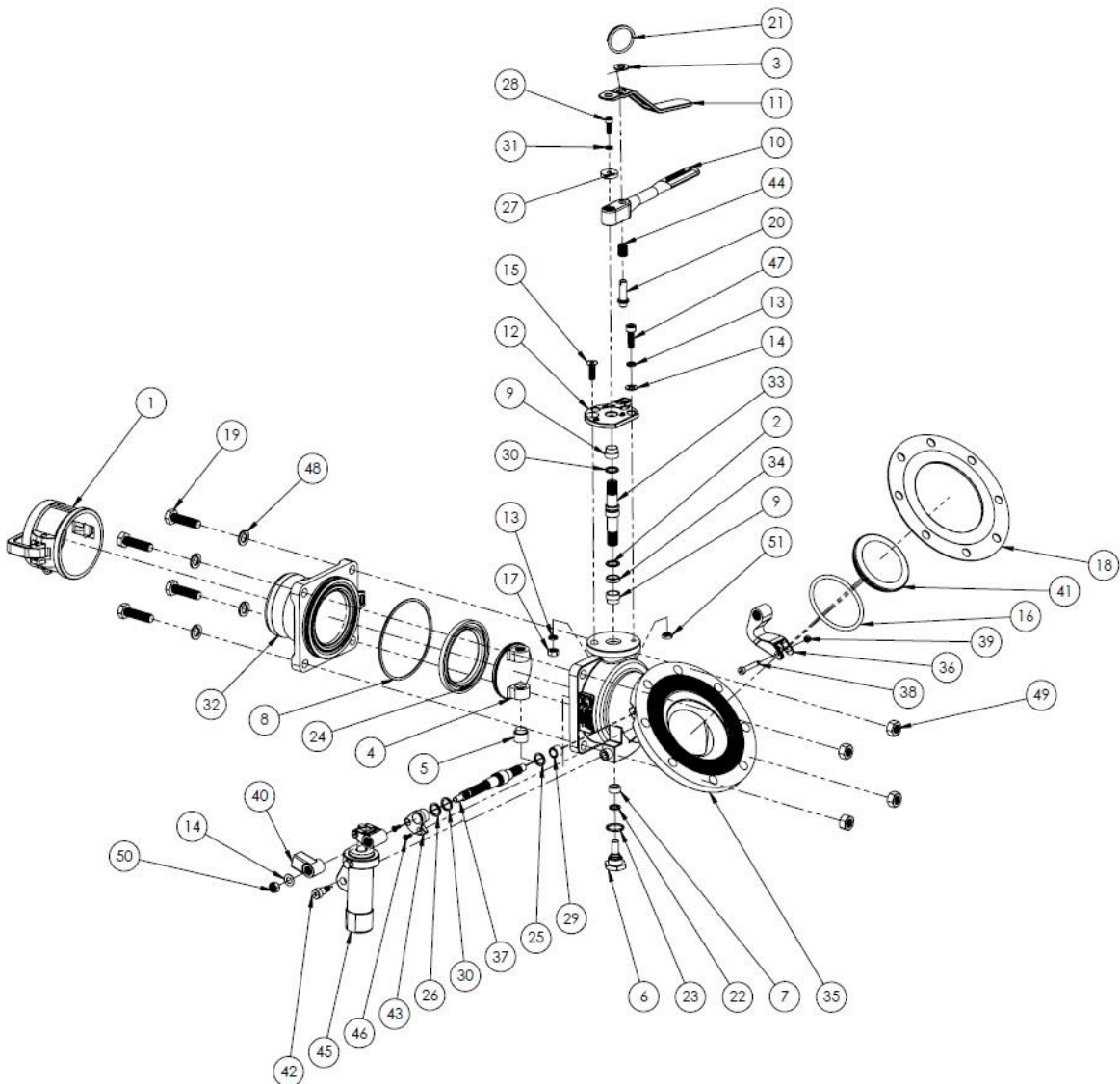


Exploded View of Product

GQ80500

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	DV72460	3" SS DUST CAP WITH LOCKING EARS	1
2	GQ50030	LOWER SHAFT O-RING	1
3	GQ50031	UPPER SHAFT O-RING - VITON	1
4	GQ50040	DISC	1
5	GQ50050	B-FLY BOTTOM BUSHING	1
6	GQ50060	SUPPORT SHAFT	1
7	GQ50061	PIVOT PIN BUSHING	1
8	GQ50070	SEAT TEF-O-SEAL O-RING -245	1
9	GQ50090	BUTTERFLY BUSHING	2
10	GQ50091	HANDLE	1
11	GQ50092	HANDLE LEVER	1
12	GQ50101	HANDLE LOCK PLATE	1
13	GQ50160	M8 SPLIT LOCK WASHER	2
14	GQ50170	M8 FLAT WASHER	2
15	GQ50185	M8 X 25MM FLAT HEAD SOCKET CAP SCREW	1
16	GR08040	IM PRES O-RING 80MM	1
17	GQ50190	M8 HEX NUT	1
18	GM42110	45 DEG F.V. / TANK ENVELOPE GASKET	1
19	GQ80450	M12 X 45MM HEX HEAD CAP SCREW	4
20	GQ50210	LOCK PIN	1
21	GQ50230	PULL RING	1
22	GQ50250	SHAFT O-RING TEF-O-SIL	1
23	GQ50260	SUPPORT STEM O-RING	1
24	GQ50501	BUTTERFLY SEAL	1
25	GQ60040	BUSHING O-RING SOLID PTFE	1
26	GQ60050	BOV THRUST COLLAR	1

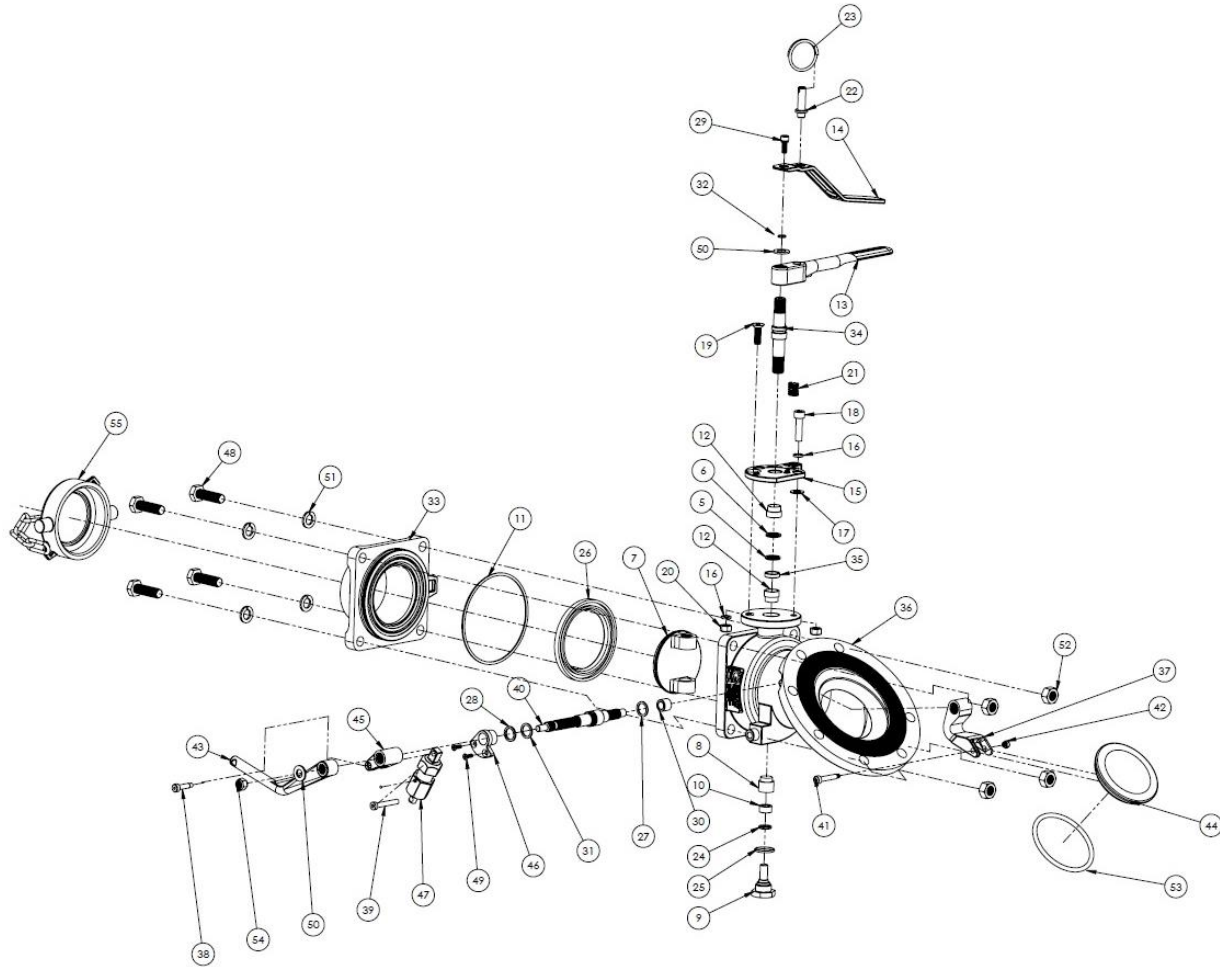
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
27	GQ60080	24MM OD 6.4MM ID FLAT WASHER W/C-BORE	1
28	GQ101014	M6 X 16MM SOCKET HEAD CAP SCREW	1
29	GQ60190	BOV BUSHING	1
30	GQ60202	BOTTOM OUTLET SHAFT -113 VITON EXTREME O-RING	1
31	GQ60310	M6 SPLIT LOCK WASHER	1
32	GQ75240	BOTTOM OUTLET CONNECTOR	1
33	GQ80260	BUTTERFLY SHAFT	1
34	GQ80280	SHAFT COLLAR	1
35	GQ80315	MAIN BODY	1
36	GQ80319	CENTER LINK	1
37	GQ80325	FLAPPER HANDLE SHAFT	1
38	GQ80331	M5 X 30MM SHOULDER BOLT	1
39	GQ80332	M5 LOCK NUT W/ NYLON INSERT	1
40	GQ80338	HANDLE G2	1
41	GQ80340	STOPPER	1
42	GQ80380	M8 X 10MM SHOULDER BOLT	1
43	GQ80390	SHAFT RETAINER	1
44	GQ50200	LEVER SPRING	1
45	GQ80602	HTV HYDRAULIC ASSY G3	1
46	GQ97775	M4 X 12MM FLAT HEAD SCREW	2
47	GQ50187	M8 X 25MM SOCKET HEAD CAP SCREW	1
48	GQ97940	M12 SPLIT LOCK WASHER	4
49	GQ97950	M12 HEX NUT	4
50	GR05010	M8 HEX LOCK NUT	1
51	GR05000	M8 HEX JAM NUT	1



GQ80300

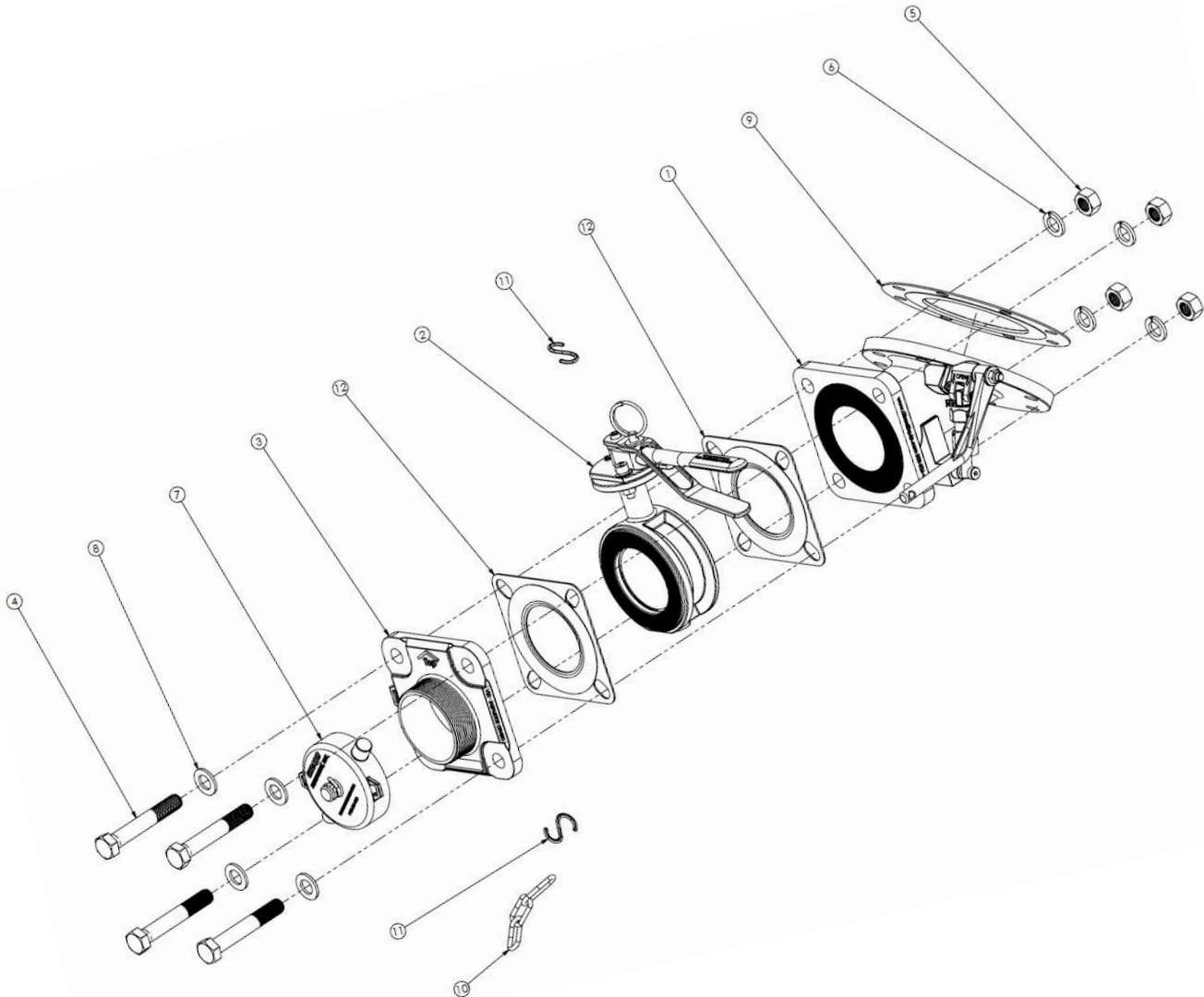
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GM42110	45DEG.F.V./TANK ENVGSKT FF	1
2	GO40110	TORQUE INDEX DIAGRAM CARD	1
3	GO40120	SAFETY DECAL	1
4	GO40150	PASSED INSPECTION STICKER	1
5	GQ50030	-113 TEF-O-SIL O-RING	1
6	GQ50031	-113 VITON O-RING	1
7	GQ50040	DISC	1
8	GQ50050	SHAFT BUSHING	1
9	GQ50060	SUPPORT SHAFT	1
10	GQ50061	PIVOT PIN BUSHING	1
11	GQ50070	SEAT TEF-O-SEAL O-RING -245	1
12	GQ50090	BUTTERFLY BUSHING	2
13	GQ50091	HANDLE	1
14	GQ50092	HANDLE LEVER	1
15	GQ50101	HANDLE LOCK PLATE	1
16	GQ50160	8mm LOCK WASHER	2
17	GQ50170	M8 FLAT WASHER	1
18	GQ50180	M8 X 30MM SOCKET HEAD CAP SCREW	1
19	GQ50185	M8x1.25x25 FLAT HEAD SOCKET CAP SCREW	1
20	GQ50190	M8 NUT	2
21	GQ50200	LEVER SPRING	1
22	GQ50210	LOCK PIN	1
23	GQ50230	PULL RING	1
24	GQ50250	SHAFT BUSHING TEFLON O-RING	1
25	GQ50260	SUPPORT STEM TEFLON O-RING -117	1
26	GQ50501	WALKER SEAL	1
27	GQ60040	BUSHING O-RING SOLID PTFE	1
28	GQ60050	BOV THRUST COLLAR	1

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
29	GQ60100	M6x1x16 SOCKET HEAD CAP SCREW	1
30	GQ60190	BOV BUSHING	1
31	GQ60202	BOTTOM OUTLET SHAFT -113 VITON EXTREME O-RING	1
32	GQ60310	M6 SPLIT LOCK WASHER	1
33	GQ80240	BOV CONNECTOR BSP	1
34	GQ80260	BUTTERFLY SHAFT	1
35	GQ80280	SHAFT COLLAR	1
36	GQ80315	MAIN BODY	1
37	GQ80319	CENTER LINK	1
38	GQ80321	M5 X 20MM SHOULDER BOLT	1
39	GQ80323	M6 X 40MM SOCKET HEAD CAP SCREW	1
40	GQ80325	FLAPPER HANDLE SHAFT	1
41	GQ80331	M5x0.8 SHOULDER SCREW	1
42	GQ80332	M5 LOCK NUT W/ NYLON INSERT	1
43	GQ80335	HANDLE	1
44	GQ80340	STOPPER	1
45	GQ80355	PRESSURE LINK	1
46	GQ80388	SHAFT RETAINER	1
47	GQ80400	SPRING ASSEMBLY	1
48	GQ80450	M12 X 45 HEX HD. SCREW	4
49	GQ97775	M4 X 12 FLAT HD. SCREW	2
50	GQ97898	M10 304SS FLAT WASHER	2
51	GQ97940	M12 SPLIT WASHER	4
52	GQ97950	M12 x 1.75 NUT	4
53	GR08040	PRES O-RING 80mm	1
54	GR05010	M8 HEX LOCK NUT	1
55	GK30200	3" BSP STRAIGHT CAP W/ CHAIN	1



GQ81000

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GQ81317	45 DEG FULL FLOW ASSEMBLY	1
2	GQ50000	3" CLAMPED BUTTERFLY VALVE	1
3	GQ70040	OUTLET FLANGE 3" BSP	1
4	GQ97968	M16 X 100MM HEX HEAD CAP SCREW	4
5	GQ97966	M16 X 2 HEX NUT	4
6	GQ97965	M16 SPLIT LOCK WASHER	4
7	GK30100	3" SS CAP W/ BSP THREAD	1
8	GQ97964	M16 FLAT WASHER	4
9	GM42110	45 DEG F.V. / TANK ENVELOPE GASKET	1
10	GK98010	1/8" 316 SS CHAIN - PER FOOT	1
11	GK10001	1/8" 316 SS "S" HOOK	2
12	GQ70030	SQUARE B-FLY INLET GASKET	2



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

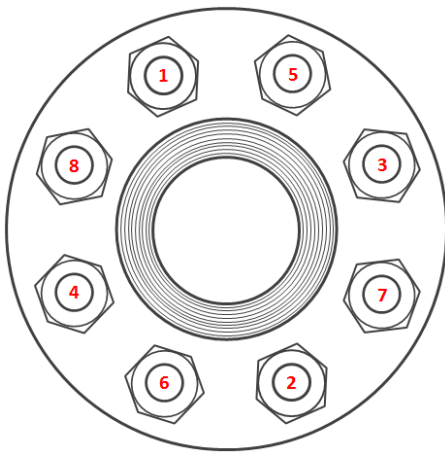
Follow OSHA practices for lifting of heavy objects.

Disposal Requirements

No Special Requirements.

Installation Instructions

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



Torque Value: **50** Ft/Lbs. of torque +/- 10 Ft/Lbs.

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

Operation Instructions

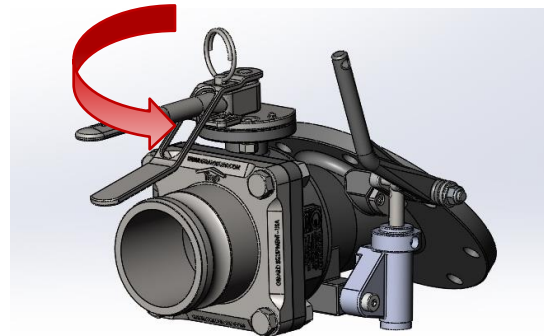
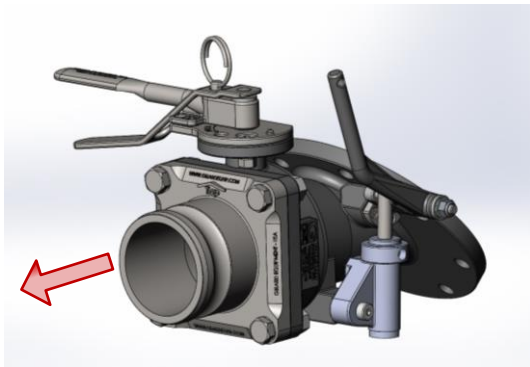
Note: It is the responsibility of all persons performing the operation of the TankFlo Valve to read and understand this procedure before starting work. Before using a Girard valve with a hydraulic actuator installed, follow the procedure for bleeding hydraulic lines located under the maintenance section of this manual.



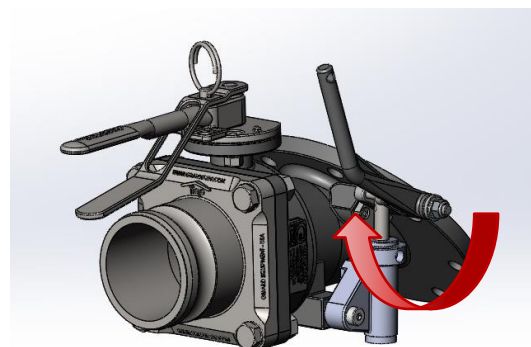
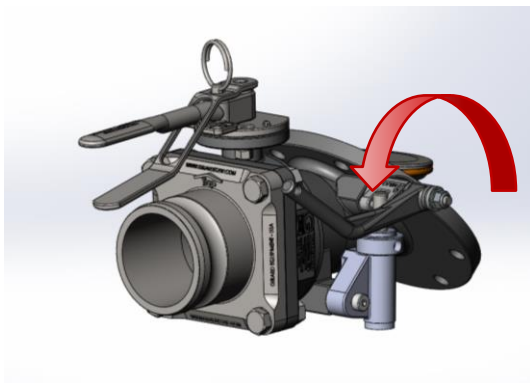
Unloading procedure for GQ80500 (other models may differ)

CAUTION: Do not pressurize tank prior to opening internal valve

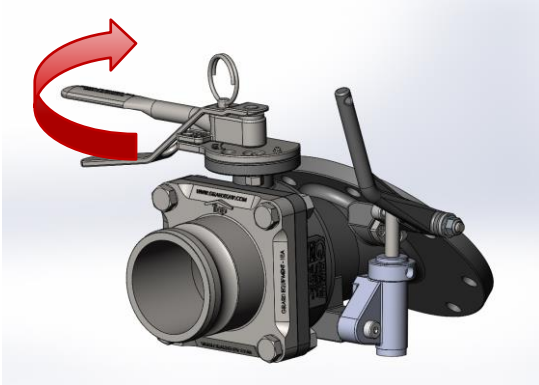
- 1) Remove cap from TankFlo Valve
- 2) Connect discharge hose to outlet
- 3) Open external butterfly valve by squeezing the handle and turning counter-clockwise to the "OPEN" position



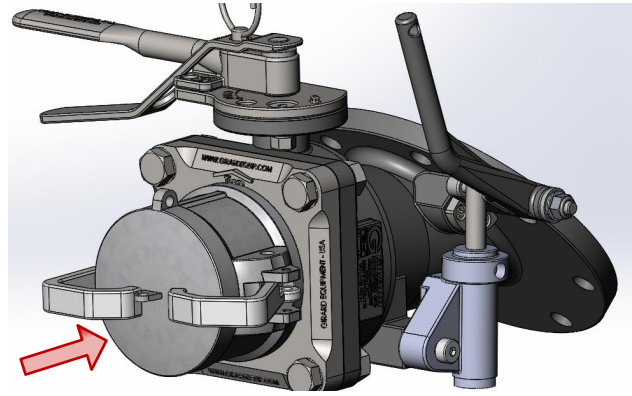
- 4) Open internal valve by pressurizing the hydraulic actuator
- 5) Tank will now unload
- 6) When finished unloading, re close the internal valve by relieving pressure from the hydraulic actuator
- 7) Visually check that the valve is in the "CLOSED" position before continuing



- 8) Close the external butterfly valve by squeezing the handle and turning clockwise to the "CLOSED" position

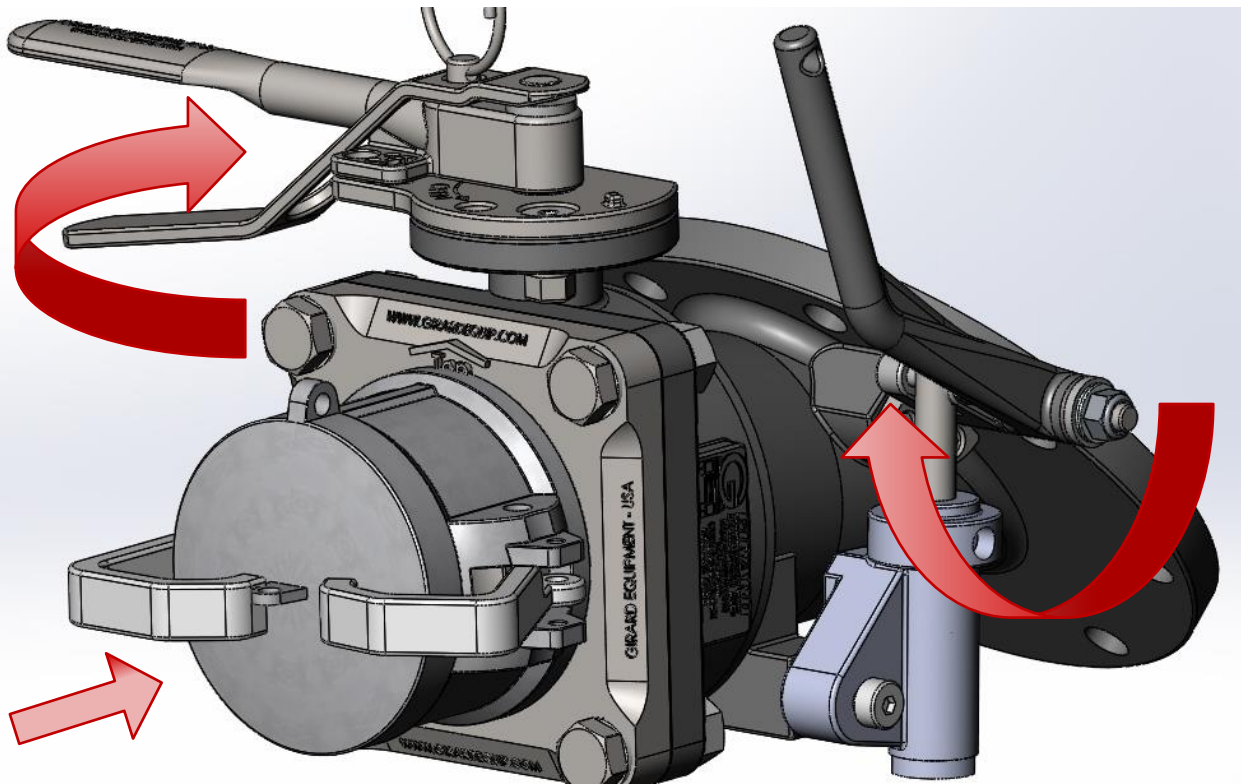


- 9) Remove the discharge hose
10) Reinstall the cap




Loading precautions

Before loading the tank container, ensure that the internal valve and butterfly valve 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

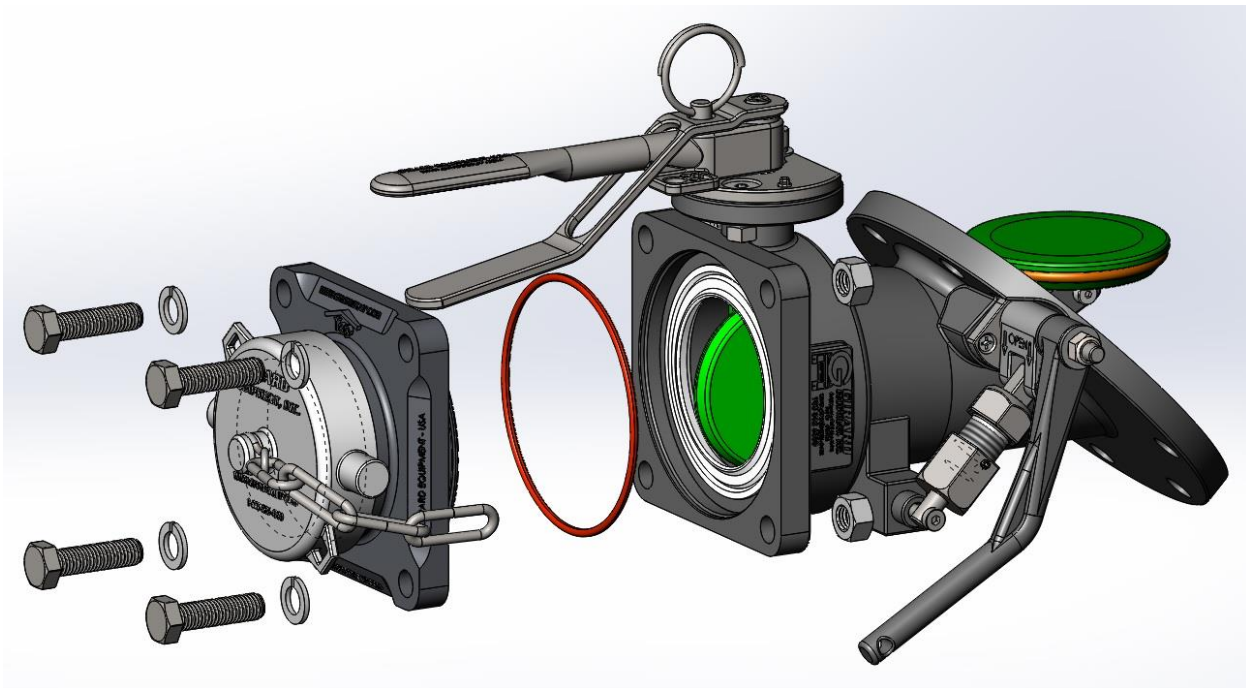
All soft goods should be replaced at time of regular maintenance and requalification.

Preparation

Before performing maintenance on any part of the valve, loosen the cap to relieve built up pressure in the outlet, then open both the butterfly and poppet.

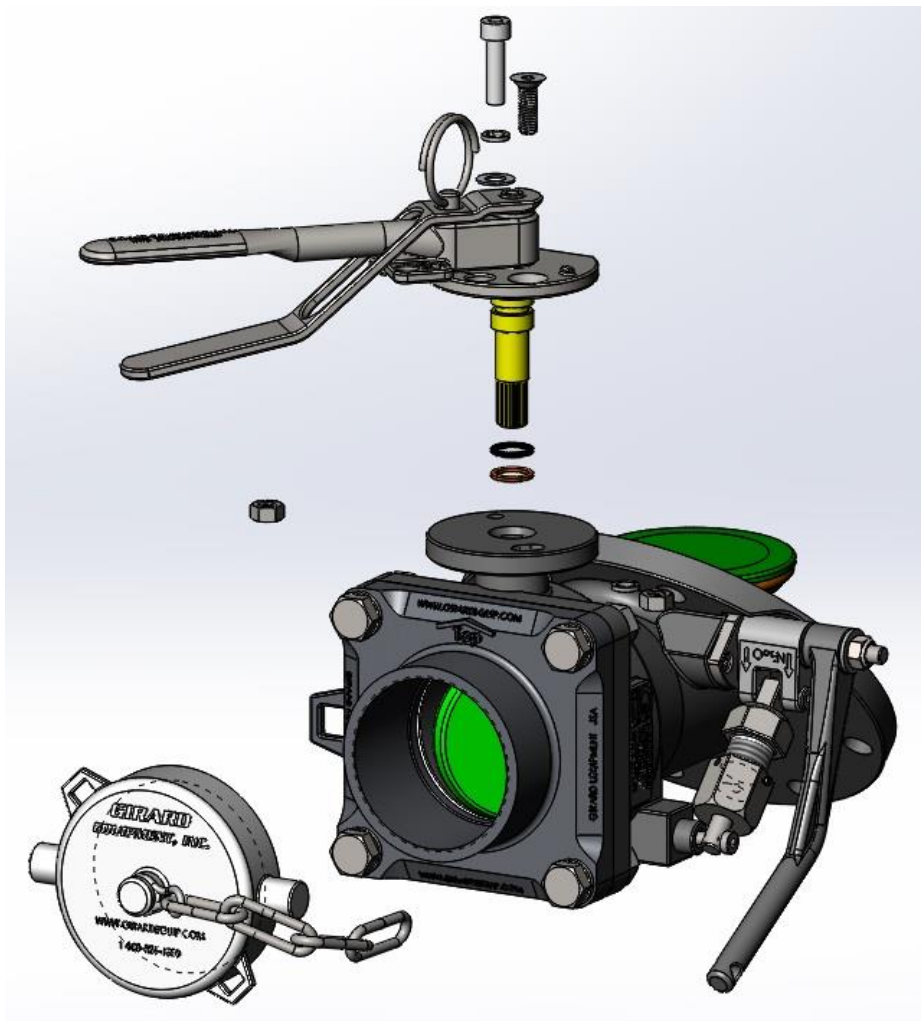
To Replace Outlet Spigot Seat O-ring (some models have flat gasket)

- 1) Using open-ended wrench, loosen and remove the four cap screws, lock washers and hex nuts
- 2) Remove the outlet flange
- 3) Remove and replace the O-ring (or gasket)
- 4) Re-assemble the outlet flange with the new O-ring using the removed fasteners in step 1



To Replace the Butterfly Shaft O-ring

- 1) Note the relationship between the handle and the butterfly stopper
- 2) Loosen and remove the fasteners from the butterfly handle locking plate
- 3) Remove the handle locking plate and the butterfly handle assembly
- 4) Remove the butterfly shaft from the butterfly housing
- 5) Remove and replace the O-rings on the butterfly shaft (lower shaft O-ring may need to be removed from the shaft hole)
- 6) Re-assemble following steps 2-4 in reverse order with the handle returning to its noted position



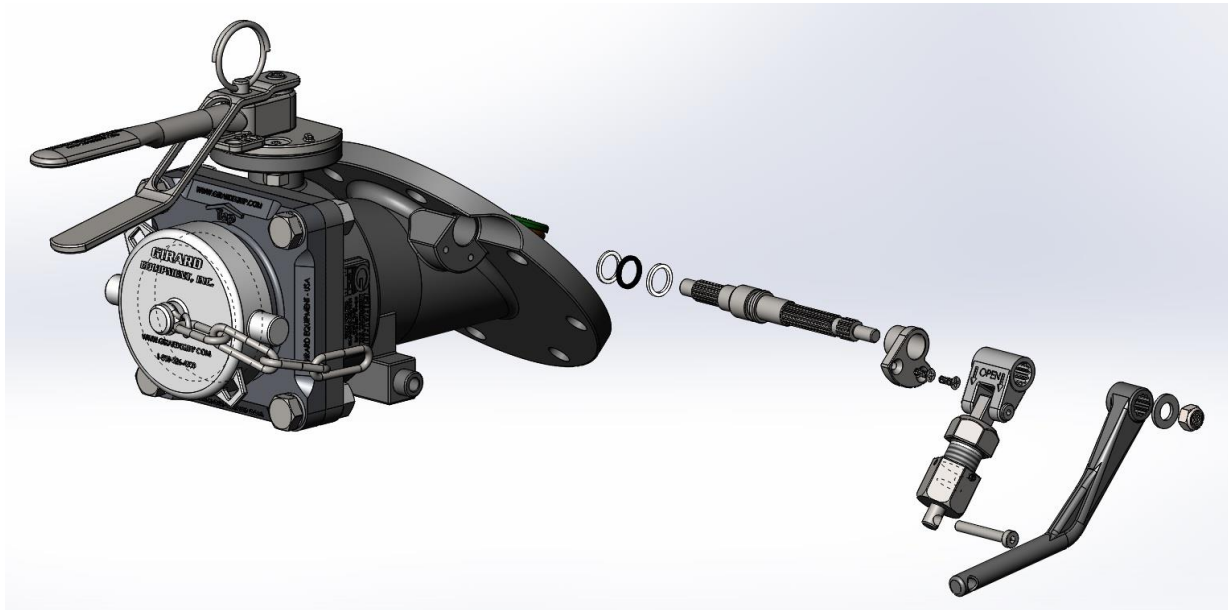
To Replace the Poppet O-ring

- 1) Open the valve so the poppet O-ring is fully exposed
- 2) 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



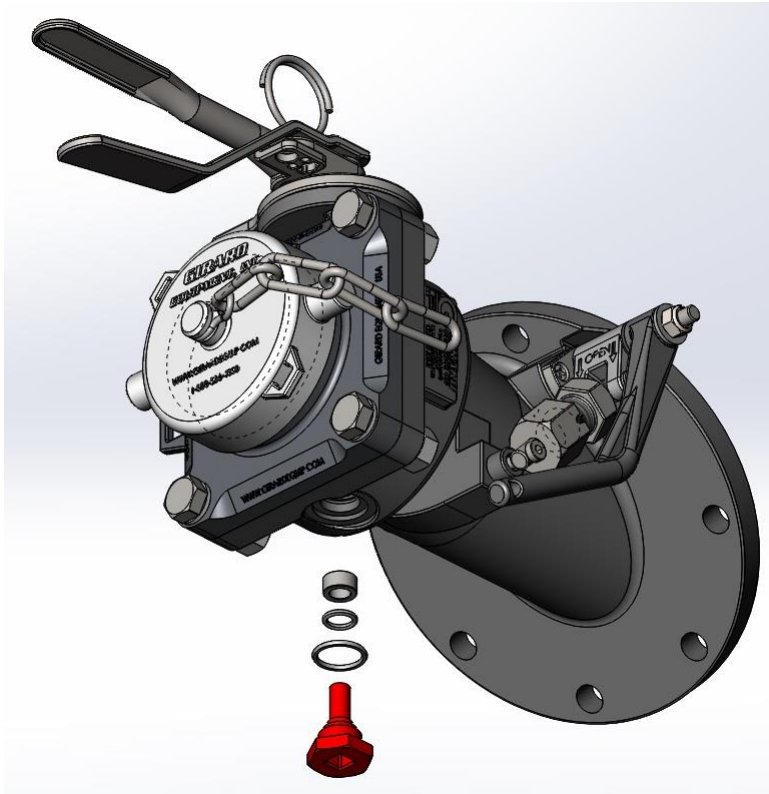
To Replace the Flapper Handle Shaft O-rings

- 1) Relieve tension on the poppet (either by tightening the cap on spring assembly or by applying a small amount of pressure to the HTV cylinder)
- 2) Loosen and remove the locknut, flat washer, and handle from the shaft
- 3) Loosen and remove the fastener holding the actuator to the main body
- 4) Remove the actuator/pressure link 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



To Replace the Support Stem O-rings

- 1) Loosen and remove the support stem with O-rings and bushing
- 2) Remove and replace the O-rings (and bushing if necessary)
- 3) Re-assemble following step 1 in reverse



For HTV Hydraulic Assembly Maintenance

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

Manufacturer's Recommendations for Bleeding of Hydraulic Lines

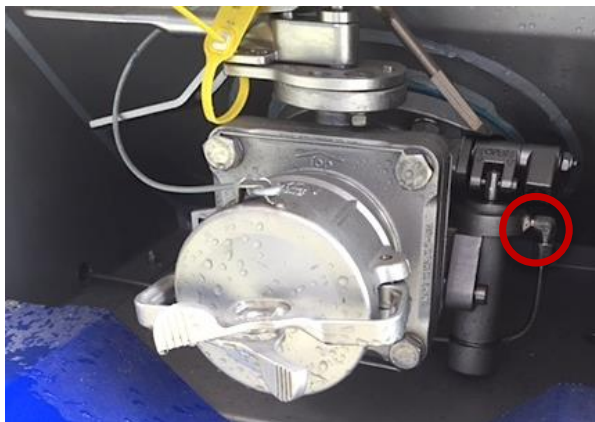
Bleeding of Hydraulic Lines

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



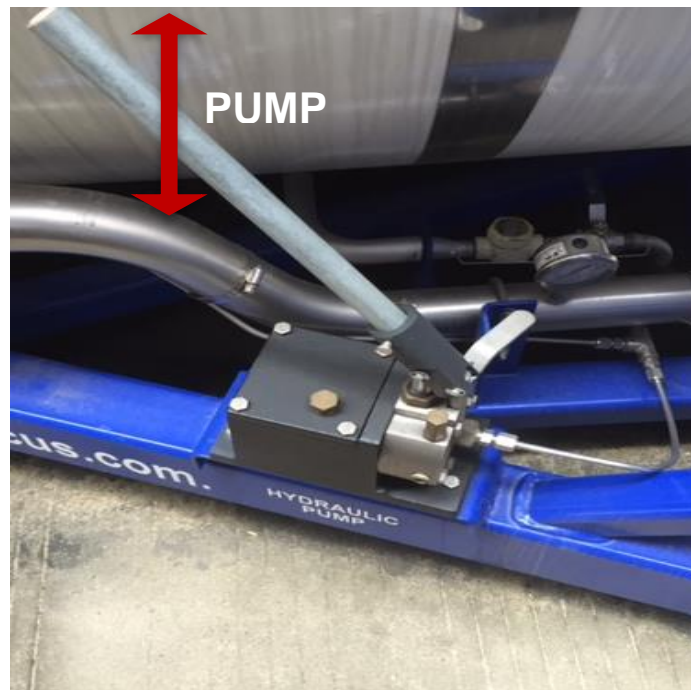
Bottom Outlet Valve (Lowest Point)



Fusible Link (Lowest Point)



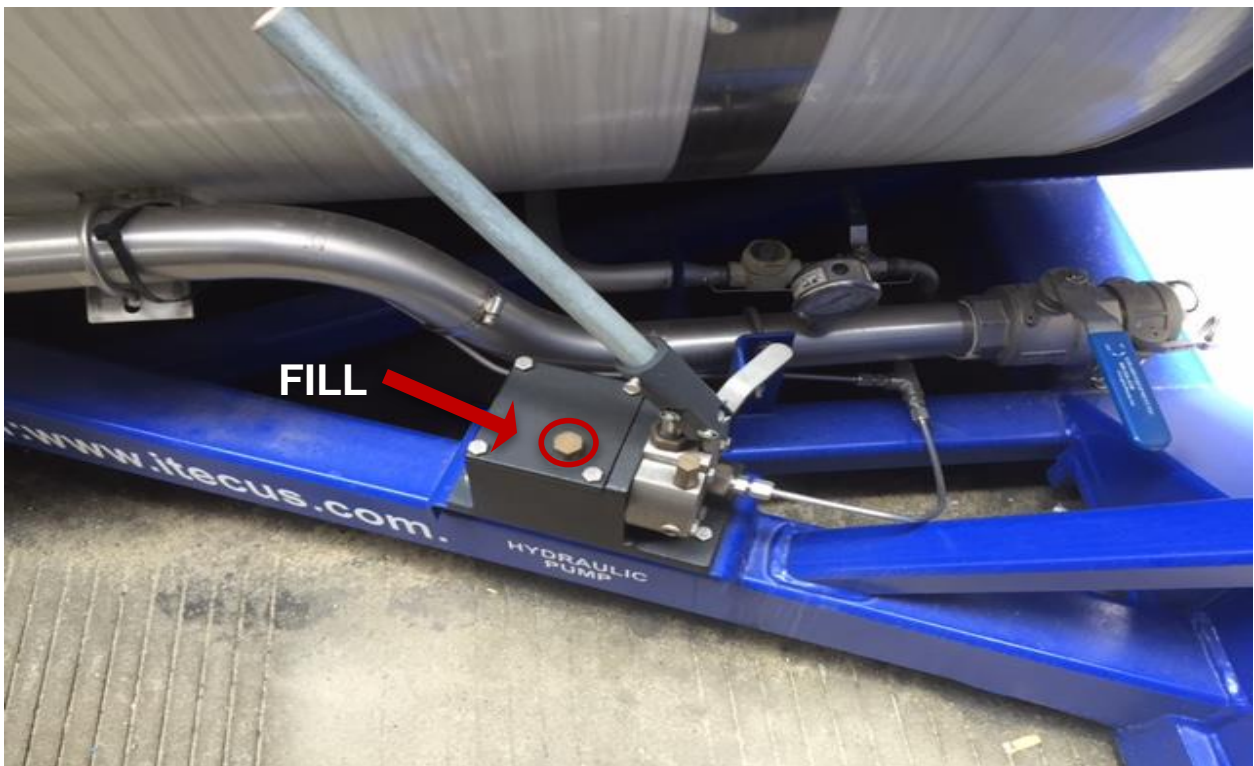
- 3) One person should operate the pump while the other person monitors the end of the hydraulic line



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



Note: Fill reservoir as necessary



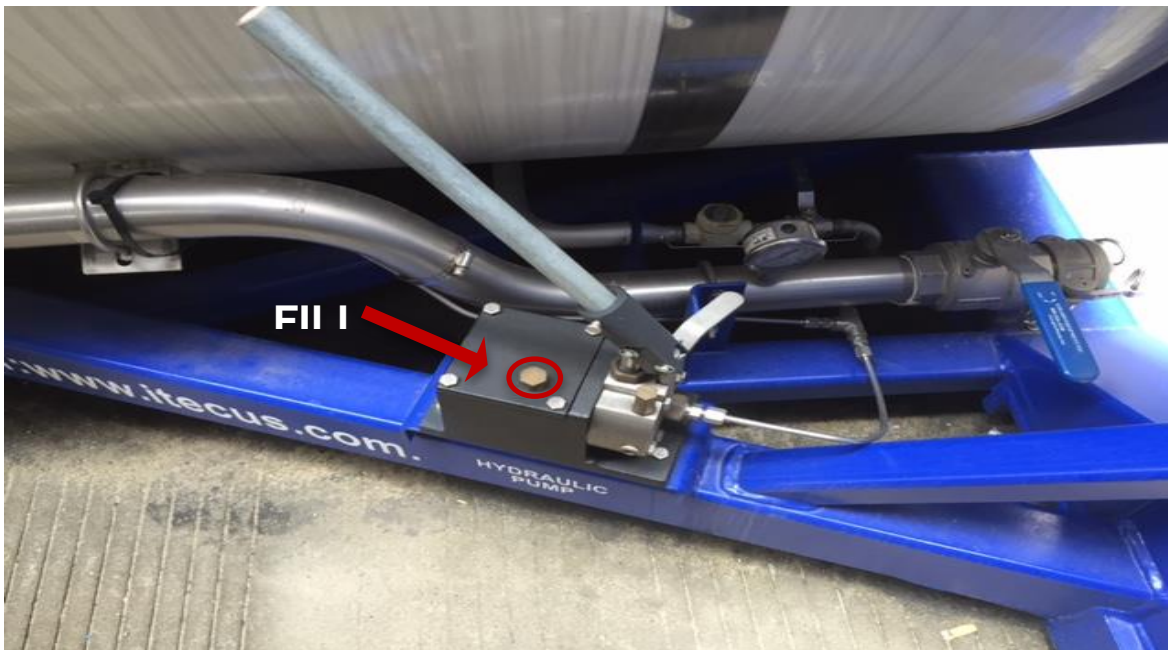
- 5) Continue pumping until a steady stream of hydraulic fluid comes from the end of the line (no air bubbles)



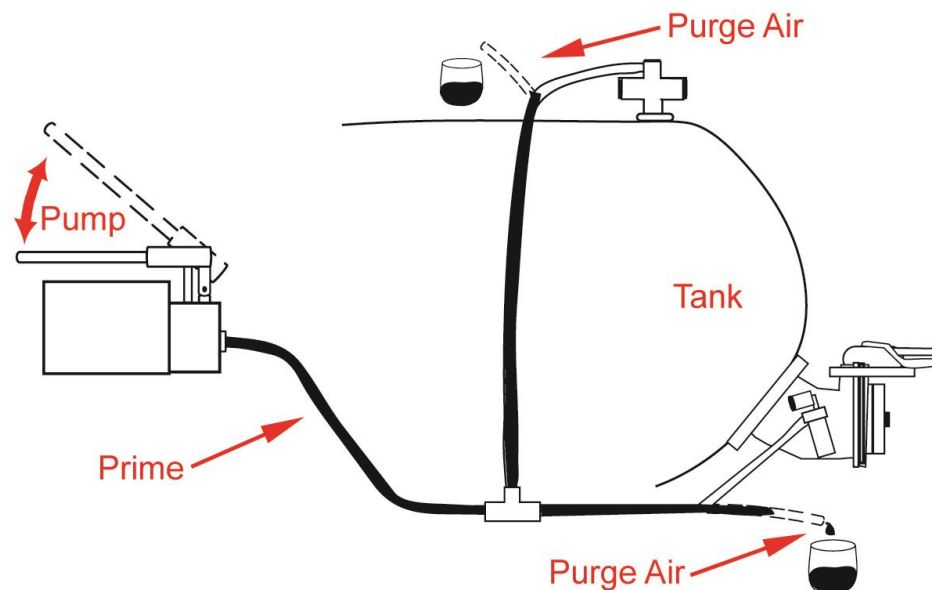
- 6) Once air is completely purged from the system, reconnect hydraulic line to hydraulic cylinder or valve
- 7) Repeat with remaining hydraulic lines, working from the lowest point and proceeding to the highest point



- 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 GQ80300

O-rings:	GQ50030, GQ50070, GQ50250, GQ50260, GQ60040, GQ60202, GR08040
Bushings:	GQ50050, GQ50090, GQ60050, GQ60190
Gaskets:	GM30000, GM42110
Additional:	GQ80325, GQ80335

Replacement Parts for GQ80500

O-rings:	GQ50030, GQ50070, GQ50250, GQ50260, GQ60040, GQ60202, GR08040
Bushings:	GQ50050, GQ50090, GQ60050, GQ60190
Gaskets:	GM42110
Additional:	GQ80325, GQ80615

Replacement Parts for GQ81000

O-rings:	GQ50030, GQ50070, GQ50250, GQ50260, GQ60202, GR08040
Bushings:	GQ50050, GQ50090, GQ60190, GQ80475
Gaskets:	GM30000, GM42110, GQ70030
Additional:	GQ80335, GQ80485

*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 be free from defects and will be replaced free of charge if failure occurs within 12 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

