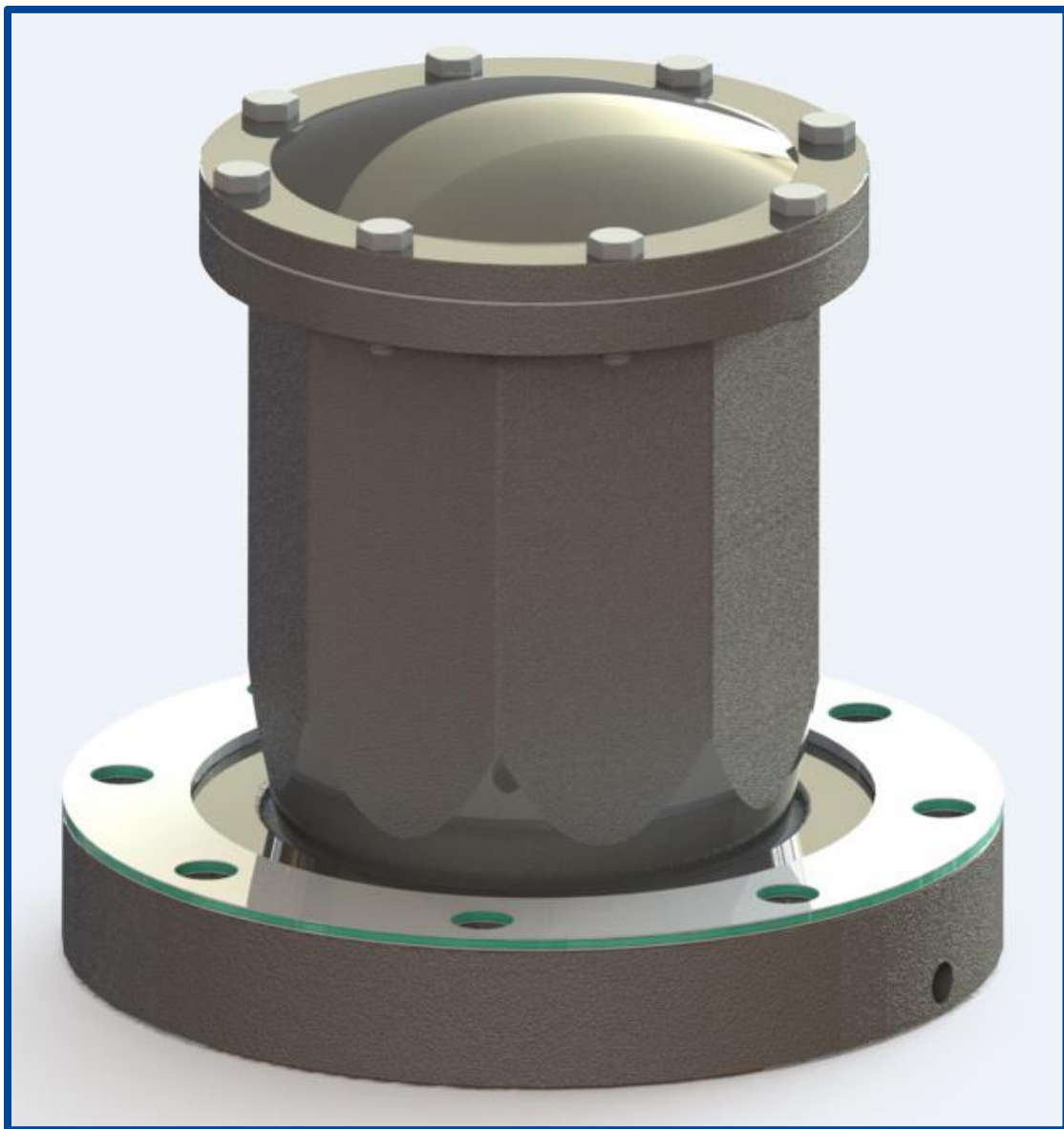




## 4" Chemovation Internal Valve and 4x3 Chemovation Elbows GQ87000, GQ87020, GQ87040

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**Emergency valve for use on DOT 407 tank trailers  
transporting a variety of goods.**

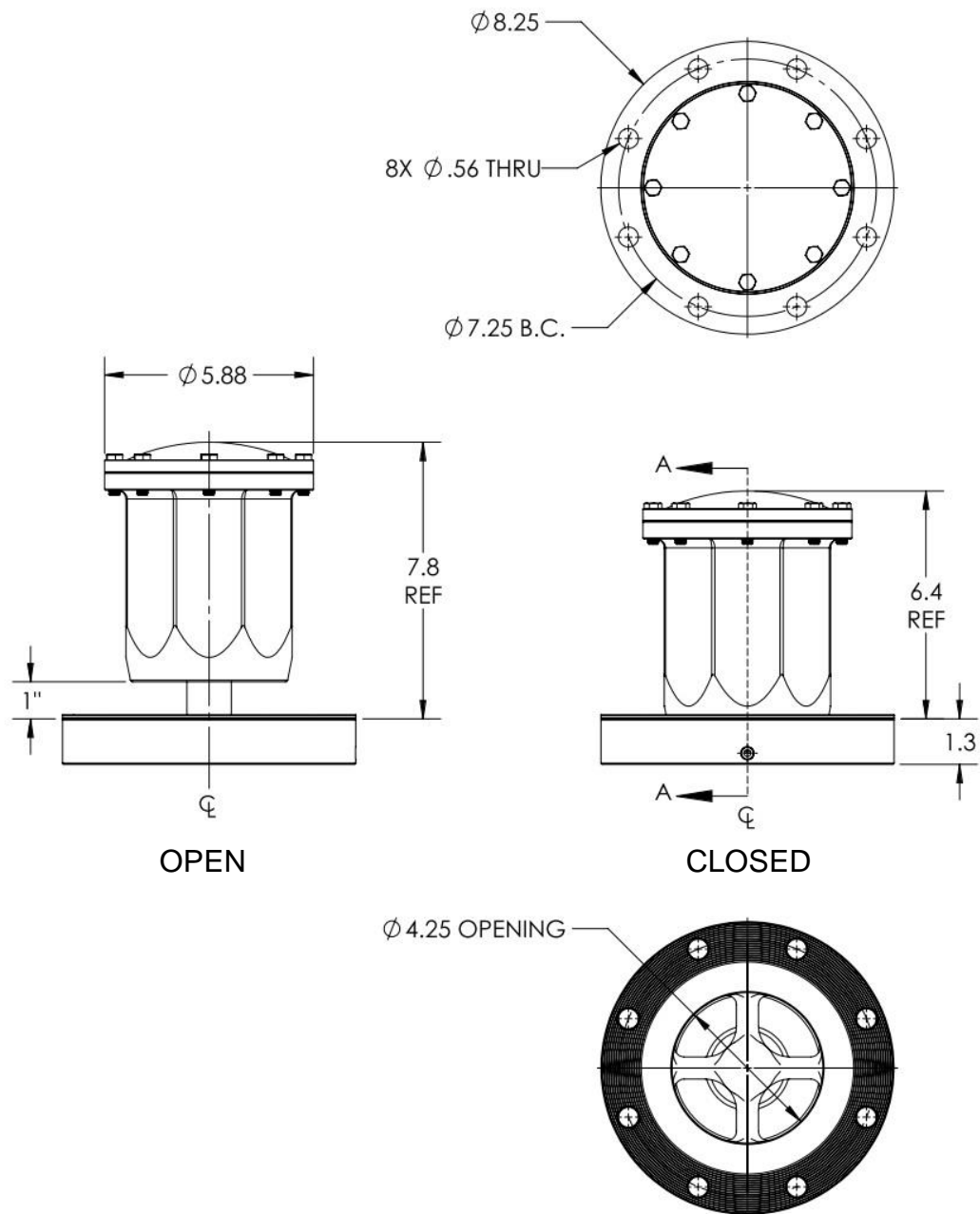


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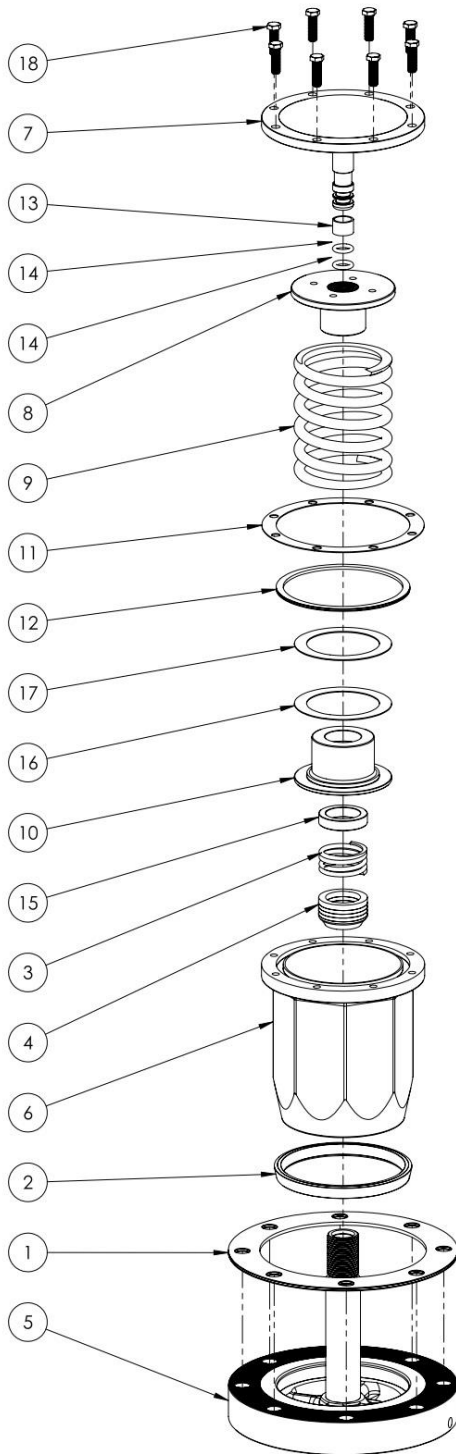
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## Technical Data (GQ87000)

- 1) Overall Height: 7.70"
- 2) Design pressure (MAWP): 50 PSI MAXIMUM
- 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) Teflon seals and gaskets for a broad range of chemical compatibility
- 7) Manufactured, assembled, and cast in the USA
- 8) Valve meets CFR Title 49, ADR Section 6, and ASME Section VIII design requirements for Bottom Outlet Valves
- 9) Valve may be ordered with Hastelloy® trim (GQ87002)



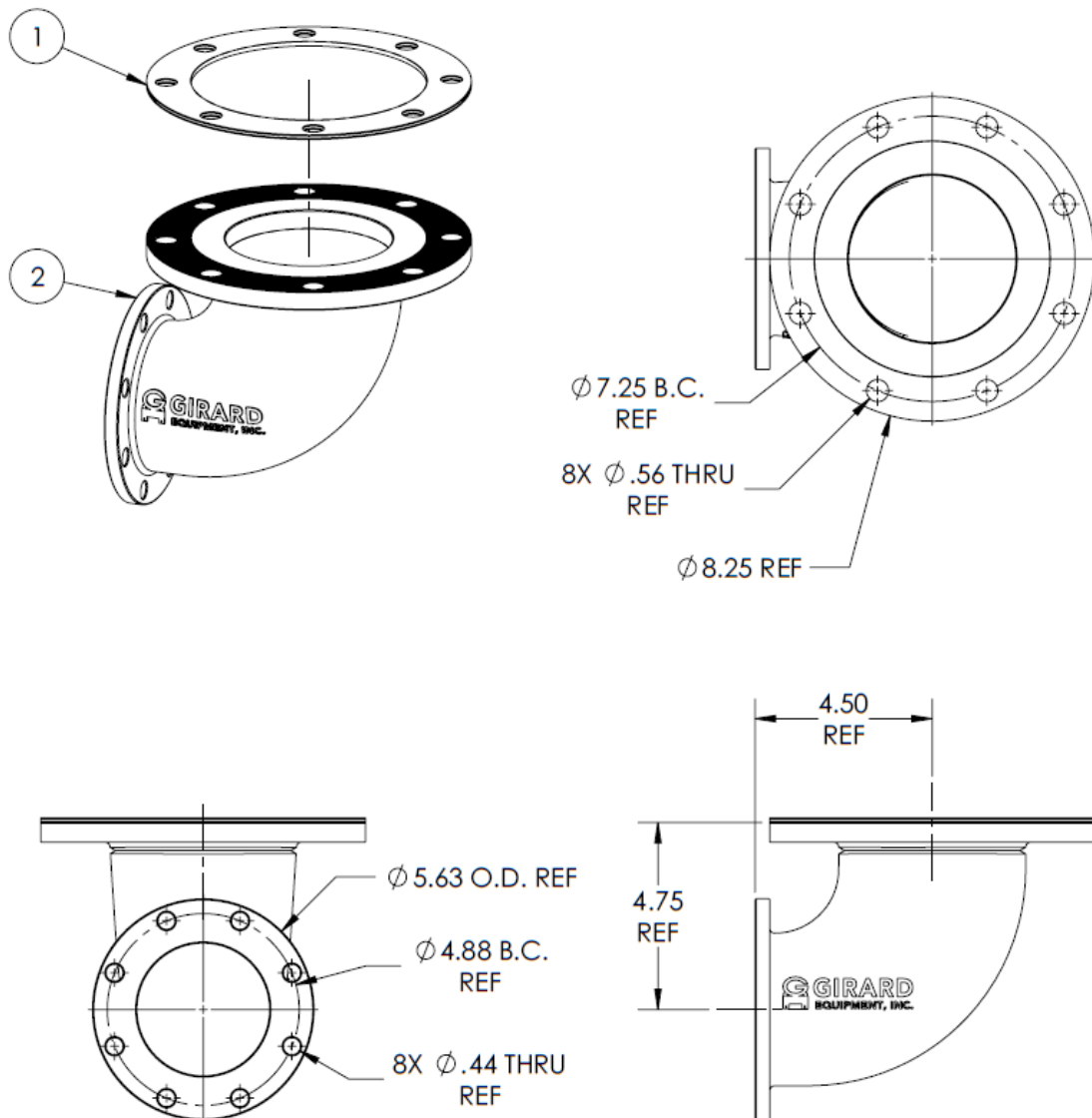
## Exploded View of Product (GQ87000)



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GQ85035	CHEMOVATION VALVE ENVELOPE GASKET	1
2	GQ86020	CHEMOVATION EXTERNAL, TEFLON SEAT	1
3	GQ86045	CHEMOVATION EXTERNAL, PACKING SEAL SPRING	1
4	GQ86070	CHEMOVATION EXTERNAL, PACKING SEAL SET W/ WIPER	1
5	GQ87100	CHEMOVATION INTERNAL BASE, MACHINED	1
6	GQ87110	CHEMOVATION INTERNAL HOUSING, MACHINED	1
7	GQ87120	CHEMOVATION INTERNAL HOUSING COVER, MACHINED	1
8	GQ87130	CHEMOVATION INTERNAL SPRING RETAINER, MACHINED	1
9	GQ87140	CHEMOVATION INTERNAL POPPET SPRING	1
10	GQ87145	CHEMOVATION INTERNAL PACKING SEAL RETAINER, MACHINED	1
11	GQ87147	CHEMOVATION INTERNAL TOP FLANGE GASKET	1
12	GQ87150	CHEMOVATION INTERNAL ENVELOPE GASKET	1
13	GQ87152	CHEMOVATION INTERNAL, GUIDE RING .75" OD X 1/2	1
14	GQ87154	CHEMOVATION INTERNAL, VITON O-RING -206	2
15	GQ87156	CHEMOVATION INTERNAL BUSHING	1
16	GQ87158	CHEMOVATION INTERNAL PTFE THRUST WASHER	1
17	GQ87160	CHEMOVATION INTERNAL SS THRUST WASHER	1
18	GQ87162	5/16-18 X 1" HEX HEAD CAP SCREW	8

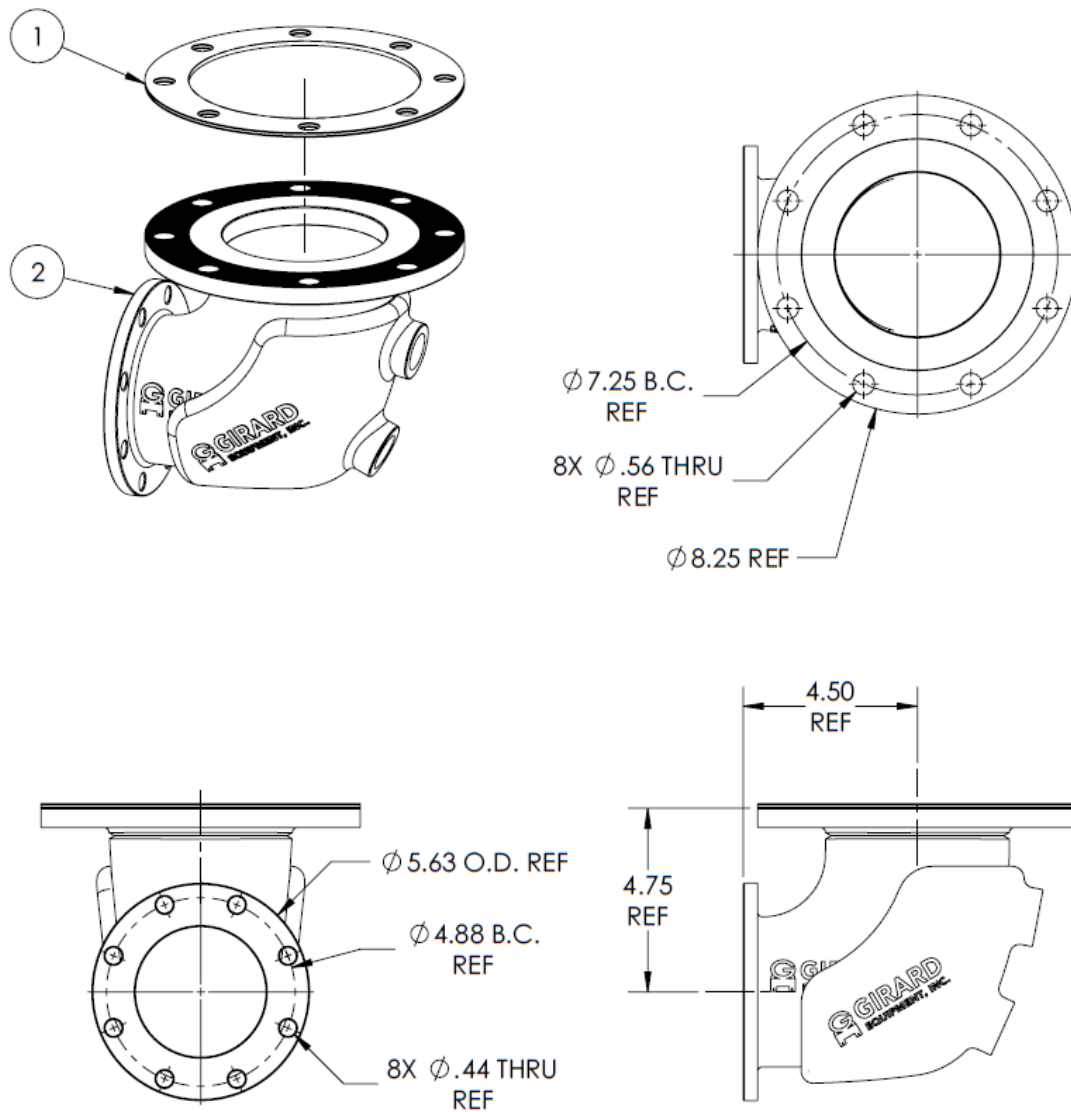
## Technical Data / Exploded View (GQ87020)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GQ85035	CHEMOVATION VALVE ENVELOPE GASKET	1
2	GQ87022	4X3 CHEMOVATION ELBOW, MACHINED	1



## Technical Data / Exploded View (GQ87040)

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GQ85035	CHEMOVATION VALVE ENVELOPE GASKET	1
2	GQ87042	4X3 STEAM JACKETED CV ELBOW WELDMENT	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 to +250°F
- Humidity Range: N/A
- Altitude Range: N/A

Store device with the 3" flange face down, in its original container, to maintain a dust-free environment. We recommend that stored valves be retested every year or as required by DOT regulations. The initial test date will be listed on the valve certificate.

## Product Handling

Follow OSHA practices for lifting of heavy objects.

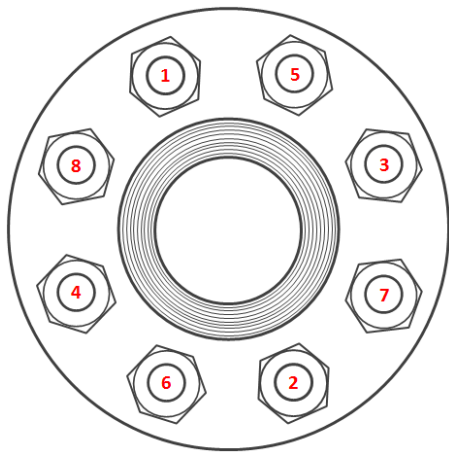
## Disposal Requirements

No Special Requirements.



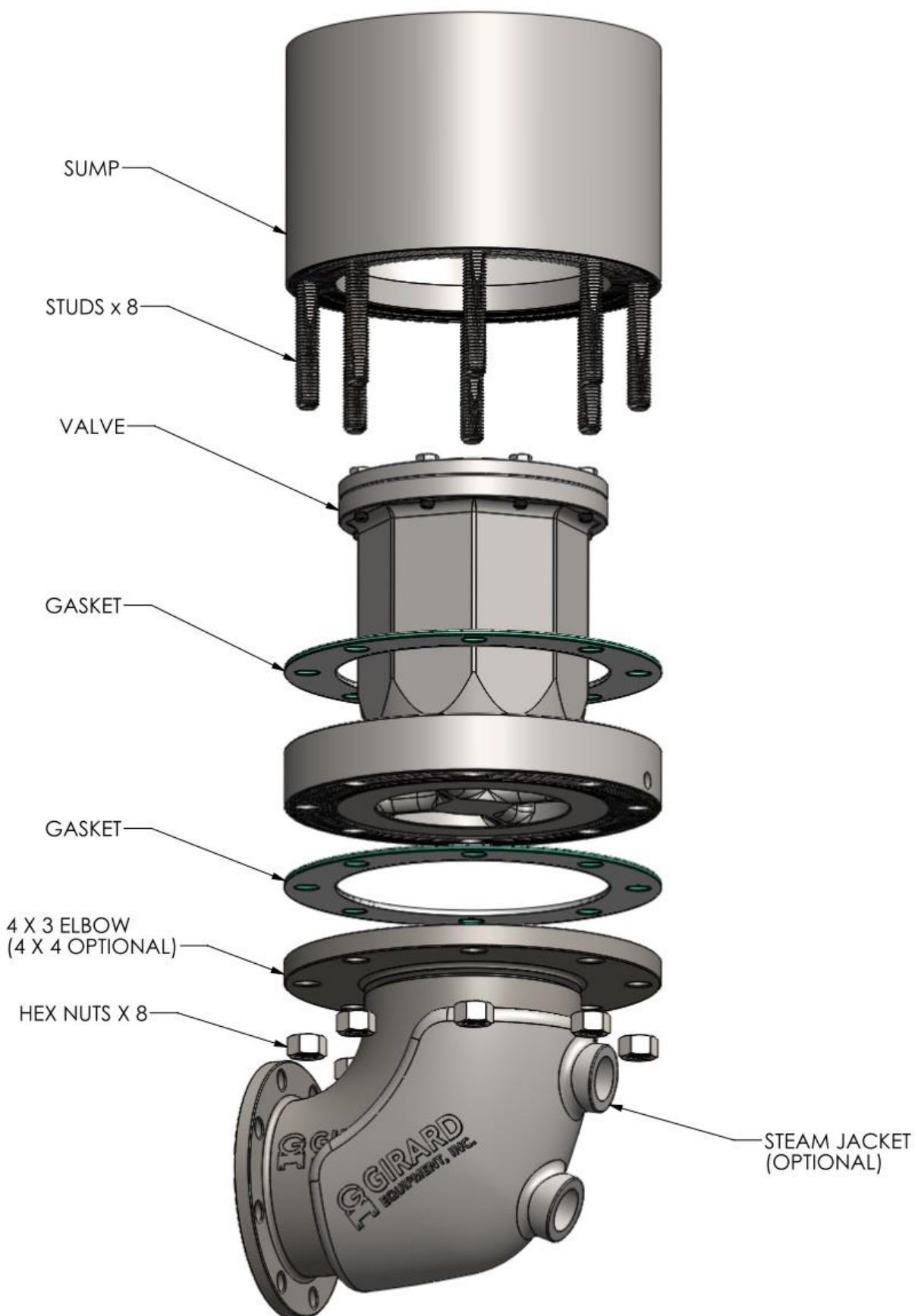
## Installation Instructions

- 1) Remove valve from packaging.
- 2) Install valve with housing inserted into sump and new, clean gasket between the valve flange and sump
- 3) Mount elbow to valve with new, clean gasket between valve flange and elbow flange  
\*See below for details
- 4) Girard Equipment recommends using new, non-lubricated, stainless steel studs and nuts to bolt device to tank container.



Torque Value: **45** FT/LBS. Dry +/- 10%.

**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 4" Chemovation Internal Valve to read and understand this procedure before starting work. Before using a Girard valve with a hydraulic actuator, follow the procedure for bleeding hydraulic lines, located under the maintenance section of this manual.

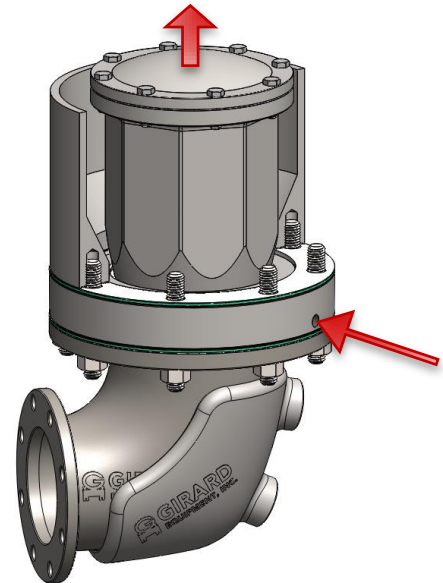
\*This valve may require the cover to be removed when bleeding air from the hydraulics.



### Unloading procedure for GQ87000

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

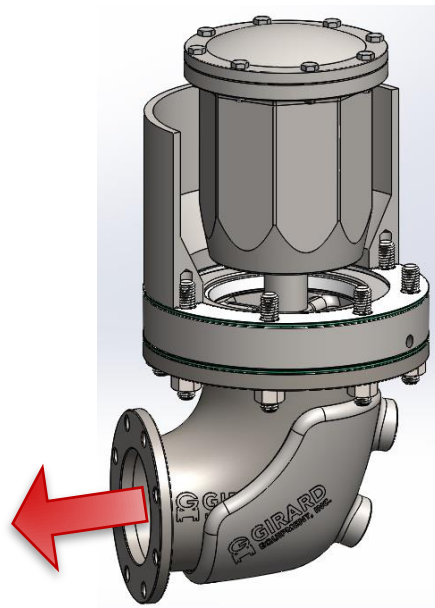
- 1) Open the chemical valve by pressurizing the hydraulic actuator (located in the mounting flange of the valve assembly).



- 2) Tank will now unload.
- 3) When finished unloading, close the chemical valve by relieving the pressure from the hydraulic actuator.

### Loading Precautions:

Before loading the tank container, ensure that the Chemovation Valve is closed.



## 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.

### Gasket and Seal Maintenance

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

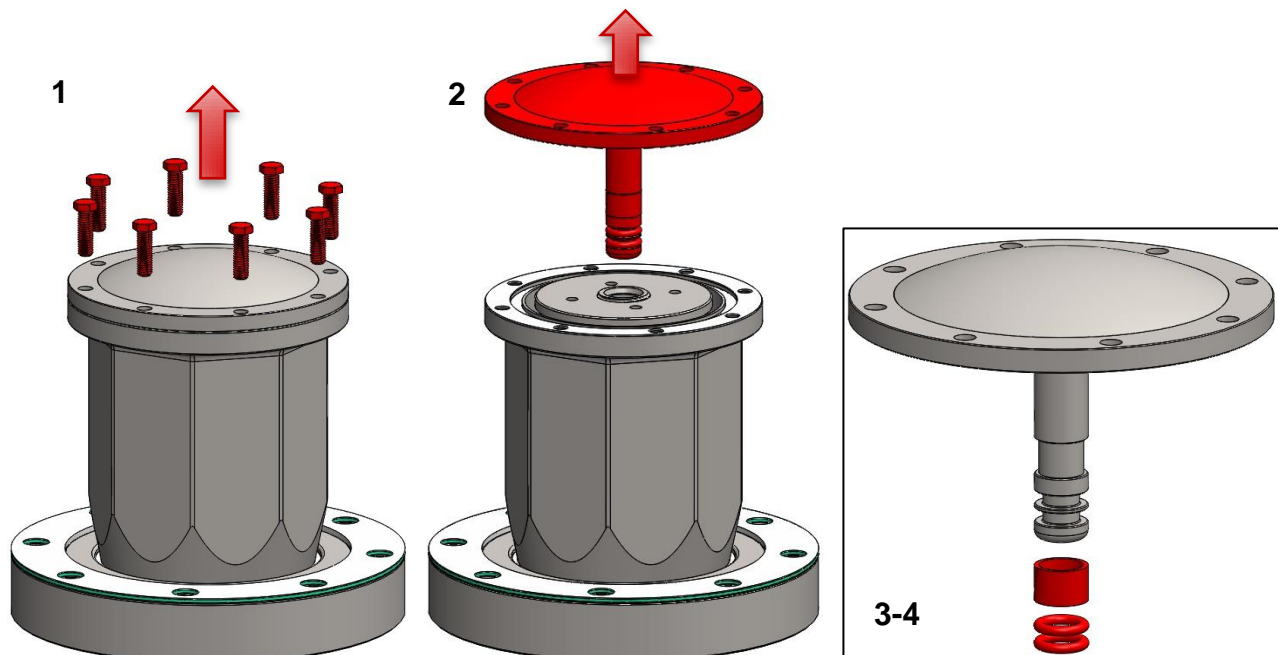
### Preparation

Relieve hydraulic pressure to the valve.

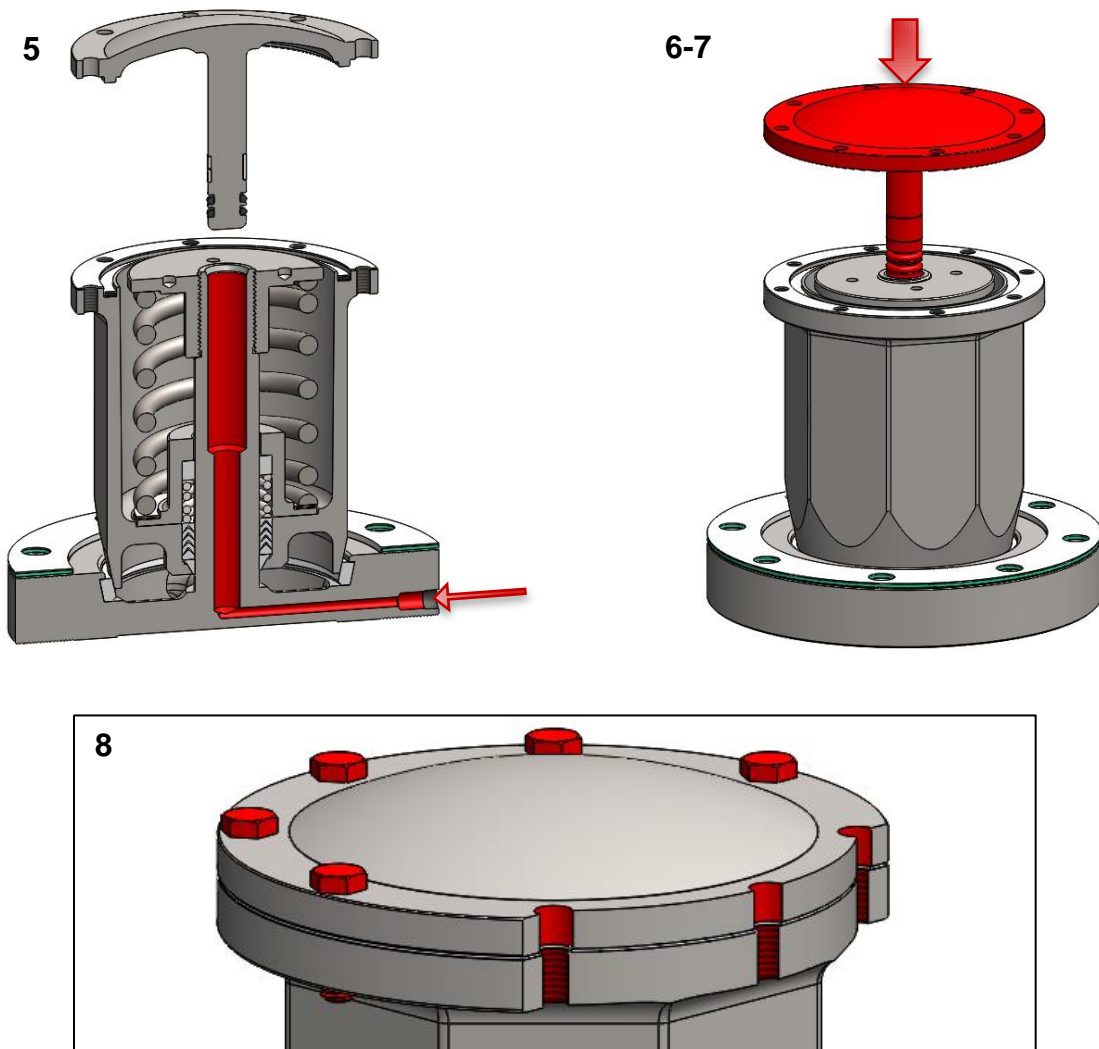
### To Replace Chemovation Internal Valve Hydraulic Seals (GQ87152 and GQ87154)

*\*See later instructions for replacing Flange Gasket (GQ87147) and Envelope Gasket (GQ87150)*

- 1) Using a 7/16" socket or open ended wrench, loosen and remove the (8) 5/16-18 Hex Head Cap Screws (GQ87162) from the Housing Cover (GQ87120).
- 2) Carefully remove the Housing Cover (GQ87120) from the Housing (GQ87110).  
*\*Slowly increase hydraulic pressure to assist in removing the Cover*
- 3) Remove the Guide Ring (GQ87152) and O-Rings (GQ87154) from the piston of the Housing Cover (GQ87120) and inspect the piston for damage or wear.  
*\*If damage or wear is found, contact Girard Equipment*
- 4) Install new Guide Ring (GQ87152) and O-Rings (GQ87154).

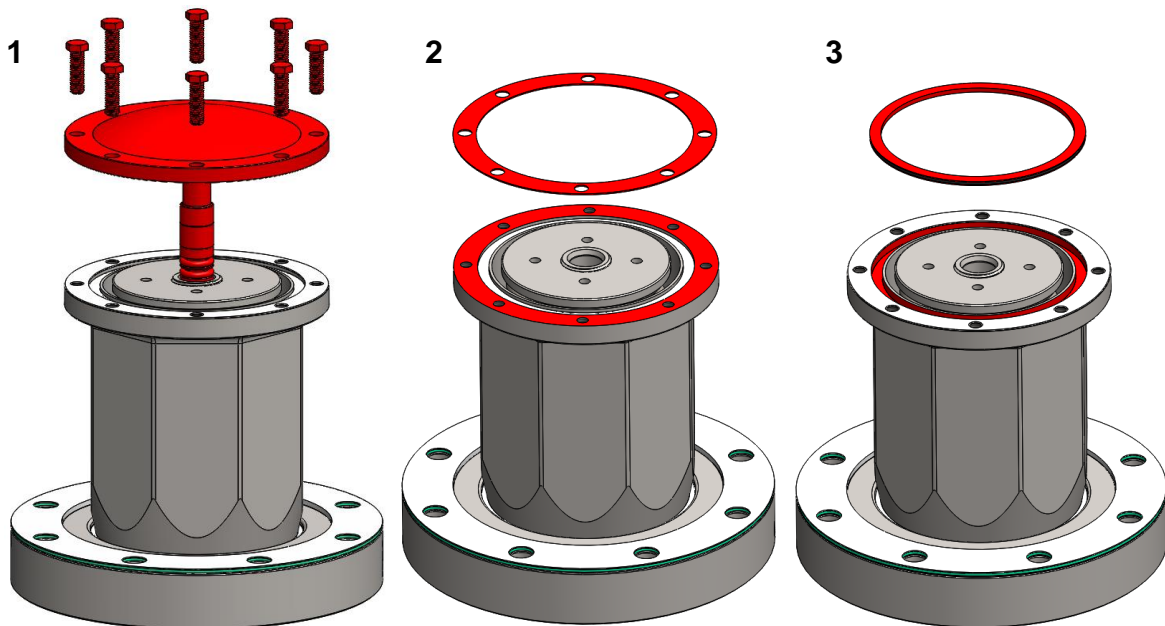


- 5) Slowly apply hydraulic pressure to evacuate all air from the piston bore of the Base (GQ87100).  
*\*Fill to 1/8" from top of piston bore*
- 6) Align the Housing Cover Piston (GQ87120) with the bore of the Base (GQ87100) and press on the top of the Cover (GQ87120).
- 7) Relieve the hydraulic pressure to the valve and continue to press down on the Housing Cover (GQ87120).  
*\*May use rubber mallet to fully seat the cover*
- 8) Align the bolt holes of the Cover (GQ87120) with the Housing (GQ87110) and Flange Gasket (GQ87147) and insert and tighten the (8) 5/16-18 Hex Head Cap Screws (GQ87162).
- 9) Actuate the valve multiple times to condition the seals before putting into use.



## To Replace the Chemovation Internal Valve Flange Gasket (GQ87147) and Envelope Gasket (GQ87150)

- 1) To access the gaskets, remove the Housing Cover (GQ87120) by following steps 1-2 for replacing the hydraulic seals (above).
- 2) Remove the Flange Gasket (GQ87147) and clean mating surfaces, then replace.
- 3) Using a pick or knife, remove and replace the Envelope Gasket (GQ87150) in the highlighted groove.
- 4) Re-assemble by following steps 5-9 for replacing the hydraulic seals (above).



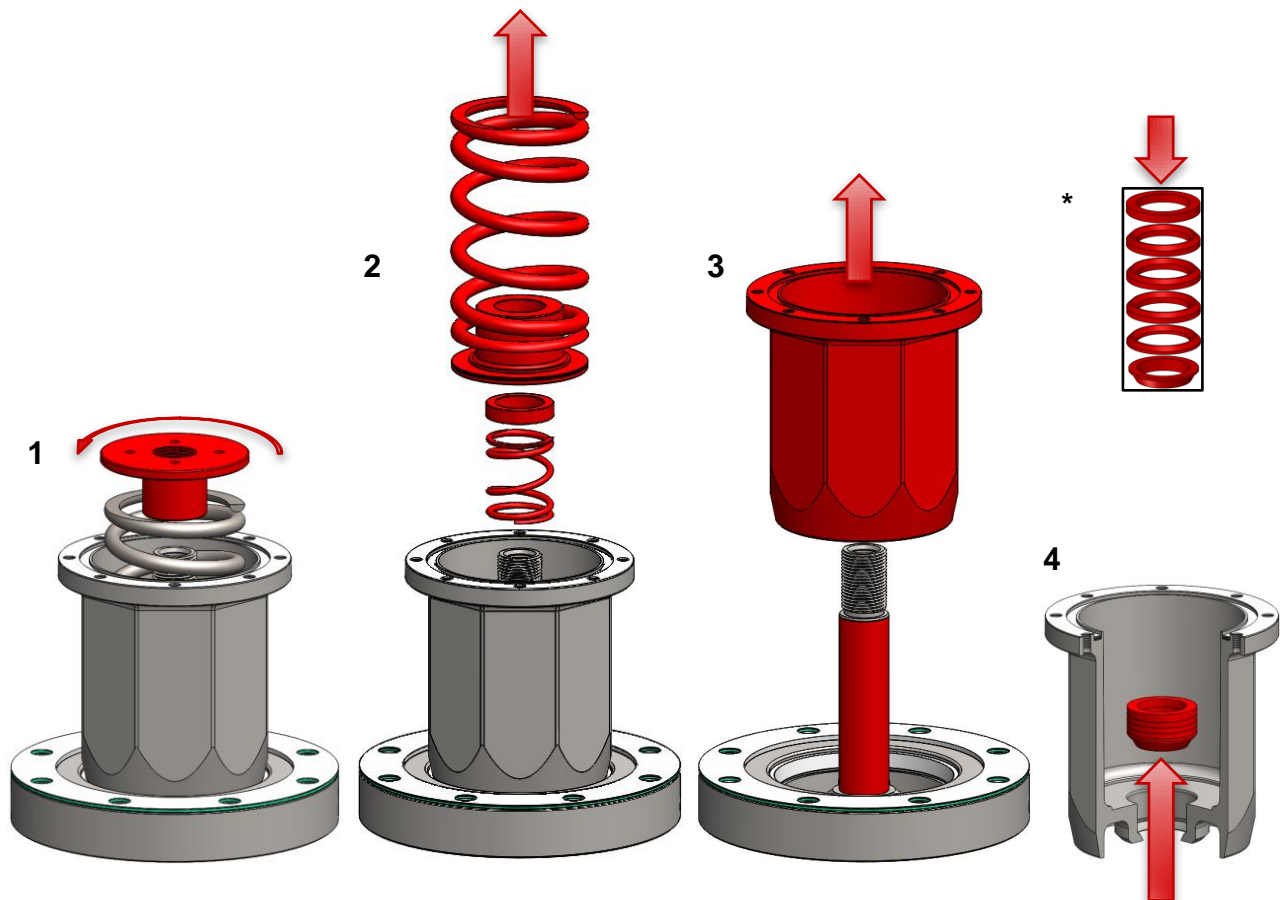


## To Replace the Chemovation Internal Valve Packing Seal Set (GQ86070)

*\*See later instructions for replacing Teflon® Seat (GQ86020 or GQ86022)*

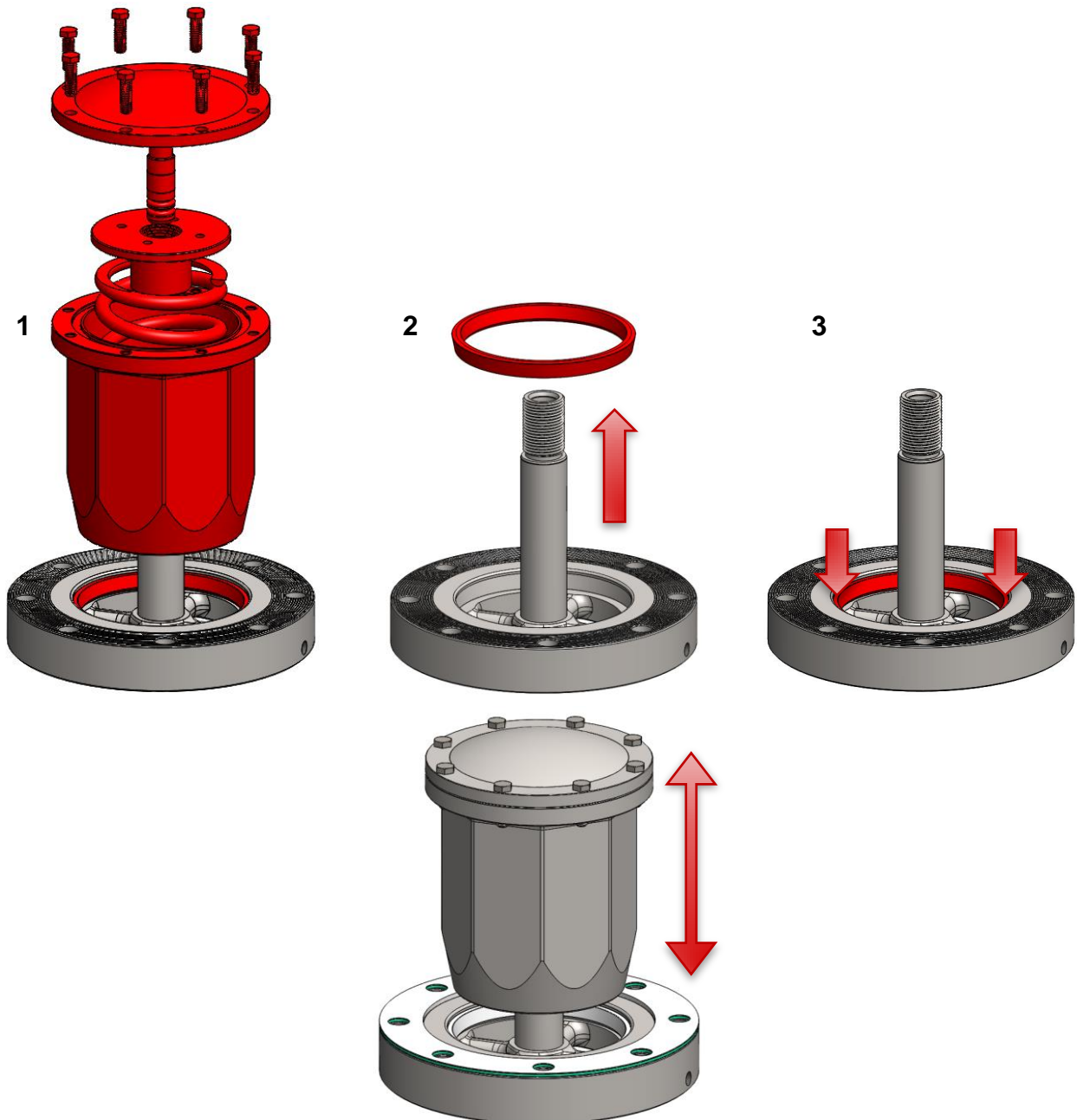
To access the internal seals, remove the Housing Cover (GQ87120) by following steps 1-2 for replacing the hydraulic seals (above).

- 1) Using an adjustable spanner wrench, loosen and remove the Spring Retainer (GQ87130).  
*\*CAUTION: High spring tension, handle with care*
- 2) Remove the Poppet Spring (GQ87140), Packing Seal Retainer (GQ87145) with the Stainless and PTFE Thrust Washers (GQ87160 and GQ87158), Bushing (GQ87156), and Packing Seal Spring (GQ86045).
- 3) Carefully lift and remove the Housing (GQ87110) with the Packing Seal Set (GQ86070) over the stem of the Base (GQ87100).
- 4) Push up to remove the Packing Seal Set (GQ86070) from the Housing (GQ87110) and replace in the orientation shown.  
*\*Install wiper first, then male adapter, v-rings, and female adapter last*
- 5) Re-assemble following steps 1-3 in reverse order.



### To Replace the Chemovation Internal Teflon® Seat (GQ86020 or GQ86022)

- 1) To access the Teflon® Seat (GQ86020 or GQ86022), remove the Housing Cover (GQ87120) by following steps 1-2 for replacing the hydraulic seals, then follow steps 1-3 for replacing the Packing Seal Set (GQ86060).
- 2) Remove the Teflon® Seat (GQ86020/GQ86022) and discard.  
*\*Seat may need to be cut or broken to remove*
- 3) Press in new Teflon® Seat (GQ86020/GQ86022).
- 4) Re-assemble the valve and actuate multiple times to condition the seals.





## Test Instructions

Perform visual inspection and leakage test in accordance with DOT regulations 49 CFR 180.407 and any other regulations that may apply.

## Troubleshooting & Repair Guide

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

1. Wipe sealing area with clean rag.
2. Ensure that the housing sealing area is contacting the **Teflon® Seat** evenly.
3. Install new seals and gaskets.
4. If problem cannot be corrected, contact a Girard Equipment representative.

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

1. Check for leaks near the hydraulic line connection.
2. Bleed hydraulic lines.
3. Install new hydraulic seals.
4. If problem cannot be corrected, contact a Girard Equipment representative.

## Replacement Parts

Seals:	GQ86020 (TEFLON® SEAT) or GQ86022 (TEFLON® SEAT W/ O-RINGS), GQ87154 (VITON O-RING), GQ87152 (GUIDE RING), GQ86070 (PACKING SEAL SET)
Gaskets:	GQ85035 (ENVELOPE GASKET), GQ87147 (TOP FLANGE GASKET), GQ87150 (INTERNAL ENVELOPE GASKET)
Additional:	GQ87162 (HEX HEAD CAP SCREW), GQ87158 (PTFE THRUST WASHER), GQ87160 (SS THRUST WASHER)

**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 5 years of the date of shipment (excludes O-Rings and gaskets), 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

***GIRARD***  
***EQUIPMENT, INC.***

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