



## 4 x 3 Chemovation Quick Release Valve GQ85000, GQ85002

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

# Table of Contents

**Technical Data .....3**

**Exploded View of Product .....4**

    GQ85000..... 4

    GQ85200..... 5

    GQ85300..... 6

    GQ86400..... 7

**Safety.....8**

    General Safety Information..... 8

    Product Storage ..... 8

    Product Handling..... 8

    Disposal Requirements ..... 8

**Installation Instructions.....9**

**Operation Instructions..... 10**

**Maintenance Instructions ..... 11**

    To Replace the Hydraulic Actuator Seals (GQ85400)..... 11

    To Replace the Teflon® Gasket (GQ85030) or SS Cage Insert (GQ85020) ..... 13

    To Replace the Poppet O-Ring (GQ85230) ..... 14

    To Replace the Spring Housing Seals (GQ85300) ..... 15

**Test Instructions ..... 16**

**Troubleshooting & Repair Guide ..... 16**

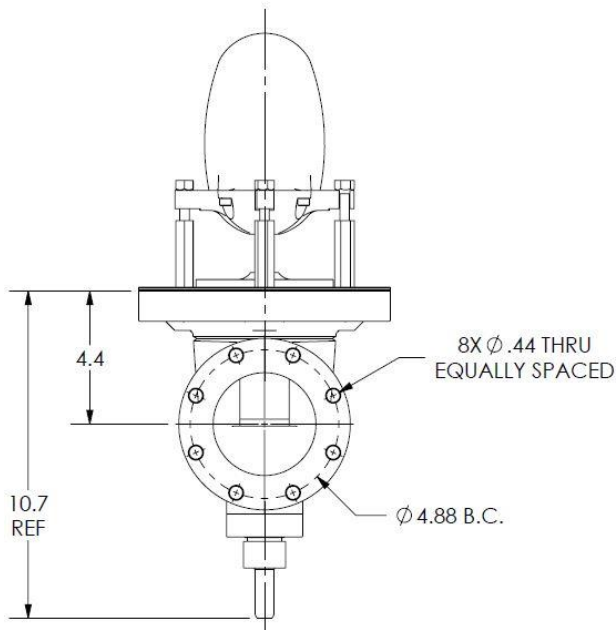
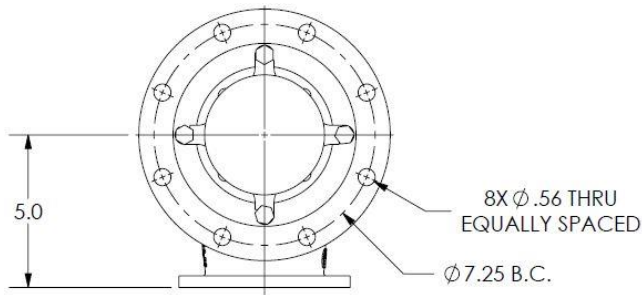
**Replacement Parts ..... 17**

**Warranty..... 18**

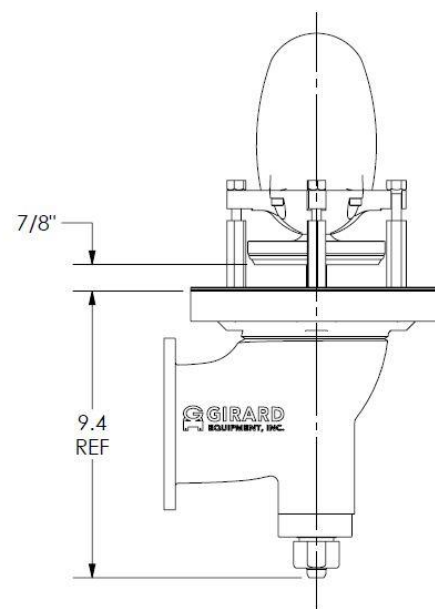
**Contact Information ..... 18**

## Technical Data

- 1) Overall Height: 19.2"
- 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) Outlet flange made to 3" TTMA standard
- 6) 1/4" NPT hydraulic connection
- 7) Teflon seals and gaskets for a broad range of chemical compatibility
- 8) Manufactured, assembled, and cast in the USA
- 9) Valve meets CFR Title 49, ADR Section 6, and ASME Section VIII design requirements for Bottom Outlet Valves
- 10) Cage Insert may be ordered in Hastelloy® (GQ85022)



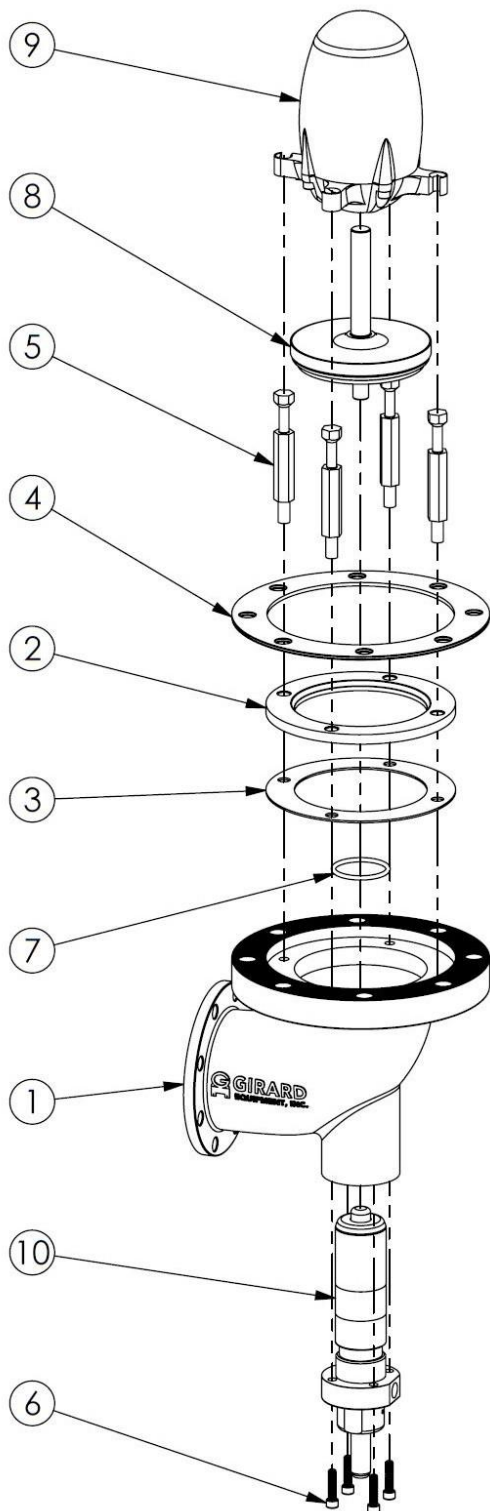
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# Exploded View of Product

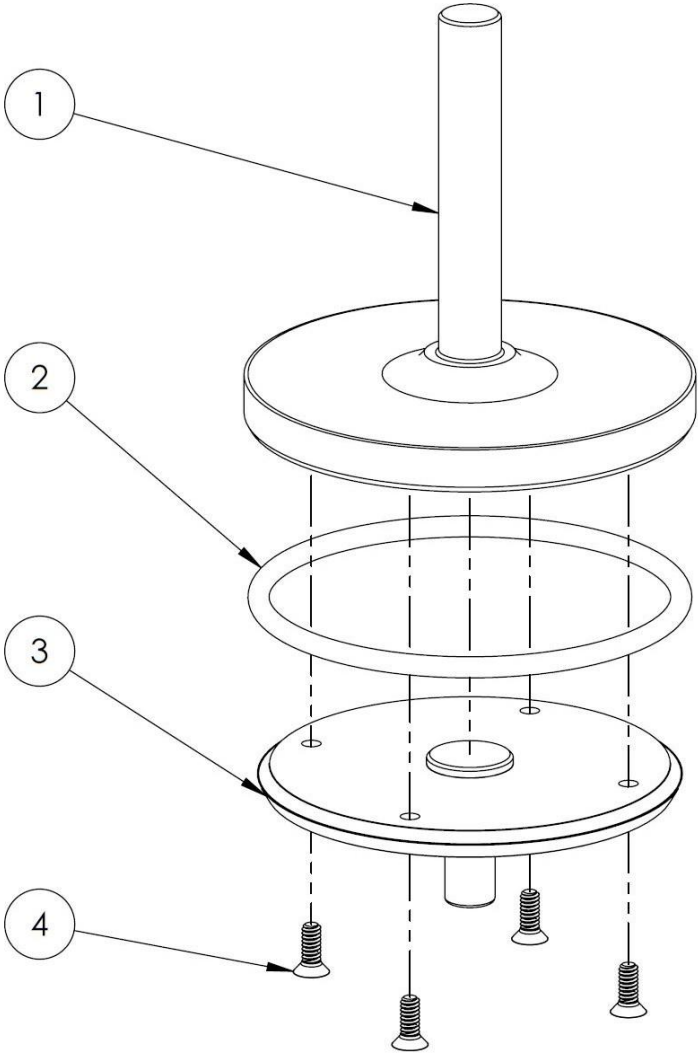
## GQ85000



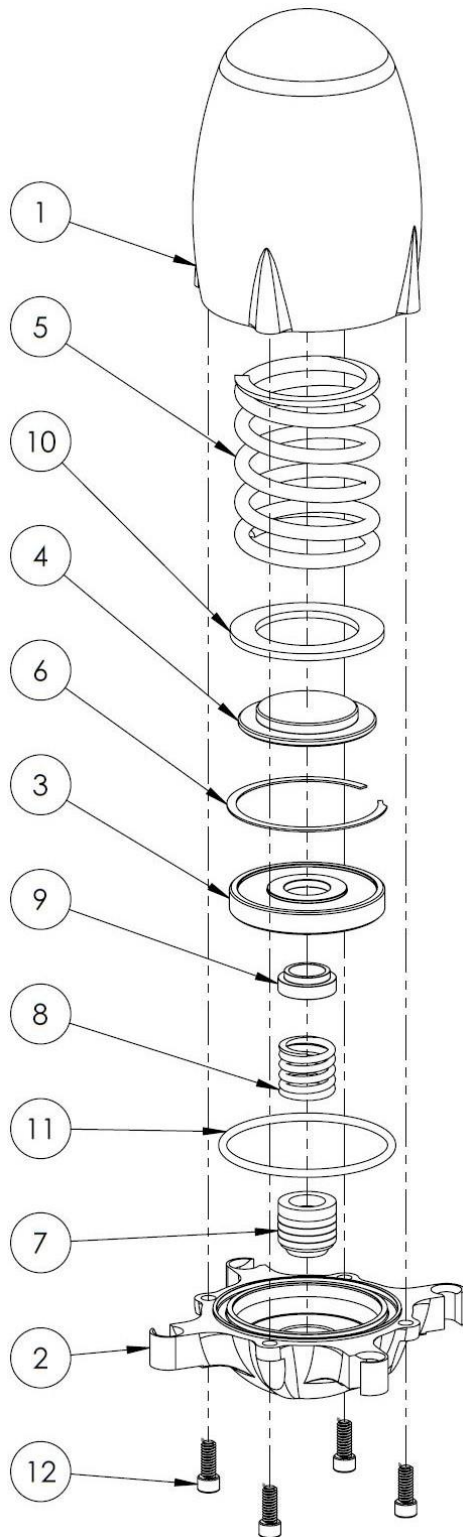
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GQ85010	CHEMOVATION QUICK RELEASE MAIN BODY	1
2	GQ85020	CHEMOVATION QUICK RELEASE SS CAGE INSERT	1
3	GQ85030	CHEMOVATION QUICK RELEASE TEFLON GASKET	1
4	GQ85035	CHEMOVATION VALVE ENVELOPE GASKET	1
5	GQ85040	CHEMOVATION QUICK RELEASE SPRING HOUSING RISER	4
6	GQ85050	1/4-20 X 1 SOCKET HEAD CAP SCREW	4
7	GQ85055	-223 O-RING	1
8	GQ85200	CHEMOVATION QUICK RELEASE POPPET ASSEMBLY	1
9	GQ85300	CHEMOVATION QUICK RELEASE SPRING HOUSING ASSEMBLY	1
10	GQ85400	CHEMOVATION QUICK RELEASE HYDRAULIC ACTUATOR ASSEMBLY	1

# GQ85200

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GQ85210	CHEMOVATION QUICK RELEASE POPPET UPPER	1
2	GQ85230	-345 O-RING	1
3	GQ85220	CHEMOVATION QUICK RELEASE POPPET LOWER	1
4	GQ85235	10-24 X 1/2 FHMS	4



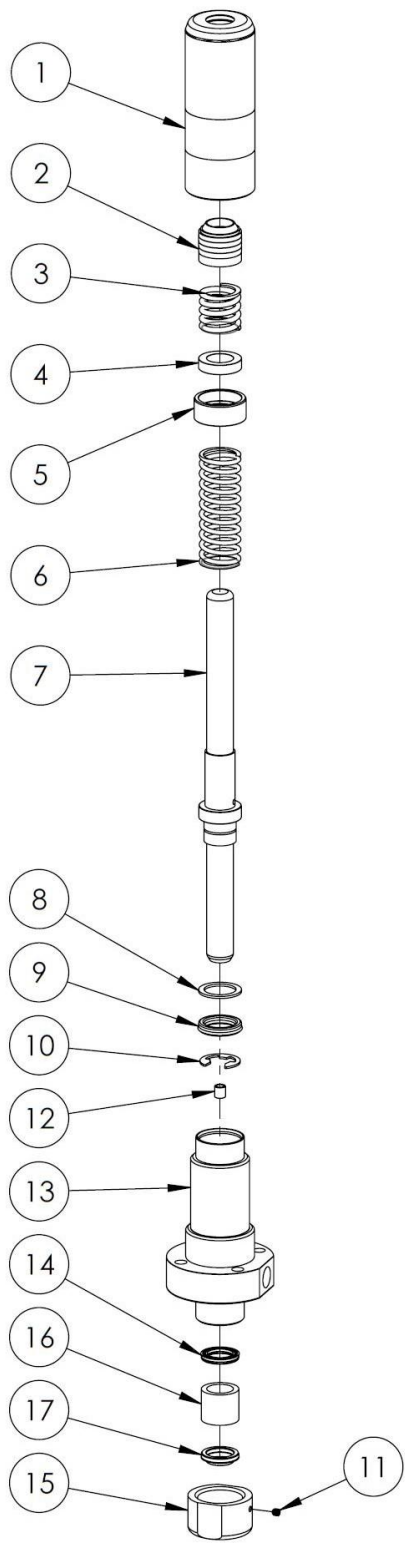
# GQ85300



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GQ85310	CHEMOVATION QUICK RELEASE SPRING HOUSING	1
2	GQ85320	CHEMOVATION QUICK RELEASE SPRING HOUSING SPIDER	1
3	GQ85330	CHEMOVATION QUICK RELEASE PACKING SEAL DISC	1
4	GQ85340	CHEMOVATION QUICK RELEASE POPPET SPRING DISC	1
5	GQ85350	CHEMOVATION QUICK RELEASE POPPET SPRING	1
6	GQ85355	SPRING HOUSING RETAINING RING	1
7	GQ85370	CV QR VALVE PACKING SEAL SET W/ WIPER	1
8	GQ85380	CHEMOVATION QUICK RELEASE PACKING SEAL SPRING	1
9	GQ85385	CHEMOVATION QUICK RELEASE POPPET BUSHING	1
10	GQ85390	CHEMOVATION QUICK RELEASE POPPET SPRING WASHER	1
11	GQ85395	-232 TEF-O-SIL O-RING	1
12	GQ85398	1/4-20 X 5/8 SHCS	4



GQ86400



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GQ85420	CHEMOVATION QUICK RELEASE ACTUATOR UPPER	1
2	GQ85370	CV QR VALVE PACKING SEAL SET W/ WIPER	1
3	GQ85380	CHEMOVATION QUICK RELEASE PACKING SEAL SPRING	1
4	GQ85438	CHEMOVATION QUICK RELEASE ACTUATOR BUSHING	1
5	GQ85426	CHEMOVATION QUICK RELEASE BUSHING RETAINER	1
6	GQ85440	CHEMOVATION QUICK RELEASE ACTUATOR SPRING	1
7	GQ85422	CHEMOVATION QUICK RELEASE ACTUATOR PISTON	1
8	GQ85442	1 X .75 BACK-UP RING	1
9	GQ85444	.75 PTB ROD SEAL	1
10	GQ85446	5/8" EXTERNAL RETAINING RING	1
11	GQ80445	M4 X 4MM SET SCREW	1
12	GQ80635	BREATHER VENT	1
13	GQ85410	CHEMOVATION QUICK RELEASE ACTUATOR LOWER	1
14	GQ85448	.625 STD ROD SEAL	1
15	GQ85424	CHEMOVATION QUICK RELEASE ACTUATOR CAP	1
16	GQ85450	7/8 OD 5/8 ID PTFE BUSHING	1
17	GQ85452	5/8 DTW WIPER	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.

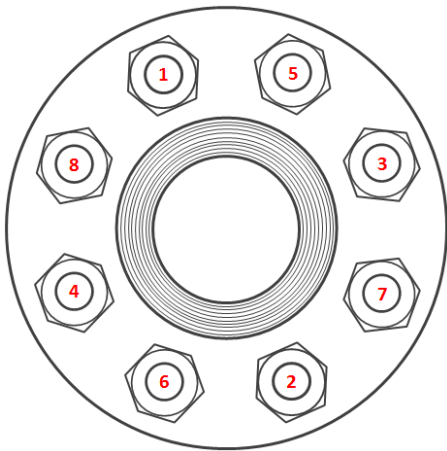
## Disposal Requirements

No Special Requirements.



## Installation Instructions

- 1) Remove valve from packaging.
- 2) Insert new, clean gasket.
- 3) Align the valve with the sump at the bottom of the tank.
- 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 x 3 Chemovation External 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.



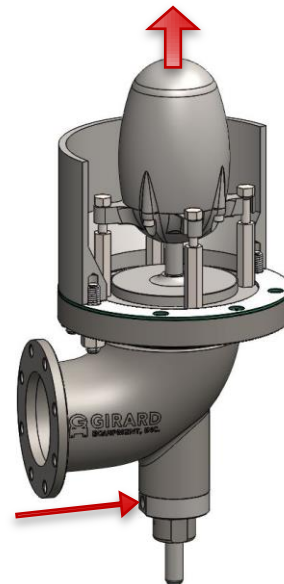
### Unloading procedure for GQ86000

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

- 1) Open the chemical valve by pressurizing the hydraulic actuator (located at the bottom of the valve assembly).

**NOTE:** In an emergency, the valve can be opened by lifting at the indicator pin.

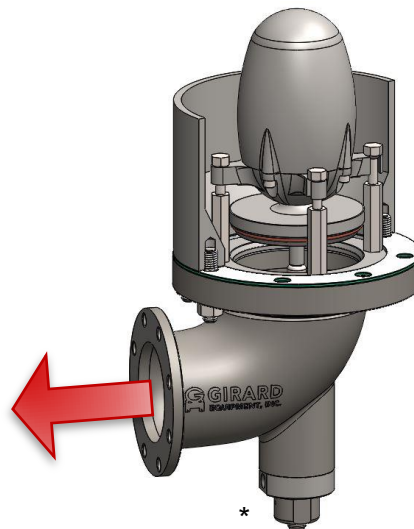
- 2) Tank will now unload.
- 3) When finished unloading, close the chemical valve by relieving the pressure from the hydraulic actuator.




### Loading Precautions:

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

\*Four socket head cap screws in the bottom of the hydraulic actuator, used for mounting to the main body, can be removed and the hydraulic actuator rotated for optimum port location



## 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.

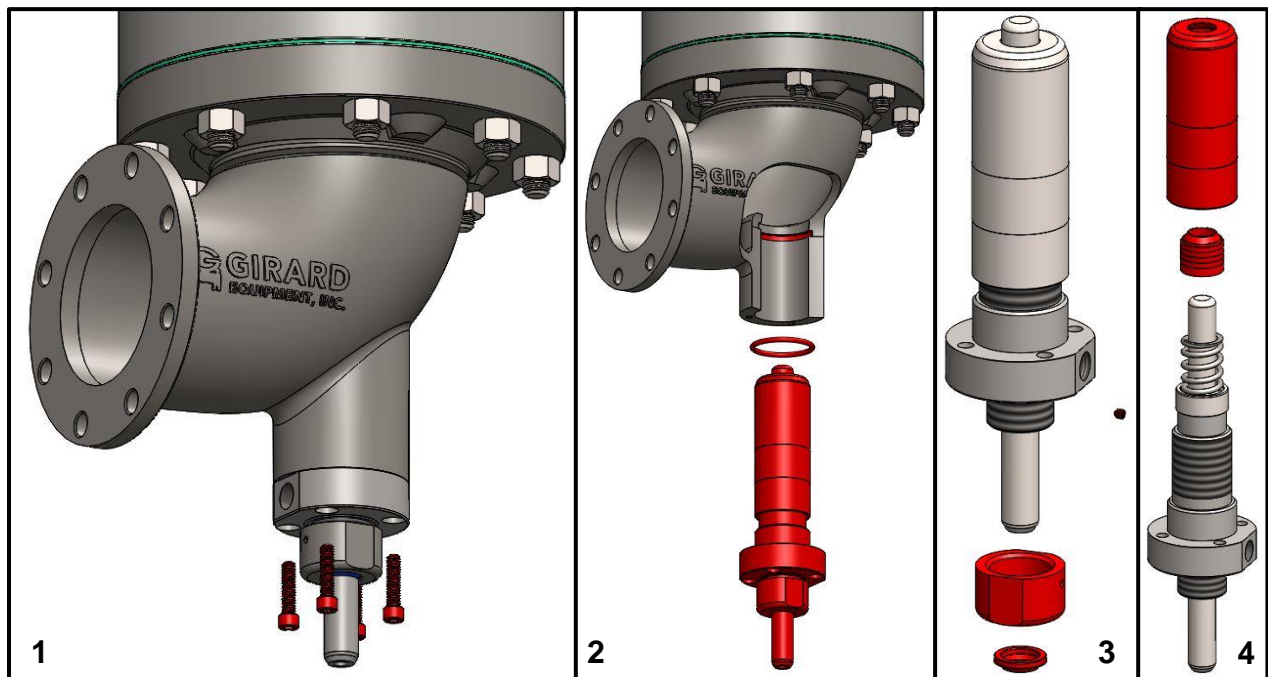
### Preparation

Relieve pressure from the Hydraulic Actuator and disconnect the hydraulic line and fitting from the Actuator Housing.

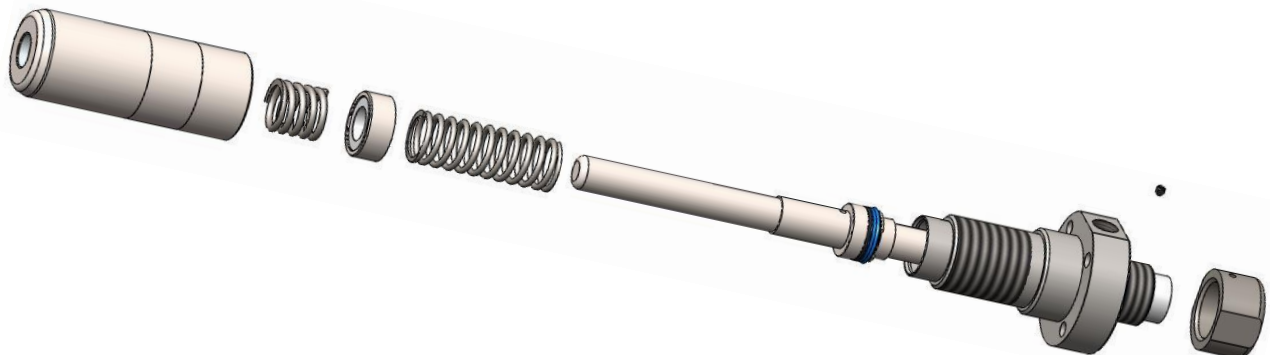
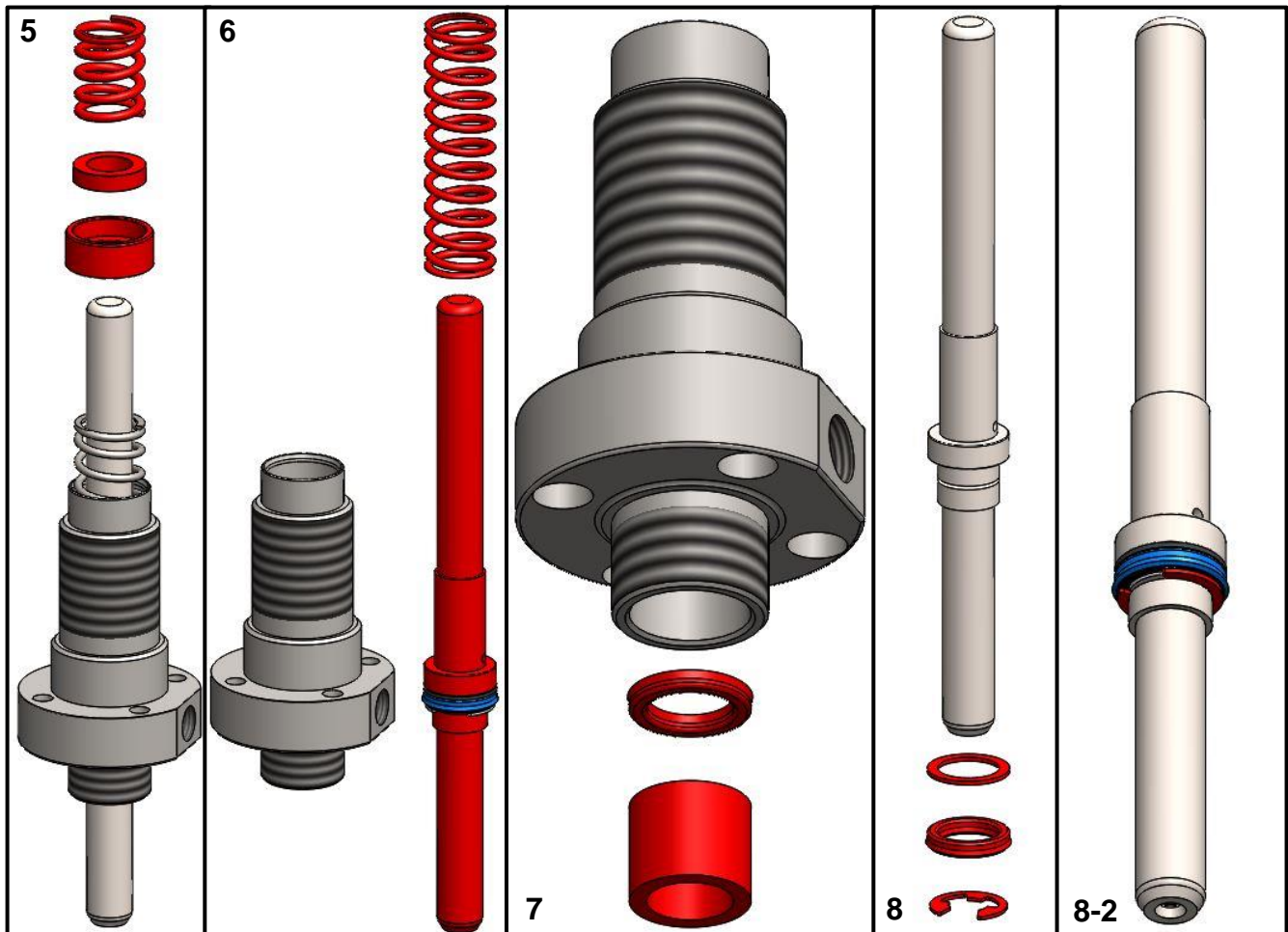
### To Replace the Hydraulic Actuator Seals (GQ85400)

\*The Hydraulic Actuator can be removed and serviced with the valve still mounted.

- 1) Using a 3/16" hex key, loosen and remove the 4 Socket Head Cap Screws (GQ85050) from the Hydraulic Actuator (GQ85400).
- 2) Gently remove the Hydraulic Actuator (GQ85400) from the Main Body (GQ85010).  
\*It is recommended to replace the O-Ring (GQ85055) in the highlighted area of the Main Body at this time
- 3) Using a 2 mm hex key, loosen and remove the Set Screw (GQ80445) from the Hydraulic Actuator Cap (GQ85424), then loosen and remove the Cap and remove and replace the Wiper (GQ85452) in the Cap.
- 4) Loosen and remove the Actuator Upper (GQ85420) and remove and replace the Packing Seal Set (GQ85370).

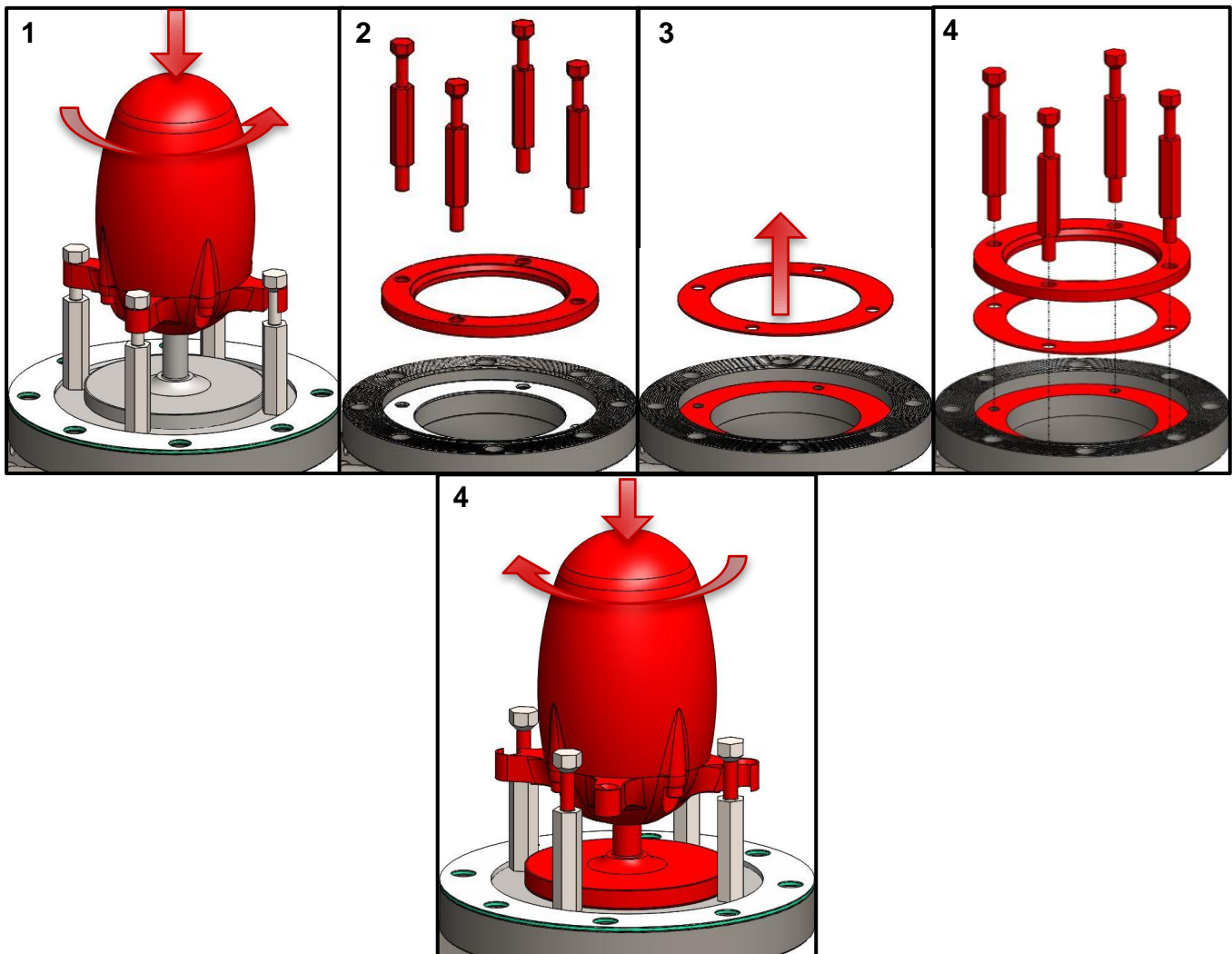


- 5) Remove the Packing Seal Spring (GQ85380) and Actuator Bushing Retainer (GQ85426) with the Bushing (GQ85438) and replace the Bushing if necessary.
- 6) Remove the Spring (GQ85440) and the Piston (GQ85422) from the Lower (GQ85410).
- 7) Remove and replace the PTFE Bushing (GQ85450) and 5/8 Rod Seal (GQ85488).
- 8) Remove the Retaining Ring (GQ85446) from the Piston (GQ85422) and remove and replace the 3/4 Rod Seal (GQ85444) and Back-up Ring (GQ85442), then re-install or relace the Retaining Ring.
- 9) Re-assemble following steps 1-6 in reverse order. Tighten the Actuator Upper (GQ85420) and Actuator Cap (GQ85424) to fully capture the seals.



### To Replace the Teflon® Gasket (GQ85030) or SS Cage Insert (GQ85020)

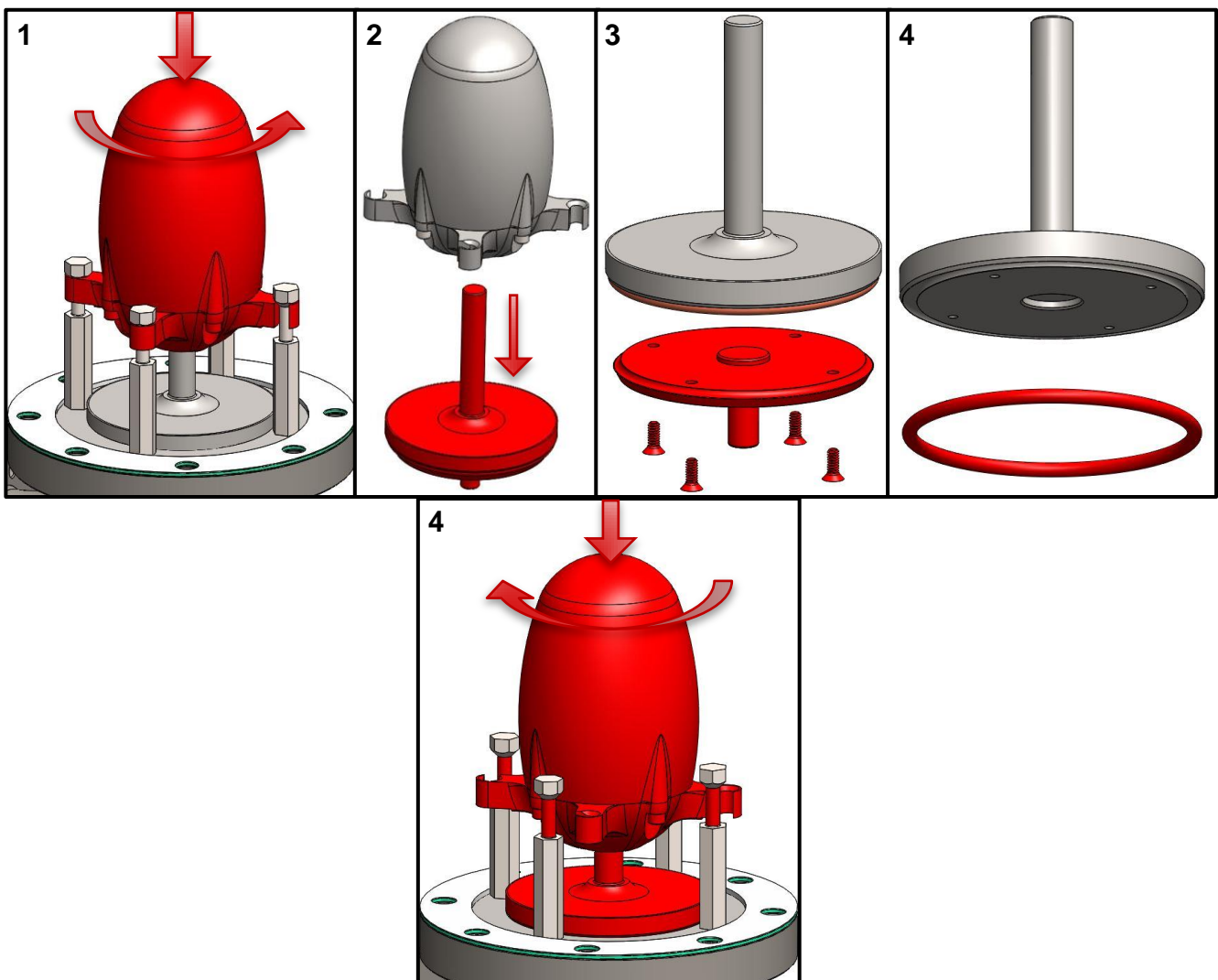
- 1) To access the Teflon® Gasket (GQ85030) or SS Cage Insert, press down on the Spring Housing (GQ85300) and rotate counter-clockwise to release.
- 2) Using a 5/8 wrench, loosen and remove the 4 Spring Housing Risers (GQ85040) and remove the Cage Insert (GQ85020).  
\*Replace or clean-up angled sealing face of the Cage Insert, if necessary.
- 3) Remove the Teflon® Gasket (GQ85030) and wipe the mating faces of the Main Body (GQ85010) and Cage Insert (GQ85020) with a clean rag, then replace and align the 4 holes of the Teflon® Gasket with the 4 tapped holes of the Main Body (GQ85010).
- 4) Align the 4 holes of the Cage Insert (GQ85020) with the holes of the Teflon® Gasket (GQ85030) and Main Body (GQ85010) and fasten by tightening the 4 Spring Housing Risers (GQ85040) in place.
- 5) Finish assembling by aligning the Poppet between the Risers (GQ85040) and press down on the Spring Housing (GQ85300) and rotate clockwise until the Spring Housing hooks engage with the Risers.





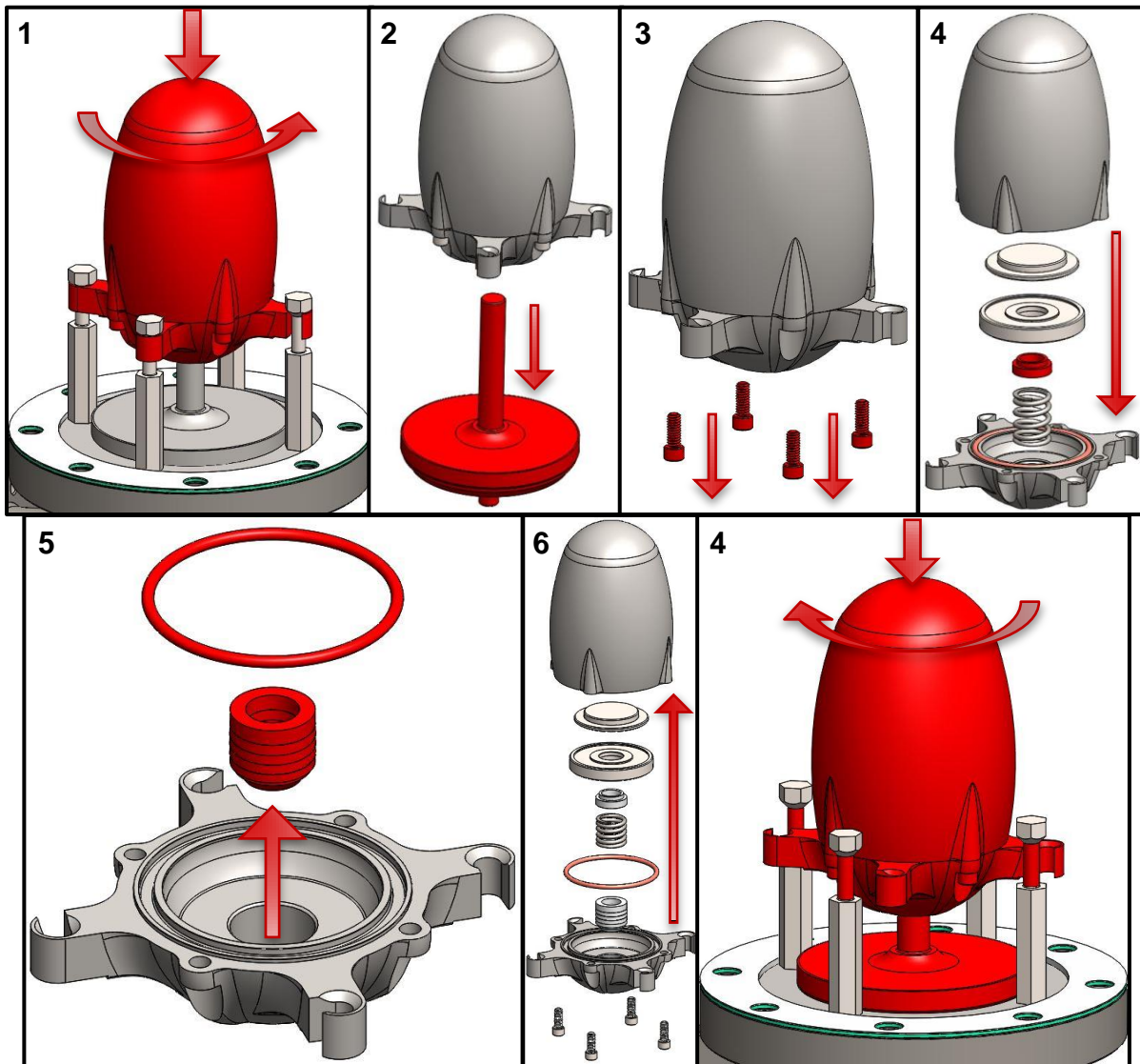
### To Replace the Poppet O-Ring (GQ85230)

- 1) Press down on the Spring Housing (GQ85300) and rotate counter-clockwise to release.
- 2) Gently pull the Poppet Assembly (GQ85200) from the Spring Housing (GQ85300).
- 3) Using a phillips head screwdriver, loosen and remove the 4 Flat Head Screws (GQ85235), then separate the Poppet Lower (GQ85220) from the Poppet Upper (GQ85210).
- 4) Remove the O-ring (GQ85230) from the Poppet Upper groove (GQ85210) and replace.
- 5) Wipe the mating faces of the Poppet Lower (GQ85220) and Poppet Upper (GQ85210) as well as the stem of the Poppet Upper with a clean rag before re-assembly.
- 6) Re-assembly the Poppet Assembly (GQ85200) and Spring Housing (GQ85300) by following steps 2-4 in reverse order and re-attach to the main assembly by aligning the Poppet between the Risers (GQ85040) and press down on the Spring Housing (GQ85300) and rotate clockwise until the Spring Housing hooks engage with the Risers.



## To Replace the Spring Housing Seals (GQ85300)

- 1) Press down on the Spring Housing (GQ85300) and rotate counter-clockwise to release.
- 2) Gently pull the Poppet Assembly (GQ85200) from the Spring Housing (GQ85300).
- 3) Using a 3/16" hex key, loosen and remove the 4 Socket Head Cap Screws (GQ85398) from the Spring Housing (GQ85300).
- 4) Carefully remove the Spring Housing Spider (GQ85320), Packing Seal Spring (GQ85380), Packing Seal Disc (GQ85330), and Poppet Spring Disc (GQ85340), and remove and replace the Poppet Bushing (GQ85385).
- 5) Remove and replace the O-Ring (GQ85395) and Packing Seal Set (GQ85370) in the Spring Housing Spider (GQ85320).
- 6) Re-assembly by following steps 2-5 in reverse order and re-attach to the main assembly by aligning the Poppet between the Risers (GQ85040) and press down on the Spring Housing (GQ85300) and rotate clockwise until the Spring Housing hooks engage with the Risers.



## 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. Tighten the four spring housing risers.
3. Tighten the four fasteners in the poppet assembly.
4. Install new poppet o-ring and/or gaskets.
5. If problem cannot be corrected, contact a Girard Equipment representative.

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

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

## Replacement Parts

### Replacement Parts for GQ85000

Seals: GQ85055 (TEF-O-SIL O-RING)  
Gaskets: GQ85035 (ENVELOPE GASKET),  
GQ85030 (TEFLON GASKET)  
Additional: GQ85020 (STAINLESS CAGE INSERT),  
GQ85040 (SPRING HOUSING RISERS)

### Replacement Parts for GQ85200 (POPPET ASSEMBLY)

Seals: GQ85230 (TEF-O-SIL O-RING)

### Replacement Parts for GQ85300 (SPRING HOUSING ASSEMBLY)

Seals: GQ85370 (PACKING SEAL SET W/ WIPER),  
GQ85395 (TEF-O-SIL O-RING)  
Bushings: GQ85385 (POPPET BUSHING)  
Additional: GQ85380 (PACKING SEAL SPRING),  
GQ85330 (PACKING SEAL DISC),  
GQ85340 (POPPET SPRING DISC)

### Replacement Parts for GQ85400 (HYDRAULIC ACTUATOR ASSEMBLY)

Seals: GQ85370 (PACKING SEAL SET W/ WIPER),  
GQ85442 (BACK-UP RING), GQ85444 (3/4 ROD SEAL),  
GQ85448 (5/8 ROD SEAL), GQ85452 (5/8 WIPER)  
Bushings: GQ85438 (ACTUATOR BUSHING),  
GQ85450 (PTFE BUSHING)  
Additional: GQ85380 (PACKING SEAL SPRING),  
GQ85440 (ACTUATOR SPRING),  
GQ85446 (RETAINING RING)

**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



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