



DOT 407 Pressure Relief Vent Owner's Manual GA00010 to GA60000



Spring-loaded, dual-acting pressure and vacuum reclosing pressure relief vent provides much needed protection from dangerous build-up of positive and negative forces on tank trailers transporting hazardous materials.

Patent Number 9,121,523

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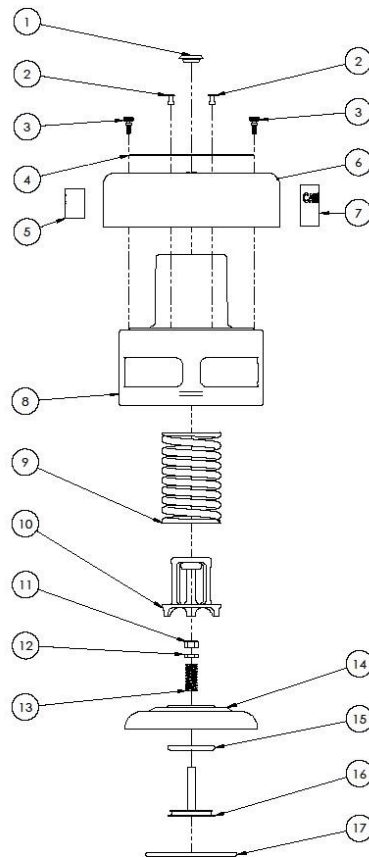
Technical Data

- 1) Patent Number 9,121,523
- 2) External spring design.
- 3) All pressure bearing components are constructed of corrosion resistant 316 stainless steel.
- 4) 3 or 4 inch connection styles include NPS female thread, NPS swivel, ANSI flange, or TTMA flange.
- 5) Weld-in connections include straight stub, miter, or low profile designed to weld directly to a dome cover.
- 6) Flanged mounts have a raised face designed with serrations in accordance with ASME B16.5 to ensure proper gasket seal for non-Teflon® lined models.
- 7) Tef-O-Sil (Teflon® encapsulated O-Ring) seals are compatible with all ladings for packing groups 1 & 2.
- 8) Flow data for various vent configurations can be found in the following table:

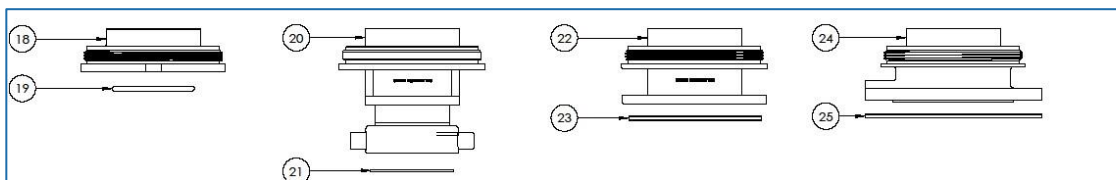
Vent Size & MAWP	Part No.	Test Pressure (psig)	Flow Rate (SCFH)	Sq. Ft.
3 in, 25 psi	GA00100	40	372,844	732
		45	408,485	860
3 in, 30 psi	GA01100	45	408,485	860
3 in, 35 psi	GA02100	52.5	460,443	1,061
4 in, 25 psi	GA00010	40	374,512	737
		45	431,308	946
4 in, 30 psi	GA01010	45	431,308	946
4 in, 35 psi	GA02010	52.5	484,718	1,156
3 in, 25 psi HIGH FLOW	GA76300	40	383,114	768
		45	418,367	897
3 in, 30 psi HIGH FLOW	TBD	45	418,367	897
4 in, 25 psi HIGH FLOW	GA76005	40	426,983	930
		45	466,115	1,083
4 in, 30 psi HIGH FLOW	TBD	45	466,115	1,083

Exploded View of Product

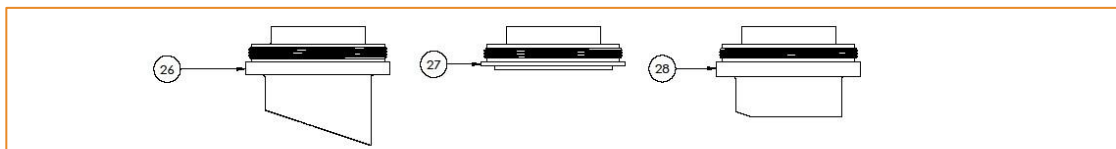
DOT 407 Combination Pressure/Vacuum Relief Vent



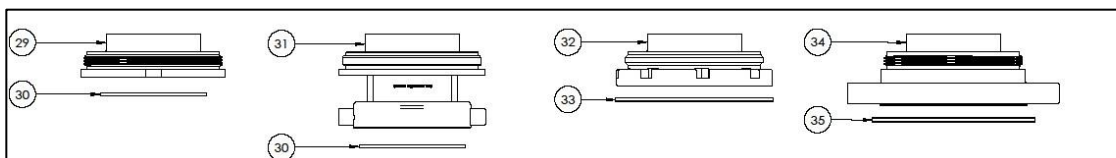
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GB19000	VENT, UPPER HOUSING HOLE PLUG	1
2	GB98030	RIVET	4
3	GB03020	RAIN COVER RETAINING SCREW	2
4	GB02054	407 VENT 4 INCH RATING DISC 25#	1
5	GO40100	NAMEPLATE, VENT, METAL	1
6	GB03010	VENT RAIN COVER	1
7	GO40130	GE CAUTION LABEL, SPRING, PEEL & STICK	1
8	GB04002	DOT407 COMBO LOW PROFILE UPPER HOUSING 25#	1
9	GB05200	25-30 PSI VENT PRESSURE SPRING	1
10	GB25000	VENT WITH VACUUM SPRING RETAINER	1
11	GR05010	M8 HEX LOCK NUT	1
12	GR05000	M8 HEX JAM NUT	1
13	GR06000	IM VACUUM SPRING	1
14	GB06060	VENT, POPPET, FOR VACUUM	1
15	GB07715	DOT407 TEF-O-SIL O-RING COMBO	1
16	GB09000	WV VACUUM POPPET	1
17	GB07000	VENT O-RING	1
18	GB18000	VENT 3" THREADED LOWER HOUSING	1
19	GM30010	3" TEFLOON O-RING GASKET	1
20	GB50005	VENT 407 3.0" SWVL HSG, SEMI	1
21	GM30050	SWIVEL GASKET	1
22	GB20000	VENT 3"TTMA FLANGED LOWER HOUSING	1
23	GM32100	3CFE 8-HOLE 3" GASKET ASSEMBLY	1
24	GB21000	VENT 3" ANSI FLANGED LOWER HOUSING	1
25	GM32150	3" ANSI FLANGE GASKET FULL FACE	1
26	GB13010	VENT LOW PROFILE MITER LOWER HOUSING	1
27	GB17000	PRESSURE VENT LOW PROFILE WELD-IN LOWER HOUSING	1
28	GB12010	VENT LOW PROFILE STUB END LOWER HOUSING	1
29	GB11010	VENT 4" THREADED LOW PROFILE LOWER HOUSING	1
30	GM40000	4TR GASKET TEFOSIL 4"	1
31	GB50000	VENT 407 4" SWIVEL HOUSING	1
32	GB14010	VENT 4" TTMA FLANGED LOWER HOUSING	1
33	GM42100	407 TTMA GASKET ASSEMBLY	1
34	GB15010	VENT 4" ANSI FLANGED LOWER HOUSING	1
35	GB16000	ANSI GASKET	1



3"



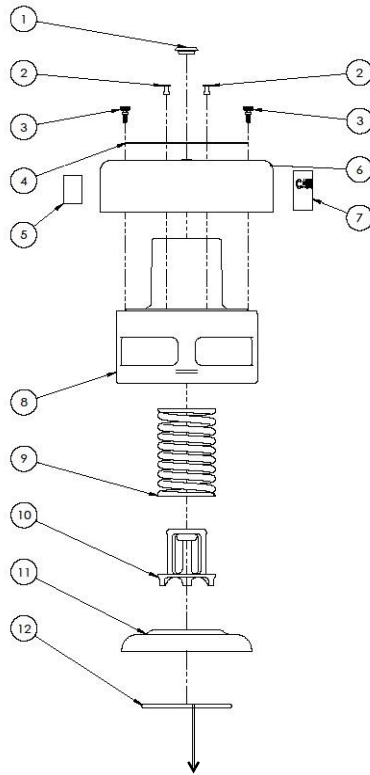
Weld-In



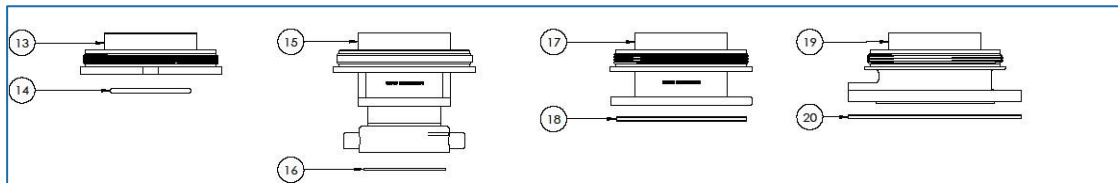
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Exploded View of Product

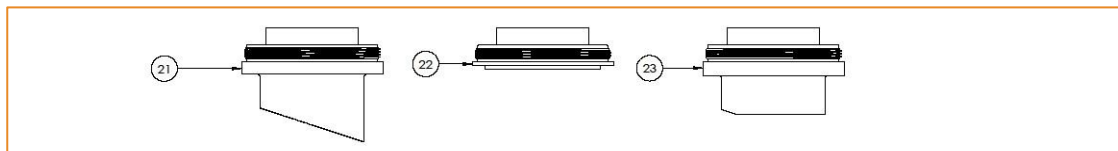
DOT 407 Pressure Relief Vent



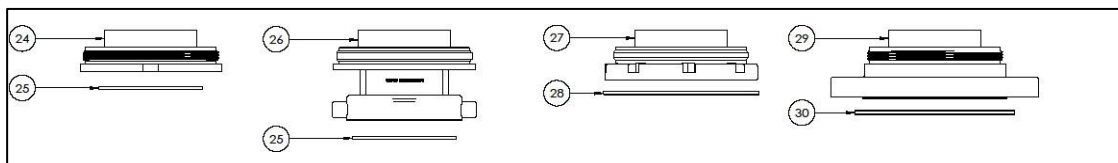
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GB19000	VENT, UPPER HOUSING HOLE PLUG	1
2	GB98030	RIVET	4
3	GB03020	RAIN COVER RETAINING SCREW	2
4	GB02054	407 VENT 4 INCH RATING DISC 25#	1
5	GO40100	NAMEPLATE, VENT, METAL	1
6	GB03010	VENT RAIN COVER	1
7	GO40130	GE CAUTION LABEL, SPRING, PEEL & STICK	1
8	GB04001	DOT407 VENT LOW PROFILE UPPER HOUSING 25#	1
9	GB05200	25-30 PSI VENT PRESSURE SPRING	1
10	GB25000	VENT WITH VACUUM SPRING RETAINER	1
11	GB06010	VENT, POPPET, LOW PROFILE	1
12	GB07000	VENT O-RING	1
13	GB18000	VENT 3" THREADED LOWER HOUSING	1
14	GM30010	3" TEFLON O-RING GASKET	1
15	GB50005	VENT 407 3.0" SWVL HSG, SEMI	1
16	GM30050	SWIVEL GASKET	1
17	GB20000	VENT 3"TTMA FLANGED LOWER HOUSING	1
18	GM32100	3CFE 8-HOLE 3" GASKET ASSEMBLY	1
19	GB21000	VENT 3" ANSI FLANGED LOWER HOUSING	1
20	GM32150	3" ANSI FLANGE GASKET FULL FACE	1
21	GB13010	VENT LOW PROFILE MITER LOWER HOUSING	1
22	GB17000	PRESSURE VENT LOW PROFILE WELD-IN LOWER HOUSING	1
23	GB12010	VENT LOW PROFILE STUB END LOWER HOUSING	1
24	GB11010	VENT 4" THREADED LOW PROFILE LOWER HOUSING	1
25	GM40000	4TR GASKET TEFOFIL 4"	1
26	GB50000	VENT 407 4" SWIVEL HOUSING	1
27	GB14010	VENT 4" TTMA FLANGED LOWER HOUSING	1
28	GM42100	407 TTMA GASKET ASSEMBLY	1
29	GB15010	VENT 4" ANSI FLANGED LOWER HOUSING	1
30	GB16000	ANSI GASKET	1



3"



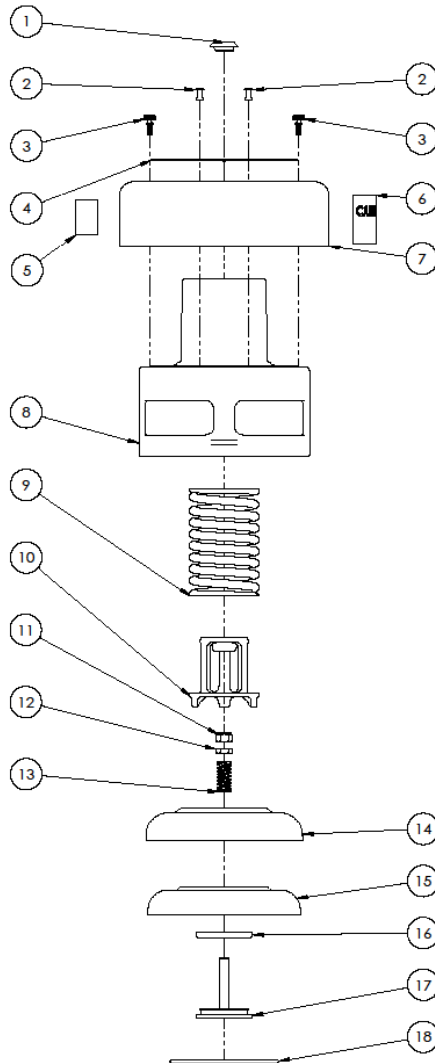
Weld-In



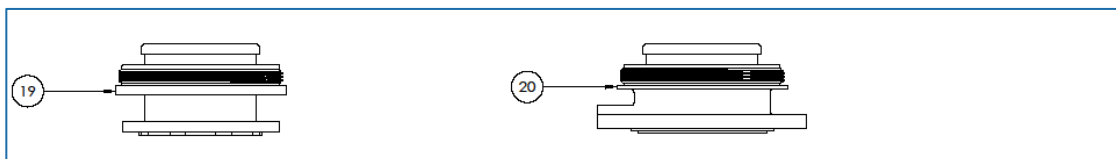
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Exploded View of Product

DOT 407 GEILINER® Combo Pressure/Vacuum Relief Vent



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GB19000	VENT, UPPER HOUSING HOLE PLUG	1
2	GB98030	RIVET	4
3	GB03020	RAIN COVER RETAINING SCREW	2
4	GB02054	407 VENT 4 INCH RATING DISC 25#	1
5	GO40100	NAMEPLATE, VENT, METAL	1
6	GO40130	GE CAUTION LABEL, SPRING, PEEL & STICK	1
7	GB03010	VENT RAIN COVER	1
8	GB04004	DOT407 GEILINER COMBO UPPER HOUSING 25#	1
9	GB05200	25-30 PSI VENT PRESSURE SPRING	1
10	GB25000	VENT WITH VACUUM SPRING RETAINER	1
11	GR05010	M8 HEX LOCK NUT	1
12	GR05000	M8 HEX JAM NUT	1
13	GR06000	IM VACUUM SPRING	1
14	GB06037	GEILINER POPPET FOR VACUUM COMBO	1
15	GB08010	TEFLON SEAT WITH VACUUM	1
16	GB07710	DOT407 VITON XTREME O-RING COMBO	1
17	GB09001	VACUUM POPPET ASSY, LINED	1
18	GB07000	VENT O-RING	1
19	GB20005	VENT 3" TTMA LINED FLANGED LOWER HOUSING	1
20	GB21010	DOT407 3" ANSI LINED LOWER HOUSING	1
21	GB14020	GEILINER ASSEMBLY 4" TTMA LOWER HOUSING	1
22	GB15030	4" ANSI LINED LOWER HOUSING	1

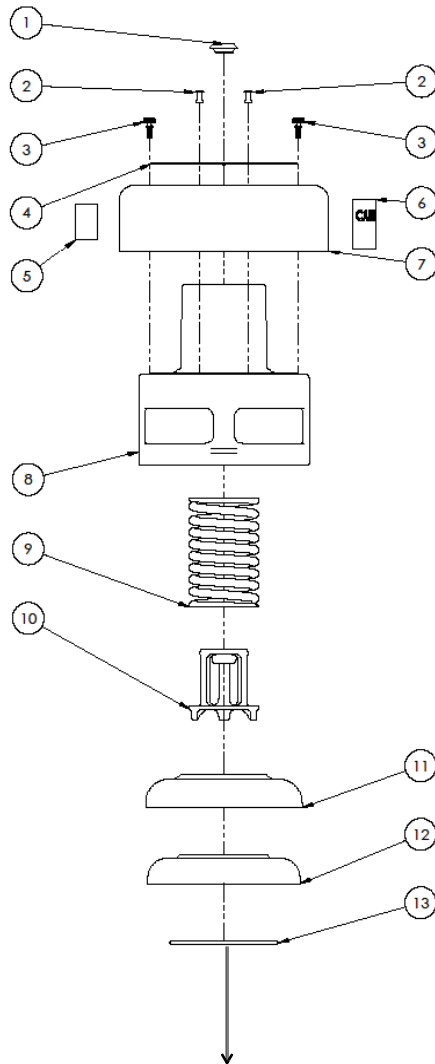


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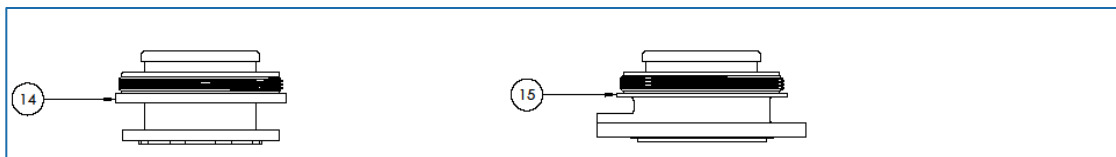
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Exploded View of Product

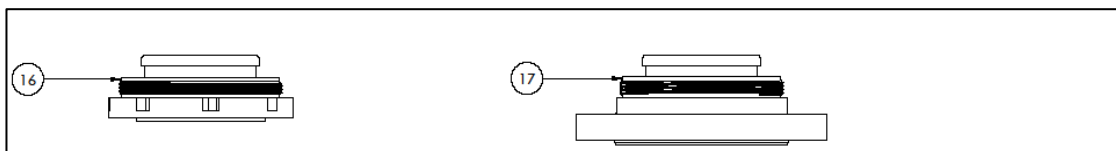
DOT 407 GEILINER® Pressure Relief Vent



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	GB19000	VENT, UPPER HOUSING HOLE PLUG	1
2	GB98030	RIVET	4
3	GB03020	RAIN COVER RETAINING SCREW	2
4	GB02054	407 VENT 4 INCH RATING DISC 25#	1
5	GO40100	NAMEPLATE, VENT, METAL	1
6	GO40130	GE CAUTION LABEL, SPRING, PEEL & STICK	1
7	GB03010	VENT RAIN COVER	1
8	GB04003	DOT407 GEILINER UPPER HOUSING 25#	1
9	GB05200	25-30 PSI VENT PRESSURE SPRING	1
10	GB25000	VENT WITH VACUUM SPRING RETAINER	1
11	GB06030	VENT POPPET FOR GEILINER	1
12	GB08005	TEFLON SEAT, GEILINER WITH O-RING GROOVE	1
13	GB07000	VENT O-RING	1
14	GB20005	VENT 3" TTMA LINED FLANGED LOWER HOUSING	1
15	GB21010	DOT407 3" ANSI LINED LOWER HOUSING	1
16	GB14020	GEILINER ASSEMBLY 4" TTMA LOWER HOUSING	1
17	GB15030	4" ANSI LINED LOWER HOUSING	1



3"



4"

Safety

General Safety Information



WARNING: This device is under extreme high pressure that could cause serious injury or death. 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 upright and 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

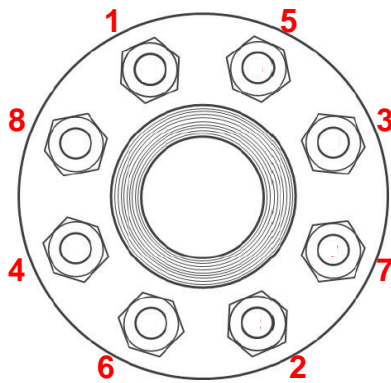
Follow OSHA practices for lifting of heavy objects.

Disposal Requirements

Due to spring pressure, authorized personnel must disassemble the device before disposal. Use extreme caution. If authorized personnel are not present, please contact Girard Equipment.

Installation Instructions

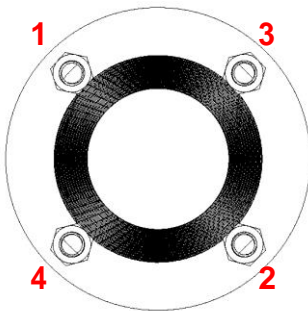
- 1) Remove valve from packaging.
- 2) Insert new, clean gasket.
- 3) Align the valve with the tank mount.
- 4) Girard Equipment recommends using new, lubricated with light-weight oil, 316 stainless steel studs and nuts to bolt device to tank car.



3" and 4" TTMA Flange (3/8" – 16 Bolt)

Torque Value: **20** Ft-Lbs of torque \pm 10%.

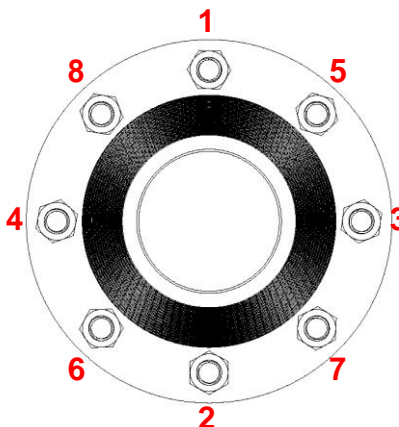
Note: This is a guideline; customer needs to perform their own torque study. ASME studs require higher torque.



3" ANSI Flange (5/8" – 11 Bolt)

Torque Value: **80** Ft-Lbs of torque \pm 10%.

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



4" ANSI Flange (5/8" – 11 Bolt)

Torque Value: **80** Ft-Lbs of torque \pm 10%.

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

Operation Instructions

No instructions are needed during the operation. This safety relief valve opens and reseats automatically.

Maintenance Instructions



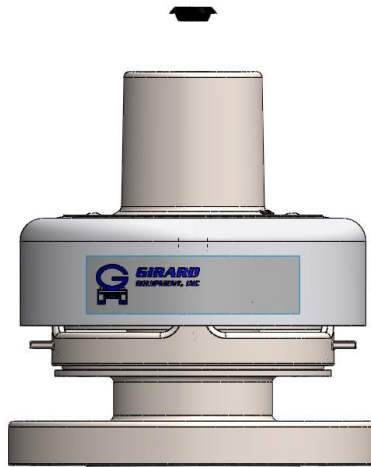
WARNING: This device is under extreme high pressure that could cause serious injury or death. Do not attempt to disassemble this device unless you have been properly trained by a Girard Equipment representative. Follow all installation, maintenance, and repair instructions to avoid injury.

O-Ring and Gasket Maintenance

All soft goods should be replaced during regular maintenance and requalification, or if device fails an in-service STD (Start to Discharge) pressure test.

To replace O-Ring:

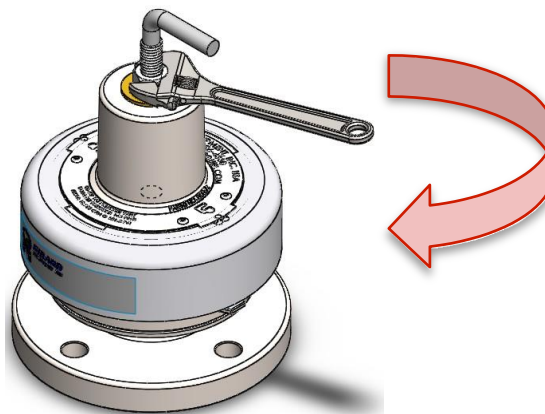
- 1) Remove GB19000 plug.



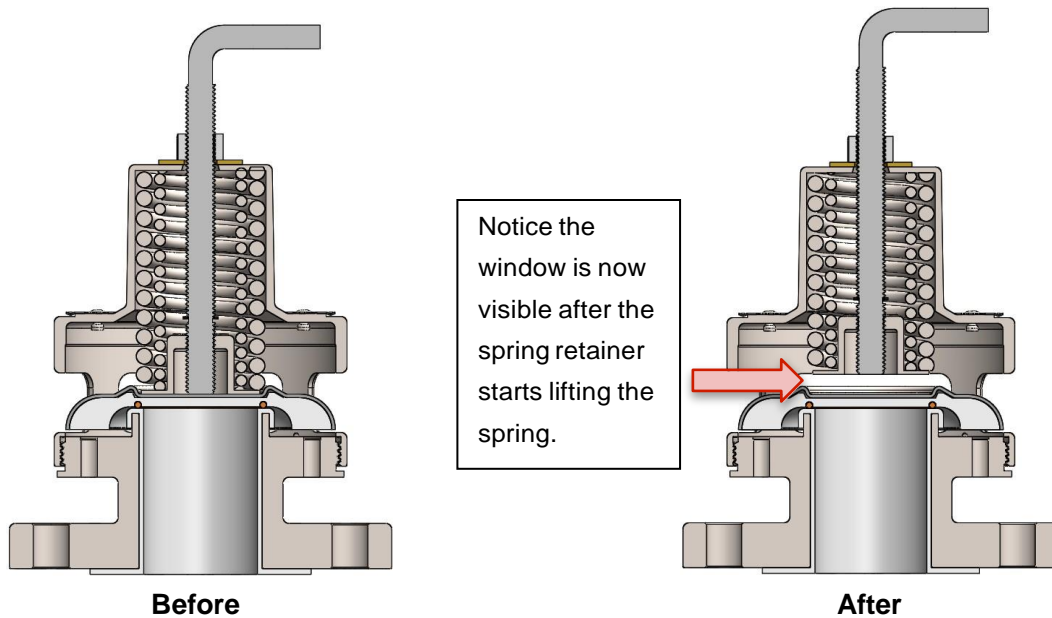
- 2) Insert GB45000 Girard disassembly t-wrench into the spring retainer through plug hole.



- 3) Ensure male thread on tool is fully engaged into spring retainer. The tool should bottom out to the pressure poppet or stop rotating in place. Tighten GB06040 lifting nut by rotating clockwise with a wrench.



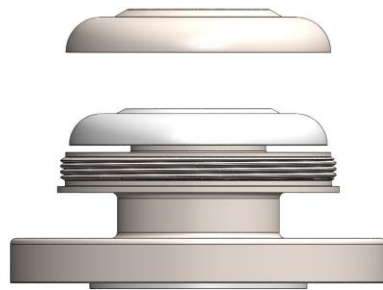
- 4) After a few turns, the GB45000 t-wrench should start to raise the spring retainer and spring.



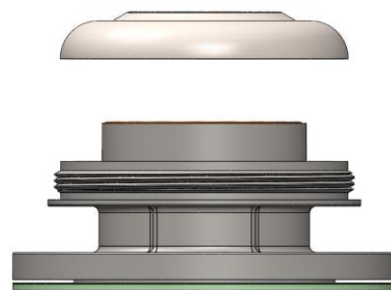
- 5) With the GB45000 t-wrench in place, begin unscrewing the upper housing from the lower housing. After a few turns, the upper housing will detach.



- 6) Remove the poppet.

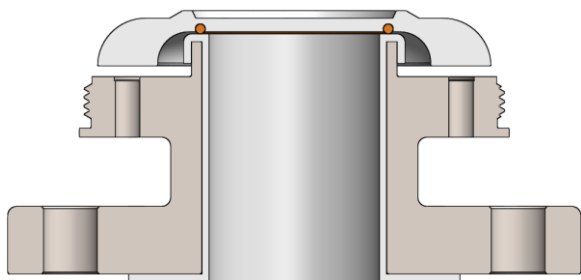


Lined Lower Housing



Unlined Lower Housing

- 7) Replace the O-Ring. The O-Ring will be located in either the Teflon® poppet for lined DOT 407 vents or on the lower housing for unlined coated or uncoated vents.



Lined Lower Housing



Unlined Lower Housing

- 8) Re-assemble following steps 1-7 in reverse order. Note: The upper housing should be screwed all the way down.

Test Instructions

Refer to test instructions in Title 49 of the Code of Federal Regulations 180.407 and/or applicable requirements.

We recommend using the Girard Equipment Test Box for testing and verification of the DOT 407 pressure relief device.



Troubleshooting & Repair

If device fails STD (Start to Discharge) test:

1. Replace O-Ring as shown in the Maintenance Instructions section, Step 1-8.
2. Clean ceiling of poppet with Scotch-Brite™ pad.

If device fails vacuum set pressure test:

1. Tighten or loosen the vacuum spring to reach desired pressure setting.

If device fails to reseal:

1. Clean ceiling of poppet with Scotch-Brite™ pad.

If device doesn't seal properly:

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

Replacement Parts

O-Rings:

FFKM	TEF-O-SIL	KALREZ 1045	BUNA-N	VITON	VITON-GFTL	VITON EXTREME	VITON (SILICON FREE)
GB07500	GB07000	GB07510	GB07005	GB07010	GB07025	GB07020	GB07035

Gaskets:

Teflon® Envelope	GM32100, GM32150, GB16000, GM42100
O-Ring Gasket	GB30010
Ring Gasket	GM40000, GM30030

*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 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

GIRARD
EQUIPMENT, INC.

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Vero Beach, FL 32960
(908) 862-6300

www.GirardEquip.com

