



407 Series Stainless Steel Railcar Pressure Relief Vent

Disassembly and Repair Instructions: 407 Railcar Pressure Relief Vent

Revised 05/17/2011

Purpose:

The purpose of this manual is to describe the disassembly procedure for the 407 Railcar Vent.

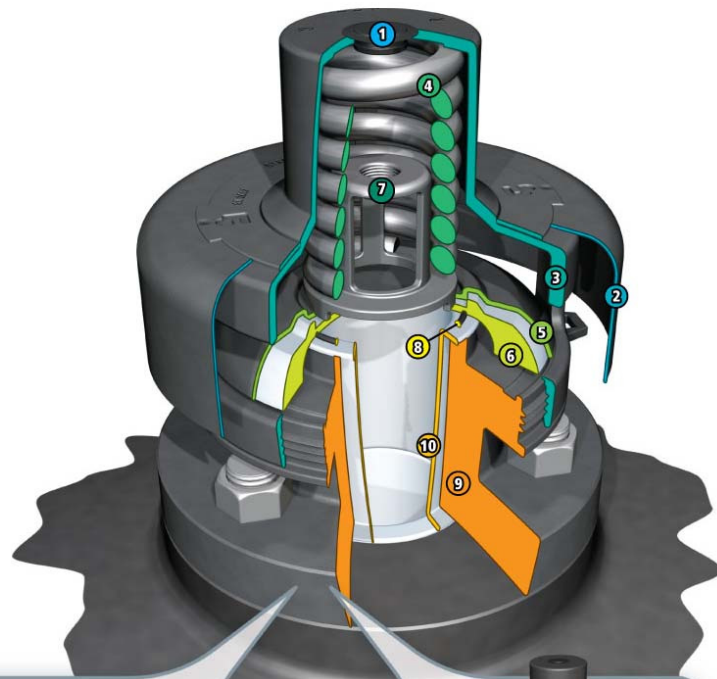
Responsibilities:

It is the responsibility of all persons performing the disassembly of the 407 Railcar Vent to read and understand this procedure before starting any work.

Precaution is needed when working with aggressive chemicals or products which may cause personal injury. It is highly recommended to employ the use of safety equipment including safety glasses, protective clothing, chemically resistant gloves, etc.

Equipment:

- GE - T Wrench
- 15/16" Wrench
- Small Flat head screwdriver
- Oring Pick



Item	Part	Name	Material
1	402019	Plug	Plastic
2	402003-TC	Rain Cover	Stainless Steel
3	402004-TC	Upper Housing	Stainless Steel
4	402005-TC	Spring	Stainless Steel
5	402006-TC	Poppet	Stainless Steel
6	GB04720	Seat	Teflon®
7	GB25010-TC	Spring Retainer	Stainless Steel
8	402007	"O" Ring	Teflon® Silicone
9	402021-TC	Lower Housing	Stainless Steel
10	GB04710	Lower Housing Liner	Teflon®

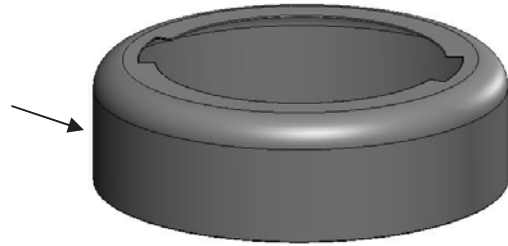
"-TC" designates Teflon spray-coated component.



407 Series Stainless Steel Railcar Pressure Relief Vent

Vent Disassembly

RAIN COVER

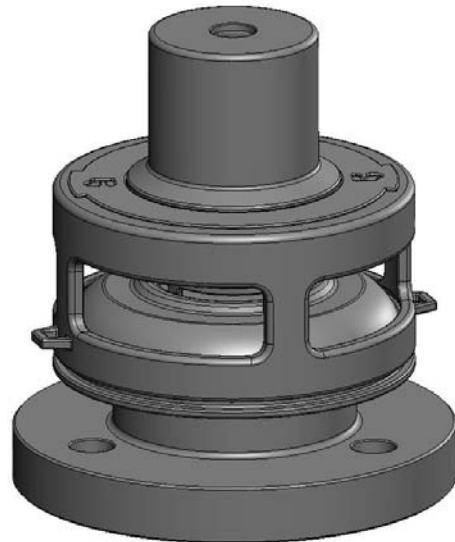


1. Rotate the 402003-TC Rain Cover until the slots in the cover align with the tabs on the 402004-TC Upper Housing. Lift and remove the Rain Cover.

PLUG



2. Pry and remove the 401019 Plastic Plug with a flat-head screwdriver or similar tool exposing a hole in the top of the 402004-TC Upper Housing. Use care not to damage the Plastic Plug with sharp tools.



407 Series Stainless Steel Railcar Pressure Relief Vent

Vent Disassembly

SPRING COMPRESSION TOOL

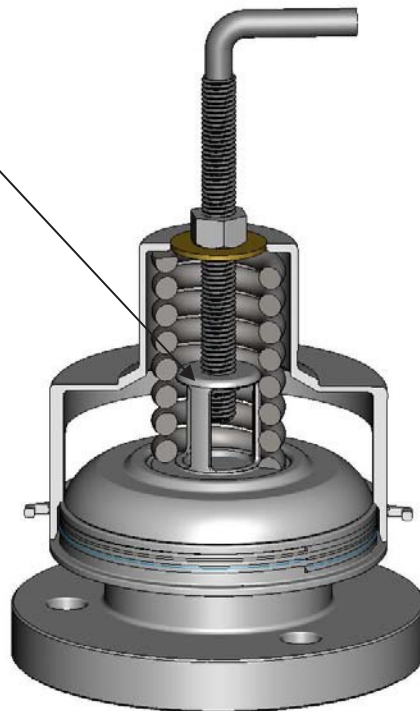
3. Insert Spring Compression Tool into the hole in the 402004-TC Upper Housing and engage threads of the GB25010-TC Spring Retainer inside the Upper Housing.



SPRING RETAINER

4. Thread the Spring Compression Tool down until it bottoms, then back it out 5 turns. This insures the Compression Tool is completely engaged with the Spring Retainer but not putting force on the poppet.

Note: Upper Housing and Spring and shown cut away to allow an internal view of the correct Tool & Spring Retainer engagement



407 Series Stainless Steel Railcar Pressure Relief Vent Vent Disassembly

SPRING COMPRESSION TOOL

5. Thread the nut on the Spring Compression Tool down while holding the tool handle still until the spring is fully compressed.

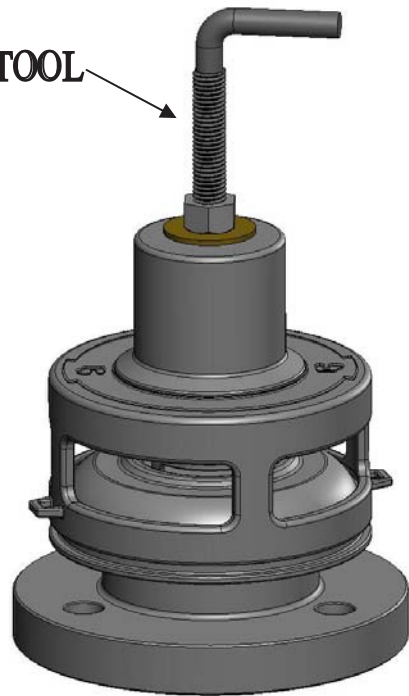
6. Unthread the 402004-TC Upper Housing from the 402021-TC Lower Housing. Lift and remove the Upper Housing including the 402005-TC Spring, GB25010-TC Spring Retainer, and Spring Compression Tool together as one unit. Set these parts in a safe place until reinstallation.
7. A thorough inspection of the Upper Housing, 402005-TC Spring and GB25010-TC Spring Retainer must be performed to ensure component integrity.

CAUTION:

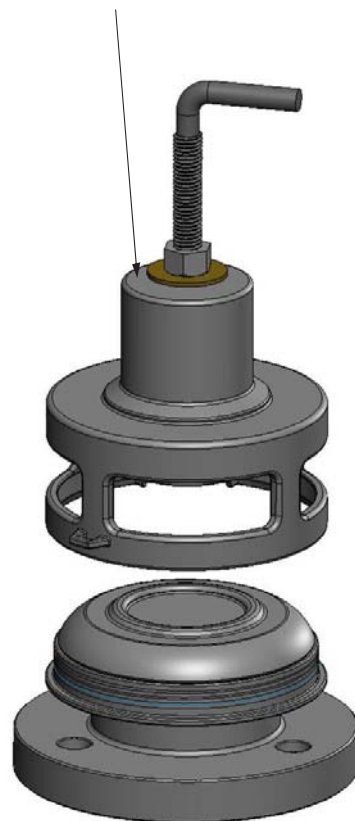
When Unthreading the Compression tool to inspect the spring care should be taken to remove all tension from the spring before removing the tool. Slowly unthread the compression tool to release the valve spring for inspection.

Visual Spring Inspection

8. Visually inspect the spring for any cracks, pitting, corrosion or other surface damage. Questionable indications must have an additional nondestructive examination performed using a more sensitive method to clarify or to further evaluate defect severity. The inspection must be performed by qualified personnel and documented accordingly.
9. If any surface damage is observed, the spring must be replaced.



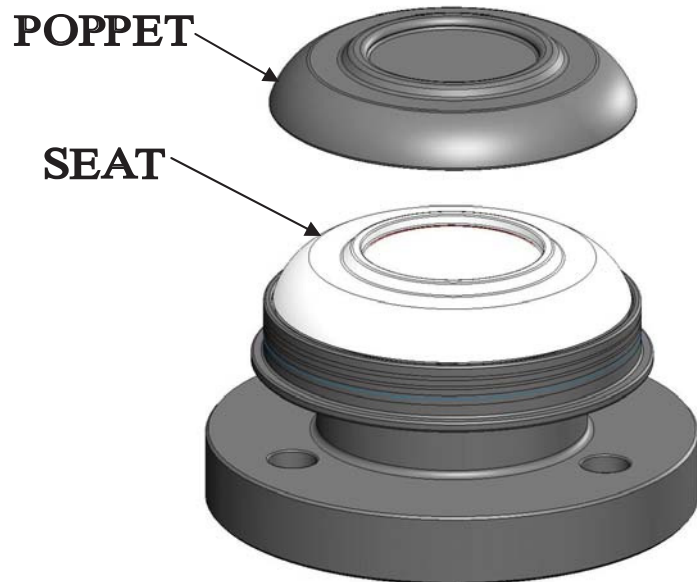
UPPER HOUSING



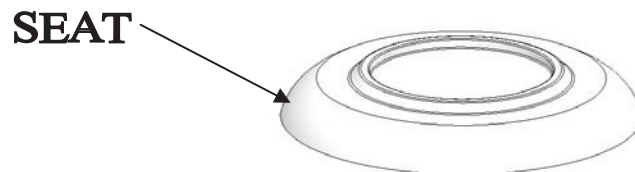
407 Series Stainless Steel Railcar Pressure Relief Vent

Vent Disassembly

7. Lift off the 402006-TC Poppet.

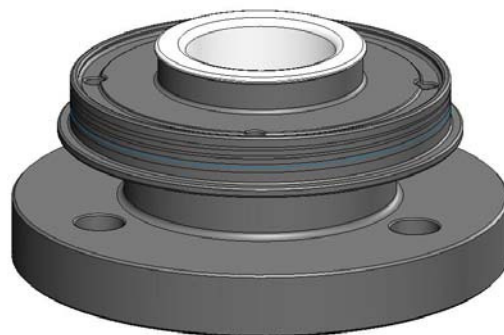


8. Lift off the 402008 Teflon Seat.



Note that the 402007 O-ring will remain attached to the mating groove in the bottom of the Teflon Seat.

Inspect the 402008 Teflon Seat for damage or wear and replace if necessary.

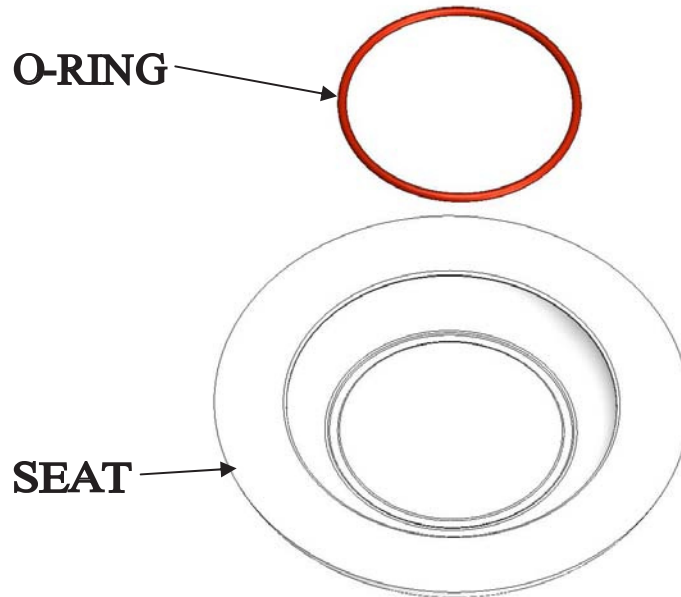


407 Series Stainless Steel Railcar Pressure Relief Vent

Vent Disassembly

9. Replace the 402007 O-Ring.

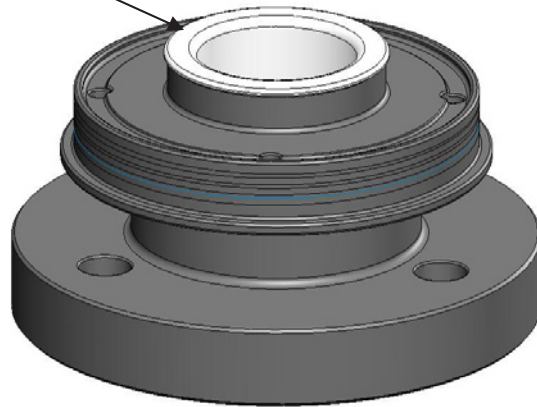
Note: Removal of the 402007 O-Ring from the 402008-TC Seat will damage the O-Ring thus requiring replacement.



LOWER HOUSING LINER

10. The 402021-TC Lower Housing Liner is not a user removable item. Inspect this item for damage or wear before beginning reassembly of the vent. Check condition of threads and original fit with upper housing.

Please contact your Girard Equipment Representative for information regarding replacement of the liner.

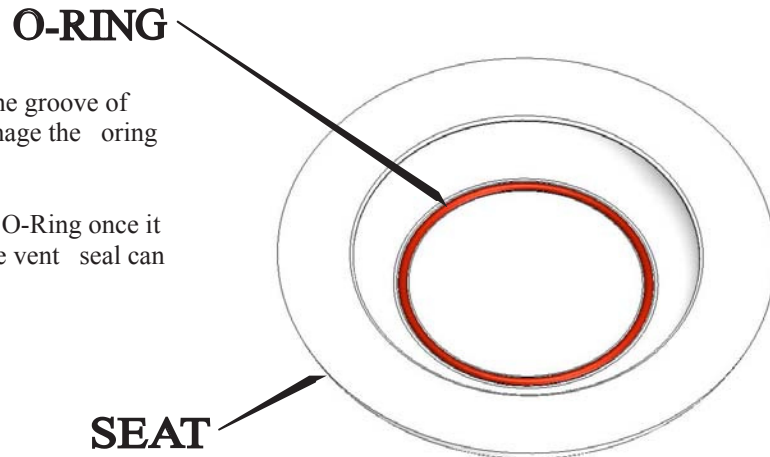


407 Series Stainless Steel Railcar Pressure Relief Vent

Vent Reassembly

11. Seat a new 402007 O-Ring into the groove of 402008-TC Seat. Use care to not damage the O-ring in the process of installation.

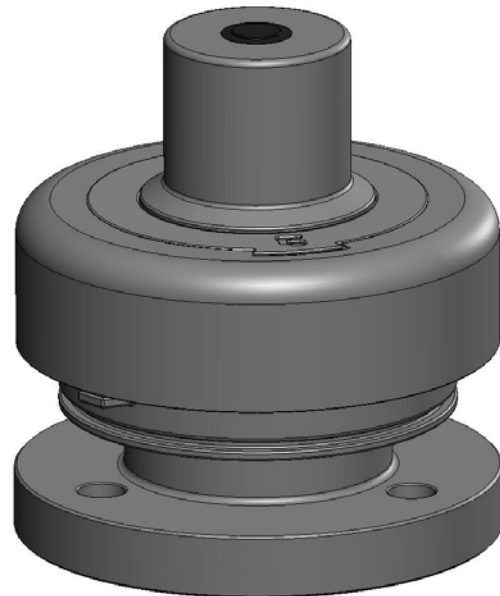
Note: Do not reinstall a used 402007 O-Ring once it has been removed from the Seat or the vent seal can be compromised.



The remainder of the 407 Railcar Vent assembly is the exact reverse of the disassembly process shown in this manual. Reinstall in this order:

- 1 Seat with O-ring
- 2 Poppet
- 3 Upper Housing with Spring Retainer and Spring
- 4 Unthread the Spring Compression Tool nut
- 5 Remove the Spring Compression Tool
- 6 Press in the Plastic Plug
- 7 Re-attach the Rain Cover
- 8 To reset the valve to the proper start to discharge pressure, thread the complete assembly together. The setting are achieved by threading the upper housing (402004-TC) completely down until it bottoms out against the lower housing (40201-TC)

Test the valve per the manufacturers guidelines. The valve should open in the specified start to discharge range (160.5 to 169.5 PSI) and be vapor tight at 132 PSI. If the valve is opening higher than 169.5 PSI bleed, bleed pressure down. There is a fine tune adjustment. Turn the upper housing 1/8 turn counter clockwise and retest. Repeat as needed.



GIRARD EQUIPMENT, INC.

D.O.T. REGISTERED TANK COMPONENT MANUFACTURER REG. NO CT-0035.

4360 Old Dixie Highway, Vero Beach, FL 32967

800-526-4330 • 908-862-6300 • FAX 908-862-8178 • www.girardequip.com •

RR407 Pressure Relief Vent Valve Testing Procedures

NOTE: WHEN TESTING FOLLOW ALL OF YOUR COMPANIES SAFETY REGULATIONS

1. Inspect the valve per the manufacturer's guidelines and replace unusable parts. Repair work shall be limited per MSRP-CIII, Appendix A paragraph 4.11
2. Carefully clean the gasket mating surfaces and inspect them for cuts, cracks, corrosion, warping, or other damage. Contact the car owner or lessee for corrective action if defect exists.
3. Inspect the valve for product damage and for missing, bent, or broken parts.
4. Elastomeric material used for gaskets or gasket seals must be replaced.
5. Reassemble per manufacturer's guidelines. Avoid introducing foreign matter to the valve interior.
6. Install the valve to the test rack using a suitable full face gasket.
7. Slowly open the air input valve. The pressure increase should be about 1 psi per second.
8. Note the pressure at which the pressure relief valve is set to discharge. Monitor the increasing pressure on the gauge. When the pressure stops increasing, record the value on the gauge. This is the **Start To Discharge Pressure** .
9. Reduce the pressure slowly and note the pressure. When the pressure stops decreasing, record the value on the gauge. This is the **Vapor Tight Pressure** .

10. If the valve does not function within prescribed pressure ranges as defined in the table below, the cause shall be determined and corrected and the valve retested.

Start To Discharge Pressure +/- 3%

Pressure Setting 165 psi

Vapor Tight Pressure

132 psi Minimum

Start To Discharge Pressure +/- 3 psi

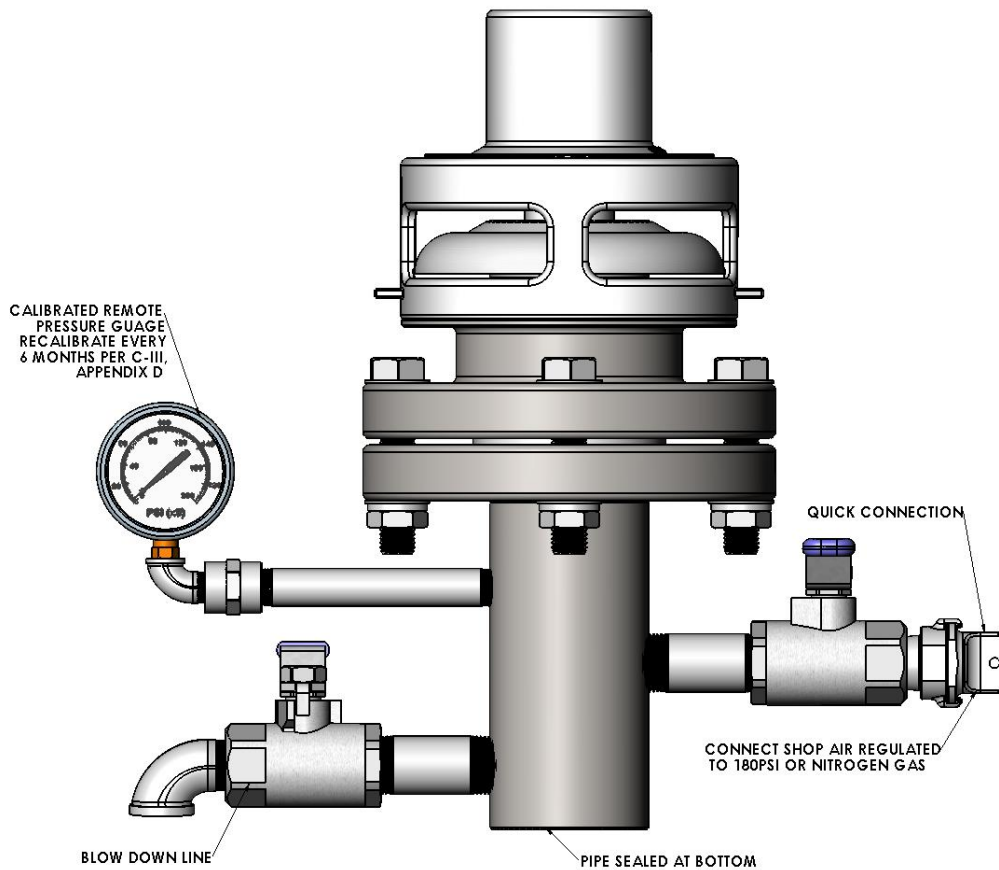
Pressure Setting 75 psi

60psi Minimum

Start To Discharge Pressure – The pressure in which the vent will open to relieve pressure.

Vapor Tight Pressure - The pressure in which the vent will close. Minimum 80% of start to discharge pressure .

9. Spark Test the valve PTFE liner and poppet at a setting of 35,000 volts at multiple locations.
10. Prepare documentation as required by DOT and send to car owner.



Example of a Test Stand

Any Questions Regarding Testing Procedures Please call our office or send your inquiry via email to:

Tgirard@girardequip.com Engineering@girardequip.com gsales@girardequip.com
Dgirard@girardequip.com

Website :

www.girardequip.com

GIRARD EQUIPMENT, INC.

D.O.T. REGISTERED TANK COMPONENT MANUFACTURER REG. NO CT-0035.

4360 Old Dixie Highway, Vero Beach, FL 32967

800-526-4330 • 908-862-6300 • FAX 908-862-8178 • www.girardequip.com •