



**ME983-VRK
RAILCAR ESV
VALVE REPAIR KIT**

!!!WARNING!!!

**READ AND UNDERSTAND ALL INSTRUCTIONS INCLUDED WITH THIS REPAIR KIT
RELIEVE ALL PRESSURE FROM SYSTEM BEFORE REMOVING VALVE FOR SERVICE**

NOTE: Numbers in brackets [] refer to the number in the valve component list.

!WARNING!

Relieve all pressure from system before removing valve for service, and before any disassembly or repair.

Read and understand all instructions included with the repair kit, prior to starting any repairs.

!GENERAL WARNING!

Marshall Excelsior products are mechanical devices that are subject to wear, contaminants, corrosion, and aging of components made of materials such as rubber and metal. Over time these devices will eventually become inoperative. The safe service life of these products will reflect the environment and conditions of use that they are subjected to. Regular inspection and maintenance is essential. Marshall Excelsior products have a long record of quality and service, so LP-Gas dealers may forget hazards that can arise from using aging devices that have outlived their safe service life.

A. Disassembly of ME983 Railcar ESV

1. Remove (8) Bonnet Screws [3] from Bonnet Adapter [2] and discard.
2. Remove Bonnet Adapter [2] from Body [1] and retain. Remove (3) Set Screws [4] from Bonnet Adapter and discard.
3. Remove Stem Bushing Retainer [5], Rulon Stem Bearing [6], and Bonnet O-Ring [7] from Bonnet Adapter [2]. Retain Stem Bushing Retainer, discard Rulon Bearing and Bonnet O-ring
4. Remove Graphite Bonnet Seal [8] from Body [1] and discard.
5. Remove and discard Ex-Flow Spring Guide [9], Closing Spring [10] and Closing Spring Washer [11] from Stem Assembly [12].
6. Remove Stem Assembly [12] from Body [1].
7. Remove and discard Lock Nut [12b], Bleed Disc [12c], and Valve Poppet Assembly [12d] from Stem [12a].

8. Remove Excess Flow Spring or Spacer [12e] from Stem [12a]. Retain Spring or Spacer unless a new Excess Flow Spring was purchased. If so, discard the old component.
9. Discard Spring Seat [12f], Stem [12a] and Stem O-ring [12g]
10. Remove and discard Piston Retainer [13], Valve Piston Gasket [14], Piston Retainer O-Ring [15], and Piston [16] from Body [1].
11. Remove and discard Quick Connect [17], Screen [18], NPT Plug [19], Breather Vent [20], and Eutectic Plug [21] from Body [1].
12. Remove and discard Nameplate [22] and Drive Screws [23] from body [1].
13. Inspect Body [1] and Bonnet Adapter [2] and clean if necessary, be sure interior is free of dirt, residue, and foreign particles.

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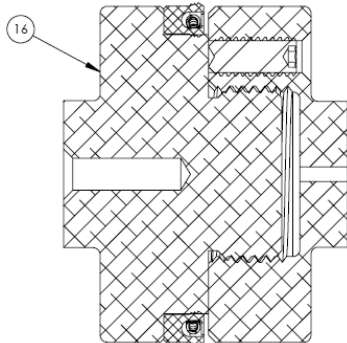
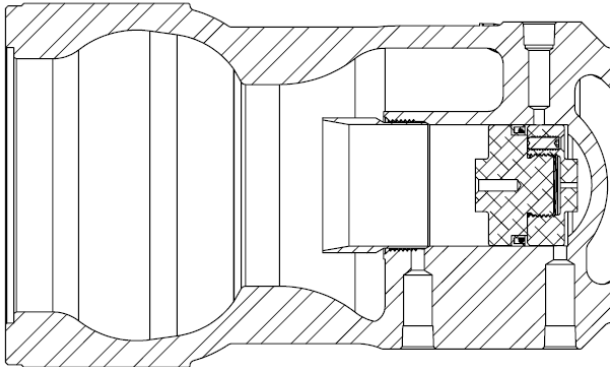
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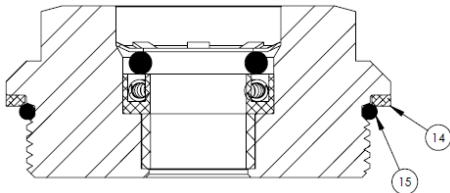
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B. Reassembly

1. Apply Lubriplate or equivalent grease to Piston Assembly [16] and install into Body [1] as shown using Installation Tool [24]. Discard Installation Tool after use.

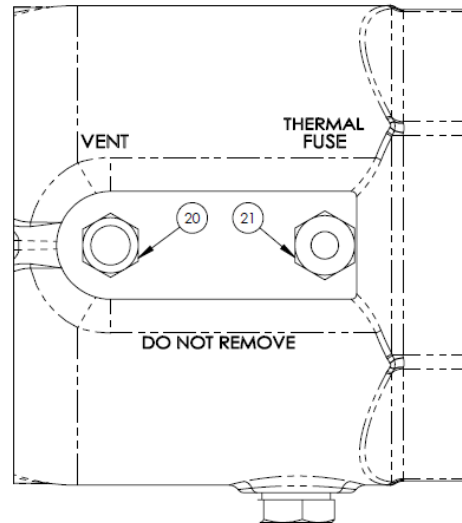


2. Apply Lubriplate or equivalent grease to Outer O-ring [15]. Install Valve Piston Gasket [14] and Outer O-Ring onto Piston Retainer [13].



3. Apply Loctite #271 (Red) or equivalent thread locker to Piston Retainer Assembly [13] and install into Body [1].
4. Install Spring Seat [12f] onto Stem [12a] oriented as shown.
5. Apply Lubriplate or equivalent grease to Stem O-ring [12g] and install onto Stem [12a].
6. Install Excess Flow Spring [12e], Valve Poppet Assembly [12d], and Bleed Disc [12c] onto Stem [12a].
7. Install Lock Nut [12b] onto Stem [12a] and tighten securely.
8. Install Stem Assembly [12] into Body [1].
9. Install Closing Spring Washer [11], Closing Spring [10], and Ex-Flow Spring Guide [9] onto Stem Assembly [12].

10. Install Graphite Bonnet Seal [8] into Body [1].
11. Apply Lubriplate or equivalent grease to Bonnet O-Ring [7] and install onto Bonnet Adapter [2].
12. Install Rulon Stem Bearing [6] and Stem Bushing Retainer [5] into Bonnet Adapter [2].
13. Apply Loctite #242 (Blue) or equivalent thread locker to (8) threaded holes of Body [1]. Install Bonnet Adapter [2] onto Body. Install (8) Bonnet Screws [3] through Bonnet Adapter into Body.
14. Install (3) Set Screws [4] into Bonnet Adapter [2] until cup end is flush with inside diameter of Bonnet Adapter.
15. Apply Loctite #565 (White) or equivalent thread seal to Quick Connect [17]; install Screen [18] into Body [1], and install Quick Connect to retain.
16. Apply Loctite #565 (White) or equivalent thread seal to NPT Plug [19] and install into body [1].
17. Apply Loctite #565 (White) or equivalent thread seal to Breather Vent [20] and Eutectic Plug [21]; install into Body [1] as shown.



18. Install Nameplate [22] onto Body [1] with (2) Drive Screws [23].

After reassembly, connect the ESV outlet to a pressure source of at least 150 psi. Check for leaks at all assembly joints using a suitable leak detector solution such as "Marshall Excelsior" leak detector.

!CAUTION!

If any joint or seal continues to leak after reassembly, do not continue to use the valve.

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Item Number	Description	Qty	Included in Repair Kit
1	Body	1	No
2	Bonnet Adapter	1	No
3	Bonnet Screw	8	Yes
4	Set Screw	3	Yes
5	Stem Bushing Retainer	1	No
6	Rulon Stem Bearing	1	Yes
7	Bonnet O-ring	1	Yes
8	Graphite Bonnet Seal	1	Yes
9	Ex-flow Spring Guide	1	Yes
10	Closing Spring	1	Yes
11	Closing Spring Washer	1	Yes
12	Stem Assembly		
12a	Stem	1	Yes
12b	Lock Nut	1	Yes
12c	Bleed Disc	1	Yes
12d	Valve Poppet	1	Yes
12e	Excess Flow Spring or Spacer	1	No
12f	Spring Seat	1	Yes
12g	Stem O-ring	1	Yes
13	Piston Retainer	1	Yes
14	Valve Piston Gasket	1	Yes
15	Piston Retainer O-ring	1	Yes
16	Piston	1	Yes
17	Quick Connect	1	Yes
18	Screen	1	Yes
19	1/4" NPT Plug	1	Yes
20	Breather Vent	1	Yes
21	Eutectic Plug	1	Yes
22	Nameplate	1	Yes
23	Nameplate Drive Screw	2	Yes
24	Installation Tool	1	Yes

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