

Clif Mock

PEV-3C ***Pressure Equalizing Valve***

User Manual

Manual No. 99104500135, Rev. B

Table of Contents

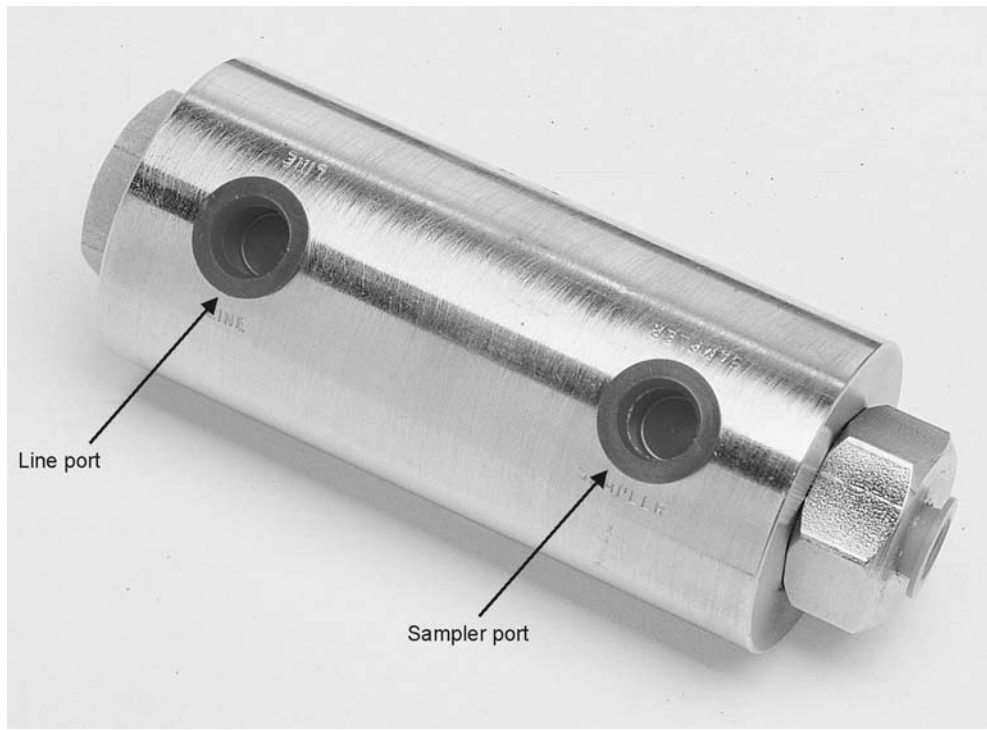
Nomenclature	1
Description	1
Installation	1
Maintenance.....	2
Service Tools.....	3
Disassembling the PEV	3
Piston Assembly Maintenance.....	3
End Cap Maintenance	4
PEV Reassembly.....	5
Bill of Materials	6

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Nomenclature



Description

The PEV-3C Pressure Equalizer Valve is designed to reduce differential pressure across the valve seats of True-Cut C Series Samplers. Differential pressure reductions will range from 5 psi at 50-psi line pressure to approximately 300 psi at 1500-psi line pressure.

Installation

Install the PEV-3C equalizer valve as follows:

1. Locate the PEV equalizer valve as close to the sampler as possible.
2. Connect the sampler discharge port to the PEV port marked "SAMPLER" with a minimum length of tubing.
3. Connect the PEV port marked "LINE" to the shut-off valve on the pipeline.
4. Connect the 1/8-in. pipe outlet fitting at the end of the PEV to the sample receptacle.
5. Start the sampler and allow it to run 5 to 10 samples; then, open the equalizer line to the pipeline.

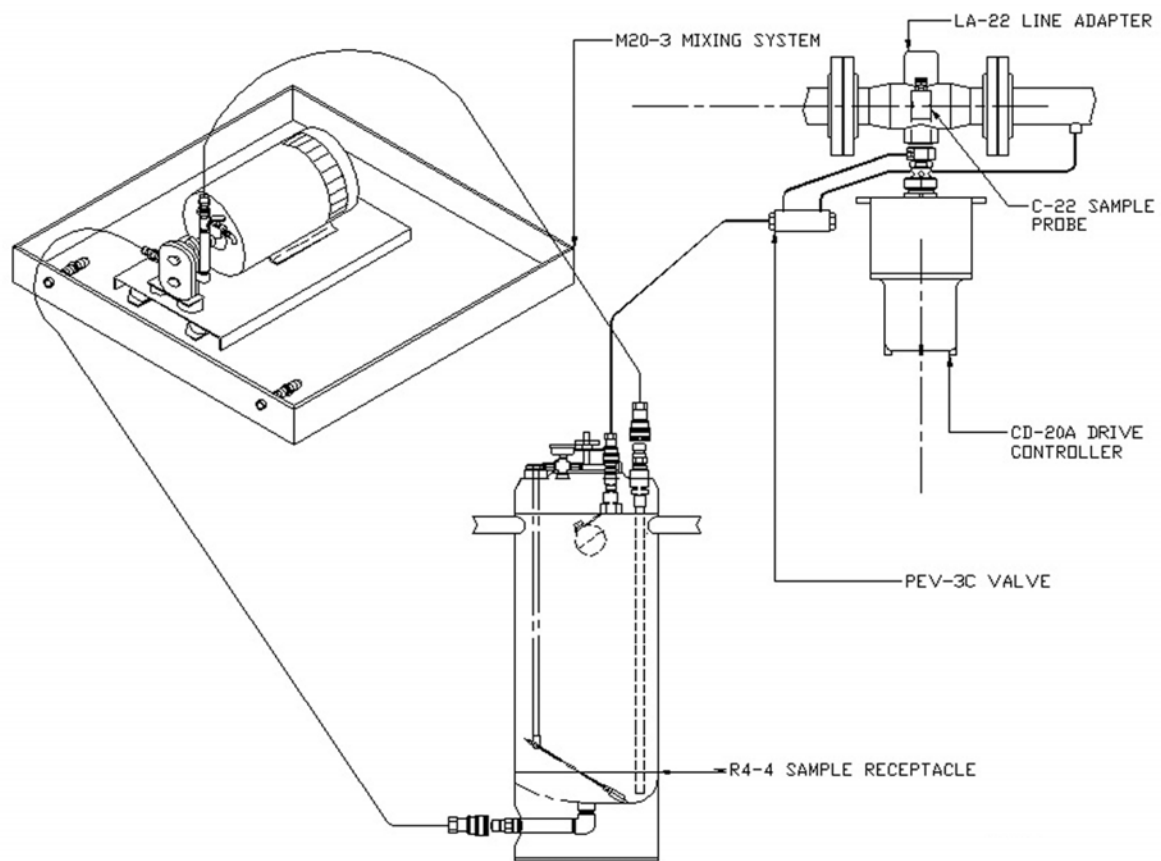


Figure 1—Installation of the PEV-3C valve

CAUTION: The PEV-3C pressure equalizer valve has full internal line pressure. Only qualified personnel should service these units. A caution tag is provided to alert all personnel to this potential hazard.

Maintenance

The piston assembly should be refurbished at regular intervals of approximately 6 months, however the maintenance schedule may vary, depending on the location and the application used.

Typical maintenance includes disassembling the PEV, disassembling the piston assembly, replacing worn or broken parts with the PEV Repair Kit, replacing the seal head and seal retainer in the end cap, and reassembling the PEV. Each of these steps is described, step by step, in the following instructions.

Service Tools

The following tools may be required to disassemble and reassemble the PEV-3C Pressure Equalizer Valve for routine repairs:

- 1/16-in. punch
- a 3/32-in. punch
- a small ball peen hammer
- inside-tapered seating cylinder tool (Part No. 50142200498)
- piston seal tool (Part No. 50142200499)
- internal retaining ring pliers
- cleaning fluid
- light lubricating oil

Disassembling the PEV

Disassemble the equalizer valve as follows:

1. Shut off line pressure to the sampler.
2. Open the fitting to relieve pressure throughout the system.
3. Disconnect the PEV piping.
4. Remove the PEV from the enclosure or system.
5. Remove the end adapter (item 12) from the PEV body.
6. Remove the end cap (item 18) from the PEV body.
7. Remove the spring (item 16).
8. Push the piston assembly out of the body.

Piston Assembly Maintenance

Perform routine maintenance and repairs on the piston assembly as follows:

1. Remove the slipper seal (item 11) and O-ring (item 10) from the piston assembly, and discard both items.
2. If the seal tip (item 15) is damaged, use a 1/16-in. punch and a small ball peen hammer to remove the roll pin (item 9) from the piston assembly. Check the spring (item 7) and replace it if it is broken or damaged. Do not to bend the seal rod.
3. Using a safe cleaning fluid, wash all reusable parts.
4. Open the PEV Repair Kit (Part No. 50142151248) and spread the parts out on a clean surface.

5. If the seal tip was removed, replace the spring (item 7) and seal tip (item 15) using the new roll pin (item 9).
6. Slide the piston seal tool (Part No. 50142200499) onto the piston assembly with the skirt of the piston closest to the O-ring groove.
7. Lubricate the O-ring (item 10) with light oil and slide it over the piston seal tool into the O-ring groove.
8. Lubricate the slipper seal (item 11) in the same manner as the O-ring and slide the slipper seal over the piston seal tool and O-ring.

CAUTION: Do not damage the slipper seal. Apply a few drops of light oil or lubricant onto the slipper seal and O-ring to ease assembly.

9. Pull the piston assembly through the inside-tapered seating cylinder tool (Part No. 50142200498) several times, reversing the direction of the piston assembly each time.
10. Let the piston assembly stand in the seating tool for several minutes to allow the slipper seal to return to its original shape.

End Cap Maintenance

Perform routine maintenance and repairs on the PEV end cap as follows:

1. Using the internal retaining ring pliers, remove and discard the retaining ring (item 6).
2. Using a 3/32-in. punch and a small ball peen hammer, tap out the seal head (item 13) with the O-ring (item 14) and seal retainer (item 8). Discard the seal head and O-ring; lay the seal retainer to the side for use in reassembling the end cap.
3. Lubricate the new O-ring (item 14) with light oil. Pull the O-ring over and onto the groove of the new seal head (item 13).
4. Before inserting the new seal head assembly and seal retainer into the end adapter, match the tapered ID of the seal head to the seal tip (item 15).

CAUTION: If the seal head and seal tip are not mated prior to inserting the seal head assembly and seal retainer into the end adapter, the seal tip may get lodged in the seal head, preventing the sampler from functioning, or causing it to leak severely.

5. Set the end adapter with the “RECEPTACLE” marking face-down on a flat surface.
6. With the tapered end of the seal head up, insert the seal head (item 13) and O-ring (item 14) into the end adapter.
7. Insert the seal retainer (item 8), and tap the seal head (item 13) into position with a punch and a small hammer.
8. Insert the retainer ring (item 6).

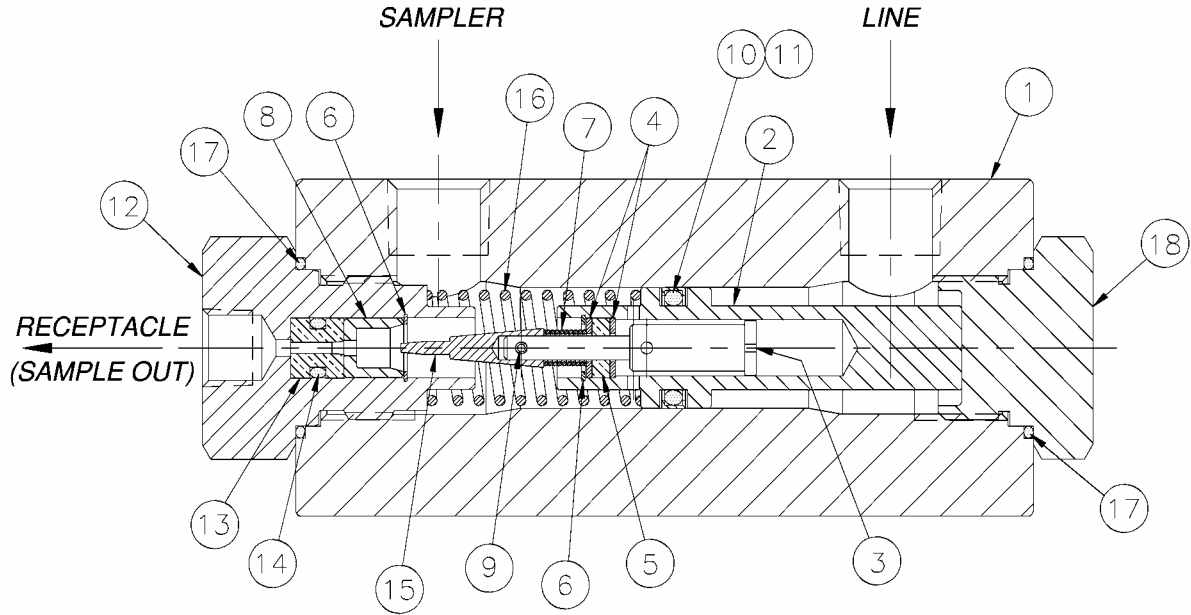
PEV Reassembly

Reassemble the equalizer valve as follows:

1. Insert the piston assembly into the “LINE” end of the PEV body with the seal tip end entering first.
2. Reinstall the spring (item 16).
3. Reinstall the end cap (item 18) and the O-ring (item 17).
4. Reinstall the end adapter assembly (items 6, 8, 12, 13, and 14) and the O-ring (item 17).

Caution: Never allow the sampler nipple to penetrate into the PEV body far enough to interfere with or contact the end adapter assembly.

5. Reinstall the PEV in the enclosure or unit, as applicable.
6. Insert the unit in the system and check for leaks.



PEV-3C (Pressure Equalizing Valve) Bill of Materials

ITEM	QTY.	PART NUMBER	DESCRIPTION
1	1	50142200477	PEV Body
2	1	50142200553	PEV Piston
3	1	50142200554	PEV Seal Rod
4	2	50142200560	Washer
5	1	50142200558	PEV Bearing
6	2	50142200556	Retaining Ring
7	1 *	50142200557	PEV Spring
8	1	50142200552	PEV Seal Retainer
9	1 *	50142200559	Roll Pin 1/16" Dia. X 3/16"
10	1 *	50142200368	O-Ring Viton #111
11	1 *	50142200464	Slipper Seal #2036-111
12	1	50142200555	PEV End Adapter
13	1 *	50142200485	PEV Seal Head
14	1 *	50142200079	O-Ring Viton #008
15	1*	50142200551	PEV Seal Tip
16	1	50142200497	PEV Spring
17	2 *	50142200462	O-Ring Viton #019
18	1	50142200509	PEV End Cap

* Parts included in a PEV Repair Kit; Repair Kit for PEV-3C is Part No. 50142151248

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