



TECHNICAL DATA

PRESSURE OPERATED RELIEF VALVE (PORV) MODELS D-3 & D-4

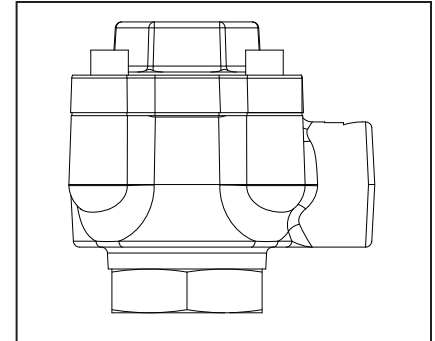
RATED TO 250 PSI (17.2 BAR)

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058

Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

1. DESCRIPTION

The Viking Model D Pressure Operated Relief Valve (PORV) is used in Viking Deluge, Preaction, Firecycle® Multi-Cycle and Surefire® Systems. Once tripped, it maintains a positive vent to prevent the deluge valve from automatically resetting prematurely. The device is automatically reset when the pressure is removed from the control diaphragm. The device is designed to trip when the trip port is pressurized with water from the intermediate chamber of the control valve, or when the water in the inlet is drained from the prime chamber of the control valve. The Model D-4 PORV is similar to the D-3, except some components are specially plated for additional corrosion resistance.



2. LISTINGS AND APPROVALS:

cULus Listed: VLTR

FM Approved: Deluge Sprinkler Systems, Preaction Sprinkler Systems, On-Off Multi-Cycle Sprinkler Systems, and Refrigerated Area Sprinkler Systems

3. TECHNICAL DATA

Specifications:

Pressure Differential: Approximately 10:1

Maximum Operating Pressure: 250 psi (17.2 bar)

Materials: Refer to Figure 1.

Ordering Information:

Part Numbers:

Standard Brass, Model D-3: 16970

Corrosion Resistant, Model D-4: 16971

Shipping weight: 2.5 lbs. (1.13 kg)

Available Since 2011.

Viking Technical Data may be found on
The Viking Corporation's Web site at
<http://www.vikinggroupinc.com>.
The Web site may include a more recent
edition of this Technical Data Page.

4. INSTALLATION

DO NOT plug the 1/2" (15 mm) outlet. Pipe drain outlet to open atmospheric drain. DO NOT connect drain outlet to any line that may be pressurized, as this may create back pressure on the Pressure Operated Relief Valve.

5. OPERATION

The inlet side of the PORV is connected directly to the top chamber of the deluge valve. In the set position, pressure is supplied to the inlet. The pressure on the Push Rod prevents water from escaping. When the deluge valve operates, water is drained from the PORV inlet. When the 10:1 differential is overcome, the push rod opens, allowing the prime water to drain. If a release resets, priming water will continue to escape through the PORV, allowing the deluge valve to continue to operate until the system is reset.

6. INSPECTIONS, TESTS AND MAINTENANCE

The Viking Pressure Operated Relief Valve should be tested for operation annually. Where difficulty in performance is experienced, the valve manufacturer or authorized representative shall be contacted if any field adjustment is to be made.

A. Test: Trip the deluge system at 10:1 system pressure. The PORV should operate, and water will flow from the outlet.

B. Disassembly: (Refer to Figure 1.)

1. Place the deluge system and the release system out of service.
2. Remove the PORV from the trim.
3. To remove the cover (5), remove each of the cover screws (6) using a 3/16" Allen wrench.
4. With the cover (5) removed, you can now remove the jam nut (9).
 - a. To remove the jam nut (9), place the flat head screwdriver through the bottom of the PORV to hold the push rod (8) in place.
 - b. Use a socket wrench with a 3/8" socket to remove the jam nut (9).
5. With the jam nut (9) removed, you can remove the washers (10, 11), diaphragm (4), support (7), spring (3) and the push rod (8).

C. Installation of Repair Parts:

1. The first part to install is the spring (3) into the body (2).
2. Install the support (7) onto the spring (3).
3. Install one rubber washer (11) onto the support.
4. Install the diaphragm (4) onto the rubber washer (11) and support (7).
5. Install one rubber washer (11) onto the diaphragm (4).
6. Install washer (10) onto the rubber washer (11).

Replaces page 287e-f, dated February 25, 2011.
(Revised the description and added Item 6 to Figure 1.)



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7. Install the push rod (8) through the bottom of the PORV until the end of the push rod (8) is through the washer (10).
8. Hand thread the jam nut (9) onto the push rod (8).
9. To keep the holes of the diaphragm (4) in-line with the holes of the body (2) when tightening the jam nut (9), replace the cover (5) and hand thread the cover screws (6) partially into the body (2).
10. Place a flat head Screwdriver into the push rod (8) through the bottom of the PORV and use a socket wrench with a 3/8" socket to tighten the jam nut (9).
11. Tighten the cover screws (6) using a 3/16" Allen wrench.

7. AVAILABILITY

The Viking PORV is available through a network of domestic and international distributors. See the Viking Corp. Web site for closest distributor or contact The Viking Corporation.

8. GUARANTEES

For details of warranty, refer to Viking's current list price schedule or contact Viking directly.

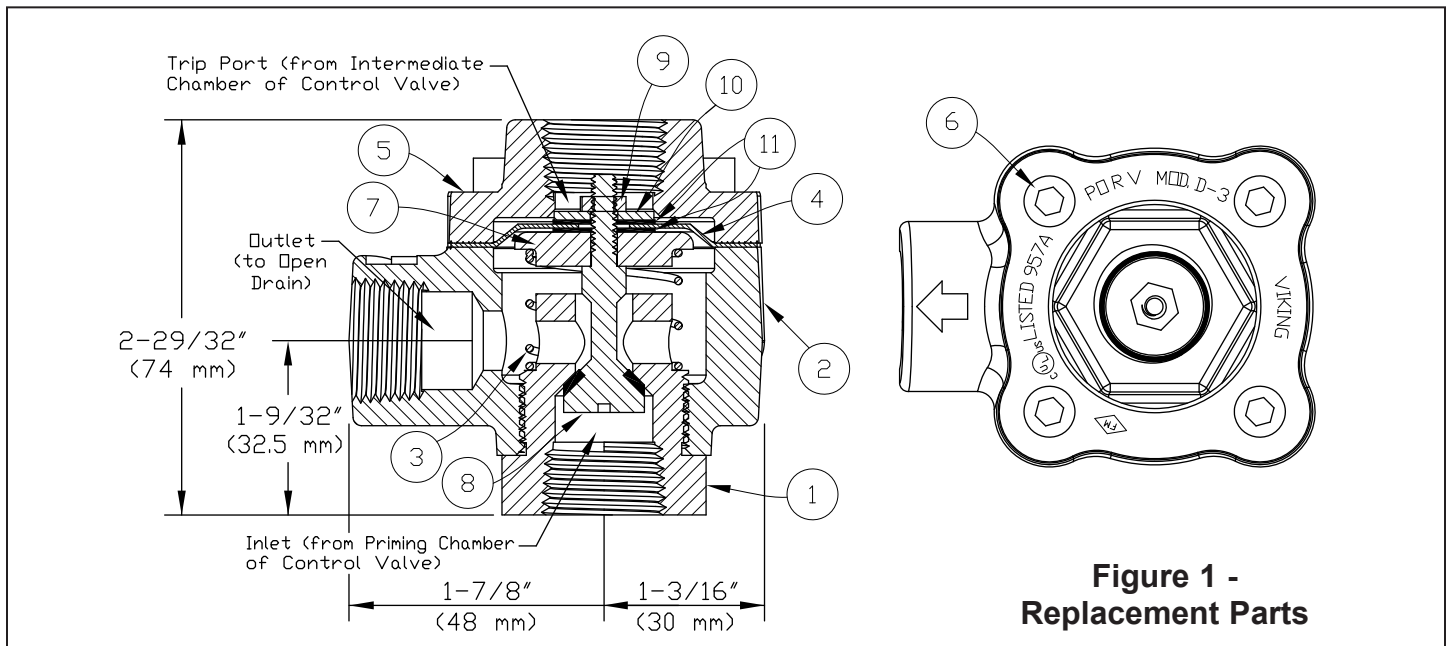


Figure 1 - Replacement Parts

ITEM NO.	PART #		DESCRIPTION	MATERIAL		NO REQ'D
	D-3	D-4		D-3, STANDARD BRASS	D-4, CORROSION RESISTANT	
1	--	--	Seat	Brass, UNS-C36000	Brass, UNS-C36000, Electroless Nickel Plated	1
2	--	--	Body	Brass, UNS-C84400	Brass, UNS-C84400, Electroless Nickel Plated	1
3	13592	13592	Spring	Stainless Steel, UNS - S30200	Stainless Steel, UNS-S30200	1
4	16142	16142	Diaphragm	Polyester & EPDM	Polyester & EPDM	1
5	--	--	Cover	Brass, UNS-C84400	Brass, UNS-C84400, Electroless Nickel Plated	1
6	16972	16972	Screw, SHC, #-1/4-20 x 1"	Stainless Steel, UNS-S31600	Stainless Steel, UNS - S31600	4
7	13595	13595	Support	10% Glass filled Polycarbonate	10% Glass filled Polycarbonate	1
8	13599	13857	Push Rod	EPDM & Brass, UNS-C36000	EPDM & Stainless Steel, UNS-S31600	1
9	01755A	01755A	Jam Nut, #10-24	Stainless Steel, UNS-S30400	Stainless Steel, UNS-S30400	1
10	13836	13836	Washer, #10	Stainless Steel	Stainless Steel	1
11	16700	16700	Rubber Washer, #10	EPDM, ASTM D2000	EPDM, ASTM D2000	2
-- Indicates replacement part not available						
SUB-ASSEMBLY						
3, 4, 6-11	16968	16969	Maintenance Kit			