1. DESCRIPTION
The Viking Model D Pressure Operated Relief Valve (PORV) is used in Viking Deluge, Pre-
action, 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 spe-
cially plated for additional corrosion resistance.

2. LISTINGS AND APPROVALS:

- UL 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.

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).
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**

```
<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>PART #</th>
<th>DESCRIPTION</th>
<th>MATERIAL</th>
<th>NO REQ'D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>D-3</td>
<td>D-4</td>
<td>D-3, STANDARD BRASS</td>
<td>D-4, CORROSION RESISTANT</td>
</tr>
<tr>
<td>1</td>
<td>--</td>
<td>--</td>
<td>Seat</td>
<td>Brass, UNS-C36000</td>
</tr>
<tr>
<td>2</td>
<td>--</td>
<td>--</td>
<td>Body</td>
<td>Brass, UNS-C84400</td>
</tr>
<tr>
<td>3</td>
<td>13592</td>
<td>13592</td>
<td>Spring</td>
<td>Stainless Steel, UNS-S30200</td>
</tr>
<tr>
<td>4</td>
<td>16142</td>
<td>16142</td>
<td>Diaphragm</td>
<td>Polyester &amp; EPDM</td>
</tr>
<tr>
<td>5</td>
<td>--</td>
<td>--</td>
<td>Cover</td>
<td>Brass, UNS-C84400</td>
</tr>
<tr>
<td>6</td>
<td>16972</td>
<td>16972</td>
<td>Screw, SHC, #1/4-20 x 1”</td>
<td>Stainless Steel, UNS-S31600</td>
</tr>
<tr>
<td>7</td>
<td>13595</td>
<td>13595</td>
<td>Support</td>
<td>10% Glass filled Polycarbonate</td>
</tr>
<tr>
<td>8</td>
<td>13599</td>
<td>13857</td>
<td>Push Rod</td>
<td>EPDM &amp; Stainless Steel, UNS-S31600</td>
</tr>
<tr>
<td>9</td>
<td>01755A</td>
<td>01755A</td>
<td>Jam Nut, #10-24</td>
<td>Stainless Steel, UNS-S30400</td>
</tr>
<tr>
<td>10</td>
<td>13836</td>
<td>13836</td>
<td>Washer, #10</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>11</td>
<td>16700</td>
<td>16700</td>
<td>Rubber Washer, #10</td>
<td>EPDM, ASTM D2000</td>
</tr>
</tbody>
</table>

-- Indicates replacement part not available

**SUB-ASSEMBLY**

3, 4, 6-11 16968 16969 Maintenance Kit

Form No. F_022211 18.10.18 Rev P65

Replaces Form No. F_022211 October 7, 2011
(Added P65 Warning.)