VIKING®

TECHNICAL DATA

PRIMING SHUT-OFF VALVE (PSOV)
Maximum 250 PSI (1 724 kPa)

1. PRODUCT NAME

VIKING PRIMING SHUT-OFF VALVE (PSOV)

- Model A-1, Part Number 10723
  Available since 1999
- Model A-2*, Part Number 10724
  Available since 1999

*The Model A-2 Priming Shut-Off Valve is similar to the Model A-1, except some components are specifically plated for additional corrosion resistance and the Model A-2 has no listings or approvals.

2. MANUFACTURER

THE VIKING CORPORATION
210 N. Industrial Park Road
Hastings, Michigan 49058 U.S.A.
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(877) 384-5464
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3. PRODUCT DESCRIPTION

The Viking Prime Shut-off Valve (PSOV) is a spring-loaded to open, rolling diaphragm, piston operated valve. It is used to positively shut off the priming water supply to a deluge valve upon deluge valve operation. The prime shut-off valve is a required component on deluge systems utilizing “Easy Trim”, where pressure regulation and thermostatic release are not required.

The Model A-1 Prime Shut-off Valve is listed and approved for use on Viking deluge valves utilizing “Easy Trim” for deluge systems or pre-action systems. The Model A-2 is similar to the Model A-1, except some components are specifically plated and marterials are compatible for additional corrosion resistance.

4. TECHNICAL DATA

Listings and Approvals:
UL Listed Guide No. VLTR
UL Control No. 957A
C-UL Listed
FM Approved

Water Pressure Ratings:
Models A-1 and A-2 rated to 250 PSI (1 724 kPa) water working pressure
Hydrostatically tested to 500 PSI (3 447 kPa)

K-Factor: 4.6 U.S. (6,62 metric*)
*Metric K-Factor shown is for use when pressure is measured in kPa. When pressure is measured in BAR, multiply the metric K-Factor shown by 10.0.

Shipping Weight: 2 lbs.

Materials:
Cast Brass: UNS-C84400
Brass Bar Stock: UNS-C36000
Stainless Steel: UNS-S30206
Piston: Polycarbonate
Diaphragm: Polyester Fabric and EPDM Elastomer

5. FEATURES

Models A-1 and A-2:

- Corrosion resistant construction with minimal moving parts.
- Low differential design--allows minimum back pressure development at deluge valve to operate prime shut-off valve and isolate prime water supply to priming chamber of deluge valve.

Model A-2 only:

- Some components are specially plated for additional corrosion resistance (see Table 1 on page 238 b)

6. AVAILABILITY AND SERVICE

The Viking Prime Shut-off Valve is available through a network of domestic, Canadian, and international distributors. See the Yellow Pages of the telephone directory for a local distributor (listed under “Sprinklers-Automatic-Fire”) or contact The Viking Corporation.

Viking Technical Data may be found on The Viking Corporation’s Web site at http://www.vikingcorp.com. The Web site may include a more recent edition of this Technical Data page.

7. GUARANTEES

For details of warranty, refer to Viking’s current list price schedule or contact Viking directly. Model A-2 Prime Shut-off Valves are without guarantee or warranty, either expressed or implied. Regarding corrosion: it is the end-user's responsibility to verify that materials are compatible with the environment.

8. OPERATION

The Viking Prime Shut-off Valve has an inlet, outlet, and sensing end. When pressure is applied to the sensing end, the rolling diaphragm and piston assembly moves and is seated against the valve seat. This seals the inlet from the outlet, eliminating the supply of priming water to the priming chamber of the deluge utilizing “Easy Trim”. Due to the differential design, back pressure caused in the discharge outlet of the deluge valve ported through the auxiliary outlet will cause the prime shut-off valve to close. When pressure is removed from the sensing end of the prime shut-off valve, the rolling diaphragm and piston will reset to the flow through position by means of the spring forcing the diaphragm wrapped piston in the open position.

9. MAINTENANCE

The prime shut-off valve is manufactured with a weep hole to indicate a failure of upper or lower diaphragm. The body of the prime shut-off valve is constructed of three cast brass pieces. The center section of the valve assembly houses the piston of the assembly; the housing is created by the upper and lower diaphragm. The valve also includes an integral spring that guides the diaphragm wrapped housing to the valve seat. If water appears from the weep hole located in the center section of the valve assembly, replace the diaphragm assembly. If the prime shut-off valve does not positively close upon deluge valve operation (evident by continual prime water discharge at the drain cup), flush prime shut off valve. To do this, remove deluge valve from service and either flush the prime shut-off valve or disassemble the prime shut-off valve and inspect valve for debris.

WARNING: Any system maintenance or testing that involves putting a control valve or detection system out of service may eliminate the fire protection of that system. Prior to proceeding, notify all authorities having jurisdiction. Consideration should be given to employment of a fire patrol in the affected area.

The Viking prime shut-off valve must be kept free of foreign matter and freezing conditions that could impair its operation. At regular intervals (at least annually) inspect and test the prime shut-off valve. The frequency of the inspections

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is dependent upon the condition of the water and release system.

PRIOR TO PERFORMING ANY WORK ON THE PRIME SHUT-OFF VALVE, REFER TO "SYSTEM DESCRIPTION" FOR INSTRUCTIONS AND WARNINGS REGARDING THE FIRE PROTECTION SYSTEM AND RELEASE SYSTEM.

A. Inspection:

1. Place the fire protection system out of service.
2. Trip the release system.
3. Drain any accumulated condensation for the release line.
4. Purge the release system of any foreign matter.
5. Place the release system back in service.
6. Prime the deluge valve by opening the priming water control valve.
7. Trip test the prime shut-off valve by tripping the deluge valve. The prime shut valve will shut the priming supply to the deluge valve priming chamber.
8. Set up the deluge valve per deluge valve resetting instructions.
9. Should the prime shut-off valve fail to close or reset, remove it from service and disassemble. Clean and/or replace any dirty or worn parts and reinstall. Repeat the inspection procedures.

B. Disassembly:

(Refer to Figure 1 on this page.)

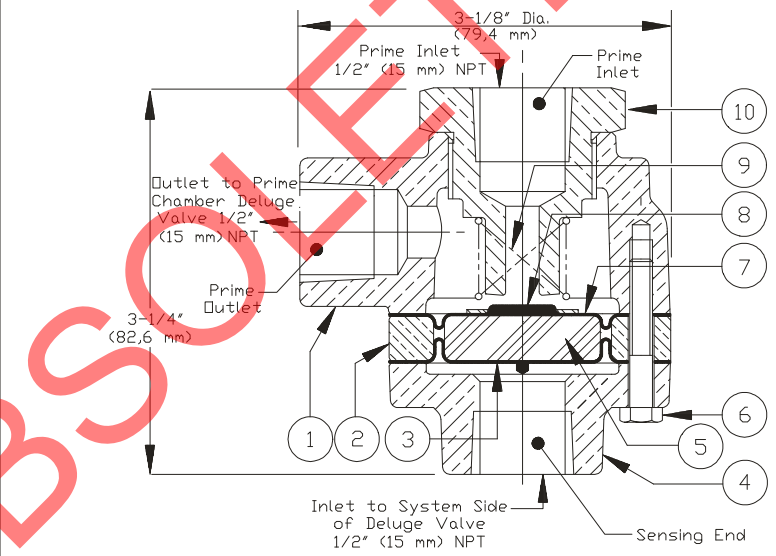
1. Place the fire protection system out of service.
2. Close the priming valve.
3. Trip the deluge valve.
4. Remove the prime shut-off valve.
5. Remove the three cover screws (6). **CAUTION:** The assembly is under spring tension.
6. Separate the cover (4) from the lower assembly.
7. Separate the lower diaphragm (3), piston (5), upper diaphragm (7), and spring pad (8), from body (1).
8. Clean and/or replace dirty or worn parts.
9. If required, remove the valve seat (10) from the body (1) and replace.

C. Reassembly:

1. Reverse the disassembly procedure, making sure that the burr side of the spring pad is toward the spring, away from the upper diaphragm.
2. Purge all trim piping of foreign matter.
3. Reinstall prime shut-off valve and trim piping.
4. Repeat inspection procedures.
5. Check for and repair any leaks.
6. Reset the deluge valve per deluge valve re-setting instructions.

D. Installation:

1. Remove all thread protectors from the device.
2. The prime shut-off valve requires three ½" (15 mm) NPT pipe connections. Refer to Easy Deluge Trim Charts for piping arrangement.
3. When used with a Viking deluge valve or flow control valve, connect the sensing end to the system side of the deluge valve, (the sensing end is normally connected to piping connected to the auxiliary outlet of the deluge valve, but can be connected to other outlets connected to the discharge chamber of the deluge valve). Connect the prime inlet to the priming supply piping of the Easy Deluge Trim. Connect the prime outlet to the trim piping supplying the priming chamber of the deluge valve.



ITEM NO.	PART NUMBER		DESCRIPTION	MATERIAL		QTY REQ'D
	10723	10724		Model A-1	Model A-2	
1	–	–	Body	Brass, UNS-C84400	Brass*, UNS-C84400	1
2	–	–	Spacer	Brass, UNS-C84400	Brass*, UNS-C84400	1
3	04735A	04735A	Upper Diaphragm	EPDM/Polyester Fabric	EPDM/Polyester Fabric	1
4	–	–	Cover	Brass, UNS-C84400	Brass*, UNS-C84400	1
5	04736A	04736A	Piston	Polycarbonate	Polycarbonate	1
6	04732A	06228A	Hex Head Screw, #10-24 x 1-1/4" Lg.	Steel, Zinc Coated	Stainless Steel, UNS-S31600	3
7	04861A	04861A	Lower Diaphragm	EPDM/Polyester Fabric	EPDM/Polyester Fabric	1
8	04739A	06227A	Spring Pad	Stainless Steel UNS-S30200/UNS-S30400	Monel #400	1
9	04741A	06224A	Spring	Stainless Steel UNS-S30200	Inconel #600	1
10	06464B	06464BJ	Seat	Brass, UNS-C36000	Brass**, UNS-C36000	1

* Electroless Nickel plated, Model A-2 only, Specification No. SPF02-J01.
**Electroless Nickel and tin plated, Model A-2 only, Specification No. SPF-02-J07.
-- Indicates part is not available.

Table 1

New issue, dated July 1, 1999.

Form No. F_062299