

	<h1 style="margin: 0;">TECHNICAL DATA</h1>	<p><b>DELUGE VALVE MODEL F-2 HALAR® COATED STRAIGHT THROUGH STYLE 1-1/2" (DN40) &amp; 2" (DN50)</b></p>
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**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 F-2 Halar® Coated Deluge Valve is a quick opening, differential diaphragm, flood valve with one moving mechanism. The Deluge Valve is used to control water flow in Deluge and Preaction sprinkler systems. The valve is held closed by system water pressure trapped in the priming chamber; keeping the outlet chamber and system piping dry. In fire conditions, when the releasing system operates, pressure is released from the priming chamber. The Deluge Valve clapper opens to allow water to flow into the system piping.

The Viking Model F-2 Halar® Coated Deluge Valve is identical to the Viking Model F-1 Deluge Valve, except the Model F-2 is manufactured with specially coated components.

The body and cover of the Model F-2 Deluge Valve is coated inside and outside with Halar® Coating consisting of ethylene chlorotrifluoroethylene (ECTFE). The coating makes the valve suitable for use in corrosive environments similar to those found on offshore platforms and many industrial chemical facilities. Coatings on internal operating parts of the valve also include Teflon®, Electroless Nickel plating, and Tin plating. The Halar® Coated valve may be used to control water flow in deluge and preaction systems supplied by brackish or salt water when operation is controlled by fixed temperature hydraulic release systems. Also, the Viking Halar® Coated Deluge Valve has been satisfactorily evaluated as a Foam Concentrate Control Valve for use with AFFF or ATC foam in fixed foam/water sprinkler systems.



**Features**

**1. HALAR® COATING**

- a. Exceeds performance of Epoxy Coating or Kynar Coating
- b. Mechanical strength and toughness.
- c. High thermal stability
- d. High dielectric strength
- e. Resistant to most chemicals and solvents
- f. Resistant to cobalt 60 radiation
- g. All wetted surfaces are coated including pipe threads.

**2. VALVE**

- a. Field replaceable Diaphragm and Seat Rubbers
- b. Designed for installation in horizontal or vertical position
- c. Designed to be reset without opening the valve
- d. Compatible with Hydraulic, Pneumatic and Electric Release Systems

**2. LISTINGS AND APPROVALS:**

**UL Listed:** Guide No. VLFT & VLJH

**C-UL Listed**

**FM Approved:** Deluge Sprinkler Systems, Preaction Sprinkler Systems, Refrigerated Area Sprinkler Systems

**NYC Department of Buildings:** MEA 89-92-E Vol. XXXI

**American Bureau of Shipping (ABS):** Certificate No. 05-HS502910C-PDA

**CE:** Pressure Equipment Directive 97/23/EC

DESCRIPTION	NOMINAL SIZE	PART NUMBER	FRICTION LOSS*	CV FACTOR	SHIPPING WEIGHT
Groove/Groove <u>Pipe O.D.</u>					
48 mm	1½" / DN40	12127Q/B	7 ft. (2.1 m)	66	35 lbs. (16 kg)
60 mm	2" / DN50	12058Q/B	13 ft. (3.9 m)	93	35 lbs. (16 kg)

$$Q = C_v \sqrt{\frac{\Delta P}{S}}$$

- Q= Flow
- Cv= Flow Factor (GPM/1 PSI ΔP)
- ΔP= Pressure Loss through Valve
- S= Specific Gravity of Fluid

\* Expressed in equivalent length of pipe based on Hazen & Williams Formula. C-120

\* Specific gravity of water at 60°F equals 1.00

**Table 1 - Valve Part Numbers and Specifications**



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### 3. TECHNICAL DATA

#### Specifications:

Maximum working water pressure: 250 PSI (17.4 bar)

Style: Straight through

Connections: Refer to Table 1

Factory tested to 500 psi (34.5 bar)

Valve differential: over 2:1 (priming chamber to inlet chamber)

Priming chamber supply restriction (required): 0.0625" (1.6 mm)

Color: Black

Friction loss: Refer to Table 1

C<sub>v</sub> Factor: Refer to Table 1

Coating Specifications: Refer to Table 2

#### Material Standards:

Refer to Figure 3

#### Ordering Information:

Part Numbers: Refer to Table 1

Manufactured since 2004

#### Accessories:

1. A Conventional trim package for use with the Model F Deluge Valve is available. When the Halar® Coated Deluge Valve is used on systems with fresh water supplies, Viking F Deluge Valve trim sets may be used. The trim sets include the VALVE ACCESSORY package and the fittings and nipples shown on the Deluge Valve Conventional Trim Charts for the valve used.
2. Where brackish or seawater is used, it is recommended that Viking Stainless Steel Trim package be used. This includes 316 stainless steel valves, pipe and fittings with brass electroless nickel-plated devices.
3. A special trim package is available for use when the Halar® Coated Deluge Valve is used as a FOAM CONCENTRATE CONTROL VALVE for AFFF or ATC Foam Concentrate. See the Viking Foam Engineering and Design Data book.

Additional accessories are available and may be required for system operation or supervision. Refer to the system description and technical data for complete operating trim requirements for the system used.

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

**NOTE: FOR INSTALLATION INSTRUCTIONS FOR USING THE HALAR® COATED DELUGE VALVE AS A FOAM CONCENTRATE CONTROL VALVE, REFER TO THE VIKING FOAM ENGINEERING DESIGN AND DATA BOOK.**

#### A. General Instruction

1. Viking Deluge Valves may be installed in the horizontal or vertical position.
2. When the Viking Halar® Coated Deluge Valve is used on systems supplied with brackish water, salt water, foam/water (pre-mixed) solution, or any other corrosive water supply, consult Table 3 for trim material specifications. Check with manufacturer prior to using this valve with fluids other than fresh water and those listed in Table 3.
3. When the Halar® coated deluge valve is supplied with anything other than clean fresh water, such as salt water or brackish water, conventional trim should not be utilized. Stainless steel or brass trim should be used for installations that are supplied with water supplies other than clean fresh water.
4. Use caution when using wrenches on or around Halar® Coated Valves. Halar® Coating may chip when struck with hard or sharp objects. If the Halar® coating becomes chipped, immediately repair the damaged area to inhibit the potential for corrosion. Refer to paragraph 6.III.D Halar® Coating Repair instructions.
5. Halar® Coating is black in color. Due to its chemical resistance paint will not adhere to Halar® Coating sufficiently to resist abrasion.
6. The valve must be installed in an area not subject to freezing temperatures or physical damage.
7. The valve must be trimmed according to current Viking Trim Charts and appropriate instructions for the system used. Trim Charts are printed in the Viking Engineering and Design Data book, and are provided with trim packages.
  - a. Remove all plastic protectors from the openings of the Deluge Valve.
  - b. Apply a small amount of pipe joint compound or tape to the external threads of all pipe connections required. Take care not to allow any compound, tape, or other foreign matter inside any of the nipples or openings of the valve or trim components.
  - c. Verify that all system components are rated for the water working pressure of the system.
8. The priming line must be connected upstream of the system water supply main control valve or to a constant source of water at a pressure equal to the system water supply.

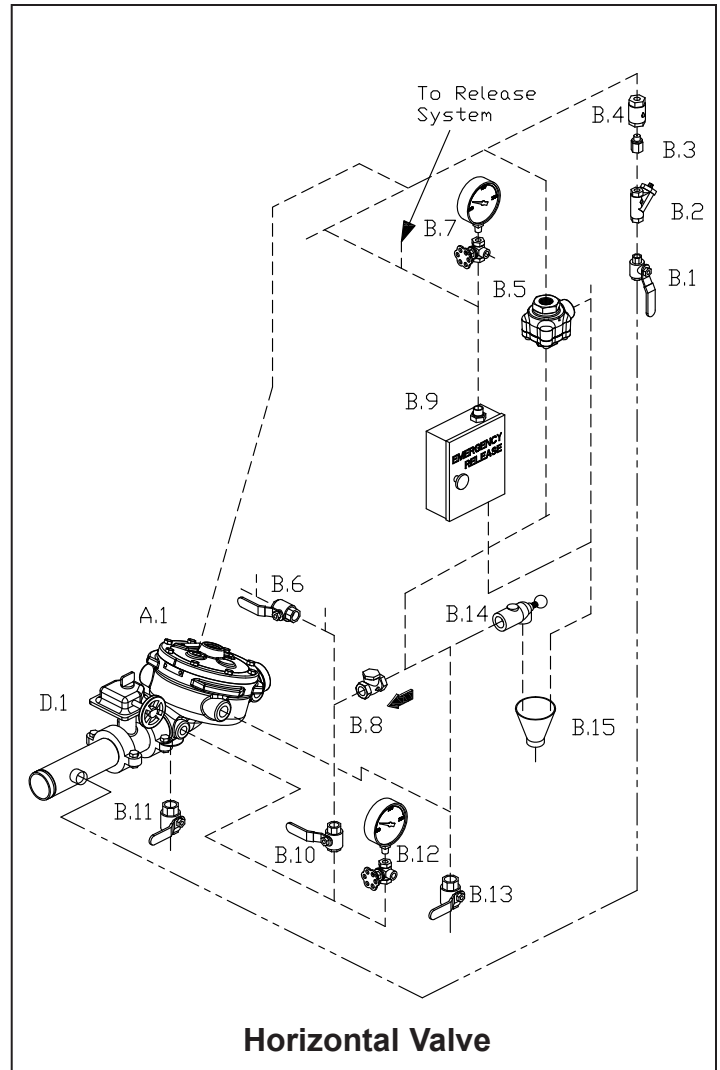
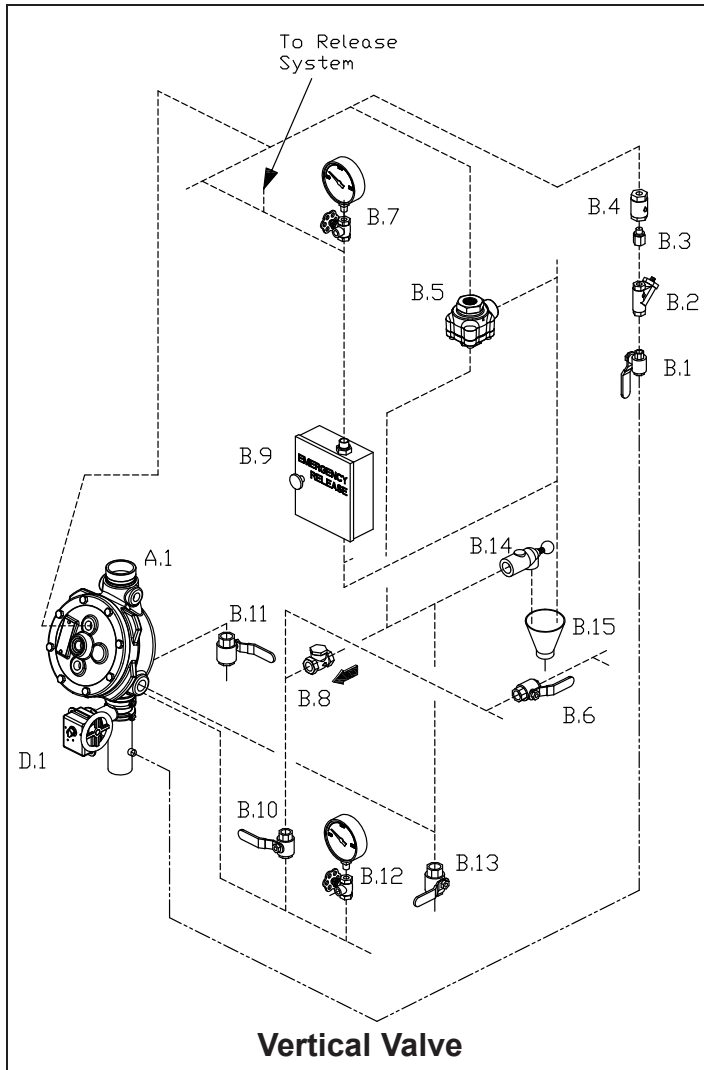


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----- Dashed lines indicate nipples and fittings included with trim.

----- Phantom lines indicate piping required, but not included with trim.

**Figure 1 - Conventional Trim Components**

- |     |  |      |   |
|-----|--|------|---|
| A.1 | Deluge Valve                           | B.9  | Emergency Release                           |
| B.1 | Priming Valve (Normally Open)          | B.10 | Alarm Test Valve (Normally Closed)          |
| B.2 | Strainer                               | B.11 | Flow Test Valve (Normally Closed)           |
| B.3 | 1/16" Restricted Orifice               | B.12 | Water Supply Pressure Water Gauge and Valve |
| B.4 | Spring Loaded Check Valve              | B.13 | Auxiliary Drain Valve (Normally Closed)     |
| B.5 | Pressure Operated Relief Valve (PORV)  | B.14 | Drip Check Valve                            |
| B.6 | Alarm Shut Off Valve (Normally Open)   | B.15 | Drain Cup                                   |
| B.7 | Priming Pressure Water Gauge and Valve | D.1  | Water Supply Control Valve                  |
| B.8 | Drain Check Valve                      |      |   |



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9. Hydrostatic Test: The Model F-2 Halar® Coated Deluge Valve is manufactured and listed for use at a maximum Water Working Pressure of 250 PSI (17.2 bar). The valve is factory tested at 500 PSI (34.5 bar). Model F-2 Halar® Coated Deluge Valves may be hydrostatically tested at 300 PSI (20.7 bar) and/or 50 PSI (3.5 bar) above the normal Water Working Pressure, for limited periods of time (two hours), for the purpose of acceptance by the Authority Having Jurisdiction. If air testing is required, do not exceed 60-PSI (4.2 bar) air pressure.

**NOTE: NEVER CONDUCT THE HYDROSTATIC TEST AGAINST THE PRESSURE OPERATED RELIEF VALVE. (PORV) TEMPORARILY REMOVE THE PORV FROM THE TRIM AND PLUG TRIM OPENINGS WHILE CONDUCTING THE HYDROSTATIC TEST.**

**TRIM NOTE: DISCHARGE PIPING FROM THE AUXILIARY DRAIN VALVE, THE FLOW TEST VALVE, AND ALL SYSTEM DRAINS SHOULD BE KEPT SEPARATE. DO NOT CONNECT THE OUTLET OF THE DRIP CHECK TO ANY OTHER DRAIN.**

10. After the Deluge Valve is set, operation of the Deluge Valve requires the release of priming water from the priming chamber. This may be by automatic or manual operation of the release system. Viking Deluge Valves are compatible with hydraulic, pneumatic, and electric release systems.
- Hydraulic Release Systems: See Figure 2 for the maximum allowable elevation of hydraulic release piping above the Deluge Valve. If the maximum height of hydraulic release piping exceeds the limit shown in Figure 2, use a Pneumatic or Electric Release System.
  - Pneumatic Release Systems: A Viking Pneumatic Actuator is required between the release system connection provided on deluge valve trim and pneumatic release Piping.
  - Electric Release: Solenoid Valves, System Control Panels, and Electrical Detectors must be compatible. Consult appropriate listing and/or approval guides.

**NOTE: FOR OPERATION AT WATER PRESSURES IN EXCESS OF 175 PSI, A 250-PSI RATED SOLENOID VALVE MUST BE USED. REFER TO APPROPRIATE VIKING TECHNICAL DATA PAGE FOR TYPE OF SYSTEM USED.**

**CAUTION: OPERATION OF VIKING DELUGE VALVES BY PRESSURIZING THE PRIMING CHAMBER WITH AIR PRESSURE OR ANY OTHER PRESSURIZED GAS IS NOT RECOMMENDED OR APPROVED.**

### **B. Placing the Valve in Service**

For Deluge Valves equipped with Conventional Deluge Valve Trim, follow steps 1 through 10 (and 11 & 12 if applicable) below.

- Verify:
  - The system Main Water Supply Control Valve (D.1) is closed and the Deluge Valve is trimmed according to current Viking Trim Charts and schematic drawings for the system used.
  - The system has been properly drained.
  - Auxiliary Drain (B.13) is open.
  - The Emergency Release (B.9) is closed.
  - The system water supply piping is pressurized up to the closed Main Water Supply Control Valve (D.1) and the priming line is pressurized up to the closed Priming Valve (B.1).
- For Systems equipped with:
  - Hydraulic Release Systems:
    - Verify that all releasing devices are set and that any Inspector's Test Valve and/or auxiliary drain valves are closed.
    - Open Priming Valve (B.1). Allow the hydraulic release system to fill. When priming pressure gauge (B.7) indicates that the release piping and priming chamber pressure is equal to system supply pressure, proceed to step 3.
  - Pneumatic Release Systems:
    - Set the release system.
    - Open Priming Valve (B.1). Proceed to step 3
  - Electric Release Systems:
    - Open Priming Valve (B.1).
    - Set the electric release system. Proceed to step 3.
- Open Flow Test Valve (B.11).
- Partially open Main Water Supply Control Valve (D.1).
- When full flow develops from the Flow Test Valve (B.11), close the Flow Test Valve (B.11). Verify that there is no flow from the open Auxiliary Drain (B.13).
- Close Auxiliary Drain (B.13).
- Fully open and secure the Main Water Supply Control Valve (D.1).
- Verify that the Alarm Shut-off Valve (B.6) is open and that all other valves are in their normal operating position. (Refer to Figure 1, page 215 c and/or Trim Charts and System Data for the system used.)
- Depress the plunger of Drip Check Valve (B.14). No water should flow from the Drip Check Valve (B.14) when the plunger is pushed.



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10. Check for, and repair all leaks.
11. On new installations, those systems that have been placed out of service, or where new equipment has been installed, trip test the system to verify that all equipment functions properly. Refer to Annual Trip Tests, paragraph 6.II.C.
12. After completing a trip test, perform SEMI-ANNUAL maintenance.

**CAUTION! PERFORMING A TRIP TEST RESULTS IN OPERATION OF THE DELUGE VALVE. WATER WILL FLOW INTO THE SPRINKLER PIPING. TAKE NECESSARY PRECAUTIONS TO PREVENT DAMAGE.**

### C. Valve Removed From Service

**NOTE: WHEN A VALVE HAS BEEN REMOVED FROM SERVICE AND IS SUBJECT TO FREEZING OR WILL BE OUT OF SERVICE FOR AN EXTENDED PERIOD OF TIME, ALL WATER MUST BE REMOVED FROM THE PRIMING CHAMBER, TRIM PIPING, WATER SUPPLY PIPING AND OTHER TRAPPED AREAS.**

## 5. OPERATION (Refer to Figure 3)

The Viking Model F-2 Halar® Coated Deluge Valve has an inlet chamber, an outlet chamber and a priming chamber. The inlet chamber and outlet chamber are separated from the priming chamber by the clapper (5) and diaphragm (6).

### In the set condition:

System pressure is supplied to the priming chamber through a restricted priming line (trim) equipped with a check valve. System water supply pressure trapped in the priming chamber holds the clapper (5) on seat (2) due to area differential design. Clapper (5) separates the inlet chamber from the outlet chamber, keeping the outlet chamber and system piping dry.

### In fire conditions:

When the release system operates, pressure is released from the priming chamber faster than it is supplied through the restricted priming line. Water supply pressure in the inlet chamber forces the clapper (5) off from seat (2), allowing water to flow through the outlet and into the system and alarm devices.

### For Deluge Valves equipped with Conventional Trim:

When the deluge valve operates, the air side of the PORV (B.5) loses pressure, causing the PORV (B.5) to operate. When the PORV (B.5) operates, it continually vents the priming chamber to prevent the deluge valve from resetting even if the open releasing devices close. The deluge valve can only be reset after the system is taken out of service, and the outlet chamber of the deluge valve and associated trim piping is depressurized and drained.

## 6. INSPECTIONS, TESTS AND MAINTENANCE (Refer to Figure 1)

**NOTICE: THE OWNER IS RESPONSIBLE FOR MAINTAINING THE FIRE PROTECTION SYSTEM AND DEVICES IN PROPER OPERATING CONDITION. THE DELUGE VALVE MUST BE KEPT FROM FREEZING CONDITIONS AND PHYSICAL DAMAGE THAT COULD IMPAIR ITS OPERATION.**

**WARNING: ANY SYSTEM MAINTENANCE WHICH INVOLVES PLACING A CONTROL VALVE OR DETECTION SYSTEM OUT OF SERVICE MAY ELIMINATE THE FIRE PROTECTION CAPABILITIES OF THAT SYSTEM. PRIOR TO PROCEEDING, NOTIFY ALL AUTHORITIES HAVING JURISDICTION. CONSIDERATION SHOULD BE GIVEN TO EMPLOYMENT OF A FIRE PATROL IN THE AFFECTED AREAS.**

### I. Inspection

It is imperative that the system be inspected and tested on a regular basis. The frequency of the inspections may vary due to contaminated water supplies, corrosive water supplies or corrosive atmospheres. Also, the alarm devices, detection systems or other connected trim may require a more frequent schedule. For minimum maintenance and inspection requirements, refer to NFPA 25. In addition, the Authority Having Jurisdiction may have additional maintenance, testing, and inspection requirements which must be followed. The following recommendations are minimum requirements.

#### A. Weekly - Weekly visual inspection of the Viking Deluge Valve is recommended.

1. Verify that the Main Water Supply Control Valve (D.1) is open and that all other valves are in their normal operating position and appropriately secured. (Refer to Figure 1 and/or Trim Charts and System Data for the system used.)
2. Check for signs of mechanical damage, leakage, and/or corrosive activity. If detected, perform maintenance as required. If necessary, replace the device.
3. Verify that the valve and trim are adequately heated and protected from freezing and physical damage.

\*\*For normal operating position, refer to Figure 1 and/or Trim Charts and System Data for the system used.





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### II. Tests

#### A. Quarterly Water Flow Alarm Test

Quarterly testing of water flow alarms and performance of a Main Drain Test is recommended and may be required by the Authority Having Jurisdiction.

1. Notify the Authority Having Jurisdiction and those in the area affected by the test.
2. To test the local electric alarm (if provided) and/or mechanical water motor alarm (if provided), OPEN the alarm test valve (B.10) in the Deluge Valve trim.
  - a. Electric alarm pressure switches (if provided) should activate.
  - b. Electric local alarms should be audible.
  - c. The local water motor gong should be audible.
  - d. If equipped with remote station alarm signaling devices, verify that alarm signals were received.
3. When testing is complete, CLOSE the Alarm Test Valve (B.10).
4. Verify:
  - a. All local alarms stop sounding and alarm panels (if provided) reset.
  - b. All remote station alarms reset.
  - c. Supply piping to water motor alarm properly drains.
5. Verify that the Alarm Shut-off Valve (B.6) is OPEN, and the Alarm Test Valve (B.10) is CLOSED.
6. Verify that the outlet chamber is free of water. No water should flow from the Drip Check (B.14) when the plunger is pushed.
7. Notify the Authority Having Jurisdiction and those in the affected area that testing is complete.

#### B. Main Drain Test

1. Notify the Authority Having Jurisdiction and those in the area affected by the test.
2. Record pressure reading from the water supply pressure gauge (B.12).
3. Verify that the outlet chamber of the Deluge Valve is free of water. No water should flow from the drip check (B.14) when the plunger is pushed.
4. Fully OPEN the Flow Test Valve (B.11).
5. When a full flow is developed from the Flow Test Valve (B.11), record the residual pressure from the water supply pressure gauge (B.12).
6. When the test is complete, SLOWLY CLOSE the Flow Test Valve (B.11).
7. Compare test results with previous flow information. If deterioration of the water supply is detected, take appropriate steps to restore adequate water supply.
8. Verify:
  - a. Normal water supply pressure has been restored to the inlet chamber, the priming chamber, and the release system. The pressure on the priming chamber water pressure gauge should equal the system water supply pressure.
  - b. All alarm devices and valves are secured in normal operating position (refer to Figure 1 and/or Trim Charts and System Data for the system used).
9. Notify the Authority Having Jurisdiction that the test is complete. Record and/or provide notification of test results as required by the Authority Having Jurisdiction.

#### C. Annual Trip Tests

**CAUTION! PERFORMING THIS TEST RESULTS IN OPERATION OF THE DELUGE VALVE. WATER WILL FLOW INTO THE SPRINKLER PIPING AND FROM ANY OPEN SPRINKLERS AND/OR NOZZLES. TAKE NECESSARY PRECAUTIONS TO PREVENT DAMAGE.**

1. Notify the Authority Having Jurisdiction and those in the area affected by the test.
2. Fully open the Flow Test Valve (B.11) to flush away any accumulation of foreign material.
3. Close the Flow Test Valve (B.11).
4. Trip the system by operating the release system. Allow a full flow to pass through the Deluge Valve. Water flow alarms should operate.
5. When test is complete:
  - a. Close the Main Water Supply Control Valve (D.1).
  - b. Close the Priming Valve (B.1).
  - c. Open the Auxiliary Drain Valve (B.13).
  - d. Open all system main drains and auxiliary drains. Allow the system to drain completely.
6. Perform semi-annual maintenance. Refer to paragraph 6.III.B Semi-Annual Maintenance.
7. Place the system in service. Refer to Item 4-B.
8. Notify the Authority Having Jurisdiction that the test is complete. Record and/or provide notification of test results as required by the Authority Having Jurisdiction.



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### III. Maintenance (Refer to Figure 1)

**NOTICE: THE OWNER IS RESPONSIBLE FOR MAINTAINING THE FIRE PROTECTION SYSTEM AND DEVICES IN PROPER OPERATING CONDITION. THE DELUGE VALVE MUST BE KEPT FROM FREEZING CONDITIONS AND PHYSICAL DAMAGE THAT COULD IMPAIR ITS OPERATION.**

Where difficulty in performance is experienced, the valve manufacturer or his authorized representative shall be contacted if any field adjustment is to be made.

**WARNING: ANY SYSTEM MAINTENANCE THAT INVOLVES PLACING A CONTROL VALVE OR DETECTION SYSTEM OUT OF SERVICE MAY ELIMINATE THE FIRE PROTECTION CAPABILITIES OF THAT SYSTEM. PRIOR TO PROCEEDING, NOTIFY ALL AUTHORITIES HAVING JURISDICTION. CONSIDERATION SHOULD BE GIVEN TO EMPLOYMENT OF A FIRE PATROL IN THE AFFECTED AREAS.**

#### A. After Each Operation:

1. Sprinkler systems that have been subjected to a fire must be returned to service as soon as possible. The entire system must be inspected for damage, and repaired or replaced as necessary.
2. Deluge Valves and trim that have been subjected to brackish water, salt water, foam, foam/water solution, or any other corrosive water supply, should be flushed with good quality fresh water before being returned to service.
3. Perform SEMI-ANNUAL maintenance after every operation.

#### B. Semi-Annual Maintenance:

1. Remove the system from service. (Refer to Deluge or Preaction System Data that describes systems with the release system used for additional information.)
  - a. Close the Main Water Supply Control Valve (D.1) and Priming Valve (B.1).
  - b. Open the Auxiliary Drain Valve (B.13).
  - c. Relieve pressure in the priming chamber by opening the Emergency Release Valve (B.9).
2. Inspect all trim for signs of corrosion and/or blockage. Clean and/or replace as required.
3. Clean and/or replace all strainer screens (including B.2).
4. Check Halar® coating of the Deluge Valve for physical damage. If necessary, make repairs to the affected area to inhibit potential corrosion. Refer to paragraph 6.III.D Halar® Coating Repair instructions.
6. Place the system in service. Refer to Item 4-B.

#### C. Every Fifth Year

1. Internal inspection of Deluge Valves is recommended every five years unless inspections and tests indicate more frequent internal inspections are required. Refer to DISASSEMBLY instructions provided below.
2. Internal inspection of strainers, and restricted orifices is recommended every five years unless inspections and tests indicate more frequent internal inspections are required.
3. Record and provide notification of inspection results as required by the Authority Having Jurisdiction.

#### D. Halar® Coating Repair

If the Halar® coating becomes chipped, immediately repair the damaged area to inhibit the potential for corrosion. Follow instructions below:

1. Wipe clean and prepare the area to be repaired as instructed.
2. Using a hand held torch, gently heat the Halar® coating around the area needing repair to the melting point of the Halar®.
3. Allow the heated Halar® to flow together.
4. Allow the coating to cool.

#### E. Valve Disassembly (Refer to Figure 3)

1. Remove the valve from service (see the release system description and Technical Data for additional information). Close the main control valve, open the main drain valve. Release the pressure in the priming chamber by opening the Emergency Release Valve.
2. Remove trim as required to allow removal of cover (4).
3. Remove screws (9).
4. Lift cover (4) from body (1).
5. Remove clapper assembly (No. 3, 5, 6, 7, & 10) by lifting it from the body (1).
6. Inspect seat (2). If replacement is necessary, remove screws (11). Remove old seat (2) and o-ring (12). Replace with new seat (2) and o-ring (12). Replace screws (11).
7. To replace the diaphragm rubber (6), remove the circle of screws (10). Remove the clamp ring (3) and remove the diaphragm rubber (6).
8. To replace the seat rubber assembly (7), clapper assembly (3, 5, 6, 7, & 10) must be removed from the valve. Remove the circle of screws (11). Seat rubber assembly (7) can be removed.



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**NOTE: PRIOR TO INSTALLING A NEW CLAPPER RUBBER (6) OR SEAT RUBBER ASSEMBLY (7), MAKE CERTAIN THAT ALL SURFACES ARE CLEAN AND FREE OF FOREIGN MATTER. THE PLATED SEAT (2) MUST BE SMOOTH AND FREE OF NICKS, BURRS OR INDENTATIONS.**

### F. Valve Reassembly

1. Prior to reassembly flush the valve of all foreign matter.
2. To reassemble, reverse disassembly procedure.

## 7. AVAILABILITY AND SERVICE

The Viking Deluge Valve and accessories are available through a network of Domestic, Canadian, and International Distributors. See the Viking Corp. Web site for your 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.

**Table 2 - Coating and Plating Specifications**

**Halar® Coating specification:** Viking Specification SPF02-Q06 - Ethylene and Chlorotrifluoroethylene (Powder)

Total Thickness: .008"-.010" (.20 mm - .25 mm) applied as follows:

1. Parts are cleaned and sandblasted for proper adhesion and performance
2. Primer base powder and Halar® clear powder coat applied using Electrostatic Spray system
3. Powder is fusion bonded and cured in oven, and allowed to cool

**Electroless Nickel Plating Specification:** Viking Specification SPF02-J07

Total thickness: .002" - .0025" (.05 mm - .06 mm) applied for corrosion resistance as follows:

1. Parts are cleaned and rinsed for proper adhesion
2. Parts are chemically activated for adhesion of plating
3. Finish plate with .002"-.0025" (.05 mm - .06 mm) Electroless Nickel Phosphorus plating
4. Apply .0002" - .0003" (.005 mm - .007 mm) Tin/Lead plating to seat/rubber contact surface

**Teflon® Coating Specification:** Viking Specification SPF02-N05 - Teflon® Powder Coating

Total thickness: .002"-.0025" (.05 mm - .06 mm) Teflon® Powder Coating applied as follows:

1. Parts are cleaned and burned off in oven
2. Parts are etched for adhesion by grit blasting
3. Teflon® Powder is electrostatically applied to .002" - .0025" (.05 mm - .06 mm)
4. Powder is fusion bonded and cured in oven, and allowed to cool

Halar® is a registered trademark of Ausimont USA, Inc.

Teflon® is a registered trademark of E.I. Dupont Corp.

**Table 3 - Trim Piping Materials Chart**

VALVE CONTROLLING:	TRIM PIPING MATERIAL
Fresh Water Only	Standard - See Note 1
Sea Water Only AFFF/Sea Water Premix Solution ARC/Sea Water Premix Solution	316 Stainless Steel or 400 Monel. See Note 2 & 4
AFFF/Fresh Water Premix Solution	Black Steel, Copper, Stainless Steel or 400 Monel. See Note 3 & 4
AFFF/Fresh Water Premix Solution	Black Steel, Copper, Stainless Steel or 400 Monel. See Note 3 & 4
AFFF Foam Concentrate in pipes 2" (DN50) & larger	Black Steel, Copper, Stainless Steel or 400 Monel. See Note 3 & 4
AFFF Foam Concentrate in pipes smaller than 2" (DN50)	Copper 316, Stainless Steel or 400 Monel. See Note 4
ARC Foam Concentrate	Stainless Steel or 400 Monel. See Note 4 & 5

**Note 1** - Standard Trim sets available from Viking consist of galvanized nipples and fittings. Includes ACCESSORY PACKAGE.

**Note 2** - After operation, the valve & trim should be flushed with good quality fresh water before being returned to service.

**Note 3** - Copper trim sets are not available from Viking. They may be manufactured by installer. Refer to Model E Deluge Valve Trim Charts provided in the *Viking Engineering and Design Data* book for required configuration of trim, sizes and lengths of nipples and components required.

**Note 4** - Monel trim sets are not available from Viking. They may be manufactured by installer. Refer to Model E Deluge Valve Valve Trim Charts provided in the *Viking Engineering and Design Data* book for required configuration of trim, sizes and lengths of nipples and components required.

**Note 5** - Do NOT allow ARC Foam Concentrate to enter the priming chamber of the Deluge Valve. When using the Halar® Coated Deluge Valve as a Foam Concentrate Control Valve, refer to the *Viking Foam Engineering and Design Data* book for trim charts, technical data and special instructions





# TECHNICAL DATA

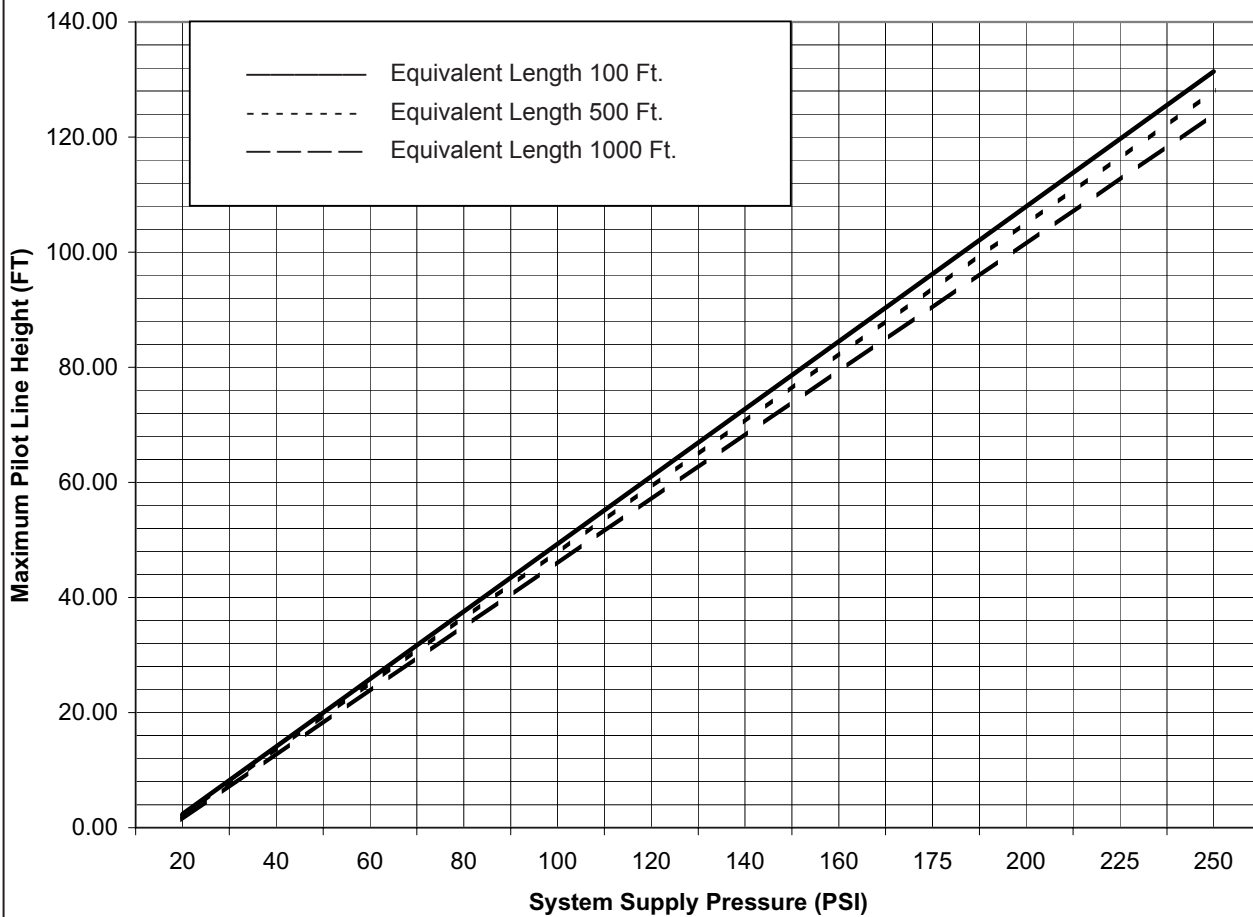
**DELUGE VALVE  
MODEL F-2 HALAR® COATED  
STRAIGHT THROUGH STYLE  
1-1/2" (DN40) & 2" (DN50)**

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

### Maximum Allowable Pilot Heights for Select Equivalent Lengths of Hydraulic Release Piping Model F-2 Deluge Valves with 1/16" (1.6 mm) Restricted Orifice

Graph is based on 1/2" (15 mm) pilot sprinklers installed on 1/2" (15 mm) schedule 40 galvanized release system piping.  
If the maximum height of hydraulic release piping exceeds the limits shown on the graph, use Pneumatic or Electric Release System.



**Figure 2**  
**1-1/2" (DN40) & 2" (DN50) Valves**

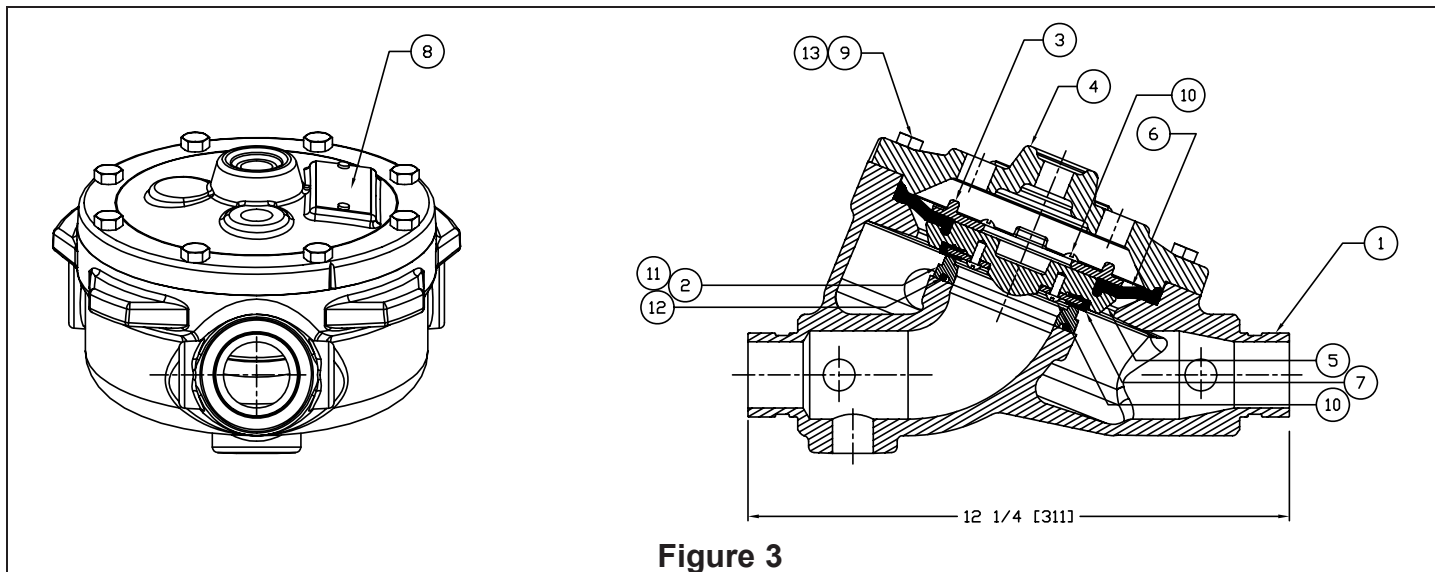


# TECHNICAL DATA

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**Figure 3**

ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	NO. REQ'D
	1-1/2" & 2" (DN40 & DN50)			1-1/2" & 2" (DN40 & DN50)
1	--	Body	Ductile Iron 65-45-12, Halar® Coated	1
2	*	Seat	Brass, UNS-C84400, Nickel Plated	1
3	04224BN	Ring Clamp, Upper Diaphragm	Brass, UNS-C84400, Teflon Coated	1
4	--	Cover	Ductile Iron 65-45-12, Halar® Coated	1
5	07046BN	Clapper	Brass, UNS-C84400, Teflon Coated	1
6	12055	Upper Diaphragm	EPDM ASTM D-2000	1
7	04225B	Rubber Seat Assembly	EPDM ASTM D-2000/Stainless Steel UNS-S30400	1
8	--	Data Plate	Aluminum Etched	1
9	08091	Screw, H.H.C. <sup>1</sup> , 3/8-16 x 1-1/8 (29 mm)	Stainless Steel UNS-S30400	10
10	08214	Screw, R.H. <sup>2</sup> , 10-24 x 1/2 (13 mm)	#400 Monel	8
11	*	Screw, R.H. <sup>2</sup> , 10-24 x 5/8 (16 mm)	#400 Monel	4
12	*	O-Ring	EPDM	1
13	08412	Washer	Stainless Steel	12

-- Indicates no replacement part available

\* Indicates part available only in sub-assembly listed below

**SUB-ASSEMBLY**

2, 11-12	14712-2	Seat Replacement Kit*	
3, 5-7, 9, 10, 13	13396	Clapper Assembly Kit	
<sup>1</sup> Hex Head Cap Screw	<sup>2</sup> Round Head, Phillips Drive Screw		

\*Note: Includes o-ring lubricant to be added to ring groove in seat.

Note: Do not damage the coating, or complete valve replacement will be required.