



TECHNICAL DATA

WET PIPE FOAM/WATER SYSTEM SUPPLIED BY BLADDER TANK

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

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1. DESCRIPTION

A Wet Pipe Foam/Water System Supplied by Bladder Tank is a standard wet pipe automatic sprinkler system capable of discharging a foam/water solution automatically through any sprinklers that operate. A Wet Pipe Foam/Water System Supplied by Bladder Tank with a hydraulically actuated Viking Halar® deluge concentrate control valve (CCV) consists of a standard wet pipe sprinkler system using a Viking alarm check valve complete with variable pressure trim, a ratio controller proportioning device with appropriately sized orifice, a hydraulically actuated Viking Halar® Deluge Valve, a foam concentrate bladder tank and foam concentrate.

2. LISTINGS AND APPROVALS

No formal approval as a Wet Pipe System. Main component and sub-system approvals below;

- Alarm Check Valve and Trim
 - UL Listed - Guide VPLX
 - FM Approved - Waterflow Alarm Valves
- Model VRC Ratio Controller (Proportioner)
 - UL Listed - Guide GFGV
 - FM Approved - Low Expansion Foam Systems
- Model E2, F2, H2 or J2 Halar® Coated Concentrate Control Valve (CCV)
 - UL Listed - Guide VLFT
 - FM Approved - Automatic Water Control Valve as standard deluge valve. No formal approval available for coating.
- Model VFT Viking Bladder Tank - with ASME Section VIII and/or EN13455 Design Code
 - UL Listed - Guide GHXV
 - FM Approved - Low Expansion Foam Systems
- Viking AFFF 1%S C6, AFFF 3%S C6 or ARC 3X3S C6 Foam Concentrates with C6 Formulation
 - UL Listed - Guide GFGV
 - FM Approved - Low Expansion Foam Systems

3. TECHNICAL DATA

Specifications:

Refer to individual component technical data pages.

Material Standards:

Refer to individual component technical data pages.

Ordering Information:

Please contact your local Viking office or distributor.

4. INSTALLATION

A1. FM Approved Discharge Devices

- Standard Spray Sprinklers (refer to water/foam sprinkler data page)

A2. Other Discharge Devices

- Non-aspirating spray nozzles
- Manual monitors
- Hose reels and hand lines

B. General Instructions And Warnings

1. Refer to the Warnings and General Notes on pages 2a-d in the "Foam Design" section of the *Viking website*.
2. Refer to specific technical data sheets, FM Global Property Loss Prevention Data Sheet 4-12, acceptable installation standards, codes and Authority Having Jurisdiction for additional installation, operation and maintenance instructions.
3. The alarm check valve (C) must be installed using the variable pressure trim to minimize false operation of the CCV (D).
4. Inspections - It is imperative that the system be inspected and tested on a regular basis. See Section 6 - Inspections, Tests, and Maintenance.

WARNING

Any system maintenance or testing that involves placing 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.

5. The valve, trim, and assembly must be installed in an area not subject to freezing temperatures or physical damage.



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C. Design and Installation

⚠ WARNING

Locate all portions of the foam/water system subject to freezing in a heated area.

The following guidance is given with reference to the general system schematics (Figures) detailed later in this system manual.

1. Refer to the Special Notes section on page 10f and the Warnings and General Notes and the Warnings and General Notes on pages 2a-d in the Foam Design Section of our website.
2. Install the alarm check valve and trim (C) in accordance with the relevant Viking technical data page.
3. Install the proportioning device (B) in the system riser in accordance with the ratio controller technical data page and Special Notes Section of this System Manual.
4. Install foam solution test valve (25) and system isolation valve (26). These valves are used to conduct foam/water solution tests and are required.
5. Install hydraulically actuated Halar® coated Viking Deluge CCV (D) and associated trim as indicated in Figure 1 or refer to technical data page 61a-g. FM systems require electrical supervision in accordance with FM Global Property Loss Prevention Data Sheet 4-12.
6. Install bladder tank (A) in accordance with the bladder tank operation manual and the following key notes;
 - a. Recommended connections are shown in Figure 1.
 - b. Locate the tank as close as practical to the system riser. (See Special Note B on Page 6).
 - c. Allow enough room around the tank to perform maintenance on the bladder.
 - d. Allow access to the tank for filling from containers of foam concentrate.
 - e. All valves and devices should be located for easy access for operation and maintenance.
 - f. Install the water supply piping (16) from the riser to the bladder tank as shown in Figure 1.
 - g. Install the piping from the tank (A) to the ratio controller (B) as straight as possible to limit pressure loss.
 - i. Fill bladder tank (A) with foam concentrate in accordance with the bladder tank operation manual and leave isolated from the system.

D. Placing System Into Service & Removing System from Service

1. Placing the System into Service:
 - a. Refer to the Special Notes section on page 6 and the Warnings and General Notes and the Warnings and General Notes on pages 2a-d in the Foam Design Section of our website.
 - b. Verify the following valves are in the closed position: water supply control valve (8), PORV activation line ball valve (14), bladder tank water supply control valve (15), 1/2" CCV priming line ball valve (21), concentrate control shut-off valve (22), foam solution test valve (25), foam concentrate auxiliary drain valve (29) and alarm test shut-off valve on the alarm check valve (C).
 - c. Place the wet alarm check valve in service in accordance with the relevant Viking technical data page.
 - d. When the system piping is pressurized and has stabilized, prime the Halar® Coated Deluge CCV (D) by opening and securing the 1/2" CCV priming line ball valve (21) in the open position. When the pressure on the priming chamber water pressure gauge (27) equals the supply water pressure, the deluge valve will close.
 - e. The wet alarm system (C) should now be in service. To place the bladder tank (A) in service refer to the bladder tank operation manual for the complete start-up procedure.

NOTICE

In accordance with the bladder tank operation manual, ensure that CCV (D) is closed, bladder tank is vented of air and shut-off valves (22) and (15) are opened slowly..

Open Alarm Shut-Off Valve on Alarm Check Valve (C) Trim.

When system pressure has stabilized, open PORV actuation ball valve (14)..

- f. Verify normal valve positions and secure in correct position (as detailed in Figure 1).
- g. Check for and repair any leaks in the foam/water system pipe network.
2. For System and Riser Piping Service and Maintenance:
 - a. Refer to the Special Notes section on page 6 and the Warnings and General Notes and the Warnings and General Notes on pages 2a-d in the Foam Design Section of our website.
 - b. Close the water supply control valve (8).
 - c. Close the bladder tank water supply control valve (15), concentrate control shut-off valve (22) and PORV activation line ball valve (14).
 - d. Leave the system isolation valve (26) open.
 - e. Refer to instructions for removing the alarm check valve (C) from service in the relevant Viking technical data page.
 - f. Open the main drain on alarm check valve (C) and sprinkler system auxiliary drain valves and remote inspector's test valve to vent system as required.
 - g. Perform required service and maintenance on system devices or piping network.
 - h. Refer to instructions for returning the alarm check valve (C) to service in the relevant Viking technical data page.
 - i. Verify Halar® Coated Deluge CCV (D) is closed by checking water pressure gauge (27) to insure that it is the same as or higher than the system pressure.



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- j. Open tank water supply valve (15) and concentrate control shut-off valve (22).
Open shut-off valve on alarm check valve (C) trim.
When system pressure has stabilized, open PORV actuation ball valve (14).
- k. Verify normal valve positions and secure in correct position (as detailed in Figure 1).
- 3. For Total System Service and Maintenance:
 - a. Refer to the Special Notes section on page 6 and the Warnings and General Notes and the Warnings and General Notes on pages 2a-d in the Foam Design Section of our website.
 - b. Close the water supply control valve (8).
 - c. Close the bladder tank water supply control valve (15), concentrate control shut-off valve (22) PORV actuation line ball valve (14) and 1/2" CCV priming line ball valve (21).
 - d. Leave the system isolation valve (26) open.
 - e. Refer to instructions for removing the alarm check valve (C) from service in the relevant Viking technical data page.
 - f. Open the main drain on alarm check valve (C) and sprinkler system auxiliary drain valves and remote inspector's test valve to vent system as required.
 - g. Relieve pressure on CCV priming line (28) through the 3-way gauge valve (27).
 - h. Perform required service and maintenance on system devices or piping network.
 - i. Refer to instructions for removing the bladder tank (A) from service in the bladder tank operation manual.
 - j. Perform required service and maintenance on bladder tank (A) in accordance with the bladder tank operation manual.
 - k. To return the system into service, follow steps 2b through 2g in Section D above.
- 4. For Bladder Tank Service and Maintenance - While Leaving Wet System in Service:
 - a. Refer to the Special Notes section on page 6 and the Warnings and General Notes and the Warnings and General Notes on pages 2a-d in the Foam Design Section of our website.
 - b. Close the bladder tank water supply control valve (15), concentrate control shut-off valve (22) and PORV actuation line ball valve (14).
 - c. Refer to instructions for removing the bladder tank (A) from service in the bladder tank operation manual.
 - d. Perform required service and maintenance on bladder tank (A) in accordance with the bladder tank operation manual.
 - e. To place the bladder tank (A) in service refer to the bladder tank operation manual for the complete start-up procedure.

NOTICE

In accordance with the bladder tank operation manual, ensure that CCV (D) is closed, bladder tank is vented of air and shut-off valves (22) and (15) are opened slowly..

- Open alarm shut-off valve on alarm check valve (C) trim.
When system pressure has stabilized, open PORV actuation ball valve (14)..
- f. Verify normal valve positions and secure in correct position (as detailed in Figure 1).
- 5. For Riser Only Service and Maintenance:
 - a. Refer to the Special Notes section on page 6 and the Warnings and General Notes and the Warnings and General Notes on pages 2a-d in the Foam Design Section of our website.
 - b. Close the water supply control valve (8).
 - c. Close the bladder tank water supply control valve (15), concentrate control shut-off valve (22) and PORV activation line ball valve (14).
 - d. Close the system isolation valve (26).
 - e. Refer to instructions for removing the preaction deluge valve (C) from service in the relevant Viking technical data page.
 - f. Open the main drain check valve (C).
 - g. Perform required service and maintenance on the check valve.
 - h. Refer to instructions for returning the alarm check valve (C) to service in the relevant Viking technical data page.
 - i. Verify Halar® Coated Deluge CCV (D) is closed by checking water pressure gauge (27) to insure that it is the same as or higher than the system pressure.
 - j. Open the system isolation valve (26).
 - k. Open tank water supply valve (15) and concentrate control shut-off valve (22).
Open alarm shut-off valve on alarm check valve (C) trim.
When system pressure has stabilized, open PORV actuation ball valve (14).
 - l. Verify normal valve positions and secure in correct position (as detailed in Figure 1).
- 6. Testing the foam concentrate swing check valve:
 - a. After a flow test or proportioning test has been conducted, the foam concentrate swing check valve (24) should be checked to insure that it maintains a positive seal between the Halar® Coated Deluge CCV (D) and the preaction system riser, by following the procedure outlined below.
 - b. Bleed off any pressure which may have been trapped between the outlet of the chamber of the Halar® Coated Deluge CCV (D) and the swing check valve (24) by placing a container under the foam concentrate auxiliary drain valve (29) and opening the valve slowly.
 - c. Drain excess foam concentrate into container. Should the leakage continue, check the priming pressure gauge (27) on the Halar® Coated Deluge CCV (D) to insure that the valve is primed and closed.
 - d. If the foam concentrate auxiliary drain valve (29) continues to leak foam concentrate, then the Halar® Coated Deluge



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CCV (D) must be checked for proper operation and repaired if necessary. Follow the procedure in section 4 D.5 and refer to component data page for repair instructions.

- e. Should water continue to leak from the foam concentrate auxiliary drain valve (29), the foam concentrate swing check valve (24) clapper rubber and seat should be maintained. Follow the procedure in section D.5 and refer to component data page for repair instructions.

E. Troubleshooting

1. For operating and maintenance instructions pertaining to Viking manufactured equipment, refer to the appropriate section of the Viking Website.
2. For operating and maintenance instructions pertaining to foam equipment manufactured for Viking, refer to the Foam section on the Viking Website.
3. For operation and maintenance instructions for all other equipment, refer to appropriate equipment data.

F. Emergency Instructions

1. During and after a fire:
 - a. Make sure the fire is OUT! Make a complete inspection of all areas covered by this system including areas not involved in the fire. Place a fire watch in the entire area until the system is back in service. **NOTE:** If the fire is not out, DO NOT turn the alarm off by placing the alarm shut-off valve in the closed position.
 - b. Close the system water supply control valve (8) and the tank water supply valve (15). Post a person at the valve ready to turn them back on, should the fire rekindle.
 - c. Replace all operated and damaged sprinklers with the same type and temperature rating as were removed. Open main drain if necessary.
 - d. Check the level of foam concentrate and refill the foam concentrate bladder tank (A) in accordance with the bladder tank operation manual. Always replace the foam concentrate with the same brand and type as that being used currently.
NOTE: Never intermix different types or brands of foam concentrate, as this could cause them to gel or solidify, and render the concentrate useless.
 - e. Return the complete system to service by following the procedure listed in Section 4.D.1, Steps a through g.
 - f. Perform quarterly test. See Special Note E on Page 6 for special instructions.
 - g. Fire can damage piping and supports, so call your Viking representative for assistance in obtaining a complete inspection and additional replacement sprinklers. For additional details, see technical data sheets for specific device.
NOTE: If replacement foam concentrate is not immediately available, activate the wet pipe portion of the foam/water system until the replacement foam concentrate arrives.
2. If the discharge system is damaged and the system is flowing water:
 - a. Close the water supply control valve (8) to shut off the water supply
 - b. Close the concentrate control shut-off valve (22) to eliminate the flowing of the foam concentrate to the hydraulically actuated Halar® Coated Deluge CCV (D) and the ratio controller (B).
 - c. Close the tank water supply control valve (15) to reduce the pressure on the bladder tank (A).
 - d. Close the system isolation valve (26), to stop the flow of water/foam solution into the discharge system.
 - e. Place the alarm shut-off valve on the Viking alarm valve (C) trim in the closed position to reestablish the prime pressure on the hydraulically actuated Halar® Coated Deluge CCV (D).
 - f. Repair the damaged portion of the discharge system.
 - g. Return the riser and the foam system to service, following the procedure listed above in section 4.D.4, Steps a through f
3. If the foam concentrate pipe system is damaged:
 - a. Close the concentrate control shut-off valve (22) to eliminate the flowing of the foam concentrate to the hydraulically actuated Halar® Coated Deluge CCV (D) and the ratio controller (B).
 - b. Close the tank water supply control valve (15) to reduce the pressure on the bladder tank (A).
 - c. Repair the damaged portion of the foam concentrate pipe system.
 - d. Return the foam concentrate system to service. Follow the procedure listed above in section 4.D.4 steps a through f.
NOTE: If there are no damaged sections of the distribution system, the wet pipe portion of the sprinkler system may be kept in service for protection while repairs to the foam concentrate system are performed.

5. OPERATION

Actuation of a sprinkler head allows system water to flow causing the alarm check valve (C) clapper to open. The retard chamber and alarm line (13) are filled, pressurizing the PORV (17) and connected alarm devices. Operation of the PORV (17) relieves pressure from the priming chamber of the Halar® Coated Deluge CCV (D) allowing the valve to open. If fitted, the priming line pressure switch (30) will signal the CCV's activation. The bladder tank (A) is already pressurized by the water supply piping (16). System water pressure in the space between the flexible bladder and the inside surface of the steel tank causes the bladder to collapse, forcing the foam concentrate out through the foam concentrate discharge piping (23), Halar® Coated Deluge CCV (D) and metering orifice of the ratio controller (B), into the venturi (low pressure) area of the ratio controller (B). The foam concentrate is proportioned (usually 1% or 3%), with the main water supply, sending foam solution to the sprinklers or other foam/water discharge devices downstream.



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6. INSPECTIONS, TESTS AND MAINTENANCE

NOTICE

The owner is responsible for maintaining the fire protection system and devices in proper operating condition. For minimum maintenance and inspection requirements, refer to recognized standards such as those produced by NFPA, FM Global Property Loss Prevention Data Sheet 4-12, LPC and VdS, which describe care and maintenance of sprinkler systems. In addition, the Authority Having Jurisdiction may have additional maintenance, testing, and inspection requirements that must be followed.

⚠ WARNING

Any system maintenance or testing that involves placing 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.

Inspections: It is imperative that the system be inspected and tested on a regular basis. The following recommendations are minimum requirements. The frequency of the inspections may vary due to contaminated or corrosive water supplies and corrosive atmospheres. In addition, the alarm devices or other connected equipment may require more frequent inspections. Refer to the technical data, system description, applicable codes, and Authority Having Jurisdiction for minimum requirements. Prior to testing the equipment, notify appropriate personnel.

- A. Alarm Test - Please refer to Special Note E, Page 10f before performing an alarm test, otherwise, an unwanted release of foam concentrate will occur. At least quarterly, test all connected alarm devices by opening the remote inspector's test valve.
- B. Riser Flow Test - Please refer to Special Note E, Page 10f and Section 4-D, before performing the riser flow test, otherwise, an unwanted release of foam concentrate will occur. At least quarterly, perform a riser flow test. Observe and record the supply pressure gauge reading. Open the main drain valve fully. Again, observe and record the supply pressure gauge reading. Close the main drain valve. If the readings vary significantly from those previously established or from normal, check the main supply line for obstructions or closed valves and correct any problems found.
- C. General - Visually inspect the valve, trim, piping, alarm devices, and connected equipment for physical damage, freezing, corrosion, or other conditions that may inhibit the proper operation of the system.

7. AVAILABILITY

The Wet Pipe Foam/Water System Supplied by Bladder Tank is available through a network of domestic and international distributors. See the Viking web site for closest distributor or contact Viking.

8. GUARANTEE

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



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SPECIAL NOTES

- A. Provide a minimum of 5 pipe diameters of straight pipe on the inlet and outlet of the ratio controller (B) to minimize turbulence inside the ratio controller. Exception: The outlet for the tank water supply control valve (15) may be connected nearer to the inlet of the ratio controller and should not cause excessive turbulence. However, if the outlet to the foam solution test valve (25) is located closer than 5 pipe diameters, there may be turbulence at high flow rates.
- B. The combined total equivalent length of pipe (pipe length, plus equivalent lengths for fittings and valves) including both the water supply inlet piping (16) and the foam concentrate discharge piping (23), should not exceed 50 equivalent feet (15.2 meters). This will allow both pipes to be the same size as the foam liquid inlet to the ratio controller.
- C. The CCV (D) and swing check valve (24) must be connected adjacent to the ratio controller using pipe nipples as short as possible.
- D. The alarm check valve must be installed using the variable pressure trim and retard chamber (30) to minimize false operation of the CCV (D). The releasing PORV (17) for the CCV (D) is activated by the operation of the alarm valve.
- E. Ball Valve (14) must be left in the open position, except when conducting alarm or flow test. Failure to close ball valve (14) before running an alarm or flow test will result in the unwanted discharge of foam concentrate. Once the test is completed, ball valve (14) must be returned to the open position, or the foam CCV (D) will not operate, and the foam concentrate will not flow to the ratio controller.

⚠ WARNING

Turning off the alarm test shut-off valve during a fire may cause the concentrate control valve to close, stopping the flow of foam concentrate. The installing contractor should post a sign stating the same at alarm shut-off valve and/or install a monitor switch on the alarm shut-off valve.

- F. The suggested location for a water flow switch, should one be required, is between the outlet of the alarm check valve (C) and the inlet to the ratio controller.
- G. Figure 1 is a general schematic of the required piping arrangement. Refer to the appropriate technical data page for specific information regarding the valve, tank, and related trim and devices.
- H. The technical information, statements, and recommendations contained in this manual are based on information and tests which, to the best of our knowledge, we believe to be dependable. It represents general guidelines only, and the accuracy or completeness thereof, are not guaranteed since conditions of handling and usage are outside our control. The purchaser should determine the suitability of the product for its intended use and assumes all risks and liability whatsoever in connection therewith.
- I. A strainer is not required in the foam concentrate discharge piping (23) of bladder tank systems per NFPA Standards.
- J. The Halar® Coated Deluge CCV (D) requires a 1/2" priming line (28) with CCV priming connection package. This package includes PORV (17), restricted orifice (18), check valve (19), strainer (20) and ball valve (21). Auxiliary drain valve (29) and gauge with 3-way valve (27) are included in the CCV Trim kit along with the plugs required for all other unused connections. Refer to the Viking website or data page 61 to find the correct trim kit part number for the corresponding size of Halar® Coated Deluge CCV (D).
- K. FM Global Property Loss Prevention Data Sheet 4-12 requires that the activation of the CCV must be supervised.



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- A. Foam Concentrate Bladder Tank complete with Items 1-7
1. Water Drain/Fill Valve - NORMALLY CLOSED
 2. Fill Line Master Shut-off Valve - NORMALLY CLOSED
 3. Concentrate Drain/Fill Valve - NORMALLY CLOSED
 4. Fill Cup/Sight Gauge Shut-off Valve - NORMALLY CLOSED
 5. Sight Gauge Assembly (or Hydrometer) - The trim for this assembly varies with the type of foam concentrate to be used. Refer to Tank Manufacturer's O & M Manual for specific details.
 6. Tank Water Vent Valve - NORMALLY CLOSED
 7. Diaphragm Concentrate Vent Valve - NORMALLY CLOSED
- B. Proportioning Device - Ratio Controller with Integral Orifice
- C. Type of System - Alarm Check Valve with Variable Pressure Trim including Retard Chamber
8. Water Supply Control Valve - NORMALLY OPEN
 12. Water Motor Alarm and Strainer or Alarm Pressure Switch with circuit closer vent trim
- D. Concentrate Control Valve (CCV) - Hydraulically actuated Halar Coated Viking Angle Style Deluge Valve (*Angle Style and Straight Thru Style CCV available.)
14. 1/2" P.O.R.V. Water Supply Ball Valve - NORMALLY OPEN
 17. P.O.R.V.
 18. Restricted Orifice .125"
 19. 1/2" Soft Seat Check Valve
 20. 1/2" Strainer
 21. 1/2" Ball Valve - NORMALLY OPEN
 27. Water Pressure Gauge and 3 way valve and remainder of CCV special trim
 29. 1/2" foam concentrate auxiliary drain valve
 30. CCV Actuation Alarm Pressure Switch (Mandatory for FM Systems)
- E. Accessory Trim - (Order each item separately)
9. Check Valve*
 10. Fire Department Connection with Ball Drip Valve*
 11. 1/2" Soft Seat Check Valve*
 13. Alarm Line Piping
 15. Tank Water Supply Control Valve - NORMALLY OPEN
 16. Water Supply Piping to Bladder Tank
 22. Concentrate Control Shut-off Valve - NORMALLY OPEN ***
 23. Foam Concentrate Discharge Piping
 24. Foam Concentrate Swing Check Valve
 25. Foam Solution Test Valve - NORMALLY CLOSED
 26. System Isolation Valve - NORMALLY OPEN
 28. 1/2" Priming Line
- * Optional (Not required if a Fire Department Connection is located elsewhere)
- *** Full Port Bronze Body with 316 Stainless Steel Trim and Ball (2" and under). Cast Iron Body OS & Y with Bronze Trim and seats (over 2")

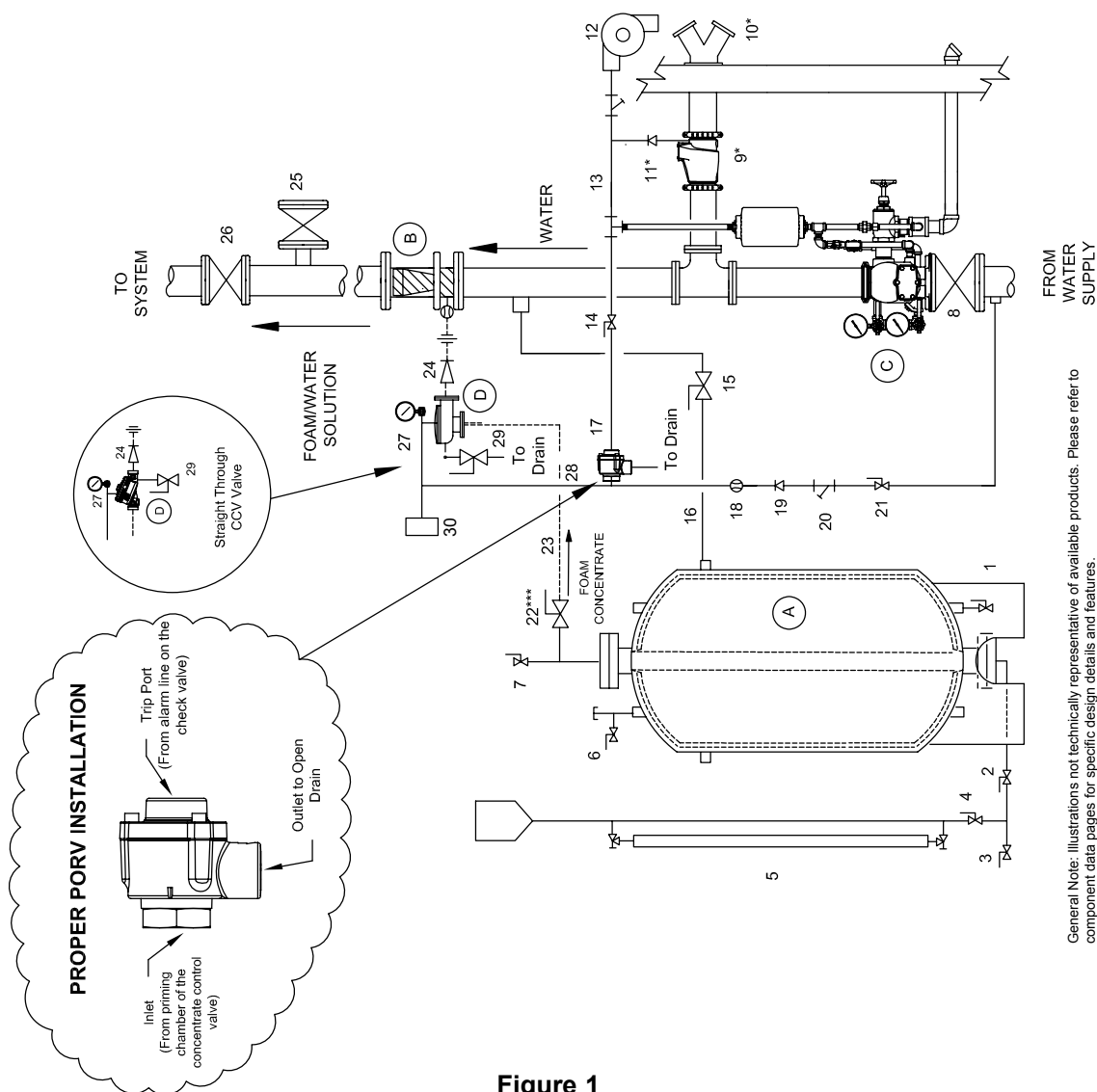


Figure 1

General Note: Illustrations not technically representative of available products. Please refer to component data pages for specific design details and features.



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For complete Wet Pipe Foam/Water System, select Alarm Valve and Trim, Retard Chamber and Circuit Closer Vent Trim, Pilot Operated Pressure Control Valve, Foam Concentrate Control Valve and Trim, Foam Concentrate and Ratio Flow Controller, Bladder Tank and accessories.

DESCRIPTION	NOMINAL SIZE	PART NUMBER	DATA PAGE	
ALARM CHECK VALVE				
Flange/ Flange	Flange Drilling	Model J-1	26 a-g	
	ANSI	3"		08235
	ANSI	4"		08238
	ANSI	6"		08241
	ANSI	8"		08244
	PN10/16	DN80		09108
	PN10/16	DN100		09109
	PN10/16	DN150		09110
PN10	DN200	09111		
PN16	DN200	12388		
Flange/ Groove	Flange Drilling / Pipe O.D.	Model J-1	26 a-g	
	ANSI / 89 mm	3"		08236
	ANSI / 114 mm	4"		08239
	ANSI / 168 mm	6"		08242
	ANSI / 219 mm	8"		08245
	PN10/16 / 89 mm	DN80		09535
	PN10/16 / 114 mm	DN100		09536
	PN10/16 / 168 mm	DN150		09874
PN10 / 219 mm	DN200	09877		
PN16 / 219 mm	DN200	12389		
Groove/ Groove	Pipe O.D.	Model J-1	26 a-g	
	89 mm	3" / DN80		08237
	114 mm	4" / DN100		08240
	165 mm	DN150		09405
	168 mm	6" / DN150		08243
219 mm	8" / DN200	08246		
MODEL J-1 ALARM VALVE TRIM BRASS				
Vertical		3" / DN80	11428	27 a-c
		4" / DN100	11429	
		6" / DN150	11430	
		8" / DN200	11431	
Horizontal		3" / DN80	11432	28 a-c
		4" / DN100	11433	
		6" / DN150	11434	
		8" / DN200	11435	

DESCRIPTION	NOMINAL SIZE	PART NUMBER	DATA PAGE
CIRCUIT CLOSER VENT BRASS TRIM		08220	38 a-b
MODEL C-1 RETARDING CHAMBER (not included in the trim)		05904B	

FOAM CONCENTRATE CONTROL VALVE HALAR® COATED				
Groove/ Groove	Straight Through		61a-f	
	Pipe O.D.	Model F-2		
	48 mm	1½" / DN40		12127Q/B
	60 mm	2" / DN50		12058Q/B
	73 mm	2½" / DN65		12404Q/B
	76 mm	2½" / DN65		12730Q/B
89 mm	3" / DN80	12023Q/B		

FOAM CONCENTRATE CONTROL VALVE TRIM			
Use with Straight Through Valves	Galvanized		61a-f
	1½" / DN40	12848-1	
	2" / DN50	12848-1	
	2½" / DN65	12929-1	
	3" / DN80	12929-1	
	Brass		
	1½" / DN40	12848-2	
	2" / DN50	12848-2	
	2½" / DN65	12929-2	
	3" / DN80	12929-2	

DESCRIPTION	PRESSURE RATING	TANK SIZE	DESIGN CODE	PART NUMBER	DATA PAGE
Vertical Bladder Tank	175psi (12bar)	25 to 4000 US Gallon	EN13445	VFTV****GF	xx
Horizontal Bladder Tank	175psi (12bar)	50 to 5250 US Gallon	EN13445	VFTH****GF	xx
Vertical Bladder Tank	232psi (16bar)	25 to 4000 US Gallon	EN13445	VFTV****GF-16	xx
Horizontal Bladder Tank	232psi (16bar)	50 to 5250 US Gallon	EN13445	VFTH****GF-16	xx
Vertical Bladder Tank	175psi (12bar)	25 to 4000 US Gallon	ASME Sec.VIII Div.1	VFTV****GAF	xx
Horizontal Bladder Tank	175psi (12bar)	50 to 5250 US Gallon	ASME Sec.VIII Div.1	VFTH****GAF	xx
Vertical Bladder Tank	232psi (16bar)	25 to 4000 US Gallon	ASME Sec.VIII Div.1	VFTV****GAF-16	xx
Horizontal Bladder Tank	232psi (16bar)	50 to 5250 US Gallon	ASME Sec.VIII Div.1	VFTH****GAF-16	xx
Where **** is the tank size in US Gallon					
(Example1: VFTV0025F = Model VFT Vertical 25 US Gallon Bladder Tank in accordance with EN13445 design code)					
(Example2: VFTH2000AF = Model VFT Horizontal 2000 US Gallon Bladder Tank in accordance with ASME Sec.VIII Div.1 design code)					

Table 1



TECHNICAL DATA

WET PIPE FOAM/WATER SYSTEM SUPPLIED BY BLADDER TANK

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

VISIT THE VIKING WEBSITE FOR THE LATEST EDITION OF THIS TECHNICAL DATA PAGE

For complete Wet Pipe Foam/Water System, select Alarm Valve and Trim, Retard Chamber and Circuit Closer Vent Trim, Pilot Operated Pressure Control Valve, Foam Concentrate Control Valve and Trim, Foam Concentrate and Controller, Bladder Tank and accessories.

DESCRIPTION	NOMINAL SIZE	PART NUMBER	DATA PAGE
FOAM CONCENTRATE SWING CHECK VALVE			
	1½" / DN40	99S-0150	-
	2" / DN50	99S-0200	-
	2½" / DN65	05497C	803 a-d
FOAM SOLUTION TEST VALVE			
Grooved Butterfly Valve	2½" / DN65	01G-0250	-
	3" / DN80	01G-0300	
	4" / DN100	01G-0400	
	6" / DN150	01G-0600	
	8" / DN200	01G-0800	
SYSTEM ISOLATION VALVE			
Grooved Butterfly Valve	2½" / DN65	01G-0250	-
	3" / DN80	01G-0300	
	4" / DN100	01G-0400	
	6" / DN150	01G-0600	
	8" / DN200	01G-0800	
WATER SUPPLY CONTROL VALVE			
OS & Y	2½" / DN65	8068A-0250	-
	3" / DN80	8068A-0300	
	4" / DN100	8068A-0400	
	6" / DN150	8068A-0600	
	8" / DN200	8068A-0800	
FOAM CONCENTRATE SHUT-OFF VALVE			
Ball Valve	1½" / DN40	T595Y66-0150	-
	2" / DN50	T595Y66-0200	
ACCESSORIES FOR FOAM/WATER SPRINKLER SYSTEMS			
MODEL D-3 PORV	½" / DN15	16970	287e-f
1/8" / 3 MM RESTRICTED ORIFICE	½" / DN15	06555A	-
SOFT SEAT CHECK VALVE	½" / DN15	03945A	-
Y STRAINER	½" / DN15	01054A	-
BALL VALVE	½" / DN15	10355	-
CONCENTRATE CONTROL VALVE PRIMING CONNECTION PKG.			
Required to connect priming chamber		10985	-
BLADDER TANK WATER SUPPLY CONTROL VALVE			
Ball Valve	1½" / DN40	WBV-0150	-
Ball Valve	2" / DN50	WBV-0200	
OS & Y	2½" / DN65	8068A-0250	
OS & Y	3" / DN80	8068A-0300	

RATIO CONTROLLERS						
Connection		Foam Type	Part Number		Data Page	
“Body Grooved”	“Foam Inlet Grooved”		NAB (1)(3)	Brass (2)		
2" (60.3mm)	1.5" (48.3mm)	AFFF 1% S C6	VRC060JAA	F20282A	xx	
		AFFF 3% S C6	VRC060JAB	F20282B		
		ARC 3X3 S C6	VRC060JAJ	F20282J		
2.5" (76.1mm)	1.5" (48.3mm)	AFFF 1% S C6	VRC076JAA	N/A		
		AFFF 3% S C6	VRC076JAB	N/A		
		ARC 3X3 S C6	VRC076JAJ	N/A		
2.5" (73.0mm)	1.5" (48.3mm)	AFFF 1% S C6	VRC073JAA	F20162A		
		AFFF 3% S C6	VRC073JAB	F20162B		
		ARC 3X3 S C6	VRC073JAJ	F20162J		
3" (88.9mm)	1.5" (48.3mm)	AFFF 1% S C6	VRC089JAA	F20152A		
		AFFF 3% S C6	VRC089JAB	F20152B		
		ARC 3X3 S C6	VRC089JAJ	F20152J		
4" (114.3mm)	2" (60.3mm)	AFFF 1% S C6	VRC114JAA	F20217A		
		AFFF 3% S C6	VRC114JAB	F20217B		
		ARC 3X3 S C6	VRC114JAJ	F20217J		
6" (165.1mm)	2" (60.3mm)	AFFF 1% S C6	VRC165JAA	N/A		
		AFFF 3% S C6	VRC165JAB	N/A		
		ARC 3X3 S C6	VRC165JAJ	N/A		
6" (168.3mm)	2" (60.3mm)	AFFF 1% S C6	VRC168JAA	F20214A		
		AFFF 3% S C6	VRC168JAB	F20214B		
		ARC 3X3 S C6	VRC168JAJ	F20214J		
8" (219.1mm)	2.5" (76.1mm)	AFFF 1% S C6	VRC219JAA	N/A		
		AFFF 3% S C6	VRC2196JAB	N/A		
		ARC 3X3 S C6	VRC2196JAJ	N/A		
8" (219.1mm)	2.5" (73.0mm)	AFFF 1% S C6	VRC2193JAA	F20137A		
		AFFF 3% S C6	VRC2193JAB	F20137B		
		ARC 3X3 S C6	VRC2193JAJ	F20137J		
(1) Nickel Aluminium Bronze (NAB) - Standard Offering in Viking EMEA & APAC Territories. Brass available on request.						
(2) Brass - Standard Offering in Viking Americas Territories. Nickel Aluminium Bronze available on request.						
(3) NAB 73mm and NAB 219mm with 73mm foam inlet are non standard and could be subject to additional lead time and price.						

Foam Type	Part Number		
	US Gallon		
	5	55	265
AFFF 1% S C6	F20335/5	F20335/55	F20335/265
AFFF 3% S C6	F20336/5	F20336/55	F20336/265
ARC 3X3 S C6	F20227/5	F20227/55	F20227/265
Foam Type	Litres		
	25	200	1000
AFFF 1% S C6	V-AFFF1S/25	V-AFFF1S/200	V-AFFF1S/1000
AFFF 3% S C6	V-AFFF3S/25	V-AFFF3S/200	V-AFFF3S/1000
ARC 3X3 S C6	V-ARC3X3S/25	V-ARC3X3S/200	V-ARC3X3S/1000

Table 2