



TECHNICAL BULLETIN

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. This system consists of a standard wet pipe fire sprinkler system with the addition of a Viking Halar coated deluge valve that is used as a concentrate control valve. Additional equipment includes foam concentrate, a bladder tank for storage, and a proportioning device.

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 VNR Wide Range Proportioner
FM Approved - Low Expansion Foam Systems
- Model F2 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 ARK (3% AR-SFFF) Fluorine Free Foam Concentrate
FM Approved
- Viking USP (3% SFFF) Fluorine Free Foam Concentrate
UL Listed
FM Approved

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

A. Discharge Devices

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

B. General Instructions and Warnings

1. 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.
2. The alarm check valve (C) must be installed using the variable pressure trim to minimize false operation of the CCV (D).
3. Inspections - It is imperative that the system be inspected and tested on a regular basis. See Section 6 - Inspections, Tests, and Maintenance.
4. The valve, trim, and assembly must be installed in an area not subject to freezing temperatures or physical damage.

WARNING

After the proportioning system is tested or activated, foam concentrate needs to be flushed from the pipe network downstream of the concentrate control valve. Connect a water supply to the commissioning valve on the concentrate line and flush through the test header.



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C. Design and Installation

⚠ 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.

⚠ 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. Install the alarm check valve and trim (C) in accordance with the relevant Viking technical data page.
2. Install the proportioning device (B) in the system riser in accordance with the wide range proportioner technical data page and Special Notes Section of this System Manual.
3. Install foam solution test valve (22) and system isolation valve (24). These valves are used to conduct foam/water solution tests and are required.
4. Install the (CCV) and associated trim as indicated in Figure 1. FM systems require electrical supervision in accordance with FM Global Property Loss Prevention Data Sheet 4-12.
5. 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 7).
 - 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 (19) from the riser to the bladder tank as shown in Figure 1.
 - g) Install the piping from the tank (A) to the wide range controller (B) as straight as possible to limit pressure loss.
 - h) 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 7.
 - b) Verify the following valves are in the closed position: water supply control valve (10), PORV activation line ball valve (13), bladder tank water supply control valve (19), 1/2" CCV priming line ball valve (18), concentrate control shut-off valve (20), foam solution test valve (22), foam concentrate auxiliary drain valve (12) and alarm test shut-off valve on the alarm check valve (C), vent valves (1, 3, 12, 30, 31, 32, and 33)
 - 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 CCV (D) by opening and securing the 1/2" CCV priming line ball valve (18) in the open position. When the pressure on the priming chamber water pressure gauge (11) equals the supply water pressure, the deluge valve will close. Bleed off any air pressure trapped in the priming line to the CCV (D) by opening the 3-way pressure gauge valve (11). Once air pressure has been relieved, close the 3-way valve and plug outlet. Re-open 3-way valve to maintain pressure on gauge (11). Continue placing the wet valve in service.
 - 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.
 - f) Verify the CCV (D) is closed.
 - g) Slowly open the shut-off valves (19) and (20).
 - h) **IMPORTANT:** Bleed air from vent valves (31).



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NOTICE

In accordance with the bladder tank operation manual, ensure that CCV (D) is closed, shut-off valves (19) and (20) are opened slowly, and the bladder tank is vented of air.

- i) Open Alarm Shut-Off Valve on Alarm Check Valve (C) Trim.
 - j) When system pressure has stabilized, open PORV actuation ball valve (13).
 - k) Verify normal valve positions and secure in correct position (as detailed in Figure 1).
 - l) 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 7.
 - b) Close the water supply control valve (10).
 - c) Close the bladder tank water supply control valve (19), concentrate control shut-off valve (20) and PORV activation line ball valve (13).
 - d) Leave the system isolation valve (24) 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 that the CCV (D) is closed by checking water pressure gauge (11) to ensure that it is the same as or higher than the system pressure.
 - j) **IMPORTANT:** Bleed air from vent valves (31).

NOTICE

In accordance with the bladder tank operation manual, ensure that CCV (D) is closed, shut-off valves (19) and (20) are opened slowly, and the bladder tank is vented of air.

- k) Open tank water supply valve (19) and concentrate control shut-off valve (20).
 - l) Open shut-off valve on alarm check valve (C) trim.
 - m) When system pressure has stabilized, open PORV actuation ball valve (13).
 - n) 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 7.
 - b) Close the water supply control valve (10).
 - c) Close the bladder tank water supply control valve (19), concentrate control shut-off valve (20) PORV actuation line ball valve (13) and 1/2" CCV priming line ball valve (18).
 - d) Leave the system isolation valve (24) 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 through the 3-way gauge valve (11).
 - 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 1a through 1i 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 7.
 - b) Close the bladder tank water supply control valve (19), concentrate control shut-off valve (20) and PORV actuation line ball valve (13).
 - c) Refer to instructions for removing the bladder tank (A) from service in the bladder tank operation manual.



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- 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.
- f) **IMPORTANT:** Bleed air from vent valves (31).

NOTICE

In accordance with the bladder tank operation manual, ensure that CCV (D) is closed, shut-off valves (19) and (20) are opened slowly, and the bladder tank is vented of air.

- g) Open alarm shut-off valve on alarm check valve (C) trim.
 - h) When system pressure has stabilized, open PORV actuation ball valve (13).
 - i) 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 7.
 - b) Close the water supply control valve (10).
 - c) Close the bladder tank water supply control valve (19), concentrate control shut-off valve (20) and PORV activation line ball valve (13).
 - d) Close the system isolation valve (24).
 - 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 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) **IMPORTANT:** Bleed air from vent valves (31).

NOTICE

In accordance with the bladder tank operation manual, ensure that CCV (D) is closed, shut-off valves (19) and (20) are opened slowly, and the bladder tank is vented of air.

- j) Open the system isolation valve (24).
 - k) Open tank water supply valve (19) and concentrate control shut-off valve (20).
 - l) Open alarm shut-off valve on alarm check valve (C) trim.
 - m) When system pressure has stabilized, open PORV actuation ball valve (13).
 - n) Verify normal valve positions and secure in correct position (as detailed in Figure 1).
6. Testing the foam concentrate swing check valve:
- After a flow test or proportioning test has been conducted, the foam concentrate swing check valve (21) should be checked to ensure that it maintains a positive seal between the CCV (D) and the riser by following the procedure outlined below.
- a) Bleed off any pressure which may have been trapped between the outlet of the chamber of the CCV (D) and the swing check valve (21) by placing a container under the foam concentrate auxiliary drain valve (12) and opening the valve slowly.
 - b) Drain excess foam concentrate into container. Should the leakage continue, check the priming pressure gauge (11) on the CCV (D) to ensure that the valve is primed and closed.
 - c) If the foam concentrate auxiliary drain valve (12) continues to leak foam concentrate, then the 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.
 - d) Should water continue to leak from the foam concentrate auxiliary drain valve (12), the foam concentrate swing check valve (21) clapper rubber and seat should be repaired. 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.



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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 (10) and the tank water supply valve (19). 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 i.
 - f) Perform quarterly test. See Special Note E on Page 7 for special instructions.
 - g) Fire can damage piping and supports, so call your Viking representative for 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 (10) to shut off the water supply
 - b) Close the concentrate control shut-off valve (20) to eliminate the flowing of the foam concentrate to the CCV (D) and the wide range proportioner (B).
 - c) Close the tank water supply control valve (19) to reduce the pressure on the bladder tank (A).
 - d) Close the system isolation valve (24), to stop the flow of water/foam solution into the discharge system.
 - e) Place the alarm shut-off valve on the alarm valve (C) trim in the closed position to reestablish the prime pressure on the 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 (20) to eliminate the flowing of the foam concentrate to the CCV (D) and the ratio controller (B).
 - b) Close the tank water supply control valve (19) 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 allows system water to flow causing the alarm check valve (C) clapper to open. The retard chamber and alarm line are filled, pressurizing the PORV (14) and connected alarm devices. Operation of the PORV (14) relieves pressure from the priming chamber of the CCV (D) allowing the valve to open. If fitted, the priming line pressure switch (29) will signal the CCV's activation. The bladder tank (A) is already pressurized by the water supply piping. 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, CCV (D), and wide range proportioner (B). The foam concentrate is proportioned 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

⚠ 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.

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.

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 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 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

⚠ 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.

- A. Provide a minimum of 5 pipe diameters of straight pipe on the inlet and outlet of the wide range proportioner (B) to minimize turbulence inside the proportioner. Exception: The outlet for the tank water supply control valve may be connected nearer to the inlet of the proportioner and should not cause excessive turbulence. However, if the outlet to the foam solution test valve (22) 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) on the water supply inlet piping (19) shall be less than 100' (30.5 m) and the foam concentrate discharge piping (20), should be less than 65 equivalent feet (50.3 meters).
- C. The CCV (D) and swing check valve (21) must be connected adjacent to the wide range proportioner using the shortest pipe nipples as possible.
- D. The alarm check valve must be installed using the variable pressure trim and retard chamber to minimize false operation of the CCV (D). The releasing PORV (14) for the CCV (D) is activated by the operation of the alarm valve.
- E. Ball Valve (13) must be left in the open position, except when conducting alarm or flow test. Failure to close this valve before running an alarm or flow test will result in the unwanted discharge of foam concentrate. Once the test is completed, the valve must be returned to the open position, or the foam CCV (D) will not operate, and the foam concentrate will not flow to the wide range proportioner.
- 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 of bladder tank systems per NFPA Standards.
- J. The CCV (D) requires a 1/2" priming line with CCV priming connection package. This package includes PORV (14), restricted orifice (16), check valve (15), strainer (17) and ball valve (18). Auxiliary drain valve and gauge with 3-way valve are included in the CCV Trim kit along with the plugs required for all other unused connections. Refer to the Viking website to find the correct trim kit part number for the corresponding size of 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**
 1. Water Vent Valve – NORMALLY CLOSED
 2. Safety Thermal Relief Valve
 3. Foam Concentrate Vent Valve – NORMALLY CLOSED
 4. Filling Vent Valve (Optional)
 5. Filling Pressure Gauge (Optional)
 6. Water filling/drain valve – NORMALLY CLOSED
 7. Foam concentrate filling/drain valve – NORMALLY CLOSED
 8. Concentrate level sight tube drain valve – NORMALLY CLOSED
 9. Concentrate level sight tube
- B. Proportioning Device – Wide Range Proportioner ****
- C. Type of System – Alarm check valve with trim & retard chamber (Each item below sold separately)**
 10. Water Supply Control Valve – NORMALLY OPEN
- D. Concentrate Control Valve (CCV) (Hydraulically activated Halon® coated straight through deluge valve)**
 11. CCV Priming pressure gauge
 12. 1/2" Foam concentrate auxiliary drain valve
 13. 1/2" POR Water supply ball valve – NORMALLY OPEN
- Prime Line Connection Package**
 14. Pressure Operated Relief Valve (PORV)
 15. 1/2" Soft seat check valve
 16. Restricted orifice 0.125"
 17. 1/2" Strainer
 18. 1/2" Ball valve – NORMALLY OPEN
- Accessory Trim – (Each item below sold separately)**
 19. Bladder tank water supply control valve – NORMALLY OPEN
 20. Foam concentrate shut-off valve – NORMALLY OPEN* (INSTALLED HORIZONTALLY AS SHOWN)
 21. Foam concentrate swing check valve
 22. Foam solution test valve – NORMALLY CLOSED
 23. Foam solution test header
 24. Foam system isolation valve – NORMALLY OPEN
 25. Mechanical alarm and/or alarm pressure switch
 26. 1/2" Automatic ball drip valve
 27. Fire Department Connection (FDC) Check valve
 28. FDC
 29. Prime line supervision switch
- Commissioning and Flushing Valves**
 30. 2 1/2" Ball Valves (2) - NORMALLY CLOSED (Installed on customer-supplied outlet)
- Air Vent and Drain Valves**
 31. 1/2" Air vent valves (2) - NORMALLY CLOSED (Installed on customer-supplied outlet)
 32. 1/2" Drain valve (1) - NORMALLY CLOSED (Installed on customer-supplied outlet)
- Bladder Tank Dip Valve**
 33. 1" Dip valve - NORMALLY CLOSED (Installed on customer-supplied outlet)

*Full port bronze body with 316 stainless steel trim and ball valve
 **Five pipe diameters required before and after the proportioner.

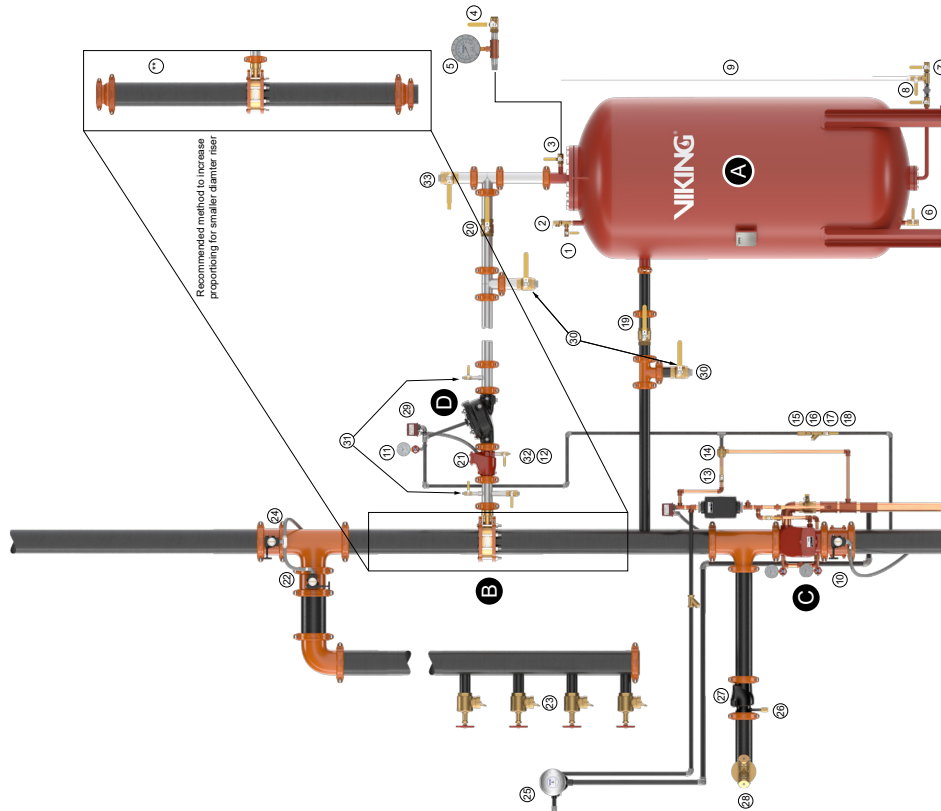


Figure 1

	<h1 style="margin: 0;">TECHNICAL BULLETIN</h1>	<h2 style="margin: 0;">WET PIPE FOAM/WATER SYSTEM SUPPLIED BY BLADDER TANK</h2>
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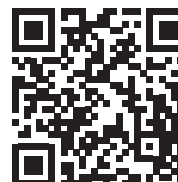
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ORDERING INSTRUCTIONS:

For complete Wet Pipe Foam/Water System Supplied by a Bladder Tank, select 1 each of the following as well as all desired Accessories from the tables below:

- Alarm Check Valve and Trim
- Retard Chamber and Circuit Closer Vent Trim
- Pilot Operated Pressure Control Valve
- Foam Concentrate Control Valve and Trim,
- Foam Concentrate
- Wide Range Proportioner
- Bladder Tank

Scan or click to visit Viking's digital system estimators.



<https://digital.vikingcorp.com>

DESCRIPTION	NOMINAL SIZE	PART NUMBER
Alarm Check Valves		
Flange/ Flange	Flange Drilling	Model J-1
	ANSI	3"
	ANSI	4"
	ANSI	6"
	ANSI	8"
	PN10/16	DN80
	PN10/16	DN100
	PN10/16	DN150
	PN10	DN200
PN16	DN200	
Flange/ Groove	Flange Drilling / Pipe O.D.	Model J-1
	ANSI / 89 mm	3"
	ANSI / 114 mm	4"
	ANSI / 168 mm	6"
	ANSI / 219 mm	8"
	PN10/16 / 89 mm	DN80
	PN10/16 / 114 mm	DN100
	PN10/16 / 168 mm	DN150
	PN10 / 219 mm	DN200
PN16 / 219 mm	DN200	
Groove/ Groove	Pipe O.D.	Model J-1
	89 mm	3" / DN80
	114 mm	4" / DN100
	165 mm	DN150
	168 mm	6" / DN150
219 mm	8" / DN200	
Alarm Check Valve Trim		
Vertical	3" / DN80	11428
	4" / DN100	11429
	6" / DN150	11430
	8" / DN200	11431
Horizontal	3" / DN80	11432
	4" / DN100	11433
	6" / DN150	11434
	8" / DN200	11435

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

DESCRIPTION	NOMINAL SIZE	PART NUMBER
Foam Concentrate Control Valves (Halar® Coated)		
Straight Through		
Groove/ Groove	Pipe O.D. 73 mm	Model F-2 2½" / DN65
		12404Q/B

DESCRIPTION	NOMINAL SIZE	PART NUMBER
CCV Trims		
Use with Straight Through Valves	Brass 2½" / DN65	12929-2

DESCRIPTION	PRESSURE RATING	TANK SIZE	DESIGN CODE	PART NUMBER
Vertical Bladder Tank	175psi (12bar)	25 to 4000 US Gallon	EN13445	VFTV****GF
Horizontal Bladder Tank	175psi (12bar)	50 to 5250 US Gallon	EN13445	VFTH****GF
Vertical Bladder Tank	232psi (16bar)	25 to 4000 US Gallon	EN13445	VFTV****GF-16
Horizontal Bladder Tank	232psi (16bar)	50 to 5250 US Gallon	EN13445	VFTH****GF-16
Vertical Bladder Tank	175psi (12bar)	25 to 4000 US Gallon	ASME Sec.VIII Div.1	VFTV****GAF
Horizontal Bladder Tank	175psi (12bar)	50 to 5250 US Gallon	ASME Sec.VIII Div.1	VFTH****GAF
Vertical Bladder Tank	232psi (16bar)	25 to 4000 US Gallon	ASME Sec.VIII Div.1	VFTV****GAF-16
Horizontal Bladder Tank	232psi (16bar)	50 to 5250 US Gallon	ASME Sec.VIII Div.1	VFTH****GAF-16

Where **** is the tank size in US Gallon



TECHNICAL BULLETIN

WET PIPE FOAM/WATER SYSTEM SUPPLIED BY BLADDER TANK

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Accessories		
DESCRIPTION	NOMINAL SIZE	PART NUMBER
Foam Concentrate Swing Check Valve		
	2½" / DN65	05497C
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		
Grooved Butterfly Valve	2½" / DN65	01G-0250
	3" / DN80	01G-0300
	4" / DN100	01G-0400
	6" / DN150	01G-0600
	8" / DN200	01G-0800
Foam Concentrate Shut-Off Valve		
Ball Valve	2½" / DN65	23247
ACCESSORIES FOR FOAM/WATER SPRINKLER SYSTEMS		
Model D-3 PORV	½" / DN15	16970
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
Pressure switch	½" NPT	PS10
Concentrate Control Valve Priming Connection Pkg.		
Required to connect priming chamber		10985
Bladder Tank Water Supply Control Valve		
Ball Valve	2½" / DN65	23247
Vent Valves		
Ball Valve	½" / DN15	10355
Ball Valve	1" / DN25	10356

Wide Range Proportioner			
Connection		Foam Type	Part Number
"Body Grooved"	"Foam Inlet Grooved"		
6" (150mm)	2.5" (73.0mm)	ARK (3% SFFF)	VNR063P
8" (200mm)	2.5" (73.0mm)		VNR083P
6" (150mm)	2.5" (73.0mm)	USP (3% SFFF)	VNR063L
8" (200mm)	2.5" (73.0mm)		VNR083L

Foam Concentrate			
Foam Type	Part Number		
	US Gallon		
	6.5	55	265
ARK (3% AR-SFFF)	F24175-6.5	F24175-55	F24175-265
USP (3% SFFF)	F21720-6.5	F21720-55	F21720-265