



TECHNICAL DATA

PILOT PRESSURE REGULATING FOAM/WATER DELUGE SYSTEM SUPPLIED BY A 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

1. SYSTEM DESCRIPTION

The Pilot Pressure Regulating Foam/Water Deluge System Supplied by a Bladder Tank is a UL Listed and FM Approved system, for use with Viking supplied foam concentrate. This sprinkler system consists of a standard deluge sprinkler system, using a Viking flow control valve with pressure regulating flow control trim (D), a release module for the supplemental detection system, an In-Line Balanced Pressure Proportioner ILBP (B), a hydraulically actuated Viking Halar[®] coated concentrate control valve, (C) and foam concentrate UL listed and FM approved for use with the Viking system.

This system was developed to provide constant discharge rates to eliminate over-discharge on deluge systems. It will provide constant pressure and water flow past the ILBP enabling the foam concentrate to be determined by the demand flow. The Viking Pilot Pressure Regulating Foam/Water Deluge System combines the advantages of a conventional foam deluge system, but without the required supply hydraulic calculation to provide for the over-discharge past the ILBP, which would deplete the concentrate supply prior to the required time duration. Water supply pressure to the bladder tank must be provided from a downstream source, after the pilot pressure regulating deluge valve, preferably between the discharge outlet of the flow control valve (D) and the ILBP (B). The listed pressure differential for the pressure regulating trim is 20 PSIG (1.38 bar). This means that the inlet pressure at the desired flow rate to the pressure regulating deluge system has to be 20 psi higher than the desired pressure on the discharge side of the deluge valve.

In order to obtain the pressure differential between foam/water solution and supply water pressure, the pilot pressure regulating valve on the pressure regulating deluge trim must be adjusted to reduce the water pressure past the discharge side of the flow control valve. For best results, the pilot pressure regulating deluge valve (D) should be set using the downstream pressure gauge (41) of the pilot pressure regulating deluge valve (D) and the water pressure gauge (38). For existing sprinkler systems that are restricted in flow and pressure capacity, this system should not be used without supplementing the available supply pressure.

2. LISTINGS AND APPROVALS

No formal approval as a system. Main component approvals listed below.

- Flow Control Valve and Trim
 - UL Listed - Guide VLFT
 - FM - Automatic Water Control Valves
- In-Line Balanced Pressure Proportioner (ILBP)
 - UL Listed - Guide GFGV
 - FM Approved - Low Expansion Foam Systems
- 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.
- Foam Concentrate
 - UL Listed - Guide GFGV
 - FM Approved - Low Expansion Foam Systems
- Viking Bladder Tank ASME Sect. VIII Certified
 - UL Listed - Guide GHXV
 - FM Approved - Low Expansion Foam Systems

3. TECHNICAL DATA

Specifications:

Refer to individual component technical data page.

Material Standards:

Refer to individual component technical data page.

Ordering Information:

Refer to Tables 1 through 3.

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

A. Discharge Devices

- Standard Spray Sprinklers Approved with Foam Concentrate and Fuel being protected.
- Non-Aspirating Spray Nozzles
- Manual Monitors or Oscillating Monitors
- Hose Reels and Hand Lines



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- Foam Makers
- Foam Chambers
- Any open discharge device

B. General Instructions And Warnings

1. Refer to Warnings and General Notes on pages 2a-d in the "Foam Design" section of the *Viking Foam Systems Engineering and Design Data* book.
2. Refer to specific technical data sheets, acceptable installation standards, codes and Authority Having Jurisdiction for additional installation, operation, and maintenance instructions.
3. Inspections – The system must be inspected and tested in Accordance with NFPA 25. See Section 6 – Inspections, Tests, and Maintenance.
4. **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, bladder tank, and appurtenances must be installed in an area not subject to freezing temperatures or physical damage.

C. Design And Installation

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

1. Refer to the **Special Notes** section on page 30d and **Warnings and General Notes** on pages 2a-d in the foam data book.
2. Install the flow control valve with pilot pressure regulating deluge trim in accordance with The *Viking Engineering and Design Data* book and Figure 23.
3. Install the Viking iLBP (B) in the riser. (See Special Note A and B, Page 30d).
4. Install foam solution test valve (25) and system isolation valve (26). These test valves are required in accordance with NFPA 16, and NFPA 16A.
5. Install the Viking hydraulically actuated Halar® coated concentrate control valve (C) and associated trim as indicated in Figures 1-3, trim charts, or technical data pages.
6. Install bladder tank (A) in accordance with the manufacturer's instructions with connections as shown on Figures 1-3, and herein described.
 - a. Locate the tank as close as practical to the system riser.
 - b. Allow enough room around the tank to service the bladder.
 - c. Allow access to the tank for filling from barrels of foam concentrate.
 - d. Install the pipe from the riser to the tank as indicated on Figure 23. The bladder tank water supply piping (16) must be connected above the pilot pressure regulating deluge valve (D). Install the piping from the tank (A) to the Viking iLBP (B) as straight as possible.
 - e. All valves and devices should be located for easy access for operation and maintenance.
7. All valves should be closed, including the water supply control valve (8), the PORV water supply valve (14), the tank water supply control valve (15), the ½" ball valve (21), the concentrate control shut-off valve (22), and the foam solution test valve (25).
8. Pressurize the system:
 - a. Verify that the water supply control valve (8) is closed, close tank water supply control valve (15), then place the pilot pressure regulating deluge valve (D) in service. (See installation instructions in the Viking technical data page). Open system isolation valve (26) if closed.
 - b. Set release and detection system according to installation instructions for a deluge (pneumatic or electric release) system.
 - c. Prime the pilot pressure regulating deluge valve (D) by opening the priming valve on the deluge valve trim. Prime the Halar® coated concentrate control valve by opening the concentrate control priming valve (21). Bleed off any air pressure trapped in the priming line to the Viking Halar® coated concentrate control valve by opening the 3-way pressure gauge valve (27). Once air pressure has been relieved, close the 3-way valve to maintain pressure on gauge (27).
 - d. When pressure in the pilot pressure regulating deluge valve (D) and the concentrate control valve (C) priming chambers equal system water supply pressure, turn on system water supply by opening water supply valve (8), place alarm test shut-off valve in alarm position.
 - e. Place bladder tank (A) in service by following manufacturers instructions, except to slowly open concentrate control shut-off valve (22***) to allow foam concentrate to flow slowly to the Viking Halar® coated concentrate control valve (D). With system set, fully open and secure water supply control valve (15).
 - f. Verify normal valve positions and secure in proper position.
 - g. Check for and repair any leaks.



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9. Testing the foam concentrate swing check valve: 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 concentrate control deluge valve (C) and the deluge riser, by following the procedure outlined below.
 - a. Bleed off any pressure that may have been trapped between the outlet of the chamber of the Halar[®] coated concentrate control deluge valve (C) and the foam concentrate swing check valve (24) by placing a container under the foam concentrate auxiliary drain valve (29) and opening the valve slowly.
 - b. Drain excess foam concentrate into container. Should the leakage continue, check the priming pressure gauge (27) on the Viking concentrate control deluge valve to ensure that the valve is primed and closed.
 - c. If the foam concentrate auxiliary drain valve (29) continues to leak foam concentrate, then the concentrate control valve must be checked for proper operation and repaired if necessary. Follow the procedure indicated in Section 6-D in the Wet Pipe Foam/Water System for repair.
 - d. Should water continue to leak from the foam concentrate auxiliary drain valve (29), the foam concentrate check valve (24) clapper rubber and seat should be maintained. Follow the procedure indicated in Section 6-D in the Wet Pipe Foam/Water System for repair.

5. OPERATION

Actuation of the supplemental detection system (pneumatically or electrically) will release the priming water pressure in the deluge valve's priming chamber allowing the deluge valve to open, filling the deluge system with water. While water flows through the flow control valve, water will flow out a ½" (13 mm) port on the discharge side of the flow control valve and pressurize the sensing end of the pressure operated relief valve (PORV), which will release the prime pressure of the Halar[®] coated concentrate control valve (C), allowing it to open and supply foam concentrate to the ILBP (B). Foam/water solution will be proportioned throughout the system (normally 1% or 3%).

The bladder tank will be pressurized by the water passing through the deluge valve, through the piping and supply inlet to the bladder tank. System water pressure in the space between the flexible bladder and the inside surface of the tank causes the bladder to collapse, forcing foam concentrate out through the foam concentrate supply piping, Halar[®] concentrate control valve, and to the ILBP. The low venturi of the ILBP meters foam concentrate into the water stream passing by the ILBP. The listed minimum flow rate of the ILBP must be achieved before accurate proportioning will occur. Refer to the ILBP data pages in the "Proportioning Devices" section of the *Viking Foam Systems Design and Engineering* data book.

6. INSPECTION, 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, 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.

7. AVAILABILITY

The Pilot Pressure Regulating Foam/Water Deluge System Supplied by a Bladder Tank is available through a network of domestic and international distributors. See the Viking Corp. web site for closest distributor or contact The Viking Corporation.

8. 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 concentrate controller (B) to minimize the turbulence inside the concentrate controller. **WARNING:** 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 release of the concentrate control valve and the deluge valve must NOT be combined. The concentrate control valve must be primed and released separately of the pressure regulating deluge valve to ensure open position of the concentrate control valve clapper.
- C. Figures 1-3 are general schematics of the required piping arrangement. Refer to the appropriate technical data page for specific information regarding the valve, tank, and related trim and devices.
- D. 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.
- E. A strainer is not required in the foam concentrate discharge piping (23) of bladder tank systems per NFPA Standards.
- F. The foam concentrate control deluge valve (C) does not require any trim except for a 1/2" priming line (28), 1/2" auxiliary drain valve (29) and gauge with 3-way valve (27). Plug all remaining valve trim outlets. Refer to the "Valves" section of this data book to find the correct trim kit part number for the corresponding size of foam concentrate control Halar® coated deluge valve (C) required.



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PILOT PRESSURE REGULATING FOAM/WATER DELUGE SYSTEM

- 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 - The trim for this assembly varies with the type of foam concentrates 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. In-Line Balanced Pressure Proportioner
- C. Concentrate Control Valve (CCV) - Hydraulically actuated Halar Coated Viking Deluge Valve (*Angle and Straight Through CCV available.)
 - 17. PORV
 - 18. Restricted Orifice .125"
 - 19. 1/2" Spring Loaded 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
 - 28. 1/2" Priming Line
 - 29. 1/2" foam concentrate auxiliary drain valve
- D. Pilot Pressure Regulating Deluge Valve
 - 31. Viking Model H Flow Control Valve
 - 32. Viking Model C-2 Pilot Pressure Regulating Valve
 - 33. Viking Model A-2 Speed Control Assembly
 - 34. Check Valve
 - 35. Priming Valve
 - 36. Restricted Orifice
 - 37. Strainer
 - 38. Water Supply Pressure Gauge
 - 39. Drain Valve
 - 40. Air Bleed Valve and Pressure Gauge
 - 41. Downstream Pressure Gauge
 - 42. Emergency Release
- E. Accessory Trim - (Order each item separately)
 - 8. Water Supply Control Valve - NORMALLY OPEN
 - 13. CCV Release Piping to PORV
 - 14. 1/2" PORV Water Supply Ball Valve - NORMALLY OPEN
 - 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 Solution Test Valve - NORMALLY CLOSED
 - 25. System Isolation Valve - NORMALLY OPEN

*** 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")

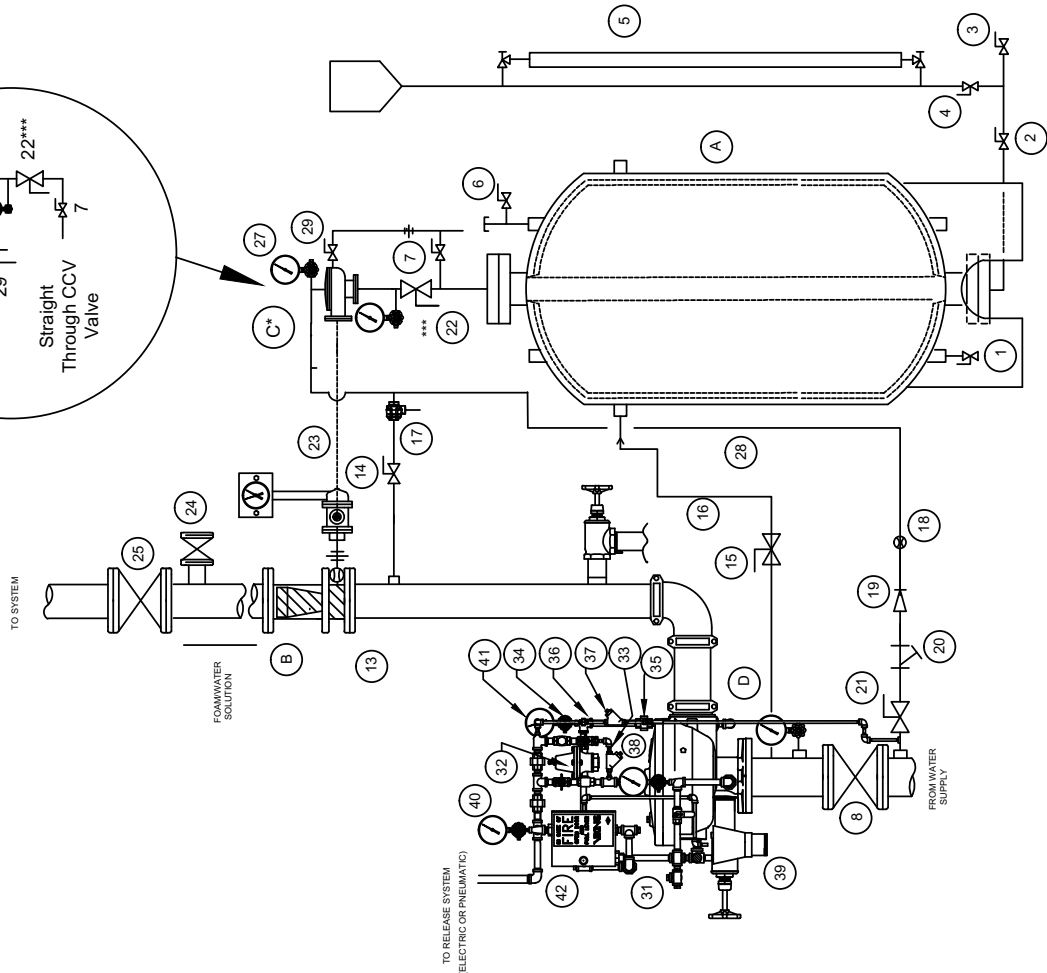
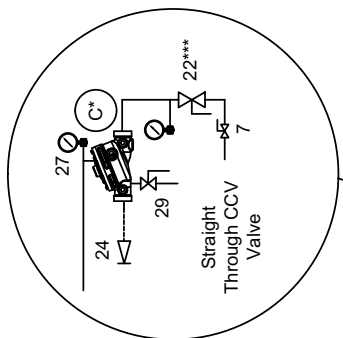
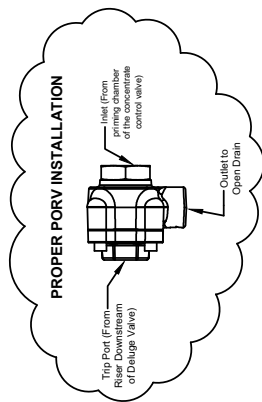


Figure 1



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PILOT PRESSURE REGULATING FOAM/WATER DELUGE SYSTEM SUPPLIED BY A BLADDER TANK

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 - 3. Concentrate Drain/Fill Valve - NORMALLY CLOSED
 - 4. Fill Cup/Sight Gauge Shut-off Valve - NORMALLY CLOSED
 - 5. Sight Gauge Assembly - The trim for this assembly varies with the type of foam concentrates 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. In-Line Balanced Pressure Proportioner
- 23. Check Valve
- C. Concentrate Control Valve (CCV) - Hydraulically actuated Halar Coated Viking Deluge Valve
 - (*Angle and Straight Through Style CCV available.)
 - 17. PORV
 - 18. Restricted Orifice .125"
 - 19. 1/2" Spring Loaded 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
 - 28. 1/2" Priming Line
 - 29. 1/2" foam concentrate auxiliary drain valve
- D. Pilot Pressure Regulating Deluge Valve
 - 31. Viking Model H Flow Control Valve
 - 32. Viking Model C-2 Pilot Pressure Regulating Valve
 - 33. Viking Model B-2 Speed Control Valve
 - 34. Check Valve
 - 35. Priming Valve
 - 36. Restricted Orifice
 - 37. Strainer
 - 38. Water Supply Pressure Gauge
 - 39. Drain Valve
 - 40. Air Bleed Valve and Pressure Gauge
 - 41. Downstream Pressure Gauge
 - 42. Emergency Release
- E. Accessory Trim - (Order each item separately)
 - 8. Water Supply Control Valve - NORMALLY OPEN
 - 13. CCV Release Piping to PORV
 - 14. 1/2" PORV Water Supply Ball Valve - NORMALLY OPEN
 - 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 Solution Test Valve - NORMALLY CLOSED
 - 25. System Isolation Valve - NORMALLY OPEN

*** 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")

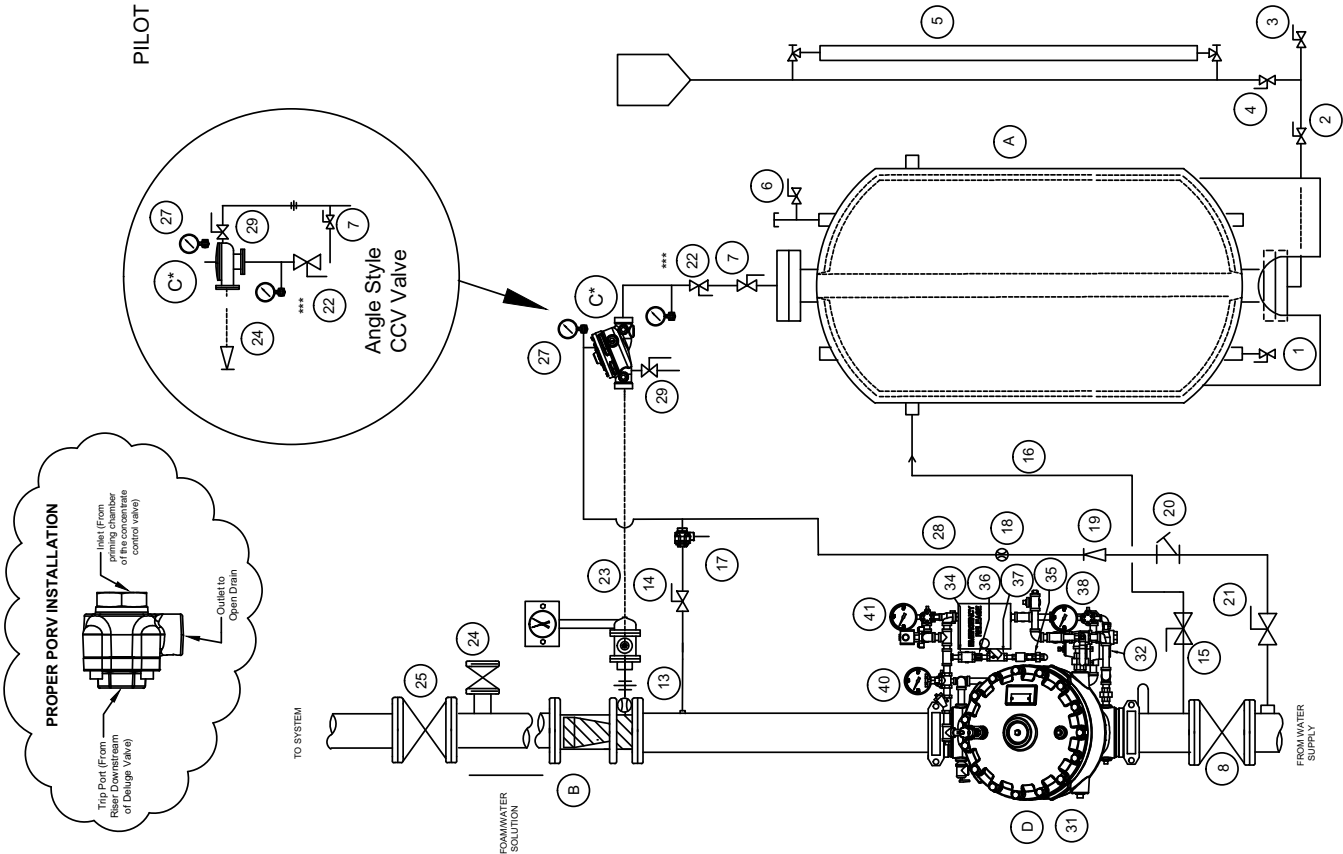


Figure 2



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PILOT PRESSURE REGULATING FOAM/WATER DELUGE SYSTEM SUPPLIED BY A BLADDER TANK

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 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 - The trim for this assembly varies with the type of foam concentrates to be used.
- 6. Tank Water Vent Valve - NORMALLY CLOSED
- 7. Diaphragm Concentrate Vent Valve - NORMALLY CLOSED

- B. In-Line Balanced Pressure Proportioner
- 23. Check Valve
- C. Concentrate Control Valve (CCV) - Hydraulically actuated Haler Coated Viking Deluge Valve

- (*Angle and Straight Through Style CCV available.)
- 17. PORV
- 18. Restricted Orifice, 125"
- 19. 1/2" Spring Loaded 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
- 28. 1/2" Priming Line
- 29. 1/2" foam concentrate auxiliary drain valve

- D. Pilot Pressure Regulating Deluge Valve
- 31. Viking Model H Flow Control Valve
- 32. Viking Model C-2 Pilot Pressure Regulating Valve
- 33. Viking Model A-2 Speed Control Assembly
- 34. Check Valve
- 35. Priming Valve
- 36. Restricted Orifice
- 37. Strainer
- 38. Water Supply Pressure Gauge
- 39. Drain Valve
- 40. Air Bleed Valve and Pressure Gauge
- 41. Downstream Pressure Gauge
- 42. Emergency Release

- E. Accessory Trim - (Order each item separately)
- 8. Water Supply Control Valve - NORMALLY OPEN
- 13. CCV Release Piping to PORV
- 14. 1/2" PORV Water Supply Ball Valve - NORMALLY OPEN
- 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 Solution Test Valve - NORMALLY CLOSED
- 25. System Isolation Valve - NORMALLY OPEN

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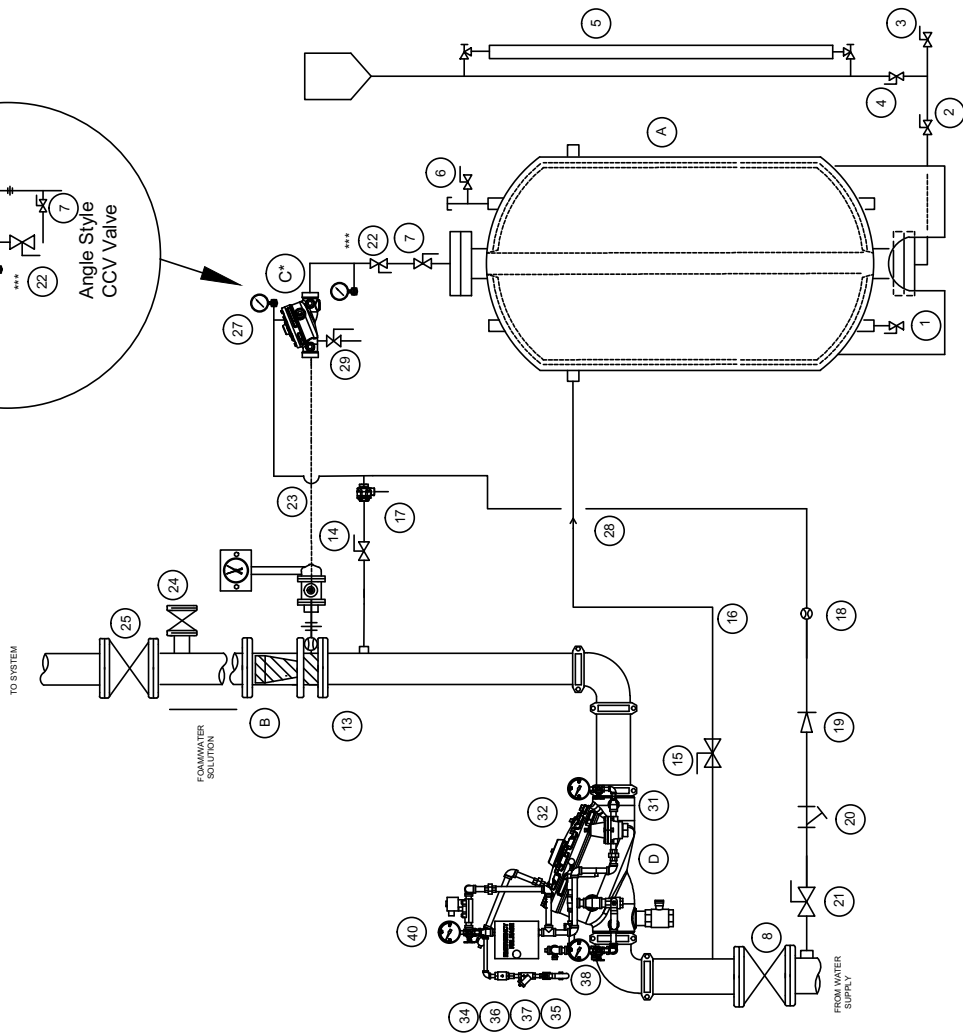
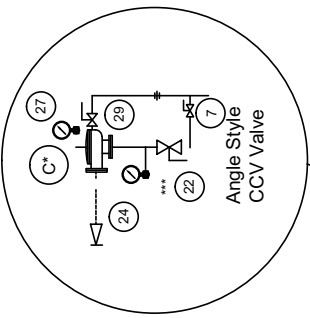
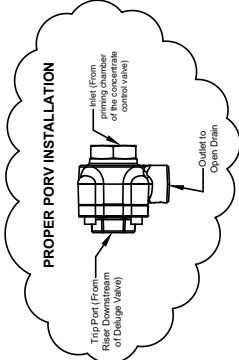


Figure 3



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For complete Pilot Pressure Regulating Foam/Water Deluge System Supplied by a Bladder Tank, select Flow Control Valve, Pressure Regulating Trim, Release Trim, Foam Concentrate Control Valve and Trim, Foam Concentrate and Ratio Flow Controller, Bladder Tank and Accessories.

DESCRIPTION	NOMINAL SIZE	PART NUMBER	DATA PAGE	
FLOW CONTROL VALVES - ANGLE STYLE				
Threaded	Model & Pipe O.D.	Painted Red		
	Model H-3 48 mm	1½" / DN40	09894 500 a-h	
	Model H-1 60 mm	2" / DN50	05856C 501 a-h	
	Model & Pipe O.D.	Halar® Coated		
	Model H-4 48 mm	1½" / DN40	09895Q/B 503 a-j	
	Model H-2 60 mm	2" / DN50	08365Q/B 504 a-k	
Flange/ Flange	Flange Drilling	Model H-1	Painted Red	
	ANSI	3"	05914C	
	ANSI	4"	05911C	
	ANSI	6"	05908C	
	ANSI/Japan	4"	09037	
	ANSI/Japan	6"	09386	
	PN10/16	DN80	08627	
	PN10/16	DN100	08630	
	PN10/16	DN150	08632	
	Flange Drilling	Model H-2	Halar® Coated	
	ANSI	3"	08366Q/B	502 a-i
	ANSI	4"	08367Q/B	
	ANSI	6"	08368Q/B	
	PN10/16	DN80	08873Q/B	
	PN10/16	DN100	08874Q/B	
PN10/16	DN150	08875Q/B	504 a-k	
Flange/ Groove	Flange Drilling / Pipe O.D.	Model H-1	Painted Red	
	ANSI / 89 mm	3"	05837C	
	ANSI / 114 mm	4"	05841C	
	ANSI / 168 mm	6"	05458C	
	PN10/16 / 89 mm	DN80	11658	
	PN10/16 / 114 mm	DN100	11811	
	PN10/16 / 168 mm	DN150	05458C	
	Flange Drilling / Pipe O.D.	Model H-2	Halar® Coated	
	ANSI / 89 mm	3"	11207Q/B	502 a-i
	ANSI / 114 mm	4"	11208Q/B	
	ANSI / 168 mm	6"	11209Q/B	
	PN10/16 / 89 mm	DN80	12646Q/B	
	PN10/16 / 114 mm	DN100	12647Q/B	
	PN10/16 / 168 mm	DN150	12643Q/B	504 a-k

DESCRIPTION	NOMINAL SIZE	PART NUMBER	DATA PAGE	
FLOW CONTROL VALVES - STRAIGHT THROUGH				
Threaded	Pipe O.D.	Model J-1	Painted Red	
	NPT 48 mm	1½"	12130 505 a-h	
	NPT 60 mm	2"	12063	
	NPT 65 mm	2½"	12405	
	BSP 48 mm	DN40	12684	
	BSP 60 mm	DN50	12688	
	Pipe O.D.	Model J-2	Halar® Coated	
	NPT 65 mm	2½"	12406Q/B	506 a-j

DESCRIPTION	NOMINAL SIZE	PART NUMBER	DATA PAGE	
FLOW CONTROL VALVES - STRAIGHT THROUGH				
Flange/ Flange	Flange Drilling	Model J-1	Painted Red	
	ANSI	3"	12016	
	ANSI	4"	11968	
	ANSI	6"	11970	
	ANSI	8"	11993	
	ANSI/Japan	4"	11975	
	ANSI/Japan	6"	11981	
	PN10/16	DN80	12028	
	PN10/16	DN100	11973	
	PN10/16	DN150	11971	
	PN10	DN200	11997	
	PN16	DN200	12001	
	Flange Drilling	Model J-2	Halar® Coated	
	ANSI	3"	12017Q/B	506 a-j
	ANSI	4"	11977Q/B	
	ANSI	6"	11979Q/B	
	ANSI	8"	11994Q/B	
	PN10/16	DN80	12029Q/B	
	PN10/16	DN100	11982Q/B	
	PN10/16	DN150	11980Q/B	
PN10	DN200	11998Q/B		
PN16	DN200	12002Q/B		
Flange/ Groove	Flange Drilling / Pipe O.D.	Model J-1	Painted Red	
	ANSI / 89 mm	3"	12020	
	ANSI / 114 mm	4"	11967	
	ANSI / 168 mm	6"	11969	
	PN10/16 / 89 mm	DN80	12031	
	PN10/16 / 114 mm	DN100	11974	
	PN10/16 / 165 mm	DN150	12642	
	PN10/16 / 168 mm	DN150	11969	
	Flange Drilling / Pipe O.D.	Model J-2	Halar® Coated	
	ANSI / 89 mm	3"	12021Q/B	506 a-j
	ANSI / 114 mm	4"	11976Q/B	
	ANSI / 168 mm	6"	11978Q/B	
	PN10/16 / 89 mm	DN80	12646Q/B	
	PN10/16 / 114 mm	DN100	12647Q/B	
	PN10/16 / 165 mm	DN150	12643Q/B	
PN10/16 / 168 mm	DN150	11978Q/B		
Groove/ Groove	Pipe O.D.	Model J-1	Painted Red	
	48 mm	1½" / DN40	12129	
	60 mm	2" / DN50	12061	
	73 mm	2½" / DN65	12407	
	76 mm	DN80	12731	
	89 mm	3" / DN80	12024	
	114 mm	4" / DN100	11516	
	165 mm	DN150	11912	
	168 mm	6" / DN150	11527	
	219 mm	8" / DN200	11019	
	Pipe O.D.	Model J-2	Halar® Coated	
	48 mm	1½" / DN40	12131Q/B	505 a-h
	60 mm	2" / DN50	12062Q/B	
	73 mm	2½" / DN65	12408Q/B	
	76 mm	DN80	12732Q/B	
	89 mm	3" / DN80	12025Q/B	
	114 mm	4" / DN100	11517Q/B	
	165 mm	DN150	11913Q/B	
	168 mm	6" / DN150	11528Q/B	
	219 mm	8" / DN200	11119Q/B	
Groove/ Groove	Pipe O.D.	Model J-2	Halar® Coated	
	48 mm	1½" / DN40	12131Q/B	507 a-f
	60 mm	2" / DN50	12062Q/B	
	73 mm	2½" / DN65	12408Q/B	
	76 mm	DN80	12732Q/B	
	89 mm	3" / DN80	12025Q/B	
	114 mm	4" / DN100	11517Q/B	
	165 mm	DN150	11913Q/B	
	168 mm	6" / DN150	11528Q/B	
	219 mm	8" / DN200	11119Q/B	

Table 1



TECHNICAL DATA

PILOT PRESSURE REGULATING FOAM/WATER DELUGE SYSTEM SUPPLIED BY A 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

DESCRIPTION	NOMINAL SIZE	PART NUMBER	DATA PAGE	
FLOW CONTROL PRESSURE REGULATING TRIM FOR ANGLE STYLE VALVES				
		Galvanized	Brass	
Includes both conventional flow control trim and pilot regulator trim, as well as speed control assembly and pilot pressure regulating valve.	2" / DN50	14764-1	14764-2	543 a-c
	3" / DN80	14765-1	14765-2	543 d-f
	4" / DN100	14766-1	14766-2	543 g-i
	6" / DN150	14767-1	14767-2	543 j-l
FLOW CONTROL PRESSURE REGULATING TRIM FOR STRAIGHT THROUGH VALVES				
		Galvanized	Brass	
Includes both conventional flow control trim and pilot regulator trim, as well as speed control assembly and pilot pressure regulating valve.	1½" / DN40	14768-1	14768-2	544 a-c
	2" / DN50	14768-1	14768-2	544 a-c
	2½" / DN65	14769-1	14769-2	544 d-f
	3" / DN80	14769-1	14769-2	544 d-f
	4" / DN100	14770-1	14770-2	544 g-i
	6" / DN150	14771-1	14771-2	544 j-l
	8" / DN200	14772-1	14772-2	544 m-o


DESCRIPTION	PART NUMBER	DATA PAGE		
RELEASE TRIM PACKAGES				
Use with Angle or Straight Through Valves	Galvanized	Brass		
	Pneumatic Release	10809	10811	265 b
	Electric Release	10830	10832	265 a

DESCRIPTION	TANK SIZE	PART NUMBER	DATA PAGE
HORIZONTAL BLADDER TANK	50 - 4500 Gallon	CHBT2-xxxx *	240 a-h
VERTICAL BLADDER TANK	25 - 4500 Gallon	CVBT2-xxxx *	
* Where xxxx is the tank size			

DESCRIPTION	NOMINAL SIZE	PART NUMBER	DATA PAGE	
FOAM CONCENTRATE CONTROL VALVE HALAR® COATED				
Angle Style				
Threaded NPT	Model & Pipe O.D.		61a-f	
	Model E-4 48 mm	1½" / DN40		09890Q/B
	Model E-2 60 mm	2" / DN50		08361Q/B
Straight Through				
Threaded NPT	Pipe O.D.	Model F-2		12402Q/B
	NPT 65 mm	2½"		
Groove/Groove	Pipe O.D.	Model F-2		12404Q/B
	48 mm	1½" / DN40	12127Q/B	
	60 mm	2" / DN50	12058Q/B	
	73 mm	2½" / DN65		

DESCRIPTION	NOMINAL SIZE	PART NUMBER	DATA PAGE
FOAM CONCENTRATE CONTROL VALVE TRIM			
Use with Angle Style Valve	Galvanized		61a-f
	1½" / DN40	08098	
	2" / DN50	08099	
	Brass		
	1½" / DN40	09694	
2" / DN50	09695		
Use with Straight Through Valves	Galvanized		
	1½" / DN40	12848-1	
	2" / DN50	12848-1	
	2½" / DN65	12929-1	
	Brass		
	1½" / DN40	12848-2	
	2" / DN50	12848-2	
2½" / DN65	12929-2		

Table 2

	<h1 style="margin: 0;">TECHNICAL DATA</h1>	<h2 style="margin: 0;">PILOT PRESSURE REGULATING FOAM/WATER DELUGE SYSTEM SUPPLIED BY A BLADDER TANK</h2>
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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

DESCRIPTION	NOMINAL SIZE	PART NUMBER	DATA PAGE
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-1 PORV	½" / DN15	13598	287 a-b
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	

FOAM CONCENTRATES AND RATIO FLOW CONTROLLERS					
FOAM CONCENTRATE			RATIO FLOW CONTROLLER		
DESCRIPTION	PART NUMBER	DATA PAGE	SIZE	PART NUMBER	DATA PAGE
1% AFFF C103	F14969	100 a-b	3" (80 mm) Wafer 1-1/4" NPT	F15012/A	171 a-d
			4" (100 mm) Wafer 1½" NPT	F15018/A	
			6" (150 mm) Wafer 2" NPT	F15025/A	
			8" (200 mm) Wafer 2½" NPT	F15032/A	
3% AFFF C303	F14970	101 a-b	3" (80 mm) Wafer 1-1/4" NPT	F15012/B	
			4" (100 mm) Wafer 1½" NPT	F15018/B	
			6" (150 mm) Wafer 2" NPT	F15025/B	
3% AFFF MS C301 MS	F14971	102 a-b	8" (200 mm) Wafer 2½" NPT	F15032/B	
			3" (80 mm) Wafer 1-1/4" NPT	F15012/C	
			4" (100 mm) Wafer 1½" NPT	F15018/C	
3% AFFF MS C301 MS	F14971	102 a-b	6" (150 mm) Wafer 2" NPT	F15025/C	
			8" (200 mm) Wafer 2½" NPT	F15032/C	
			3" (80 mm) Wafer 1-1/4" NPT	F15012/D	
3% / 6% AR-AFFF @ 3% C363	F14973	103 a-b	4" (100 mm) Wafer 1½" NPT	F15018/D	
			6" (150 mm) Wafer 2" NPT	F15025	
3% / 6% AR-AFFF @ 6% C363	F14973	103 a-b	3" (80 mm) Wafer 1-1/4" NPT	F15012/E	
			4" (100 mm) Wafer 1½" NPT	F15018/E	
			6" (150 mm) Wafer 2" NPT	F15025/D	
3% AR-AFFF CUG	F14972	104 a-b	3" (80 mm) Wafer 1-1/4" NPT	F15012/J	
			4" (100 mm) Wafer 1½" NPT	F15018/J	
			6" (150 mm) Wafer 2" NPT	F15025/J	
			8" (200 mm) Wafer ½" NPT	F15032/J	

Table 3