



TECHNICAL DATA

NON-INTERLOCKED PREACTION SYSTEM WITH PNEUMATIC RELEASE

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058

Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

1. DESCRIPTION

(Refer to Figures 1-3.)

A Viking Non-Interlocked Preaction system utilizes a Viking Deluge Valve to control water flow into system piping equipped with closed sprinklers. Under normal operating conditions, the sprinkler piping is supervised with pressurized air or nitrogen to ensure against undetected leaks. Non-Interlocked Preaction Systems are recommended for very large dry systems that exceed the capacity normally permitted on a dry valve. Pneumatically controlled preaction systems require a pneumatic release system, equipped with thermostatic (rate-of-rise) releases, and/or fixed temperature releases, and/or pilot heads. Release trim for pneumatically controlled preaction systems utilize a pneumatic actuator normally held closed by pressure maintained in the pneumatic release system AND pneumatic pressure maintained in the closed sprinkler system.

Non-Interlocked Preaction Systems are designed so the deluge valve will open when EITHER a detector on the pneumatic release system operates, OR a loss of pressure in the sprinkler system occurs. When the deluge valve opens, water will flow into the sprinkler piping and out of any open sprinklers and any other opening on the system. In the event of non-operation of the release system, the system will operate as a dry system. In the event of damage to the sprinkler piping or a sprinkler, the deluge valve will open. Water will flow from any open sprinklers and any other opening in the sprinkler system piping.

2. LISTINGS AND APPROVALS

 **cULus Listed: VLFT**

3. SYSTEM OPERATION

(Refer to Figures 1-3.)

A. IN THE SET CONDITION

System water supply pressure enters the priming chamber of the deluge valve (A.1) through the 1/4" (8 mm) priming line, which includes a normally open priming valve (B.1), **strainer (B.2), restricted orifice (B.3) and check valve (B.4).** In the SET condition, water supply pressure is trapped in the priming chamber by the check valve (B.4) and pneumatic actuator (F.1). The pneumatic actuator is held closed by pressure maintained in the pneumatic release system and pneumatic pressure maintained in the sprinkler system. The pressure in the priming chamber holds the deluge valve clapper closed, keeping the outlet chamber and system piping dry.

B. IN FIRE CONDITIONS

In a fire condition, when a releasing device operates, pressure in the pneumatic release system escapes, causing the pneumatic actuator (F.1) to open. Pressure is released from the priming chamber faster than it is supplied through restricted orifice (B.3). The deluge valve clapper opens to allow water to flow into the system piping and alarm devices. When a sprinkler head opens, water will flow from the system.

If a sprinkler opens prior to operation of a releasing device, OR ANY TIME PRESSURE IN THE SPRINKLER PIPING IS LOST, the pneumatic actuator (F.1) will open. The deluge valve will open and water will flow from any open sprinklers and/or any other opening in the sprinkler system piping.

When the deluge valve operates, the sensing end of the PORV (B.10) is pressurized, causing the PORV to operate. When the PORV operates, it continually vents the priming chamber to prevent the deluge valve from resetting even if the open releasing devices close. The deluge valve can only be reset after the system has been taken out of service and the outlet chamber of the deluge valve and associated trim piping are depressurized and drained.

C. MANUAL OPERATION

Any time the handle inside emergency release (B.11) is pulled, pressure is released from the priming chamber; the deluge valve will open but the water will be contained in the sprinkler piping. The water motor alarm (C.2) and alarms connected to the alarm pressure switch (C.1) will activate. If a sprinkler head opens, water will flow from the system.

4. INSTALLATION

Refer to current Viking Technical Data describing individual components of the Viking Non-Interlocked Preaction System. Technical Data describing the Viking Deluge Valve, and other system components are packed with product and in the *Viking Engineering and Design Data* book. Also, refer to applicable installation standards, codes, and Authorities Having Jurisdiction.

A. IMPORTANT SETTINGS

(Also refer to Table 1 on page 307b.)

1. Provide 30 PSI (2 bar) pneumatic pressure to the pneumatic release system and pneumatic actuator for system water pressures of 175 PSI (12 bar) or less. For system water pressures above 175 PSI, up to a maximum of 250 PSI (17 bar), provide 50 PSI (3.4 bar) of pneumatic pressure to the pneumatic release system and pneumatic actuator.



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TABLE 1: AIR PRESSURE SETTINGS FOR GIVEN WATER SUPPLY PRESSURES

DEVICE	Up to 175 PSI (12 bar) Set to Maintain:	175 PSI (12 bar) to 250 PSI (17 bar) Set to Maintain:
Air Compressor On/Off Switch (G.2)	30 PSI (2 bar) / 40 PSI (2.8 bar)	50 PSI (3.4 bar) / 60 PSI (4.1 bar)
Air Maintenance Device (G.6)	30 PSI (2 bar)	50 PSI (3.4 bar)
Air Pressure Supervisory Switch (E.3)	25 PSI (1.7 bar)	45 PSI (2.4 bar)

- Set the release system air pressure supervisory switch to activate at 25 PSI (1.7 bar) on pressure drop for system water pressures of 175 PSI (12 bar) or less. For system water pressures above 175 PSI, up to a maximum of 250 PSI (17 bar), set the air pressure supervisory switch to activate at 45 PSI (2.4 bar) on pressure drop. The air pressure supervisory switch should be wired to activate an alarm to signal a low air pressure condition. Activation of an alarm to signal a high pressure condition may be required. Refer to applicable installation standards and the Authority Having Jurisdiction.
- The alarm pressure switch should activate when pressurized to 4 to 8 PSI (0.3 to 0.6 bar) on pressure rise. The alarm pressure switch should be wired to activate the water flow alarm.

B. AIR SUPPLY DESIGN

The air supply compressor should be sized to establish total required air pressure in 30 minutes. The air supply must be regulated, restricted, and maintained automatically.

The air supply must be regulated to maintain the pneumatic pressure desired in the release system and the pneumatic pressure desired in the sprinkler piping. Pressures in excess of the pressure settings recommended in section 4. INSTALLATION, may affect operation of the system.

The air supply must be restricted to ensure that the automatic air supply cannot replace air as fast as it escapes when a releasing device or a sprinkler operates.

It is recommended practice to provide inspector's test connections on both the pneumatic release system and the sprinkler piping. The sprinkler system inspector's test connection should be equipped with a ball valve (normally locked closed) capable of being opened to simulate the opening of a sprinkler and should terminate in an orifice equal to the smallest sprinkler orifice provided on the system. The sprinkler system inspector's test connection should be installed at the most hydraulically demanding location of the system.

The inspector's test connection provided on the pneumatic release system should be equipped with a ball valve (normally locked closed) capable of being opened to simulate the opening of a releasing device. Locate the connection and valve at the highest and most demanding location of the release system. Test connections provided on pneumatic release systems should terminate in an orifice equal to the smallest orifice of the releasing devices provided. The inspector's test connection may be used to verify that the automatic air supply cannot replace air as fast as it escapes when a releasing device operates. Refer to section 7. INSPECTIONS and TESTS.

5. PLACING THE SYSTEM IN SERVICE

(Refer to Figures 1-3.)

NOTE: REFER TO INSTRUCTIONS PROVIDED IN TECHNICAL DATA DESCRIBING THE VIKING DELUGE VALVE AND OTHER SYSTEM COMPONENTS (SEE SECTION 8).

To Return the System to Service:

- Verify that the system has been properly drained. The system main drain (D.3) and auxiliary drain (B.6) should be open. The priming valve (B.1) should be closed. Verify that the emergency release (B.11) is closed.
- Close the system main drain (D.3).
- Restore pneumatic pressure to the release system. Maintain 30 PSI (2 bar) or 50 PSI (3.4 bar) as required by the pneumatic actuator. Refer to section 4. INSTALLATION.
 - Verify that the 1/2" valve in the air maintenance device (G.6) by-pass trim is closed and that both 1/4" valves are open.
- Open the priming valve (B.1).
- Open the flow test valve (B.15).
- Partially open the main water supply control valve (D.1).
- When full flow develops from the flow test valve, close the flow test valve (B.15).
 - Verify that there is no flow from the open auxiliary drain (B.6).
- Close the auxiliary drain (B.6).
- Fully open and secure the main water supply control valve (D.1).
- Verify that the alarm shut-off valve (B.9) is open and that all other valves are in their normal operating position.
- Depress the plunger of drip check (B.7). No water should flow from the drip check when the plunger is pushed.



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6. EMERGENCY INSTRUCTIONS

(Refer to Figures 1-3.)

WARNING

Any system maintenance that involves placing a control valve or detection system out of service will impair the fire protection capabilities of that system. Prior to proceeding, appropriate impairment procedures per NFPA 25 shall be followed with the notification of all Authorities Having Jurisdiction. Consideration should be given to employment of a fire patrol in the affected areas.

Failure to follow these instructions could cause improper system operation, resulting in serious personal injury and/or property damage.

To Take System Out of Service:

After a fire, verify that the fire is OUT and that placing the system out of service has been authorized by the appropriate Authority Having Jurisdiction.

1. Close the water supply valve (B.1).
2. Open the system main drain (D.3).
3. Silence alarms (optional).
 - a. To silence electric alarms controlled by the pressure switch and to silence the water motor alarm, close the alarm shut-off valve (B.9).

NOTE: ELECTRIC ALARMS CONTROLLED BY A PRESSURE SWITCH INSTALLED IN THE 1/2" (15 MM) NPT CONNECTION FOR A NON-INTERRUPTIBLE ALARM PRESSURE SWITCH CANNOT BE SHUT OFF UNTIL THE DELUGE VALVE IS RESET OR TAKEN OUT OF SERVICE.

4. Shut off the air supply (optional).
5. Open the auxiliary drain (B.6).
6. Close the priming valve (B.1).

NOTE: SPRINKLER SYSTEMS THAT HAVE BEEN SUBJECTED TO A FIRE MUST BE RETURNED TO SERVICE AS SOON AS POSSIBLE. THE ENTIRE SYSTEM MUST BE INSPECTED FOR DAMAGE, AND REPAIRED OR REPLACED AS NECESSARY.

7. Replace any thermostatic releases that have been damaged. Replace any fixed temperature releases or pilot heads that have operated.
8. Replace any sprinklers that have opened, been damaged, or have been exposed to fire conditions.
9. Perform all maintenance procedures recommended in Technical Data describing individual components of the system that have operated.
10. Return the system to service as soon as possible. Refer to section 5. PLACING THE SYSTEM IN SERVICE.

7. INSPECTIONS AND TESTS

NOTICE: THE OWNER IS RESPONSIBLE FOR MAINTAINING THE FIRE PROTECTION SYSTEM AND DEVICES IN PROPER OPERATING CONDITION.

It is imperative that the system be inspected and tested on a regular basis in accordance with NFPA 25. Refer to INSPECTIONS and TESTS recommended in current Viking Technical Data describing individual components of the Viking Non-Interlocked Preaction System used. (See section 8 for hyperlinks to Viking Technical Data.)

The frequency of the inspections may vary due to contaminated water supplies, corrosive water supplies, corrosive atmospheres, as well as the condition of the air supply to the system. For minimum maintenance and inspection requirements, refer to NFPA 25. In addition, the Authority Having Jurisdiction may have additional maintenance, testing, and inspection requirements that must be followed.

WARNING: Any system maintenance that involves placing a control valve or detection system out of service will impair the fire protection capabilities of that system. Prior to proceeding, appropriate impairment procedures per NFPA 25 shall be followed with the notification of all Authorities Having Jurisdiction. Consideration should be given to employment of a fire patrol in the affected areas.

Failure to follow these instructions could cause improper system operation, resulting in serious personal injury and/or property damage.

Low Air Pressure Alarm Test (Quarterly testing of low air alarms is recommended.)

To Test the Pneumatic Release System "Low Air" Alarm:

1. To prevent operation of the deluge valve and filling of the sprinkler piping with water during the test, CLOSE the main water supply control valve (D.1) and OPEN the auxiliary drain (B.6).



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2. Fully open the inspector's test valve on the system being tested.
3. Verify that low air alarms operate within an acceptable time period and continue without interruption.
4. Close the inspector's test valve.
5. Close the priming valve (B.1).
6. Establish recommended pneumatic pressure to be maintained. Refer to section 4. INSTALLATION.
7. Alarms should stop.
8. Open the priming valve (B.1).

To Test the Sprinkler System "Low Air" Alarm:

1. Repeat steps 1-8 above, operating the sprinkler system inspector's test valve.

When testing is complete, return the system to service following steps 1 through 8 below.

CAUTION! This procedure applies only when done in conjunction with "Low Air" Alarm testing described above.

1. Verify that the pressure indicated on the priming pressure water gauge (B.12) indicates that the priming chamber is pressurized with system water supply pressure.
 - a. Verify that the auxiliary drain (B.6) is open.
2. Open the flow test valve (B.15).
3. Partially open the main water supply control valve (D.1).
4. When full flow develops from the flow test valve, close the flow test valve (B.15).
 - a. Verify that there is no flow from the open auxiliary drain (B.6).
5. Close the auxiliary drain (B.6).
6. Fully open and secure the main water supply control valve (D.1).
7. Verify that the alarm shut-off valve (B.9) is open and that all other valves are in their normal operating position.
8. Depress the plunger of drip check (B.7). No water should flow from the drip check when the plunger is pushed.

Full Flow Trip Test

Performance of a trip test is recommended annually during warm weather. Consider coordinating this test with operation testing of the releasing devices.

CAUTION! Performance of this test will cause the deluge valve to open and the sprinkler system to fill with water.

To Trip Test the Pneumatically Controlled Non-Interlocked Preaction System:

1. Notify the Authority Having Jurisdiction and those in the area affected by the test.
2. Trip the deluge valve by performing option "a", "b", or "c" below.
 - a. Operate a releasing device according to the manufacturer's instructions.
 - b. Open either the pneumatic release system or sprinkler system inspector's test valve to simulate operation of a releasing device or sprinkler.
 - c. Open the door of the emergency release (B.11) and pull the handle.
3. The deluge valve should open, filling the sprinkler system with water.
 - a. Water flow alarms should operate.
4. Open the sprinkler system inspector's test valve to verify adequate flow.

When Trip Testing is Complete:

5. Perform steps 1 through 10 of section 6. EMERGENCY INSTRUCTIONS to take the system out of service.
6. Perform steps 1 through 11 of section 5. PLACING THE SYSTEM IN SERVICE to return the system to service.
7. Notify the Authority Having Jurisdiction and those in the affected area that testing is complete.

8. ORDERING INSTRUCTIONS

To order a complete Non-Interlocked Preaction System with Pneumatic Release, the following components must be purchased: Deluge Valve, Conventional Trim, Release Trim package and a Pneumatic Actuator.



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VALVE PART NUMBERS

DELUGE VALVES, ANGLE STYLE				
DESCRIPTION		NOMINAL SIZE	PART NUMBERS	
			Painted Red	Halar®
Threaded NPT	Pipe O.D.		Model E-3	Model E-4
	48 mm	1½" / DN40	09889	09890Q/B
	260 mm	2" / DN50	05852C	08361Q/B
Flange/ Flange	Flange Drilling		Model E-1	Model E-2
	ANSI	3"	05912C	08362Q/B
	ANSI	4"	05909C	08363Q/B
	ANSI	6"	05906C	08364Q/B
	ANSI/Japan	6"	07136	----
	PN10/16	DN80	08626	08862Q/B
	PN10/16	DN100	08629	08863Q/B
Flange/ Groove	Flange Drilling / Pipe O.D.		Model E-1	Model E-2
	ANSI / 89 mm	3"	05835C	11064Q/B
	ANSI / 114 mm	4"	05839C	11065Q/B
	ANSI / 168 mm	6"	05456C	11001 Q/B
	PN10/16 / 89 mm	DN80	09539	----
	PN10/16 / 114 mm	DN100	09540	----
	PN10/16 / 168 mm	DN150	05456C	11001Q/B

DELUGE VALVES, STRAIGHT THROUGH STYLE				
DESCRIPTION		NOMINAL SIZE	PART NUMBERS	
			Painted Red	Halar®
Threaded NPT	Pipe O.D.		Model F-1	Model F-2
	NPT 48 mm	1½"	12126	----
	NPT 60 mm	2"	12059	----
	NPT 65 mm	2½"	12401	12402Q/B
	BSP 48 mm	DN40	12682	----
Flange/ Flange	Flange Drilling		Model F-1	Model F-2
	ANSI	3"	12014	12015Q/B
	ANSI	4"	11953	11960Q/B
	ANSI	6"	11955	11962Q/B
	ANSI	8"	11991	11992Q/B
	ANSI/Japan	6"	11964	----
	PN10/16	DN80	12026	12027Q/B
	PN10/16	DN100	11965	11966Q/B
	PN10/16	DN150	11956	11963Q/B
	PN10	DN200	11995	11996Q/B
	PN16	DN200	11999	12000Q/B
Flange/ Groove	Flange Drilling / Pipe O.D.		Model F-1	Model F-2
	ANSI / 89 mm	3"	12018	12019Q/B
	ANSI / 114 mm	4"	11952	11959Q/B
	ANSI / 168 mm	6"	11954	11961Q/B
	PN10/16 / 89 mm	DN80	12030	12644Q/B
	PN10/16 / 114 mm	DN100	11958	12645Q/B
	PN10/16 / 165 mm	DN150	12640	12641Q/B
Groove/ Groove	Pipe O.D.		Model F-1	Model F-2
	48 mm	1½" / DN40	12125	12127Q/B
	60 mm	2" / DN50	12057	12058Q/B
	73 mm	2½" / DN65	12403	12404Q/B
	76 mm	DN80	12729	12730Q/B
	89 mm	3" / DN80	12022	12023Q/B
	114 mm	4" / DN100	11513	11514Q/B
	165 mm	DN150	11910	11911Q/B
	168 mm	6" / DN150	11524	11525Q/B
	219 mm	8" / DN200	11018	11118Q/B

VALVE TRIM PACKAGE PART NUMBERS

DESCRIPTION		NOMINAL SIZE	PART NUMBERS	
Use with Angle Style Valves			Galvanized	Brass
		1½" / DN40	14629-1	14629-2
		2" / DN50	14630-1	14630-2
		3" / DN80	14631-1	14631-2
		4" / DN100	14632-1	14632-2
		6" / DN150	14633-1	14633-2
Use with Straight Through Valves	Horizontal Arrangement		Galvanized	Brass
		1½" / DN40	14635-1	14635-2
		2" / DN50	14635-1	14635-2
		2½" / DN65	14637-1	14637-2
		3" / DN80	14637-1	14637-2
		4" / DN100	14638-1	14638-2
		6" / DN150	14640-1	14640-2
		8" / DN200	14643-1	14643-2
	Vertical Arrangement	1½" / DN40	14634-1	14634-2
		2" / DN50	14634-1	14634-2
		2½" / DN65	14636-1	14636-2
		3" / DN80	14636-1	14636-2
		4" / DN100	14639-1	14639-2
		6" / DN150	14641-1	14641-2
	8" / DN200	14642-1	14642-2	

RELEASE TRIM AND PNEUMATIC ACTUATOR PART NUMBERS

DESCRIPTION	PART NUMBERS	
Release Trim	Galvanized	Brass
	10809	10811
Pneumatic Actuator	H-1	R-1 Corrosion Resistant
	06459b	09733

NOTE: When viewing this data page online, part numbers displayed in **BLUE** are hyperlinks. Clicking the part number will open the corresponding technical data page.



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CHECK VALVE PART NUMBERS

DESCRIPTION		NOMINAL SIZE	PART NUMBER	
IN-LINE CHECK VALVE				
Groove/ Groove	Model L-1	1-1/2" / DN40	11054	
		2" / DN50	11059	
Threaded NPT	Model K-1	1-1/2" / DN40	10659	
		2" / DN50	10667	
EASY RISER® SWING CHECK VALVE				
Flange/ Flange	Flange Drilling	Model F-1		
		ANSI	3"	08505
		ANSI	4"	08508
		ANSI	6"	08511
		ANSI/Japan	DN100	09039
		ANSI/Japan	DN150	09385
		ANSI/Japan	DN200	14023
		PN10/16	DN80	08796
		PN10/16	DN100	08797
		PN10/16	DN150	08835
		PN10	DN200	08836
		PN16	DN200	12355
	Flange/ Groove	Flange Drilling / Pipe O.D.	Model F-1	
		ANSI / 89 mm	3"	08506
		ANSI / 114 mm	4"	08509
		ANSI / 168 mm	6"	08512
		ANSI / 219 mm	8"	08515
		PN10/16 / 89 mm	DN80	12648
		PN10/16 / 114 mm	DN100	12649
		PN10/16 / 165 mm	DN150	12652
		PN10/16 / 168 mm	DN150	08512
		PN10 / 219 mm	DN200	12651
Groove/ Groove	Pipe O.D.	Model E-1		
		73 mm	2 1/2" / DN65	07929
			Model F-1	
		89 mm	3" / DN80	08507
		114 mm	4" / DN100	08510
		165 mm	DN150	12356
		168 mm	6" / DN150	08513
	219 mm	8" / DN200	08516	

CHECK VALVE TRIM PACKAGE PART NUMBERS

DESCRIPTION	NOMINAL SIZE	PART NUMBER
CHECK VALVE TRIM		
	1 1/2" / DN40	12960
	2" / DN50	12960
	2 1/2" / DN65	13776
	3", 4", 6", 8" / DN80, DN100, DN150, DN200	13777

AIR MAINTENANCE DEVICE AND SUPERVISORY SWITCH PART NUMBERS

DESCRIPTION	MODEL	PART NUMBER
AIR PRESSURE MAINTENANCE DEVICE Complete with Trim	D-2	07459
PRESSURE SUPERVISORY SWITCH (1/2" / DN15) Adjustable Range 10-175 PSI (0.7-12 bar)	Single SPDT	PS40-1A
	Dual SPDT	PS40-2A

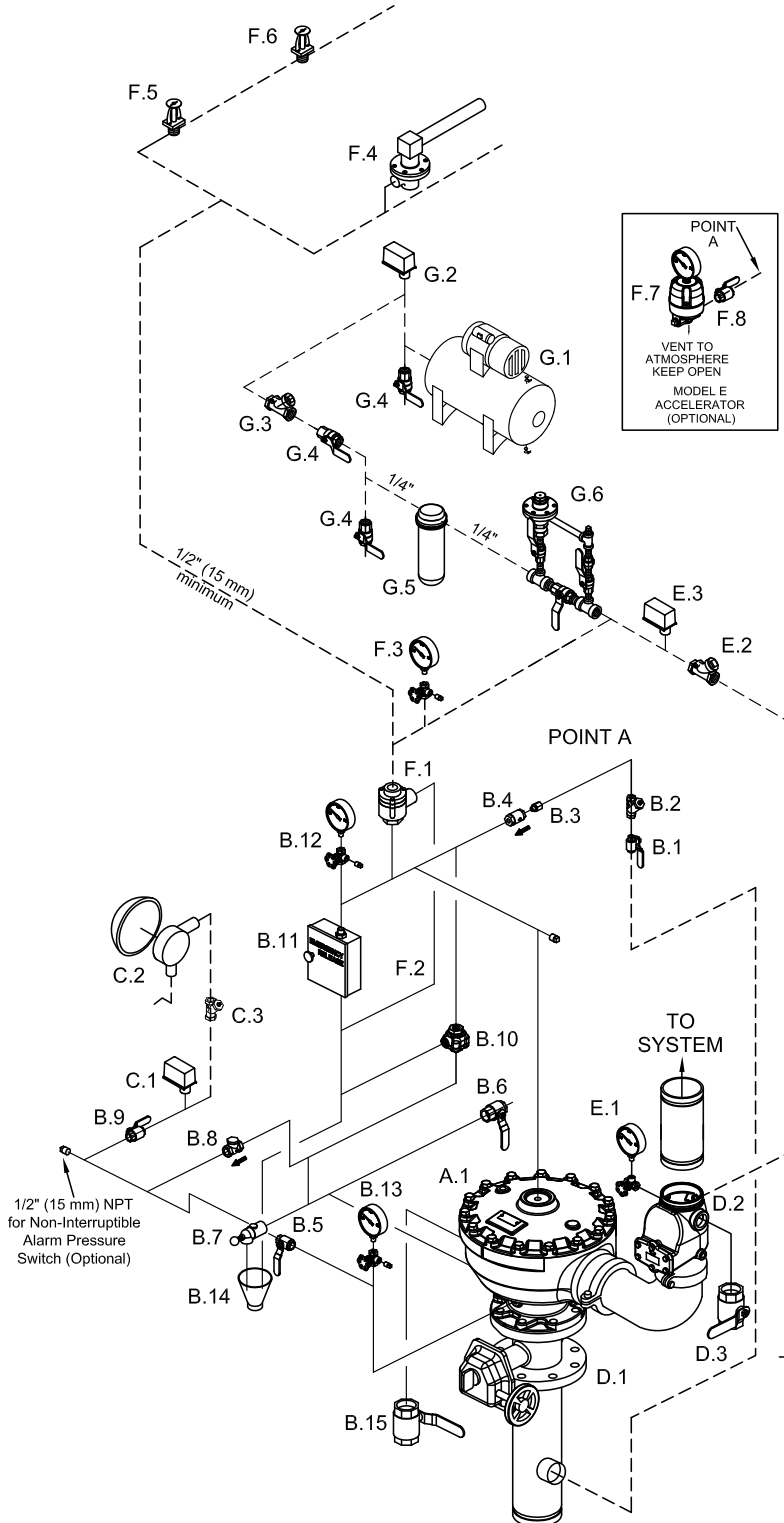


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SYSTEM COMPONENTS

- A. Valve
 - A.1 Deluge Valve
 - B. Deluge Valve Conventional Trim*
 - (See Deluge Valve Conventional Trim Charts)
 - B.1 Priming Valve (Normally Open)
 - B.2 Strainer
 - B.3 1/16" Restricted Orifice
 - B.4 Spring Loaded Check Valve
 - B.5 Alarm Test Valve (Normally Closed)
 - B.6 Auxiliary Drain Valve (Normally Closed)
 - B.7 Drip Check Valve
 - B.8 Drain Check Valve
 - B.9 Alarm Shut-Off Valve (Normally Open)
 - B.10 Pressure Operated Relief Valve (PORV)
 - B.11 Emergency Release
 - B.12 Priming Pressure Water Gauge and Valve
 - B.13 Water Supply Pressure Gauge and Valve
 - B.14 Drain Cup
 - B.15 Flow Test Valve (Normally Closed)
 - C. Water Flow Alarm Equipment
 - C.1 Alarm Pressure Switch and/or
 - C.2 Water Motor Alarm (Strainer Required)
 - C.3 Strainer
 - D. Riser
 - D.1 Water Supply Control Valve
 - D.2 Easy Riser Check Valve or rubber seated check valve
 - D.3 Sprinkler System Main Drain
 - E. Supervisory Air Supply
 - E.1 System Pressure Gauge and Valve
 - E.2 Soft Seat Swing Check Valve
 - E.3 Air Pressure Supervisory Switch
 - F. Release System
 - F.1 Pneumatic Actuator
 - F.2 Pneumatic Release Trim
 - F.3 Air Pressure Gauge and Valve
 - F.4 Thermostatic Release and/or
 - F.5 Fixed Temperature Release and/or
 - F.6 Pilot Head (Sprinkler)
 - F.7 Accelerator (Optional. See Inset.)
 - F.8 Accelerator Isolation Valve (See Inset.)
 - G. Air Supply
 - G.1 Automatic Air Supply. Air Compressor and Tank shown for clarity.
 - G.2 Air Supervisory Pressure Switch (Compressor On/Off Control Switch)
 - G.3 Soft Seat Check Valve
 - G.4 Shut Off Valve (Indicating Ball Valve recommended.)
 - G.5 Dehydrator
 - G.6 Air maintenance Device & By-Pass Trim
- Dashed lines indicate pipe required but not listed in the "System Components" Table.
- * Viking Deluge Valve Trim Packages contain items B.1 through B.15 and associated nipples. Viking Accessory Package for Conventional Deluge Valve Trim contains B.2 through B.5, B.7 through B.11, and B.14.

**FIGURE 1: ANGLE STYLE DELUGE VALVE (6" VALVE SHOWN)
WITH TANK MOUNTED COMPRESSOR**



TECHNICAL DATA

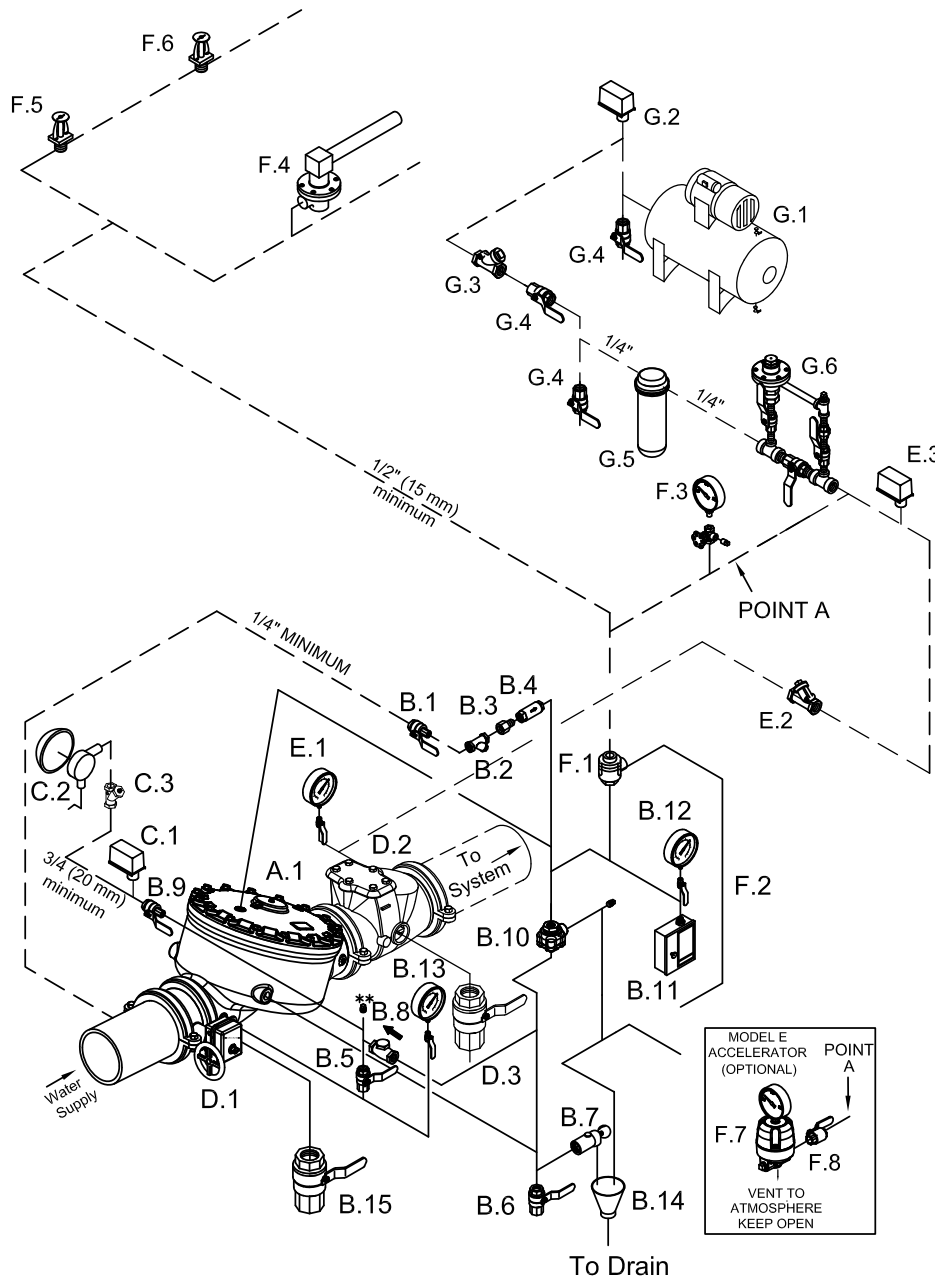
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SYSTEM COMPONENTS

- A. Valve
 - A.1 Deluge Valve
- B. Deluge Valve Conventional Trim*
 - (See Deluge Valve Conventional Trim Charts)
 - B.1 Priming Valve (Normally Open)
 - B.2 Strainer
 - B.3 1/16" Restricted Orifice
 - B.4 Spring Loaded Check Valve
 - B.5 Alarm Test Valve (Normally Closed)
 - B.6 Auxiliary Drain Valve (Normally Closed)
 - B.7 Drip Check Valve
 - B.8 Drain Check Valve
 - B.9 Alarm Shut-Off Valve (Normally Open)
 - B.10 Pressure Operated Relief Valve (PORV)
 - B.11 Emergency Release
 - B.12 Priming Pressure Water Gauge and Valve
 - B.13 Water Supply Pressure Gauge and Valve
 - B.14 Drain Cup
 - B.15 Flow Test Valve (Normally Closed)
- C. Water Flow Alarm Equipment
 - C.1 Alarm Pressure Switch and/or
 - C.2 Water Motor Alarm (Strainer Required)
 - C.3 Strainer
- D. Riser
 - D.1 Water Supply Control Valve
 - D.2 Easy Riser Check Valve or rubber seated check valve
 - D.3 Sprinkler System Main Drain
- E. Supervisory Air Supply
 - E.1 System Pressure Gauge and Valve
 - E.2 Soft Seat Swing Check Valve
 - E.3 Air Pressure Supervisory Switch
- F. Release System
 - F.1 Pneumatic Actuator
 - F.2 Pneumatic Release Trim
 - F.3 Air Pressure Gauge and Valve
 - F.4 Thermostatic Release and/or
 - F.5 Fixed Temperature Release and/or
 - F.6 Pilot Head (Sprinkler)
 - F.7 Accelerator (Optional. See Inset.)
 - F.8 Accelerator Isolation Valve (See Inset.)
- G. Air Supply
 - G.1 Automatic Air Supply. Air Compressor and Tank shown for clarity.
 - G.2 Air Supervisory Pressure Switch (Compressor On/Off Control Switch)
 - G.3 Soft Seat Check Valve
 - G.4 Shut Off Valve (Indicating Ball Valve recommended.)
 - G.5 Dehydrator
 - G.6 Air maintenance Device & By-Pass Trim



— Dashed lines indicate pipe is required but not listed in "System Components" Table.

* Viking Deluge Valve Trim Packages contain items B.1 through B.15 and associated nipples. Viking Accessory Package for Conventional Deluge Valve Trim contains B.2 through B.5, B.7 through B.11, and B.14.

** 1/2" (15 mm) NPT for Non-Interruptible Alarm Pressure Switch (Optional)

**FIGURE 2: STRAIGHT THROUGH HORIZONTAL DELUGE VALVE
(6" VALVE SHOWN)**

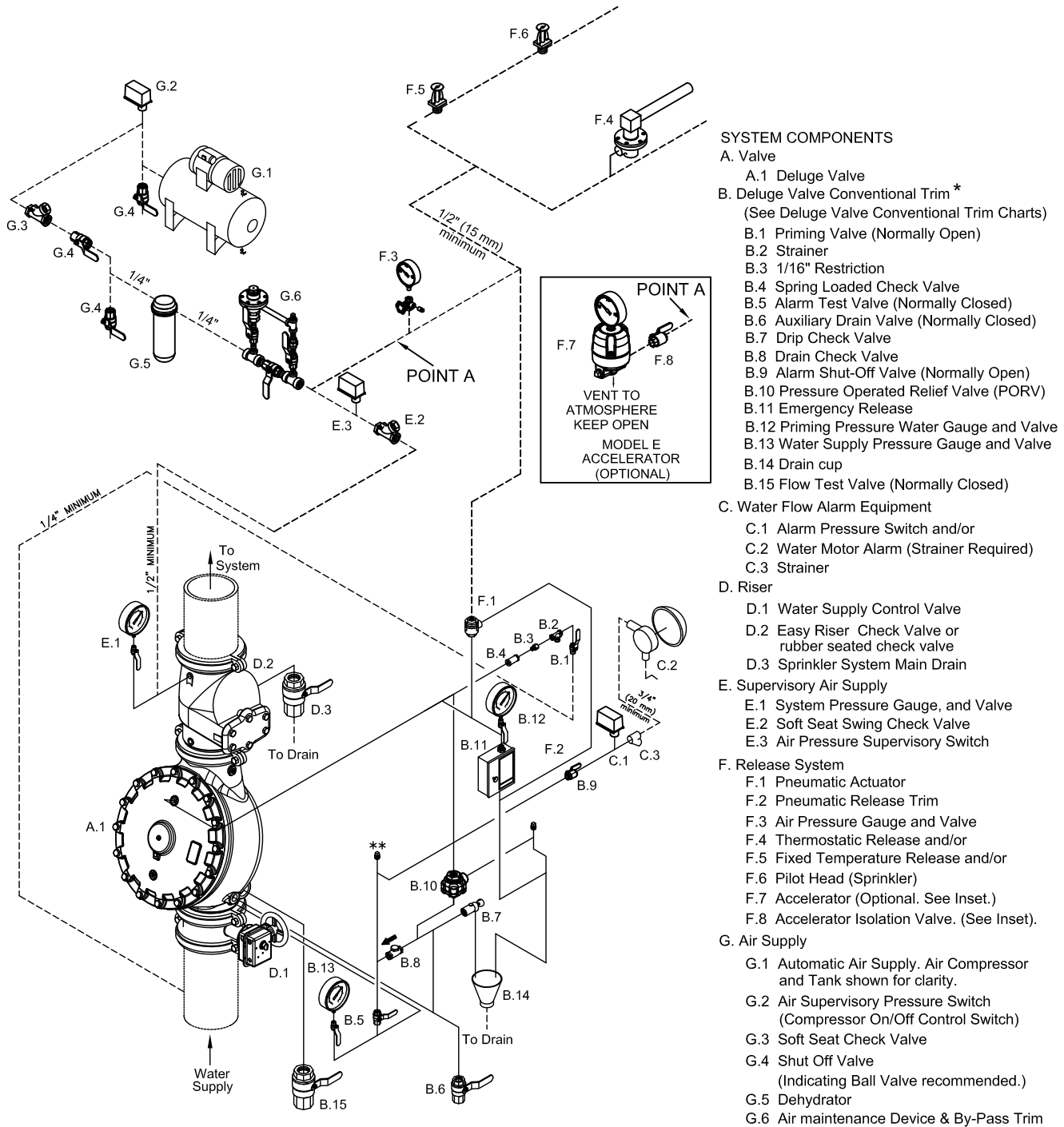


TECHNICAL DATA

NON-INTERLOCKED PREACTION SYSTEM WITH PNEUMATIC RELEASE

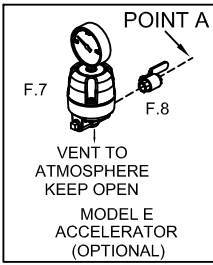
The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058

Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com



SYSTEM COMPONENTS

- A. Valve
- A.1 Deluge Valve
- B. Deluge Valve Conventional Trim *
 - B.1 Priming Valve (Normally Open)
 - B.2 Strainer
 - B.3 1/16" Restriction
 - B.4 Spring Loaded Check Valve
 - B.5 Alarm Test Valve (Normally Closed)
 - B.6 Auxiliary Drain Valve (Normally Closed)
 - B.7 Drip Check Valve
 - B.8 Drain Check Valve
 - B.9 Alarm Shut-Off Valve (Normally Open)
 - B.10 Pressure Operated Relief Valve (PORV)
 - B.11 Emergency Release
 - B.12 Priming Pressure Water Gauge and Valve
 - B.13 Water Supply Pressure Gauge and Valve
 - B.14 Drain cup
 - B.15 Flow Test Valve (Normally Closed)
- C. Water Flow Alarm Equipment
 - C.1 Alarm Pressure Switch and/or
 - C.2 Water Motor Alarm (Strainer Required)
 - C.3 Strainer
- D. Riser
 - D.1 Water Supply Control Valve
 - D.2 Easy Riser Check Valve or rubber seated check valve
 - D.3 Sprinkler System Main Drain
- E. Supervisory Air Supply
 - E.1 System Pressure Gauge, and Valve
 - E.2 Soft Seat Swing Check Valve
 - E.3 Air Pressure Supervisory Switch
- F. Release System
 - F.1 Pneumatic Actuator
 - F.2 Pneumatic Release Trim
 - F.3 Air Pressure Gauge and Valve
 - F.4 Thermostatic Release and/or
 - F.5 Fixed Temperature Release and/or
 - F.6 Pilot Head (Sprinkler)
 - F.7 Accelerator (Optional. See Inset.)
 - F.8 Accelerator Isolation Valve. (See Inset.)
- G. Air Supply
 - G.1 Automatic Air Supply. Air Compressor and Tank shown for clarity.
 - G.2 Air Supervisory Pressure Switch (Compressor On/Off Control Switch)
 - G.3 Soft Seat Check Valve
 - G.4 Shut Off Valve (Indicating Ball Valve recommended.)
 - G.5 Dehydrator
 - G.6 Air maintenance Device & By-Pass Trim



----- Dashed lines indicate pipe required but not included with Deluge Valve Conventional Trim and Easy Riser Check Valve Trim Packages.

* Viking Deluge Valve Trim Packages contain items B.1 through B.15 and associated nipples. Viking Accessory Package for Conventional Deluge Valve Trim contains B.2 through B.5, B.7 through B.11, and B.14.

** 1/2" (15 mm) NPT for Non-Interruptible Alarm Pressure Switch (Optional)

**FIGURE 3: STRAIGHT THROUGH VERTICAL DELUGE VALVE
(6" VALVE SHOWN)**

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