



TECHNICAL DATA

DELUGE SYSTEM CONTROLLED BY 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 1-4.)

Viking Deluge Systems utilize a Viking Model E or F Deluge Valve to control the water supply to system piping equipped with open sprinklers and/or spray nozzles. The system piping remains empty until the deluge valve (A.1) is activated by operation of the release system. Deluge systems are commonly used where it is desirable to simultaneously spray water from all open sprinklers and/or nozzles on the system when the system operates.

Pneumatically controlled deluge systems require a pneumatic release system, equipped with thermostatic (rate-of-rise) releases and/or fixed-temperature releases, and/or pilot sprinkler heads. Release trim, for the pneumatically controlled deluge valve (A.1) requires a pneumatic actuator normally held closed by the air pressure maintained in the pneumatic release system.

In fire conditions, operation of the pneumatic release system opens the deluge valve (A.1), allowing water to enter the system piping. Water will flow from any open sprinklers and/or spray nozzles on the system.

2. LISTINGS AND APPROVALS

cULus Listed - VLFT

FM Approved - (Deluge Sprinkler Systems) - The Viking pneumatically controlled deluge system is FM Approved when installed with the following components: Viking Model E-1, E-2, E-3, E-4, F-1 or F-2 Deluge Valves; Viking model C-1 or C-2 Emergency release, Viking Model H-1 or R-1 Pneumatic Actuator, Viking Model C-1 or C-2 Thermostatic Release, Viking PORV, and Viking Pressure Switch. Refer to current FM Approval Guide. Consult the manufacturer for any component approvals too recent to appear in the FM Approval Guide.



WARNING: Cancer and Reproductive Harm-
www.P65Warnings.ca.gov

3. SYSTEM OPERATION

(Refer to Figures 1-4)

A. IN THE SET CONDITION

System water supply pressure enters the priming chamber of the deluge valve (A.1) through the 1/4" (6.4 mm) priming line, which includes a normally open priming valve (B.1), strainer (B.2), restricted orifice (B.3), check valve (B.4), and the normally closed PORV (B.10). In the SET condition, water supply pressure is trapped in the priming chamber by check valve (B.4) and pneumatic actuator (E.1). Pneumatic actuator (E.1) is held closed by pressure maintained in the pneumatic release 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

When a releasing device operates, pressure in the pneumatic release system escapes, causing alarms controlled by air supervisory switch to activate and the pneumatic actuator (E.1) to open. When the pneumatic actuator opens, 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, causing water motor alarm (C.2) and water flow alarms connected to alarm pressure switch (C.1) to activate. Water will flow from any open sprinklers and/or spray nozzles on the system.

C. FOR DELUGE VALVE TRIM

When the deluge valve (A.1) operates, the air side of the PORV (B.10) loses pressure, causing the PORV (B.10) to operate. When the PORV (B.10) operates, it continually vents the priming chamber to prevent the Deluge Valve from resetting even if the open releasing devices close. The Deluge Valve (A.1) can only be reset after the system is taken out of service, and the outlet chamber of the deluge valve and associated trim piping are de-pressurized and drained.

D. TROUBLE CONDITIONS

In the event of an air supply failure and slow leakage of air from the pneumatic release system, alarms connected to air supervisory switch (E.5) will signal a low air pressure condition. Failure to restore air supply to the pneumatic release system will result in operation of the pneumatic actuator (E.1) and the deluge valve (A.1) will open. Similarly, if the release system operates due to mechanical damage or malfunction, the deluge valve (A.1) will open. Water will flow from any open sprinklers and/or spray nozzles on the system. Water motor alarm (C.2) and alarms connected to alarm pressure switch (C.1) will activate.

E. MANUAL OPERATION

Any time the handle inside emergency release (B.11) is pulled, pressure is released from the priming chamber and the deluge valve (A.1) will open. Water will flow into the system piping and from any open sprinklers and/or spray nozzles on the system. Alarm devices will operate.

4. INSTALLATION

Refer to current Viking Technical Data describing individual components of the Viking Deluge System. Technical Data describing the Viking Deluge Valve, and other system components are packed with product and in the *Viking Engineering Design Data* book and can be found on our web site.

Also, refer to applicable installation standards, codes, and Authorities Having Jurisdiction.



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A. IMPORTANT SETTINGS

1. Provide a minimum 30 PSI (2 bar) pneumatic pressure to the pneumatic release system and pneumatic actuator (E.1) 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 (17.2 bar), provide a minimum of 50 PSI (3.4 bar) pneumatic pressure to the pneumatic release system and pneumatic actuator. (E.1)
 - a. Set release system air pressure supervisory switch (E.5) 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 (17.2 bar), set the air pressure supervisory switch (E.5) to activate at 45 PSI (3.1 bar) on pressure drop.
 - b. Air supervisory switch (E.5) should be wired to activate a supervisory alarm to signal a "low air" pressure condition. Activation of a supervisory alarm to signal a high pressure condition may be required. Refer to applicable installation standards and the Authority Having Jurisdiction.
2. Alarm pressure switch (C.1) should activate when pressurized to 4 to 8 PSI (.3 to .6 bar) on pressure rise. Alarm pressure switch (C.1) 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 pressure desired in the release system. Pressure settings other than the pressure settings recommended in section 4. INSTALLATION, A. IMPORTANT SETTINGS, 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 operates.

It is recommended practice to provide an inspectors test connection on the pneumatic release system. The inspectors test connection 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, 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 inspectors 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 1-4)

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

To Return a System to Service:

1. Verify that the system has been properly drained. Auxiliary drain (B.6) should be open. Verify that emergency release is closed.
2. Restore pneumatic pressure to release system. Maintain 30 PSI (2 bar) or 50 PSI (3.4 bar) as required by the pneumatic actuator. Refer to item 4.A: Important Settings.
3. Prime pressure will be restored to the priming chamber of the deluge valve (A.1).
4. Open flow test valve (B.15).
5. Partially open main water supply control valve (D.1)
6. When full flow develops from flow test valve, close the flow test valve. Verify that there is no flow from open auxiliary drain (B.6).
7. Close auxiliary drain (B.6).
8. Fully open and secure the main water supply control valve (D.1).
9. Verify that the alarm shut-off valve (B.9) is open and that all other valves are in their normal operating position.
10. Depress the plunger of drip check (B.7). No water should flow from the drip check (B.7) when the plunger is pushed.

6. EMERGENCY INSTRUCTIONS

(Refer to Figures 1-4)

To Take System Out of Service:

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

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.



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1. Close the water supply control valve (D.1).
2. Open the auxiliary drain (B.6).
3. Silence alarms (optional). To silence electric alarms controlled by pressure switch and to silence water motor alarm (C.2), close alarm shut-off valve (B.9).

NOTE: ELECTRIC ALARMS CONTROLLED BY A PRESSURE SWITCH INSTALLED IN THE ½" (15 MM) NPT CONNECTION FOR A NON-INTERRUPTIBLE ALARM PRESSURE SWITCH (C.1) CANNOT BE SHUT OFF UNTIL THE DELUGE VALVE (A.1) IS RESET OR TAKEN OUT OF SERVICE.

4. Shut off the air supply (optional).
5. 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.

6. Replace any thermostatic releases (E.6) that have been damaged. Replace any fixed temperature releases (E.7) or pilot heads (E.8) that have operated.
7. Replace any sprinklers and/or spray nozzles that have been damaged or exposed to fire conditions.
8. Perform all maintenance procedures recommended in Technical Data describing individual components of the system that has operated.
9. 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 Deluge 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.

To Test Pneumatic Release System "Low Air" Alarm:

1. To prevent operation of the deluge valve (A.1) and the system piping filling with water during the test, CLOSE main water supply control valve (D.1).
2. Fully open the release system inspectors test valve to simulate operation of a releasing device.
3. Verify that low air alarms operate within an acceptable time period and continue without interruption.
4. Close the inspectors test valve.
5. Close priming valve (B.1).
6. Establish recommended pneumatic pressure to be maintained. Refer to section 4. INSTALLATION, A. IMPORTANT SETTINGS.
7. Alarms should stop.
8. Open priming valve (B.1).

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 priming pressure water gauge (B.12) indicates that the priming chamber is pressurized with system water supply pressure.
2. Depress the plunger of drip check (B.7). No water should flow from the drip check (B.7) when the plunger is pushed.
3. Open flow test valve (B.15).
4. Partially open main water supply control valve (D.1)
5. When full flow develops from flow test valve (B.15), close the flow test valve (B.15).
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, that priming valve (B.1) 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 (B.7) when the plunger is pushed.



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8. ORDERING INSTRUCTIONS

To order a complete Pneumatic release Deluge system, the following components must be purchased: Deluge Valve, Conventional Trim and a Release Trim package.

Valve Part Numbers

DESCRIPTION	NOMINAL SIZE	PART NUMBER
DELUGE VALVE		
Angle Style		
Threaded NPT Painted Red		
Model & Pipe O.D.		
Model E-3 48 mm	1½" / DN40	09889
Model E-1 60 mm	2" / DN50	05852C
HALAR®		
Model E-4 48 mm	1½" / DN40	09890Q/B
Model E-2 60 mm	2" / DN50	08361Q/B
Flange/Flange Painted Red		
Flange Drilling	Model E-1	
ANSI 3"		05912C
ANSI 4"		05909C
ANSI 6"		05906C
ANSI/Japan 6"		07136
PN10/16 DN80		08626
PN10/16 DN100		08629
PN10/16 DN150		08631
HALAR®		
Flange Drilling	Model E-2	
ANSI 3"		08362Q/B
ANSI 4"		08363Q/B
ANSI 6"		08364Q/B
PN10/16 DN80		08862Q/B
PN10/16 DN100		08863Q/B
PN10/16 DN150		08864Q/B
Flange/Groove Painted Red		
Flange Drilling / Pipe O.D.	Model E-1	
ANSI / 89 mm	3"	05835C
ANSI / 114 mm	4"	05839C
ANSI / 168 mm	6"	05456C
PN10/16 / 89 mm	DN80	09539
PN10/16 / 114 mm	DN100	09540
PN10/16 / 168 mm	DN150	05456C
HALAR®		
Flange Drilling / Pipe O.D.	Model E-2	
ANSI / 89 mm	3"	11064Q/B
ANSI / 114 mm	4"	11065Q/B
ANSI / 168 mm	6"	11001Q/B
PN10/16 / 168 mm	DN150	11001Q/B

DESCRIPTION	NOMINAL SIZE	PART NUMBER
Straight Through		
Threaded Painted Red		
Pipe O.D.	Model F-1	
NPT 48 mm	1½"	12126
NPT 60 mm	2"	12059
NPT 65 mm	2½"	12401
BSP 48 mm	DN40	12682
BSP 60 mm	DN50	12686
HALAR®		
NPT 65 mm	2½"	12402Q/B
Flange/Flange Painted Red		
Flange Drilling	Model F-1	
ANSI 3"		12014
ANSI 4"		11953
ANSI 6"		11955
ANSI 8"		11991
ANSI/Japan 6"		11964
PN10/16 DN80		12026
PN10/16 DN100		11965
PN10/16 DN150		11956
PN10 DN200		11995
PN16 DN200		11999
HALAR®		
Flange Drilling	Model F-2	
ANSI 3"		12015Q/B
ANSI 4"		11960Q/B
ANSI 6"		11962Q/B
ANSI 8"		11992Q/B
PN10/16 DN80		12027Q/B
PN10/16 DN100		11966Q/B
PN10/16 DN150		11963Q/B
PN10 DN200		11996Q/B
PN16 DN200		12000Q/B

Note: When viewing this datapage online, Part Numbers displayed in BLUE are hyperlinks. Clicking the part number will open the corresponding Technical Data Page.

DESCRIPTION	NOMINAL SIZE	PART NUMBER
Flange/Groove Painted Red		
Flange Drilling / Pipe O.D.	Model F-1	
ANSI / 89 mm	3"	12018
ANSI / 114 mm	4"	11952
ANSI / 168 mm	6"	11954
PN10/16 / 89 mm	DN80	12030
PN10/16 / 114 mm	DN100	11958
PN10/16 / 165 mm	DN150	12640
PN10/16 / 168 mm	DN150	11954
HALAR®		
Flange Drilling / Pipe O.D.	Model F-2	
ANSI / 89 mm	3"	12019Q/B
ANSI / 114 mm	4"	11959Q/B
ANSI / 168 mm	6"	11961Q/B
PN10/16 / 89 mm	DN80	12644Q/B
PN10/16 / 114 mm	DN100	12645Q/B
PN10/16 / 165 mm	DN150	12641Q/B
PN10/16 / 168 mm	DN150	11961Q/B
Groove/Groove Painted Red		
Pipe O.D.	Model F-1	
48 mm	1½" / DN40	12125
60 mm	2" / DN50	12057
73 mm	2½" / DN65	12403
76 mm	DN80	12729
89 mm	3" / DN80	12022
114 mm	4" / DN100	11513
165 mm	DN150	11910
168 mm	6" / DN150	11524
219 mm	8" / DN200	11018
HALAR®		
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	DN80	12730Q/B
89 mm	3" / DN80	12023Q/B
114 mm	4" / DN100	11514Q/B
165 mm	DN150	11911Q/B
168 mm	6" / DN150	11525Q/B
219 mm	8" / DN200	11118Q/B



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Valve Trim Package Part Numbers

DESCRIPTION	NOMINAL SIZE	PART NUMBER
CONVENTIONAL DELUGE VALVE TRIM Includes Deluge Valve Accessory Package	Rated to 250 psi (1 724 kPa)	
	Use with Angle Style Valves	
	Galvanized	
	1½" / DN40	14629-1
	2" / DN50	14630-1
	3" / DN80	14631-1
	4" / DN100	14632-1
	6" / DN150	14633-1
	Brass	
	1½" / DN40	14629-2
	2" / DN50	14630-2
	3" / DN80	14631-2
	4" / DN100	14632-2
	6" / DN150	14633-2
	Use with Straight Through Valves	
	Galvanized	
Hoz.	1½" / DN40	14635-1
	2" / DN50	14635-1
	2½" / DN65	14637-1
	3" / DN80	14637-1
	4" / DN100	14638-1
	6" / DN150	14640-1
	8" / DN200	14643-1
Vert.	1½" / DN40	14634-1
	2" / DN50	14634-1
	2½" / DN65	14636-1
	3" / DN80	14636-1
	4" / DN100	14639-1
	6" / DN150	14641-1
	8" / DN200	14642-1
	Brass	
Hoz.	1½" / DN40	14635-2
	2" / DN50	14635-2
	2½" / DN65	14637-2
	3" / DN80	14637-2
	4" / DN100	14638-2
	6" / DN150	14640-2
	8" / DN200	14643-2
Vert.	1½" / DN40	14634-2
	2" / DN50	14634-2
	2½" / DN65	14636-2
	3" / DN80	14636-2
	4" / DN100	14639-2
	6" / DN150	14641-2
	8" / DN200	14642-2

Release Trim Package Part Numbers

RELEASE TRIM PACKAGES		
Use with Conventional Trim	Use with Straight Through and Angle Style Valves	
	Galvanized	10809
Pneumatic	Brass	10811

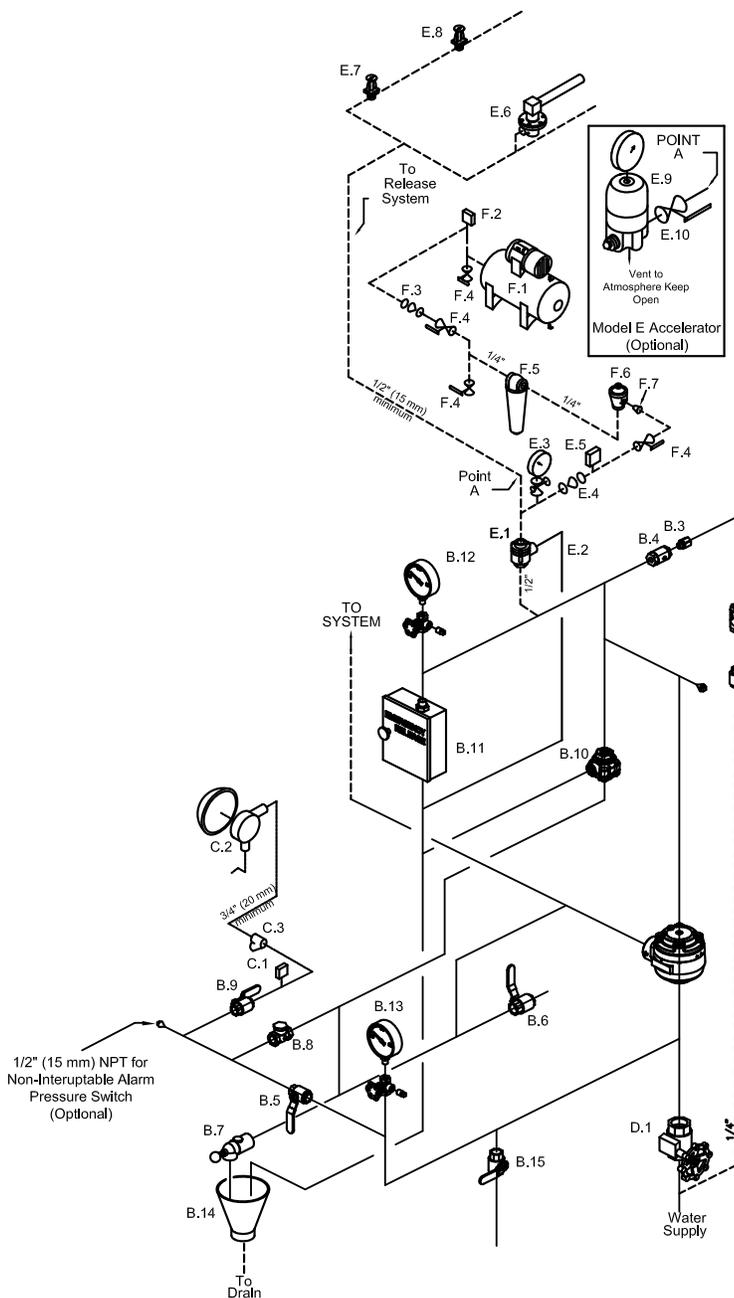


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SYSTEM COMPONENTS

- A. Valve
 - A.1 Deluge Valve
- B. Deluge Valve Conventional Trim *
 - (See Deluge Valve Conventional Trim Charts)
 - B.1 Priming Valve
 - 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
- E. Release System
 - E.1 Pneumatic Actuator (purchased separately)
 - E.2 Pneumatic Release Module Trim
 - E.3 Air Pressure Gauge and Valve
 - E.4 Soft Seat Check Valve
 - E.5 Air Pressure Supervisory Switch
 - E.6 Thermostatic Release and/or
 - E.7 Fixed Temperature Release and/or
 - E.8 Pilot Head (Sprinkler)
 - E.9 Accelerator (Optional. See Inset.)
 - E.10 Accelerator Isolation Valve (See Inset.)
- F. Air Supply
 - F.1 Automatic Air Supply. Air Compressor and Tank shown for clarity.
 - F.2 Air Supervisory Pressure Switch (For Compressor)
 - F.3 Soft Seat Check Valve
 - F.4 Shut Off Valve (Indicating Ball Valve recommended.)
 - F.5 Dehydrator
 - F.6 Air Maintenance Device
 - F.7 1/2" X 1/4" Reducing Coupling (Optional)

----- Dashed lines indicate pipe 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.

**FIGURE 1: ANGLE DELUGE VALVE WITH CONVENTIONAL TRIM
1-1/2" VALVE SHOWN**

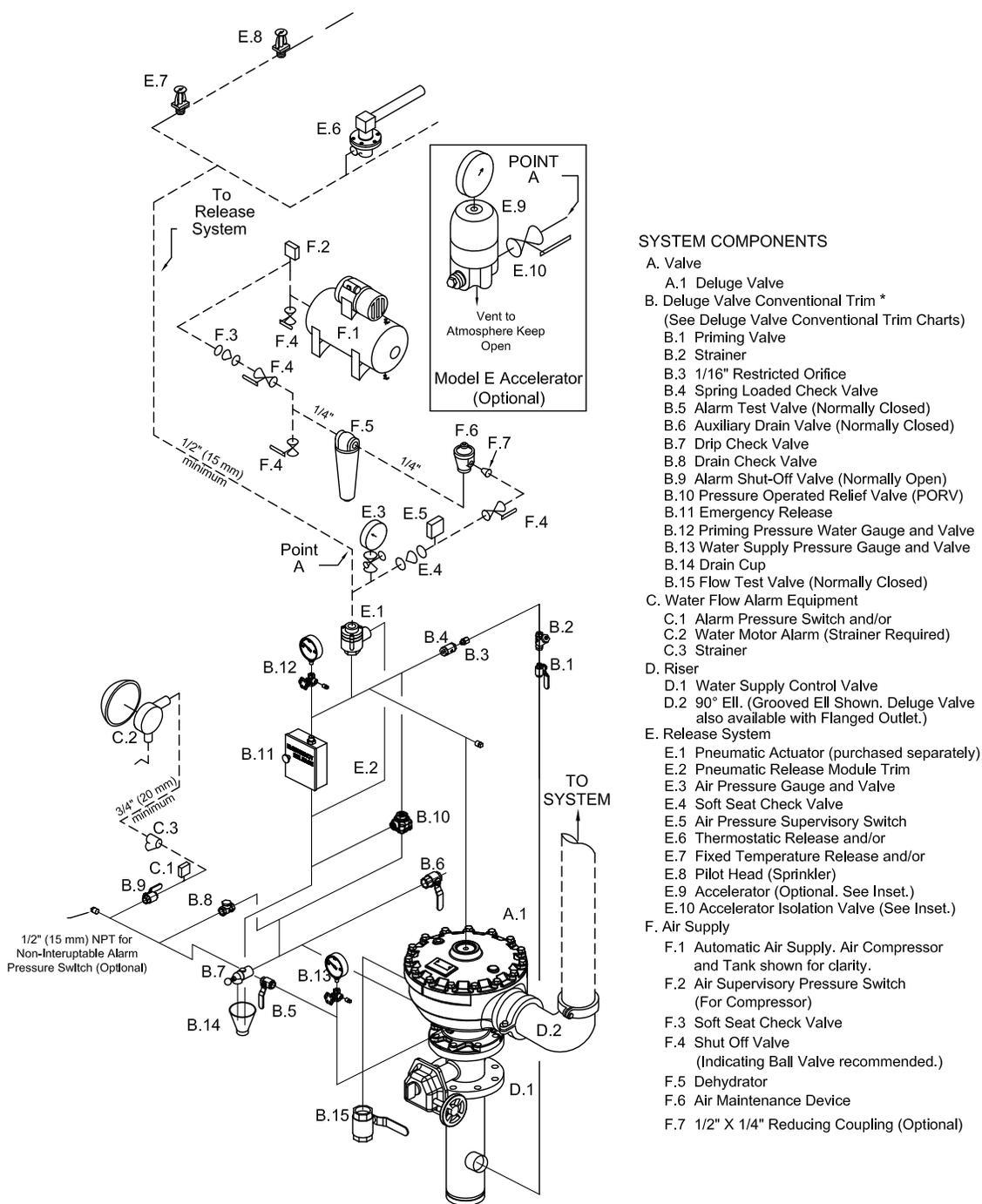


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- B. Deluge Valve Conventional Trim *
 - (See Deluge Valve Conventional Trim Charts)
 - B.1 Priming Valve
 - B.2 Strainer
 - B.3 1/16" Restricted Orifice
 - B.4 Spring Loaded Check Valve
 - B.5 Alarm Test Valve (Normally Closed)
 - B.6 Auxiliary Drain 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 90° Ell. (Grooved Ell Shown, Deluge Valve also available with Flanged Outlet.)
- E. Release System
 - E.1 Pneumatic Actuator (purchased separately)
 - E.2 Pneumatic Release Module Trim
 - E.3 Air Pressure Gauge and Valve
 - E.4 Soft Seat Check Valve
 - E.5 Air Pressure Supervisory Switch
 - E.6 Thermostatic Release and/or
 - E.7 Fixed Temperature Release and/or
 - E.8 Pilot Head (Sprinkler)
 - E.9 Accelerator (Optional. See Inset.)
 - E.10 Accelerator Isolation Valve (See Inset.)
- F. Air Supply
 - F.1 Automatic Air Supply. Air Compressor and Tank shown for clarity.
 - F.2 Air Supervisory Pressure Switch (For Compressor)
 - F.3 Soft Seat Check Valve
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--- Dashed lines indicate pipe 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,

**FIGURE 2: ANGLE DELUGE VALVE WITH CONVENTIONAL TRIM
 6" VALVE SHOWN. ALSO AVAILABLE IN 2", 3", & 4".**

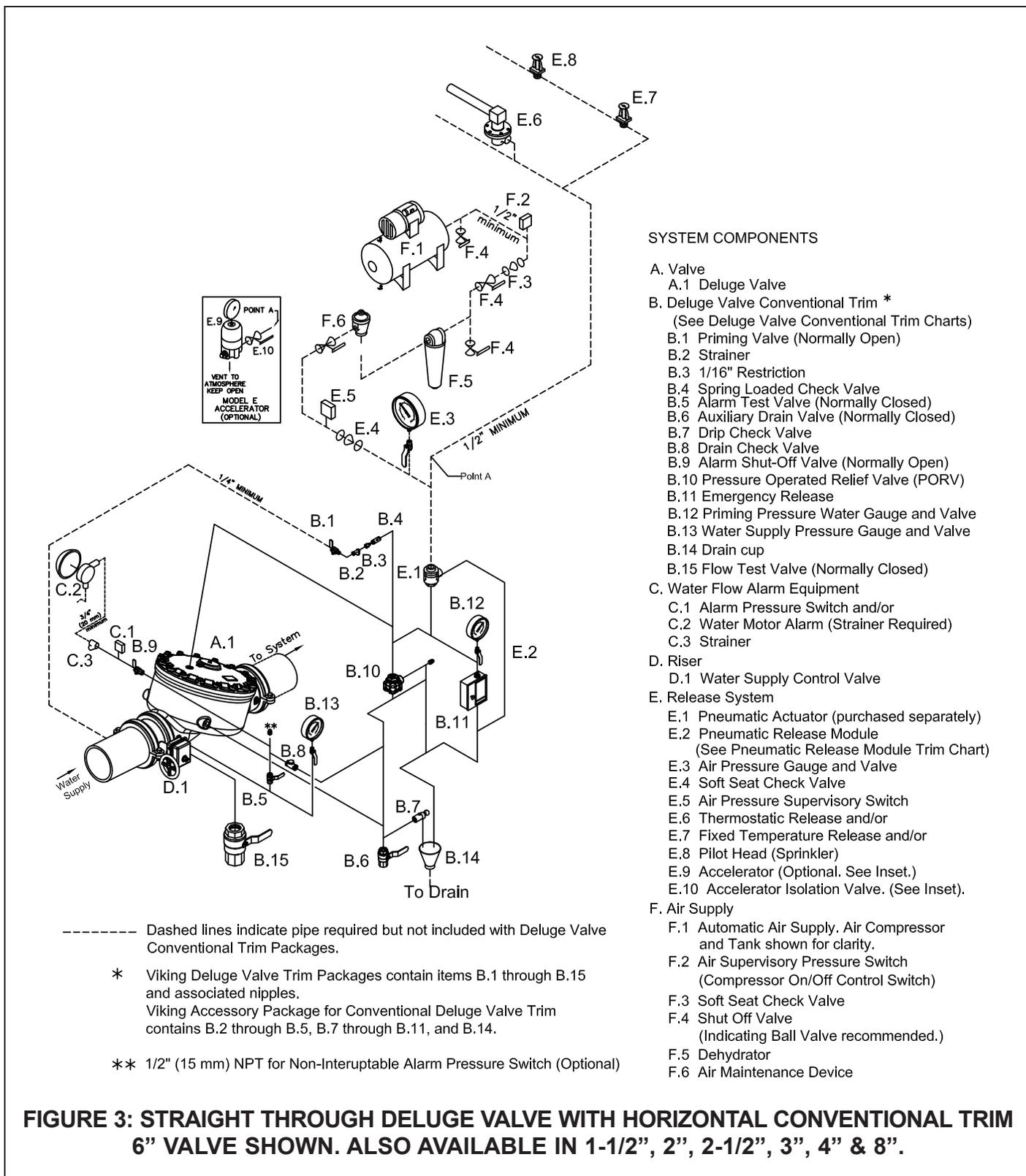


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SYSTEM COMPONENTS

- 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" 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
- E. Release System
 - E.1 Pneumatic Actuator (purchased separately)
 - E.2 Pneumatic Release Module
(See Pneumatic Release Module Trim Chart)
 - E.3 Air Pressure Gauge and Valve
 - E.4 Soft Seat Check Valve
 - E.5 Air Pressure Supervisory Switch
 - E.6 Thermostatic Release and/or
 - E.7 Fixed Temperature Release and/or
 - E.8 Pilot Head (Sprinkler)
 - E.9 Accelerator (Optional. See Inset.)
 - E.10 Accelerator Isolation Valve. (See Inset).
- F. Air Supply
 - F.1 Automatic Air Supply. Air Compressor and Tank shown for clarity.
 - F.2 Air Supervisory Pressure Switch
(Compressor On/Off Control Switch)
 - F.3 Soft Seat Check Valve
 - F.4 Shut Off Valve
(Indicating Ball Valve recommended.)
 - F.5 Dehydrator
 - F.6 Air Maintenance Device

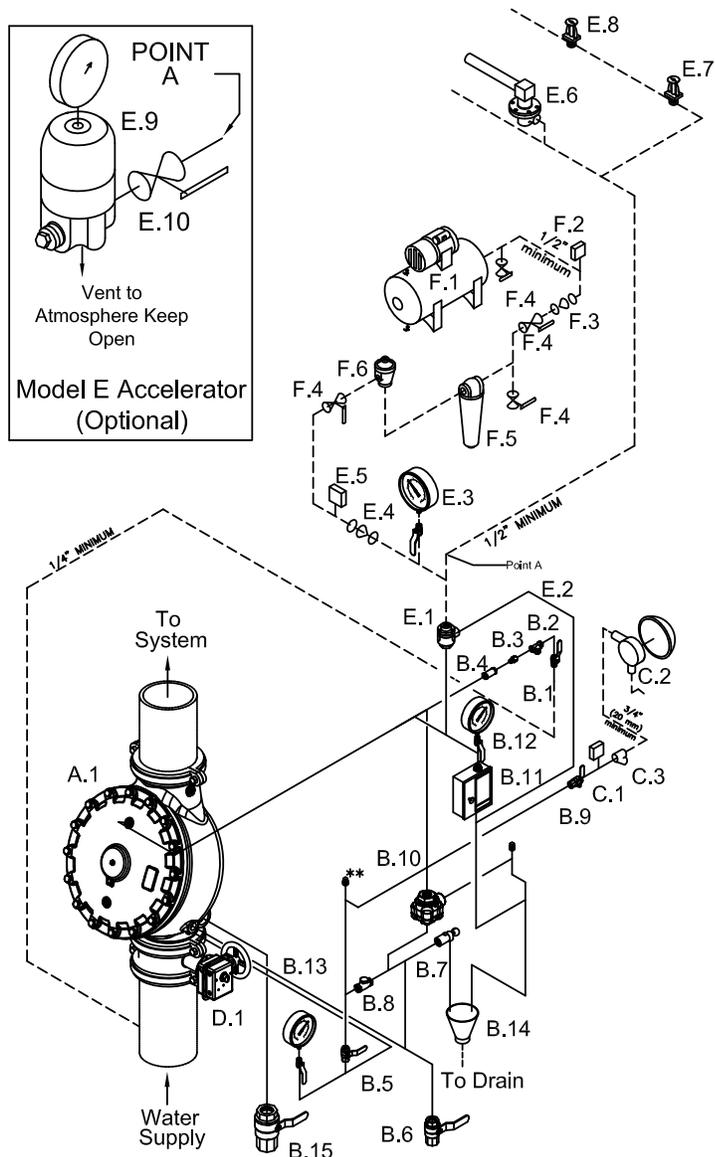


TECHNICAL DATA

DELUGE SYSTEM CONTROLLED BY 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



Model E Accelerator
(Optional)

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" 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 (P.O.R.V.)
 - 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
- E. Release System
 - E.1 Pneumatic Actuator
 - E.2 Pneumatic Release Module
(See Pneumatic Release Module Trim Chart)
 - E.3 Air Pressure Gauge and Valve
 - E.4 Soft Seat Check Valve
 - E.5 Air Pressure Supervisory Switch
 - E.6 Thermostatic Release and/or
 - E.7 Fixed Temperature Release and/or
 - E.8 Pilot Head (Sprinkler)
 - E.9 Accelerator (Optional. See Inset.)
 - E.10 Accelerator Isolation Valve. (See Inset.)
- F. Air Supply
 - F.1 Automatic Air Supply. Air Compressor and Tank shown for clarity.
 - F.2 Air Supervisory Pressure Switch (Compressor On/Off Control Switch)
 - F.3 Soft Seat Check Valve
 - F.4 Shut Off Valve (Indicating Ball Valve recommended.)
 - F.5 Dehydrator
 - F.6 Air maintenance Device & By-Pass Trim

----- Dashed lines indicate pipe required but not included with Deluge Valve Conventional 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-Interruptable Alarm Pressure Switch (Optional)

**FIGURE 4: STRAIGHT THROUGH DELUGE VALVE WITH CONVENTIONAL VERTICAL TRIM
6" VALVE SHOWN. ALSO AVAILABLE IN 1-1/2", 2", 2-1/2", 3", 4" & 8".**