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# APPROVAL REPORT

**Project No:** 3049157  
**Class:** 1011/1012/1013  
**Product Type:** Deluge and Preaction Sprinkler Systems  
**Product Name:** TotalPac 3  
**Name of Report Holder:** The Viking Corp  
**Address of Report Holder:** 210 N Industrial Park Dr  
Hastings, MI 49058  
United States  
**Customer ID:** 1000000620  
**Customer website** <http://www.vikingcorp.com>

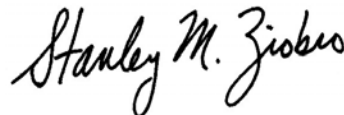
**Prepared by**



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Joseph M. Looney  
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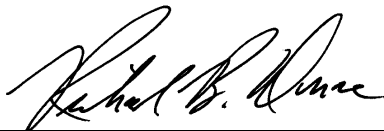
**Reviewed by**



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Stanley M. Ziobro  
Technical Team Manager – Fire Protection

**Authorized by**



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Richard B. Dunne  
Group Manager - Fire Protection

**Date of Approval**

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September 4, 2013

**1 INTRODUCTION**

1.1 The Viking Corp requested Approval of the product(s) listed in Section 1.4 for compliance with the standard listed in Section 1.3.

1.2 This Report may be freely reproduced only in its entirety and without modification.

**1.3 FM Approvals Standards**

Title	Number	Issue Date
Deluge and Preaction Systems	1011/1012/1013	September 2009

**1.4 Listing**

The product(s) will be updated in the Approval Guide, an on-line resource of FM Approvals, as detailed in an attachment at the end of this Report. Deletions from any current product listing are shown with strikethroughs and additions to the current Approval listing are shown in red text.

**2 DESCRIPTION**

2.1 The TotalPac 3 is an enclosure for The Viking Corp’s currently FM Approved Dry Pipe, Deluge, Preaction, Refrigerated Area and Multicycle On-Off Sprinkler Systems in sizes 1-1/2 to 8 inch NPS.

2.2 The TotalPac 3 enclosure is similar in design to the currently FM Approved TotalPac 2 enclosure (see Approval Report P.I. 3016606 dated June 30, 2003) with the following modifications listed below.

2.2.1 The Viking Corp’s FM Approved Model F-1 Deluge Valve will be used in place of the Viking Corp’s FM Approved Model E-1 Deluge Valve. See Approval Reports in Table 2.1 below.

Table 2.1

Report Title	Project ID	Date
Automatic water control valves Models F-1, F-2, J-1 and J-2 size 8 inch NPS	3005859	July 2, 2001
Automatic water control valves Models F-1, F-2, J-1 and J-2 sizes 4 and 6 inch NPS	3012863	April 18, 2003
Automatic water control valves Models F-1, F-2, J-1 and J-2 size 3 inch NPS	3017826	September 9, 2003
Automatic water control valves Models F-1, F-2, J-1 and J-2 sizes 1-1/2 and 2 inch NPS	3018875	December 5, 2003
Automatic Water Control Valves Models F-1, F-2, J-1 and J-2 size 2 1/2 inch NPS.	3022001	February 28, 2005

2.2.2 The enclosures have been modified to fit the conventional trim package that Viking currently has approved with FM Approvals. The conventional trim was utilized in all systems examined under the Approval Reports in Table 2.1.

2.2.3 The FM Approved VFR400 Releasing Control Panel from Viking will be used as opposed to only the mother board of the VFR400 panel (see Approval Report P.I. 3031241 dated December 21, 2007).

- 2.2.4 The TotalPac 3 enclosure is available with a size 8 inch NPS Model F-1 Deluge Valve (see Table 2.1).
- 2.2.5 The Viking Corp's currently FM Approved anti-column device will be added as an option (see Approval Report P.I. 3030739 dated April 11, 2008).
- 2.2.6 A Potter Model RCDS-1 disconnect switch will be added to all systems to disable the releasing solenoid per NFPA 72. This will make it possible to disable the releasing circuit from outside the panel using a key.

### **3 EXAMINATIONS AND TESTS**

- 3.1 Drawings and documentation were submitted for review. All drawings and documentation submitted is on file at FM Approvals along with other documents and correspondence applicable to this program.
- 3.2 Due to similarities between the TotalPac 3 enclosure system and Viking Corp equipment currently FM Approved, no testing was deemed necessary.

### **4 MARKING**

The following information appears printed on two labels affixed to the inside of the door of each TotalPac 3 enclosure:

- FM Approval mark
- Maximum rated working pressure
- The system identification (e.g. dry pilot deluge system).
- An isometric drawing of the TotalPac 3 enclosure showing the system component arrangement and a complete listing of same.
- The system description and instructions for Normal Conditions and Emergency Instructions
- Wiring Diagrams.

### **5 REMARKS**

- 5.1 The FM Global Property Loss Prevention Data Sheets should be strictly adhered to when installing this product.
- 5.2 Installations shall comply with the latest edition of the manufacturer's instruction manual.

## **6 SURVEILLANCE AUDIT**

The manufacturing facility at the following location is subject to follow-up audit inspections. The facilities and quality control procedures in place have been found to be satisfactory to manufacture product identical to that examined and tested as described in this Report. A Form 797 shall be submitted to FM Approvals for requesting any additional manufacturing facilities which are not listed below. The products discussed in this Report are FM Approved only when manufactured at the following facilities:

FireFlex  
1935 Lionel-Bertrand Blvd  
Boisbriand, QC J7H 1N8  
Canada

## **7 MANUFACTURER'S RESPONSIBILITIES**

- 7.1** Documentation considered critical to this Approval is on file at FM Approvals and is listed in the Documentation File, Section 8, of this Report. No changes of any nature shall be made unless notice of the proposed change has been given and written authorization obtained from FM Approvals. The FM Approved Product Revision Report, Form 797, shall be forwarded to FM Approvals as notice of proposed changes.
- 7.2** The manufacturer is responsible for control of the product marking and installation instructions for the product.
- 7.3** The manufacturer shall provide installation, operating, and maintenance manual(s) with each system.

## **8 DOCUMENTATION FILE**

All pertinent Report documents are outlined in the ATTACHMENTS list below.

## **9 CONCLUSION**

The product(s) described in Section 2, as shown in the listing referenced in Section 1.4 meets FM Approvals requirements. Since a duly signed Master Agreement is on file for this manufacturer, Approval is effective the date of this Report.

**ATTACHMENTS:** Listing Sheets  
CDL Control Drawing Blueprint Report  
Drawing FM-076X-0-5B - Totalpac 3- List of Components

## LISTING SHEETS

### Deluge Sprinkler Systems

Automatic Sprinkler Systems Sprinkler Systems Deluge Sprinkler Systems

#### Viking Deluge Sprinkler System

Viking Deluge Sprinkler System. Consists of an automatic water control valve with one of the following combinations of model, size, and end connections:

<i>Valve Model</i>	<i>Size, inches NPS</i>	<i>End connections</i>
E-1, E-2, H-1, H-2	2 3, 4, 6	Threaded Flanged, Flanged x Grooved
E-3, E-4, H-3, H-4	1 1/2	Threaded
F-1, F-2, J-1, J-2	1 1/2, 2, 2 1/2 3, 4, 6 8	Threaded, Grooved Flanged, Grooved, Flanged x Grooved Flanged, Grooved

Major system components include:

- Priming Valve (Normally Open)
- Strainer
- 1/16" Restricted Orifice
- Spring Loaded Check Valve
- Alarm Test Valve (Normally Closed)
- Auxiliary Drain Valve (Normally Closed)
- Model D-1 or D-4 Drip Check Valve
- Drain Check Valve 05781A
- Alarm Shut Off Valve (Normally Open)
- Model D-3 or D-4 or C-1 pressure-operated relief valve (PORV)
- Model C-1 or C-2 emergency release
- Priming Pressure Water Gauge and Valve
- Water Supply Pressure Water Gauge and Valve
- Flow Test Valve (Normally Closed)
- Water Supply Control Valve
- Alarm pressure switch and/or water motor alarm
- For hydraulic release systems, the components include:
  - o Model C-1 or C-2 thermostatic rate-of rise release and/or fixed temperature release and/or pilot head (sprinkler)
- For pneumatic release systems, the components include:
  - o Model H-1 or R-1 pneumatic actuator
  - o Air pressure gauge and valve
  - o Soft seat check valve
  - o Pressure switch
  - o Model C-1 or C-2 thermostatic rate-of rise release and/or fixed temperature release and/or pilot head (sprinkler)
  - o Air supply
- For electric release systems, the components include:
  - o Solenoid valve, part no. 11591, 11592, 11593, 11594, 11596, 11601, 11602, 13843, or 13844
  - o System control panel
  - o Electric detection system

Optional system components include:

- Speed Control Assembly, Model A-1
- Model E-1 Accelerator
- Model D-2 Air Pressure Maintenance Device
- TRIMPAC Models B-1, B-1B, B-1S, B-2, B-2B, B-2S, B-8, B-8B and B-2S
- Viking Total Pac enclosure, for sizes 1-1/2 through 6 8 inch NPS with electric release

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- Deluge Sprinkler Systems, which utilize the angle type main water control valves, are available factory assembled in the Viking Total Pac2 enclosure, a second generation enclosure which replaces the Total Pac. The Total Pac2 is available in several configurations: 1) the system fully enclosed on legs with an access door and a built in electrical control panel (when electric activation required); 2) the valve system fully enclosed on legs with an access door and a remote control panel; 3) the valve system assembled to a skid and used with a remote control panel.

- Deluge Sprinkler Systems, which utilize the Model F or Model J type main water control valves, are available factory assembled in the Viking Total Pac 3 enclosure. The Total Pac 3 is available in several configurations: 1) a system fully enclosed on legs with an access door and a built in electrical control panel; 2) a system fully enclosed on legs with an access door and a remote control panel; 3) the valve system assembled to a skid and a remote control panel. The Total Pac 3 Deluge Systems are available with Electric Release, Pneumatic Release, and Hydraulic Release.

## On-Off Multicycle Sprinkler Systems

Automatic Sprinkler Systems Sprinkler Systems On-Off Multicycle Sprinkler Systems On-Off Multicycle Sprinkler System

### Firecycle III System

Firecycle III System. System rated working pressure is 250 psi (1725 kPa). Consists of an automatic water control valve with one of the following combinations of model, size, and end connections:

<i>Valve Model</i>	<i>Size, inches NPS</i>	<i>End connections</i>
H-1	2 3, 4, 6	Threaded Flanged, Flanged x Grooved
H-3	1-1/2	Threaded
J-1, J-2	1-1/2, 2, 2-1/2 3, 4, 6 8	Threaded, Grooved Flanged, Grooved, Flanged x Grooved Flanged, Grooved

Major system components include:

- FM Approved check valve (Viking Model E-1 or equivalent having rubber-faced clapper)
- Viking Control Panel VFR400
- Firecycle III Model B heat-actuated fire detectors for 140°F (60°C), P/N 04625-B; 160°F (71°C), 04626-B; 190°F (88°C), P/N 04627-B; 225°F (107°C), P/N 04628-B;
- Firecycle aluminum clad detector cable, P/N 04632-A;
- Model C-1 emergency release;
- 90-hour, 17 A-H battery back-up power supply capable of being recharged in 48 hours, P/N A-09867;
- Normally closed solenoid valve part no. 11591, 11592, 11593, 11594, 11596, 11601, 11602, 13843, or 13844
- FM Approved 30 psi Supervisory Pressure Switch;
- FM Approved 5 psi Pressure Alarm Switch;
- Pneumatic Actuator, Viking Model H-1;
- Pressure Operated Relief Valve (PORV), Viking Model C-1;
- With the TRIMPAC system, the Pressure Operated Relief Valve (PORV), Viking Model D-1, is utilized.
- Automatic Drip Check Valve, Viking Model D-1.

Available with TrimPac trim package. A restricted and regulated air supply is recommended by the manufacturer. An equivalent FM Approved air pressure maintenance device may be used.

The Viking Model VFR400 Control Panel automatically starts and stops waterflow to the sprinkler system in response to the on-off cycling of the heat responsive detectors. Piping above the riser check valve contains supervisory air pressure at 25-30 psi to monitor system integrity. If the system piping is damaged, the low air pressure alarm is activated, but the main water control valve does not trip and no water flows from the sprinkler system.

The temperature rating of the detector should be lower than the rating of its adjacent sprinklers. Power failure and fire alarm are signaled automatically. System is powered by line voltage (110/220/240 V ac) and operates (cycles) normally with the 24 V emergency battery back-up system (90 hr standby capability).

Detectors are spaced according to ceiling construction and possible obstruction conditions, but should not exceed 40 ft (12 m) for P/N 04625-B or 25 ft (8 m) for P/N 04626-B, 04627-B and 04628-B; their location should be within 18 in. (457 mm) laterally of a sprinkler deflector except in low hazard occupancies. Sprinkler discharge continues for a timed interval (5 min. normally) after all normally closed contact detectors have been restored; this interval should be extended to 15 min. where persistent localized fire is anticipated. The manufacturer's instructions and appropriate sprinkler installation rules should be followed in Firecycle III installation, testing and maintenance.

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FireCycle III and FireCycle III-OH Sprinkler Systems are available factory assembled in the Viking Total Pac enclosure in sizes 1 1/2 through 8 in. NPS, when utilizing the angle type main water control valves, Models H-3 and H-1, in both single-interlock preaction and cycling wet pipe configurations. The Total Pac2 enclosure and assembled valve systems comprise an integrated fire protection system which is assembled and tested at the factory, and requires only the connection to the water supply inlet, water outlet (to system), main drain, the alarm and detection connections, and the electrical power supply.

FireCycle III and FireCycle III-OH Sprinkler Systems, which utilize the Model J type main water control valves, are available factory assembled in the Viking Total Pac 3 enclosure. The Total Pac 3 is available in several configurations: 1) a system fully enclosed on legs with an access door and a built in electrical control panel; 2) a system fully enclosed on legs with an access door and a remote control panel; 3) the valve system assembled to a skid and a remote control panel. The Total Pac 3 FireCycle III and FireCycle III-OH Systems are available with Single Interlocked Preaction and Cycling Wet configurations.

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### Firecycle III-OH System

Firecycle III-OH System. System rated working pressure is 250 psi (1725 kPa). Consists of an automatic water control valve with one of the following combinations of model, size, and end connections:

<i>Valve Model</i>	<i>Size, inches NPS</i>	<i>End connections</i>
H-1	2 3, 4, 6	Threaded Flanged, Flanged x Grooved
H-3	1-1/2	Threaded
J-1, J-2	1-1/2, 2, 2-1/2 3, 4, 6 8	Threaded, Grooved Flanged, Grooved, Flanged x Grooved Flanged, Grooved

Major system components include:

- Viking Model F-1 riser check valve, sizes 3, 4, 6, and 8 in., or Model L-1 riser check valve, sizes 1 1/2 and 2 in. having a rubber-faced clapper);
- Firecycle III Control Panel Model VFR400
- Firecycle III-OH heat detectors are self-restoring, normally closed, heat-actuated switches. There are two types: Viking Model C surface mount and Viking Model C flush mount. The surface mount is attached directly to a ceiling or to a ceiling mounted standard octagonal electrical box, and the detector wire in conduit is exposed below the ceiling. The flush mount detector is attached to a standard octagonal electrical box recessed in the ceiling, and the detector wire is concealed above the ceiling.
- The detector wire is Viking P/N 09954, NEC FPL rated wire, 16 gage, 2 conductor, 2 hour rated (in conduit or equal), or Viking P/N 11988, NEC FPL rated wire, 18 gage, 2 conductor, 2 hour rated (in conduit or equal), or Viking P/N 04236A, aluminum clad wire installed behind proper rated construction.
- Model C normally closed heat-actuated flush mounted fire detectors for Ordinary Hazard applications: 140°F (60°C), P/N 11723; 160°F (71°C), P/N 11724; 190°F (88°C), P/N 11725; 225°F (107°C), P/N 11726
- Model C normally closed heat-actuated surface mounted fire detectors for Ordinary Hazard applications: 140°F (60°C), P/N 11727; 160°F (71°C), P/N 11728; 190°F (88°C), P/N 11729; 225°F (107°C), P/N 11730.
- Model C-1 emergency release; 90-hour, 18 A-H battery back-up power supply capable of being recharged in 48 hours, P/N A-09867.
- Normally closed solenoid valve part no. 11591, 11592, 11593, 11594, 11596, 11601, 11602, 13843, or 13844.
- 30-50 psi adjustable supervisory pressure switch
- 5 psi Pressure Alarm Switch
- Pneumatic Actuator, Viking Model H-1.
- Pressure Operated Relief Valve (PORV), Viking Model C-1
- With the TRIMPAC system, the Pressure Operated Relief Valve (PORV), Viking Model D-1, is utilized.
- Automatic Drip Check Valve, Viking Model D-1.

Available with TrimPac trim package. A restricted and regulated air supply is recommended by the manufacturer.



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The Firecycle III-OH On-Off Preaction Sprinkler System piping has supervisory system air pressure (minimum 30 psi, for 20 psi water supply pressure, up to 50 psi, for 250 psi water supply pressure) to monitor system integrity. If the system piping is damaged or a sprinkler activates, the low air pressure alarm is activated, but the main water control valve does not trip and no water flows to the sprinkler system. When the heat detection system has been activated, the main water control valve opens and water will flow out any open sprinklers.

The Model VFR400 Control Panel automatically starts and stops water flow to the sprinkler system in response to the on-off cycling of the heat responsive detectors. The heat detectors open when the detectors are exposed to the heat of the fire and close when the detector cools below its set point. Sprinkler discharge continues for a timed "soak" interval (5 min normally) after all normally closed contact detectors have closed. This interval should be extended to 15 minutes where persistent localized fire is anticipated. The on-off cycling of the heat responsive contacts controls the system solenoid valves which in turn control the opening and closing of the main water control valve.

The temperature rating of the detectors should be lower than the rating of its adjacent sprinklers. Power failure and fire alarms are signaled automatically. System is powered by line voltage (110/220/240 VAC) and operates (cycles) normally with the 24 VDC emergency battery back-up system (90 hr standby capability).

Detectors are spaced according to ceiling construction and possible obstruction conditions, but should not exceed 40 ft (12 m) for P/N 11727 or 25 ft (8 m) for P/N 11728, 11729 and 11730; their location should be in accordance with NFPA 72E. The manufacturer's instructions and appropriate sprinkler installation rules should be followed in Firecycle III-OH installation, testing and maintenance.

FireCycle III and FireCycle III-OH Sprinkler Systems are available factory assembled in the Viking Total Pac2 enclosure in sizes 1 1/2 through 8 in. NPS, when utilizing the angle type main water control valves, Models H-3 and H-1, in both single-interlock preaction and cycling wet pipe configurations. The Total Pac enclosure and assembled valve systems comprise an integrated fire protection system which is assembled and tested at the factory, and requires only the connection to the water supply inlet, water outlet (to system), main drain, the alarm and detection connections, and the electrical power supply.

**FireCycle III and FireCycle III-OH Sprinkler Systems, which utilize the Model J type main water control valves, are available factory assembled in the Viking Total Pac 3 enclosure. The Total Pac 3 is available in several configurations: 1) a system fully enclosed on legs with an access door and a built in electrical control panel; 2) a system fully enclosed on legs with an access door and a remote control panel; 3) the valve system assembled to a skid and a remote control panel. The Total Pac 3 FireCycle III and FireCycle III-OH Systems are available with Single Interlocked Preaction and Cycling Wet configurations.**

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### Firecycle III-OH Cycling Wet Pipe System

Firecycle III-OH Cycling Wet Pipe System. Consists of: Model H-3 main water control valve, size 1 1/2 NPS, or Model H-1 main water control valve, sizes 2, 3, 4 or 6 in. NPS, or Models J-1 or J-2, 1 1/2, 2, 2 1/2, 3, 4, 6 and 8 in. NPS main water control valve and accessories; Water Flow Switch and system Drain Valve down stream of control valve. Firecycle III Control Panel E-1, Viking P/N 10751 and 10752; Firecycle III-OH heat detectors are self-restoring, normally closed, heat-actuated switches. There are two types: Viking Model C surface mount and Viking Model C flush mount. The surface mount is attached directly to a ceiling or to a ceiling mounted standard octagonal electrical box, and the detector wire in conduit is exposed below the ceiling. The flush mount detector is attached to a standard octagonal electrical box recessed in the ceiling, and the detector wire is concealed above the ceiling. The detector wire is Viking P/N 09954, NEC FPL rated wire, 16 gage, 2 conductor, 2 hour rated (in conduit or equal), or Viking P/N 11988, NEC FPL rated wire, 18 gage, 2 conductor, 2 hour rated (in conduit or equal), or Viking P/N 04236A, aluminum clad wire installed behind proper rated construction.; Model C normally closed heat-actuated flush mounted fire detectors for Ordinary Hazard applications: 140°F (60°C), P/N 11723; 160°F (71°C), P/N 11724; 190°F (88°C), P/N 11725; 225°F (107°C), P/N 11726; Model C normally closed heat-actuated surface mounted fire detectors for Ordinary Hazard applications: 140°F (60°C), P/N 11727; 160°F (71°C), P/N 11728; 190°F (88°C), P/N 11729; 225°F (107°C), P/N 11730; Model C-1 emergency release; 90- hour, 18 A-H battery back-up power supply capable of being recharged in 48 hours, P/N A-09867. For 250 psi rated working pressure, N.C. solenoid valve, Viking P/N 11591 and N.O. solenoid valve, Viking P/N 11596; or N.C. Solenoid Valve, Viking P/N 11591 and N.O. Solenoid Valve, Viking P/N 13215 for 250 psi (1725 kPa) rated working pressure, and Viking NC solenoid valves: P/N 13843 non-explosion proof, or Viking P/N 13844, explosion proof, both rated for 300 psi, can be substituted for any listed NC solenoid valve. With TRIMPACsystem, the Pressure Operated Relief Valve (P.O.R.V.), Viking Model D-1, is utilized.

The Firecycle III-OH Cycling Wet System in the normal set condition has the main water control valve in the open position, the sprinkler piping is filled with water, and water will flow from any activated sprinklers. The Firecycle III Model E-1 Control Panel automatically starts and stops water flow to the sprinkler system in response to the on-off cycling of the heat responsive detectors. The heat detectors open when the detectors are exposed to the heat of the fire and close when the detector cools below its set point. Sprinkler discharge continues for a timed "soak" interval (5 min normally) after all normally closed contact detectors have closed. This interval should be extended to 15 minutes where persistent localized fire is anticipated. The on-off cycling of the heat

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responsive contacts controls the system solenoid valves which in turn control the opening and closing of the main water control valve. The temperature rating of the detectors should be lower than the rating of its adjacent sprinklers. Power failure and fire alarms are signaled automatically. System is powered by line voltage 110/220/240 V ac and operates (cycles) normally with the 24 VDC emergency battery back-up system (90 hr standby capability).

Detectors are spaced according to ceiling construction and possible obstruction conditions, but should not exceed 40 ft (12 m) for P/N 11727 or 25 ft (8 m) for P/N 11728, 11729 and 11730; their location should be in accordance with NFPA 72E. The manufacturer's instructions and appropriate sprinkler installation rules should be followed in FireCycle III-OH installation, testing and maintenance. The FireCycle III System-OH is rated for 250 psi (1725 kpa) operating pressure.

Multicycle On-Off Sprinkler Systems, which utilize the angle type main water control valves, are available factory assembled in the Viking Total Pac2 enclosure, a second generation enclosure which replaces the Total Pac. The Total Pac2 is available in several configurations: 1) the system fully enclosed on legs with an access door and a built in electrical control panel (when electric activation required); 2) the valve system fully enclosed on legs with an access door and a remote control panel; 3) the valve system assembled to a skid and used with a remote control panel. Available with TrimPac trim package.

FireCycle III and FireCycle III-OH Sprinkler Systems are available factory assembled in the Viking Total Pac enclosure in sizes 1 1/2 through 8 in. NPS, when utilizing the angle type main water control valves, Models H-3 and H-1, in both single-interlock preaction and cycling wet pipe configurations. The Total Pac enclosure and assembled valve systems comprise an integrated fire protection system which is assembled and tested at the factory, and requires only the connection to the water supply inlet, water outlet (to system), main drain, the alarm and detection connections, and the electrical power supply.

FireCycle III and FireCycle III-OH Sprinkler Systems, which utilize the Model J type main water control valves, are available factory assembled in the Viking Total Pac 3 enclosure. The Total Pac 3 is available in several configurations: 1) a system fully enclosed on legs with an access door and a built in electrical control panel; 2) a system fully enclosed on legs with an access door and a remote control panel; 3) the valve system assembled to a skid and a remote control panel. The Total Pac 3 FireCycle III and FireCycle III-OH Systems are available with Single Interlocked Preaction and Cycling Wet configurations.

## Preaction Sprinkler Systems

Automatic Sprinkler Systems Sprinkler Systems Preaction Sprinkler Systems

### Viking Single Interlock Preaction Sprinkler System

Viking Single Interlock Preaction Sprinkler System. System rated working pressure is 250 psi (1724 kPa). Consists of an automatic water control valve with one of the following combinations of model, size, and end connections:

<i>Valve Model</i>	<i>Size, inches NPS</i>	<i>End connections</i>
E-1, E-2, H-1, H-2	2 3, 4, 6	Threaded Flanged x flanged, flanged x Grooved
E-3, E-4, H-3, H-4	1 1/2 1 1/2, 2, 2 1/2	Threaded Threaded, grooved x grooved
F-1, F-2, J-1, J-2	3, 4, 6 8	Flanged x flanged, grooved x grooved, flanged x grooved Flanged x flanged, grooved x grooved

Major system components include:

- Deluge valve conventional trim:
  - o Priming Valve (Normally Open)
  - o Strainer
  - o 1/16" Restricted Orifice
  - o Spring Loaded Check Valve
  - o Alarm Test Valve (Normally Closed)
  - o Auxiliary Drain Valve (Normally Closed)
  - o Model D-1 or D-4 Drip Check Valve
  - o Drain Check Valve 05781A
  - o Alarm Shut Off Valve (Normally Open)
  - o Model D-3 or D-4 or C-1 pressure-operated relief valve (PORV)
  - o Model C-1 or C-2 emergency release
  - o Priming Pressure Water Gauge and Valve
  - o Water Supply Pressure Water Gauge and Valve
  - o Flow Test Valve (Normally Closed)
- Water flow alarm equipment:
  - o Model 07756, 07758, 09470 or 09471 alarm pressure switch and/or water motor alarm
  - o Strainer
- Riser
  - o Water Supply Control Valve
  - o Easy Riser Check valve or rubber seated check valve
  - o Sprinkler system main drain
- Supervisory air supply
  - o System pressure gauge and valve
  - o Soft seat check valve
  - o Pressure switch
- For pneumatic release systems, the components include:
  - o Model H-1 or R-1 pneumatic actuator
  - o Air pressure gauge and valve
  - o Soft seat check valve
  - o Pressure switch
  - o Model C-1 or C-2 thermostatic rate-of-rise release and/or fixed temperature release and/or pilot head (sprinkler)
- For electric release systems, the components include:
  - o Solenoid valve, part no. 11591, 11592, 11593, 11594, 11596, 11601, 11602, 13843, or 13844 (normally closed)

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- o System control panel
- o Electric detection system

Optional system components include:

- Speed control assembly, Model A-1
- TRIMPAC Models B-3, B-3B, B-3S, B-4, B-4B, and B-4S
- Model E-1 Accelerator
- Model D-2 Air Pressure Maintenance Device
- Model LD-1 anti column device
- Viking Total Pac enclosure, for sizes 1-1/2 through 6 8 inch NPS with electric release
- Single Interlocked Preaction Sprinkler Systems, which utilize the angle type main water control valves, are available factory assembled in the Viking Total Pac2 enclosure, a second generation enclosure which replaces the Total Pac. The Total Pac2 is available in several configurations: 1) the system fully enclosed on legs with an access door and a built in electrical control panel (when electric activation required); 2) the valve system fully enclosed on legs with an access door and a remote control panel; 3) the valve system assembled to a skid and used with a remote control panel.
- Single Interlocked Preaction Sprinkler Systems, which utilize the Model F or Model J type main water control valves, are available factory assembled in the Viking Total Pac 3 enclosure. The Total Pac 3 is available in several configurations: 1) a system fully enclosed on legs with an access door and a built in electrical control panel; 2) a system fully enclosed on legs with an access door and a remote control panel; 3) the valve system assembled to a skid and a remote control panel. The Total Pac 3 Single Interlocked Preaction Systems are available with Electric Release and Pneumatic Release.

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### Surefire Single Interlocked Preaction System

Surefire® Single Interlocked Preaction System. System rated working pressure is 250 psi (1724 kPa). Consists of an automatic water control valve with one of the following combinations of model, size, and end connections:

<i>Valve Model</i>	<i>Size, inches NPS</i>	<i>End connections</i>
E-1, E-2, H-1, H-2	2 3, 4, 6	Threaded Flanged, Flanged x Grooved
E-3, E-4, H-3, H-4	1 1/2	Threaded
F-1, F-2, J-1, J-2	1 1/2, 2, 2 1/2 3, 4, 6 8	Threaded, Grooved Flanged, Grooved, Flanged x Grooved Flanged, Grooved

Major system components include:

- Deluge valve conventional trim:
  - o Priming Valve (Normally Open)
  - o Strainer
  - o 1/16" Restricted Orifice
  - o Spring Loaded Check Valve
  - o Alarm Test Valve (Normally Closed)
  - o Auxiliary Drain Valve (Normally Closed)
  - o Model D-1 or D-4 Drip Check Valve
  - o Drain Check Valve, 05781A
  - o Alarm Shut Off Valve (Normally Open)
  - o Model D-3 or D-4 or C-1 pressure-operated relief valve (PORV)
  - o Model C-1 or C-2 emergency release
  - o Priming Pressure Water Gauge and Valve
  - o Water Supply Pressure Water Gauge and Valve
  - o Flow Test Valve (Normally Closed)
- Water flow alarm equipment:
  - o Pressure switch and/or water motor alarm
  - o Strainer

## FM APPROVALS PROJECT NO: 3049157

- Supervisory air supply
  - o Pressure switch
  - o Soft seat check valve
  - o System pressure gauge and valve
- Riser
  - o Water Supply Control Valve
  - o Rubber seated check valve
  - o Sprinkler system main drain valve (Normally Closed)
- Release System
  - o Normally closed solenoid valve part no. 11591, 11592, 11593, 11594, 11596, 11601, 11602, 13843, or 13844
  - o Maintenance orifice 5/64"
  - o Normally open solenoid valve part no. 11595 or 13215
  - o System control panel o Electric detection system
  - o Pressure switch
- Optional system components include:
  - o Model LD-1 anti-water column device
  - o Speed control assembly, Model A-1
  - o TRIMPAC Model D-1 and D-1B
  - o Model E-1 Accelerator
  - o Model D-2 Air Pressure Maintenance Device
- Viking Total Pac enclosure, for sizes 1-1/2 through 6 8 inch NPS
- Single Interlocked Preaction Sprinkler Systems, which utilize the angle type main water control valves, are available factory assembled in the Viking Total Pac2 enclosure, a second generation enclosure which replaces the Total Pac. The Total Pac2 is available in several configurations: 1) the system fully enclosed on legs with an access door and a built in electrical control panel (when electric activation required); 2) the valve system fully enclosed on legs with an access door and a remote control panel; 3) the valve system assembled to a skid and used with a remote control panel.
  
- Single Interlocked Preaction Sprinkler Systems, which utilize the Model F or Model J type main water control valves, are available factory assembled in the Viking Total Pac 3 enclosure. The Total Pac 3 is available in several configurations: 1) a system fully enclosed on legs with an access door and a built in electrical control panel; 2) a system fully enclosed on legs with an access door and a remote control panel; 3) the valve system assembled to a skid and a remote control panel. The Total Pac 3 Single Interlocked Preaction Systems are available with Electric Release and Pneumatic Release.

## Refrigerated Area Sprinkler Systems

Automatic Sprinkler Systems Sprinkler Systems Refrigerated Area Sprinkler Systems

### Viking Double Interlock Preaction Sprinkler System

Viking Double Interlock Preaction Sprinkler System, Pneumatic/Pneumatic Release. Consists of an automatic water control valve with one of the following combinations of model, size, and end connections:

<i>Valve Model</i>	<i>Size, inches NPS</i>	<i>End connections</i>
E-1, E-2, H-1, H-2	2 3, 4, 6	Threaded Flanged, Flanged x Grooved
E-3, E-4, H-3, H-4	1 1/2	Threaded
F-1, F-2, J-1, J-2	1 1/2, 2, 2 1/2 3, 4, 6 8	Threaded, Grooved Flanged, Grooved, Flanged x Grooved Flanged, Grooved

Major system components include:

- Deluge valve conventional trim:
  - o Priming valve (normally open)
  - o Strainer
  - o 1/16" restricted orifice
  - o Spring loaded check valve
  - o Alarm test valve (normally closed)
  - o Auxiliary drain valve (normally closed)
  - o Model D-1 or D-4 Drip check valve
  - o Drain check valve 05781A
  - o Alarm shut off valve (normally open)
  - o Model D-3 or D-4 or C-1 pressure-operated relief valve (PORV)
  - o Model C-1 or C-2 emergency release
  - o Priming pressure water gauge and valve
  - o Water supply pressure water gauge and valve
  - o Flow test valve (normally closed)
- Water flow alarm equipment:
  - o Pressure switch and/or water motor alarm
  - o Strainer
- Riser
  - o Water supply control valve
  - o Rubber Seated Check Valve
  - o Sprinkler system main drain
- Supervisory air supply
  - o System pressure gauge and valve
  - o Soft seat check valve
  - o Pressure switch
- Release System
  - o Model H-1 pneumatic actuators
  - o Air pressure gauge and valve
  - o Pressure switch
  - o Model C-1 or C-2 thermostatic rate-of-rise release and/or fixed temperature release and/or pilot head (sprinkler)
- Automatic air supply

Optional system components include:

- Model E-1 Accelerator
- Model D-2 Air Pressure Maintenance Device
- TRIMPAC Models B-7, B-7B, and B-7S
- Model LD-1 anti-water column device
- Model A-1 Speed Control Assembly trim option

## FM APPROVALS PROJECT NO: 3049157

- Viking Total Pac enclosure, for sizes 1-1/2 through 6 8 inch NPS
- Double Interlocked Preaction Sprinkler Systems, which utilize the angle type main water control valves, are available factory assembled in the Viking Total Pac2 enclosure, a second generation enclosure which replaces the Total Pac. The Total Pac2 is available in several configurations: 1) the system fully enclosed on legs with an access door and a built in electrical control panel (when electric activation required); 2) the valve system fully enclosed on legs with an access door and a remote control panel; 3) the valve system assembled to a skid and used with a remote control panel.
- Double Interlocked Preaction Sprinkler Systems, which utilize the Model F or Model J type main water control valves, are available factory assembled in the Viking Total Pac 3 enclosure. The Total Pac 3 is available in several configurations: 1) a system fully enclosed on legs with an access door and a built in electrical control panel; 2) a system fully enclosed on legs with an access door and a remote control panel; 3) the valve system assembled to a skid and a remote control panel. The Total Pac 3 Double Interlocked Preaction Systems are available with Electric/Pneu-Lectric Release, Electric/Pneumatic Release, and Pneumatic/Pneumatic Release.

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### Viking Double Interlock Preaction Sprinkler System, Pneumatic Release

Viking Double Interlock Preaction Sprinkler System, Pneumatic/Electric Release. System rated working pressure is 250 psi (1724 kPa). Consists of an automatic water control valve with one of the following combinations of model, size, and end connections:

<i>Valve Model</i>	<i>Size, inches NPS</i>	<i>End connections</i>
E-1, E-2	2 3, 4, 6	Threaded Flanged, Flanged x Grooved
E-3, E-4	1 1/2	Threaded
F-1, F-2	1 1/2, 2, 2 1/2 3, 4, 6 8	Threaded, Grooved Flanged, Grooved, Flanged x Grooved Flanged, Grooved

Major system components include:

- Deluge valve conventional trim:
  - o Priming valve (normally open)
  - o Strainer
  - o 1/16" restricted orifice
  - o Spring loaded check valve
  - o Alarm test valve (normally closed)
  - o Auxiliary drain valve (normally closed)
  - o Model D-1 or D-4 Drip check valve
  - o Drain check valve 05781A
  - o Alarm shut off valve (normally open)
  - o Model C-1 or D-3 or D-4 pressure-operated relief valve (PORV)
  - o Model C-1 emergency release
  - o Priming pressure water gauge and valve
  - o Water supply pressure water gauge and valve
  - o Flow test valve (normally closed)
- Water flow alarm equipment:
  - o Pressure switch and/or water motor alarm
  - o Strainer
- Riser
  - o Water supply control valve
  - o Rubber Seated Check Valve
  - o Sprinkler system main drain
- Supervisory air supply
  - o System pressure gauge and valve
  - o Soft seat check valve
  - o Pressure switch

## FM APPROVALS PROJECT NO: 3049157

- Release System
  - o Model H-1 or R-1 pneumatic actuator
  - o Solenoid valve part no. 11591, 11592, 11593, 11594, 11596, 11601, 11602, 13843, or 13844 (Normally Closed)
  - o System control panel
  - o Electric detection system
  - o Soft Seat Check Valve
  - o Pressure Switch
- Automatic air supply

Optional system components include:

- Model E-1 Accelerator
- Model LD-1 anti-water column device
- Model D-2 Air Pressure Maintenance Device
- Model A-1 Speed Control Assembly trim option
- TRIMPAC Models B-5, B-5B and B-5S
- Viking Total Pac enclosure, for sizes 1-1/2 through 6 8 inch NPS
- Double Interlocked Preaction Sprinkler Systems, which utilize the angle type main water control valves, are available factory assembled in the Viking Total Pac2 enclosure, a second generation enclosure which replaces the Total Pac. The Total Pac2 is available in several configurations: 1) the system fully enclosed on legs with an access door and a built in electrical control panel (when electric activation required); 2) the valve system fully enclosed on legs with an access door and a remote control panel; 3) the valve system assembled to a skid and used with a remote control panel.
- Double Interlocked Preaction Sprinkler Systems, which utilize the Model F or Model J type main water control valves, are available factory assembled in the Viking Total Pac 3 enclosure. The Total Pac 3 is available in several configurations: 1) a system fully enclosed on legs with an access door and a built in electrical control panel; 2) a system fully enclosed on legs with an access door and a remote control panel; 3) the valve system assembled to a skid and a remote control panel. The Total Pac 3 Double Interlocked Preaction Systems are available with Electric/Pneu-Lectric Release, Electric/Pneumatic Release, and Pneumatic/Pneumatic Release.

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## Viking Double Interlock Preaction Sprinkler System, Pneumatic/Pneu-Electric Release

Viking Double Interlock Preaction Sprinkler System, Pneumatic/Pneu-Electric Release. System rated working pressure is 250 psi (1724 kPa). Consists of an automatic water control valve with one of the following combinations of model, size, and end connections:

<i>Valve Model</i>	<i>Size, inches NPS</i>	<i>End connections</i>
E-1, E-2, H-1, H-2	2 3, 4, 6	Threaded Flanged, Flanged x Grooved
E-3, E-4, H-3, H-4	1 1/2	Threaded
F-1, F-2, J-1, J-2	1 1/2, 2, 2 1/2 3, 4, 6 8	Threaded, Grooved Flanged, Grooved, Flanged x Grooved Flanged, Grooved

Major system components include:

- Deluge valve conventional trim:
  - o Priming valve (normally open)
  - o Strainer
  - o 1/16" restricted orifice
  - o Spring loaded check valve
  - o Alarm test valve (normally closed)
  - o Auxiliary drain valve (normally closed)
  - o Model D-1 or D-4 Drip check valve
  - o Drain check valve 05781A



## FM APPROVALS PROJECT NO: 3049157

- o Alarm shut off valve (normally open)
- o Model C-1 or D-3 or D-4 pressure-operated relief valve (PORV)
- o Model C-1 or C-2 emergency release
- o Priming pressure water gauge and valve
- o Water supply pressure water gauge and valve
- o Flow test valve (normally closed)
- Water flow alarm equipment:
  - o Pressure switch
  - o Strainer
- Riser
  - o Water supply control valve
  - o Rubber Seated Check Valve
  - o Sprinkler system main drain
- Supervisory air supply
  - o System pressure gauge and valve
  - o Soft seat check valve
  - o Pressure switch
- Release System
  - o Solenoid valve part no. 11591, 11592, 11593, 11594, 11596, 11601, 11602, 13843, or 13844 (normally closed)
  - o System control panel
  - o Electric detection system
- Automatic air supply

Optional system components include:

- Model E-1 Accelerator
- Model D-2 Air Pressure Maintenance Device
- Model LD-1 anti-water column device
- Model A-1 Speed Control Assembly trim option
- TRIMPAC Models B-6, B-6B, and B-6S
- Viking Total Pac enclosure, for sizes 1-1/2 through 8 inch NPS
- Double Interlocked Preaction Sprinkler Systems, which utilize the angle type main water control valves, are available factory assembled in the Viking Total Pac2 enclosure, a second generation enclosure which replaces the Total Pac. The Total Pac2 is available in several configurations: 1) the system fully enclosed on legs with an access door and a built in electrical control panel (when electric activation required); 2) the valve system fully enclosed on legs with an access door and a remote control panel; 3) the valve system assembled to a skid and used with a remote control panel.
- Double Interlocked Preaction Sprinkler Systems, which utilize the Model F or Model J type main water control valves, are available factory assembled in the Viking Total Pac 3 enclosure. The Total Pac 3 is available in several configurations: 1) a system fully enclosed on legs with an access door and a built in electrical control panel; 2) a system fully enclosed on legs with an access door and a remote control panel; 3) the valve system assembled to a skid and a remote control panel. The Total Pac 3 Double Interlocked Preaction Systems are available with Electric/Pneu-Lectric Release, Electric/Pneumatic Release, and Pneumatic/Pneumatic Release.

## Sure Fire Fail/Safe double interlocked preaction system

Sure Fire Fail/Safe double interlocked preaction system. System rated working pressure is 250 psi (1725 kPa). Consists of an automatic water control valve with one of the following combinations of model, size, and end connections:

<i>Valve Model</i>	<i>Size, inches NPS</i>	<i>End connections</i>
E-1, E-2, H-1, H-2	2 3, 4, 6	Threaded Flanged, Flanged x Grooved
E-3, E-4, H-3, H-4	1 1/2	Threaded
F-1, F-2, J-1, J-2	1 1/2, 2, 2 1/2 3, 4, 6 8	Threaded, Grooved Flanged, Grooved, Flanged x Grooved Flanged, Grooved

Major system components include:

## FM APPROVALS PROJECT NO: 3049157

- Trimpac
  - o Emergency release (normally closed, Model C-1, or C-2)
  - o Priming valve (normally open)
  - o Strainer
  - o 1/16" restriction
  - o Spring loaded check valve
  - o Priming pressure water gauge and valve
  - o Alarm test valve (normally closed)
  - o Auxiliary Drain Valve (Normally Closed)
  - o Model D-1 or D-4 Drip check valve
  - o Drain check valve 05781A
  - o Flow Test Valve (Normally Closed)
  - o Water supply pressure gauge and valve
  - o Alarm shut-off valve (normally open)
  - o Pressure operated relief valve (PORV, Model D-3 or D-4 or C-1)
- Riser
  - o Water supply control valve
  - o Rubber seated check valve
  - o Sprinkler System Main Drain Valve (Normally Closed)
- Release system
  - o System control panel
  - o Electric detection system
  - o Pneumatic actuator, Model H-1 or R-1
  - o Air pressure gauge and valve
  - o Solenoid valve part no. 11591, 11592, 11593, 11594, 11596, 11601, 11602, 13843, or 13844 (normally closed)
  - o 5/64" restricted orifice
  - o Solenoid valve part no. 11595 or 13215 (normally open)
  - o Pressure switch
- Air supply

Optional system components include:

- Model LD-1 anti-water column device
- Model D-2 Air Pressure Maintenance Device
- Model A-1 Speed Control Assembly
- Model E-1 Accelerator
- TRIMPAC Models D-2 and D-2B
- Viking Total Pac enclosure, for sizes 1-1/2 through 6 8 inch NPS
- Double Interlocked Preaction Sprinkler Systems, which utilize the angle type main water control valves, are available factory assembled in the Viking Total Pac2 enclosure, a second generation enclosure which replaces the Total Pac. The Total Pac2 is available in several configurations: 1) the system fully enclosed on legs with an access door and a built in electrical control panel (when electric activation required); 2) the valve system fully enclosed on legs with an access door and a remote control panel; 3) the valve system assembled to a skid and used with a remote control panel.
- Double Interlocked Preaction Sprinkler Systems, which utilize the Model F or Model J type main water control valves, are available factory assembled in the Viking Total Pac 3 enclosure. The Total Pac 3 is available in several configurations: 1) a system fully enclosed on legs with an access door and a built in electrical control panel; 2) a system fully enclosed on legs with an access door and a remote control panel; 3) the valve system assembled to a skid and a remote control panel. The Total Pac 3 Double Interlocked Preaction Systems are available with Electric/Pneu-Lectric Release, Electric/Pneumatic Release, and Pneumatic/Pneumatic Release.

## Dry Pipe Valves

Automatic Sprinkler Systems Valves System Valves Dry Pipe Valves

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### Model F-1

Model F-1. 3, 4, 6 in. flange/flange, and flange/groove end connections.

Model F-1 Dry Pipe Valves are available factory assembled in the Viking Total Pac2 enclosure, in sizes 3 through 6 in. NPS. The Total Pac2 enclosure and assembled valves comprise an integrated fire protection system which is assembled and tested at the factory, and requires only the connection to the water supply inlet, water outlet (to system), main drain, the alarm connections, and the electrical connections for the alarm devices and optional air compressor.

Model F-1 Dry Pipe Valves are available factory assembled in the Viking Total Pac 3 enclosure. The Total Pac 3 is available in two configurations: 1) a system fully enclosed on legs with an access door 2) the valve system assembled to a skid. These Dry Pipe Systems are available in sizes 3, 4 and 6 in. NPS.

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### Model F-2

Model F-2. 3, 4, 6 in. groove/groove end connections.

Model F-2, 3, 4, 6 in. groove/groove end connections. Dry Pipe valves are available factory assembled in the Viking Total Pac@ enclosure, in sizes 3 through 6 in. NPS. The Total Pac2 enclosure and assembled valves comprise an integrated fire protection system which is assembled and tested at the factory, and requires only the connection to the water supply inlet, water outlet (to system), main drain, the alarm connections, and the electrical connections for the alarm devices and optional air compressor.

Model F-1 Dry Pipe Valves are available factory assembled in the Viking Total Pac 3 enclosure. The Total Pac 3 is available in two configurations: 1) a system fully enclosed on legs with an access door 2) the valve system assembled to a skid. These Dry Pipe Systems are available in sizes 3, 4 and 6 in. NPS.

**CDL CONTROL DRAWING BLUEPRINT REPORT**

***Blueprint Report***

**VIKING CORPORATION (1000000620)**

**Class No 1020**

**Original Project I.D. 3049157**

<b><u>Drawing No.</u></b>	<b><u>Revision Level</u></b>	<b><u>Drawing Title</u></b>	<b><u>Last Report</u></b>	<b><u>Electronic Drawing</u></b>
<b>FM-076X-0-5B</b>	<b>0</b>	<b>Totalpac 3 - List of components</b>	<b>3049157</b>	<b>Yes (pdf)</b>

**DRAWING FM-076X-0-5B - TOTALPAC 3 - LIST OF COMPONENTS**

**(4 pages)**

**Totalpac 3**  
**List of components**


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**Accelerator:**


UL Listed (VJPZ), FM Approved, model D-2 quick-opening device with an integral anti-flood assembly. Manufactured by Viking Corporation, Hastings, MI.

UL Listed (VJPZ), FM Approved model E-1 quick opening device. Manufactured by Viking Corporation, Hastings, MI.

**Air Compressor:**

Air Compressor  UL recognized air compressors, manufactured by General Air Products, Exton Pa. The compressor model numbers shall be as shown below:

Motor data	Model No.
1/6 HP	OL12516A
1/3 HP	OL25033A
½ HP	OL36550A
1 HP	OL615100A
1½ HP	OL915150A
2 HP	OL1225200A
1/6 HP	OL39012A-50
1/3 HP	OL75025A-50
½ HP	OL114056A-50
1 HP	OL1965120A-50
1½ HP	OL2870150A-50


Alternate Air Compressor  UL recognized air compressors, manufactured by General Air Products, Exton Pa. The compressor model numbers shall be as shown below:

Motor data	Model No.
1/6 hp, 115 V, 60 Hz, 1 Ph	OL11016A
1/3 hp, 115 V, 60 Hz, 1 Ph	OL21533A
½ hp, 115 V, 60 Hz, 1 Ph	OL33550A
1 hp, 115 V, 60 Hz, 1 Ph	OL610V100A
1/6 hp, 220 V, 50 Hz, 1 Ph	OL11016A-50
1/3 hp, 220 V, 50 Hz, 1 Ph	OL21533A-50
½ hp, 220 V, 50 Hz, 1 Ph	OL33550A-50
1 hp, 220 V, 50 Hz, 1 Ph	OL525100A-50

## Totalpac 3

### List of components

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Alternate Air Compressor  UL recognized, Special Type, 746 A, 50 psig maximum, manufactured by Gast Manufacturing Corp., Benton Harbor, MI. The compressor model numbers shall be as shown below:

Motor Data	Model No.
1/6 hp, 115 V, 60 Hz, 1 Ph	1LAA-32-M100X or 1LAA10-M100X
1/3 hp, 115 V, 60 Hz, 1 Ph	3LBA-32-M300X or 3LBA10-M300X
½ hp, 115 V, 60 Hz, 1 Ph	4LCB-21-M400X or 4LCB10-M450X
1 hp, 115 V, 60 Hz, 1 Ph	6LCF-13-M616X or 6LCF10-M616X

**Air Pressure Gauge:**

UL Listed (VEVX), FM Approved, pressure gauge for fire protection service, ½ in. NPT by 3-1/2 in. 0-80-250 psig.

**Air Pressure Maintenance Device:**

UL Listed (VIOT), Model D-2, manufactured by Viking Corp. Hastings, MI.  
The Model D-2 air pressure maintenance device is used with air style B or C.

**Air Pressure Switch for Compressor:**

UL Listed (NKPZ)

**Air Pressure Supervisory Switch:**

UL Listed (USQT), FM approved extinguishing system attachment.

**Alarm Drain Check Valve:**

Brass body, ½ in. size P/N 05781A or 05781AJ By Viking Corp. Hastings., MI.

**Alarm Pressure Switch:**

UL Listed (USQT), FM Approved extinguishing system attachment, switch with a pressure setting of 5 psig.

**Anti-Flood Device:**

UL Listed (VJPZ), FM Approved, Anti-flood mod. B-1. Manufactured by Viking Corp. Hastings, MI

**Ball valve:**

UL Listed (VQGU), FM Approved, ball type. The valve sizes are ¼, ½, ¾, 1, 1-1/4, 1-1/2 or 2 in. brass or stainless steel as appropriate for the assembled Unit.

**Check Valve :**

System trim check , ½ in. brass swing type check valve.

**Check Valve (priming line):**

Brass body, ¼ or ½ in. size.

**Check Valve (System):**

UL Listed (HMER), FM Approved, spring loaded in-line check valve, grooved ends 1-1/2 or 2 in. sizes.  
Model L-1 manufactured by Viking Corp. Hastings MI.

**Check Valve (System):**

UL Listed (HMER), FM Approved, Easy riser swing check valve, model F-1, 3, 4, 6 or 8" sizes, manufactured by Viking Corp. Hastings, MI.

**Deluge Valve:**

UL Listed (VLFT & VLJH), FM Approved, model E-3 deluge valve 1-1/2" size , 250 psi water working pressure.

UL Listed, FM Approved model E-1 deluge valve 2, 3, 4 or 6" sizes, 250 psi water working pressure.  
Manufactured by Viking Corp. Hastings, MI

UL Listed (VLFT & VLJH), FM Approved, model F-1 deluge valve 1-1/2", 2, 3, 4, 6 or 8" sizes, 250 psi water working pressure. Manufactured by Viking Corp. Hastings, MI

# Totalpac 3

## List of components

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**Dehydrator:**

Manually regenerated desiccant-type air dryer # 1285A or 16854. Manufactured for The Viking Corporation, Hastings, MI.

**Drip check valve:**

UL Listed (HMER), FM Approved, model D-1 automatic drip check valve manufactured by Viking Corp. Hastings, MI.

**Flanged Fitting ( 90° Elbow):**

UL Listed (HHXX) Flanged end fitting, 1-1/2, 2, 3, 4 or 6 in. sizes.

**Flexible conduit:**

All electrical wiring is enclosed in UL **listed** (DXOQ) or **recognized** Non-metallic flexible conduit.

**Float Check Valve:**

Model A-1, ½ in. size, P/N 10883 manufactured by Viking Corp. Hastings, MI.

**Flow Control Valve:**

UL Listed (VLFT & VLLA), FM Approved, model H-3 flow control valve 1-1/2" size, 250 psi water working pressure. Manufactured by Viking Corp. Hastings, MI

UL Listed (VLFT & VLLA), FM Approved, model H-1 flow control valve 2", 250 psi water working pressure. Manufactured by Viking Corp. Hastings, MI

UL Listed (VLFT & VLLA), FM Approved, model H-1 flow control valve 3", 4" or 6", 250 psi water working pressure. Manufactured by Viking Corp. Hastings, MI

UL Listed (VLFT & VLLA), FM Approved, model J-1 flow control valve 1-1/2", 2, 3, 4, 6 or 8" sizes, 250 psi water working pressure. Manufactured by Viking Corp. Hastings, MI

**Gauge valve:**

¼ in. NPT, brass body valve.

**Grooved Fitting ( 90° Elbow):**

UL Listed (VIZA), grooved end fitting,

1-1/2, 2, 3, 4 or 6 in. sizes.

**Main Water Inlet Valve:**

UL Listed (HLXS), FM Approved, Butterfly valve with tamper switch (dry contacts). Valve is in 3, 4 or 6" sizes. Rated pressure 250 psi minimum.

UL Listed (HLVG), FM Approved, Butterfly valve with tamper switch (dry contacts). Valve is in 1-1/2" and 2" sizes. Rated pressure 250 psi minimum.

**Manual Emergency Release Valve:**

UL Listed (VQGU), FM Approved, ½" ball valve. Brass or stainless, rated pressure 250 psi minimum

**Pneumatic Actuator:**

UL Listed (VLTR), FM Approved, model H1 or R1 spring loaded to open, rolling diaphragm, piston operated valve, manufactured by Viking Corp. Hastings, MI.

**Pressure Operated Relief Valve:**

UL Listed (VLTR), FM Approved, Model C-1 manufactured by Viking Corp. Hastings, MI

UL Listed (VLTR), FM Approved, Model D-1,D-2, D3 or D4 manufactured by Viking Corp. Hastings, MI

**Priming Shut-Off Valve:**

UL Listed (VLTR), FM Approved, P/N 10723 manufactured by Viking Corporation., Hastings, MI

**Release control Panel:**

UL Listed (UOJZ), FM Approved, model VFR-400 manufactured by Viking Corporation, Hastings, MI



## Totalpac 3

### List of components

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**Restriction orifice:**

Model 10110 brass body ¼" in. NPT x 0.062 orifice manufactured by Viking Corp. Hastings, MI.

Model 01611A brass body ¼" in. NPT x 0.125 restriction orifice for Firecycle system, manufactured by Viking Corp. Hastings, MI.

Model 06555A brass body ½" in. NPT x 0.125 restriction orifice for Firecycle wet system, manufactured by Viking Corp. Hastings, MI.

Model 11706 brass body ½" in. NPT x 5/64" restriction orifice for Firecycle release, manufactured by Viking Corp. Hastings, MI.

Model 06980A brass body ½" in. NPT x 7/32" restriction orifice for dry system alarm line, manufactured by Viking Corp. Hastings, MI.

**Rubber Gasketed Fittings:**

UL Listed (VIZM), FM Approved, rubber gasketed fittings, 1-1/2, 2, 3, 4 or 6 in. sizes.

**Solenoid Valves Normally Closed:**

UL Listed (VLTR), FM Approved, model 11591 NC ½ in NPT 2 way normally closed 10.0 watt (416Ma), 24 VDC, 9/16 in orifice, 5-300 PSI rated water pressure, for use in all electric operated deluge, preaction and Firecycle III systems. Manufactured by Viking Corp. Hastings, MI.

**Solenoid Valves Normally Opened:**

UL Listed (YIOZ), FM Approved, model 11595 NO ½ in NPT 2 way normally opened 10.0 watt (416Ma), 24 VDC, 9/16 in orifice, 5-300 PSI rated water pressure, for use in Firecycle III and Sure-Fire Fail-Safe systems. Manufactured by Viking Corp. Hastings, MI.

**Terminal blocks:**

UL Recognized Component (XCFR2) and CSA certified terminal block.

**Trim Piping Strainers:**

¼ or ½ in. NPT brass body strainer with stainless steel or Monel screen manufactured for Viking Corp. Hastings, MI.

**Trim Piping Check Valves:**

Brass body and clapper valves, ¼ or ½ in. size, trim and drain check valve.

**Water pressure gauges:**

UL Listed (VEVX), FM Approved, pressure gauges for Fire Protection Service, ¼ in. By 3-1/2 in. 0-300 psig or 0-600 psig.

**Wiring:**

UL Listed (ZKHZ), Machine-tool wire