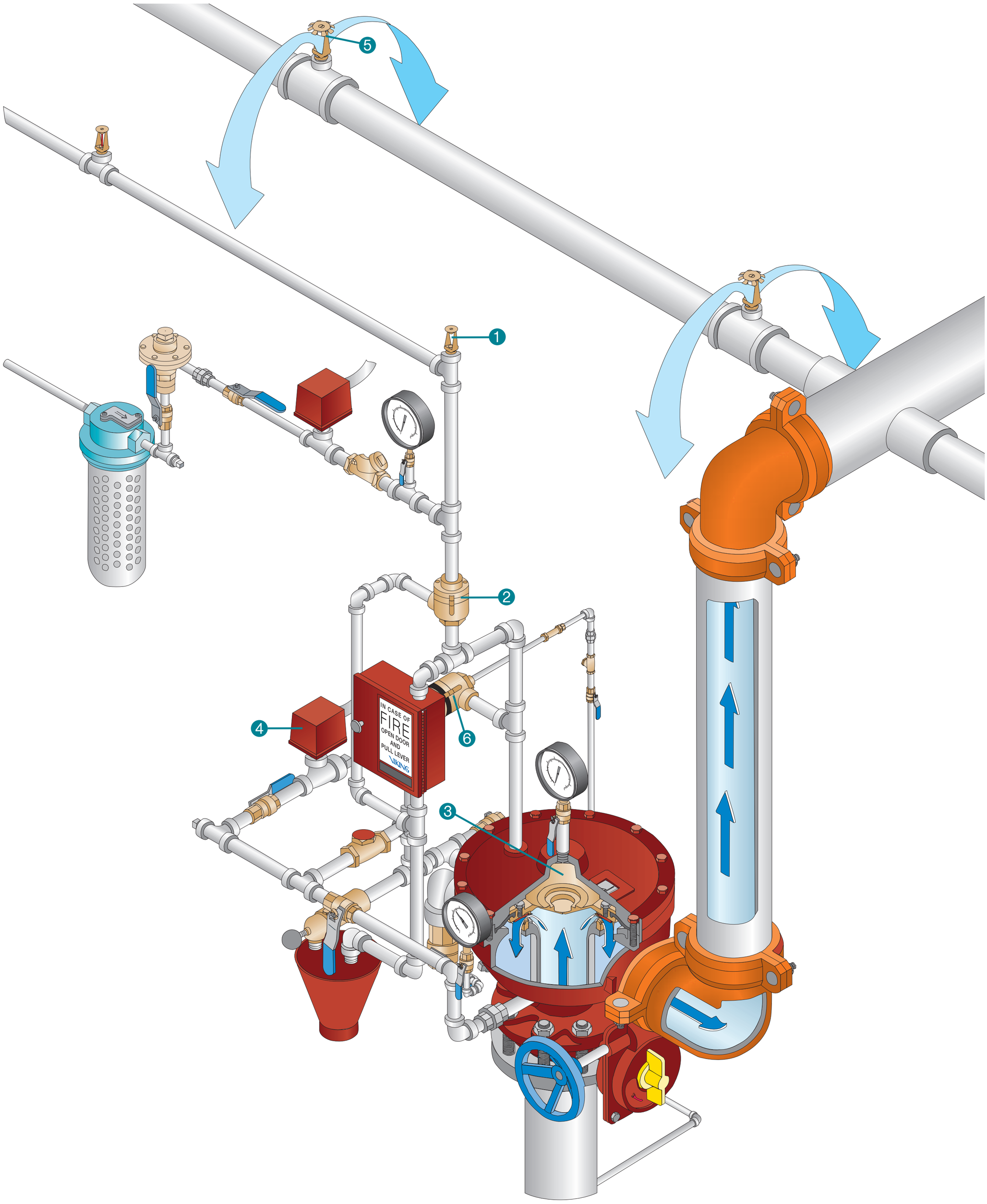
VIKING®

Deluge System

Pneumatic Release



Deluge System

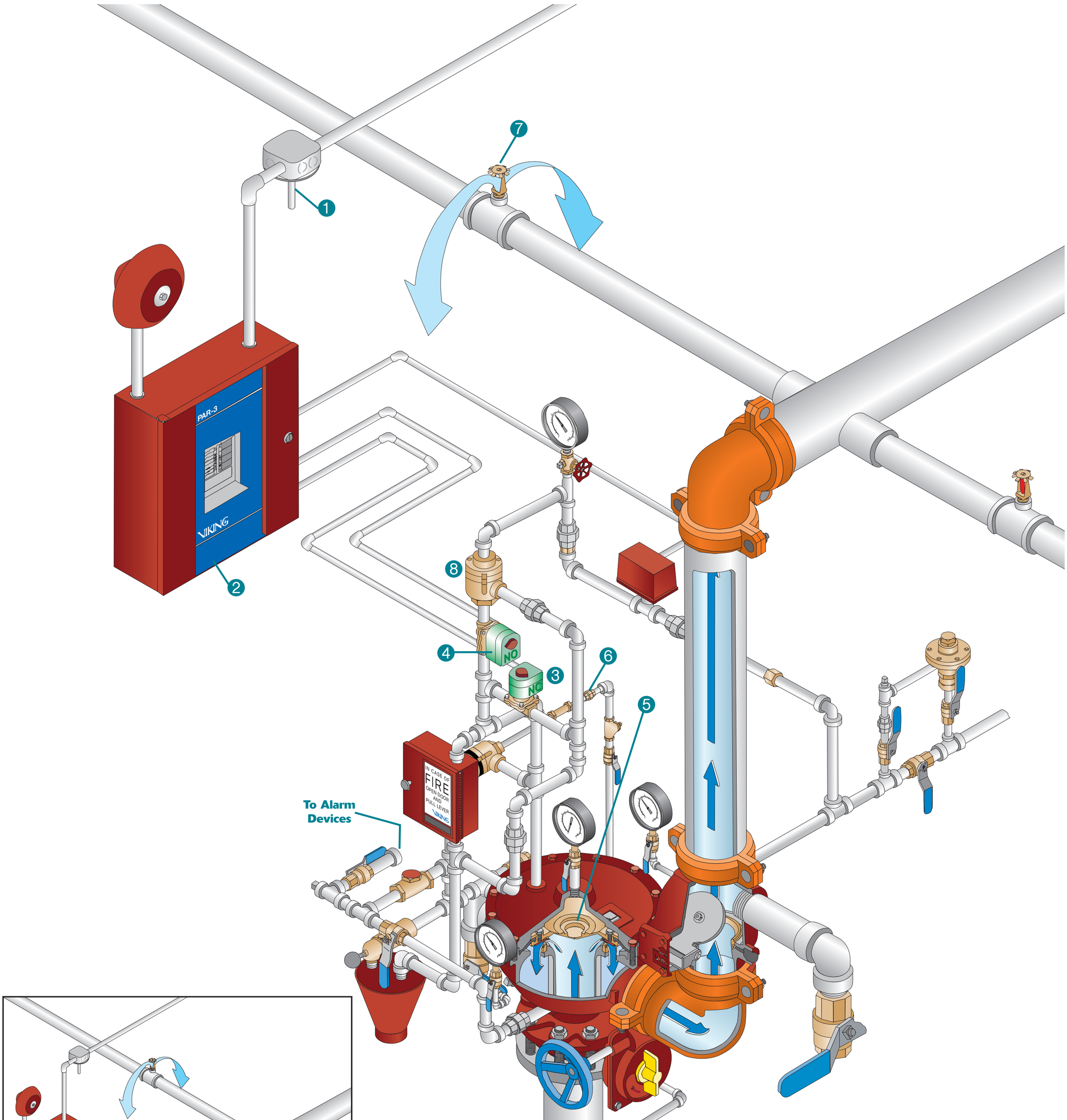
Pneumatic Release

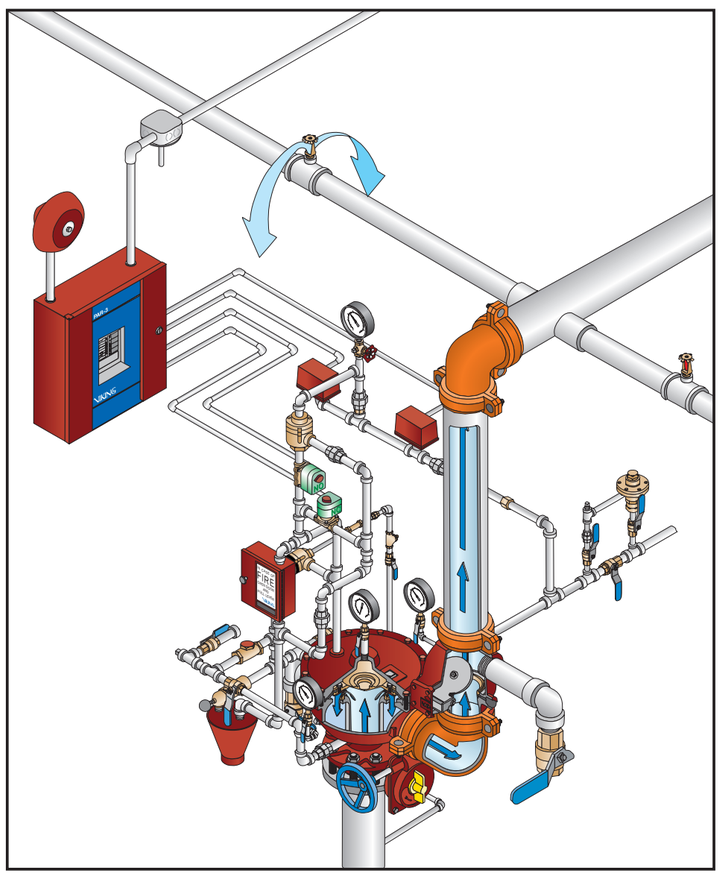
When the fixed temperature release (1) is activated by fire, pressure in the release system escapes from the open device, allowing the pneumatic actuator (2) to open. This releases pressure from the priming chamber (3) of the deluge valve, allowing the valve to open. Water flows into the system piping and to the alarm devices, causing the pressure switch (4) to activate an electric alarm and/or operating a mechanical water motor alarm. Water flows from all open sprinklers or nozzles (5). When the deluge valve operates, pressure closes the PSOV (6) cutting off the water supply to the priming chamber, latching the deluge valve in the open position.

VIKING®

SureFire™

Single Interlock Preaction





Double Interlock Preaction

SureFire™ Single Interlock

System operation under normal power conditions

When the detector (1) is activated by fire, a signal is sent to the Par-3/B-1 Release control panel (2). The panel sends the appropriate alarm and trouble signals, and at the same time, powers the normally closed (N/C) solenoid valve (3) open, releasing pressure from the priming chamber. The priming chamber (5) of the deluge valve is then vented faster than water is supplied through the restricted orifice (6), allowing the deluge valve to open. The water enters the system piping, but no water is discharged until a sprinkler (7) is activated. Should there be a loss of AC power, the system has battery backup.

System operation under loss of total AC and battery back-up power

Should both the AC power and the battery back-up power be lost, the system will still operate as a dry system, as long as there is air pressure in the system piping. Heat from a fire activates a sprinkler (7), which causes a drop in the system air pressure. The system air pressure continues to drop until the pneumatic actuator (8) operates. The priming chamber (5) of the deluge valve is then vented through the normally open (N/O) solenoid valve (4) and the pneumatic actuator (8) faster than water is supplied through the restricted orifice (6), which opens the deluge valve. Water is then discharged out of the sprinklers opened by the fire.

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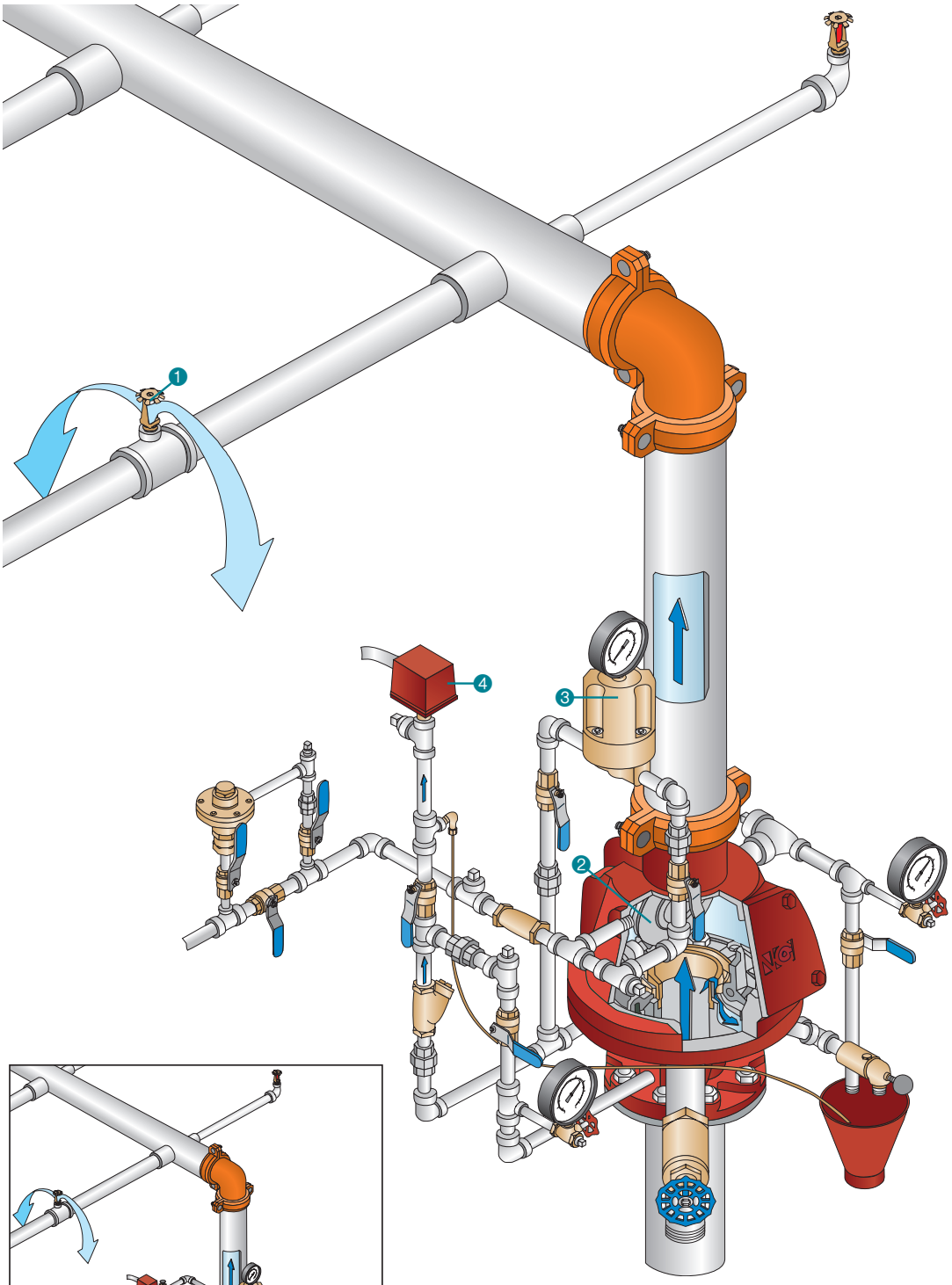
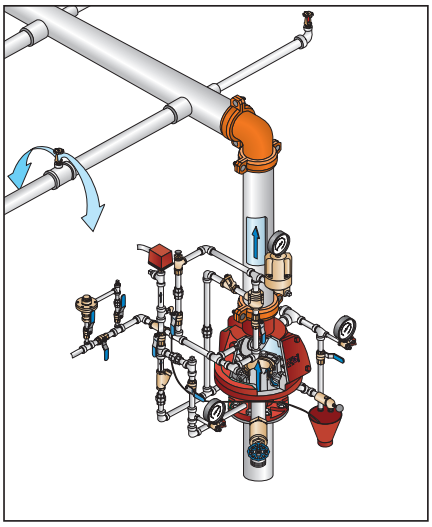
Dry System
With D2 Accelerator





Dry System with E1 Accelerator/B1 Anti-Flood Device

Dry System

with Model D2 Accelerator

When a sprinkler (1) opens, loss of air pressure in the system allows the dry valve clapper (2) to open, filling the system with water. To speed the opening of the dry valve in large systems, an accelerator (3) can be added. An integral anti-flood device protects against accelerator flooding. Water flow from the intermediate chamber of the dry valve can cause a pressure switch (4) to activate an electric alarm and/or operate a mechanical water motor alarm.

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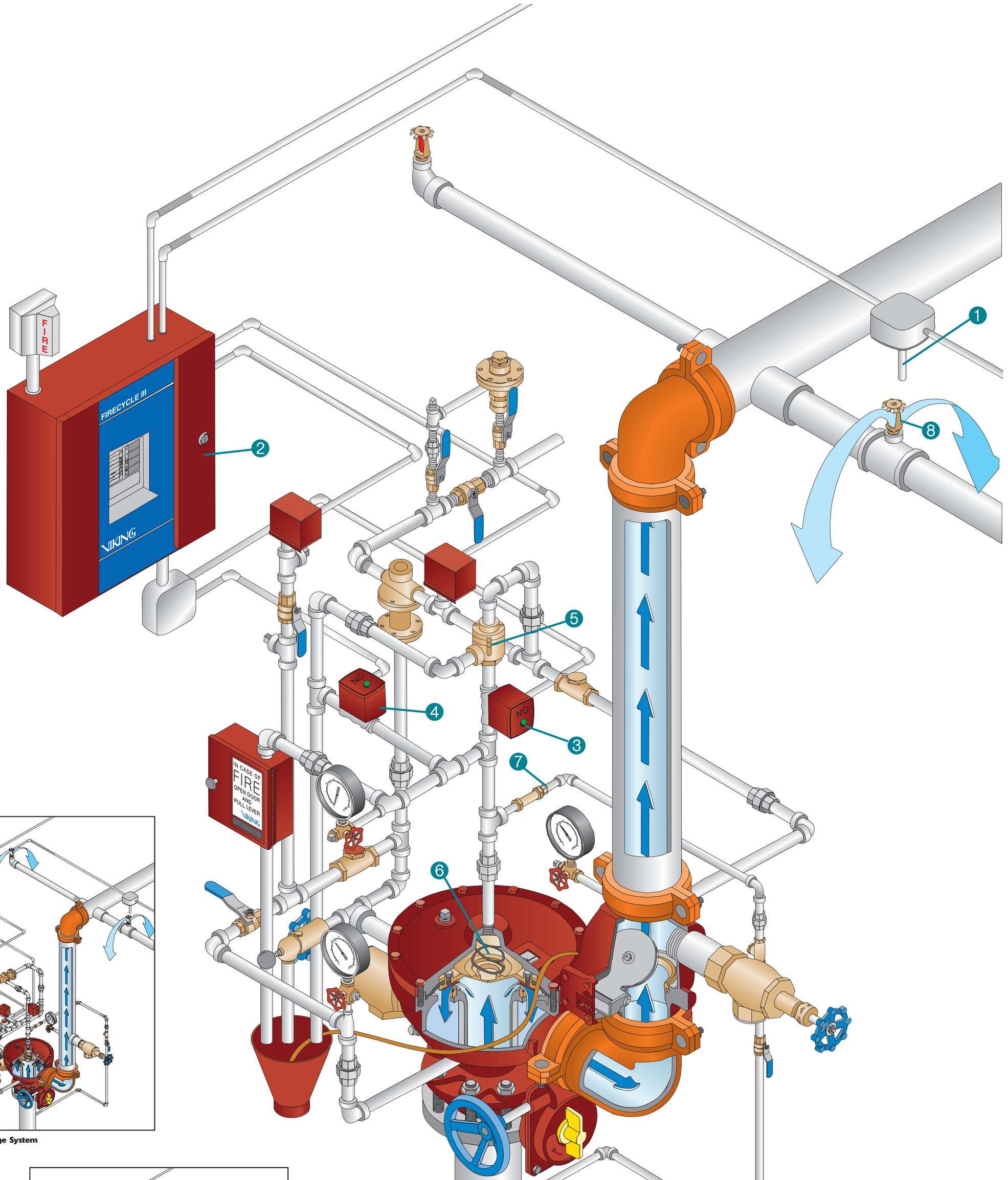
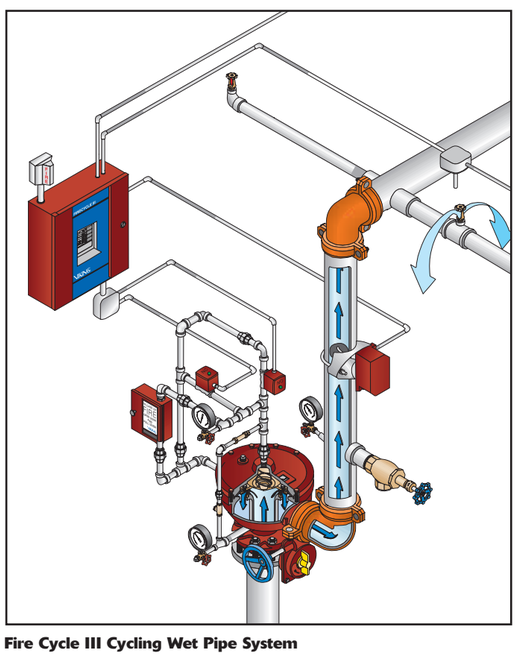
Firecycle III

Cycling Single Interlock Preaction



Fire Cycle III Cycling Deluge System



Fire Cycle III Cycling Wet Pipe System

Firecycle III System

Cycling Single Interlock

When the detector (1) is activated by fire, a signal is sent to the Firecycle III Control Panel (2). The panel sends the appropriate alarm and trouble signals and, at the same time, powers the normally open (3) and normally closed (4) solenoid valves, isolating the pneumatic actuator (5) and releasing pressure from the priming chamber. The priming chamber (6) of the flow control valve is then vented faster than water is supplied through the restricted orifice (7), allowing the flow control valve to open. The water enters the system piping, but until a sprinkler (8) is activated no water is discharged. After the detectors cool and the timer is satisfied, the normally closed solenoid is allowed to close and reestablish prime pressure, closing the control valve and stopping the flow of water. If the detector senses a flare-up of the fire, the cycle begins again. If the detector never cools completely, or is damaged, the system will continue to discharge water.

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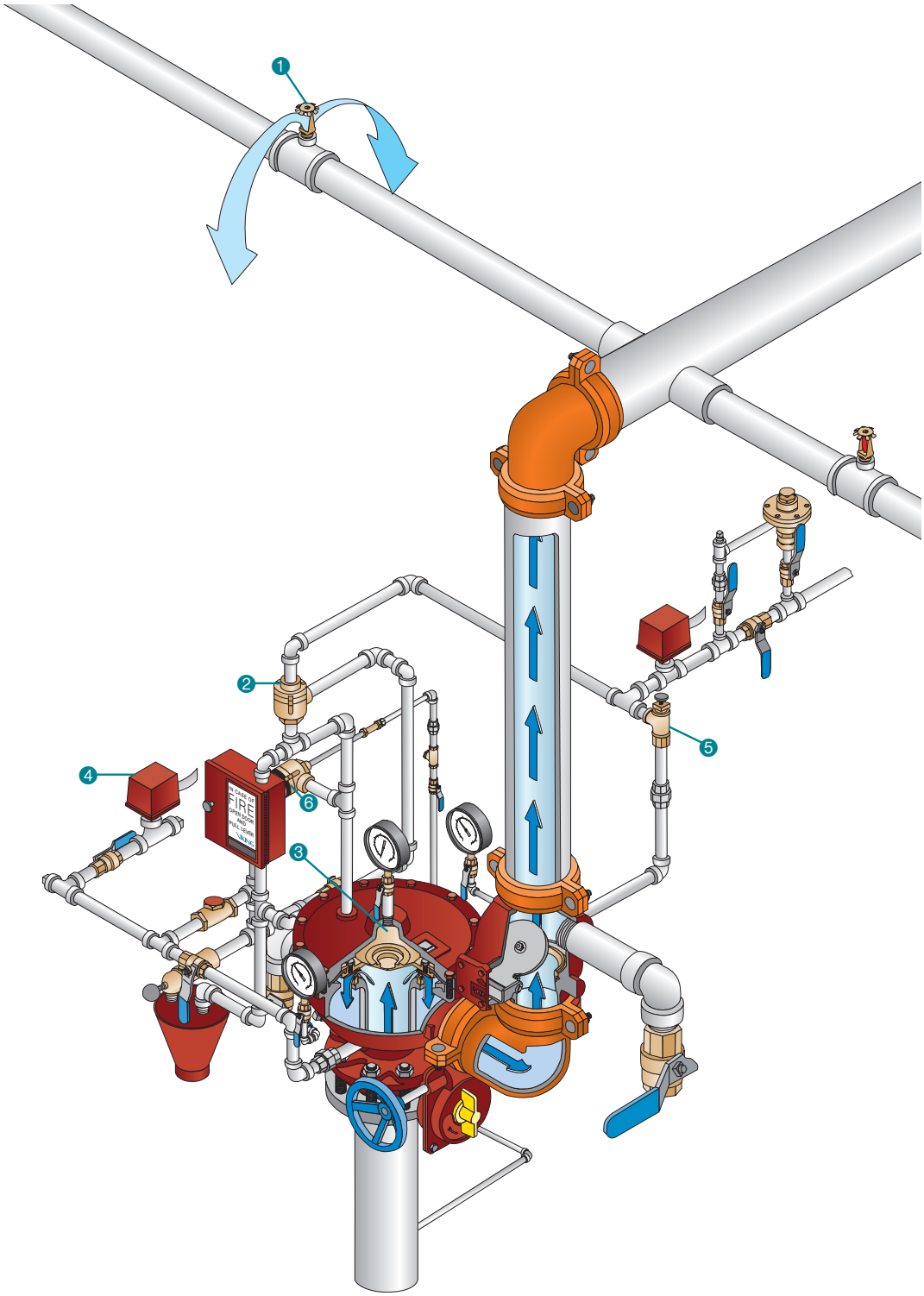
HP® Dry System



HP Dry System

When a sprinkler (1) opens, loss of air pressure in the system piping causes the anti-flood device (2) to open. This releases pressure from the priming chamber (3) of the deluge valve, allowing the valve to open. Water flows into the system piping and to the alarm devices, causing the pressure switch (4) to activate an electric alarm and/or operating a mechanical water motor alarm. A float check valve (5) installed in the air supply connection to the riser, prevents water from pressurizing the anti-flood device. When the deluge valve operates, pressure closes the PSOV (6) cutting off the water supply to the priming chamber, latching the deluge valve in the open position.

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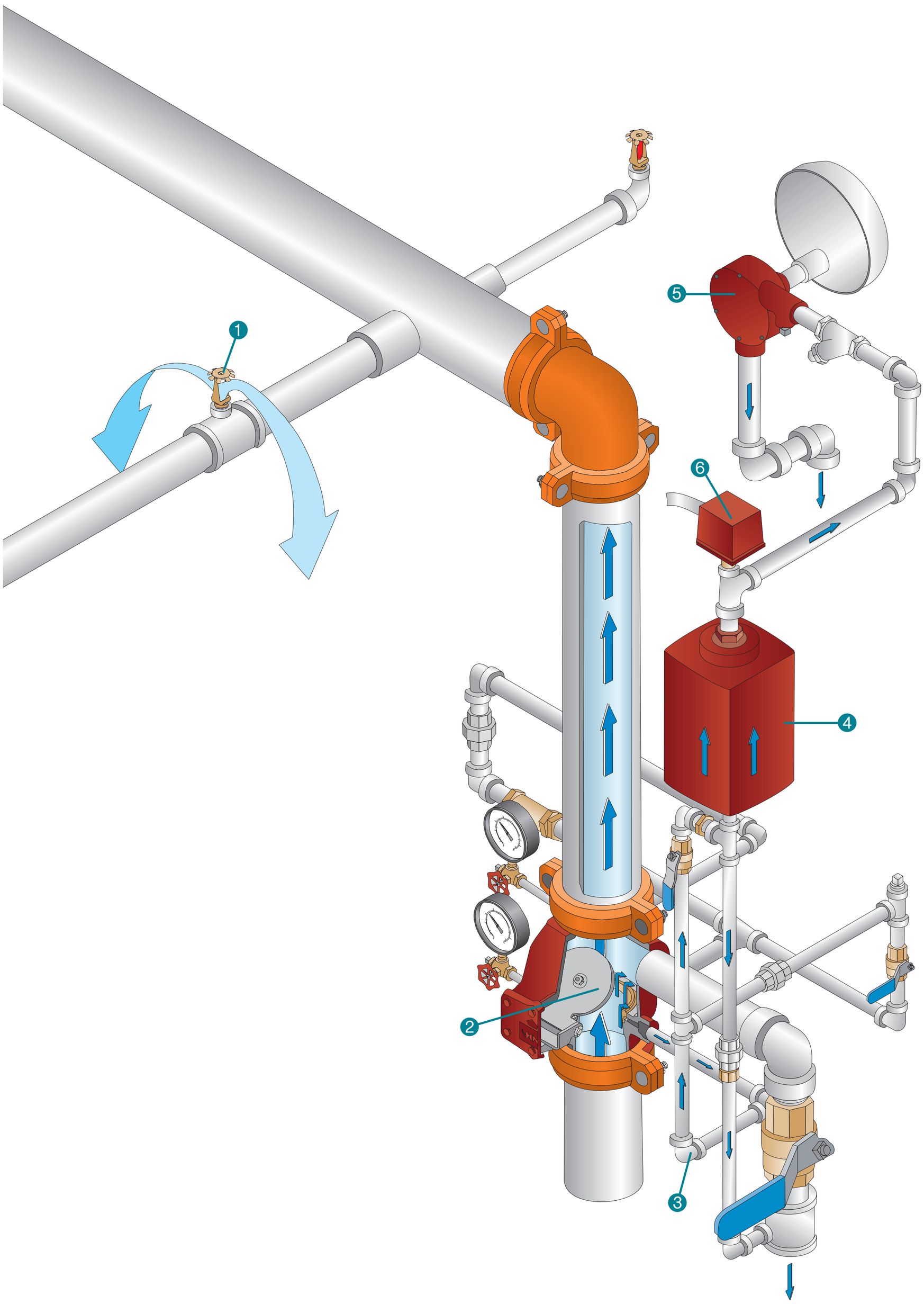
Wet System



Wet System

When a sprinkler (1) opens, the discharging water lifts the alarm valve clapper (2) and flows through the alarm port (3) to the retard chamber (4). When the retard chamber is filled, water flows to the water motor alarm (5) and/or the optional pressure switch (6) which signals an electric alarm bell.

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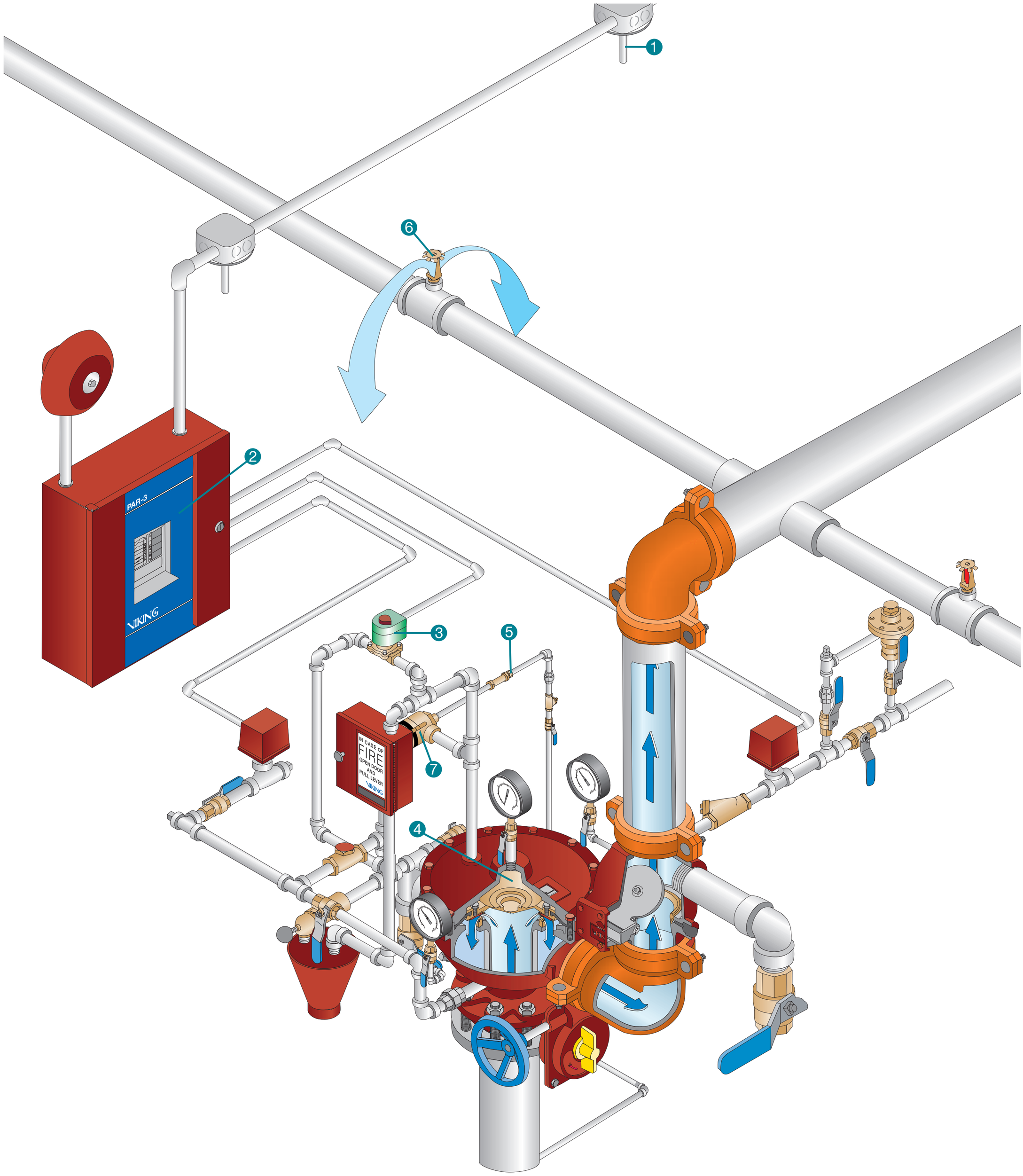
Preaction System

Single Interlock Electric Release



Preaction System

Single Interlock Electric Release

When the detector (1) is activated by fire, a signal is sent to the Par 3 Release Control Panel (2). The panel sends appropriate alarm and trouble signals and, at the same time, signals the release of the solenoid valve (3). The deluge valve priming chamber (4) is then vented faster than water is supplied through the restricted orifice (5), allowing the deluge valve to open. The water enters the system piping, but until a sprinkler (6) activates no water is discharged. When the deluge valve operates, pressure closes the PSOV (7) cutting off the supply of water to the priming chamber, latching the deluge valve in the open position.

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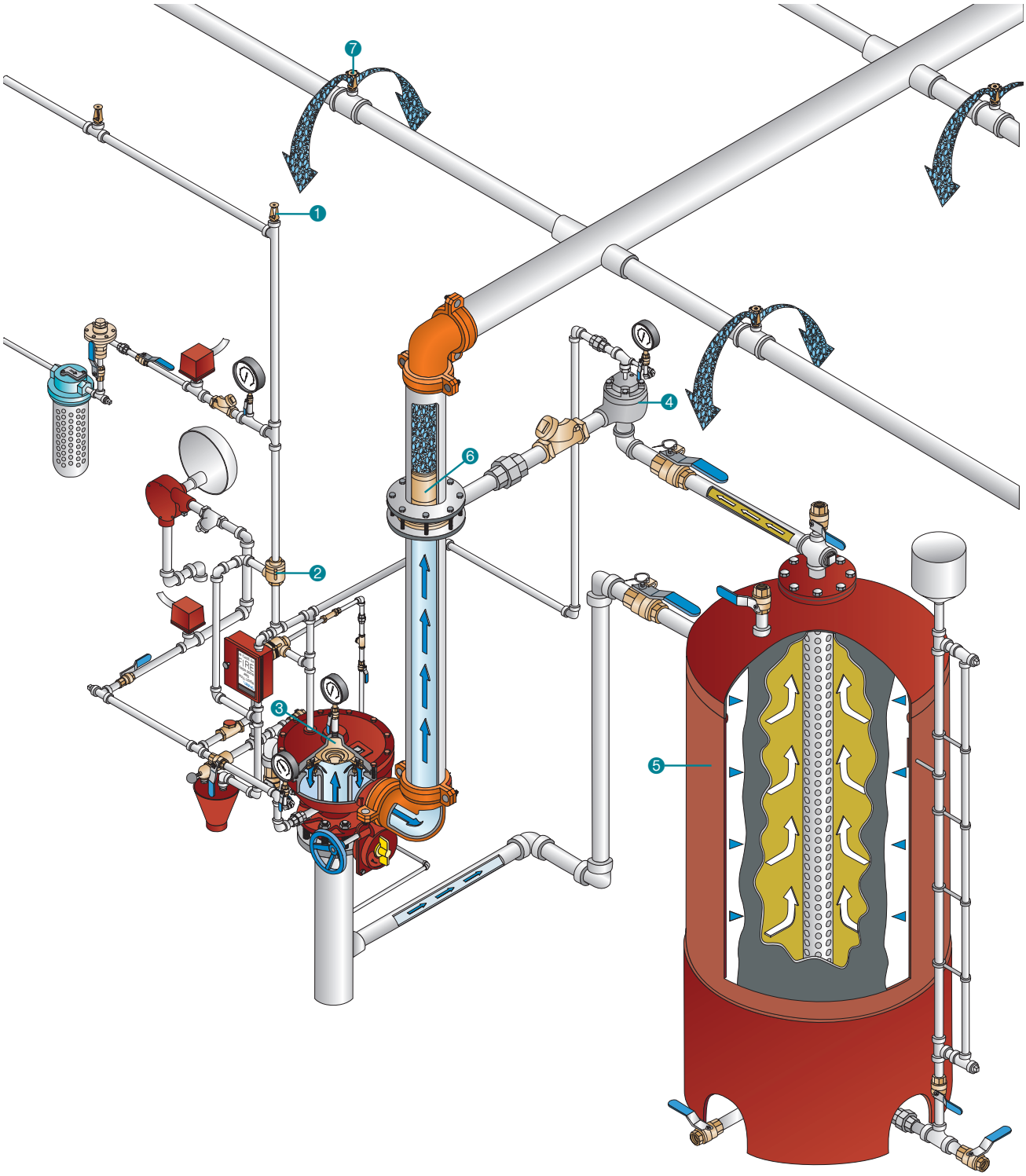
Foam/Water Deluge Sprinkler System



Foam/Water Deluge Sprinkler System

When the detector (1) is activated by fire, pressure in the release system escapes, allowing the pneumatic actuator (2) to open. This releases pressure from the priming chamber (3) which allows the deluge valve to open. Trim piping, tied into the priming chamber of the Halar-coated concentrate control valve (4), allows that valve to open at approximately the same time, opening the foam concentrate line to the sprinkler system. The outer shell of the bladder tank (5), pressurized by system water, squeezes foam concentrate out to the proportioner (6). As water flows through the venturi area of the proportioner, a metered pressure drop draws foam concentrate into the system water creating a foam solution mixed to the appropriate ratios. This solution then flows through the sprinkler piping and out to the open sprinklers or nozzles (7).

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