Reliable®

Model H Riser Assembly

Electric Release Double
Interlock Preaction System

Features

- Compact design
- Straight through low friction loss design
- Simple electric solenoid operation
- 15 psi (1.03 bar) supervisory pressure

Product Description

The Reliable Model H Double Interlock Preaction System is specifically designed where an electrically operated system with a limited number of fire sprinklers is required.

The Model H 1½" (40mm) Double Interlock Preaction Riser incorporates a Parker-Hannifin 7321GBN99NLVNOC322C2 normally closed 2-way internal pilot operated solenoid valve as the primary operating mechanism. A full range of approved electrical detectors may be used for system activation.

The trim is factory assembled for the Model H Riser Assembly. The trim includes valve supervision, water flow alarm pressure switch, alarm test valve, pressure gauges, and system draining provisions.

Note: The customer is responsible for providing an NFPA 13 compliant supervisory pneumatic pressure source capable of automatically maintaining pressure at 15 psi (1.03 bar).

Model H Riser Assembly Double Interlock Preaction System
(Image is subject to change)

Installation

1. The Model H assembly shall be installed, maintained, and tested in accordance with NFPA13, "Standard for the Installation of Sprinkler Systems," as well as the requirements of any authorities having jurisdiction. Failure to follow installation instructions may void the warranty and/or listing of the system.
2. The Model H assembly must only be installed in the vertical position with water moving up and through the valve.
3. A minimum water supply pressure of 20 psi (1.4 bar) is required.
4. Verify compatibility of the Model H system materials with the water supply and the environment where the valve will be installed prior to installation.
5. The Model H assembly must be installed in a location where the temperature is maintained at a minimum of 40°F (4°C). Heat tracing of the valve and/or trim is not permitted.
6. The Model H assembly must not be installed in a location where the ambient and/or the water temperature exceeds 140°F (60°C).
7. Unauthorized revisions to the trim arrangement of the valve may void the warranty and/or listing of the system.
8. Design and installation of detection and release systems must be performed in accordance with applicable NFPA standards and the authority having jurisdiction.
9. The release control panel (by others) must be compatible with the solenoid valve specified herein.
10. Drains should be piped to a location that will avoid damage to property and/or injury to personnel.

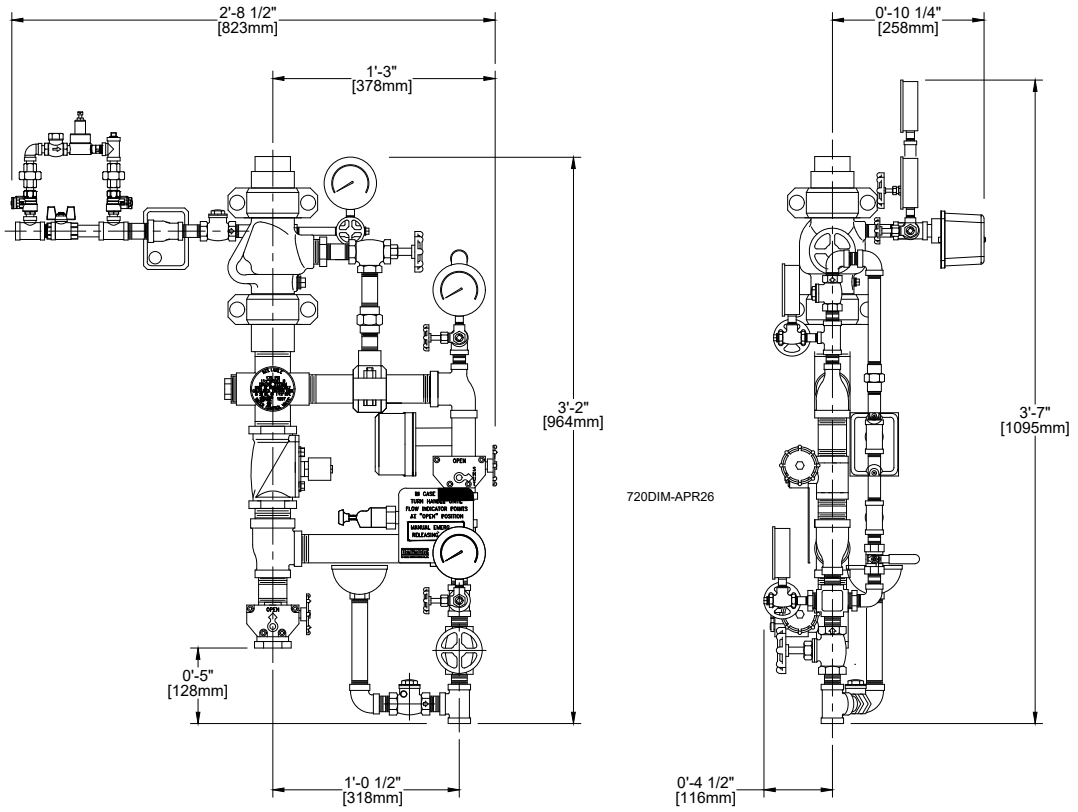
Model H Technical Data — **Table A**

Size	End Connection	Pressure Rating	Listings & Approvals	Friction Loss (Eq. Length C = 120)	Approx. Shipping Weight
1-1/2" (40mm)	Threaded	175 psi (12.1 bar)	cULus (VLFT)	36 ft (11m)	62 lbs (28.1 kg)

Model H Double Interlock Preaction System

The Model H system utilizes a normally closed (de-energized) solenoid valve as the primary operation mechanism. Upon receipt of a signal from the electric detection system, the release control panel energizes the solenoid valve causing it to open and charge the closed-sprinkler system with water. For double interlock preaction systems, the electrical detection system and activation of the low air/nitrogen pressure switch serve as the two events required to energize the solenoid valve open. Alarm devices are activated upon the flow of water into the sprinkler system piping. Following system activation, the solenoid valve closes when the release control panel is reset. The system is designed to operate at a supervisory pressure of 15 psi (1.03 bar). In addition to acting as the second release signal, the pressure switch monitors for off-normal (high or low) pneumatic pressure. Note that loss of pneumatic pressure in the system without an active detection signal does not result in system operation.

Model H Riser Assembly Dimensions **Figure 1**



Resetting Model H Riser Assembly (Refer to Figure 2)

1. Fully close the main water supply control valve.
2. Open the main drain valve and emergency manual release valve and drain the system.
3. Unless already open, energize and open the solenoid valve by operating a detector or electric manual emergency station. Allow residual water to drain from above the solenoid valve.
4. Inspect and replace any portion of the fire protection system and detection system subjected to fire conditions.
5. Close the emergency manual release valve.
6. Reset the release control panel causing the solenoid valve to de-energize and close.
7. Slowly open the main water supply control valve and close the main drain valve when a full stream of water is noted.
8. Allow water pressure to establish on system, then close the main water supply control valve. Observe lower water pressure gauge and verify that no pressure drop occurs.
9. Fully open the main water supply control valve and verify it is properly supervised in the open position.
10. Pressurize the system with air or nitrogen to 15 psi (1.03 bar) and place the pneumatic supply into automatic operation.
11. Notify any affected parties that the fire protection system has been placed into service.

Inspection (Refer to Figure 2)

1. Verify that the valve controlling water supply to the system is fully open and properly supervised in this position.
2. Verify that the emergency manual release valve is closed and properly supervised in this position.
3. Verify that the main drain valve is closed.
4. Verify that the alarm test valve is fully closed.
5. The automatic drain valve monitors internal leakage. Push in on the plunger to confirm the ball check is off its seat. If no water appears, the assembly is leak free.
6. Confirm that the pneumatic pressure source is operational and automatically maintaining 15 psi (1.03 bar) supervisory pressure.

Full Operational Test (Refer to Figure 2)

Note: This test will result in water flow to the system!

1. Notify all affected parties that testing is being performed.
2. If necessary, protect any surfaces or equipment exposed to water discharge.
3. Increase supervisory pressure to approximately 20 psi (1.07 bar) and confirm that high pressure signal is received.
4. Decrease supervisory pressure to approximately 10 psi (0.9 gar) and confirm that low pressure signal is received.
5. With low air signal activated, operate a detector or an emergency manual station on the detection system.
6. Verify that water flow occurs and water flow alarms activate.
7. Close the main water supply control valve and reset system per “Resetting Model H Riser Assembly.”

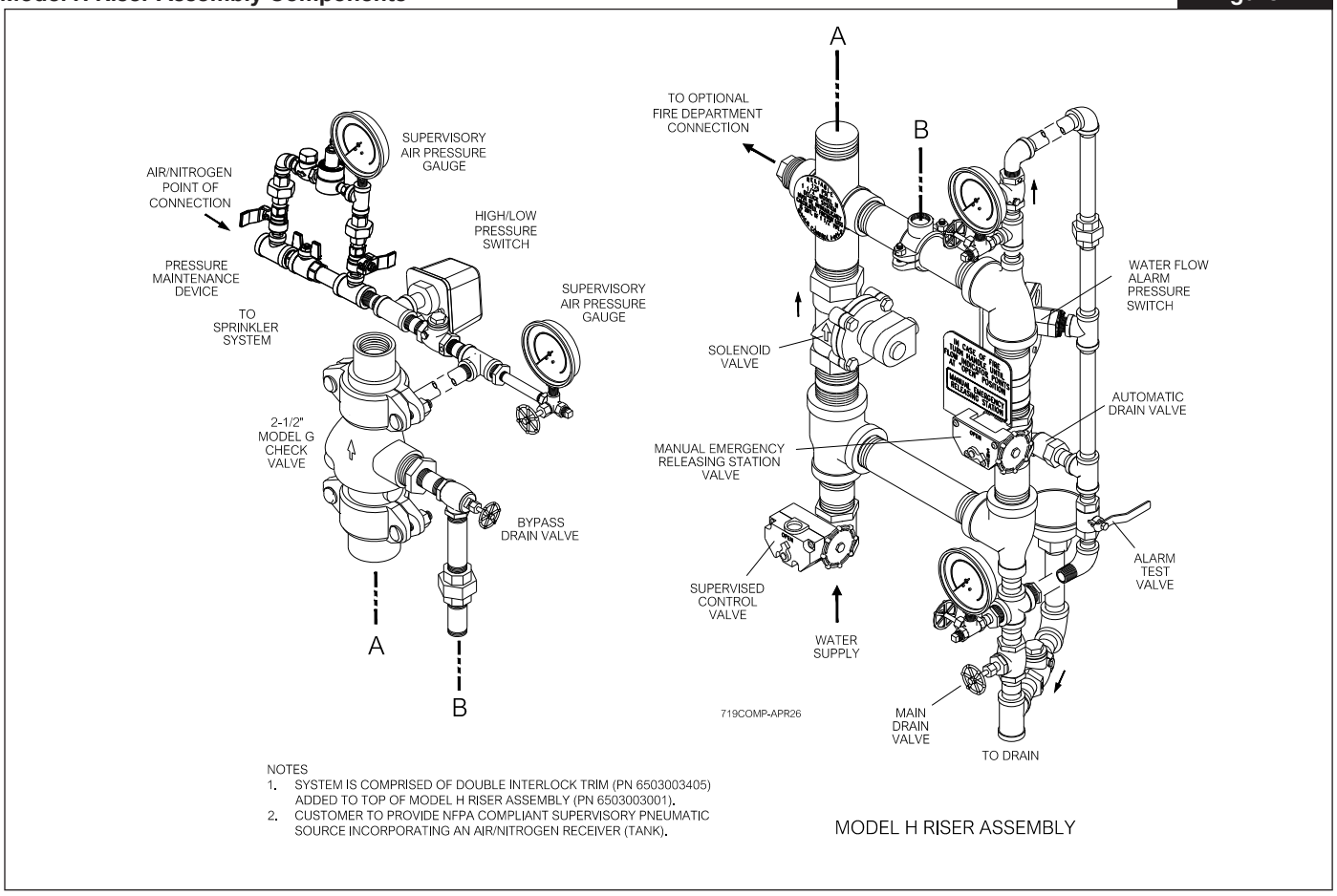
Partial Operational Test (Refer to Figure 2)

1. Notify all affected parties that testing is being performed.
2. Fully close the main water supply control valve.
3. Operate a detector or an emergency manual station on the detection system.
4. Decrease supervisory pneumatic pressure until low pressure switch activates.
5. Verify that a sudden drop in water pressure occurs on the lower pressure gauge confirming that the solenoid valve has opened.
6. Reset system per “Resetting Model H Riser Assembly.”

Water Flow Alarm Test (Refer to Figure 2)

1. Notify all affected parties that testing is being performed.
2. Open the Alarm Test Valve.
3. Confirm that proper water flow alarm signals are reported.
4. Close the Alarm Test Valve, and depress plunger on the mechanical ball drip valve to relieve alarm line pressure.

Model H Riser Assembly Components **Figure 2**



Maintenance

The owner is responsible for maintaining the fire protection system in proper operating condition. Any system maintenance or testing that involves placing a system out of service may eliminate the fire protection that is provided by the fire protection system. Notify any required authorities having jurisdiction and implement appropriate precautions prior to proceeding.

The Reliable Model H Double Interlock Preaction System shall periodically be given a thorough inspection and test. NFPA 25, "Inspection, Testing and Maintenance of Water Based Fire Protection Systems," provides minimum maintenance requirements. Replace any components found to be corroded, damaged, worn or non-operable. Increase the frequency of inspections when the valve is exposed to corrosive conditions or chemicals that could impact materials and/or operation of the assembly.

Troubleshooting

Steady flow of a small volume of water into the system, as evidenced by dripping at the automatic drain valve, is caused by water leaking past either the emergency manual release valve or the solenoid valve.

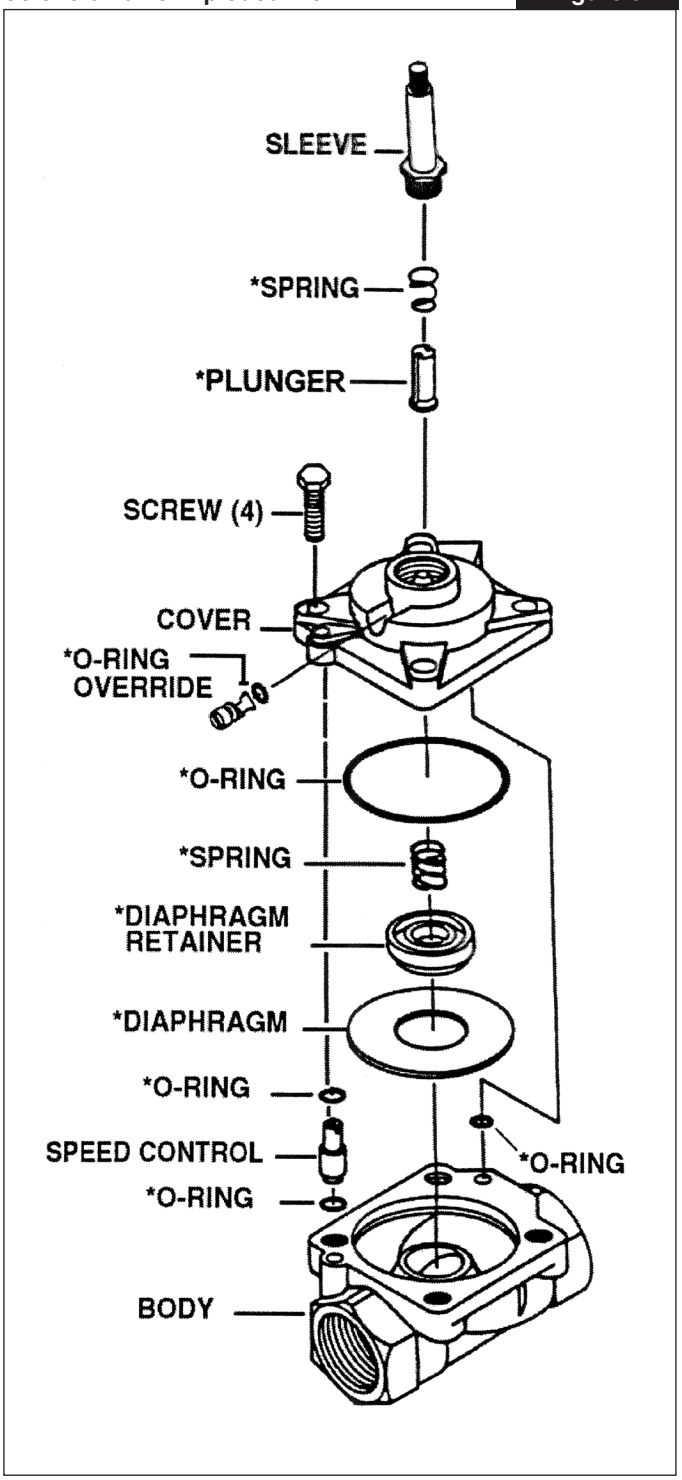
WARNING: Disable and drain the system and turn off electrical power to the solenoid valve before attempting repair.

Emergency Manual Release Valve
The emergency manual release valve is not field serviceable. In the event that leakage cannot be stopped by flushing and/or fully closing the valve, it must by replaced with a new emergency manual release valve, PN 7M99004564..

Solenoid Valve
Note: Replacement parts kit (PN 6999991583) is strongly recommended prior to servicing the solenoid valve. Parts included in each kit are marked with an asterisk (*) in the exploded view, Figure 3. The solenoid valve does not need to be removed from the assembly for servicing.

1. Unscrew the nut on the top of the coil assembly. Remove washer and coil assembly from the valve. [Maximum retightening torque on coil assembly nut is 53 inch-lbs (5.98 N-m)].
2. Use a hex wrench to loosen the sleeve assembly. DO NOT use a wrench or pliers directly on the sleeve tube. Unscrew and remove the sleeve assembly, followed by the return spring and plunger. [Maximum retightening torque is 270 inch-lbs (30.5 N-m)].
3. Unscrew the four (4) cover screws. Gently pry the cover from the body with a screwdriver. Care must be taken not to damage diaphragm, cover, or body.
4. The remaining internal components can now be removed. [Maximum retightening torque on cover screws is 135 inch-lbs (15.25 N-m)].
5. Clean all parts in a mild soap and water solution. Caution: DO NOT expose plastic or elastomeric materials to any type of commercial cleaning fluid.
6. Inspect all components for damage, corrosion, or embedded material. New components or a new valve may be necessary depending on condition of components.
7. Reassemble valve using new components where necessary, paying careful attention to the torque requirements listed herein.

Solenoid Valve Exploded View **Figure 3**



Note: Shown with coil removed.

Listings and Approvals

- Listed by Underwriters Laboratories, Inc. and UL certified for Canada (Special System Water Control Valves - Deluge Type, VLFT).

Guarantee

For Reliable Automatic Sprinkler Co., Inc. guarantee, terms, and conditions, visit www.reliablesprinkler.com.

Ordering Information

Specify: 1-1/2" Model H Riser Assembly PN 6503003001
Double Interlock Trim PN 6503003405

Optional Equipment
1-1/2" (40mm) System Side Service Control Valve:
- PN 7M99004564 (Threaded)
- PN 7M99004568 (Grooved)

Solenoid Valve Service Kit
PN: 6999991583