Alarm Check Valves
Pressure Relief Trim

GENERAL DESCRIPTION

The Pressure Relief Trim shown in Figure 1 is designed for installation in the system pressure gauge connection of Star Alarm Check Valves. The trim automatically relieves the over pressure which could otherwise be created in wet pipe sprinkler systems which are exposed to significant increases in ambient temperature. In particular, a gridded wet pipe system with a relatively small air pocket and no relief valve can be subjected to an increase in pressure of more than 100 psi (6.9 bar), due to an increase in ambient temperature for example from 70 to 120°F (21 to 49°C).

WARNING

The Pressure Relief Valve Trim described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the National Fire Protection Association, in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the integrity of this device.

The owner is responsible for maintaining his fire protection system and devices in proper operating condition. The installing contractor or sprinkler manufacturer should be contacted relative to any questions.

The Pressure Relief Trim is not intended for use in relieving system over pressures caused by either water hammer or system supply pressure in excess of the closing pressure of the Relief Valve.

TECHNICAL DATA

Approvals
Intended to meet the requirements of NFPA 13.

Pressure Settings
175 psi Pressure Relief Trim: opens at maximum 175 psi (12.1 bar), recloses at minimum 165 psi (11.4 bar).

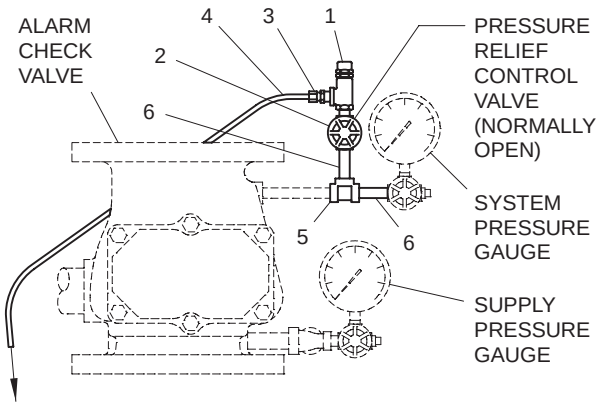
185 psi Pressure Relief Trim: opens at maximum 185 psi (12.8 bar), recloses at minimum 175 psi (12.1 bar).

Relief Valve
Bass body, metal-to-metal seat, stainless steel spring and ball.

DESIGN CRITERIA

The 175 psi (12.1 bar) Pressure Relief Trim is suitable for use with any size alarm valve and in applications where the maximum normal system pressure at the alarm check valve will not exceed 165 psi (11.4 bar).

The 185 psi (12.8 bar) Pressure Relief Trim is intended for use in applications where the maximum normal system pressure at the alarm check valve will not exceed 175 psi (12.1 bar) and the sprinkler piping is located at least 20 feet (6.1 m) above the alarm check valve. In the case of the 185 psi (12.8 bar) Trim, the 20 foot (6.1 m) minimum elevation criteria is necessary to assure that the sprinkler service pressure will not exceed 175 psi (12.1 bar).



NO.	DESCRIPTION	QTY.	PART
1	1/4" Relief Valve	1	
	175 psi		923431025
	185 psi		923431026
2	1/4" Globe Valve	1	460471002
3	1/4" Tube Connector	1	CH
4	1/4" Tube, 36 " long	1	CH
5	1/4" Tee	1	CH
6	1/4" x 2" Nipple	2	CH

CH: Common Hardware

FIGURE 1
PRESSURE RELIEF TRIM

NOTE

The 185 psi (12.8 bar) Pressure Relief Trim is only for use in applications where the maximum normal system pressure of the alarm check valve is 175 psi (12.1 bar) and the sprinkler piping is located at least 20 feet (6.1 m)above the alarm check valve.

Figure 2 illustrates the approximate increase in system pressure for an increase in sprinkler piping temperature from 70 to 120°F (21 to 49°C). The data is given for steel piping and as a function of the percentage volume of air at 70°F (21°C). For initial air volumes of 10% or more, the increase in pressure is predominately caused by the expansion of the heated air; and, for initial volumes of 5% or less, the increase in pressure is predominately caused by the expansion of the heated water.

INSTALLATION

The Pressure Relief Trim must be installed in accordance with the following instructions:

NOTE

If the Pressure Relief Trim is to be installed in a fire protection system that is already in service, the system must be shut down and drained. Wait until the sound of water has stopped and/or the supply and system pressure gauges read zero pressure.

Before closing a fire protection system main control valve for maintenance work on the fir protection system which it controls, permission to shut down the affected fire protection system must be obtained from the proper authorities and all personnel who may be affected by this action must be notified.

1. Inspect the inside of each trim component and remove any debris.
2. Assemble the components as shown in Figure 1. Apply pipe thread sealant to the male threads only.
3. If the alarm check valve does not have a drain funnel, suitable provision must be made to direct the drainage water such that it will not cause accidental damage to property or danger to persons.
4. Close the Pressure Relief Control Valve while the system is being hydrostatically tested.
5. Open the Pressure Relief Control Valve after the alarm check valve is set and the fire protection system is ready for service.

MAINTENANCE AND SERVICE

The Pressure Relief Trim does not require any regularly scheduled maintenance. It is recommended, however, that their proper operation and condition be periodically verified. Any impairment must be immediately corrected.

NOTES

Since the Relief Valve outlet is alternately wet and dry during normal service, it is susceptible to the building of mineral deposits which can affect the proper operation of the valve. Consequently, it is particularly important to periodically check for proper operation in the case of water supplies which have a tendency to deposit calcium carbonate

It is recommended that a spare relief valve be kept on hand.

It is recommended that the following inspection procedure be performed at least quarterly by a qualified Inspection Service.

1. Verify that the Pressure Relief Control Valve is open.
2. Verify that the system pressure gauge does no read over 5 psi (0.4 bar) more than the opening pressure setting of the relief Valve.

If the system pressure gauge reads in excess of the required value, proceed as follows:

A. Close the Pressure Relief Control Valve.

B. Remove the Relief Valve from the trim and remove the Tubing Connector.

C. Inspect for and remove any debris from the inlet and outlet of the Relief Valve.

D. Replace the Relief Valve if the cause of the clogging cannot be removed.

NOTE

No attempt is to be made to disassemble the Relief Valve for repair or cleaning.

E. Replace the drain tubing connection.

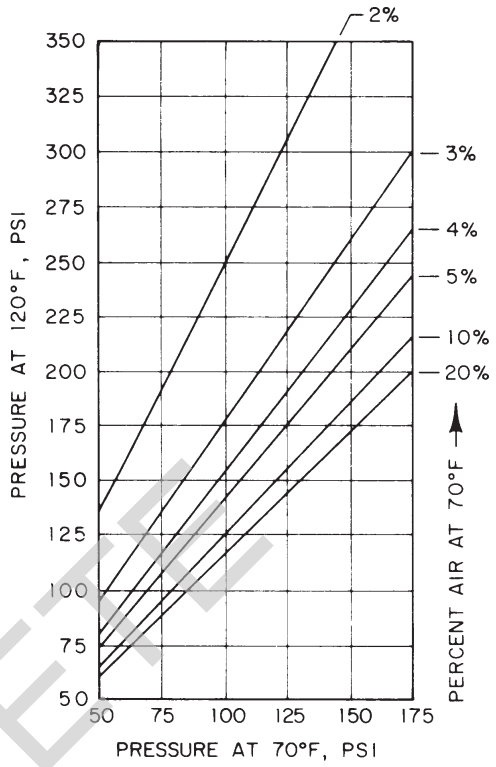


FIGURE 2
APPROXIMATE INCREASE IN STEEL SPRINKLER PIPING PRESSURE AS A FUNCTION OF INITIAL AIR VOLUME

ORDERING PROCEDURE

Please Specify:

1 175 psi (12.1 bar) Pressure Relief Trim (#4968-01)

2. 185 psi (12.8 bar) Pressure Relief Trim (#4968-02)

AVAILABILITY AND SERVICE

Star Sprinkler Inc. products and devices are available worldwide through a network of independent distributors. Please contact Star Sprinkler Inc. for information and the name and address of the Star distributor in your area.

LIMITED WARRANTY

Seller warrants for a period of one year from date of shipment (warranty period) that the products furnished hereunder will be free of defects in material and workmanship.

For further details on Warranty, contact Star Sprinkler Inc.