

Model RC-1 Retard Chamber For Variable Pressure Wet Pipe Sprinkler Systems 300 psi (20,7 bar)

General Description

The Tyco® Model RC-1 Retard Chamber is required in installations that will be subject to pressure variations, as are generally associated with public water supplies, in order to help prevent false alarms. The RC-1 is specifically intended for use as a separately ordered item for the Model AV-1-300 Alarm Check Valve (TFP910). It can, however, also be used as a separately ordered item for changing out older style Retard Chambers used with the Central Model F/G, Gem Model A, or Star Model E/F Alarm Check Valves.

The Model RC-1 Retarding Chamber is a re-designation for the Gem Model F211 for use with Gem Model F20/F200/F2001 Alarm Check Valves, as well as the Star Model S310 for use with Star Model S30/S300/S3001 Alarm Check Valves.

NOTICE

The Model RC-1 Retard Chamber 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 their fire protection system and devices in proper operating condition. The installing contractor or sprinkler manufacturer should be contacted relative to any questions.

Technical Data

Approvals

UL and ULC Listed, as well as FM Approved for use with the Model AV-1-300 Alarm Check Valves.

UL and ULC Listed, as well as FM, LPCB, and VdS Approved for use with the following Alarm Check Valves:

Model AV-1-175
Gem Model F20/F200/F2001
Gem Model A
Star Model S30/S300/S3001

Working Water Pressure 300 psi (20,7 bar)

Construction

The Model RC-1 Retard Chamber shown in Figure 1 is cast iron, and a 3/4" x 1/2" x 3/4" Tee is provided at the outlet (top) for connection of a pressure alarm switch and/or water motor alarm. The Restriction Assembly shown in Figure 2 is provided with the AV-1-300 trim or ordered separately for retrofitting other valves. This assembly is comprised of brass restrictions assembled to a cast iron or malleable iron threaded tee fitting. The screen is stainless steel.

Operation

When water flows steadily into the sprinkler system due to sprinkler operation, the Waterway Clapper in the Alarm Check Valve opens as shown in Figure 3. Water is then permitted to flow into the centrally located groove in the Seat Ring and out through the Alarm Port towards the Restriction Assembly (Figure 2).



When the flow through the Inlet Restriction of the Restriction Assembly exceeds the flow out through the Outlet Restriction, the Retard Chamber begins to fill. Subsequently, the Water Motor Alarm and/or the Pressure Alarm Switch activate. The alarms continue to operate as long as the Waterway Clapper remains open. When the Clapper closes as a result of discontinued water flow, water in the alarm lines automatically drains out through the 1/8 inch (3,2 mm) drain orifice in the Restriction Assembly (Figure 2).

In the case of variable pressure systems, a transient surge in supply pressure that is sufficient only to open the Clapper momentarily will not cause a false alarm. The volume of the Retard Chamber is sufficiently large enough that it will not fill to operate the connected alarm devices. Any water in the alarm line is then automatically drained, further reducing the possibility of a false alarm due to a successive transient surge in supply pressure.

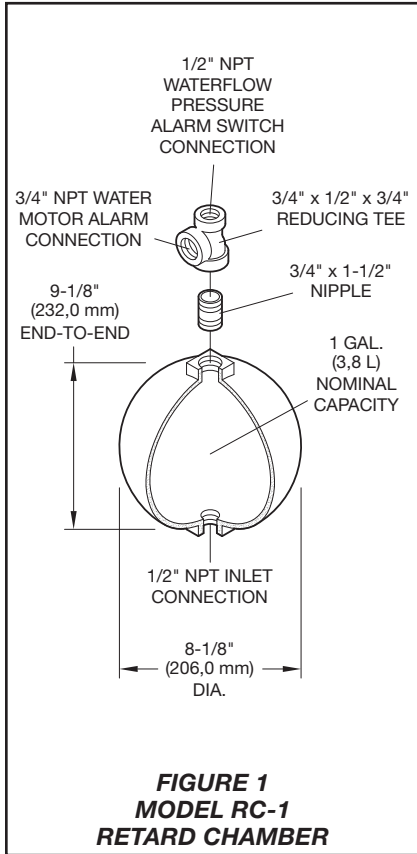


FIGURE 1
MODEL RC-1
RETARD CHAMBER

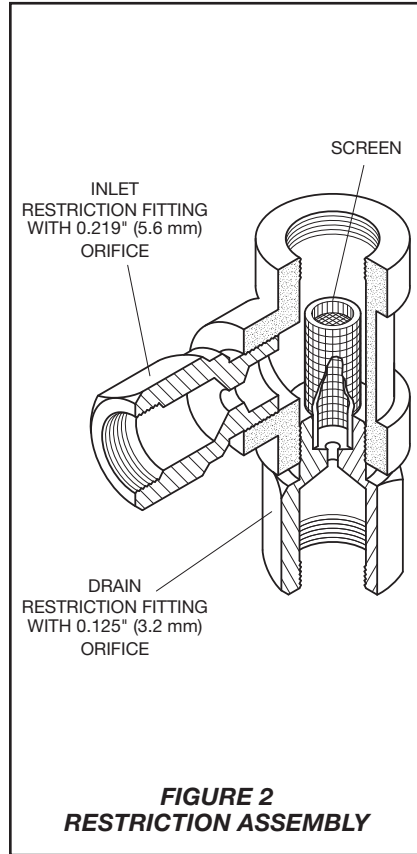


FIGURE 2
RESTRICTION ASSEMBLY

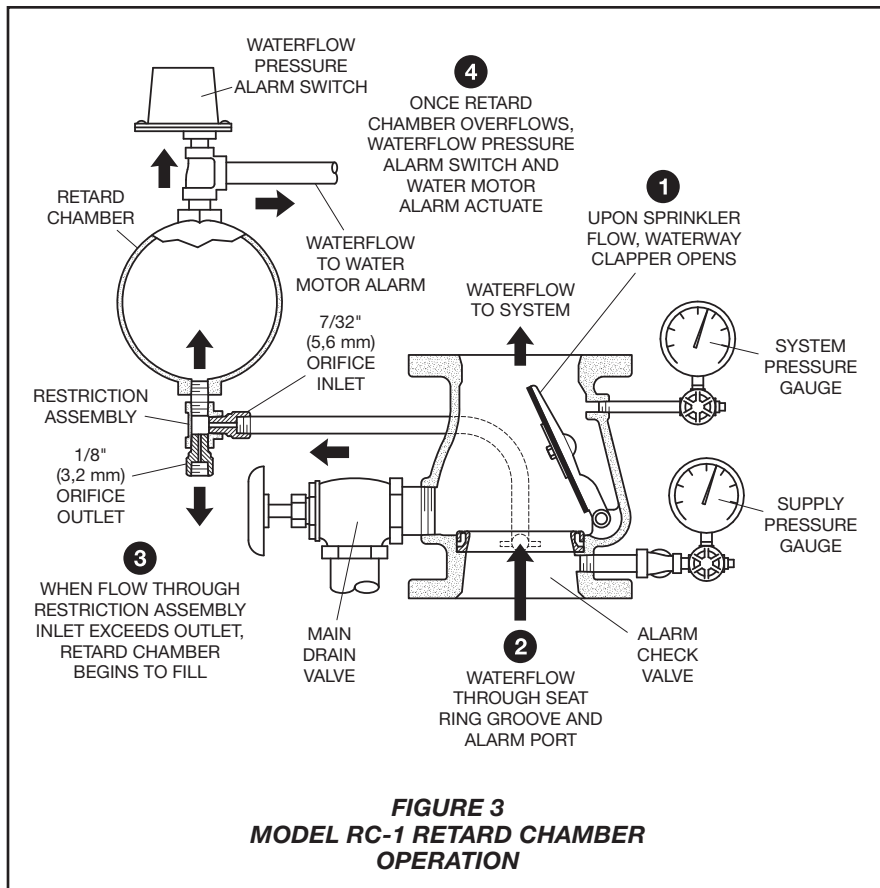


FIGURE 3
MODEL RC-1 RETARD CHAMBER
OPERATION

Installation

The Tyco® Model RC-1 Retard Chamber must be installed in accordance with the specific instructions provided with the Tyco® Model AV-1-300 Alarm Check Valve (TFP910). The standard trim for these Alarm Check Valves includes all necessary components including the Restriction Assembly shown in Figure 2.

- In the case of retrofitting Central Model F/G Alarm Check Valves, refer to Figure 4.
- In the case of retrofitting Gem Model A Alarm Check Valves, refer to Figure 5.
- In the case of retrofitting Star Model E/F Alarm Check Valves, refer to Figures 6 and 7.

Apply pipe thread sealant sparingly to male threads only.

Care and Maintenance

Responsibility lies with the owner for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of the National Fire Protection Association (for example, NFPA 25), in addition to the standards of any authority having jurisdiction. Contact the installing contractor or product manufacturer regarding any questions.

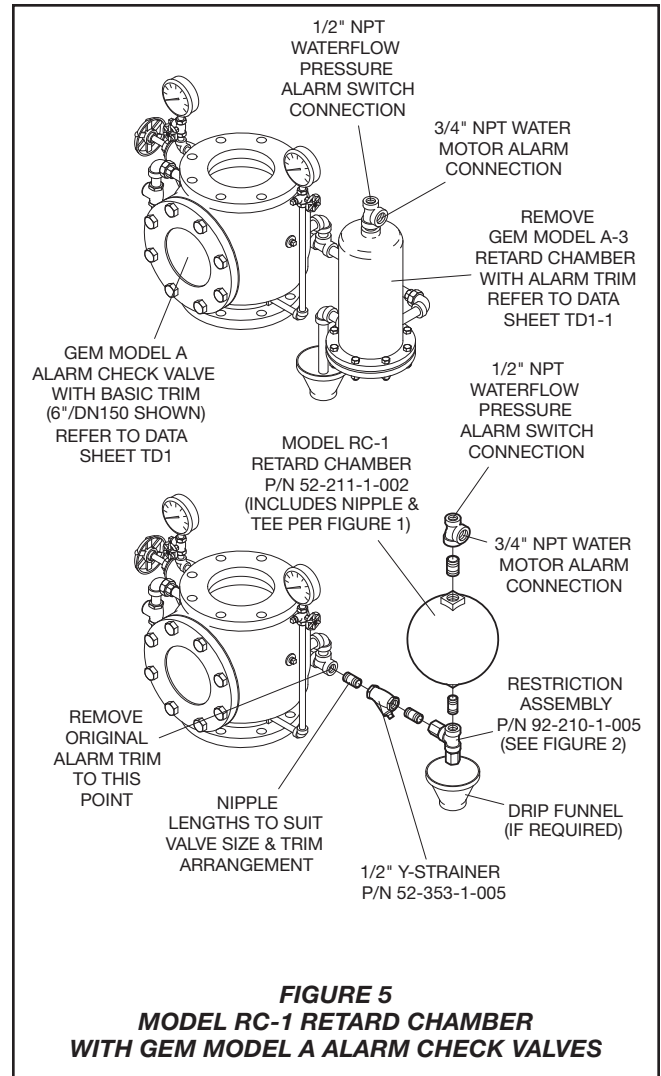
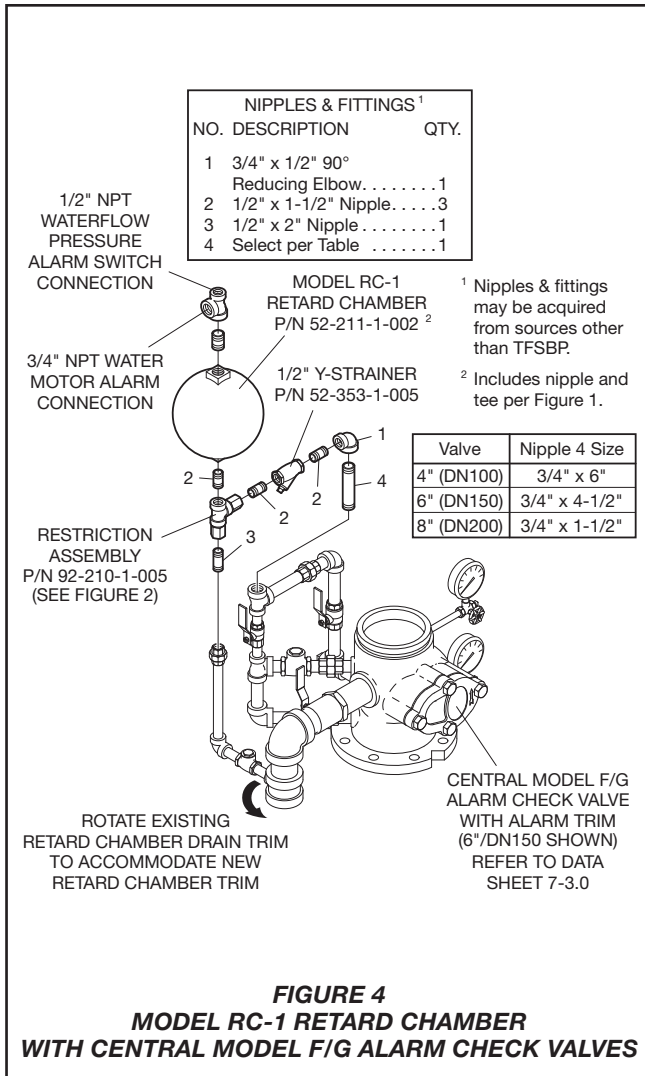
Automatic sprinkler systems should be inspected, tested, and maintained by a qualified Inspection Service in accordance with local requirements and/or national codes.

Specific consideration must be given to cleaning the Screen within the Restriction Assembly, as well as the Y-Strainer. More frequent cleaning than that required by NFPA 25 may be necessary as determined after the first inspection and is a function of the water quality with respect to water borne debris.

NOTICE

Before closing a fire protection system control valve for inspection or maintenance work on the fire protection system that it controls, obtain permission to shut down the affected fire protection system from the proper authorities, and notify all personnel who may be affected by this action.

After placing a fire protection system in service, notify the proper authorities and advise those responsible for monitoring proprietary and/or central station alarms.



Limited Warranty

Products manufactured by Tyco Fire Suppression & Building Products (TFSBP) are warranted solely to the original Buyer for ten (10) years against defects in material and workmanship when paid for and properly installed and maintained under normal use and service. This warranty will expire ten (10) years from date of shipment by TFSBP. No warranty is given for products or components manufactured by companies not affiliated by ownership with TFSBP or for products and components which have been subject to misuse, improper installation, corrosion, or which have not been installed, maintained, modified or repaired in accordance with applicable Standards of the National Fire Protection Association, and/or the standards of any other Authorities Having Jurisdiction. Materials found by TFSBP to be defective shall be either

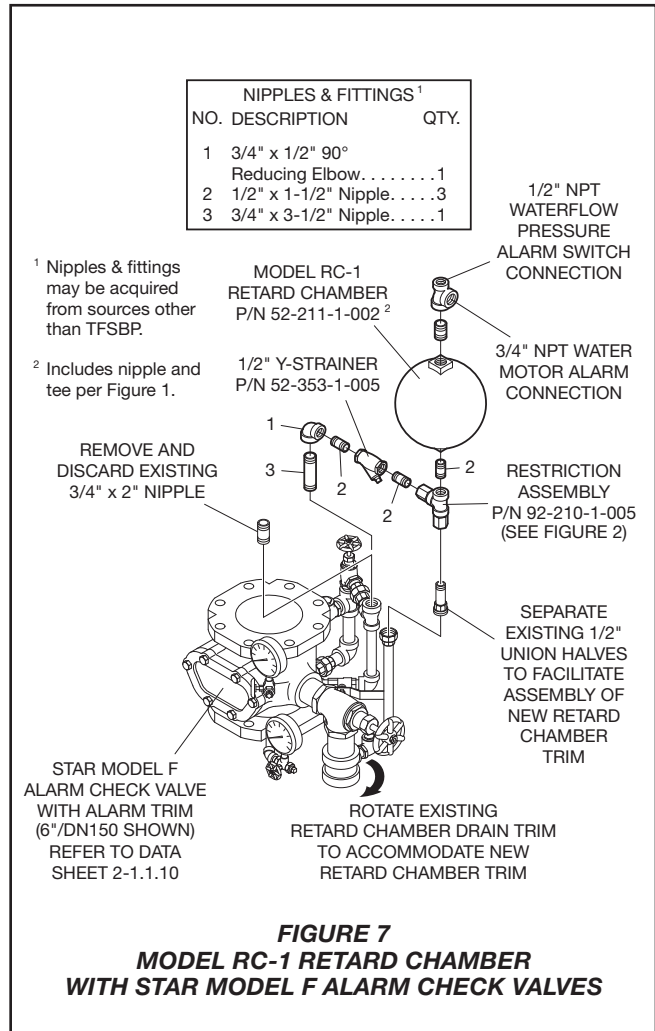
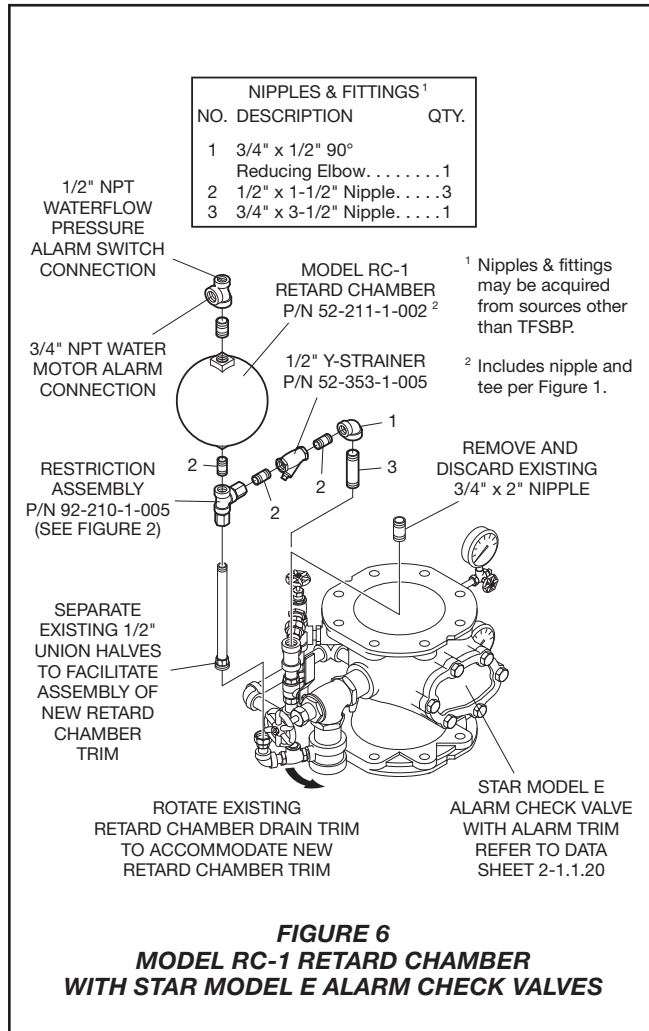
repaired or replaced, at TFSBP's sole option. TFSBP neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of products or parts of products. TFSBP shall not be responsible for sprinkler system design errors or inaccurate or incomplete information supplied by Buyer or Buyer's representatives.

In no event shall TFSBP be liable, in contract, tort, strict liability or under any other legal theory, for incidental, indirect, special or consequential damages, including but not limited to labor charges, regardless of whether TFSBP was informed about the possibility of such damages, and in no event shall TFSBP's liability exceed an amount equal to the sales price.

The foregoing warranty is made in lieu of any and all other warranties, express or implied, including warranties of merchantability and fitness for a particular purpose.

This limited warranty sets forth the exclusive remedy for claims based on failure of or defect in products, materials or components, whether the claim is made in contract, tort, strict liability or any other legal theory.

This warranty will apply to the full extent permitted by law. The invalidity, in whole or part, of any portion of this warranty will not affect the remainder.



Ordering Information

Orders for the Tyco® Model RC-1 and additional components, as applicable, must include the description and Part Number (P/N).

RC-1

Specify: Model RC-1 Retard Chamber w/galvanized steel fittings, P/N 52-211-1-002.

Separately Ordered Parts for Retrofitting Other Valves

When retrofitting according to Figures 4, 5, 6, or 7, the Restriction Assembly, Y-Strainer, and associated pipe nipples and fittings must be ordered separately to complete installation. Pipe nipples and fittings can be acquired from sources other than TFSBP.

Specify: 1/2 inch Y-Strainer, P/N 52-353-1-005.

Specify: Restriction Assembly, P/N 92-210-1-005.