

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

### IMPORTANT

Refer to Technical Data Sheet TFP2300 for warnings pertaining to regulatory and health information.

Scan the QR code or enter the URL in a web browser to access the most up-to-date electronic version of this document. Data rates may apply.



[docs.jci.com/tycofire/tfp920](http://docs.jci.com/tycofire/tfp920)

### 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, (NFPA), 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. Contact the installing contractor or product manufacturer with any questions.

### Technical Data

#### Approvals

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

UL and ULC Listed  
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 in. x 1/2 in. x 3/4 in. 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.

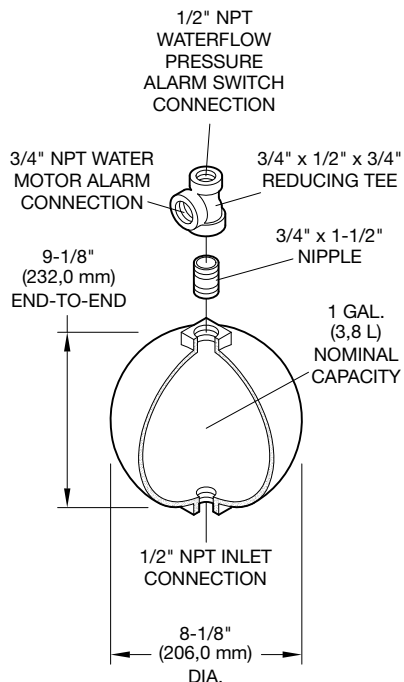


### Operation

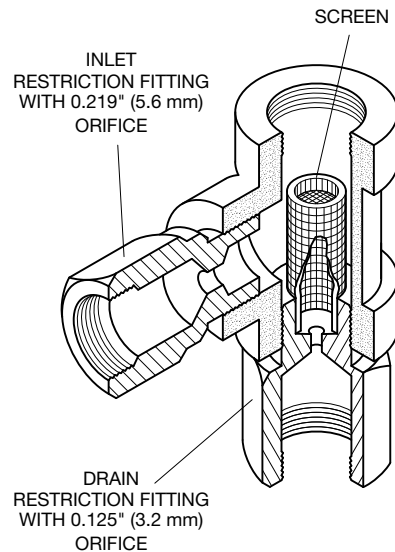
When water flows steadily into the sprinkler system due to sprinkler operation, the Waterway Clapper in the Alarm Check Valve opens as shown in Figure 3. Water is then permitted to flow into the centrally located groove in the Seat Ring and out through the Alarm Port towards the Restriction Assembly.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

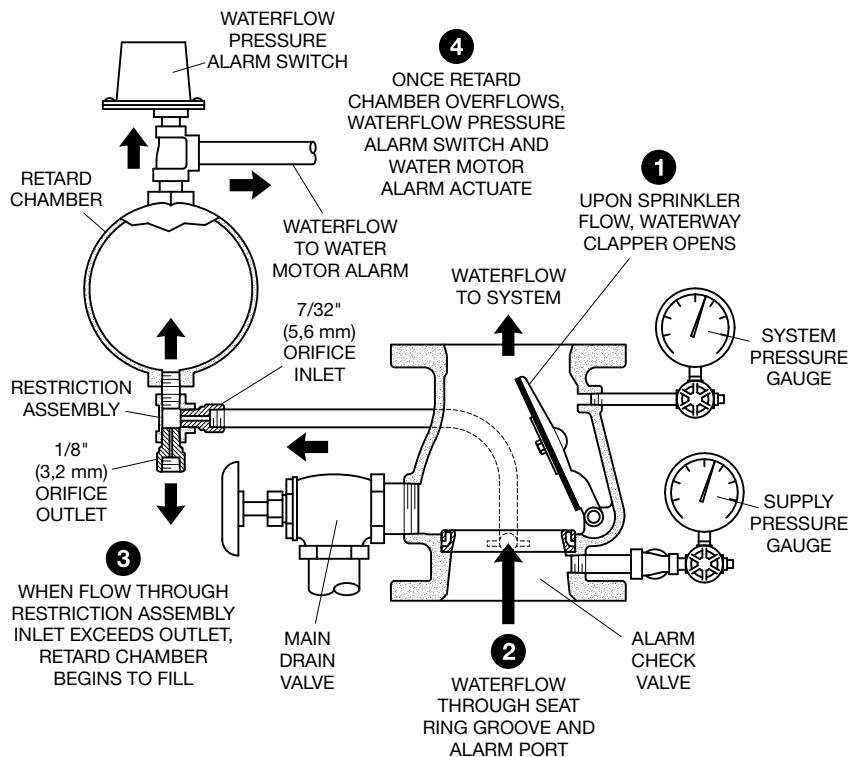
In the case of variable pressure systems, a transient surge in supply pressure that is sufficient only to open the Clapper momentarily will not cause a false alarm. The volume of the Retard Chamber is sufficiently large enough that it will not fill to operate the connected alarm devices. Any water in 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 the Restriction Assembly shown in Figure 2.

- In the case of retrofitting Central Model F/G Alarm Check Valves, see Figure 4.
- In the case of retrofitting Gem Model A Alarm Check Valves, see Figure 5.
- In the case of retrofitting Star Model E/F Alarm Check Valves, see Figures 6 and 7.
- Apply pipe thread sealant sparingly to male threads only.

## Care and Maintenance

The TYCO Model RC-1 Retard Chamber must be maintained and serviced in accordance with this section.

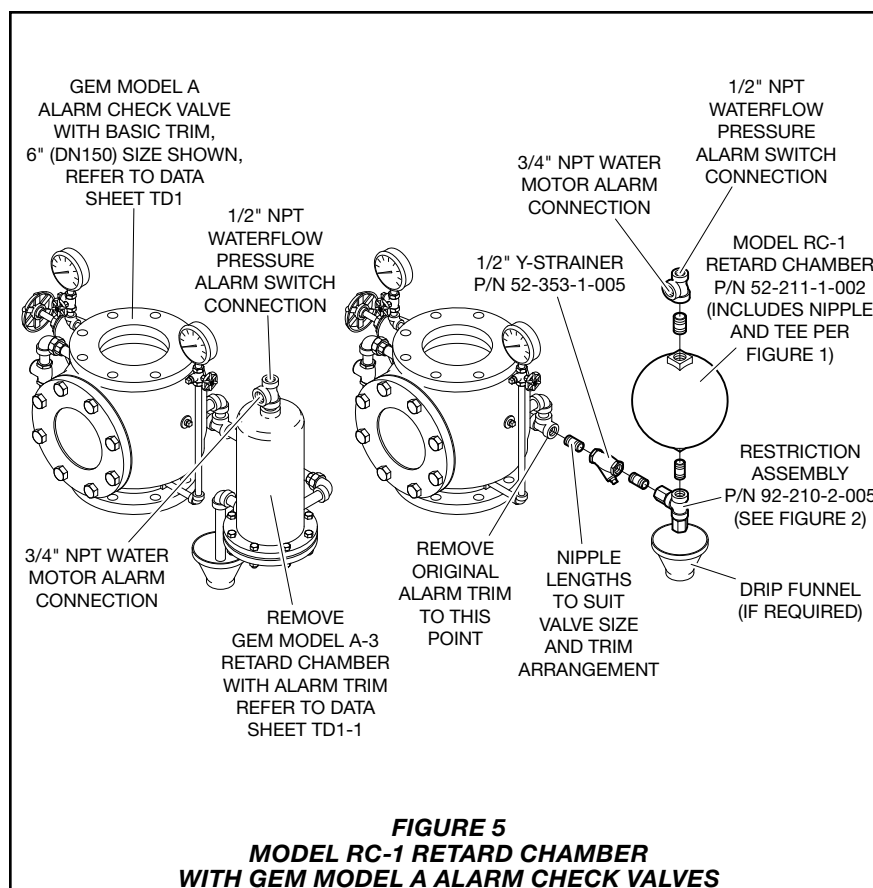
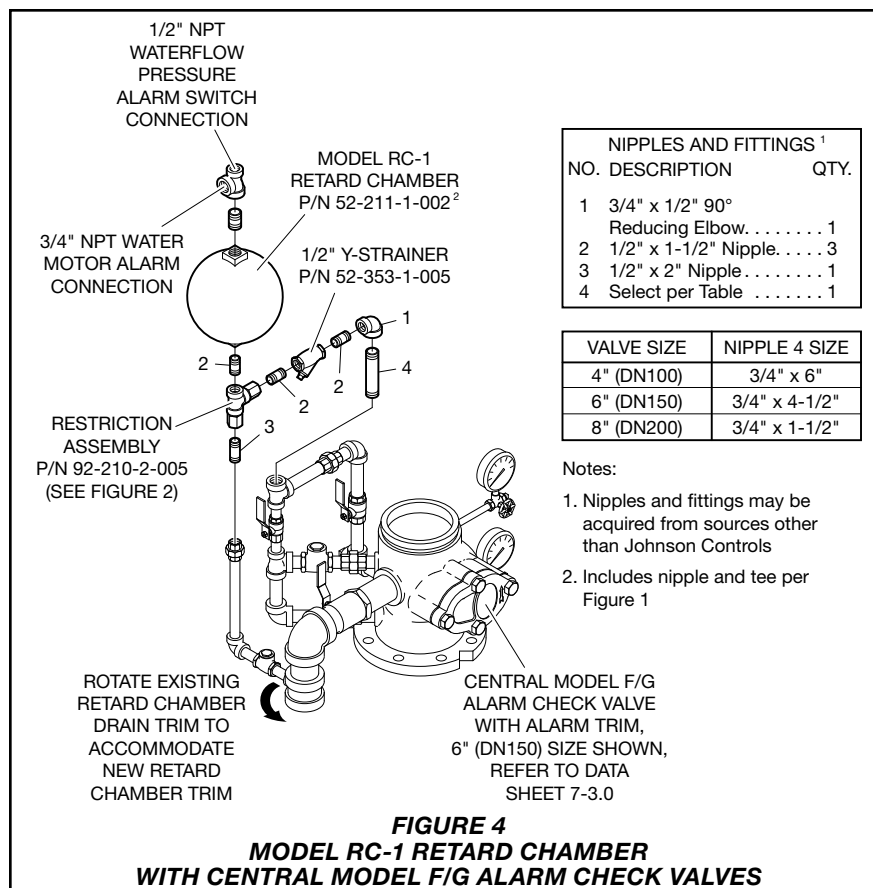
Before closing a fire protection system control valve for inspection or maintenance work on the fire protection system that it controls, obtain permission to shut down the affected fire protection system from the proper authorities, and notify all personnel who may be affected by this action.

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

The owner is responsible 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 with any questions.

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.

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

For warranty terms and conditions, visit  
[www.tyco-fire.com](http://www.tyco-fire.com).

## Ordering Procedure

Contact your local distributor for availability. When placing an order, indicate the full product name and Part Number (P/N).

### RC-1

Specify: Model RC-1 Retard Chamber with 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 Johnson Controls.

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

Specify: Restriction Assembly, P/N 92-210-2-005

