



The RD13 Riser is constructed from Listed CPVC products suitable for fire sprinkler services subject to the limitations and installation requirements of Flameguard® by Spears. The RD13 Riser incorporates a UL Listed VSR-SFG flow switch, gauge, drain valve, and optional UL Listed check valve. The VSR-SFG flow switch is equipped with union connection to facilitate the installation and removal of the switch in confined spaces.

#### INSTALLATION

1. Following CPVC manufacturer's instructions for preparation and gluing of CPVC piping systems, glue the main riser to the main supply line for the sprinkler heads.
2. Using appropriate fittings, connect the main water supply to the bottom of the check valve (or riser on units without check valves) and the drain connection to an adequate drain line. The riser must be mounted in a vertical position, (arrow on check valve must point in the direction of the intended water flow). See Fig 4.
3. Attach gauge to riser. Apply Teflon® tape to male fitting of gauge only. See Fig 4.
4. Check to make sure the proper paddle is installed on the switch. (Paddle size must match the riser pipe size and Tee manufacture.)
5. Install the flow switch to the RD13 Riser. Verify that the o-ring is properly positioned in its groove. Hand tighten the nut to the union after orienting the flow switch in the appropriate direction to detect waterflow. The paddle must not rub the inside of the Tee or bind in any way. The stem should move freely when operated by hand. See Fig. 1.

#### INSPECTION AND TESTING

If an inspector's test valve is not provided, check the operation of the unit by opening the test and drain connection.

The frequency of the inspection and testing and its associated protective monitoring system should be in accordance with the applicable NFPA Codes and Standards and/or authority having jurisdiction (manufacturer recommends quarterly or more frequently).

### CAUTION

Do not over-tighten the union nut, hand tighten only.

#### VSR-SFG Specifications:

##### UL, CUL, and CSFM Listed

**Service Pressure:** 175 PSI (12,07 BAR) - UL

**Flow Sensitivity Range for Signal:** 4-10 GPM (15-38 LPM) - UL

**Maximum Surge:** 18 FPS (5.5 MPS)

**Contact Ratings:** Two sets of SPDT (Form C)  
10.0 Amps at 125/250V AC  
2.0 Amps at 30V DC Resistive  
10 m Amps min. at 24V DC

**Conduit Entrances:** Two knockouts provided for 1/2" conduit.

##### Environmental Specifications:

• Temperature range: 40°F - 120°F, (4.5°C - 49°C) - UL

#### Service Use:

Automatic Sprinkler NFPA-13  
One or two family dwelling NFPA-13D  
Residential occupancy up to four stories NFPA-13R  
National Fire Alarm Code NFPA-72

**Optional:** Cover Tamper Switch Kit  
Stock number 0090148

**Gauge and flow switch shipped loose in box.**

#### Models:

- 1" RD13RISER with or without check valve
- 1 1/4" RD13RISER with or without check valve
- 1 1/2" RD13RISER with or without check valve
- 2" RD13RISER with or without check valve

### WARNING

- Installation must be performed by qualified personnel and in accordance with all national and local codes and ordinances.
- Shock hazard. Disconnect power source before servicing. Serious injury or death could result.
- Risk of explosion. Not for use in hazardous locations. Serious injury or death could result.

#### Testing

The frequency of inspection and testing for the Model VSR-SFG and its associated protective monitoring system, should be in accordance with applicable NFPA Codes and Standards and/or the authority having jurisdiction (manufacturer recommends quarterly or more frequently.) If provided, the inspector's test valve (usually located at the end of the most remote branch line) should always be used for test purposes. If there are no provisions for testing the operation of the flow detection device on the system, application of the VSR-SFG is not recommended or advisable. A minimum flow of 10 GPM (38 LPM) is required to activate this device.

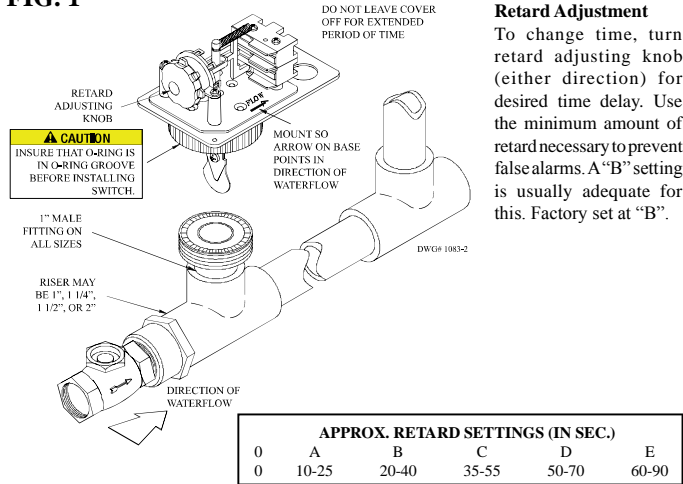
#### Maintenance

Inspect detectors monthly for leaks. If leaks are found, replace the detector. The VSR-SFG waterflow switch should provide years of trouble-free service. If any part of the detector does not perform properly, replace the entire detector.

#### Removal

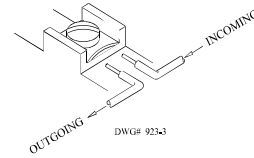
- To prevent accidental water damage, all control valves should be shut tight and the system completely drained before waterflow detectors are removed or replaced.
- Turn off electrical power to the detector, then disconnect wiring.
- Loosen nut on union fitting.
- Lift detector clear of pipe.

**FIG. 1**



**FIG. 2**

**SWITCH TERMINAL CONNECTIONS  
CLAMPING PLATE**



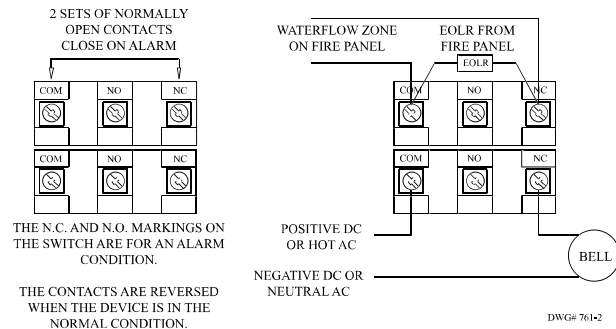
**CAUTION**

Waterflow switches that are monitoring wet pipe sprinkler systems should not be used as the sole initiating device to discharge AFFF, deluge, or chemical suppression systems. Waterflow switches used for this application may result in unintended discharges caused by surges, trapped air, or short retard times.

**WARNING**

An uninsulated section of a single conductor should not be looped around the terminal and serve as two separate connections. The wire must be severed, thereby providing supervision of the connection in the event that the wire become dislodged from under the terminal. Failure to sever the wire may render the device inoperable risking severe property damage and loss of life.

**FIG. 3**

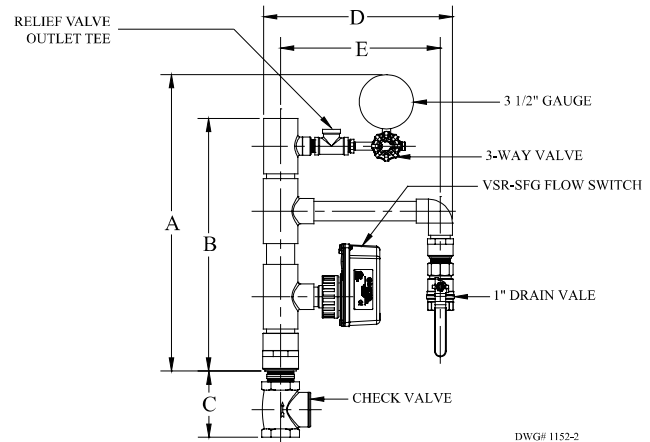


**NOTES:**

1. The model VSR-SFG has two switches, one can be used to operate a central station, proprietary or remote signaling unit, while the other is used to operate a local audible or visual annunciator.
2. For supervised circuits see "Switch Terminal Connections" drawing and caution note (Fig. 2).

**FIG. 4**

**DIMENSIONS**



| RD13 RISERS |             |              |                |             |                  |              |             |                     |                     |                     |                     |                     |
|-------------|-------------|--------------|----------------|-------------|------------------|--------------|-------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Riser Size  | Check Valve | 3 1/2" Gauge | 1" Drain Valve | 3-Way Valve | Relief Valve Tee | Model Number | Part Number | Dimension "A" (In.) | Dimension "B" (In.) | Dimension "C" (In.) | Dimension "D" (In.) | Dimension "E" (In.) |
| 1"          |             | X            | X              | X           | X                | RD13-100-0   | 1119062     | 18 5/8              | 15 3/8              | -                   | 12 1/4              | 10 1/2              |
|             | X           | X            | X              | X           | X                | RD13-100-1   | 1119067     |                     |                     | 3 1/2               |                     |                     |
| 1 1/4"      |             | X            | X              | X           | X                | RD13-125-0   | 1119072     | 19 3/4              | 16 5/8              | -                   | 12 5/8              | 10 3/4              |
|             | X           | X            | X              | X           | X                | RD13-125-1   | 1119077     |                     |                     | 4                   |                     |                     |
| 1 1/2"      |             | X            | X              | X           | X                | RD13-150-0   | 1119082     | 20 1/8              | 17 1/8              | -                   | 12 7/8              | 10 7/8              |
|             | X           | X            | X              | X           | X                | RD13-150-1   | 1119087     |                     |                     | 4 1/2               |                     |                     |
| 2"          |             | X            | X              | X           | X                | RD13-200-0   | 1119092     | 21 1/4              | 18 1/2              | -                   | 13 1/2              | 11 1/8              |
|             | X           | X            | X              | X           | X                | RD13-200-1   | 1119097     |                     |                     | 5 1/8               |                     |                     |