

Riser Manifold

Figure 513, 513D/513R

Commercial

- NFPA 13 Systems

Floor Control

- High Rises

Residential

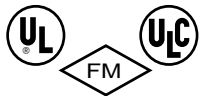
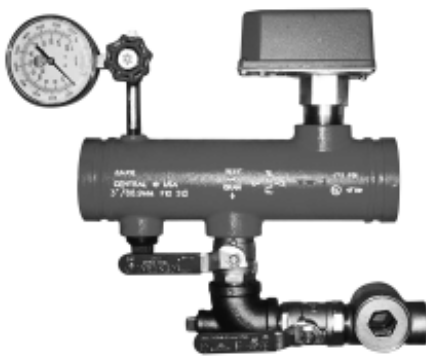
- NFPA 13D/13R Systems



Grooved Piping Products

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General Description



See Fire Protection Submittal Sheet for pressure rating and Listing and Approval information

The Figure 513, 513D/513R Riser Manifold provides all of the accessory equipment for a riser in a single assembly. The availability of the Riser Manifold in different configurations allows cost effective riser installation in commercial (NFPA 13) systems, high rises requiring floor control assemblies, and residential systems (NFPA 13D/13R).

The threaded ends of the 1" and 1½" bodies, the threaded by grooved ends of the 2" bodies, and the grooved ends of the 1½" - 6" bodies allow for an easy transition to either check or control valves. The exclusive and dedicated flow switch designed for the manifolds has been tested and Listed for use in this specific configuration by Underwriters Laboratories, Underwriters Laboratories of Canada and Factory Mutual.

Installation is simplified with one convenient take-out for the 1" and 1½" threaded and 1½" grooved versions, as well as one take-out for the 2" threaded by grooved and the grooved sizes 2" - 6".

The Riser Manifold is approved for installation in either the horizontal or the vertical position. The optional relief valve assembly is available for locations which require relief valves on gridded systems.

Riser Manifolds for use in Canada only are provided with a Water Flow Switch that has a Tamper Switch mounted inside for cover removal detection.



Technical Data

Figure: 513 (commercial)
 513D (residential)
 513D/513R (residential)

Styles: Threaded or Grooved

Sizes: 1", 1½", 2", 2½", 3", 4" and 6"

Approvals: UL, FM, and ULC

Maximum

Working Pressure: 175 psi

Standard Finish: Painted

Optional Accessories:

Pressure Relief Valve Kit (see page 7)

Figure 1
1" Threaded Residential Riser Manifold Figure 513D

Approximate Trimmed Weight - 7.5 lbs. (3.4Kg.)

The width of the Riser Manifold is approximately 3½".

Note: Items 7 & 8 are used on Manifolds for use in Canada Only

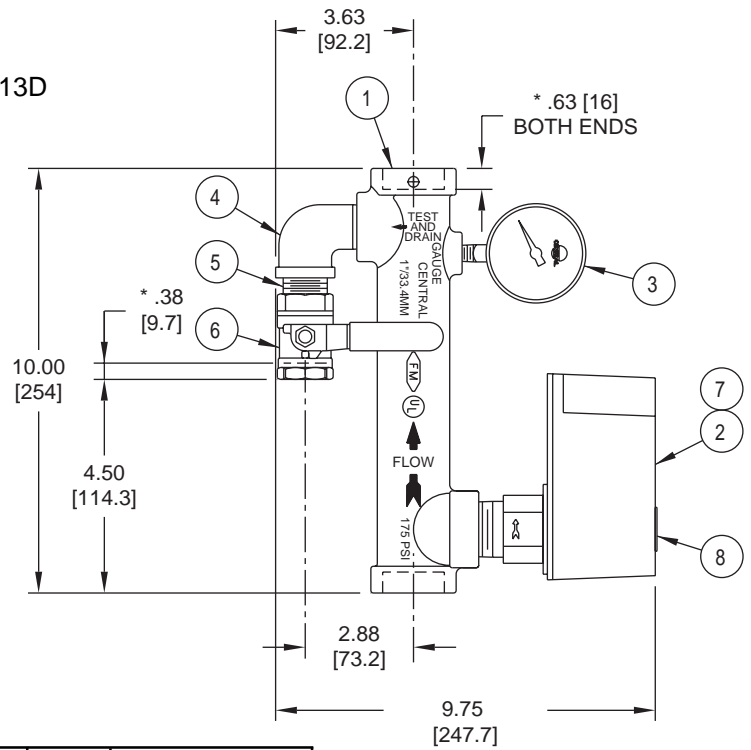


Figure 1 - Bill of Material
1" Threaded Residential Riser Manifold

| Detail No. | Description | No. Req'd | Part Number |
|------------|---|-----------|-------------|
| 1 | Manifold Body F x F | 1 | 976-363-01 |
| 2 | Potter Waterflow Switch # VSR-SF w/Paddle | 1 | H-416-01 |
| 3 | ¼" Water Pressure Gauge | 1 | 971-118-02 |
| 4 | ¾" 90° Street Elbow | 1 | H-463-075 |
| 5 | ¾" Close Nipple | 1 | H-474-12 |
| 6 | ¾" Ball Valve | 1 | 971-116-02 |
| 7 | Tamper Switch (ULC only) | 1 | H-419-01 |
| 8 | Label (ULC only) | 1 | 976-343-01 |

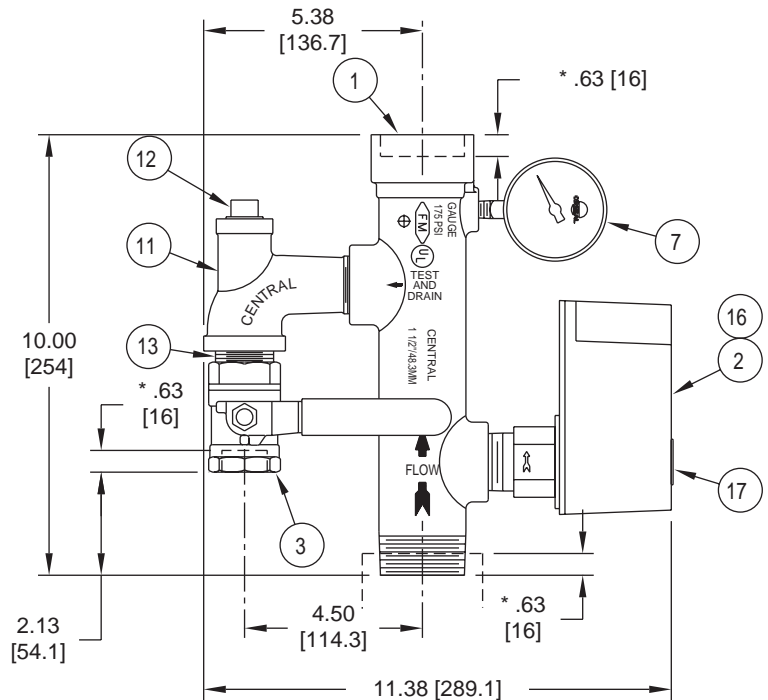
* Approximate thread engagement.
Note: Values shown in parenthesis are in millimeters

Figure 2
1½" Threaded Residential Riser Manifold
Figure 513D/513R
Reference Figures 2 and 3
Bill of Materials (page 3)

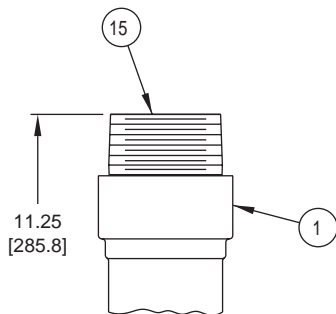
Approximate Trimmed Weight - 8.7 lbs. (3.9Kg.)

The width of the Riser Manifold is approximately 3½".

Note: Items 16 & 17 are used on Manifolds for use in Canada Only.



* Approximate thread engagement.
Note: Values shown in parenthesis are in millimeters



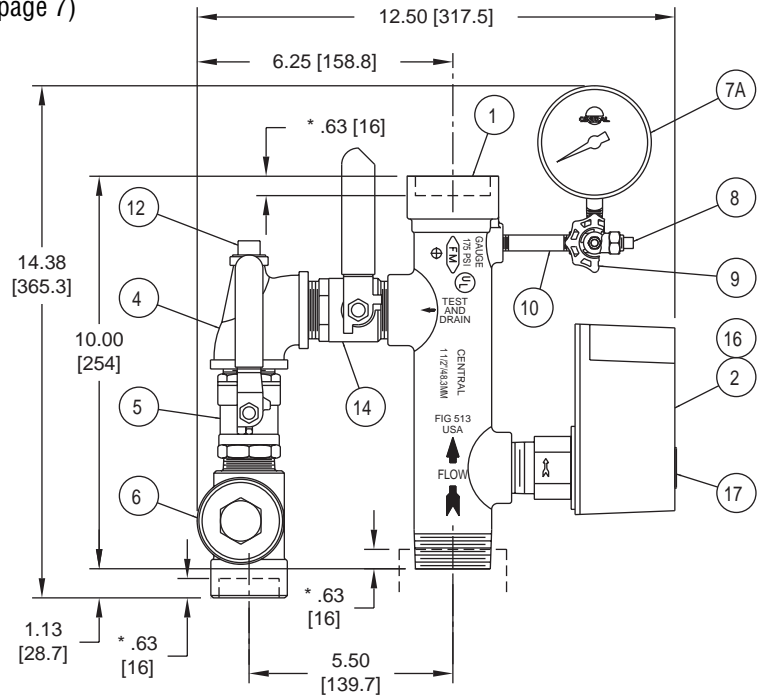
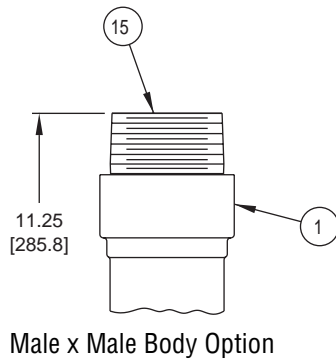
Male x Male Body Option

Figure 3
 1½" Threaded Commercial Riser Manifold Figure 513
 For optional pressure relief valve, see Figure 10 (page 7)

Approximate Trimmed Weight - 11.2 lbs. (5.1Kg.)

The width of the Riser Manifold is approximately 3½".

Note: Items 16 & 17 are used on Manifolds for use in Canada Only.



* Approximate thread engagement.
 Note: Values shown in parenthesis are in millimeters

Figures 2 and 3 - Bill of Material
 1½" Threaded Residential and Commercial Riser Manifold

| Detail No. | Description | No. Req'd | | Part Number |
|------------|---|-----------|------|-------------------|
| | | Com. | Res. | |
| 1 | Manifold Body M x F | 1 | 1 | 976-339-01 |
| 2 | Potter Waterflow Switch # VSR-SF w/ 1¼" Paddle | 1 | 1 | H-416-02 |
| 3 | 1" Ball Valve F101 | 0 | 1 | 971-116-03 |
| 4 | 1" x ½" x 1" Reducing Tee | 1 | 0 | H-469-100-050-100 |
| 5 | 1" Insp. Test & Drain Valve F202 w/ ½" Test Orifice | 1 | 0 | 971-122-04 |
| 6 | Sight Glass M x F | 1 | 0 | H-418-100 |
| 7 | ¼" Water Pressure Gauge | 0 | 1 | 971-118-02 |
| 7a | ¼" Water Pressure Gauge | 1 | 0 | 971-118-01 |
| 8 | ¼" Pipe Plug | 1 | 0 | H450-025-000 |
| 9 | ¼" 3-Way Globe Valve | 1 | 0 | 971-119-01 |
| 10 | ¼" x 3" Nipple | 1 | 0 | H-459-025-30 |
| 11 | 1" x ½" x 1" California Tee | 0 | 1 | 976-385-01 |
| 12 | ½" Pipe Plug | 1 | 1 | H450-050-000 |
| 13 | 1" Close Nipple | 0 | 1 | H-474-16 |
| 14 | 1" Ball Valve | 1 | 0 | 971-121-01 |
| 15 | 1½" Close Nipple | 1 | 1 | H-474-24 |
| 16 | Tamper Switch (ULC only) | 1 | 1 | H-419-01 |
| 17 | Label (ULC only) | 1 | 1 | 976-343-01 |

Figure 4
 1½" Grooved Commercial Riser Manifold - Figure 513
 For optional pressure relief valve, see Figure 10 (page 7)

Approximate Trimmed Weight - 11.2 lbs. (5.1Kg.)

The width of the Riser Manifold is approximately 3½".

Note: Items 12 & 13 are used on Manifolds for use in Canada Only.

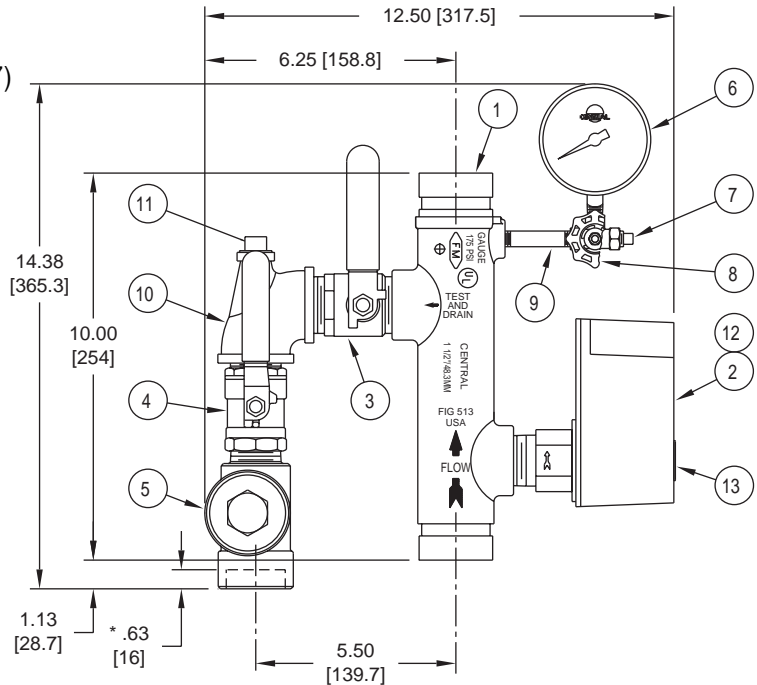


Figure 4 - Bill of Material
 1½" Grooved Commercial Riser Manifold

| Detail No. | Description | No. Req'd | Part Number |
|------------|---|-----------|-------------------|
| 1 | Manifold Body G x G | 1 | 976-399-02 |
| 2 | Potter Waterflow Switch # VSR-SF w/ 1¼" Paddle | 1 | H-416-02 |
| 3 | 1" Ball Valve F101 | 1 | 971-121-01 |
| 4 | 1" Insp. Test & Drain Valve F202 w/ ½" Test Orifice | 1 | 971-122-04 |
| 5 | Sight Glass M x F | 1 | H-418-100 |
| 6 | ¼" Water Pressure Gauge | 1 | 971-118-01 |
| 7 | ¼" Pipe Plug | 1 | H-450-025-000 |
| 8 | ¼" 3-Way Globe Valve | 1 | 971-119-01 |
| 9 | ¼" x 3" Nipple | 1 | H-459-025-30 |
| 10 | 1" x ½" x 1" Reducing Tee | 1 | H-469-100-050-100 |
| 11 | ½" Pipe Plug | 1 | H-450-050-000 |
| 12 | Tamper Switch (ULC only) | 1 | H-419-01 |
| 13 | Label (ULC only) | 1 | 976-343-01 |

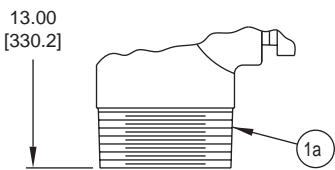
* Approximate thread engagement.
 Note: Values shown in parenthesis are in millimeters

Figure 5
 2" Grooved Residential Riser Manifold
 Figure 513D/513R
 Reference Figures 5 and 6 Bill of Materials (page 5)
 For optional pressure relief valve, see Figure 10 (page 7)

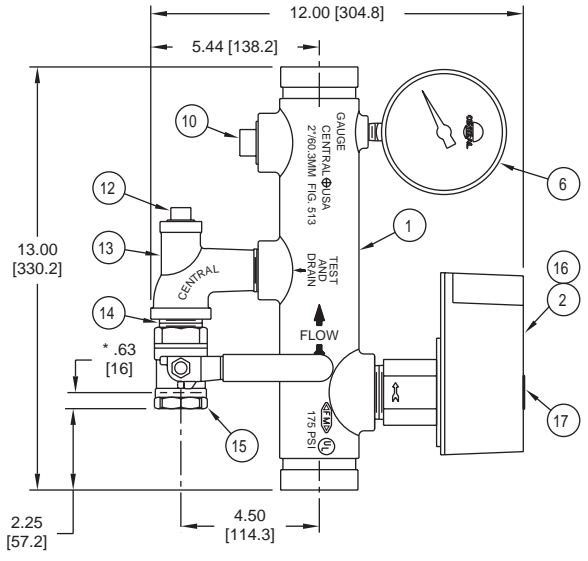
Approximate Trimmed Weight - 11.0 lbs. (5.0Kg.)

The width of the Riser Manifold is approximately 3½".

Note: Items 16 & 17 are used on Manifolds for use in Canada Only.



2" Male x Groove Body Option

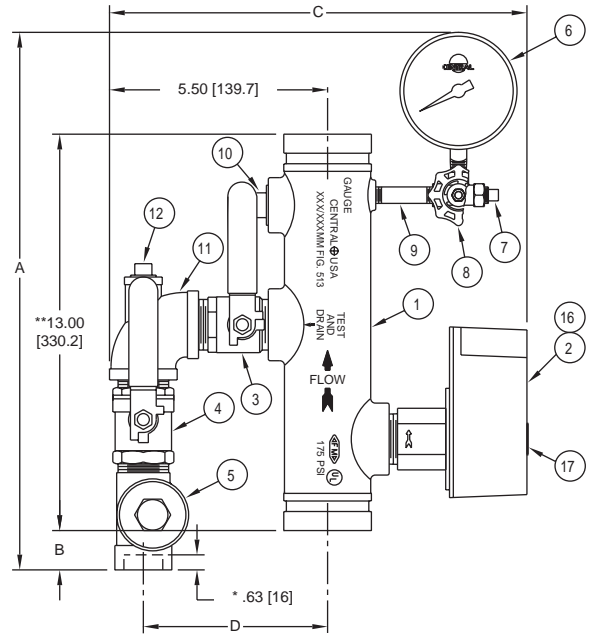


* Approximate thread engagement.
 Note: Values shown in parenthesis are in millimeters

Figure 6
2", 2½", 3", 4", and 6"
Grooved Commercial Riser Manifold - Figure 513
 For optional pressure relief valve, see Figure 10 (page 7)

Approximate Weights and Dimensions of Trimmed
 2", 2½", 3", 4", and 6" Grooved Commercial Riser Manifolds

| Size Inches | A Inches mm | B Inches mm | C Inches mm | D Inches mm | Appx. Width Inches mm | Weight Lbs. Kg. |
|----------------|-------------------|-------------------|-------------------|-------------------|-----------------------------|-----------------------|
| 2 | 17.13 135.0 | 0.88 22.2 | 12.88 327.0 | 5.25 139.7 | 3.50 88.9 | 13.5 6.1 |
| 2½ | 18.13 460.4 | 1.88 47.6 | 13.75 349.3 | 6.38 155.6 | 3.50 88.9 | 16.8 7.6 |
| 3 | 18.13 460.4 | 1.88 47.6 | 14.38 365.1 | 6.25 158.8 | 3.50 88.9 | 18.7 8.5 |
| 4 | 20.00 508.0 | 3.75 95.3 | 17.38 441.3 | 8.38 212.7 | 4.50 114.3 | 32.7 14.8 |
| 6 | 20.00 508.0 | 3.75 95.3 | 19.25 489.0 | 9.25 235.0 | 6.63 182.3 | 41.6 18.9 |



* Approximate thread engagement.

** 13" is the take-out for all sizes 2" through 6"

Note: Values shown in parenthesis are in millimeters

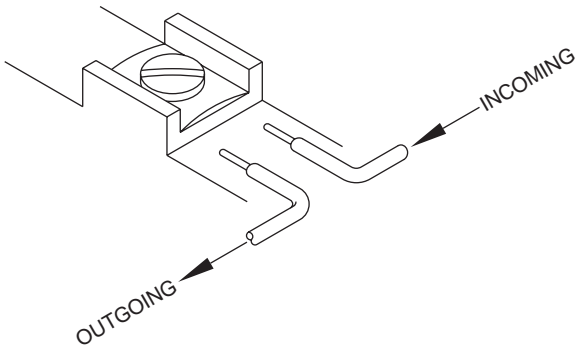
Figure 5 and 6 - Bill of Material

2" Grooved, 2" Threaded x Grooved and 2", 2½", 3", 4", and 6" Commercial Riser Manifold

| Detail No. | Description | No. Req'd | Part Number |
|------------|---|-----------|-------------------|
| 1 | 2" Manifold Body Groove x Groove | 1 | 976-254-01 |
| | 2½" Manifold Body Groove x Groove | 1 | 976-254-02 |
| | 3" Manifold Body Groove x Groove | 1 | 976-254-03 |
| | 4" Manifold Body Groove x Groove | 1 | 976-254-04 |
| | 6" Manifold Body Groove x Groove | 1 | 976-254-05 |
| 1a | 2" Manifold Body Male x Groove | 1 | 976-411-01 |
| 2 | Potter Waterflow Switch # VSC w/ 2" Paddle | 1 | 976-357-01 |
| | Potter Waterflow Switch # VSC w/ 2½" Paddle | 1 | 976-357-02 |
| | Potter Waterflow Switch # VSC w/ 3" Paddle | 1 | 976-357-03 |
| | Potter Waterflow Switch # VSC w/ 4" Paddle | 1 | 976-357-04 |
| | Potter Waterflow Switch # VSC w/ 6" Paddle | 1 | 976-357-05 |
| 3 | 1" Ball Valve F101 (2") | 1 | 971-121-01 |
| | 1¼" Ball Valve F101 (2½" and 3") | 1 | 971-121-02 |
| | 2" Ball Valve F101 (4" and 6") | 1 | 971-121-03 |
| 4 | 1" Insp. Test & Drain Valve F202 (2") w/ ½" Test Orifice | 1 | 971-122-04 |
| | 1¼" Insp. Test & Drain Valve F202 (2½" and 3") w/ ½" Test Orifice | 1 | 971-122-05 |
| | 2" Insp. Test & Drain Valve F202 (4" and 6") w/ ½" Test Orifice | 1 | 971-122-06 |
| 5 | 1" Sight Glass (2") | 1 | H-418-100 |
| | 1¼" Sight Glass (2½" and 3") | 1 | H-418-125 |
| | 2" Sight Glass (4" and 6") | 1 | H-418-200 |
| 6 | ¼" Water Pressure Gauge | 1 | 971-118-01 |
| 7 | ¼" Pipe Plug | 1 | H-450-025-000 |
| 8 | ¼" 3-Way Globe Valve | 1 | 971-119-01 |
| 9 | ¼" x 3" Nipple | 1 | H-459-025-30 |
| 10 | 1" Pipe Plug | 1 | H-450-100-000 |
| 11 | 1" x ½" x 1" Reducing Tee (2") | 1 | H-469-100-050-100 |
| | 1¼" x ½" x 1¼" Reducing Tee (2½" and 3") | 1 | H-469-125-050-125 |
| | 2" x ½" x 2" Reducing Tee (4" and 6") | 1 | H-469-200-050-200 |
| 12 | ½" Pipe Plug | 1 | H-450-050-000 |
| 13 | 1" x ½" x 1" California Tee | 1 | 976-385-01 |
| 14 | 1" Close Nipple | 1 | H-474-16 |
| 15 | 1" Ball Valve F101 | 1 | 971-116-03 |
| 16 | Tamper Switch (ULC only) | 1 | H-419-01 |
| 17 | Label (ULC only) | 1 | 976-343-01 |

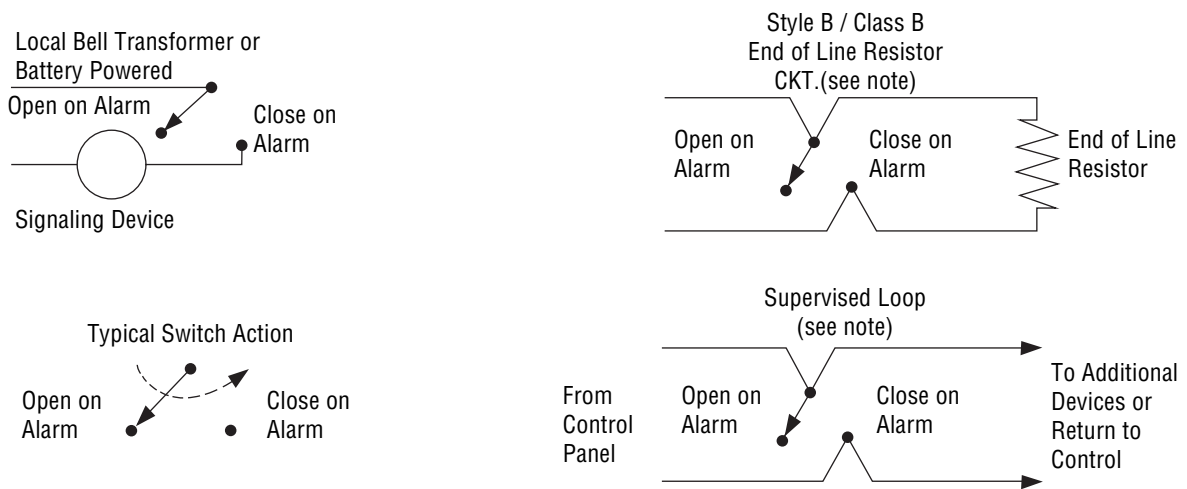
Note: Items 16 & 17 are used on Manifolds for use in Canada Only.

Figure 7
Potter Waterflow Switch Terminal Connections



Caution: An uninsulated section of a single conductor is not permitted to be looped around the terminal and serve as two separate connections. The wire must be severed to serve as two separate connections, thereby providing supervision of the connection in the event that the wire becomes dislodged from the terminal.

Figure 8
Potter Waterflow Switch Typical Electrical Connections



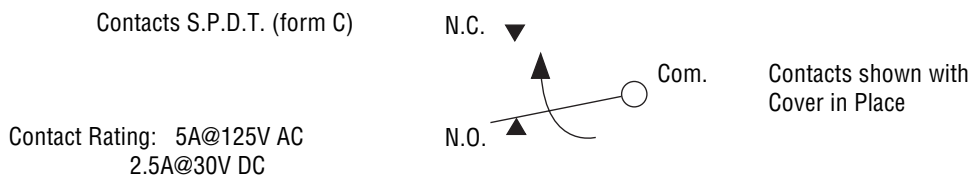
Note:

For supervised circuits, see "Switch Terminal Connections" and caution note (above). The Model VSC and Model VSR-SF have two switches, one can be used to operate a central station, proprietary or remote signaling unit, while the other contact is used to operate a local audible or visual annunciator.

Testing:

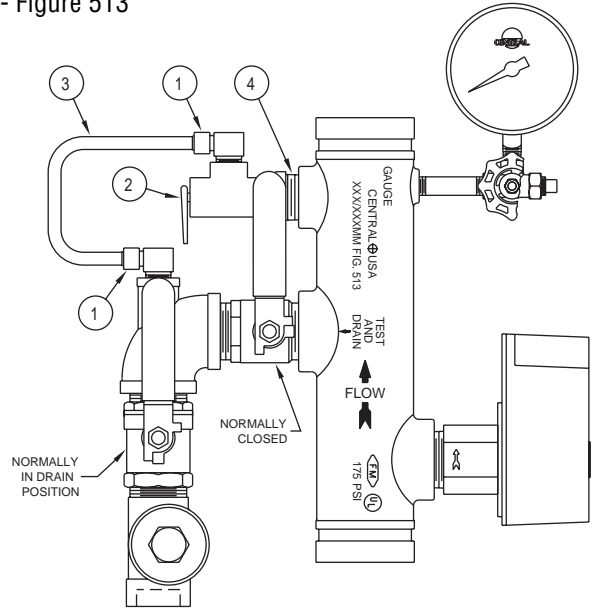
The frequency of testing for the Model VSC and Model VSR-SF and their associated protective monitoring system should be in accordance with applicable NFPA Standards and/or the Authority Having Jurisdiction, but under no circumstances less than bimonthly.

Figure 9
Potter Tamper Switch Typical Electrical Connection



Installation for Models VSC and VSR-SF: Remove the one retard assembly mounting screw. Place the switch assembly over the retard mounting tab. Replace the screw.

Figure 10
Optional Pressure Relief Valve
Grooved Commercial Trim - Figure 513



Relief Valve is factory set at 175psi (nonadjustable).

Note: If the optional pressure relief kit is desired for Figures 3 and 4, an outlet on the riser must be provided, and the connection and material between the riser and the manifold will need to be supplied and fabricated by the installer.

Figure 10 - Bill of Material
Optional Pressure Relief Valve Kit

| Detail No. | | No. Req'd | Part Number |
|------------|---|-----------|---------------|
| 1 | 90° Compression Fitting | 2 | H-475-050-038 |
| 2 | ½" Watts Pressure Relief Valve Model FP53L (UL, FM) | 1 | H-476-01 |
| 3 | Tubing (2") | 1 | 976-419-01 |
| | Tubing (2½" and 3") | 1 | 976-419-02 |
| | Tubing (4" and 6") | 1 | 976-419-03 |
| 4 | 1" x ½" Reducing Bushing | 1 | H-477-01 |

M = Male N.P.T.
 F = Female N.P.T.
 G = Grooved Connection

Optional Figure 513 Pressure Relief Valve Kit

| Size | Part Number |
|------------|-------------|
| 2" | 4063 |
| 2½" and 3" | 4072 |
| 4" and 6" | 4073 |

| Size | Figure | Part Number | Size | Figure | Part Number |
|------|-------------------------------------|-------------|------|--------------------------------------|-------------|
| 1" | 513D, F x F (UL, FM) | 4067 | 2" | 513D/513R, M x G (ULC) | 4094 |
| 1" | 513D, F x F (ULC) | 4085 | 2" | 513D/513R, G x G (UL, FM) | 4059 |
| 1½" | 513D/513R, F x M (UL, FM) | 4057 | 2" | 513D/513R, G x G (ULC) | 4093 |
| 1½" | 513D/513R, M x M (UL, FM) | 4058 | 2" | 513, G x G, ½" Test Orifice (UL, FM) | 4060 |
| 1½" | 513D/513R, F x M (ULC) | 4088 | 2" | 513, G x G, ½" Test Orifice (ULC) | 4090 |
| 1½" | 513D/513R, M x M (ULC) | 4089 | 2½" | 513, G x G, ½" Test Orifice (UL, FM) | 4061 |
| 1½" | 513, F x M ½" Test Orifice (UL, FM) | 4055 | 2½" | 513, G x G, ½" Test Orifice (ULC) | 4091 |
| 1½" | 513, M x M ½" Test Orifice (UL, FM) | 4056 | 3" | 513, G x G, ½" Test Orifice (UL, FM) | 4062 |
| 1½" | 513, F x M ½" Test Orifice (ULC) | 4086 | 3" | 513, G x G, ½" Test Orifice (ULC) | 4092 |
| 1½" | 513, M x M ½" Test Orifice (ULC) | 4087 | 4" | 513, G x G, ½" Test Orifice (UL, FM) | 4065 |
| 1½" | 513, G x G ½" Test Orifice (UL, FM) | 4056G | 4" | 513, G x G, ½" Test Orifice (ULC) | 4095 |
| 1½" | 513, G x G ½" Test Orifice (ULC) | 4087G | 6" | 513, G x G, ½" Test Orifice (UL, FM) | 4066 |
| 2" | 513D/513R, M x G (UL, FM) | 4064 | 6" | 513, G x G, ½" Test Orifice (ULC) | 4096 |



Ordering Procedure

Ordering Information: When placing an order, indicate the full product name. Please specify the quantity, figure number, style, and size. (see page 7 for figure and part numbers)

Availability and Service: Grooved Piping Products, valves, accessories and other products are available throughout the U.S., Canada, and internationally, through a network distribution centers. You may write directly or call 215-362-0700 for the distributor nearest you.



Care and Maintenance

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in accordance with the applicable standards of the National Fire Protection Association (e.g., NFPA 25), in addition to the standards of any authority having jurisdiction. The installing contractor or product manufacturer should be contacted relative to any questions. Any impairment must be immediately corrected.

It is recommended that automatic sprinkler systems be inspected, tested, and maintained by a qualified Inspection Service.



Limited Warranty

Products manufactured by Tyco Fire Products 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 Tyco Fire Products. No warranty is given for products or components manufactured by companies not affiliated by ownership with Tyco Fire Products 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 (NFPA), and/or the standards of any other Authorities Having Jurisdiction. Materials found by Tyco Fire Products to be defective shall be either repaired or replaced, at Tyco Fire Products' sole option. Tyco Fire

Products neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of products or parts of products. Tyco Fire Products 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 TYCO FIRE PRODUCTS 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 TYCO FIRE PRODUCTS WAS INFORMED ABOUT THE POSSIBILITY OF SUCH DAMAGES, AND IN NO EVENT SHALL TYCO FIRE PRODUCTS' 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.

General Notes: It is the Designer's responsibility to select products suitable for the intended service and to ensure that pressure ratings and performance data is not exceeded. Always read and understand the installation instructions (IH-1000). Never remove any piping component nor correct or modify any piping deficiencies without first depressurizing and draining the system. Material and gasket selection should be verified to be compatible for the specific application.



Certified Company