

Model 513 (13) Riser Manifold 1-1/2 thru 6 Inch (DN40 thru DN150) For NFPA 13 Sprinkler Systems

General Description

The Figure 513 (13) Riser Manifolds described in this technical data sheet provide the necessary waterflow alarm, pressure gauge, alarm test orifice, drain, and sight glass equipment in a single assembly for use in NFPA 13 sprinkler systems as follows:

NFPA 13*

- 1-1/2 Inch (DN40)
Male Thread x Female Thread
- 1-1/2 thru 6 Inch (DN40 thru DN150)
Groove x Groove

*Although the Riser Manifold described in this data sheet is intended for NFPA 13 sprinkler systems, it may be used for NFPA 13D or 13R residential sprinkler systems, where a test orifice of 5.6K (80K) is acceptable.

The variety of sizes and grooved end connections allow cost effective and easy transition to check valves, control valves, and system piping. The Riser Manifolds may be installed in either the horizontal (flow switch on top) or vertical (flow going up) for both single sprinkler rises and floor control in high rises.

WARNING

The Riser Manifolds 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 performance of these devices.

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 with any questions.

Technical Data

Approvals

The Figure 513 (13) Riser Manifolds with a cover tamper switch for the waterflow alarm switch are UL Listed, ULC Listed, and FM Approved.

The Figure 513 (13) Riser Manifolds without a cover tamper switch for the waterflow alarm switch are UL Listed and FM Approved.

Maximum Working Pressure

175 psi (12,1 bar)

Test Orifice

5.6K (80K)

Assembly

The manifold body of the Figure 513 is ductile iron, whereas the manifold body of the Figure 13 is cast iron. The two assemblies are completely interchangeable in function, application, and end-to-end laying length.

Finish

Red painted.

Installation

The Riser Manifolds may be installed in either the horizontal (flow switch on top) or vertical (flow going up). The inlet of the Riser Manifold may be directly connected to a shut-off control valve.

NOTES

Where applicable pipe thread sealant is to be applied sparingly. Use of a non-hardening pipe thread sealant is recommended.

Never remove any piping component nor correct or modify any piping deficiencies without first depressurizing and draining the system.

Step 1. Install the manifold body with the flow arrow pointing in the downstream position using threaded con-



nections and/or listed mechanical grooved connections, as applicable

Step 2. Connect the drain line, and then close the drain valve.

Step 3. Refer to Figure 3 for wiring guidance. All wiring must be performed in accordance with the Authority Having Jurisdiction and/or the National Electrical Code.

Step 4. Refer to Figure 4 for optional relief valve.

Step 5. Place the system in service by filling the system with water. When filling the system, partially open the control valve to slowly fill the system. *Filling the system slowly will help avoid damaging the waterflow alarm switch.*

After the system is fully pressurized, completely open the control valve.

Step 6. Secure all supply valves open.

NO.	DESCRIPTION	QTY.	P/N
1	1-1/2" Manifold Body, Male x Female NPT	1	N/A
	Groove x Groove	1	N/A
2	Waterflow Alarm Switch: VSR-SF with Paddle, UL/FM	1	971-096-00
	VSR-SF with Paddle and Cover Tamper Switch, ULC/FM	1	976-519-02
	300 psi/2000 kPa Water Pressure Gauge	1	2341

- NOTES:
1. Approximate weight, 11.2 lbs. (5,1 kg).
 2. ULC Listed Manifolds are equipped with Cover Tamper Switches installed internal to the Waterflow Alarm Switches.
 3. CH: Common Hardware

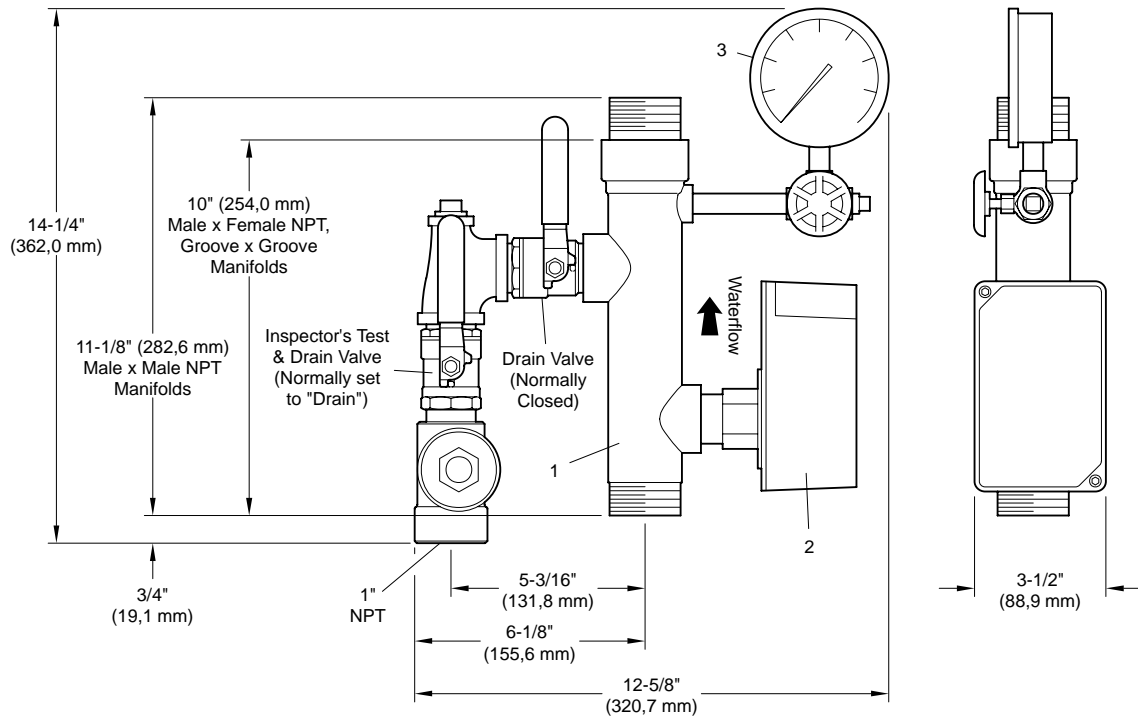


FIGURE 1
1-1/2 INCH (DN40) RISER MANIFOLD ASSEMBLY AND DIMENSIONS

2 INCH (DN50) MANIFOLD			
NO.	DESCRIPTION	QTY.	P/N
1	2" Manifold Body, Groove x Groove	1	N/A
2	Waterflow Alarm Switch: VSC with Paddle, UL/FM	1	976-357-01
	VSC with Paddle and Cover Tamper Switch, ULC/FM	1	976-520-01
3	300 psi/2000 kPa Water Pressure Gauge . .	1	2341

4 INCH (DN100) MANIFOLD			
NO.	DESCRIPTION	QTY.	P/N
1	4" Manifold Body, Groove x Groove	1	N/A
2	Waterflow Alarm Switch: VSC with Paddle, UL/FM	1	976-357-04
	VSC with Paddle and Cover Tamper Switch, ULC/FM	1	976-520-04
3	300 psi/2000 kPa Water Pressure Gauge . .	1	2341

6 INCH (DN150) MANIFOLD			
NO.	DESCRIPTION	QTY.	P/N
1	6" Manifold Body, Groove x Groove	1	N/A
2	Waterflow Alarm Switch: VSC with Paddle, UL/FM	1	976-357-05
	VSC with Paddle and Cover Tamper Switch, ULC/FM	1	976-520-05
3	300 psi/2000 kPa Water Pressure Gauge . .	1	2341

2-1/2 INCH (DN65) MANIFOLD			
NO.	DESCRIPTION	QTY.	P/N
1	2-1/2" Manifold Body, Groove x Groove	1	N/A
2	Waterflow Alarm Switch: VSC with Paddle, UL/FM	1	976-357-02
	VSC with Paddle and Cover Tamper Switch, ULC/FM	1	976-520-02
3	300 psi/2000 kPa Water Pressure Gauge . .	1	2341

Manifold Size	Nominal Installation Dimensions in Inches and (mm)							Drain Size	Weight lbs. (kg)
	A	B	C	D	E	F	G		
2 Inch (DN50)	16-3/4 (425,5)	13 (330,2)	9/16 (14,3)	5-3/8 (136,5)	6-3/8 (161,9)	13-1/16 (331,8)	3-1/2 (88,9)	1" NPT	13.5 (6,1)
2-1/2 Inch (DN65)	17-3/16 (436,6)	13 (330,2)	1 (25,4)	5-3/4 (146,1)	6-7/8 (174,6)	13-3/4 (349,3)	3-1/2 (88,9)	1-1/4" NPT	16.8 (7,6)
3 Inch (DN80)	17-3/16 (436,6)	13 (330,2)	1 (25,4)	6 (152,4)	7-1/8 (181,0)	14-1/4 (362,0)	3-1/2 (88,9)	1-1/4" NPT	18.7 (8,5)
4 Inch (DN100)	20-1/2 (520,7)	13 (330,2)	4-5/16 (109,5)	7-9/16 (192,1)	9-1/16 (230,2)	16-5/8 (422,3)	4-1/2 (114,3)	2" NPT	32.7 (14,8)
6 Inch (DN150)	20-1/2 (520,7)	13 (330,2)	4-5/16 (109,5)	8-1/2 (215,9)	10 (254,0)	18-1/2 (469,9)	6-5/8 (168,3)	2" NPT	41.6 (18,9)

3 INCH (DN80) MANIFOLD			
NO.	DESCRIPTION	QTY.	P/N
1	3" Manifold Body, Groove x Groove	1	N/A
2	Waterflow Alarm Switch: VSC with Paddle, UL/FM	1	976-357-03
	VSC with Paddle and Cover Tamper Switch, ULC/FM	1	976-520-03
3	300 psi/2000 kPa Water Pressure Gauge . .	1	2341

NOTES:
 1. ULC Listed Manifolds are equipped with Cover Tamper Switches installed internal to the Waterflow Alarm Switches.
 2. CH: Common Hardware

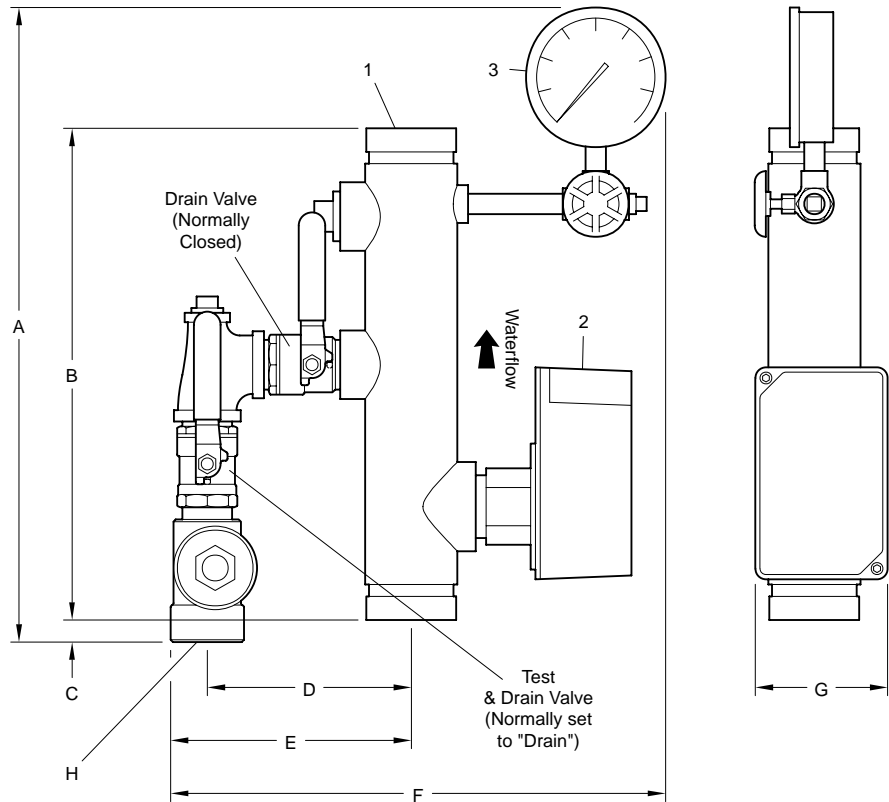
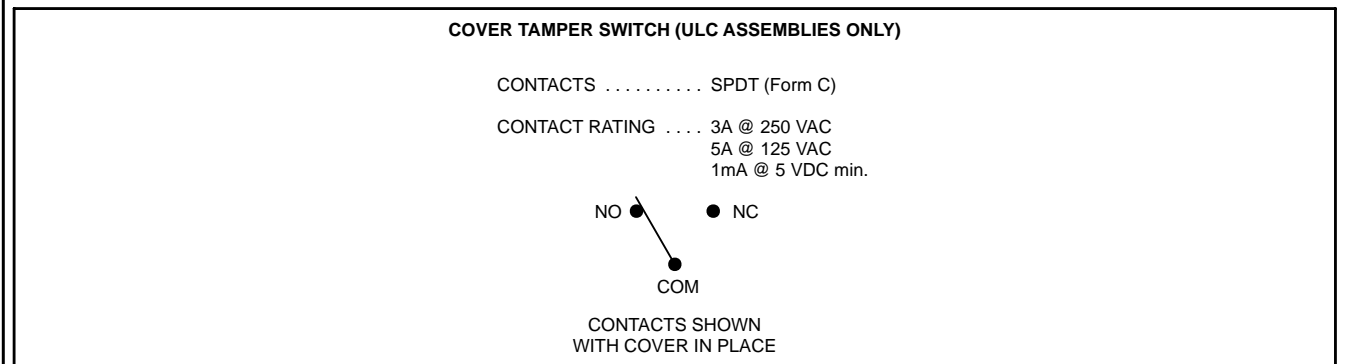
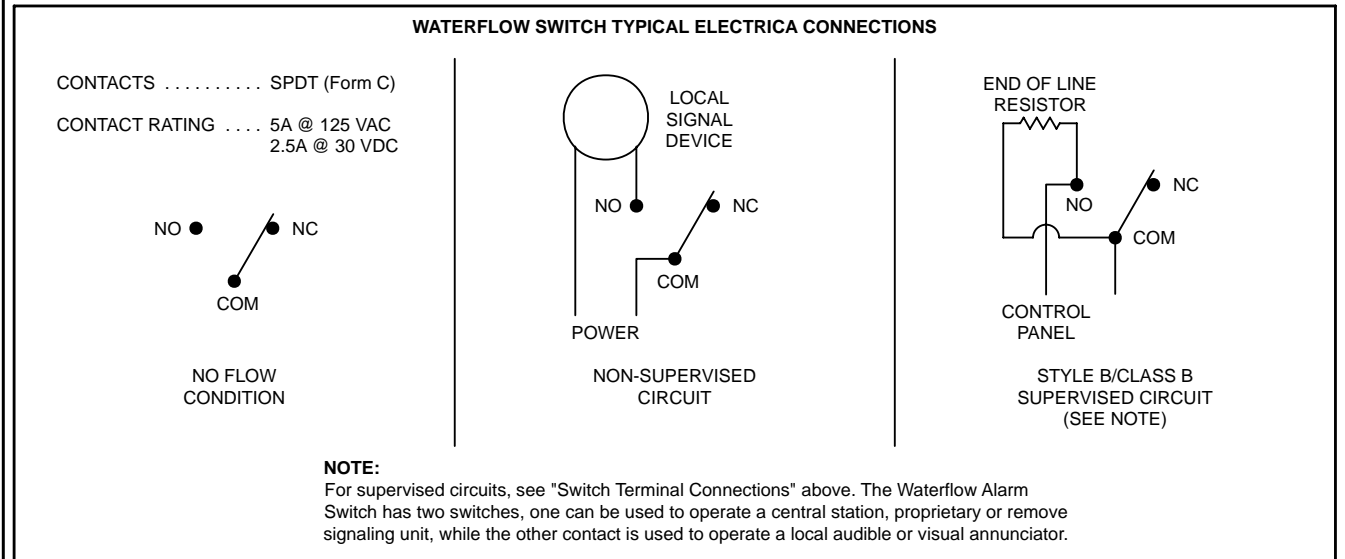
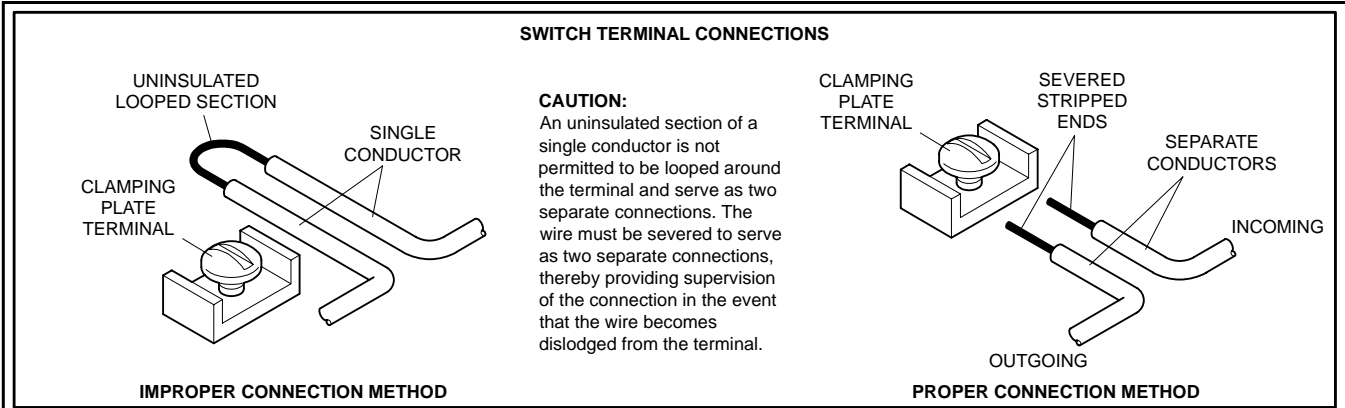
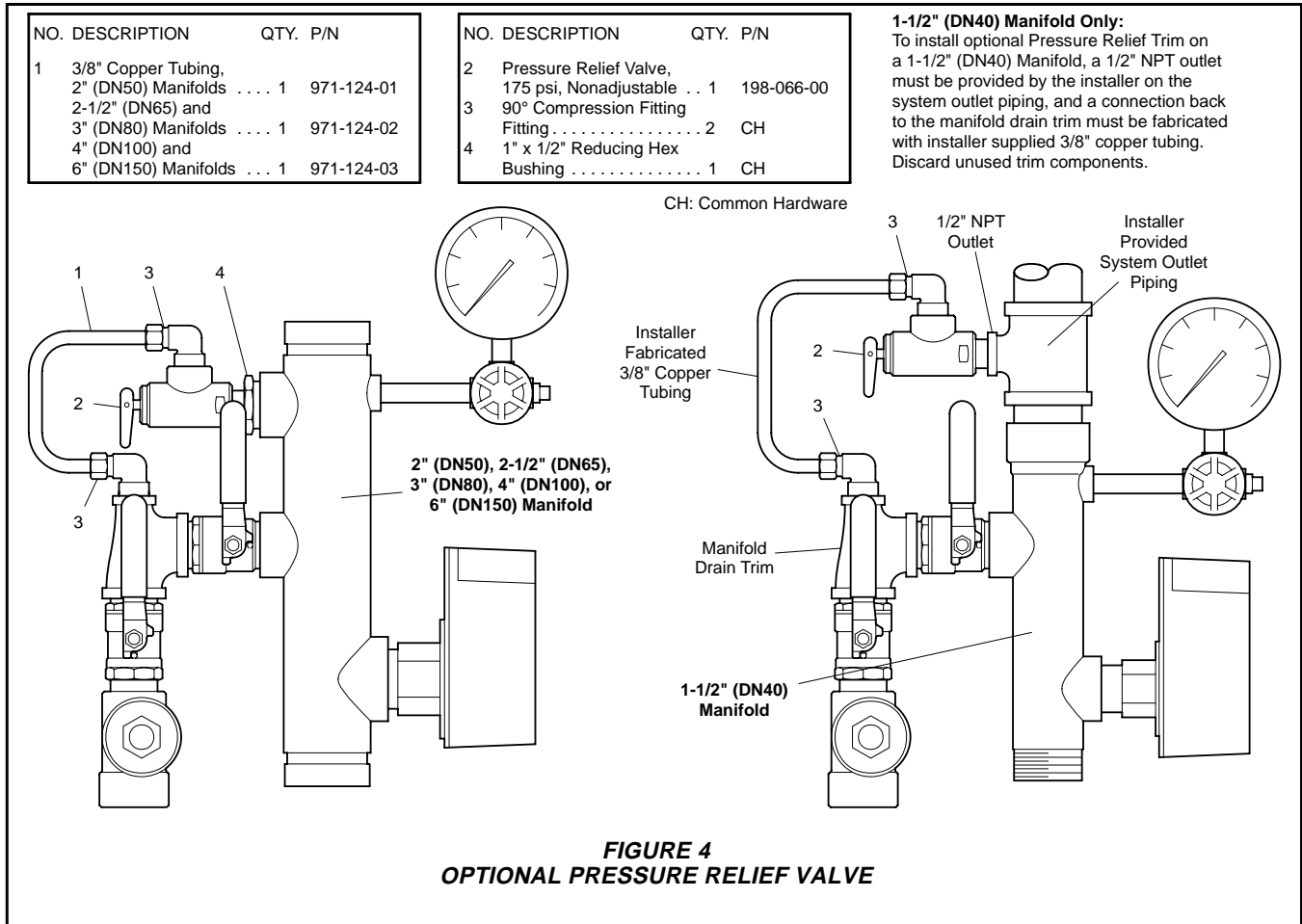


FIGURE 2
2 thru 6 INCH (DN50 thru DN150) RISER MANIFOLD ASSEMBLY AND DIMENSIONS



**FIGURE 3
WIRING GUIDANCE**



1-1/2" (DN40) Manifold Only:
To install optional Pressure Relief Trim on a 1-1/2" (DN40) Manifold, a 1/2" NPT outlet must be provided by the installer on the system outlet piping, and a connection back to the manifold drain trim must be fabricated with installer supplied 3/8" copper tubing. Discard unused trim components.

Care and Maintenance

The following inspection procedure must be performed as indicated, in addition to any specific requirements of the NFPA, and any impairment must be immediately corrected.

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 (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.

It is recommended that automatic sprinkler systems be inspected, tested, and maintained by a qualified Inspection Service in accordance with local requirements and/or national codes.

NOTES

No attempt is to be made to repair any

Riser Manifold component in the field. Only the pressure gauge, waterflow alarm switch, or relief valve can be replaced. If any other problems are encountered the entire riser manifold must be replaced.

The alarm/flow test procedure will result in operation of the associated alarms. Consequently, notification must be given to the owner and the fire department, central station, or other signal station to which the alarms are connected, and notification must be given to the building occupants.

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

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

Alarm/Flow Test Procedure

Step 1. Place the test & drain Valve in the "test" position.

Step 2. Fully open the drain valve. Make certain that drainage water will not cause any damage or injury.

Step 3. Verify operation of associated alarms.

Step 4. Close the drain valve.

Step 5. Place the test & drain Valve in the "drain" position.

Step 6. Verify that the residual (flowing) pressure indicated by the pressure gauge is no less that originally recorded for the system when it was first installed.

Step 7. Close the drain valve.

Step 8. Verify that the static (not flowing) pressure indicated by the pressure gauge is no less that originally recorded for the system when it was first installed.

Limited Warranty

Products manufactured by Tyco Fire & Building Products (TFBP) 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 TFBP. No warranty is given for products or components manufactured by companies not affiliated by ownership with TFBP 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 TFBP to be defective shall be either repaired or replaced, at TFBP's sole option. TFBP neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of products or parts of products. TFBP 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 TFBP 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 TFBP was informed about the possibility of such damages, and in no event shall TFBP'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

Riser Manifold:

Specify: Size (specify), Figure 513, (specify connection type inlet x outlet) Riser Manifold (specify - without or with) a cover tamper switch for the waterflow alarm switch, P/N (specify).

NOTES

Orders for Figure 513 may be filled with a Figure 13. The two assemblies are completely interchangeable in function, application, and end-to-end laying length.

If a ULC Listing is required, the Riser Manifold must be ordered with a cover tamper switch for the waterflow alarm switch.

UL/ULC/FM Assemblies

With Cover Tamper Switch

1-1/2 Inch (DN40)	
MT x FT	P/N 4086
1-1/2 Inch (DN40)	
MT x MT	P/N 4087
2 Inch (DN50)	
G x G	P/N 4090
2-1/2 Inch (DN65)	
G x G	P/N 4091
3 Inch (DN80)	
G x G	P/N 4092
4 Inch (DN100)	
G x G	P/N 4095
6 Inch (DN150)	
G x G	P/N 4096

UL/FM Assemblies

Without Cover Tamper Switch

1-1/2 Inch (DN40)	
MT x FT	P/N 4055
1-1/2 Inch (DN40)	
MT x MT	P/N 4056
2 Inch (DN50)	
G x G	P/N 4060
2-1/2 Inch (DN65)	
G x G	P/N 4061
3 Inch (DN80)	
G x G	P/N 4062
4 Inch (DN100)	
G x G	P/N 4065
6 Inch (DN150)	
G x G	P/N 4066

Optional Pressure Relief Valve:

Specify: Operational Pressure Relief Valve and Trim for use with (specify size) Figure 513 or 13 Series Riser Manifold, P/N (specify).

1-1/2" or 2"	P/N 4063
2-1/2" or 3"	P/N 4072
4" or 6"	P/N 4073

Replacement Parts:

Specify: (description) for use with Figure 513 or 13 Riser Manifold, P/N (Ref. Figure 1 or 2, as applicable).