

## G-FIRE Figure 522 Sprinkler Outlets

### IMPORTANT

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

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## General Description

The GRINNELL G-FIRE Figure 522 Sprinkler Outlet is an economical alternative to welded pipe outlets on steel pipe. The Figure 522 Sprinkler Outlet may be used with full lengths of pipe and eliminates threading and welding, decreasing waste and installation time. The Figure 522 Sprinkler Outlet may be used in wet pipe, dry pipe, and deluge systems.

The 1/2 in. and 3/4 in. nominal outlet sizes are intended for use in fire protection systems leading to a direct connection to a sprinkler only. The 1 inch nominal outlet size must be used in fire protection systems leading to a connection to system piping. These fittings should be used for hydraulically calculated systems only.

### NOTICE

Never remove any piping component nor correct or modify any piping deficiencies without first de-pressurizing and draining the system. Failure to do

so may result in serious personal injury, property damage, and/or impaired device performance.

It is the designer's responsibility to select products suitable for the intended service and to ensure that pressure ratings and performance data are not exceeded. Material and gasket selection should be verified to be compatible for the specific application. Always read and understand the installation instructions.

The GRINNELL G-FIRE Figure 522 Sprinkler Outlet described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the Approval agency, in addition to the standards of any other authorities having jurisdiction. Failure to do so may result in serious personal injury or impair the performance of these devices.

The owner is responsible for maintaining their mechanical system and devices in proper operating condition. The installing contractor or device manufacturer should be contacted with any questions.

## Technical Data

### Approvals

UL and ULC Listed  
FM Approved  
VdS Approved\*  
LPCB Certified

\*VdS Approval is for direct supply of one sprinkler only and not for connection of system piping.

### Maximum Working Pressure

300 psi (20,7 Bar)

### Sizes

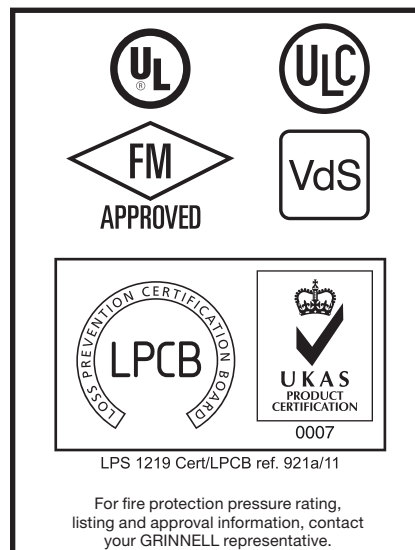
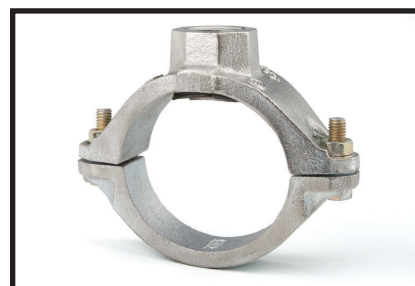
- Run Sizes  
1 in., 1-1/4 in., 1-1/2 in., 2 in.,  
2-1/2 in., 76,1 mm (DN25, DN32,  
DN40, DN50, DN65)
- Outlet Sizes  
NPT or ISO 7-1 Pipe Threaded  
3/8 in., 1/2 in., 3/4 in., 1 in.  
(DN10, DN15, DN20, DN25)

### Housing Materials

Ductile Iron conforming to  
ASTM A 536, Grade 65-45-12

### Finish

- Zinc electroplate conforming to



### ASTM B 633 Type III

- Red (RAL3000) painted finish for ISO Thread only
- Orange painted finish for NPT Thread only

### Bolts

Conforming to DIN 933,  
M8 x 30 mm Class 8.8

### Nuts

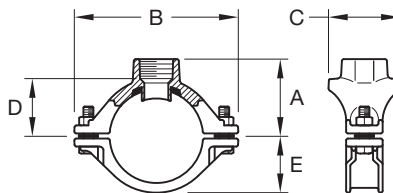
Flange nuts conforming to DIN 934, Class 8

### Gasket

Grade "E" EPDM, Green color code  
-30°F to 230°F (-34°C to 110°C)  
See Data Sheet TFP1865 for additional gasket information.

### Friction Loss

Equivalent length of 1 in. Schedule 40 pipe is 15 ft (4,6 m).  
Hazen Williams coefficient = 120

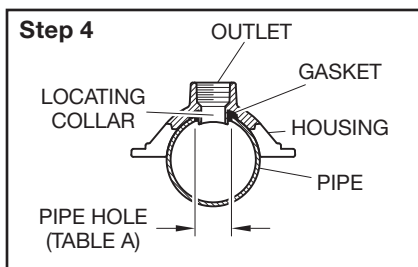
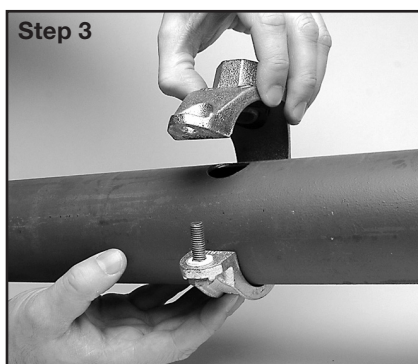


Nominal Pipe Size		Outlet Size NPT or ISO 7-1 Pipe Threads	Max. <sup>a</sup> Outlet End Load Lbs. (kN)	Nominal Dimensions Inches (mm)					Approx. Weight Lbs. (kg)
Nominal Run Size ANSI Inches (DN)	O.D. Inches (mm)			A	B	C	D	E	
<b>1</b> (DN25)	1.315 (33,7)	1/2	165.9 (0,738)	1.00 (25,4)	3.40 (86,4)	1.94 (49,3)	0.56 (14,3)	1.00 (25,4)	0.9 (0,4)
		3/4	259.9 (1,156)	1.64 (41,7)	3.40 (86,4)	1.94 (49,3)	1.14 (29,0)	1.00 (25,4)	1.1 (0,5)
		1	259.9 (1,156)	1.83 (46,5)	3.40 (86,4)	2.25 (57,2)	1.26 (32,0)	1.00 (25,4)	1.1 (0,5)
<b>1-1/4</b> (DN32)	1.660 (42,4)	3/8	165.9 (0,738)	1.22 (31,0)	3.78 (96,0)	2.25 (57,2)	0.91 (23,1)	1.06 (26,9)	0.9 (0,4)
		1/2	165.9 (0,738)	1.22 (31,0)	3.78 (96,0)	2.25 (57,2)	0.78 (19,8)	1.06 (26,9)	0.9 (0,4)
		3/4	259.9 (1,156)	1.83 (46,5)	3.78 (96,0)	2.25 (57,2)	1.33 (33,8)	1.06 (26,9)	1.1 (0,5)
		1	406.9 (1,81)	2.00 (50,8)	3.78 (96,0)	2.25 (57,2)	1.44 (36,6)	1.06 (26,9)	1.3 (0,6)
<b>1-1/2</b> (DN40)	1.900 (48,3)	1/2	165.9 (0,738)	1.32 (33,5)	4.00 (101,6)	2.25 (57,2)	0.88 (22,4)	1.25 (31,8)	1.1 (0,5)
		3/4	259.9 (1,156)	1.93 (49,0)	4.00 (101,6)	2.25 (57,2)	1.43 (36,3)	1.25 (31,8)	3.1 (0,5)
		1	406.9 (1,81)	2.11 (53,6)	4.00 (101,6)	2.25 (57,2)	1.55 (39,4)	1.25 (31,8)	1.3 (0,6)
<b>2</b> (DN50)	2.375 (60,3)	1/2	165.9 (0,738)	1.56 (39,6)	4.46 (113,3)	2.25 (57,2)	1.12 (28,4)	1.50 (38,1)	1.3 (0,6)
		3/4	259.9 (1,156)	2.17 (55,1)	4.46 (113,3)	2.25 (57,2)	1.67 (42,4)	1.50 (38,1)	1.5 (0,7)
		1	406.9 (1,81)	2.35 (60,0)	4.46 (113,3)	2.50 (63,5)	1.79 (45,5)	1.50 (38,1)	1.5 (0,7)
<b>2-1/2</b> (DN65)	2.875 (73,0)	1/2	165.9 (0,738)	2.00 (50,8)	5.12 (130,0)	2.25 (57,2)	1.56 (39,6)	1.69 (42,9)	1.5 (0,7)
		3/4	259.9 (1,156)	2.50 (63,5)	5.12 (130,0)	2.25 (57,2)	2.00 (50,8)	1.69 (42,9)	1.8 (0,8)
		1	406.9 (1,81)	2.70 (68,6)	5.12 (130,0)	2.50 (63,5)	2.14 (54,4)	1.69 (42,9)	1.8 (0,8)
<b>76.1 mm</b> (DN65)	3.000 (76,1)	1/2	165.9 (0,738)	2.00 (50,8)	5.12 (130,0)	2.25 (57,2)	1.56 (39,6)	1.82 (46,2)	1.5 (0,7)
		3/4	259.9 (1,156)	2.50 (63,5)	5.12 (130,0)	2.25 (57,2)	2.00 (50,8)	1.82 (46,2)	1.8 (0,8)
		1	406.9 (1,81)	2.75 (69,9)	5.12 (130,0)	2.50 (63,5)	2.19 (55,6)	1.82 (46,2)	1.8 (0,8)

**NOTES:**

a. ‡ Maximum pressure and end load are total from all loads based on standard weight steel pipe.  
 Pressure ratings and end loads may differ on other pipe materials and/or wall thickness.  
 Always confirm compatibility by contacting Johnson Controls for details.

**FIGURE 1**  
**FIGURE 522 SPRINKLER OUTLET**  
**NOMINAL DIMENSIONS**



Nominal Run Size ANSI Inches (DN)	Nominal Branch Size ANSI Inches (DN)	Hole Diameter <sup>a</sup>	
		Inches (mm)	Tolerance + Inches (mm)
1 (DN25)	1/2 (DN15)	0.94 (24,0)	0.02 (0,5)
	3/4 (DN20)		
	1 (DN25)		
1-1/4 (DN32)	3/8 (DN10)		
	1/2 (DN15)		
	3/4 (DN20)		
	1 (DN25)		
1-1/2 (DN40)	1/2 (DN15)		
	3/4 (DN20)		
	1 (DN25)		
2 (DN50)	1/2 (DN15)		
	3/4 (DN20)		
	1 (DN25)		
76.1 mm (DN65)	1/2 (DN15)	1.38 (34,9)	
	3/4 (DN20)	0.94 (24,0)	
	1 (DN25)	1.38 (34,9)	

**NOTES:**

a. Proper hole preparation is required for effective sealing and performance. Check the pipe seal surface within 5/8 in. (15.88 mm) of the hole to be certain it is free from conditions that would affect proper gasket sealing. Remove any sharp or rough edges from the hole or upper housing contact area that might affect assembly, proper seating of the locating collar, or flow from the outlet. Check gasket grade to be certain it is suitable for the service. The use of threaded products other than steel pipe, such as dry pendants, etc. may not be compatible with the female threaded outlet on the Mechanical Tee. Always confirm compatibility by contacting GRINNELL Products.

**TABLE A**  
**FIGURE 522 SPRINKLER OUTLET**  
**PIPE HOLE FABRICATION DIMENSIONS**

## Installation

The GRINNELL G-FIRE Figure 522 Sprinkler Outlets are to be installed in accordance with this section.

**Step 1.** Select hole size from Table A. The hole must be drilled on the pipe center-line. Remove any sharp or rough edges from the hole or upper housing contact area. The gasket-seating surface on the pipe should be examined to verify all loose debris, dirt, chips, paint and any other foreign material such as grease are removed.

Verify that the gasket grade is correct for the application intended. Refer to Technical Data Sheet TFP1895 for additional gasket information.

**Step 2.** Check for proper gasket positioning in the housing. The alignment tabs on the gasket should fit into the recesses of the housing. Check sealing surface for cuts or imperfections that would affect sealing. For Wet Based applications, no lubricant is required. When used for Dry Pipe and Freezer applications, use a petroleum-free silicon based lubricant.

**Step 3.** With one nut and bolt removed and the other nut threaded out flush with the end of the screw, swing the housing over the hole in the pipe.

**Step 4.** Verify that the housing outlet locating collar is positioned in the hole. Insert the other bolt into the housing and rotate the nuts clockwise until finger tight. Verify that the bolt heads are fully seated in the housing.

**Step 5.** Alternate when tightening nuts until properly torqued to between 15 - 20 lb-ft (20 - 27 N·m) with even gaps between the bolt pads. Uneven tightening can cause the gasket to pinch or bind. Over torquing can damage the product or thin wall pipe and will not increase sealing efficiency.

## ***Limited Warranty***

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

## ***Ordering Procedure***

Grinnell Mechanical Products, valves, accessories and other products are available globally through a network of distribution centers. For the nearest distributor, visit [www.grinnell.com](http://www.grinnell.com). When placing an order, indicate the full product name.

### **Figure 522 Sprinkler Outlet**

Specify the following:

- Quantity
- Run Size x Outlet Size
- ISO 7/1 or NPT Outlet Threads
- Finish