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**TC25061**

## **EQUIPMENT INDEX**

<b>NO.</b>	<b>MANUFACTURER</b>	<b>SIZE</b>	<b>MODEL</b>	<b>DESCRIPTION</b>
1	RELIABLE	1/2"	F1FR 56	QUICK RESPONSE PENDENT
2	RELIABLE	1/2"	J112	QUICK RESPONSE PENDENT
3	EASYFLEX	48",72"	HP	FLEXIBLE SPRINKLER DROPS

# Reliable®

## Model F1FR Series Quick Response Glass Bulb Sprinklers

### Model F1FR56 Sprinkler Types

Standard Spray Upright  
Standard Spray Pendent  
Conventional Upright/Pendent  
Vertical Sidewall  
Horizontal Sidewall

### Model F1FR56 Recessed Sprinkler Types

Standard Spray Pendent  
Horizontal Sidewall

### Model F1FR56 Concealed Sprinkler Types

Standard Spray Pendent

### Model F1FR42, F1FRXLH & F1FR28 Sprinkler Types

Standard Spray Upright  
Standard Spray Pendent

### Model F1FR40 Sprinkler Types

Standard Spray Pendent

### Model F1FR42, F1FR40, F1FRXLH & F1FR28 Recessed Sprinkler Types

Standard Spray Pendent

### Model F1FR56LL & F1FR42LL Low Lead Sprinkler Types

Standard Spray Pendent with less than 0.25% Lead Content

### Listing & Approvals

The following organizations provide Listings or Approvals for various Model F1FR series sprinklers. See the Design and Installation table in this Bulletin for information on specific listings and approvals applicable to each sprinkler.

1. Underwriters Laboratories Inc. and Certified for Canada (cULus) in accordance with ANSI/UL199.
2. FM Approvals (FM)
3. Loss Prevention Certification Board (LPCB)
4. VdS Schadenverhütung GmbH (VdS)
5. Underwriters Laboratories Inc. and Underwriters Laboratories of Canada Certified for Health Effects to NSF/ANSI Standard 61 Annex G (ULH)
6. EC Certificate: 0786-CPD-40239 (RA1414), 0786-CPD-40251 (RA1425), 0786-CPD-40252 (RA1475) (EC)

### UL Listing Category

Sprinklers, Automatic & Open (VNIV)  
Quick Response Sprinkler



### Product Description

Reliable Model F1FR series sprinklers are quick-response automatic sprinklers with a glass bulb thermal element. Model F1FR series sprinklers are Standard Spray sprinklers, with the exception of the Model F1FR56 Conventional sprinkler which is an Old-style/Conventional sprinkler.

The Model F1FR Series automatic sprinklers utilize a 3.0 mm frangible glass bulb. These sprinklers have demonstrated response times in laboratory tests which are five to ten times faster than standard response sprinklers. This quick response enables the Model F1FR Series sprinklers to apply water to a fire faster than standard-response sprinklers of the same temperature rating.

The glass bulb consists of an accurately controlled amount of special fluid hermetically sealed inside a precisely manufactured glass capsule. This glass bulb is specially constructed to provide fast thermal response.



XLH Recessed Pendent FP

At normal temperatures, the glass bulb contains the fluid in both the liquid and vapor phases. The vapor phase can be seen as a small bubble. As heat is applied, the liquid expands, forcing the bubble smaller and smaller as the liquid pressure increases. Continued heating forces the liquid to push out against the bulb, causing the glass to shatter, opening the waterway and allowing the deflector to distribute the discharging water.

Model F1FR Series sprinklers provide a wide range of options where quick-response, glass bulb sprinklers are used:

- Pendent, recessed pendent, upright, horizontal sidewall, and vertical sidewall deflectors
- K-factors of 2.8 (40 metric), 4.0 (57 metric), 4.2 (60 metric), and 5.6 (80 metric)
- Flush, recessed, and concealed installations

See the Design and Installation Information table in this Bulletin for information on the approvals and availability of specific Model F1FR series sprinkler configurations.

Model F1FR Recessed Pendent and Recessed Horizontal Sidewall sprinklers are required to be used with Reliable Model F1, F2, or FP recessed escutcheons. See the Recessed Escutcheon Data table in this Bulletin for listing and approval information with each specific Model F1FR series sprinkler. Model F1 and F2 recessed escutcheons, shown in Fig. 1 and 3, are a friction fit assembly allowing for 3/4-inch (19mm) and 1/2-inch (12.7mm) of adjustment, respectively. Model FP recessed escutcheons, shown in Fig. 2, provide a 1/2-inch (12.7mm) threaded adjustment.

Model F1FR56 Concealed Pendent and Model F1FR56LL Concealed Pendent sprinklers are required to be used with Model CCP cover plates. A standard profile Model CCP cover plate is available that provides up to 1/2-inch (12.7mm) of cover plate adjustment. In addition, a low profile Model CCP cover plate is also available that provides up to 5/16-inch (8.0mm) of cover plate adjustment. See the Design and Installation Information and Listed and Approved Temperature Ratings tables in this Bulletin for further information on approved cover plate options.

## Application

Model F1FR Series sprinklers are intended for use in accordance with NFPA 13, FM Property Loss Prevention Data Sheets, and the requirements of the Authority Having Jurisdiction. Care must be exercised that the k-factor, temperature rating, deflector style, and sprinkler type are in accordance with the requirements of the applicable design and installation standards. In addition, Model F1FR Series sprinklers must be used in accordance with their listings and approvals, as well as the information provided in this Bulletin.

## Installation

Glass bulb sprinklers have orange bulb protectors or protective caps to minimize bulb damage during shipping, handling and installation. Reliable sprinkler installation wrenches are designed to install sprinklers with bulb protectors in place. Remove the bulb protector at the time when the sprinkler system is placed in service for fire protection. Removal of the bulb protector before this time may leave the bulb vulnerable to damage. Remove bulb protectors by undoing the clasp by hand. Do not use tools to remove bulb protectors.

Model F1FR Series sprinklers must be installed with the Reliable sprinkler installation wrench identified in the Design and Installation Information table in this Bulletin. Any other wrench may damage the sprinkler. A leak tight sprinkler joint can be obtained with a torque of 8 to 18 lb-ft (11 to 24 N-m). Do not tighten sprinklers over the maximum recommended installation torque. Exceeding the maximum recommended installation torque may cause leakage or impairment of the sprinkler.

## Recessed Sprinklers

Model F1FR Series Recessed sprinklers are to be installed as shown in Fig. 1, Fig. 2, or Fig. 3, as applicable to the specific model being installed. The Recessed Escutcheon Data table in the Bulletin identifies the only recessed escutcheons that are permitted to be used with each Model F1FR Series Recessed sprinkler. The use of any other recessed escutcheon will void all approvals and negate all warranties.

## Concealed Sprinklers

Model F1FR Series Concealed Pendent sprinklers are to be installed as shown in Fig. 4 or Fig. 5, as applicable to the selected cover plate. Model F1FR56 Concealed Pendent and Model F1FR56LL Concealed Pendent sprinklers have a factory-installed Model CCP cup. A protective cap is installed at the factory that should remain on the sprinkler until the sprinkler is installed and should then be reinstalled on the sprinkler until the cover plate is installed. The concealed sprinkler assemblies are completed by the installation of a Model CCP push-on/thread-off cover plate assembly. The cover plate and sprinkler cup assemblies are joined using a cover plate skirt with flexible tabs for threaded engagement. A choice of two Model CCP cover plate assemblies provides either 1/2-inch (13mm) or 5/8-inch (8mm) of cover adjustment. Do not install Model F1FR Series Concealed Pendent sprinklers in ceilings which have positive pressure in the space above.

Model F1FR Series Concealed Pendent sprinklers require a 2-5/8-inch (67mm) diameter hole to be cut in the ceiling. The Model RC1 wrench is used to engage the sprinkler wrenching surfaces and to install the sprinkler in the fitting. Remove the protective cap to install the sprinkler, then reinstall the protective cap until the cover plate is installed. When inserting or removing the wrench from the sprinkler/cup assembly, care should be taken to prevent damage to the sprinkler. Do not wrench any other part of the sprinkler/cup assembly. Installation is completed by removing the protective cap from the sprinkler and pushing the cover plate onto the cup. Final adjustment is made by hand turning the cover plate until the skirt flange makes full contact with the ceiling. Cover plate removal requires turning the cover plate in the counter clockwise direction. After installation, inspect all sprinklers to ensure that there is a gap between the cover plate and ceiling and that the four cup slots are open and free from any air flow impediment to the space above.

Concealed cover plate/cup assemblies are listed only for use with specific sprinklers. The use of any concealed cover plate/cup assembly other than the Reliable Model CCP with Model F1FR56 Concealed Pendent and Model F1FR56LL Concealed Pendent sprinklers or the use of the Model CCP Concealed cover plate assembly on any sprinkler with which it is not specifically listed may prevent good fire protection and will void all guarantees, warranties, listings and approvals.

## Technical Data:

**Sensitivity:** Quick-response

**Thread Size:** 1/2-inch NPT standard; ISO 7-R1/2 optional

**Maximum Working Pressure:** 175 psi (12 bar) - 100% Factory tested hydrostatically to 500 psi (34.5 bar)

SIN RA1425, RA1414 & RA1435 cULus listed for 250 psi (17 bar)

Design and Installation Information											
Model	Nominal K-factor		Nominal Orifice Diameter		Deflector/ Orientation	Nominal Sprinkler Height		Installation Wrench	SIN	Listings and Approvals	Approval Notes
	US	Metric	inches	mm		inches	mm				
F1FR28	2.8	40	3/8	10	Pendent	2.25	57	D or W2	RA1411	cULus	2
					Recessed Pendent	2.25	57	GFR2	RA1411	cULus	2
					Upright	2.25	57	D or W2	RA1421	cULus	1,2
F1FR40	4.0	57	3/8	10	Pendent	2.25	57	D or W2	RA1418	VdS	
					Recessed Pendent	2.25	57	GFR2	RA1418	VdS	
F1FR42	4.2	60	7/16	10	Pendent	2.25	57	D or W2	RA1413	cULus	2
					Recessed Pendent	2.25	57	GFR2	RA1413	cULus	2
					Upright	2.25	57	D or W2	RA1423	cULus	1,2
F1FR42LL	4.2	60	7/16	10	Pendent	2.25	57	D or W2	RA1410	cULus, ULH	
					Recessed Pendent	2.25	57	GFR2	RA1410	cULus, ULH	
F1FRXLH (F1FR42 with Pintle)	4.2	60	7/16	10	Pendent	2.25	57	D or W2	RA1413	cULus	2
					Recessed Pendent	2.25	57	GFR2	RA1413	cULus	2
					Upright	2.25	57	D or W2	RA1423	cULus	1,2
F1FR56	5.6	80	1/2	15	Pendent	2.25	57	D or W2	RA1414	cULus, FM, LPCB, VdS, EC	1,2,3,4
					Recessed Pendent	2.25	57	GFR2	RA1414	cULus, FM, LPCB, VdS, EC	1,2,3,4
					Concealed Pendent	2.25	57	RC1	RA1414	cULus, VdS, EC	5,6
					Upright	2.25	57	D or W2	RA1425	cULus, FM, LPCB, VdS, EC	1,2,3,4
					"Conventional (Pendent or Upright)"	2.25	57	D or W2	RA1475	LPCB, VdS, EC	4
F1FR56LL	5.6	80	1/2	15	Pendent	2.25	57	D or W2	RA1415	cULus, ULH	1
					Recessed Pendent	2.25	57	GFR2	RA1415	cULus, ULH	
					Concealed Pendent	2.25	57	RC1	RA1415	cULus, ULH	6
F1FR56	5.6	80	1/2	15	Horizontal Sidewall	2.63	67	D or W2	RA1435	cULus, FM	1,2,3,7
					Recessed Horizontal Sidewall	2.63	67	GFR2	RA1435	cULus, FM	8
F1FR56	5.6	80	1/2	15	Vertical Sidewall (Pendent or Upright)	2.25	57	D or W2	RA1485	cULus, FM, LPCB	1,2,3,9

<sup>(1)</sup> cULus Listed Corrosion Resistant sprinkler when ordered with available Polyester coating.

<sup>(2)</sup> cULus Listed Corrosion Resistant sprinkler when ordered with available Electroless Nickel PTFE plating.

<sup>(3)</sup> Available with FM approved Polyester coating in black or white.

<sup>(4)</sup> Available with LPCB and VdS approved Polyester coating.

<sup>(5)</sup> VdS and EC approvals of the F1FR56 Concealed Pendent sprinkler are for 155°F (68°C) temperature rated sprinklers only. VdS approved sprinklers must use Norbulb brand glass bulbs with the 1/2-inch (12.7mm) adjustment Model CCP cover plate only.

<sup>(6)</sup> Model F1FR56 Concealed Pendent and Model F1FR56LL Concealed Pendent sprinklers must be used with Reliable Model CCP cover plates, available as either standard depth with 1/2-inch (12.7mm) of adjustment or low profile with 5/16-inch (8.0 mm) of adjustment.

<sup>(7)</sup> cULus Listing of the F1FR56 Horizontal Sidewall sprinkler is for Light and Ordinary Hazard occupancies only. Minimum to maximum deflector to ceiling distance shall be 4 inches to 12 inches (102mm to 305mm). FM Approval of the F1FR56 Horizontal Sidewall sprinkler is for Light Hazard occupancies only.

<sup>(8)</sup> cULus Listing and FM Approval of the F1FR56 Recessed Horizontal Sidewall sprinkler is for Light Hazard occupancies only.

<sup>(9)</sup> The F1FR56 Vertical Sidewall sprinkler is listed and approved for use only in Light Hazard occupancies. LPCB approval of the F1FR56 Vertical Sidewall sprinkler is for installation in the Pendent position only.

## Listed and Approved Temperature Ratings

Model	Deflector/ Orientation	Ordinary Temp. Classification 100°F (38°C) Max. Ambient Temp.		Intermediate Temp. Classification 150°F (65°C) Max. Ambient Temp.		High Temp. Classification 225°F (107°C) Max. Ambient Temp.
		135°F (57°C) Temp. Rating	155°F (68°C) Temp. Rating	175°F (79°C) Temp. Rating	200°F (93°C) Temp. Rating	286°F (141°C) Temp. Rating
		Orange Bulb	Red Bulb	Yellow Bulb	Green Bulb	Blue Bulb
F1FR28	Pendent	cULus				
	Recessed Pendent	cULus				--
	Upright	cULus				
F1FR40	Pendent	VdS				
	Recessed Pendent	VdS				--
F1FR42	Pendent	cULus				
	Recessed Pendent	cULus				--
	Upright	cULus				
F1FR42LL	Pendent	--			cULus, ULH	--
	Recessed Pendent	--			cULus, ULH	--
F1FRXLH	Pendent	cULus				
	Recessed Pendent	cULus				--
	Upright	cULus				
F1FR56	Pendent	cULus, FM, LPCB, VdS, EC				
	Recessed Pendent	cULus, FM, LPCB, VdS, EC				--
	Concealed Pendent*	cULus	cULus, VdS, EC	cULus		--
	Upright	cULus, FM, LPCB, VdS, EC				
	"Conventional (Pendent or Upright)"	LPCB, VdS, EC				
F1FR56LL	Pendent	--			cULus, ULH	--
	Recessed Pendent	--			cULus, ULH	--
	Concealed Pendent*	--			cULus, ULH	--
F1FR56	Horizontal Sidewall	cULus, FM				
	Recessed Horizontal Sidewall	cULus, FM				--
F1FR56	Vertical Sidewall (Pendent or Upright)	cULus, FM, LPCB				

\* Model F1FR56 Concealed Pendent and F1FR56LL Concealed Pendent sprinklers must be used with Reliable Model CCP cover plates. For Ordinary Temperature Classification sprinklers use a 135°F (57°C) temperature rated cover plate. For Intermediate Temperature Classification sprinklers use a 165°F (74°C) temperature rated cover plate.

## Recessed Escutcheon Data

Model	Deflector/ Orientation	Listed and Approved Recessed Escutcheons			SIN
		Model F1 (Fig. 1 & 3) 3/4-inch (19mm) adjustment	Model F2 (Fig. 1 & 3) 1/2-inch (12.7mm) adjustment	Model FP (Fig. 2) 1/2-inch (12.7mm) adjustment	
F1FR28	Recessed Pendent	cULus	cULus	cULus	RA1411
F1FR40	Recessed Pendent	VdS	VdS	VdS	RA1418
F1FR42	Recessed Pendent	cULus	cULus	cULus	RA1413
F1FR42LL	Recessed Pendent	cULus, ULH	cULus, ULH	cULus, ULH	RA1410
F1FR42XLH	Recessed Pendent	cULus	cULus	cULus	RA1413
F1FR56	Recessed Pendent	cULus, LPCB, VdS, EC	cULus, FM, LPCB, VdS, EC	cULus, VdS, EC	RA1414
F1FR56LL	Recessed Pendent	cULus, ULH	cULus, ULH	cULus, ULH	RA1415
F1FR56	Recessed Horizontal Sidewall	cULus	cULus, FM	cULus	RA1435

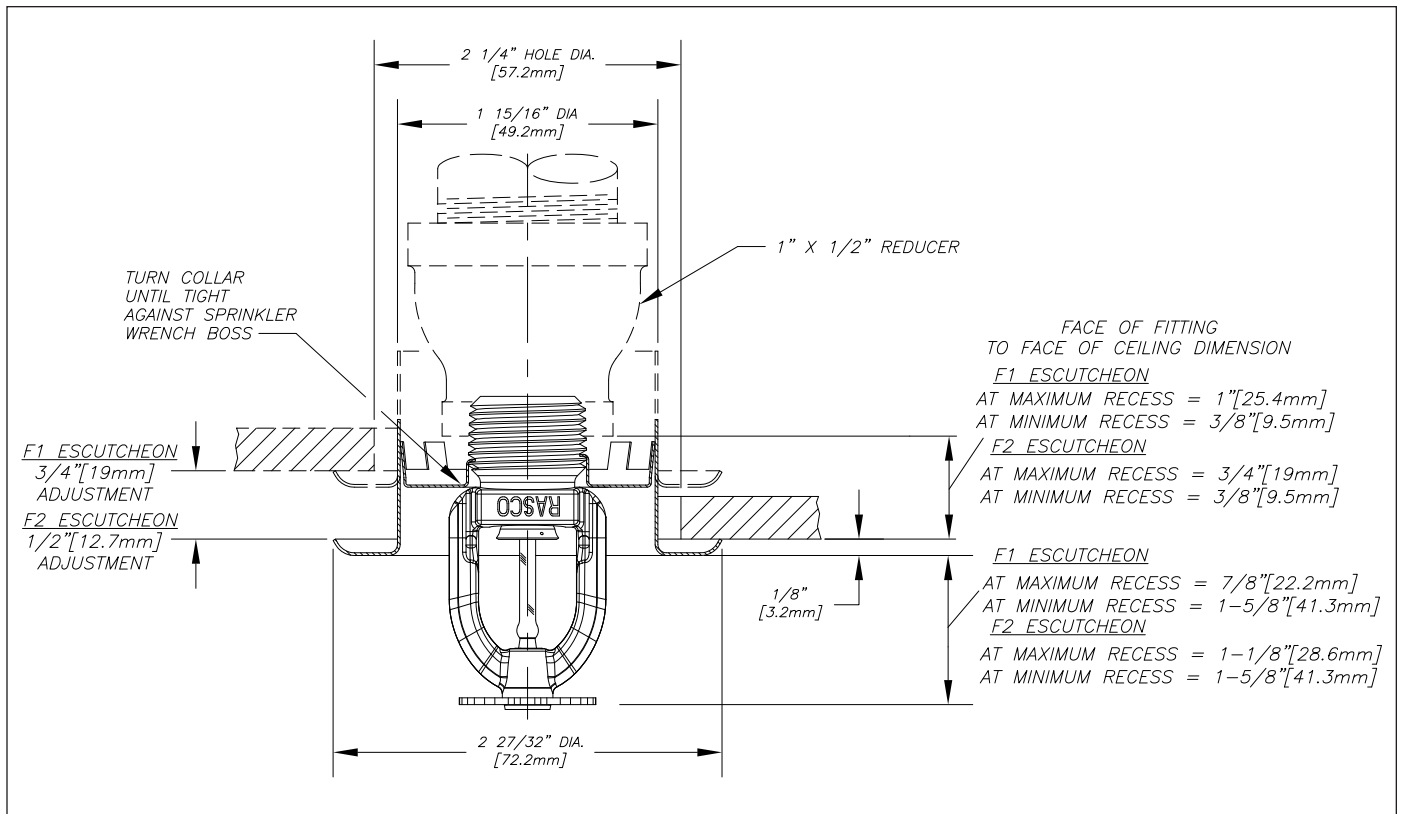


Fig. 1

Model F1FR56, F1FR56LL, F1FR42, F1FR40, F1FR42LL, F1FRXLH & F1FR28  
Recessed Pendant sprinkler with Model F1 or F2 escutcheon

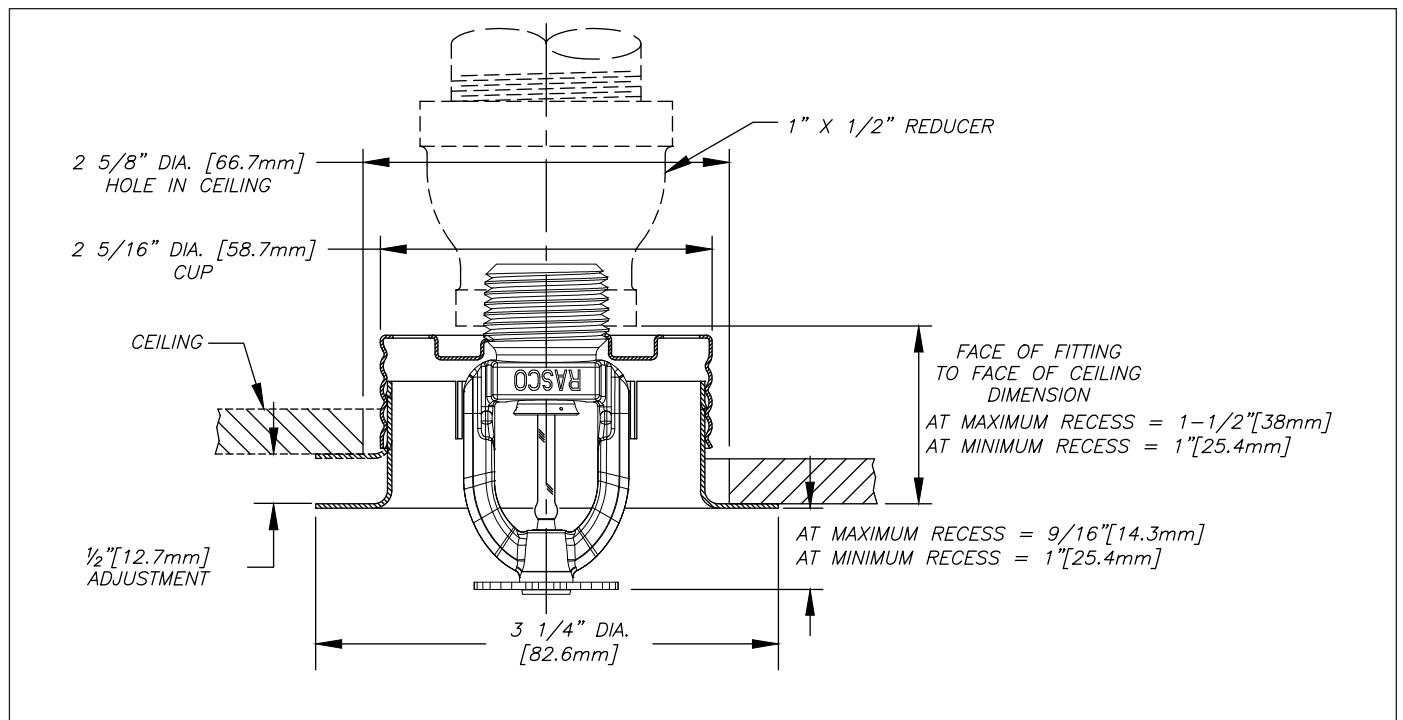


Fig. 2

Model F1FR56, F1FR56LL, F1FR42, F1FR40, F1FR42LL, F1FRXLH & F1FR28  
Recessed Pendant sprinkler with Model FP escutcheon



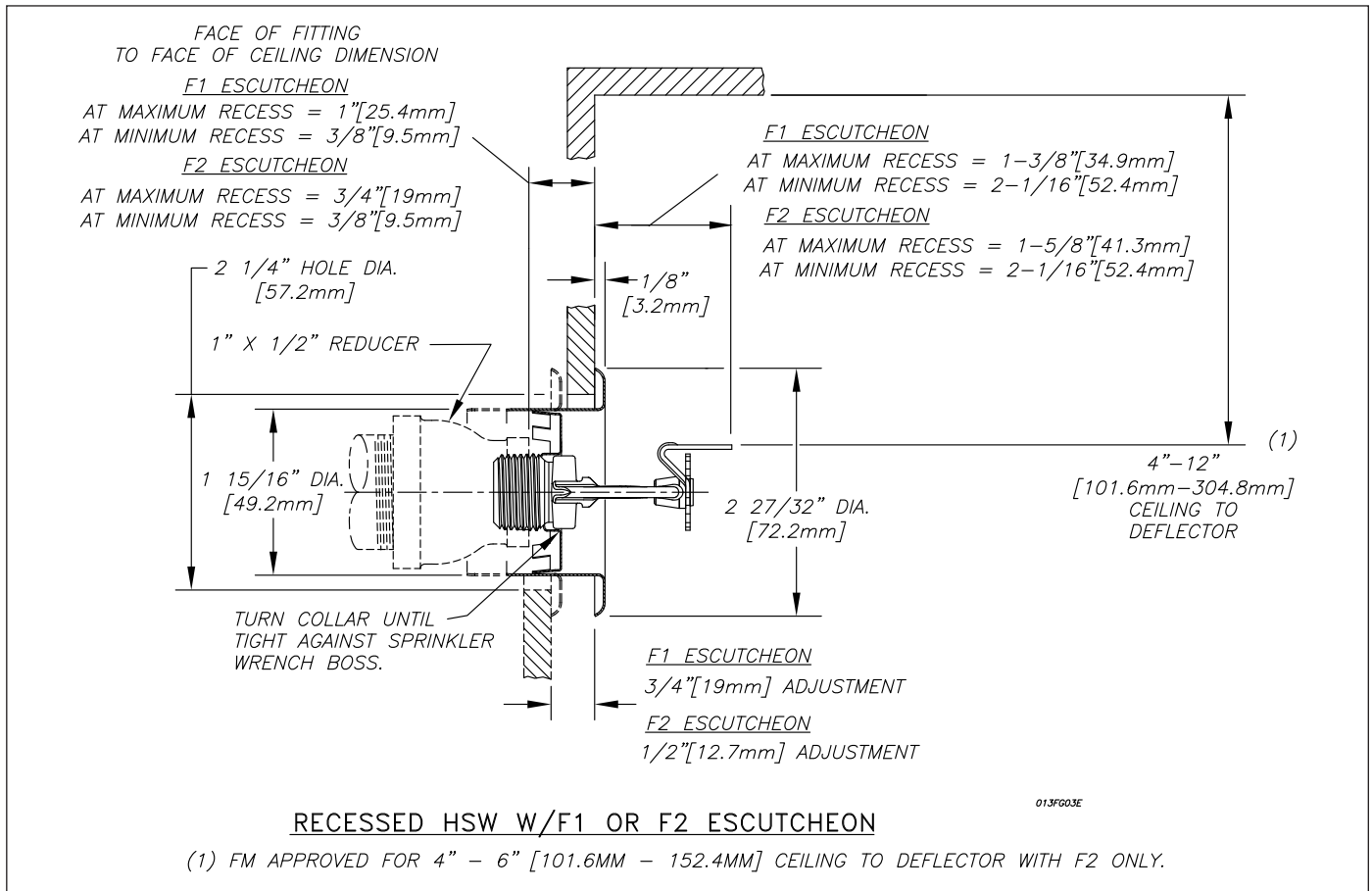


Fig. 3

Model F1FR56 Recessed Horizontal Sidewall sprinkler with Model F1 or F2 escutcheon

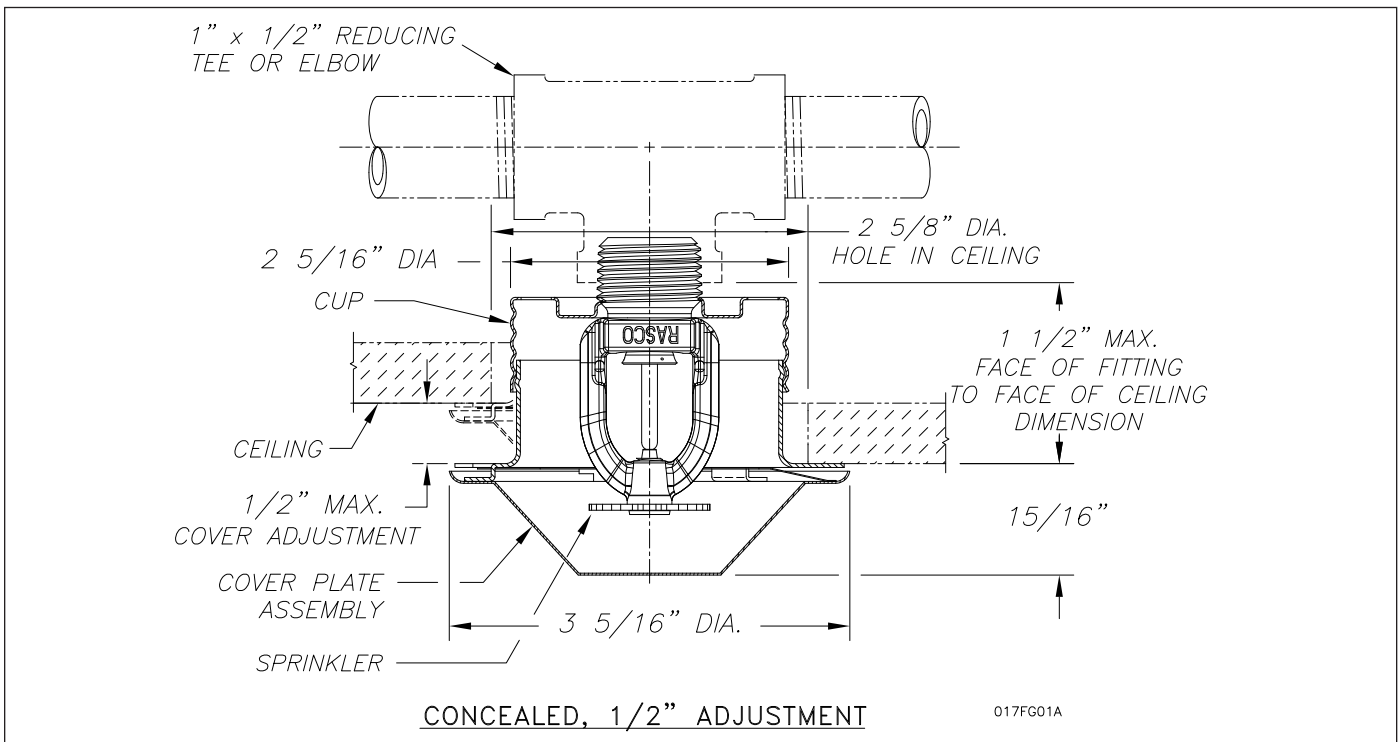


Fig. 4

Model F1FR56/F1FR56LL Concealed Pendant sprinkler with standard depth 1/2-inch (12.7mm) adjustment - Model CCP cover plate

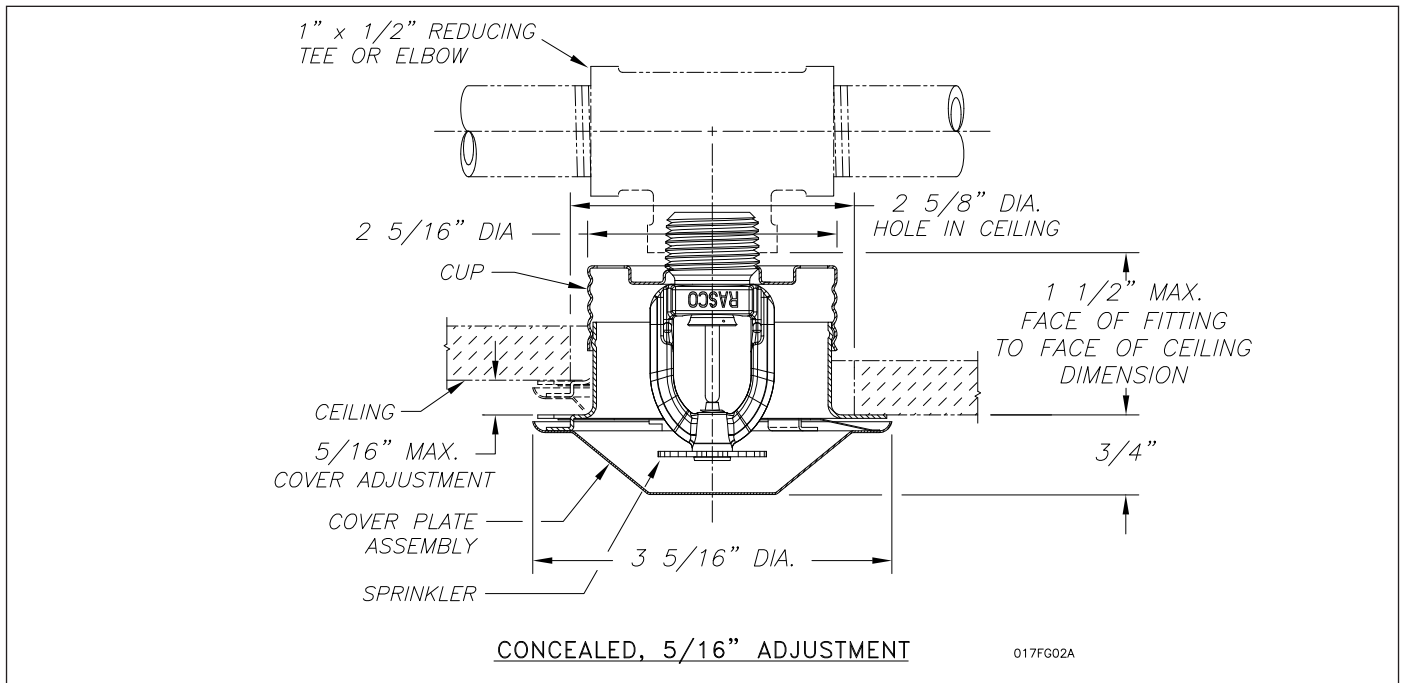


Fig. 5 - Model F1FR56/F1FR56LL Concealed Pendent sprinkler with low profile 5/16-inch (8.0mm) adjustment - Model CCP cover plate

## Maintenance

The Model F1FR Series sprinklers should be inspected and the sprinkler system maintained in accordance with NFPA 25. Do not clean sprinklers with soap and water, ammonia or any other cleaning fluids. Remove dust by using a soft brush or gentle vacuuming. Replace any sprinkler which has been painted (other than factory applied) or damaged in any way. A stock of spare sprinklers should be maintained to allow quick replacement of damaged or operated sprinklers.

## Finishes <sup>(1)</sup>

Standard Finishes		
Sprinkler	Escutcheon	Cover plate <sup>(1)</sup>
Bronze	Brass	Chrome
Chrome Plated	Chrome Plated	White
Polyester Coated <sup>(4)(5)(6)</sup>	White Painted	
Special Application Finishes		
Sprinkler	Escutcheon	Cover plate <sup>(1)</sup>
Electroless Nickel PTFE <sup>(7)</sup>	Electroless Nickel PTFE	Bright Brass
Bright Brass <sup>(3)</sup>	Bright Brass	Black Plating
Black Plated	Black Plated	Black Paint
Black Paint <sup>(2)(6)</sup>	Black Paint	Off White
Off White <sup>(2)(6)</sup>	Off White	Satin Chrome
Chrome Dull	Chrome Dull	

<sup>(1)</sup> Other finishes and colors are available on special order. Consult the factory for details. Custom color painted sprinklers may not retain their UL Corrosion resistance listing. Coverplate custom paint is semi-gloss, unless specified otherwise.

<sup>(2)</sup> cULus Listed only.

<sup>(3)</sup> 200°F (93°C) maximum.

<sup>(4)</sup> cULus listed "corrosion resistance" applies to SIN Numbers RA1435 (HSW), RA1485(VSW), RA1425 (Upright), RA1414 (Pendent) and RA1415 (Pendent) in standard black or white. Corrosion resistance in other polyester colors is available upon request.

<sup>(5)</sup> FM Approvals finish as "Polyester coated" applies to SIN Number RA1414, RA1435 and RA1425 in standard black or white.

<sup>(6)</sup> LPCB and VdS Approved finish applies only to RA1425, RA1414, RA1418 (VdS) and RA1475.

<sup>(7)</sup> cULus listed Corrosion Resistant

## Material Data

<b>Frame:</b>	DZR Brass, QM Brass, or Low Lead Brass
<b>Deflector:</b>	CDA Alloy 220, 260, or 510
<b>Load Screw\Pintle:</b>	CDA Alloy 360 or 544
<b>Cup:</b>	CDA Alloy 651 or 693
<b>Washer:</b>	Nickel Alloy 440 or 360, coated with PTFE Adhesive Tape
<b>Bulb:</b>	Glass

## Ordering Information

### Specify:

- Sprinkler Model: [F1FR28][F1FR40][F1FR42][F1FR42LL][F1FRXLH][F1FR56][F1FR56LL]
- Sprinkler Deflector/Orientation: [Pendent][Recessed Pendent][Upright][Conventional][Horizontal Sidewall][Recessed Horizontal Sidewall][Vertical Sidewall]
- Sprinkler threads: [1/2-inch NPT][ISO 7-R1/2]
- Sprinkler Temperature Rating: [135°F (57°C)][155°F (68°C)][175°F (79°C)][200°F (93°C)][286°F (141°C)]
- Sprinkler Finish
- Escutcheon Model: [F1][F2][FP]
- Escutcheon Finish (where applicable)
- Cover plate Model: [standard profile CCP 1/2-inch (12.7mm) adjustment][low profile CCP 5/16-inch (8.0mm) adjustment]
- Cover plate Temperature Rating: [135°F (57°C) for use with Ordinary Temperature sprinklers][165°F (74°C) for use with Intermediate Temperature sprinklers]
- Cover plate Finish

**Note:** When Model F1FR Series Recessed sprinklers are ordered, the sprinklers and escutcheons are packaged separately.



# Reliable...For Complete Protection

Reliable offers a wide selection of sprinkler components. Following are some of the many precision-made Reliable products that guard life and property from fire around the clock.

- Automatic sprinklers
- Flush automatic sprinklers
- Recessed automatic sprinklers
- Concealed automatic sprinklers
- Adjustable automatic sprinklers
- Dry automatic sprinklers
- Intermediate level sprinklers
- Open sprinklers
- Spray nozzles
- Alarm valves
- Retarding chambers
- Dry pipe valves
- Accelerators for dry pipe valves
- Mechanical sprinkler alarms
- Electrical sprinkler alarm switches
- Water flow detectors
- Deluge valves
- Detector check valves
- Check valves
- Electrical system
- Sprinkler emergency cabinets
- Sprinkler wrenches
- Sprinkler escutcheons and guards
- Inspectors test connections
- Sight drains
- Ball drips and drum drips
- Control valve seals
- Air maintenance devices
- Air compressors
- Pressure gauges
- Identification signs
- Fire department connection

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The equipment presented in this bulletin is to be installed in accordance with the latest published Standards of the National Fire Protection Association, Factory Mutual Research Corporation, or other similar organizations and also with the provisions of governmental codes or ordinances whenever applicable. Products manufactured and distributed by Reliable have been protecting life and property for almost 100 years.

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Manufactured by

**Reliable<sup>®</sup>**

**Reliable Automatic Sprinkler Co., Inc.**

(800) 431-1588

(800) 848-6051

(914) 829-2042

[www.reliablesprinkler.com](http://www.reliablesprinkler.com)

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Sales Fax

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EG. Printed in U.S.A. 11/17 P/N 9999970300

# Reliable®

## Model J112 and JL112 Sprinklers

Extended Coverage Sprinklers for  
Light Hazard and Ordinary Hazard

cULus Listed  
K11.2 (160 metric)

### Product Description

Model J112 and JL112 series sprinklers are cULus Listed extended coverage spray sprinklers intended for installation in accordance with NFPA 13. The sprinklers also have cULus Listed Specific Application Criteria for installation under concrete tee construction in accordance with the requirements documented in this bulletin. Coverage areas up to 400 ft<sup>2</sup> (37 m<sup>2</sup>) per sprinkler with a maximum spacing of up to 20 ft by 20 ft (6.1 m by 6.1 m) are permitted for both Light Hazard and Ordinary Hazard occupancies. Listed flows and pressures for each hazard classification and sprinkler spacing are provided in this bulletin. Model J112 and JL112 series sprinkler are cULus Listed as quick-response sprinklers for Light Hazard occupancies. When used in the Ordinary Hazard occupancies, Model J112 and JL112 series sprinklers are cULus Listed as quick-response for spacings up to 14 ft by 14 ft (4.3 m by 4.3 m) and standard-response for other listed spacings up to 20 ft by 20 ft (6.1 m by 6.1 m).

Model J112 Pendent and J112 Upright sprinklers use a glass bulb operating element and are cULus Listed as Corrosion Resistant Sprinklers when ordered with Polyester or Electroless Nickel PTFE (ENT) finish. Model JL112 Pendent and JL112 Upright sprinklers use a fusible link operating element. Model J112 Pendent and Model JL112 Pendent sprinklers are cULus Listed for use with the Model F2 and Model FP recessed escutcheons, which provide up to ½ inch (13 mm) of adjustment. In addition, for Ordinary Hazard occupancies, the Model J112 Pendent and Model JL112 Pendent sprinklers are cULus Listed for use with the Model F1 recessed escutcheon that provides up to ¾ inch (19 mm) of adjustment.

### Application

Model J112 and JL112 series sprinklers are intended for installation in Light Hazard and Ordinary Hazard occupancies in accordance with NFPA 13. The sprinklers must be installed in accordance with the requirements of NFPA 13 for extended coverage spray sprinklers and the requirements identified in this bulletin. In addition to the installation requirements of NFPA 13, cULus Listed Specific Application Criteria for installation under concrete tee construction is provided in this bulletin.

**Important!** Reliable fire sprinklers must be handled, stored, and installed in accordance with the guidelines in Caution Sheet 310 and this bulletin. Failure to follow these instructions may result in unintended operation or nonoperation of the fire protection system.



Model JL112 Upright



Model J112 Upright



Model JL112 Pendent



Model J112 Pendent



F1/F2 Recessed Escutcheon



FP Recessed Escutcheon

### Model J112 and JL112 Series Sprinkler Summary

Table A

Model	Orientation	Operating Element	Sprinkler Identification Number (SIN)
J112	Pendent	Glass Bulb	RA7216
JL112	Pendent	Fusible Link	R7216
J112	Upright	Glass Bulb	RA7326
JL112	Upright	Fusible Link	R7326

**Model J112 Pendent Sprinkler**

**SIN RA7216**

**Technical Specifications**

**Style:** Extended Coverage Pendent  
**Threads:** 3/4" NPT or ISO 7-1R3/4  
**Nominal K-Factor:** 11.2 (160 metric)  
**Max. Working Pressure:** 175 psi (12 bar)  
**Min. Spacing:** 8 ft. (2.4 m)

**Material Specifications**

**Thermal Sensor:** Glass Bulb  
**Cup:** Bronze Alloy  
**Frame:** Brass Alloy  
**Sealing Assembly:** Nickel Alloy with PTFE  
**Load Screw:** Bronze Alloy  
**Kick Spring:** Steel Alloy  
**Deflector:** Brass Alloy

**Sprinkler Wrench**

Model J1  
 Model RJ (recessed)

**Finishes**

(See Table G)

**Sensitivity**

(See Table B)

**Temperature Ratings**

155°F (68°C)  
 200°F (93°C)  
 286°F (141°C)

**Recessed Escutcheons**

F1-3/4" (19mm) adjustment (Ordinary Hazard only)  
 F2-1/2" (13mm) adjustment  
 FP-1/2" (13mm) adjustment

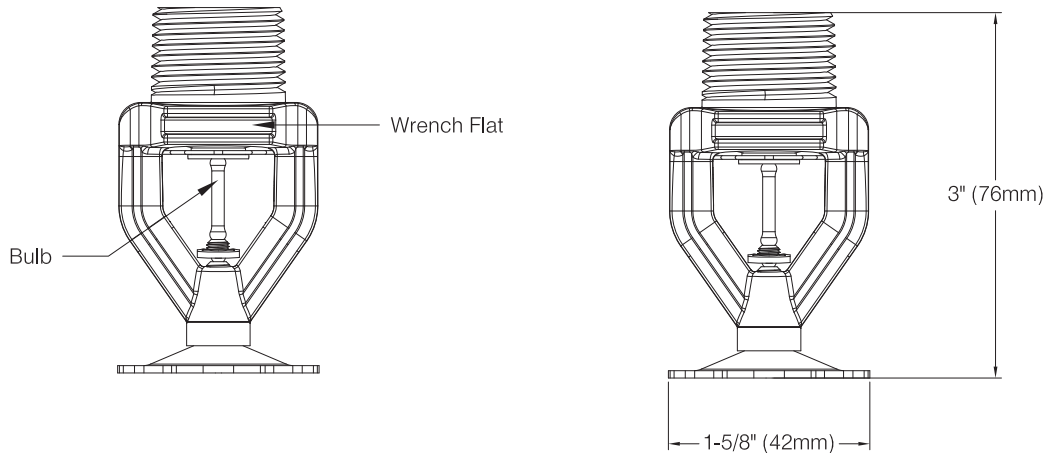
**Listings and Approvals**

cULus Listed  
 cULus Listed as Corrosion Resistant  
 with Polyester and ENT finish only



**Model J112 Pendent Sprinkler Components**

**Figure 1**



**Listed Design Criteria and Sensitivity**

**Table B**

Max. Spacing ft. x ft. (m x m)	Light Hazard		Ordinary Hazard Group 1		Ordinary Hazard Group 2	
	Flow gpm (l/m)	Pressure psi (bar)	Flow gpm (l/m)	Pressure psi (bar)	Flow gpm (l/m)	Pressure psi (bar)
12 x 12 (3.7 x 3.7)	30 (114) QR	7.2 (0.50) QR	30 (114) QR	7.2 (0.50) QR	39 (148) QR	12.1 (0.8) QR
14 x 14 (4.3 x 4.3)	30 (114) QR	7.2 (0.50) QR	30 (114) QR	7.2 (0.50) QR	39 (148) QR	12.1 (0.8) QR
16 x 16 (4.9 x 4.9)	30 (114) QR	7.2 (0.50) QR	39 (148) SR	12.1 (0.8) SR	51 (193) SR	20.7 (1.4) SR
18 x 18 (5.5 x 5.5)	33 (125) QR	8.7 (0.60) QR	49 (186) SR	19.1 (1.3) SR	65 (246) SR	33.7 (2.3) SR
20 x 20 (6.1 x 6.1)	40 (152) QR	12.8 (0.88) QR	60 (227) SR	28.7 (2.0) SR	80 (303) SR	51.0 (3.5) SR

QR = Quick-response  
 SR = Standard-response

**Model JL112 Pendent Sprinkler**

**SIN R7216**

**Technical Specifications**

**Style:** Extended Coverage Pendent  
**Threads:** 3/4" NPT or ISO 7-1R3/4  
**Nominal K-Factor:** 11.2 (160 metric)  
**Max. Working Pressure:** 175 psi (12 bar)  
**Min. Spacing:** 8 ft. (2.4 m)

**Material Specifications**

**Thermal Sensor:** Nickel Alloy Solder Link  
**Frame:** Brass Alloy  
**Levers:** Brass Alloy  
**Cap:** Bronze Alloy  
**Sealing Assembly:** Nickel Alloy with PTFE  
**Load Screw:** Bronze Alloy  
**Deflector:** Brass Alloy  
**Strut:** Copper Alloy

**Sprinkler Wrench**

Model J1  
 Model RJ (recessed)

**Finishes**

(See Table G)

**Sensitivity**

(See Table C)

**Temperature Rating\***

165°F (74°C)  
 212°F (100°C)

**Recessed Escutcheons**

F1-3/4" (19mm) adjustment (Ordinary Hazard only)  
 F2-1/2" (13mm) adjustment  
 FP-1/2" (13mm) adjustment

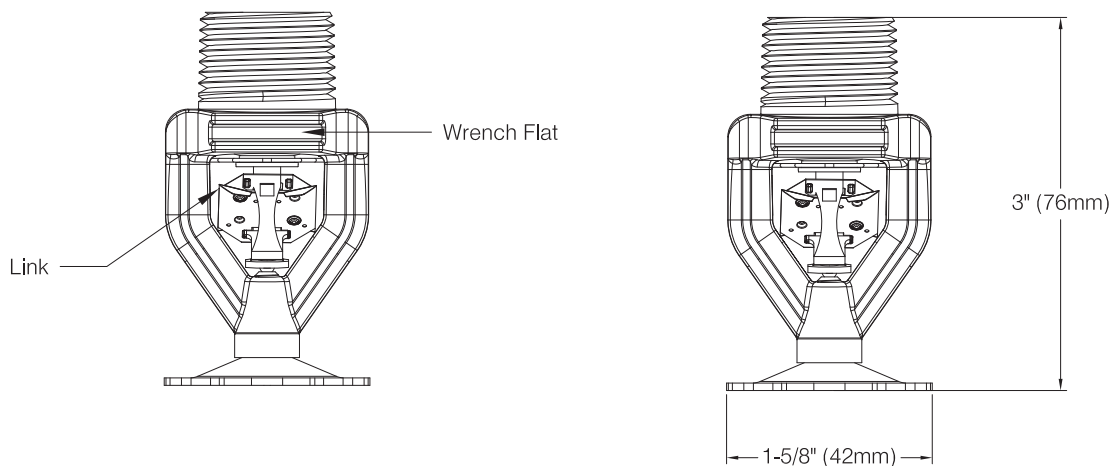
**Listings and Approvals**

cULus Listed



**Model J112 Pendent Sprinkler Components**

**Figure 2**



**Listed Design Criteria and Sensitivity**

**Table C**

Max. Spacing ft. x ft. (m x m)	Light Hazard		Ordinary Hazard Group 1		Ordinary Hazard Group 2	
	Flow gpm (l/m)	Pressure psi (bar)	Flow gpm (l/m)	Pressure psi (bar)	Flow gpm (l/m)	Pressure psi (bar)
12 x 12 (3.7 x 3.7)	30 (114) QR	7.2 (0.50) QR	30 (114) QR	7.2 (0.50) QR	39 (148) QR	12.1 (0.8) QR
14 x 14 (4.3 x 4.3)	30 (114) QR	7.2 (0.50) QR	30 (114) QR	7.2 (0.50) QR	39 (148) QR	12.1 (0.8) QR
16 x 16 (4.9 x 4.9)	30 (114) QR	7.2 (0.50) QR	39 (148) SR	12.1 (0.8) SR	51 (193) SR	20.7 (1.4) SR
18 x 18 (5.5 x 5.5)	33 (125) QR	8.7 (0.60) QR	49 (186) SR	19.1 (1.3) SR	65 (246) SR	33.7 (2.3) SR
20 x 20 (6.1 x 6.1)	40 (152) QR	12.8 (0.88) QR	60 (227) SR	28.7 (2.0) SR	80 (303) SR	51.0 (3.5) SR

QR = Quick-response  
 SR = Standard-response

**Model J112 Upright Sprinkler**

**SIN RA7326**

**Technical Specifications**

**Style:** Extended Coverage Upright  
**Threads:** 3/4" NPT or ISO 7-1 R3/4  
**Nominal K-Factor:** 11.2 (160 metric)  
**Max. Working Pressure:** 175 psi (12 bar)  
**Min. Spacing:** 8 ft. (2.4 m)

**Material Specifications**

**Thermal Sensor:** Glass Bulb  
**Cup:** Bronze Alloy  
**Frame:** Brass Alloy  
**Sealing Assembly:** Nickel Alloy with PTFE  
**Load Screw:** Bronze Alloy  
**Kick Spring:** Steel Alloy  
**Deflector:** Brass Alloy

**Finishes**

(See Table G)

**Sensitivity**

(See Table D)

**Temperature Rating**

155°F (68°C)  
 200°F (93°C)  
 286°F (141°C)

**Sprinkler Wrench**

Model J1

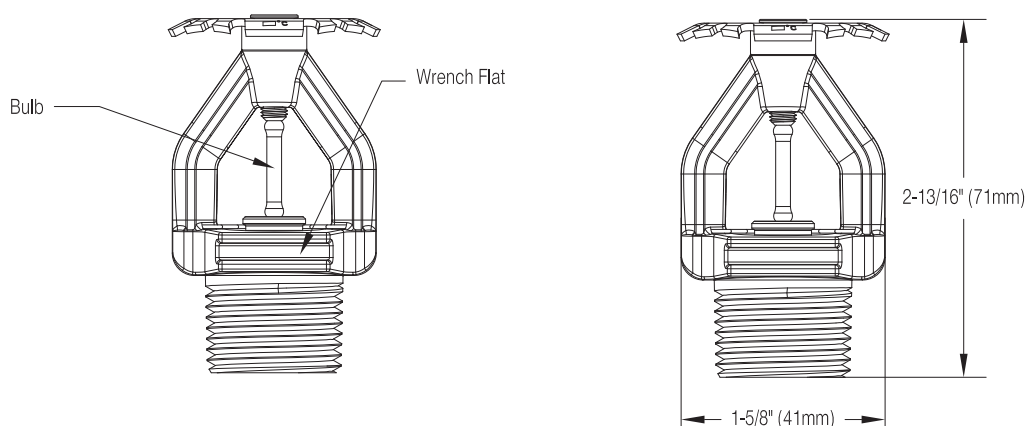
**Listings and Approvals**

cULus Listed  
 cULus Listed as Corrosion Resistant  
 with Polyester and ENT finish only



**Model J112 Upright Sprinkler Components**

**Figure 3**



**Listed Design Criteria and Sensitivity**

**Table D**

Max. Spacing ft. x ft. (m x m)	Light Hazard		Ordinary Hazard Group 1		Ordinary Hazard Group 2	
	Flow gpm (l/m)	Pressure psi (bar)	Flow gpm (l/m)	Pressure psi (bar)	Flow gpm (l/m)	Pressure psi (bar)
12 x 12 (3.7 x 3.7)	30 (114) QR	7.2 (0.50) QR	30 (114) QR	7.2 (0.50) QR	39 (148) QR	12.1 (0.8) QR
14 x 14 (4.3 x 4.3)	30 (114) QR	7.2 (0.50) QR	30 (114) QR	7.2 (0.50) QR	39 (148) QR	12.1 (0.8) QR
16 x 16 (4.9 x 4.9)	30 (114) QR	7.2 (0.50) QR	39 (148) SR	12.1 (0.8) SR	51 (193) SR	20.7 (1.4) SR
18 x 18 (5.5 x 5.5)	33 (125) QR	8.7 (0.60) QR	49 (186) SR	19.1 (1.3) SR	65 (246) SR	33.7 (2.3) SR
20 x 20 (6.1 x 6.1)	40 (152) QR	12.8 (0.88) QR	60 (227) SR	28.7 (2.0) SR	80 (303) SR	51.0 (3.5) SR

QR = Quick-response  
 SR = Standard-response

**Model JL112 Upright Sprinkler**

**SIN R7326**

**Technical Specifications**

**Style:** Extended Coverage Upright  
**Threads:** 3/4" NPT or ISO 7-1 R3/4  
**Nominal K-Factor:** 11.2 (160 metric)  
**Max. Working Pressure:** 175 psi (12 bar)  
**Min. Spacing:** 8 ft. (2.4 m)

**Material Specifications**

**Thermal Sensor:** Nickel Alloy Solder Link  
**Frame:** Brass Alloy  
**Levers:** Brass Alloy  
**Strut:** Brass Alloy  
**Cap:** Bronze Alloy  
**Sealing Assembly:** Nickel Alloy with PTFE  
**Load Screw:** Bronze Alloy  
**Deflector:** Brass Alloy

**Finishes**

(See Table G)

**Sensitivity**

(See Table E)

**Temperature Rating\***

165°F (74°C)  
 212°F (100°C)

**Sprinkler Wrench**

Model J1

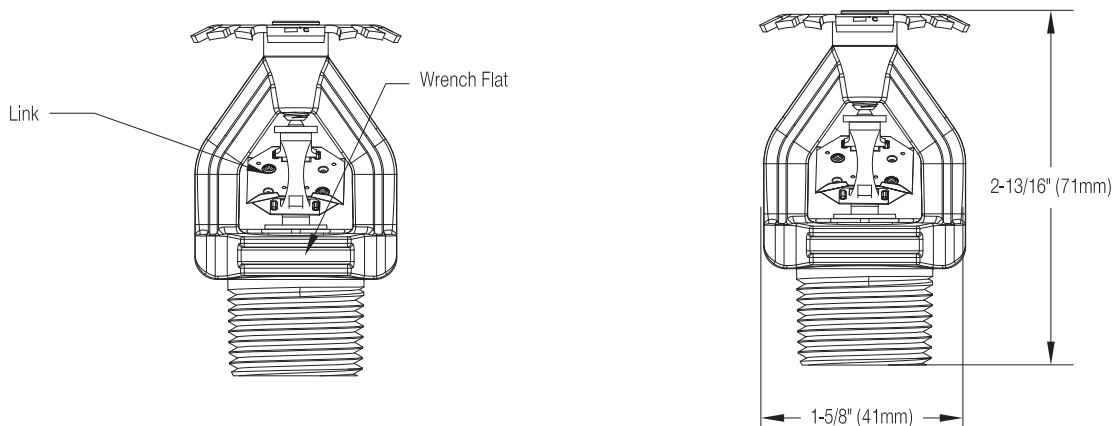
**Listings and Approvals**

cULus Listed



**Model JL112 Upright Sprinkler Components**

**Figure 4**



**Listed Design Criteria and Sensitivity**

**Table E**

Max. Spacing ft. x ft. (m x m)	Light Hazard		Ordinary Hazard Group 1		Ordinary Hazard Group 2	
	Flow gpm (l/m)	Pressure psi (bar)	Flow gpm (l/m)	Pressure psi (bar)	Flow gpm (l/m)	Pressure psi (bar)
12 x 12 (3.7 x 3.7)	30 (114) QR	7.2 (0.50) QR	30 (114) QR	7.2 (0.50) QR	39 (148) QR	12.1 (0.8) QR
14 x 14 (4.3 x 4.3)	30 (114) QR	7.2 (0.50) QR	30 (114) QR	7.2 (0.50) QR	39 (148) QR	12.1 (0.8) QR
16 x 16 (4.9 x 4.9)	30 (114) QR	7.2 (0.50) QR	39 (148) SR	12.1 (0.8) SR	51 (193) SR	20.7 (1.4) SR
18 x 18 (5.5 x 5.5)	33 (125) QR	8.7 (0.60) QR	49 (186) SR	19.1 (1.3) SR	65 (246) SR	33.7 (2.3) SR
20 x 20 (6.1 x 6.1)	40 (152) QR	12.8 (0.88) QR	60 (227) SR	28.7 (2.0) SR	80 (303) SR	51.0 (3.5) SR

QR = Quick-response  
 SR = Standard-response

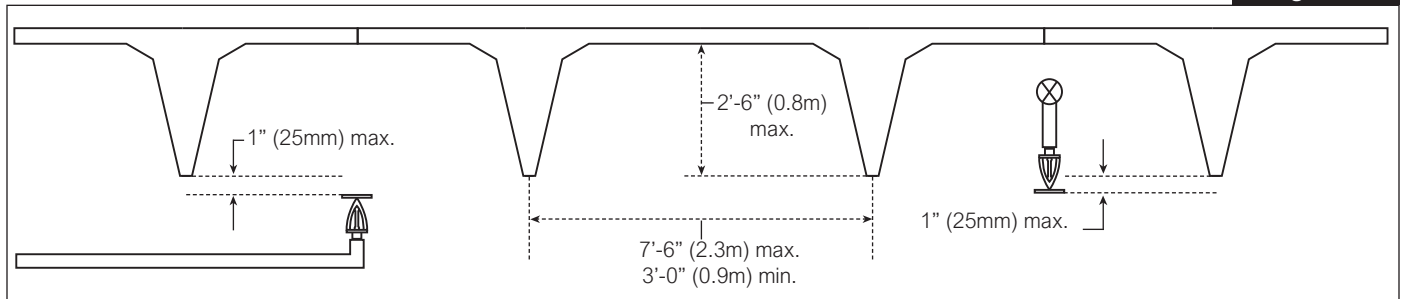


The Model J112 and JL112 pendent and upright sprinklers are cULus Listed for installation under concrete tee construction in accordance with the following specific application criteria:

- Max. Tee Depth: 2'- 6" (0.8m)
- Max. Tee Stem Spacing: 7'- 6" (2.3m)
- Min. Tee Stem Spacing: 3'- 0" (0.9m)
- Max. Tee Length: 32'- 0" (9.8m) or non-combustible baffles not less than the depth of the tees must be installed so that the longitudinal space between baffles does not exceed 32ft (9.8m) in length.
- Max. Deflector distance below Tee: 1" (25mm)
- Comply with obstructions to the Sprinkler Discharge Pattern Development requirements of the NFPA13 where deflector is located above bottom of tee.

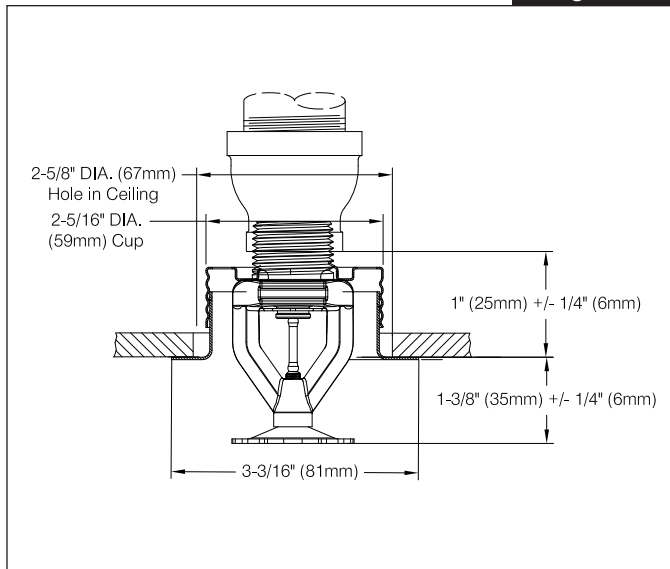
**Application and Installation for Use Under Concrete Tee**

**Figure 5**



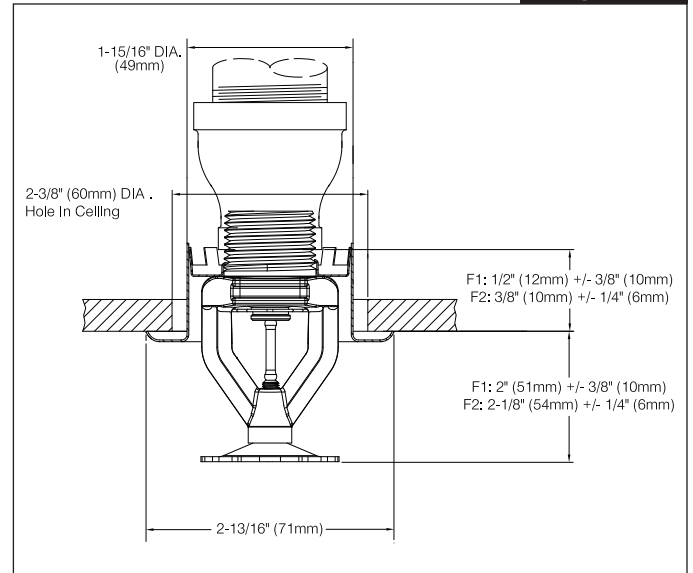
**Model FP Escutcheon Installation Dimensions**

**Figure 6**



**Model F1/F2 Escutcheon Installation Dimensions**

**Figure 7**



Note: The Model FP, F1, or F2 may be used for ordinary hazard occupancies. For light hazard occupancies, the Model FP or F2 recessed escutcheon must be used. Model J112 and JL112 sprinklers with Model F1 recessed escutcheon are not listed for use in light hazard occupancies.

Standard Finishes		Special Application Finishes	
Sprinkler	F1, F2, & FP <sup>(3)</sup> Escutcheons	Sprinkler	F1, F2, & FP <sup>(3)</sup> Escutcheons
Bronze Chrome Plated White Polyester <sup>(2)</sup>	Brass Chrome Plated White Polyester	Bright Brass Satin Chrome Custom Color Polyester <sup>(2)</sup> Electroless Nickel PTFE <sup>(2) (4)</sup>	Bright Brass Satin Chrome Custom Color Polyester Type 316 Stainless Steel

- Notes:** <sup>(1)</sup> Paint or any other coating applied over the factory finish will void all approvals and warranties.  
<sup>(2)</sup> cULus Listed Corrosion Resistant when ordered with Model J112 Pendent (RA7216) or Model J112 Upright (RA7326).  
<sup>(3)</sup> The Model FP escutcheon assembly consists of an unfinished galvanized cup with a finished escutcheon ring.  
<sup>(4)</sup> Available with Model J112 Pendent (RA7216) and Model J112 Upright (RA7326) only.

**Installation**

Glass bulb sprinklers have orange bulb protectors to minimize bulb damage during shipping, handling, and installation. Reliable sprinkler installation wrenches are designed to install sprinklers with bulb protectors in place. Remove the bulb protector at the time when the sprinkler system is placed in service for fire protection. Removal of the bulb protector before this time may leave the bulb vulnerable to damage. Remove bulb protectors by undoing the clasp by hand. Do not use tools to remove bulb protectors.

Models J112 and JL112 series sprinklers must be installed with the Reliable sprinkler installation wrench identified in this bulletin. Any other wrench may damage the sprinkler. Recommended installation torque is 14 to 20 lb.ft (19 to 27 N.m). Do not tighten sprinklers over the maximum recommended installation torque. Exceeding the maximum recommended installation torque may cause leakage or impairment of the sprinkler.

Recessed pendent sprinklers are to be installed as shown in Fig. 6 or Fig 7., as applicable to the specific model being installed. Models J112 and JL112 series recessed pendent sprinklers may only be installed with the Reliable Model F1, Model F2, or Model FP recessed escutcheon. The use of any other recessed escutcheon will void all approvals and negate all warranties. The Reliable Model FP escutcheon may not be used in ceilings having positive pressure with respect to the space below. Ensure that the openings in the Model FP escutcheon/can assembly are unobstructed following installation.

**Maintenance**

Models J112 and JL112 series sprinklers should be inspected and the sprinkler system maintained in accordance with NFPA 25. Do not clean sprinklers with soap and water, ammonia or any other cleaning fluids. Remove dust by gentle vacuuming. Replace any sprinkler which has been painted (other than factory applied) or damaged in any way. A stock of spare sprinklers should be maintained to allow quick replacement of damaged or operated sprinklers. Prior to installation, sprinklers should be maintained in the original cartons and packaging until used to minimize the potential for damage to sprinklers that would cause improper operation or non-operation.

**J1 Wrench**



**RJ Wrench**



**Listings and Approvals**

Listed by Underwriters Laboratories, Inc. and certified by Underwriters Laboratories of Canada (cULus)

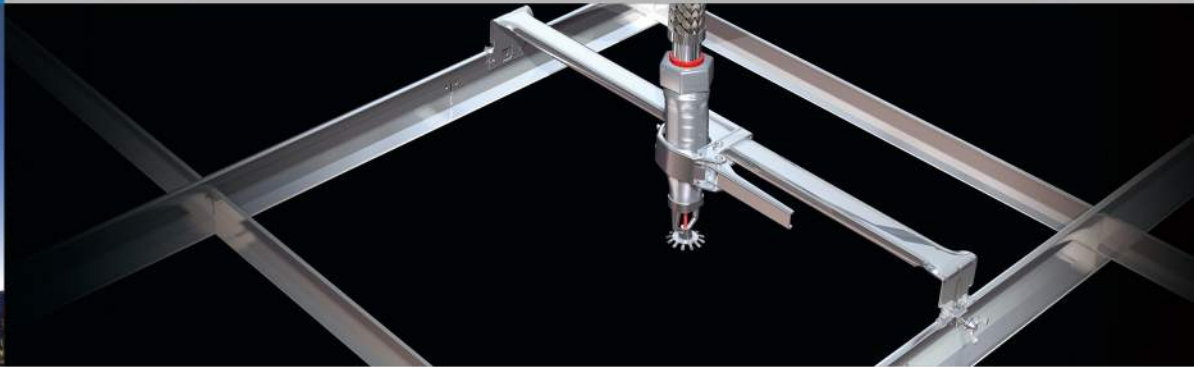
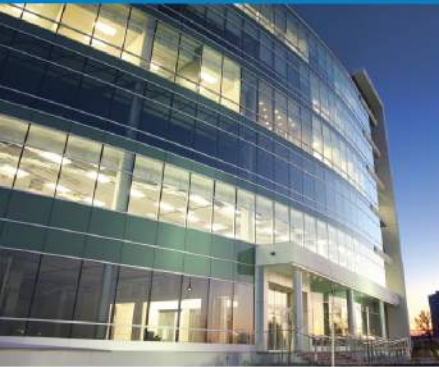
**UL Listing Category**

Sprinklers, Automatic and Open Extended Coverage Sprinklers  
 UL Guide Number – VNIV.

**Ordering Information**

**Specify:**

1. Sprinkler Model: [J112 Pendent] [JL112 Pendent] [J112 Upright] [JL112 Upright]
2. Temperature Rating: J112: [155°F (68°C)] [200°F (93°C)] [286°F (141°C)]  
 JL112: [165°F (74°C)] [212°F (100°C)]
3. Finish: (See Table G)
4. Escutcheon (Pendent Only; for 3/4" threads)  
 Model F1 (Ordinary Hazard Only)  
 Model F2  
 Model FP



## Flexible Sprinkler Drops

### Braided Flexible Sprinkler Connection Data Sheet (High Performance)

**EASYFLEX Flexible Sprinkler Drops are designed to significantly reduce labor and installation costs. By eliminating the need for pipe cutting and midline connections, you save valuable time and money.**

Easyflex flexible sprinkler connections offer braided and unbraided flexible hoses in 2',3',4',5', and 6' with top loading or front loading brackets for variety of ceiling and wall applications: T-Bars, metal studs, hat channels, wood beams, concrete sidewalls, and more. The system is qualified to be installed at commercial, hotel, retail, restaurants, cultural, entertainment, educational, government, healthcare, and religious buildings.

#### EASYFLEX Flexible Sprinkler Drops Appliance Standards

##### National Fire Protection Association (NFPA):

- NFPA 13: Standard for the Installation of Sprinkler Systems
- NFPA 13D: Standard for the Installation of Sprinkler Systems in One and Two-Family Dwellings and Manufactured Homes
- NFPA 13R: Standard for Installation of Sprinkler Systems in residential Occupancies up to and including four stories in height
- NFPA 13 Section 9.2.1.3.3.3 : No hangers are required for flexible connections as long as the length does not exceed 6ft.

##### American Society for Testing and Methods (ASTM):

- ASTM C635: Standard specifications for the manufacture, performance, and testing of metal suspension systems for acoustical tile and lay-in panel ceilings
- ASTM C636: Standard practice for installation of metal ceiling suspension systems for acoustical tile and lay-in panels

##### Factory Mutual (FM), FM Class No, 1637:

- Approved standard for flexible sprinkler hose with threaded end fittings

##### International Building Code (IBC) Section 1621 / American Society of Civil Engineers (ASCE) 7 9.6.2.6.2 & 9.6.2.6.2.2:

- Flexible Sprinkler Connections are an alternative solution to install without seismic escutcheons

Job Name :

Engineer / Architect :

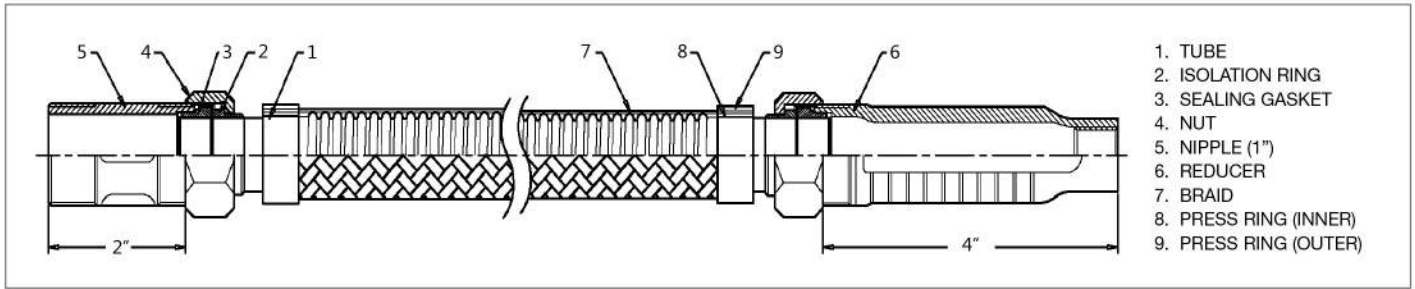
Job Location :

Wholesaler :

Submittal Date :

Contractor :

**BRAIDED FLEXIBLE HOSE (High Performance)**



- 1. TUBE
- 2. ISOLATION RING
- 3. SEALING GASKET
- 4. NUT
- 5. NIPPLE (1")
- 6. REDUCER
- 7. BRAID
- 8. PRESS RING (INNER)
- 9. PRESS RING (OUTER)

**SPECIFICATIONS**

Lengths Available	24", 36", 48", 60" and 72"
Outlet	1/2" or 3/4"
Hose Type	Braided
Max. Ambient Temperature Rating	225°F
Max. Working Pressure Rating	175 psig

Hose	Stainless Steel 304
Nut & Nipple	Zinc-Plated Steel
Sealing Gasket / Isolation Ring	EPDM/ NYLON

Minimum Bend Radius	8" (FM) * DO NOT bend within 2.52 inches from connection nuts
---------------------	--

\* No hangers and seismic escutcheons required  
 \* Required torque to assemble reducer and nipple with the flexible hose : 50 ft-lb

Connection	Inlet	1" NPT
	Outlet	1/2" or 3/4" NPT



**FRICITION LOSS DATA**

EFB HP Series Braided Hose  
 OGSB, TBS Bracket Systems

Length (in.)	Outlet Connection	K-Factor	Max. Number of 90° Bends	Equivalent Length of 1 in. Schedule 40 Pipe, ft.
24"	1/2"	5.6	1	17.8
		8.0	1	8.3
	3/4"	14.0	1	8.3
36"	1/2"	5.6	2	23.0
		8.0	2	13.9
	3/4"	14.0	2	13.7
48"	1/2"	5.6	3	30.2
		8.0	3	21.7
	3/4"	14.0	3	21.6
60"	1/2"	5.6	4	37.4
		8.0	4	29.5
	3/4"	14.0	4	29.5
72"	1/2"	5.6	4	43.3
		8.0	4	34.5
	3/4"	14.0	4	33.2

\* FM: 8" minimum bend radius, where C=120



# Air Release Valves



### Operational Highlights:

- Maintains system flow efficiency
- Releases unwanted air pockets during system operation
- Protects system against air related surges
- Fully complies with AWWA C512

### Product Features:

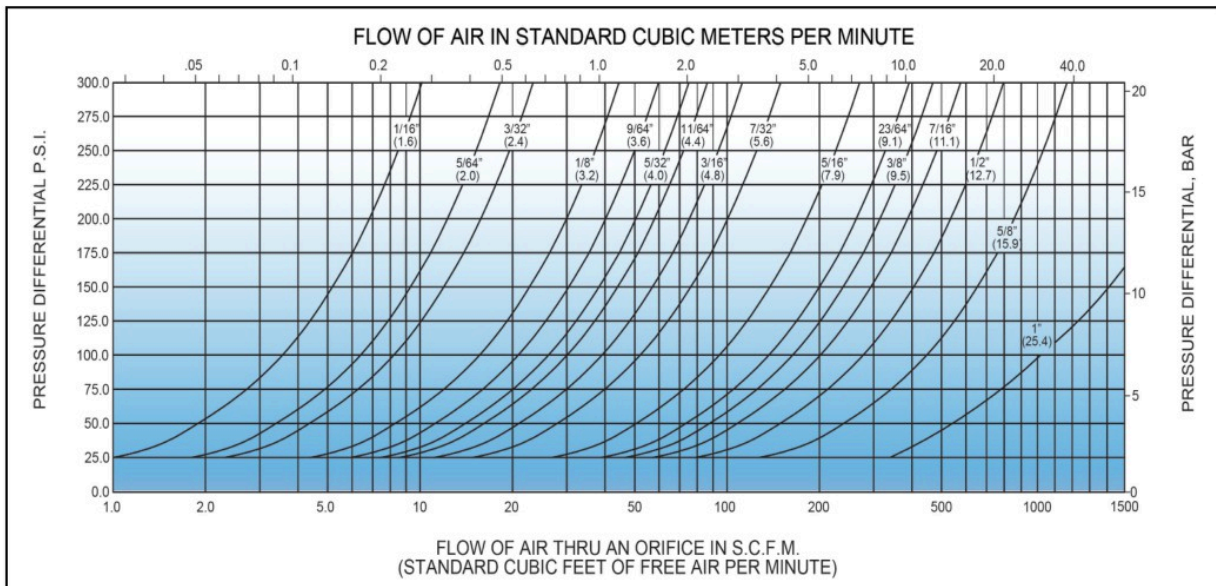
- Unconditionally guaranteed stainless steel floats
- Stainless steel 316 internal trim
- Resilient seating for positive shutoff
- Performance proven for over 50 years
- Non-clog design minimizes need for backwashing

### Optional Accessories:

- Vacuum check (prevents inflow of air)
- Outlet hood with screen (prevents debris from entering valves)
- Ball and plug isolation valves (allows valve maintenance)
- Inflow Preventer on outlet (stops flood water and resulting contamination from entering pipeline)
- Backwash kit (for severe wastewater applications)

MATERIALS OF CONSTRUCTION		
COMPONENT	STANDARD	OPTIONAL
Body and Cover	Cast Iron ASTM A126 Class B Ductile Iron ASTM A536 Grade 65-45-12	Carbon Steel ASTM A216 Grade WCB Stainless Steel ASTM A351 Grade CF8M
Float and Trim	Type 316 Stainless Steel	—————
Seal	Buna-N	EPDM or Viton
Coating	Universal Acrylic Primer (external)	Non-Stick Fusion Bonded Epoxy (internal & external)

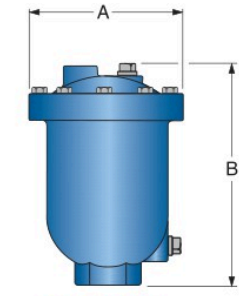
### VENTING CAPACITY OF AIR RELEASE VALVE ORIFICES



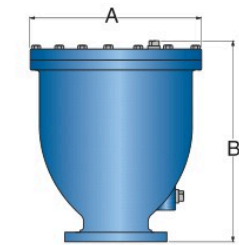
# Air Release Valves

WATER AIR RELEASE VALVES						
Inlet Size	Outlet Size	Model Number*	CWP PSI	Orifice Size	Dimensions (Inches)	
					A	B
1/2" NPT	1/2" NPT	15A†	175	1/16"	4.75	5.25
3/4" NPT	1/2" NPT	15A.2†	175	1/16"	4.75	5.25
1" NPT	1/2" NPT	15A.3†	175	1/16"	4.75	5.25
1" NPT	1/2" NPT	22.3†	175	3/32"	5.13	6.31
1/2" - 3/4" NPT	1/2" NPT	22.4†	175	3/32"	5.13	6.31
1/2" NPT	1/2" NPT	22.7†	300	1/16"	5.13	6.31
3/4" - 1" NPT	1/2" NPT	22.9	300	1/16"	5.13	6.31
3/4" - 1" NPT	1/2" NPT	25.5	150	1/8"	6.13	7.00
3/4" - 1" NPT	1/2" NPT	25.6	300	3/32"	6.13	7.00
1" NPT	1/2" NPT	38	150	3/16"	7.00	10.00
2" NPT	1/2" NPT	38.2	150	3/16"	7.00	10.00
1" NPT	1/2" NPT	38HP	500	1/8"	7.00	10.00
2" NPT	1/2" NPT	38HP.2	500	1/8"	7.00	10.00
1" NPT	1/2" NPT	38.5	300	5/32"	7.00	10.00
2" NPT	1/2" NPT	38.6	300	5/32"	7.00	10.00
2" NPT	1" NPT	45	150	23/64"	9.50	12.25
3" NPT	1" NPT	45.2	150	23/64"	9.50	12.25
2" NPT	1" NPT	45HP	400	3/16"	9.50	12.25
3" NPT	1" NPT	45HP.2	400	23/64"	9.50	12.25
2" NPT	1" NPT	45.5	300	7/32"	9.50	12.25
3" NPT	1" NPT	45.6	300	7/32"	9.50	12.25
2" NPT	1" NPT	50	500	7/32"	10.88	13.06
2" NPT	1" NPT	50HP	1000	1/8"	10.88	13.06
6" 125lb Flg	1" NPT	61	150	1"	19.63	22.06

\*NSF 61 & 372 Certified †UL Listed/FM Approved

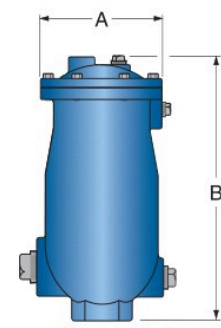


**15A - 50HP**  
Air Release Valve



**61**  
Air Release Valve

WASTEWATER AIR RELEASE VALVES						
Inlet Size	Outlet Size	Model Number	CWP PSI	Orifice Size	Dimensions (Inches)	
					A	B
2" NPT	1/2" NPT	48A	150	3/16"	7.00	15.31
3" NPT	1/2" NPT	48A.2	150	3/16"	7.00	15.31
2" NPT	1/2" NPT	48A.4	75	5/16"	7.00	15.31
3" NPT	1/2" NPT	48A.5	75	5/16"	7.00	15.31
4" NPT	1/2" NPT	48A.6	75	5/16"	7.00	15.31
2" NPT	1" NPT	49A	150	7/16"	9.50	17.56
3" NPT	1" NPT	49A.2	150	7/16"	9.50	17.56
2" NPT	1" NPT	49A.4	75	1/2"	9.50	17.56
3" NPT	1" NPT	49A.5	75	1/2"	9.50	17.56
4" NPT	1" NPT	49A.6	75	1/2"	9.50	17.56



**48A - 49A.6**  
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