



FIRE SPRINKLER EQUIPMENT INDEX

PROJECT INFORMATION:

TANDOORI GRILL
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PUYALLUP, WA 98374

4/5/2022

SFS PROJECT NUMBER: **TI22022**

SPRINKLERS

NO.	MANUFACTURER	SIZE	MODEL	DESCRIPTION
1	RELIABLE	5.6K	F1FR-56	RECESSED STANDARD RESPONSE PENDENT SPRINKLER
2	RELIABLE	5.6K	F3QR56	DRY QUICK RESPONSE PENDENT SPRINKLER

PIPE AND FITTINGS

NO.	MANUFACTURER	SIZE	MODEL	DESCRIPTION
2	EASYFLEX	1"	60"	BRAIDED FLEXIBLE SPRINKLER HOSE

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

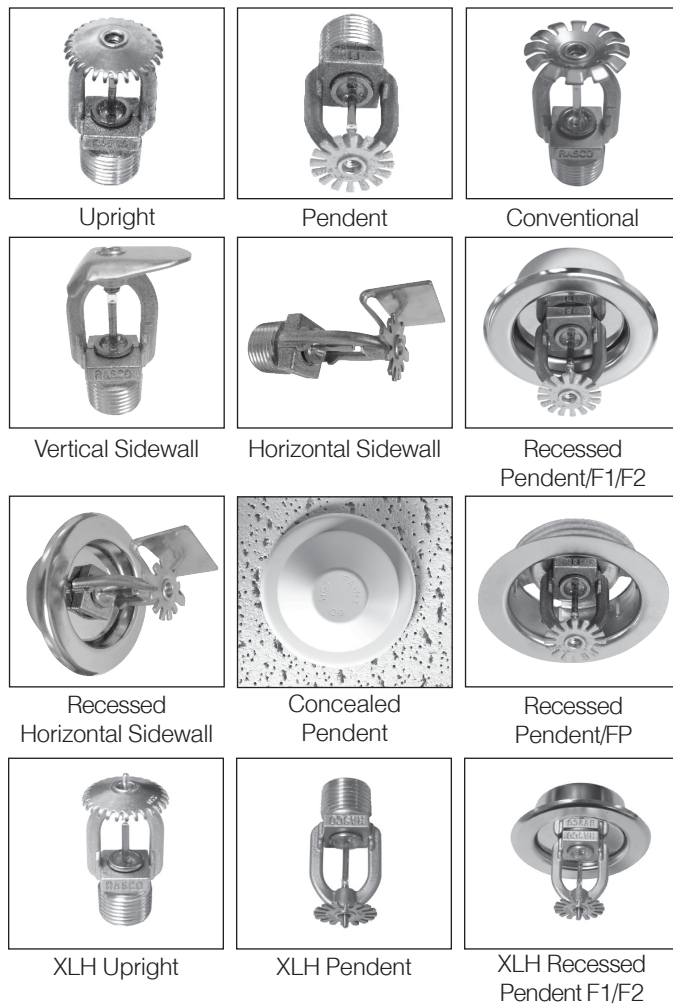
Listing & Approvals

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.

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

⁽¹⁾ cULus Listed Corrosion Resistant sprinkler when ordered with available Polyester coating.

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

⁽³⁾ Available with FM approved Polyester coating in black or white.

⁽⁴⁾ Available with LPCB and VdS approved Polyester coating.

⁽⁵⁾ 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.

⁽⁶⁾ 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.

⁽⁷⁾ cULus Listing of the F1FR56 Horizontal Sidewall sprinkler is for Light and Ordinary Hazard occupancies only. FM Approval of the F1FR56 Horizontal Sidewall sprinkler is for Light Hazard occupancies only.

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

⁽⁹⁾ The F1FR56 Vertical Sidewall sprinkler is listed and approved for use only in Light Hazard occupancies. Minimum to maximum deflector to ceiling distance shall be 4 inches to 12 inches (102mm to 305mm). 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 (Pen- dent 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

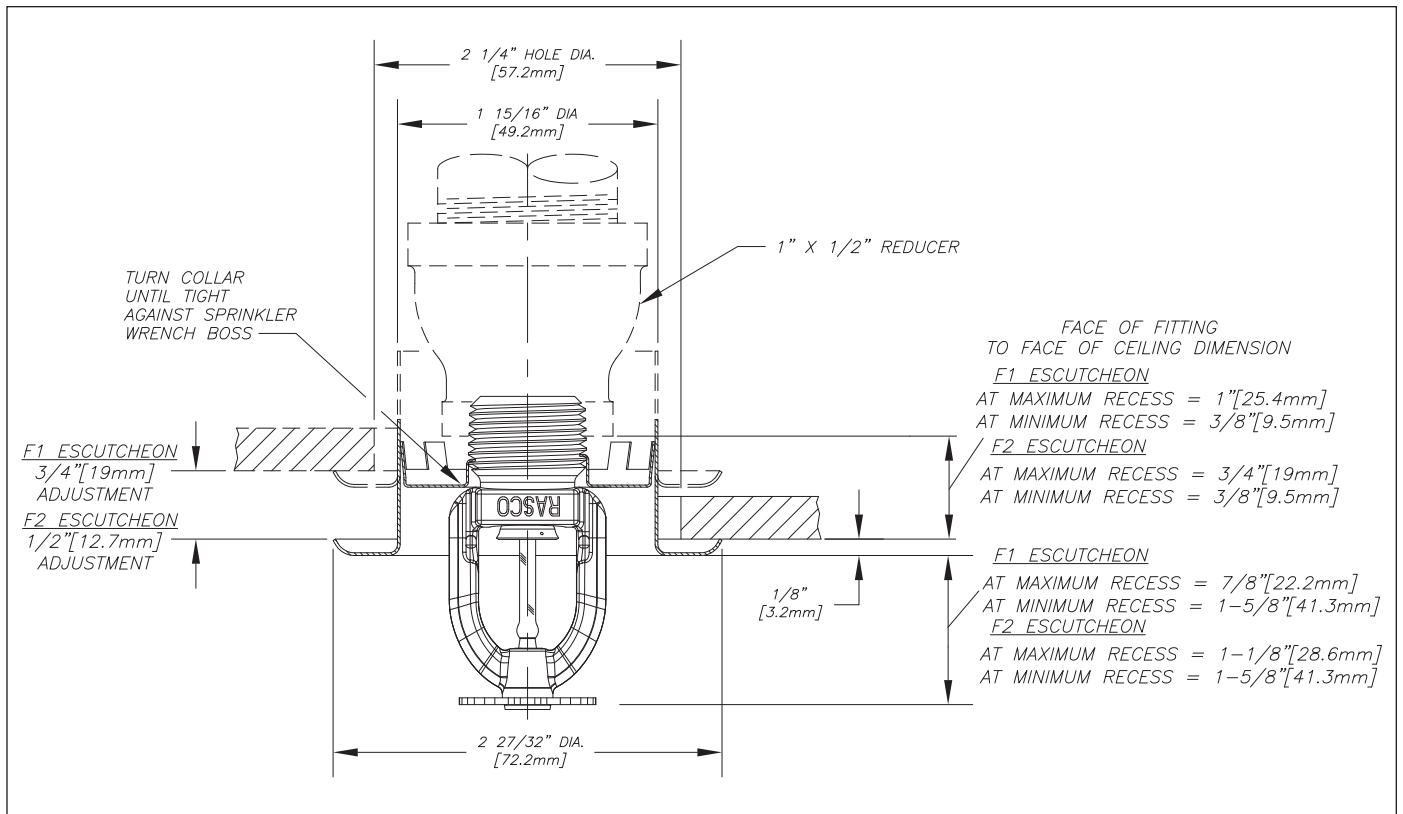


Fig. 1

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

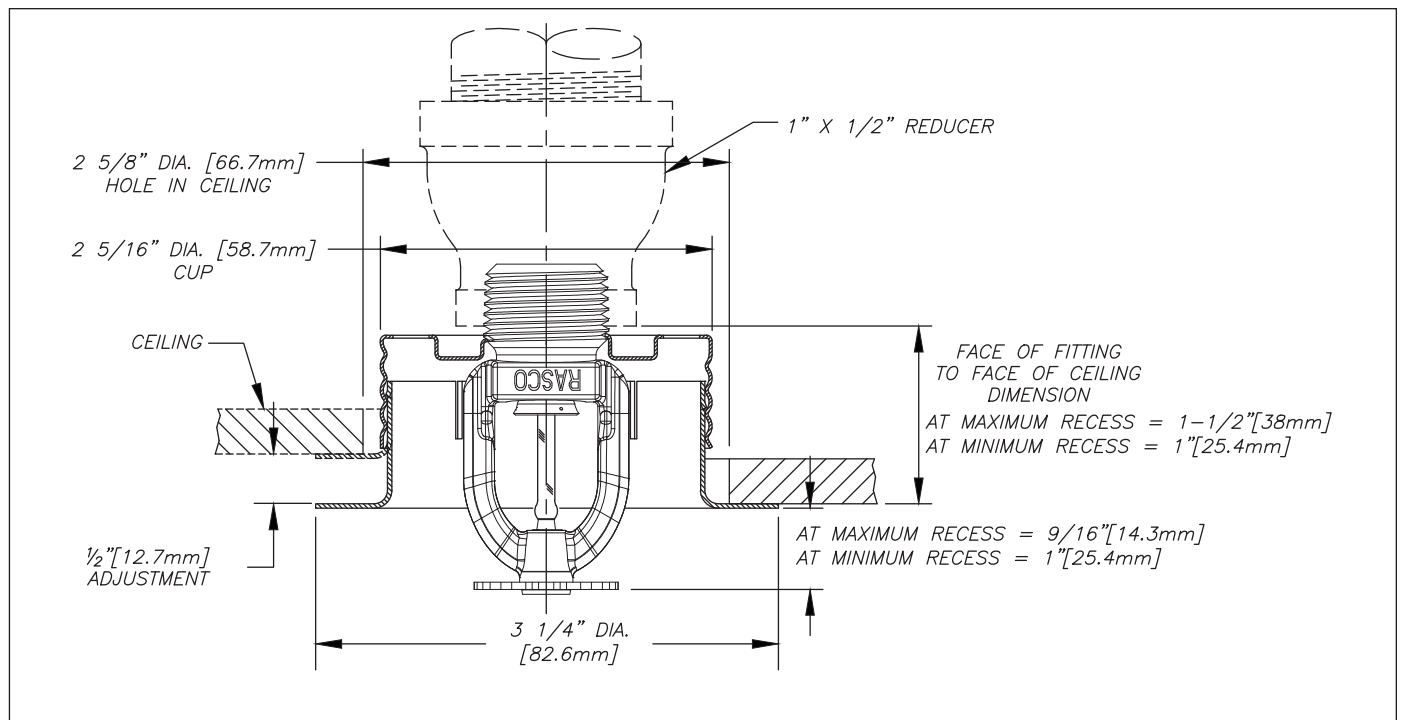


Fig. 2

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

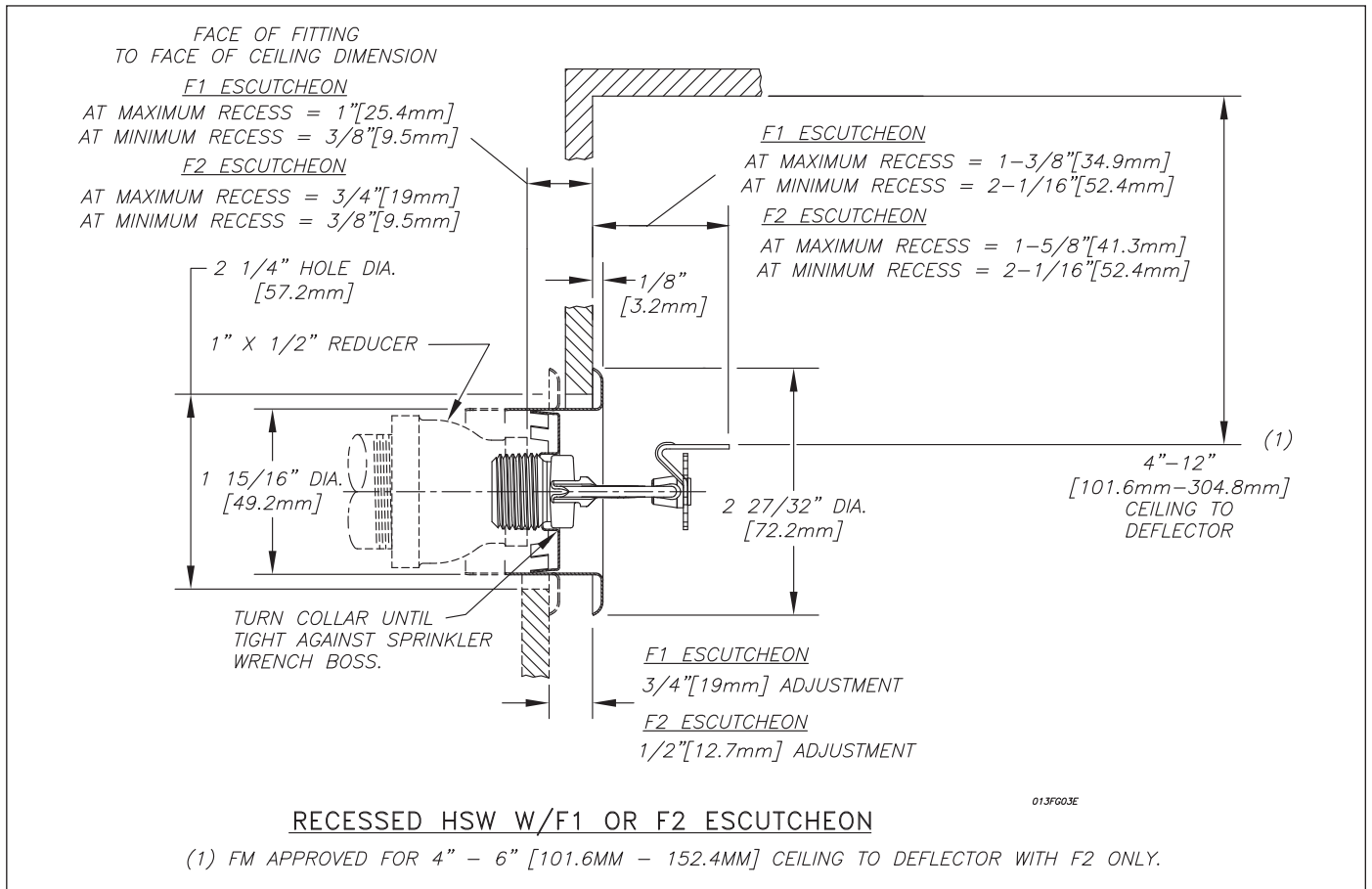


Fig. 3
Model F1FR56 Recessed Horizontal Sidewall sprinkler with Model F1 or F2 escutcheon

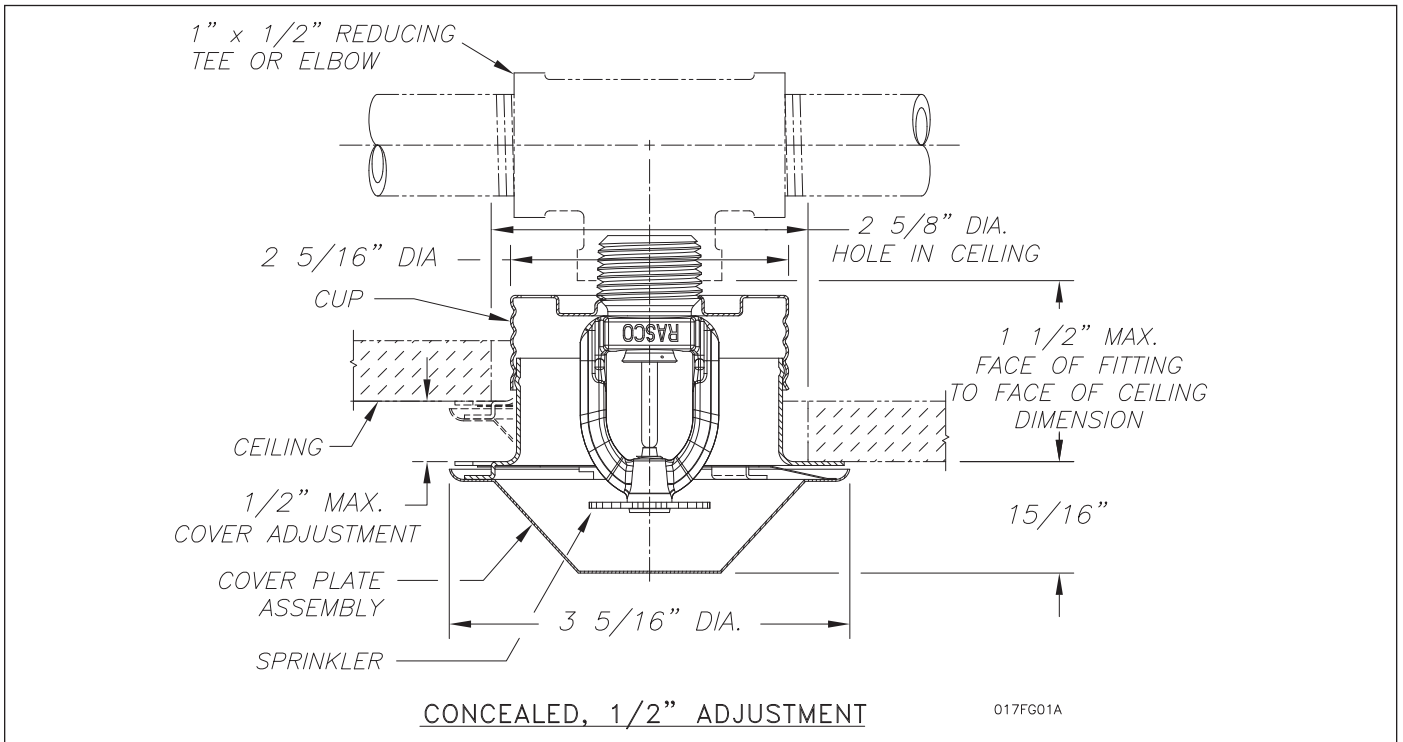


Fig. 4
Model F1FR56/F1FR56LL Concealed Pendant sprinkler with standard depth
1/2-inch (12.7mm) adjustment - Model CCP cover plate

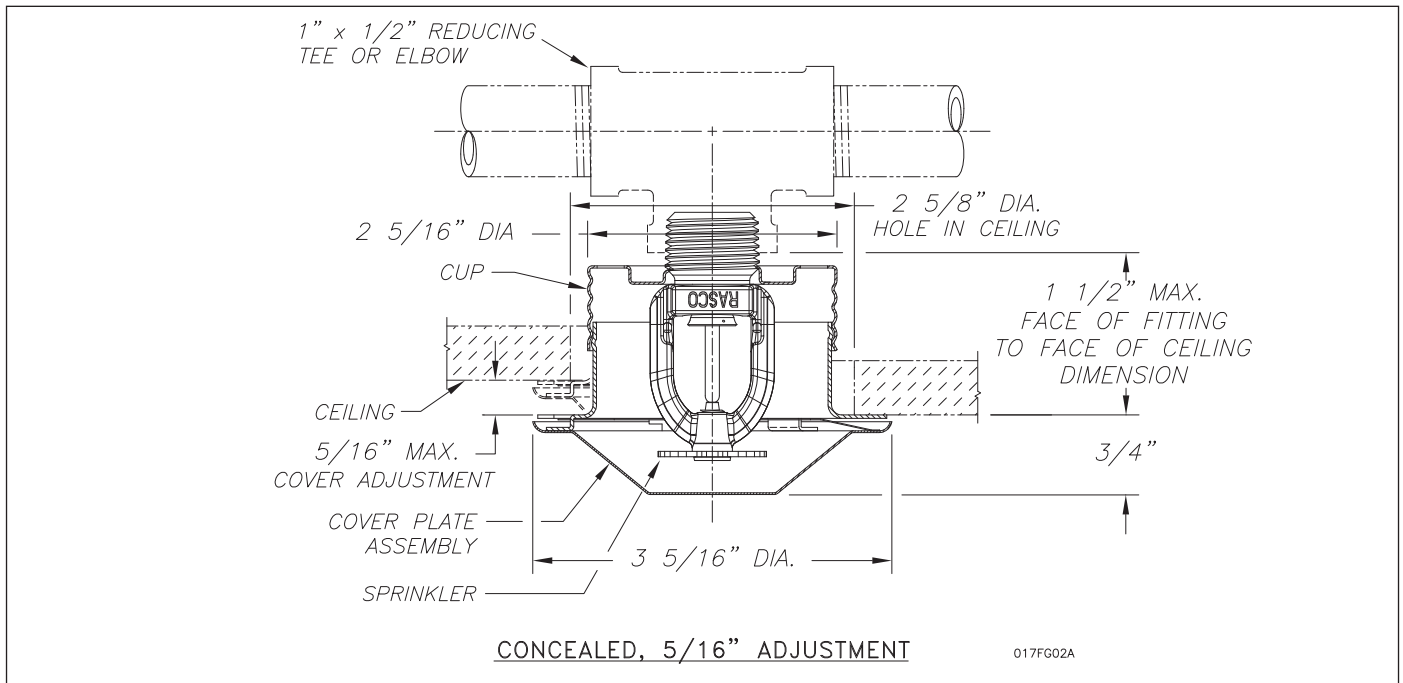


Fig. 5 - Model F1FR56/F1FR56LL Concealed Pendant sprinkler with low profile 5/16-inch (8.0mm) adjustment - Model CCP cover plate

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 ⁽¹⁾

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

⁽¹⁾ 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.

⁽²⁾ cULus Listed only.

⁽³⁾ 200°F (93°C) maximum.

⁽⁴⁾ 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.

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

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

⁽⁷⁾ cULus listed Corrosion Resistant

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

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.

Manufactured by

Reliable[®]

Reliable Automatic Sprinkler Co., Inc.

(800) 431-1588 Sales Offices
(800) 848-6051 Sales Fax
(914) 829-2042 Corporate Offices
www.reliablesprinkler.com Internet Address



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Reliable®

Model F3QR56 Dry K5.6 (80 metric) Quick-Response, Standard Spray Sprinklers

Bulletin 157 April 2020

Features

- Available in the following configurations:
 - Pendent with standard escutcheon
 - Pendent with Model HB extended escutcheon
 - Pendent with Model FP recessed escutcheon
 - Pendent with Model F1 recessed escutcheon
 - Concealed Pendent with Model CCP cover plate
 - Horizontal Sidewall with Standard escutcheon
 - Horizontal Sidewall with Model HB extended escutcheon
 - Horizontal Sidewall with Model FP recessed escutcheon (FM Standard Response)
 - Horizontal Sidewall with Model F1 recessed escutcheon (FM Standard Response)
 - Upright
- Available with 1" NPT, ISO7-1R1, 3/4" NPT, or ISO7-1R3/4 inlet fitting.
- 3/4" NPT inlet fittings permit replacement of older 3/4" inlet dry sprinklers without changing to a larger sprinkler fitting.
- Sprinklers, escutcheons, and cover plates are available in a wide variety of standard and special application finishes.
- White polyester, black polyester, and Electroless Nickel PTFE (ENT) finish sprinklers are cULus Listed as Corrosion Resistant.
- Available with cULus Listed 250 psi (17.2 bar) pressure rating for Dry Pendent and select HSW configurations. FM Approved for 175 psi (12 bar).

Product Description

Model F3QR56 Dry sprinklers are quick-response, standard coverage sprinklers with a nominal K-Factor of 5.6 (80 metric). Available in Dry Pendent, Dry Horizontal Sidewall, and Dry Upright configurations, Model F3QR56 Dry sprinklers all use a 3 mm glass bulb operating element. See the Temperature Ratings table in this Bulletin for available temperature ratings. Model F3QR56 Dry sprinklers are intended for installation on wet-pipe, dry-pipe, or preaction sprinkler systems in accordance with NFPA 13, FM Property Loss Prevention Data Sheets, and other applicable installation standards.

Model F3QR56 Dry Pendent and Sidewall sprinklers are available with a variety of escutcheon options as illustrated in Figs. 1 through 3 and Figs. 5 through 9. In addition, Model F3QR56 Dry Pendent sprinklers are also available with the Model CCP conical concealed cover plate as illustrated in Fig. 4. Available sprinkler, escutcheon, and cover plate finishes are identified in the Finishes table in this Bulletin. The Model F1 escutcheon, Model FP escutcheon, and Model CCP cover plate are the only recessed escutcheons and cover plate listed for use with Model F3QR56 Dry sprinklers; the use of any other recessed escutcheon or cover plate



Pendent
(See Fig. 1)



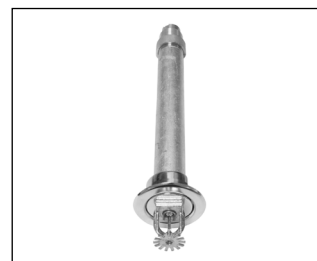
Pendent / HB
(See Fig. 2)



Recessed FP Pendent
(See Fig. 3)



Concealed
(See Fig. 4)



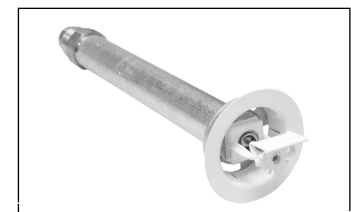
Recessed F1 Pendent
(See Fig. 5)



Horizontal Sidewall
(See Fig. 6)



Horizontal Sidewall / HB
(See Fig. 7)



Recessed FP
Horizontal Sidewall
(See Fig. 8)



Recessed F1
Horizontal Sidewall
(See Fig. 9)



Upright
(See Fig. 10)

with Model F3QR56 Dry sprinklers will void all guarantees, warranties, listings and approvals.

Inlet fittings are available with 1" NPT, ISO 7-1R1, 3/4" NPT, or ISO7-1R3/4 threads. Sprinklers with 3/4" NPT and ISO7-1R3/4 inlet fittings are intended primarily for replacement of

existing 3/4" or ISO7-1R3/4 inlet dry sprinklers, but may also be used in new installations.

See the Available Configurations, Listings, and Approvals table in this Bulletin for further information on Model F3QR56 Dry sprinklers.

Available Configurations, Listings, and Approvals

Sprinkler Model	Escutcheon or Cover Plate	Available Length (See Figs. 1-9)	Listings and Approvals ⁽¹⁾	Inlet Threads	Sprinkler Identification Number (SIN)
F3QR56 Dry Pendent	Standard Escutcheon	2" to 36" (50 to 900 mm)	cULus, NYC	3/4" NPT or ISO7-1R3/4	R5714
	HB Extended Escutcheon	3-1/2" to 36" (90 to 900 mm)			
	F1 Recessed Escutcheon				
	FP Recessed Escutcheon				
	CCP Cover Plate				
	Standard Escutcheon	2" to 48" (50 to 1200 mm)	cULus, FM, NYC	1" NPT or ISO7-1R1	
	HB Extended Escutcheon	3-1/2" to 48" (90 to 1200 mm)			
	F1 Recessed Escutcheon				
	FP Recessed Escutcheon				
	CCP Cover Plate				
F3QR56 Dry Horizontal Sidewall	Standard Escutcheon	2" to 48" (50 to 1200 mm)	cULus ⁽²⁾ , NYC ⁽²⁾	3/4" NPT or ISO7-1R3/4	R5734
	HB Extended Escutcheon	3-1/2" to 48" (90 to 1200 mm)			
	F1 Recessed Escutcheon				
	FP Recessed Escutcheon				
	Standard Escutcheon	2" to 48" (50 to 1200 mm)	cULus ⁽²⁾ , FM ⁽³⁾ , NYC ⁽²⁾	1" NPT or ISO7-1R1	
	HB Extended Escutcheon	3-1/2" to 48" (90 to 1200 mm)			
	F1 Recessed Escutcheon	3-1/2" to 48" (90 to 1200 mm)	cULus ⁽²⁾ , FM ⁽³⁾⁽⁴⁾ , NYC ⁽²⁾		
	FP Recessed Escutcheon				
F3QR56 Dry Upright	N/A	5" to 48" (127 to 1200 mm)	cULus ⁽²⁾	1" NPT or ISO7-1R1	R5724

⁽¹⁾ For available temperature ratings and finishes see the Temperature Ratings and Finishes tables, respectively, in this Bulletin.

⁽²⁾ cULus Listing and NYC for Light Hazard and Ordinary Hazard only.

⁽³⁾ FM Approved for Light Hazard only.

⁽⁴⁾ Model F3QR56 Dry Horizontal Sidewall with Model F1 or Model FP recessed escutcheon are FM Approved as Standard Response.

Listing and Approval Agencies

See the Available Configurations, Listings, and Approvals table in this Bulletin for listings and approvals applicable to each available configuration.

1. Listed by Underwriters Laboratories, Inc. and UL Certified for Canada (cULus)
2. Certified by FM Approvals (FM)
3. Permitted in New York City based on UL Listing per Local Law 33/2007 (NYC)

Technical Data

Nominal K-Factor: 5.6 gpm/psi^{1/2} (80 L/min/bar^{1/2})

Sprinkler	Listing or Approval	Deflector to Ceiling Distance	Maximum Working Pressure
F3QR56 Dry Pendent	cULus, NYC	See note below	250 psi (17.2 bar)
	FM	See note below	175 psi (12 bar)
F3QR56 Dry Horizontal Sidewall	cULus, NYC	4" to 6 "	250 psi (17.2 bar)
		4" to 12"	175 psi (12 bar)
	FM	See note below	175 psi (12 bar)
F3QR56 Dry Upright	cULus	See note below	175 psi (12 bar)

Note: Deflector distance to be in accordance with applicable NFPA, FM, or other agency requirements. Information is provided only when additional clarification is necessary.

Temperature Classification	Glass Bulb Color	Sprinkler Temperature Rating	Cover Plate Temperature Rating	Maximum Ceiling Temperature	Listings and Approvals ⁽¹⁾
Ordinary	Orange	135°F (57°C)	135°F (57°C)	100°F (38°C)	cULus, FM, NYC
	Red	155°F (68°C)			
Intermediate	Yellow	175°F (79°C)	165°F (74°C)	150°F (66°C)	cULus, NYC
Intermediate	Green	200°F (93°C)	165°F (74°C)	150°F (66°C)	cULus, FM, NYC
High	Blue	286°F (141°C)	None	225°F (107°C)	cULus, FM ⁽²⁾ , NYC
			165°F (74°C)	150°F (66°C)	cULus, NYC

⁽¹⁾ For listed and approved sprinkler, escutcheon, and inlet configurations see the Available Configurations, Listings, and Approvals table in this Bulletin.

⁽²⁾ High temperature classification is FM Approved with Standard and Model HB escutcheons only.

Finishes⁴

Component	Sprinkler	Escutcheon ⁽¹⁾	Cover Plate
Standard Finishes	Bronze	Brass ⁽³⁾	White Paint
	White Polyester ⁽²⁾	White Polyester	Chrome
	Chrome	Chrome	
Special Application Finishes	Electroless Nickel PTFE ⁽²⁾	Type 316 Stainless Steel	Satin Chrome Black Paint Custom Color Paint Black Plating
	Black Polyester ⁽²⁾	Black Polyester	
	Custom Color Polyester	Customer Color Polyester	

⁽¹⁾ Standard and Model HB escutcheons are supplied with both the can and escutcheon finished. Model F1 escutcheons are supplied with both the collar and escutcheon finished. Model FP escutcheons are supplied with the escutcheon finished; the cup is galvanized or stainless steel with no further finish.

⁽²⁾ cULus Listed as a Corrosion Resistant Sprinkler.

⁽³⁾ Brass finish available for standard, Model F1, and Model FP escutcheons only.

⁽⁴⁾ Dry upright sprinkler available in standard bronze only.

Model F3QR56 Dry Pendent Sprinkler with Standard Escutcheon (SIN R5714)

"A" Dim.	2" to 48" (51mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 2" to 36" (51mm to 914mm) in 1/4" (6mm) increments for 3/4" connections
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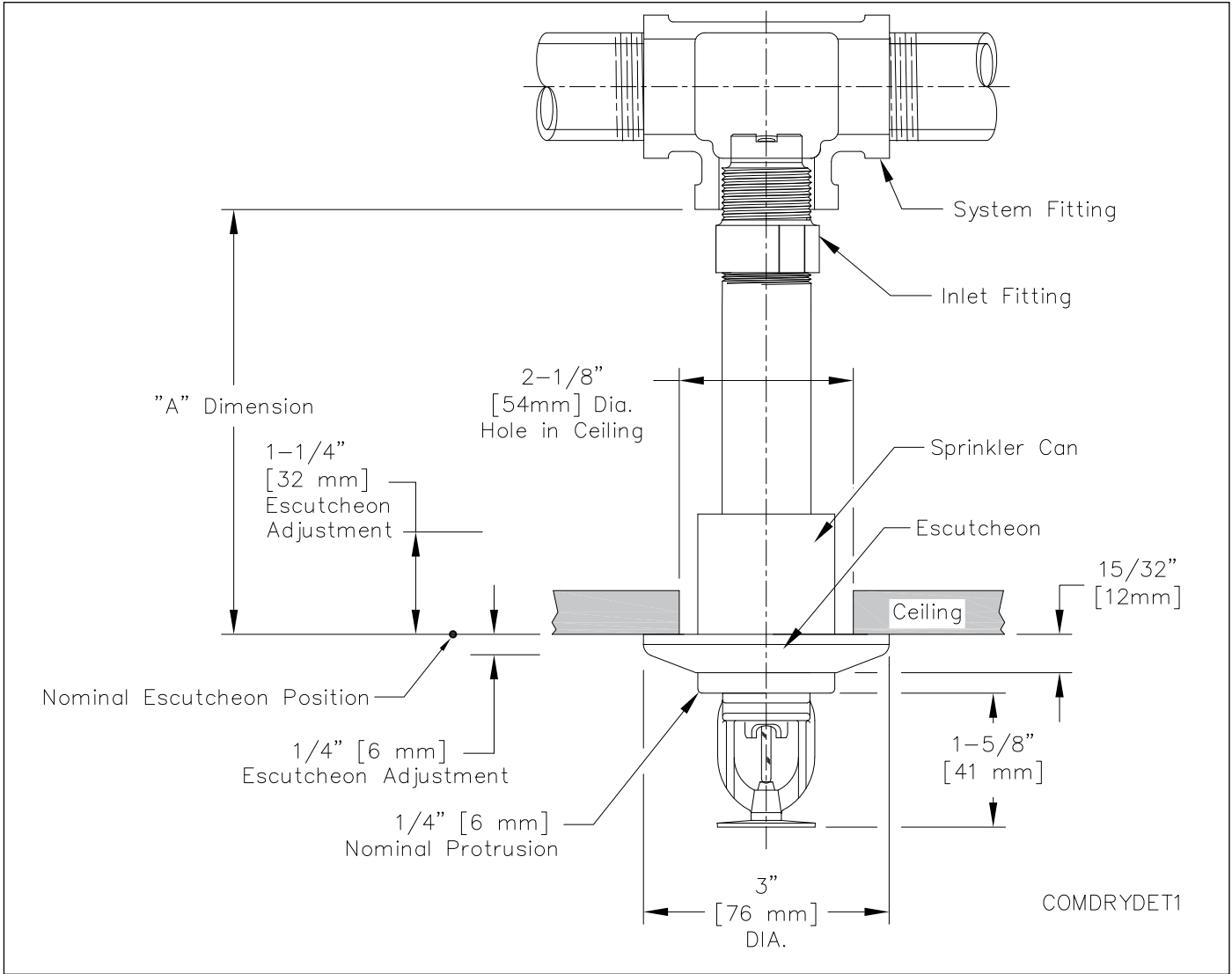


Fig. 1

Note: The sprinkler can protrudes 1/4" when escutcheon is in nominal position. Escutcheon adjustment provides -1/4" (-6mm) to +1 1/4" (+32mm) "A" dimension adjustment range.

Sprinkler Guard: Model C2

Model F3QR56 Dry Pendant Sprinkler with Model HB Extended Escutcheon (SIN R5714)

"A" Dim.	3½" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 3½" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections
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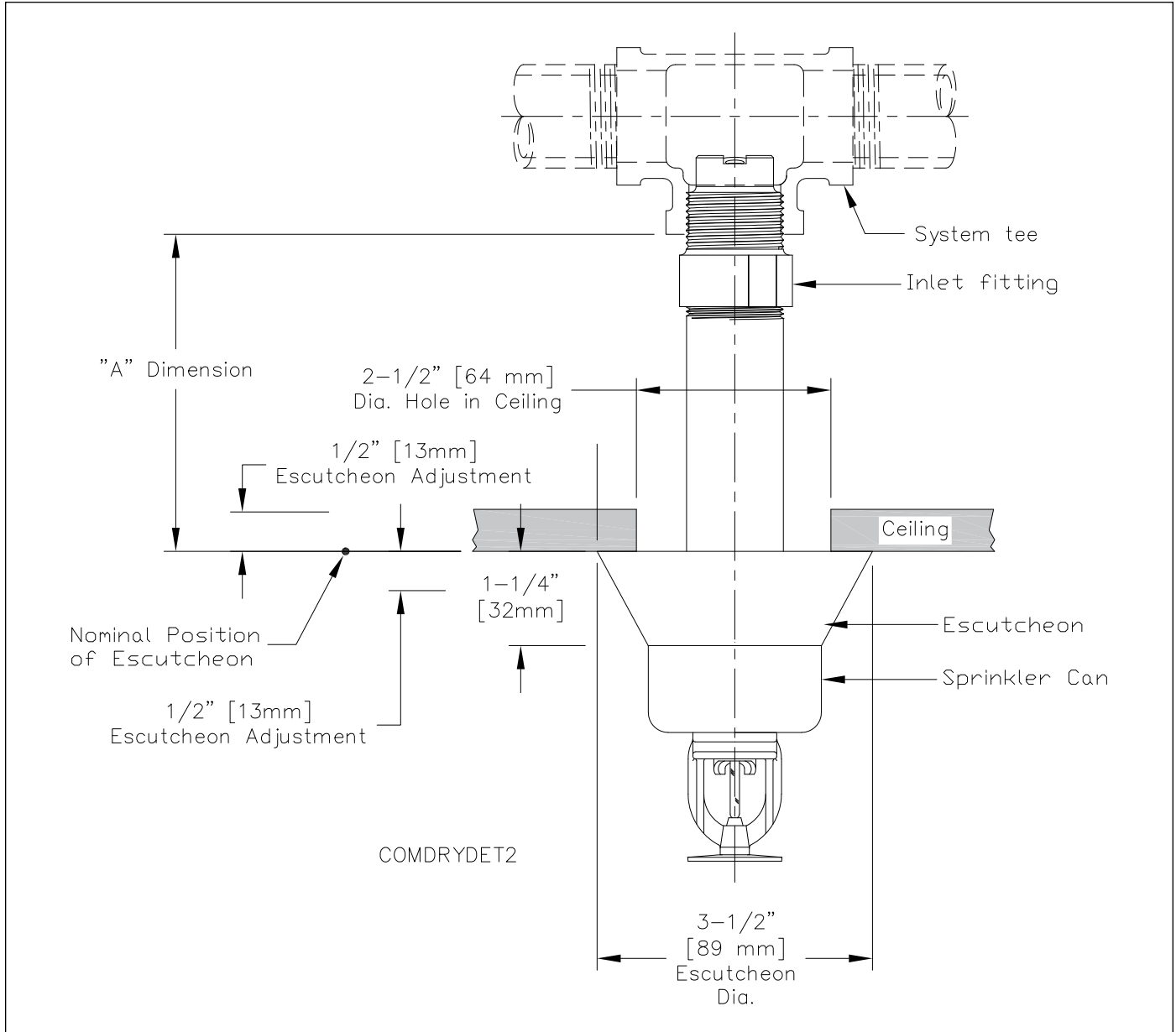


Fig. 2

Note: The sprinkler can protrudes 1¼" when escutcheon is in nominal position. Escutcheon adjustment provides -½" (-12.7mm) to +½" (+12.7mm) "A" dimension adjustment range.

Sprinkler Guard: Model C2

Model F3QR56 Dry Pendent Sprinkler with Model FP Recessed Escutcheon (SIN R5714)

"A" Dim.	3 1/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 3 1/2" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections
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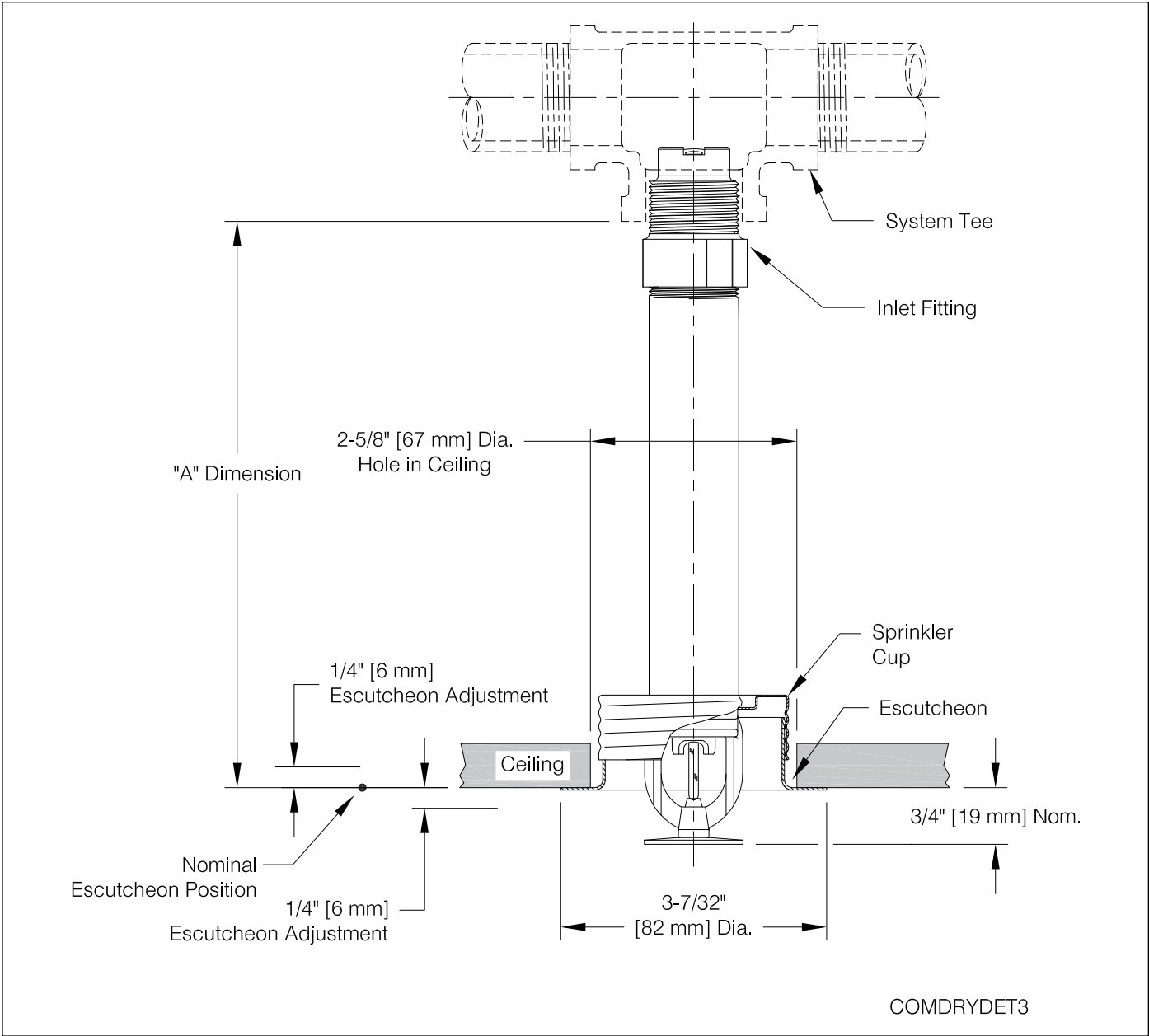


Fig. 3

Note: Do not install the Model F3QR56 Dry Pendent sprinkler with the Model FP escutcheon in ceilings which have positive pressure in the space above.

Model F3QR56 Dry Pendent Sprinkler with Model CCP Cover Plate (SIN R5714)

"A" Dim.	3 1/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or
	3 1/2" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections

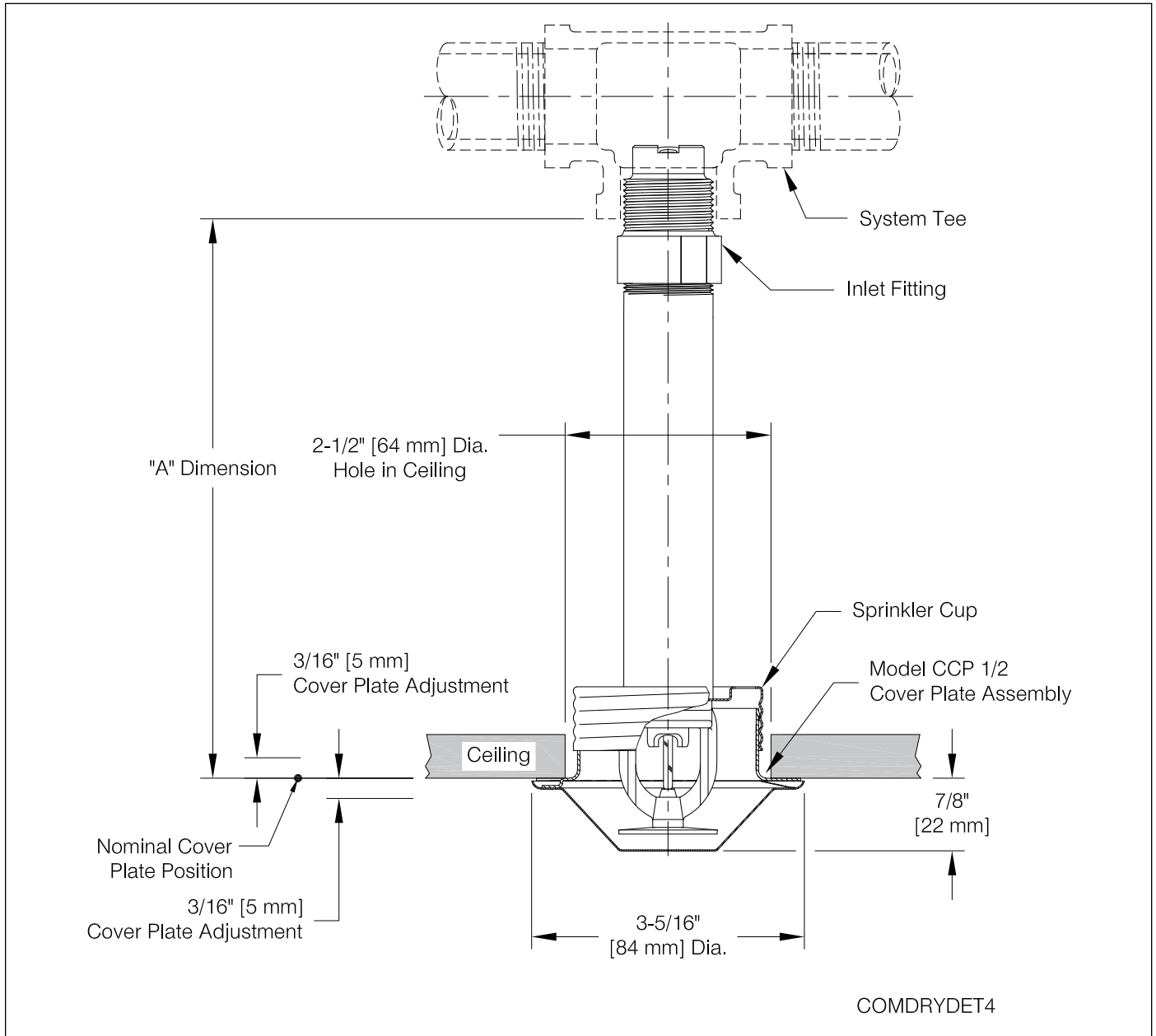


Fig. 4

Note: Do not install the Model F3QR56 Dry Pendent sprinkler with the Model CCP cover plate in ceilings which have positive pressure in the space above.

Model F3QR56 Dry Pendent Sprinkler with Model F1 Recessed Escutcheon (SIN R5714)

"A" Dim.	3 1/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 3 1/2" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections.
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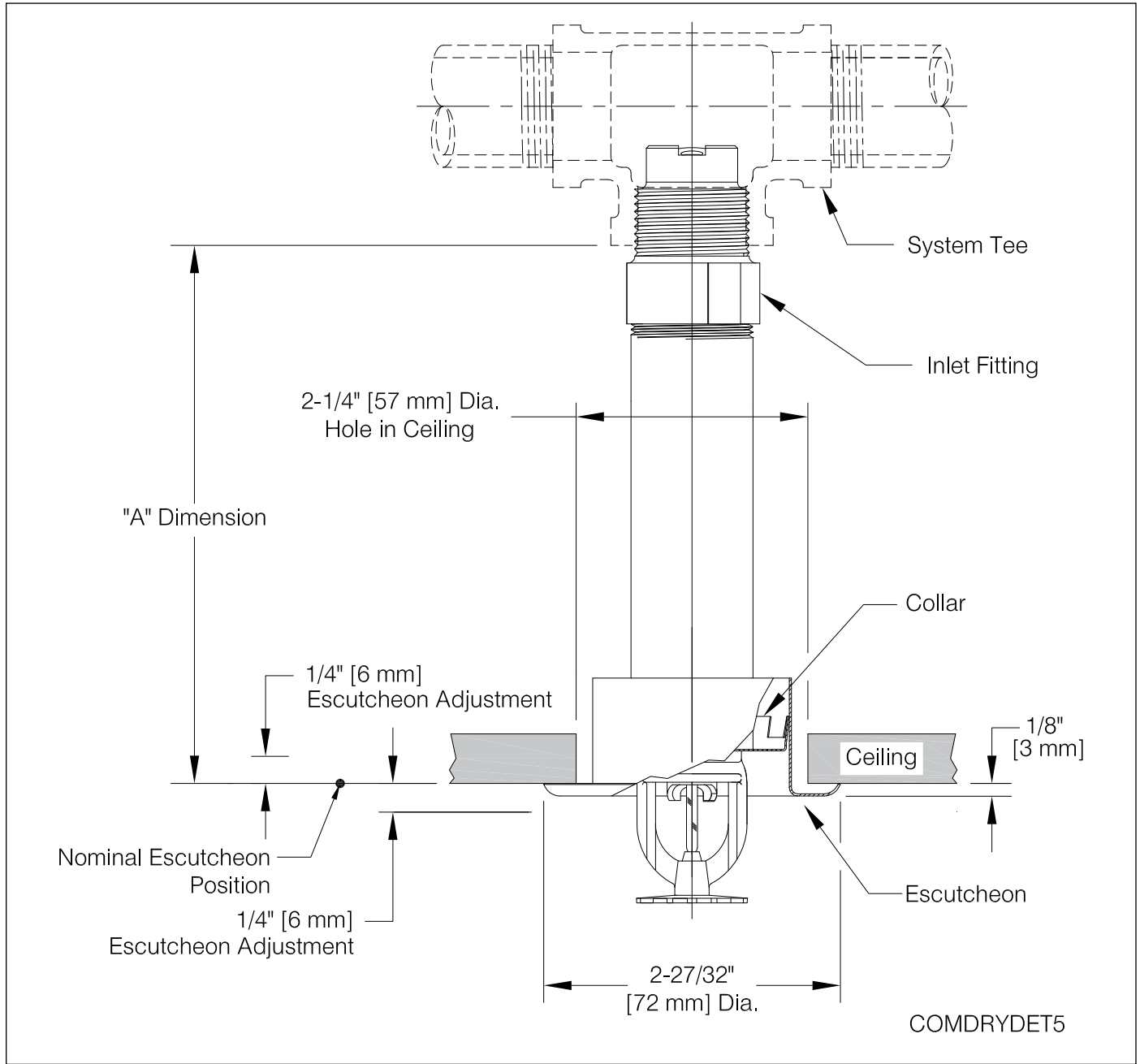


Fig. 5

Model F3QR56 Dry Horizontal Sidewall Sprinkler with Standard Escutcheon (SIN R5734)

"A" Dim.	2" to 48" (51mm to 1219mm) in 1/4" (6mm) increments for 1" connections or
	2" to 36" (51mm to 914mm) in 1/4" (6mm) increments for 3/4" connections

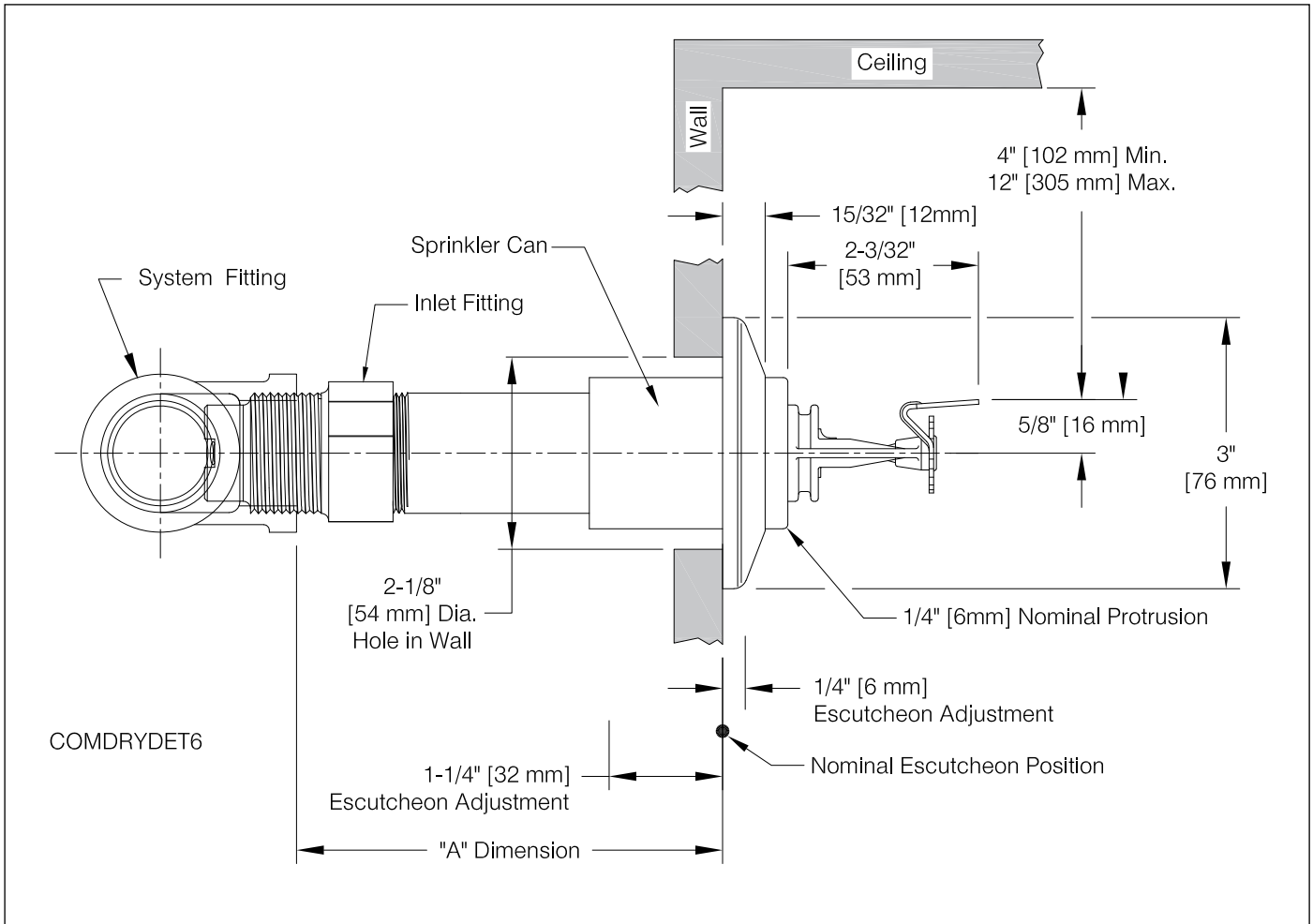


Fig. 6

Note: The sprinkler can protrudes 1/4" when escutcheon is in nominal position. Escutcheon adjustment provides -1/4" (-6mm) to +1/4" (+32mm) "A" dimension adjustment range.

Model F3QR56 Dry Horizontal Sidewall Sprinkler with Model HB Escutcheon (SIN R5734)

"A" Dim.	3 1/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or
	3 1/2" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections

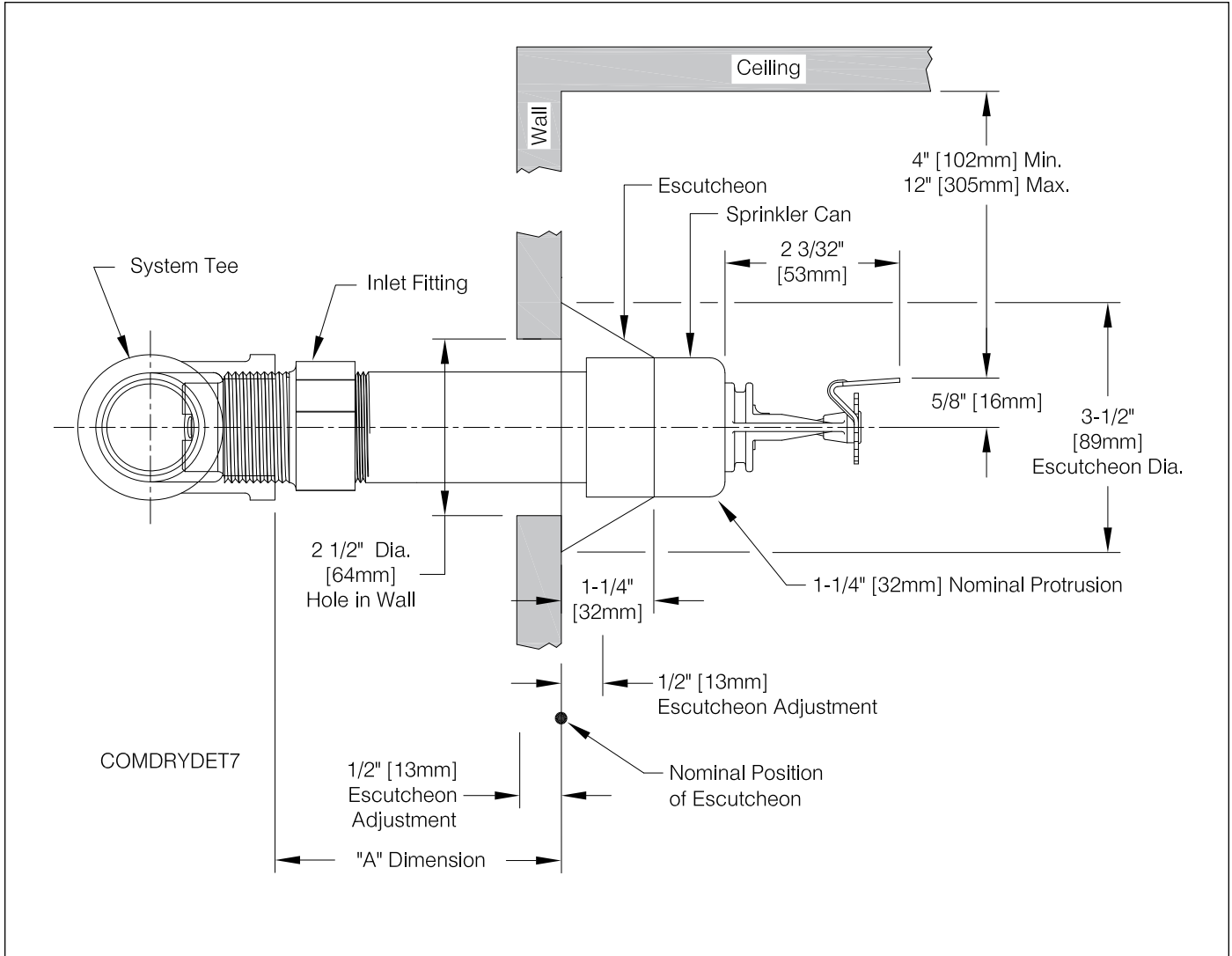


Fig. 7

Note: The sprinkler can protrudes 1/4" when escutcheon is in nominal position. Escutcheon adjustment provides -1/2" (-12.7mm) to +1/2" (+12.7mm) "A" dimension adjustment range.

Model F3QR56 Dry Horizontal Sidewall Sprinkler with Model FP Recessed Escutcheon (SIN R5734)

"A" Dim.	3 1/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 3 1/2" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections
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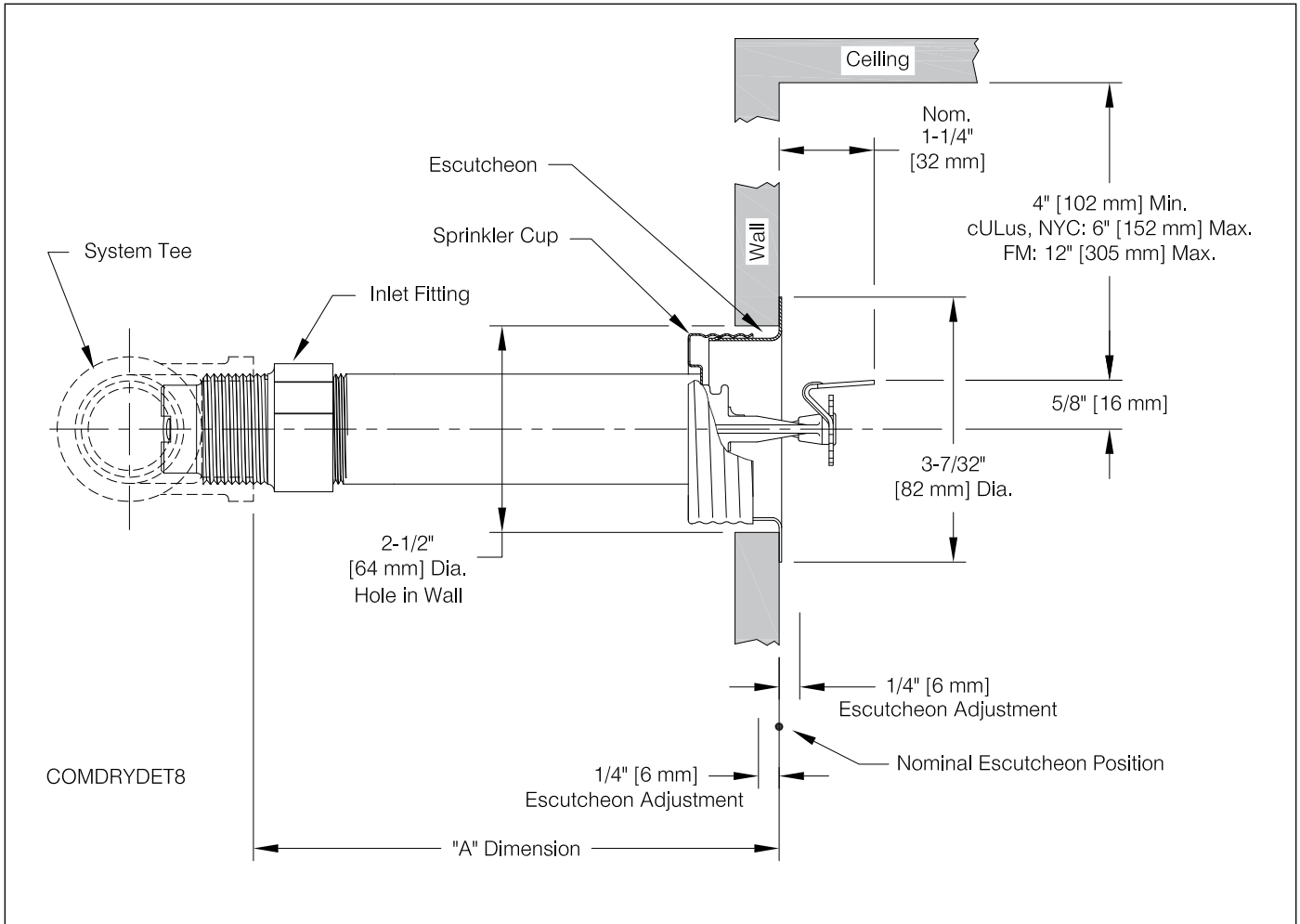


Fig. 8

Note: Do not install the Model F3QR56 Dry Horizontal Sidewall sprinkler with the Model FP escutcheon in walls which are positively pressurized with respect to the protected space.

Model F3QR56 Dry Horizontal Sidewall Sprinkler with Model F1 Recessed Escutcheon (SIN R5734)

"A" Dim.	3 1/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or
	3 1/2" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections

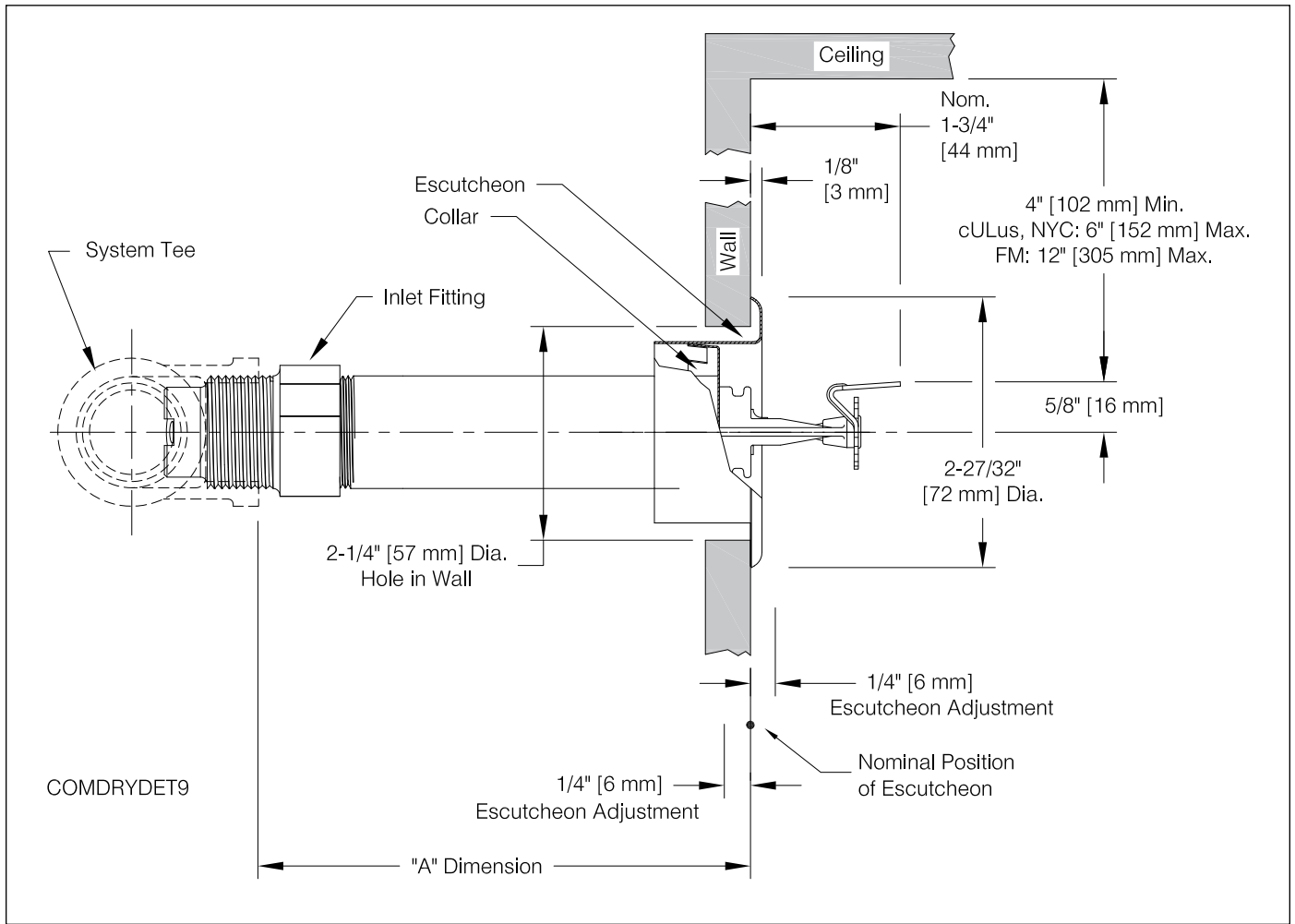


Fig. 9

Model F3QR56 Dry Upright (SIN 5724)

Order Dimensions 5" to 48" (127 mm to 1219 mm)

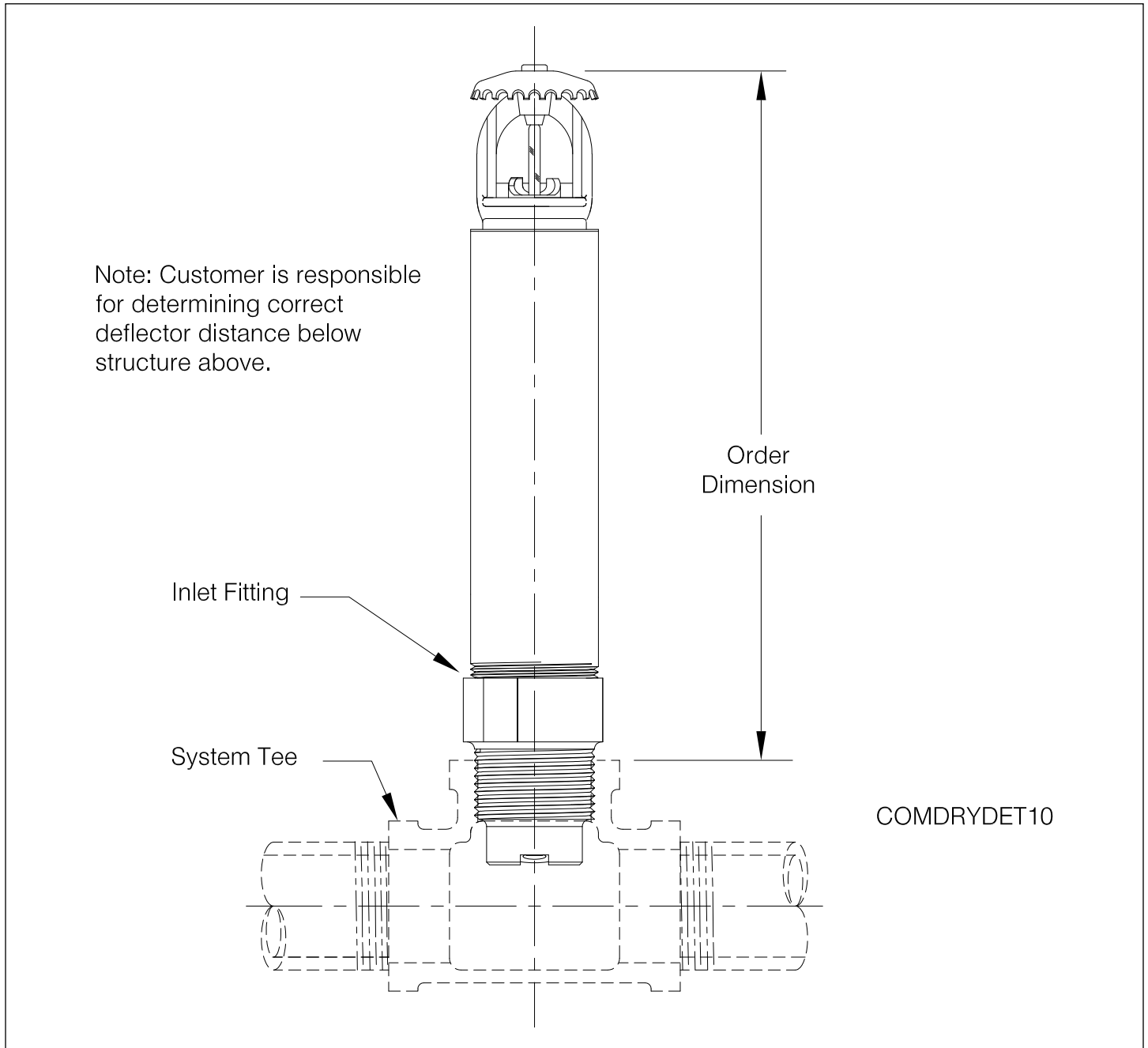


Fig. 10

MINIMUM EXPOSED BARREL LENGTH WHEN CONNECTED TO WET PIPE SPRINKLER SYSTEM

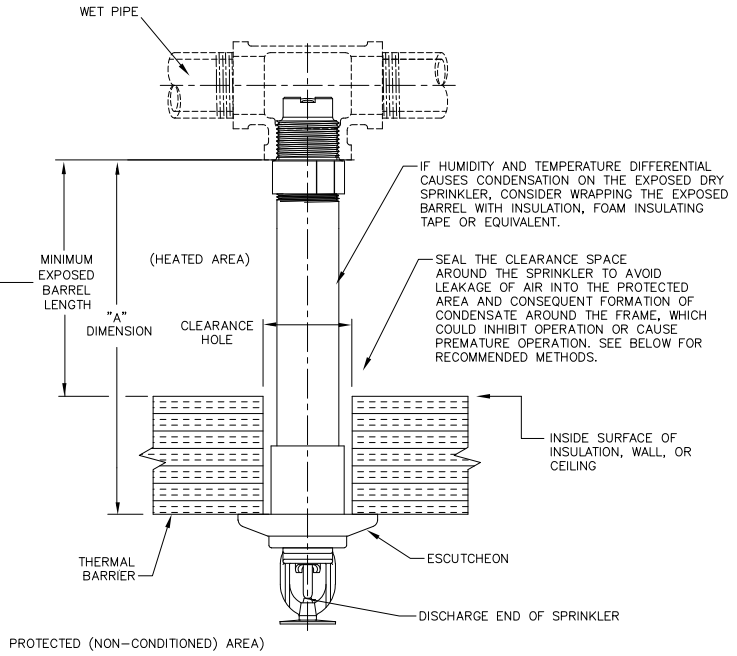
NOTE: STANDARD DRY PENDENT IS SHOWN, HOWEVER, MINIMUM EXPOSED BARREL LENGTH APPLIES TO ALL STYLES OF DRY SPRINKLERS CONNECTED TO A WET PIPE SYSTEM.

AMBIENT TEMPERATURE EXPOSED TO DISCHARGE END OF SPRINKLER*	EXPOSED BARREL AMBIENT TEMPERATURE		
	40°F/4°C	50°F/10°C	60°F/16°C
	EXPOSED MINIMUM BARREL LENGTH** (FACE OF FITTING TO TOP OF CEILING)***		
	IN. (MM)	IN. (MM)	IN. (MM)
40°F (4°C)	0	0	0
30°F (-1°C)	0	0	0
20°F (-7°C)	4 (100)	0	0
10°F (-12°C)	8 (200)	1 (25)	0
0°F (-18°C)	12 (300)	3 (75)	0
-10°F (-23°C)	14 (350)	4 (100)	1 (25)
-20°F (-29°C)	14 (350)	6 (150)	3 (75)
-30°F (-34°C)	16 (400)	8 (200)	4 (100)
-40°F (-40°C)	18 (450)	8 (200)	4 (100)
-50°F (-46°C)	20 (500)	10 (250)	6 (150)
-60°F (-51°C)	20 (500)	10 (250)	6 (150)

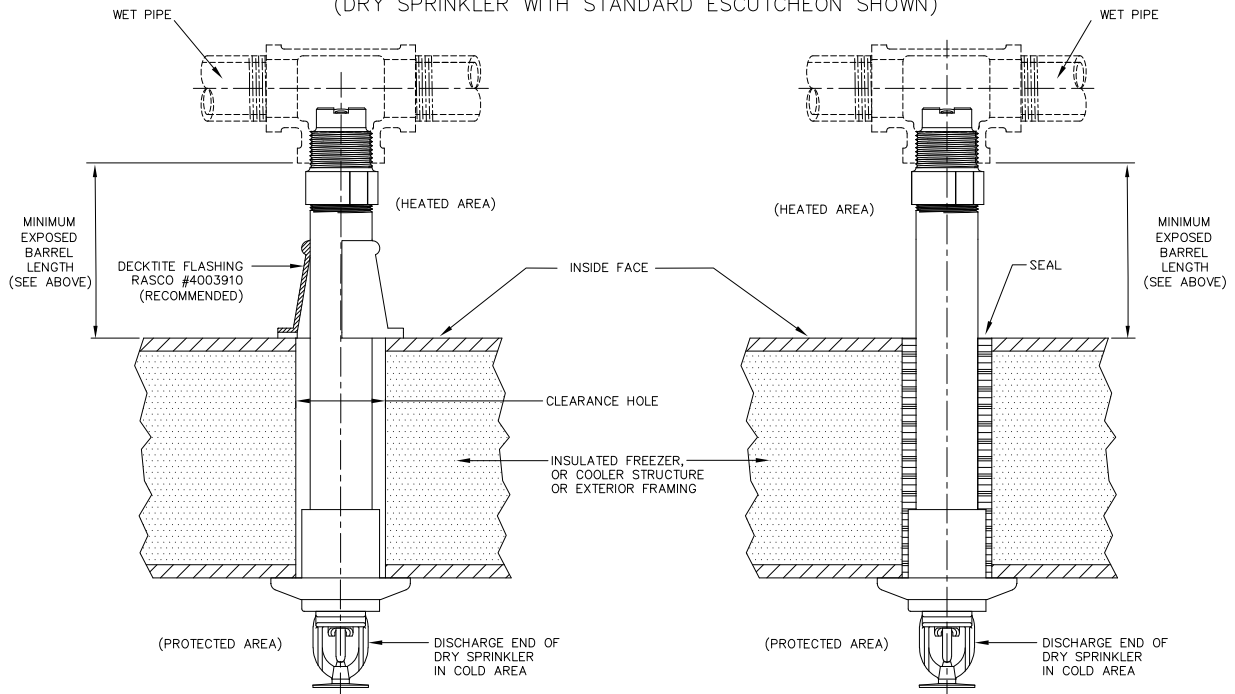
* FOR AMBIENT TEMPERATURES EXPOSED TO THE DISCHARGE END OF THE SPRINKLER THAT OCCUR BETWEEN THE VALUES LISTED, USE THE NEXT COOLER TEMPERATURE.

** THE MINIMUM EXPOSED BARREL LENGTH IS NOT THE SAME AS THE "A" DIMENSION. THE MINIMUM EXPOSED BARREL LENGTH IS BASED ON A PROPERLY SEALED PENETRATION WITH A MAXIMUM WIND VELOCITY ON THE EXPOSED SPRINKLER OF 30 MPH (48 KM/H). LONGER EXPOSED BARREL LENGTHS WILL HELP AVOID FREEZING OF THE WET PIPING WHERE HIGHER WIND VELOCITY IS EXPECTED.

*** THE MINIMUM EXPOSED BARREL LENGTH IS MEASURED FROM THE FACE OF THE FITTING TO THE INSIDE FACE OF THE INSULATION, WALL, OR CEILING LEADING TO THE COLD SPACE, WHICHEVER IS CLOSEST TO THE FITTING.



RECOMMENDED DRY SPRINKLER SEAL ARRANGEMENTS
(DRY SPRINKLER WITH STANDARD ESCUTCHEON SHOWN)



COMDRYDET1

Fig. 11

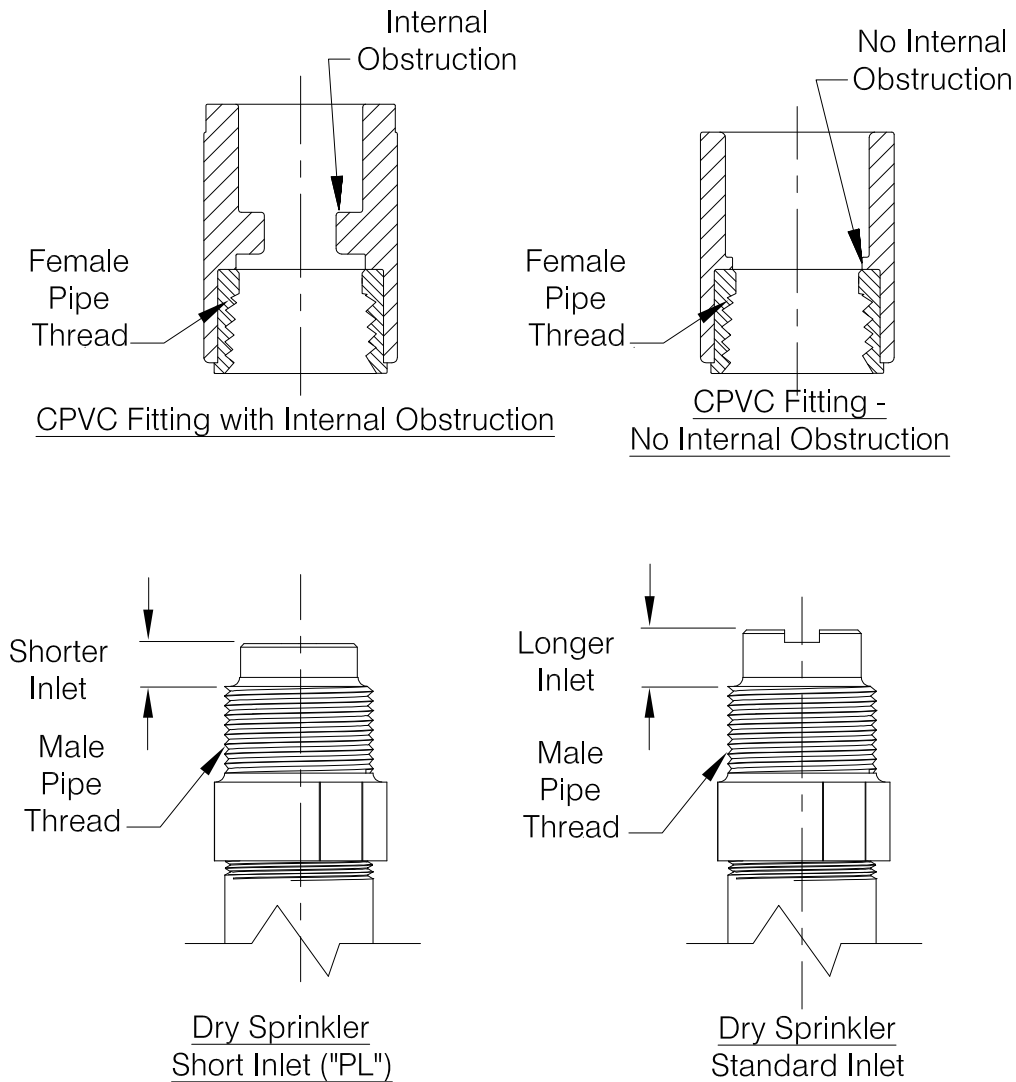
CAUTION

RELIABLE DRY SPRINKLERS MAY BE INSTALLED IN A LISTED CPVC SPRINKLER FITTING, ONLY UPON VERIFICATION THAT THE FITTING DOES NOT INTERFERE WITH THE SPRINKLER'S INLET.

Do not install dry sprinklers with standard inlets into CPVC fittings that have an internal obstruction; this will damage the sprinkler, the fitting, or both.

Short inlet ("PL") versions of Reliable dry sprinklers are available that may or may not be compatible with fittings having internal obstructions in existing installations. Sprinklers with the short inlet ("PL") should only be installed in CPVC fittings of wet-pipe systems.

In all cases, verify sprinkler and fitting dimensions prior to installation to avoid interference.



BE SURE TO ORDER THE CORRECT SPRINKLERS FOR YOUR APPLICATION

COMDRYDET2

Fig. 12

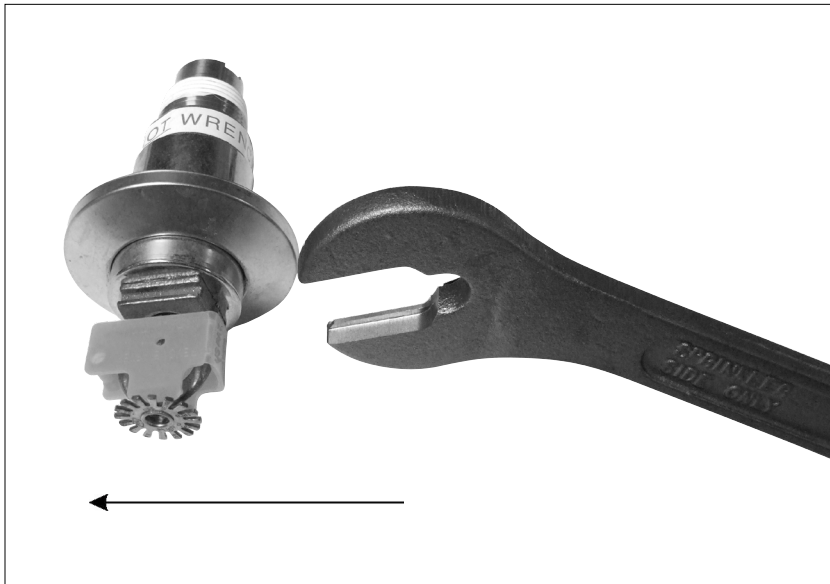


Fig. 13 - Model F3R Wrench

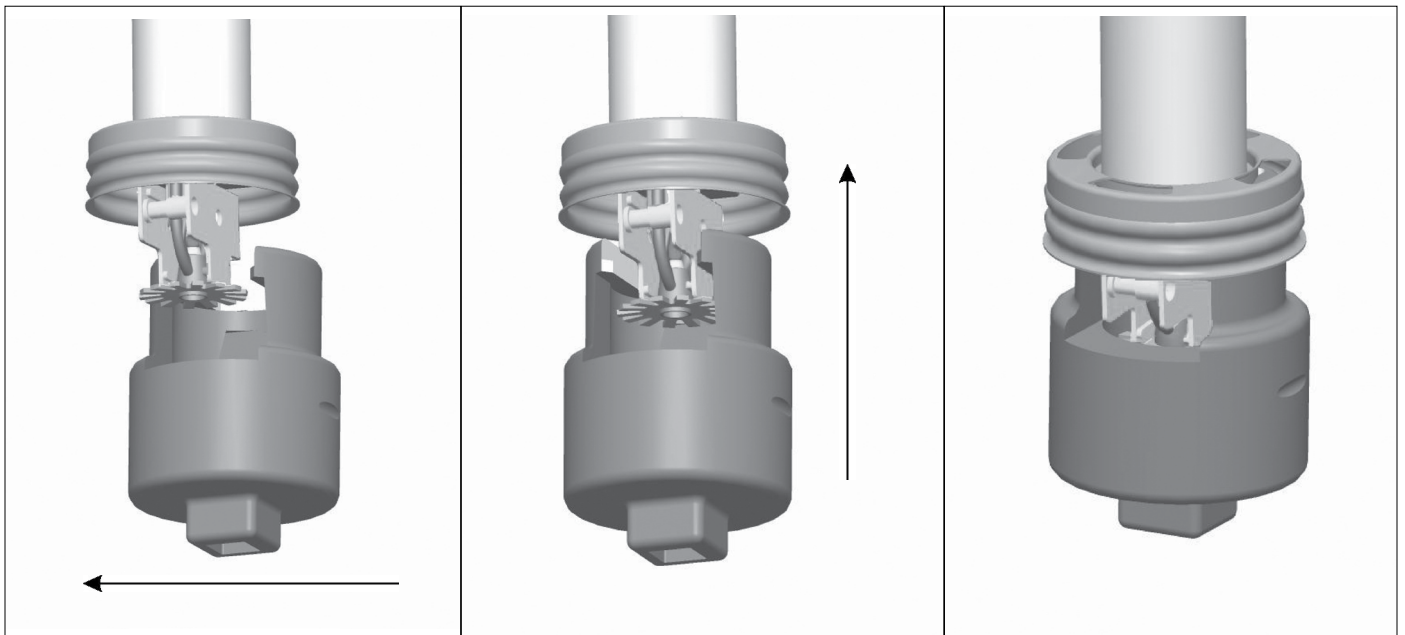
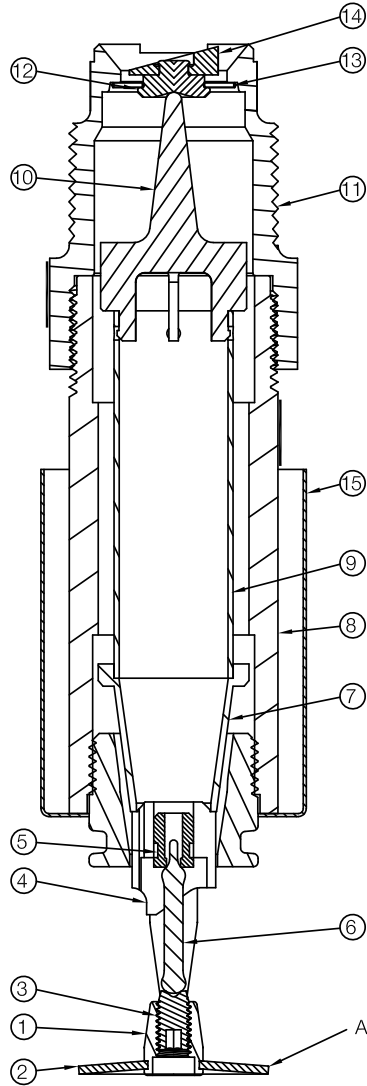


Fig. 14 - Model XLO2 Wrench

MATERIAL SPECIFICATIONS



ITEM #	DESCRIPTION	MATERIAL SPECIFICATION
1	FRAME	BRASS PER UNS C83600
2	DEFLECTOR	BRONZE PER UNS C51000
3	LOAD SCREW	BRASS PER UNS C22000
4	SEAT ADAPTOR	BRASS ALLOY PER UNS C36000
5	BULB INSERT	COPPER ALLOY PER UNS C31400
6	GLASS BULB	GLASS W/GLYCERIN SOLUTION
7	ORIFICE ADAPTOR	BRASS ALLOY PER UNS C36000
8	OUTER TUBE	GALVANIZED STEEL
9	INNER TUBE	BRASS ALLOY PER UNS C23000
10	YOKE	BRASS ALLOY PER UNS C38000
11	INLET	BRASS ALLOY PER UNS C35330
12	CAP	BRASS ALLOY PER UNS C54400
13	SPRING WASHER/SEAL	PTFE COATED BERYLLIUM NICKEL
14	FLIP DISK	BRASS ALLOY PER UNS C54400
15	CAN/ESCUTCHEON	PAINTED OR PLATED MILD STEEL, EXCEPT FOR TYPE 316 STAINLESS STEEL FOR SPRINKLERS WITH ENT FINISH

(PIPE WRENCH MAY ONLY BE USED ON OUTER STEEL PIPE OF SPRINKLER)

COMDRYDET13

APPEARANCE OF DEFLECTOR MAY VARY DEPENDING ON MODEL

Fig. 15

Installation Instructions

Model F3QR56 Dry sprinklers must only be installed in the following fittings:

1. The side outlet of an ANSI B 16.3 class 150 (malleable or ductile) or ANSI B16.4 class 125 (cast) iron pipe tee
2. The run outlet of an ANSI B 16.3 class 150 (malleable or ductile) or ANSI B16.4 class 125 (cast) iron pipe tee, with the side outlet plugged (wet-pipe systems only)
3. Spears Manufacturing Company Brass Thread Insert Style or Special Reinforced Plastic Thread Style Listed adapter or tee (wet-pipe systems only) (gasket sealed outlets shall not be used)
4. Any Listed CPVC sprinkler adapter or tee only in accordance with Fig. 12 and upon verification that the CPVC adapter or tee does not interfere with the sprinkler's inlet (wet-pipe systems only) (gasket sealed outlets shall not be used)

Model F3QR56 dry sprinklers must not be installed into elbows, welded outlets, gasket sealed outlets, or couplings. Installation of the Model F3QR56 Dry sprinkler is not recommended in copper pipe systems, as this may reduce the life expectancy of the sprinkler.

In all dry-pipe system installations, the Model F3QR56 Dry sprinkler must be installed with protrusion into the fitting in accordance with Fig. 1 through Fig. 10 in this Bulletin. Do not install Model F3QR56 Dry sprinklers with the standard (long) inlet fitting into CPVC fittings that have an internal obstruction (see Fig. 12); this will damage the sprinkler, the fitting, or both. Model F3QR56 Dry sprinklers are available with a short "PL" inlet fitting for installation on CPVC fittings of wet-pipe sprinkler systems only.

Model F3QR56 Dry sprinklers connected to wet-pipe systems must be installed with the Exposed Minimum Barrel Length required by Fig. 11 located in a Heated Area.

An orange protective clip is factory installed on the sprinkler to protect the glass bulb thermal element from damage. The clip should remain in place during installation of the sprinkler and be removed when the sprinkler system is placed in service. Sprinklers with 3/4" NPT and ISO7-1R3/4 inlets are supplied with a protective cap on the inlet that must be removed before installation.

Use the following steps for installation:

1. Cut a hole in the wall or ceiling directly in-line with the outlet of the fitting. See the Installation Data table for the recommended hole diameter based on the escutcheon or cover plate option selected.
2. Apply pipe joint compound or PTFE tape to the male threads of the sprinkler's inlet fitting.
3. Install the sprinkler in the fitting using the installation wrench specified in the Installation Data table. The Model F3R wrench is designed to be inserted into the grooves in the sprinkler's wrench boss as shown in Fig. 13. The Model XLO2 wrench is designed to fit into the cup and engage the wrench boss as shown in Fig. 14. Do NOT wrench any part of the sprinkler assembly

other than the wrench boss. When inserting or removing the wrench from the sprinkler, care should be taken to prevent damage to the sprinkler. The sprinkler is then tightened into the pipe fitting to achieve a leak free connection. The recommended minimum to maximum installation torque is 22 - 30 lb-ft (30 - 40 N-m) for 1" NPT and ISO7-1R1 sprinklers, and 14 - 20 lb-ft (19 - 27 N-m) for 3/4" NPT and ISO7-1R3/4 sprinklers.

3a. Alternatively, where access to the outer tube of the sprinkler is available, the Model F3QR56 Dry sprinkler may be installed using a pipe wrench. The pipe wrench shall only be permitted to interface with the galvanized steel outer tube portion of the sprinkler (Item #8 in Fig. 15). Do NOT wrench any other portion of the sprinkler assembly. A pipe wrench can install the sprinkler into the fitting with a large amount of torque; consideration should be given to the need for future removal of the sprinkler because the installation torque will have to be matched or exceeded to remove the sprinkler. The recommended minimum to maximum installation torque is 22 - 30 lb-ft (30 - 40 N-m) for 1" NPT and ISO7-1R1 sprinklers, and 14 - 20 lb-ft (19 - 27 N-m) for 3/4" NPT and ISO7-1R3/4 sprinklers.

4. Standard and Model HB escutcheons can be installed by slipping the escutcheon over the can until the escutcheon is seated against the ceiling or wall. Model F1 escutcheons are installed by pressing the escutcheon onto the collar until the escutcheon is seated against the ceiling or wall. The Model FP escutcheon is installed by pressing or threading the escutcheon into the cup by hand; the escutcheon can be tightened against the ceiling or wall by turning the escutcheon in a clockwise direction and removed by turning the escutcheon in a counter-clockwise direction. To install the Model CCP cover plate, first remove the protective clip. Install the Model CCP cover plate on the sprinkler by pressing or threading the cover plate into the cup by hand; the cover plate can be tightened against the ceiling by turning the cover plate in a clockwise direction and removed by turning the cover plate in a counter-clockwise direction.
5. Remove the orange protective clip when placing the sprinkler system in service.

Installation Data

Sprinkler Model	Escutcheon or Cover Plate	Suggested Hole Diameter in Wall or Ceiling	Installation Wrench	Required Centerline of Sprinkler Tube/Inlet to Finished Ceiling Vertical Dimension*
F3QR56 Dry Pendent	Standard Escutcheon	2-1/8" (54 mm)	F3R	Not Applicable
	HB Extended Escutcheon	2-1/2" (64 mm)	F3R	
	F1 Recessed Escutcheon	2-1/4" (57 mm)	XLO2	
	FP Recessed Escutcheon	2-1/2" (64 mm)	XLO2	
	CCP Cover Plate		XLO2	
F3QR56 Dry Horizontal Sidewall	Standard Escutcheon	2-1/8" (54 mm)	F3R	4-5/8" to 12-5/8" (118 mm to 321 mm)
	HB Extended Escutcheon	2-1/2" (64 mm)	F3R	cULus, NYC 4-5/8" to 6-5/8" (118 mm to 168 mm)
	F1 Recessed Escutcheon	2-1/4" (57 mm)	XLO2	
	FP Recessed Escutcheon	2-1/2" (64 mm)	XLO2	
	F1 Recessed Escutcheon	2-1/4" (57 mm)	XLO2	FM 4-5/8" to 12-5/8" (118 mm to 321 mm)
	FP Recessed Escutcheon	2-1/2" (64 mm)	XLO2	
F3QR56 Dry Upright	N/A	1-1/2" (38mm)	F3R	Not Applicable

*Note: Based on 5/8" (16 mm) centerline of sprinkler tube/inlet to deflector vertical distance.

Maintenance

The Model F3QR56 Dry Sprinklers should be inspected and the sprinkler system maintained in accordance with NFPA 25. Do not remove the factory applied thermally sensitive wax fillet between the bulb supporting cup and the wrenching boss. Do not replace this wax with a substitute substance.

An Alternate substance may interfere with proper operation of the sprinkler. Do not clean sprinklers with soap and water, ammonia or any other cleaning fluids. Remove dust by using a soft brush or gently 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.

Ordering Information

Specify:

- Sprinkler: [Model F3QR56 Dry Pendent SIN R5714]
[Model F3QR56 Dry Horizontal Sidewall SIN R5734]
[Model F2QR Dry Upright SIN R5724]
- Escutcheon/Cover Plate: [None][Standard escutcheon][Model HB extended escutcheon][Model F1 recessed escutcheon][Model FP recessed escutcheon]
[Model CCP cover plate – pendent only]

- Inlet Threads: [1" NPT][ISO7-1R1][3/4" NPT][ISO7-1R3/4]
- Inlet Fitting: [Long – Standard Inlet Fitting][Short "PL" – Wet Pipe Systems only]
- Sprinkler Temperature Rating: See Temperature Ratings table
- Sprinkler Finish: See Finishes Table
- Escutcheon/Cover Plate Finish: See Finishes Table
- Length:

*For dry pendants and dry sidewalls: "A" Dimension is from face of tee to face of finished ceiling or wall in 1/4" (6mm) increments. See Fig. 1 through Fig. 9.

*For dry uprights: Order dimension is from face of tee to top of deflector in 1/4" (6mm) increments. See Fig. 10.

Notes:

- For Dry Upright, customer is responsible for determining the correct deflector distance from structure above.
- Length is based on normally gauged pipe thread "make-up" of .600" (15mm) per ANSI B2.1 (approximately 7-1/2 threads).

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.

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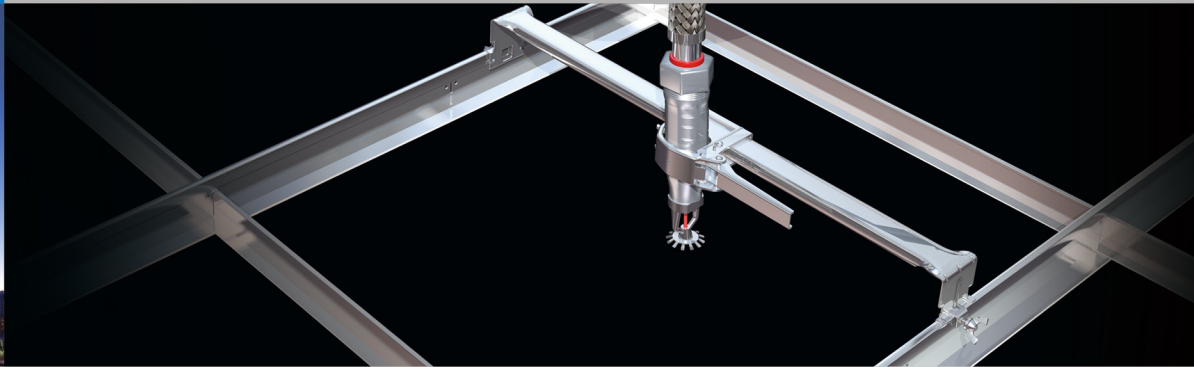
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Flexible Sprinkler Drops

Braided Flexible Sprinkler Connection Data Sheet

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

Underwriter's Laboratories, Inc. (UL), UL 2443:

- Standard for flexible sprinkler hose with fittings for fire protection service

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 :

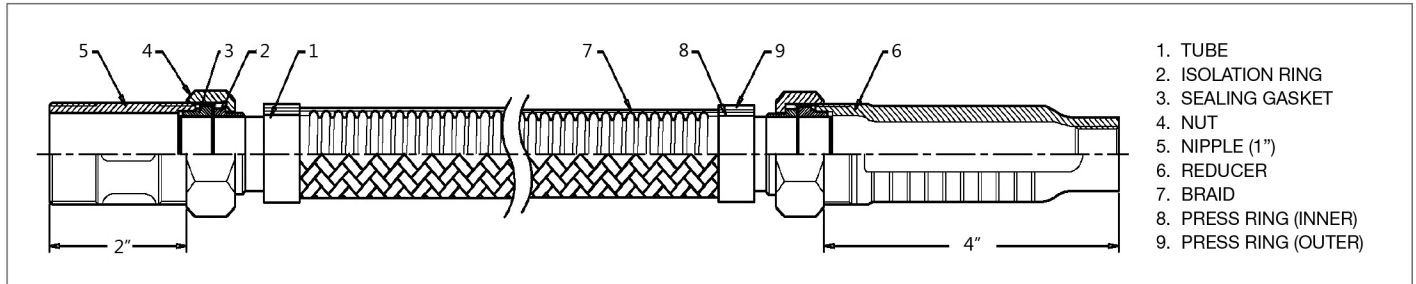
Job Location :

Wholesaler :

Submittal Date :

Contractor :

BRAIDED FLEXIBLE HOSE



- 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	4" (UL/ULC) and 8" (FM) * DO NOT bend within 2.52 inches from connection nuts	
Connection	Inlet	1" NPT
	Outlet	1/2" or 3/4" NPT

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



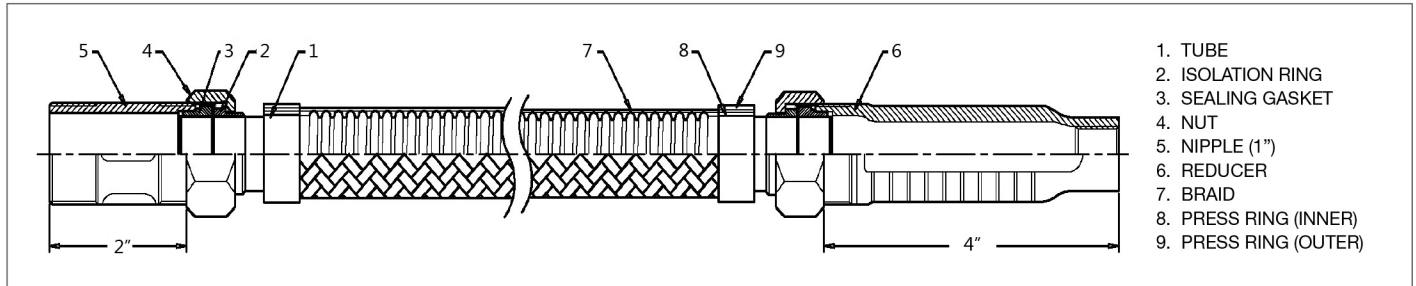
FRICITION LOSS DATA

EFB Series Braided Hose
 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	18
	3/4"	8.0	1	18
36"	1/2"	5.6	2	31
	3/4"	8.0	2	34
48"	1/2"	5.6	3	48
	3/4"	8.0	3	51
60"	1/2"	5.6	4	60
	3/4"	8.0	4	65
72"	1/2"	5.6	4	71
	3/4"	8.0	4	72

* UL: 4" minimum bend radius, where C=120

BRAIDED FLEXIBLE HOSE



- 1. TUBE
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Nut & Nipple	Zinc-Plated Steel	
Sealing Gasket / Isolation Ring	EPDM/ NYLON	
Minimum Bend Radius	4" (UL/ULC) and 8" (FM) * DO NOT bend within 2.52 inches from connection nuts	
Connection	Inlet	1" NPT
	Outlet	1/2" or 3/4" NPT

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



FRICITION LOSS DATA

EFB 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	27.0
	3/4"	8.0	1	18.6
36"	1/2"	5.6	2	37.4
	3/4"	8.0	2	30.4
48"	1/2"	5.6	3	54.9
	3/4"	8.0	3	48.3
60"	1/2"	5.6	4	72.5
	3/4"	8.0	4	66.2
72"	1/2"	5.6	4	90.5
	3/4"	8.0	4	83.0

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