Reliable

Model F3-56 Dry K5.6 (80 metric) Standard-Response, Standard Spray Sprinklers

Features

- 1. 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
 - Horizontal Sidewall with Model F1 recessed escutcheon
- 2. Available with 1" NPT, ISO7-1R1, 3/4" NPT, or ISO7-1R3/4 inlet fitting.
- 3. 3/4" NPT inlet fittings permit replacement of older 3/4" inlet dry sprinklers without changing to a larger sprinkler fitting.
- 4. Sprinklers, escutcheons, and cover plates are available in a wide variety of standard and special application finishes.
- 5. cULus Listed as Corrosion Resistant when ordered with select finishes (see Finishes chart).
- 6. Available with cULus Listed 250 psi (17.2 bar) pressure rating for Dry Pendent and select HSW configurations. Other approvals are for 175 psi (12 bar).

Product Description

Model F3-56 Dry sprinklers are standard-response, standard coverage sprinklers with a nominal K-Factor of 5.6 (80 metric). Available in Dry Pendent or Dry Horizontal Sidewall configurations, Model F3-56 Dry sprinklers all use a 5 mm glass bulb operating element. See the Temperature Ratings table in this Bulletin for available temperature ratings. Model F3-56 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 F3-56 Dry sprinklers are available with a variety of escutcheon options as illustrated in Figs. 1 through 3 and Figs. 5 through 9. In addition, Model F3-56 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 F3-56 Dry sprinklers; the use of any other recessed escutcheon or cover plate with Model F3-56 Dry sprinklers will void all guarantees, warranties, listings and approvals.



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)

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 F3-56 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)
	Standard Escutcheon	2" to 36" (50 to 900 mm)	cULus, NYC	3/4" NPT or ISO7-1R3/4	R5314
	HB Extended Escutcheon				
	F1 Recessed Escutcheon	3-1/2" to 36" (90 to 900 mm)			
	FP Recessed Escutcheon	(90 to 900 mm)			
F3-56 Dry	CCP Cover Plate				
Pendent	Standard Escutcheon	2" to 48" (50 to 1200 mm)	cULus, FM, NYC, LPCB, CE	1" NPT or ISO7-1R1	
	HB Extended Escutcheon				
	F1 Recessed Escutcheon	3-1/2" to 48"			
	FP Recessed Escutcheon	(90 to 1200 mm)			
	CCP Cover Plate				
	Standard Escutcheon	2" to 48" (50 to 1200 mm)	cULus ⁽²⁾ , NYC ⁽²⁾	NYC ⁽²⁾ 3/4" NPT or ISO7-1R3/4	
	HB Extended Escutcheon				
	F1 Recessed Escutcheon	3-1/2" to 48" (90 to 1200 mm)			
F3-56 Dry Horizontal Sidewall	FP Recessed Escutcheon				
	Standard Escutcheon	2" to 48" (50 to 1200 mm)			R5334
	HB Extended Escutcheon		cULus ⁽²⁾ , FM ⁽³⁾ , NYC ⁽²⁾ , LPCB, CE	1" NPT or ISO7-1R1	
	F1 Recessed Escutcheon	3-1/2" to 48" (90 to 1200 mm)			
	FP Recessed Escutcheon				

⁽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 (existing) and Ordinary Hazard only.

2.

⁽³⁾ FM Approved for Light Hazard only.

Patents

Model F3-56 Dry series sprinklers may be covered by one or more of the following patents:

US Patent No. 5,775,431 US Patent No. 5,967,240

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)
- 4. Loss Prevention Certification Board Approved (LPCB)
- 5. CE Listed 0832-CPD-2006 (CE)

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
F3-56 Dry	cULus, NYC		250 psi (17.2 bar)
Pendent	FM, LPCB, CE		175 psi (12 bar)
	alli ua NIVO	4" to 6 "	250 psi (17.2 bar)
F3-56 Dry Horizontal Sidewall	cULus, NYC	6" to 12"	175 psi (12 bar)
rionzontal oldowali	FM, LPCB, CE		175 psi (12 bar)

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)	10505 (5700)	100°F (38°C)	cULus, FM, NYC, LPCB, CE	
	Red	155°F (68°C)	135°F (57°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, LPCB, CE	
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.

Finishes

Component	Sprinkler Escutcheon ⁽¹⁾		Cover Plate	
	Bronze Brass ⁽³⁾		White Paint	
Standard Finishes	White Polyester ⁽²⁾	White Polyester	01	
	Chrome	Chrome	Chrome	
	Electroless Nickel PTFE(2)			
	Black Polyester(2)		Satin Chrome Black Paint Custom Color Paint	
	Custom Color Polyester			
Cascial Application Finishes	Wax Coated(2)(4)	Electroless Nickel PTFE		
Special Application Finishes	High Temp. Wax Coated(2)(5)	Black Polyester Customer Color Polyester		
	Lead Plated(2)(4)		Black Plating	
	Wax Over Lead(2)(4)			
	High Temp. Wax Over Lead(2)(5)			

⁽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 steel with no further finish.

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

⁽²⁾ cULus Listed as a Corrosion Resistant Sprinkler.

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

⁽⁴⁾ Wax coating, lead plating, and wax over lead finishes are cULus Listed and NYC permitted only; listing is limited to 155°F (68°C), 175°F (79°C), and 200°F (93°C) activation temperature sprinklers only.

⁽⁵⁾ High temperature wax coating and high temperature wax over lead finishes are cULus Listed and NYC permitted only; listing is for 286°F (141°C) activation temperature sprinklers only and shall only be installed where maximum ceiling temperature does not exceed 150°F (66°C).

Model F3-56 Dry Pendent Sprinkler with Standard Escutcheon (SIN R5314)

"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

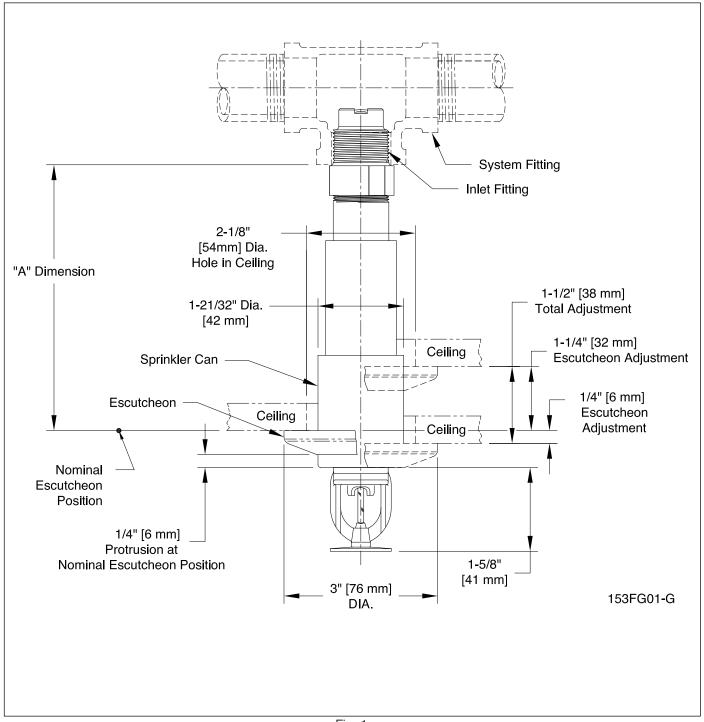


Fig. 1

Note: The sprinkler can protrudes ¼" when escutcheon is in nominal position. Escutcheon adjustment provides -¼" (-6mm) to +1¼" (+32mm) "A" dimension adjustment range.

Sprinkler Guard: Model C2

Model F3-56 Dry Pendent Sprinkler with Model HB Extended Escutcheon (SIN R5314)

"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

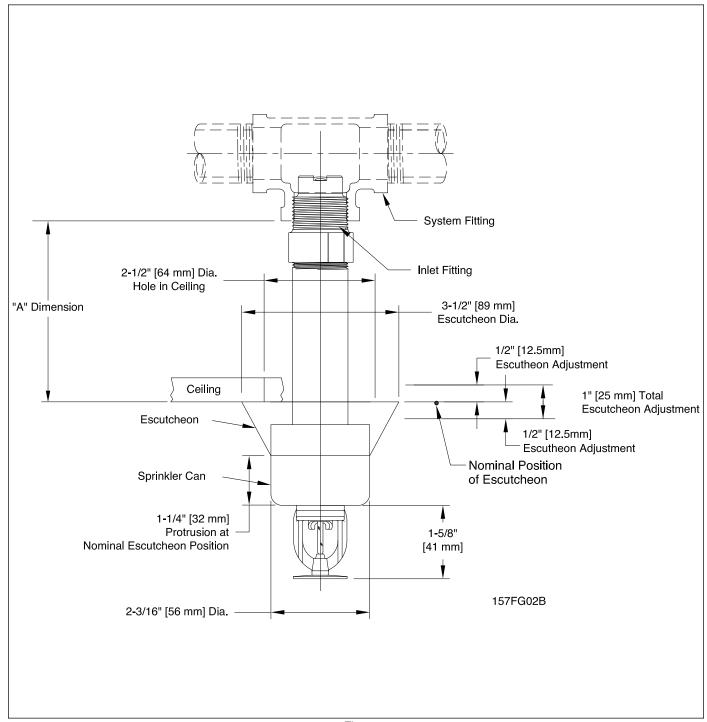


Fig. 2

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 F3-56 Dry Pendent Sprinkler with Model FP Recessed Escutcheon (SIN R5314)

"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

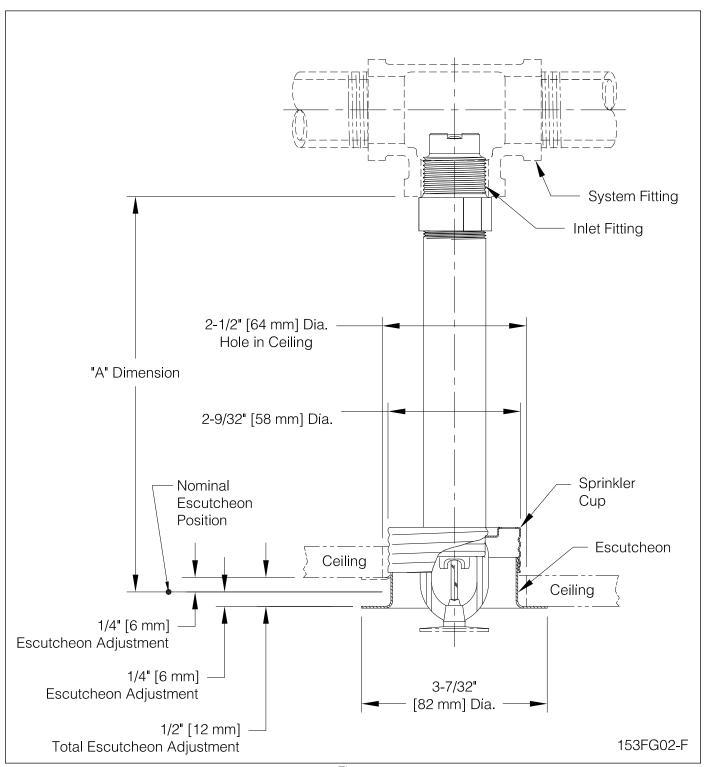


Fig. 3

Note: Do not install the Model F3-56 Dry Pendent sprinkler with the Model FP escutcheon in ceilings which have positive pressure in the space above.

Model F3-56 Dry Pendent Sprinkler with Model CCP Cover Plate (SIN R5314)

"A" Dim. 3¹/2" 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

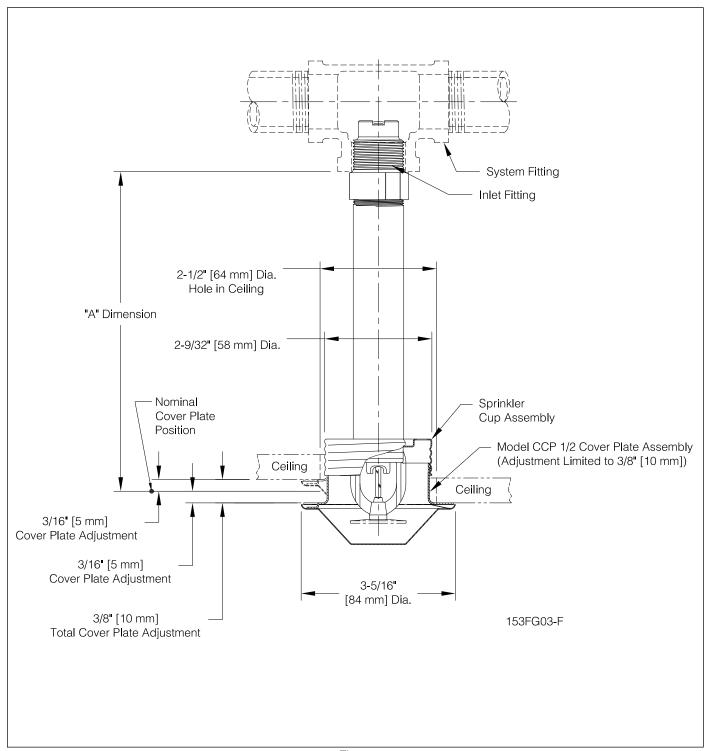


Fig. 4

Note: Do not install the Model F3-56 Dry Pendent sprinkler with the Model CCP cover plate in ceilings which have positive pressure in the space above.

Model F3-56 Dry Pendent Sprinkler with Model F1 Recessed Escutcheon (SIN R5314)

"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.

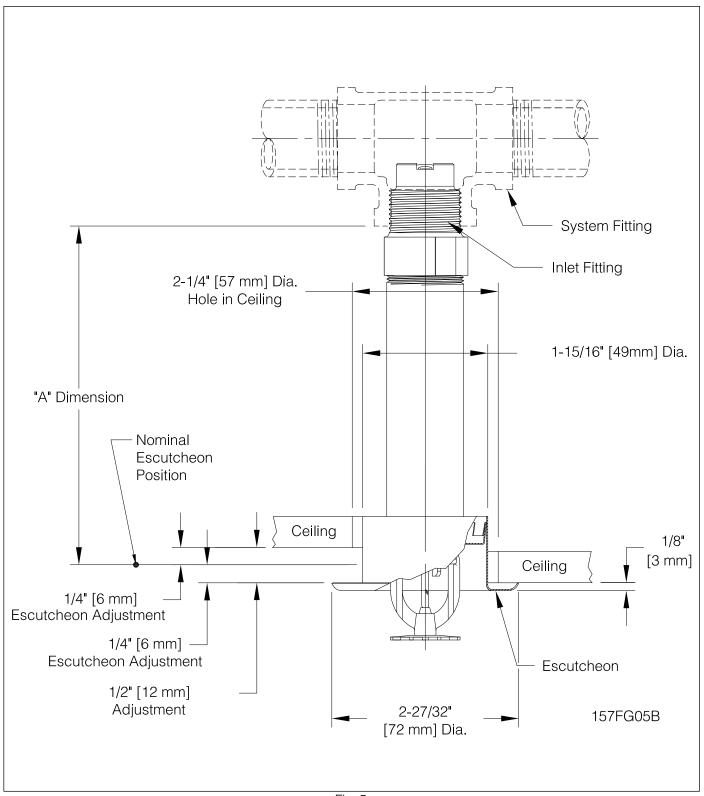


Fig. 5

Model F3-56 Dry Horizontal Sidewall Sprinkler with Standard Escutcheon (SIN R5334)

"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

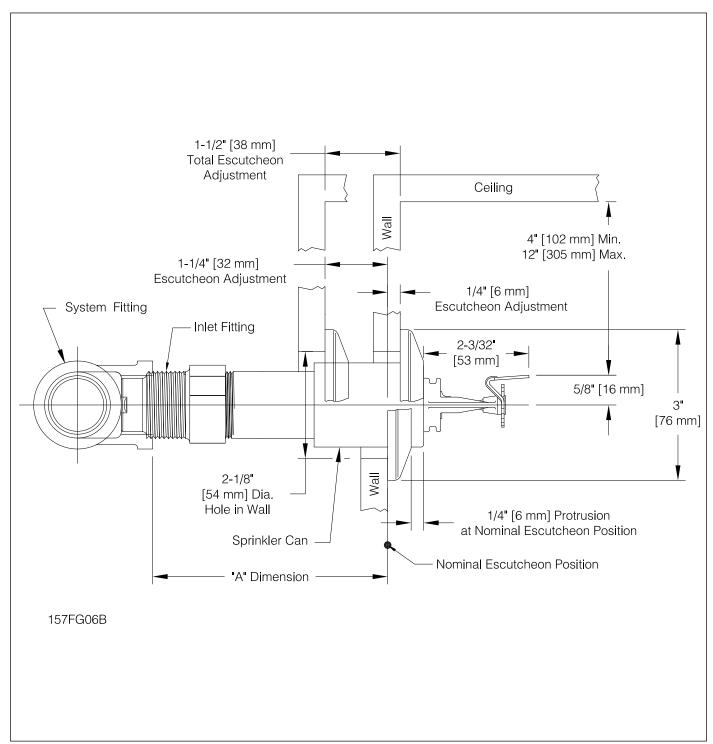


Fig. 6

Note: The sprinkler can protrudes ¼" when escutcheon is in nominal position. Escutcheon adjustment provides -¼" (-6mm) to +1¼" (+32mm) "A" dimension adjustment range.

Model F3-56 Dry Horizontal Sidewall Sprinkler with Model HB Escutcheon (SIN R5334)

"A" Dim. 31/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 31/2" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections

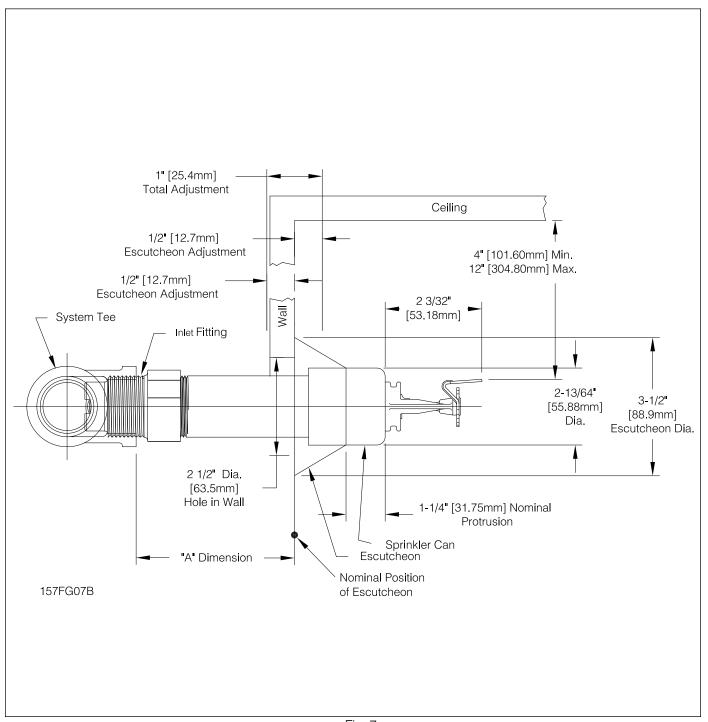


Fig. 7

Note: The sprinkler can protrudes 11/4" when escutcheon is in nominal position. Escutcheon adjustment provides -1/2" (-12.7mm) to +1/2" (+12.7mm) "A" dimension adjustment range.

Model F3-56 Dry Horizontal Sidewall Sprinkler with Model FP Recessed Escutcheon (SIN R5334)

"A" Dim. 31/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 31/2" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections

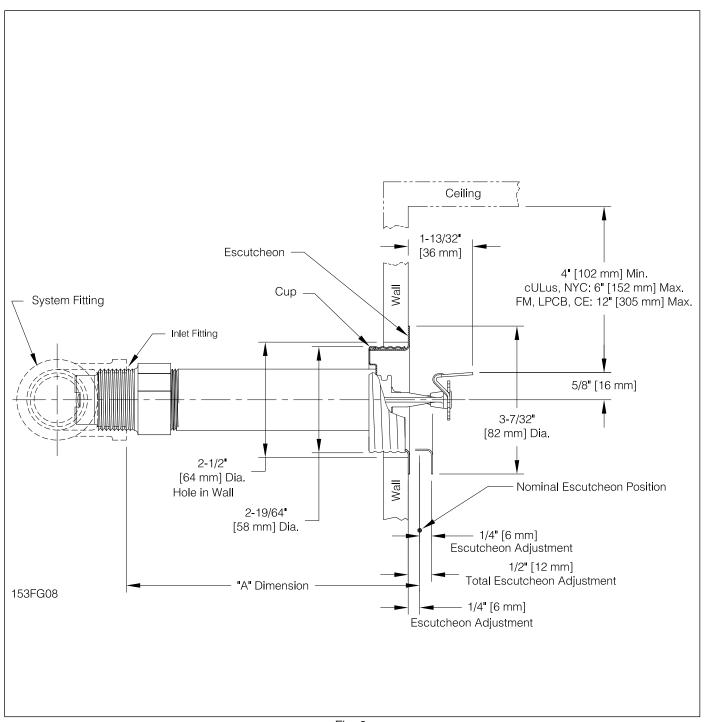


Fig. 8

Note: Do not install the Model F3-56 Dry Horizontal Sidewall sprinkler with the Model FP escutcheon in walls which are positively pressurized with respect to the protected space.

Model F3-56 Dry Horizontal Sidewall Sprinkler with Model F1 Recessed Escutcheon (SIN R5334)

"A" Dim. 31/2" 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

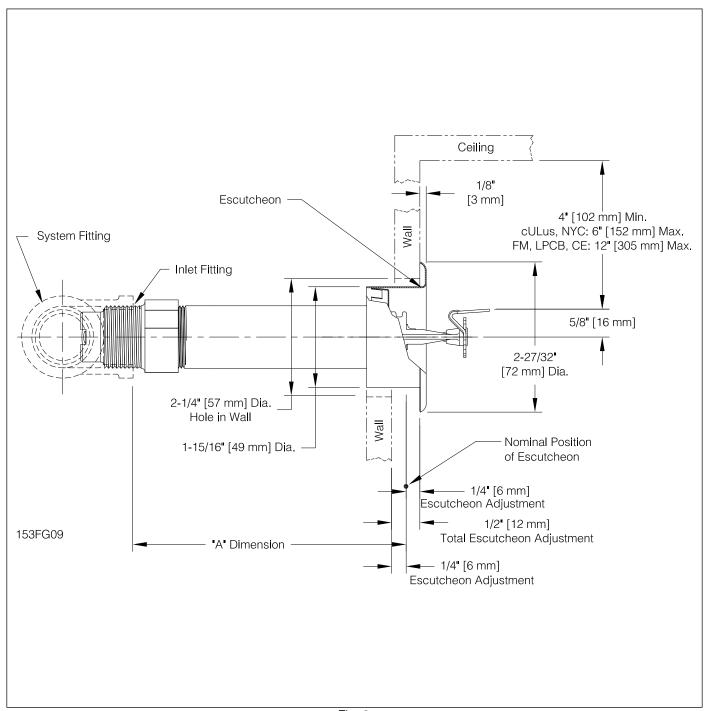
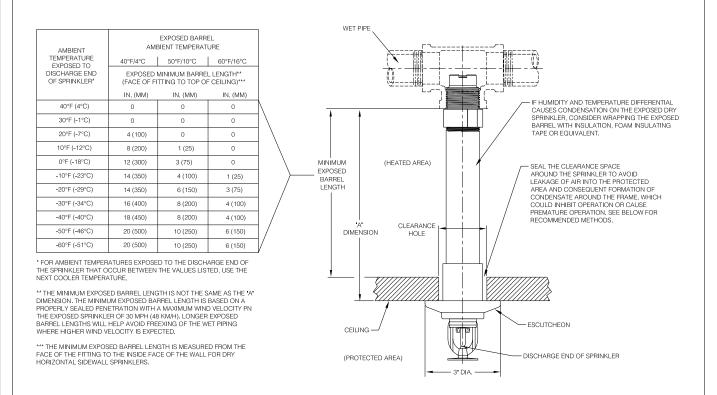


Fig. 9

RECOMMENDED EXPOSED MINIMUM BARREL LENGTH WHEN CONNECTED TO WET PIPE SPRINKLER SYSTEM (DRY PENDENT SPRINKLER WITH STANDARD ESCUTCHEON SHOWN)



RECOMMENDED EXPOSED MINIMUM BARREL LENGTHS ALSO APPLY TO DRY HORIZONTAL SIDEWALL SPRINKLERS

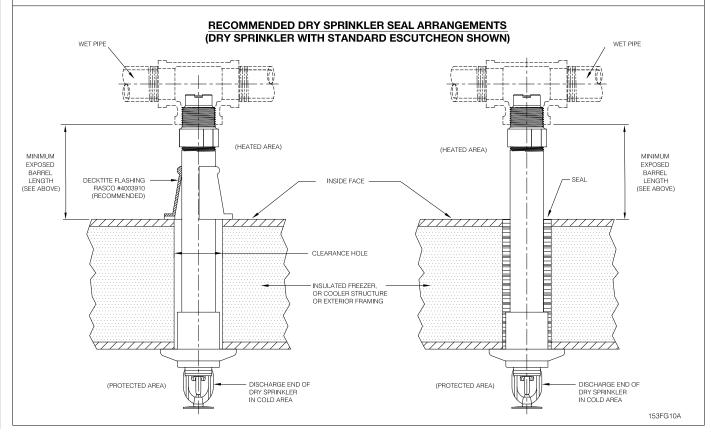


Fig. 10

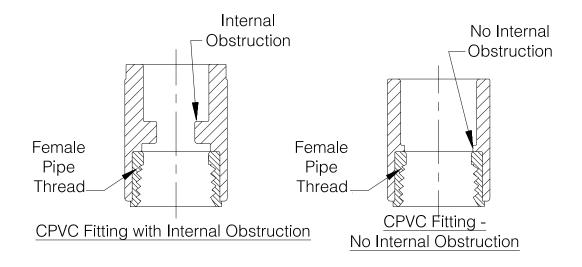
CAUTION

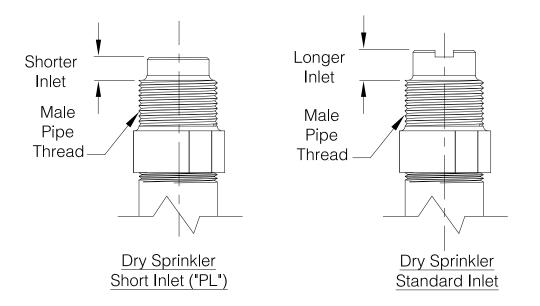
RELIABLE DRY PENDENT AND DRY HORIZONTAL SIDEWALL SPRINKLERS MAY BE INSTALLED IN A LISTED CPVC SPRINKLER FITTING, ONLY UPON VERIFICATION THAT THE FITTING DOES NOT INTERFERE WITH THE SPRINKLER'S INLET.

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

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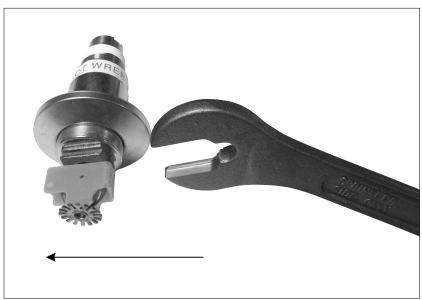


Fig. 12 - Model F3 or Model F3R Wrench

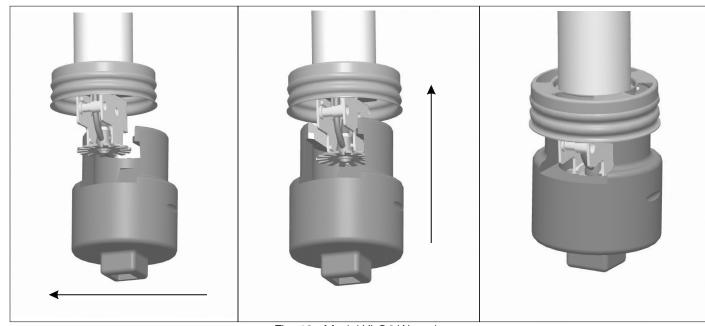


Fig. 13 - Model XLO2 Wrench

MATERIAL SPECIFICATIONS

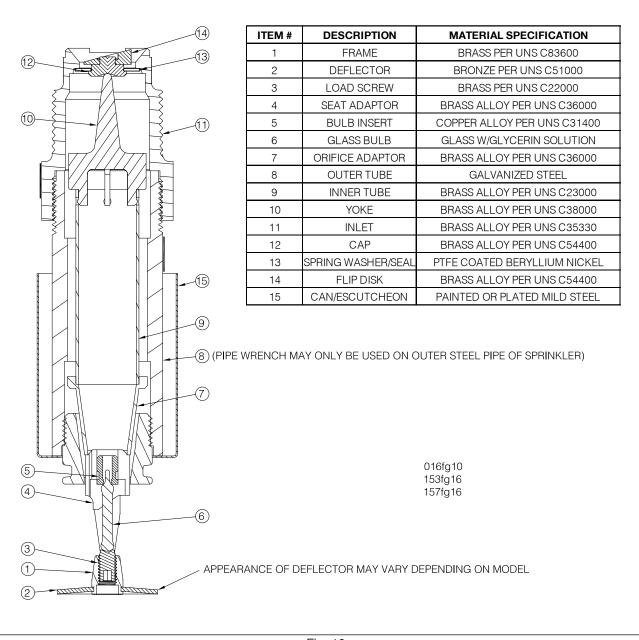


Fig. 16

Installation Instructions

Model F3-56 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)
- Any Listed CPVC sprinkler adapter or tee only in accordance with Fig. 11 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 F3-56 Dry sprinklers must not be installed into elbows, welded outlets, or gasket sealed outlets. Installation of the Model F3-56 Dry sprinkler is not recommend in copper pipe systems, as this may reduce the life expectancy of the sprinkler.

In all dry-pipe system installations, the Model F3-56 Dry sprinkler must be installed with protrusion into the fitting in accordance with Fig. 1 through Fig. 9 in this Bulletin. Do not install Model F3-56 Dry sprinklers with the standard (long) inlet fitting into CPVC fittings that have an internal obstruction (see Fig. 11); this will damage the sprinkler, the fitting, or both. Model F3-56 Dry sprinklers are available with a short "PL" inlet fitting for installation on CPVC fittings of wet-pipe sprinkler systems only.

Model F3-56 Dry sprinklers connected to wet-pipe systems must be installed with the Exposed Minimum Barrel Length required by Fig. 10 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:

- 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 F3 and F3R wrenches are designed to be inserted into the groves in the sprinkler's wrench boss as shown in Fig. 12. The Model XLO2 wrench is designed to fit into the cup and engage the wrench boss as shown in Fig. 13. 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 F3-56 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. 16). 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	Required Centerline of Sprinkler Tube/Inlet to Finished Ceiling Vertical Dimension*	Installation Wrench
F3-56 Dry Pendent	Standard Escutcheon	2-1/8" (54 mm)		F3 or F3R
	HB Extended Escutcheon	2-1/2" (64 mm)		
	F1 Recessed Escutcheon	2-1/4" (57 mm)	Not Applicable	XLO2
	FP Recessed Escutcheon	0.4/01/(0.4	Пррпоавто	
	CCP Cover Plate	2-1/2" (64 mm)		
F3-56 Dry Horizontal Sidewall	Standard Escutcheon	2-1/8" (54 mm)	4-5/8" to 12-5/8"	F3 or F3R
	HB Extended Escutcheon	2-1/2" (64 mm)	(118 mm to 321 mm)	
	F1 Recessed Escutcheon	2-1/4" (57 mm)	cULus, NYC	XLO2
	FP Recessed Escutcheon	2-1/2" (64 mm)	4-5/8" to 6-5/8" (118 mm to 168 mm)	
	F1 Recessed Escutcheon	2-1/4" (57 mm)	FM, LPCB, CE	
	FP Recessed Escutcheon	2-1/2" (64 mm)	4-5/8" to 12-5/8" (118 mm to 321 mm)	

^{*} Based on 5/8" (16 mm) centerline of sprinkler tube/inlet to defector vertical distance.

Maintenance

The Model F3-56 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:

- 1. Sprinkler: [Model F3-56 Dry Pendent SIN R5314] [Model F3-56 Drv Horizontal Sidewall SIN R5334]
- 2. Escutcheon/Cover Plate: [None][Standard escutcheon][Model HB extended escutcheon][Model F1 recessed escutcheon][Model FP recessed escutcheon][Model CCP cover plate - pendent only]
- 3. Inlet Threads: [1" NPT][ISO7-1R1][3/4" NPT][ISO7-
- 4. Inlet Fitting: [Long Standard Inlet Fitting][Short "PL" Wet Pipe Systems only]
- 5. Sprinkler Temperature Rating: See Temperature Ratings table
- 6. Sprinkler Finish: See Finishes Table
- 7. Escutcheon/Cover Plate Finish: See Finishes Table
- 8. Length: "A" Dimension (face of tee to face of ceiling or wall) in 1/4" (6 mm) increments – See Fig. 1 through Fig. 9

Note:

The "A" dimension is based on a nominally gauged pipe thread "make-up" of .600" (15mm) per ANSI B2.1 [approximately 7 ½ threads1.

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.



Reliable Automatic Sprinkler Co., Inc.

(800) 431-1588 (800) 848-6051 (914) 829-2042

Sales Offices Sales Fax Corporate Offices www.reliablesprinkler.com Internet Address

