Reliable

Model F3QR Quick Response Dry Sprinklers

Features

- The Model F3QR sprinkler utilizes Belleville Spring Closure Technology. Reliable is the first in the industry to produce a Quick Response Dry Concealed sprinkler utilizing this technology.
- 2. Styles available
 - Pendent
 - Recessed FP Pendent
 - Recessed F1 Pendent
 - Concealed
 - Horizontal Sidewall
 - Recessed FP Horizontal Sidewall
 - Recessed F1 Horizontal Sidewall
- 3. 1½" (38mm) escutcheon adjustment on pendent sprinkler.
- 4. ½" (13mm) escutcheon adjustment on recessed sprinkler with push-on/thread-off FP Model Escutcheon ring.
- 5. 3/8" (9.5mm) cover plate adjustment on concealed sprinkler with push-on/thread-off CCP Cover Plate.
- 6. 3/4" (19mm) escutcheon adjustment on recessed sprinkler with F1 Escutcheon.
- 7. Attractive appearance. Employs 3mm frangible glass bulb and galvanized nipple.
- 8. Lengths available to accommodate installation dimensions from 2" to 48" (51mm to 1219mm), in 1/4" (6mm) increments. See specific styles for correct "A" dimension range.
- 9. Available in a variety of plated and painted finishes.
- 10. Polyester Coated Corrosion Resistant Sprinklers.

US Patent Numbers 5,775,431 and 5,967,240. Other US Patents pending.

Approvals

1. Listed by Underwriters Laboratories Inc. and UL Certified for Canada (cULus)

continued for carrada (cozac)				
Style	Response	Sprinkler System Type	Hazard	
Pendent Recessed Pendent Recessed F1 Pendent CCP Concealed (R5714)	Quick	Wet Pipe Dry Pipe All Preaction	Light Ordinary	
Horizontal Sidewall Recessed Horizontal Sidewall (R5734)	Quick	Wet Pipe Dry Pipe All Preaction	Light	

2. Certified by FM Approvals

Style	Response	Sprinkler System Type	Hazard
Pendent Recessed F1 Pendent (R5714)	Quick	Wet Pipe Dry Pipe All Preaction	Light Ordinary, Groups 1&2
Horizontal Sidewall Recessed F1 Horizontal Sidewall (R5734)	Quick	Wet Pipe Dry Pipe All Preaction	Light

3. NYC MEA 258-93-E



Pendent (See Fig. 1)



Recessed FP Pendent (See Fig. 3)



Recessed F1 Pendent (See Fig. 5)



Pendent / HB (See Fig. 2)



Concealed (See Fig. 4)



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)

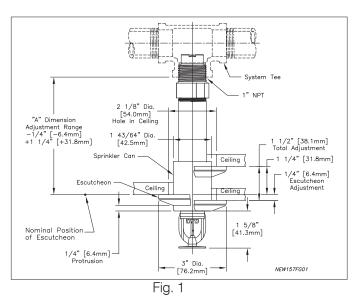
Model F3QR Dry Pendent Sprinkler

"A" Dim. 2" to 48" (51mm to 1219mm) in 1/4" (6mm) increments

Finishes⁽¹⁾

	i illistics		
Sprinkler		Escutcheon	
	Bronze	Brass (3)	
	Chrome Plated	Chrome Plated	
	White Polyester (2)	White	

- (1) Other finishes and colors are available on special order. Consult factory for details.
- (2) cULus Listed as a Corrosion Resistant sprinkler in standard Black or White.
- (3) Not available for HB escutcheons.



Note: The sprinkler can protrudes ¼" when escutcheon is in nominal position. Escutcheon adjustment provides -1¼" (-6mm) to +11¼" (+32mm) "A" dimension adjustment range.

Sprinkler Guard: Model C-2

Sprinkler Installation Wrench: Model G3 Sprinkler Wrench

Sprinkler Identification Number (SIN): R5714

Model F3QR Dry Recessed FP Pendent Sprinkler

"A" Dim. 31/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments

Finishes (1)

Sprinkler	Escutcheon	
Bronze	Brass	
Chrome Plated	Chrome Plated	
White Polyester (2)	White	

- ⁽¹⁾ Other finishes and colors are available on special order.
 - Consult factory for details. Cup remainds unfinished.
- Only the escutcheon will contain desired finish.
- (2) cullus Listed as a Corrosion Resistant sprinkler in standard Black or White.

Standard Temperature Ratings

Classification	Sprinkler Temperature Rating	Max. Ambient Temp.	Bulb Color
Ordinary	135°F (57°C)	100°F (38°C)	Orange
Ordinary	155°F (68°C)	100°F (38°C)	Red
Intermediate (1)	175°F (79°C)	150°F (66°C)	Yellow
Intermediate	200°F (93°C)	150°F (66°C)	Green
High (1)	286°F (141°C)	225°F (107°C)	Blue

Sprinkler cup and FP Escutcheon fabricated of steel and recommended for interior applications.

Model F3QR Dry Pendent w/HB Escutcheon

"A" Dim. 3½" to 48" (89mm to 1219mm) in ¼" (6mm) increments

Standard Temperature Ratings

Classification	Sprinkler Temperature Rating	Max. Ambient Temp.	Bulb Color
Ordinary	135°F (57°C)	100°F (38°C)	Orange
Ordinary	155°F (68°C)	100°F (38°C)	Red
Intermediate (1)	175°F (79°C)	150°F (66°C)	Yellow
Intermediate	200°F (93°C)	150°F (66°C)	Green
High (1)	286°F (141°C)	225°F (107°C)	Blue

Sprinkler can and escutcheon fabricated of brass for better weather resistance in exterior applications.

(1) Listed and Certified only by cULus.

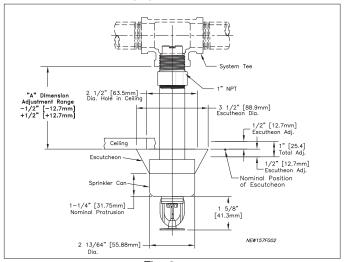


Fig. 2

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.

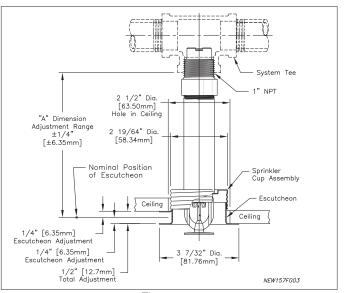


Fig. 3

Note: Do not install the Model F3QR Dry Recessed FP Pendent Sprinkler in ceilings which have positive pressure in space above.

Sprinkler Installation Wrench: Model G3 R/C Sprinkler Wrench Sprinkler Identification Number (SIN): R5714

⁽¹⁾ Listed and Certified only by cULus.

Model F3QR Dry Pendent Concealed Sprinkler

"A" Dim. 31/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments

CCP Cover Plate (1) Finishes (2)

OOI OOVER I INC.			
Standard Finishes	Special Application Finishes		
Chrome Plated	Bright Brass Plated		
White	Black Plated		
	Black Paint		
	Off White		
	Satin Chrome		

⁽¹⁾ Utilizes the 1/2" cover plate with 3/8" total adjustment.

Standard Temperature Ratings

Classification	Sprinkler Temperature Rating	Cover Plate Temp. Rating	Max. Ambient Temp.
Ordinary	135°F (57°C)	135°F (57°C)	100°F (38°C)
Ordinary	155°F (68°C)	135°F (57°C)	100°F (38°C)
Intermediate (1)	175°F (79°C)	165°F (74°C)	150°F (66°C)
Intermediate	200°F (93°C)	165°F (74°C)	150°F (66°C)
High (1)	286°F (141°C)	165°F (74°C)	150°F (66°C)

Sprinkler cup fabricated of steel and CCP Cover Plate fabricated of brass and recommended for interior applications.

Sprinkler Installation Wrench:

Model G3 R/C Sprinkler Wrench

Sprinkler Identification Number (SIN): R5714

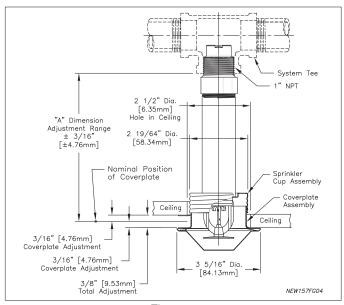


Fig. 4

Note: Do not install the Model F3QR Dry Concealed Pendent Sprinkler in ceilings which have positive pressure in the space above.

Model F3QR Dry Recessed F1 Pendent Sprinkler

"A" Dim.	31/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments		
Finishes (1)	Finishes (1)		
Sprinkler	Escutch	neon Collar	
Chrome Plated White Polyeste		Plated Chrome Plated White	

⁽¹⁾ Other finishes and colors are available on special order. Consult factory for details.

Standard Temperature Ratings

Classification	Sprinkler Temperature Rating	Max. Ambient Temp.	Bulb Color
Ordinary	135°F (57°C)	100°F (38°C)	Orange
Ordinary	155°F (68°C)	100°F (38°C)	Red
Intermediate (1)	175°F (79°C)	150°F (66°C)	Yellow
Intermediate	200°F (93°C)	150°F (66°C)	Green
High (1)	286°F (141°C)	225°F (107°C)	Blue

⁽¹⁾ Listed and Certified only by cULus.

Sprinkler Installation Wrench: Model G3 R/C Sprinkler Wrench

Sprinkler Identification Number (SIN): R5714

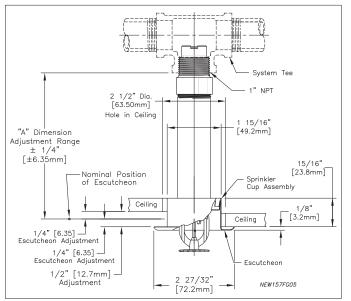


Fig. 5

⁽²⁾ Other finishes and colors are available on special order. Consult factory for details.

⁽¹⁾ Listed and Certified only by cULus.

⁽²⁾ cULus Listed as a Corrosion Resistant sprinkler in standard Black or

Model F3QR Dry Horizontal Sidewall Sprinkler

2" to 48" (51mm to 1219mm) in 1/4" (6mm) increments

Finishes (1)

Sprinkler	Escutcheon
Bronze	Brass (3)
Chrome Plated	Chrome Plated
White Polyester (2)	White

- (1) Other finishes and colors are available on special order. Consult factory for details.
- (2) cULus Listed as a Corrosion Resistant sprinkler in standard Black or White.
- (3) Not available for HB escutcheons.

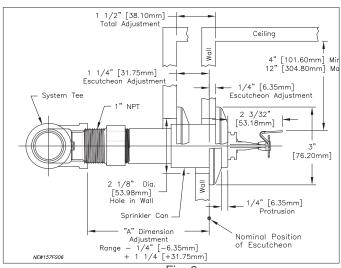


Fig. 6

Note: The sprinkler can protrudes 1/4" when escutcheon is in nominal position. Escutcheon adjustment provides -1/4" (-6mm) to +11/4" (+32mm) "A" dimension adjustment range.

(1) Listed and Certified only by cULus.

Sprinkler Installation Wrench: Model G3 Sprinkler Wrench prinkler Identification Number (SIN): R5734

Model F3QR Dry HSW w/HB Escutcheon

"A" Dim. 2" to 48" (51mm to 1219mm) in 1/4" (6mm) increments

Standard Temperature Ratings

Classification	Sprinkler Temperature Rating	Max. Ambient Temp.	Bulb Color
Ordinary	135°F (57°C)	100°F (38°C)	Orange
Ordinary	155°F (68°C)	100°F (38°C)	Red
Intermediate (1)	175°F (79°C)	150°F (66°C)	Yellow
Intermediate	200°F (93°C)	150°F (66°C)	Green
High	286°F (141°C)	225°F (107°C)	Blue

Sprinkler can and escutcheon fabricated of brass for better weather resistance in exterior applications.

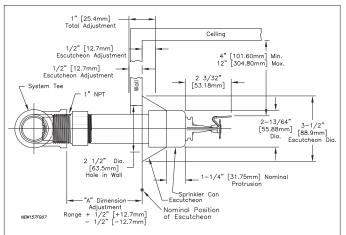


Fig. 7

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

Model F3QR Dry Recessed FP Horizontal Sidewall Sprinkler

"A" Dim.	31/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments				
Finishes (1)					
Sprinkler		Escutcheon			
Bronze		Brass			
Chrome Plated		Chrome Plated			
White Polvester (2)		White			

- (1) Other finishes and colors are available on special order. Consult factory for details. Cup remainds unfinished. "See page 2"
- (2) cULus Listed as a Corrosion Resistant sprinkler in standard Black or White.

Standard Temperature Ratings

Classification	Sprinkler Tem- perature Rating	Max. Ambient Temp.	Bulb Color
Ordinary	135°F (57°C)	100°F (38°C)	Orange
Ordinary	155°F (68°C)	100°F (38°C)	Red
Intermediate (1)	175°F (79°C)	150°F (66°C)	Yellow
Intermediate	200°F (93°C)	150°F (66°C)	Green
High (1)	286°F (141°C)	225°F (107°C)	Blue

(1) Listed and Certified only by cULus.

Sprinkler Installation Wrench: Model G3 R/C Sprinkler Wrench

Sprinkler Identification Number (SIN): R5734

1 13/32" [35.7mm] Escutcheon 5 2 1/2" Dia. [63.5mm] Hole in Wall Nominal Posit of Escutcheor 19/64" Dia [58.3mm] ← 1/4" [6.35] Escutcheon Adjustment "A" Dimensio 1/2" [12.7mm]
Escutcheon Adjustm
1/4" [6.35]
Escutcheon Adjustment Jimension Jiustment Ran ±1/4" [±6.35mm] NEW157FG08 * • FOR FACTORY MUTUAL (FM)
• 4" - 6" FOR UNDERWRITERS LABORATORIES (UL)

Fig. 8

Notes: Do not install the Model F3QR Dry Recessed FP Horizontal Sidewall Sprinkler in walls which have positive pressure in their

- Listed by cULus for Quick Response. Approved by FM for Standard Response.
- Recessed Horizontal sidewall sprinklers are listed with cULus for installation of min. 4" (100mm) - to - max. 6" (150mm) below ceiling and approved by FM for installation of min. 4" (100mm)
 - to max. 12" (300mm) below ceiling.

Model F3QR Dry Recessed F1 Horizontal Sidewall Sprinkler

"A" Dim. 31/2" to	31/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments					
Finishes (1)						
Sprinkler	Escutcheon	Collar				
Chrome Plated White Polyester (2)	Chrome Plated White	Chrome Plated White				

⁽¹⁾ Other finishes and colors are available on special order. Consult factory for details.

Standard Temperature Ratings

Classification	Sprinkler Temperature Rating	Max. Ambient Temp.	Bulb Color
Ordinary	135°F (57°C)	100°F (38°C)	Orange
Ordinary	155°F (68°C)	100°F (38°C)	Red
Intermediate (1)	175°F (79°C)	150°F (66°C)	Yellow
Intermediate	200°F (93°C)	150°F (66°C)	Green
High (1)	286°F (141°C)	225°F (107°C)	Blue

⁽¹⁾ Listed and Certified only by cULus.

Sprinkler Installation Wrench:

Model G3 R/C Sprinkler Wrench

Sprinkler Identification Number (SIN): R5734

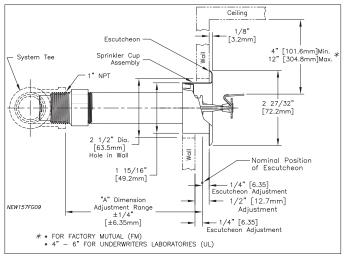


Fig. 9

- Listed by cULus for Quick Response. Approved by FM for Standard Response.
- Recessed Horizontal sidewall sprinklers are listed with cULus for installation of min. 4" (100mm) to max. 6" (150mm) below ceiling and approved by FM for installation of min. 4" (100mm) to max. 12" (300mm) below ceiling.

Technical Data:

Orifice Size: ½" (15mm)

Thread Size: 1" NPT per ANSI B2.1 Working Pressure: 175 psi (12 bar) Nominal K Factor - US / (Metric): 5.6 / (80)

Product Description

Reliable Model F3QR Dry Sprinklers are quick response sprinklers utilizing a durable 3mm frangible glass bulb. This quick response enables these sprinklers to apply water to a fire much sooner than standard response sprinklers of the similar temperature rating.

Model F3QR Dry Sprinklers are intended for use in dry and preaction systems and in areas subjected to freezing temperatures, such as freezers and unheated portions inside and outside buildings.

Environments wherein dry sprinklers are employed can be corrosive. For this reason, Model F3 Sprinklers have a special wax fillet placed in the gap between the cup that supports the bulb and the wrenching boss. This wax will not interfere with the operation of the sprinkler, and it prevents contaminents from entering the internal portion of the drop nipple. The wax must not be removed.

Operation

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. When the temperature increases sufficiently, due to a fire, the bulb shatters allowing operating parts to clear the waterway. This enables the inlet seal to release air or water and subsequently, cause water flow over the deflector in a uniform spray pattern, controlling or extinguishing the fire.

Ordering Information

Specify:

- 1. Sprinkler Type (select one):
 - (a) Model F3QR Dry Pendent
 - (b) Model F3QR Dry Pendent/HB
 - (c) Model F3QR Dry Recessed FP Pendent
 - (d) Model F3QR Dry Recessed F1 Pendent
 - (e) Model F3QR Dry Concealed Pendent
 - (f) Model F3QR Dry Horizontal Sidewall (g) Model F3QR Dry Horizontal Sidewall/HB
 - (b) Model F3QR Dry Recessed FP Horizontal Sidewall
 - (i) Model F3QR Dry Recessed F1 Horizontal Sidewall
- (1) Woder Foot Dry Necessed FT Horizontal oldewa
- 2. Sprinkler Temperature Rating.
- 3. Sprinkler Finish.
- 4. Escutcheon type (F1 or FP).
- 5. Cover Plate/Escutcheon Finish.
- 6. Length:
 - "A" Dimension (face of tee to face of ceiling or wall) in $\frac{1}{4}$ " (6mm) increments.
- 7. Model F3QR Dry Pendent (a) is available without sprinkler can and escutcheon.

Note

- The "A" dimension is based on a nominally gauged pipe thread "make-up" of 0.600" (15mm) per ANSI B2.1 [7½ threads approximately].
- All platings and paintings are decorative and intended for interior use.

⁽²⁾ cULus Listed as a Corrosion Resistant sprinkler in standard Black or White.

General Installation Instructions

Model F3QR dry sprinklers must be installed only in standard (ANSI B 16.3 class 150 and ANSI B 16.4 class 125) pipe tees in the horizontal position, even at branch line ends. They should not be installed into elbows or pipe couplings located on drop nipples to the sprinklers. For these and other fittings including CPVC*, the dry sprinkler should be installed into a fitting to allow protrusion into the fitting in accordance with the diagrams. The "A" dimension of the dry sprinkler, which extends into the freezers or a freezing zone from wet pipe systems, should be selected to provide, as a minimum, the specified lengths in inches shown in Fig. 10.

Caution:

Do not install Model F3QR Dry sprinklers into CPVC adapter fittings or tees that have an internal obstruction. This will damage the sprinkler and /or the fitting. Refer to Fig. 11.

During installation, the following steps must be followed:

- 1. Cut the specified size hole (see illustrations) for the sprinkler in the ceiling or wall directly in line with the tee.
- 2. Apply pipe joint compound to the 1" (25mm) pipe threads and install sprinkler using the Model G3 or G3 R/C Sprinkler Wrench as specified.
- 3. Install the Model FP push-on / thread-off escutcheon or CCP cover plate if required.

Note: Installation of the Model F3QR Sprinklers is not recommended in copper pipe systems, as this may reduce the life expectancy of the sprinklers.

Model F3QR Concealed and Recessed Installation Instructions

- The Model G3 R/C wrench (Fig. 12) is designed to locate on the wrenching pads of the recessed sprinkler while centering in the cup. A standard ½" drive ratchet may be used to drive this wrench. Fig. 13 and Fig. 14 show sequentially the insertion of the wrench. First the wrench, with its jaws above the sprinkler deflector, is moved laterally until centered with the cup. Then raise the wrench inside of the cup until its jaws engage the sprinkler's square wrenching pads (Fig. 14). To remove the wrench, follow this procedure in reverse order. Care should be taken to avoid striking the deflector, with the wrench.
- Model G3 Wrench (Fig. 15) is used for installation of Pendent and Horizontal Sidewall sprinklers.
- Glass bulb sprinklers have orange bulb protectors to minimize bulb damage during shipping, handling and installation. REMOVE THIS PROTECTION AT THE TIME THE SPRINKLER SYSTEM IS PLACED IN SERVICE FOR FIRE PROTECTION. Removal of the protectors before this time may leave the bulb vulnerable to damage. RASCO wrenches are designed to install sprinklers when covers are in place. REMOVE PROTECTORS BY UNDOING THE CLASP BY HAND. DO NOT USE TOOLS TO REMOVE THE PROTECTORS.

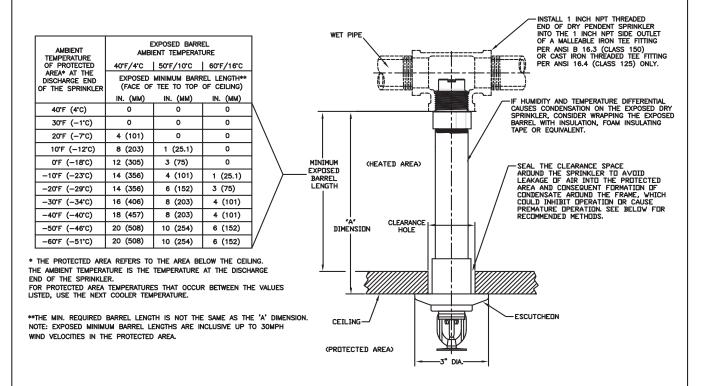
Maintenance

The Model F3QR Quick Response Dry Sprinklers should be inspected quarterly 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. Remove 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.

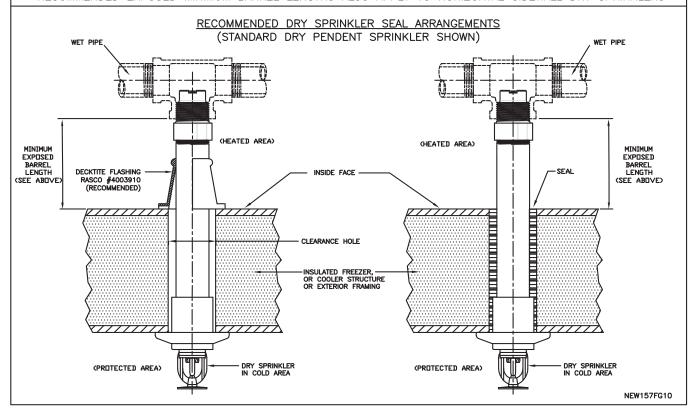
Caution:

Use specified by RASCO wrenches only, which are designed to engage sprinkler's wrenching pad. (Fig. 15, page 9)

RECOMMENDED EXPOSED MINIMUM BARREL LENGTH BASED ON AMBIENT TEMPERATURE IN THE PROTECTED AREA (STANDARD DRY PENDENT SPRINKLER SHOWN)



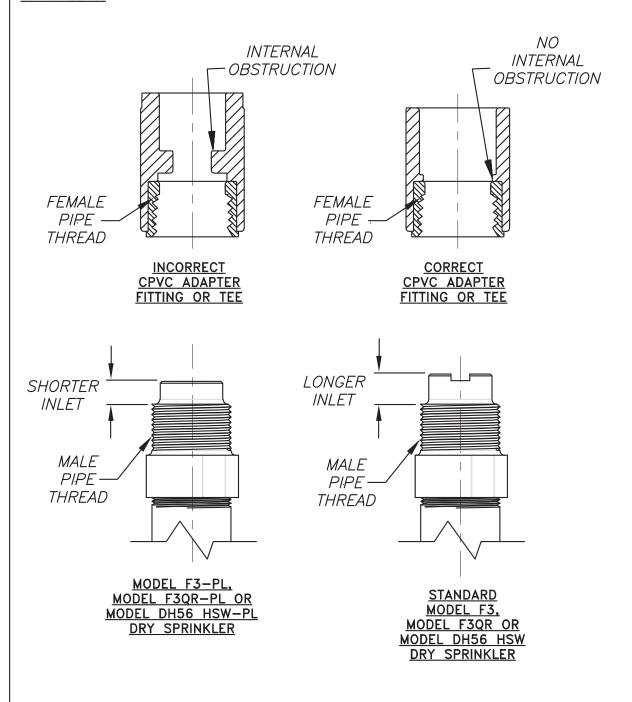
RECOMMENDED EXPOSED MINIMUM BARREL LENGTHS ALSO APPLY TO HORIZONTAL SIDEWALL DRY SPRINKLERS



CAUTION

DO NOT INSTALL MODEL F3, MODEL F3QR OR MODEL DH56 HSW DRY SPRINKLERS INTO CPVC ADAPTER FITTINGS OR TEES THAT HAVE AN INTERNAL OBSTRUCTION. THIS WILL DAMAGE THE SPRINKLER AND/OR THE FITTING.

CPVC ADAPTER FITTINGS AND TEES WITH INTERNAL OBSTRUCTIONS ARE ALSO COMMONLY FOUND DURING THE RETROFITTING PROCESS OF RELIABLE'S OLDER MODEL G3 DRY SPRINKLERS.



<u>BE SURE TO ORDER THE CORRECT SPRINKLERS FOR YOUR</u>
<u>APPLICATION</u>

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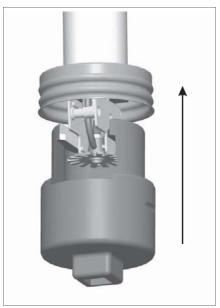


Fig. 13 - G3 R/C Wrench

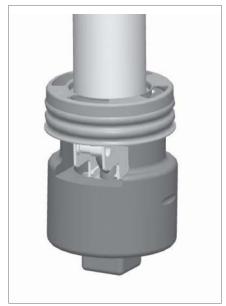


Fig. 14 - G3 R/C Wrench

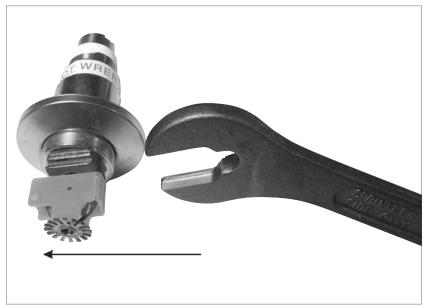


Fig. 15 - G3 Wrench

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 over 90 years, and are installed and serviced by the most highly qualified and reputable sprinkler contractors located throughout the United States, Canada and foreign countries.

