

## Model F3QR Quick Response Dry Sprinklers

### Features

1. 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 Horizontal Sidewall - FP
  - 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. ⅜" (9.5mm) cover plate adjustment on concealed sprinkler with push-on/ thread-off CCP Cover Plate.
6. ¾" (19mm) escutcheon adjustment on recessed sprinkler with G/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 ¼" (6mm) increments.
9. Available in a variety of plated and painted finishes.

### Approvals

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

| Style  | Response | Sprinkler System Type                 | Hazard            |
|--|----------|---------------------------------------|-------------------|
| Pendent<br>Recessed Pendent<br>Recessed F1 Pendent<br>CCP Concealed<br>(R5714)                       | Quick    | Wet Pipe<br>Dry Pipe<br>All Preaction | Light<br>Ordinary |
| Horizontal Sidewall<br>Recessed FP Horizontal Sidewall<br>Recessed F1 Horizontal Sidewall<br>(R5734) |          |                                       |                   |

2. Certified by FM Approvals

| Style   | Response | Sprinkler System Type                      | Hazard                              |
|---|----------|--|-------------------------------------|
| Pendent<br>Recessed F1 Pendent<br>(R5714)                         | Quick    | Wet Pipe,<br>Single Interlock<br>Preaction | Light<br>Ordinary,<br>Groups<br>1&2 |
| Horizontal Sidewall<br>Recessed F1 Horizontal Sidewall<br>(R5734) | Quick    | Wet Pipe,<br>Single Interlock<br>Preaction | Light                               |

3. NYC MEA 258-93-E



Concealed



Recessed FP Pendent



Recessed F1 Pendent



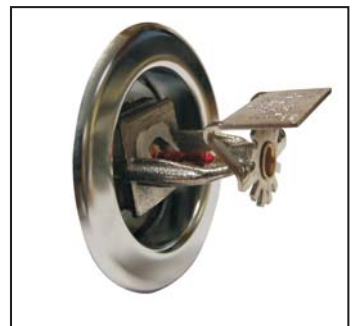
Pendent



Horizontal Sidewall



Recessed FP  
Horizontal Sidewall



Recessed F1  
Horizontal Sidewall

# Model F3QR Dry Pendent Sprinkler

|                 |   |
|-----------------|---|
| <b>"A" Dim.</b> | 2" to 48" (51mm to 1219mm) in 1/4" (6mm) increments |
|-----------------|---|

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

| Sprinkler            | Escutcheon    |
|----------------------|---------------|
| Bronze               | Brass         |
| Chrome Plated        | Chrome Plated |
| White <sup>(2)</sup> | White         |

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

<sup>(2)</sup> White coated sprinklers will have chrome plated cans.

## 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   | 200°F (93°C)                 | 150°F (66°C)       | Green      |
| High           | 286°F (141°C)                | 225°F (107°C)      | Blue       |

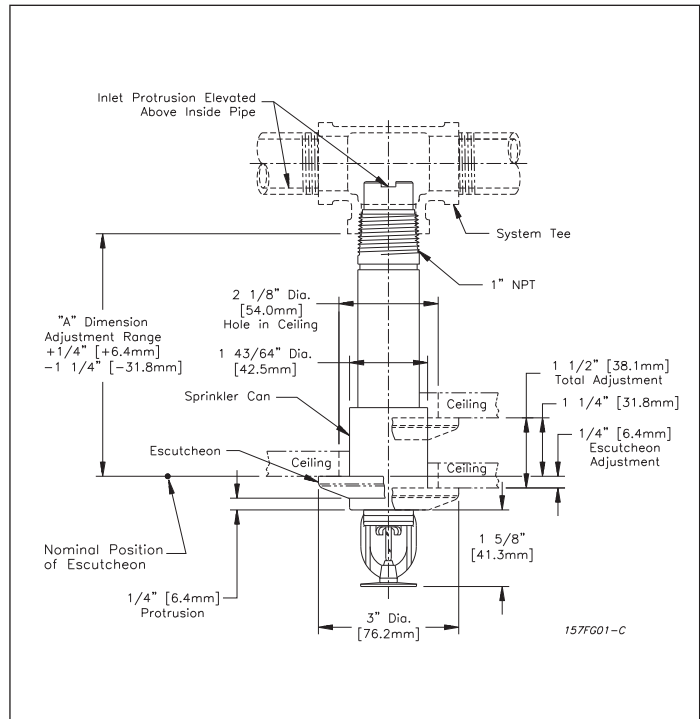
Sprinkler can and escutcheon fabricated of brass for better weather resistance in exterior applications.

## Sprinkler Guard: Model C-2

## Sprinkler Installation Wrench

Model G3 Sprinkler Wrench

## Sprinkler Identification Number (SIN): R5714



**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.

# Model F3QR Dry Recessed Pendent Sprinkler

|                 |   |
|-----------------|---|
| <b>"A" Dim.</b> | 3 1/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments |
|-----------------|---|

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

| Sprinkler     | Escutcheon    |
|---------------|---------------|
| Bronze        | Brass         |
| Chrome Plated | Chrome Plated |
| White         | White         |

<sup>(1)</sup> Other finishes and colors are available on special order. Consult factory for details. Cup remains unfinished. Only the escutcheon will contain desired finish.

## 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   | 200°F (93°C)                 | 150°F (66°C)       | Green      |
| High*          | 286°F (141°C)                | 225°F (107°C)      | Blue       |

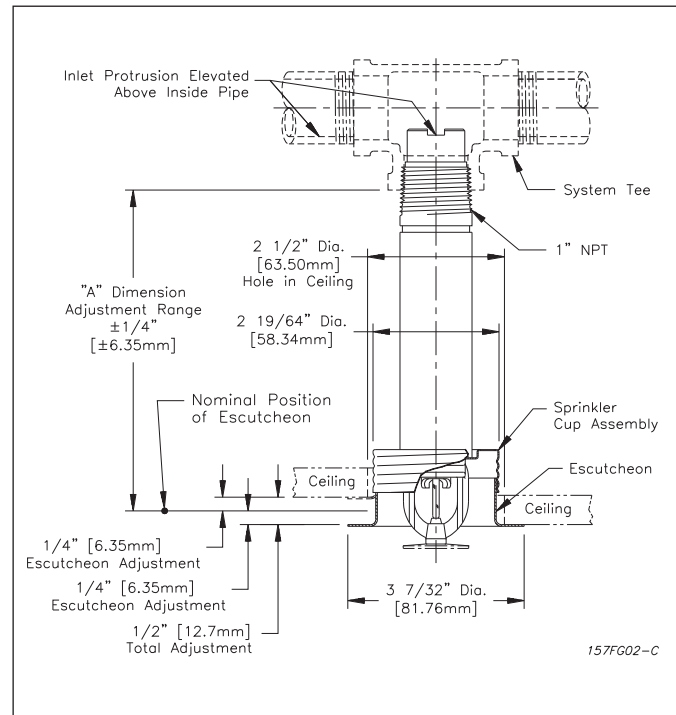
Sprinkler cup and FP escutcheon fabricated of steel and recommended for interior applications.

\* Listed and Certified only by cULus

## Sprinkler Installation Wrench

Model G3 R/C Sprinkler Wrench

## Sprinkler Identification Number (SIN): R5714



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

# Model F3QR Dry Pendent Concealed Sprinkler

|                 |  |
|-----------------|--|
| <b>"A" Dim.</b> | 3½" to 48" (89mm to 1219mm) in ¼" (6mm) increments |
|-----------------|--|

## CCP Cover Plate<sup>(1)</sup> Finishes<sup>(2)</sup>

| Standard Finishes      | Special Application Finishes  |
|------------------------|---|
| Chrome Plated<br>White | Bright Brass Plated<br>Black Plated<br>Black Paint<br>Off White<br>Satin Chrome |

<sup>(1)</sup> Utilizes the ½" cover plate with ⅜" total adjustment.

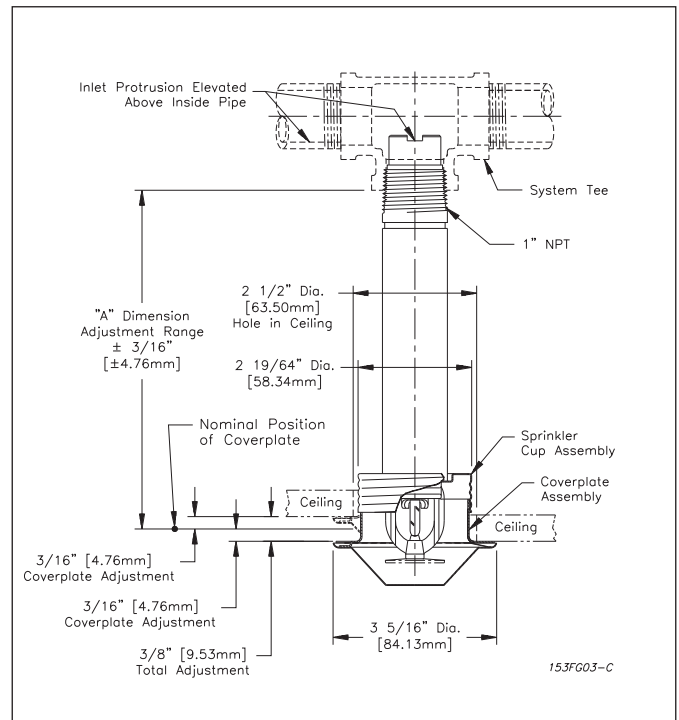
<sup>(2)</sup> Other finishes and colors are available on special order. Consult factory for details.

## 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   | 200°F (93°C)                 | 165°F (74°C)             | 150°F (66°C)       |
| High*          | 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.

\* Listed and Certified only by cULus.



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

## Sprinkler Installation Wrench:

Model G3 R/C Sprinkler Wrench

**Sprinkler Identification Number (SIN): R5714**

# Model F3QR Dry Horizontal Sidewall Sprinkler

|                 |   |
|-----------------|---|
| <b>"A" Dim.</b> | 2' to 48" (51mm to 1219mm) in ¼" (6mm) increments |
|-----------------|---|

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

| Sprinkler            | Escutcheon    |
|----------------------|---------------|
| Bronze               | Brass         |
| Chrome Plated        | Chrome Plated |
| White <sup>(2)</sup> | White         |

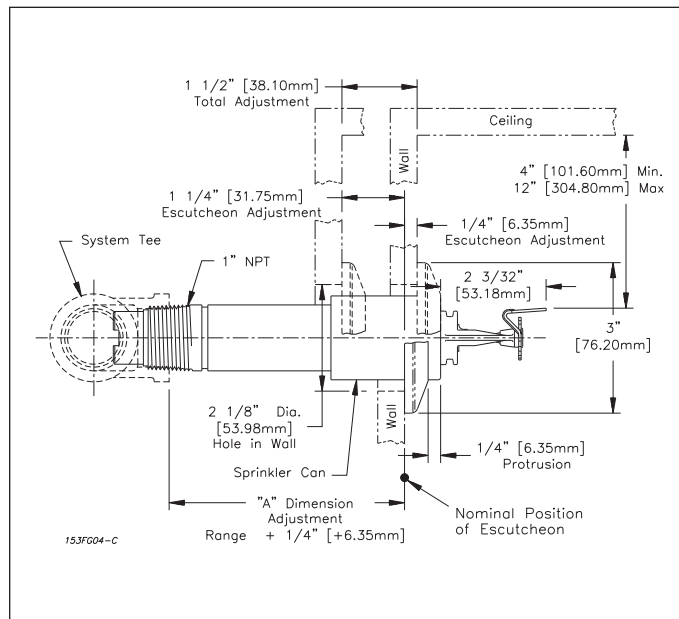
<sup>(1)</sup> Other finishes and colors are available on special order. Consult factory for details.

<sup>(2)</sup> White coated sprinklers will have chrome plated can.

## 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   | 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 weather resistance in exterior applications.



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

## Sprinkler Installation Wrench:

Model G3 Sprinkler Wrench

**Sprinkler Identification Number (SIN): R5734**

# Model F3QR Dry Recessed F1 Pendent Sprinkler

**"A" Dim.** 3 1/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments

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

| Sprinkler           | Escutcheon          | Collar              |
|---------------------|---------------------|---------------------|
| Chrome Plated White | Chrome Plated White | Chrome Plated White |

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

## Standard Temperature Ratings

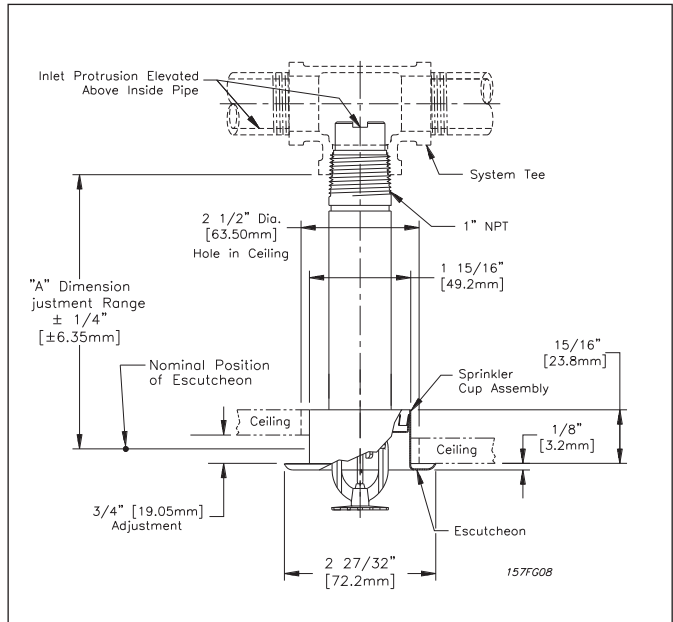
| Classification | Sprinkler Temperature Rating | Max. Ambient Temp. | Bulb Color |
|----------------|------------------------------|--------------------|------------|
| Ordinary       | 135°F (57°C)                 | 100°F (38°C)       | Orange     |
| Ordinary       | 155°F (68°C)                 |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

\* Listed and Certified only by cULus.

## Sprinkler Installation Wrench:

Model G3 R/C Sprinkler Wrench

**Sprinkler Identification Number (SIN): R5714**



# Model F3QR Dry Horizontal Recessed F1 Sidewall Sprinkler

**"A" Dim.** 3 1/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments

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

| Sprinkler           | Escutcheon          | Collar              |
|---------------------|---------------------|---------------------|
| Chrome Plated White | Chrome Plated White | Chrome Plated White |

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

## Standard Temperature Ratings

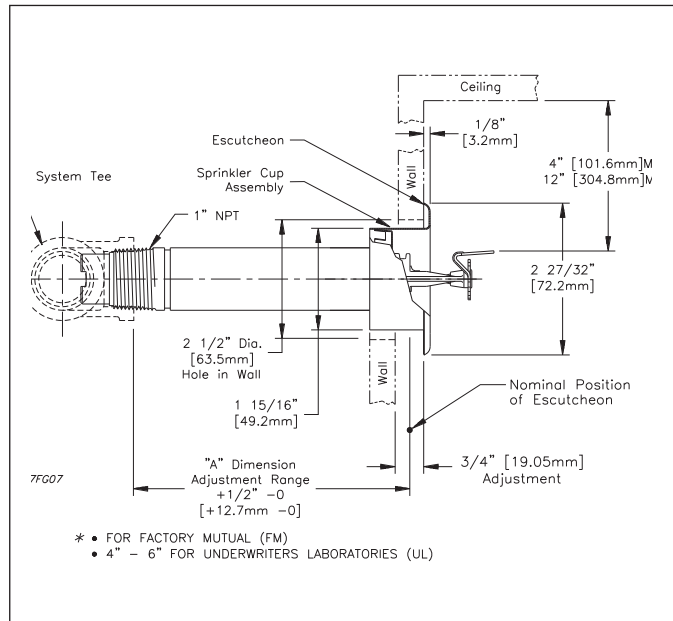
| Classification | Sprinkler Temperature Rating | Max. Ambient Temp. | Bulb Color |
|----------------|------------------------------|--------------------|------------|
| Ordinary       | 135°F (57°C)                 | 100°F (38°C)       | Orange     |
| Ordinary       | 155°F (68°C)                 |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

\* Listed and Certified only by cULus.

## Sprinkler Installation Wrench:

Model G3 R/C Sprinkler Wrench

**Sprinkler Identification Number (SIN): R5734**



\* • FOR FACTORY MUTUAL (FM)  
• 4" - 6" FOR UNDERWRITERS LABORATORIES (UL)

- 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 Horizontal Recessed Sidewall Sprinkler

|                 |   |
|-----------------|---|
| <b>"A" Dim.</b> | 3/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments |
|-----------------|---|

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

| Sprinkler     | Escutcheon    |
|---------------|---------------|
| Bronze        | Brass         |
| Chrome Plated | Chrome Plated |
| White         | White         |

<sup>(1)</sup> Other finishes and colors are available on special order. Consult factory for details. Cup remains unfinished. "See page 2"

## Standard Temperature Ratings

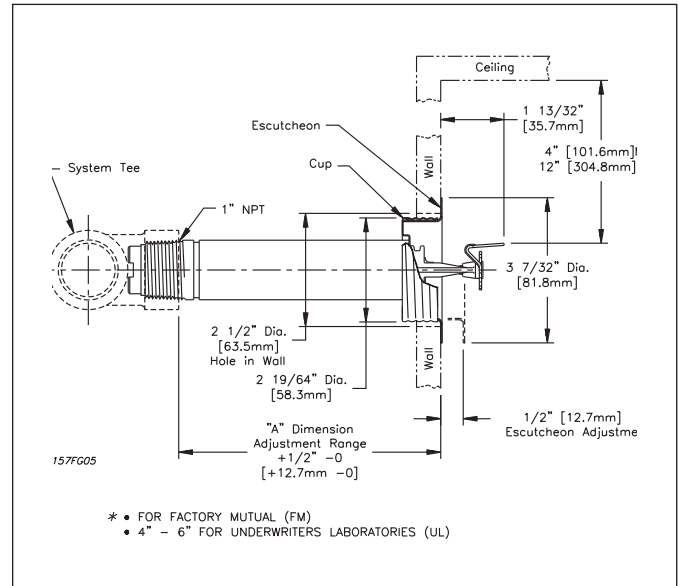
| Classification | Sprinkler Temperature Rating | Max. Ambient Temp. | Bulb Color |
|----------------|------------------------------|--------------------|------------|
| Ordinary       | 135°F (57°C)                 | 100°F (38°C)       | Orange     |
| Ordinary       | 155°F (68°C)                 |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

\* Listed and Certified only by cULus.

## Sprinkler Installation Wrench:

Model G3 R/C Sprinkler Wrench

## Sprinkler Identification Number (SIN): R5734



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

- 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: 1/2" (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 contaminants 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:

- Sprinkler Type (select one):
  - Model F3QR Dry Pendant
  - Model F3QR Dry Recessed Pendant
  - Model F3QR Dry Recessed F1 Pendant
  - Model F3QR Dry Concealed Pendant
  - Model F3QR Dry Horizontal Sidewall
  - Model F3QR Dry Recessed Horizontal Sidewall
  - Model F3QR Dry Recessed F1 Horizontal Sidewall
- Sprinkler Temperature Rating.
- Sprinkler Finish.
- Escutcheon type (G/F1 or FP).
- Cover Plate/Escutcheon Finish.
- Length: "A" Dimension (face of tee to face of ceiling or wall) in 1/4" (6mm) increments.
- Model F3QR Dry Pendant (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 [7 1/2 threads approximately].
- All platings and paintings are decorative and intended for interior use.

## 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 the following table, between face of the fitting and the exterior face of the protected area. The following table is used for freezing zones when the ambient temperature around the wet pipe system is kept at 40 °F (4°C), and specifies the minimum length from fitting face to inside face of ceiling or wall for different protected area temperatures.

TABLE 1 (See Fig. 8)

| Minimum Length<br>(Face to inside Face Ceiling/Wall) | Temperature<br>(Protected Area)** |
|--|-----------------------------------|
| 12 inches / 300 mm                                   | -20°F / -29°C                     |
| 18 inches / 450 mm                                   | -40°F / -40°C                     |
| 24 inches / 600 mm                                   | -60°F / -51°C                     |

\*\* For temperatures falling between those in the above chart, the minimum length may be determined by interpolation.

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. 1) is designed to locate on the wrenching pads of the recessed sprinkler while centering in the cup. A standard 1/2" drive ratchet can be used to drive this wrench. Figures 1 and 2 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. 3). 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. 4) 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.

\* Spears CPVC sprinkler adapter tees (with steel thread insert) can only be used with horizontal sidewall sprinklers which do not require protrusion into tees to prevent ice or debris blockage of sprinkler inlets. These CPVC tees do not permit sufficient sprinkler inlet protrusion as required for pendent installation.

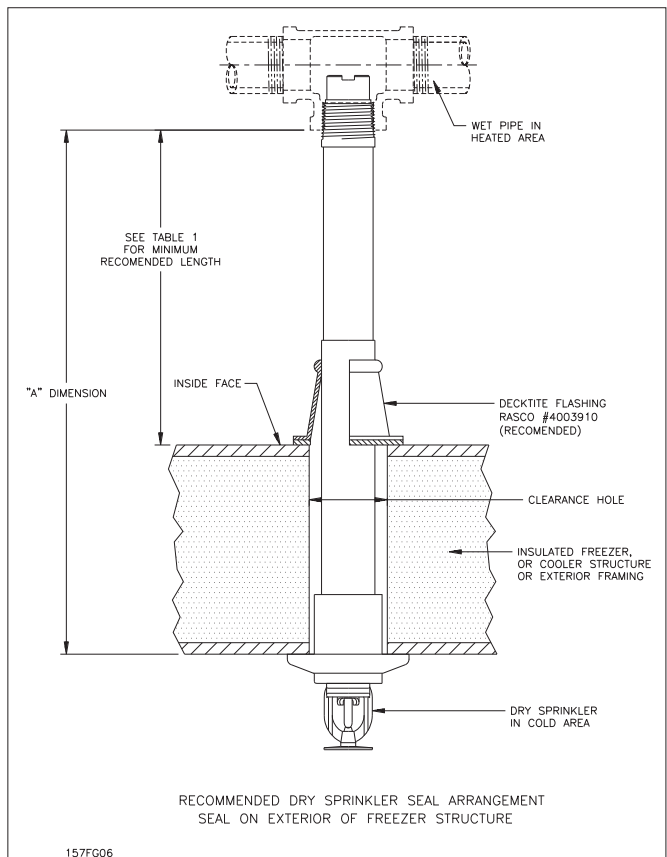


Fig. 8

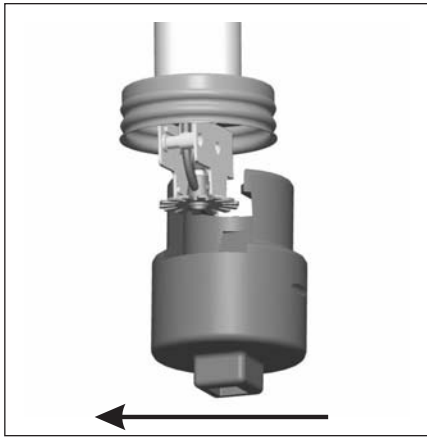


Fig. 1 - G3 R/C Wrench

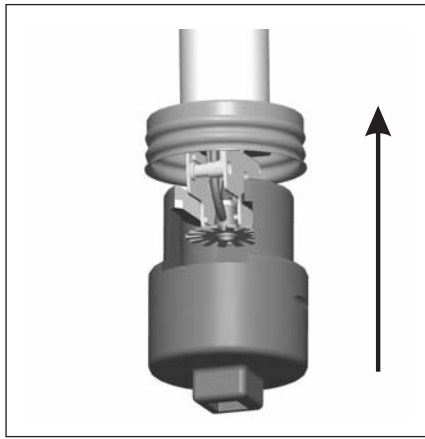


Fig. 2 - G3 R/C Wrench

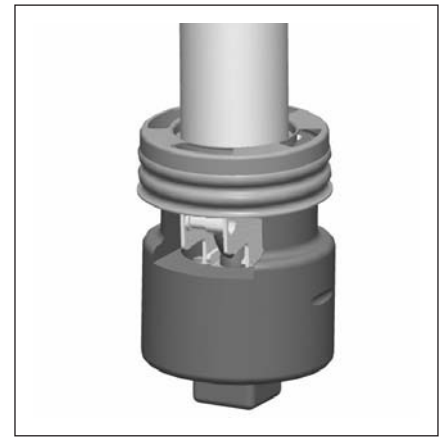


Fig. 3 - G3 R/C Wrench

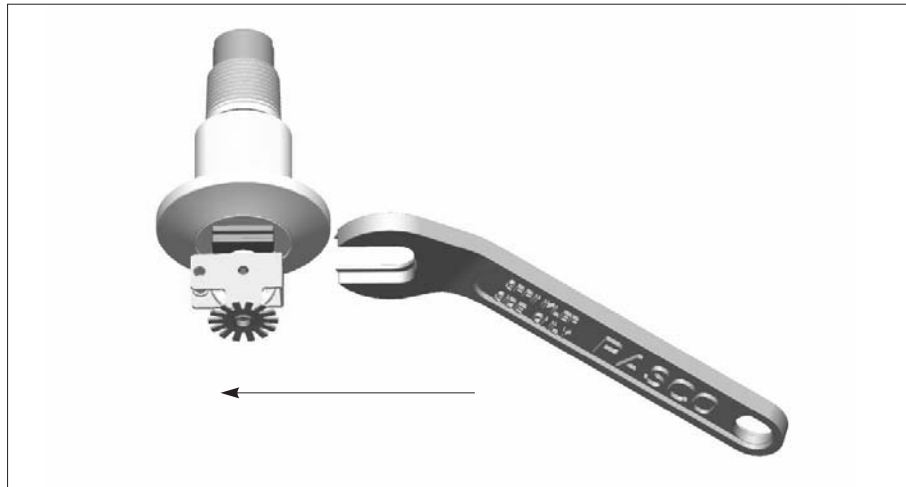


Fig. 4 - G3 Wrench

# 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

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The equipment presented in this bulletin is to be installed in accordance with the latest pertinent 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 80 years, and are installed and serviced by the most highly qualified and reputable sprinkler contractors located throughout the United States, Canada and foreign countries.

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Manufactured by

**Reliable**<sup>®</sup>

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