

Model TY-QRF — 5.6 K-factor Flush Pendent Sprinklers Quick Response, Standard Coverage

General Description

The Tyco® Model TY-QRF, 5.6 K-factor, Flush Pendent Sprinklers described in this data sheet are quick response - standard coverage decorative fusible solder type sprinklers. They are designed for use in commercial light and ordinary hazard occupancies such as offices and restaurants. When aesthetics is the major consideration, the TY-QRF should be your first choice.

The TY-QRF features a separable escutcheon providing 3/8 inch (9,5 mm) vertical adjustment. This adjustment reduces the accuracy to which the fixed pipe drops to the sprinklers must be cut to help assure a perfect fit installation.

NOTICE

The Model TY-QRF Flush Pendent Sprinklers described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the National Fire Protection Association, in addition to the standards of any authorities having jurisdiction. Failure to do so may impair the performance of these devices.

The owner is responsible for maintaining their fire protection system and de-

vices in proper operating condition. The installing contractor or sprinkler manufacturer should be contacted with any questions.

Sprinkler/Model Identification Number

SIN TY3261

Technical Data

Approvals:
UL and ULC Listed.

Maximum Working Pressure:
175 psi (12,1 bar)

Discharge Coefficient:
K=5.6 GPM/psi^{1/2} (80,6 LPM/bar^{1/2})

Temperature Rating:
162°F/72°C

Vertical Adjustment:
3/8 inch (9,5 mm)

Finishes:
Sprinkler and Escutcheon:
White, Chrome, or Black

Physical Characteristics:
Body Bronze
Deflector Copper
Valve Cap Brass
Orifice Seal Copper
Heat Collectors Copper



Operation

The sprinkler assembly contains a small fusible solder element. When exposed to sufficient heat from a fire, the solder melts and enables the internal components of the sprinkler to fall away. At this point the sprinkler activates with the deflector dropping into its operated position (Reference Figure 1C), permitting water to flow.

IMPORTANT

Always refer to Technical Data Sheet TFP700 for the "INSTALLER WARNING" that provides cautions with respect to handling and installation of sprinkler systems and components. Improper handling and installation can permanently damage a sprinkler system or its components and cause the sprinkler to fail to operate in a fire situation or cause it to operate prematurely.

Design Criteria

The Tyco® Model TY-QRF Flush Pendent Sprinklers are intended for fire protection systems designed in accordance with the standard installation rules recognized by the applicable Listing or Approval agency (e.g., UL Listing is based on NFPA 13 requirements).

NOTICE

Precautionary Warnings for Corrosive Environments. The Model TY-QRF Flush Pendent Sprinklers must be installed in a non-corrosive environment. The improper use of corrosive agents such as flux, other products that contain chloride ions described, whether applied internally or externally to the sprinkler system, may result in corrosion of the sprinkler head, or stress corrosion cracking, which in turn may cause the sprinkler heads to develop leaks, operate unexpectedly, or not operate properly.

Accordingly, it is essential that the Model TY-QRF Flush Pendent Sprinklers be installed only by experienced fire sprinkler engineers, who comply fully with NFPA 13 and 25, ASTM B813, ASTM B828 and Copper Development Association (CDA).

Copper sprinkler system piping.

Any time copper piping is used in any part of a fire sprinkler system, the copper piping must be installed in conformance with all applicable standards and requirements for copper piping, including: NFPA 13 and 25, ASTM B813, ASTM B828, and Copper Development Association (CDA). Any soldering in any part of a sprinkler system, either internally or externally, must be done with use of only an ASTM B 813 approved flux. Residual flux must be thoroughly REMOVED from both the interior and exterior surfaces of the piping before installing the sprinkler heads. The use of improper flux, or the failure to thoroughly remove proper flux, may result in corrosion of the sprinkler head or stress cracking, which in turn may cause the sprinkler heads to develop leaks, operate unexpectedly, or not operate properly.

Installation

The Tyco® Model TY-QRF (TY3261) Flush Pendent Sprinklers must be installed in accordance with the following instructions:

NOTICE

The Protective Cap is to remain on the sprinkler during installation until the ceiling installation is complete. The Protective Cap must be removed to place the sprinkler in service.

A leak tight 1/2 inch NPT sprinkler joint should be obtained with a torque of 7 to 14 ft.lbs. (9,5 to 19,0 Nm). A maximum of 21 ft.lbs. (28,5 Nm) of torque is to be used to install sprinklers. Higher levels of torque may distort the sprinkler inlet with consequent leakage or impairment of the sprinkler.

Do not attempt to compensate for insufficient adjustment in an Escutcheon Plate by under- or over-tightening the Sprinkler. Readjust the position of the sprinkler fitting to suit.

Each sprinkler must be inspected before installation. Do not use any sprinkler that exhibits any deformations or cracks, including cracks on the protective cap.

Step 1. The Sprinkler must be installed only in the pendent position and with the Sprinkler waterway centerline perpendicular to the mounting surface.

Step 2. Install the sprinkler fitting so that the distance from the face of the fitting to the mounting surface will be nominally 1-3/32 inches (27,8 mm) as shown in Figure 1A.

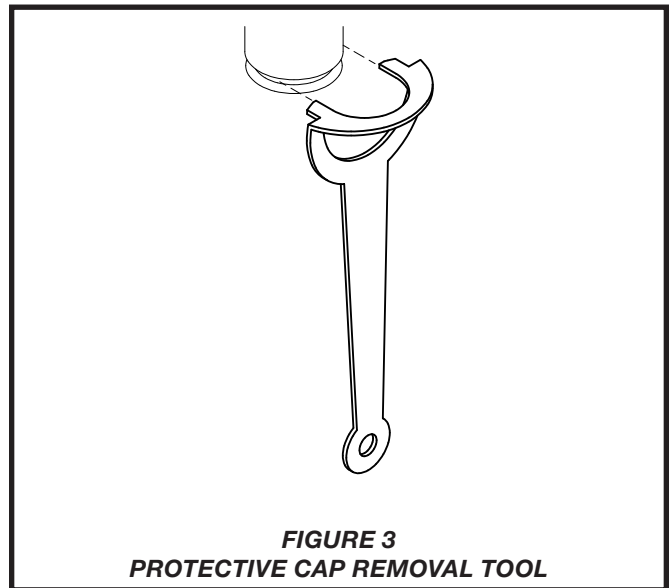
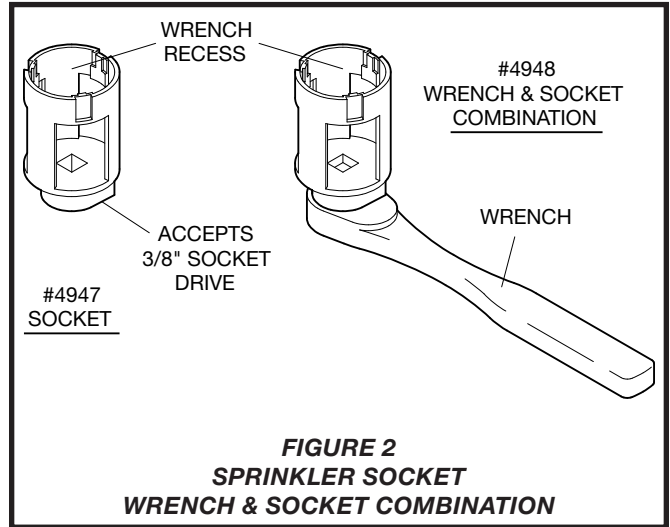
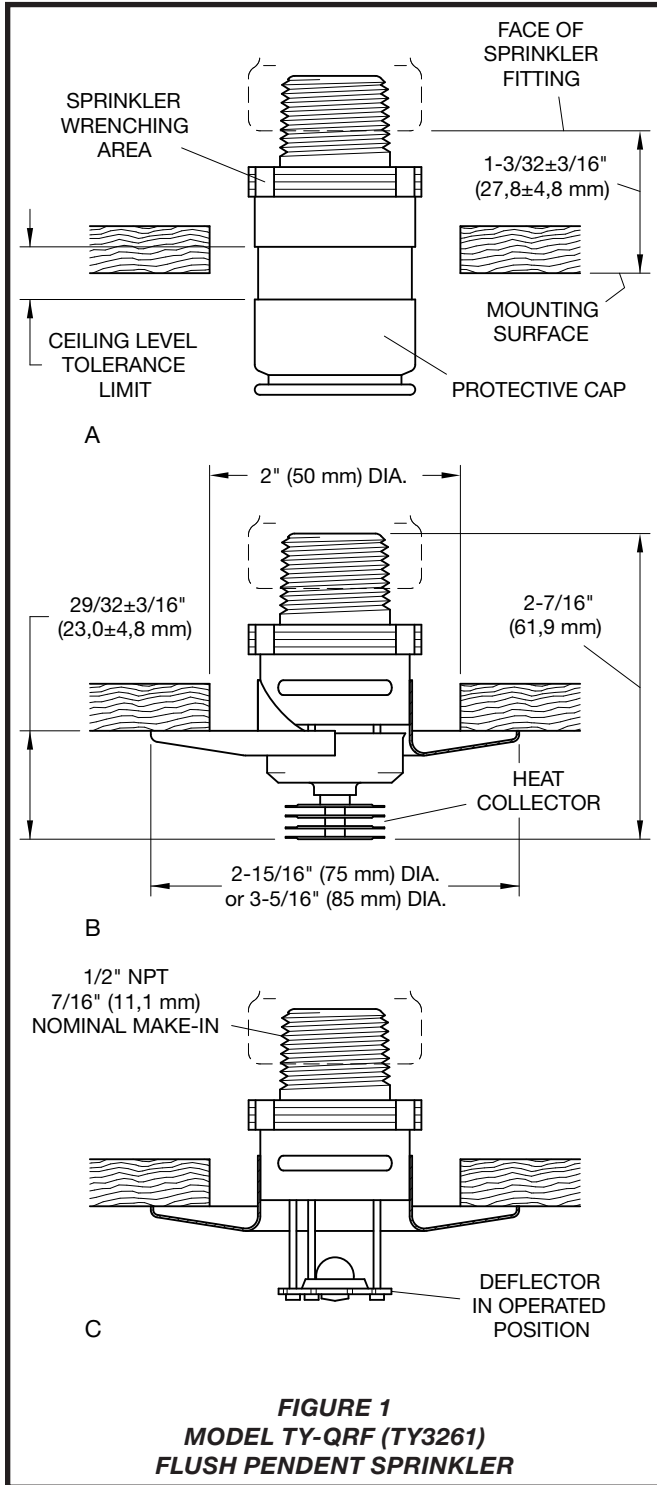
Step 3. With pipe thread sealant applied to the pipe threads, hand tighten the Sprinkler into the sprinkler fitting.

Step 4. Wrench tighten the Sprinkler using only the Sprinkler Socket or Wrench & Socket Combination (Ref. Figure 2). The wrench recess of the Socket is to be applied to the sprinkler wrenching area (Ref. Figure 1A).

Step 5. Use the "ceiling level tolerance limit" indicator on the Protective Cap to check for proper installation height. Relocate the sprinkler fitting as necessary. If desired the Protective Cap may also be used to locate the center of the clearance hole by gently pushing the ceiling material against the center point of the Cap.

Step 6. After the ceiling has been completed with the 2 inch (50 mm) diameter clearance hole, use the Protective Cap Removal Tool (Ref. Figure 3) to remove the Protective Cap and then push on the Escutcheon until its flange just comes in contact with the

ceiling. Do not continue to push the Escutcheon such that it lifts a ceiling panel out of its normal position. If the Escutcheon cannot be engaged with the Sprinkler, or the Escutcheon cannot be engaged sufficiently to contact the ceiling, relocate the sprinkler fitting as necessary.



Care and Maintenance

The Tyco® Model TY-QRF must be maintained and serviced in accordance with the following instructions:

NOTICE

Absence of an Escutcheon Plate may delay the time to sprinkler operation in a fire situation.

Before closing a fire protection system main control valve for maintenance work on the fire protection system that it controls, permission to shut down the affected fire protection system must be obtained from the proper authorities and all personnel who may be affected by this action must be notified.

Sprinklers which are found to be leaking or exhibiting visible signs of corrosion must be replaced.

Automatic sprinklers must never be painted, plated, coated, or otherwise altered after leaving the factory. Modified or over heated sprinklers must be replaced.

Care must be exercised to avoid damage before, during, and after installation. Sprinklers damaged by dropping, striking, wrench twist/slippage, or the like, must be replaced.

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of the National Fire Protection Association (e.g., NFPA 25), in addition to the standards of any other authorities having jurisdiction. The installing contractor or sprinkler manufacturer should be contacted relative to any questions.

It is recommended that automatic sprinkler systems be inspected, tested, and maintained by a qualified Inspection Service in accordance with local requirements and/or national codes.

Limited Warranty

Products manufactured by Tyco Fire Suppression & Building Products (TFSBP) are warranted solely to the original Buyer for ten (10) years against defects in material and workmanship when paid for and properly installed and maintained under normal use and service. This warranty will expire ten (10) years from date of shipment by TFSBP. No warranty is given for products or components manufactured by companies not affiliated by ownership with TFSBP or for products and components which have been subject to misuse, improper installation, corrosion, or which have not been installed, maintained, modified or repaired in accordance with applicable Standards of the National Fire Protection Association, and/or the standards of any other Authorities Having Jurisdiction. Materials found by TFSBP to be defective shall be either repaired or replaced, at TFSBP's sole option. TFSBP neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of products or parts of products. TFSBP shall not be responsible for sprinkler system design errors or inaccurate or incomplete information supplied by Buyer or Buyer's representatives.

In no event shall TFSBP be liable, in contract, tort, strict liability or under any other legal theory, for incidental, indirect, special or consequential damages, including but not limited to labor charges, regardless of whether TFSBP was informed about the possibility of such damages, and in no event shall TFSBP's liability exceed an amount equal to the sales price.

The foregoing warranty is made in lieu of any and all other warranties, express or implied, including warranties of merchantability and fitness for a particular purpose.

This limited warranty sets forth the exclusive remedy for claims based on failure of or defect in products, materials or components, whether the claim is made in contract, tort, strict liability or any other legal theory.

This warranty will apply to the full extent permitted by law. The invalidity, in whole or part, of any portion of this warranty will not affect the remainder.

Ordering Procedure

When placing an order, indicate the full product name. Contact your local distributor for availability.

Sprinkler Assembly:

Model TY-QRF (TY3261), K=5.6, Flush Pendent Sprinkler without Escutcheon and having a (specify) finish, P/N (specify).

| | |
|-------------|--------------|
| Chrome..... | 53-261-9-162 |
| White..... | 53-261-4-162 |
| Black..... | 53-261-6-162 |

Escutcheon:

Escutcheon for Model TY-QRF (TY3261), K=5.6, Flush Pendent Sprinkler with (specify) finish, P/N (specify).

75 mm Outside Diameter

| | |
|-------------|--------------|
| Chrome..... | 56-123-9-001 |
| White..... | 56-123-4-001 |
| Black..... | 56-123-6-001 |

85 mm Outside Diameter

| | |
|-------------|---------------|
| Chrome..... | 56-123-9-001T |
| White..... | 56-123-4-001T |
| Black..... | 56-123-6-001T |

Accessories:

Socket for Model TY-QRF, Flush Pendent Sprinkler, P/N 56-000-4-947.

Wrench & Socket for Model TY-QRF, Flush Pendent Sprinkler, P/N 56-000-4-948.

Protective Cap Removal Tool for Model TY-QRF, Flush Pendent Sprinkler, P/N 56-000-4-300.