

Model EC-17 — 16.8 K-factor Extended Coverage Area Density Sprinklers Pendent and Recessed Pendent

General Description

The Tyco® Model EC-17 Extended Coverage Pendent Sprinklers (Ref. Figure 1) are "Control-Mode Extended Coverage Sprinklers" having a nominal K-factor of 16.8. Their use is especially advantageous as a means of decreasing the number of required sprinklers to protect occupancies requiring an area/density application of water.

Features:

- The EC-17 Sprinklers offer a maximum coverage area of 196 ft² (18,2 m²) at a maximum spacing of 14 feet (4,3 m), almost double that of standard coverage sprinklers used for similar applications.
- The EC-17 Sprinklers offer a maximum coverage area of 144 ft² (13,4 m²) at a maximum spacing of 15 ft. (4,3 m) which can be beneficial to maximizing sprinkler line spacing.
- The 144 ft² (13,4 m²) coverage with maximum spacing of 15 ft. (4,3 m) for the EC-17 Sprinklers can be beneficial for retrofitting an existing system to a higher applied water density, especially where the system had utilized sprinklers having a maximum sprinkler spacing of 15 feet (4,3 m).

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.

The recessed version of the Model EC-17 Pendent Sprinkler is intended for use in areas with a finished ceiling. It uses a two-piece Style 30 (3/4 inch NPT) Recessed Escutcheon with 1/4 inch (6,4 mm) of recessed adjustment, or up to 1/2 inch (12,7 mm) of total adjustment from the flush pendent position. The adjustment provided by the Recessed Escutcheon reduces the accuracy to which the fixed pipe drops to the sprinklers must be cut.

Applications for the Model EC-17 Sprinklers are expanding beyond the current testing. For information regarding additional research fire tests that may be acceptable to an Authority Having Jurisdiction please contact the Technical Services Department.

WARNINGS

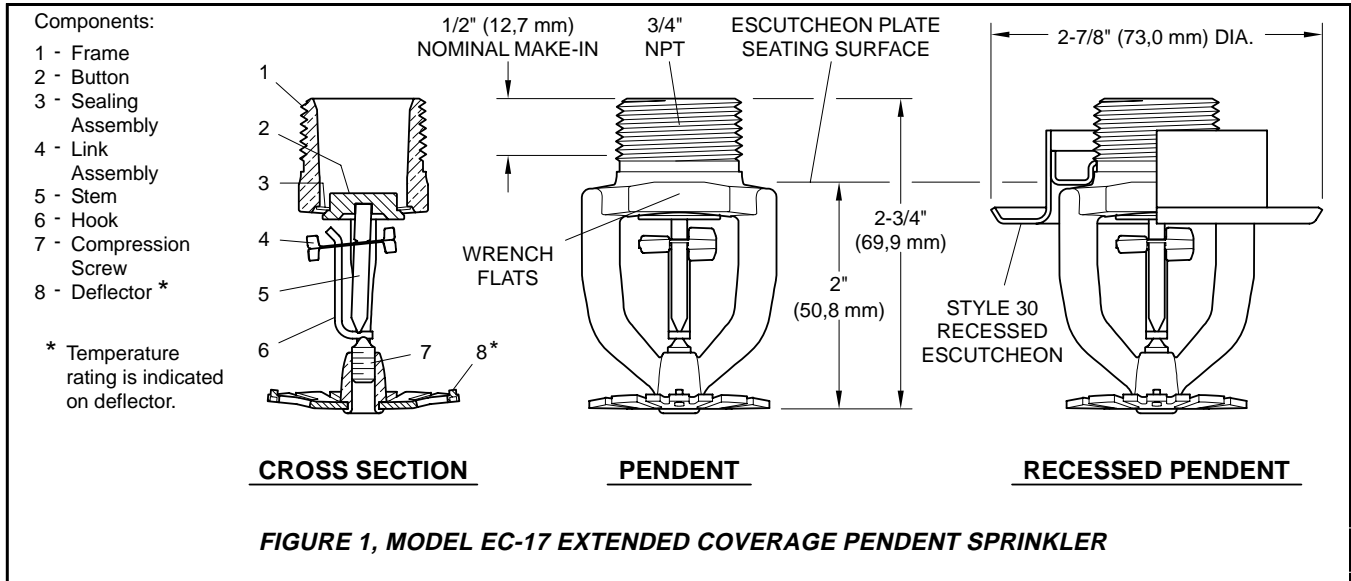
*The Model EC-17 Sprinklers described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the National Fire Protection Association, in addition to the standards of any other authorities having jurisdiction. **Failure to do so may impair the performance of these devices.***

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. The installing contractor or sprinkler manufacturer should be contacted with any questions.



Sprinkler Identification Number

SIN TY7228 - (Pendent K=16.8)



Technical Data

Approvals

UL and C-UL Listed. (Approvals only apply to the service conditions indicated in the Design Criteria section.)

Maximum Working Pressure

175 psi (12,1 bar)

Pipe Thread Connection

3/4 inch NPT

Discharge Coefficient

$K = 16.8 \text{ GPM/psi}^{1/2}$
(241,9 LPM/bar^{1/2})

Temperature Ratings

160°F/71°C or 212°F/100°C

Finish

Natural Brass, White, or Chrome Plated

Physical Characteristics

| | |
|-----------------------------|----------------------------------------|
| Frame | Brass |
| Deflector | Phosphor Bronze |
| Compression Screw | Stainless Steel |
| Hook | Monel |
| Strut | Monel |
| Link Assembly | Solder, Nickel |
| Button | Brass |
| Sealing Assembly | Beryllium Nickel w/Teflon [†] |

Patents

Patent Pending

Operation

The fusible link assembly is comprised of two link halves that are joined together by a thin layer of solder. When the rated temperature is reached, the solder melts and the two link halves separate allowing the sprinkler to activate and flow water.

Design Criteria

The Tyco® Model EC-17 Extended Coverage Pendent Sprinklers (SIN TY7228) are UL and C-UL Listed, with the exception of using plastic pallets as described in 5.6.2.6 of NFPA 13-2007, for installation in accordance with the extended coverage pendent spray sprinkler requirements of NFPA 13, or other applicable NFPA standards, when used in conjunction with the following guidelines :

- Suitable for the protection of extra hazard and high-piled storage occupancies where area/density design criterion are provided.
- Suitable for “unobstructed” or “non-combustible obstructed” construction.
- The Model EC-17 Sprinklers, having been specifically tested and listed for noncombustible obstructed construction, are suitable for use within trusses or bar joists having non-combustible web members greater than 1 inch (25,4 mm) when applying the four times obstruction criteria rule defined under “Obstructions to Sprinkler Discharge Pattern Development”.

- The maximum area of coverage per sprinkler is 196 sq. ft. (18,2 m²).
- The maximum distance between sprinklers is 15 feet (4,3 m) when the coverage does not exceed 144 ft.² (13,4 m²), and the maximum distance between sprinklers is 14 feet (4,3 m) when the coverage does not exceed 196 ft.² (18,2 m²).
- The minimum distance between sprinklers is 8 feet (2,44 m).
- The minimum flow requirement is to be based on the design density applied over the actual area of coverage per sprinkler.

For example: when sprinkler spacing is 14 feet by 12 feet - 6 inches (4,3 x 3,8 m) or 175 ft² (16,3 m²), and the design density is 0.3 gpm/ft² (16,3 mm/m), the sprinkler design flow rate is 53 GPM (200 LPM) and the required design pressure is 10 psi (0,7 bar).
- The minimum clearance between the deflector and the top of storage is 36 inches (0,9 m).
- The ordinary and intermediate temperature rated EC-17 Sprinklers have been investigated for use in high-piled storage occupancies at the hydraulic demand normally associated with high temperature sprinklers. As such, the EC-17 sprinklers are listed storage sprinklers having a K-factor greater than 11.2 and having ordinary and intermediate temperature ratings (i.e., 160F and 212F). Consequently, the EC-17 Sprinklers, in accordance with the NFPA 13, may be used in conjunction with the density curves for high temperature sprinklers.

Installation

NOTES

Damage to the fusible Link Assembly during installation can be avoided by handling the sprinkler by the frame arms only and by using the appropriate sprinkler wrench. Do not grip or apply any force to the Fusible Link Assembly. Damaged sprinklers must be replaced immediately.

A leak tight 3/4 inch NPT sprinkler joint should be obtained with a torque of 10 to 20 ft.lbs. (13,4 to 26,8 Nm). Higher levels of torque may distort the sprinkler inlet with consequent leakage or impairment of the sprinkler.

The **Model EC-17 Pendent Sprinklers** must be installed in accordance with the following instructions:

Step 1. The EC-17 Sprinkler must be installed in the pendent position.

Step 2. With pipe thread sealant applied, hand tighten the sprinkler into the sprinkler fitting. Do not apply any force to the Link Assembly, and handle the EC-17 Sprinkler only by the Frame arms.

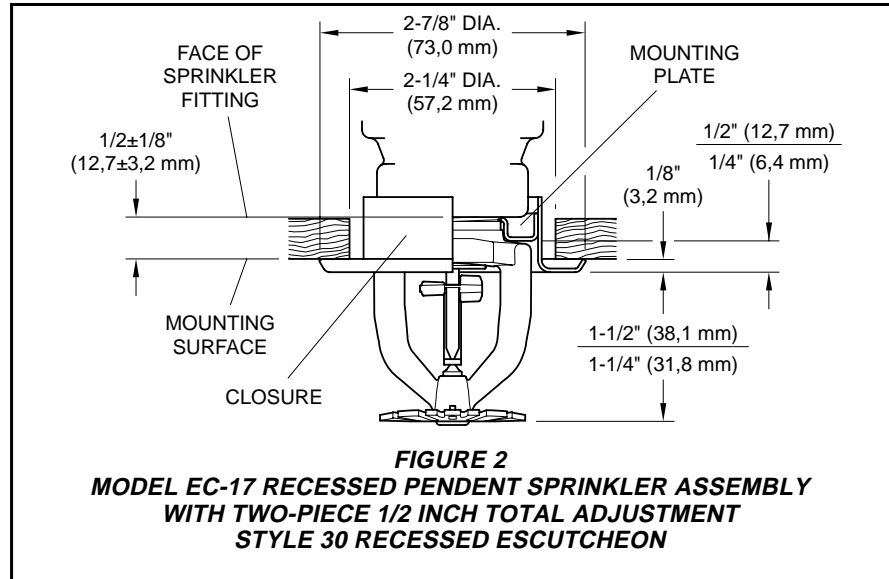
Step 3. Wrench tighten the EC-17 Sprinkler using only the W-Type 3 Sprinkler Wrench (Ref. Figure 3) and by fully engaging (seating) the wrench on the sprinkler wrench flats.

The **Model EC-17 Recessed Pendent Sprinklers** must be installed in accordance with the following instructions.

Step A. After installing the Style 30 Mounting Plate over the sprinkler threads, and with pipe thread sealant applied to the pipe threads, hand tighten the sprinkler into the sprinkler fitting.

Step B. Wrench tighten the EC-17 Sprinkler using only the W-Type 24 Sprinkler Wrench (Ref. Figure 4) and fully engaging (seating) the wrench on the sprinkler wrench flats.

Step C. After the ceiling has been installed, slide the Style 30 Closure over the Model EC-17 Sprinkler and push the Closure over the Mounting Plate until its flange comes in contact with the ceiling.



Care and Maintenance

The Tyco® Model EC-17 must be maintained and serviced in accordance with the following instructions:

NOTE

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 systems must be obtained from the proper authorities and all personnel who may be affected by this action must be notified.

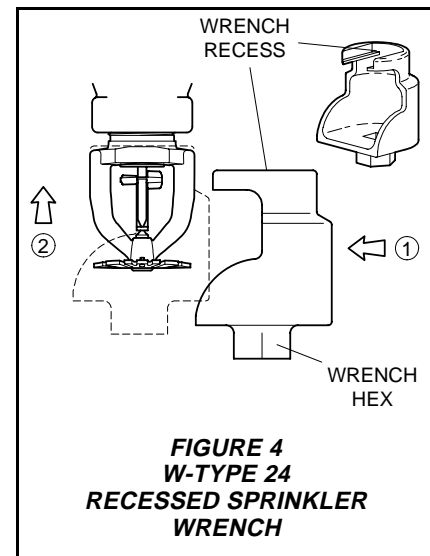
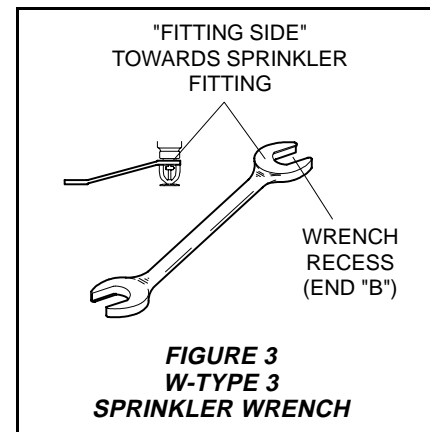
Sprinklers that are found to be leaking or exhibiting visible signs of corrosion must be replaced.

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.

Automatic sprinkler systems should be



inspected, tested, and maintained by a qualified Inspection Service in accordance with local requirements and/or national code.

Limited Warranty

Products manufactured by Tyco Fire & Building Products (TFBP) 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 TFBP. No warranty is given for products or components manufactured by companies not affiliated by ownership with TFBP 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 TFBP to be defective shall be either repaired or replaced, at TFBP's sole option. TFBP neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of products or parts of products. TFBP 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 TFBP 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 TFBP was informed about the possibility of such damages, and in no event shall TFBP'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. Please specify the Sprinkler Identification Number (SIN), quantity, and temperature rating. Refer to the Price List for complete listing of Part Numbers.

Contact your local distributor for availability.

Sprinkler Assemblies:

Specify: (specify temperature rating), (specify finish), Model EC-17 (TY7228) Extended Coverage Pendant Sprinkler, P/N (specify).

Natural Brass

160°F/71°C P/N 51-310-1-160
212°F/100°C P/N 51-310-1-212

Chrome Plated

160°F/71°C P/N 51-310-9-160
212°F/100°C P/N 51-310-9-212

White Polyester

160°F/71°C P/N 51-310-4-160
212°F/100°C P/N 51-310-4-212

Recessed Escutcheon:

Specify: Style 30 Recessed Escutcheon with (specify finish), P/N (specify).

Chrome Plated PSN 56-705-9-011
White Color Coated PSN 56-705-4-011
Brass Plated PSN 56-705-2-011

Sprinkler Wrench

Specify: W-Type 3 Sprinkler Wrench, P/N 56-895-1-001.

Specify: W-Type 24 Sprinkler Wrench, P/N 56-000-6-856.