ILLUSION — 11.2 K-factor Extra Large Orifice Concealed Pendent Sprinklers Quick & Standard Response, Standard Coverage

IMPORTANT

Refer to Technical Data Sheet TFP2300 for warnings pertaining to regulatory and health information.

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.

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General Description

The TYCO ILLUSION, 11.2 K-factor, Extra Large Orifice Concealed Pendent Sprinklers quick, response, standard coverage, are decorative, fast response solder type sprinklers featuring a flat cover plate designed to conceal the sprinkler. When limited water pressure is available and a higher applied water density is necessary, the ILLUSION sprinkler is the best choice for architecturally sensitive areas such as casinos, hotel lobbies, office buildings, churches, and restaurants.

Each unit includes a cover plate assembly that conceals the sprinkler operating components above the ceiling. The separable two-piece design of the cover plate and support cup Assemblies allows installation of the sprinklers and pressure testing of the fire protection system prior to installation of a suspended ceiling or application of the finish coating to a fixed ceiling. They also permit removal of suspended ceiling panels for access to building service equipment without having to first shut down the fire protection system and remove sprinklers.

Also, the separable two-piece design of the sprinkler provides for 3/4 in. (19,1 mm) of vertical adjustment to provide a measure of flexibility with regard to which the length of fixed pipe drops to the sprinklers must be cut.

The ILLUSION sprinklers are shipped with a disposable protective cap. The protective cap is temporarily removed for installation, and it can be replaced to help protect the sprinkler while the ceiling is being installed or finished. The tip of the protective cap can also be used to mark the center of the ceiling hole into plaster board, ceiling tiles, etc. by gently pushing the ceiling product against the protective cap. When the ceiling installation is complete, the protective cap is removed and the cover plate assembly installed.



As an option, the ILLUSION pendent sprinklers may be fitted with a silicone air and dust seal as shown in Figure 4. The air and dust seal is intended for sensitive areas where it is desirable to stop air and dust travel through the cover plate from the area above the ceiling.

NOTICE

The TYCO ILLUSION Concealed Pendent Sprinklers described herein must be installed and maintained in compliance with this document and with the applicable standards of the National Fire Protection Association (NFPA), 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. Contact the installing contractor or product manufacturer with any questions.

Sprinkler Identification Number (SIN)

TY5521

Technical Data

Approvals
UL and C-UL Listed

Note: *The listings apply only to the service conditions indicated in the Design Criteria section.*

Approvals for Air and Dust Seal
UL and C-UL Listed for use with the TYCO ILLUSION (TY5521) sprinkler

Note: *Use of the air and dust seal changes the sprinkler response rating from quick to standard.*

Maximum Working Pressure
175 psi (12,1 bar)

Discharge Coefficient
K = 11.2 GPM/psi½ (161,3 LPM/bar½)

Temperature Ratings
160°F (71°C) Sprinkler; 139°F (59°C) Plate
212°F (100°C) Sprinkler; 165°F (74°C) Plate

Adjustment
3/4 in. (19,1 mm)

Finishes
Cover Plate: Refer to Ordering Procedure section

Physical Characteristics

Body	Brass
Cap	Bronze
Saddle	Brass
Sealing Assembly	Beryllium Nickel w/TEFLON
Solder Link Halves	Nickel
Lever	Bronze
Compression Screw	Brass
Deflector	Bronze/Brass
Guide Pin Housing	Bronze
Guide Pins	Stainless Steel
Support Cup	Plated Steel
Cover Plate	Brass
Retainer	Brass
Cover Plate Ejection Spring	Stainless Steel

Operation

When exposed to heat from a fire, the cover plate, soldered to the retainer at three points, falls away to expose the sprinkler assembly. At this point the deflector supported by the guide pins drops down to its operational position.

When the rated temperature of the solder link element is reached, the link element separates, allowing the sprinkler to activate and flow water.

Design Criteria

The TYCO ILLUSION, 11.2 K-factor, Extra Large Orifice Concealed Pendent Sprinklers are UL and C-UL Listed as quick response -standard spray sprinklers for use in accordance with the current NFPA standard; however, in accordance with its UL and C-UL Listing it cannot be used for the protection of storage.

The ILLUSION Concealed Pendent Sprinklers are only listed and approved with the ILLUSION Concealed Cover Plates having a factory applied finish.

The ILLUSION sprinkler must not be used in applications where the air pressure above the ceiling is greater than that below. Down drafts through the support cup could delay sprinkler operation in a fire situation.

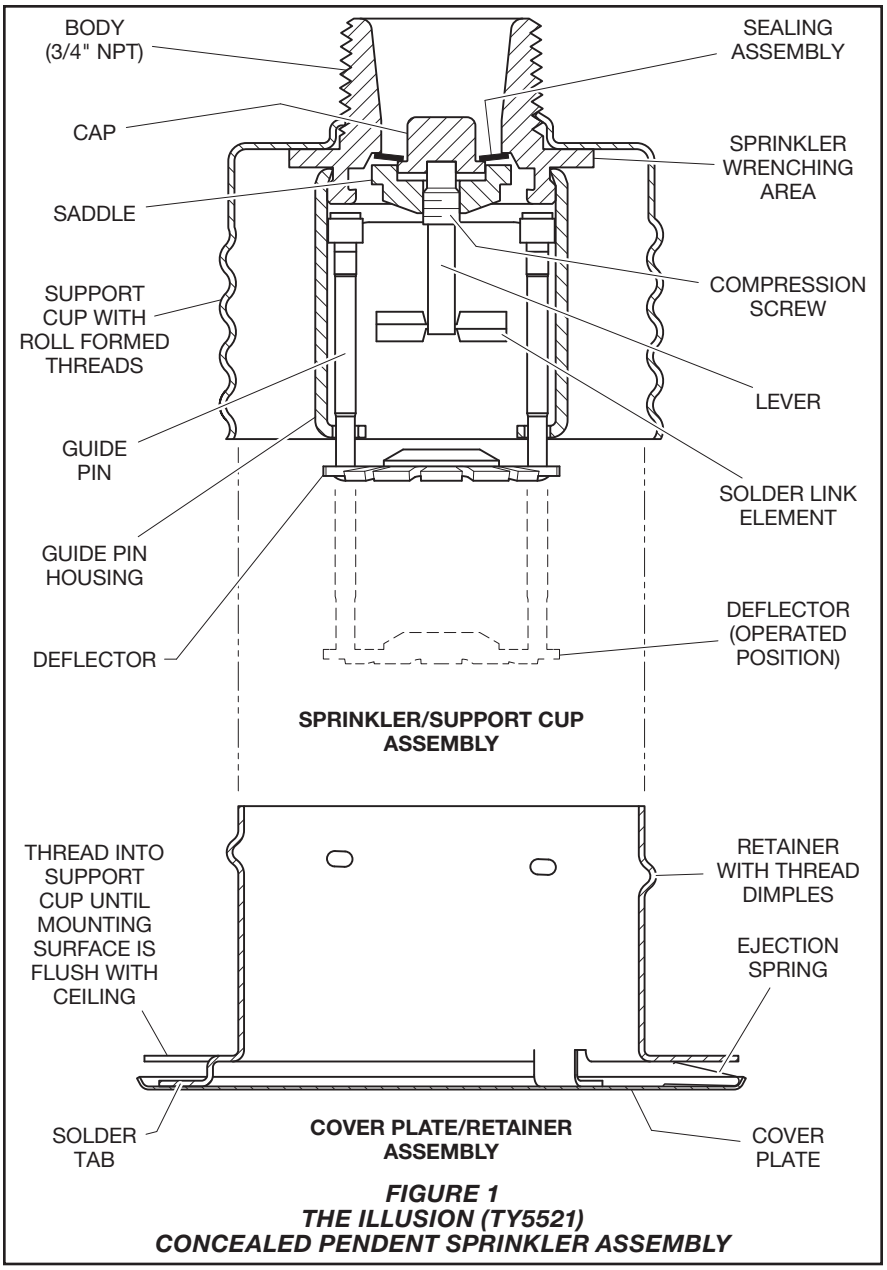


FIGURE 1
THE ILLUSION (TY5521)
CONCEALED PENDENT SPRINKLER ASSEMBLY

Installation

The TYCO ILLUSION, 11.2 K-factor, Extra Large Orifice Concealed Pendent Sprinklers must be installed in accordance with this section.

General Instructions
A 3/4 in. NPT sprinkler joint should be obtained with a minimum to maximum torque of 10 ft-lb to 20 ft-lb (13,4 N·m to 26,8 N·m). Higher levels of torque may distort the sprinkler inlet with consequent leakage or impairment of the sprinkler.

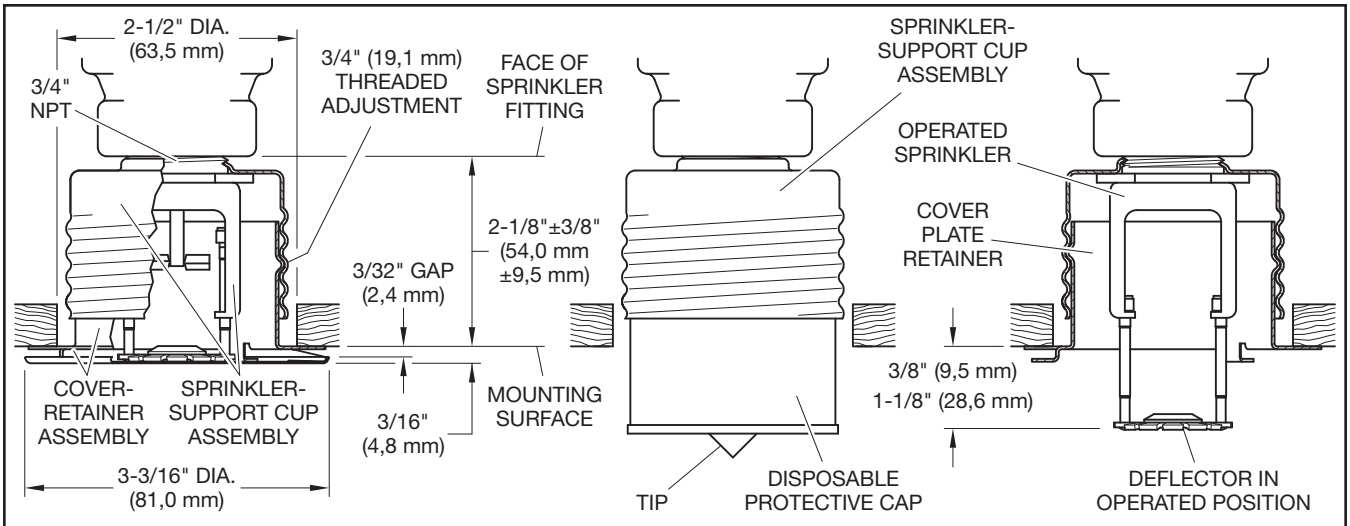


FIGURE 2
THE ILLUSION PENDENT SPRINKLER INSTALLATION DIMENSIONS

Do not attempt to compensate for insufficient adjustment in the sprinkler assembly by under-or over-tightening the sprinkler/support cup assembly. Readjust the position of the sprinkler fitting to suit.

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

Step 2. Remove the protective cap.

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 W-Type 18 Sprinkler Wrench shown in Figure 3. The wrench is to be applied to the sprinkler as shown in Figure 3.

Step 5. Replace the protective cap shown in Figure 2 by pushing it upwards until it bottoms out against the support cup. The protective cap helps prevent damage to the deflector and arms during ceiling installation and/or during application of the finish coating of the ceiling. It may also be used to locate the center of the clearance hole by gently pushing the ceiling material against the center point of the protective cap.

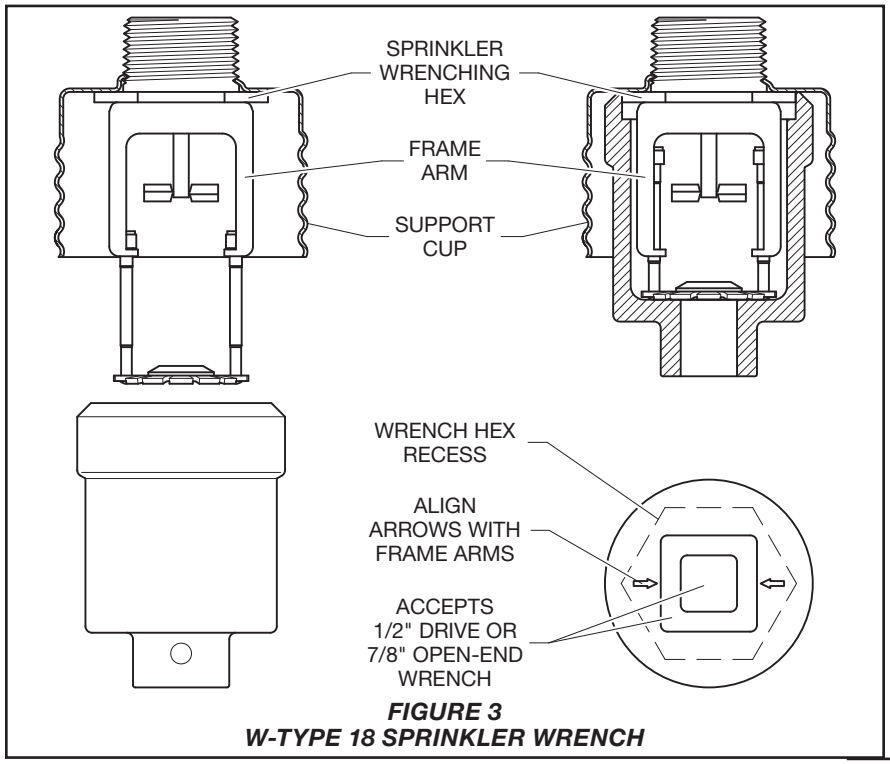


FIGURE 3
W-TYPE 18 SPRINKLER WRENCH

NOTICE

As long as the protective cap remains in place, the system is considered to be "Out of Service".

Step 6. After the ceiling has been completed with the 2-1/2 in. (63,5 mm) diameter clearance hole and in preparation for installing the cover plate assembly, remove and discard the protective cap, and verify that the deflector moves up and down freely. If the sprinkler has been damaged and the deflector does not move up and down freely, replace the entire sprinkler assembly. Do not attempt to modify or repair a damaged sprinkler.

Step 7. When installing an air and dust seal, see Figure 4 for reference and follow this step; otherwise proceed to Step 8. To attach the air and dust seal, verify the angle of the outside edge of the seal is oriented according to Figure 4. Start the edge of the retainer in the grooved slot of the air and dust seal and continue around the retainer until the entire air and dust seal is engaged.

Step 8. Screw on the cover plate/retainer assembly until the retainer as shown in Figure 2, or air and dust seal as shown in Figure 4, makes contact with the ceiling. Do not continue to screw on the cover plate/retainer assembly such that it lifts a ceiling panel out of its normal position. If the cover plate/retainer assembly cannot be engaged with the support cup or the cover plate/retainer assembly cannot be engaged sufficiently to contact the ceiling, the sprinkler fitting must be repositioned.

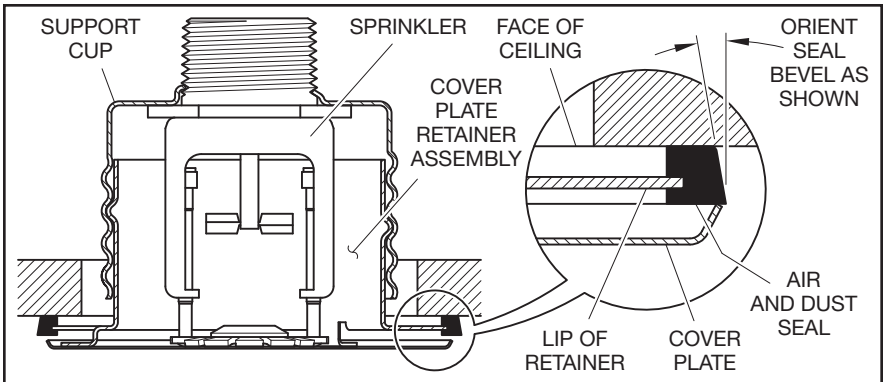


FIGURE 4
OPTIONAL AIR AND DUST SEAL FOR THE ILLUSION (TY5521)

Care and Maintenance

The TYCO ILLUSION, 11.2 K-factor, Extra Large Orifice Concealed Pendent Sprinklers must be maintained and serviced in accordance with this section.

Absence of the cover plate assembly may delay sprinkler operation in a fire situation.

When properly installed, there is a nominal 3/32 in. (2,4 mm) air gap between the lip of the cover plate and the ceiling, as shown in Figure 2. This air gap is necessary for proper operation of the sprinkler by allowing heat flow from a fire to pass below and above the cover plate to help assure appropriate release of the cover plate in a fire situation. If the ceiling is to be repainted after the installation of the sprinkler, care must be exercised to ensure that the new paint does not seal off any of the air gap.

Factory painted cover plates must not be repainted. They should be replaced, if necessary, by factory painted units. Non-factory applied paint may adversely delay or prevent sprinkler operation in the event of a fire.

Do not pull the cover plate relative to the enclosure. Separation may result.

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 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 to the sprinklers -before, during, and after installation. Sprinklers damaged by dropping, striking, wrench twist/slippage, or the like, must be replaced. Also, replace any sprinkler that has a cracked bulb or that has lost liquid from its bulb. For information about replacing a sprinkler, see the Installation Section.

If a sprinkler must be removed, do not reinstall it or a replacement without reinstalling the cover plate assembly. If a cover plate assembly becomes dislodged during service, replace it immediately.

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 such as NFPA 25, in addition to the standards of any other authorities having jurisdiction. Contact the installing contractor or product manufacturer with any questions.

Automatic sprinkler systems should be inspected, tested, and maintained by a qualified inspection service in accordance with local requirements and/or national codes.

Limited Warranty

For warranty terms and conditions, visit www.tyco-fire.com.

Ordering Procedure

Contact your local distributor for availability. When placing an order, indicate the full product name and Part Number (P/N).

Sprinkler Assembly
Specify: ILLUSION (TY5521), Extra Large Orifice Concealed Pendent Sprinkler with (specify) temperature rating and (specify) finish, P/N (specify).

160°F (71°C)
TY5521 50-711-1-160

212°F (100°C)
TY5521 50-711-1-212

Separately Ordered Cover Plate
Specify: ILLUSION Cover Plate, (specify) temperature rating with (specify) finish, P/N (specify):

139°F (59°C)[a]
Grey White (RAL9002) 56-892-0-135
Brass 56-892-1-135
Pure White [c] (RAL9010) 56-892-3-135
Signal White (RAL9003) 56-892-4-135
Brush Chrome 56-892-8-135
Chrome 56-892-9-135
Custom 56-892-X-135

165°F (74°C)[b]
Grey White (RAL9002) 56-892-0-165
Brass 56-892-1-165
Pure White [c] (RAL9010) 56-892-3-165
Signal White (RAL9003) 56-892-4-135
Brush Chrome 56-892-8-165
Chrome 56-892-9-165
Custom 56-892-X-165

NOTES
a. For use with 160°F (71°C) sprinklers
b. For use with 212°F (100°C) sprinklers
c. Eastern Hemisphere sales only

Sprinkler Wrench
Specify: W-Type 18 Sprinkler Wrench, P/N 56-000-1-265

Air and Dust Seal
Specify: Air and Dust Seal, P/N 56-908-1-001

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