



Std. Response - Std. Coverage Intermediate Level Sprinklers Star Galaxy™ I-SG, K=5.6 and 8.0

GENERAL DESCRIPTION

The Star Galaxy I-SG, 5.6 and 8.0 K-Factor, Intermediate Level Sprinklers are standard response - standard coverage, glass bulb type spray sprinklers. Intermediate Level Sprinklers are primarily designed for use in rack storage sprinkler systems, where their thermally sensitive elements must be shielded from the water spray of higher elevation sprinklers which could operate earlier during a fire. Intermediate Level Sprinklers are also used in applications such as beneath open gridded catwalks.

Wax and lead coatings are utilized to extend the life of copper alloy sprinklers beyond that which would otherwise be obtained when exposed to corrosive atmospheres. Although wax and lead coated sprinklers have passed the standard corrosion tests of the applicable approval agencies, the testing is not representative of all possible corrosive atmospheres. Consequently, it is recommended that the end user be consulted with respect to the suitability of these corrosion resistant coatings for any given corrosive environment. The effects of ambient temperature, concentration of chemicals, and gas/chemical velocity, should be considered, as a minimum, along with the corrosive nature of the chemical to which the sprinklers will be exposed.

WARNINGS

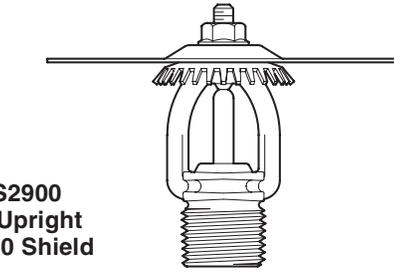
The Star Galaxy I-SG Sprinklers described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the National Fire Protection Association, in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the integrity 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 relative to any questions.

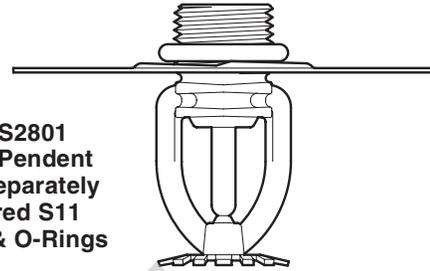
OPERATION

The glass bulb contains a fluid which expands when exposed to heat. When the rated temperature is reached, the fluid expands sufficiently to shatter the glass bulb, which then allows the sprinkler to activate and flow water.

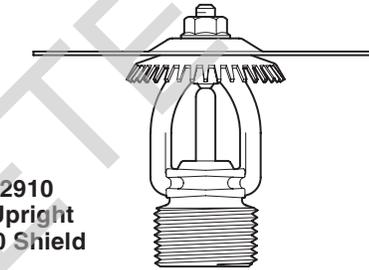
SIN S2900
K=5.6 Upright
With S10 Shield



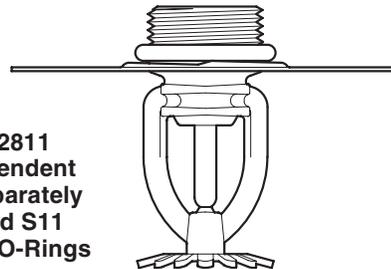
SIN S2801
K=5.6 Pendent
With Separately
Ordered S11
Shield & O-Rings



SIN S2910
K=8.0 Upright
With S10 Shield



SIN S2811
K=8.0 Pendent
With Separately
Ordered S11
Shield & O-Rings



TECHNICAL DATA

Approvals

UL and ULC Listed. FM Approved.
(Refer to Table A. The approvals apply only to the service conditions indicated in the Design Criteria section.)

Maximum Working Pressure

175 psi (12,1 bar)

Pipe Thread Connection

1/2 inch NPT for K=5.6
3/4 inch NPT for K=8.0

Discharge Coefficient

K = 5.6 GPM/psi^{1/2} (80,7 LPM/bar^{1/2})
K = 8.0 GPM/psi^{1/2} (115,2 LPM/bar^{1/2})

Temperature Ratings

135°F/57°C, 155°F/68°C, 175°F/79°C,
200°F/93°C, 286°F/141°C, or 360°F/182°C
(Refer to Table A)

TYCO FIRE PRODUCTS

Customer Service/Sales: Tel: (800) 558-5236 • Fax: (414) 570-5010
Technical Services: Tel: (800) 381-9312 • Fax: (800) 791-5500

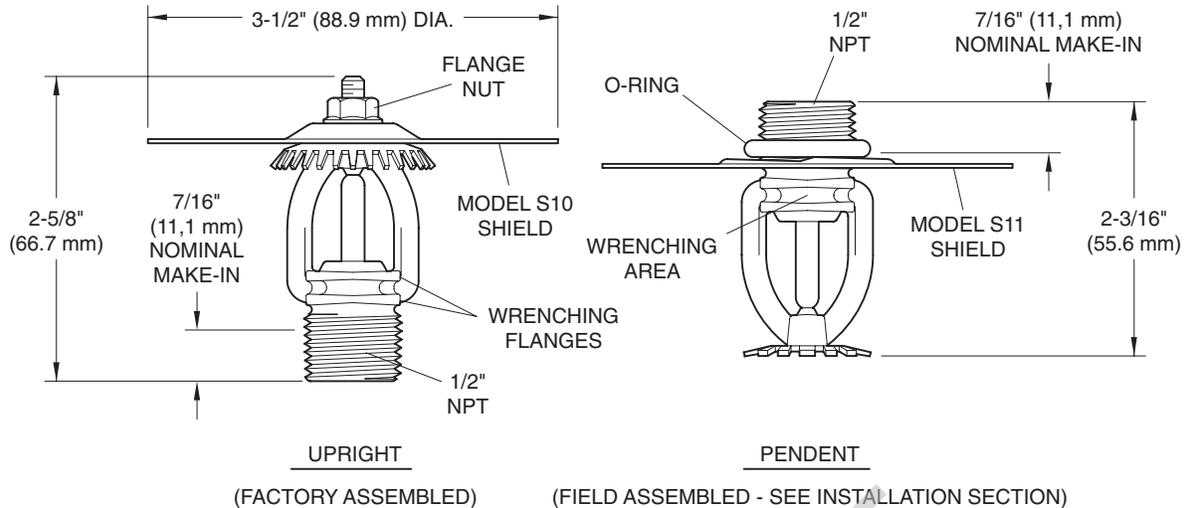


FIGURE 1
5.6 K-FACTOR, STAR GALAXY I-SG
UPRIGHT AND PENDENT INTERMEDIATE LEVEL SPRINKLERS

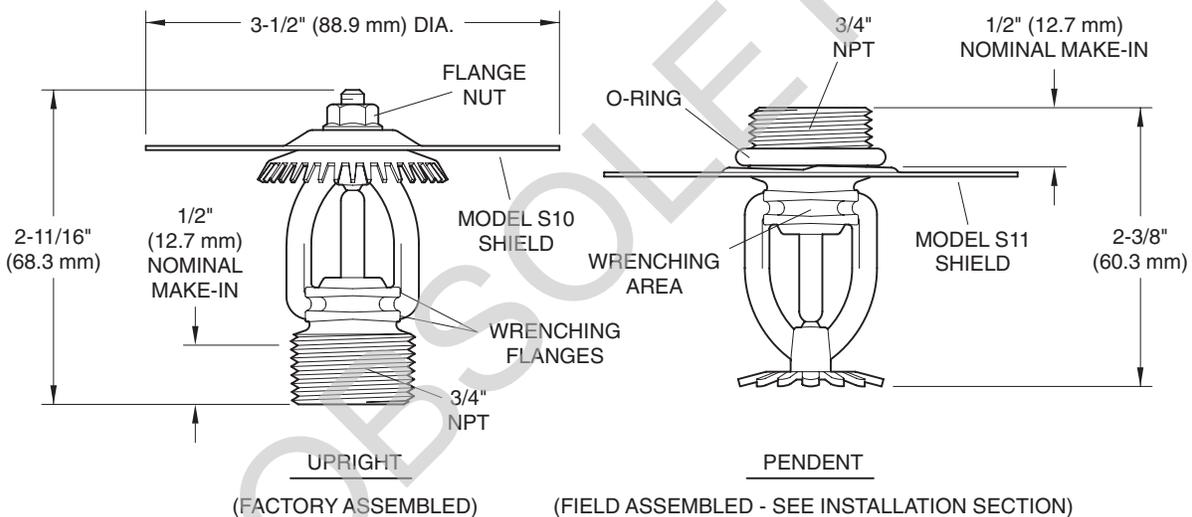


FIGURE 2
8.0 K-FACTOR, STAR GALAXY I-SG
UPRIGHT AND PENDENT INTERMEDIATE LEVEL SPRINKLERS

Finishes

Sprinkler: Chrome Plated, Natural Brass, Wax Coated, Lead Coated, Wax over Lead Coated (Refer to Table A).

Physical Characteristics (Ref. Figure 1)

The Star Galaxy I-SG utilizes a dezincification resistant (DZR) bronze frame, and a 5 mm diameter glass bulb. The two-piece button assembly is brass and copper. The gasketed spring plate consists of a beryllium nickel disc spring that is sealed on both its inside and outside edges with a Teflon \neq gasket. The compression screw is bronze, and the deflector is brass.

The standard response Star Galaxy I-SG Intermediate Level Sprinklers are obtained by assembling the S11 Pendent Shield or the S10 Upright Shield, as applicable, to the basic pendent or upright sprinklers. The standard response 5.6 K-Factor Star Galaxy SG Sprinklers are de-

scribed in Product Data Sheet 1-1.2.20 and the standard response 8.0 K-Factor Star Galaxy SG Sprinklers are described in 1-1.2.50.

The S10 and S11 Shields are fabricated from carbon steel and are furnished zinc coated with a clear chromate finish. In the case of the pendent assembly, the S11 Pendent Shield and O-Ring shown in Figures 1 and 2 are field assembled to the Star Galaxy SG Pendent Sprinkler. The O-Ring forms a water seal when it is slightly compressed between the Shield and sprinkler fitting. In the case of the upright assembly shown in Figures 1 and 2, the S11 Upright Shield is factory assembled to the Star Galaxy SG Upright Sprinkler with a Flange Nut that is secured in position with an adhesive.

SPRINKLER FINISH						
5.6 K-Factor Upright (S2900) and 8.0 K-Factor Upright (S2910) With S10 Shield						
Temperature Rating	Bulb Liquid Code	Natural Brass With Zinc Chromate Shield	Chrome Plated With Zinc Chromate Shield	Lead Coated	Wax Coated	Wax Over Lead Coated
135°F/57°C	Orange	1, 2, 3		1, 2, 3	1, 2, 3	1, 2, 3
155°F/68°C	Red					
175°F/79°C	Yellow					
200°F/93°C	Green				1**, 2**, 3**	1**, 2**, 3**
286°F/141°C	Blue					
360°F/182°C	Mauve					

SPRINKLER FINISH						
5.6 K-Factor Pendent (S2801) and 8.0 K-Factor Pendent (S2811) With S11 Shield						
Temperature Rating	Bulb Liquid Code	Natural Brass With Zinc Chromate Shield	Chrome Plated With Zinc Chromate Shield	Lead Coated	Wax Coated	Wax Over Lead Coated
135°F/57°C	Orange	1, 2, 3			N/A	
155°F/68°C	Red					
175°F/79°C	Yellow					
200°F/93°C	Green					
286°F/141°C	Blue					
360°F/182°C	Mauve					

Notes:

1. Listed by Underwriters Laboratories, Inc.
 2. Listed by Underwriters' Laboratories of Canada.
 3. Approved by Factory Mutual Research Corporation as Rack Storage Sprinklers.
- ** 150°F/66°C Maximum Ceiling Temperature.

**TABLE A
LABORATORY LISTINGS AND APPROVALS**

DESIGN CRITERIA

The 5.6 and 8.0 K-Factor, Star Galaxy I-SG Intermediate Level 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).

tained 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 may be used to install sprinklers with 1/2 NPT connections. A leak tight 3/4 inch NPT sprinkler joint should be obtained with a torque of 10 to 20 ft.lbs. (13,4 to 20,4 Nm). A maximum of 30 ft. lbs. (40,7 Nm) of torque may be used to install sprinklers with 3/4 NPT connections. Higher levels of torque may distort the sprinkler inlet with consequent leakage or impairment of the sprinkler.

INSTALLATION

The 5.6 and 8.0 K-Factor, Star Galaxy Sprinklers must be installed in accordance with the following instructions:

NOTES

Do not install any bulb type sprinkler if the bulb is cracked or there is a loss of liquid from the bulb. With the sprinkler held horizontally, a small air bubble should be present. The diameter of the air bubble is approximately 1/16 inch (1,6 mm) for the 135°F/57°C to 3/32 inch (2,4 mm) for the 360°F/182°C temperature ratings.

A leak tight 1/2 inch NPT sprinkler joint should be ob-

— Upright Sprinklers —

The Star Galaxy I-SG Intermediate Level Upright Sprinklers must be installed in accordance with the following instructions.

Step 1. With pipe thread sealant applied to the pipe threads, hand tighten the sprinkler into the sprinkler fitting.

Step 2. Tighten the sprinkler into the sprinkler fitting using only the W-Type 9 Sprinkler Wrench (Ref. Figure 3), except that an 8 or 10 inch adjustable Crescent wrench is to be used for wax coated sprinklers. With reference to Figure 1 or 2, the W-Type 9 Sprinkler Wrench is to be ap-

plied to the sprinkler wrenching area, and the adjustable Crescent wrench is to be applied to the wrenching flanges.

— Pendent Sprinklers —

The Star Galaxy I-SG Intermediate Level Pendent Sprinklers must be installed in accordance with the following instructions.

Step 1. Thread the S11 Shield onto the sprinkler threads with the stamped markings toward the deflector and just to the end of the threads. The final assembly step is easier to accomplish if the Shield is not disengaged by continuing to turn the Shield past the threads.

Step 2. Roll the O-Ring over the sprinkler threads until it seats against the Shield.

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

Step 4. Tighten the sprinkler into the sprinkler fitting using only the W-Type 9 Sprinkler Wrench (Ref. Figure 3), except that an 8 or 10 inch adjustable Crescent wrench is to be used for wax coated sprinklers. With reference to Figure 1 or 2, the W-Type 9 Sprinkler Wrench is to be applied to the sprinkler wrenching area, and the adjustable Crescent wrench is to be applied to the wrenching flanges.

Step 5. Rotate the S11 Shield clockwise (looking up) so that it slightly compresses the O-Ring between the Shield and sprinkler fitting.

—Wax Coated Sprinklers—

When installing wax coated sprinklers with the adjustable Crescent wrench, additional care needs to be exercised to prevent damage to the wax coating on the sprinkler wrenching flanges or frame arms and, consequently, exposure of bare metal to the corrosive environment. The jaws of the wrench should be opened sufficiently wide to pass over the wrenching flanges without damaging the wax coating. Before wrench tightening the sprinkler, the jaws of the wrench are to be adjusted to just contact the sprinkler wrenching flanges. After wrench tightening the sprinkler, loosen the wrench jaws before removing the wrench.

After installation, the sprinkler wrenching flanges and frame arms must be inspected and the wax coating retouched (repaired) whenever the coating has been damaged and bare metal is exposed. The wax coating on the wrenching flanges can be retouched by gently applying a heated 1/8 inch diameter steel rod to the areas of wax that have been damaged, to smooth it back over areas where bare metal is exposed.

NOTES

Only retouching of the wax coating applied to the wrenching flanges and frame arms is permitted, and the retouching is to be performed only at the time of the initial sprinkler installation.

The steel rod should be heated only to the point at which it can begin to melt the wax, and appropriate precautions need to be taken, when handling the heated rod, in order to prevent the installer from being burned.

If attempts to retouch the wax coating with complete cov-

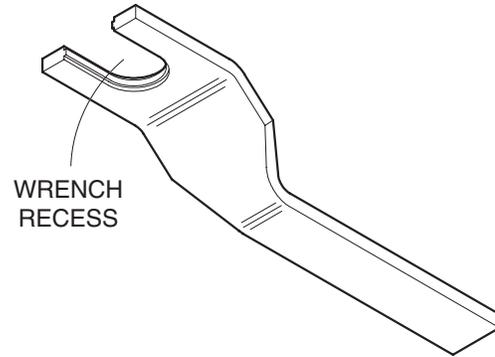


FIGURE 3
W-TYPE 9 (#1849) SPRINKLER WRENCH

erage are unsuccessful, additional wax can be ordered in the form of a wax stick (the end of which is color coded). Only the correct color coded wax is to be used, and retouching of wrenching flanges and frame arms is only permitted at the time of initial sprinkler installation. With the steel rod heated as previously described, touch the rod to the area requiring additional wax with the rod angled downward, and then touch the wax stick to the rod approximately one-half inch away from the area requiring retouching. The wax will melt and run down onto the sprinkler.

CARE AND MAINTENANCE

The Star Galaxy I-SG Sprinklers 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 which 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 which are found to be leaking or exhibiting visible signs of corrosion must be replaced.

Automatic sprinklers must never be shipped or stored where their temperature will exceed 100°F/38°C and they must never be painted, plated, coated, or otherwise altered after leaving the factory. Modified sprinklers must be replaced. Sprinklers that have been exposed to corrosive products of combustion, but have not operated, should be replaced if they cannot be completely cleaned by wiping the sprinkler with a cloth or by brushing it with a soft bristle brush.

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 (ref. Installation Section Note).

Frequent visual inspections are recommended to be initially performed for wax and/or lead coated sprinklers, after the installation has been completed, to verify the integrity of the wax and/or lead coating. Thereafter, annual inspections per NFPA 25 should suffice; however, instead of inspecting from the floor level, a random sampling of close-up visual inspections should be made, so as to better determine the exact sprinkler condition and the long term integrity of the wax and/or lead coating, as it may be affected by the corrosive conditions present.

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.

LIMITED WARRANTY

Products manufactured by Tyco Fire Products 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 Tyco Fire Products. No warranty is given for products or components manufactured by companies not affiliated by ownership with Tyco Fire Products 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 Tyco Fire Products to be defective shall be either repaired or replaced, at Tyco Fire Products' sole option. Tyco Fire Products neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of products or parts of products. Tyco Fire Products 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 TYCO FIRE PRODUCTS 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 TYCO FIRE PRODUCTS WAS INFORMED ABOUT THE POSSIBILITY OF SUCH DAMAGES, AND IN NO EVENT SHALL TYCO FIRE PRODUCTS' 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.

ORDERING PROCEDURE

Please Specify:

5.6 K-Factor, Star Galaxy I-SG
Upright Intermediate Level Sprinkler (#2900)

5.6 K-Factor, Star Galaxy SG Pendent Sprinkler (#2801)
plus one 1/2" NPT S11 Pendent Shield (#7735-22) and
one O-ring (#1426-03)

8.0 K-Factor, Star Galaxy I-SG
Upright Intermediate Level Sprinkler (#2910)

8.0 K-Factor, Star Galaxy SG Pendent Sprinkler (#2811)
plus one 3/4" NPT S11 Pendent Shield (#8051-22) and
one O-ring (#1426-04)

W-Type 9 Sprinkler Wrench (#1849)

Wax Sticks (for retouching wrench damaged wax coating)
Black for 135°F (560651135)
Red for 155°F (#560651155)
Yellow for 175°F (#560651175)
Blue for 200°F and 286°F (#560651286)

Each wax stick is suitable for retouching up to twenty-five sprinklers. The wax used for 286°F sprinklers is the same as for 200°F sprinklers, and, therefore, the 286°F sprinkler is limited to the same maximum ceiling temperature as the 200°F sprinkler (i.e., 150°F).

Refer to Price List for complete listing of Part Numbers with respect to temperature ratings, sprinkler finishes, recessed escutcheon finishes, etc.

OBSOLETE