

tyco Fire Suppression & Building Products

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Issue D Quartzoid® — 5.6 and 8.0 K-factor High Temperature, Upright and Pendent Sprinklers Standard Response, Standard Coverage

General Description

The Tyco® Issue D, 5.6 and 8.0 K-factor, Upright and Pendent Sprinklers described in this data sheet are standard response - standard coverage, 11 mm glass bulb type spray sprinklers designed for use in light, ordinary, or extra hazard, commercial occupancies where high ambient temperatures may be encountered.

Corrosion-resistant coatings, where applicable, are utilized to extend the life of copper alloy sprinklers beyond that which would otherwise be obtained when exposed to corrosive atmospheres. Although corrosion-resistant 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 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.

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.

NOTICE

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

Model/Sprinkler Identification Numbers

TY3191 - Upright 5.6K, 1/2" NPT
TY3296 - Pendent 5.6K, 1/2" NPT
TY4191 - Upright 8.0K, 3/4" NPT
TY4292 - Pendent 8.0K, 3/4" NPT

TY3191 is a redesignation for G1036.
TY3296 is a redesignation for G1040.
TY4191 is a redesignation for G1136.
TY4292 is a redesignation for G1140.

Technical Data

Approvals

UL and C-UL Listed
FM Approved
(Refer to Table A for complete approval information including corrosion resistant status.)

Maximum Working Pressure

175 psi (12,1 bar)

Discharge Coefficient

K = 5.6 GPM/psi^{1/2} (80,6 LPM/bar^{1/2})
K = 8.0 GPM/psi^{1/2} (115,2 LPM/bar^{1/2})

Temperature Ratings

Refer to Table A.

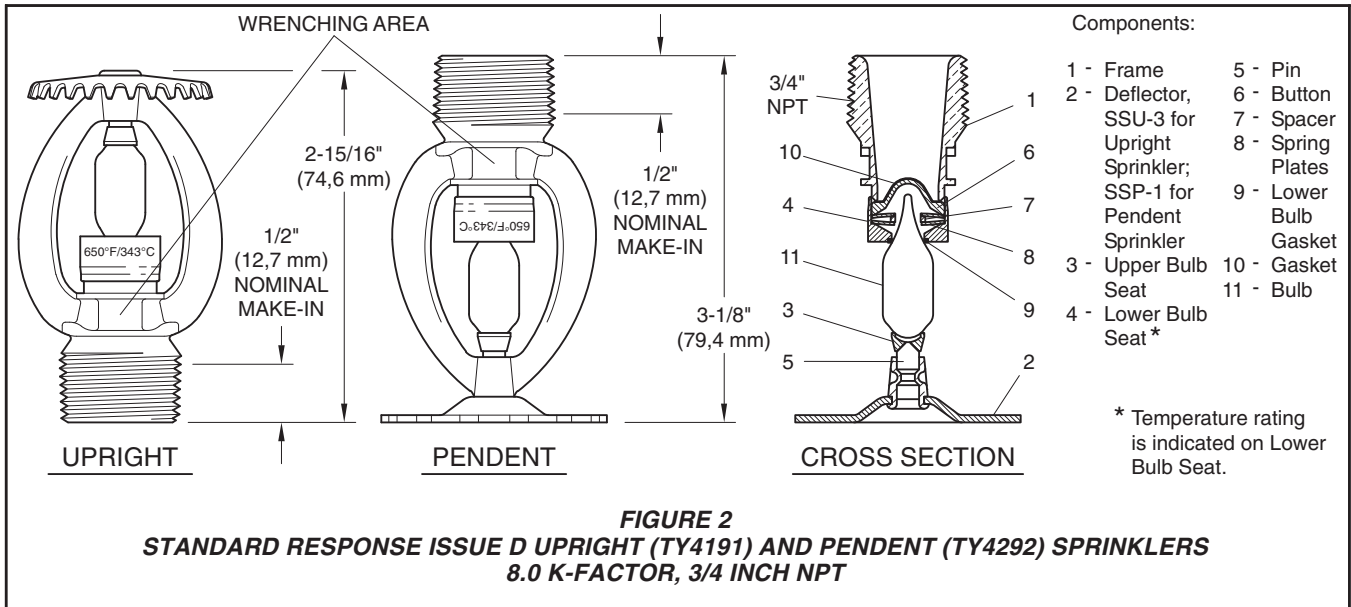
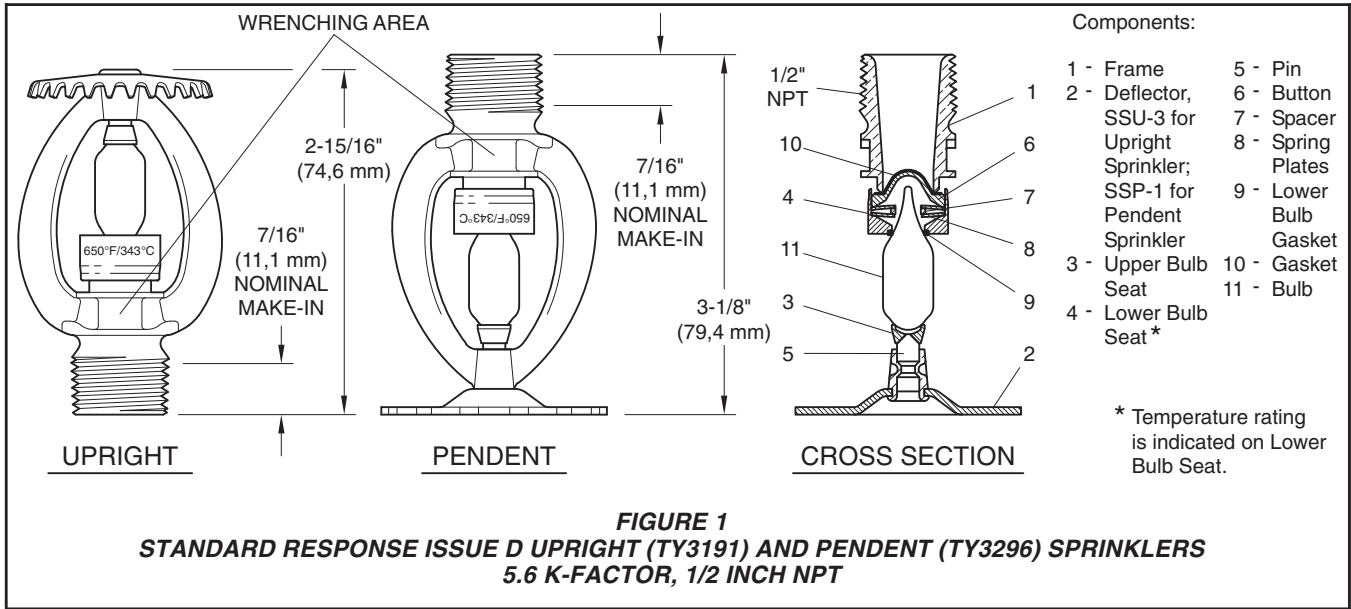


Finishes

Refer to Table A.

Physical Characteristics

Frame	Bronze
Deflector	Bronze
Bulb (11mm dia.)	Glass
Bulb Seats	Bronze
Spacer	Bronze
Pin	Bronze
Button	Bronze
Spring Plates	Inconel
Gaskets	Copper



K	TYPE	TEMP. RATING	BULB LIQUID COLOR	SPRINKLER FINISH (See Note 4)		
				NATURAL BRASS	CHROME PLATED	LEAD COATED
5.6 1/2" NPT	PENDENT (TY3296) and UPRIGHT (TY3191)	400°F/204°C	Black	1, 2, 3		1, 2
		500°F/260°C	Black			
		650°F/343°C	Black	3		N/A
8.0 3/4" NPT	PENDENT (TY4292) and UPRIGHT (TY4191)	400°F/204°C	Black	1, 2		1, 2
		500°F/260°C	Black			

NOTES:

1. Listed by Underwriters Laboratories, Inc. (UL)
 2. Listed by Underwriters Laboratories, Inc. for use in Canada (C-UL)
 3. Approved by Factory Mutual Research Corporation (FM)
 4. Where Lead Coated Sprinklers are noted as UL and C-UL Listed, the sprinklers are UL and C-UL Listed as Corrosion Resistant Sprinklers.
- N/A: Not Available

TABLE A
LABORATORY LISTINGS AND APPROVALS

Operation

The glass Bulb contains a fluid that expands when exposed to heat. When the rated temperature is reached, the fluid expands sufficiently to shatter the glass Bulb, allowing the sprinkler to activate and water to flow.

Design Criteria

The Tyco® Issue D Pendent and Upright Sprinklers are intended for fire protection systems designed in accordance with the standard installation rules recognized by the applicable Listing or Approval agency (for example, UL Listing is based on the requirements of NFPA 13, and FM Approval is based on the requirements of FM Loss Prevention Data Sheets).

Installation

The Issue D Sprinklers must be installed in accordance with the following instructions.

NOTICE

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

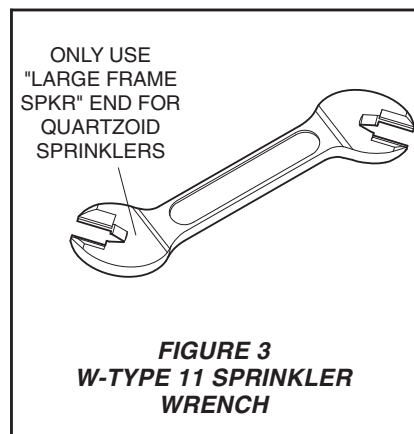
should be present. The diameter of the air bubble is approximately 1/4 inch (6,4 mm).

Obtain a leak-tight 1/2 inch NPT sprinkler joint by applying a minimum-to-maximum torque of 7 to 14 ft.lbs. (9,5 to 19,0 Nm). Obtain a leak-tight 3/4 inch NPT sprinkler joint by applying a minimum-to-maximum torque of 10 to 20 ft.lbs. (13,4 to 26,8 Nm). Higher levels of torque can distort the sprinkler inlet and cause leakage or impairment of the sprinkler.

Step 1. Install pendent sprinklers in the pendent position and upright sprinklers in the upright position.

Step 2. With pipe-thread sealant applied to the pipe threads, hand-tighten the sprinkler into the sprinkler fitting.

Step 3. Tighten the sprinkler into the sprinkler fitting using only the W-Type 11 Sprinkler Wrench (refer to Figure 3). With reference to Figures 1 and 2, apply the W-Type 11 Sprinkler Wrench to the wrenching area.



Care and Maintenance

The Tyco® Issue D Sprinklers must be maintained and serviced in accordance with the following instructions.

NOTICE

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

Exercise care to avoid damage to the sprinklers before, during, and after installation. Never paint, plate, coat, or otherwise alter automatic sprinklers after they leave the factory.

Replace sprinklers that:

- were modified.
- were damaged by dropping, striking, wrench twisting, wrench slippage, or the like.
- are leaking or exhibiting visible signs of corrosion.
- were exposed to corrosive products of combustion but have not operated, if they cannot be completely cleaned by wiping the sprinkler with a cloth or by brushing it with a soft bristle brush.
- have a cracked bulb or that have lost liquid from the bulb (refer to the Installation section).

Frequent visual inspections of random samples are recommended to be initially performed for corrosion-resistant coated sprinklers to verify the integrity of the corrosion-resistant coating. Thereafter, annual inspections per NFPA 25 should suffice. Inspections of corrosion-resistant sprin-

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			MODEL/SIN		SPRINKLER		TEMPERATURE RATING	
036	5.6K UPRIGHT (1/2"NPT)	TY3191	1	NATURAL BRASS	400	400°F/204°C		
040	5.6K PENDENT (1/2"NPT)	TY3296	9	CHROME PLATED	500	500°F/260°C		
136	8.0K UPRIGHT (3/4"NPT)	TY4191	7	LEAD COATED (400°F & 500°F Only)	650	650°F/343°C (5.6K Only)		
140	8.0K PENDENT (3/4"NPT)	TY4292						

TABLE B
PART NUMBER SELECTION
ISSUE D UPRIGHT AND PENDENT SPRINKLERS

klers are recommended to be at close range (instead of inspecting from the floor level per NFPA 25). Inspection at close range can better determine the exact sprinkler condition and the long-term integrity of the corrosion-resistant coating, which can be affected by the corrosive conditions present.

Responsibility lies with the owner 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 (for example, NFPA 25), in addition to the standards of any authorities having jurisdiction. Contact the installing contractor or sprinkler manufacturer regarding any questions.

Automatic sprinkler systems are recommended to 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 re-

paired 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

Contact your local distributor for availability. When placing an order, indicate the full product name. Refer to the Price List for a complete listing of Part Numbers.

Sprinkler Assemblies with NPT Thread Connections:

Specify: (Model/SIN), Standard Response, (K-factor), (temperature rating), Issue D (Pendent or Upright) Sprinkler with (type of finish or coating), P/N (from Table B).

Sprinkler Wrench:

Specify: W-Type 11 Sprinkler Wrench, P/N 56-452-1-001.