

## Series TY-FRB – 5.6 and 8.0 K-factor Conventional (Old Style) Sprinklers Quick Response

### General Description

The TYCO Series TY-FRB, 5.6 and 8.0 K-factor, Conventional Sprinklers described in this technical data sheet are Quick Response, Standard Coverage, decorative 3 mm glass bulb type spray sprinklers. These sprinklers are intended to be installed either pendent or upright and, in either position, produce a spherical water discharge pattern with approximately 50% of the discharge directed upwards and approximately 50% of the discharge directed downwards.

Conventional sprinklers are generally used with Ordinary and Extra High Hazard Class Systems, as defined by the automatic sprinkler system installation rules of the country and authority having jurisdiction. The National Fire Protection Association (NFPA) permits the use of "Old Style Sprinklers" where special construction features require a unique water distribution, for the protection of fur vaults, or to replace similar sprinklers that had been installed prior to 1955.

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.

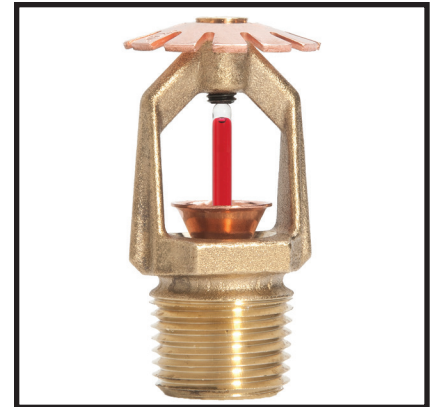
#### NOTICE

*The TYCO Series TY-FRB Sprinklers described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the 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 Numbers (SINs)

TY3631 – 5.6K, 1/2" NPT  
TY4631 – 8.0K, 3/4" NPT



### Technical Data

#### Approvals

UL and C-UL Listed  
LPCB Approved  
VdS Approved  
NYC Approved

(Refer to Table A for complete approval information.)

Sprinklers with Polyester Finish are UL and C-UL Listed as Corrosion-Resistant Sprinklers.

#### Maximum Working Pressure

175 psi (12,1 bar)

#### Discharge Coefficient

K=5.6 gpm/psi<sup>1/2</sup> (80,6 lpm/bar<sup>1/2</sup>)  
K=8.0 gpm/psi<sup>1/2</sup> (115,2 lpm/bar<sup>1/2</sup>)

#### Temperature Ratings

Refer to Table A

#### Finishes

Sprinkler: Refer to Table A

#### Physical Characteristics

Frame	.....	Bronze
Button	.....	Brass/Copper
Sealing Assembly	.....	Beryllium Nickel w/TEFLON
Bulb	.....	Glass
Compression Screw	.....	Bronze
Deflector	.....	Copper

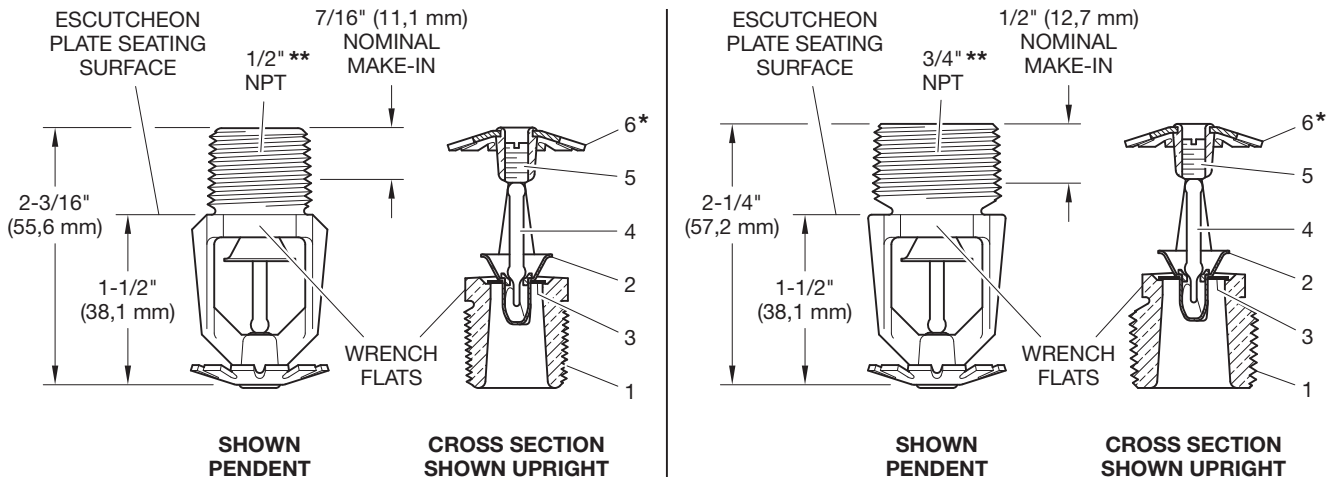
#### IMPORTANT

*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.*

\* Temperature rating is indicated on Deflector or adjacent to orifice seat on Frame.

\*\* Pipe thread connections per ISO 7-1 can be provided on special request.

- Components:
- |                      |                       |
|----------------------|-----------------------|
| 1 - Frame            | 4 - Bulb              |
| 2 - Button           | 5 - Compression Screw |
| 3 - Sealing Assembly | 6 - Deflector*        |



**FIGURE 1**  
**SERIES TY-FRB 5.6 K-FACTOR (TY3631) AND 8.0 K-FACTOR (TY4631)**  
**QUICK RESPONSE CONVENTIONAL SPRINKLERS**

## 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, allowing the sprinkler to activate and water to flow.

## Design Criteria

The TYCO Series TY-FRB Conventional 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). The Series TY-FRB Conventional Sprinklers are only for non-recessed applications.

## Installation

The Series TY-FRB Sprinklers must be installed in accordance with this section.

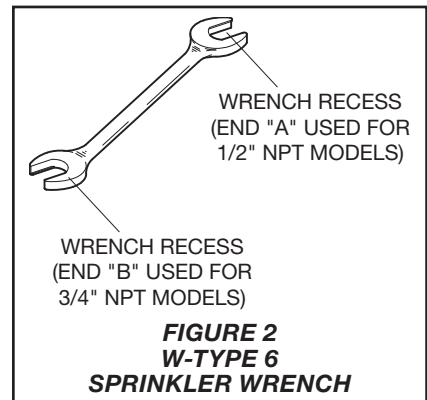
### General Instructions

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 286°F (141°C) temperature ratings.

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 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 26,8 Nm). A maximum of 30 ft.-lbs. (40,7 Nm) of torque is to be used to install sprinklers with 3/4 NPT connections. Higher levels of torque may distort the sprinkler inlet and cause leakage or impairment of the sprinkler.

**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 6 Sprinkler Wrench (Ref. Figure 2). With reference to Figure 1, the W-Type 6 Sprinkler Wrench is to be applied to the Wrench Flats.



Type	Temperature Rating	Bulb Liquid Color	Sprinkler Finish			
			Natural Brass	Chrome Plated	Polyester*	Lead Coated
5.6K CONVENTIONAL (TY3631) or 8.0K CONVENTIONAL (TY4631)	135°F (57°C)	Orange	1, 2, 3, 4, 5			1, 2, 4
	155°F (68°C)	Red				
	175°F (79°C)	Yellow				
	200°F (93°C)	Green				
	286°F (141°C)	Blue				

**Notes:**

1. UL Listed
  2. C-UL Listed
  3. LPCB Approved (LPCB Ref. No. 094a/06 & 007k/04)
  4. Approved by the City of New York under MEA 354-01-E
  5. VdS Approved (For details, contact Tyco Fire Protection Products, Enschede, Netherlands, Tel. +31-53-428-4444 / Fax +31-53-428-3377.)
  6. Where polyester-coated and lead-coated sprinklers are noted to be UL and C-UL Listed, the sprinklers are UL and C-UL Listed as Corrosion-Resistant Sprinklers
- \* Frame and deflector only

**TABLE A**  
**LABORATORY LISTINGS AND APPROVALS**

## Care and Maintenance

The TYCO Series TY-FRB Sprinklers must be maintained and serviced in accordance with this section.

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 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.)

Frequent visual inspections are recommended to be initially performed for corrosion resistant coated sprinklers, after the installation has been completed, to verify the integrity of the corrosion resistant 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 corrosion-resistant 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. Contact the installing contractor or product manufacturer with 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.

P/N 57 - XXX - X - XXX

		SIN	SPRINKLER FINISH	TEMPERATURE RATING		
373	5.6K CONVENTIONAL (1/2" NPT)	TY3631	1	NATURAL BRASS	135	135°F (57°C)
393	8.0K CONVENTIONAL (3/4" NPT)	TY4631	3	PURE WHITE (RAL9010)* POLYESTER	155	155°F (68°C)
			4	SIGNAL WHITE (RAL9003) POLYESTER	175	175°F (79°C)
			5	JET BLACK (RAL9005)** POLYESTER	200	200°F (93°C)
			9	CHROME PLATED	286	286°F (141°C)

**Notes:**  
 \* Eastern Hemisphere sales only  
 \*\* Available only for temperature ratings of 155°F (68°C) or 200°F (93°C)

**TABLE B**  
**SERIES TY-FRB CONVENTIONAL SPRINKLERS**  
**PART NUMBER SELECTION**

## Limited Warranty

For warranty terms and conditions, visit [www.tyco-fire.com](http://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 Assemblies with NPT Thread Connections

Specify: (specify) SIN, Series TY-FRB Conventional Sprinkler Quick Response, (specify) SIN, K=(specify), (specify) temperature rating, with (specify) finish, P/N (specify from Table B)

### Sprinkler Wrench:

Specify: W-Type 6 Sprinkler Wrench, P/N 56-000-6-387