

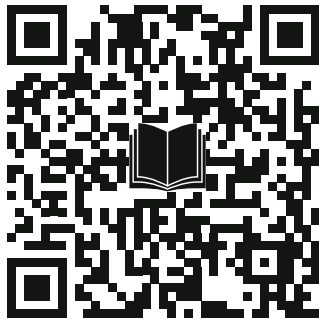
## Series TY-B and TY-FRB Poly-Stainless Sprinklers

### 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.

Scan the QR code or enter the URL in a web browser to access the most up-to-date electronic version of this document. Data rates may apply.



[docs.jci.com/tycofire/tfp682](http://docs.jci.com/tycofire/tfp682)

## General Description

The TYCO Series TY-B and TY-FRB Poly-Stainless Sprinklers are corrosion resistant sprinklers designed for use in commercial occupancies where corrosive atmospheres may exist.

The series characteristics are as follows:

### TY-B Series

- 5 mm diameter heat sensitive glass bulb
- Standard response (SR) rating

### TY-FRB Series

- 3 mm diameter heat sensitive glass bulb
- Quick response (QR) rating

Although corrosion resistant 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 this coating material for any given corrosive environment. The effects of ambient temperature, concentration of chemicals, and gas/chemical velocity, should be considered, at a minimum, along with the corrosive nature of the chemical to which the sprinklers will be exposed.

### Upright and Pendent Sprinklers

The upright and pendent spray sprinklers are standard coverage spray sprinklers available in either 5.6 or 8.0 K-factor. The recessed version is intended for use in areas with a finished ceiling. The two-piece Style 10 (1/2 inch NPT) or Style 40 (3/4 inch NPT) recessed escutcheons provide 1/2 inch (12,7 mm) of recessed adjustment or 3/4 inch (19,1 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.

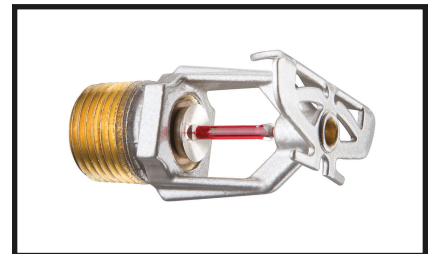
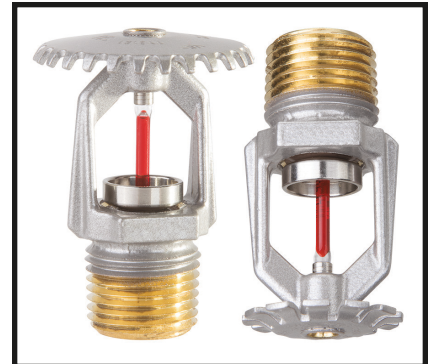
### Horizontal Sidewall Sprinklers

The horizontal sidewall sprinklers are designed for installation along a wall or side of a beam and just beneath a smooth ceiling. Sidewall sprinklers are commonly used instead of upright and pendent sprinklers due to aesthetics or building construction considerations, where piping across the ceiling is not desirable.

A recessed version of the horizontal sidewall sprinkler can be achieved by using the Style 10 recessed escutcheon.

### NOTICE

The Series TY-B and TY-FRB Sprinklers described herein must be installed and maintained in compliance with this document and with the applicable standards of the National Fire Pro-



tection 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. Contact the installing contractor or product manufacturer with any questions.

## Sprinkler Identification Number (SIN)

### TY-B Standard Response

TY3151 . . . Upright 5.6K, 1/2 in. NPT  
TY3251 . . . Pendent 5.6K, 1/2 in. NPT  
TY4151 . . . Upright 8.0K, 3/4 in. NPT  
TY4251 . . . Pendent 8.0K, 3/4 in. NPT  
TY3351 . . . HSW\* 5.6K, 1/2 in. NPT

### TY-FRB Quick Response

TY3131 . . . Upright 5.6K, 1/2 in. NPT  
TY3231 . . . Pendent 5.6K, 1/2 in. NPT  
TY4131 . . . Upright 8.0K, 3/4 in. NPT  
TY4231 . . . Pendent 8.0K, 3/4 in. NPT  
TY3331 . . . HSW\* 5.6K, 1/2 in. NPT

\* = Horizontal Sidewall

Model K-Factor Response	Type	Temperature Rating	Bulb Liquid Color	Sprinkler Material
				Brass
TY-B 5.6 1/2 in. NPT SR	Upright TY3151 and Pendent TY3251	135°F (57°C)	Orange	1, 2, 3
		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	
	Recessed* Pendent TY3251  See Figure 1	135°F (57°C)	Orange	
		155°F (68°C)	Red	
		175°F (79°C)	Yellow	
		200°F (93°C)	Green	
		286°F (141°C)	Blue	
TY-B 8.0 3/4 in. NPT SR	Upright TY4151 and Pendent TY4251	135°F (57°C)	Orange	
		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	
	Recessed** Pendent TY4251  See Figure 1	135°F (57°C)	Orange	
		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. EAC Approved

\* Installed with Style 10 (1/2 NPT) Recessed Escutcheon

\*\* Installed with Style 40 (3/4 NPT) Recessed Escutcheon

**TABLE A**  
**POLY-STAINLESS SERIES TY-B STANDARD RESPONSE**  
**5.6 AND 8.0 K-FACTOR UPRIGHT AND PENDENT SPRINKLERS**  
**LABORATORY LISTINGS AND APPROVALS**

## Technical Data

### Approvals

UL and C-UL Listed  
EAC Approved

**Note:** For complete approvals information,  
see Tables A, B, and C.

**Maximum Working Pressure**  
175 psi (12,1 bar)

**Temperature Rating**  
See Tables A, B, C, and D

### Physical Characteristics

Frame . . . . . Polyester coated Brass  
Button . . . . . L316 Stainless Steel\*  
Compression Screw . . . . . L316 Stainless Steel\*  
Bulb . . . . . Glass  
Deflector . . . . . Copper/Bronze  
Sealing Assembly . . . . . Gold Plated Beryllium Nickel  
w/TEFLON\*\*

\*Type L316 stainless steel (UNS 31603) per ASTM  
A479/479M or BS EN 1008 WN1.4404.

\*\*Beryllium Nickel (UNS NO3360) Gold Plated per MIL  
G-45204, Type 3, Class 2.

## 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-B and TY-FRB 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, the UL Listing is based on the requirements of NFPA 13. Only the Style 10 or 40 Recessed Escutcheon, as applicable, is to be used for recessed installation.

Model K-Factor Response	Type	Temperature Rating	Bulb Liquid Color	Sprinkler Material
				Brass
TY-FRB 5.6 1/2 in. NPT QR	Upright TY3131 and Pendent TY3231	135°F (57°C)	Orange	1, 2, 3
		155°F (68°C)	Red	
		175°F (79°C)	Yellow	
		200°F (93°C)	Green	
		286°F (141°C)	Blue	
	Recessed Pendent* TY3231  See Figure 2	135°F (57°C)	Orange	
		155°F (68°C)	Red	
		175°F (79°C)	Yellow	
		200°F (93°C)	Green	
		286°F (141°C)	Blue	
TY-FRB 8.0 3/4 in. NPT QR	Upright TY4131 and Pendent TY4231	135°F (57°C)	Orange	
		155°F (68°C)	Red	
		175°F (79°C)	Yellow	
		200°F (93°C)	Green	
		286°F (141°C)	Blue	
	Recessed Pendent** TY4231  See Figure 4	135°F (57°C)	Orange	
		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. EAC Approved

\* Installed with Style 10 (1/2 NPT) Recessed Escutcheon

\*\* Installed with Style 40 (3/4 NPT) Recessed Escutcheon

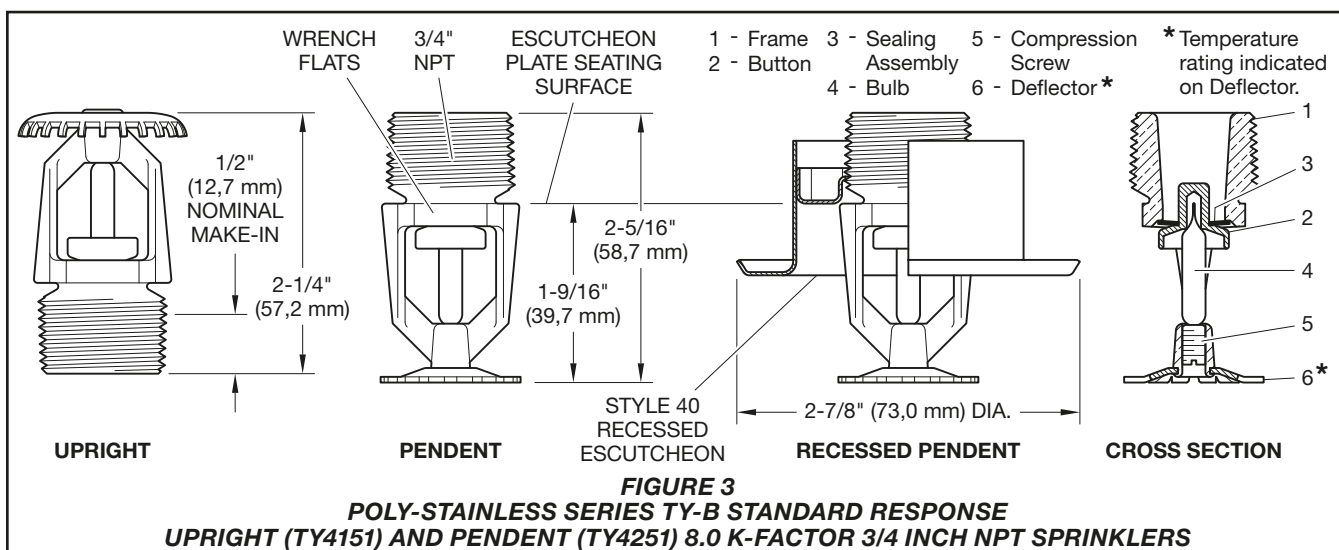
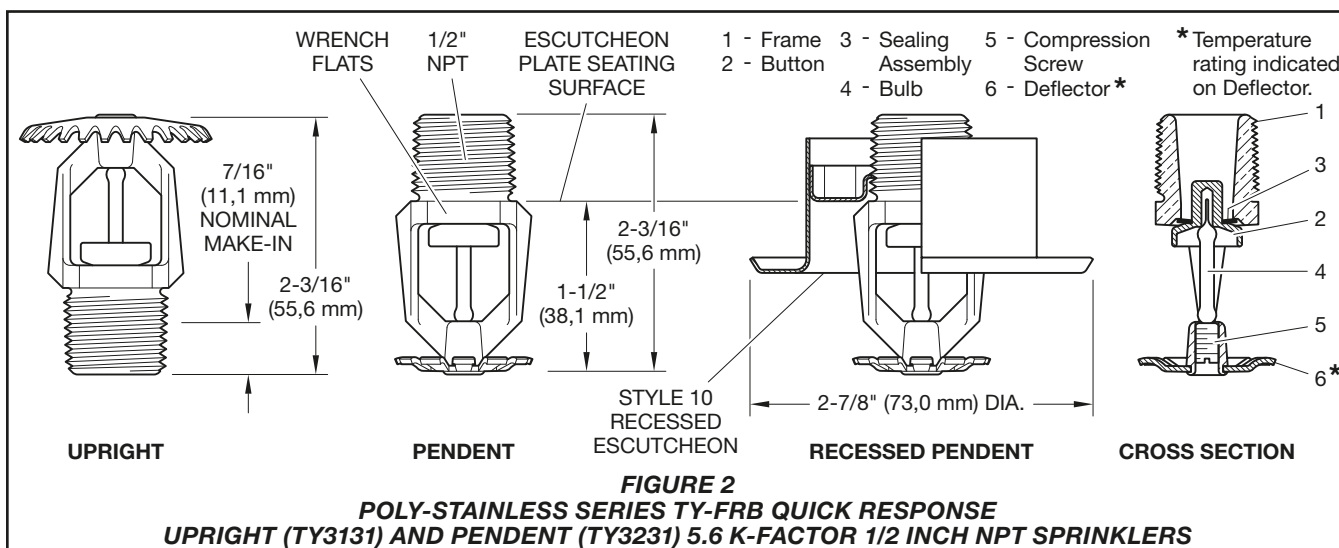
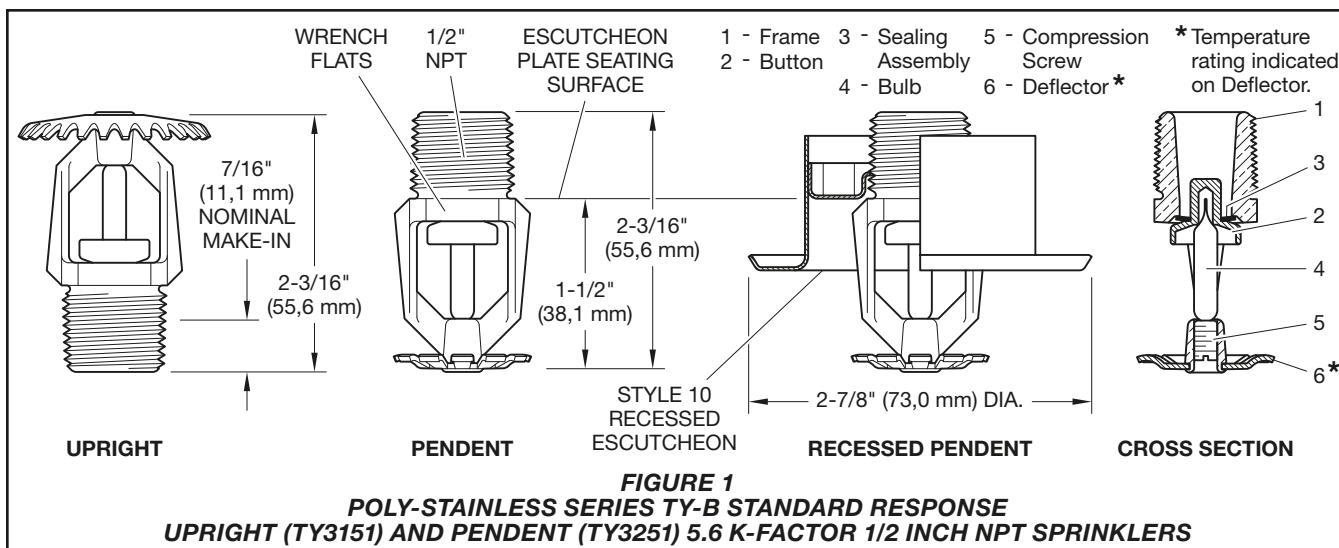
**TABLE B**  
**POLY-STAINLESS SERIES TY-FRB QUICK RESPONSE**  
**5.6 AND 8.0 K-FACTOR UPRIGHT AND PENDENT SPRINKLERS**  
**LABORATORY LISTINGS AND APPROVALS**

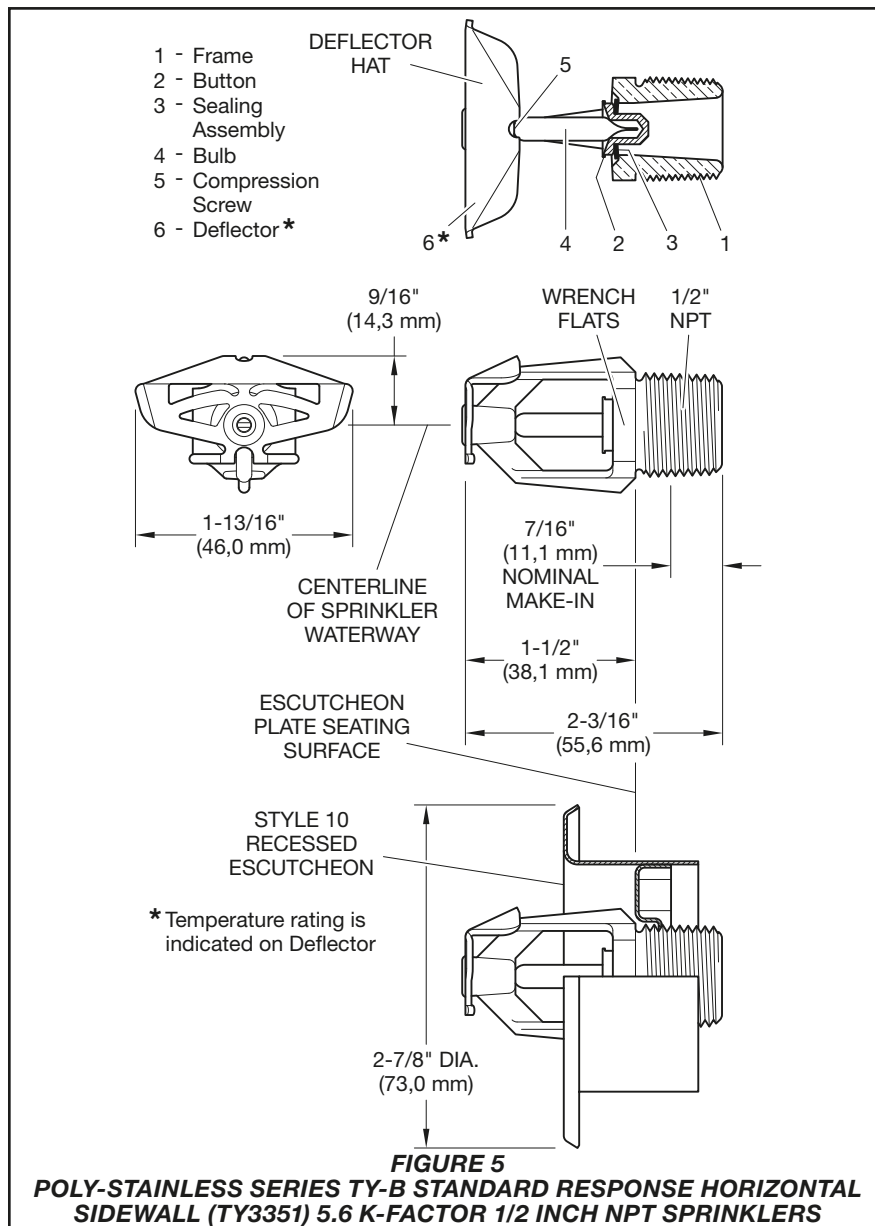
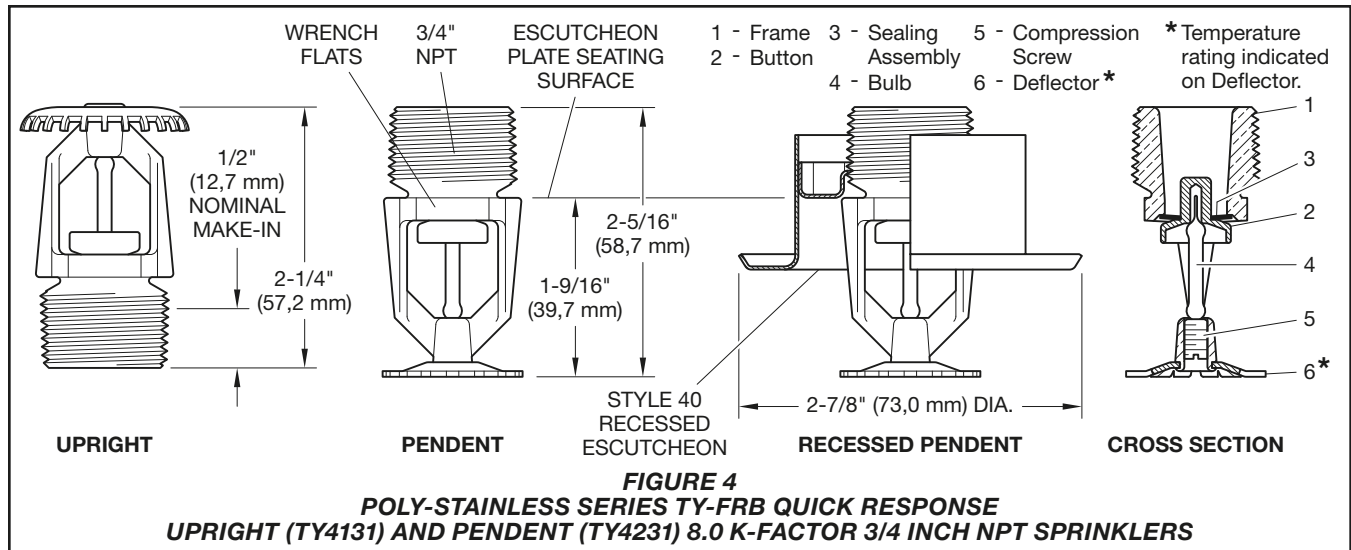
Model K-Factor Response	Type	Temperature Rating	Bulb Liquid Color	Sprinkler Material
				Brass
TY-B 5.6 1/2 in. NPT SR	Horizontal Sidewall TY3351	135°F (57°C)	Orange	1, 2, 3
		155°F (68°C)	Red	
		175°F (79°C)	Yellow	
		200°F (93°C)	Green	
		286°F (141°C)	Blue	
		360°F (182°C)	Mauve	
	Recessed Horizontal Sidewall* TY3351  See Figure 5	135°F (57°C)	Orange	
		155°F (68°C)	Red	
		175°F (79°C)	Yellow	
		200°F (93°C)	Green	
		286°F (141°C)	Blue	
TY-FRB 5.6 1/2 in. NPT QR	Horizontal Sidewall TY3331	135°F (57°C)	Orange	
		155°F (68°C)	Red	
		175°F (79°C)	Yellow	
		200°F (93°C)	Green	
		286°F (141°C)	Blue	
	Recessed Horizontal Sidewall* TY3331  See Figure 6	135°F (57°C)	Orange	
		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. EAC Approved
- \* Installed with Style 10 (1/2 NPT) Recessed Escutcheon

**TABLE C**  
**POLY-STAINLESS SERIES TY-B STANDARD RESPONSE**  
**AND POLY-STAINLESS SERIES TY-FRB QUICK RESPONSE**  
**5.6 K-FACTOR HORIZONTAL SIDEWALL SPRINKLERS**  
**LABORATORY LISTINGS AND APPROVALS**





## Installation

The TYCO Series TY-B and 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) and 3/32 inch (2,4 mm) for the 360°F (182°C) temperature ratings.

A 1/2 inch NPT sprinkler joint should be obtained with a minimum to maximum torque of 7 to 14 ft-lbs (9,5 to 19,0 Nm). A 3/4 inch NPT sprinkler joint should be obtained with a minimum to maximum torque of 10 to 20 ft-lbs (13,4 to 26,8 Nm). Higher levels of torque may distort the sprinkler inlet and cause leakage or impairment of the sprinkler.

Do not attempt to compensate for insufficient adjustment in the sprinkler by under- or over-tightening the sprinkler. Re-adjust the position of the sprinkler fitting to suit.



### Upright and Pendent Sprinklers

The Poly-Stainless Series TY-B and TY-FRB Upright and Pendent Sprinklers must be installed in accordance with the following instructions:

**Step 1A.** Upright sprinklers must be installed in the upright position, and pendent sprinklers are to be installed in the pendent position.

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

**Step 3A.** Tighten the sprinkler into the sprinkler fitting using only the W-Type 6 Sprinkler Wrench, refer to Figure 10. With reference to Figures 1, 2, 3, and 4, apply the W-Type 6 Sprinkler Wrench to the sprinkler wrench flats.

### Recessed Pendent Sprinklers

The Poly-Stainless Series TY-B and TY-FRB Recessed Pendent Sprinklers must be installed in accordance with the following instructions:

**Step 1B.** After installing the Style 10 or 40 Mounting Plate, as applicable, over the sprinkler threads and with pipe sealant applied to the sprinkler threads, hand tighten the sprinkler into the sprinkler fitting.

**Step 2B.** Tighten the sprinkler into the sprinkler fitting using only the W-Type 7 Recessed Sprinkler Wrench, refer to Figure 11. With reference to Figures 1, 2, 3, and 4 apply the W-Type 7 Recessed Sprinkler Wrench to the sprinkler wrench flats.

**Step 3B.** After the ceiling has been installed or the finish coat has been applied, slide the Style 10 or 40 Closure over the sprinkler and push the Closure over the Mounting Plate until it comes in contact with the ceiling mounting surface.

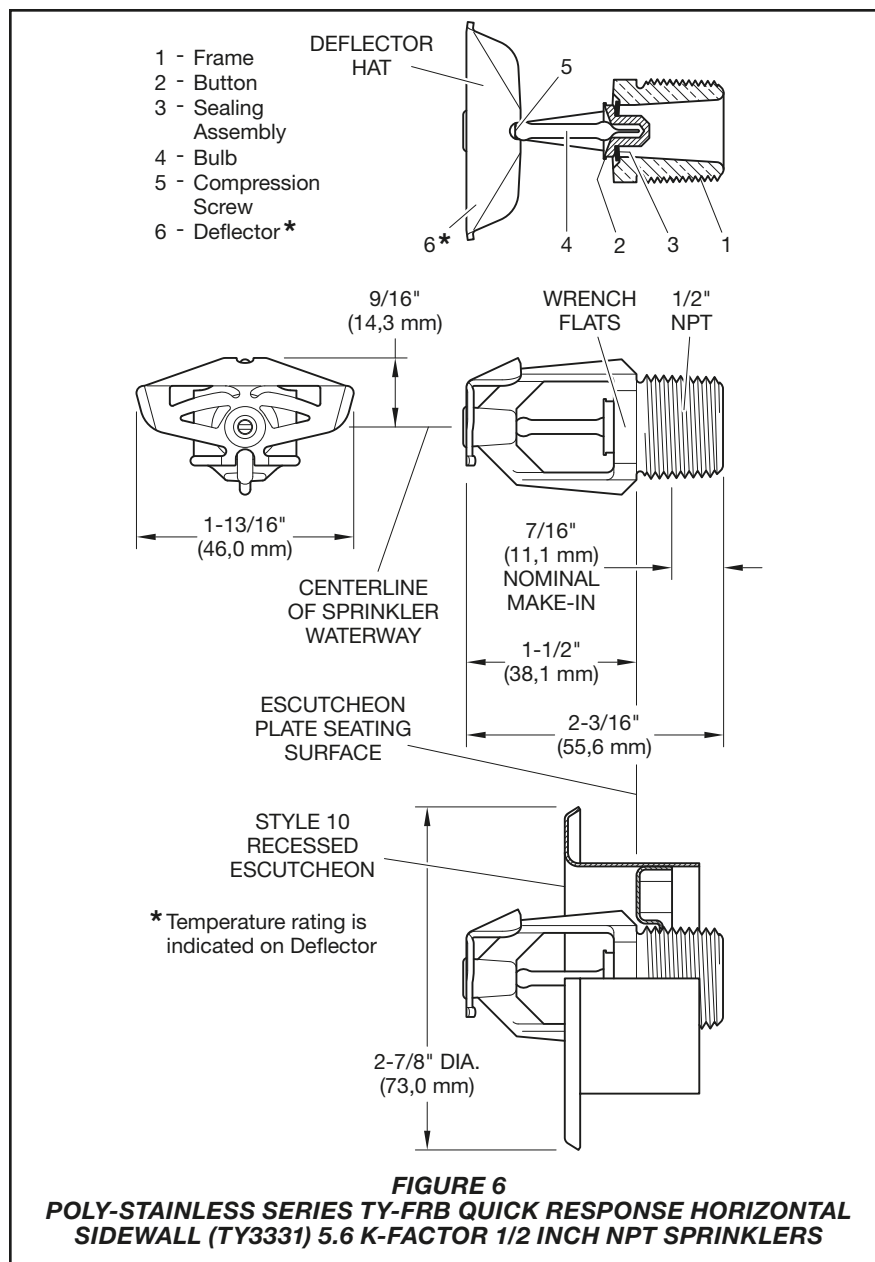
### Horizontal Sidewall Sprinklers

The Poly-Stainless Series TY-B and TY-FRB Horizontal Sprinklers must be installed in accordance with the following instructions:

**Step 1C.** Horizontal sprinklers must be positioned in the horizontal position with their centerline of waterway perpendicular to the back wall and parallel to the ceiling. The word "TOP" on the deflector is to face towards the ceiling.

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

**Step 3C.** Tighten the sprinkler into the sprinkler fitting using only the W-Type 6 Sprinkler Wrench, as shown in Figure 10. Apply the W-Type 6 Sprinkler Wrench to the wrench flats shown in Figure 5 and Figure 6.



### Recessed Horizontal Sidewall Sprinklers

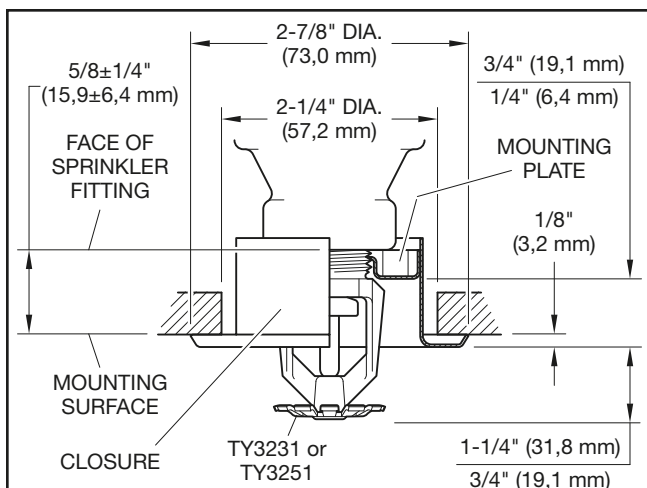
The Poly-Stainless Series TY-B and TY-FRB Recessed Horizontal Sidewall Sprinklers must be installed in accordance with the following instructions:

**Step 1E.** Recessed horizontal sidewall sprinklers are to be positioned in the horizontal position with their centerline of waterway perpendicular to the back wall and parallel to the ceiling. The word "TOP" on the deflector is to face towards the ceiling.

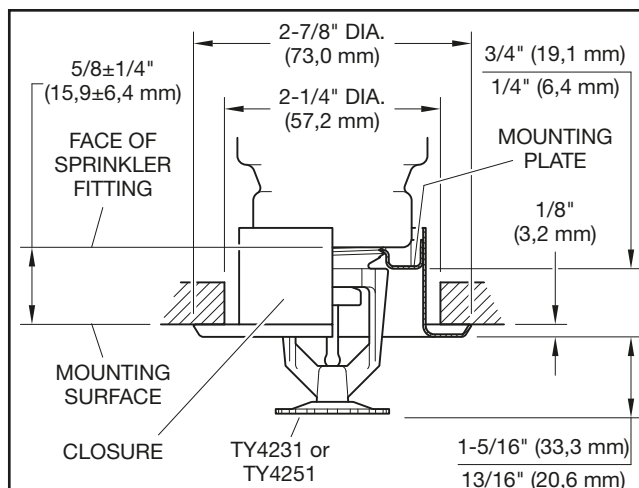
**Step 2E.** After installing the Style 10 Mounting Plate over the sprinkler threads and with pipe thread sealant applied to the sprinkler threads, hand tighten the sprinkler into the sprinkler fitting.

**Step 3E.** Tighten the sprinkler into the sprinkler fitting using only the W-Type 7 Recessed Sprinkler Wrench, refer to Figure 11. Apply the W-Type 7 Sprinkler Wrench to the wrench flats shown in Figure 5 and Figure 6.

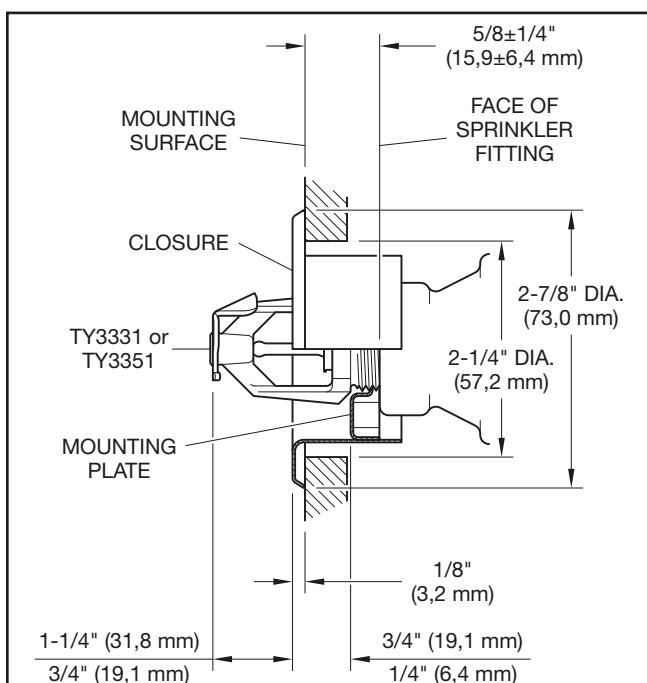
**Step 4E.** After the wall has been installed or the finish coat has been applied, slide the Style 10 Closure over the sprinkler and push the Closure over the Mounting Plate until it comes in contact with the wall mounting surface.



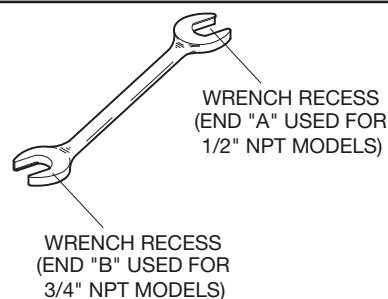
**FIGURE 7**  
**POLY-STAINLESS SERIES TY-B OR TY-FRB**  
**RECESSED PENDENT 5.6 K-FACTOR 1/2 INCH NPT**  
**SPRINKLER ASSEMBLY**  
**WITH TWO-PIECE 3/4 INCH TOTAL ADJUSTMENT**  
**STYLE 10 RECESSED ESCUTCHEON**



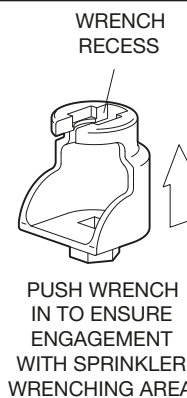
**FIGURE 8**  
**POLY-STAINLESS SERIES TY-B OR TY-FRB**  
**RECESSED PENDENT 8.0 K-FACTOR 3/4 INCH NPT**  
**SPRINKLER ASSEMBLY**  
**WITH TWO-PIECE 3/4 INCH TOTAL ADJUSTMENT**  
**STYLE 40 RECESSED ESCUTCHEON**



**FIGURE 9**  
**POLY-STAINLESS SERIES TY-B OR TY-FRB**  
**RECESSED HORIZONTAL SIDEWALL**  
**5.6 K-FACTOR 1/2 INCH NPT**  
**SPRINKLER ASSEMBLY**  
**WITH TWO-PIECE 3/4 INCH TOTAL ADJUSTMENT**  
**STYLE 10 RECESSED ESCUTCHEON**



**FIGURE 10**  
**W-TYPE 6 SPRINKLER WRENCH**



**FIGURE 11**  
**W-TYPE 7 SPRINKLER WRENCH**



## Care and Maintenance

The TYCO Series TY-B and 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.

The owner must assure that the sprinklers are not used for hanging of any objects; otherwise, non-operation in the event of a fire or inadvertent operation may result.

Absence of an escutcheon, which is used to cover a clearance hole, may delay the time to sprinkler operation in a fire situation.

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. For more information, see the Installation section.

Frequent visual inspections are recommended to be initially performed for corrosion resistant sprinklers, after the installation has been completed, to verify the integrity of the corrosion resistant material of construction.

P/N 57 — XXX — X — XXX				
570 590 571 591 578	Standard Response (SR)		SIN	135 155 175 200 286 360
	TY-B 5.6K Upright SR		TY3151	
	TY-B 8.0K Upright SR		TY4151	
	TY-B 5.6K Pendent SR		TY3251	
	TY-B 8.0K Pendent SR		TY4251	
	TY-B 5.6K HSW SR		TY3351	
370 390 371 391 378	Quick Response (QR)		SIN	135°F (57°C) 155°F (68°C) 175°F (79°C) 200°F (93°C) 286°F (141°C) 360°F (182°C)*
	TY-FRB 5.6K Upright QR		TY3131	
	TY-FRB 8.0K Upright QR		TY4131	
	TY-FRB 5.6K Pendent QR		TY3231	
	TY-FRB 8.0K Pendent QR		TY4231	
	TY-FRB 5.6K HSW QR		TY3331	
				* TY-B - Only
				Sprinkler Finish
				2 Grey Aluminium (RAL9007)

**TABLE D**  
**POLY-STAINLESS SERIES TY-B AND TY-FRB**  
**UPRIGHT, PENDENT AND HORIZONTAL SIDEWALL SPRINKLERS**  
**PART NUMBER SELECTION**

Thereafter, annual inspections according to 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 material of construction, 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 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](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

Specify: (specify SIN), (specify Standard Response or Quick Response), (specify K-factor), (specify) temperature rating, (specify Upright, Pendent or HSW), P/N (specify from Table D)

### Recessed Escutcheon

Specify: Style (specify 10 or 40) Recessed Escutcheon, Grey Aluminum (RAL9007) finish, P/N (specify\*)

\*Refer to Technical Data Sheet TFP770.

### Sprinkler Wrench

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

Specify: W-Type 7 Recessed Sprinkler Wrench, P/N 56-850-4-001

