

## Series TY-B and TY-FRB Sprinklers Alternate Materials of Construction Stainless Steel, SMO, and Titanium

### General Description

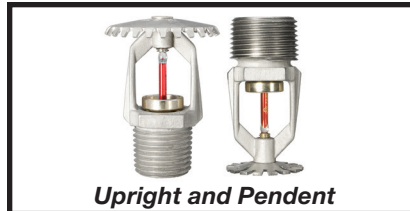
The TYCO Series TY-B and TY-FRB Sprinklers are corrosion resistant sprinklers designed for use in commercial occupancies where corrosive atmospheres may exist. The TY-B with its 5 mm diameter heat sensitive glass bulb is rated standard response, whereas the TY-FRB with its 3 mm diameter heat sensitive glass bulb is rated quick response.

The alternate materials of construction for the TY-B and TY-FRB Sprinklers, that is Stainless Steel, SMO, or Titanium, are utilized to extend the life of a sprinkler beyond that which might be expected of copper alloy sprinklers exposed to corrosive atmospheres. 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 these alternate materials of construction 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

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.



*Upright and Pendent*



*Horizontal Sidewall*



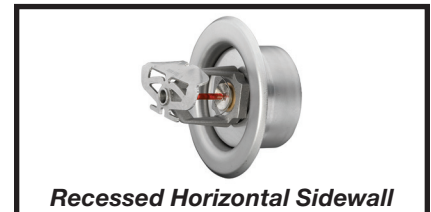
*Recessed Pendent*



*Conventional*



*Vertical Sidewall*



*Recessed Horizontal Sidewall*

#### Upright and Pendent Sprinklers

The upright and pendent 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 in. NPT) or Style 40 (3/4 in. NPT) Recessed Escutcheons provide 1/2 in. (12.7mm) of recessed adjustment or 3/4 in. (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.

#### Conventional Sprinklers

The 5.6 or 8.0 K-factor conventional sprinklers are intended to be installed either upright or pendent and, in either position, they produce a spherical water discharge pattern with approximately 50% of the discharge 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 conventional sprinklers (old style sprinklers) where special construction features require a unique water distribution; for fur vaults; or, replacement of similar sprinklers that had been installed prior to 1955.

#### Sidewall Sprinklers

The horizontal and vertical 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 NFPA, 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

### TY-B Stainless Steel Standard Response

TY8191	Upright 5.6K, 1/2 in. NPT
TY8291	Pendent 5.6K, 1/2 in. NPT
TY9191	Upright 8.0K, 3/4 in. NPT
TY9291	Pendent 8.0K, 3/4 in. NPT
TY8691	C/UP 5.6K, 1/2 in. NPT
TY9691	C/UP 8.0K, 3/4 in. NPT
TY8391	HSW 5.6K, 1/2 in. NPT
TY8491	VSW 5.6K, 1/2 in. NPT

### TY-FRB Stainless Steel Quick Response

TY8181	Upright 5.6K, 1/2 in. NPT
TY8281	Pendent 5.6K, 1/2 in. NPT
TY9181	Upright 8.0K, 3/4 in. NPT
TY9281	Pendent 8.0K, 3/4 in. NPT
TY8681	C/UP 5.6K, 1/2 in. NPT
TY9681	C/UP 8.0K, 3/4 in. NPT
TY8381	HSW 5.6K, 1/2 in. NPT
TY8481	VSW 5.6K, 1/2 in. NPT

### TY-B SMO Standard Response

TY8192	Upright 5.6K, 1/2 in. NPT
TY8292	Pendent 5.6K, 1/2 in. NPT
TY8692	C/UP 5.6K, 1/2 in. NPT
TY8392	HSW 5.6K, 1/2 in. NPT
TY8492	VSW 5.6K, 1/2 in. NPT

### TY-FRB SMO Quick Response

TY8182	Upright 5.6K, 1/2 in. NPT
TY8282	Pendent 5.6K, 1/2 in. NPT
TY8682	C/UP 5.6K, 1/2 in. NPT
TY8382	HSW 5.6K, 1/2 in. NPT
TY8482	VSW 5.6K, 1/2 in. NPT

### TY-B Titanium Standard Response

TY8193	Upright 5.6K, 1/2 in. NPT
TY8293	Pendent 5.6K, 1/2 in. NPT
TY8693	C/UP 5.6K, 1/2 in. NPT
TY8393	HSW 5.6K, 1/2 in. NPT
TY8493	VSW 5.6K, 1/2 in. NPT

### TY-FRB Titanium Quick Response

TY8183	Upright 5.6K, 1/2 in. NPT
TY8283	Pendent 5.6K, 1/2 in. NPT
TY8683	C/UP 5.6K, 1/2 in. NPT
TY8383	HSW 5.6K, 1/2 in. NPT
TY8483	VSW 5.6K, 1/2 in. NPT

## Technical Data

### Approvals

See Tables A, B, C, and D

### Maximum Working Pressure

175 psi (12,1 bar)

### Temperature Rating

See Tables A, B, C, and D

### Physical Characteristics

#### • Stainless Steel

The frame is free machining ANC4A Stainless Steel, per BS 3146 PT 2. The Deflector is Type 316L (UNS 31603) Stainless Steel per ASTM A479/479M or BS EN 10088 WN1.4401/4404. The Compression Screw and Button are Type 316L (UNS 31603) Stainless Steel per ASTM A479/479M or BS EN 10088 WN1.4404. The Sealing Assembly consists of a Disc Spring that is sealed on both its inside and outside faces with a TEFLON Gasket. The Disc Spring is 1/2 Hard Beryllium Nickel (UNS NO3360) Gold Plated per MIL G-45204, Type 3, Class 2. The bulb is glass.

#### • SMO

The Frame, Compression Screw, and Button are 254 SMO Duplex Stainless Steel per UNS S31254. The Deflector is High Performance Austenitic Stainless Steel per UNS S31254 or UNS N08926/N08367. The Sealing Assembly consists of a Disc Spring that is sealed on both its inside and outside faces with a TEFLON Gasket. The Disc Spring is 1/2 Hard Beryllium Nickel (UNS NO3360) Gold Plated per MIL G-45204, Type 3, Class 2. The bulb is glass.

#### • Titanium

The Frame is Titanium, Grade 2 per UNS R50400. The Deflector is Titanium, Grade 2 per ASTM B265-03. The Compression Screw is Titanium, Grade 5 per ASTM B348-03. The Button is Titanium, Grade 2 per ASTM B348. The Sealing Assembly consists of a Disc Spring that is sealed on both its inside and outside faces with a TEFLON Gasket. The Disc Spring is Titanium 6AL/4V Ti per AMS4911J. The bulb is glass.

## 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, 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. The Series TY-B and TY-FRB Conventional Sprinklers in pendent orientation and Vertical Sidewall Sprinklers are for non-recessed applications only.

Model K-Factor Response	Type	Temperature Rating	Bulb Liquid Color	SPRINKLER MATERIAL		
				Stainless Steel	SMO	Titanium
<b>TY-B 5.6 1/2 in. NPT Standard Response</b>	<b>Upright</b>	135°F (57°C)	Orange	1, 2, 3, 4	4	
		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			
	<b>Pendent</b>	135°F (57°C)	Orange	1, 2, 3, 4	4	
		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			
	<b>Recessed Pendent<sup>a</sup> Figure 13</b>	135°F (57°C)	Orange	1, 2	NAS <sup>c</sup>	
		155°F (68°C)	Red			
		175°F (79°C)	Yellow			
200°F (93°C)		Green				
286°F (141°C)		Blue				
<b>TY-B 8.0 3/4 in. NPT Standard Response</b>	<b>Upright</b>	135°F (57°C)	Orange	1, 2, 3, 4	N/A <sup>d</sup>	
		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			
	<b>Pendent</b>	135°F (57°C)	Orange	1, 2, 4	N/A <sup>d</sup>	
		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			
	<b>Recessed Pendent<sup>b</sup> Figure 14</b>	135°F (57°C)	Orange	1, 2	N/A <sup>d</sup>	
		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. 007q/01 and 007q/02)  
LPCB EC Certificate of Conformity — 0832-CPD-2020
  4. Lloyd's Register Certificate of Fire Approval — SAS F060123  
Lloyd's Register EC Type Examination (Module B) Certificate — MED0650147  
Lloyd's Register EC (Module D) Certificate of Conformity — MED 0750238
- a. Installed with Style 10 (1/2 in. NPT) Recessed Escutcheon  
b. Installed with Style 40 (3/4 in. NPT) Recessed Escutcheon  
c. NAS = No Approval Status  
d. N/A = Not Available

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

Model K-Factor Response	Type	Temperature Rating	Bulb Liquid Color	SPRINKLER MATERIAL		
				Stainless Steel	SMO	Titanium
<b>TY-FRB 5.6 1/2 in. NPT Quick Response</b>	<b>Upright</b>	135°F (57°C)	Orange	1, 2, 3, 4	4	
		155°F (68°C)	Red			
		175°F (79°C)	Yellow			
		200°F (93°C)	Green			
		286°F (141°C)	Blue			
	<b>Pendent</b>	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			
	<b>Recessed Pendent<sup>a</sup> Figure 13</b>	135°F (57°C)	Orange	1, 2	NAS <sup>c</sup>	
		155°F (68°C)	Red			
		175°F (79°C)	Yellow			
		200°F (93°C)	Green			
		286°F (141°C)	Blue			
<b>TY-FRB 8.0 3/4 in. NPT Quick Response</b>	<b>Upright</b>	135°F (57°C)	Orange	1, 2, 3, 4	N/A <sup>d</sup>	
		155°F (68°C)	Red			
		175°F (79°C)	Yellow			
		200°F (93°C)	Green			
		286°F (141°C)	Blue			
	<b>Pendent</b>	135°F (57°C)	Orange	1, 2, 3, 4		
		155°F (68°C)	Red			
		175°F (79°C)	Yellow			
		200°F (93°C)	Green			
		286°F (141°C)	Blue			
	<b>Recessed Pendent<sup>b</sup> Figure 14</b>	135°F (57°C)	Orange	1, 2		
		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. 007q/01 and 007q/02)  
LPCB EC Certificate of Conformity — 0832-CPD-2020
4. Lloyd's Register Certificate of Fire Approval — SAS F060123  
Lloyd's Register EC Type Examination (Module B) Certificate — MED0650147  
Lloyd's Register EC (Module D) Certificate of Conformity — MED 0750238

- a. Installed with Style 10 (1/2 in. NPT) Recessed Escutcheon
- b. Installed with Style 40 (3/4 in. NPT) Recessed Escutcheon
- c. NAS = No Approval Status
- d. N/A = Not Available

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

Model K-Factor Response	Type	Temperature Rating	Bulb Liquid Color	Sprinkler Material		
				Stainless Steel	SMO	Titanium
<b>TY-B</b> 5.6 1/2 in. NPT Standard Response	<b>Horizontal Sidewall</b>	135°F (57°C)	Orange	3, 4		4
		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			
	<b>Recessed Horizontal Sidewall<sup>a</sup> Figure 15</b>	135°F (57°C)	Orange	NAS <sup>c</sup>		NAS <sup>c</sup>
		155°F (68°C)	Red			
		175°F (79°C)	Yellow			
		200°F (93°C)	Green			
		286°F (141°C)	Blue			
	<b>Vertical Sidewall</b>	135°F (57°C)	Orange	3, 4		4
		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				
<b>TY-FRB</b> 5.6 1/2 in. NPT Quick Response	<b>Horizontal Sidewall</b>	135°F (57°C)	Orange	3, 4		4
		155°F (68°C)	Red			
		175°F (79°C)	Yellow			
		200°F (93°C)	Green			
		286°F (141°C)	Blue			
	<b>Recessed Horizontal Sidewall<sup>a</sup> Figure 15</b>	135°F (57°C)	Orange	NAS		NAS
		155°F (68°C)	Red			
		175°F (79°C)	Yellow			
		200°F (93°C)	Green			
		286°F (141°C)	Blue			
	<b>Vertical Sidewall</b>	135°F (57°C)	Orange	3,4		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. 007q/01 and 007q/02)  
LPCB EC Certificate of Conformity — 0832-CPD-2020
4. Lloyd's Register Certificate of Fire Approval — SAS F060123  
Lloyd's Register EC Type Examination (Module B) Certificate — MED0650147  
Lloyd's Register EC (Module D) Certificate of Conformity — MED 0750238

- a. Installed with Style 10 (1/2 in. NPT) Recessed Escutcheon
- b. Installed with Style 40 (3/4 in. NPT) Recessed Escutcheon
- c. NAS = No Approval Status
- d. N/A = Not Available

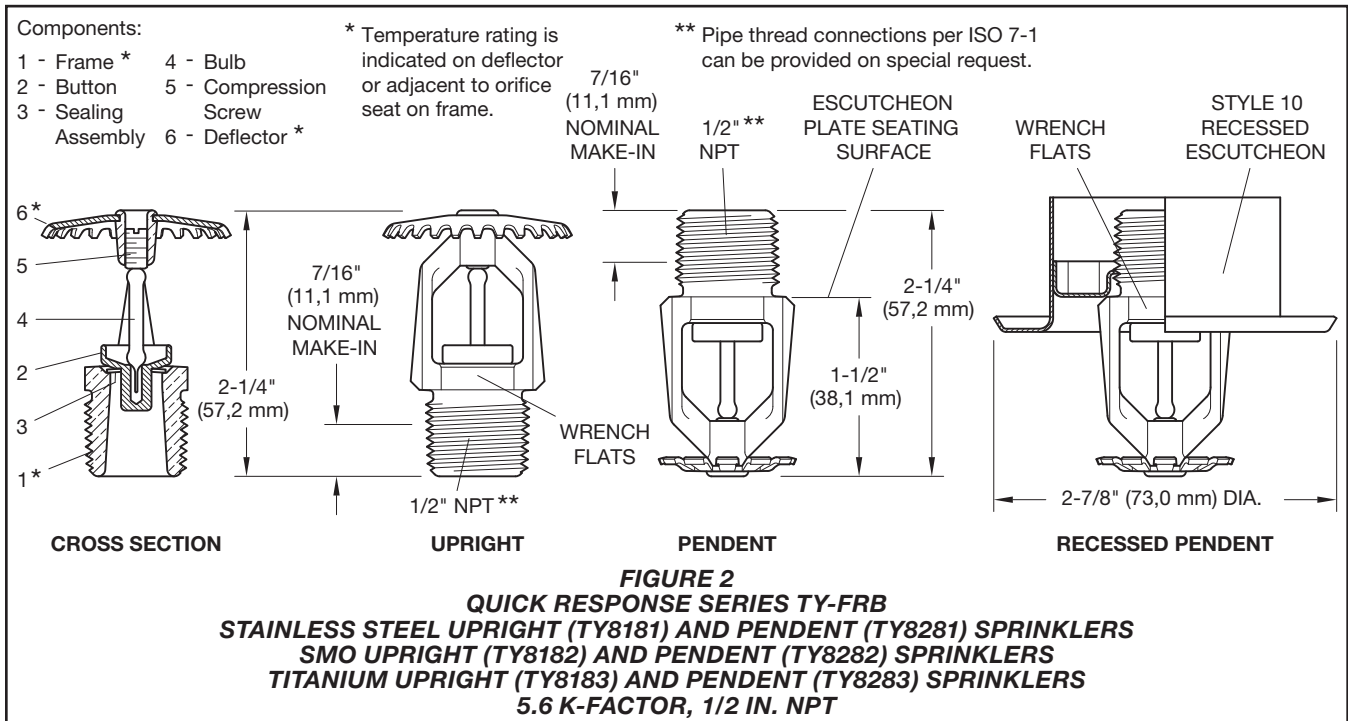
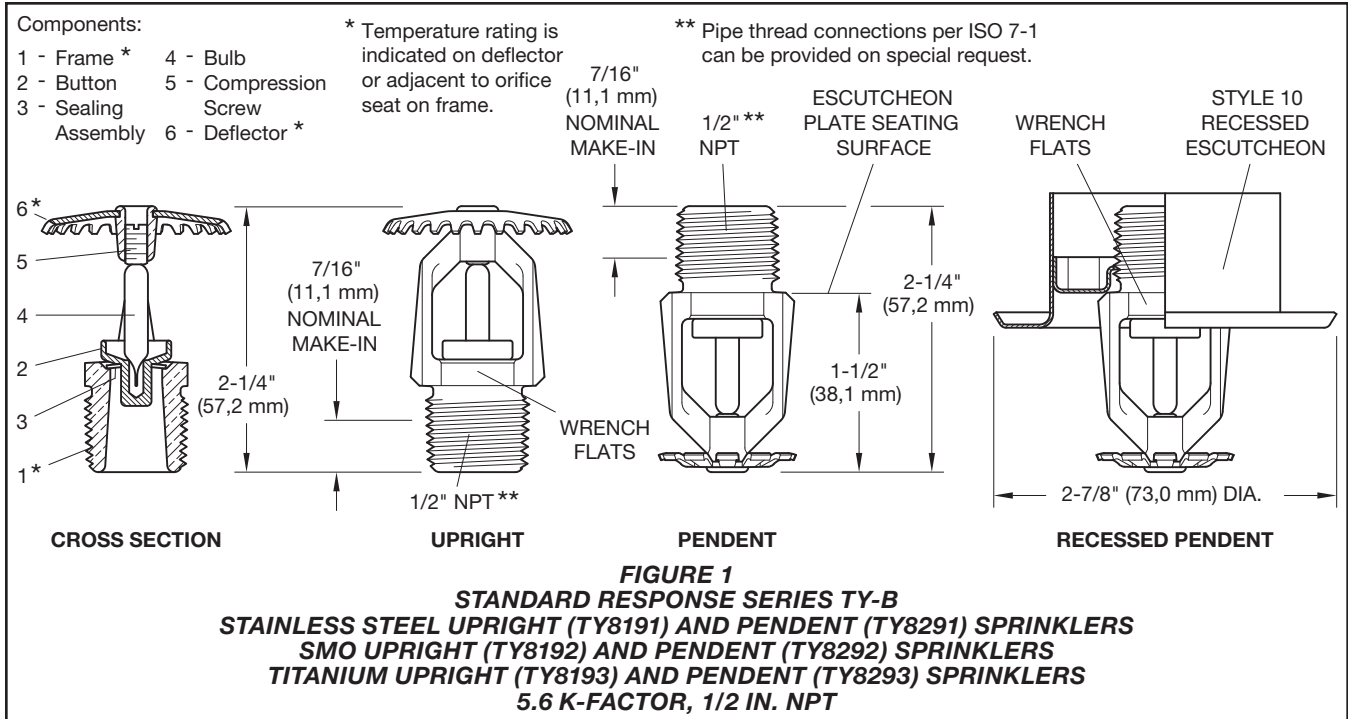
**TABLE C**  
**SERIES TY-B STANDARD RESPONSE AND SERIES TY-FRB QUICK RESPONSE**  
**5.6 K-FACTOR HORIZONTAL SIDEWALL AND VERTICAL SIDEWALL SPRINKLERS**  
**LABORATORY LISTINGS AND APPROVALS**

Model K-Factor Response	Type	Temperature Rating	Bulb Liquid Color	Sprinkler Material		
				Stainless Steel	SMO	Titanium
<b>TY-B 5.6 1/2 in. NPT Standard Response</b>	<b>Conventional Upright</b>	135°F (57°C)	Orange	3, 4	4	
		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			
<b>TY-FRB 5.6 1/2 in. NPT Quick Response</b>	<b>Conventional Upright</b>	135°F (57°C)	Orange	3, 4	4	
		155°F (68°C)	Red			
		175°F (79°C)	Yellow			
		200°F (93°C)	Green			
		286°F (141°C)	Blue			
<b>TY-B 8.0 3/4 in. NPT Standard Response</b>	<b>Conventional Upright</b>	135°F (57°C)	Orange	4	N/A <sup>d</sup>	
		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			
<b>TY-FRB 8.0 3/4 in. NPT Quick Response</b>	<b>Conventional Upright</b>	135°F (57°C)	Orange	4	N/A <sup>d</sup>	
		155°F (68°C)	Red			
		175°F (79°C)	Yellow			
		200°F (93°C)	Green			
		286°F (141°C)	Blue			

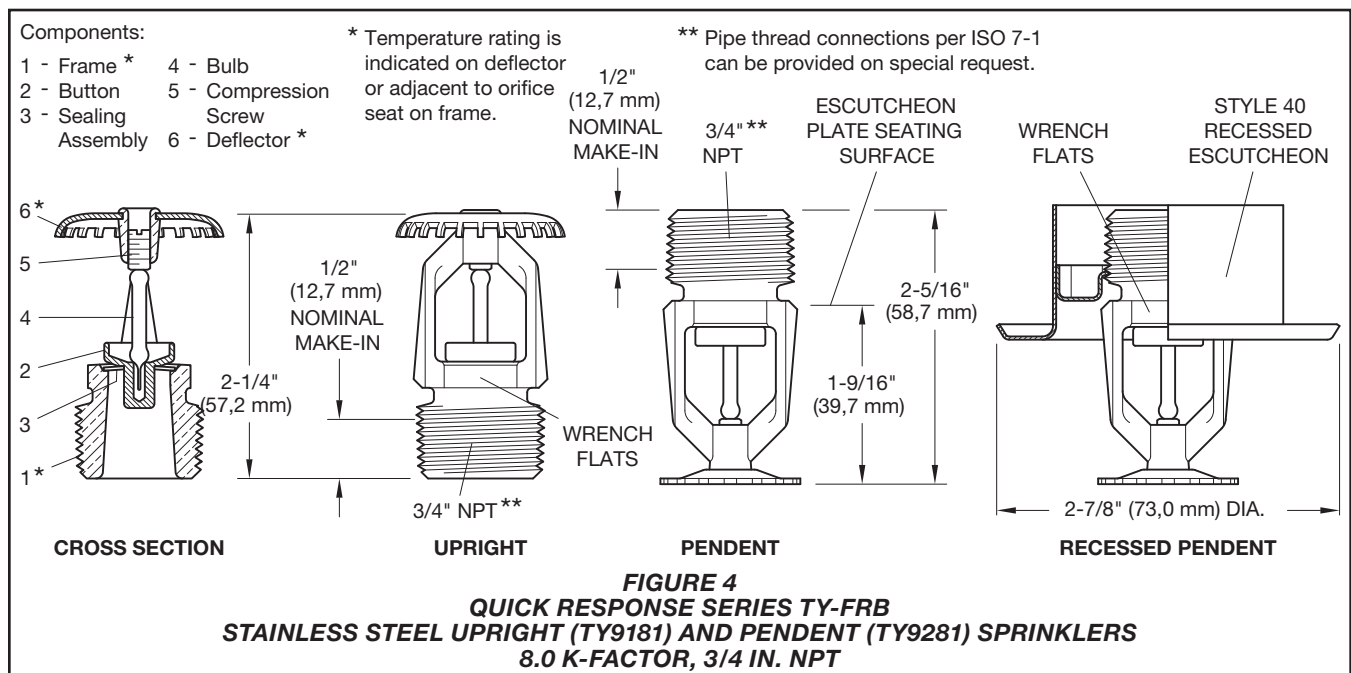
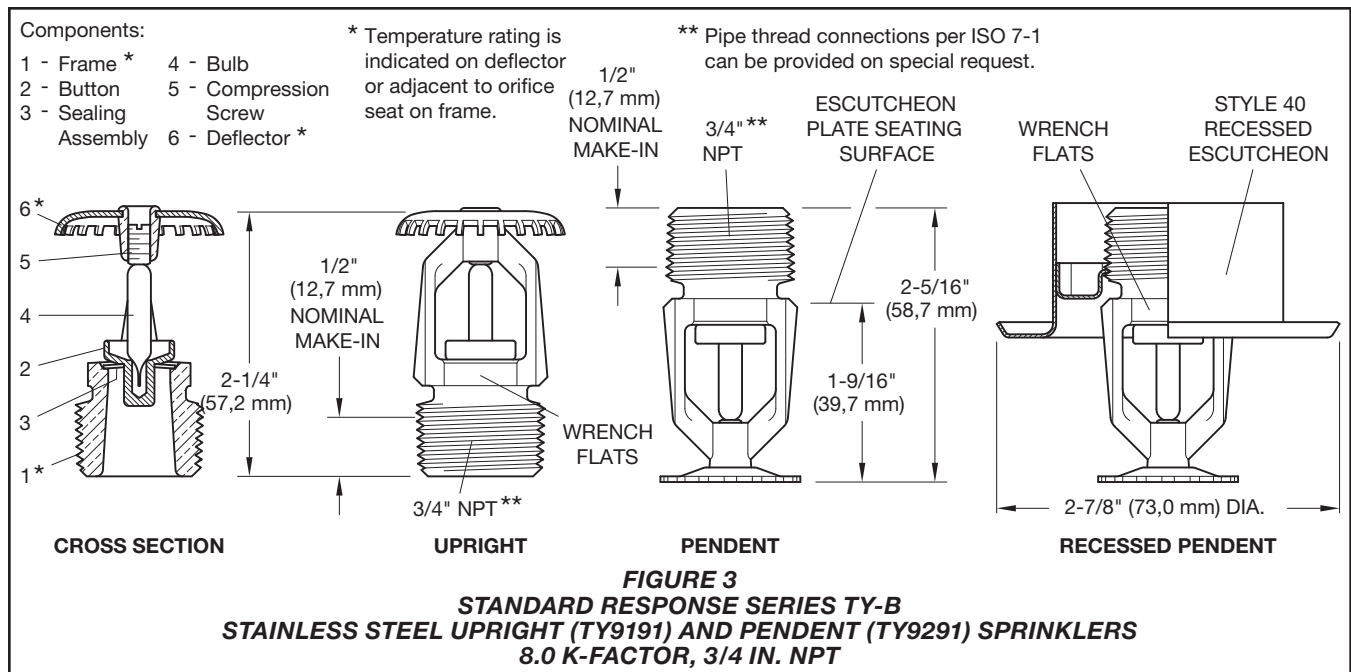
**NOTES:**

1. UL Listed
  2. C-UL Listed
  3. LPCB Approved (LPCB Ref. No. 007q/01 & 007q/02)  
LPCB EC Certificate of Conformity — 0832-CPD-2020
  4. Lloyd's Register Certificate of Fire Approval — SAS F060123  
Lloyd's Register EC Type Examination (Module B) Certificate — MED0650147  
Lloyd's Register EC (Module D) Certificate of Conformity — MED 0750238
- a. Installed with Style 10 (1/2 in. NPT) Recessed Escutcheon  
b. Installed with Style 40 (3/4 in. NPT) Recessed Escutcheon  
c. NAS = No Approval Status  
d. N/A = Not Available

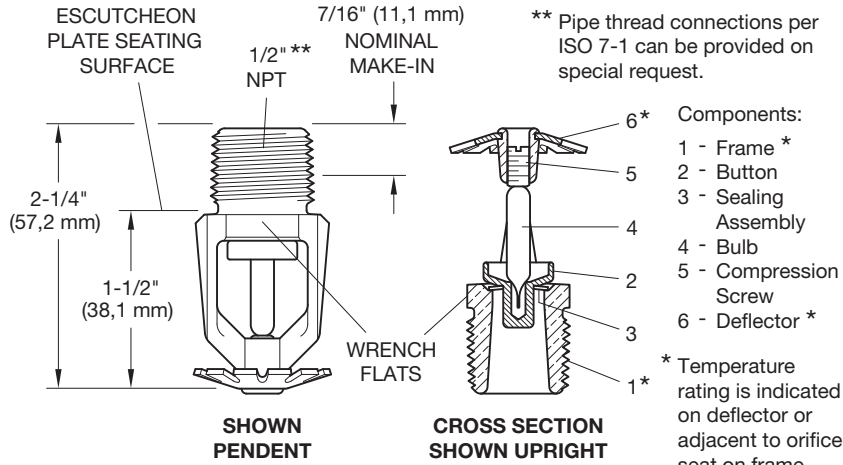
**TABLE D**  
**SERIES TY-B STANDARD RESPONSE AND SERIES TY-FRB QUICK RESPONSE**  
**5.6 AND 8.0 K-FACTOR CONVENTIONAL UPRIGHT (C/UP) SPRINKLERS**  
**LABORATORY LISTINGS AND APPROVALS**



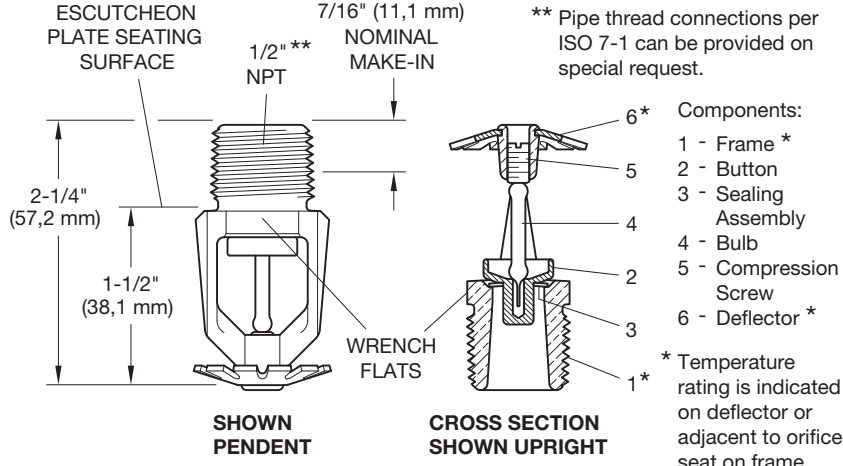




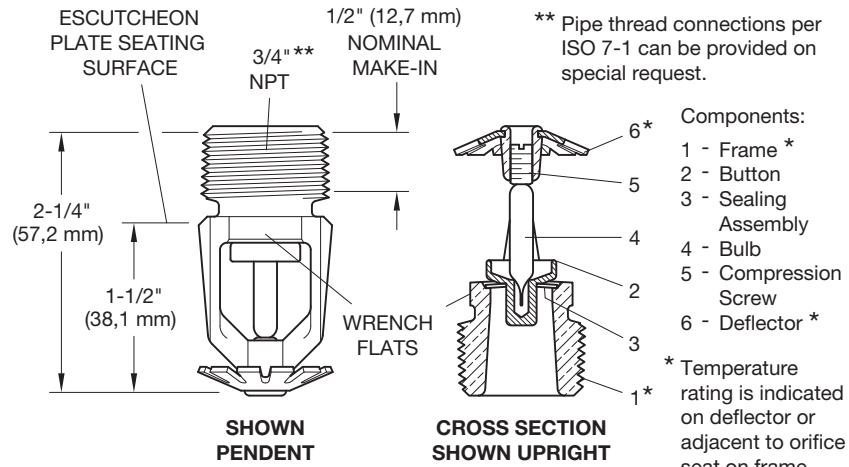




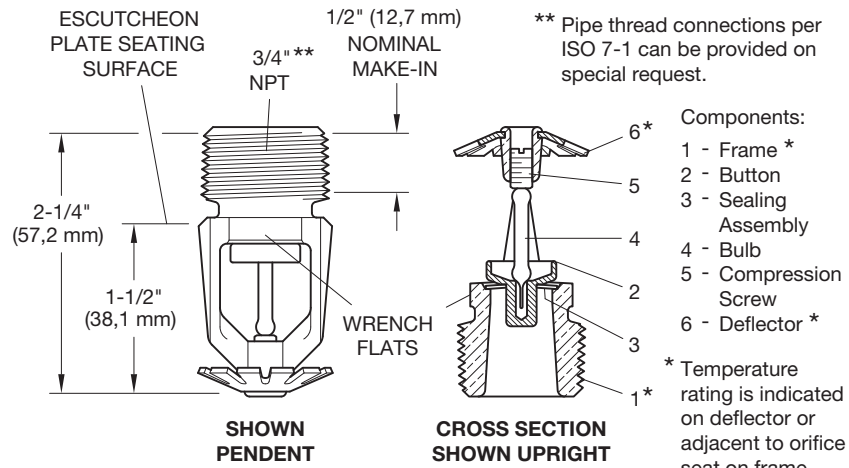
**FIGURE 5**  
**SERIES TY-B CONVENTIONAL STANDARD RESPONSE SPRINKLER**  
**STAINLESS STEEL (TY9691), SMO (TY8692) AND TITANIUM (TY8693)**  
**5.6 K-FACTOR, 1/2 IN. NPT**



**FIGURE 6**  
**SERIES TY-FRB CONVENTIONAL QUICK RESPONSE SPRINKLER**  
**STAINLESS STEEL (TY9681), SMO (TY8682) AND TITANIUM (TY8683)**  
**5.6 K-FACTOR, 1/2 IN. NPT**



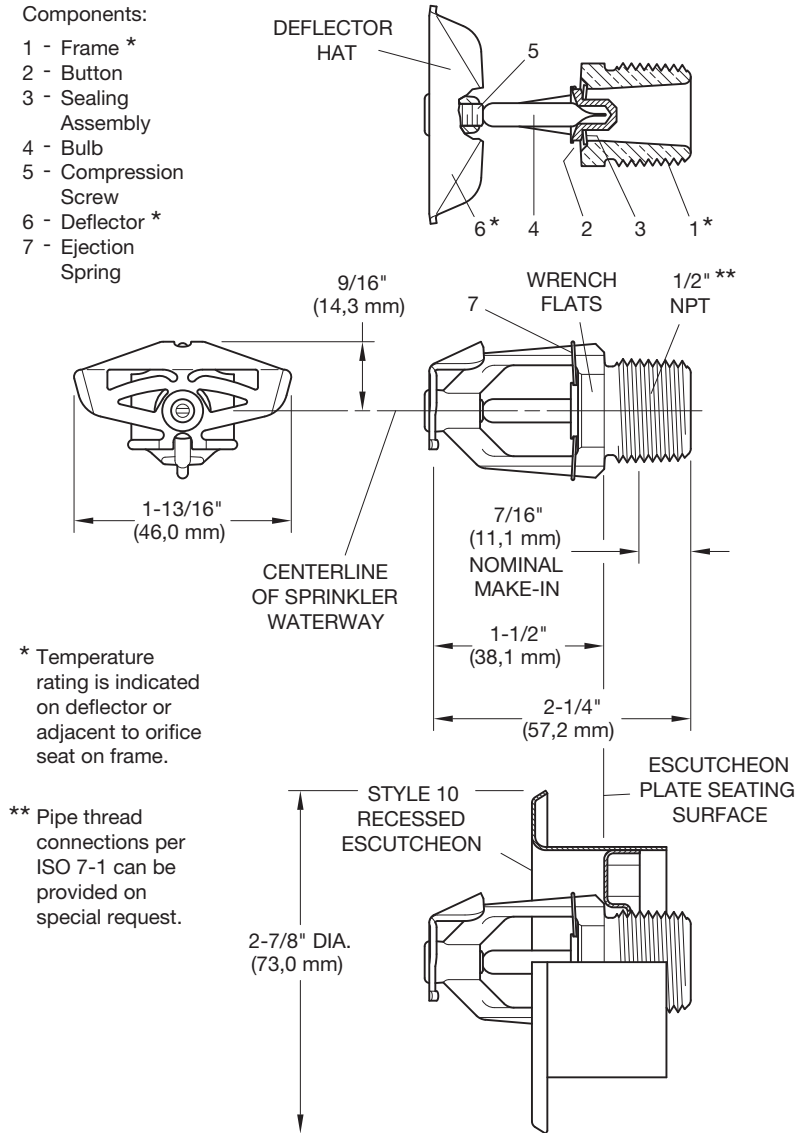
**FIGURE 7**  
**SERIES TY-B CONVENTIONAL STANDARD RESPONSE SPRINKLER**  
**STAINLESS STEEL (TY9691)**  
**8.0 K-FACTOR, 3/4 IN. NPT**



**FIGURE 8**  
**SERIES TY-FRB CONVENTIONAL QUICK RESPONSE SPRINKLER**  
**STAINLESS STEEL (TY9681)**  
**8.0 K-FACTOR, 3/4 IN. NPT**

Components:

- 1 - Frame \*
- 2 - Button
- 3 - Sealing Assembly
- 4 - Bulb
- 5 - Compression Screw
- 6 - Deflector \*
- 7 - Ejection Spring



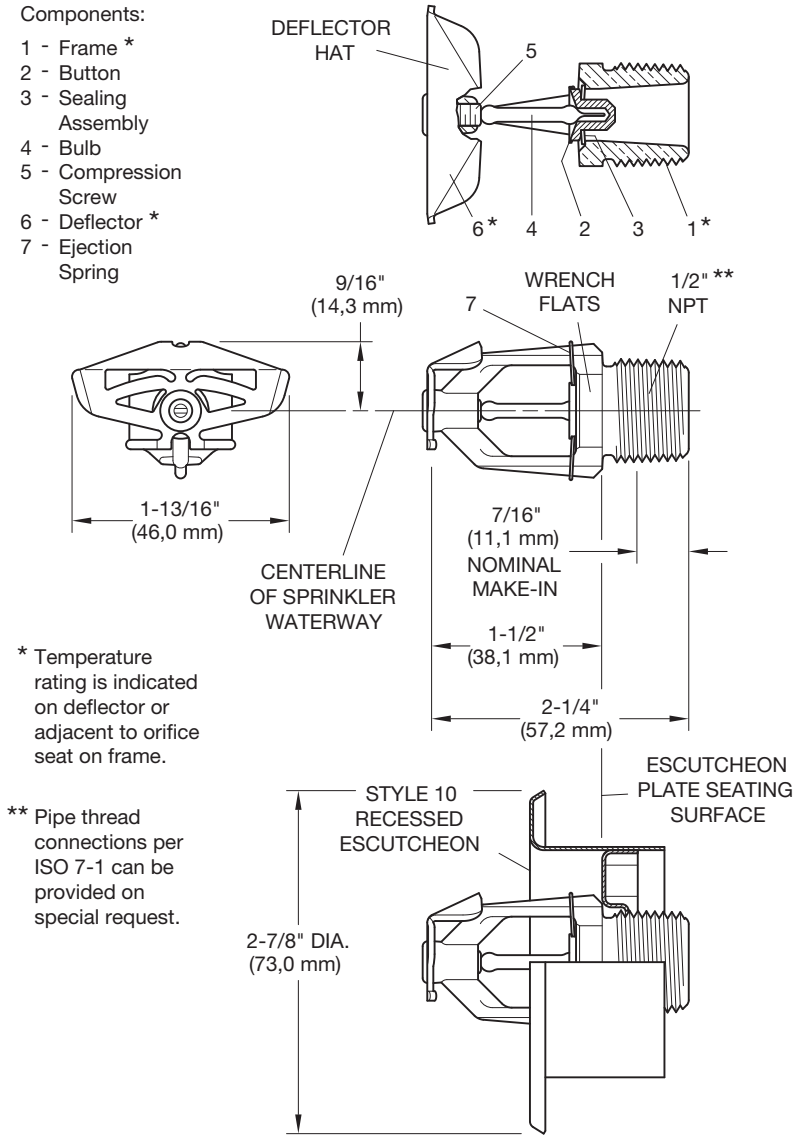
\* Temperature rating is indicated on deflector or adjacent to orifice seat on frame.

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

**FIGURE 9**  
**SERIES TY-B HORIZONTAL SIDEWALL STANDARD RESPONSE SPRINKLER**  
**STAINLESS STEEL (TY8391), SMO (TY8392) AND TITANIUM (TY8393)**  
**5.6 K-FACTOR, 1/2 IN. NPT**

**Components:**

- 1 - Frame \*
- 2 - Button
- 3 - Sealing Assembly
- 4 - Bulb
- 5 - Compression Screw
- 6 - Deflector \*
- 7 - Ejection Spring

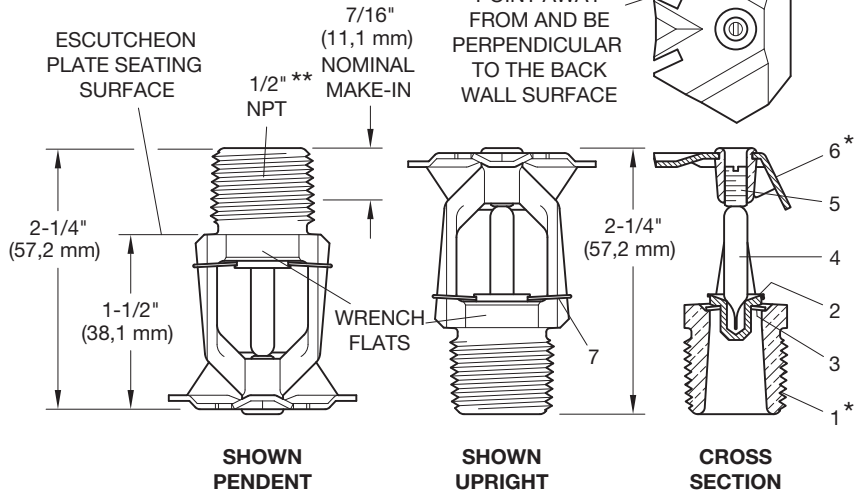


\* Temperature rating is indicated on deflector or adjacent to orifice seat on frame.

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

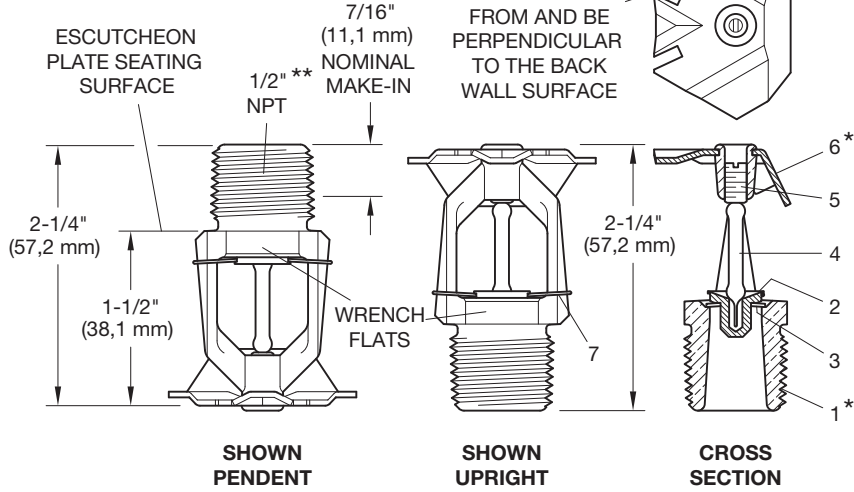
**FIGURE 10**  
**SERIES TY-FRB HORIZONTAL SIDEWALL QUICK RESPONSE SPRINKLER**  
**STAINLESS STEEL (TY8381), SMO (TY8382) AND TITANIUM (TY8383)**  
**5.6 K-FACTOR, 1/2 IN. NPT**

- Components:
- |                      |                       |  |  |
|----------------------|-----------------------|--|--|
| 1 - Frame *          | 5 - Compression Screw | * 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. |
| 2 - Button           | 6 - Deflector *       |  |  |
| 3 - Sealing Assembly | 7 - Ejection Spring   |  |  |
| 4 - Bulb             |                       |  |  |

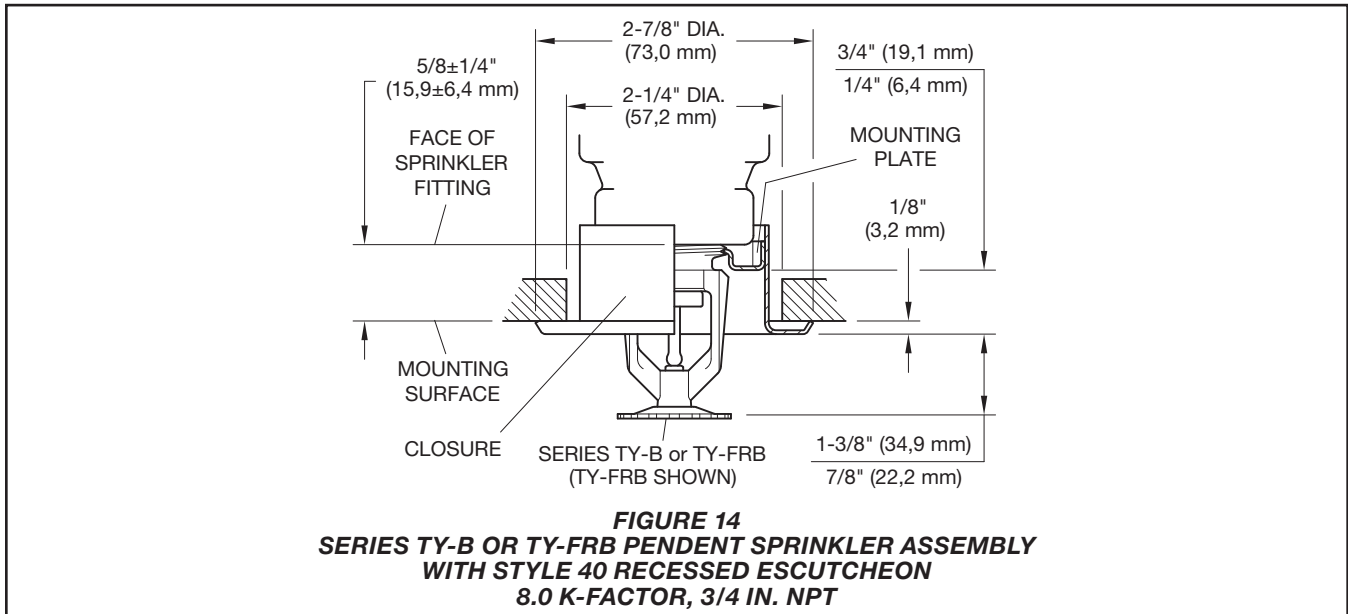
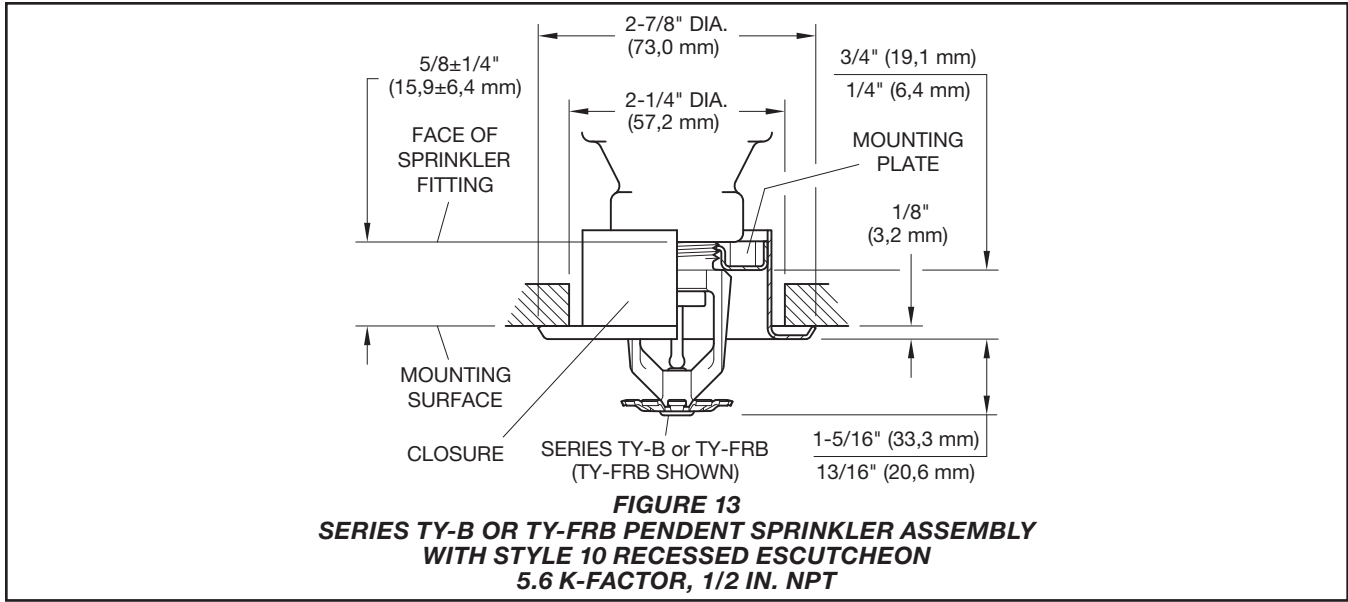


**FIGURE 11**  
**SERIES TY-B VERTICAL SIDEWALL STANDARD RESPONSE SPRINKLER**  
**STAINLESS STEEL (TY8491), SMO (TY8492) AND TITANIUM (TY8493)**  
**5.6 K-FACTOR, 1/2 IN. NPT**

- Components:
- |                      |                       |  |  |
|----------------------|-----------------------|--|--|
| 1 - Frame *          | 5 - Compression Screw | * 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. |
| 2 - Button           | 6 - Deflector *       |  |  |
| 3 - Sealing Assembly | 7 - Ejection Spring   |  |  |
| 4 - Bulb             |                       |  |  |



**FIGURE 12**  
**SERIES TY-FRB VERTICAL SIDEWALL QUICK RESPONSE SPRINKLER**  
**STAINLESS STEEL (TY8481), SMO (TY8482) AND TITANIUM (TY8483)**  
**5.6 K-FACTOR, 1/2 IN. NPT**



## 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 in. (1,6 mm) for the 135°F (57°C) and 3/32 in. (2,4 mm) for the 360°F (182°C) temperature ratings.

A 1/2 in. NPT sprinkler joint should be obtained with a minimum to maximum torque of 7 to 14 lb-ft (9,5 to 19,0 N-m). A 3/4 in. NPT sprinkler joint should be obtained with a minimum to maximum

torque of 10 to 20 lb-ft (13,4 to 26,8 N-m). 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.

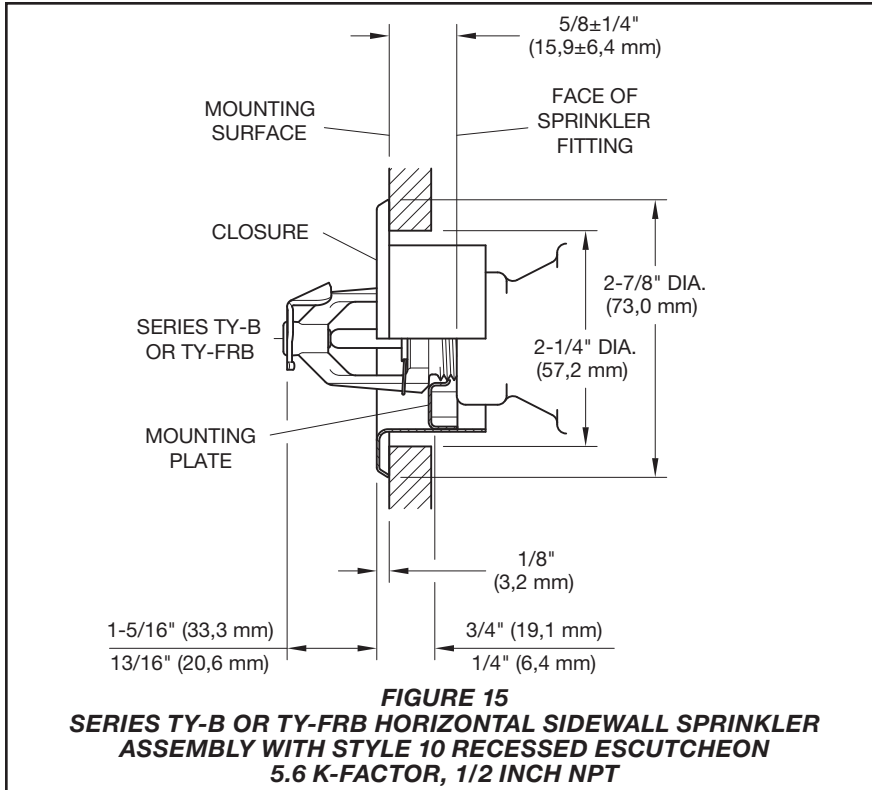
### Series TY-B and TY-FRB Upright and Pendent Sprinklers

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

**Step 1A.** Pendent sprinklers must be installed in the pendent position, and upright sprinklers are to be installed in the upright 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 (See Figure 16). With reference to Figures 1, 2, 3, and 4, the W-Type 6 Sprinkler Wrench is to be applied to the wrench flats.



**Series TY-B and TY-FRB Recessed Pendent Sprinklers**

The 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 pipe 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 (See Figure 17). With reference to Figures 1, 2, 3, and 4 the W-Type 7 Recessed Sprinkler Wrench is to be applied to the wrench flats.

**Step 3B.** After the ceiling has been installed or the finish coat has been applied, slide on 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.

**Series TY-B and TY-FRB Conventional Sprinklers**

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

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

**Step 2C.** Tighten the sprinkler into the sprinkler fitting using only the W-Type 6 Sprinkler Wrench (See Figure 16). With reference to Figures 5, 6, 7, and 8 the W-Type 6 Sprinkler Wrench is to be applied to the wrench flats.

**Series TY-B and TY-FRB Horizontal and Vertical Sidewall Sprinklers**

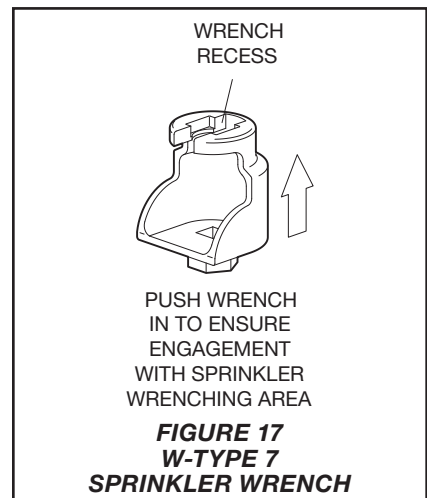
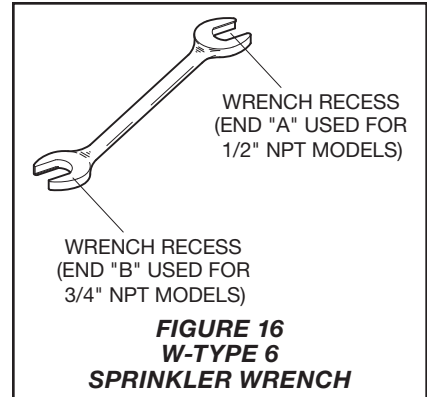
The Series TY-B and TY-FRB Horizontal and Vertical Sidewall Sprinklers must be installed in accordance with the following instructions:

**Step 1D.** 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.

Vertical sidewall sprinklers are to be installed in the upright or pendent position with the arrow on the Deflector pointing away from the wall.

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

**Step 3D.** Tighten the sprinkler into the sprinkler fitting using only the W-Type 6 Sprinkler Wrench (See Figure 16). With reference to Figures 9, 10, 11, and 12 the W-Type 6 Sprinkler Wrench is to be applied to the wrench flats.



**Series TY-B and TY-FRB Recessed Horizontal Sidewall Sprinklers**

The 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 pipe 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 (See Figure 17). With reference to Figures 9 and 10 the W-Type 6 Sprinkler Wrench is to be applied to the wrench flats.

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



P/N 57 — XXX — 0 — XXX — SUFFIX

Standard Response (SR)		Quick Response (QR)		Temperature Rating		Material	
570	TY-B 5.6K Upright SR	370	TY-FRB 5.6K Upright QR	135	135°F (57°C)	None	Stainless Steel
590	TY-B 8.0K Upright SR	390	TY-FRB 8.0K Upright QR	155	155°F (68°C)	M	SMO**
571	TY-B 5.6K Pendent SR	371	TY-FRB 5.6K Pendent QR	175	175°F (79°C)	T	Titanium**
591	TY-B 8.0K Pendent SR	391	TY-FRB 8.0K Pendent QR	200	200°F (93°C)	**5.6K only	
573	TY-B 5.6K C/UP SR	373	TY-FRB 5.6K C/UP QR	286	286°F (141°C)		
593	TY-B 8.0K C/UP SR	393	TY-FRB 8.0K C/UP QR	360	360°F (182°C)*		
578	TY-B 5.6K HSW SR	378	TY-FRB 5.6K HSW QR	* TY-B only			
575	TY-B 5.6K VSW SR	375	TY-FRB 5.6K VSW QR				

**TABLE E**  
**SERIES TY-B AND TY-FRB SPRINKLERS ALTERNATE MATERIALS OF CONSTRUCTION**  
**PART NUMBER SELECTION**

## 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. See the Installation Section for more information.

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. 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 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 NFPA (for example, 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).

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), (specify Standard Response or Quick Response), (specify K-factor), (specify) temperature rating, (specify Pendent Upright, C/UP, HSW, or VSW) Sprinkler with (specify type material: Stainless Steel, SMO, or Titanium), P/N (specify from Table E)

### Recessed Escutcheon

Specify: Style (10 or 40) Recessed Escutcheon with (specify material or finish\*), P/N (specify)

\*See Technical Data Sheet TFP770.

### Sprinkler Wrench

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

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