

Series TY-B & TY-FRB, 10 mm Orifice, ISO 7-R 3/8 Upright, Pendent, and Recessed Pendent Sprinklers Standard and Quick Response

General Description

The TYCO Series TY-B (5 mm Bulb) and TY-FRB (3 mm Bulb), 10 mm orifice Upright and Pendent Sprinklers are automatic sprinklers of the frangible bulb type. They are spray sprinklers intended for use in fire sprinkler systems designed in accordance with the installation rules recognized by the applicable approval agency. Both the Upright and Pendent Sprinklers produce a hemispherical water distribution pattern below the deflector.

The recessed version of the Series TY-B and TY-FRB Pendent Sprinklers, where applicable, are intended for use in areas with a finished ceiling. They use a two-piece Style 70 (3/8 inch NPT) Recessed Escutcheon with 12 mm of recessed adjustment or up to 20 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.

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 recognized by the Approval Agency, in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the performance of these devices.

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.

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)

TY2108	..... Upright, 5 mm bulb
TY2208	..... Pendent, 5 mm bulb
TY2109	..... Upright, 3 mm bulb
TY2209	..... Pendent, 3 mm bulb

Technical Data

Approvals

LPCB and VdS Approved
Refer to Table A

Maximum Working Pressure

12,1 bar

Discharge Coefficient

$K = 58 \text{ lpm}/\text{bar}^{1/2}$

Temperature Rating

Refer to Table A

Finishes

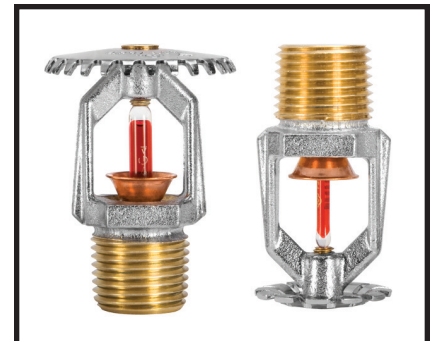
Refer to Table A

Physical Characteristics

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

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 Series TY-B and TY-FRB 10 mm Orifice Pendent and Upright Sprinklers are intended for fire protection systems designed in accordance with the standard installation rules recognized by the applicable approval agency. Only the Style 70 Escutcheon is to be used for recessed pendent installation.

			SPRINKLER FINISH		
TYPE	TEMPERATURE	BULB LIQUID COLOR	NATURAL BRASS	CHROME PLATED	POLYESTER***
5 mm Bulb					
UPRIGHT (TY2108) PENDENT (TY2208)	135°F (57°C)	Orange	1, 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			
RECESSED PENDENT (TY2208)	135°F (57°C)	Orange	1		
	155°F (68°C)	Red			
	175°F (79°C)	Yellow			
	200°F (93°C)	Green			
3 mm Bulb					
UPRIGHT (TY2109) PENDENT (TY2209)	135°F (57°C)	Orange	2, 4		
	155°F (68°C)	Red			
	175°F (79°C)	Yellow			
	200°F (93°C)	Green			
	286°F (141°C)	Blue			
RECESSED PENDENT (TY2209)	135°F (57°C)	Orange	3		
	155°F (68°C)	Red			
	175°F (79°C)	Yellow			
	200°F (93°C)	Green			

NOTES:
1. Approved by the Loss Prevention Certification Board (LPCB Ref. No. 094a/05 & 007k/03) as Standard Response.
2. Approved by the Loss Prevention Certification Board (LPCB Ref. No. 007k/04) as Quick Response.
3. Approved by the Loss Prevention Certification Board (LPCB Ref. No. 007k/04) as Unclassified Response.
4. VdS Approved
For details, contact Johnson Controls, Enschede, The Netherlands, Tel. 31-53-428-4444/Fax 31-53-428-3377.
***Frame and deflector only.
N/A: Not Available

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

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

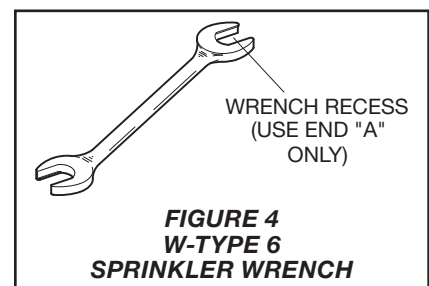
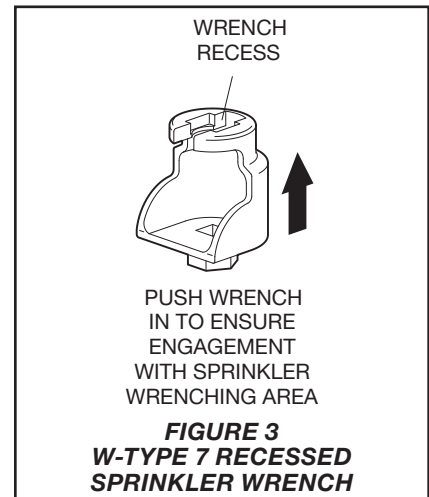
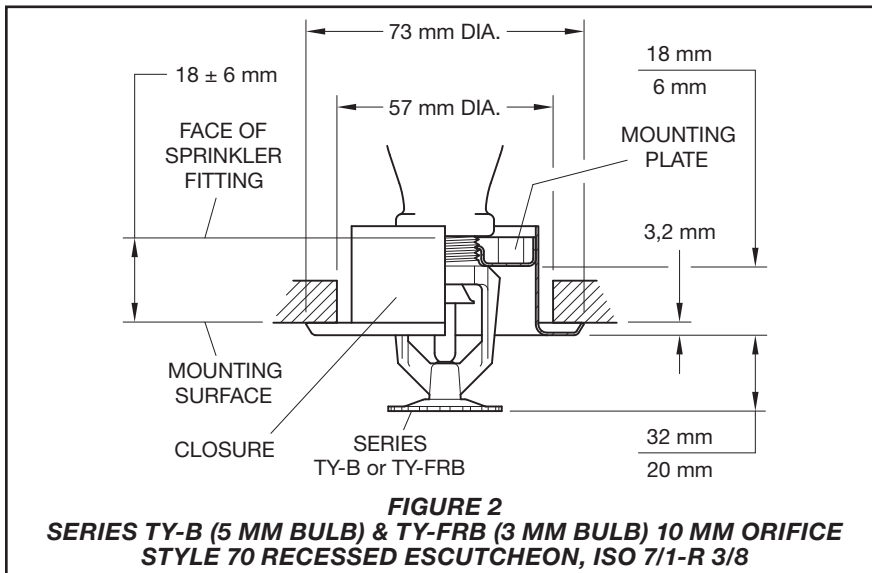
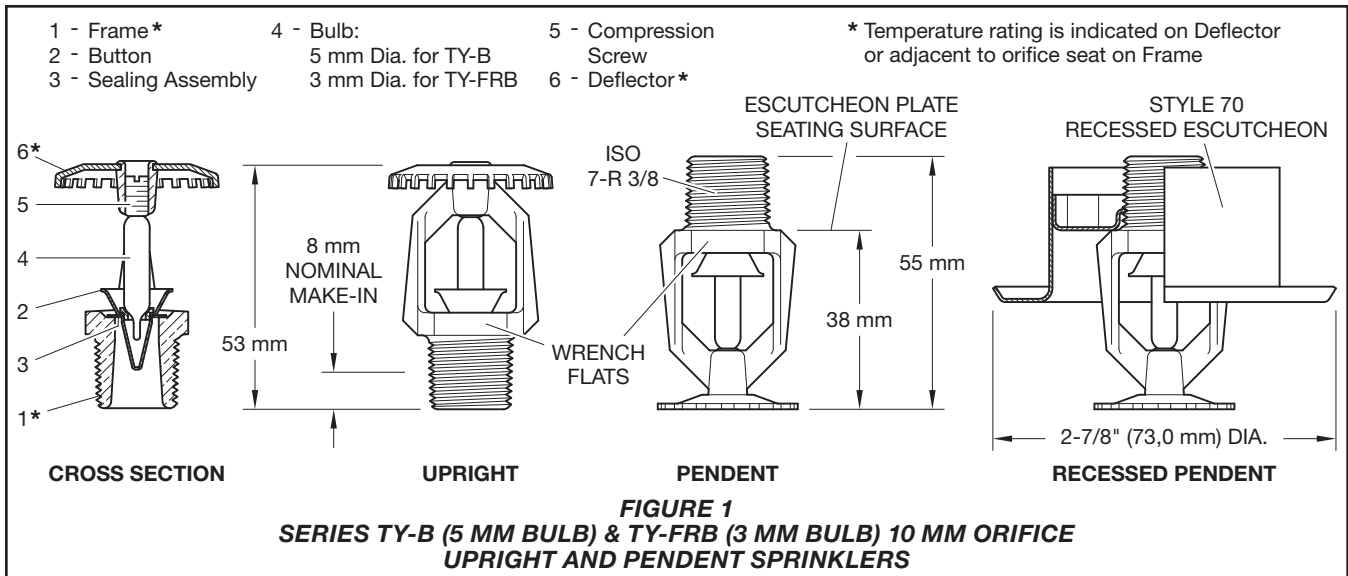
A leak-tight ISO 7-R 3/8 sprinkler joint should be obtained by applying a minimum to maximum torque of 8 to 16 N·m. Higher levels of torque can distort the sprinkler Inlet with consequent leakage or impairment of the sprinkler.

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

Step 1. Pendent sprinklers are to be installed in the pendent position, and upright sprinklers are to be installed 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 6 Sprinkler Wrench (Figure 4). With reference to Figure 1, the W-Type 6 Sprinkler Wrench is to be applied to the sprinkler wrench flats.



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

Step A. After installing the Style 70 Mounting Plate over the sprinkler threads with pipe-thread sealant applied to the pipe threads, hand-tighten the sprinkler into the sprinkler fitting.

Step B. Tighten the sprinkler into the sprinkler fitting using only the W-Type 7 Recessed Sprinkler Wrench (Figure 3). With reference to Figure 1, apply the W-Type 7 Recessed Sprinkler Wrench to the sprinkler wrench flats.

Step C. After ceiling installation and finishing, slide on the Style 70 Closure over the Series TY-FRB Sprinkler and push the Closure over the Mounting Plate until its flange comes in contact with the ceiling.

P/N57 - XXX - X - XXX

SIN			SPRINKLER FINISH		TEMPERATURE RATINGS	
580	UPRIGHT 5 mm Bulb	TY2108	1	NATURAL BRASS	135	135°F (57°C)
581	PENDENT 5 mm Bulb	TY2208	3	PURE WHITE (RAL9010)* POLYESTER	155	155°F (68°C)
380	UPRIGHT 3 mm Bulb	TY2109	4	SIGNAL WHITE (RAL9003) POLYESTER	175	175°F (79°C)
381	PENDENT 3 mm Bulb	TY2209	9	CHROME PLATED	200	200°F (93°C)
					286	286°F (141°C)
					360	360°F (182°C) (5 mm Bulb Only)

* Eastern Hemisphere sales only

TABLE B
SERIES TY-B (5 MM BULB) & TY-FRB (3 MM BULB) 10 MM ORIFICE
UPRIGHT AND PENDENT SPRINKLERS
PART NUMBER SELECTION

Care and Maintenance

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

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.

Absence of an escutcheon, which is used to cover a clearance hole, can 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. Refer to the Installation section for additional information.

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 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

For warranty terms and conditions, visit 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: (SIN), Series (TY-B or TY-FRB), (Standard or Quick Response), 10 mm Orifice, (temperature rating), (Pendent or Upright) Sprinkler with (finish), P/N (from Table B)

Recessed Escutcheon

Specify: Style 70 Recessed Escutcheon with (specify*) 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 Sprinkler Wrench, P/N 56-850-4-001