COLD STORAGE

Wiginton FIRE SYSTEMS

6363 Greenland Rd Jacksonville, Fl 32258
TEL: 904-262-6107 - FAX: 904-268-7268
www.wigintonfiresystems.com

FIRE PROTECTION PRODUCT DATA

US Cold Storage Office

211 NE McClosky Avenue
Lake City, Florida 32055

The materials submitted in this package...

are intended to describe the type and quality of all materials to be used on this project. This submittal intends that all materials, appliances, pieces, parts, and craftsmanship, will be equal to and/or better than the specific item shown and that actual per foot friction losses will be equal to and/or less than indicated herein.

Some of the items included may be substituted due to common procurement, stocking and supply procedures, scheduling requirements, etc. at the option of WFS, however ALL supplied and installed materials will meet the requirements of the applicable N.F P.A code in effect at the time of installation

All materials and equipment furnished shall be new and approved by the Underwriters' Laboratories, Inc (UL), Factory Mutual (F/M), and/or American Water Works Association (AWWA) where applicable.

Wiginton Fire Systems
Threaded and Flanged
Fittings Submittal

All of the threaded or flanged fittings to be used on this project will meet or exceed the minimum requirements of one or more of the following standards as required by Sections 6.4 and 6.5 of NFPA 13-2007 edition:

ANSI B16.4	**Cast Iron Threaded Fittings, Class 125 and 250**
ANSI B16.1	**Cast Iron Pipe Flanges and Flanged Fittings**
ANSI B16.3	**Ductile Iron, Class 500 and Galvanized/Malleable Iron Threaded Fittings, Class 150 and 300**

Note: Fitting manufacturers may vary. All fittings will be installed in strict accordance with the guidelines of NFPA 13. These fittings are not specially listed for specific fire sprinkler applications and therefore do not require the submittal of manufacturer's installation instructions according to paragraph 22.1.4 of NFPA 13-2007 edition.

REVISED

Wiginton Fire Systems
Steel Pipe Submittal

All of the steel pipe to be used on this project will meet or exceed the minimum requirements of one or more of the following standards as required by Section 6.3 of NFPA 13-2007 edition:

ASTM A-795	**Specification for Black and Hot-Dipped Zinc Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use**
ANSI/ASTM A-53	**Specification for Black and Hot-Dipped Zinc Coated (Galvanized) Welded and Seamless Steel Pipe**
ASTM A-135	**Specification for Electric – Resistance Welded Steel Pipe**

Note: Pipe/Tube manufacturers may vary. As per Section 6.3.8 of NFPA 13-2007 edition, all piping shall be marked along its length to properly identify its type, schedule and manufacturing standard.

All steel piping will be installed in strict accordance with the guidelines of NFPA 13. This pipe is not specially listed for specific fire sprinkler applications and therefore does not require the submittal of manufacturer's installation instructions as noted in paragraph 22.1.4 of NFPA 13-2007 edition.

Additional approvals or listings are <u>not</u> required when:

1. Steel pipe meeting the above referenced ASTM specifications is used and joined by welding or roll-grooved pipe and fittings, the minimum nominal wall thickness for pressures up to 300 psi shall be in accordance with Schedule 10 for sizes up to 6 inches and .188 inches for 8" – 10" pipe.
2. Steel pipe meeting the above referenced ASTM specifications is used and joined by threaded fittings, the minimum wall thickness shall be in accordance with Schedule 40 in sizes less than 8 inches for pressures up to 300 psi.

Exception: Pipe meeting the above referenced ASTM specifications with wall thickness and pressure limitations less than Schedule 40 for threading or Schedule 10 for welding and roll-grooving, which have been investigated for suitability in automatic sprinkler installations and listed for this service, shall be permitted when installed in accordance with their UL or FM listing limitations.

tyco / Fire & Building Products

Technical Services: Tel: (800) 381-9312 / Fax: (800) 791-5500

Series TY-FRB — 2.8, 4.2, 5.6, and 8.0 K-factor Upright, Pendent, and Recessed Pendent Sprinklers Quick Response, Standard Coverage

General Description

The Tyco® Series TY-FRB, 2.8, 4.2, 5.6, and 8.0 K-factor, Upright and Pendent Sprinklers described in this data sheet are quick response - standard coverage, decorative 3 mm glass bulb type spray sprinklers designed for use in light or ordinary hazard, commercial occupancies such as banks, hotels, shopping malls, etc.

The recessed version of the Series TY-FRB Pendent Sprinkler, where applicable, is intended for use in areas with a finished ceiling. It uses either a two-piece Style 10 (1/2 inch NPT) or Style 40 (3/4 inch NPT) Recessed Escutcheon with 1/2 inch (12,7 mm) of recessed adjustment or up to 3/4 inch (19,1 mm) of total adjustment from the flush pendent position, or a two-piece Style 20 (1/2 inch NPT) or Style 30 (3/4 inch NPT) Recessed Escutcheon with 1/4 inch (6,4 mm) of recessed adjustment or up to 1/2 inch (12,7 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

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.

An intermediate level versions of the Series TY-FRB Pendent Sprinklers are detailed in Technical Data Sheet TFP356, and Sprinkler Guards are detailed in Technical Data Sheet TFP780

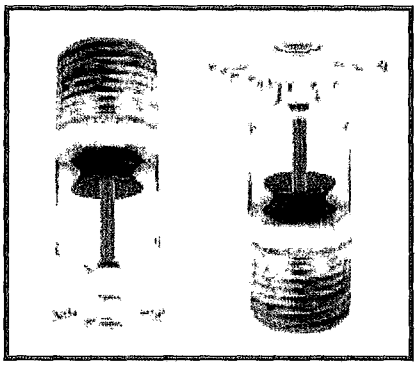
IMPORTANT

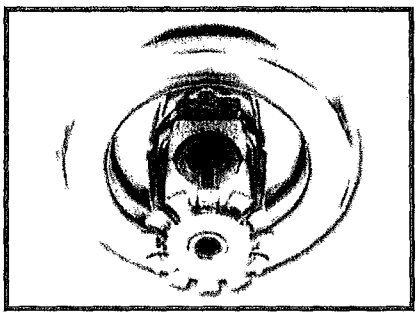
Always refer to Technical Data Sheet TFP700 for the "INSTALLER WARNING" that provides cautions with respect to handling and installation of sprinkler systems and components. Improper handling and installation can permanently damage a sprinkler system or its components and cause the sprinkler to fail to operate in a fire situation or cause it to operate prematurely.

WARNINGS

The 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 National Fire Protection Association, in addition to the standards of any other authorities having jurisdiction. ***Failure to do so may impair the performance of these devices.***

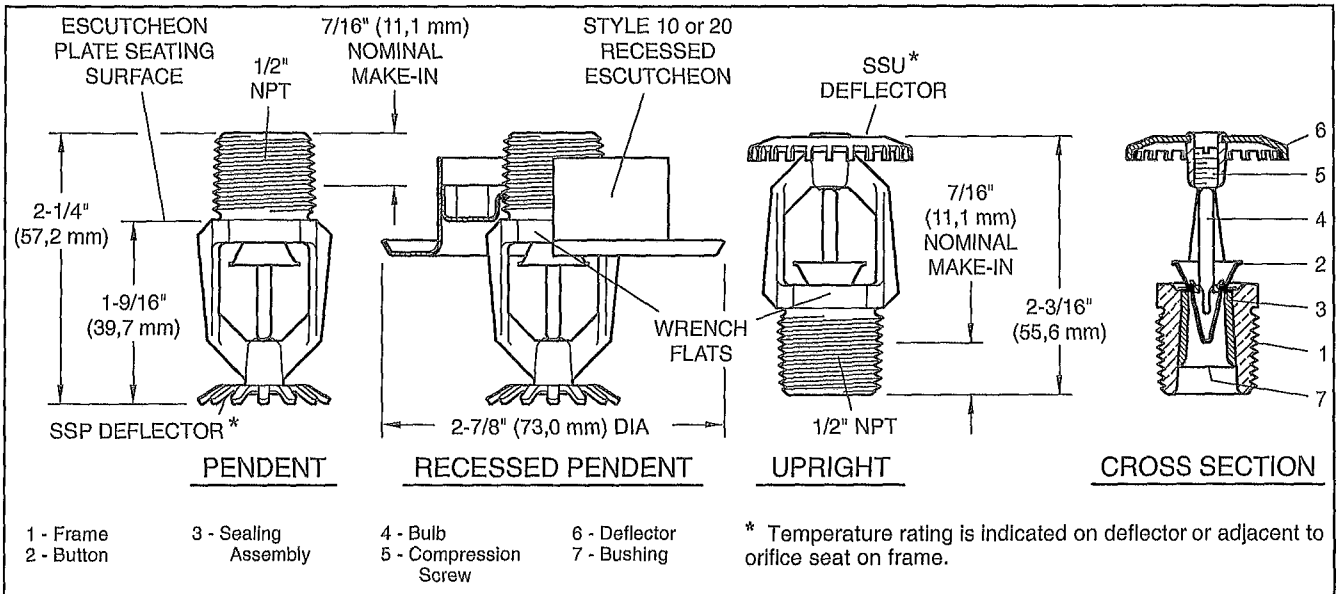
The owner is responsible for maintaining their fire protection system and devices in proper operating condition. The installing contractor or sprinkler manufacturer should be contacted with any questions.





Model/Sprinkler Identification Numbers

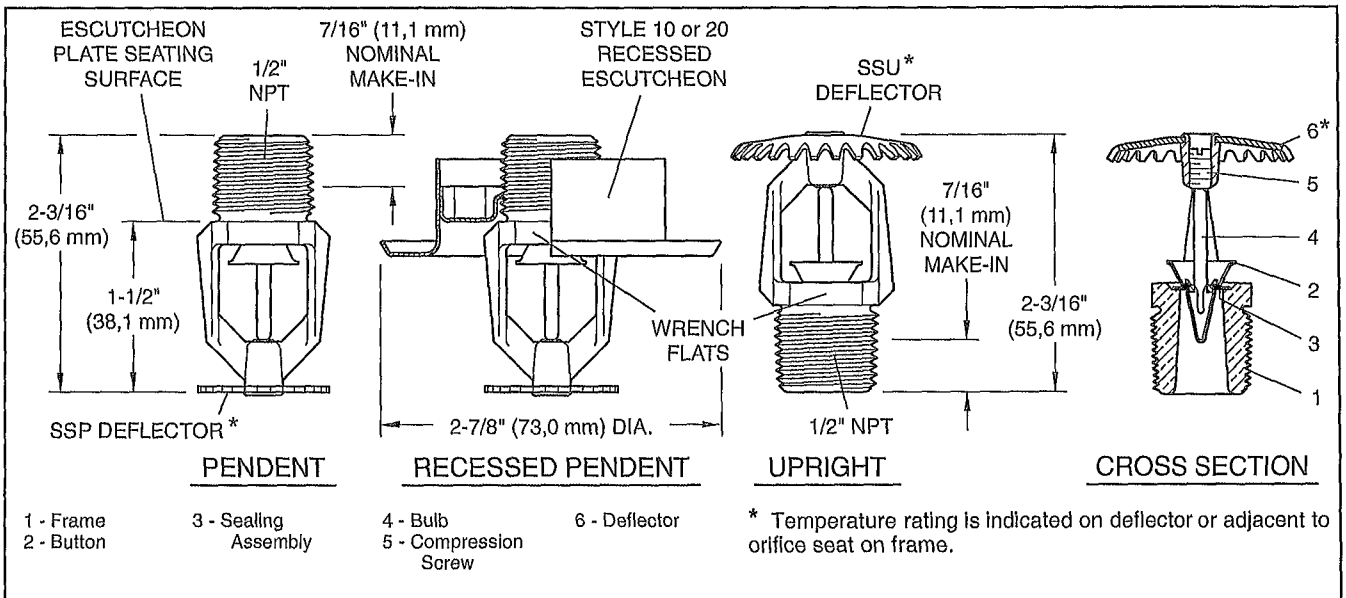
TY1131 -	Upright 2.8K, 1/2"NPT
TY1231 -	Pendent 2.8K, 1/2"NPT
TY2131 -	Upright 4.2K, 1/2"NPT
TY2231 -	Pendent 4.2K, 1/2"NPT
TY3131 -	Upright 5.6K, 1/2"NPT
TY3231 -	Pendent 5.6K, 1/2"NPT
TY4131 -	Upright 8.0K, 3/4"NPT
TY4231 -	Pendent 8.0K, 3/4"NPT
TY4831-	Upright 8.0K, 1/2"NPT
TY4931-	Pendent 8.0K, 1/2"NPT



1 - Frame
2 - Button
3 - Sealing Assembly
4 - Bulb
5 - Compression Screw
6 - Deflector
7 - Bushing

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

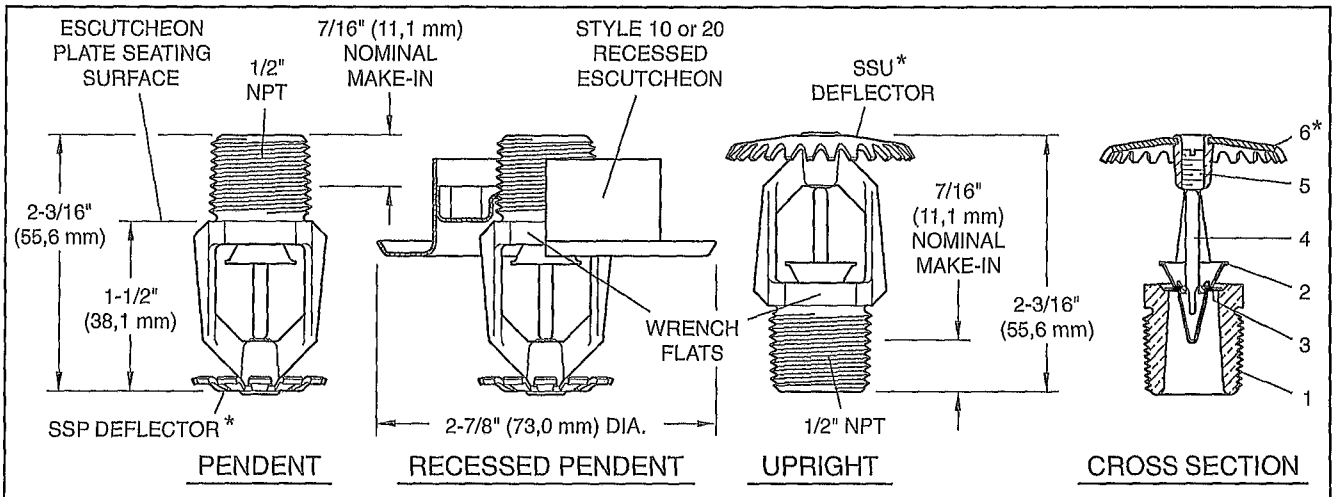
FIGURE 1
QUICK RESPONSE SERIES TY-FRB UPRIGHT (TY1131) AND PENDENT (TY1231) SPRINKLERS
2.8 K-FACTOR, 1/2 INCH NPT



1 - Frame
2 - Button
3 - Sealing Assembly
4 - Bulb
5 - Compression Screw
6 - Deflector

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

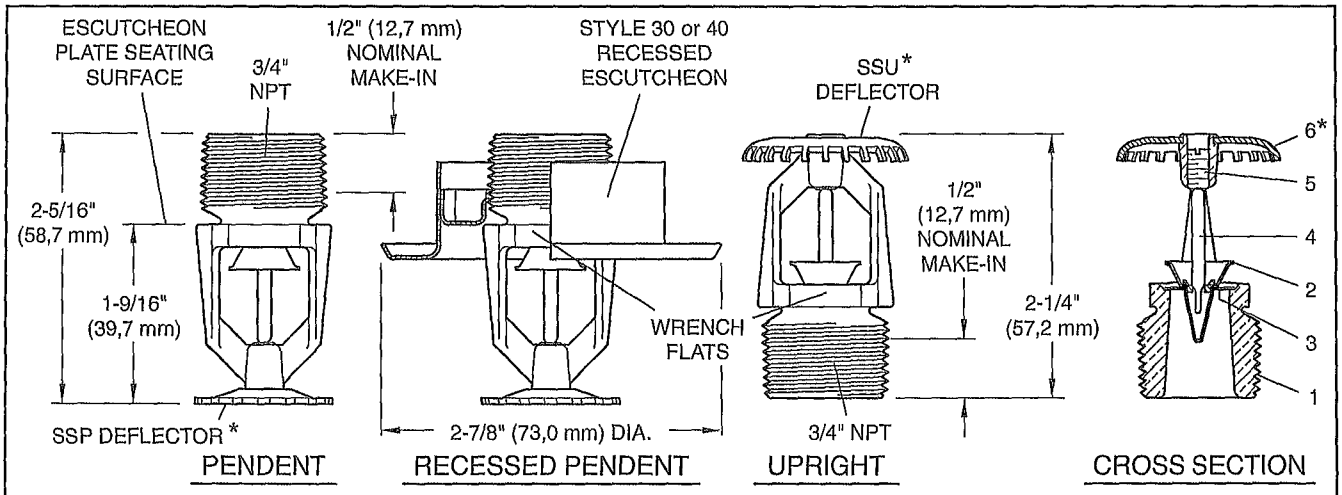
FIGURE 2
QUICK RESPONSE SERIES TY-FRB UPRIGHT (TY2131) AND PENDENT (TY2231) SPRINKLERS
4.2 K-FACTOR, 1/2 INCH NPT



1 - Frame
2 - Button
3 - Sealing Assembly
4 - Bulb
5 - Compression Screw
6 - Deflector

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

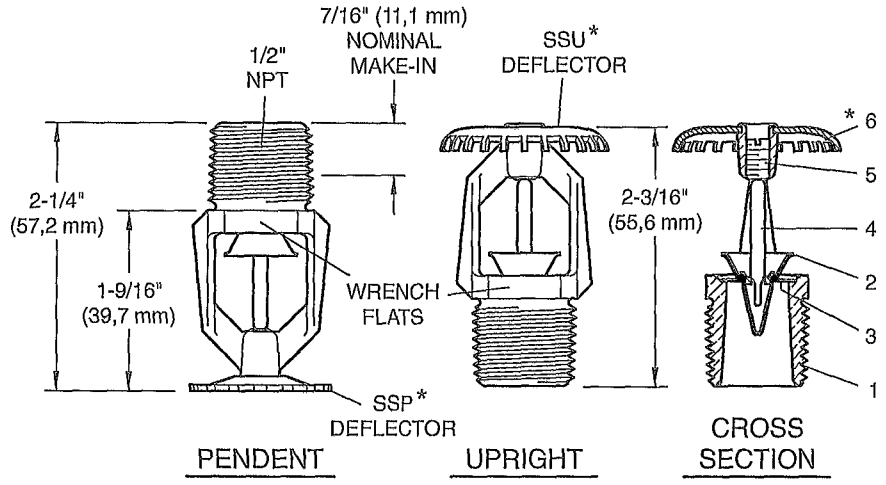
FIGURE 3
QUICK RESPONSE SERIES TY-FRB UPRIGHT (TY3131) AND PENDENT (TY3231) SPRINKLERS
5.6 K-FACTOR, 1/2 INCH NPT



1 - Frame
2 - Button
3 - Sealing Assembly
4 - Bulb
5 - Compression Screw
6 - Deflector

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

FIGURE 4
QUICK RESPONSE SERIES TY-FRB UPRIGHT (TY4131) AND PENDENT (TY4231) SPRINKLERS
8.0 K-FACTOR, 3/4 INCH NPT



1 - Frame
2 - Button
3 - Sealing Assembly
4 - Bulb
5 - Compression Screw
6 - Deflector

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

FIGURE 5
QUICK RESPONSE SERIES TY-FRB UPRIGHT (TY4831) AND PENDENT (TY4931) SPRINKLERS
8.0 K-FACTOR, 1/2 INCH NPT

Technical Data

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

Maximum Working Pressure
Refer to Table C

Discharge Coefficient
K = 2.8 GPM/psi$^{1/2}$ (40,3 LPM/bar$^{1/2}$)
K = 4.2 GPM/psi$^{1/2}$ (60,5 LPM/bar$^{1/2}$)
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 and B

Finishes
Sprinkler: Refer to Table A and B.
Recessed Escutcheon: White Coated, Chrome Plated, or Brass Plated.

Physical Characteristics
Frame . . . . . Bronze
Button . . . . . Brass/Copper
Sealing Assembly . . . . . Beryllium Nickel w/Teflon†
Bulb . . . . . Glass
Compression Screw . . . . . Bronze
Deflector . . . . . Copper/Bronze
Bushing (K=2.8) . . . . . Bronze

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 Series TY-FRB 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 (e.g., UL Listing is based on the requirements of NFPA 13, and FM Approval is based on the requirements of FM's Loss Prevention Data Sheets). Only the Style 10, 20, 30, or 40 Recessed Escutcheon, as applicable, is to be used for recessed pendent installations.

† DuPont Registered Trademark

K	TYPE	TEMP.	BULB LIQUID	SPRINKLER FINISH (See Note 7) NATURAL BRASS	CHROME PLATED	WHITE*** POLYESTER
2 8 1/2" NPT	PENDENT (TY1231) and UPRIGHT (TY1131)	135°F/57°C	Orange	1, 2, 3, 5		
		155°F/68°C	Red			
		175°F/79°C	Yellow			
		200°F/93°C	Green			
		286°F/141°C	Blue			
	RECESSED PENDENT (TY1231)* Figure 6	135°F/57°C	Orange	1, 2, 5		
		155°F/68°C	Red			
		175°F/79°C	Yellow			
		200°F/93°C	Green			
	RECESSED PENDENT (TY1231)** Figure 7	135°F/57°C	Orange			
		155°F/68°C	Red			
		175°F/79°C	Yellow			
		200°F/93°C	Green			
4 2 1/2" NPT	PENDENT (TY2231) and UPRIGHT (TY2131)	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			
	RECESSED PENDENT (TY2231)* Figure 8	135°F/57°C	Orange			
		155°F/68°C	Red			
		175°F/79°C	Yellow			
		200°F/93°C	Green			
	RECESSED PENDENT (TY2231)** Figure 9	135°F/57°C	Orange			
		155°F/68°C	Red			
		175°F/79°C	Yellow			
		200°F/93°C	Green			

NOTES:
1. Listed by Underwriters Laboratories, Inc (UL) as Quick Response Sprinklers
2. Listed by Underwriters Laboratories, Inc. for use in Canada (C-UL) as Quick Response Sprinklers.
3 Approved by Factory Mutual Research Corporation (FM) as Quick Response Sprinklers
5. Approved by the City of New York under MEA 354-01-E.
7. Where Polyester Coated Sprinklers are noted to be UL and C-UL Listed, the sprinklers are UL and C-UL Listed as Corrosion Resistant Sprinklers.
* Installed with Style 10 (1/2" NPT) or Style 40 (3/4" NPT) 3/4" Total Adjustment Recessed Escutcheon, as applicable
** Installed with Style 20 (1/2" NPT) or Style 30 (3/4" NPT) 1/2" Total Adjustment Recessed Escutcheon, as applicable
*** Frame and Deflector only. Listings and approvals apply to color (Special Order).
N/A: Not Available

TABLE A
LABORATORY LISTINGS AND APPROVALS
2.8 AND 4.2 K-FACTOR SPRINKLERS

				SPRINKLER FINISH (See Note 8)			
K	TYPE	TEMP.	BULB LIQUID	NATURAL BRASS	CHROME PLATED	WHITE*** POLYESTER	LEAD COATED
5.6 1/2" NPT	PENDENT (TY3231) and UPRIGHT (TY3131)	135°F/57°C	Orange	1, 2, 3, 4, 5, 6, 7			1, 2, 3, 5
		155°F/68°C	Red				
		175°F/79°C	Yellow				
		200°F/93°C	Green				
		286°F/141°C	Blue				
	RECESSED PENDENT (TY3231)* Figure 10	135°F/57°C	Orange	1, 2, 4, 5			N/A
		155°F/68°C	Red				
		175°F/79°C	Yellow				
		200°F/93°C	Green				
	RECESSED PENDENT (TY3231)** Figure 11	135°F/57°C	Orange	1, 2, 3, 4, 5			N/A
		155°F/68°C	Red				
		175°F/79°C	Yellow				
		200°F/93°C	Green				
8 0 3/4" NPT	PENDENT (TY4231) and UPRIGHT (TY4131)	135°F/57°C	Orange	1, 2, 3, 4, 5, 6, 7			1, 2, 5
		155°F/68°C	Red				
		175°F/79°C	Yellow				
		200°F/93°C	Green				
		286°F/141°C	Blue				
	RECESSED PENDENT (TY4231)* Figure 12	135°F/57°C	Green	1, 2, 4, 5			N/A
		155°F/68°C	Orange				
		175°F/79°C	Red				
		200°F/93°C	Yellow				
	RECESSED PENDENT (TY4231)** Figure 13	135°F/57°C	Orange	1, 2, 3, 4, 5			N/A
		155°F/68°C	Red				
		175°F/79°C	Yellow				
		200°F/93°C	Green				
8.0 1/2" NPT	PENDENT (TY4931) and UPRIGHT (TY4831)	135°F/57°C	Orange	1, 2, 4, 5, 6			1, 2, 5
		155°F/68°C	Red				
		175°F/79°C	Yellow				
		200°F/93°C	Green				
		286°F/141°C	Blue				

NOTES:

1. Listed by Underwriters Laboratories, Inc (UL) as Quick Response Sprinklers.
2. Listed by Underwriters Laboratories, Inc. for use in Canada (C-UL) as Quick Response Sprinklers.
3. Approved by Factory Mutual Research Corporation (FM) as Quick Response Sprinklers.
4 Approved by the Loss Prevention Certification Board (LPCB Ref No. 007k/04) as Quick Response Sprinklers, however, the LPCB does not rate the thermal sensitivity of recessed sprinklers.
5 Approved by the City of New York under MEA 354-01-E.
6. VdS Approved (For details contact Tyco Fire & Building Products, Enschede, Netherlands, Tel. 31-53-428-4444/Fax 31-53-428-3377)
7. Approved by the Loss Prevention Certification Board (LPCB Ref. No. 094a/06) as Quick Response Sprinklers
8. 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. Where Lead Coated Sprinklers are noted to be FM Approved, the sprinklers are FM Approved as a Corrosion Resistant Sprinklers.

* Installed with Style 10 (1/2" NPT) or Style 40 (3/4" NPT) 3/4" Total Adjustment Recessed Escutcheon, as applicable.
** Installed with Style 20 (1/2" NPT) or Style 30 (3/4" NPT) 1/2" Total Adjustment Recessed Escutcheon, as applicable.
*** Frame and Deflector only. Listings and approvals apply to color (Special Order)
N/A: Not Available

TABLE B
LABORATORY LISTINGS AND APPROVALS
5.6 AND 8.0 K-FACTOR SPRINKLERS

K	TYPE	SPRINKLER FINISH			
		NATURAL BRASS	CHROME PLATED	WHITE POLYESTER	LEAD COATED
2.8 1/2" NPT	PENDENT (TY3231) and UPRIGHT (TY3131)	175 PSI (12,1 BAR)			N/A
	RECESSED PENDENT (TY323)				
4 2 3/4" NPT	PENDENT (TY4231) and UPRIGHT (TY4131)	175 PSI (12,1 BAR)			N/A
	RECESSED PENDENT (TY4231)				
5 6 1/2" NPT	PENDENT (TY3231) and UPRIGHT (TY3131)	250 PSI (17,2 BAR) OR 175 PSI (12,1 BAR) (SEE NOTE 1)			175 PSI (12,1 BAR)
	RECESSED PENDENT (TY3231)				N/A
8 0 3/4" NPT	PENDENT (TY4231) and UPRIGHT (TY4131)	175 PSI (12,1 BAR)			175 PSI (12,1 BAR)
	RECESSED PENDENT (TY4231)				N/A
8.0 1/2" NPT	PENDENT (TY4931) and UPRIGHT (TY4831)	— 175 PSI (12,1 BAR)			175 PSI (12,1 BAR)

NOTES:
1. The maximum working pressure of 250 psi (17,2 bar) only applies to the Listing by Underwriters Laboratories Inc. (UL); the Listing by Underwriters Laboratories, Inc for use in Canada (C-UL); and , the Approval by the City of New York.

TABLE C, MAXIMUM WORKING PRESSURE

Installation

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

NOTES

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.

Do not attempt to make-up for insufficient adjustment in the escutcheon plate by under- or over-tightening the sprinkler. Readjust the position of the sprinkler fitting to suit.

The **Series 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 (Ref. Figure 14). With reference to Figures 1, 2, 3, 4, and 5, the W-Type 6 Sprinkler Wrench is to be applied to the sprinkler wrench flats.

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

Step A. After installing the Style 10. 20, 30, or 40 Mounting Plate, as applicable, over the sprinkler threads and 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 (Ref. Figure 15). With reference to Figure 1, 2, 3, and 4, the W-Type 7 Recessed

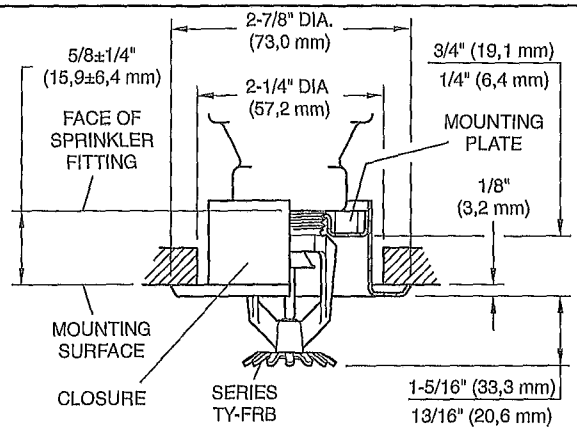


FIGURE 6
SERIES TY-FRB RECESSED PENDENT
WITH TWO-PIECE 3/4 INCH TOTAL ADJUSTMENT
STYLE 10 RECESSED ESCUTCHEON
2.8 K-FACTOR, 1/2 INCH NPT

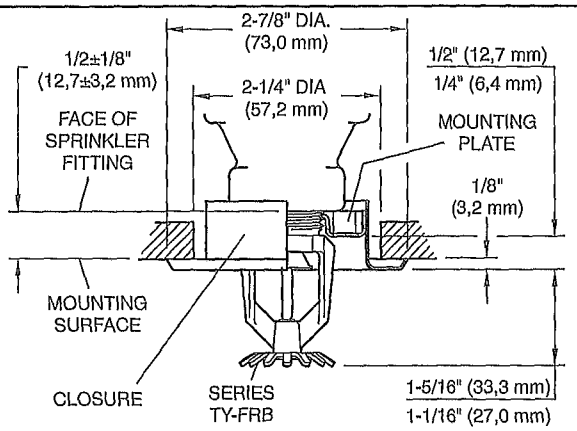


FIGURE 7
SERIES TY-FRB RECESSED PENDENT
WITH TWO-PIECE 1/2 INCH TOTAL ADJUSTMENT
STYLE 20 RECESSED ESCUTCHEON
2.8 K-FACTOR, 1/2 INCH NPT

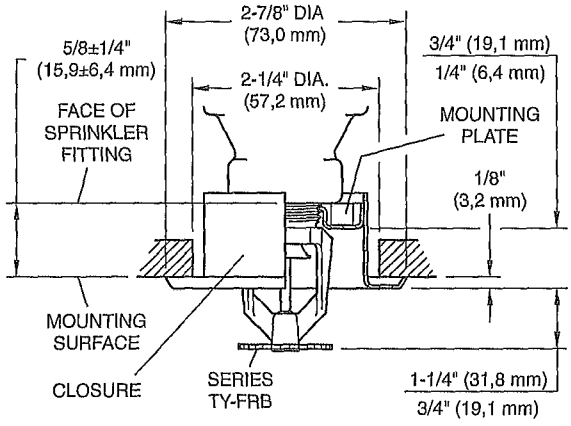


FIGURE 8
SERIES TY-FRB RECESSED PENDENT
WITH TWO-PIECE 3/4 INCH TOTAL ADJUSTMENT
STYLE 10 RECESSED ESCUTCHEON
4.2 K-FACTOR, 1/2 INCH NPT

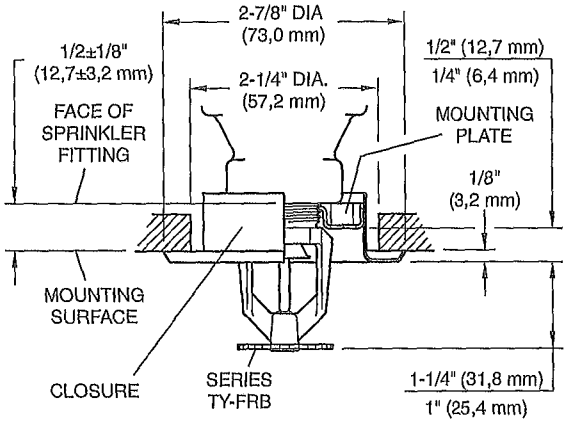


FIGURE 9
SERIES TY-FRB RECESSED PENDENT
WITH TWO-PIECE 1/2 INCH TOTAL ADJUSTMENT
STYLE 20 RECESSED ESCUTCHEON
4.2 K-FACTOR, 1/2 INCH NPT

Sprinkler Wrench is to be applied to the sprinkler wrench flats.

Step C. After the ceiling has been installed or the finish coat has been applied, slide on the Style 10, 20, 30, or 40 Closure over the Series TY-FRB Sprinkler and push the Closure over the Mounting Plate until its flange comes in contact with the ceiling.

Care and Maintenance

The Series TY-FRB Sprinklers must be maintained and serviced in accordance with the following instructions:

NOTES

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. (Ref Installation Section)

Frequent visual inspections are recommended to be initially performed for corrosion resistant coated sprinklers, after the installation has been com-

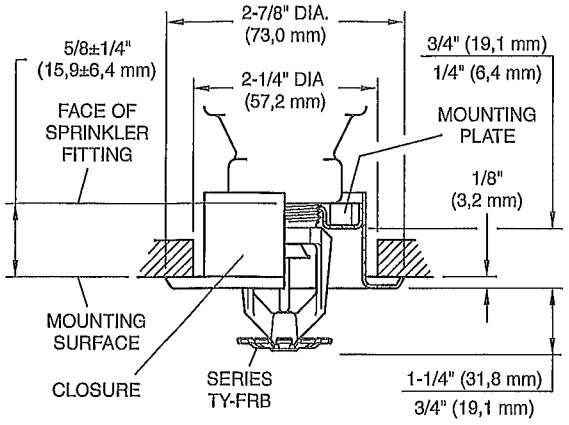


FIGURE 10
SERIES TY-FRB RECESSED PENDENT
WITH TWO-PIECE 3/4 INCH TOTAL ADJUSTMENT
STYLE 10 RECESSED ESCUTCHEON
5.6 K-FACTOR, 1/2 INCH NPT

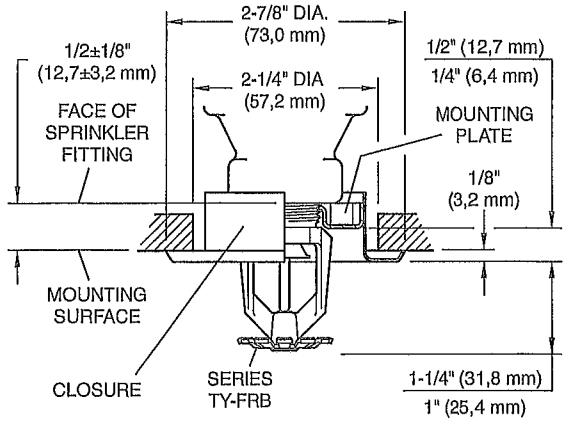


FIGURE 11
SERIES TY-FRB RECESSED PENDENT
WITH TWO-PIECE 1/2 INCH TOTAL ADJUSTMENT
STYLE 20 RECESSED ESCUTCHEON
5.6 K-FACTOR, 1/2 INCH NPT

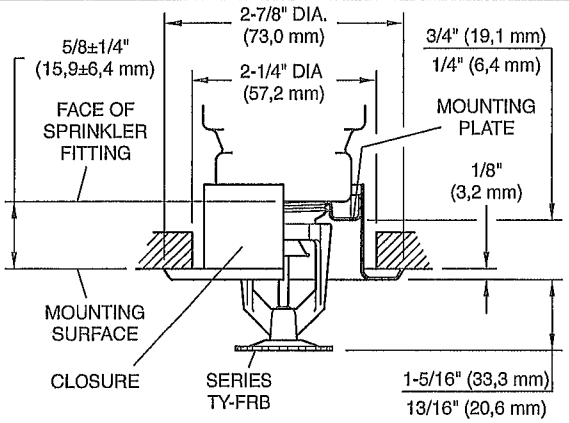


FIGURE 12
SERIES TY-FRB RECESSED PENDENT
WITH TWO-PIECE 3/4 INCH TOTAL ADJUSTMENT
STYLE 40 RECESSED ESCUTCHEON
8.0 K-FACTOR, 3/4 INCH NPT

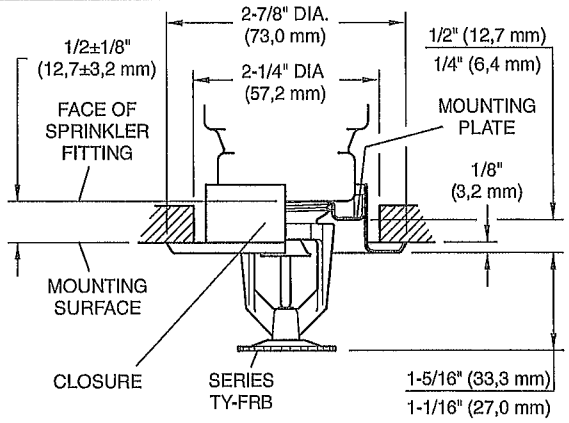


FIGURE 13
SERIES TY-FRB RECESSED PENDENT
WITH TWO-PIECE 1/2 INCH TOTAL ADJUSTMENT
STYLE 30 RECESSED ESCUTCHEON
8.0 K-FACTOR, 3/4 INCH NPT

pleted, 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. The installing contractor or sprinkler manufacturer should be contacted relative to any questions.

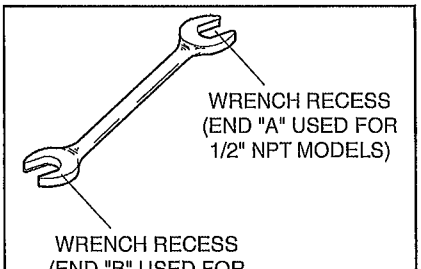


FIGURE 14
W-TYPE 6 SPRINKLER
WRENCH

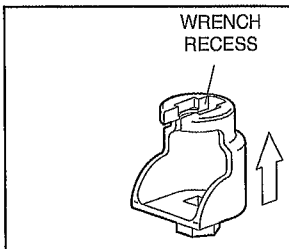


FIGURE 15
W-TYPE 7 RECESSED
SPRINKLER WRENCH

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

	MODEL/SIN
330 2.8K UPRIGHT (1/2"NPT)	TY1131
331 2 8K PENDENT (1/2"NPT)	TY1231
340 4.2K UPRIGHT (1/2"NPT)	TY2131
341 4.2K PENDENT (1/2"NPT)	TY2231
370 5.6K UPRIGHT (1/2"NPT)	TY3131
371 5.6K PENDENT (1/2"NPT)	TY3231
390 8.0K UPRIGHT (3/4"NPT)	TY4131
391 8.0K PENDENT (3/4"NPT)	TY4231
360 8.0K UPRIGHT (1/2"NPT)	TY4831*
361 8.0K PENDENT (1/2"NPT)	TY4931*

	SPRINKLER
1	NATURAL BRASS
4	WHITE POLYESTER
3	WHITE (RAL9010)*
9	CHROME PLATED
7	LEAD COATED

	TEMPERATURE RATING
135	135°F/57°C
155	155°F/68°C
175	175°F/79°C
200	200°F/93°C
286	286°F/141°C

* Eastern Hemisphere sales only

TABLE D
PART NUMBER SELECTION
SERIES TY-FRB PENDENT AND UPRIGHT SPRINKLERS

Limited Warranty

Products manufactured by Tyco Fire & Building Products (TFBP) 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 TFBP. No warranty is given for products or components manufactured by companies not affiliated by ownership with TFBP or for products and components which have been subject to misuse, improper installation, corrosion, or which have not been installed, maintained, modified or repaired in accordance with applicable Standards of the National Fire Protection Association, and/or the standards of any other Authorities Having Jurisdiction. Materials found by TFBP to be defective shall be either repaired or replaced, at TFBP's sole option. TFBP neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of products or parts of products. TFBP 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 TFBP 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 TFBP was informed about the possibility of such damages, and in no event shall TFBP'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

When placing an order, indicate the full product name. Refer to the Price List for complete listing of Part Numbers.

Contact your local distributor for availability.

Sprinkler Assemblies with NPT Thread Connections:
Specify: (Specify Model/SIN), Quick Response, (specify K-factor), (specify temperature rating), Series TY-FRB (specify Pendent or Upright) Sprinkler with (specify type of finish or coating), P/N (specify from Table D)

Recessed Escutcheon:
Specify: Style (10, 20, 30, or 40) 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.

tyco Fire Protection Products

Worldwide Contacts | www.tyco-fire.com

Series EC-11 and EC-14 Sprinklers, 11.2 K and 14.0 K Upright, and Pendent Extended Coverage Light and Ordinary Hazard

General Description

TYCO Series EC-11 and EC-14 Extended Coverage Upright and Pendent Sprinklers are decorative glass-bulb sprinklers designed for use in light or ordinary hazard occupancies. They are intended for use in automatic sprinkler systems designed in accordance with standard installation rules (e.g., NFPA 13) for a maximum coverage area of 400 ft² (37,2 m²), as compared to the maximum coverage area of 130 ft² (12,1 m²) for standard coverage sprinklers used in ordinary hazard occupancies or 225 ft² (20,6 m²) for standard coverage sprinklers used in light hazard occupancies.

Series EC-11 and EC-14 Sprinklers feature a UL and C-UL Listing that permits their use with unobstructed or non-combustible obstructed ceiling construction as defined and permitted by NFPA 13, as well as a specific application listing for use under concrete tees

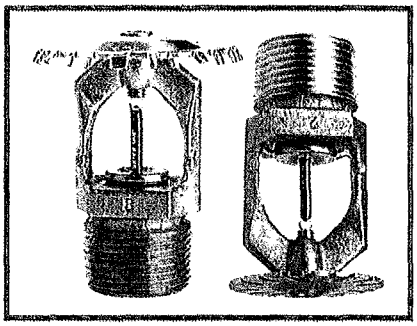
Series EC-11 and EC-14 Extended Coverage Sprinklers have been fire tested to compare their performance to that of standard coverage spray sprinklers. These tests have shown that the protection provided is equal to or more effective than standard coverage spray sprinklers.

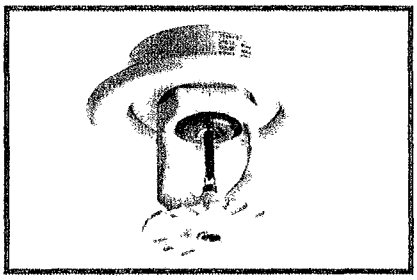
Corrosion-resistant coatings, where applicable, help extend the life of copper alloy sprinklers beyond that which occurs when exposed to corrosive atmospheres. Although corrosion-resistant coated sprinklers passed standard corrosion tests of the applicable approval agencies, this testing is not representative of all possible corrosive atmospheres. Consequently, it is recommended that the end user be consulted with respect to the suitability of these corrosion-resistant coatings for any given corrosive environment. The effects of ambient temperature, concentration of chemicals, and gas/chemical velocity should be considered, along with the corrosive nature of the chemical to which the sprinklers will be exposed.

NOTICE

Series EC-11 and EC-14 Extended Coverage 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 other authorities having jurisdiction. Failure to do so may impair the performance of these devices.

The owners 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.





Sprinkler Identification Numbers (SINs)

TY5137 - Upright, 11.2K

TY5237 - Pendent, 11.2K

TY6137 - Upright, 14.0K

TY6237 - Pendent, 14.0K

TY5137 is a redesignation for C5137, G1894, and S2510.

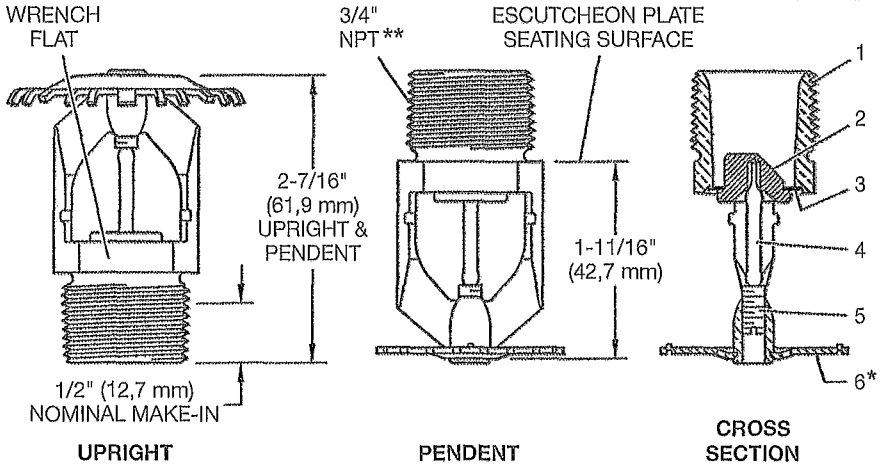
TY5237 is a redesignation for C5237, G1893, and S2511.

TY6137 is a redesignation for C6137, G1896, and S2610.

TY6237 is a redesignation for C6237, G1895, and S2611.

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.



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

* Temperature rating is indicated on Deflector.

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

FIGURE 4
SERIES EC-11 AND EC-14 EXTENDED COVERAGE SPRINKLERS
11.2 K-FACTOR UPRIGHT (TY5137) AND PENDENT (TY5237)
14.0 K-FACTOR UPRIGHT (TY6137) AND PENDENT (TY6237)
ASSEMBLY

Hazard	Type	Temperature	Bulb Liquid	Sprinkler Finish (See Note 5)			
				Natural Brass	Chrome Plated	White* Polyester	Lead Coated
Light Table B describes UL and C-UL Sensitivity Rating Table C describes FM Sensitivity Rating	Upright K=11 2 (TY5137) Pendent K=11 2 (TY5237) K=14 0 (TY6237)	135°F (57°C)	Orange	1, 2, 3**, 4			
		155°F (68°C)	Red				
		175°F (79°C)	Yellow	1, 2, 4			1, 2, 4
		200°F (93°C)	Green				
		286°F (141°C)	Blue				
	Recessed Pendent K=11 2 (TY5237) K=14 0 (TY6237) With Style 30 Escutcheon	135°F (57°C)	Orange	1, 2, 3, 4			N/A
		155°F (68°C)	Red				
		175°F (79°C)	Yellow	1, 2, 4			
		200°F (93°C)	Green				
		286°F (141°C)	Blue				
Ordinary Table B describes UL and C-UL Sensitivity Rating Table C describes FM Sensitivity Rating	Upright K=11 2 (TY5137) K=14 0 (TY6137) Pendent K=11 2 (TY5237) K=14 0 (TY6237)	135°F (57°C)	Orange	1, 2, 3, 4			1, 2, 3, 4
		155°F (68°C)	Red				
		175°F (79°C)	Yellow				1, 2, 4
		200°F (93°C)	Green				
		286°F (141°C)	Blue				
	Recessed Pendent K=11 2 (TY5237) K=14 0 (TY6237) With Style 40 Escutcheon	135°F (57°C)	Orange	1, 2, 4			N/A
		155°F (68°C)	Red				
		175°F (79°C)	Yellow				
		200°F (93°C)	Green				

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) Approved by the City of New York under MEA 177-03-E

(5). Where Polyester Coated or 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 Listings and approvals apply to color (Special Order)

** Pendent Only

N/A. Not Available

TABLE A
LABORATORY LISTINGS AND APPROVALS

Area	Style	Light Hazard					Ordinary Hazard				
		135°F (57°C)	155°F (68°C)	175°F (79°C)	200°F (93°C)	286°F (141°C)	135°F (57°C)	155°F (68°C)	175°F (79°C)	200°F (93°C)	286°F (141°C)
14 x 14	Upright or Pendent	-	-	-	-	-	QR	QR	QR	QR	QR
	Style 30 Recessed	-	-	-	-	-	QR	QR	QR	QR	QR
	Style 40 Recessed	-	-	-	-	-	QR	QR	QR	QR	QR
16 x 16	Upright or Pendent	QR*	QR*	QR*	QR*	QR*	SR	SR	SR	SR	SR
	Style 30 Recessed	QR*	QR*	QR*	QR*	QR*	SR	SR	SR	SR	SR
	Style 40 Recessed	N/A	N/A	N/A	N/A	N/A	SR	SR	SR	SR	SR
18 x 18	Upright or Pendent	QR*	QR*	QR*	QR*	QR*	SR	SR	SR	SR	SR
	Style 30 Recessed	QR*	QR*	QR*	QR*	QR*	SR	SR	SR	SR	SR
	Style 40 Recessed	N/A	N/A	N/A	N/A	N/A	SR	SR	SR	SR	SR
20 x 20	Upright or Pendent	QR*	QR*	QR*	SR*	SR*	SR	SR	SR	SR	SR
	Style 30 Recessed	QR*	QR*	QR*	SR*	SR*	SR	SR	SR	SR	SR
	Style 40 Recessed	N/A	N/A	N/A	N/A	N/A	SR	SR	SR	SR	SR

QR Quick Response
SR Standard Response
N/A Not Applicable
* Does not apply to Upright K=14 0

TABLE B
SENSITIVITY RATING FOR UL AND C-UL LISTING OF SERIES EC-11 OR EC-14 SPRINKLERS
(Refer to Table D for Permitted K-Factor/Area Combinations)

Area	Style	Light Hazard					Ordinary Hazard				
		135°F (57°C)	155°F (68°C)	175°F (79°C)	200°F (93°C)	286°F (141°C)	135°F (57°C)	155°F (68°C)	175°F (79°C)	200°F (93°C)	286°F (141°C)
14 x 14	Upright or Pendent	-	-	-	-	-	SR	SR	SR	SR	SR
	Style 30 Recessed	-	-	-	-	-	N/A	N/A	N/A	N/A	N/A
	Style 40 Recessed	-	-	-	-	-	N/A	N/A	N/A	N/A	N/A
16 x 16	Upright or Pendent	QR*	QR*	N/A	N/A	N/A	SR	SR	SR	SR	SR
	Style 30 Recessed	QR*	QR*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Style 40 Recessed	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
18 x 18	Upright or Pendent	QR*	QR*	N/A	N/A	N/A	SR	SR	SR	SR	SR
	Style 30 Recessed	QR	QR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Style 40 Recessed	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20 x 20	Upright or Pendent	QR*	QR*	N/A	N/A	N/A	SR	SR	SR	SR	SR
	Style 30 Recessed	QR	QR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Style 40 Recessed	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

QR Quick Response
SR Standard Response
N/A Not Applicable
* Does not apply to Upright K=14 0

TABLE C
SENSITIVITY RATING FOR FM APPROVAL OF SERIES EC-11 OR EC-14 SPRINKLERS
(NOTE: REFER TO FM LOSS PREVENTION DATA SHEET 2-8N FOR PERMITTED K-FACTOR/AREA COMBINATIONS)

Technical Data

Approvals
TYCO Series EC-11 and EC-14 Extended Coverage Upright, Pendent, and Recessed Pendent Sprinklers are UL and C-UL Listed. Refer to Table A for complete sprinkler approval information including corrosion-resistant status. The approvals apply to the service conditions indicated in the Design Criteria section

Series EC-11 and EC-14 Extended Coverage Upright and Pendent Sprinklers are FM Approved. Refer to Table A for complete sprinkler approval information including corrosion-resistant status. The approvals apply to the service conditions indicated in the Design Criteria section.

The Style 60 Two-Piece Flush Escutcheon (Figure 4) is UL Listed and FM Approved for use with the Series EC-11 and EC-14 Pendent Sprinklers.

Maximum Working Pressure
175 psi (12,1 bar)

Pipe Thread Connection
3/4 inch NPT

Discharge Coefficients
K = 11.2 GPM/psi$^{1/2}$
(161,3 LPM/bar$^{1/2}$)

K = 14.0 GPM/psi$^{1/2}$
(201,6 LPM/bar$^{1/2}$)

Temperature Ratings
135°F (57°C) to 286°F (141°C)

Finish
Sprinkler:
Refer to Table A

Recessed or Flush Escutcheon: White-Coated, Chrome-Plated, and Brass-Plated

Physical Characteristics
Frame . . . . . Bronze
Button . . . . . Bronze
Sealing Assembly . . . Beryllium Nickel w/TEFLON
Bulb . . . . . Glass (3 mm dia.)
Compression Screw . . . . . Bronze
Deflector . . . . . Brass

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, which then allows the sprinkler to activate and flow water.

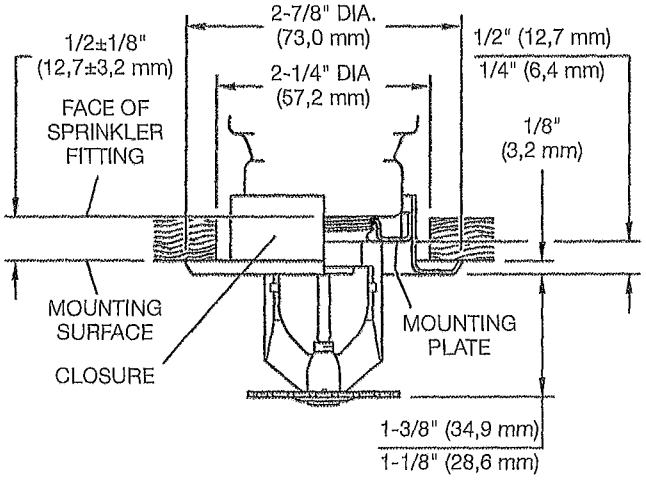


FIGURE 1
SERIES EC-11 AND EC-14 RECESSED PENDENT SPRINKLER ASSEMBLY WITH TWO-PIECE 1/2-INCH TOTAL ADJUSTMENT STYLE 30 RECESSED ESCUTCHEON

Design Criteria

TYCO Series EC-11 and EC-14 Extended Coverage Sprinklers must only be installed in accordance with the applicable UL and C-UL Listing or FM Approval requirements as indicated below. Only the Style 30 or 40 Recessed Escutcheon is to be used for recessed installation, as applicable.

Refer to Tables A, B, and C.

UL and C-UL
Listing Requirements

1. Series EC-11 and EC-14 Sprinklers may be used for the coverage areas shown in Table D, based on maintaining the minimum specified flow rate as a function of coverage area and hazard group for all sprinklers in the design area.

2 Series EC-11 and EC-14 Sprinklers are permitted to be used with unobstructed or non-combustible obstructed ceiling construction as defined and permitted by NFPA 13; for example:

- Unobstructed, combustible or noncombustible, ceiling construction with a deflector to ceiling/roof deck distance of 1 to 12 inches (25 to 300 mm).
- Obstructed, non-combustible, ceiling construction with a deflector location below structural members of 1 to 6 inches (25 to 150 mm) and a maximum deflector to ceiling/roof deck distance of 22 inches (550 mm).

3. Series EC-11 and EC-14 Sprinklers, specifically tested and listed for non-combustible obstructed construction, are permitted to be used within trusses or bar joists having non-combustible web members greater than 1 inch (25.4 mm) when applying the 4 times obstruction criteria rule defined under "Obstructions to Sprinkler Discharge Pattern Development".
4. To prevent cold soldering, the minimum allowable spacing between Series EC-11 and EC-14 Sprinklers, is 8 feet (2,4 m) for upright sprinklers and 9 feet (2,7 m) for pendent sprinklers.
5. Series EC-11 and EC-14 Sprinklers are to be installed in accordance with all other requirements of NFPA 13 for extended coverage upright and pendent sprinklers; For example, obstructions to sprinkler discharge, obstructions to sprinkler pattern development, obstructions to prevent sprinkler discharge from reaching hazard and clearance to storage.

UL and C-UL
Specific Application Listing Requirements for Installation under Concrete Tees

Series EC-11 and EC-14 Extended Coverage Upright and Pendent Sprinklers (TY5137, TY5237, TY6137 and TY6237) have a UL and C-UL Specific Application Listing for use under concrete tees when installed as follows:

1. Stems of the concrete tee construction must spaced at less than 7.5 feet (2,3 m) on center but more than 3 feet (0,9 m) on center. The depth of the concrete tees must not exceed 30 inches (762 mm). The maximum permitted concrete tee length is 32 feet (9,8 m). However, where the concrete tee length exceeds 32 feet (9,8 m), non-combustible baffles, equal in height to the depth of the tees, can be installed so that the space between the tees does not exceed 32 feet (9,8 m) in length.
2. The sprinkler deflectors are to be located in a horizontal plane at or above 1 inch (25,4 mm) below the bottom of the concrete tee stems.
3. When the sprinkler deflectors are located higher than a horizontal plane 1 inch (25,4 mm) beneath the bottom of the concrete tee stems, the obstruction to sprinkler discharge criteria requirements of NFPA 13 for extended coverage upright sprinklers applies.

FM Approval Requirements

Series EC-11 and EC-14 Extended Coverage Sprinklers are to be installed in accordance with the applicable Factory Mutual Loss Prevention Data Sheet for limited use in buildings of specific roof construction and for the protection of certain specific ordinary hazard (non-storage and/or non-flammable or combustible liquid) occupancies. Information provided in the FM Loss Prevention Data Sheets relates to, but not limited to, hydraulic design, ceiling slope, and obstructions, minimum and maximum allowable spacing, and deflector-to-ceiling distance.

These criteria may differ from UL and/or NFPA criteria. Therefore, the designer should review and become familiar with Factory Mutual requirements before proceeding with design.

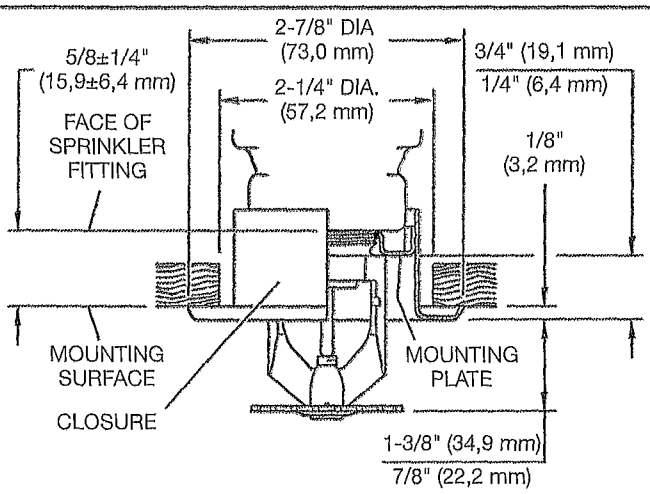


FIGURE 2
SERIES EC-11 AND EC-14 RECESSED PENDENT SPRINKLER ASSEMBLY WITH TWO-PIECE 3/4-INCH TOTAL ADJUSTMENT STYLE 40 RECESSED ESCUTCHEON

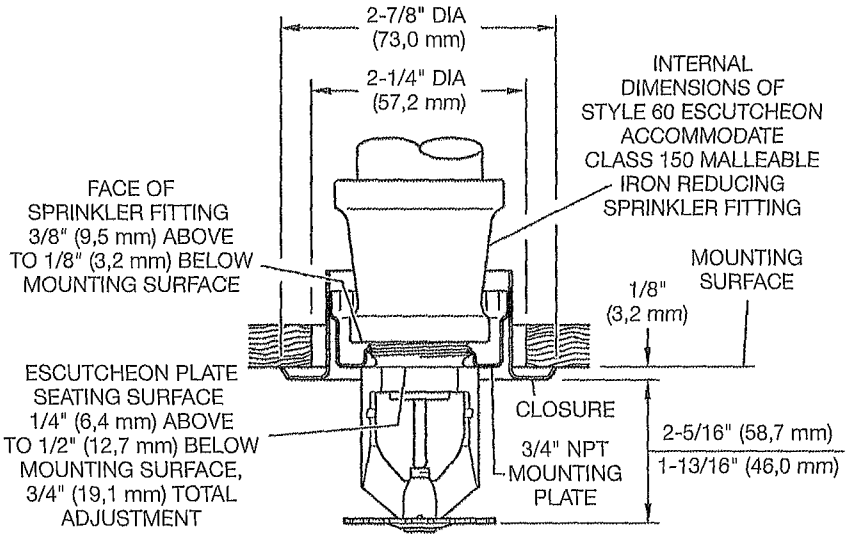


FIGURE 3
SERIES EC-11 AND EC-14 PENDENT SPRINKLER ASSEMBLY WITH 3/4-INCH TOTAL ADJUSTMENT STYLE 60 TWO-PIECE FLUSH ESCUTCHEON

Installation

Series EC-11 and EC-14 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 3/4 inch NPT sprinkler joint should be obtained by applying 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 with consequent leakage or impairment of the sprinkler.

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

Step 1. Install the sprinkler with the deflector parallel to the mounting surface. Install pendent sprinklers in the pendent position; install upright sprinklers in the upright position.

Step 2. After installing the Style 30, 40, or 60 mounting plate (or other applicable escutcheon) over the sprinkler pipe threads and with pipe-thread sealant applied to the pipe threads, hand-tighten the sprinkler into the sprinkler fitting.

Step 3. For upright or pendent sprinklers wrench-tighten using only the W-Type 3 (End A) Sprinkler Wrench. For the pendent sprinkler installed with Style 30, 40, or 60 Escutcheon, wrench-tighten the sprinkler using only the W-Type 22 Sprinkler Wrench.

Apply the wrench recess of the applicable sprinkler wrench (Figure 5 and 6) to the sprinkler wrench flats (Figure 1).

Care and Maintenance

TYCO Series EC-11 and EC-14 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, obtain permission to shut down the affected fire protection systems from the proper authorities and notify all personnel who may be affected by this action.

Sprinklers which 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.

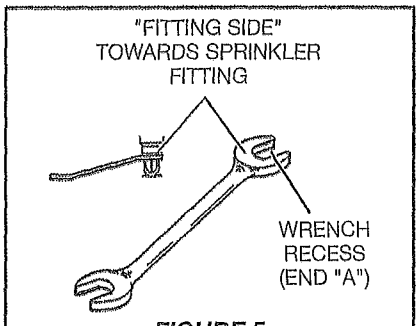


FIGURE 5
W-TYPE 3 SPRINKLER WRENCH

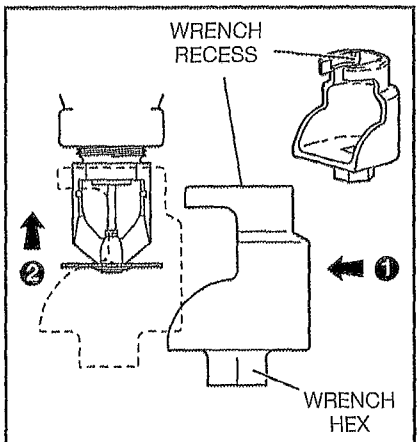


FIGURE 6
W-TYPE 22 RECESSED SPRINKLER WRENCH

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 recognized by the Approval agency (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.

Description	Area	Light Hazard 0.10 GPM/ft²		Group I Ordinary Hazard 0.15 GPM/ft²		Group II Ordinary Hazard 0.20 GPM/ft²	
		GPM	PSI	GPM	PSI	GPM	PSI
TY5137 (K=11.2) Upright	14 x 14	30	7 2	30	7 2	39	12 1
	16 x 16	30	7 2	39	12.1	51	20.7
	18 x 18	33	8.7	49	19 1	65	33 7
	20 x 20	40	12 8	60	28 7	80	51 0
TY5237 (K=11.2) Pendent	14 x 14	30	7 2	30	7 2	39	12 1
	16 x 16	30	7 2	39	12 1	51	20 7
	18 x 18	33	8 7	49	19 1	65	33 7
	20 x 20	40	12 8	60	28 7	80	51 0
TY6137 (K=14.0) Upright	14 x 14	N/A	N/A	39	7 8	51	13 3
	16 x 16	N/A	N/A	39	7 8	51	13 3
	18 x 18	N/A	N/A	49	12 3	65	21 6
	20 x 20	N/A	N/A	60	18 4	80	32 7
TY6237 (K=14.0) Pendent	14 x 14	37	7 0	39	7 8	51	13 3
	16 x 16	37	7 0	39	7 8	51	13 3
	18 x 18	37	7 0	49	12 3	65	21 6
	20 x 20	40	8 2	60	18 4	80	32 7

1 ft = 0 3048 m
1 ft ² =0 093 m²
1 GPM = 3 785 LPM

1 psi = 0 06895 bar
1 GPM/ft² = 40 74 mm/min

TABLE D
FLOW CRITERIA FOR UL AND C-UL LISTING OF SERIES EC-11 AND EC-14 SPRINKLERS

P/N 51 – XXX – X – XXX

		SIN
893	11 2K Pendent	TY5237
894	11 2K Upright	TY5137
895	14 0K Pendent	TY6237
896	14 0K Upright	TY6137

	Sprinkler Finish*
1	Natural Brass
4	White Polyester
7	Lead Coated
9	Chrome-Plated

	Temperature Rating
135	135°F (57°C)
155	155°F (68°C)
175	175°F (79°C)
200	200°F (93°C)

* Escutcheon ordered separately

TABLE E
PART NUMBERS FOR
SERIES EC-11 AND EC-14 SPRINKLERS

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: Series (specify EC-11 or EC-14) Sprinkler, (specify SIN), K = (specify), (Pendent or Upright) Extended Coverage (specify) temperature rating, (specify) finish, P/N (refer to Table E)

Recessed Escutcheon, Two-Piece
Specify: Style (30 or 40) Two-Piece Recessed Escutcheon with (specify) finish, P/N (specify*)

Flush Escutcheon, Two-Piece
Specify: Style 60 Two-Piece Flush Escutcheon with (specify) finish, P/N (specify*).

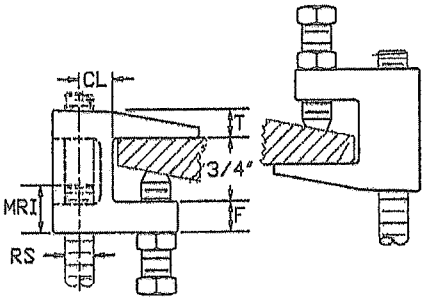
*Refer to Technical Data Sheet TFP778

Sprinkler Wrenches
Specify: W-Type 3 Sprinkler Wrench, P/N 56-895-1-001

Specify: W-Type 22 Recessed Sprinkler Wrench, P/N 56-665-7-001

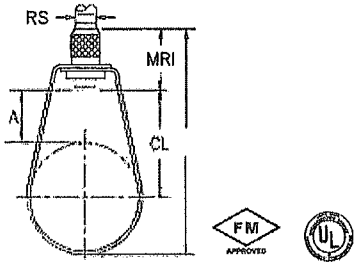
Model #300
Beam Clamp
Universal/Reversible
(Double Rod Hole)

SIZE RANGE: 3/8" thru 7/8" rod sizes (dimensions shown thru 1/2" only).
MATERIAL: Malleable iron casting with a hardened cup point set screw and locknut.
ALTERNATE MATERIAL OR FINISH: EG, HDG
APPROVAL: Factory Mutual (FM)
LISTING: Underwriters Laboratories(UL)
CONFORMS WITH: Federal Specification WW-H-171 (Type 19 & 23), Manufacturers Standardization Society ANSI/MSS-SP-58 (Type 19 & 23); install in accordance with ANSI/MSS-SP-69.
SERVICE: Structural attachment (with *infinite adjustment*) to *top or bottom* of metal beams, purlins, channel or angle iron.
ORDERING: Specify rod size, model number and name.
NOTE: Set screw must be tightened onto the sloped side of the I-Beam, channel or angle iron flange and torqued to 60 inch pounds.



RS	Max. pipe size	CL	MRI	F	T	Max. recom. load lbs.	
						Top	Bottom
3/8"	4"	7/16"	1/2"	3/8"	3/8"	500	250
1/2"	8"	9/16"	11/16"	17/32"	1/2"	950	760

Model #130
Service Weight Swivel
Ring Hanger (NFPA Rod Sizes)



SIZE RANGE: 1/2" thru 8" pipe sizes
MATERIAL: Pre-galvanized carbon steel with zinc electroplate insert nut.
APPROVAL: Factory Mutual (FM)
LISTING: Underwriters Laboratories (UL)
CONFORMS WITH: Federal Specification WW-H-171 (Type 10), Manufacturers Standardization Society ANSI/MSS-SP-58 (Type 10); install in accordance with ANSI/MSS-SP-69.
SERVICE: Pipe support manufactured to use minimum rod sizes permitted by NFPA for fire sprinkler piping.
ORDERING: Specify pipe size, model number and name.

Pipe size	H	CL	RS	MRI	A	Max. recom. load lbs.
1/2"	3-1/16"	1-11/16"	3/8"	1"	1-1/4"	300
3/4"	3"	1-1/2"	3/8"	1"	15/16"	300
1"	3-3/8"	1-5/8"	3/8"	1"	15 /16"	300
1-1/4"	3-3/4"	1-5/8"	3/8"	1"	15/16"	300
1-1/2"	3-15/16"	2"	3/8"	1"	1-1/16"	300
2"	4-5/8"	2-5/16"	3/8"	1"	1-1/8"	300
2-1/2"	5"	2-13/16"	3/8"	1"	1-3/8"	525
3"	6-1/2"	3-1/4"	3/8"	1"	1-1/2"	525
3-1/2"	7"	3-3/4"	3/8"	1"	1-3/4"	585
4"	7-1/2"	4"	3/8"	1"	1-13/16"	650
5"	9"	4-11/16"	1/2"	1 1/4"	1-7/8"	1000
6"	10"	5-1/2"	1/2"	1 1/4"	2-3/16"	1000
8"	12-1/2"	6-3/4"	1/2"	1 1/4"	2-7/16"	1000

WIGINTON FIRE PROTECTION ENGINEERING, INC.

LETTER OF TRANSMITTAL

TO: **Columbia County Fire Marshal**
370 Southeast Racetrack
Lake City, Fl. 32025

DATE: 8/21/14 **JOB #:** 1070653
ATTN: David Boozer
RE: **US Cold Storage 2nd Flr Build-out**
211 NE McCloskey Ave.
Lake City, Fl. 32055

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via ____ the following items:

☐ Contract Documents ☐ Subcontract Documents ☐ Close-Out Documents

☐ Change Order ☒ Shop Drawings ☐ Plans

☐ As-Built Drawings ☐ Specifications ☐ Other ____

COPIES	DATE	NO.	DESCRIPTION
3		1SHTS	SHOP DRAWINGS
3			PRODUCT DATA

TRANSMITTED AS CHECKED BELOW:

☒ For Approval ☐ Approved as Submitted ☐ Resubmit ____ Copies for Approval

☐ For Your Use ☐ Approved as Noted ☐ Submit ____ Copies for Distribution

☐ As Requested ☐ Returned for Corrections ☒ Return 1 Signed Copies

☐ Other ____ ☐ For Bids Due ____ ☐ For Review and Comment

REMARKS:

COPY TO FILE

SIGNED: _____

Jason D Kirk,JDK@Wiginton.net
Designer Ext. 3111

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6363 Greenland Road, Jacksonville, FL 32258
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