

## Series TY-FRL — 5.6 K-factor Horizontal Sidewall Sprinklers Quick Response, Standard Coverage

### General Description

The Series TY-FRL, 5.6 K-factor, Horizontal Sidewall Sprinklers are quick response - standard coverage, solder type spray sprinklers designed for use in light and ordinary hazard, commercial occupancies such as banks, hotels, shopping malls, offices, etc. They are designed for installation along a wall or the side of a beam and just beneath a smooth ceiling. Horizontal sidewall sprinklers are commonly used instead of pendent or upright sprinklers due to aesthetics or building construction considerations, where piping across the ceiling is not desirable.

#### WARNINGS

*The Series TY-FRL 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.*

#### 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.*

### Model/Sprinkler Identification Numbers

TY3321 - HSW 5.6K, 1/2"NPT

TY3321 is a redesignation for S1878 and G8946.

### Technical Data

#### Approvals

UL and C-UL Listed.  
FM and NYC Approved.  
(Refer to Table A for complete approval information.)

#### Maximum Working Pressure

175 psi (12,1 bar)

#### Discharge Coefficient

K = 5.6 GPM/psi<sup>1/2</sup> (80,6 LPM/bar<sup>1/2</sup>)

#### Temperature Ratings

Refer to Table A

#### Finishes

Sprinkler: Refer to Table A

#### Physical Characteristics

Frame . . . . .	Bronze
Strut . . . . .	Monel
Deflector . . . . .	Bronze
Hook . . . . .	Monel
Link Assembly . . . . .	Nickel
Ejection Spring . . . . .	Inconel
Button . . . . .	Bronze
Seal . . . . .	Teflon†
†	DuPont Registered Trademark

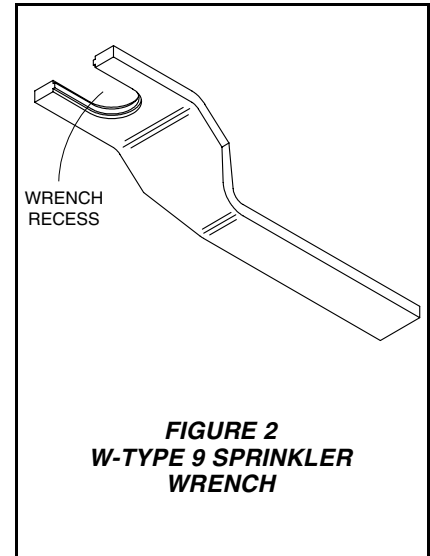
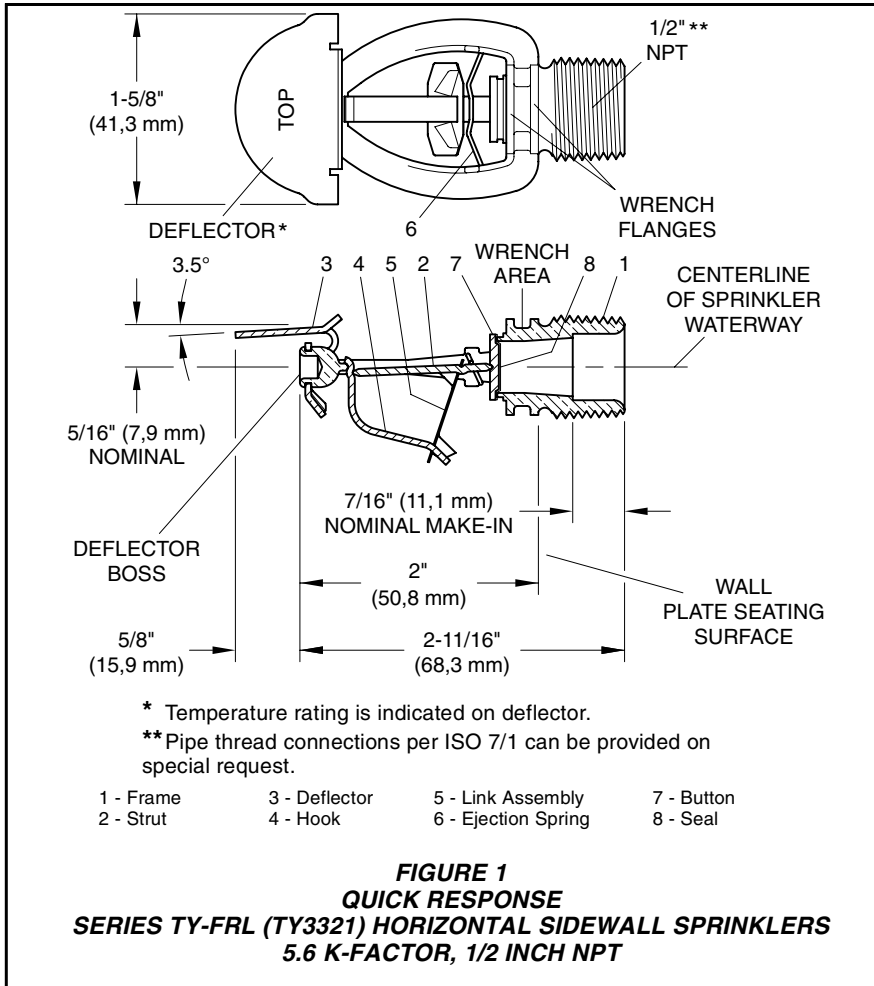


### Operation

The fusible link (heat collector) assembly is comprised of two halves that are joined together by a thin layer of solder. When the rated temperature is reached, the solder melts and the two link halves separate, allowing the sprinkler to operate.

### Design Criteria

The 5.6 K-Factor, Series TY-FRL Horizontal Sidewall Sprinklers are intended for fire protection systems designed in accordance with the standard installation rules recognized by the applicable Listing or Approval agency (e.g., UL Listing is based on NFPA 13 requirements); however, the minimum distance between sprinklers to prevent cold soldering is 8 feet (2,4 m). The Series TY-FRL Horizontal Sidewall Sprinkler must be installed with a deflector to ceiling distance of 4 to 6 inches (100 to 150 mm). To meet this requirement the centerline of the sprinkler waterway must be located 4-5/16 to 6-5/16 inches (110 to 160 mm) below the ceiling. Installation of the Series TY-FRL Horizontal Sidewall Sprinklers in recessed escutcheons will void all manufacturer's warranties, as well as possibly void the sprinkler's Approvals and/or Listings.



## Installation

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

### NOTES

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. 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-FRL Horizontal Sidewall Sprinklers** must be installed in accordance with the following instructions.

**Step 1.** The Series TY-FRL Horizontal Sidewall Sprinklers must be installed with their centerline of waterway paral-

lel to the ceiling and perpendicular to the back wall surface. The word "TOP" on the deflector must face upwards toward the ceiling.

**Step 2.** After installing an escutcheon (as applicable) 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.** Tighten the sprinkler into the sprinkler fitting using only the W-Type 9 Sprinkler Wrench (Ref. Figure 2). With reference to Figure 1, the W-Type 9 Sprinkler Wrench is to be applied to the wrench area.

K	TYPE	TEMP. RATING	FRAME COLOR CODE	SPRINKLER FINISH	
				NATURAL BRASS	CHROME PLATED
5.6 1/2" NPT	HORIZONTAL SIDEWALL (TY3321)	165°F/74°C	Unpainted	1, 2, 3, 4	
		212°F/100°C	White		

**NOTES:**

1. Listed by Underwriters Laboratories, Inc. (UL) for Light or Ordinary Hazard Occupancies as Quick Response Sprinklers.
2. Listed by Underwriters Laboratories, Inc. for use in Canada (C-UL) for Light or Ordinary Hazard Occupancies as Quick Response Sprinklers.
3. Approved by Factory Mutual Research Corporation (FM) for Light Hazard Occupancies as Quick Response Sprinklers.
4. Approved by the City of New York under MEA 112-04-E.

**TABLE A  
LABORATORY LISTINGS AND APPROVALS**

## Care and Maintenance

The Series TY-FRL 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.*

*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 or over-heated sprinklers must be replaced.

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.

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 manu-

facturer should be contacted relative to any questions.

It is recommended that automatic sprinkler systems be inspected, tested, and maintained by a qualified Inspection Service in accordance with local requirements and/or national code.

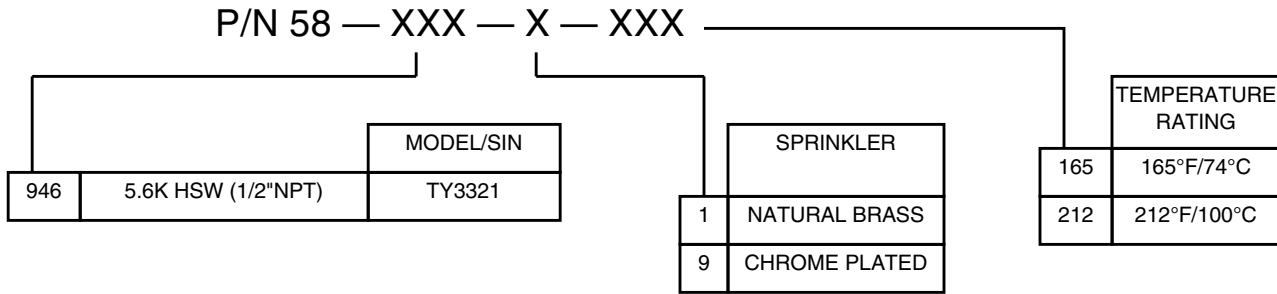
## Limited Warranty

Products manufactured by Tyco Fire Products 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 Tyco Fire Products. No warranty is given for products or components manufactured by companies not affiliated by ownership with Tyco Fire Products 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 Tyco Fire Products to be defective shall be either repaired or replaced, at Tyco Fire Products' sole option. Tyco Fire Products neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of products or parts of products. Tyco Fire Products 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 TYCO FIRE

PRODUCTS 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 TYCO FIRE PRODUCTS WAS INFORMED ABOUT THE POSSIBILITY OF SUCH DAMAGES, AND IN NO EVENT SHALL TYCO FIRE PRODUCTS' 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.**



**TABLE B**  
**PART NUMBER SELECTION**  
**SERIES TY-FRL HORIZONTAL SIDEWALL SPRINKLERS**

## 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, 5.6 K-factor, (specify temperature rating), Series TY-FRL Horizontal Sidewall Sprinkler with (specify type of finish), P/N (specify from Table B).

#### Sprinkler Wrench:

Specify: W-Type 9 Sprinkler Wrench, P/N 56-000-1-849.