

Series TY300-B — 5.6 K-factor High Pressure Sprinklers, 300 psi (20,7 bar) Standard Response, Standard Coverage

General Description

The Series TY300-B, 5.6 K-factor Sprinklers described in this data sheet are standard response, decorative 5 mm glass bulb type spray sprinklers. Their maximum rated service pressure of 300 psi (20,7 bar) makes them an excellent choice for systems that otherwise would require the use of a pressure control valve to reduce the static pressure to 165 psi (11,4 bar), when conventional 175 psi (12,1 bar) maximum rated pressure sprinklers are utilized. One of the most common uses for the TY300-B Sprinklers is in fire protection systems for high rise buildings.

The recessed version of the Series TY300-B Sprinklers are intended for use in areas with a finished mounting surface (i.e., ceiling or wall, as applicable). They use a two-piece Style 10 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/sidewall position. The adjustment provided by the Recessed Escutcheon reduces the accuracy to which the fixed pipe 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 corrosion resistant 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.

WARNINGS

The Series TY300-B 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 integrity 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 relative to any questions.

Model/Sprinkler Identification Numbers

TY3104 - Upright 5.6K, 1/2" NPT
TY3204 - Pendent 5.6K, 1/2" NPT
TY3304 - HSW 5.6K, 1/2" NPT

Technical Data

Approvals and

Maximum Working Pressure

UL and C-UL Listed: 300 psi (20,7 bar).
FM Approved: 175 psi (12,1 bar).
(Refer to Table A for complete approval information including corrosion resistant status, as well as the Design Criteria section for applicable system design criteria.)

Discharge Coefficient

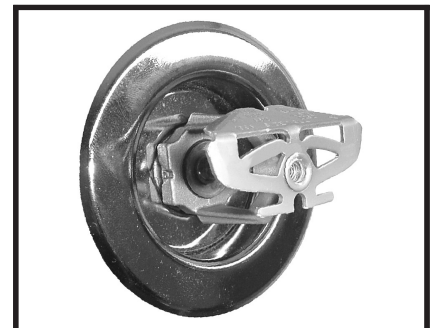
K = 5.6 GPM/psi^{1/2} (80,6 LPM/bar^{1/2})

Temperature Ratings

Refer to Table A

Finishes

Sprinkler: Refer to Table A
Recessed Escutcheon: White Coated



or Chrome Plated. (Other colors are available on request.)

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 which 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 water to flow

Design Criteria

The Series TY300-B Upright (TY3104), Pendent (TY3204), and Horizontal Sidewall (TY3304) Sprinklers are intended for fire protection systems designed in accordance with the standard coverage 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 Recessed Escutcheon is to be used for recessed installations.

Installation

The Series TY300-B 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 360°F/182°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. Higher levels of torque may distort the sprinkler inlet with consequent 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 TY300-B Pendent and Upright Sprinklers** must be installed

K	TYPE	TEMP.	BULB LIQUID	SPRINKLER FINISH (See Note 3)		
				NATURAL BRASS	CHROME PLATED	POLYESTER COATED***
5.6 1/2" NPT	PENDENT (TY3204) and UPRIGHT (TY3104)	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			
		360°F/182°C	Mauve			
	RECESSED PENDENT (TY3204)* Figure 3	135°F/57°C	Orange	1,2		
		155°F/68°C	Red			
		175°F/79°C	Yellow			
		200°F/93°C	Green			
5.6 1/2" NPT	HSW (TY3304)	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			
		360°F/182°C	Mauve			
	RECESSED HSW (TY3304)* Figure 4	135°F/57°C	Green	1,2		
		155°F/68°C	Orange			
		175°F/79°C	Red			
		200°F/93°C	Yellow			

NOTES:

- Listed by Underwriters Laboratories, Inc. (UL) and for use in Canada (C-UL) as Quick Response Sprinklers (300 psi).
 - Approved by Factory Mutual Research Corporation (FM) as Quick Response Sprinklers (175 psi).
 - 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) 3/4" Total Adjustment Recessed Escutcheon.
 *** White or Any Color (Frame and Deflector only).
 N/A: Not Available

**TABLE A
LABORATORY LISTINGS AND APPROVALS**

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.

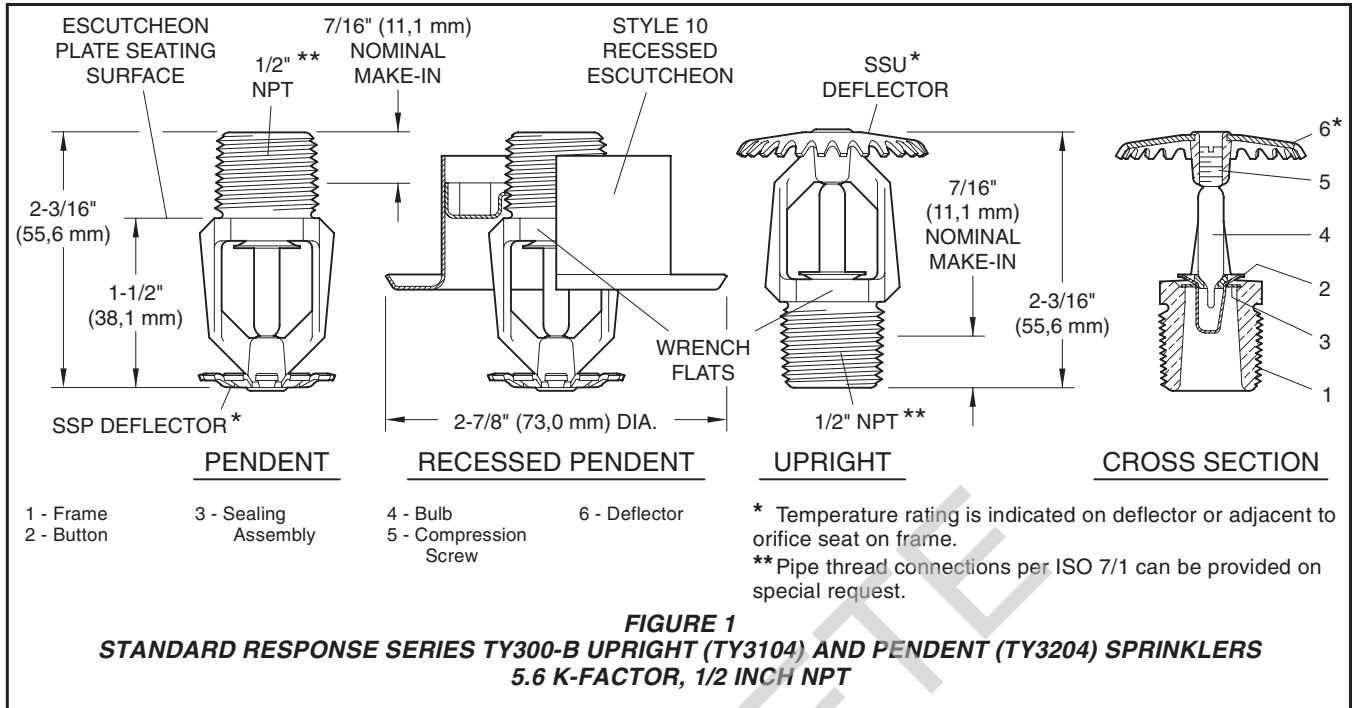
Step 3. Tighten the sprinkler into the sprinkler fitting using only the W-Type 6 Sprinkler Wrench (Ref. Figure 5). With reference to Figure 1, the W-Type 6 Sprinkler Wrench is to be applied to the sprinkler wrench flats.

The **Series TY300-B Recessed Pendent Sprinklers** must be installed in accordance with the following instructions.

Step A. 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 B. Tighten the sprinkler into the sprinkler fitting using only the W-Type 7 Recessed Sprinkler Wrench (Ref. Figure 6). With reference to Figure 1, the W-Type 7 Recessed 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 Closure over the Series TY300-B Sprinkler and push the Closure over the Mounting Plate until its flange comes in contact with the ceiling.



The **Series TY300-B Horizontal Sidewall Sprinklers** must be installed in accordance with the following instructions.

Step 1. Horizontal sidewall sprinklers are to be installed 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 2. With pipe thread sealant applied to the pipe threads, hand tighten the sprinkler into the sprinkler fitting.

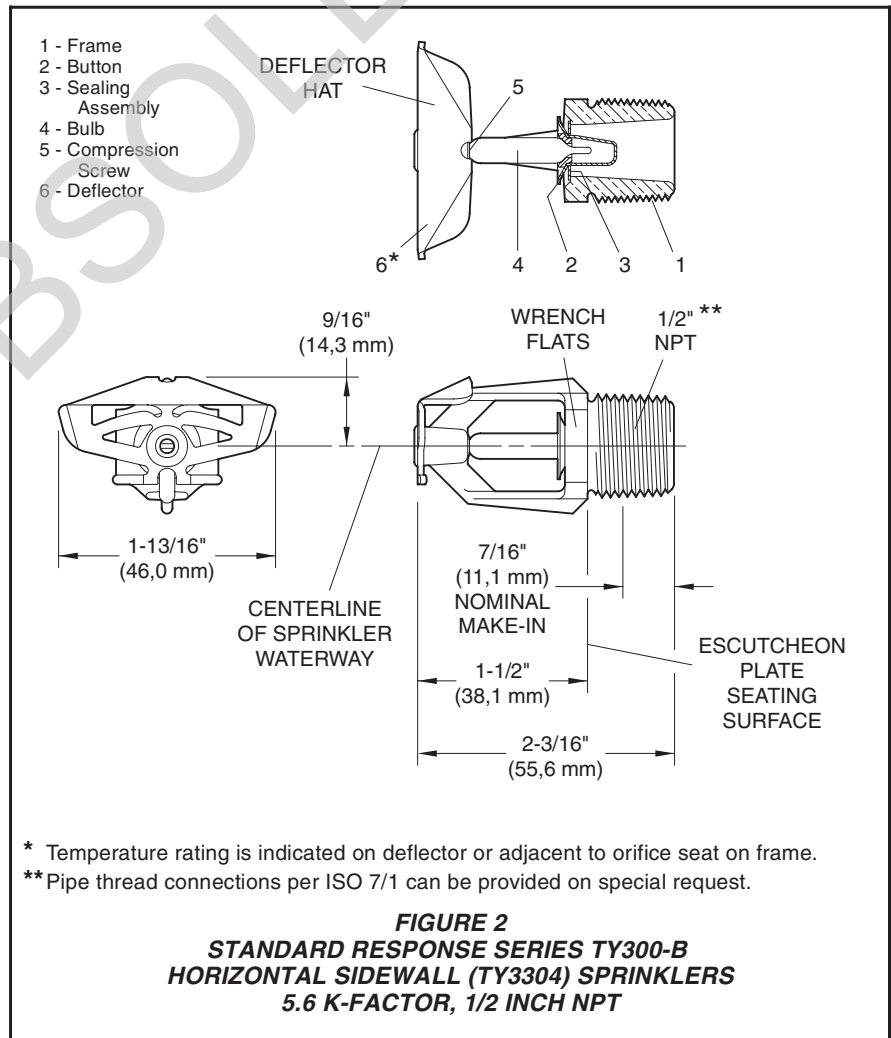
Step 3. Tighten the sprinkler into the sprinkler fitting using only the W-Type 6 Sprinkler Wrench (Ref. Figure 5), With reference to Figure 2, the W-Type 6 Sprinkler Wrench is to be applied to the wrench flats.

The **Series TY300-B Recessed Horizontal Sidewall Sprinklers** must be installed in accordance with the following instructions.

Step A. Recessed horizontal sidewall sprinklers are to be installed 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 B. After installing the Style 10 Mounting Plate over the sprinkler threads, hand tighten the sprinkler into the sprinkler fitting.

Step C. Tighten the sprinkler into the sprinkler fitting using only the W-Type 7 Recessed Sprinkler Wrench (Ref.



* 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.

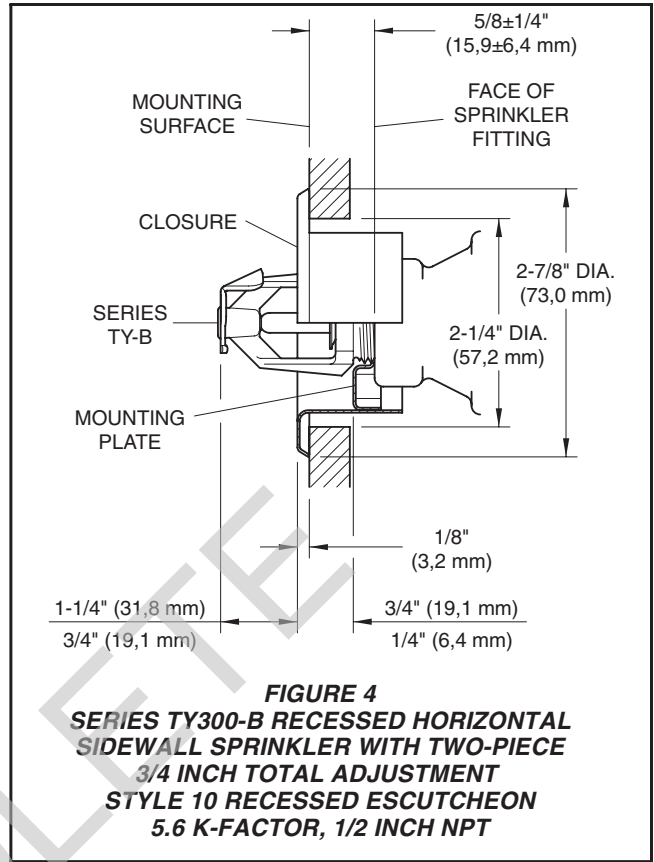
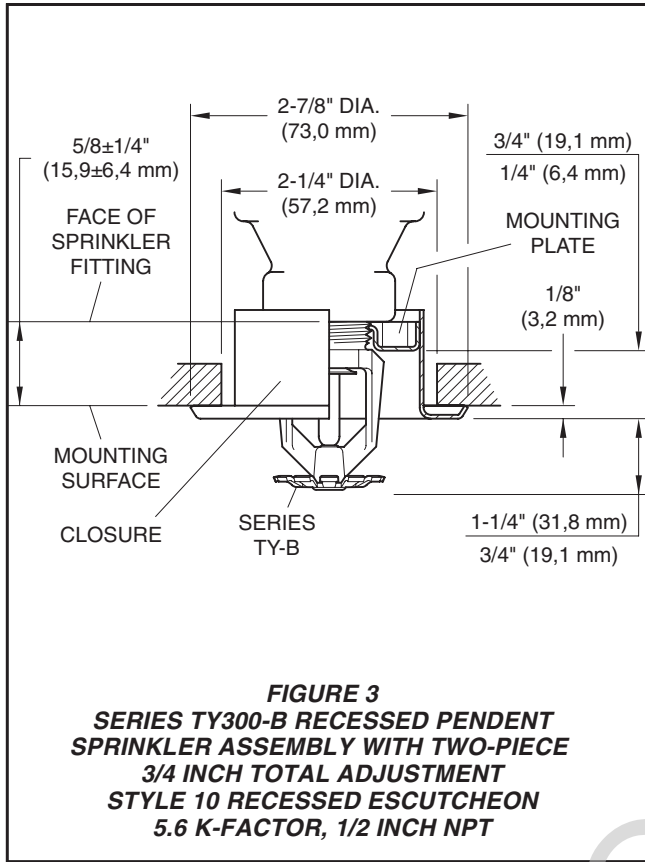
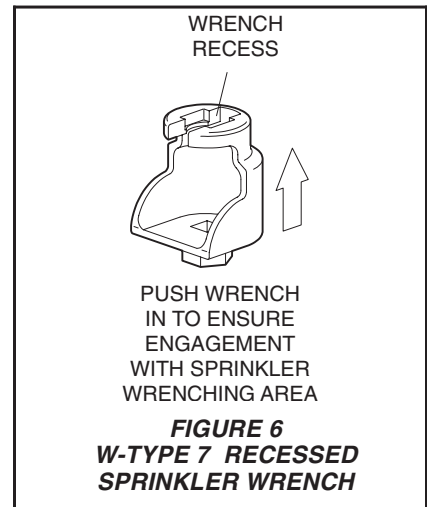
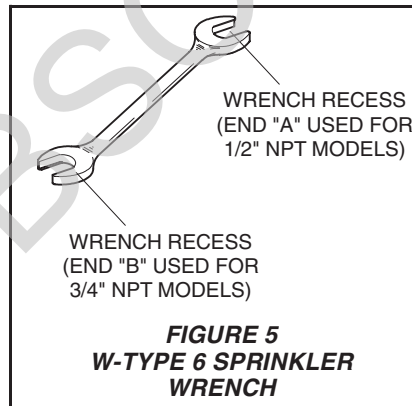


Figure 6). With reference to Figure 2, the W-Type 7 Recessed Sprinkler Wrench is to be applied to the sprinkler wrench flats.

Step D. After the wall has been installed or the finish coat has been applied, slide on the Style 10 Closure over the Series TY300-B Sprinkler and push the Closure over the Mounting Plate until its flange comes in contact with the wall.



Care and Maintenance

The Series TY300-B 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 shipped or stored where their temperature will exceed 100°F/38°C and they 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.

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this docu-

ment, 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.

It is recommended that automatic sprinkler systems be inspected, tested, and maintained by a qualified Inspection Service.

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.

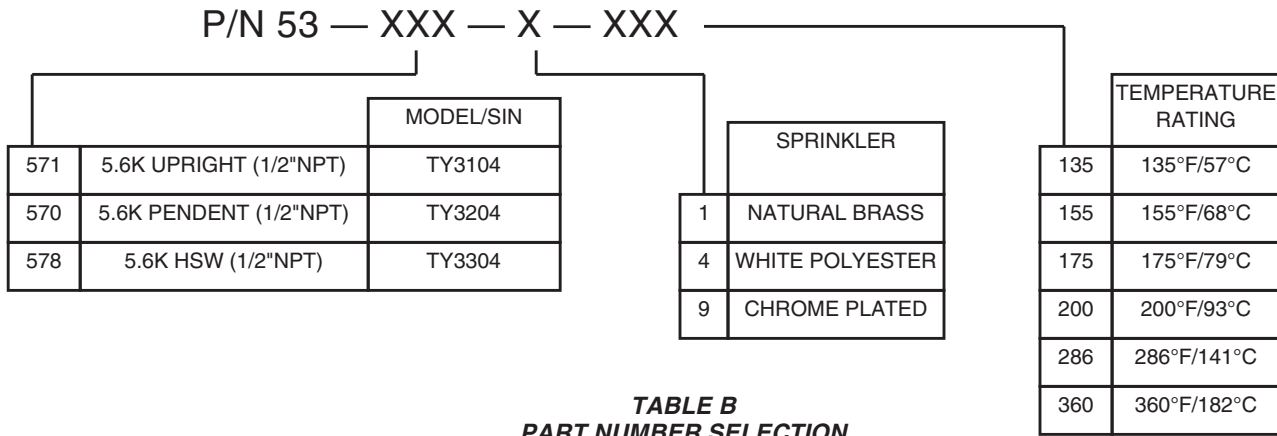


TABLE B
PART NUMBER SELECTION
SERIES TY300-B SPRINKLERS

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), 5 mm Bulb Type, 5.6 K-factor, (specify temperature rating), Series TY300-B (specify Pendent, Upright, or Horizontal Sidewall) Sprinkler with (specify type of finish or coating), P/N (specify from Table B).

Recessed Escutcheon:

Specify: Style (specify) Recessed Escutcheon with (specify finish), P/N (specify).

- 1/2" (15 mm)
 - Style 10
 - Chrome Plated P/N 56-701-9-010
- 1/2" (15 mm)
 - Style 10
 - White Color
 - Coated P/N 56-701-4-010

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.