

tyco / Fire & Building Products

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

Series EC-11 & EC-14 — 11.2 and 14.0 K-factor Extended Coverage (Light and Ordinary Hazard) Upright, Pendent, and Recessed Pendent Sprinklers

General Description

The 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.

The 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.

The 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.

IMPORTANT

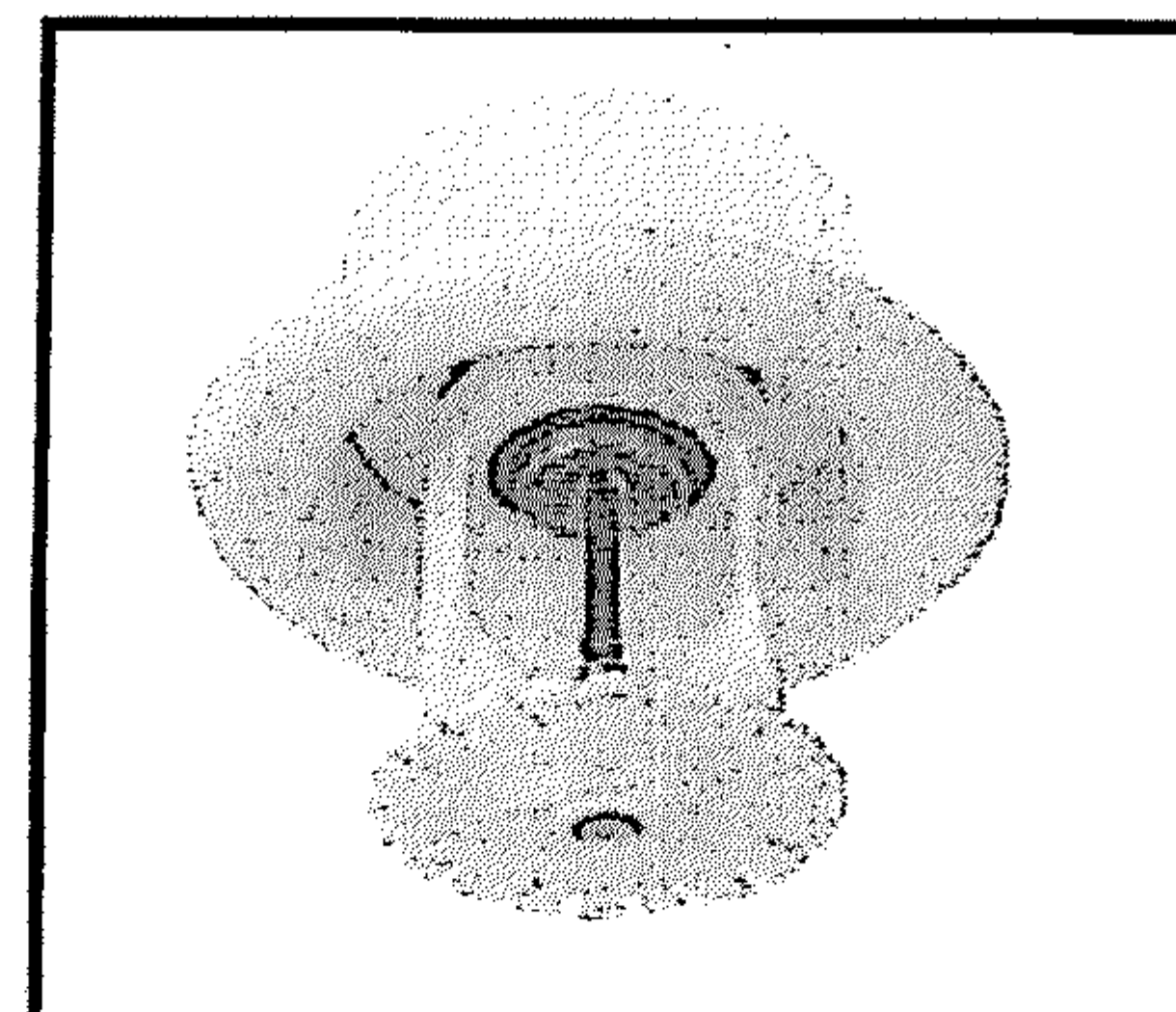
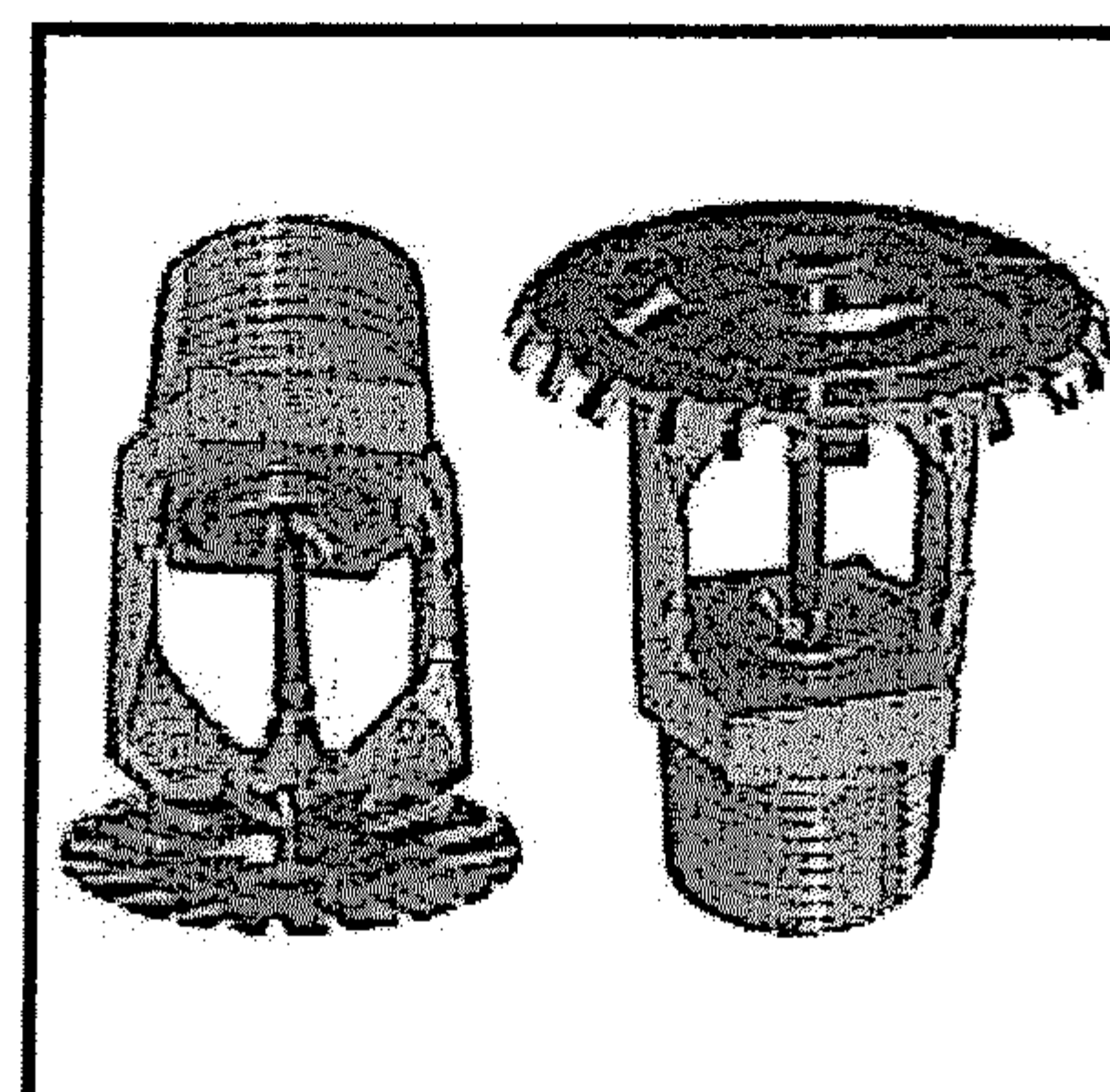
Always refer to Technical Data Sheet TFP700 for the "INSTALLER WARNING" that provides cautions with respect to handling and installation of sprinkler systems and components. Improper handling and installation can permanently damage a sprinkler system or its components and cause the sprinkler to fail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

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 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 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 Number

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.

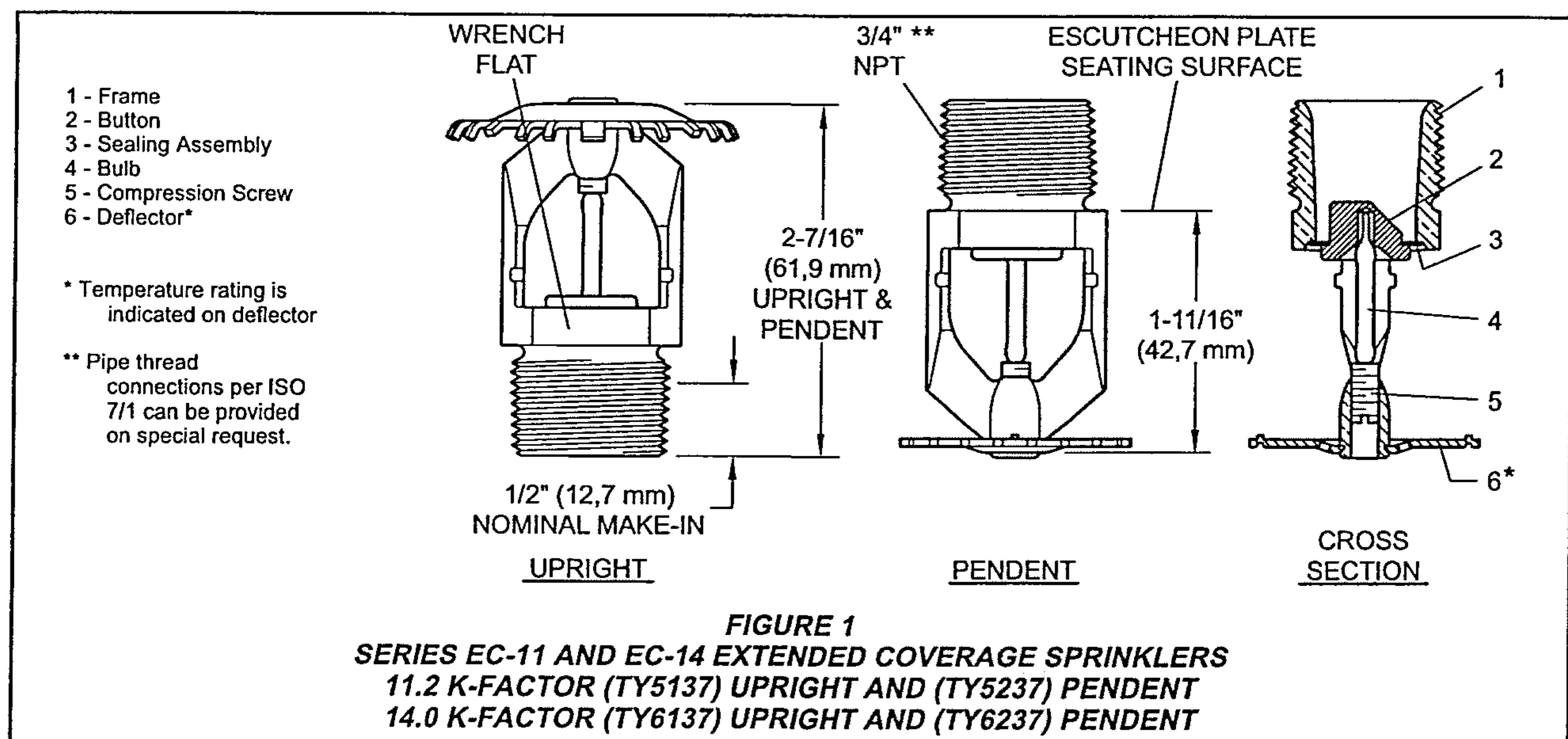
TY6137 is a redesignation for C6137, G1896, and S2610.

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

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HAZARD	TYPE	TEMP.	BULB LIQUID	SPRINKLER FINISH (See Note 5)			
				NATURAL BRASS	CHROME PLATED	WHITE* POLYESTER	LEAD COATED
LIGHT Refer to Table B for UL and C-UL Sensitivity Rating and Refer to Table C for 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				
		200°F/93°C	Green	1, 2, 4			
		286°F/141°C	Blue				
	REC. PENDENT K=11.2 (TY5237) K=14.0 (TY6237) With Style 30 Escutcheon	135°F/57°C	Orange				
		155°F/68°C	Red	1, 2, 3, 4			
		175°F/79°C	Yellow				
		200°F/93°C	Green	1, 2, 4			
		286°F/141°C	Blue				
ORDINARY Refer to Table B for UL and C-UL Sensitivity Rating and Refer to Table C for FM Sensitivity Rating	UPRIGHT K=11.2 (TY5137) K=14.0 (TY6137) and PENDENT K=11.2 (TY5237) K=14.0 (TY6237)	135°F/57°C	Orange				
		155°F/68°C	Red				
		175°F/79°C	Yellow	1, 2, 3, 4			
		200°F/93°C	Green				
		286°F/141°C	Blue				
	REC. PENDENT K=11.2 (TY5237) K=14.0 (TY6237) With Style 40 Escutcheon	135°F/57°C	Orange				
		155°F/68°C	Red				
		175°F/79°C	Yellow	1, 2, 4			
		200°F/93°C	Green				
		286°F/141°C	Blue				

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	155°F	175°F	200°F	286°F	135°F	155°F	175°F	200°F	286°F
14 x 14	Up. or Pend.	—	—	—	—	—	QR	QR	QR	QR	SR
14 x 14	Style 30 Recessed	—	—	—	—	—	QR	QR	QR	QR	N/A
14 x 14	Style 40 Recessed	—	—	—	—	—	QR	QR	QR	QR	N/A
16 x 16	Up. or Pend.	QR*	QR*	QR*	QR*	QR*	SR	SR	SR	SR	SR
16 x 16	Style 30 Recessed	QR*	QR*	QR*	QR*	QR*	SR	SR	SR	SR	N/A
16 x 16	Style 40 Recessed	N/A	N/A	N/A	N/A	N/A	SR	SR	SR	SR	N/A
18 x 18	Up. or Pend.	QR*	QR*	QR*	QR*	QR*	SR	SR	SR	SR	SR
18 x 18	Style 30 Recessed	QR*	QR*	QR*	QR*	QR*	SR	SR	SR	SR	N/A
18 x 18	Style 40 Recessed	N/A	N/A	N/A	N/A	N/A	SR	SR	SR	SR	N/A
20 x 20	Up. or Pend.	QR*	QR*	QR*	SR*	SR*	SR	SR	SR	SR	SR
20 x 20	Style 30 Recessed	QR*	SR*	QR*	SR*	SR*	SR	SR	SR	SR	N/A
20 x 20	Style 40 Recessed	N/A	N/A	N/A	N/A	N/A	SR	SR	SR	SR	N/A

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
(SEE TABLE D FOR PERMITTED K-FACTOR/AREA COMBINATIONS)

AREA	STYLE	LIGHT HAZARD					ORDINARY HAZARD				
		135°F	155°F	175°F	200°F	286°F	135°F	155°F	175°F	200°F	286°F
14 x 14	Up. or Pend.	—	—	—	—	—	SR	SR	SR	SR	SR
14 x 14	Style 30 Recessed	—	—	—	—	—	N/A	N/A	N/A	N/A	N/A
14 x 14	Style 40 Recessed	—	—	—	—	—	N/A	N/A	N/A	N/A	N/A
16 x 16	Up. or Pend.	QR*	QR*	N/A	N/A	N/A	SR	SR	SR	SR	SR
16 x 16	Style 30 Recessed	QR	QR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
16 x 16	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	Up. or Pend.	QR*	QR*	N/A	N/A	N/A	SR	SR	SR	SR	SR
18 x 18	Style 30 Recessed	QR	QR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
18 x 18	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	Up. or Pend.	QR*	QR*	N/A	N/A	N/A	SR	SR	SR	SR	SR
20 x 20	Style 30 Recessed	QR	QR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20 x 20	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
* Pendent Only

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

Technical Data

Approvals
The 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.)

The 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 (Ref. 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

Patents
U.S.A. Patent Numbers 5,366,022;
5,579,846; 5,584,344; 5,609,211;
5,862,994; and 5,865,256.

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 flow water.

Design Criteria

The 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 (Ref. Table A, B, and C).

UL and C-UL Listing Requirements

- 1. The 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 of the sprinklers in the design area.
- 2. The 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 non-combustible, 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. The Series EC-11 and EC-14 Sprinklers having been 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. The minimum allowable spacing between the Series EC-11 and EC-14

Sprinklers, to prevent cold soldering, is 8 feet (2,4 m) for upright sprinklers and 9 feet (2,7 m) for pendent sprinklers.

- 5. The 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, clearance to storage, etc.

UL and C-UL Specific Application Listing Requirements For Installation Under Concrete Tees

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

- 1. The 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

The 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

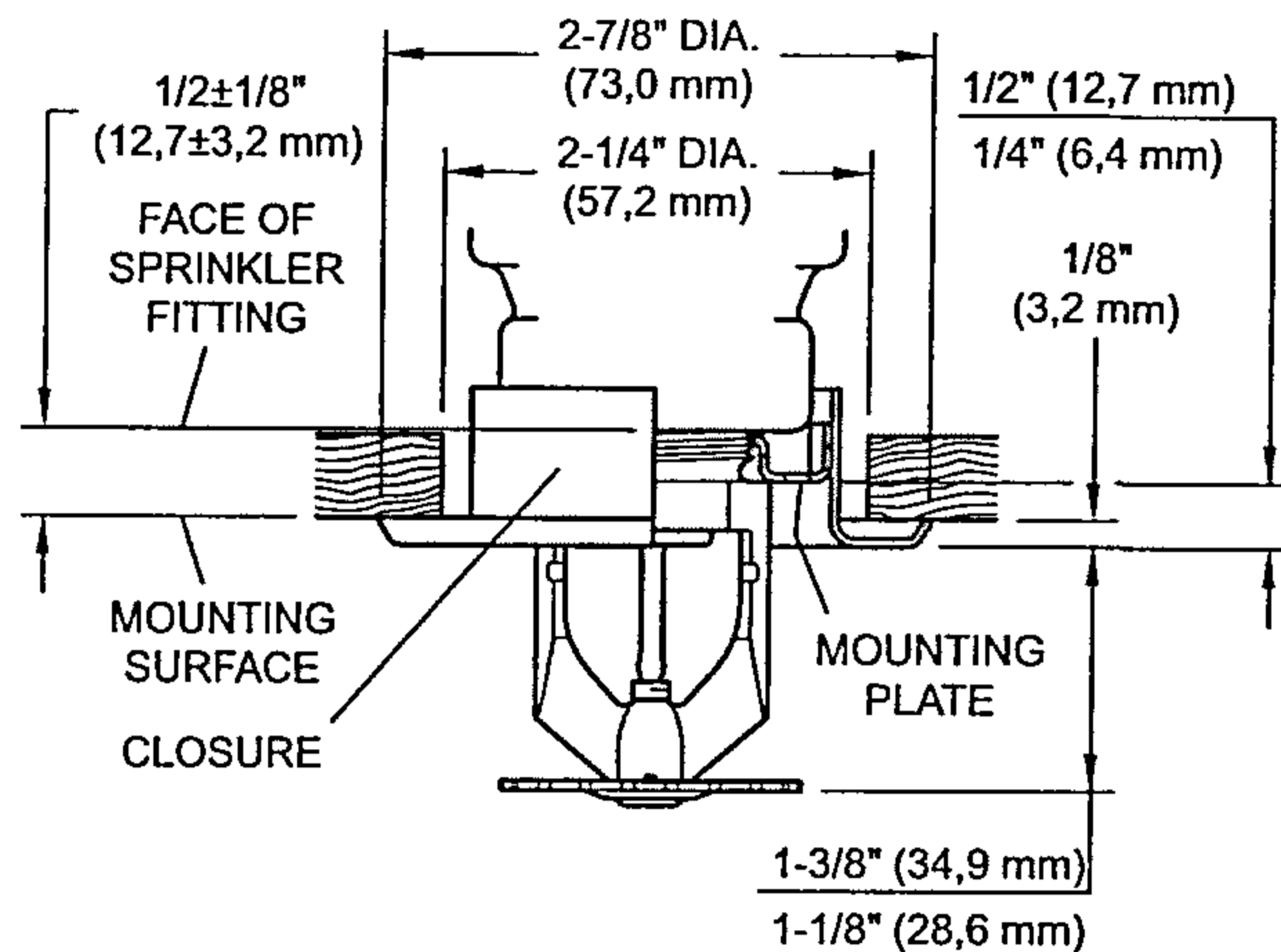


FIGURE 2
SERIES EC-11 AND EC-14 RECESSED PENDENT SPRINKLER ASSEMBLY
WITH TWO-PIECE 1/2 INCH TOTAL ADJUSTMENT
STYLE 30 RECESSED ESCUTCHEON

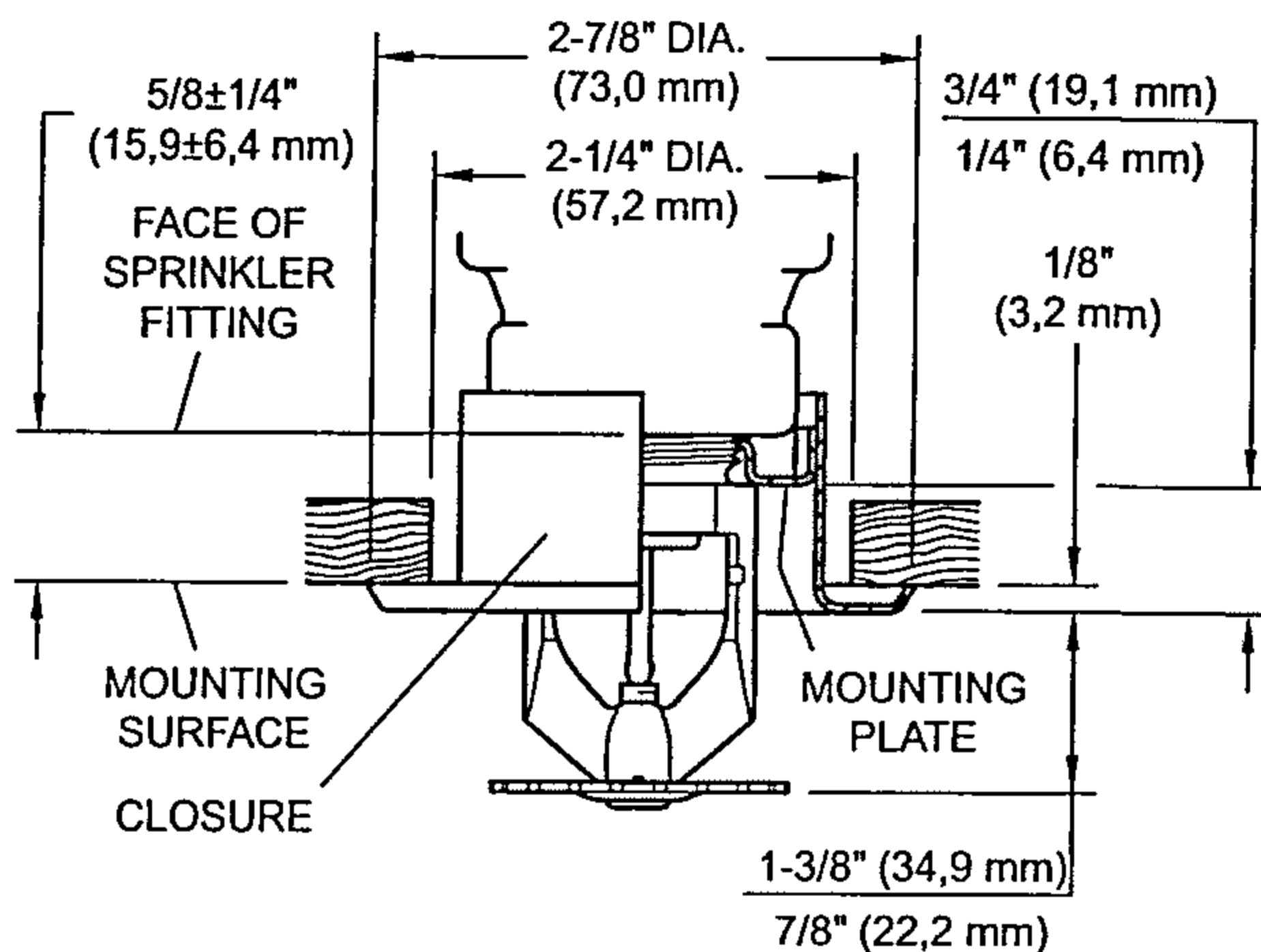


FIGURE 3
SERIES EC-11 AND EC-14 RECESSED PENDENT SPRINKLER ASSEMBLY
WITH TWO-PIECE 3/4 INCH TOTAL ADJUSTMENT
STYLE 40 RECESSED ESCUTCHEON

Loss Prevention Data Sheets relate to, but are 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.

Installation

The Series EC-11 and EC-14 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.

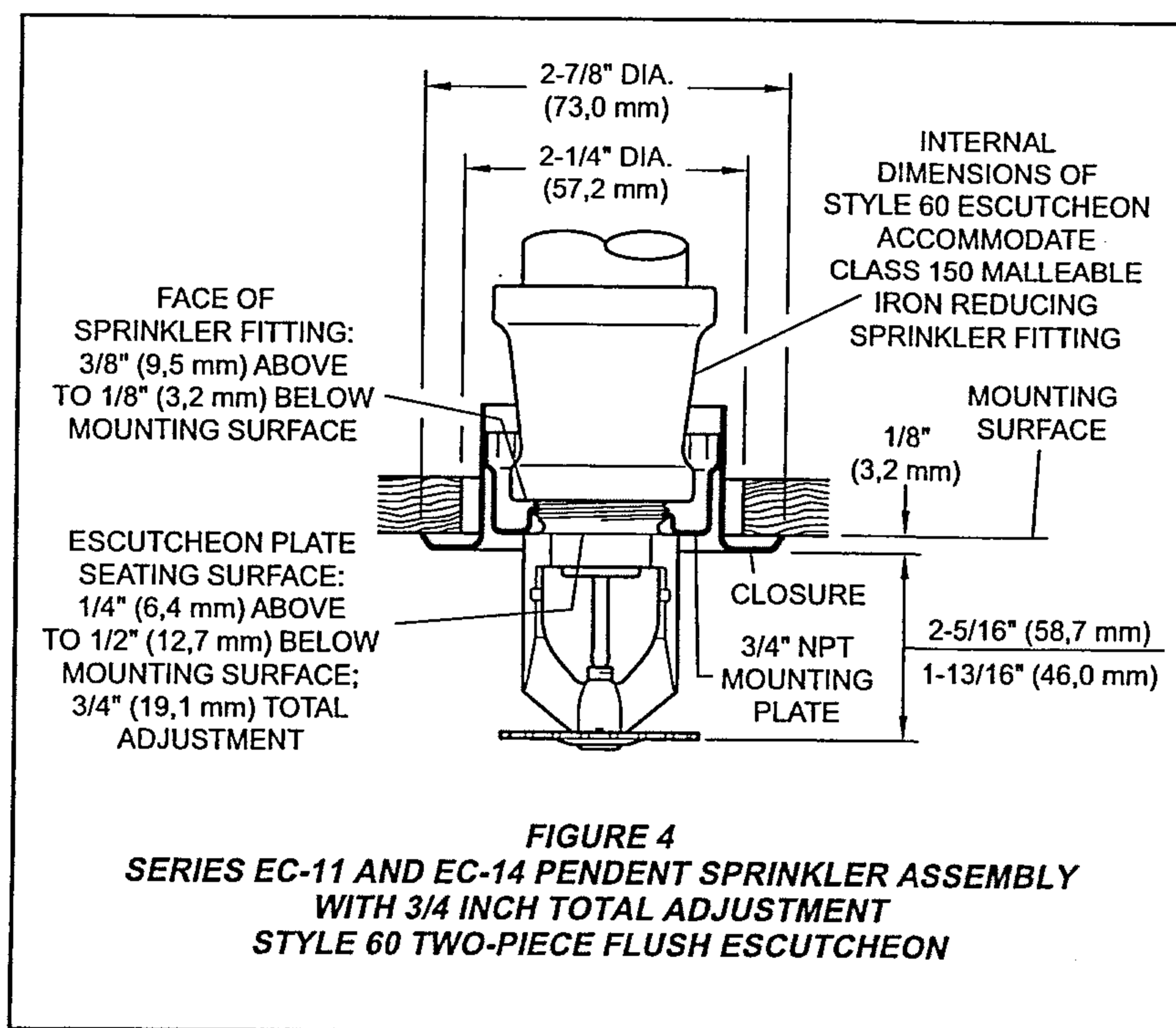
A 3/4 inch NPT sprinkler joint should be obtained with a minimum to maximum torque of 10 to 20 ft.lbs. (13.4 to 26.8 Nm). Higher levels of torque may distort the sprinkler inlet with consequent leakage or impairment of the sprinkler.

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

Step 1. The sprinkler must be installed with the deflector parallel to the mounting surface. Pendent sprinklers must be installed in the pendent position, and upright sprinklers must be installed in the upright position.

Step 2. After installing the Style 30, 40, or 60 mounting plate (or other 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. Wrench tighten upright or pendent sprinklers using only the W-Type 3 (End A) Sprinkler Wrench. When installing the pendent sprinkler with Style 30, 40, or 60 Escutcheon, wrench tighten the sprinkler using only the W-Type 22 Sprinkler Wrench. The wrench recess of the applicable sprinkler wrench (Ref. Figure 5 and 6) is to be applied to the sprinkler wrench flats (Ref. Figure 1).



Care and Maintenance

The Tyco® Series EC-11 and EC-14 Sprinklers must be maintained and serviced in accordance with the following instructions:

NOTE

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 systems must be obtained from the proper authorities and all personnel who may be affected by this action must be notified.

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.

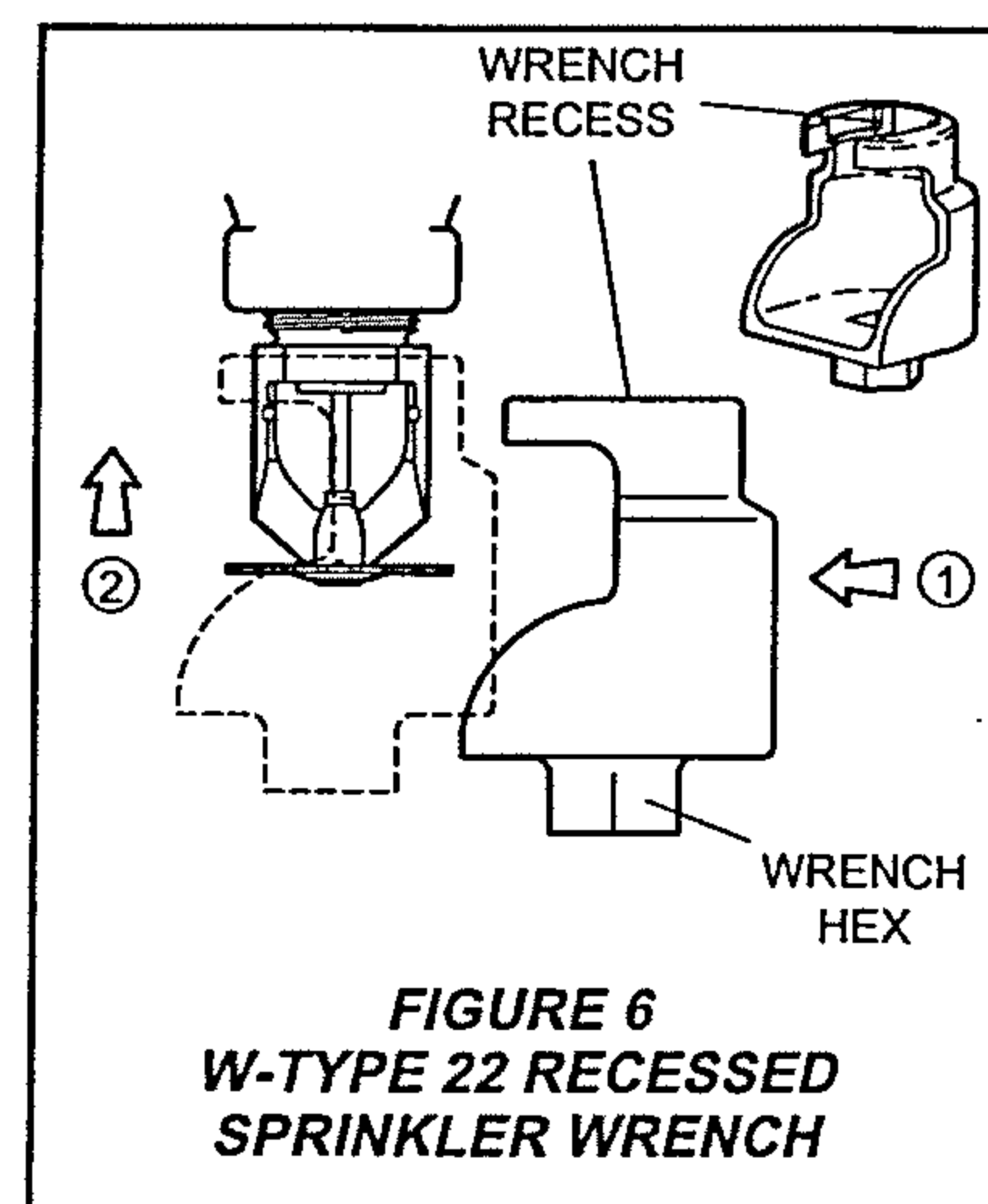
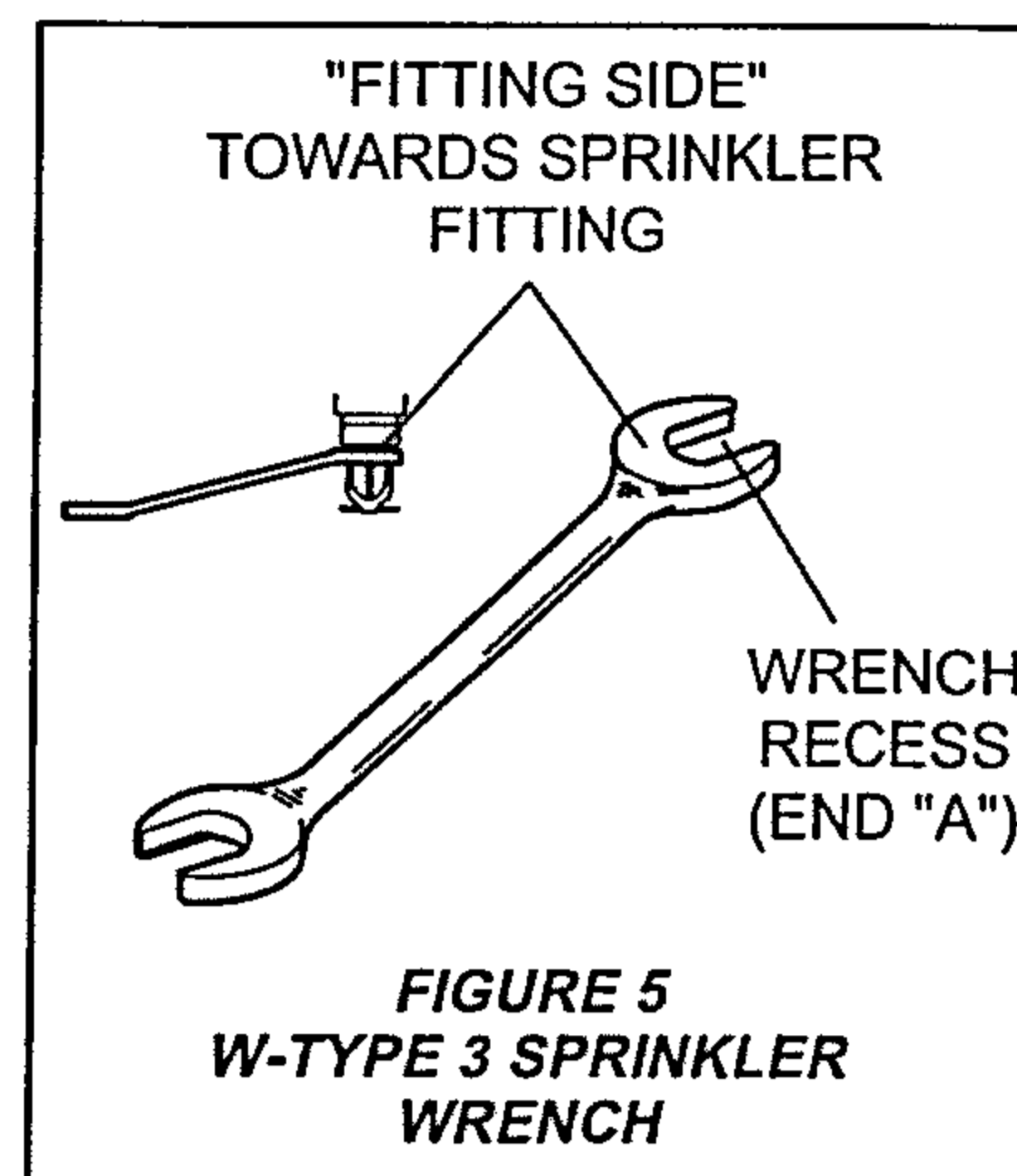
Care must be exercised to avoid damage to the sprinklers - before, during, and after installation. Sprinklers damaged by dropping, striking, wrench

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 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 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.

Automatic sprinkler systems should be inspected, tested, and maintained by a qualified Inspection Service in accord-



ance with local requirements and/or national codes.

DESCRIPTION	AREA	LIGHT HAZARD 0.10 GPM/FT ²		GROUP I ORDINARY HAZARD 0.15 GPM/FT ²		GROUP II ORDINARY HAZARD 0.20 GPM/FT ²	
		GPM	PSI	GPM	PSI	GPM	PSI
TY5137 (K=11.2) UPRIGHT	14 x 14	—	—	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	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	—	—	—	—
	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	—	—	—	—	—	—
	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 ft² = 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

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. Please specify the Sprinkler Identification Number (SIN), quantity, and temperature rating. 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 SIN), (specify K-Factor), (specify temperature rating), (specify Pendent or Upright) Extended Coverage Sprinkler with (specify finish), P/N (specify - from Table E, where applicable).

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

*Refer to Technical Data Sheet TFP770.

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

*Refer to Technical Data Sheet TFP778.

Sprinkler Wrench:

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

P/N 51 - AAA - B - CCC

AAA = 893 (for TY5237
K11.2 Pendent)

AAA = 894 (for TY5137
K11.2 Upright)

AAA = 895 (for TY6237
K14.0 Pendent)

AAA = 896 (for TY6137
K14.0 Upright)

B = 1 (for Natural Brass)

B = 3 (for White [RAL9010])*

B = 4 (for White Polyester)

B = 7 (for Lead Coated)

B = 9 (for Chrome Plated)

CCC = 135 (for 135°F/57°C)

CCC = 155 (for 155°F/68°C)

CCC = 175 (for 175°F/79°C)

CCC = 200 (for 200°F/93°C)

*Eastern Hemisphere sales only.

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

Reliable®

Model F3QR Quick Response Dry Sprinklers

Features

1. The Model F3QR sprinkler utilizes Belleville Spring Closure Technology. Reliable is the first in the industry to produce a Quick Response Dry Concealed sprinkler utilizing this technology.
2. Styles available
 - Pendent
 - Recessed FP Pendent
 - Recessed F1 Pendent
 - Concealed
 - Horizontal Sidewall
 - Recessed FP Horizontal Sidewall
 - Recessed F1 Horizontal Sidewall
3. 1½" (38mm) escutcheon adjustment on pendent sprinkler.
4. ½" (13mm) escutcheon adjustment on recessed sprinkler with push-on/ thread-off FP Model Escutcheon ring.
5. 3/8" (9.5mm) cover plate adjustment on concealed sprinkler with push-on/ thread-off CCP Cover Plate.
6. 3/4" (19mm) escutcheon adjustment on recessed sprinkler with F1 Escutcheon.
7. Attractive appearance. Employs 3mm frangible glass bulb and galvanized nipple.
8. Lengths available to accommodate installation dimensions from 2" - to - 48" (51mm - to - 1219mm), in ¼" (6mm) increments.
9. Available in a variety of plated and painted finishes.
10. Polyester Coated Corrosion Resistant Sprinklers.

US Patent Numbers 5,775,431 and 5,967,240.

Approvals

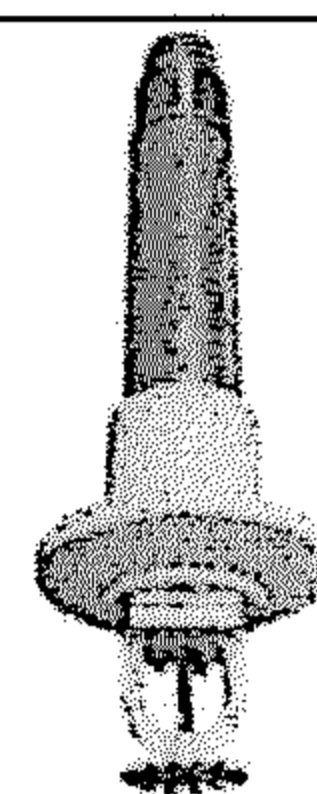
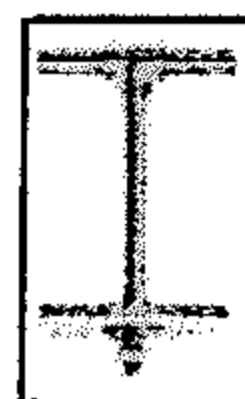
1. Listed by Underwriters Laboratories Inc. and UL Certified for Canada (cULus)

Style	Response	Sprinkler System Type	Hazard
Pendent Recessed Pendent Recessed F1 Pendent CCP Concealed (R5714)	Quick	Wet Pipe Dry Pipe All Preaction	Light Ordinary
Horizontal Sidewall Recessed Horizontal Sidewall (R5734)	Quick	Wet Pipe Dry Pipe All Preaction	Light

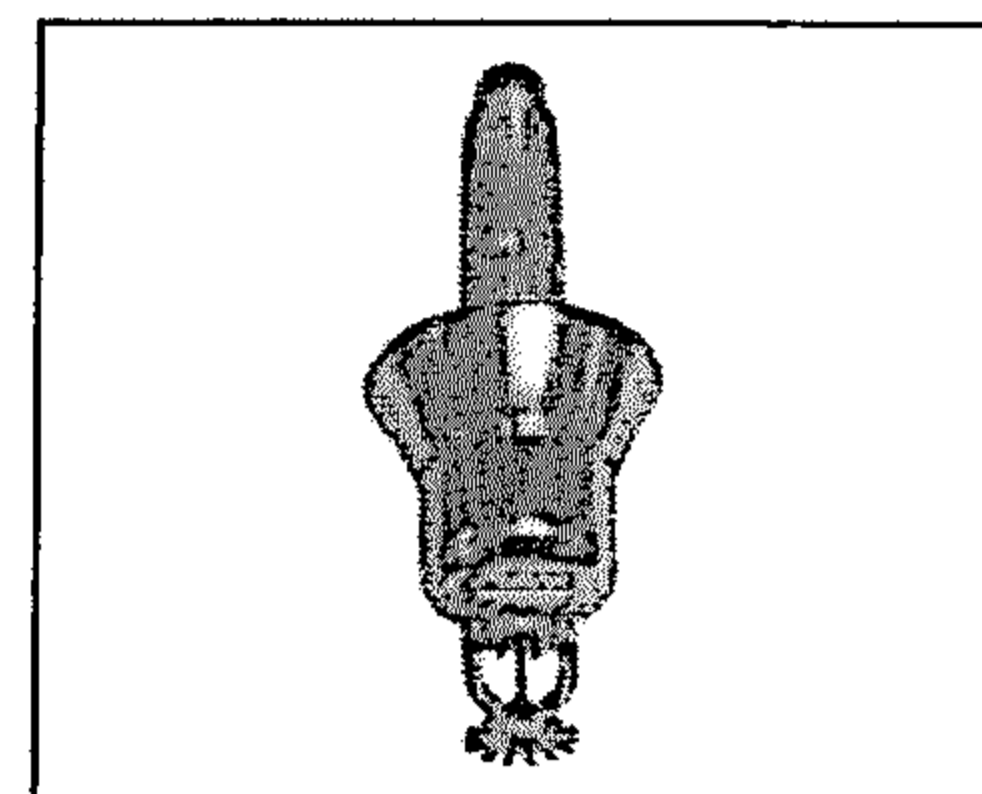
2. Certified by FM Approvals

Style	Response	Sprinkler System Type	Hazard
Pendent Recessed F1 Pendent (R5714)	Quick	Wet Pipe Dry Pipe All Preaction	Light Ordinary, Groups 1&2
Horizontal Sidewall Recessed F1 Horizontal Sidewall (R5734)	Quick	Wet Pipe Dry Pipe All Preaction	Light

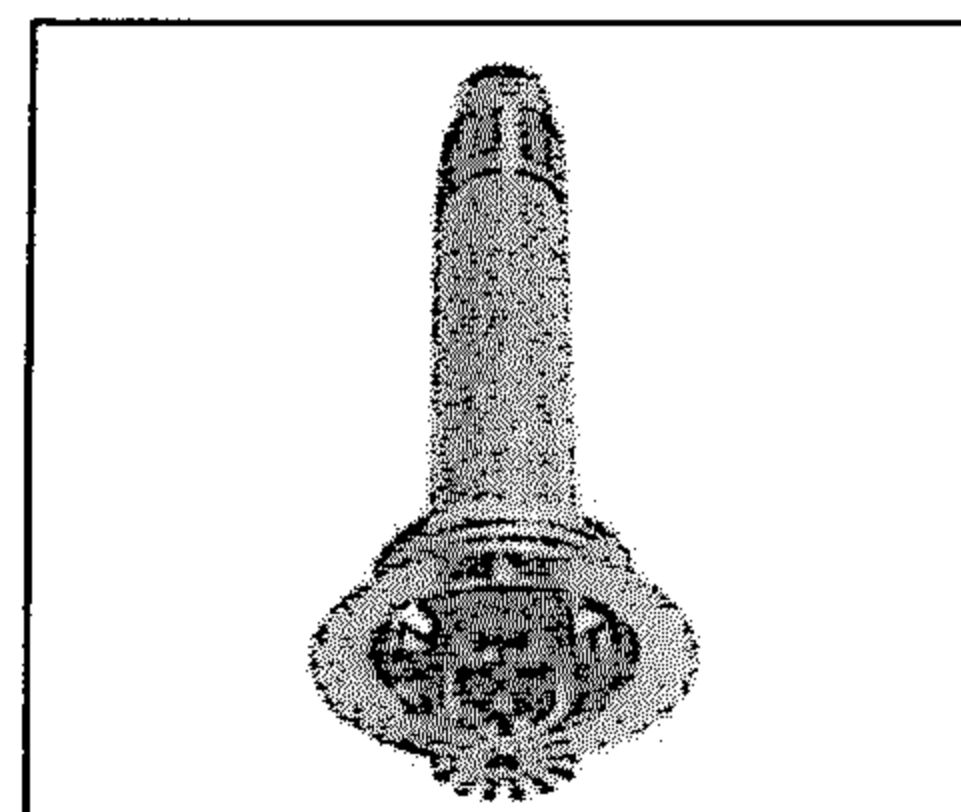
3. NYC MEA 258-93-E



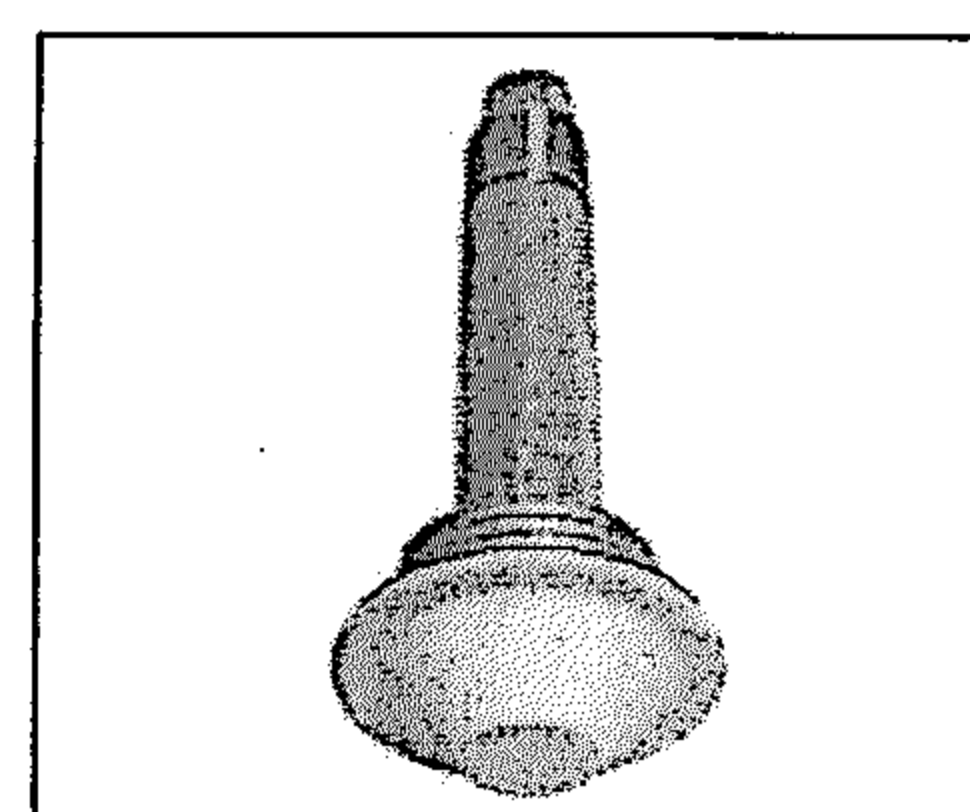
Pendent
(See Fig. 1)



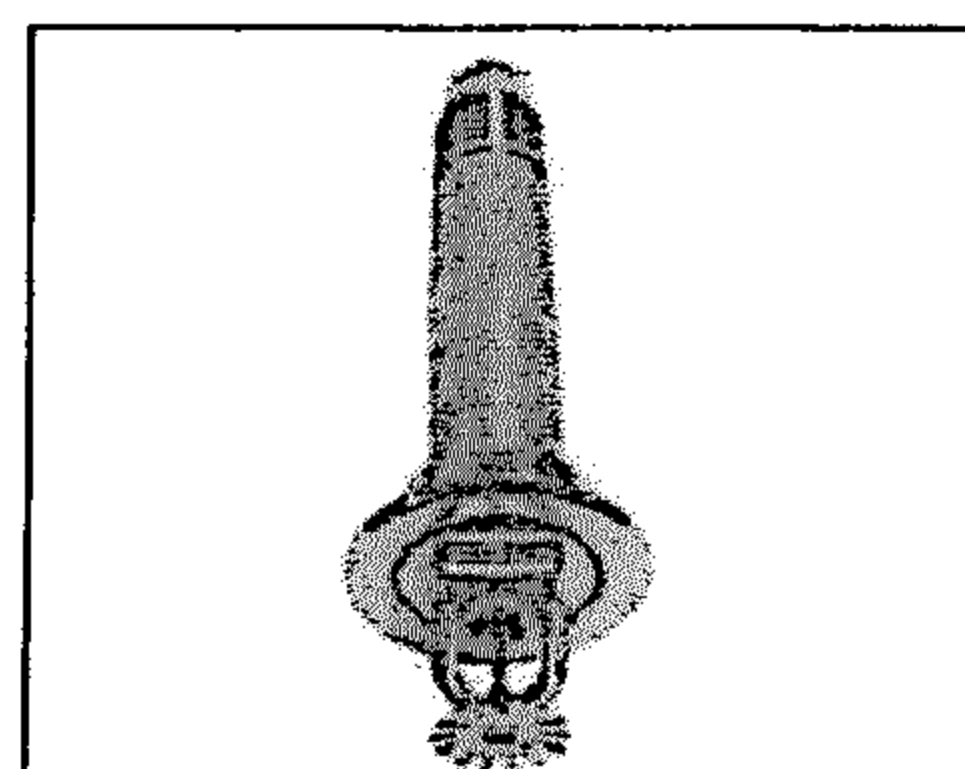
Pendent / HB
(See Fig. 2)



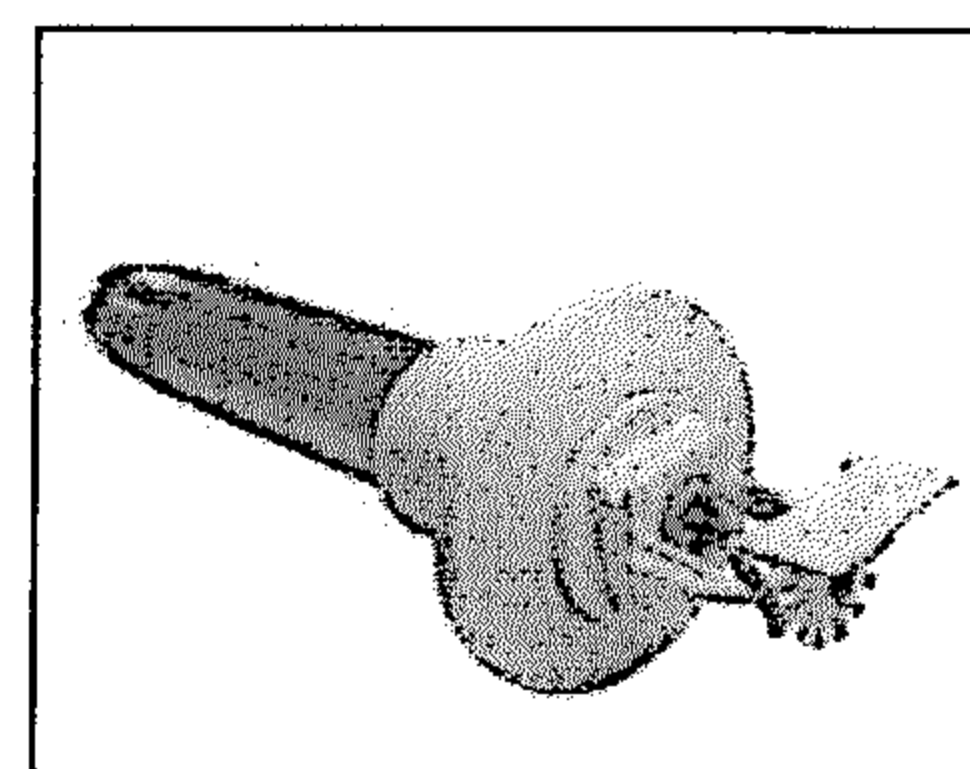
Recessed FP Pendent
(See Fig. 3)



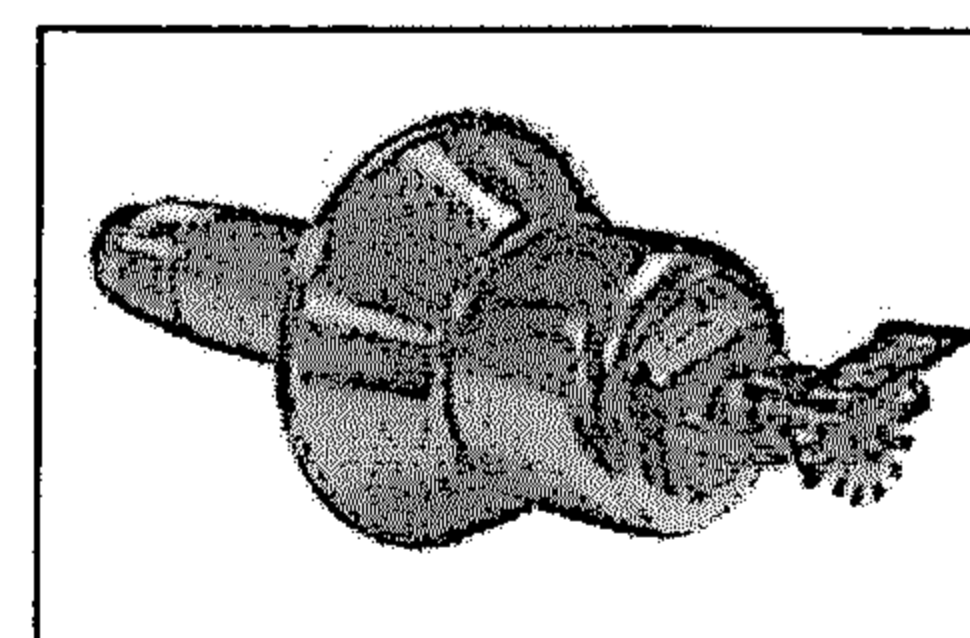
Concealed
(See Fig. 4)



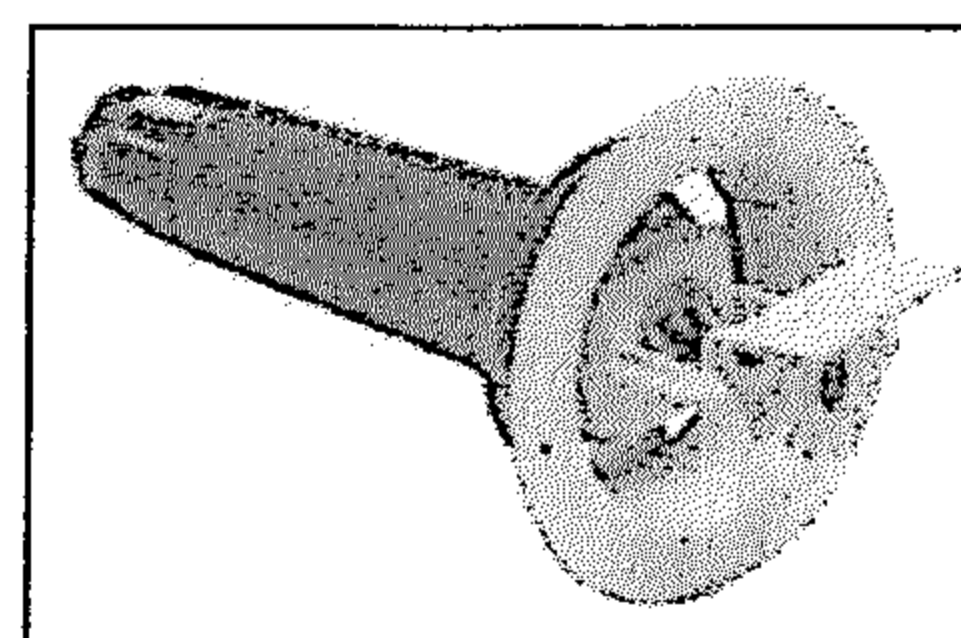
Recessed F1 Pendent
(See Fig. 5)



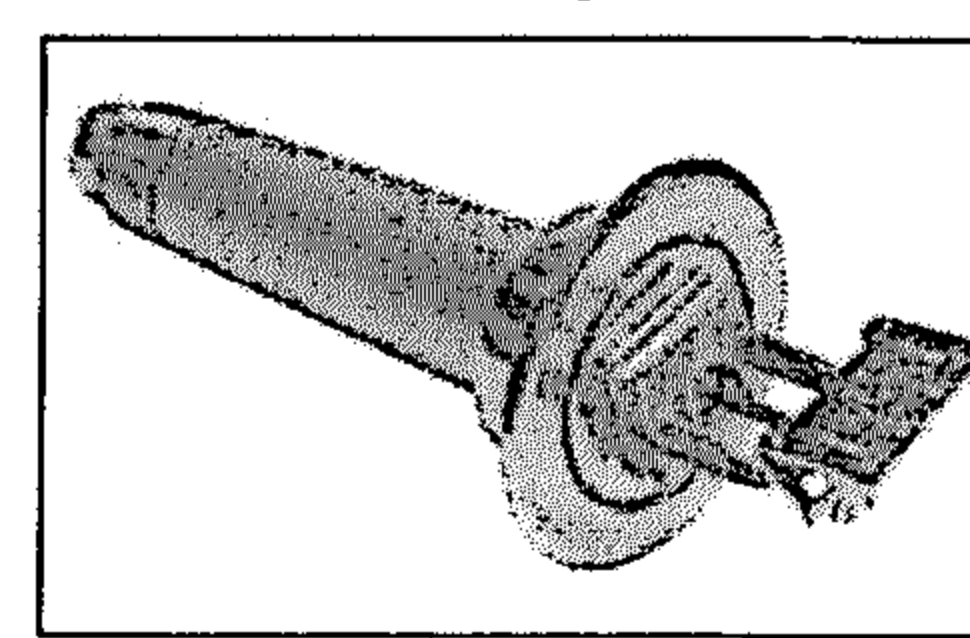
Horizontal Sidewall
(See Fig. 6)



Horizontal Sidewall / HB
(See Fig. 7)



Recessed FP
Horizontal Sidewall
(See Fig. 8)



Recessed F1
Horizontal Sidewall
(See Fig. 9)

The Reliable Automatic Sprinkler Co., Inc., 103 Fairview Park Drive, Elmsford, New York 10523

Model F3QR Dry Pendent Sprinkler

"A" Dim.	2" to 48" (51mm to 1219mm) in 1/4" (6mm) increments
----------	---

Finishes⁽¹⁾

Sprinkler	Escutcheon
Bronze	Brass ⁽³⁾
Chrome Plated	Chrome Plated
White Polyester ⁽²⁾	White

- ⁽¹⁾ Other finishes and colors are available on special order. Consult factory for details.
- ⁽²⁾ cULus Listed as a Corrosion Resistant sprinkler in standard Black or White.
- ⁽³⁾ Not available for HB escutcheons.

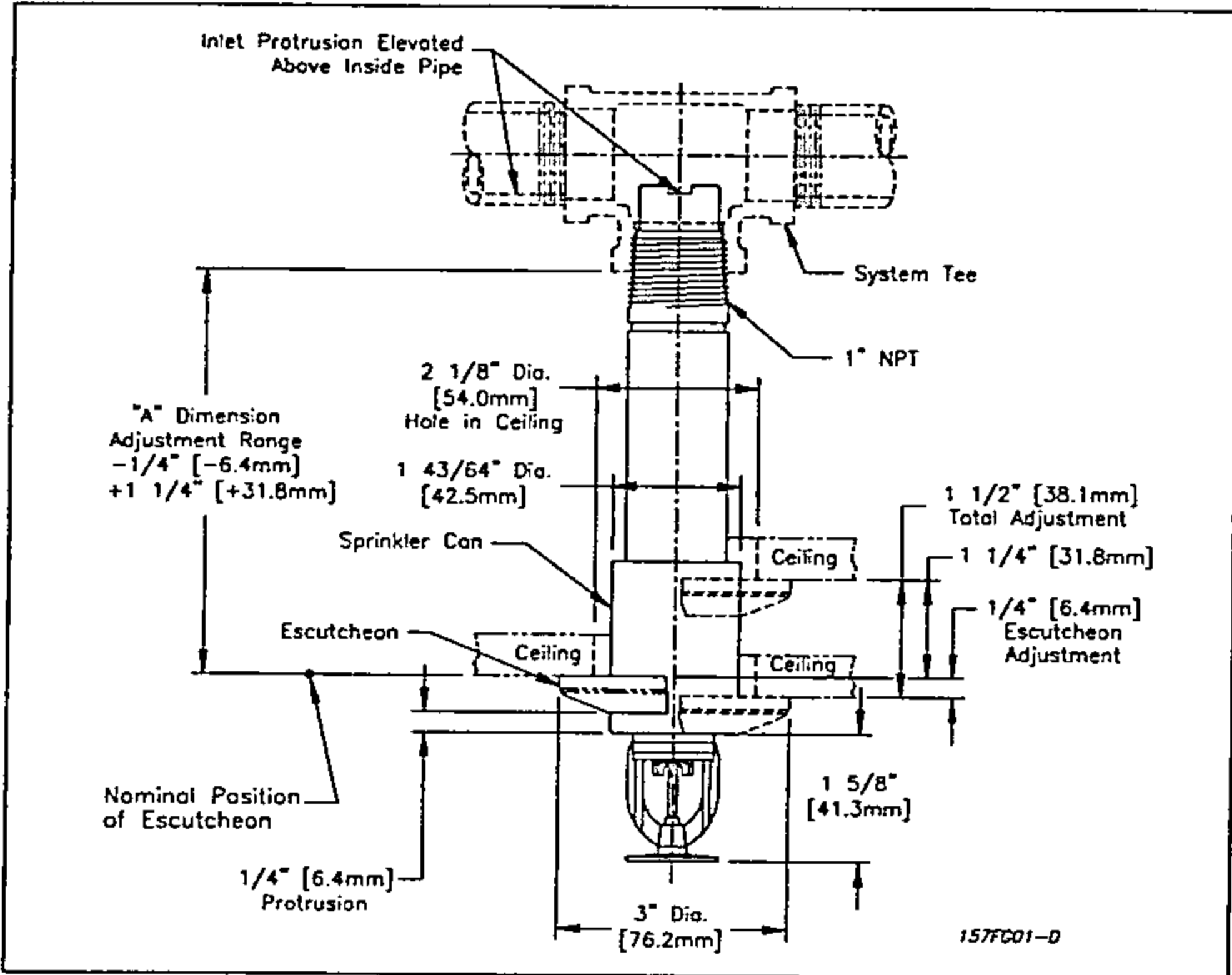


Fig. 1

Note: The sprinkler can protrudes 1/4" when escutcheon is in nominal position. Escutcheon adjustment provides -1/4" (-6mm) to +1 1/4" (+32mm) "A" dimension adjustment range.

Sprinkler Guard: Model C-2
Sprinkler Installation Wrench: Model G3 Sprinkler Wrench
Sprinkler Identification Number (SIN): R5714

Standard Temperature Ratings

Classification	Sprinkler Temperature Rating	Max. Ambient Temp.	Bulb Color
Ordinary	135°F (57°C)	100°F (38°C)	Orange
Ordinary	155°F (68°C)	100°F (38°C)	Red
Intermediate ⁽¹⁾	175°F (79°C)	150°F (66°C)	Yellow
Intermediate	200°F (93°C)	150°F (66°C)	Green
High ⁽¹⁾	286°F (141°C)	225°F (107°C)	Blue

Sprinkler can and escutcheon fabricated of brass for better weather resistance in exterior applications.

⁽¹⁾ Listed and Certified only by cULus.

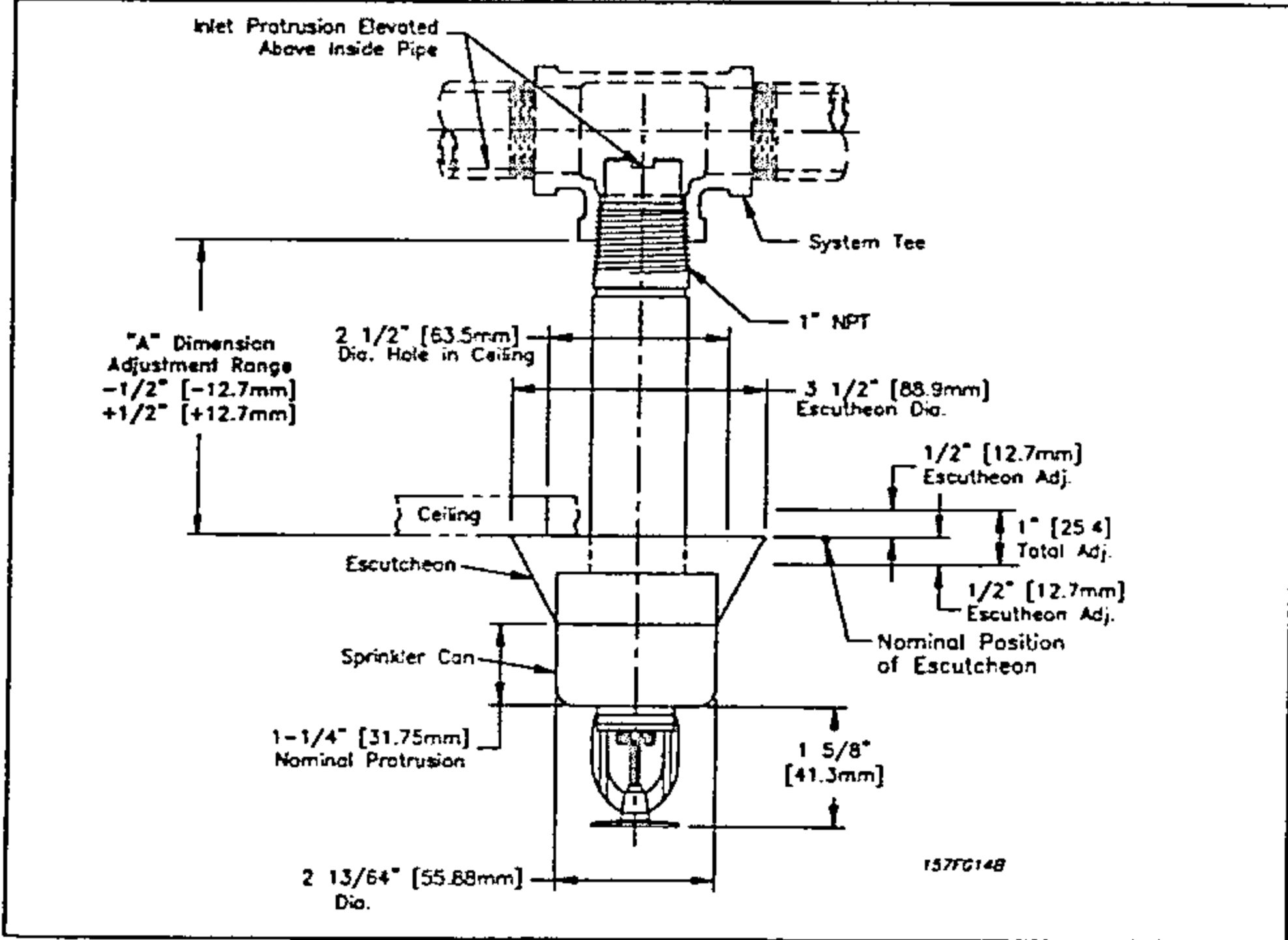


Fig. 2

Note: The sprinkler can protrudes 1 1/4" when escutcheon is in nominal position. Escutcheon adjustment provides -1/2" (-12.7mm) to +1/2" (+12.7mm) "A" dimension adjustment range.

Model F3QR Dry Recessed FP Pendent Sprinkler

"A" Dim.	3 1/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments
----------	---

Finishes⁽¹⁾

Sprinkler	Escutcheon
Bronze	Brass
Chrome Plated	Chrome Plated
White Polyester ⁽²⁾	White

- ⁽¹⁾ Other finishes and colors are available on special order. Consult factory for details. Cup remains unfinished. Only the escutcheon will contain desired finish.
- ⁽²⁾ cULus Listed as a Corrosion Resistant sprinkler in standard Black or White.

Standard Temperature Ratings

Classification	Sprinkler Temperature Rating	Max. Ambient Temp.	Bulb Color
Ordinary	135°F (57°C)	100°F (38°C)	Orange
Ordinary	155°F (68°C)	100°F (38°C)	Red
Intermediate ⁽¹⁾	175°F (79°C)	150°F (66°C)	Yellow
Intermediate	200°F (93°C)	150°F (66°C)	Green
High ⁽¹⁾	286°F (141°C)	225°F (107°C)	Blue

Sprinkler cup and FP Escutcheon fabricated of steel and recommended for interior applications.

⁽¹⁾ Listed and Certified only by cULus.

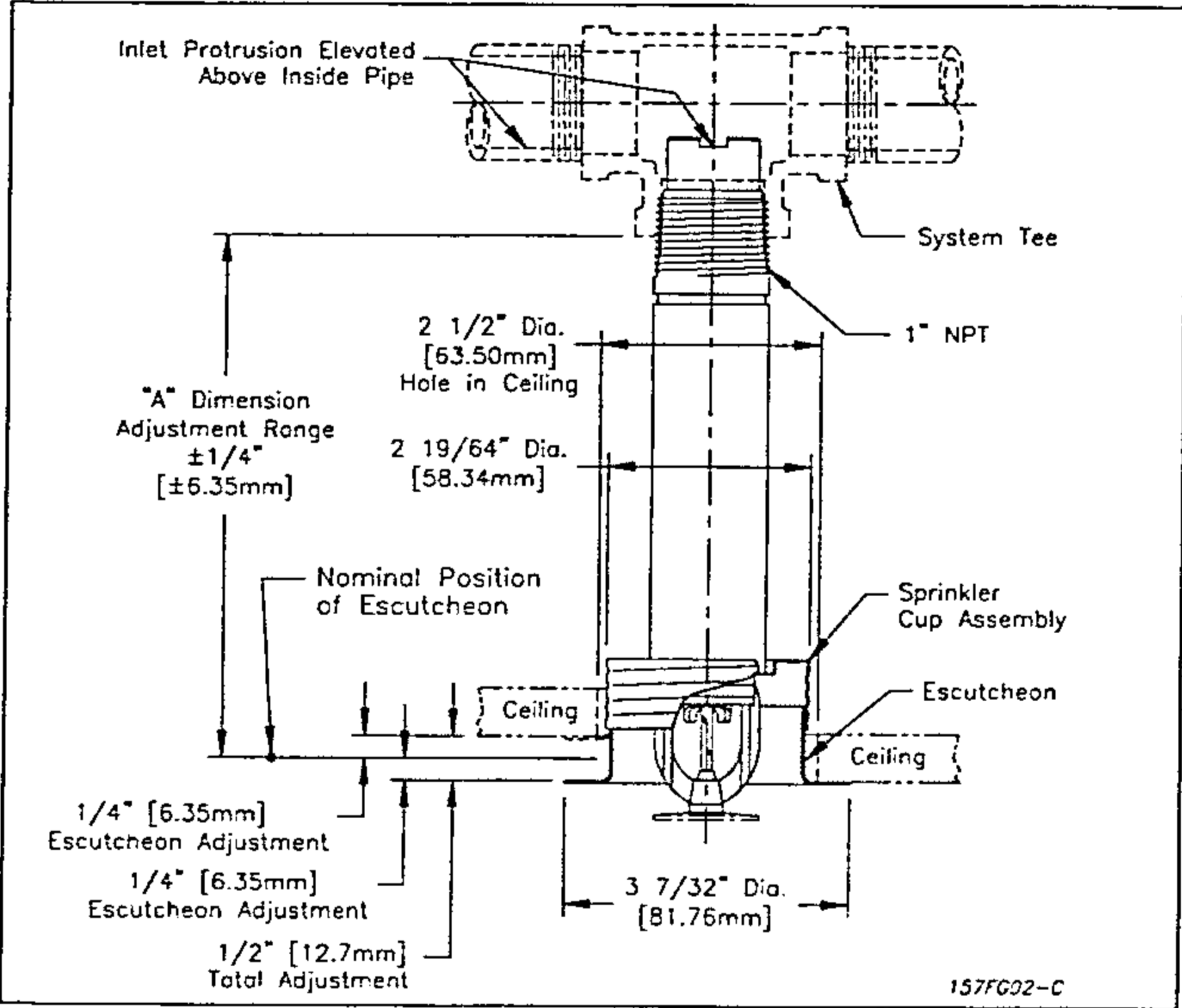


Fig. 3

Note: Do not install the Model F3QR Dry Recessed FP Pendent Sprinkler in ceilings which have positive pressure in space above.

Sprinkler Installation Wrench: Model G3 R/C Sprinkler Wrench
Sprinkler Identification Number (SIN): R5714

Model F3QR Dry Pendent Concealed Sprinkler

"A" Dim.	3 1/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments
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CCP Cover Plate ⁽¹⁾ Finishes ⁽²⁾

Standard Finishes	Special Application Finishes
Chrome Plated White	Bright Brass Plated Black Plated Black Paint Off White Satin Chrome

⁽¹⁾ Utilizes the 1/2" cover plate with 3/8" total adjustment.

⁽²⁾ Other finishes and colors are available on special order.
Consult factory for details.

Standard Temperature Ratings

Classification	Sprinkler Temperature Rating	Cover Plate Temp. Rating	Max. Ambient Temp.
Ordinary	135°F (57°C)	135°F (57°C)	100°F (38°C)
Ordinary	155°F (68°C)	135°F (57°C)	100°F (38°C)
Intermediate ⁽¹⁾	175°F (79°C)	165°F (74°C)	150°F (66°C)
Intermediate	200°F (93°C)	165°F (74°C)	150°F (66°C)
High ⁽¹⁾	286°F (141°C)	165°F (74°C)	150°F (66°C)

Sprinkler cup fabricated of steel and CCP Cover Plate fabricated of brass and recommended for interior applications.

⁽¹⁾ Listed and Certified only by cULus.

Sprinkler Installation Wrench:

Model G3 R/C Sprinkler Wrench

Sprinkler Identification Number (SIN): R5714

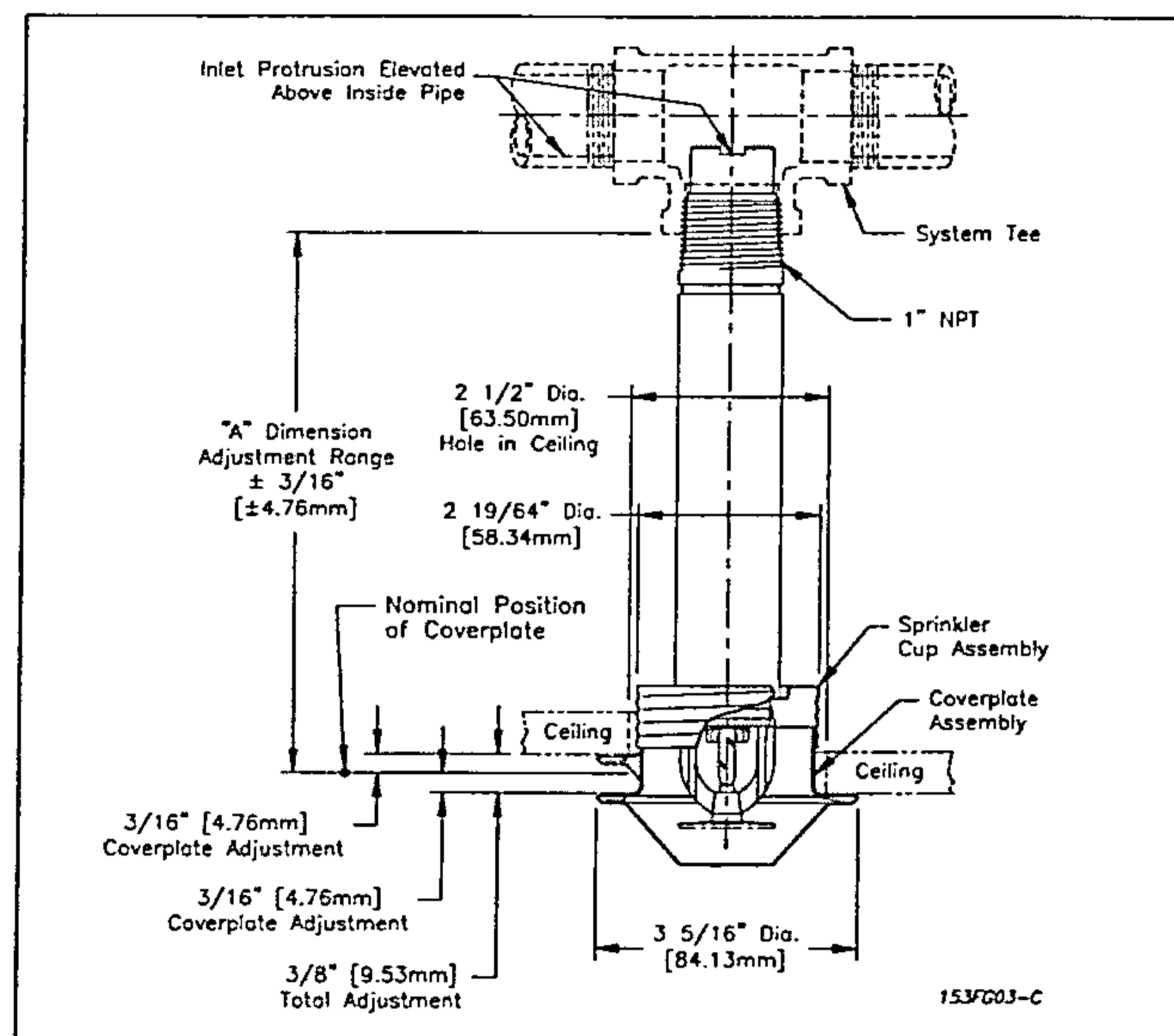


Fig. 4

Note: Do not install the Model F3QR Dry Concealed Pendent Sprinkler in ceilings which have positive pressure in the space above.

Model F3QR Dry Recessed F1 Pendent Sprinkler

"A" Dim.	3 1/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments
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Finishes ⁽¹⁾

Sprinkler	Escutcheon	Collar
Chrome Plated White Polyester ⁽²⁾	Chrome Plated White	Chrome Plated White

⁽¹⁾ Other finishes and colors are available on special order.
Consult factory for details.

⁽²⁾ cULus Listed as a Corrosion Resistant sprinkler in standard Black or White.

Standard Temperature Ratings

Classification	Sprinkler Temperature Rating	Max. Ambient Temp.	Bulb Color
Ordinary	135°F (57°C)	100°F (38°C)	Orange
Ordinary	155°F (68°C)	100°F (38°C)	Red
Intermediate ⁽¹⁾	175°F (79°C)	150°F (66°C)	Yellow
Intermediate	200°F (93°C)	150°F (66°C)	Green
High ⁽¹⁾	286°F (141°C)	225°F (107°C)	Blue

⁽¹⁾ Listed and Certified only by cULus.

Sprinkler Installation Wrench:

Model G3 R/C Sprinkler Wrench

Sprinkler Identification Number (SIN): R5714

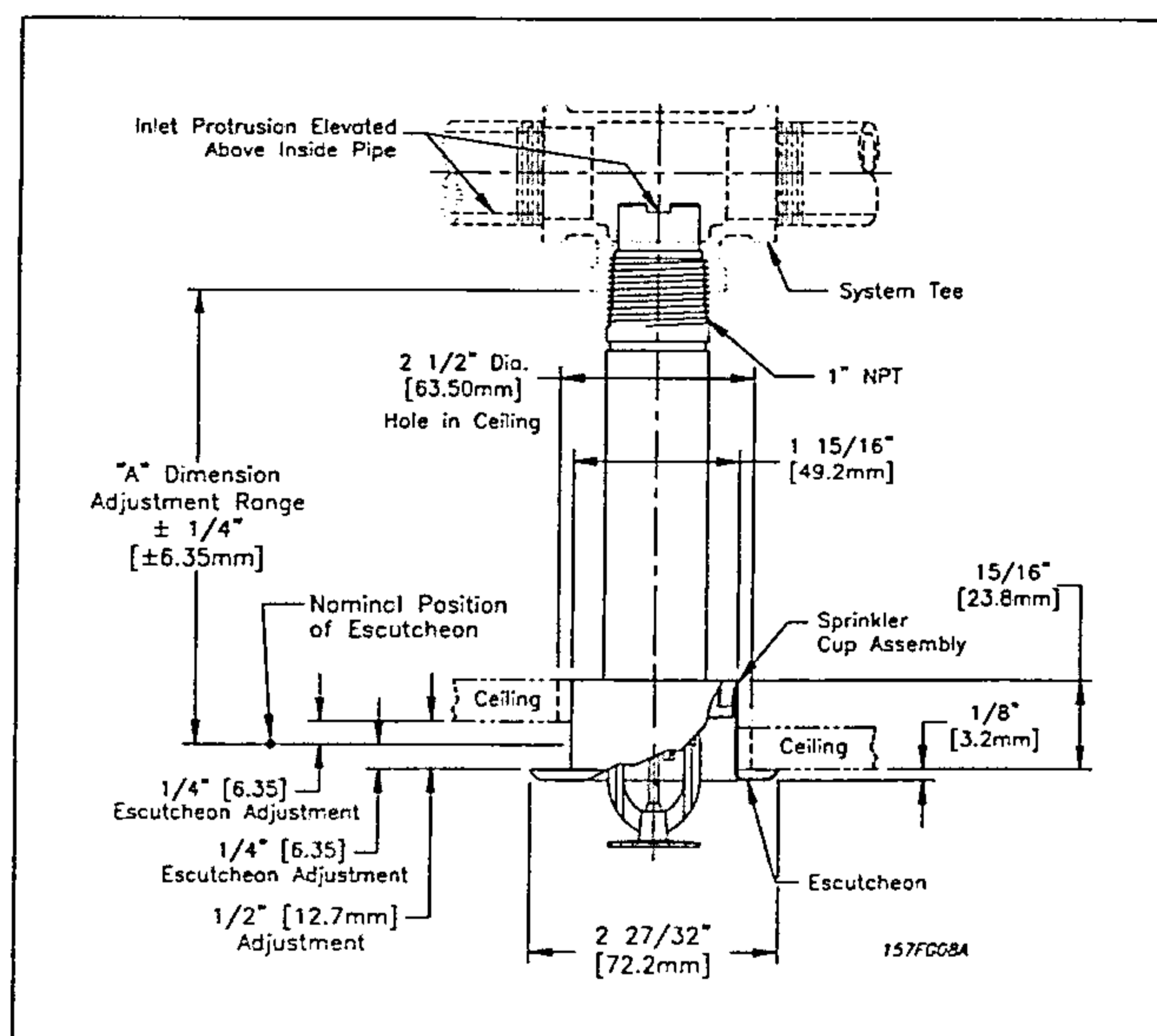


Fig. 5

Model F3QR Dry Horizontal Sidewall Sprinkler

"A" Dim. 2" to 48" (51mm to 1219mm) in 1/4" (6mm) increments

Finishes⁽¹⁾

Sprinkler	Escutcheon
Bronze	Brass ⁽³⁾
Chrome Plated	Chrome Plated
White Polyester ⁽²⁾	White

⁽¹⁾ Other finishes and colors are available on special order. Consult factory for details.

⁽²⁾ cULus Listed as a Corrosion Resistant sprinkler in standard Black or White.

⁽³⁾ Not available for HB escutcheons.

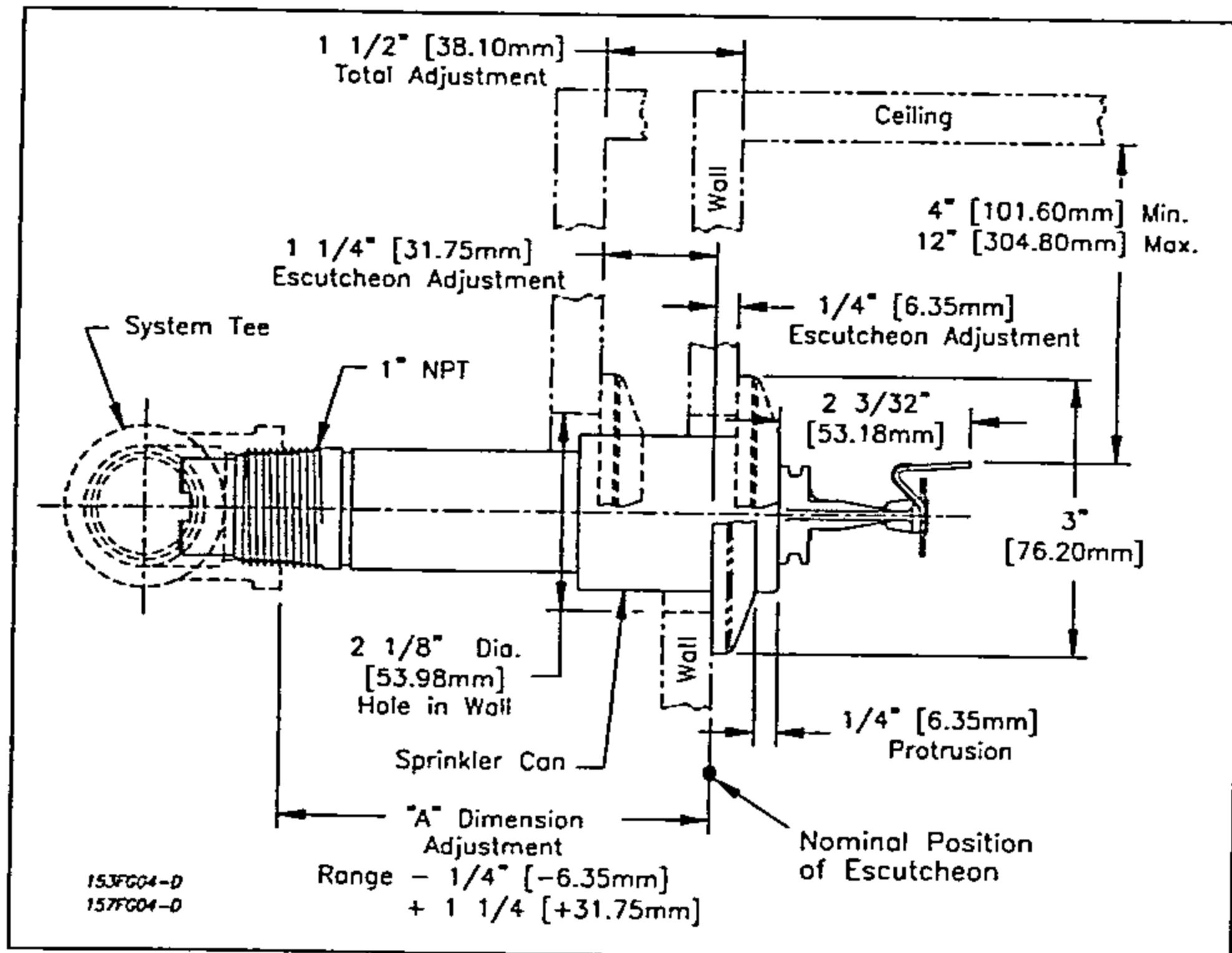


Fig. 6

Note: The sprinkler can protrudes 1/4" when escutcheon is in nominal position. Escutcheon adjustment provides -1/4" (-6mm) to +1 1/4" (+32mm) "A" dimension adjustment range.

Sprinkler Installation Wrench: Model G3 Sprinkler Wrench
Sprinkler Identification Number (SIN): R5734

Standard Temperature Ratings

Classification	Sprinkler Temperature Rating	Max. Ambient Temp.	Bulb Color
Ordinary	135°F (57°C)	100°F (38°C)	Orange
Ordinary	155°F (68°C)	100°F (38°C)	Red
Intermediate ⁽¹⁾	175°F (79°C)	150°F (66°C)	Yellow
Intermediate	200°F (93°C)	150°F (66°C)	Green
High	286°F (141°C)	225°F (107°C)	Blue

Sprinkler can and escutcheon fabricated of brass for better weather resistance in exterior applications.

⁽¹⁾ Listed and Certified only by cULus.

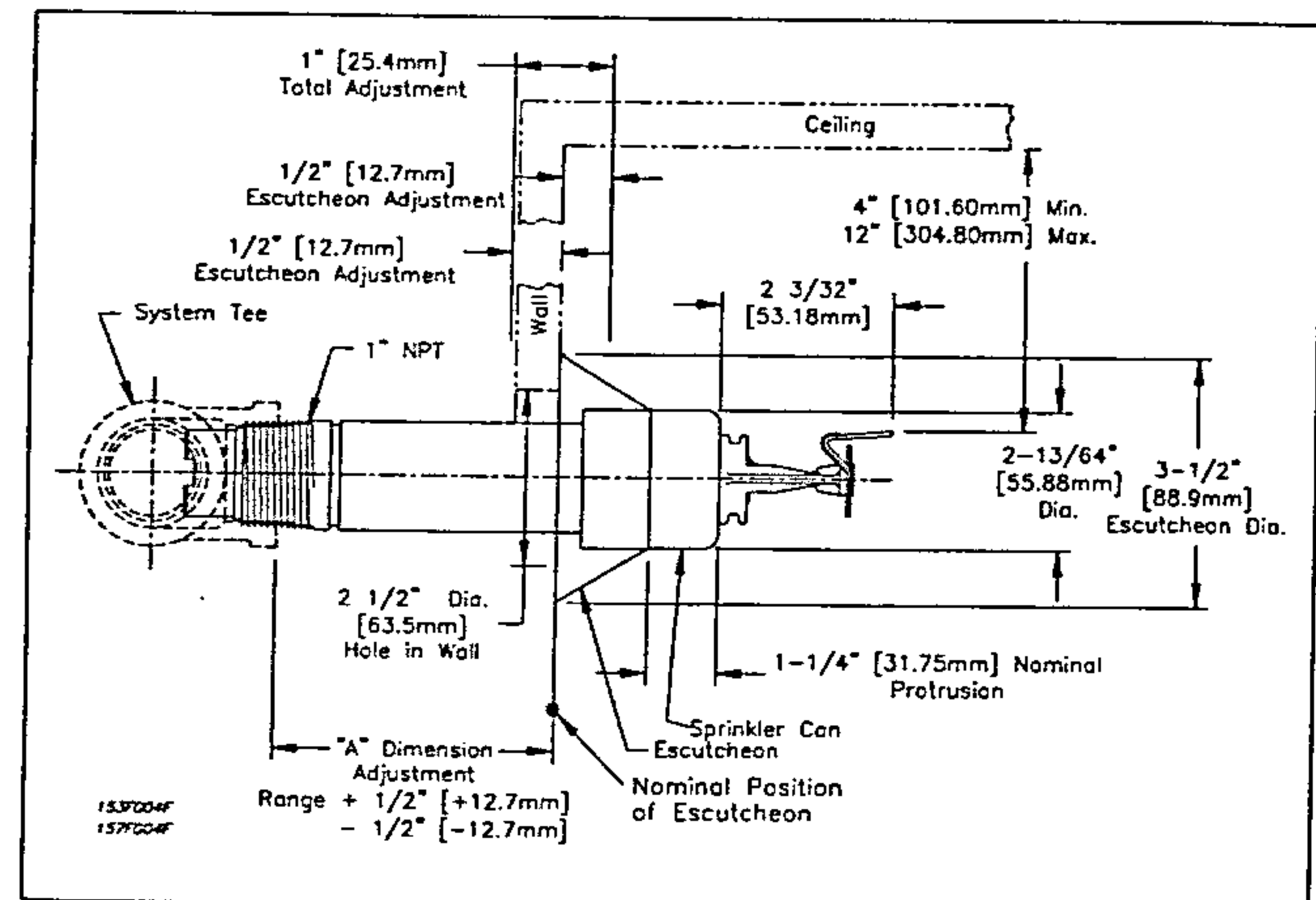


Fig. 7

Note: The sprinkler can protrudes 1/4" when escutcheon is in nominal position. Escutcheon adjustment provides -1/2" (-12.7mm) to +1/2" (+12.7mm) "A" dimension adjustment range.

Model F3QR Dry Recessed FP Horizontal Sidewall Sprinkler

"A" Dim. 3 1/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments

Finishes⁽¹⁾

Sprinkler	Escutcheon
Bronze	Brass
Chrome Plated	Chrome Plated
White Polyester ⁽²⁾	White

⁽¹⁾ Other finishes and colors are available on special order. Consult factory for details. Cup remains unfinished. "See page 2"

⁽²⁾ cULus Listed as a Corrosion Resistant sprinkler in standard Black or White.

Standard Temperature Ratings

Classification	Sprinkler Temperature Rating	Max. Ambient Temp.	Bulb Color
Ordinary	135°F (57°C)	100°F (38°C)	Orange
Ordinary	155°F (68°C)	100°F (38°C)	Red
Intermediate ⁽¹⁾	175°F (79°C)	150°F (66°C)	Yellow
Intermediate	200°F (93°C)	150°F (66°C)	Green
High ⁽¹⁾	286°F (141°C)	225°F (107°C)	Blue

⁽¹⁾ Listed and Certified only by cULus.

Sprinkler Installation Wrench:
 Model G3 R/C Sprinkler Wrench
Sprinkler Identification Number (SIN): R5734

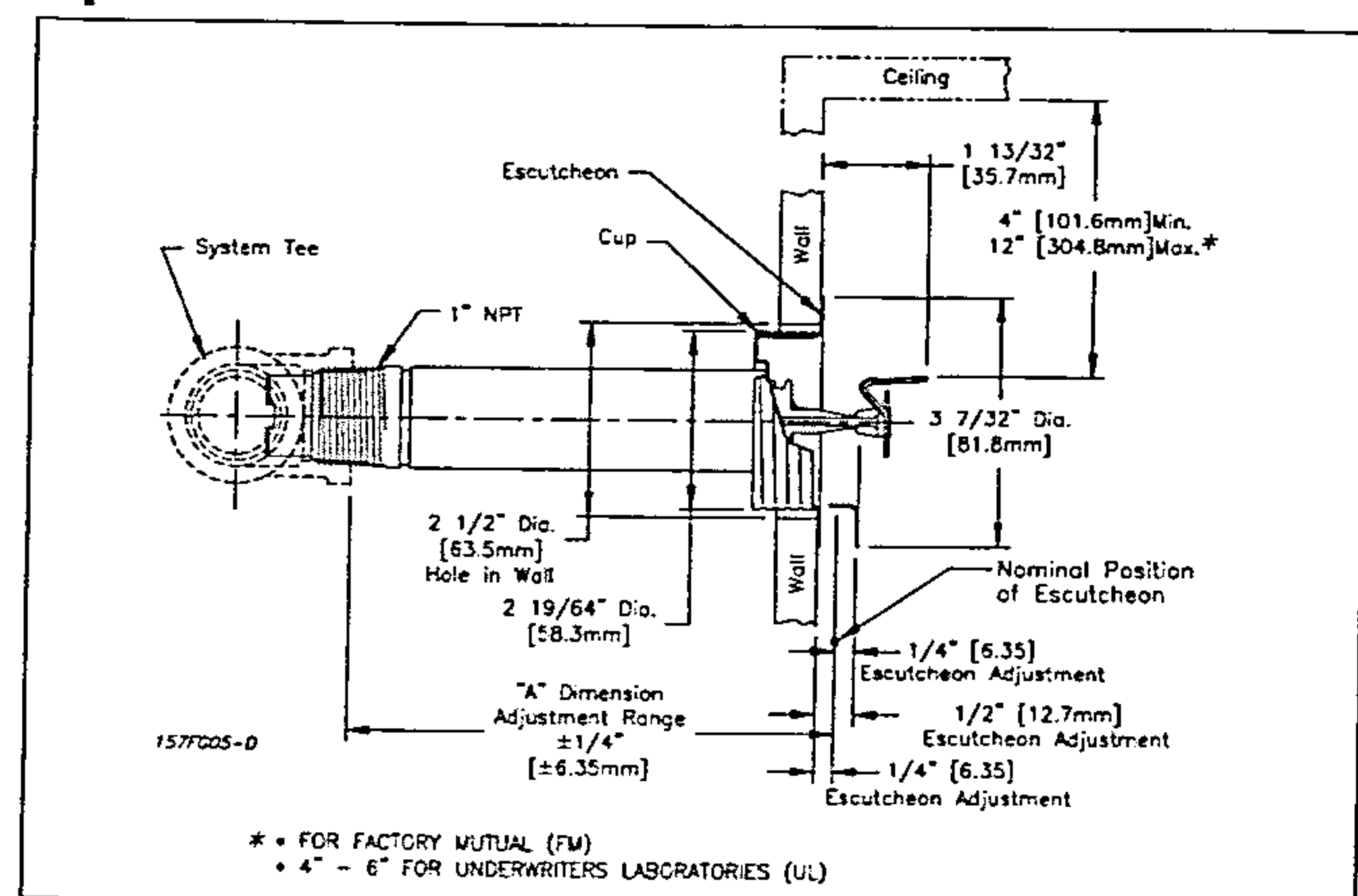


Fig. 8

Notes: Do not install the Model F3QR Dry Recessed FP Horizontal Sidewall Sprinkler in walls which have positive pressure in their side space.

- Listed by cULus for Quick Response. Approved by FM for Standard Response.
- Recessed Horizontal sidewall sprinklers are listed with cULus for installation of min. 4" (100mm) - to - max. 6" (150mm) below ceiling and approved by FM for installation of min. 4" (100mm) - to - max. 12" (300mm) below ceiling.

Model F3QR Dry Recessed F1 Horizontal Sidewall Sprinkler

"A" Dim.	3 1/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments
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Finishes ⁽¹⁾

Sprinkler	Escutcheon	Collar
Chrome Plated	Chrome Plated	Chrome Plated
White Polyester ⁽²⁾	White	White

⁽¹⁾ Other finishes and colors are available on special order.

Consult factory for details.

⁽²⁾ cULus Listed as a Corrosion Resistant sprinkler in standard Black or White.

Standard Temperature Ratings

Classification	Sprinkler Temperature Rating	Max. Ambient Temp.	Bulb Color
Ordinary	135°F (57°C)	100°F (38°C)	Orange
Ordinary	155°F (68°C)	100°F (38°C)	Red
Intermediate ⁽¹⁾	175°F (79°C)	150°F (66°C)	Yellow
Intermediate	200°F (93°C)	150°F (66°C)	Green
High ⁽¹⁾	286°F (141°C)	225°F (107°C)	Blue

⁽¹⁾ Listed and Certified only by cULus.

Sprinkler Installation Wrench:

Model G3 R/C Sprinkler Wrench

Sprinkler Identification Number (SIN): R5734

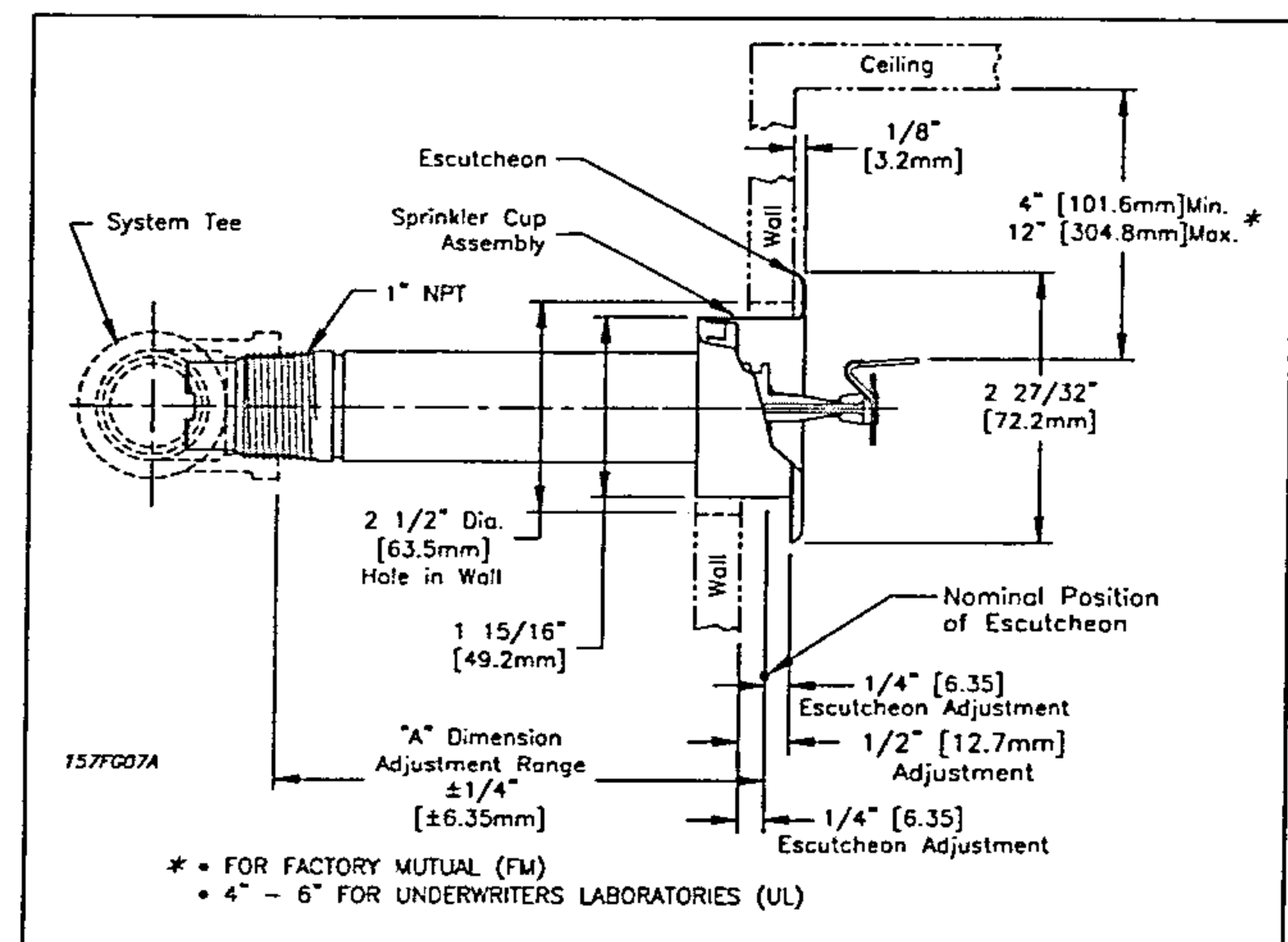


Fig. 9

- Listed by cULus for Quick Response. Approved by FM for Standard Response.
- Recessed Horizontal sidewall sprinklers are listed with cULus for installation of min. 4" (100mm) - to - max. 6" (150mm) below ceiling and approved by FM for installation of min. 4" (100mm) - to - max. 12" (300mm) below ceiling.

Technical Data:

Orifice Size: 1/2" (15mm)

Thread Size: 1" NPT per ANSI B2.1

Working Pressure: 175 psi (12 bar)

Nominal K Factor - US / (Metric): 5.6 / (80)

Product Description

Reliable Model F3QR Dry Sprinklers are quick response sprinklers utilizing a durable 3mm frangible glass bulb. This quick response enables these sprinklers to apply water to a fire much sooner than standard response sprinklers of the similar temperature rating.

Model F3QR Dry Sprinklers are intended for use in dry and preaction systems and in areas subjected to freezing temperatures, such as freezers and unheated portions inside and outside buildings.

Environments wherein dry sprinklers are employed can be corrosive. For this reason, Model F3 Sprinklers have a special wax fillet placed in the gap between the cup that supports the bulb and the wrenching boss. This wax will not interfere with the operation of the sprinkler, and it prevents contaminants from entering the internal portion of the drop nipple. The wax must not be removed.

Operation

The glass bulb consists of an accurately controlled amount of special fluid hermetically sealed inside a precisely manufactured glass capsule. This glass bulb is specially constructed to provide fast thermal response. When the temperature increases sufficiently, due to a fire, the bulb shatters allowing operating parts to clear the waterway. This enables the inlet seal to release air or water and subsequently, cause water flow over the deflector in a uniform spray pattern, controlling or extinguishing the fire.

Ordering Information

Specify:

- Sprinkler Type (select one):
 - Model F3QR Dry Pendant
 - Model F3QR Dry Pendant/HB
 - Model F3QR Dry Recessed FP Pendant
 - Model F3QR Dry Recessed F1 Pendant
 - Model F3QR Dry Concealed Pendant
 - Model F3QR Dry Horizontal Sidewall
 - Model F3QR Dry Horizontal Sidewall/HB
 - Model F3QR Dry Recessed FP Horizontal Sidewall
 - Model F3QR Dry Recessed F1 Horizontal Sidewall
- Sprinkler Temperature Rating.
- Sprinkler Finish.
- Escutcheon type (F1 or FP).
- Cover Plate/Escutcheon Finish.
- Length:

"A" Dimension (face of tee to face of ceiling or wall) in 1/4" (6mm) increments.
- Model F3QR Dry Pendant (a) is available without sprinkler can and escutcheon.

Note:

- The "A" dimension is based on a nominally gauged pipe thread "make-up" of 0.600" (15mm) per ANSI B2.1 [7 1/2 threads approximately].
- All platings and paintings are decorative and intended for interior use.

General Installation Instructions

Model F3QR dry sprinklers must be installed only in standard (ANSI B 16.3 class 150 and ANSI B 16.4 class 125) pipe tees in the horizontal position, even at branch line ends. They should not be installed into elbows or pipe couplings located on drop nipples to the sprinklers. For these and other fittings including CPVC*, the dry sprinkler should be installed into a fitting to allow protrusion into the fitting in accordance with the diagrams. The "A" dimension of the dry sprinkler, which extends into the freezers or a freezing zone from wet pipe systems, should be selected to provide, as a minimum, the specified lengths in inches shown in Fig. 10.

Caution:

Do not install Model F3QR Dry sprinklers into CPVC adapter fittings or tees that have an internal obstruction. This will damage the sprinkler and /or the fitting. Refer to Fig. 11.

During installation, the following steps must be followed:

1. Cut the specified size hole (see illustrations) for the sprinkler in the ceiling or wall directly in line with the tee.
2. Apply pipe joint compound to the 1" (25mm) pipe threads and install sprinkler using the Model G3 or G3 R/C Sprinkler Wrench as specified.
3. Install the Model FP push-on / thread-off escutcheon or CCP cover plate if required.

Note: Installation of the Model F3QR Sprinklers is not recommended in copper pipe systems, as this may reduce the life expectancy of the sprinklers.

Model F3QR Concealed and Recessed Installation Instructions

- The Model G3 R/C wrench (Fig. 12) is designed to locate on the wrenching pads of the recessed sprinkler while centering in the cup. A standard ½" drive ratchet may be used to drive this wrench. Fig. 13 and Fig. 14 show sequentially the insertion of the wrench. First the wrench, with its jaws above the sprinkler deflector, is moved laterally until centered with the cup. Then raise the wrench inside of the cup until its jaws engage the sprinkler's square wrenching pads (Fig. 14). To remove the wrench, follow this procedure in reverse order. Care should be taken to avoid striking the deflector, with the wrench.
- Model G3 Wrench (Fig. 15) is used for installation of Pendent and Horizontal Sidewall sprinklers.
- Glass bulb sprinklers have orange bulb protectors to minimize bulb damage during shipping, handling and installation. REMOVE THIS PROTECTION AT THE TIME THE SPRINKLER SYSTEM IS PLACED IN SERVICE FOR FIRE PROTECTION. Removal of the protectors before this time may leave the bulb vulnerable to damage. RASCO wrenches are designed to install sprinklers when covers are in place. REMOVE PROTECTORS BY UNDOING THE CLASP BY HAND. DO NOT USE TOOLS TO REMOVE THE PROTECTORS.

Maintenance

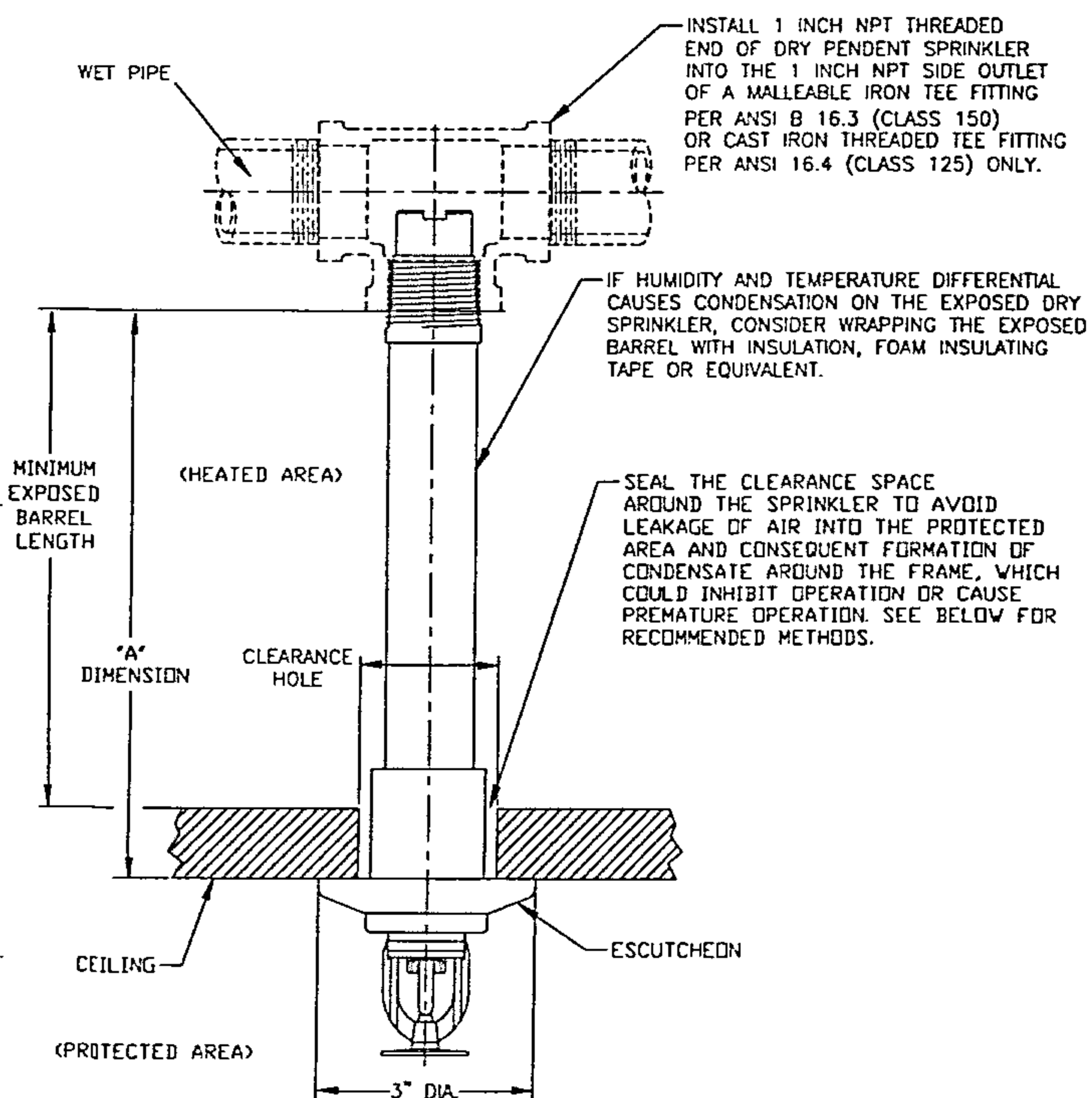
The Model F3QR Quick Response Dry Sprinklers should be inspected quarterly and the sprinkler system maintained in accordance with NFPA 25. Do not remove the factory applied thermally sensitive wax fillet between the bulb supporting cup and the wrenching boss. Do not replace this wax with a substitute substance. An Alternate substance may interfere with proper operation of the sprinkler. Do not clean sprinklers with soap and water, ammonia or any other cleaning fluids. Remove dust by using a soft brush or gently vacuuming. Remove any sprinkler which has been painted (other than factory applied) or damaged in any way. A stock of spare sprinklers should be maintained to allow quick replacement of damaged or operated sprinklers. Prior to installation, sprinklers should be maintained in the original cartons and packaging until used to minimize the potential for damage to sprinklers that would cause improper operation or non-operation.

**RECOMMENDED EXPOSED MINIMUM BARREL LENGTH BASED ON AMBIENT TEMPERATURE IN THE PROTECTED AREA
(STANDARD DRY PENDENT SPRINKLER SHOWN)**

AMBIENT TEMPERATURE OF PROTECTED AREA* AT THE DISCHARGE END OF THE SPRINKLER	EXPOSED BARREL AMBIENT TEMPERATURE		
	40°F/4°C	50°F/10°C	60°F/16°C
	EXPOSED MINIMUM BARREL LENGTH** (FACE OF TEE TO TOP OF CEILING)		
	IN. (MM)	IN. (MM)	IN. (MM)
40°F (4°C)	0	0	0
30°F (-1°C)	0	0	0
20°F (-7°C)	4 (101)	0	0
10°F (-12°C)	8 (203)	1 (25.1)	0
0°F (-18°C)	12 (305)	3 (75)	0
-10°F (-23°C)	14 (356)	4 (101)	1 (25.1)
-20°F (-29°C)	14 (356)	6 (152)	3 (75)
-30°F (-34°C)	16 (406)	8 (203)	4 (101)
-40°F (-40°C)	18 (457)	8 (203)	4 (101)
-50°F (-46°C)	20 (508)	10 (254)	6 (152)
-60°F (-51°C)	20 (508)	10 (254)	6 (152)

* THE PROTECTED AREA REFERS TO THE AREA BELOW THE CEILING. THE AMBIENT TEMPERATURE IS THE TEMPERATURE AT THE DISCHARGE END OF THE SPRINKLER.
FOR PROTECTED AREA TEMPERATURES THAT OCCUR BETWEEN THE VALUES LISTED, USE THE NEXT COOLER TEMPERATURE.

**THE MIN. REQUIRED BARREL LENGTH IS NOT THE SAME AS THE 'A' DIMENSION.
NOTE: EXPOSED MINIMUM BARREL LENGTHS ARE INCLUSIVE UP TO 30MPH WIND VELOCITIES IN THE PROTECTED AREA.



RECOMMENDED EXPOSED MINIMUM BARREL LENGTHS ALSO APPLY TO HORIZONTAL SIDEWALL DRY SPRINKLERS

**RECOMMENDED DRY SPRINKLER SEAL ARRANGEMENTS
(STANDARD DRY PENDENT SPRINKLER SHOWN)**

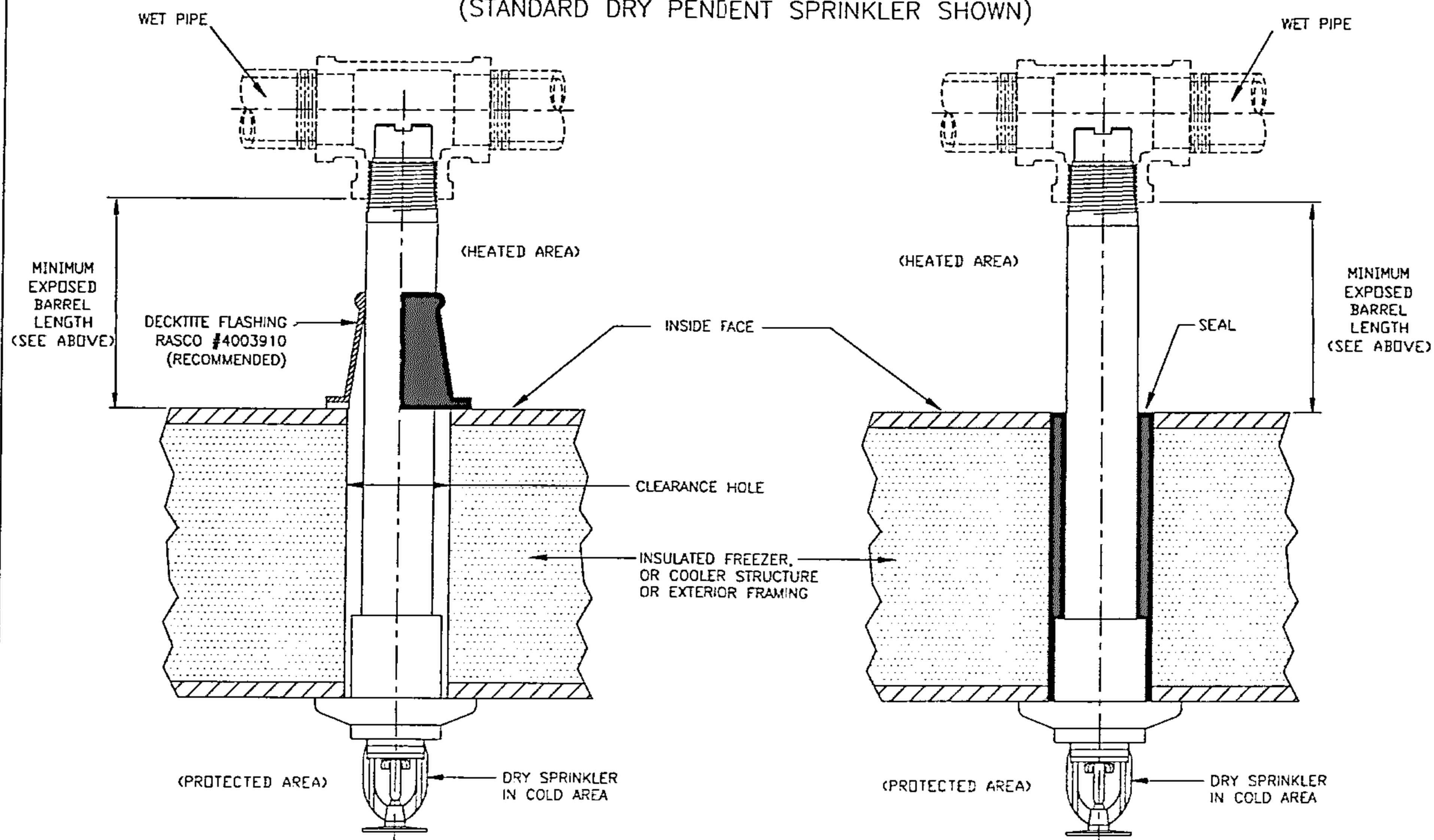
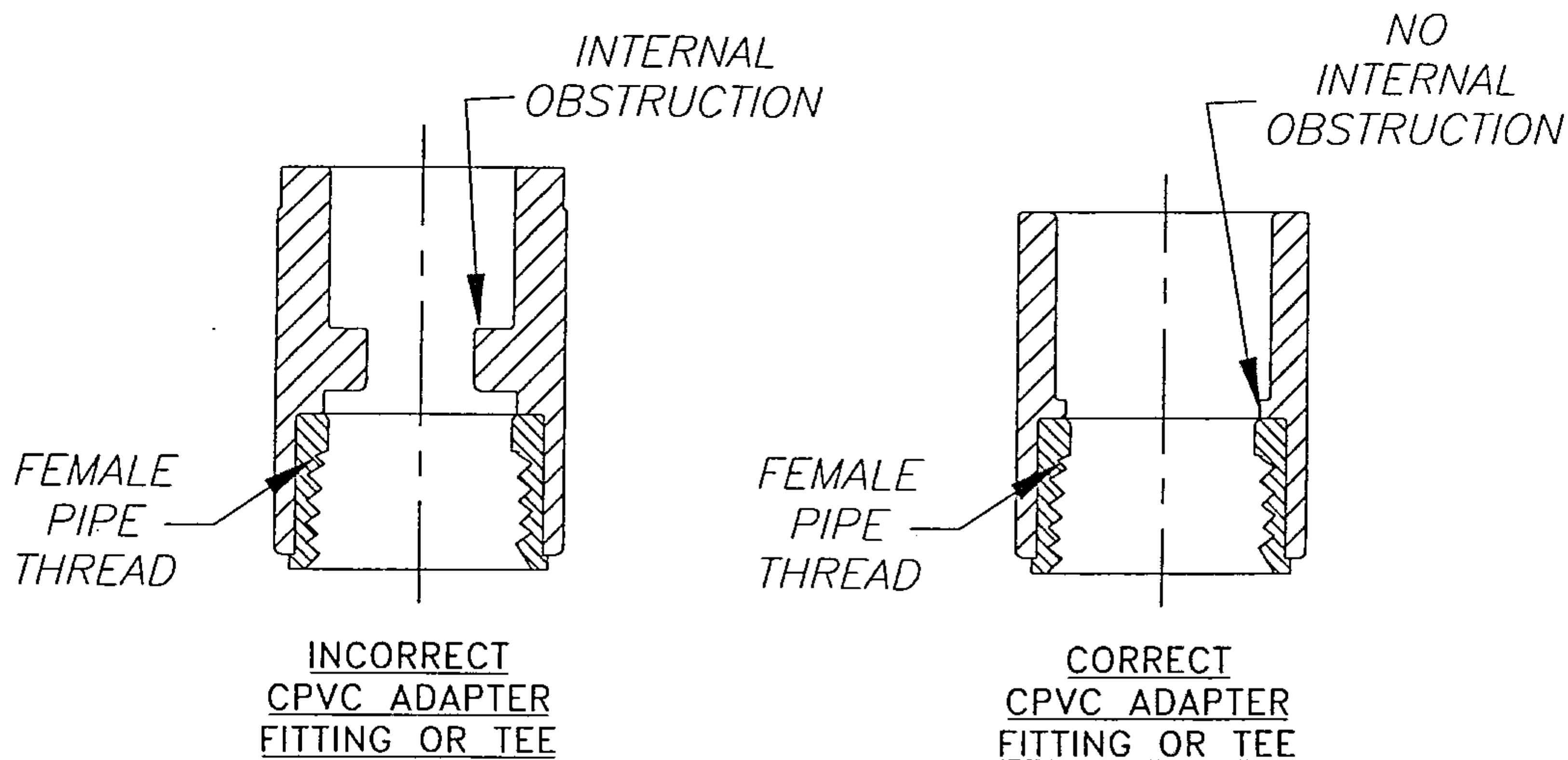


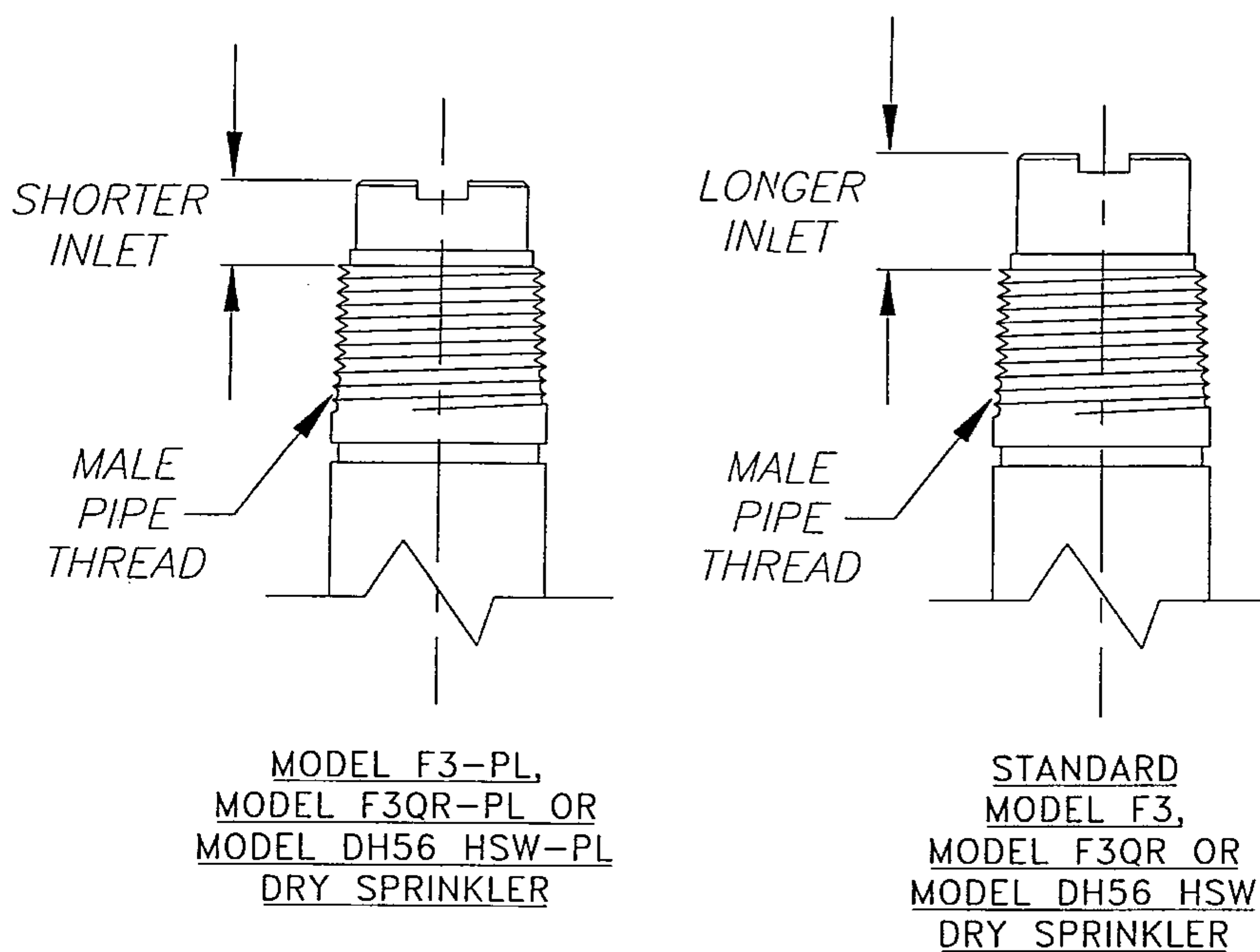
Fig. 10

CAUTION

DO NOT INSTALL MODEL F3, MODEL F3QR OR MODEL DH56 HSW DRY SPRINKLERS INTO CPVC ADAPTER FITTINGS OR TEES THAT HAVE AN INTERNAL OBSTRUCTION. THIS WILL DAMAGE THE SPRINKLER AND/OR THE FITTING.
CPVC ADAPTER FITTINGS AND TEES WITH INTERNAL OBSTRUCTIONS ARE ALSO COMMONLY FOUND DURING THE RETROFITTING PROCESS OF RELIABLE'S OLDER MODEL G3 DRY SPRINKLERS.



RELIABLE MANUFACTURES A FULL-LINE OF MODEL F3-PL, MODEL F3QR-PL, AND MODEL DH56 HSW-PL DRY SPRINKLERS THAT HAVE A SHORTER INLET FOR THESE APPLICATIONS.



BE SURE TO ORDER THE CORRECT SPRINKLERS FOR YOUR APPLICATION

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Fig. 11

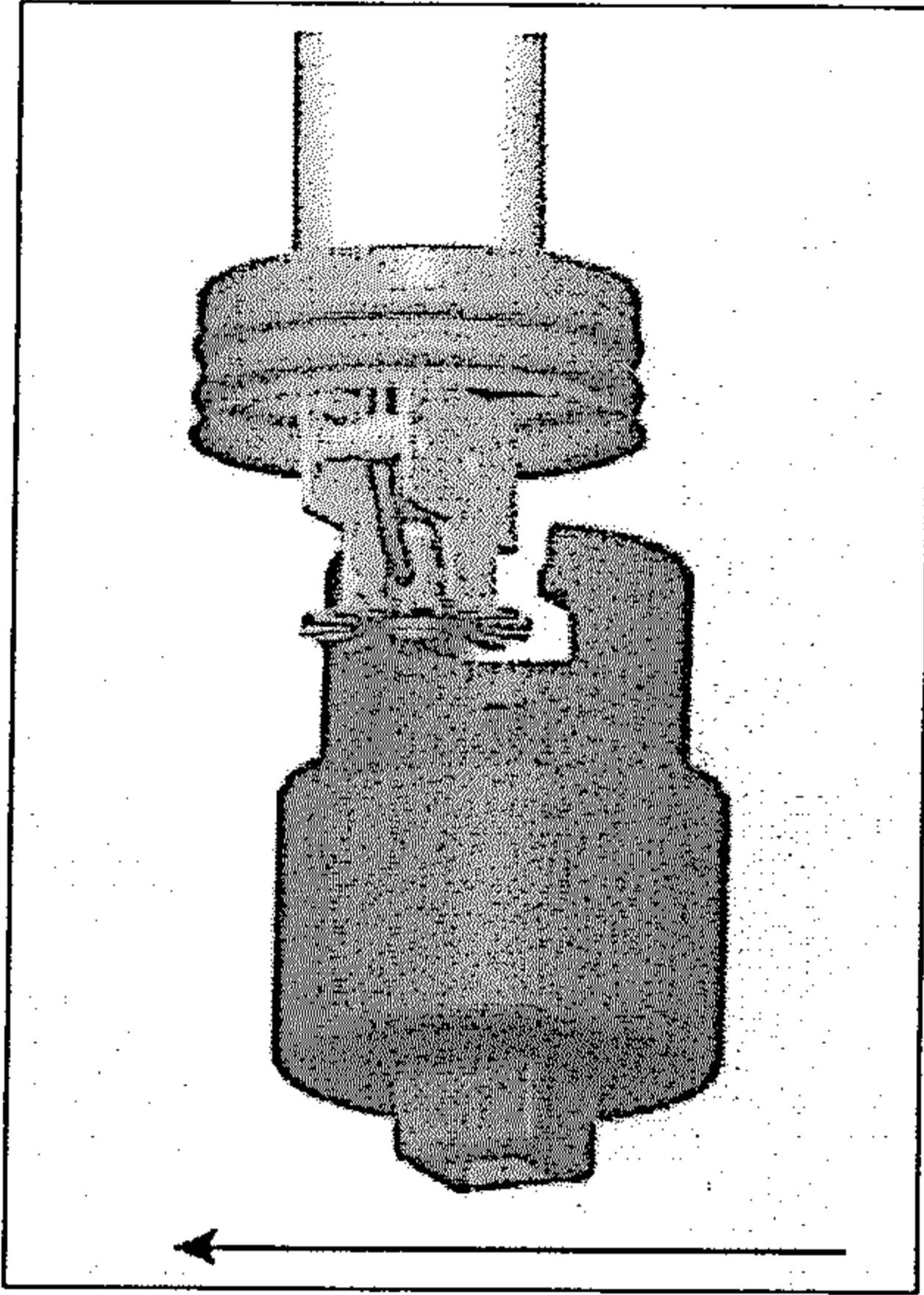


Fig. 12 - G3 R/C Wrench

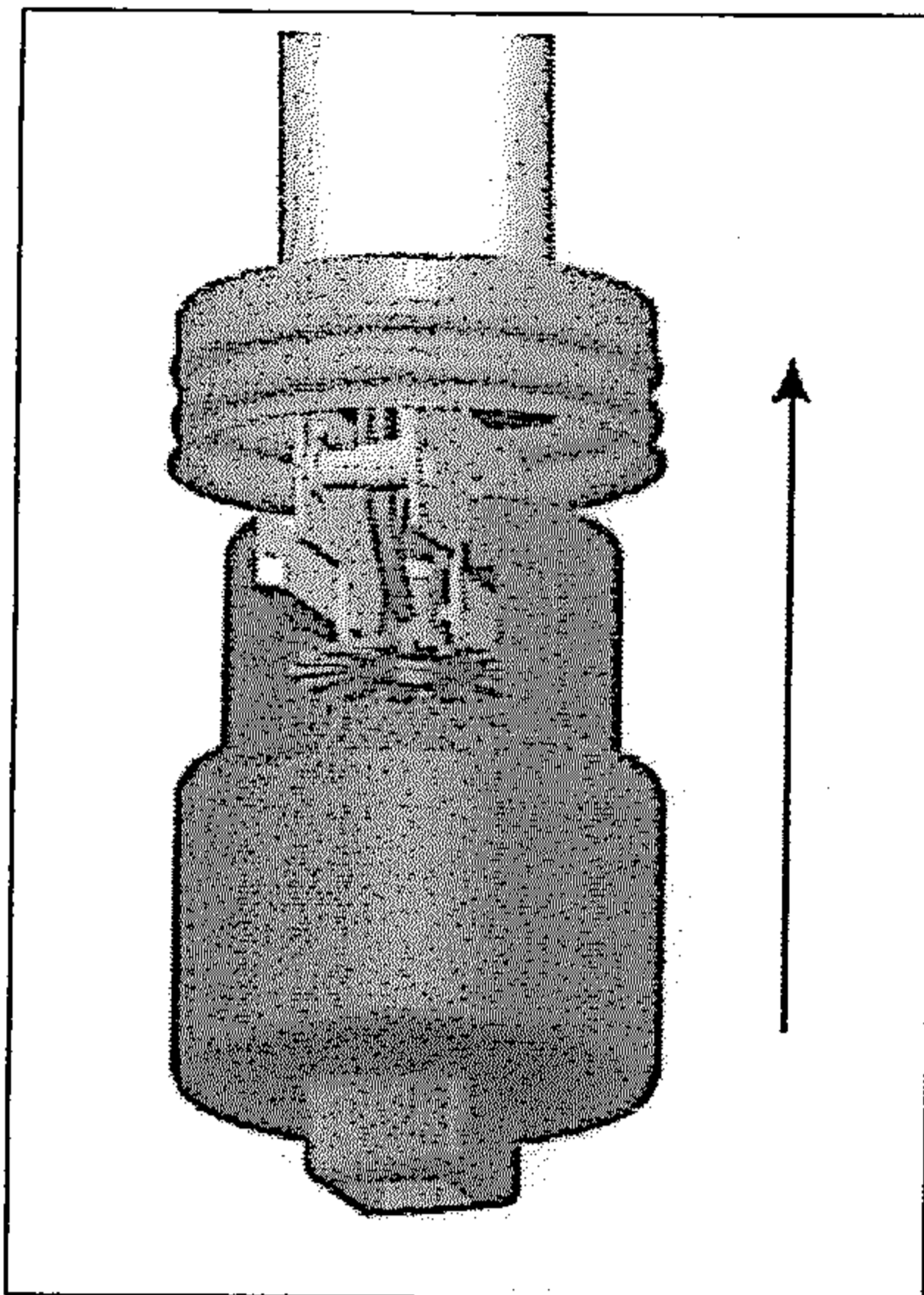


Fig. 13 - G3 R/C Wrench

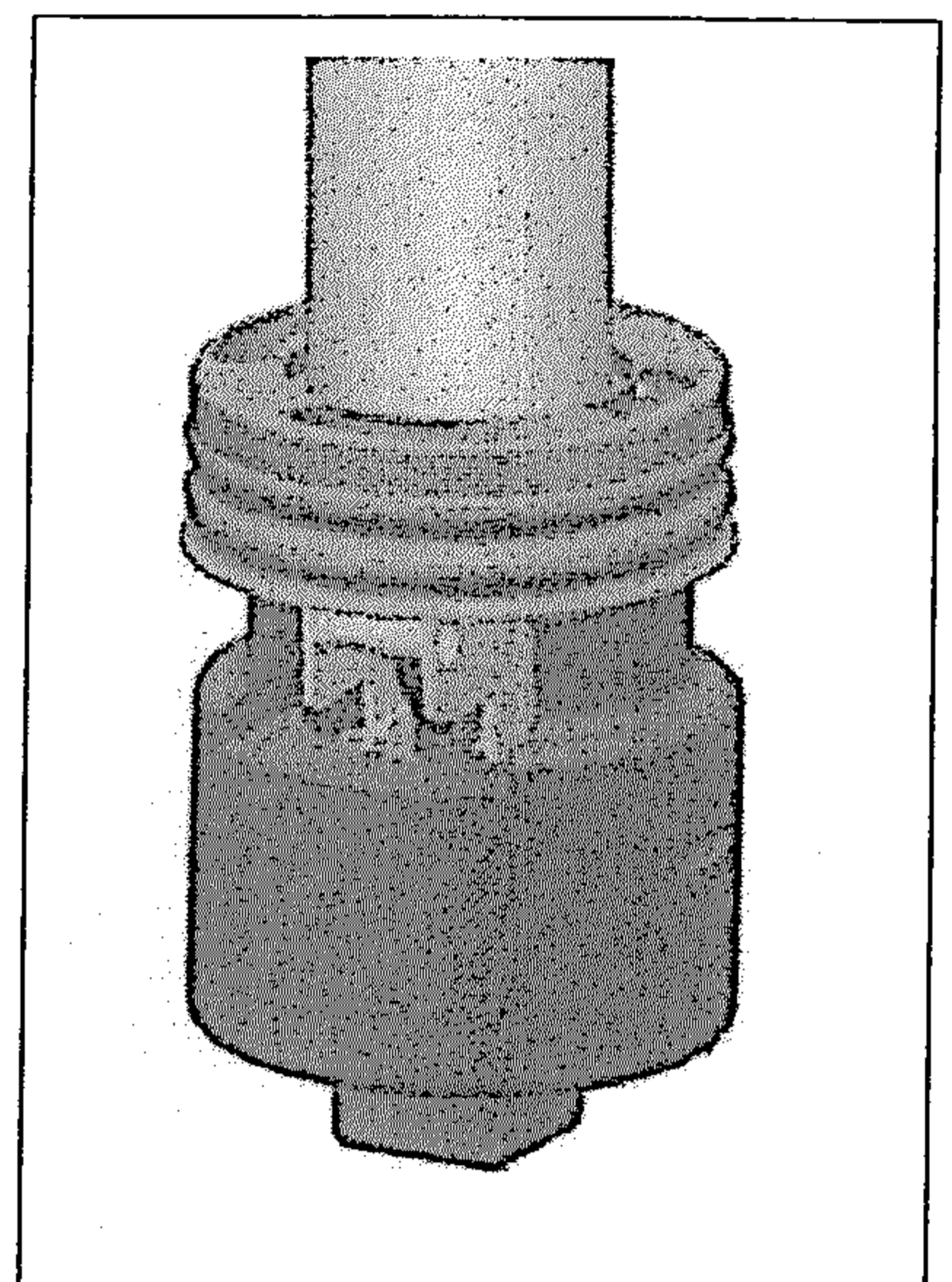


Fig. 14 - G3 R/C Wrench

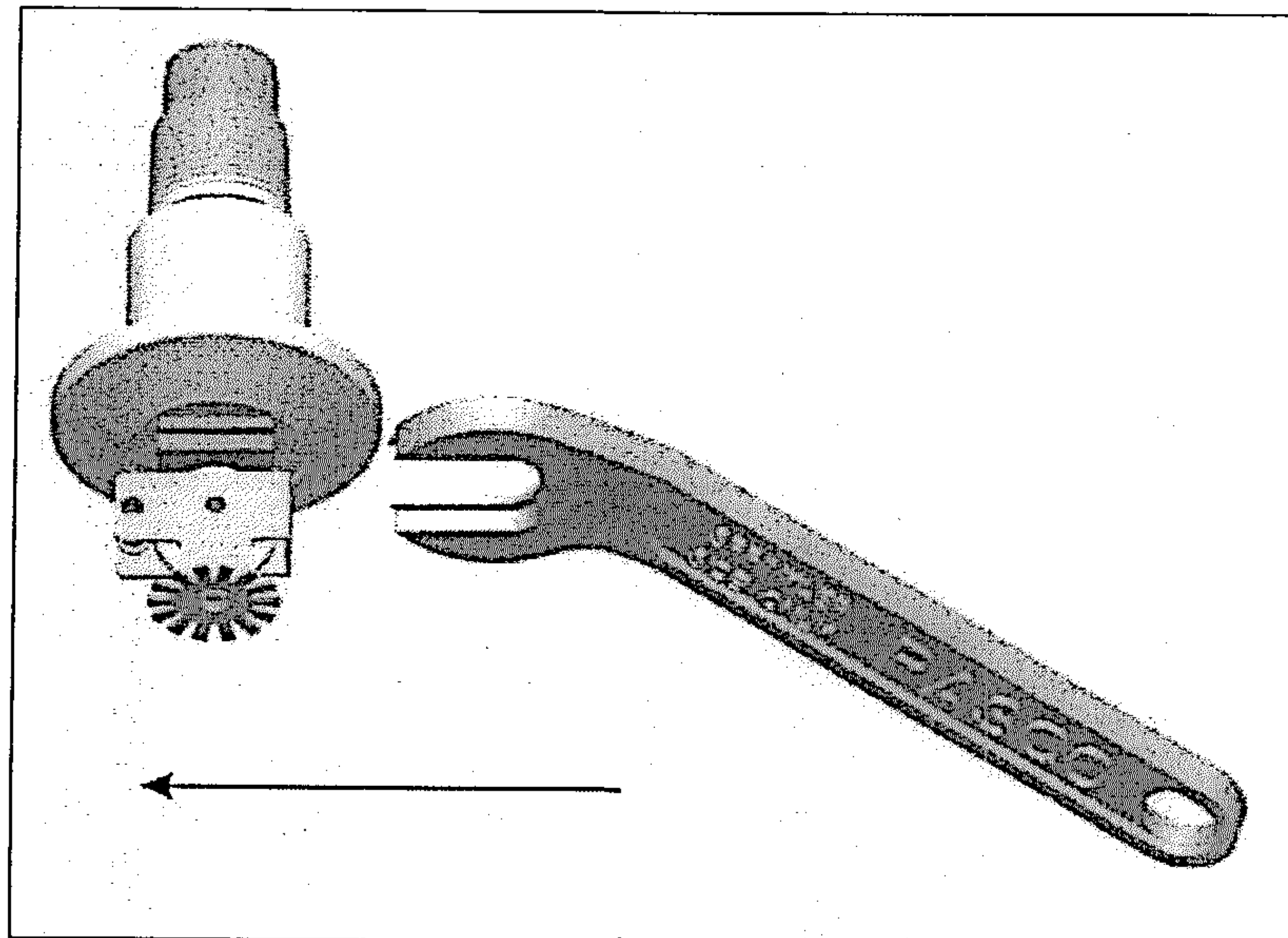


Fig. 15 - G3 Wrench

Reliable...For Complete Protection

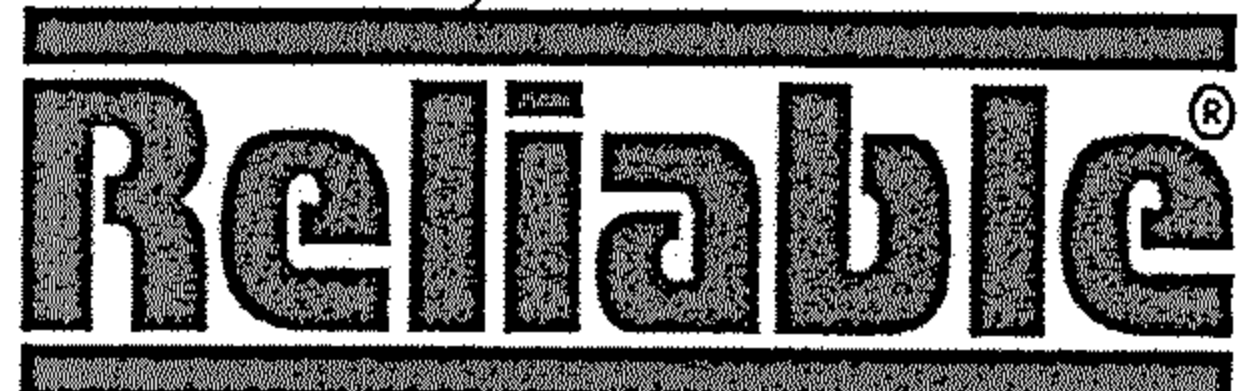
Reliable offers a wide selection of sprinkler components. Following are some of the many precision-made Reliable products that guard life and property from fire around the clock.

- Automatic sprinklers
- Flush automatic sprinklers
- Recessed automatic sprinklers
- Concealed automatic sprinklers
- Adjustable automatic sprinklers
- Dry automatic sprinklers
- Intermediate level sprinklers
- Open sprinklers
- Spray nozzles
- Alarm valves
- Retarding chambers
- Dry pipe valves
- Accelerators for dry pipe valves
- Mechanical sprinkler alarms
- Electrical sprinkler alarm switches
- Water flow detectors
- Deluge valves
- Detector check valves
- Check valves
- Electrical system
- Sprinkler emergency cabinets
- Sprinkler wrenches
- Sprinkler escutcheons and guards
- Inspectors test connections
- Sight drains
- Ball drips and drum drips
- Control valve seals
- Air maintenance devices
- Air compressors
- Pressure gauges
- Identification signs
- Fire department connection

The equipment presented in this bulletin is to be installed in accordance with the latest published Standards of the National Fire Protection Association, Factory Mutual Research Corporation, or other similar organizations and also with the provisions of governmental codes or ordinances whenever applicable.

Products manufactured and distributed by Reliable have been protecting life and property for over 90 years, and are installed and serviced by the most highly qualified and reputable sprinkler contractors located throughout the United States, Canada and foreign countries.

Manufactured by



The Reliable Automatic Sprinkler Co., Inc.

(800) 431-1588

(800) 848-6051

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www.reliablesprinkler.com

Sales Offices

Sales Fax

Corporate Offices

Internet Address



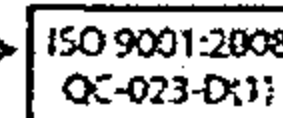
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EASYFLEX® Flexible Sprinkler Drops

FLEXIBLE HOSE DATA SHEET



EASYFLEX Flexible Sprinkler Drops are designed to significantly reduce labor and installation costs. By eliminating the need for pipe cutting and midline connections, you save valuable time and money.

EASYFLEX Flexible Sprinkler Drops can be installed on almost any suspended commercial ceilings. The flexible hose allows for fast installation while our innovative brackets are simple and easy to install. Brackets for T-Bar ceiling grids, wall mount, metal studs, woodbeams, open hat channels, industrial ducts, and cleanrooms. No special tools required, and installation completed in a few easy steps.

Flexible hoses come in braided or unbraided types, from 24" to 72" in length.

Now with the option of pre-assembled brackets for T-Bar ceiling grids for even simpler and faster installation.

EASYFLEX Flexible Sprinkler Drops Appliance Standards

National Fire Protection Association (NFPA):

NFPA 13: Standard for the Installation of Sprinkler Systems

NFPA 13D: Standard for the Installation of Sprinkler Systems in One and Two-Family Dwellings and Manufactured Homes

NFPA 13R: Standard for Installation of Sprinkler Systems in residential Occupancies up to and including four stories in height

American Society for Testing and Methods (ASTM)

ASTM C635: Standards specifications for the manufacture, performance, and testing of metal suspension systems for acoustical tile and lay-in panel ceilings

ASTM C636: Standards practice for installation of metal ceiling suspension systems for acoustical tile and lay-in panels

Factory Mutual (FM), FM Class No, 1637: Approved standard for flexible sprinkler hose with threaded end fittings

Underwriter's Laboratories, Inc. (UL), UL 2443: Standards for flexible sprinkler hose with fittings for fire protection services

TECHNICAL DATA

Maximum Working Pressure Rating:	175 psig UL/FM
Maximum Ambient Temperature Rating:	300°F (UL) and 225°F (FM)
Connection:	INLET 1" NPT OUTLET ½" or ¾" NPT
Minimum Bending Radius:	4" (UL) and 8" (FM) <i>Do not bend within 2.52 inches from connection nuts</i>
K-Factor:	½" Outlet: 5.6 gpm ¾" Outlet: 8.0 gpm

No hangers required

Required torque to assemble reducer and nipple with the flexible hose:
50 feet per pound

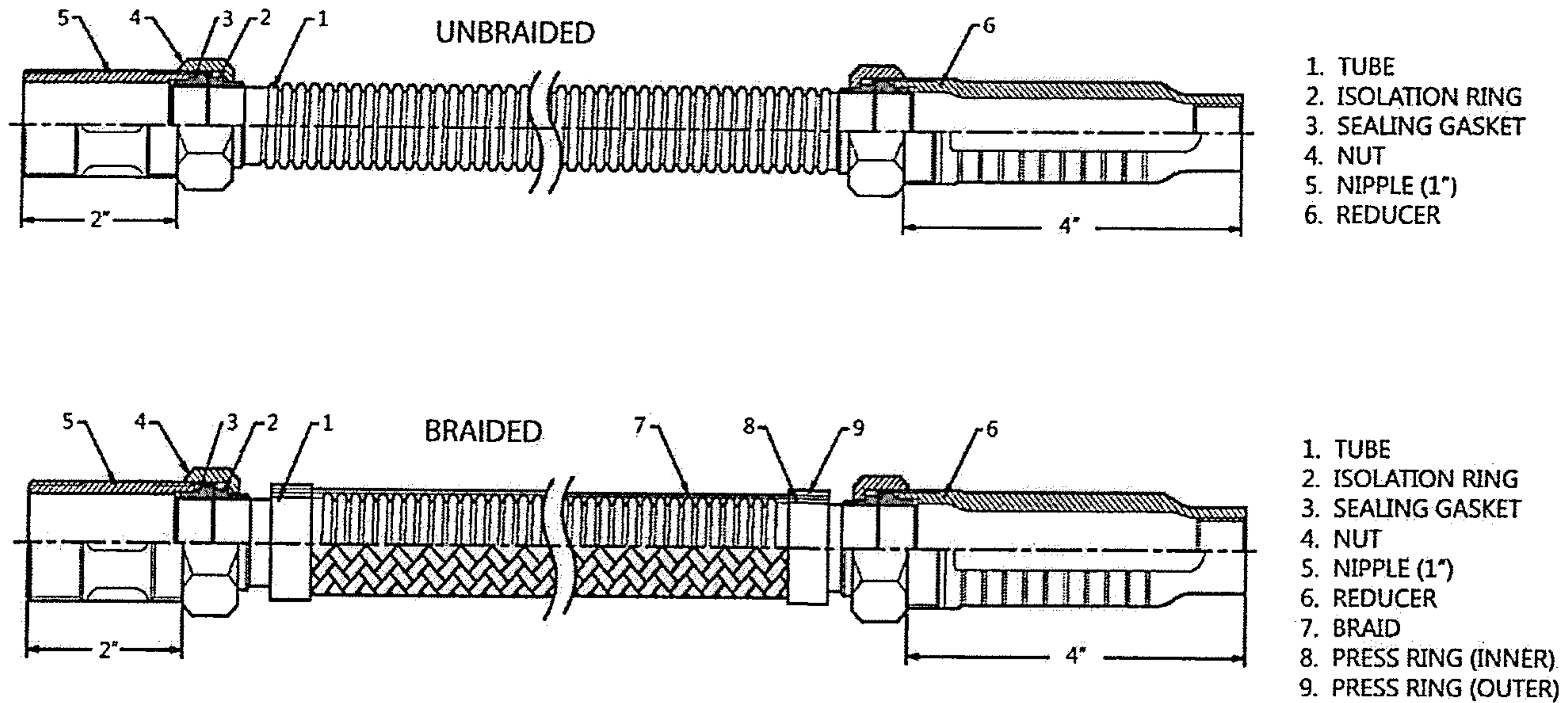
Maximum number of bends per hose:
Refer to Friction Loss Data

SUBMITTAL

Job Name	Job Location
Submitted By	Date
Approved By	Date

EASYFLEX® Flexible Sprinkler Drops

FLEXIBLE HOSE DATA SHEET



FEATURES & MATERIALS

HOSE LENGTHS 24" 36" 48" 60" 72"	HOSE/BRAID MATERIAL Stainless Steel 304
SIZES 1/2" and 3/4"	NUT & NIPPLE MATERIAL Zinc-Plated Steel
HOSE TYPES Braided Unbraided	SEALING GASKET / ISOLATION RING MATERIAL EPDM / NYLON

FRICTION LOSS DATA

Length	Outlet Connections	MAX number of 90° Bends (UL)	Equivalent Length of 1" Schedule 40 Pipe, ft (FM/UL)
24"	1/2"	1	6.8 / 18
	3/4"	1	4.7 / 18
36"	1/2"	2	11.5 / 31
	3/4"	2	10.6 / 34
48"	1/2"	3	16.7 / 48
	3/4"	3	12.7 / 51
60"	1/2"	4	20.6 / 60
	3/4"	4	17.0 / 65
72"	1/2"	4	24.0 / 71
	3/4"	4	19.8 / 72

*Differences of Friction Loss Data are due to the different test methods and conditions between UL and FM approvals.

FM: 8" minimum bend radius, where C=100 | UL: 4" minimum bend radius, where C=120

**The above chart reflects braided hose data. For unbraided data, refer to the full catalog.