Bulletin 051 Rev. B

Model G5-56 Dry (SIN RA5114) K5.6 (80 metric) Concealed Dry Pendent Sprinkler

UL Quick Response
FM Standard Response
½" (13mm) Cover plate Adjustment

Features

1. Flat cover plate with threaded attachment.
2. Solid or perforated cover plate available in chrome and white as Standard Finishes.
   Also available in a wide variety of Special Application Finishes.
3. Cover plates with gaskets are available to limit dust and air movement through the ceiling.
4. Available in Ordinary or Intermediate temperature rating.
5. Sprinkler available in lengths from 4¼ inches (108mm) to 48 inches (1219mm) in ¼-inch (6.35mm) increments (see Fig. 1).

Approvals & Listings

1. Listed by Underwriters Laboratories and Certified for Canada (cULus) as a Quick-response sprinkler for Light and Ordinary Hazard occupancies. UL Guide Number VNIV, Sprinklers, Automatic and Open.
2. FM Approved as a Standard-response sprinkler.

Patents

The Model G5-56 Dry is covered by the following patents:
U.S. 5,775,431
U.S. 5,967,240

Application

The Model G5-56 Dry is a cULus Listed Quick Response Concealed Dry Pendent sprinkler intended for use in accordance with NFPA 13. The Model G5-56 Dry sprinkler is cULus Listed for use in Light and Ordinary Hazard occupancies.

The Model G5-56 Dry is FM Approved as a Standard Response Concealed Dry Pendent sprinkler intended for use in accordance with FM Loss Prevention Data Sheet 2.0.

Product Description

The Reliable Model G5-56 Dry sprinkler is a Dry Pendent sprinkler, where the sealing washer is located at the inlet end of the sprinkler assembly. The position of the sealing washer is controlled by a fusible element at the opposite end of the sprinkler assembly. The sprinkler is installed with the fusible element at the ceiling of a protected space that may be subject to freezing temperatures and the inlet orifice located in a heated area above the ceiling. Operation of the fusible element allows the sealing washer to move out of the inlet orifice admitting water from the supply piping. The sprinkler uses a fast-response fusible element with an Ordinary, 165°F (74°C), or Intermediate, 212°F (100°C), temperature classification.

Model G5-56 Dry Sprinkler

The Model G5-56 Dry sprinkler has a dropdown deflector design that allows the sprinkler to be recessed into the ceiling and concealed by a flat cover plate. The cover plate assembly threads into the sprinkler's cup and provides ½-inch (13mm) of cover adjustment. The cover plate assembly consists of a flat cover plate that is attached to the skirt using either 135°F (57°C) or 165°F (74°C) temperature rated solder. The 135°F (57°C) cover plates are for use with Ordinary temperature classification sprinklers and the 165° (74°C) cover plates are for use with Intermediate temperature classification sprinklers.

The Model G5-56 Dry sprinkler is available in lengths ranging from 4¼ inches (108mm) to 48 inches (1219mm) in ¼-inch (6.35mm) increments (see Fig. 1). The length of the sprinkler must be selected to provide the Exposed Minimum Barrel Length in a Heated Area required by Fig. 2.

The Model G5-56 Dry sprinkler is available with 1-inch NPT or ISO 7-1 R1 threaded inlet fittings. The standard inlet fitting includes a long inlet designed to minimize the potential for water, scale, and sediment to accumulate on the sprinkler inlet in wet- and dry-pipe sprinkler systems. For wet-pipe sprinkler system applications where the standard inlet interferes with installation into existing plastic pipe fittings, an inlet fitting is available with a short ("PL") inlet. See Fig. 3 for further information.

Technical Data:

Nominal Orifice Size: ½-inch (15mm)
Thread Size: 1-inch NPT per ANSI B2.1 or ISO 7-1 R1
Nominal K Factor: 5.6 (80 metric)
Maximum Working Pressure: 175 psi (12 bar) – 100% factory hydrostatically tested to 500 psi (34.5 bar)
Sprinkler Installation Wrench: Model FC wrench
Sprinkler Identification Number (SIN): RA5114
Materials: See Fig. 4

Temperature Rating

Classification	Sprinkler	Cover Plate	Max. Ambient Temp.
Ordinary	165°F (74°C)	135°F (57°C)	100°F (38°C)
Intermediate	212°F (100°C)	165°F (74°C)	150°F (66°C)

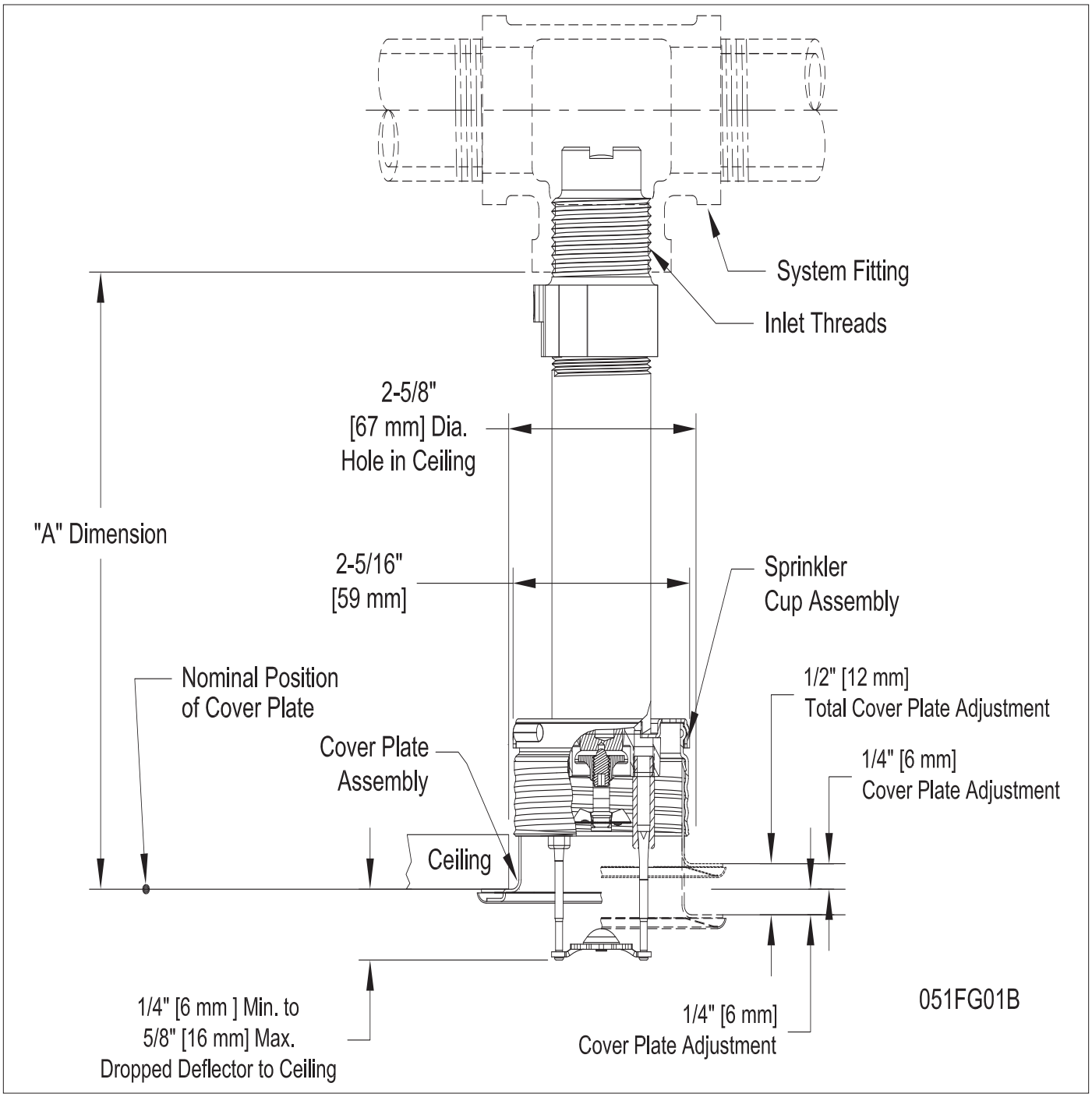


Figure. 1

Note: The "A" dimension is based on a nominally gauged pipe thread "make-up" of 0.600" (15mm) per ANSI B2.1 [7½ threads approximately].

"A" Dim.	4¼" to 48" (108mm to 1219mm) in ¼" (6.35mm) increments

Cover Plate Finishes

Standard Finishes
White Paint
Chrome
Special Application Finishes
Off White Paint
Black Paint
Custom Color Paint – Specify[1]
Raw Brass (Lacquered)
Bright Brass
Finished Bronze
Black Plated
Satin Chrome
Stainless Steel Clad[2]

Model FC
Sprinkler Wrench

[1] Custom color paint is semi-gloss, unless specified otherwise.

[2] Stainless steel clad cover plates are Type 316 Stainless Steel on the finished side and C102 Copper Alloy on the back side. Cover plates are not listed or approved as corrosion resistant. Stainless steel clad cover plates are not available perforated.

Optional Cover Plate with Gasket*

Model G4 QR Gasket
Cover Plate
(cULus Listed)

Model G4 SR Gasket
Cover Plate
(FM Approved)

* Model G4 QR Gasket and Model G4 SR Gasket cover plates are sold as assembled units including both the cover plate and gasket. Model G4 QR Gasket and Model G4 SR Gasket cover plates and gaskets are not interchangeable.

Installation Instructions

Model G5-56 Dry sprinklers must only be installed 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. Model G5-56 Dry sprinklers shall not be installed into elbows or pipe couplings located on drop nipples to the sprinklers. In all installations, including into CPVC piping, the dry sprinkler shall be installed with protrusion into the fitting in accordance with the installation diagrams in this Bulletin.

Installation of the Model G5-56 Dry sprinkler is not recommended in copper pipe systems, as this may reduce the life expectancy of the sprinkler. Do not install Model G5-56 Dry sprinklers with the standard (long) inlet fitting into CPVC adapter fittings or tees that have an internal obstruction (see Fig. 3); this will damage the sprinkler, the fitting, or both. A short inlet ("PL") version of the Model G5-56 Dry sprinkler is available for use in existing installations with CPVC adapter fittings or tees having an internal obstruction; Model G5-56 sprinklers with the short inlet fitting shall not be used on dry-pipe sprinkler systems. The Model G5-56 Dry sprinkler and the cover plate assembly are not intended for installation in corrosive environments, including, but not limited to, those with salt aerosols or chlorine.

Model G5-56 Dry sprinklers must be installed with the Exposed Minimum Barrel Length required by Fig. 2 located in a Heated Area. Do NOT install the sprinkler in ceilings which have positive pressure in the space above.

The following steps must be followed for installation:

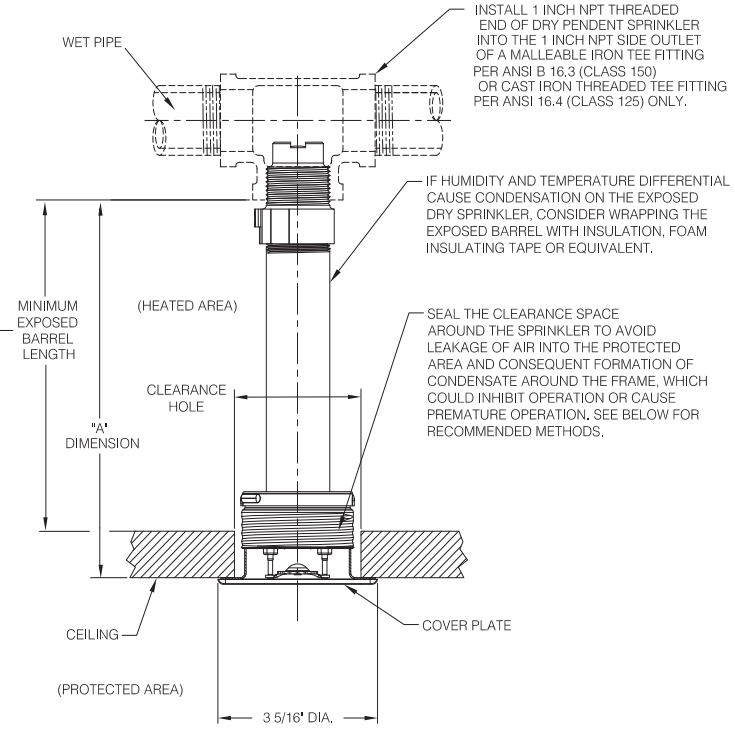
1. Cut a $2\frac{5}{8}$-inch (67mm) diameter hole in the ceiling directly in-line with the outlet of the tee.
2. Apply pipe joint compound or Polytetrafluoroethylene (PTFE) tape to the threads of the sprinkler's inlet fitting.
3. A protective cap is provided to protect the drop-down sprinkler deflector from damage which could occur during construction before the cover plate is installed. The cap is factory installed inside the sprinkler cup. Remove the cap to install sprinkler, Step 4, then reinstall cap until the cover plate is installed.
4. Install the sprinkler in the tee using the Model FC wrench. The Model FC wrench has a socket drive which is inserted into the sprinkler's cup and around the body of the sprinkler prior to installation of the sprinkler. Do NOT wrench any of the part of the sprinkler/cup assembly. The sprinkler is then tightened into the pipe fitting to achieve a leak free connection. The recommended minimum to maximum installation torque is 22-30 lb-ft (30 – 40 N-m). When inserting or removing the wrench from the sprinkler/cup assembly, care should be taken to prevent damage to the sprinkler. Reinstall the protective cap following installation of the sprinkler, until the cover plate is installed.
   a. Alternatively, where access to the outer tube of the sprinkler is available, the Model G5-56 Dry sprinkler may be installed using a pipe wrench. The protective cap should not be removed to install the sprinkler with a pipe wrench. The pipe wrench shall only be permitted to interface with the steel outer tube portion of the sprinkler (Item #8 in Fig. 4). Do NOT wrench any other portion of the sprinkler/cup assembly. A pipe wrench can install the sprinkler into the fitting with a large amount of torque; consideration should be given to the need for future removal of the sprinklers because the installation torque will have to be matched or exceeded to remove the sprinkler. The recommended minimum to maximum installation torque is 22-30 lb-ft (30 – 40 N-m).
5. To install the cover plate, remove the protective cap and install the cover plate by hand turning the cover in the clockwise direction until it is tight against the ceiling. For Model G4 QR Gasket and Model G4 SR Gasket cover plates, the gasket should be attached to the flange of the cover plate skirt only. Do not glue the gasket in place or allow the gasket to overlap both the cover plate and the flange of the skirt.

RECOMMENDED EXPOSED MINIMUM BARREL LENGTH BASED ON AMBIENT TEMPERATURE IN THE PROTECTED AREA

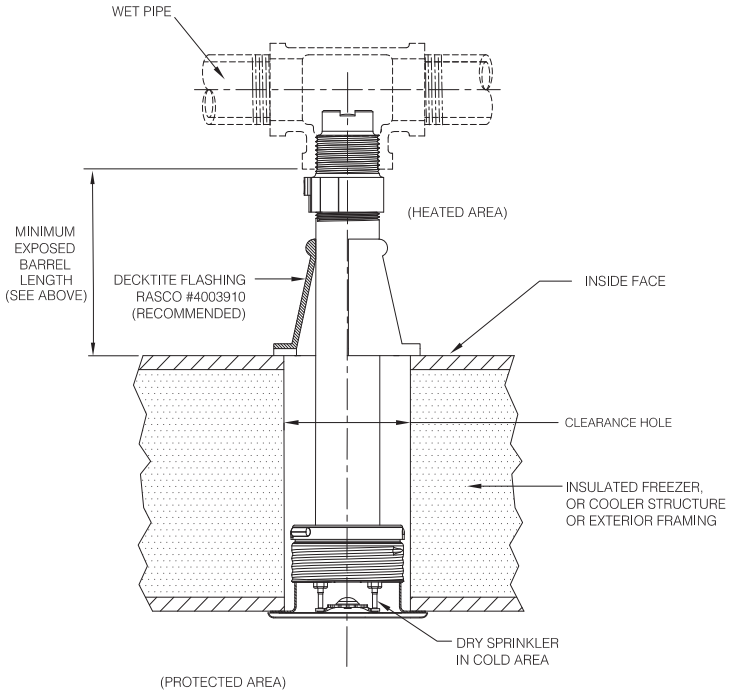
AMBIENT TEMPERATURE OF PROTECTED AREA* AT THE DISCHARGE END OF THE SPRINKLER	EXPOSED BARREL AMBIENT TEMPERATURE		
	40°F/4°C	50°F/10°C	60°F/16°C
	EXPOSED MINIMUM BARREL LENGTH** (FACE OF TEE TO TOP OF CEILING)		
	IN. (MM)	IN. (MM)	IN. (MM)
40°F (4°C)	0	0	0
30°F (-1°C)	0	0	0
20°F (-7°C)	4 (100)	0	0
10°F (-12°C)	8 (200)	1 (25)	0
0°F (-18°C)	12 (300)	3 (75)	0
-10°F (-23°C)	14 (350)	4 (100)	1 (25)
-20°F (-29°C)	14 (350)	6 (150)	3 (75)
-30°F (-34°C)	16 (400)	8 (200)	4 (100)
-40°F (-40°C)	18 (450)	8 (200)	4 (100)
-50°F (-46°C)	20 (500)	10 (250)	6 (150)
-60°F (-51°C)	20 (500)	10 (250)	6 (150)

* FOR AMBIENT TEMPERATURES EXPOSED TO THE DISCHARGE END OF THE SPRINKLER THAT OCCUR BETWEEN THE VALUES LISTED, USE THE NEXT COOLER TEMPERATURE.

** THE MINIMUM EXPOSED BARREL LENGTH IS NOT THE SAME AS THE "A" DIMENSION. THE MINIMUM EXPOSED BARREL LENGTH IS BASED ON A PROPERLY SEALED PENETRATION WITH A MAXIMUM WIND VELOCITY PN THE EXPOSED SPRINKLER OF 30 MPH (48 KM/H). LONGER EXPOSED BARREL LENGTHS WILL HELP AVOID FREEXING OF THE WET PIPING WHERE HIGHER WIND VELOCITY IS EXPECTED.



RECOMMENDED DRY SPRINKLER SEAL ARRANGEMENT



051FG02

Figure 2

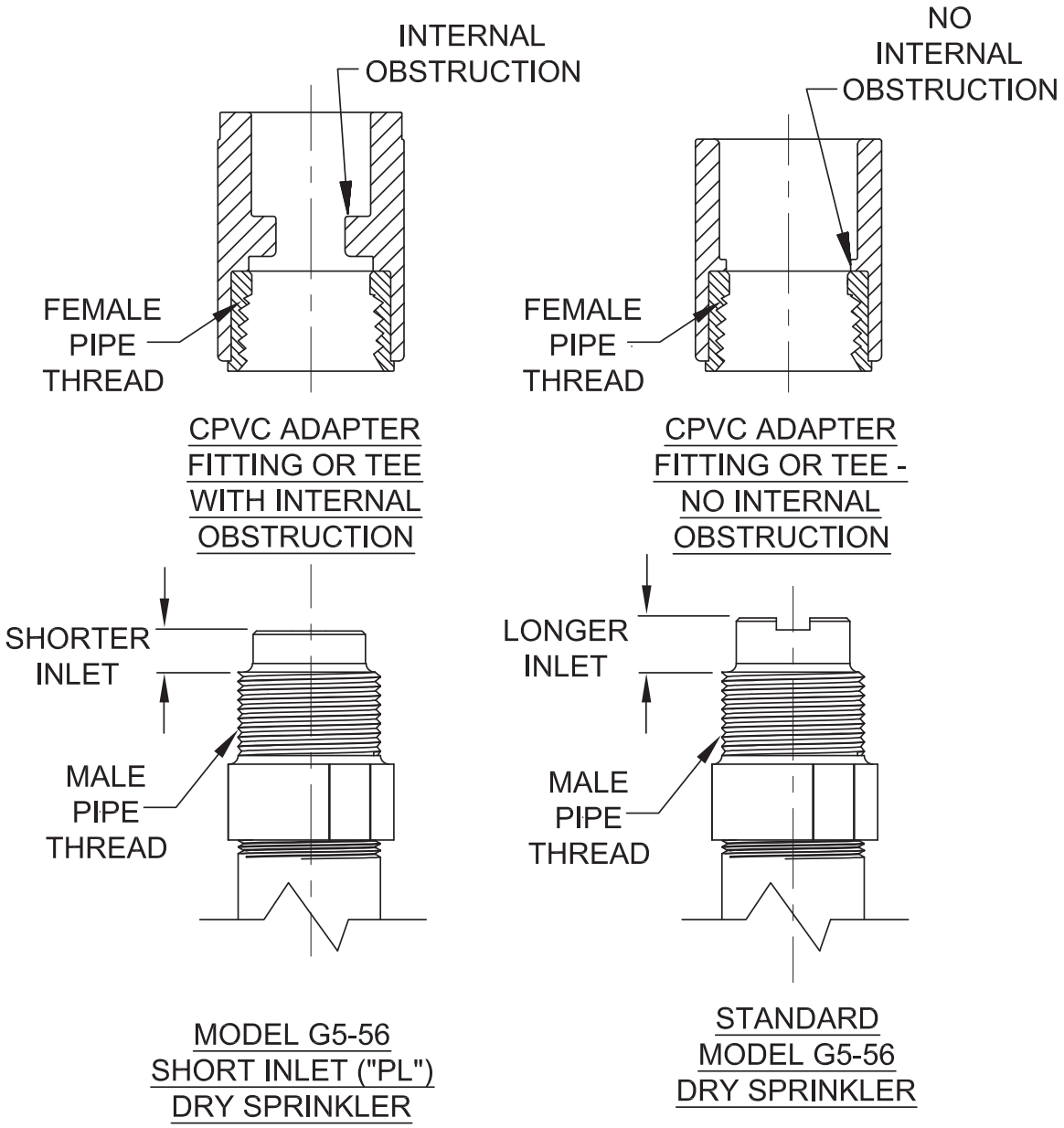
CAUTION

DO NOT INSTALL MODEL G5-56 DRY SPRINKLERS WITH STANDARD INLETS INTO CPVC ADAPTER FITTINGS OR TEES THAT HAVE AN INTERNAL OBSTRUCTION; THIS WILL DAMAGE THE SPRINKLER, THE FITTING, OR BOTH.

CPVC ADAPTER FITTINGS AND TEES WITH INTERNAL OBSTRUCTIONS ARE COMMONLY FOUND DURING THE RETROFITTING PROCESS OF RELIABLE'S OLDER MODEL G3 DRY SPRINKLERS.

A SHORT INLET ("PL") VERSION OF THE MODEL G5-56 DRY SPRINKLER IS AVAILABLE FOR USE IN EXISTING INSTALLATIONS WITH CPVC ADAPTER FITTINGS OR TEES HAVING AN INTERNAL OBSTRUCTION; THE SHORT INLET VERSION SHALL NOT BE USED ON DRY-PIPE SPRINKLER SYSTEMS.

VERIFY SPRINKLER AND FITTING DIMENSIONS PRIOR TO INSTALLATION TO AVOID INTERFERENCE.



BE SURE TO ORDER THE CORRECT SPRINKLERS FOR YOUR APPLICATION

051FG03

Figure 3

Maintenance

The Model G5-56 Dry should be inspected and the sprinkler system maintained in accordance with NFPA 25. Do not clean sprinklers with soap and water, ammonia or any other cleaning fluids. Replace any sprinkler that has been painted (other than factory applied) or damaged in any way. Concealed sprinklers cover plates can not be painted in the field, after installation or have any other coating applied other than the factory finish. A stock of spare sprinklers should be maintained to allow quick replacement of damaged or operated sprinklers. Prior to installation, sprinkler should be maintained in the original cartons and packaging to minimize the potential for damage to sprinklers that would cause improper operation or non-operation.

Engineering Specification

Model G5-56 Dry Pendent Concealed Sprinkler

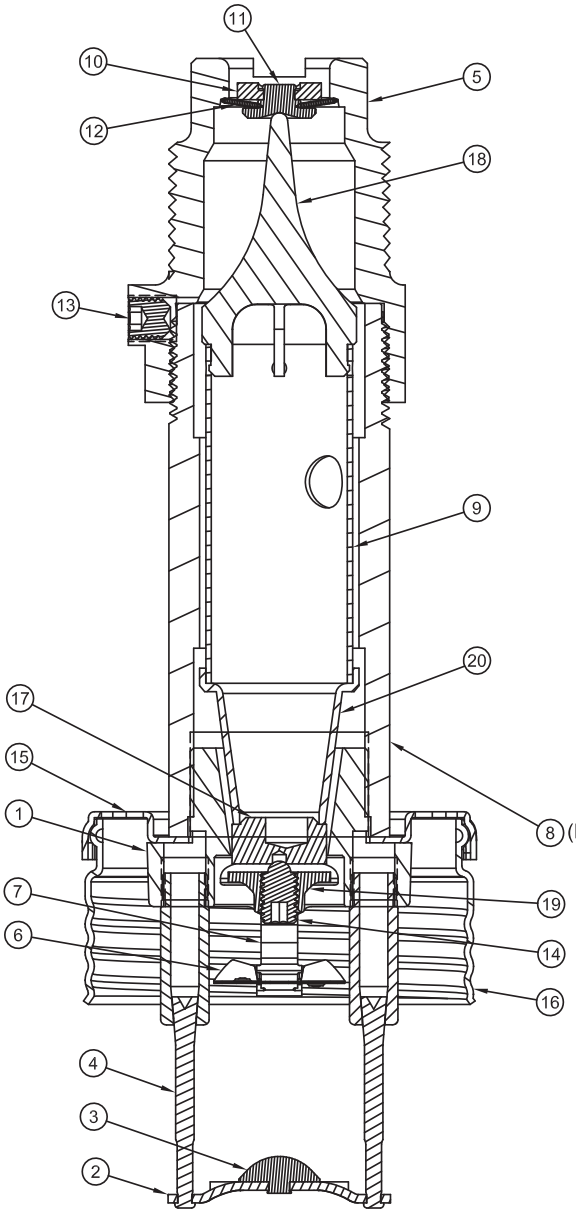
Dry pendent sprinklers shall be dry pendent concealed sprinklers with a flat cover plate. Sprinklers shall be cULus Listed as Quick Response for Light and Ordinary Hazard applications as well as FM Approved as Standard Response. Sprinklers shall be available in lengths from 4¼ inches (108mm) to 48 inches (1219mm) in ¼-inch (6.35mm) increments based on face of fitting to finished ceiling distance. Sprinkler length shall be selected to provide the Exposed Minimum Barrel Length based on the minimum design temperature in the protected area and the minimum temperature in the conditioned space where the barrel is located in accordance with the Manufacturer's written installation instructions. Sprinklers shall have [1-inch NPT][ISO 7-1 R1] threaded inlet fittings with [standard length inlets designed for use with wet- or dry-pipe sprinkler systems][short length inlets designed for use with wet-pipe sprinkler systems having pipe fittings with internal obstructions that prevent the insertion of standard length inlets]. Sprinklers shall have a PTFE coated beryllium nickel Belleville spring washer inlet seal and brass alloy cap that prevent water entry from the sprinkler system piping into the sprinkler prior to actuation. Sprinklers shall have a fast-response fusible link that controls the movement of the inlet seal and cap through a mechanism consisting of link arms, a seat adapter, an orifice adapter, an inner tube, and a yoke. Sprinklers shall use a drop down deflector supported by tapered pins. Sprinklers shall have a galvanized steel cup for threaded attachment of the flat cover plate assembly. Cover plate attachment shall provide up to ½-inch (13mm) of adjustment. Sprinklers shall be [Ordinary temperature classification, 165°F (74°C), with 135°F temperature rated cover plates][Intermediate temperature classification, 212°F, with 165°F temperature rated cover plates]. Cover plates shall be [solid][perforated] with factory applied [White][Chrome][Special Application – Specify] finish. Dry pendent concealed sprinklers shall be Reliable Model G5-56 Dry (SIN RA5114).

Ordering Information

Specify:

1. Sprinkler: Model G5-56 Dry
2. Threads: [1-inch NPT - standard][ISO 7/1 R1 - optional]
3. Inlet Length: [Standard][Short ("PL")– for existing wet-pipe installations only]
4. Cover Plate Finish: [White][Chrome][Special Application – Specify]
5. Sprinkler/Cover Plate Temperature Rating: [Ordinary – 165°F sprinkler with 135°F cover plate][Intermediate – 212°F sprinkler with 165°F cover plate]
6. Nominal Sprinkler Length (face of fitting to face of ceiling - "A" Dimension from Fig. 1): [Specify length – Lengths available from 4¼ inches to 48 inches (108mm to 1219mm) in ¼-inch (6.35mm) increments]

MATERIAL SPECIFICATIONS



ITEM #	DESCRIPTION	MATERIAL
1	BODY, MACH.	DZR BRASS
2	DEFLECTOR	COPPER ALLOY
3	DEFL. SPLITTER	BRASS ALLOY
4	DEFL. PIN	STAINLESS STEEL
5	MEGA-INLET	DZR BRASS
6	LINK ASSY.	NICKEL/BERYLLIUM NICKEL
7	LEVER	COPPER ALLOY
8	OUTER TUBE	GALVANIZED STEEL
9	INNER TUBE	BRASS ALLOY
10	FLIP DISK	BRASS ALLOY
11	CAP	BRASS ALLOY
12	WASHER	PTFE COATED BERYLLIUM NICKEL
13	SET SCREW	STAINLESS OR ALLOY STEEL
14	LOAD SCREW	STAINLESS STEEL
15	BOTTOM CUP	GALVANIZED STEEL
16	TOP CUP	GALVANIZED STEEL
17	ADJ. SEAT ADAPTER	BRASS ALLOY
18	YOKE	BRASS ALLOY
19	CLOSURE YOKE	BRASS ALLOY
20	ORIFICE ADAPTER	BRASS ALLOY

(PIPE WRENCH MAY ONLY BE USED ON OUTER STEEL PIPE OF SPRINKLER)

051FG04

Figure 4

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 almost 100.

Manufactured by

Reliable®

Reliable Automatic Sprinkler Co., Inc.
(800) 431-1588 Sales Offices
(800) 848-6051 Sales Fax
(914) 829-2042 Corporate Offices
www.reliablesprinkler.com Internet Address

Recycled Paper

Revision lines indicate updated or new data.

EG. Printed in U.S.A. 09/16 P/N 9999970480

WM TAO & ASSOCIATES
CONSULTING ENGINEERS

Shop Drawing Submittal Review

Transmitted To: Cannon Design

Date: December 15, 2016

Attention: **stl-cac@cannondesign.com**

Contact Person / WTA Field Inspector: Patrick Garner

Project Name: Webster University-**ISB**

Reviewed by: Mike Whitworth (WES)

Project No. WT 14127.01
WES 607

[ ] UPS [ ] Courier [X] **Email**

Copies	No.	Description
1 PDF	211313F03	(Submittal No.'s:)
		(Cannon #211313-016) - (Paric #15051-0376) – (WES #607)
		➢ **Concealed Dry Pendent Sprinkler Product Data**

*Remarks: See Submittal Review from Webb Enginnering.

c: **Kelvin Patel**
Kpatel@cannondesign.com

[X] ***Reviewed**

[X] ***No Exceptions Taken**

[ ]

[ ] *Make Corrections As Noted, No Resubmittal Required

Corrections or comments made on shop drawings during this review do not relieve contractor from compliance with requirements of drawings and specifications. This check is only for review of general conformance with the design concept of project and general compliance with information given in contract documents. Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner.

WTASHOP - RE: WT 14127.01 Fwd: Webster ISB - 21 1313-016

From: Michael Whitworth <mwhitworth@webb-engineering.com>
To: WTASHOP <wtashop@wmtao.com>
Date: 12/15/2016 9:26 AM
Subject: RE: WT 14127.01 Fwd: Webster ISB - 21 1313-016
Attachments: 211313-016 Concealed Dry Pendent Sprinkler Product Data_WESReviewed_121516.pdf

Shop drawing review attached for:
211313 Concealed Dry Pendant Sprinkler Head

This needs to be reviewed by the Architect for the color/finish of the cover plate.
Refer to shop drawing review 210518-003 (return dated 12/09/16)

Mike Whitworth
Webb Engineering Services, Inc.
1400 S. 3rd Street, Suite 201
St. Louis Missouri 63104
314.588.0600 ext. 208
mwhitworth@webb-engineering.com

From: WTASHOP [wtashop@wmtao.com]
Sent: Wednesday, December 14, 2016 1:49 PM
To: Michael Whitworth
Subject: WT 14127.01 Fwd: Webster ISB - 21 1313-016

Mike, for your review, thanks.

WT 14127.01 Fwd: Webster ISB - 21 1313-016

ENSURE YOUR SUBMITTALS ARE BEING PROCESSED!!! **Please include wtashop@wmtao.com, *Sara Trout*, in all of your shop drawing correspondence in order to expedite & track. *Thank you.***

Sara Trout
Shop Drawing Coordinator

WM TAO & ASSOCIATES
CONSULTING ENGINEERS

WEBB
ENGINEERING
SERVICES INC.

1400 S. 3rd Street, Suite 201
St. Louis, Missouri 63104
Phone: (314) 588-0600
Fax: (314) 588-0604

Letter of Transmittal

To: wtashop@wmtao.com

From: Mike Whitworth

Date: December 15, 2016

Re: Webster University ISB

WES No: 607

☐ For your Files ☐ For Review ☐ Please Comment ☐ Please Reply

Item No.	Description	No. of Copies	Date
1	Shop Drawing Review – (211313-016) 211313 Concealed Dry Pendant Sprinkler Head	1	12/15/16

•Signature: Mike Whitworth

WES
WEBB ENGINEERING SERVICES INC.
1400 S. 3rd Street, Suite 201 • St. Louis, Missouri 63104 • 314.588.0600 • *fax* 314.588.0604
www.webb-engineering.com

The review of this submittal is limited to the general conformance with the designated design concept and intent of this project and with the general compliance of the information provided in the contract documents. All comments, remarks and notations made on the submittal(s) as a result of this review do not relieve the contractor from full compliance with requirements of the contract documents. Approval for a specific item shall not include approval of an assembly of which the item is not a component. The contractor is solely responsible for rough-in and installation confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordination of this work with that of other trades on this project; and in a safe and satisfactory manner. All work shall be installed in full compliance with the manufacturer's recommendation, Federal, State and Local rules and regulation and the Authority Having Jurisdiction (AHJ) and applicable adopted codes and standards.

PROJECT NAME:	Webster University ISB	CONTRACTOR:	J.F. Ahern Co.
LOCATION:	St. Louis Missouri	CTR. SUBMITTAL #:	21 1313-016
CLIENT PROJ. NO.:	N/A	SUBMITTAL DATE:	December 06, 2016
WES PROJ. NO.:	607	DATE RECEIVED:	December 14, 2016
		RECEIVED VIA:	E-Mail
SPECIFICATION SECTION:	211313 Concealed Dry Pendant Sprinkler Head	RECEIVED FROM:	WTA
		DATE RETURNED:	DECEMBER 15, 2016
SUBMITTAL ITEM:	See Below -	RETURNED VIA:	E-MAIL
		RETRURNED TO:	WTASHOP@WMTAO.COM

STATUS KEY:

NO EXCEPTION TAKEN

MAKE CORRECTIONS NOTED, NO RESUBMITTAL:

AMEND AND RESUBMIT

REJECTED, SEE REMARKS:

REVIEWED ONLY

NEC	MCN	AAR	REJ	REV	ITEM	REMARKS
X					Under Canopy Concealed Sprinkler Head Reliable Model – G5-56	1. Reviewed for sprinkler head only.

This submittal and any color/finish samples of the cover plate shall be submitted to the Architect for review, selection and approval of color/finish. Refer to shop drawing review 21 0518-003, return dated 12/09/16

REVIEWED BY: Michael R. Whitworth DATE: December 15, 2016

THESE COMMENTS ARE TO BE ATTACHED TO ALL COPIES OF THE SHOP DRAWING REFERENCED ABOVE.

CANNONDESIGN

SUBMITTAL IDENTIFICATION SHEET

To be completed by Contractor/CM

WEBSTER UNIVERSITY ISB
PROJECT NAME

8274 BIG BEND BLVD
ADDRESS

NUMBER

WEBSTER UNIVERSITY
OWNER

CANNON DESIGN
ARCHITECT / ENGINEER

Joe Voypick
SUBMITTED BY

211313-015
CONTRACTOR / CM SUBMITTAL NO.

CANNON DESIGN SUBMITTAL NO.

DRAWING / DETAIL REFERENCE

211313
SPECIFICATION SECTION / PARAGRAPH

Reliable
MANUFACTURER / SUPPLIER

ITEM / PRODUCT ID

REQUIRED DATE

PRIORITY

◯ CRITICAL

ITEM BEING SUBMITTED (check only one)

- ◯ Shop Drawings
- ◯ Samples (_____ copies)
- ◯ LEED Submittal
- ◯ Certification / Qualifications
- ◯ Record Documents
- ◉ Product Data
- ◯ Coordination Drawing
- ◯ Calculations
- ◯ Schedules
- ◯ O&M Manuals
- ◯ Other _____

ITEM BEING SUBMITTED FOR (check only one)

◉ Action ◯ Information Only ◯ Record

REMARKS OR DEVIATIONS

Completely flush plate dry pendent concealed head we would like to have approved for use on the exterior overhang

CONTRACTOR / CM CERTIFICATION
(SUBMITTALS NOT CERTIFIED WILL BE RETURNED WITHOUT REVIEW)

PARIC

PARIC CORPORATION
SUBMITTAL STAMP

THIS SHOP DRAWING HAS BEEN REVIEWED BY PARIC CORPORATION

Subcontractor remains responsible for dimensions, quantities, coordination with other trades and compliance with contract documents.

By:
Devin D. Gates

Joe Voypick
REVIEWED BY

12/6/16
DATE

To be completed by Reviewer

21 1313-016
CANNON DESIGN SUBMITTAL NUMBER

12/8/16
RECEIVED DATE

- ◯ A. No Exceptions Taken
  No further review of submittal is required.
- ◯ B. Make Corrections Noted
  Incorporate corrections in work; resubmission is not required.
- ◯ C. Revise and Resubmit
  Revise as noted, and resubmit for review.
- ◯ D. Rejected
  Submittal is not in compliance with Contract Documents; provide new submittal.
- ◯ E. For Record / Information Only
  Submittal was reviewed for Record / Information purposes only.
- ◯ F. Not Required for Review
  Submittal is not required by Contract Documents and has not been reviewed.

Review is for conformance with the design concept of this project and for general compliance with contract documents. Contractor is responsible for quantities, dimensions and compliance with contract documents and for information that pertains to fabrication processes, construction techniques and coordination of this work with all trades which will be affected thereby. This review is null and void if submittal deviates from contract documents and does not indicate or note deviations.

A/E COMMENTS ◯ See attached sheet(s) for additional comments

REVIEWED BY

DATE

77 Westport Plaza
Suite 250
St. Louis, MO 63146

TRANSMITTAL

No. 15051-0376

Paric Corporation

PROJECT: 15051-Webster University Interdisciplinary Science Building

DATE: 12/06/2016

TO: Cannon Design
1100 Clark Ave
St Louis MO 63102

Fax;
314-241-2203

RE: Concealed Dry Pendent Sprinkler Product Data

ATTN: Kelvin Patel

JOB: 15051

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
☐ Shop Drawings	☑ Approval	☐ Approved as Submitted
☐ Letter	☐ Your Use	☐ Approved as Noted
☐ Prints	☐ As Requested	☐ Returned After Loan
☐ Change Order	☐ Review and Comment	☐ Resubmit
☐ Plans		☐ Submit
☐ Samples	**SENT VIA:**	☐ Returned
☐ Specifications	☐ Attached	☐ Returned for Corrections
☑ Other: Product Data	☐ Separate Cover Via:	☐ Due Date:

Item	*Package*	*Code*	*Rev.*	*Copies*	*Date*	*Description*	*Status*
Submittal		211313-016	1		12/06/2016	Concealed Dry Pendent Sprinkler Product Data	Submitted

NOTES:

CC:

Signed: _____

Devin Gates

Model G5-56 Dry (SIN RA5114) K5.6 (80 metric) Concealed Dry Pendent Sprinkler

Bulletin 051 Rev. B

UL Quick Response
FM Standard Response
½" (13mm) Cover plate Adjustment

1. Manufacturer and model/SIN number listed in submittal is not listed on the FP drawings in the Sprinkler schedule.
2. Color/finish of cover plate to be submitted to the Architect for review and approval.

Features

1. Flat cover plate with threaded attachment.
2. Solid or perforated cover plate available in chrome and white as Standard Finishes. Also available in a wide variety of Special Application Finishes.
3. Cover plates with gaskets are available to limit dust and air movement through the ceiling.
4. Available in Ordinary or Intermediate temperature rating.
5. Sprinkler available in lengths from 4¼ inches (108mm) to 48 inches (1219mm) in ¼-inch (6.35mm) increments (see Fig. 1).

Approvals & Listings

1. Listed by Underwriters Laboratories and Certified for Canada (cULus) as a Quick-response sprinkler for Light and Ordinary Hazard occupancies. UL Guide Number VNIV, Sprinklers, Automatic and Open.
2. FM Approved as a Standard-response sprinkler.

Patents

The Model G5-56 Dry is covered by the following patents:
U.S. 5,775,431
U.S. 5,967,240

Application

The Model G5-56 Dry is a cULus Listed Quick Response Concealed Dry Pendent sprinkler intended for use in accordance with NFPA 13. The Model G5-56 Dry sprinkler is cULus Listed for use in Light and Ordinary Hazard occupancies.

The Model G5-56 Dry is FM Approved as a Standard Response Concealed Dry Pendent sprinkler intended for use in accordance with FM Loss Prevention Data Sheet 2.0.

Product Description

The Reliable Model G5-56 Dry sprinkler is a Dry Pendent sprinkler, where the sealing washer is located at the inlet end of the sprinkler assembly. The position of the sealing washer is controlled by a fusible element at the opposite end of the sprinkler assembly. The sprinkler is installed with the fusible element at the ceiling of a protected space that may be subject to freezing temperatures and the inlet orifice located in a heated area above the ceiling. Operation of the fusible element allows the sealing washer to move out of the inlet orifice admitting water from the supply piping. The sprinkler uses a fast-response fusible element with an Ordinary, 165°F (74°C), or Intermediate, 212°F (100°C), temperature classification.

Model G5-56 Dry Sprinkler

The Model G5-56 Dry sprinkler has a dropdown deflector design that allows the sprinkler to be recessed into the ceiling and concealed by a flat cover plate. The cover plate assembly threads into the sprinkler's cup and provides ½-inch (13mm) of cover adjustment. The cover plate assembly consists of a flat cover plate that is attached to the skirt using either 135°F (57°C) or 165°F (74°C) temperature rated solder. The 135°F (57°C) cover plates are for use with Ordinary temperature classification sprinklers and the 165° (74°C) cover plates are for use with Intermediate temperature classification sprinklers.

The Model G5-56 Dry sprinkler is available in lengths ranging from 4¼ inches (108mm) to 48 inches (1219mm) in ¼-inch (6.35mm) increments (see Fig. 1). The length of the sprinkler must be selected to provide the Exposed Minimum Barrel Length in a Heated Area required by Fig. 2.

The Model G5-56 Dry sprinkler is available with 1-inch NPT or ISO 7-1 R1 threaded inlet fittings. The standard inlet fitting includes a long inlet designed to minimize the potential for water, scale, and sediment to accumulate on the sprinkler inlet in wet- and dry-pipe sprinkler systems. For wet-pipe sprinkler system applications where the standard inlet interferes with installation into existing plastic pipe fittings, an inlet fitting is available with a short ("PL") inlet. See Fig. 3 for further information.

Technical Data:

Nominal Orifice Size: ½-inch (15mm)
Thread Size: 1-inch NPT per ANSI B2.1 or ISO 7-1 R1
Nominal K Factor: 5.6 (80 metric)
Maximum Working Pressure: 175 psi (12 bar) – 100% factory hydrostatically tested to 500 psi (34.5 bar)
Sprinkler Installation Wrench: Model FC wrench
Sprinkler Identification Number (SIN): RA5114
Materials: See Fig. 4

Temperature Rating

Classification	Sprinkler	Cover Plate	Max. Ambient Temp.
Ordinary	165°F (74°C)	135°F (57°C)	100°F (38°C)
Intermediate	212°F (100°C)	165°F (74°C)	150°F (66°C)

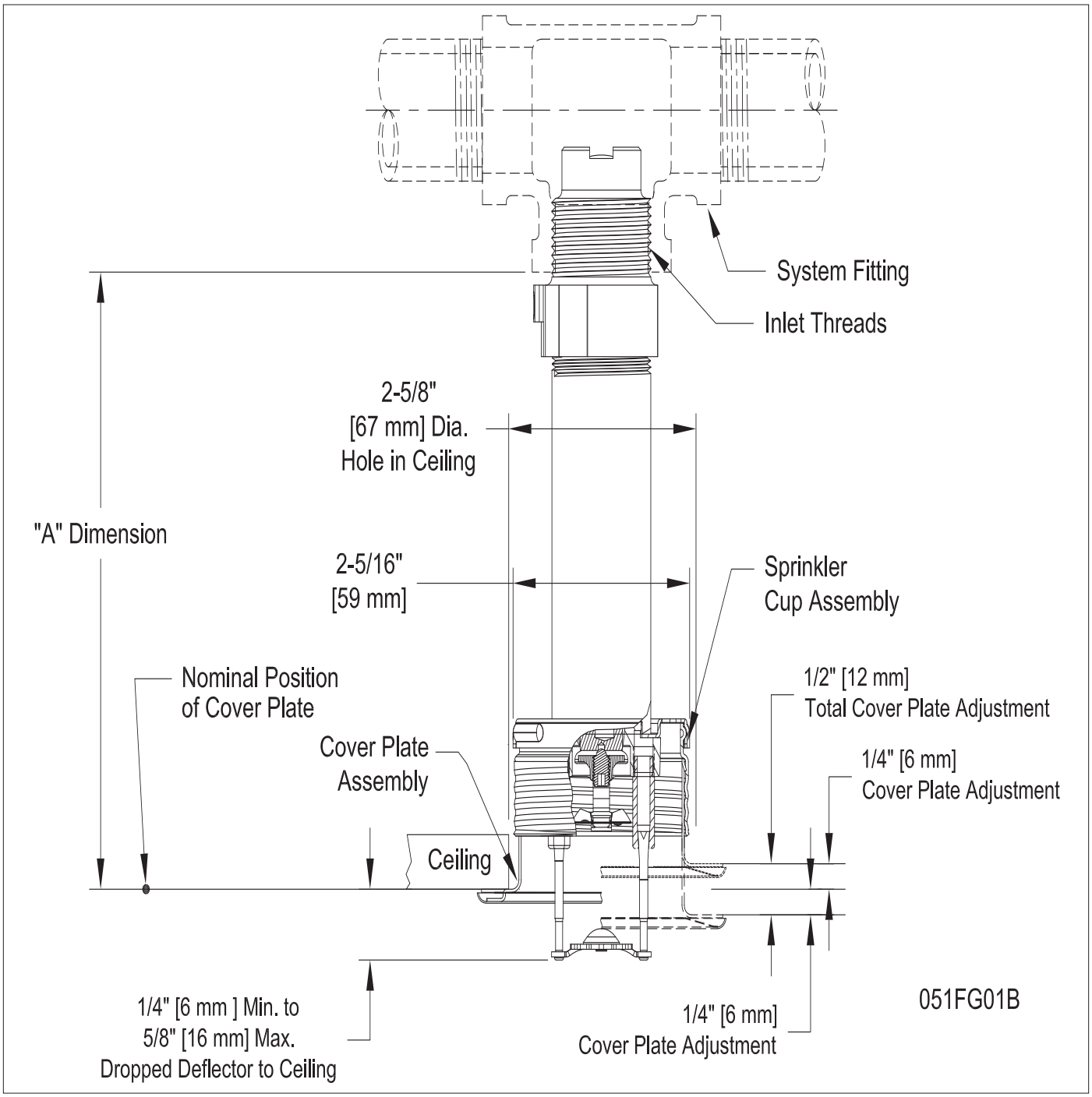


Figure. 1

Note: The "A" dimension is based on a nominally gauged pipe thread "make-up" of 0.600" (15mm) per ANSI B2.1 [7½ threads approximately].

"A" Dim.	4¼" to 48" (108mm to 1219mm) in ¼" (6.35mm) increments

Cover Plate Finishes

Standard Finishes
White Paint
Chrome
Special Application Finishes
Off White Paint
Black Paint
Custom Color Paint – Specify[1]
Raw Brass (Lacquered)
Bright Brass
Finished Bronze
Black Plated
Satin Chrome
Stainless Steel Clad[2]

Model FC
Sprinkler Wrench

[1] Custom color paint is semi-gloss, unless specified otherwise.

[2] Stainless steel clad cover plates are Type 316 Stainless Steel on the finished side and C102 Copper Alloy on the back side. Cover plates are not listed or approved as corrosion resistant. Stainless steel clad cover plates are not available perforated.

Optional Cover Plate with Gasket*

Model G4 QR Gasket
Cover Plate
(cULus Listed)

Model G4 SR Gasket
Cover Plate
(FM Approved)

* Model G4 QR Gasket and Model G4 SR Gasket cover plates are sold as assembled units including both the cover plate and gasket. Model G4 QR Gasket and Model G4 SR Gasket cover plates and gaskets are not interchangeable.

Installation Instructions

Model G5-56 Dry sprinklers must only be installed 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. Model G5-56 Dry sprinklers shall not be installed into elbows or pipe couplings located on drop nipples to the sprinklers. In all installations, including into CPVC piping, the dry sprinkler shall be installed with protrusion into the fitting in accordance with the installation diagrams in this Bulletin.

Installation of the Model G5-56 Dry sprinkler is not recommended in copper pipe systems, as this may reduce the life expectancy of the sprinkler. Do not install Model G5-56 Dry sprinklers with the standard (long) inlet fitting into CPVC adapter fittings or tees that have an internal obstruction (see Fig. 3); this will damage the sprinkler, the fitting, or both. A short inlet ("PL") version of the Model G5-56 Dry sprinkler is available for use in existing installations with CPVC adapter fittings or tees having an internal obstruction; Model G5-56 sprinklers with the short inlet fitting shall not be used on dry-pipe sprinkler systems. The Model G5-56 Dry sprinkler and the cover plate assembly are not intended for installation in corrosive environments, including, but not limited to, those with salt aerosols or chlorine.

Model G5-56 Dry sprinklers must be installed with the Exposed Minimum Barrel Length required by Fig. 2 located in a Heated Area. Do NOT install the sprinkler in ceilings which have positive pressure in the space above.

The following steps must be followed for installation:

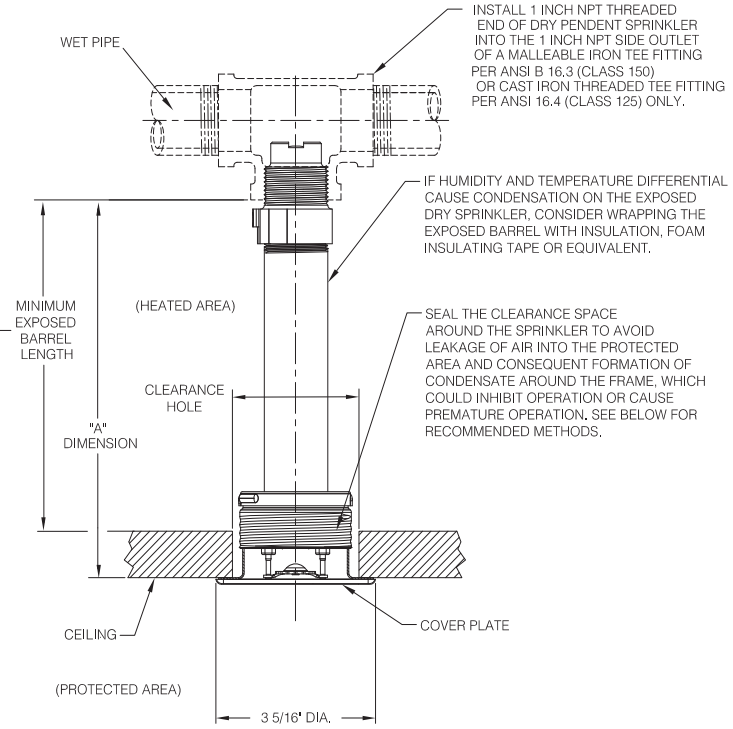
1. Cut a $2\frac{5}{8}$-inch (67mm) diameter hole in the ceiling directly in-line with the outlet of the tee.
2. Apply pipe joint compound or Polytetrafluoroethylene (PTFE) tape to the threads of the sprinkler's inlet fitting.
3. A protective cap is provided to protect the drop-down sprinkler deflector from damage which could occur during construction before the cover plate is installed. The cap is factory installed inside the sprinkler cup. Remove the cap to install sprinkler, Step 4, then reinstall cap until the cover plate is installed.
4. Install the sprinkler in the tee using the Model FC wrench. The Model FC wrench has a socket drive which is inserted into the sprinkler's cup and around the body of the sprinkler prior to installation of the sprinkler. Do NOT wrench any of the part of the sprinkler/cup assembly. The sprinkler is then tightened into the pipe fitting to achieve a leak free connection. The recommended minimum to maximum installation torque is 22-30 lb-ft (30 – 40 N-m). When inserting or removing the wrench from the sprinkler/cup assembly, care should be taken to prevent damage to the sprinkler. Reinstall the protective cap following installation of the sprinkler, until the cover plate is installed.
   a. Alternatively, where access to the outer tube of the sprinkler is available, the Model G5-56 Dry sprinkler may be installed using a pipe wrench. The protective cap should not be removed to install the sprinkler with a pipe wrench. The pipe wrench shall only be permitted to interface with the steel outer tube portion of the sprinkler (Item #8 in Fig. 4). Do NOT wrench any other portion of the sprinkler/cup assembly. A pipe wrench can install the sprinkler into the fitting with a large amount of torque; consideration should be given to the need for future removal of the sprinklers because the installation torque will have to be matched or exceeded to remove the sprinkler. The recommended minimum to maximum installation torque is 22-30 lb-ft (30 – 40 N-m).
5. To install the cover plate, remove the protective cap and install the cover plate by hand turning the cover in the clockwise direction until it is tight against the ceiling. For Model G4 QR Gasket and Model G4 SR Gasket cover plates, the gasket should be attached to the flange of the cover plate skirt only. Do not glue the gasket in place or allow the gasket to overlap both the cover plate and the flange of the skirt.

RECOMMENDED EXPOSED MINIMUM BARREL LENGTH BASED ON AMBIENT TEMPERATURE IN THE PROTECTED AREA

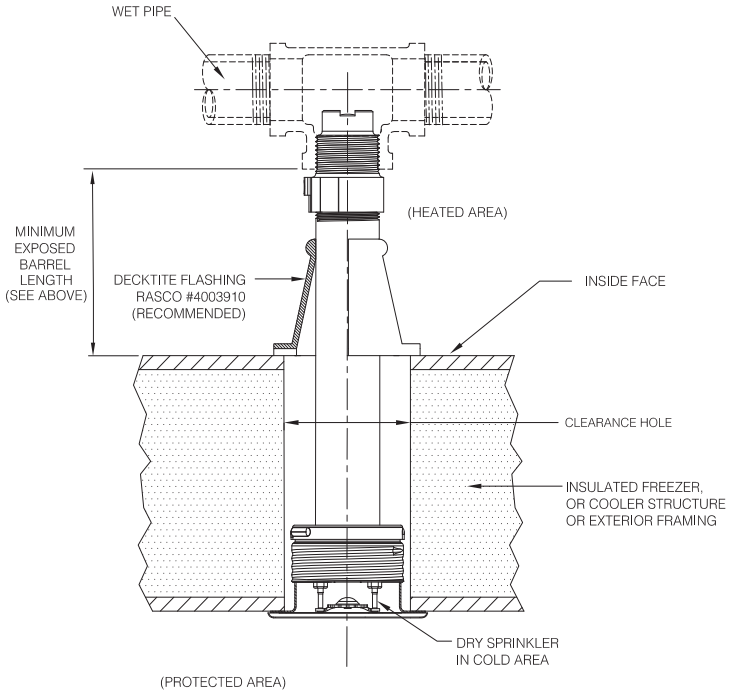
AMBIENT TEMPERATURE OF PROTECTED AREA* AT THE DISCHARGE END OF THE SPRINKLER	EXPOSED BARREL AMBIENT TEMPERATURE		
	40°F/4°C	50°F/10°C	60°F/16°C
	EXPOSED MINIMUM BARREL LENGTH** (FACE OF TEE TO TOP OF CEILING)		
	IN. (MM)	IN. (MM)	IN. (MM)
40°F (4°C)	0	0	0
30°F (-1°C)	0	0	0
20°F (-7°C)	4 (100)	0	0
10°F (-12°C)	8 (200)	1 (25)	0
0°F (-18°C)	12 (300)	3 (75)	0
-10°F (-23°C)	14 (350)	4 (100)	1 (25)
-20°F (-29°C)	14 (350)	6 (150)	3 (75)
-30°F (-34°C)	16 (400)	8 (200)	4 (100)
-40°F (-40°C)	18 (450)	8 (200)	4 (100)
-50°F (-46°C)	20 (500)	10 (250)	6 (150)
-60°F (-51°C)	20 (500)	10 (250)	6 (150)

* FOR AMBIENT TEMPERATURES EXPOSED TO THE DISCHARGE END OF THE SPRINKLER THAT OCCUR BETWEEN THE VALUES LISTED, USE THE NEXT COOLER TEMPERATURE.

** THE MINIMUM EXPOSED BARREL LENGTH IS NOT THE SAME AS THE "A" DIMENSION. THE MINIMUM EXPOSED BARREL LENGTH IS BASED ON A PROPERLY SEALED PENETRATION WITH A MAXIMUM WIND VELOCITY PN THE EXPOSED SPRINKLER OF 30 MPH (48 KM/H). LONGER EXPOSED BARREL LENGTHS WILL HELP AVOID FREEXING OF THE WET PIPING WHERE HIGHER WIND VELOCITY IS EXPECTED.



RECOMMENDED DRY SPRINKLER SEAL ARRANGEMENT



051FG02

Figure 2

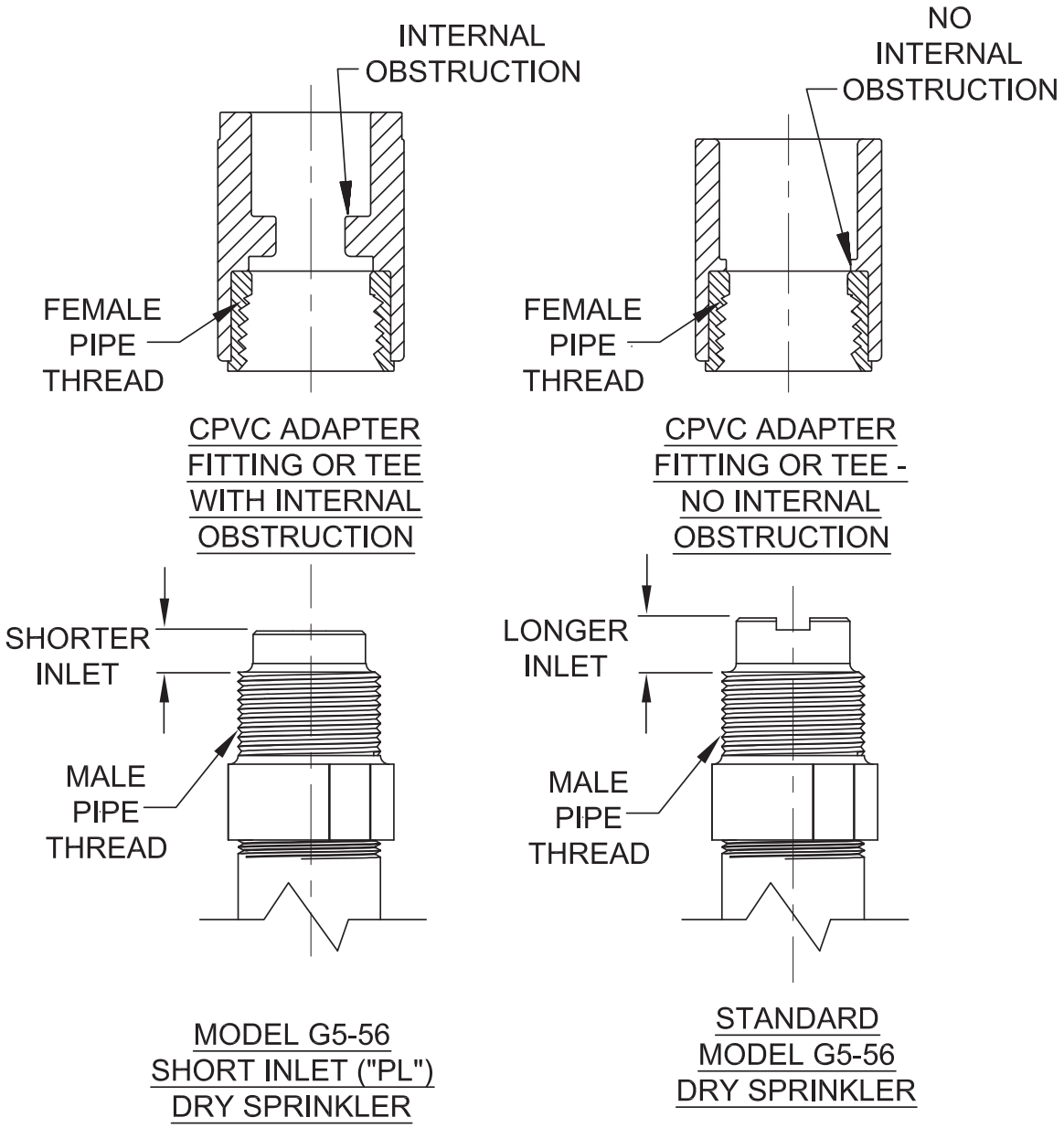
CAUTION

DO NOT INSTALL MODEL G5-56 DRY SPRINKLERS WITH STANDARD INLETS INTO CPVC ADAPTER FITTINGS OR TEES THAT HAVE AN INTERNAL OBSTRUCTION; THIS WILL DAMAGE THE SPRINKLER, THE FITTING, OR BOTH.

CPVC ADAPTER FITTINGS AND TEES WITH INTERNAL OBSTRUCTIONS ARE COMMONLY FOUND DURING THE RETROFITTING PROCESS OF RELIABLE'S OLDER MODEL G3 DRY SPRINKLERS.

A SHORT INLET ("PL") VERSION OF THE MODEL G5-56 DRY SPRINKLER IS AVAILABLE FOR USE IN EXISTING INSTALLATIONS WITH CPVC ADAPTER FITTINGS OR TEES HAVING AN INTERNAL OBSTRUCTION; THE SHORT INLET VERSION SHALL NOT BE USED ON DRY-PIPE SPRINKLER SYSTEMS.

VERIFY SPRINKLER AND FITTING DIMENSIONS PRIOR TO INSTALLATION TO AVOID INTERFERENCE.



BE SURE TO ORDER THE CORRECT SPRINKLERS FOR YOUR APPLICATION

051FG03

Figure 3

Maintenance

The Model G5-56 Dry should be inspected and the sprinkler system maintained in accordance with NFPA 25. Do not clean sprinklers with soap and water, ammonia or any other cleaning fluids. Replace any sprinkler that has been painted (other than factory applied) or damaged in any way. Concealed sprinklers cover plates can not be painted in the field, after installation or have any other coating applied other than the factory finish. A stock of spare sprinklers should be maintained to allow quick replacement of damaged or operated sprinklers. Prior to installation, sprinkler should be maintained in the original cartons and packaging to minimize the potential for damage to sprinklers that would cause improper operation or non-operation.

Engineering Specification

Model G5-56 Dry Pendent Concealed Sprinkler

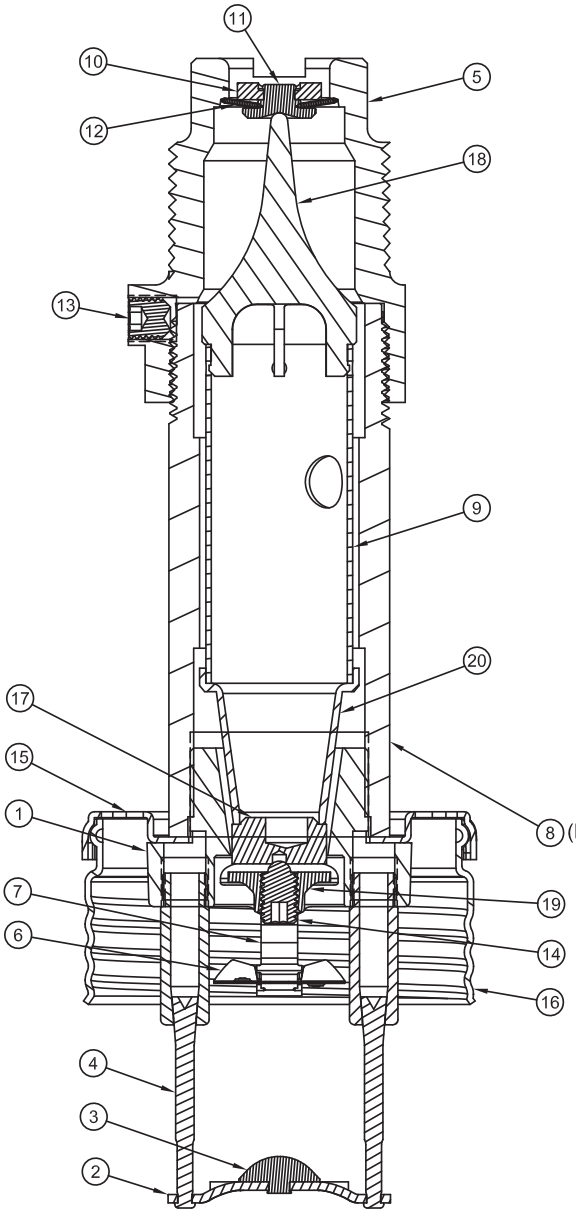
Dry pendent sprinklers shall be dry pendent concealed sprinklers with a flat cover plate. Sprinklers shall be cULus Listed as Quick Response for Light and Ordinary Hazard applications as well as FM Approved as Standard Response. Sprinklers shall be available in lengths from 4¼ inches (108mm) to 48 inches (1219mm) in ¼-inch (6.35mm) increments based on face of fitting to finished ceiling distance. Sprinkler length shall be selected to provide the Exposed Minimum Barrel Length based on the minimum design temperature in the protected area and the minimum temperature in the conditioned space where the barrel is located in accordance with the Manufacturer's written installation instructions. Sprinklers shall have [1-inch NPT][ISO 7-1 R1] threaded inlet fittings with [standard length inlets designed for use with wet- or dry-pipe sprinkler systems][short length inlets designed for use with wet-pipe sprinkler systems having pipe fittings with internal obstructions that prevent the insertion of standard length inlets]. Sprinklers shall have a PTFE coated beryllium nickel Belleville spring washer inlet seal and brass alloy cap that prevent water entry from the sprinkler system piping into the sprinkler prior to actuation. Sprinklers shall have a fast-response fusible link that controls the movement of the inlet seal and cap through a mechanism consisting of link arms, a seat adapter, an orifice adapter, an inner tube, and a yoke. Sprinklers shall use a drop down deflector supported by tapered pins. Sprinklers shall have a galvanized steel cup for threaded attachment of the flat cover plate assembly. Cover plate attachment shall provide up to ½-inch (13mm) of adjustment. Sprinklers shall be [Ordinary temperature classification, 165°F (74°C), with 135°F temperature rated cover plates][Intermediate temperature classification, 212°F, with 165°F temperature rated cover plates]. Cover plates shall be [solid][perforated] with factory applied [White][Chrome][Special Application – Specify] finish. Dry pendent concealed sprinklers shall be Reliable Model G5-56 Dry (SIN RA5114).

Ordering Information

Specify:

1. Sprinkler: Model G5-56 Dry
2. Threads: [1-inch NPT - standard][ISO 7/1 R1 - optional]
3. Inlet Length: [Standard][Short ("PL")– for existing wet-pipe installations only]
4. Cover Plate Finish: [White][Chrome][Special Application – Specify]
5. Sprinkler/Cover Plate Temperature Rating: [Ordinary – 165°F sprinkler with 135°F cover plate][Intermediate – 212°F sprinkler with 165°F cover plate]
6. Nominal Sprinkler Length (face of fitting to face of ceiling - "A" Dimension from Fig. 1): [Specify length – Lengths available from 4¼ inches to 48 inches (108mm to 1219mm) in ¼-inch (6.35mm) increments]

MATERIAL SPECIFICATIONS



ITEM #	DESCRIPTION	MATERIAL
1	BODY, MACH.	DZR BRASS
2	DEFLECTOR	COPPER ALLOY
3	DEFL. SPLITTER	BRASS ALLOY
4	DEFL. PIN	STAINLESS STEEL
5	MEGA-INLET	DZR BRASS
6	LINK ASSY.	NICKEL/BERYLLIUM NICKEL
7	LEVER	COPPER ALLOY
8	OUTER TUBE	GALVANIZED STEEL
9	INNER TUBE	BRASS ALLOY
10	FLIP DISK	BRASS ALLOY
11	CAP	BRASS ALLOY
12	WASHER	PTFE COATED BERYLLIUM NICKEL
13	SET SCREW	STAINLESS OR ALLOY STEEL
14	LOAD SCREW	STAINLESS STEEL
15	BOTTOM CUP	GALVANIZED STEEL
16	TOP CUP	GALVANIZED STEEL
17	ADJ. SEAT ADAPTER	BRASS ALLOY
18	YOKE	BRASS ALLOY
19	CLOSURE YOKE	BRASS ALLOY
20	ORIFICE ADAPTER	BRASS ALLOY

(PIPE WRENCH MAY ONLY BE USED ON OUTER STEEL PIPE OF SPRINKLER)

051FG04

Figure 4

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 almost 100.

Manufactured by

Reliable®

Reliable Automatic Sprinkler Co., Inc.
(800) 431-1588 Sales Offices
(800) 848-6051 Sales Fax
(914) 829-2042 Corporate Offices
www.reliablesprinkler.com Internet Address

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