

Reliable®

Model GFR Series Quick-Response Sprinklers

Features

- Standard coverage, quick-response sprinklers
- Upright, pendent, and horizontal sidewall deflectors
- Robust solder link design
- Available in a wide variety of finishes

Product Description

Reliable Model GFR Series sprinklers are quick-response sprinklers with a fusible alloy link operating element. These sprinklers have demonstrated response times in laboratory tests that are approximately five times faster than quick response sprinklers. This quick response enables the Models GFR Series Sprinklers to apply water to a fire much faster than quick response sprinklers of the same temperature rating.

Model GFR Series sprinklers are listed and approved for installation in accordance with NFPA 13 and FM Loss Prevention Data Sheets. Where FM Approved, Model GFR sprinklers are classified as K8.0 QR Non-storage sprinklers. Note that quick-response and standard-response sprinklers should not be intermixed within the same compartment.

When fitted with an approved Reliable water shield, these sprinklers may be considered intermediate sprinklers for use in racks, below grated walkways, and other areas where intermediate level sprinklers are required.

Important! Reliable fire sprinklers must be handled, stored, and installed in accordance with the guidelines in Caution Sheet 310 and this bulletin. Failure to follow these instructions may result in unintended operation or nonoperation of the fire protection system.



Pendent

Note: Not all versions of the product are shown.

Table A provides a summary of the approvals and availability of specific Model GFR Series sprinkler configurations. Additional technical information for each sprinkler model is provided on the following pages.

Sprinkler Summary

Table A

Model	K-Factor gpm/ psi ^{1/2} (lpm/bar ^{1/2})	Listings & Approvals	Threads	Sprinkler Identification Number (SIN)
GFR Upright	2.8 (40)	cULus	1/2" NPT, ISO 7-R1/2	R3121
	4.2 (60)	cULus	1/2" NPT, ISO 7-R1/2	R3123
	5.6 (80)	cULus	1/2" NPT, ISO 7-R1/2	R3125
	8.0 (115)	cULus, FM	3/4" NPT, ISO 7-R3/4	R3127
GFR Upright Intermediate	5.6 (80)	cULus	1/2" NPT, ISO 7-R1/2	R3195
	8.0 (115)	cULus	3/4" NPT, ISO 7-R3/4	R3197
GFR Pendent	2.8 (40)	cULus	1/2" NPT, ISO 7-R1/2	R3111
	4.2 (60)	cULus	1/2" NPT, ISO 7-R1/2	R3113
	5.6 (80)	cULus	1/2" NPT, ISO 7-R1/2	R3115
	8.0 (115)	cULus, FM	3/4" NPT, ISO 7-R3/4	R3117
GFR Pendent Intermediate	5.6 (80)	cULus	1/2" NPT, ISO 7-R1/2	R3115
	8.0 (115)	cULus	3/4" NPT, ISO 7-R3/4	R3117
GFR Horizontal Sidewall ⁽¹⁾	2.8 (40)	cULus	1/2" NPT, ISO 7-R1/2	R3131
	4.2 (60)	cULus	1/2" NPT, ISO 7-R1/2	R3133
	5.6 (80)	cULus	1/2" NPT, ISO 7-R1/2	R3135
	8.0 (115)	cULus	3/4" NPT, ISO 7-R3/4	R3137

Notes:

1. Listed for light hazard only, except for SIN R3135 is also listed for ordinary hazard for non-recessed installations.

Model GFR Upright Sprinkler

Technical Specifications

Style: Upright
Threads: (see Table B)
Nominal K-Factor: (See Table B)
Max. Working Pressure:
 175 psi (12 bar)

Material Specifications

Thermal Sensor: Nickel Alloy
Sprinkler Frame: Brass Alloy
Cap: Bronze Alloy with PTFE
Load Screw: Brass Alloy
Deflector: Brass Alloy
Strut & Lever: Copper Alloy

Sprinkler Finishes

(See Table G)

Sensitivity

Quick response

Temperature Ratings

165°F (74°C)
 212°F (100°C)

Sprinkler Wrench

Model W2
 Model W13 (with D guard)

Guards & Shields

C-3 Guard with Shield (cULus, FM)
 D-1 Guard
 D-3 Guard with Shield (cULus)

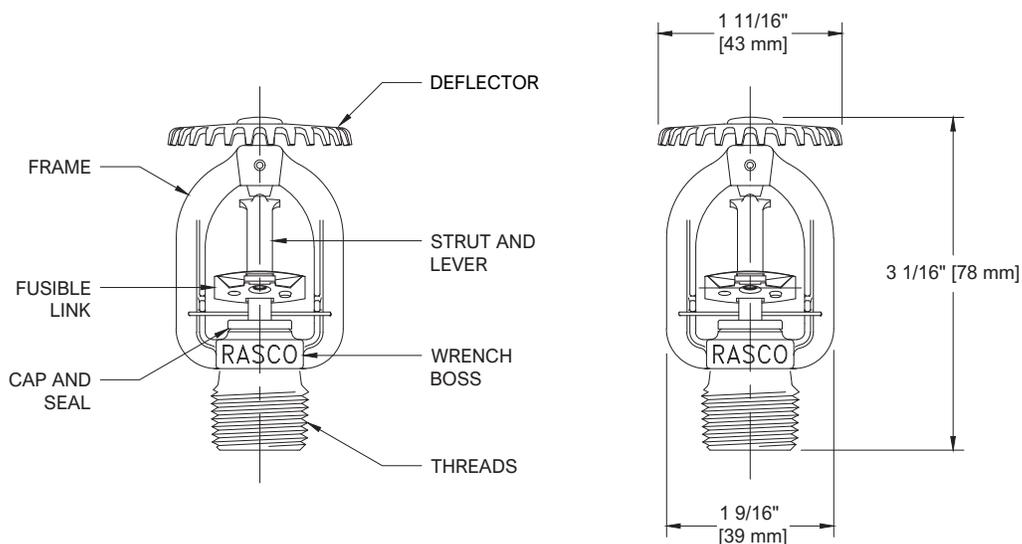
Listings and Approvals

(See Table B)



Model GFR Upright Sprinkler Components and Dimensions

Figure 1



Model GFR Upright Sprinklers

Table B

SIN	K-factor (US)	K-factor (Metric)	Threads	Approvals
R3121	2.8	40	1/2" NPT, ISO 7-R1/2	cULus
R3123	4.2	60	1/2" NPT, ISO 7-R1/2	cULus
R3125	5.6	80	1/2" NPT, ISO 7-R1/2	cULus
R3127	8.0	115	3/4" NPT, ISO 7-R3/4	cULus, FM

Model GFR Intermediate Upright Sprinkler

Technical Specifications

Style: Intermediate Upright
Threads: (See Table C)
Nominal K-Factor: (See Table C)
Max. Working Pressure:
 175 psi (12 bar)

Material Specifications

Thermal Sensor: Nickel Alloy
Sprinkler Frame: Brass Alloy
Cap: Bronze Alloy with PTFE
Load Screw: Brass Alloy
Deflector: Brass Alloy
Strut & Lever: Copper Alloy

Sprinkler Finishes

See Table G

Sensitivity

Quick response

Temperature Ratings

165°F (74°C)
 212°F (100°C)

Sprinkler Wrenches

Model W2

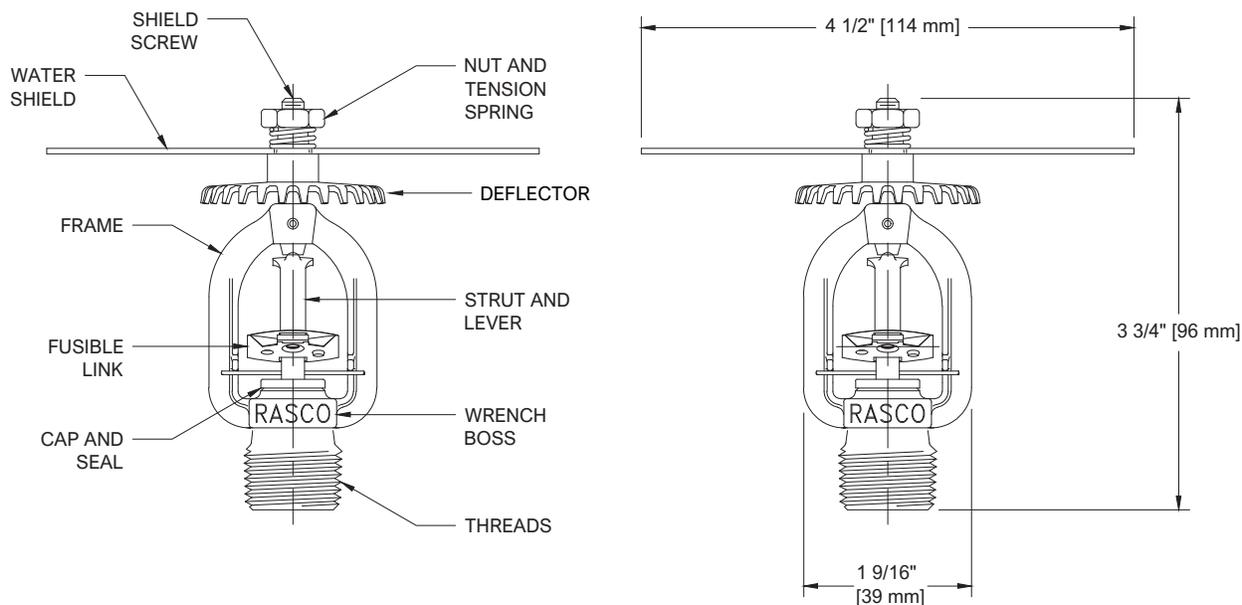
Listings and Approvals

cULus



Model GFR Intermediate Upright Sprinkler Components and Dimensions

Figure 2



Note: Shield, shield screw, and spring to be assembled to sprinkler in the field.

Model GFR Intermediate Upright Sprinklers

Table C

SIN	K-factor (US)	K-factor (Metric)	Threads	Approvals
R3195	5.60	80	1/2" NPT, ISO 7-R1/2	cULus
R3197	8.00	115	3/4" NPT, ISO 7-R3/4	cULus

Model GFR Pendent Sprinkler

Technical Specifications

Style:
Pendent
Recessed Pendent

Threads: (See Table D)

Nominal K-Factor: (See Table D)

Max. Working Pressure:
175 psi (12 bar)

Temperature Ratings

165°F (74°C)
212°F (100°C)

Recessed Escutcheons

F1
F2
FP

Material Specifications

Thermal Sensor: Nickel Alloy
Sprinkler Frame: Brass Alloy
Cap: Bronze Alloy with PTFE
Load Screw: Brass Alloy
Deflector: Brass Alloy
Strut & Lever: Copper Alloy

Guards & Shields⁽¹⁾

C-5 Guard/Shield (FM; SIN R3117 only)
D-1 Guard (cULus)

Sprinkler Wrenches

Model W2 (non-recessed)
Model W13 (with D guard)
Model GFR2 (recessed)

Sprinkler Finishes

(See Table G)

Sensitivity

Quick response

Listings and Approvals

(See Table D)

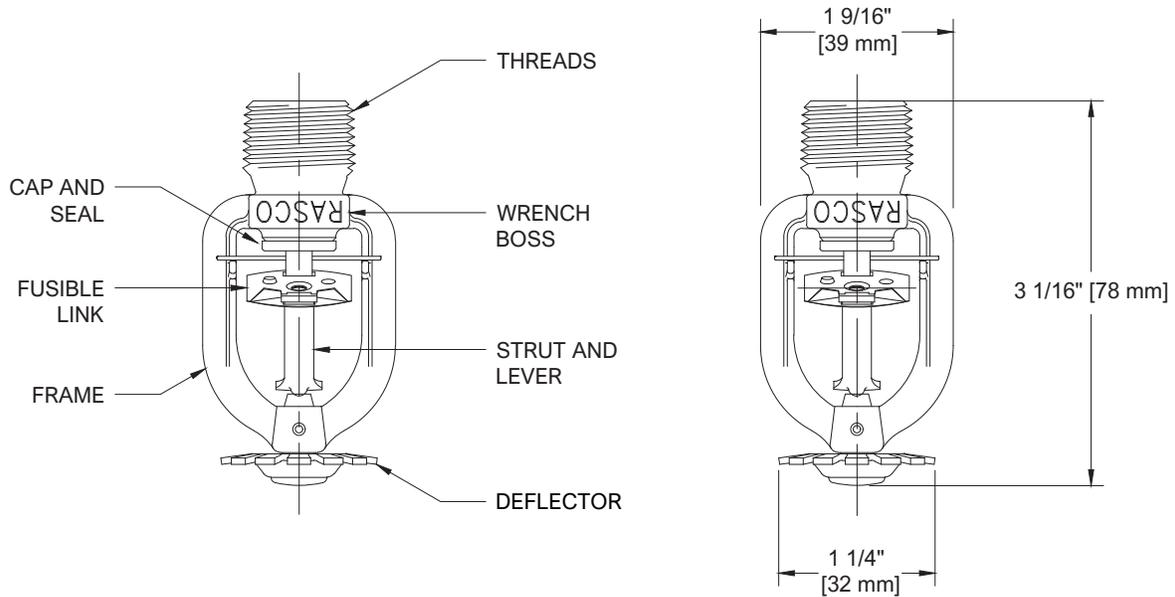


Notes:

1. Not compatible with recessed installations.

Model GFR Pendent Sprinkler Components and Dimensions

Figure 3



Note: Please refer to Figure 6 for recessed installation.

Model GFR Pendent Sprinklers

Table D

SIN	K-factor (US)	K-factor (Metric)	Threads	Approvals
R3111	2.8	40	1/2" NPT, ISO 7-R1/2	cULus
R3113	4.2	60	1/2" NPT, ISO 7-R1/2	cULus
R3115	5.6	80	1/2" NPT, ISO 7-R1/2	cULus
R3117	8.0	115	3/4" NPT, ISO 7-R3/4	cULus, FM

Model GFR Intermediate Pendent Sprinkler

Technical Specifications

Style: Intermediate Pendent
Threads: (See Table E)
Nominal K-Factor: (See Table E)
Max. Working Pressure:
 175 psi (12 bar)

Material Specifications

Thermal Sensor: Nickel Alloy
Sprinkler Frame: Brass Alloy
Cap: Bronze Alloy with PTFE
Load Screw: Brass Alloy
Deflector: Brass Alloy
Strut & Lever: Copper Alloy

Sprinkler Finishes

See Table G

Sensitivity

Quick response

Temperature Ratings

165°F (74°C)
 212°F (100°C)

Guards & Shields

D-1 Guard⁽¹⁾

Sprinkler Wrenches

Model W2
 Model W13 (with D guard)

Listings and Approvals

cULus

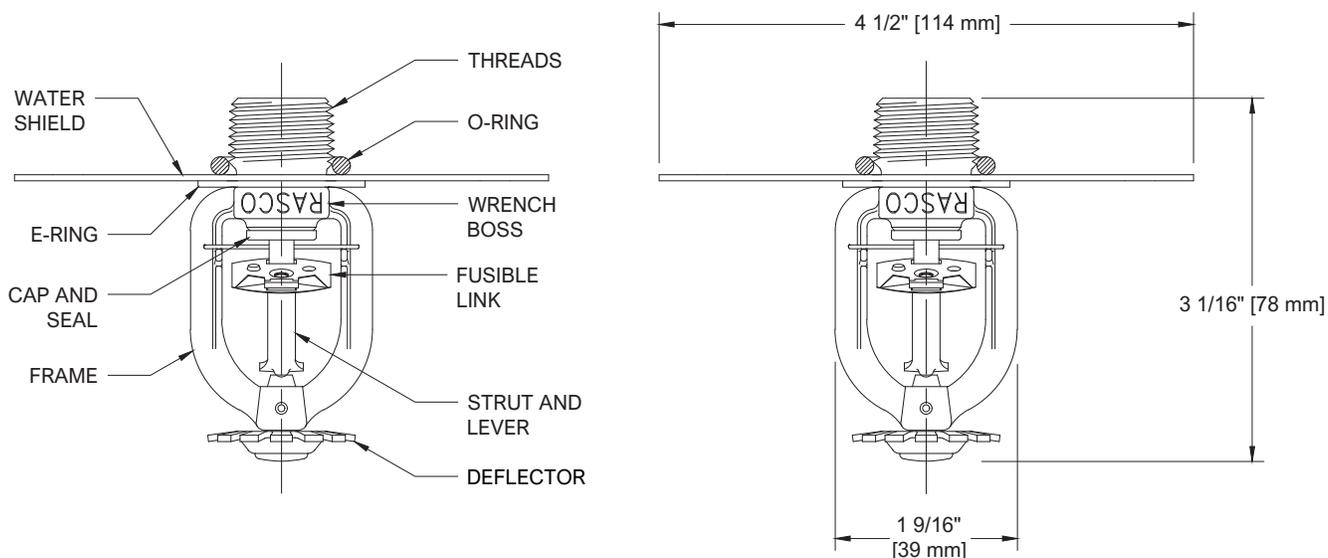


Notes:

- O-ring and E-ring are not required when D-1 guard with lock-nut is installed.

Model GFR Intermediate Pendent Sprinkler Components and Dimensions

Figure 4



Note: Shield, O-ring, and E-ring to be assembled to sprinkler in the field.

Model GFR Intermediate Pendent Sprinklers

Table E

SIN	K-factor (US)	K-factor (Metric)	Threads	Approvals
R3115	5.60	80	1/2" NPT, ISO 7-R1/2	cULus
R3117	8.00	115	3/4" NPT, ISO 7-R3/4	cULus

Model GFR Horizontal Sidewall Sprinkler

Technical Specifications

Style: Horizontal Sidewall
Threads: (See Table F)
Nominal K-Factor: (See Table F)
Max. Working Pressure:
 175 psi (12 bar)

Material Specifications

Thermal Sensor: Nickel Alloy
Sprinkler Frame: Brass Alloy
Cap: Bronze Alloy with PTFE
Load Screw: Brass Alloy
Deflector: Brass Alloy
Strut & Lever: Copper Alloy

Sprinkler Finishes

(See Table G)

Sensitivity

Quick response

Temperature Ratings

165°F (74°C)
 212°F (100°C)

Recessed Escutcheons⁽¹⁾

F1
 F2

Guards & Shields⁽²⁾

D-1 Guard

Sprinkler Wrenches

Model W2 (non-recessed)
 Model W13 (with D guard)
 Model GFR2 (recessed)

Listings and Approvals⁽³⁾

cULus

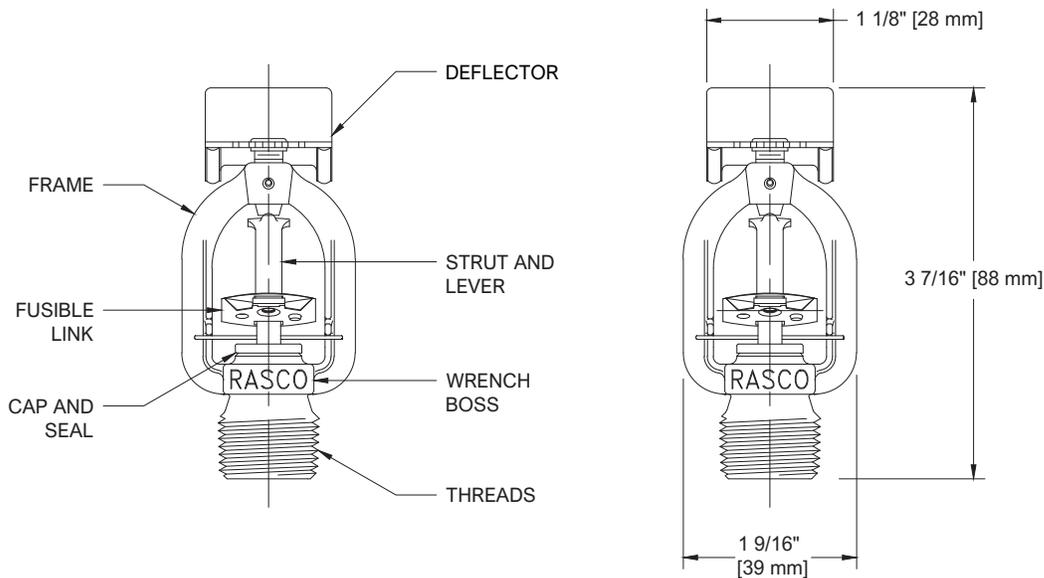


Notes:

1. Listed for Light Hazard ONLY.
2. Not compatible with recessed installations.
3. Listed for light hazard only, except SIN R3135 is also listed for ordinary hazard for non-recessed installations.

Model GFR Horizontal Sidewall Sprinkler Components and Dimensions

Figure 5

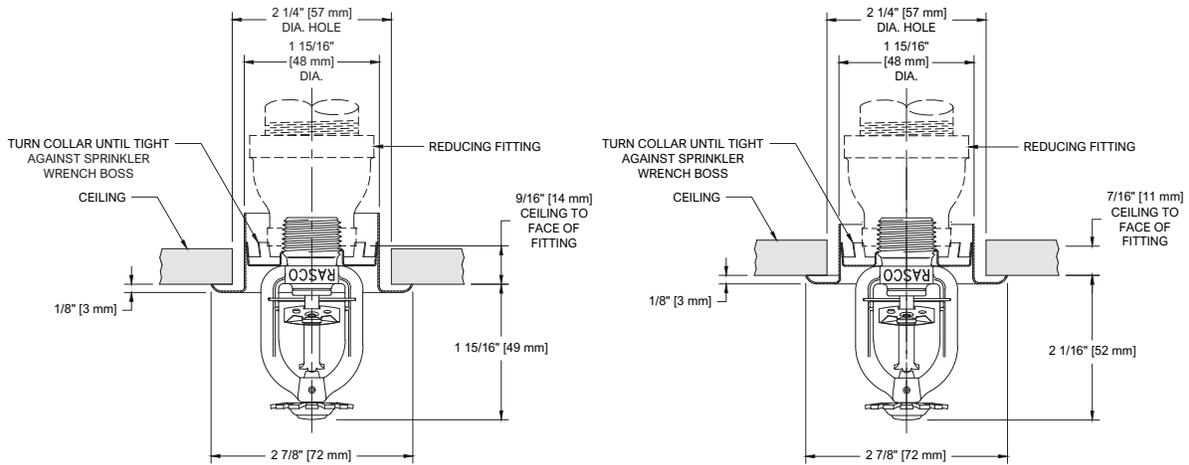


Note: Please refer to Figure 7 for recessed installation.

Model GFR Horizontal Sidewall Sprinklers

Table F

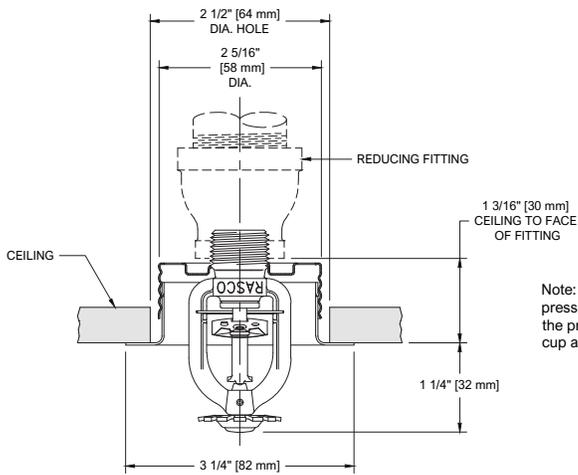
SIN	K-factor (US)	K-factor (Metric)	Threads	Approvals
R3131	2.8	40	1/2" NPT, ISO 7-R1/2	cULus
R3133	4.2	60	1/2" NPT, ISO 7-R1/2	cULus
R3135	5.6	80	1/2" NPT, ISO 7-R1/2	cULus
R3137	8.0	115	3/4" NPT, ISO 7-R3/4	cULus



MODEL GFR PENDENT SPRINKLER WITH
MODEL F1 RECESSED ESCUTCHEON
3/4" [19mm] ADJUSTMENT
(NOTE: SPRINKLER SHOWN AT MIDPOINT
OF ADJUSTMENT RANGE)

GFR_REC_PEND

MODEL GFR PENDENT SPRINKLER WITH
MODEL F2 RECESSED ESCUTCHEON
1/2" [13mm] ADJUSTMENT
(NOTE: SPRINKLER SHOWN AT MIDPOINT
OF ADJUSTMENT RANGE)



MODEL GFR PENDENT SPRINKLER WITH
MODEL FP RECESSED ESCUTCHEON
1/2" [13mm] ADJUSTMENT
(NOTE: SPRINKLER SHOWN AT MIDPOINT
OF ADJUSTMENT RANGE)

Note: Model FP recessed assemblies may not be used where the pressure in the space above the ceiling is positive with respect to the protected area. Ensure that the openings around the sprinkler cup are unobstructed following installation.

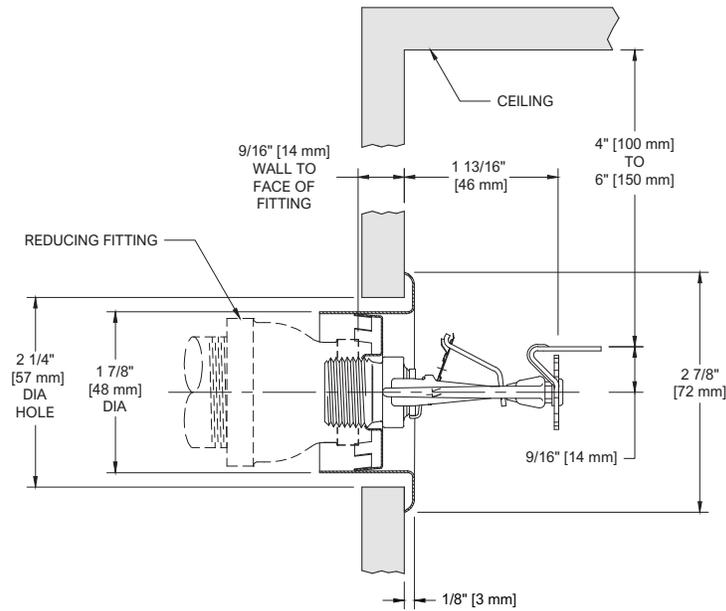


F1 Escutcheon
(F2 similar)



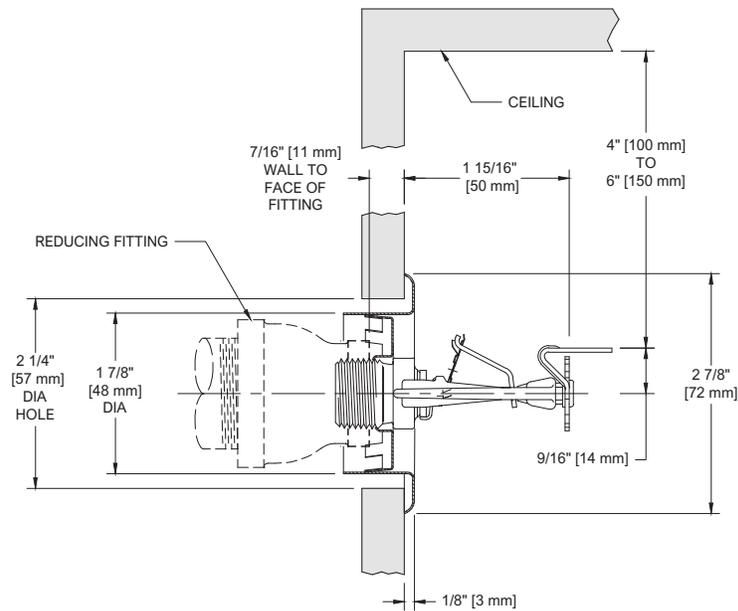
FP Escutcheon

Note: Photos are intended to reflect style of escutcheons. Appearance of fire sprinkler will vary.



MODEL GFR HORIZONTAL SIDEWALL SPRINKLER
WITH MODEL F1 RECESSED ESCUTCHEON
3/4" [19mm] ADJUSTMENT
(NOTE: SPRINKLER SHOWN AT MIDPOINT OF
ADJUSTMENT RANGE)

GFR_REC_HSW



MODEL GFR HORIZONTAL SIDEWALL SPRINKLER
WITH MODEL F2 RECESSED ESCUTCHEON
1/2" [13mm] ADJUSTMENT
(NOTE: SPRINKLER SHOWN AT MIDPOINT OF
ADJUSTMENT RANGE)

Wrenches



Model W2 (non-recessed)



Model W13 (with D guard)



Model W4 (recessed)

Finishes⁽¹⁾⁽²⁾

Table G

Standard Finishes		Special Application Finishes	
Sprinkler	Recessed Escutcheons ⁽³⁾	Sprinkler	Recessed Escutcheons ⁽³⁾
Bronze	Brass	Bright Brass	Bright Brass
Chrome	Chrome	Satin Chrome	Satin Chrome
White Polyester ⁽⁴⁾⁽⁵⁾	White Polyester	Custom Color Polyester ⁽⁴⁾⁽⁵⁾	Custom Color Polyester ⁽⁴⁾

Notes:

1. Other finishes and colors are available on special order. Consult your Reliable sales representative for details.
2. Paint or any other coating applied over the factory finish will void all approvals and warranties.
3. The Model GFR Recessed assembly consists of a sprinkler mounted in a galvanized steel cup with a finished trim ring.
4. Only frame and deflector are coated, operating parts are chrome plated.
5. FM Approved on SIN R3127 (K = 8.0 upright sprinkler) only.

Installation

Model GFR Series sprinklers must be installed in accordance with NFPA 13 and the requirements of all applicable authorities having jurisdiction

Model GFR Series sprinklers must be installed with the Reliable sprinkler installation wrench identified in this Bulletin. Any other wrench may damage the sprinkler. A leak tight sprinkler joint can be obtained with a torque of 8 to 18 lb-ft (11 - 24 N-m) for 1/2" sprinklers and a torque of 14-20 lb-ft (19 - 27 N-m) for 3/4" sprinklers after applying appropriate thread sealant.

Do not tighten sprinklers over the maximum recommended installation torque. Exceeding the maximum recommended installation torque may cause leakage or impairment of the sprinkler.

Maintenance

Reliable Model GFR series sprinklers should be inspected and the sprinkler system maintained in accordance with NFPA 25, as well as the requirements of any authorities having jurisdiction.

Prior to installation, sprinklers should remain in the original cartons and packaging until used. This will minimize the potential for damage to sprinklers that could cause improper operation or non-operation.

Do not clean sprinklers with soap and water, ammonia liquid or any other cleaning fluids. Remove dust by gentle vacuuming without touching the sprinkler.

Replace any sprinkler which has been painted (other than factory applied). A stock of spare sprinklers should be maintained to allow quick replacement of damaged or operated sprinklers. Failure to properly maintain sprinklers may result in inadvertent operation or non-operation during a fire event.

Guarantee

For the guarantee, terms, and conditions, visit www.reliablesprinkler.com.

Ordering Information

Specify the following when ordering:

Model

- GFR

Deflector/Orientation

- Upright
- Upright Intermediate
- Pendent
- Pendent Intermediate
- Horizontal Sidewall

Temperature Rating

- 165°F (74°C)
- 212°F (100°C)

Sprinkler Finish

- See Table G

Recessed Escutcheon*

- F1
- F2
- FP (Pendent sprinkler only)

Escutcheon Finish

- See Table G

Sprinkler Wrench

- Model W2 (non-recessed)
- Model W13 (with D guard)
- Model GFR2 (recessed)