

# GB & GB-QR Dry Sidewall

## Standard and Quick Response Flush, Recessed or Extended Glass Bulb Sprinkler

Manufactured by: Central Sprinkler Company  
451 North Cannon Avenue, Lansdale, Pennsylvania 19446

### Product Description

The Model GB and GB-QR Quick Response Dry Horizontal Sidewall Glass Bulb Sprinklers allow the installation of sprinklers in areas subject to freezing while being supplied from a wet pipe sprinkler system. They are available in standard response (5mm bulb) or quick response (3mm bulb).

A significant installation feature for the extended version is the built in 3" (76.2 mm) of adjustment. This allows installation of common lengths and can compensate for field variations.

Because the Model GB and GB-QR Dry Horizontal Sidewall is allowed with NFPA 13 spacings for sidewall sprinklers in either light or ordinary hazard, it can throw considerably further than the alternative method suggested in NFPA 13 for a dry sidewall sprinkler on a 45° angle.

The GB Dry Sidewall sprinkler is available flush or extended and the GB-QR dry sidewall is available recessed, flush or extended. Both versions are available with a special slatted wall escutcheon. This escutcheon compensates for the angle of the siding on the outside of the wall.

A larger wrench boss allows the sprinkler to be installed into the branchline tee using a sprinkler wrench. This allows easy installation in "hard" walls such as sheet rock as the barrel of the dry sidewall would be inaccessible.

The Model GB and GB-QR Dry Sidewalls have a maximum adjustment of  $\pm 1\frac{1}{2}$ " (38.1 mm) in the extended version, allowing ease of field installation and ordering. The Model GB dry sidewall is available recessed or flush for situations that require a more aesthetic appearance.

**Operation:** The glass bulb capsule operating mechanism contains a heat-sensitive liquid that expands upon application of heat. At the rated temperature, the frangible capsule ruptures, thereby releasing the orifice seal. The sprinkler then discharges water in a pre-designed spray pattern to control or extinguish the fire.

### Technical Data

Model: GB and GB-QR Dry Sidewall

Style: GB: Flush or Ext. Only  
GB-QR: Flush, Rec., Ext.

Escutcheon: Recessed or Extended  
Wrench:

Offset (*flush & extended*) Part #1068  
Universal (*recessed sidewall*) Part #1069

Orifice Size:  $\frac{1}{2}$ " (12.7 mm)

K-Factor: See K-Factor Table on Page 2.

Thread Size: 1" (25 mm) N.P.T.

Temperature Rating & Bulb Color:

135°F/57°C	Orange
155°F/68°C	Red
175°F/79°C	Yellow
200°F/93°C	Green
*286°F/141°C	Blue
*360°F/182°C	Purple

\*Standard Response Only.

Approval: U.L., U.L.C.

Maximum Working Pressure:  
175 psi (12.1 bar)

Factory Hydro Test: 100% at  
500 psi (34.5 bar)

Standard Finishes: brass, chrome  
plated, white

Escutcheon: brass, chrome plated and  
white painted

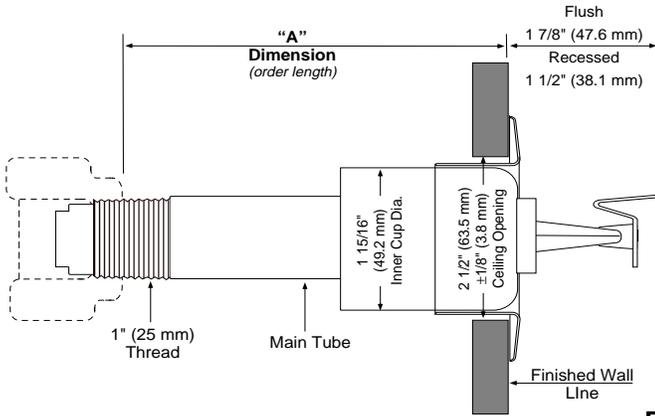


**$\frac{1}{2}$ " (12.7 mm)**

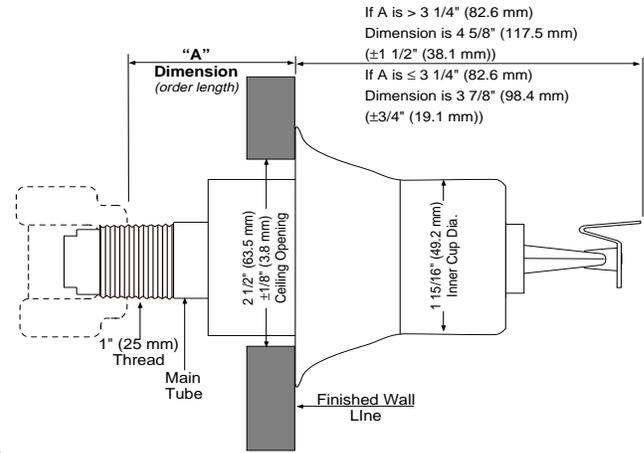
## Orifice Dry Sidewall Automatic Sprinkler

Corrosion-Resistant Coatings (*U.L. Only*): white and black painted  
Highest Allowable Ambient Storage  
Temperature: 100°F/38°C

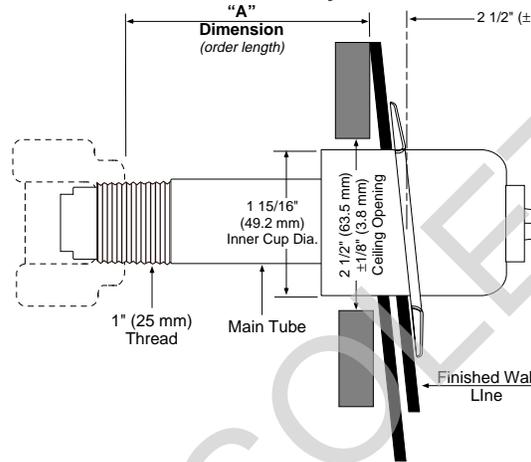
**Figure 1**  
**Model GB & GB-QR Dry Sidewall**  
**Flush & Recessed**



**Figure 2**  
**Model GB& GB-QR Dry Sidewall Extended**



**Figure 3**  
**Model GB& GB-QR Dry Sidewall Slatted Walls**



**Ordering Length for Dry Pendant Heads**

**Flush** — The “A” dimension is measured from the face of the tee to the finished wall. This is only approximately flush. Order to the nearest ¼” (6.4 mm). **Minimum “A” dimension is 2” (50.8 mm).**

**Slatted** — The “A” dimension is measured from the face of the branchline tee to the face of the finished slatted wall. **Minimum “A” dimension is 1½” (38.1 mm). The adjustment is ±½” (12.7 mm).**

**Recessed** — The “A” dimension is measured from the face of the tee to the finished wall. **Minimum “A” dimension is 2½” (54.0 mm). Adjustment is ±¾” (4.8 mm).**

**Extended** — The “A” dimension is measured from the face of the tee to the finished wall. Follow one of these two options:  
 If the “A” dimension is **less than or equal to ¾” (82.6 mm)**, total adjustment is 1½” (38.1 mm) (from the mid point of the adjustment range ±¾” (19.1 mm)). Order to the nearest ¼” (6.4 mm). **Minimum “A” dimension is 0”.**  
 If the “A” dimension is **greater than ¾” (82.6 mm)**, the total adjustment is 3” (76.2 mm) (from the mid point of the adjustment range ±1½” (38.1 mm)). Order to the nearest ¼” (6.4 mm). **Minimum “A” dimension is ¾” (82.6 mm).**

**Caution: See step one of installation sequence for appropriate fitting requirements.**

**Dry Pendant Design Guidelines**

To determine the K-factor, follow these steps:

- Determine the K-factor length (NOT The “A” DIMENSION). The K-factor is determined as follows:  
**Slatted** - “A” dimension + 1¾” (34.9 mm) = length for K-factor.  
**Flush** - “A” dimension + 7/8” (22.2 mm) = length for K-factor.  
**Recessed** - “A” dimension + 3/8” (9.5 mm) = length for K-factor.  
**Extended** - “A” dimension + 3½” (88.9 mm) = length for K-factor.
- Determine the K-factor for that length by using the K-factor table.
- Use the K-Factor at the tee in the branchline for your calculations.

**K-Factor Table**

Length	K-Factor (metric)
2½” (63.5 mm) to less than 10⅞” (254.1 mm)	5.3 (76.4)
10⅞” (254.1 mm) to less than 17⅝” (447.7 mm)	5.2 (75.0)
17⅝” (447.7 mm) to less than 25¼” (641.4 mm)	5.1 (73.5)
25¼” (641.4 mm) to less than 32¾” (831.9 mm)	5.0 (72.1)
32¾” (831.9 mm) to less than 40⅜” (1025.5 mm)	4.9 (70.7)
40⅜” (1025.5 mm) to less than 48” (1219.2 mm)	4.8 (69.2)



# Design Data

## Design Requirements—Standard Applications

The Model GB and GB-QR Dry Sidewall Sprinklers are intended for standard area coverages and standard flow and pressure requirements as specified in current NFPA 13 Standards.



# Installation

All Model GB and GB-QR Dry Sidewall Automatic Sprinklers must be installed according to current NFPA 13 Standards. Deviations from these requirements and standards or any alteration to the sprinkler itself will void any warranty made by Central Sprinkler Company. In addition, installation must also meet local government provisions, codes and standards as applicable.

Dry sprinklers are designed to prevent water from accumulating in drops to sprinklers. To accomplish this, they have a fitting that protrudes into the branch line that allows the plug to sit above the water line, if there is any residual water, and operate without the potential of freezing. Always install dry sprinklers in a threaded tee.

For standard applications the system piping may be hydraulically calculated or pipe-scheduled. Check for the proper model, style, orifice size, and temperature rating prior to installation. Install sprinklers after the piping is in place to avoid mechanical damage; replace any damaged units. Wet pipe systems must be protected from freezing.

Upon completion of the installation, the system must be tested per recognized standards.

In the event of a thread leak, remove the unit, apply new pipe joint compound or tape, and reinstall.

### Installation Sequence

**Step 1. The unit must be installed into a threaded, cast iron, ductile**

**iron, or malleable iron tee only. It may be installed into the run or outlet of this tee. Do not install into an elbow or mechanical tee.**

**Step 2.** Use only a non-hardening pipe joint compound or Teflon\* tape. Apply only to the male threads.

\*Teflon is a trademark of the DuPont Corp.

**Step 3.** Hand tighten the dry sidewall assembly into the fitting. Use the appropriate Central Sprinkler dry pendent wrench to tighten the unit in the fitting. A leak tight joint requires only 7 to 14 ft. lbs. (9.5 to 19.0 Nm) of torque; a tangential force of 14 to 28 lbs. (62.3 to 124.5 N) delivered through a 6" (150 mm) handle will deliver adequate torque. The Model GB dry sidewall can be installed by using the correct wrench on either the sprinkler wrench boss or the barrel of the dry sidewall.

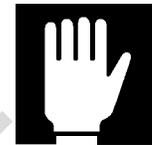
**Step 4.** To install the escutcheon plate, align it with and push it over the sprinkler body and into the upper support piece until the outer edge of the escutcheon meets the mounting surface. The recessed escutcheon tool may be used to install the escutcheon plate easily from the floor.

Do not over- or under-tighten the sprinkler to compensate for inaccurate escutcheon plate adjustment.

**Caution:** If installing in a CPVC system, appropriate adaptation must be made to insure that the dry pendent is being installed into a threaded, cast iron, ductile iron, or malleable iron tee only. Special care must be taken when installing with a CPVC system. Sprinklers must be installed after the manufacturer's recommended setting time for the

primer and cement to ensure that neither accumulate within the sprinkler.

Special care must be taken when installing with a copper system. Sprinklers must be installed only after the inside of the sprinkler drop and associated fittings have been wire brushed to remove any flux. Residual flux can cause corrosion and in extreme cases can impair proper sprinkler operation.



# Care & Maintenance

Sprinklers must be handled carefully. They must not be transported or stored where ambient temperature may exceed 100°F/38°C. For best results, store them in a dry, cool location in the original shipping package.

Do not install sprinklers that have been dropped or visibly damaged, such as a crack in a glass bulb or a loss of liquid from the bulb. Sprinklers should never be painted, coated, plated or altered in any other way from manufactured condition or they may not function properly. Any sprinklers altered in such a manner must be replaced.

The owner is responsible for the proper operating condition of all fire protection devices and accessories. The NFPA standard 25 entitled, *"Inspection, Testing and Maintenance of Water-Based Fire Protection Systems"*, contains guidelines and minimum maintenance requirements. Furthermore, the local *Authority Having Jurisdiction* may have additional regulations and requirements for maintenance, testing, and inspection that must be obeyed.

It is advisable to have sprinkler systems inspected regularly by a qualified inspection service. Length of time between such inspections can vary due to accessibility, ambient atmosphere, water supply, and site activity.

Do not attempt to reassemble or otherwise reuse a sprinkler that has operated. Replace any sprinkler exhibiting corrosion or damage; always use new sprinklers of the same orifice, style, and temperature rating as replacements.

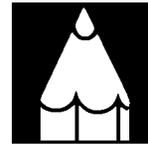
Because the discharge pattern is critical to protection of life and property, nothing should be hung or attached to the sprinkler unit that would disrupt the pattern. Such obstructions must be removed. In the event that construction has altered the original configuration, additional sprinklers should be installed to maintain the protection level.

Do not attempt to replace sprinklers without first removing the fire protection system from service. Be certain to secure permission from all *Authorities Having Jurisdiction*, and notify all personnel who may be affected during system shutdown. A fire watch during maintenance periods is a recommended precaution.

To remove the system from service, first refer to the system operating guide and valve instruction. Drain water and relieve pressure in the pipes. Remove the existing unit and install the replacement, using only the recommended sprinkler wrench. Be certain to match model, style, orifice, and temperature rating.

A fire protection system that has been shut off after an activation should be repaired and returned to service immediately. Inspect the entire system for damage and replace or repair as necessary. Sprinklers that did not operate but were subjected to corrosive elements of combustion or excessive temperatures should be inspected, and replaced if need be. The *Authority Having Jurisdiction* will detail minimum replacement requirements and regulations.

**Guarantee:** Central Sprinkler Company will repair and/or replace any products found to be defective in material or workmanship within a period of one year from the date of shipment. Please refer to the current Price List for further details of the warranty.



## Ordering Information

**Ordering Information:** When placing an order, indicate the full product name. Please specify the quantity, model, style, orifice size, temperature rating, sprinkler finish, and escutcheon finish

Order dry pendants by the "A" dimension.

**Availability and Service:** Central sprinklers, valves, accessories and other products are available throughout the U.S. and Canada, and internationally, through a network of Central Sprinkler distribution centers. You may write directly to Central Sprinkler Company, or call (215) 362-0700 for the distributor nearest you.

**Patents:** Patents are pending.

**Conversion Table:**

1 inch = 25.400 mm  
1 foot = 0.3048 m  
1 pound = 0.4536 kg  
1 foot pound = 1.36 Nm  
1 psi = 6.895 kpa  
= 0.0689 bar  
= 0.0703 kg/cm<sup>2</sup>  
1 U.S. gallon = 3.785 dm<sup>3</sup>  
= 3.785 liters

Conversions are approximate.



**Central Sprinkler Company**

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