

Royal Flush™ Concealed Standard Response (GB4) Quick Response (GB4-FR) Automatic Sprinklers

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



Product Description

The Central GB4 and GB4-FR Royal Flush Adjustable Concealed Sprinklers are standard spray sprinklers that allow over 1/2" of adjustment with an aesthetically pleasing cover plate design. The GB4 is a standard response sprinkler using a 5mm glass bulb and the GB4-FR is a quick response sprinkler using a 3mm glass bulb. These sprinklers are perfect for applications in light or ordinary hazard at standard spacing for projects that require UL, cUL, MEA and/or FM Listing and Approvals.

By adding the option of the clean room seal, the GB4 can be used in areas where dust or air flow cannot be allowed between the room and the area above the ceiling. This option is used extensively in "clean room" applications where the integrity of the ceiling is critical. The Clean Room Seal is U.L. Listed for GB4 only. **It is NOT Listed for the GB4-FR.** See the clean room seal data sheet for details.

Inherent in the design is the capability to compensate for ceiling heights which vary with respect to the sprinkler system piping. This significant feature allows the Central GB4 and GB4-FR sprinklers to seat flush with ceilings that can fluctuate nearly 1/2" in height. The 3/4" diameter cover plate presents an unobstructed and aesthetic appearance. The thin cover plate projects a mere 3/16" below the ceiling.

The operating mechanism consists of

a liquid-filled 3mm or 5mm frangible capsule that is only 2.0 cm in length.

Operation: The Central GB4 and GB4-FR sprinklers absorb heat through the ceiling cover plate which is soldered to the adjustable retainer ring with a fusible alloy. At the rated temperature, the alloy fuses, resulting in the plate dropping away from the sprinkler. At this point, the deflector drops down below the ceiling exposing the glass bulb to the fires heat. The heat bursts the bulb resulting in a rapid expulsion of the sealing cap. Water can now flow in a pattern engineered to meet the coverage requirements.



Technical Data

Model: GB4 or GB4-FR

Style: Concealed (adjustable)

Options: *Clean Room Seal
(Part#10908100)

* Clean Room Seal is U.L. Listed for GB4 only. It is not Approved for GB4-FR. Please reference Clean Room Seal data sheet for more information.

Wrench: GB4 (Part #1075) or

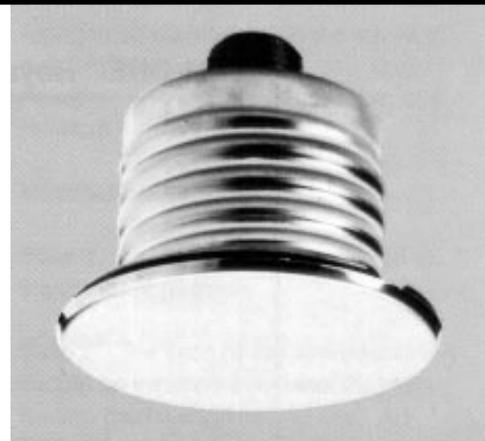
Orifice Size: 1/2"

K-Factor: 5.6

Thread Size: 1/2" N.P.T.

Approvals: U.L., cUL, *F.M.,
M.E.A. (64-93-E Vol. II)

* FM Approval is for standard response only for both light and ordinary hazard in accordance with FM guidelines.



1/2" Orifice Adjustable Concealed Ceiling Sprinkler

Temperature Rating:

155°F/68°C Sprinkler with
135°F/57°C Cover Plate

200°F/93.3°C Sprinkler with
165°F/74°C Cover Plate

Maximum Working Pressure: 175 psi

Factory Hydro Test: 100% at 500 psi

Standard Finishes:

Sprinkler: brass

Cover Plate: brass, chrome plated,
white painted, or
custom painted

Length: 2 1/2" to 3" (6.35 cm to 7.62 cm)

Cover Plate: 3/4" diameter (8.25 cm)

Ceiling Opening: 2 1/2" ± 1/8" diameter
(6.35 cm)

Adjustability: 1/2" (1.27 cm)

Weight: 6.6 oz. (187 grams) with
ceiling plate assembly

Patents: Patent #4,014,388 other
patents are pending.

Figure 1
GB4-FR (shown) Royal Flush Adjustable Concealed Pendant (Non-Activated)

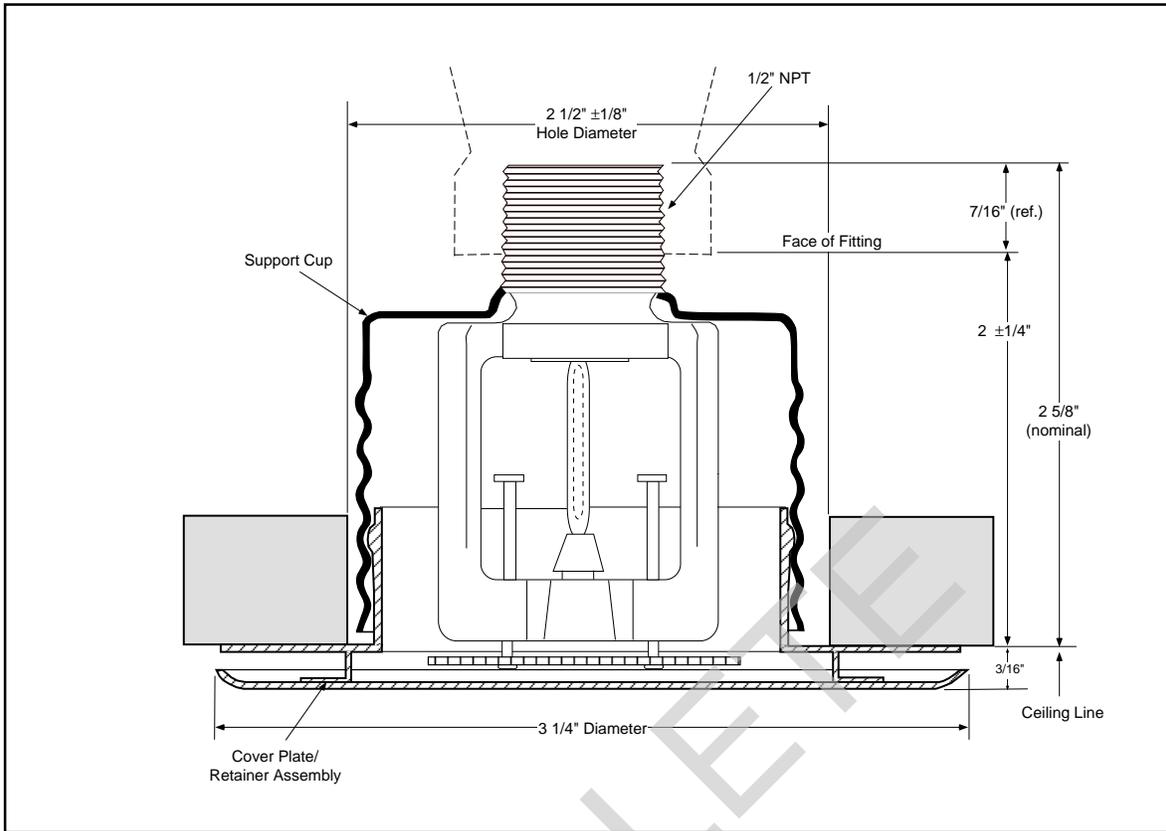
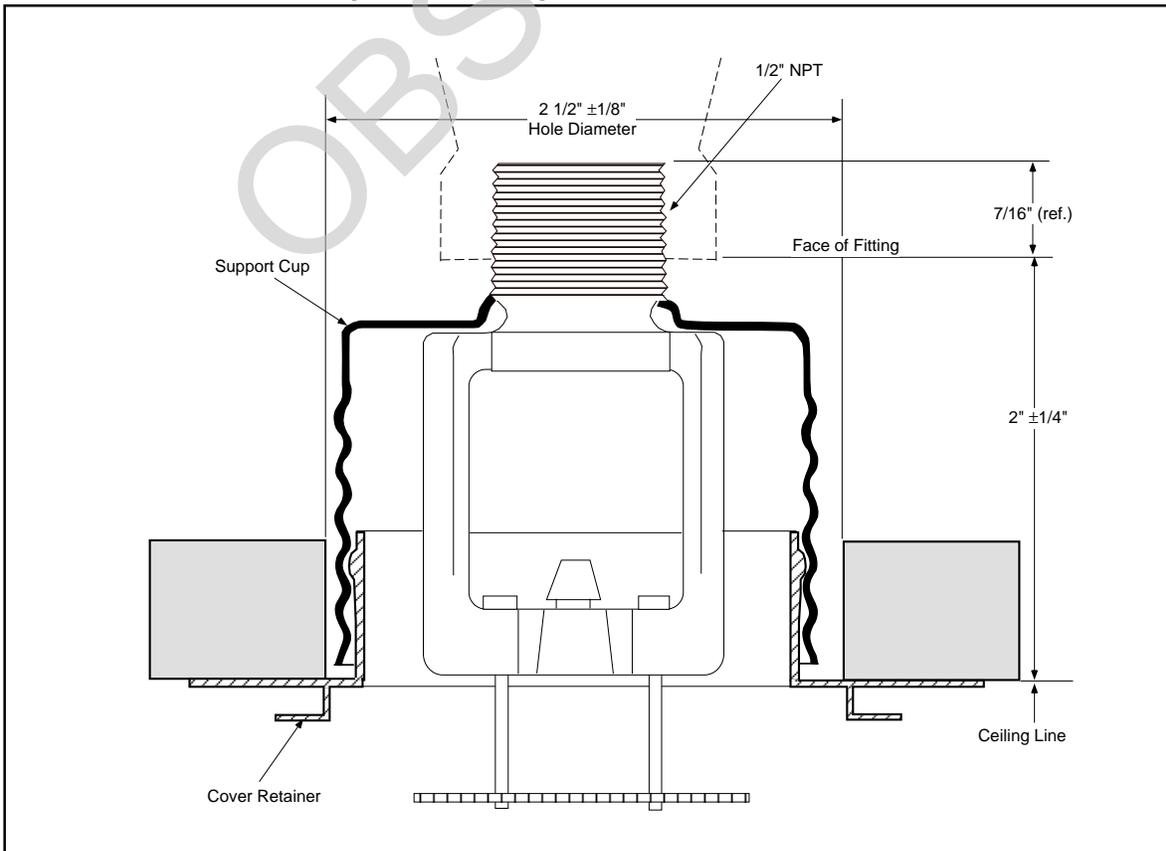


Figure 2
GB4 or GB4-FR Royal Flush Adjustable Concealed Pendant (Activated)





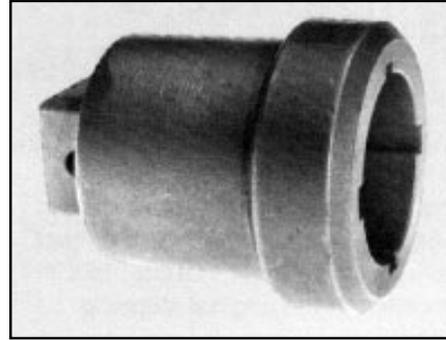
Design Data

Design Requirements - Standard Applications

155°F/68°C and 200°F/93°C

Listing/Approval	Sprinkler Designation	Bulb Type
UL, cUL, FM, MEA	GB4	5mm
UL, cUL, FM, MEA	GB4-FR	3mm

GB4 Wrench (Part #1075)



The GB4 Royal Flush Adjustable Concealed Pendent Sprinkler is UL, cUL and MEA Approved for standard area coverages and standard flow and pressure requirements as specified in current NFPA 13 Standards for light and ordinary hazard occupancies and FM Approved for light and ordinary hazard in accordance with the F.M. guidelines.

The GB4-FR is UL, cUL and MEA Approved for Quick Response Applications for standard area coverages and standard flow and pressure requirements as specified in current NFPA 13 Standards in both ordinary and light hazard. The GB4-FR is FM Approved (*but not as quick response*) for light and ordinary hazard in accordance with the F.M. Guidelines.

Ceiling cover plates are available in a variety of metallic or painted finishes. For custom painted finishes, the customer must furnish a quick-drying paint, preferably lacquer-based, to ensure proper color duplication. One quart of paint is required for each 200 plates.



Installation

The Central GB4 and GB4-FR must be installed in conformance with current NFPA 13 Standards. Deviations from these requirements and standards, or any alteration to the sprinkler assembly itself will void any warranty made by Central Sprinkler Company. In addition, installation must also meet local government provisions, codes and standards, as applicable.

The system piping must be properly sized to ensure the minimum required flow rate at the sprinkler.

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 in the pendent position.

Step 2. The face of the sprinkler fitting should be installed a nominal 2" ($\pm 1/4$ ") behind the finished ceiling line. Adjustments, to compensate for variations in fitting face to ceiling height, may be made by threading the cover plate retainer in or out of the support cup.

Step 3. 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 4. Hand tighten the sprinkler into the fitting. Avoid making contact with the deflector when using the Central Sprinkler GB4 Wrench to tighten the unit into the fitting. The GB4 wrench is designed to mate with the frame's wrench bosses, inside the

threaded support cup. A leak tight joint requires a only 7 to 14 ft. lbs. of torque. Torque levels greater than 21 ft. lbs. may distort the orifice seal, resulting in leakage.

Step 5. To install the ceiling cover plate, manually thread the cover retainer into the support cup. Continue threading until the cover retainer's flange rests against the surface of the ceiling.

Caution: Special care must be taken when installing with a CPVC system. Sprinklers must be installed after the manufacturer's recommended setting time for the solvent cement system 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. Sprinklers must 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 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. 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.

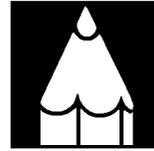
Do not attempt to replace sprinklers without first removing the fire protection system from service. Be certain to secure permission from all authorities having jurisdiction, and notify all personnel who may be affected during system shutdown. A fire watch during maintenance periods is a recommended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

To remove the system from service mode, 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.

Leak stopping products, such as water glass, must **NEVER** be introduced into a sprinkler system.

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, cover plate finish, and sprinkler wrench.

For special painted cover plate finishes, the customer must supply a quick-drying paint, preferably in a lacquer-base finish to insure proper color duplication. Without such a guide, Central Sprinkler Company cannot be responsible for acceptable color matching. All custom painting of the cover plate must be completed at the factory.

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: Patent #4,014,388 other 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/cm²
1 U.S. gallon = 3.785 dm³
= 3.785 liters

Conversions are approximate.



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