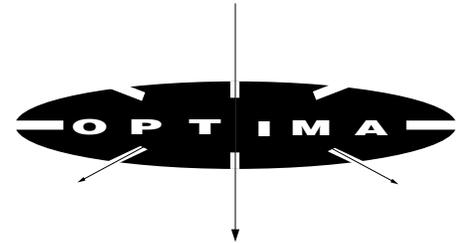
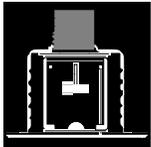


Residential Optima™ Concealed



Automatic Sprinkler

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



Product Description

The Residential Optima™ Concealed is the world's first 20' x 20' concealed residential sprinkler. It is UL Listed for residential occupancies as outlined in NFPA 13, NFPA 13D and NFPA 13R with very low flows and pressures while providing the aesthetic appeal of a flat concealed ceiling plate.

It is designed to compensate for varying ceiling heights by utilizing a drop down deflector and an adjustable thread-on escutcheon. This feature is significant because it allows the ceiling to fluctuate over 1/2" in height. The thin cover plate projects only 3/16" below the ceiling for the maximum in unobstructed and aesthetic appearance.

To prevent damage to the sprinkler and to allow the sprinkler to be located in the ceiling, a special protective cap is provided. This plastic cap has a cone shaped point that can be pressed against the wall board to locate the position of the sprinkler and allow the hole to be cut correctly.

The Residential Optima™ Concealed Sprinkler employs Central's exclusive link activating mechanism. The sprinkler is brass and the cover plate is available in brass, chrome plated or white painted.

Operation: The Central Residential Optima Concealed Sprinkler absorbs 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 surface, bringing about the link's exposure to the fire's heat. The heat fuses the link's thermal element resulting in a rapid expulsion of both the activating mechanism, as well as the sealing cap. Water can now flow in a pattern engineered to meet the coverage requirements.



Technical Data

Model: ROC

Style: Concealed (*adjustable*)

Wrench: Optima™ Concealed (Part #1074)

Orifice Size: 7/16" (11.1 mm)

K Factor: 4.2 (60.06)

Thread Size: 1/2" (12.7 mm) N.P.T.

Approvals: U.L., cUL, MEA, 7-95-E

Temperature Rating:

160°F/71°C Sprinkler with
135°F/57°C Cover Plate

Maximum Working Pressure: 175 psi

Factory Hydro Test: 100% at 500 psi

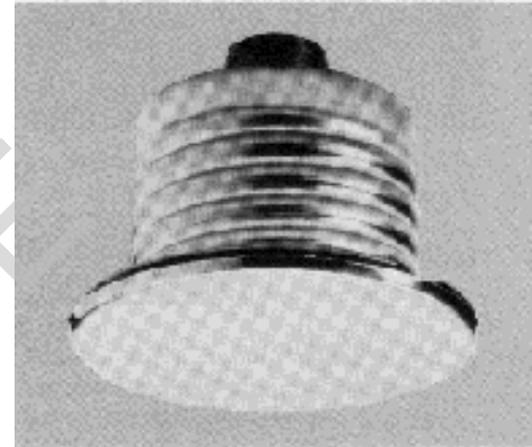
Standard Finishes:

Sprinkler: brass

Cover Plate: brass, chrome plated or
white painted.

Length: 2 9/16" to 3 1/16" (6.5 cm to 7.8 cm)

Cover Plate: 3 1/4" (8.3 cm) diameter



7/16" Orifice Adjustable Concealed Residential Sprinkler

Ceiling Opening: 2 1/2" (6.4 cm) diameter

Weight: 7.9 oz. (224 grams) complete
assembly with cover plate

Patented with additional patents
pending.

Figure 1
Residential Optima™ Concealed Pendant (Non-Activated)

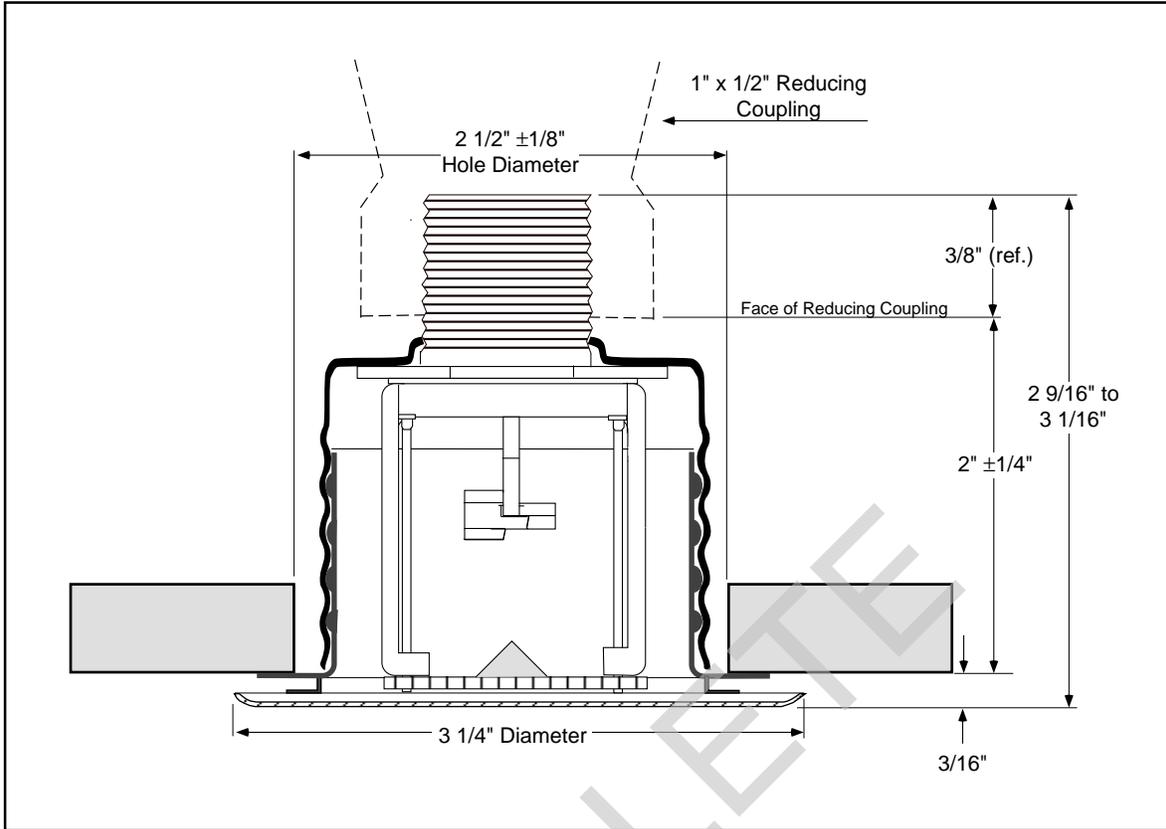
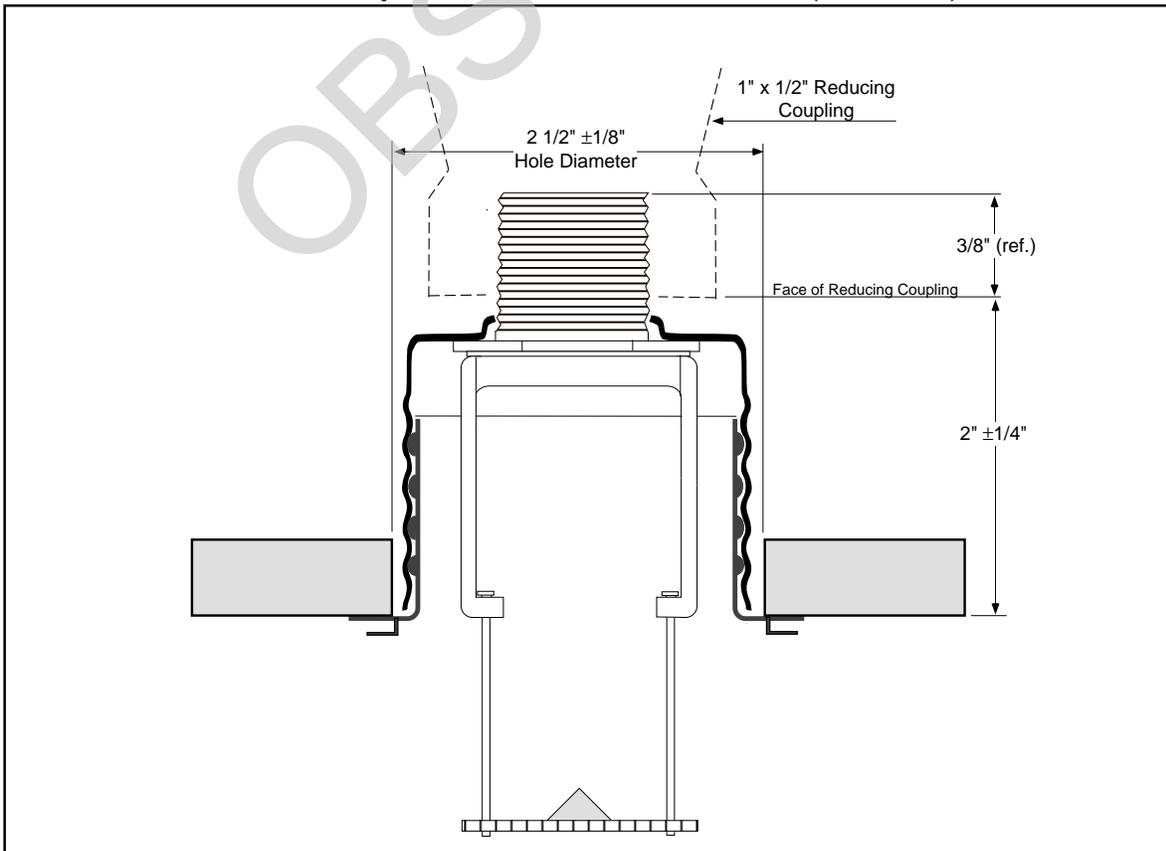


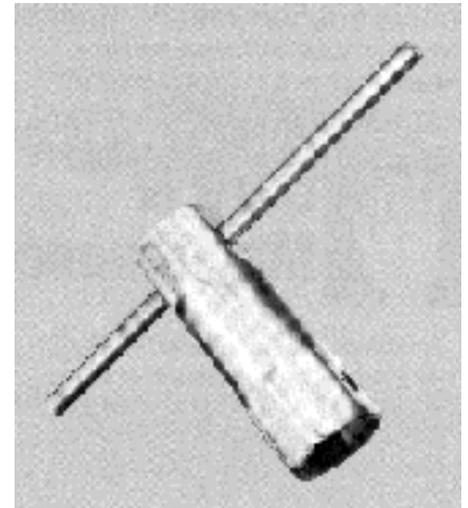
Figure 2
Residential Optima™ Concealed Pendant (Activated)





Design Data

ELOC/ROC wrench (Part #1265)



Design Requirements—ROC Residential Optima™ Concealed

Coverage Area (ft. x ft.)	Single Head		Multiple Head	
	Minimum Flow (gpm)	Minimum Pressure (psi)	Minimum Flow (gpm)	Minimum Pressure (psi)
20 x 20 (400 sq. ft.)	24	32.7	17	16.4
18 x 18 (324 sq. ft.)	24	32.7	17	16.4
16 x 16 (256 sq. ft.)	18	18.4	13	9.6
14 x 14 (196 sq. ft.)	18	18.4	13	9.6
12 x 12 (144 sq. ft.)	18	18.4	13	9.6

Caution: Minimum spacing between sprinklers is 8'.

Step 5. After initial installation and before the cover plate is installed, cover the sprinkler with the special plastic protective cap. The cap is specially designed to not only protect the sprinkler, but allow the ceiling installers to locate the sprinkler by pressing the ceiling board up against it. The end of the cap has a special tip, therefore leaving an impression in the ceiling board for the location of the sprinkler. Care should be taken to only press the ceiling lightly against the cap as excessive pressure will damage the sprinkler. This cap must be removed for the sprinkler to function correctly.

Step 6. 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 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.



Installation

The Central Model ROC Residential Optima™ Concealed Sprinkler must be installed in conformance with current NFPA 13, NFPA 13D and NFPA 13R 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 and out of the unit's support cup.

Step 3. Use only a non-hardening pipe joint compound, or Teflon* tape. Apply only to the male threads.

Step 4. Hand tighten the sprinkler into the fitting. Avoid making contact with the deflector when using the Central Sprinkler Optima™ Concealed Wrench to tighten the unit into the fitting. The wrench is designed to mate with the body'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.

*Teflon is a trademark of the DuPont Corp.



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 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

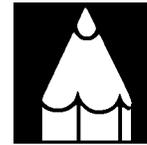
maintain the protection level.

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 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.

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: The ELO Optima™ sprinklers are protected under U.S. Patent #4,976,320. Additional 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.

OPTIMA™ is a registered trademark of Central Sprinkler Company.



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