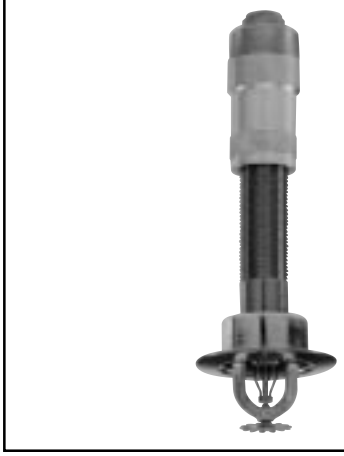
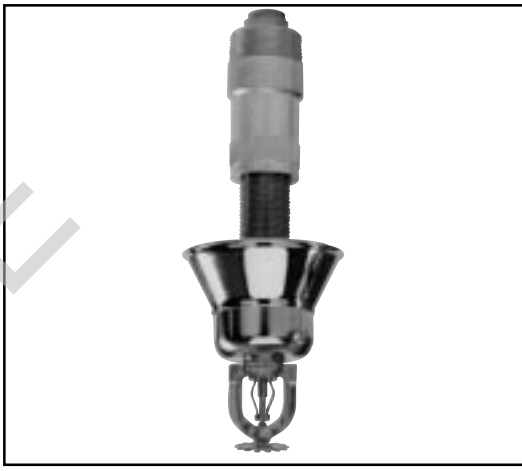
Model A-1

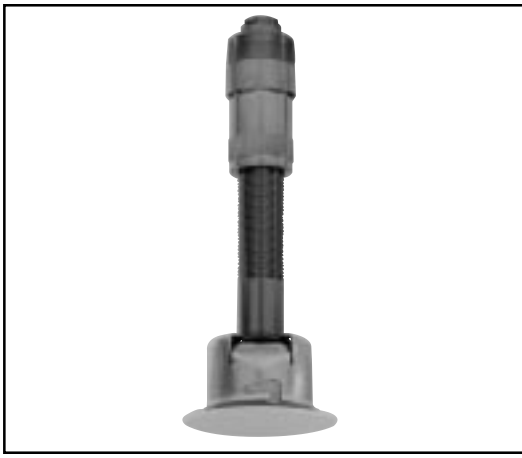
Adjustable Dry Pendent

Flush, Recessed, Extended & Concealed
Automatic Sprinkler

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







Product Description

The Model A-1 Adjustable Dry Pendent Sprinklers are designed for use in special applications such as freezing environments or in conditions where sediment or foreign materials might accumulate in ordinary drop pipes.

Unlike standard nonadjustable dry pendent sprinklers, the Model A-1 incorporates a special elbow that permits 2½" (63.5 mm) of field adjustment. This exclusive and unique feature allows flexibility which was never before available. It ensures a perfect ceiling fit for the sprinkler upon initial installation. Should the ceiling sag, a simple readjustment can once again obtain a perfect ceiling fit.

The Model A-1 Adjustable Dry Pendent Sprinklers offer considerable aesthetic appeal. They are available concealed or recessed.

The escutcheon assembly is comprised of an upper escutcheon support piece permanently attached to the sprinkler frame and a ceiling escutcheon plate that slips over the installed sprinkler. The Model A-1 is Listed by U.L., F.M. and U.L.C. for use as a standard sprinkler that qualifies for installation in accordance with current NFPA Standards.

Operation: A fusible alloy is sealed into a bronze center strut by a stainless steel ball. When the alloy melts at its rated temperature, the ball is forced upward into the center strut releasing the two ejectors and operating the sprinkler.

Technical Data

Model: A-1
Style: Flush, Recessed, Extended or Concealed
Wrench: For adjustment of sprinkler only. See installation sequence steps 2 and 4 on page 3. Combination (Part #1106) for recessed or Universal (Part #1122) for concealed.
Orifice Size: ½" (15 mm)
K-Factor: See K-Factor Table on page 2
Thread Size: Tube: 1" (25 mm) N.P.T.
Approvals: U.L., U.L.C., F.M., MEA 375-75-SA *(See approval charts for specific Listings)*
Maximum Working Pressure: 175 psi (12.1 bar)
Factory Hydro Test: 100% at 500 psi (34.5 bar)
Standard Finishes:
Sprinkler: brass, chrome, white, black
Escutcheon: brass, chrome plated and white painted with additional special finishes available upon request for concealed plate.

Approvals

*UL & ULC — Brass, Chrome, *White, *Black*		
Flush & Extended	**Recessed**	**Concealed**
135°F/57°C *2*	135°F/57°C *2*	162°F/72°C with 135°F/57C plate
165°F/74°C *1, 2, 3*	165°F/74°C *1, 2, 3*	212°F/100°C with 165°F/74°C plate
212°F/100°C *1, 2, 3*	212°F/100°C *1, 2, 3*	
286°F/141°C *1*	286°F/141°C	

U.L. Corrosion Resistant Coatings: 1 = Wax, 2 = Lead, 3 = Wax-Over-Lead
** White & Black **NOT** ULC Listed.*

FM & MEA — Brass, Chrome	
Flush & Extended	***Recessed**
135°F/57°C	135°F/57°C
165°F/74°C	165°F/74°C
212°F/100°C	212°F/100°C
286°F/141°C	

** Recessed FM Approved for Light Hazard Only.*

½" (15 mm) Orifice Adjustable Dry Pendent Automatic Sprinkler

Figure 1 Model A-1 Adjustable Dry Pendent
Flush, Recessed

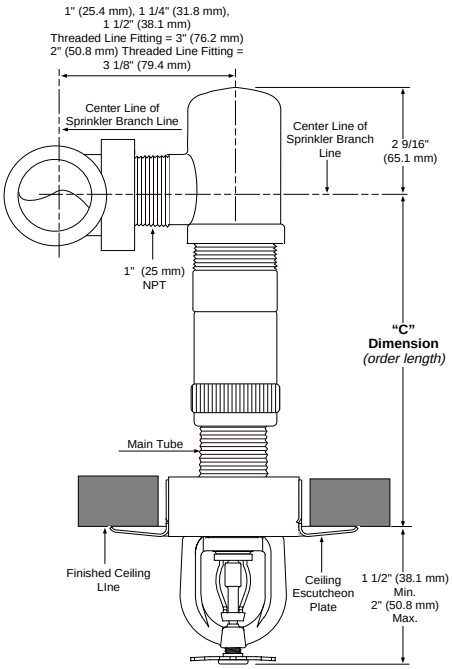


Figure 2 Model A-1 Adjustable Dry Pendent
Extended

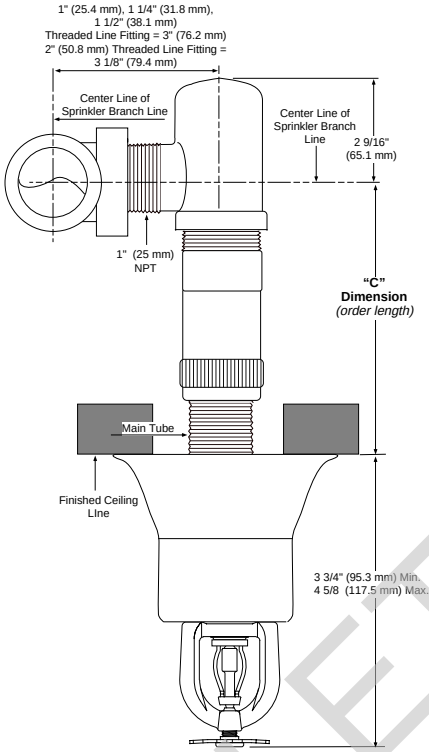
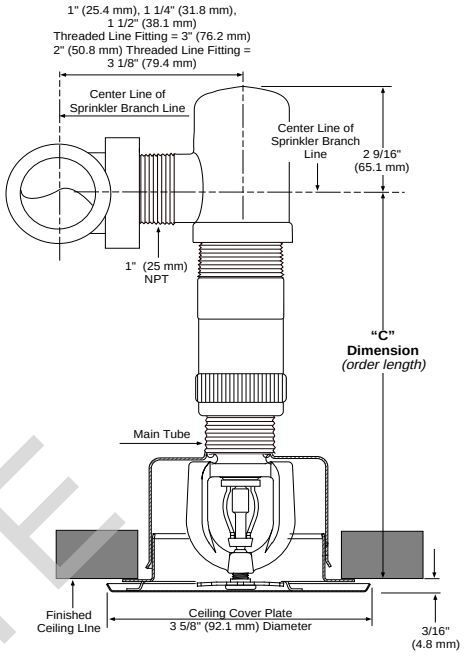


Figure 3 Model A-1 Adjustable Dry Pendent
Concealed



Recessed K-Factor Table

Order "C" Dim.	K-Factor	Order "C" Dim.	K-Factor
*5" (127.0 mm)	5.35	21¼" (539.8 mm)	4.96
6¼" (158.8 mm)	5.32	22½" (571.5 mm)	4.93
7½" (190.5 mm)	5.29	23¾" (603.3 mm)	4.90
8¾" (222.3 mm)	5.26	25" (635.0 mm)	4.87
10" (254.0 mm)	5.23	26¼" (666.8 mm)	4.84
11¼" (285.8 mm)	5.20	27½" (698.5 mm)	4.81
12½" (317.5 mm)	5.17	28¾" (730.3 mm)	4.78
13¾" (349.3 mm)	5.14	30" (762.0 mm)	4.75
15" (381.0 mm)	5.11	31¼" (793.8 mm)	4.72
16¼" (412.8 mm)	5.08	32½" (825.5 mm)	4.69
17½" (444.5 mm)	5.05	33¾" (857.3 mm)	4.66
18¾" (476.3 mm)	5.02	35" (889.0 mm)	4.63
20" (508.0 mm)	4.99		

** Available in flush only.*

Extended K-Factor Table

Order "C" Dim.	K-Factor	Order "C" Dim.	K-Factor
3¾" (95.3 mm)	5.27	20" (508.0 mm)	4.88
5" (127.0 mm)	5.24	21¼" (539.8 mm)	4.85
6¼" (158.8 mm)	5.21	22½" (571.5 mm)	4.82
7½" (190.5 mm)	5.18	23¾" (603.3 mm)	4.79
8¾" (222.3 mm)	5.15	25" (635.0 mm)	4.76
10" (254.0 mm)	5.12	26¼" (666.8 mm)	4.73
11¼" (285.8 mm)	5.09	27½" (698.5 mm)	4.70
12½" (317.5 mm)	5.06	28¾" (730.3 mm)	4.67
13¾" (349.3 mm)	5.03	30" (762.0 mm)	4.64
15" (381.0 mm)	5.00	31¼" (793.8 mm)	4.61
16¼" (412.8 mm)	4.97	32½" (825.5 mm)	4.58
17½" (444.5 mm)	7.94	33¾" (857.3 mm)	4.55
18¾" (476.3 mm)	4.91	35" (889.0 mm)	4.52

Caution: This unit must only be installed with the special cast iron fitting supplied, as this is a listed assembly. Installation into any other fitting will void the listing.

Concealed K-Factor Table

Order "C" Dim.	K-Factor	Order "C" Dim.	K-Factor
7½" (190.5 mm)	5.29	22½" (571.5 mm)	4.93
8¾" (222.3 mm)	5.26	23¾" (603.3 mm)	4.90
10" (254.0 mm)	5.23	25" (635.0 mm)	4.87
11¼" (285.8 mm)	5.20	26¼" (666.8 mm)	4.84
12½" (317.5 mm)	5.17	27½" (698.5 mm)	4.81
13¾" (349.3 mm)	5.14	28¾" (730.3 mm)	4.78
15" (381.0 mm)	5.11	30" (762.0 mm)	4.75
16¼" (412.8 mm)	5.08	31¼" (793.8 mm)	4.72
17½" (444.5 mm)	5.05	32½" (825.5 mm)	4.69
18¾" (476.3 mm)	5.02	33¾" (857.3 mm)	4.66
20" (508.0 mm)	4.99	35" (889.0 mm)	4.63
21¼" (539.8 mm)	4.96		

Notes:
A-1 Adjustable Dry Pendent Ordering Length

1. Order by "C" Dimensions shown in the tables above. Round actual "C" dimension up or down to the closest "C" dimension shown in the chart. Field adjustment is ±1 1/2" (38.1 mm) from the "C" dimension shown in the chart. The "C" dimension is measured from the center line of the branch line to the face of the finished ceiling.
2. Maximum Listed length is 36" (914.4 mm).

A-1 Adjustable Dry Pendent Design Guidelines
After determining the order length, use the K-factor associated with the length in the hydraulic calculations at the tee in the branchline.

Technical Data

Design Requirements—Standard Applications

The Model A-1 Flush, Recessed, Extended and Concealed Adjustable Dry Pendent Sprinklers are intended for standard area coverages and standard flow and pressure requirements as specified in current NFPA Standards.

Installation

All Model A-1 Adjustable Dry Pendent 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 pendent 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.

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 in a pendent position.

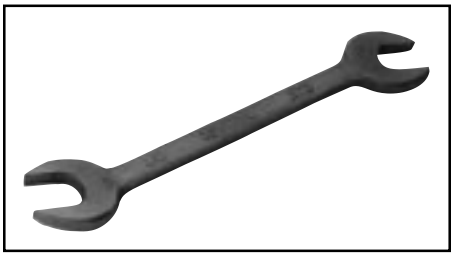
Step 2. The special cast iron fitting is not attached to the sprinkler assembly in the factory as this fitting must be made into the sprinkler line fitting first. **Warning: Do not over-tighten special cast iron fitting into the branch line fitting or breakage will result.** The sprinkler assembly is attached to the special cast iron fitting by screwing the threaded connector tightly. This is done by using a pipe wrench on the threaded connector. Never wrench on the sprinkler head itself for tightening the threaded connector into the special cast iron fitting. The Model 1106 (recessed) or the Model 1122 (concealed) sprinkler wrench may be used on the sprinkler for adjustment purposes only (see Step #4).

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

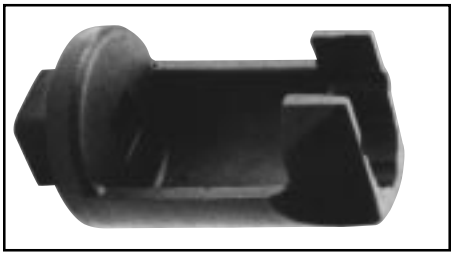
*Teflon is a trademark of the DuPont Corp.

Step 4. Adjustment in length is obtained by applying the sprinkler head wrench and turning either clockwise or counterclockwise. Note that no locking is required when the sprinkler is in its desired position.

Combination Wrench Part #1106



Universal Wrench Part #1122



Step 5. To install the recessed 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.

To install the concealed ceiling cover plate, align the dimples of the support ring assembly with the slots of the upper support shell assembly. Push upward and twist to the right.

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

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.

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 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, and required "C" Dimension.

See page 2 for "C" Dimension information.

For special painted concealed plate finishes, the customer must supply a quick-drying paint, a lacquer-base is preferred, to insure proper color duplication.

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^2
1 U.S. gallon = 3.785 dm^3
= 3.785 liters
Conversions are approximate.

Central Sprinkler Company
451 North Cannon Avenue, Lansdale, PA 19446
Phone: 215-362-0700
FAX: 215-362-5385