



**TECHNICAL DATA**

**HORIZON® MIRAGE®  
CONCEALED SPRINKLER**

**1. PRODUCT NAME**

VIKING HORIZON®MIRAGE®  
Model B-2 Concealed Pendent Sprinkler  
**UL and C-UL Standard Response**  
Sprinkler Base Part No. 09782  
Cover Plate Assembly Part No. 09804  
**UL and C-UL Quick Response and  
Factory Mutual Standard Response**  
Sprinkler Base Part No. 09783  
Cover Plate Assembly Part No. 09804  
(See Footnote No. 7, Below)  
Manufactured 1996-

**2. MANUFACTURER**

THE VIKING CORPORATION  
210 N. Industrial Park Road  
Hastings, Michigan 49058 U.S.A.  
Telephone: (616) 945-9501  
(800) 968-9501  
Fax Number: (616) 945-9599  
From outside U.S.A.:  
Telephone: +1 (616) 945-9501  
Fax Number: +1 (616) 945-9599

**3. PRODUCT DESCRIPTION**

The Viking Horizon® Mirage® Concealed Sprinkler is a small, solder link and lever spray sprinkler designed for installation on concealed pipe systems where the appearance of a smooth ceiling is desired. The sprinkler is hidden from view by a low profile, small diameter cover plate installed flush to the ceiling. The cover plate is available in several decorative finishes to meet design requirements.

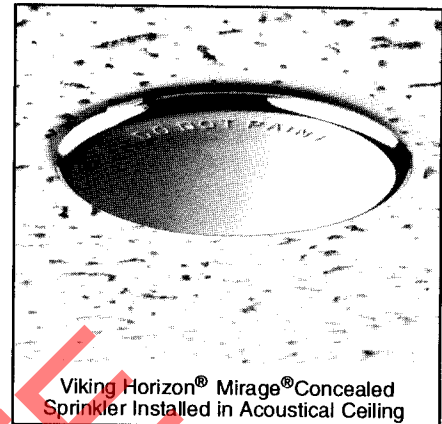
The two piece design allows installation and testing of the sprinkler prior to installation of the cover plate. After the system has been tested and the ceiling finish applied, the "push on", "thread off" design of the Horizon® Mirage® cover plate assembly allows easy installation of the cover plate with up to 1/2" (12,7mm) adjustment available. The "thread off" feature, is designed to prevent unwanted disengagement of the cover assembly, while allowing it to be removed and reinstalled to permit temporary removal of ceiling panels without taking the sprinkler system out of service and removing the sprinkler.

Inside the body of the Viking Horizon® Mirage® Concealed Sprinkler, the deflector and sealing assembly are held in position by the heat sensitive fusible link. During fire conditions, when the temperature around the sprinkler approaches it's operating temperature, the cover plate detaches. Continued heating of the sprinkler causes the heat sensitive fusible link to disengage; releasing

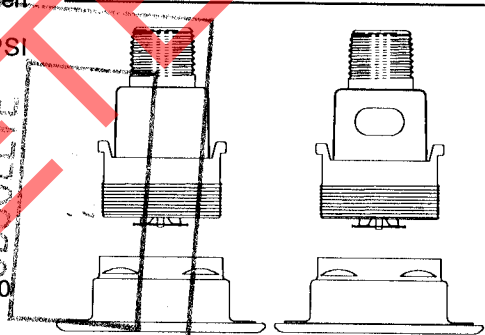
the deflector and sealing assembly. Water flowing through the sprinkler orifice strikes the deflector forming a uniform spray pattern to extinguish or control the fire.

**4. TECHNICAL DATA**

Refer to chart (below, this page) for approvals.  
Rated to 175 PSI (1 207 kPa) water working pressure  
Factory tested pneumatically to 95 PSI (655 kPa)  
Spring: U.S.A. Patent No. 4,570,720.  
Thread Size: 1/2" (15mm) NPT  
Orifice Size: Nominal 1/2" (15mm)  
**K Factor: 5.5** (7,9 Metric: for use when pressure is measured in kPa)  
Minimum operating pressure: 7 PSI (48,3 kPa)  
Available Cover Plate Adjustment: 1/2" (12,7mm) +/- 1/4" (6,4 mm)  
**Sprinkler Materials:**  
Body: Brass Casting UNS-C84400  
Body Cap: Brass UNS-C26000  
Deflector: Copper UNS-C19500  
Deflector Pins: Stainless Steel UNS-30300  
Lever Bar: Copper Alloy UNS-C72500  
Compression Screw: Brass UNS-C36000  
Fusible Link Assembly: Nickel Alloy and Eutectic Solder  
Fusible Link Levers: Stainless Steel UNS-S31600  
Seal: Teflon® Tape



Viking Horizon® Mirage® Concealed Sprinkler Installed in Acoustical Ceiling



UL/C-UL listed Standard Response Part No. 09782

UL/C-UL listed Quick Response FM approved Standard Response Part No. 09783

Sprinkler Temperature Classification	Nominal Temperature Rating <sup>1</sup>	Highest Ambient Temperature Allowed at Ceiling <sup>2</sup>	Required Cover Assembly Temperature Rating
Ordinary	165°F (74°C)	100°F (38°C)	165°F (74°C)
Intermediate	220°F (104°C)	150°F (65°C)	165°F (74°C)

Base Part No. <sup>3</sup>	Approvals <sup>4</sup>			
	UL <sup>6</sup>	C-UL <sup>5,6</sup>	FM <sup>7</sup>	NYC
09782	A1, B1	A1, B1	-	-
09783	A2, B2	A2, B2	A1	-

<b>Approved Temperatures</b> A - 165°F (74°C) B - 220°F (104°C)	<b>Approval Listings</b> 1 - Listed Standard Response Sprinkler 2 - Listed Quick Response Sprinkler
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**Footnotes**

- Temperature rating of Viking Horizon® Mirage® Concealed Sprinkler is stamped on the sprinkler body.
- Based on NFPA-13. Other limits may apply depending on fire loading, sprinkler location and other Authority Having Jurisdiction requirements. Refer to specific installation standards.
- Base part number shown. For complete part number, see price list.
- This chart shows the listings and approvals available at the time of printing. Other approvals are in process. Check with manufacturer for any additional approvals.
- Listed by Underwriters Laboratories Inc. for use in Canada.
- UL and C-UL listing is limited to smooth, flat horizontal ceilings.
- Sprinkler Base Part No. 09783 is Factory Mutual Approved as a Standard Response Sprinkler. (Note: Cover Plate Assembly Part No. 09804 **MUST** be used).

Note: Units of measure in parentheses may be approximations.

Replaces Sprinkler page 20 a-c dated March 26, 1996  
(Added new Cover Plate Assembly and FM Approvals)

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### HORIZON® MIRAGE® CONCEALED SPRINKLER

Spring: Nickel Alloy

**Cover Plate Assembly Materials:**

Cover Plate Assembly: Brass

UNS-C26000

Spring: Nickel Alloy

Solder: Eutectic

**Cover Finishes:**

Polished Chrome

Painted<sup>1</sup> White (No. 1004)<sup>2</sup>

Painted<sup>1</sup> Ivory (No. 1634)<sup>2</sup>

Painted<sup>1</sup> Black (No. 1007)<sup>2</sup>

<sup>1</sup> Painted finish consists of Polyester Baked Enamel.

<sup>2</sup> Sherwin-Williams® Color Answers™ Interior Color Number. Other Colors available on request. See Sherwin-Williams® Color Answers™ Interior Color Selection color numbers.

**Ordering Instructions:**

To order the Viking Horizon® Mirage® Concealed Sprinkler and Cover Plate Assembly, refer to:

Sprinkler Base Part No. 09782 or 09783 and Cover Plate Assembly Part No. 09804.

Specify sprinkler temperature rating and temperature rating and finish of Cover Plate Assembly. (See Footnote No. 7, Page 20 a).

**Accessories:**

Concealed Sprinkler Wrench \*  
Viking PN 08336W/B

\* Concealed Sprinkler Wrench PN 08336W/B is required. Previous Viking Horizon Flush Sprinkler Wrenches appear similar, but are manufactured with an outside diameter too large for use with Horizon® Mirage® Concealed Sprinklers. A 1/2" ratchet is required (not available from Viking).

**5. AVAILABILITY AND SERVICE**

Viking sprinklers are available through a network of Domestic, Canadian, and International Distributors. See the Yellow Pages of the telephone directory for your closest distributor (listed under "Sprinklers Automatic Fire") or contact The Viking Corporation.

**6. GUARANTEES**

For details of warranty, refer to Viking's current price schedule or contact Viking directly.

**7. INSTALLATION**

**WARNING:** Viking sprinklers are manufactured and tested to meet the rigid requirements of the approving agency. The sprinklers are designed to be installed in accordance with recognized installation standards. Deviation from the standards or any alteration to the sprinkler or cover plate assembly after it leaves the factory including, but not limited to, painting, plating, coating or modification, may render the sprinkler inoperative and will automatically nullify the

approval and any guarantee made by The Viking Corporation.

A. Sprinklers are to be installed in accordance with the latest published standards of the National Fire Protection Association, Factory Mutual, Loss Prevention Council, Assemblée Plenièrè, Verband der Sachversicherer or other similar organizations, and also with the provisions of governmental codes, ordinances and standards whenever applicable. Concealed sprinklers are decorative sprinklers and may be considered special purpose. Refer to the Authority Having Jurisdiction prior to installation.

**NOTE:** Model B-2 Cover Plate Assembly 09804 **MUST** be used for all Factory Mutual Approved installations. Previous Model B-1 Cover Plate Assembly 08310 may still be used for UL/C-UL installations.

B. Sprinklers must be handled with care. They must be stored in a cool, dry place in their original shipping container. Never install sprinklers that have been dropped, damaged in any way, or have been exposed to temperatures in excess of maximum ambient temperature allowed. Such sprinklers should be destroyed immediately.

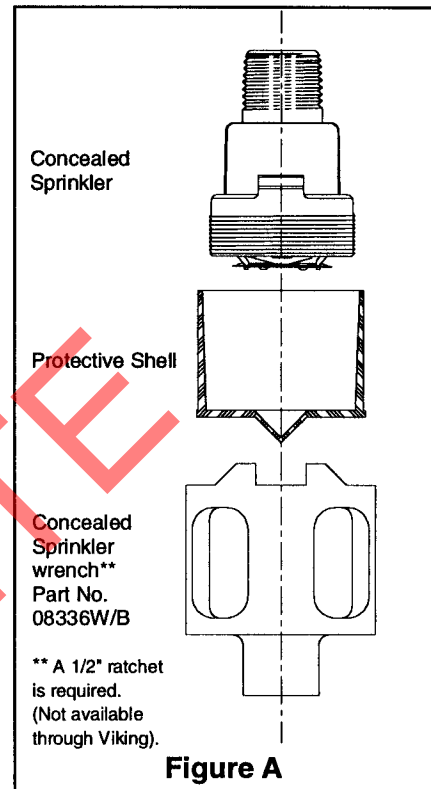
C. Viking Horizon® Mirage® Concealed sprinklers are not intended for use in corrosive environments. Use only sprinklers listed for corrosive environments when subject to corrosive atmospheres.

D. Use care when locating sprinklers near fixtures that can generate heat. Do not install sprinklers where they will be exposed to temperatures that exceed the maximum recommended ambient temperature for the temperature rating used.

E. Adequate heat must be provided when the Viking Horizon® Mirage® Concealed sprinklers are installed on wet pipe systems. When installing Viking Horizon® Mirage® Concealed sprinklers on dry systems, refer to appropriate installation guides.

F. The sprinklers must be installed after the piping is in place to prevent mechanical damage. Before installing, make sure the appropriate model, style, orifice size and temperature rating with the desired response characteristic is used. Install the sprinklers according to the following steps:

1. Install all piping and cut the sprinkler drop nipple to position the 1/2" (15mm) NPT outlet of the reducing coupling at the desired



elevation. The drop nipple must be perpendicular to the ceiling and centered in a 2" (50mm) diameter opening in the ceiling.

2. With the sprinkler in the plastic protective shell, apply a small amount of pipe joint compound or tape to the external threads of the sprinkler only.
3. Use only the special wrench\* designed for installing Viking Horizon® Mirage® Concealed Sprinklers. With the sprinkler in the plastic protective shell, place the unit into the wrench.

\* Concealed Sprinkler Wrench PN 08336W/B is required. Previous Viking Horizon Flush Sprinkler Wrenches appear similar, but are manufactured with an outside diameter too large for use with Horizon® Mirage® Concealed Sprinklers. A 1/2" ratchet is required (not available from Viking).

4. Turn the unit clockwise to thread the sprinkler into the 1/2" (15mm) NPT outlet of the coupling. DO NOT use the fusible link to start or thread the sprinkler into a fitting.

G. After installation, the entire system must be tested in accordance with the recognized installation standards. The test is applied after the sprinkler installation to insure no damage has occurred to the sprinkler during shipping and installation, and

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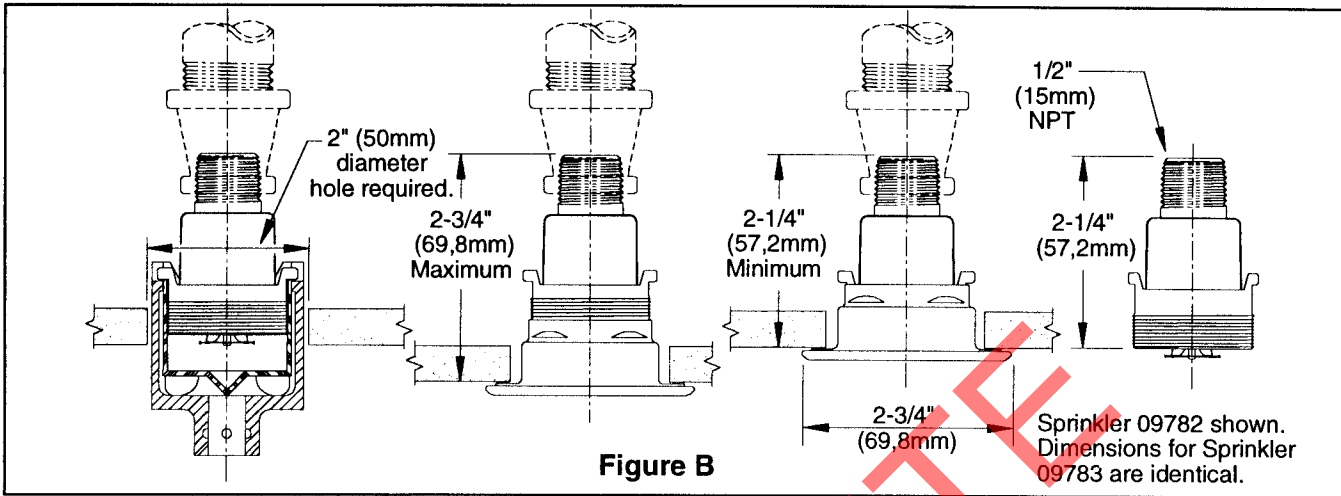


Figure B

to make sure the unit has been properly tightened. If a thread leak should occur, normally the unit must be removed, new pipe joint compound or tape applied, and reinstalled. This is due to the fact that when the joint seal leaks, the sealing compound or tape is washed out of the joint.

H. After testing, repairing all leaks, and installation and painting of the ceiling, the cover plate assembly may be attached.

1. Remove the cover from the protective box taking care not to damage the cover plate assembly.
2. Remove and discard the plastic protective shell from the sprinkler. (It is recommended to retain a protective shell in the spare sprinkler cabinet. The internal diameter of the special Horizon® Mirage® Concealed Sprinkler Installation Wrench is designed for use with the sprinkler contained in the shell.)
3. From below the ceiling, gently place the base of the cover plate assembly over the threaded body of the sprinkler protruding through the 2" (50mm) diameter hole in the ceiling.
4. Push the cover plate assembly onto the sprinkler until the unfinished brass flange of the cover plate base touches the ceiling.

The maximum adjustment available, is 1/2" (12,7mm). DO NOT MODIFY THE UNIT. If necessary re-cut the sprinkler drop nipple.

I. DISASSEMBLY: The "thread off" design of the cover plate assembly allows the cover plate assembly to be removed and reinstalled to permit temporary removal of ceiling panels without taking the sprinkler system out of service and removing the sprin-

kler. To remove the cover plate assembly:

1. From below the ceiling, grasp the cover plate and gently turn it counterclockwise.

If it is necessary to remove the entire sprinkler, the system must be removed from service. See Maintenance instructions and follow all warnings and instructions.

J. RE-ASSEMBLY: The "push on" feature of the cover plate assembly allows easy installation of the cover plate.

1. From below the ceiling, gently place the base of the cover plate assembly over the threaded body of the sprinkler.
2. Push the cover plate assembly on to the sprinkler until the unfinished brass flange of the cover plate base touches the ceiling.

### 8. MAINTENANCE

NOTICE: The owner is responsible for maintaining the fire protection system and devices in proper operating condition. For minimum maintenance and inspection requirements, refer to the appropriate National Fire Protection Association Pamphlet that describes care and maintenance of sprinkler systems. In addition, the Authority Having Jurisdiction may have additional maintenance requirements which must be followed.

- A. The sprinklers must be inspected on a regular basis for corrosion, mechanical damage, obstructions, paint, etc. The frequency of the inspections may vary due to corrosive atmospheres, water supplies and activity around the device.
- B. Sprinklers or cover plate assemblies that have been field painted or me-

chanically damaged must be replaced immediately. Sprinklers showing signs of corrosion shall be tested and/or replaced immediately as required. Installation standards require sprinklers to be tested and, if necessary, replaced after a specified term of service. For Viking Horizon® Mirage® Concealed Sprinklers, refer to the installation standards and the Authority Having Jurisdiction for the specified period of time after which testing and/or replacement is required. Sprinklers and cover plate assemblies that have operated cannot be reassembled or re-used, but must be replaced. When replacement is necessary, use only new sprinklers and cover plate assemblies.

C. The sprinkler discharge pattern is critical for proper fire protection. Nothing should be hung from, attached to, or otherwise obstruct the discharge pattern. All obstructions must be immediately removed or, if necessary, additional sprinklers installed.

D. When replacing existing sprinklers, the system must be removed from service. Refer to the appropriate system description and/or valve instructions. Prior to removing the system from service, notify all Authorities Having Jurisdiction. Consideration should be given to employment of a fire patrol in the affected area.

1. Remove the system from service, draining all water and relieving all pressure on the piping.
2. Remove the cover plate assembly.
  - a. From below the ceiling, grasp the cover plate and gently turn it counterclockwise.
3. Place a plastic protective shell (from the spare sprinkler cabinet) over the sprinkler to be removed.

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The internal diameter of the special Horizon® Mirage® Concealed sprinkler installation wrench is designed for use with the sprinkler contained in the shell.

4. Remove the sprinkler from the piping in which it is installed.
  - a. Using the special sprinkler wrench, turn the unit counter-clockwise to remove the old sprinkler.
5. Install the new unit. Care must be taken to replace the sprinkler with the proper model, style, orifice size, temperature rating and response characteristics. A fully stocked spare sprinkler cabinet should be provided for this pur-

pose.

Use of the correct Horizon® Mirage® Concealed Sprinkler can be verified by checking the fusible link for the following identification scheme:

UL/C-UL Standard Response:

..... No Stripe

UL/C-UL Quick Response **and**

FM Standard Response:

..... Purple Stripe

(Refer to Technical Data Page 57 a-c for additional information).

UL/C-UL QREC:

..... Yellow Stripe

(Refer to Technical Data Page 58 a-c for additional information).

**Follow instructions provided in "INSTALLATION" paragraph 7.**

6. Place the system back in service and secure all valves. Check the replaced sprinklers and repair all leaks.
- E. Sprinkler systems that have been subjected to a fire must be returned to service as soon as possible. The entire system must be inspected for damage and repaired or replaced as necessary. Sprinklers that have been exposed to corrosive products of combustion or high ambient temperatures, but have not operated, should be replaced. Refer to the Authority Having Jurisdiction for minimum replacement requirements.

OBSOLETE