



## TECHNICAL DATA

### HORIZON® STANDARD RESPONSE FLUSH PENDENT SPRINKLER VK400

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058

Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

#### 1. DESCRIPTION

Viking Horizon® Standard Response Flush Pendent Sprinkler VK400 is a small, flush, solder link and lever spray sprinkler. Designed for use with concealed piping, the unit is mounted flush to the ceiling with the fusible link exposed. The sprinkler is available with a Polished Chrome or White painted finish with four styles of ceiling rings (see Figure 1), which allow up to ¼" (6.3 mm) of adjustment. The standard 2-11/16" (68 mm) diameter ceiling rings are available in a "thread-on" style for stability, or in a "push-on" style for ease of installation.

A 3-1/4" (82.5 mm) diameter ceiling ring is also available (thread-on only), making Standard Response Flush Pendent Sprinkler VK400 suitable for replacing Viking Model D-1 Flush Pendent Sprinklers. The two-piece design allows installation and testing of the sprinklers prior to installation of the ceiling. The ceiling rings can be removed and reinstalled, allowing removal of ceiling panels without shutting down the sprinkler system and removing the sprinklers.



#### 2. LISTINGS AND APPROVALS

**cULus Listed:** Category VNIV

**FM Approved:** Class 2015

**NYC Approved:** City of New York Board of Standards and Appeals, Calendar No. 219-76-SA

Refer to Approval Chart 1 and Design Criteria on page 16d for cULus Listing requirements and refer to Approval Chart 2 and Design Criteria on page 16e for FM Approval requirements that must be followed.

#### 3. TECHNICAL DATA

##### Specifications:

Available since 1988.

Minimum Operating Pressure: 7 psi (0.5 bar)

Maximum Working Pressure: 175 psi (12 bar)

Factory tested pneumatically to 95 psi (6.55 bar)

Spring: U.S.A. Patent No. 4,570,720

Thread size: 1/2" (15 mm) NPT

Nominal K-Factor: 5.6 U.S. (80.6 metric†)

†Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.

Overall Length: 2-5/8" (65 mm)

##### Material Standards:

Sprinkler Body: Brass UNS-C84400

Body Cap: Stainless Steel UNS-S30400 or UNS-S30500

Cover: Stainless Steel UNS-S43000

Deflector: Copper UNS-C19500

Deflector Pins: Stainless Steel UNS-S30300

Button: UNS-C23000 H55-H80

Compression Screw: Brass UNS-C36000

Element Assembly: Copper UNS-C41100 and Eutectic Solder

Levers: Stainless Steel UNS-S31600

Lever Bar: Copper Alloy UNS-C72500

Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with Teflon Tape

Ceiling Ring: Cold Rolled Steel UNS-G10080 or Brass UNS-C26000

**Ordering Information:** (Also refer to the current Viking price list.)

Viking Horizon® Standard Response Flush Pendent Sprinkler VK400 and Ceiling Rings must be ordered separately:

**Sprinkler:** Base Part No. 06697B

Viking Technical Data may be found on  
The Viking Corporation's Web site at  
<http://www.vikinggroupinc.com>.  
The Web site may include a more recent  
edition of this Technical Data Page.



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Order the Horizon® Standard Response Flush Pendent Sprinkler by first adding the appropriate suffix for the sprinkler finish and then the appropriate suffix for the temperature rating to the sprinkler base part number.

Finish Suffix: Polished Chrome = F or White Polyester = M-W

Temperature Suffix (°F/°C): 165°/74° = C, 220°/104° = F

For example, sprinkler VK400 with a Chrome finish and 165 °F/74 °C temperature rating = 06697BFC.

#### Ceiling Rings:

Base Part No. 07027 "push-on" style with a 2-11/16" (68 mm) diameter

Base Part No. 07626 "push-on" style with a 3" (76,2 mm) diameter

Base Part No. 06919B "thread-on" style with a 2-11/16" (68 mm) diameter

Base Part No. 06905B "thread-on" style with a 3-1/4" (82,5 mm) diameter

Specify the finish of the ceiling ring: Polished Chrome = F, Painted White = M-W

For example, ceiling ring 07027 with a Polished Chrome finish = 07027F.

#### Available Finishes And Temperature Ratings:

Refer to Table 1

**Accessories:** (Also refer to the "Sprinkler Accessories" section of the Viking data book.)

#### Sprinkler Wrenches\*:

A. Heavy Duty Part Number 08336W/B (available since 1983), or

B. Light Duty Part Number 10366W/B\*\* (available since 1998)

\*Requires a 1/2" ratchet (not available from Viking).

\*\*Ideal for sprinkler cabinets.

**Sprinkler Cabinet:** Part No. 01731A, Capacity: six (6) sprinklers (available since 1971)

## 4. INSTALLATION

Refer to appropriate NFPA Installation Standards.

## 5. OPERATION

The concealed deflector is held inside the body of the sprinklers until the eutectic metal solder link is fused.

## 6. INSPECTIONS, TESTS AND MAINTENANCE

Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

## 7. AVAILABILITY

Viking flush sprinklers are available through a network of domestic and international distributors. See The Viking Corporation web site for the closest distributor or contact The Viking Corporation.

## 8. GUARANTEE

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



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TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

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

Sprinkler Finishes: Polished Chrome or White Polyester

Footnotes

<sup>1</sup> The sprinkler temperature rating is stamped on the sprinkler body.

<sup>2</sup> Based on NFPA-13. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.

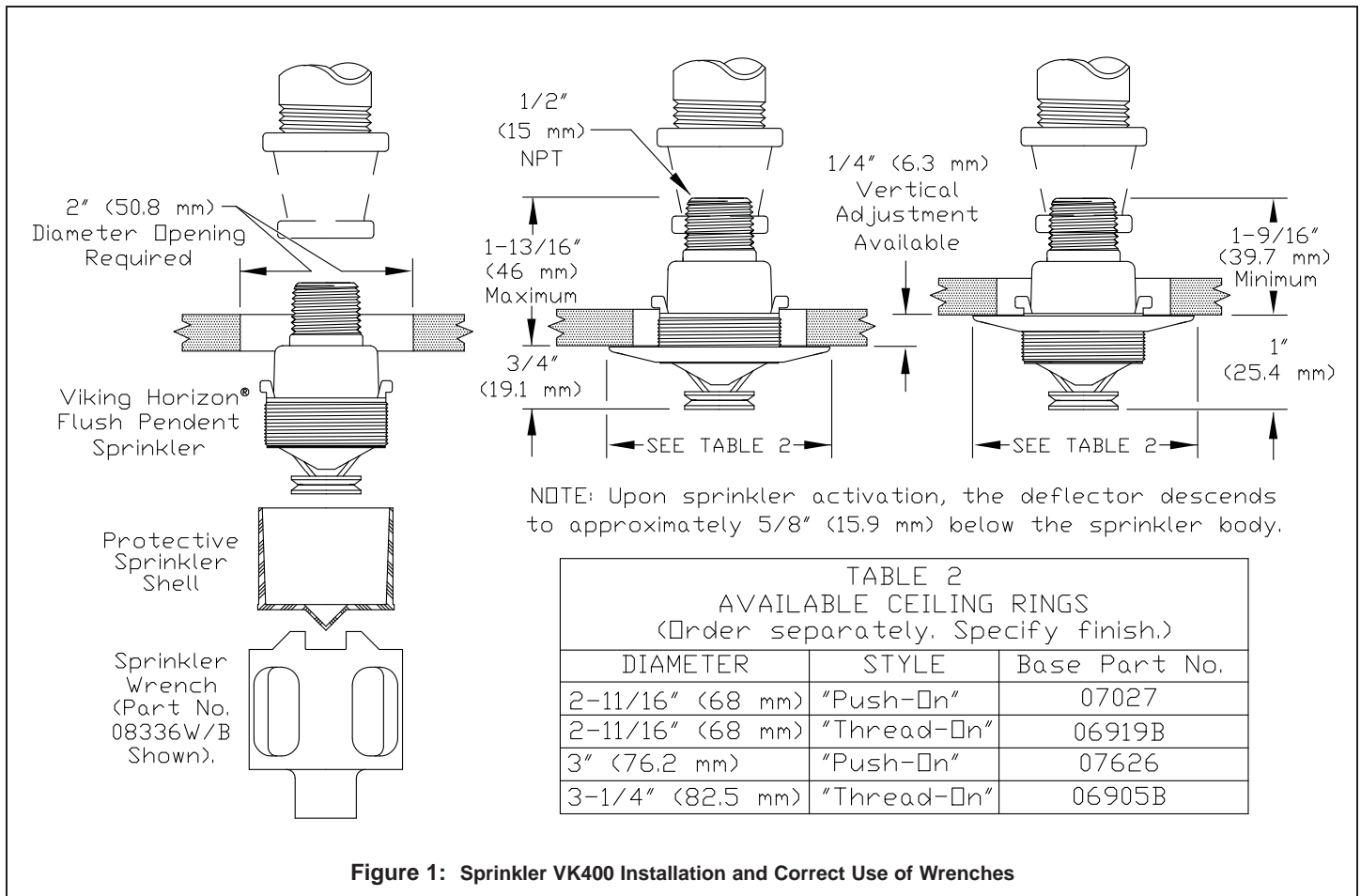
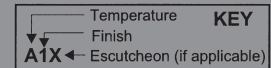


Figure 1: Sprinkler VK400 Installation and Correct Use of Wrenches

	<b>TECHNICAL DATA</b>	<b>HORIZON® STANDARD RESPONSE FLUSH PENDENT SPRINKLER VK400</b>
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<b>Approval Chart 1 (UL)</b> Horizon® Standard Response Flush Pendent Sprinklers													
Sprinkler Base Part No <sup>1</sup>	SIN	NPT Thread Size		Nominal K-Factor		Maximum Water Working Pressure	Overall Length		Listings and Approvals <sup>3</sup> (Refer also to Design Criteria below.)				
		Inch	mm	U.S.	metric <sup>2</sup>		Inches	mm	cULus <sup>4</sup>	NYC <sup>5</sup>	LPCB	CE	⚙
06697B	VK400	1/2"	15	5.6	80.6	175 psi (12 bar)	2-5/8"	65	A1	A1	--	--	--
<b>Sprinkler Temperature Ratings</b> A - 165 °F (74 °C) and 220 °F (104 °C)							<b>Approved Finishes</b> 1 - Polished Chrome or White Polyester						
Footnotes													
<sup>1</sup> Part number shown is the base part number. For complete part number, refer to current Viking price list schedule. <sup>2</sup> Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0. <sup>3</sup> This chart shows the listings and approvals available at the time of printing. Other approvals may be in process. Check with the manufacturer for any additional approvals. <sup>4</sup> Listed by Underwriter's Laboratories for use in the U.S. and Canada. <sup>5</sup> Accepted for use, City of New York Department of Buildings, MEA Number 89-92-E, Vol. 27.													

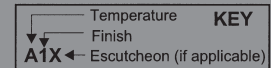


<b>DESIGN CRITERIA - UL</b> (Also refer to Approval Chart 1 above.)
<p><b>cULus Listing Requirements:</b></p> <p>Horizon® Standard Response Flush Pendent Sprinkler VK400 is cULus Listed for installation in accordance with the latest edition of NFPA 13 for standard coverage pendent spray sprinklers as indicated below:</p> <ul style="list-style-type: none"> <li>• For hazard occupancies up to and including Ordinary Hazard, Group II.</li> <li>• Protection areas and maximum spacing shall be in accordance with the tables provided in NFPA 13. Maximum spacing allowed is 15 ft. (4.6 m).</li> <li>• Minimum spacing allowed is 6 ft. (1.8 m) unless baffles are installed in accordance with NFPA 13.</li> <li>• Minimum distance from walls is 4 in. (102 mm).</li> <li>• Maximum distance from walls shall be no more than one-half of the allowable distance between sprinklers. The distance shall be measured perpendicular to the wall.</li> <li>• The sprinkler installation and obstruction rules contained in NFPA 13 for standard coverage pendent spray sprinklers must be followed.</li> </ul>
<p><b>IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to page SR1-3 for general care, installation, and maintenance information. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate standards of NFPA, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.</b></p>

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Approval Chart 2 (FM)									
Horizon® Standard Response Flush Pendent Sprinklers									
Sprinkler Base Part No <sup>1</sup>	SIN	NPT Thread Size		Nominal K-Factor		Maximum Water Working Pressure	Overall Length		FM Approval <sup>3,4</sup> (Refer also to Design Criteria below.)
		Inch	mm	U.S.	metric <sup>2</sup>		Inches	mm	
06697B	VK400	1/2"	15	5.6	80.6	175 psi (12 bar)	2-5/8"	65	A1
<b>Sprinkler Temperature Rating</b> A - 165 °F (74 °C)							<b>Approved Finishes</b> 1 - Polished Chrome or White Polyester		
Footnotes									
<sup>1</sup> Part number shown is the base part number. For complete part number, refer to current Viking price list schedule.									
<sup>2</sup> Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.									
<sup>3</sup> This chart shows the listings and approvals available at the time of printing. Other approvals may be in process. Check with the manufacturer for any additional approvals.									
<sup>4</sup> FM Approved as a standard response control mode standard spray <b>Non-storage</b> sprinkler. For specific application and installation requirements, reference the latest applicable FM Loss Prevention Data Sheets (including Data Sheet 2-0).									



DESIGN CRITERIA - FM
(Also refer to Approval Chart 2 above.)
<p><b>FM Approval Requirements:</b> Horizon® Flush Pendent Sprinkler VK400 is FM Approved as a standard response control mode standard spray <b>Non-storage</b> sprinkler as indicated in the FM Approval Guide. For specific application and installation requirements, reference the latest applicable FM Loss Prevention Data Sheets (including Data Sheet 2-0). FM Global Loss Prevention Data Sheets contain guidelines relating to, but not limited to: minimum water supply requirements, hydraulic design, ceiling slope and obstructions, minimum and maximum allowable spacing, and deflector distance below the ceiling.</p> <p><b>NOTE:</b> The FM installation guidelines may differ from cULus and/or NFPA criteria.</p>
<p><b>IMPORTANT:</b> Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to page SR1-3 for general care, installation, and maintenance information. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate standards of NFPA, FM Global, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.</p>

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