



TECHNICAL DATA

QUICK RESPONSE ELO PENDENT SPRINKLER VK377 (STORAGE-DENSITY/AREA)

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

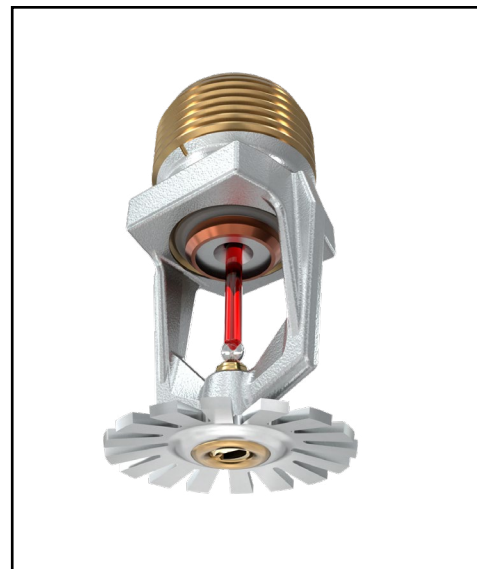
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1. DESCRIPTION

Viking Quick Response Extra-Large Orifice Pendent Sprinkler VK377 is a thermosensitive glass bulb spray sprinkler available in several different finishes and temperature ratings to meet design requirements. The special Polyester and Electroless Nickel PTFE (ENT) coatings can be used in decorative applications where colors are desired. In addition, these coatings have been investigated for installation in corrosive environments and are listed/approved as indicated in the Approval Charts.

The extra-large orifice provides greater flows at lower pressures than standard orifice or large orifice sprinklers. This feature allows reduced pipe sizing for hydraulically calculated sprinkler systems, which require high densities of water. Viking Quick Response Extra-Large Orifice Sprinklers may eliminate the need for a fire pump or reduce the size of the pump if it is required. On existing systems, replacing large orifice sprinklers with extra-large orifice sprinklers may provide the higher densities required to allow an increase in the hazard classification of an occupancy.

Viking quick response sprinklers may be ordered and/or used as open sprinklers (glass bulb and pip cap assembly removed) on deluge systems. Refer to Ordering Instructions below.



2. LISTINGS AND APPROVALS



cULus Listed: Category VNIV



FM Approved: Class 2009



VdS Approved: Certificate G413049, G413051



LPCB Approved: Certificate 096e/14

Refer to the Approval Charts and Design Criteria for requirements that must be followed.



WARNING: Cancer and Reproductive Harm-
www.P65Warnings.ca.gov

3. TECHNICAL DATA

Specifications:

Available since 1993.

Maximum Working Pressure: 175 psi (12 bar). Factory tested hydrostatically to 500 psi (34.5 bar).

Thread size: See Approval Charts

Nominal K-factor: 11.2 U.S. (161.3 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.

Glass-bulb fluid temperature rated to -65 °F (-55 °C)

Overall Length: 2-5/16" (58.7 mm)

Material Standards:

Sprinkler Frame: Brass UNS-C84400

Deflector: Brass UNS-C51000

Bulb: Glass, nominal 3 mm diameter

Pip Cap and Insert Assembly: Copper UNS-C11000, or Leaded Bronze (UNS-C31600 or UNS-C31400) and Stainless Steel UNS-S30400

Compression Screw: Brass UNS-C36000

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

For Polyester Coated Sprinklers: Belleville Spring-Exposed

For ENT Coated Sprinklers: Belleville Spring-Exposed, Screw and Pipcap-ENT plated

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4. INSTALLATION

Refer to appropriate NFPA, FM Global, and/or any other applicable installation standards.

5. OPERATION

During fire conditions, when the temperature around the sprinkler reaches its operating temperature, the heat-sensitive liquid in the glass bulb expands, causing the bulb to shatter, releasing the pip cap assembly. Water flowing through the sprinkler orifice strikes the sprinkler deflector, forming a uniform spray pattern to extinguish or control the fire.

6. INSPECTIONS, TESTS AND MAINTENANCE

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

7. AVAILABILITY

Viking Sprinkler Model VK377 is 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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Ordering Instructions

1. Choose a sprinkler base part number with the required thread size and listing or approval (refer to the approval chart).
2. Add the suffix for the desired finish.
3. Add the suffix for the desired temperature rating.

EXAMPLE: 08337AD = VK377 with brass finish and 175 °F (79 °C) nominal temperature rating. This sprinkler is to be installed into an area with a maximum ambient temperature of 150 °F (66 °C).

Sprinkler Base Part Number	
Part Number	Thread Size
08337	3/4" NPT
08337XX-TQ*	3/4" NPT
17489	1/2" NPT
17489XX-TQ*	1/2" NPT

Finish	
Description	Suffix
Brass	A
Chrome	F
White polyester	M-/W
Black polyester	M-/B
ENT	JN

Temperature Ratings				
Temperature Classification	Temperature Rating	Bulb color	Maximum Ambient Ceiling Temperature	Suffix
Ordinary	155 °F (68 °C)	Red	100 °F (38 °C)	B
Intermediate	175 °F (79 °C)	Yellow	150 °F (66 °C)	D
Intermediate	200 °F (93 °C)	Green	150 °F (66 °C)	E
High	286 °F (141 °C)	Blue	225 °F (107 °C)	G

* Where "XX" is shown in the base part number, enter the desired suffixes for Finish and Temperature Rating (EXAMPLE: 08337AE-TQ)

Accessories
Sprinkler wrench: 05118CW/B (standard) & 11663W/B (recessed or coated sprinklers)
Sprinkler cabinet: 01724A (six sprinklers) or 01725A (six to twelve sprinklers)



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Remove clip or cap after sprinkler installation and before placing the fire protection system in service.

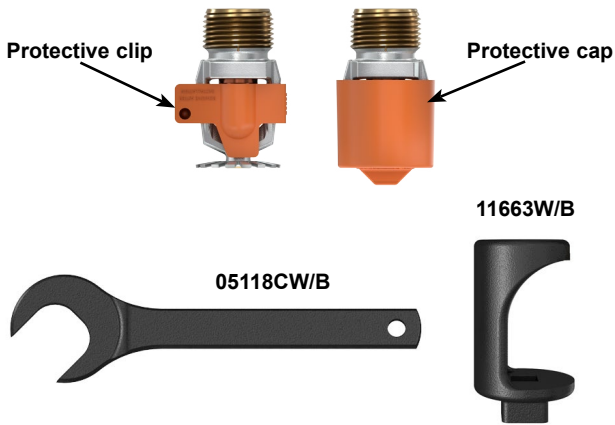


Figure 1: Sprinkler Wrenches and Protective Caps

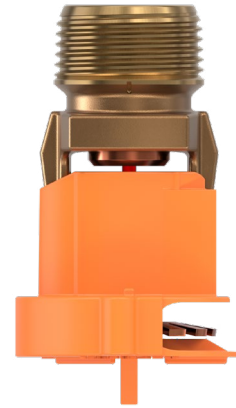


Figure 2: Sprinkler with Torque Assist Cap

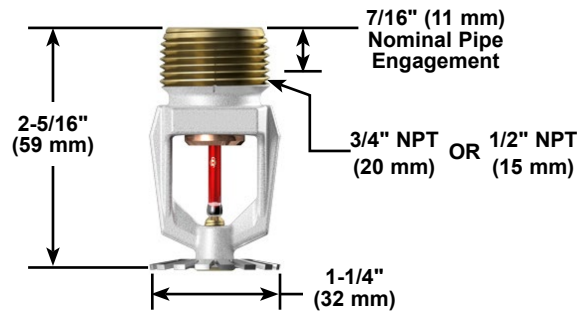





Figure 3: Sprinkler Dimensions

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Approval Chart 1 - UL Quick Response Extra-Large Orifice Pendent Sprinkler VK377 Maximum 175 PSI (12 Bar) WWP											
Base Part Number ¹	SIN	Sprinkler Style	Thread Size		Nominal K-Factor		Overall Length		Listings and Approvals ³ (Refer also to Design Criteria below.)		
			NPT	BSPT	U.S.	metric ²	Inches	mm	cULus ^{4,5}	VdS	LPCB
08337	VK377	Pendent	3/4"	--	11.2	161.3	2-5/16	58.7	A1W, B1Z, B2X, A2W	A1	A1
08337XX-TQ	VK377	Pendent	3/4"	--	11.2	161.3	2-5/16	58.7	A1W, B1Z, B2X, A2W	A1	A1
17489	VK377	Pendent	1/2"	--	11.2	161.3	2-5/16	58.7	--	A1	A1
17489XX-TQ	VK377	Pendent	1/2"	--	11.2	161.3	2-5/16	58.7	--	A1	A1
Approved Temperature Ratings A - 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141 °C) B - 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)				Approved Finishes 1 - Brass, chrome, white polyester ⁶ , black polyester ⁶ 2 - ENT ⁶				Escutcheons W - Standard surface-mounted escutcheons only X - Standard surface-mounted escutcheons or recessed with the Micromatic Model E-1 Escutcheon. Z - Standard surface-mounted escutcheon or recessed with the Viking Micromatic [®] Model E-1, E-2, or E-3 Recessed Escutcheon			
Footnotes											
1. Base part number shown. For complete part number, refer to Viking's current price schedule. 2. 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. 3. This table shows the listings and approvals available at the time of printing. Other approvals may be in process. 4. Listed by Underwriters Laboratories Inc. for use in the U.S. and Canada. 5. cULus-Listed only for use in wet pipe sprinkler systems (or preaction systems qualifying as wet systems). 6. cULus Listed as corrosion-resistant. The corrosion-resistant coating has passed the standard corrosion test required by the approving agencies indicated in the Approval Charts. These tests cannot and do not represent all possible corrosive environments. Prior to installation, verify through the end-user that the coatings are compatible with or suitable for the proposed environment. For automatic sprinklers, the ENT coating is applied to all exposed exterior surfaces, including the waterway.											

 Temperature  Finish  Escutcheon (if applicable)	KEY
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DESIGN CRITERIA - UL Also refer to the Approval Chart above.
cULus Listing Requirements: Quick Response Extra-Large Orifice Pendent Sprinkler VK377 is cULus Listed for installation in accordance with the latest edition of NFPA 13 for standard pendent spray sprinklers: <ul style="list-style-type: none"> Designed for use in hazard occupancies up to and including Ordinary Hazard Group II with a minimum operating pressure of 7 psi (0.5 bar). Also cULus Listed for use in High-Piled Storage Occupancies as defined in NFPA 13 with a minimum operating pressure of 7 psi (0.5 bar). Listed only for use in wet pipe sprinkler systems (or preaction systems qualifying as wet systems). The sprinkler installation and obstruction rules contained in NFPA 13 for standard spray pendent sprinklers must be followed. Venting is not required.
IMPORTANT: Always refer to Form No. F_091699 - Care and Handling of Sprinklers. Also refer to Form No. F_080614 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.



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Approval Chart 2 - FM

Quick Response Extra-Large Orifice Pendent Sprinkler VK377
 Maximum 175 PSI (12 Bar) WWP

KEY	
Temperature	↓
Finish	←
Escutcheon (if applicable)	↙
A1X	↙

Base Part Number ¹	SIN	Sprinkler Style	Thread Size		Nominal K-Factor		Overall Length		FM Approvals ³ (Refer also to Design Criteria below.)
			NPT	BSPT	U.S.	metric ²	Inches	mm	
08337	VK377	Pendent	3/4"	--	11.2	161.3	2-5/16	58.7	A1X
08337XX-TQ	VK377	Pendent	3/4"	--	11.2	161.3	2-5/16	58.7	A1X

Approved Temperature Ratings	Approved Finish	Escutcheons
A - 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141 °C)	1 - Brass and ENT ⁴	X - Standard surface-mounted escutcheons

Footnotes

1. Base part number shown. For complete part number, refer to Viking's current price schedule.
2. 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.
3. This table shows the FM Approvals available at the time of printing. Other approvals may be in process.
4. FM approved as corrosion resistant.

DESIGN CRITERIA - FM

Also refer to the Approval Chart above.

FM Approval Requirements:

1. Sprinkler VK377 is FM Approved as a quick response pendent Storage 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 Sheets 2-0 and 8-9).
2. Approved storage sprinklers are also FM Approved for use as non-storage sprinklers.
 - 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.

NOTE: The FM Installation guidelines may differ from UL and/or NFPA criteria.

IMPORTANT: Always refer to Form No. F_091699 - Care and Handling of Sprinklers. Also refer to Form No. F_080614 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.

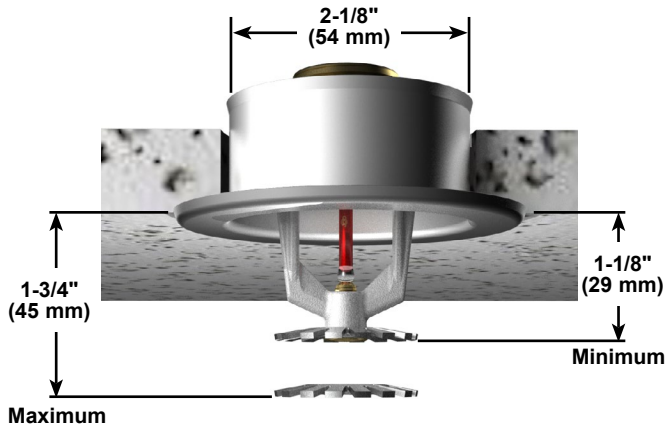


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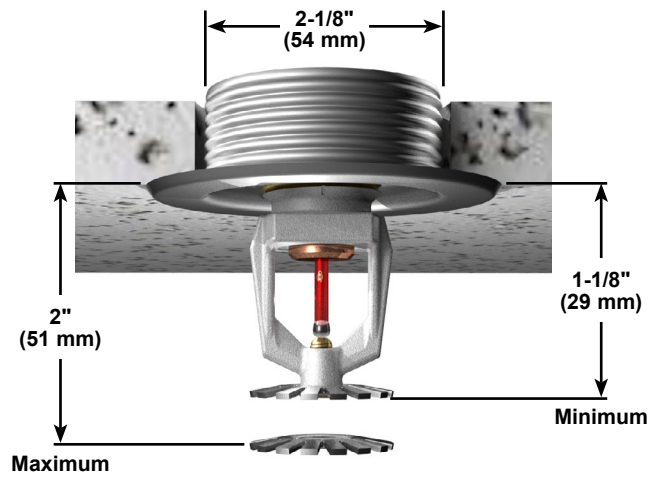
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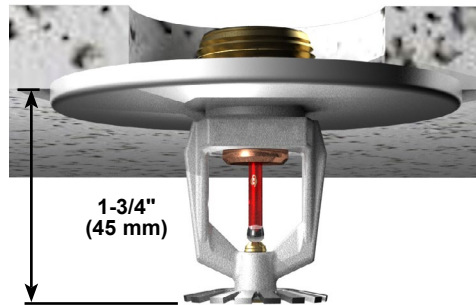
Ceiling Opening Size:
Minimum: 2-5/16" (59 mm)
Maximum: 2-1/2" (64 mm)



E-1 Escutcheon



E-2 (shown) or E-3 Escutcheon



Surface Mount Escutcheon

Figure 4: Installation Dimensions with Viking Escutcheons



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1. Install the escutcheon inner ring onto the sprinkler threads then carefully slide the wrench** sideways around the protective cap (not shown).

2. Push the wrench upwards to ensure engagement with the wrench flats. Install the sprinkler and escutcheon inner ring into the pipe fitting. Remove the protective clip or cap after sprinkler installation and before placing the fire protection system in service.

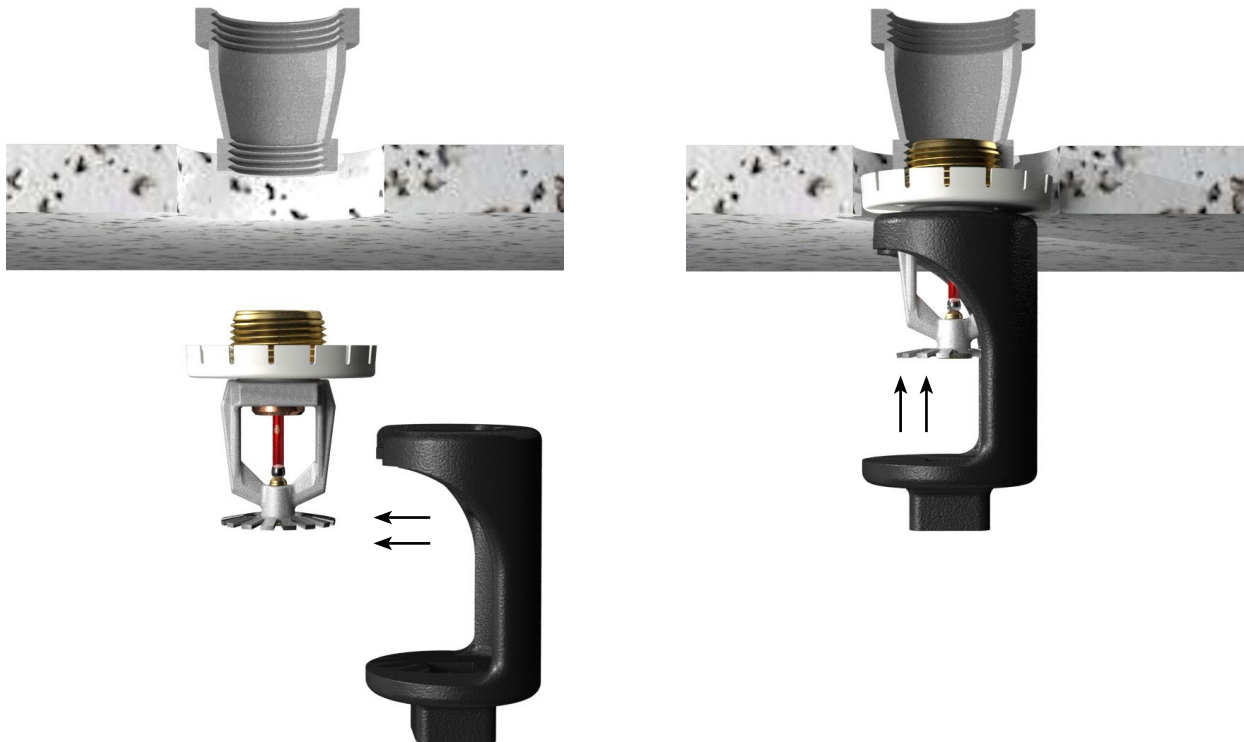


Figure 5: Recessed Installation

Protective cap/clip not shown for clarity

**A 1/2" ratchet is required (not available from Viking).