



TECHNICAL DATA

QUICK RESPONSE ELO FUSIBLE ELEMENT UPRIGHT SPRINKLER VK533 (STORAGE-DENSITY/AREA)

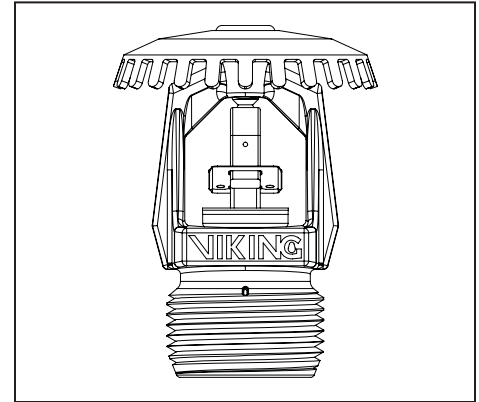
The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058

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

1. DESCRIPTION

The Viking Quick Response Fusible Element ELO Upright Sprinkler VK533 is a thermosensitive fusible element type spray sprinkler available in several different finishes and temperature ratings to meet design requirements. The special Polyester and Teflon® coatings can be used in decorative applications where colors are desired.

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 ELO 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.



2. LISTINGS AND APPROVALS

cULus Listed: Category VNIV

NOTE: Upright Sprinkler VK533 is Listed and Approved as a Specific Application Sprinkler as indicated in the Design Criteria section on page 70z.

Refer the Approval Chart on page 70y and Design Criteria on page 70z for cULus listing requirements that must be followed.

3. TECHNICAL DATA

Specifications:

Available since 2007.

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

Thread size: 3/4" (20 mm) NPT

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.

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

Material Standards:

Sprinkler Frame: Brass UNS-C84400

Deflector: Brass UNS-C26000

Fusible Element Assembly: Nickel Alloy

Pip Cap and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400

Compression Screw: Brass UNS-C36000

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

For Teflon® Coated Sprinklers: Belleville Spring-Exposed, Screw-Nickel Plated, Pip Cap-Teflon® Coated

For Polyester Coated Sprinklers: Belleville Spring-Exposed

Ordering Information: (Also refer to the current [Viking price list](#).)

Order Quick Response Fusible Element ELO Upright Sprinkler VK533 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: Brass = A, Chrome-Enloy® = F, White Polyester = M-/W, Black Polyester = M-/B, Black Teflon® = N

Temperature Suffix (°F/°C): 165°/74° = C, 205°/96° = E, and 280°/138° = G

For example, sprinkler VK533 with a Brass finish and a 165 °F/74 °C temperature rating = Part No. 13978AC

Available Finishes And Temperature Ratings:

Refer to Table 1

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

Sprinkler Wrenches:

- A. Standard Wrench: Part No. 05118CW/B (available since 1981).
 - B. Wrench for coated sprinklers: Part No. 11663W/B** (available since 2001)
- **A 1/2" ratchet is required (not available from Viking).

Sprinkler Cabinets:

- A. Six-head capacity: Part No. 01724A (available since 1971)
- B. Twelve-head capacity: Part No. 01725A (available since 1971)

4. INSTALLATION

Refer to appropriate NFPA Installation Standards.

5. OPERATION

During fire conditions, the heat-sensitive fusible element assembly disengages, releasing the seat and spring assemblies to open the waterway. 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

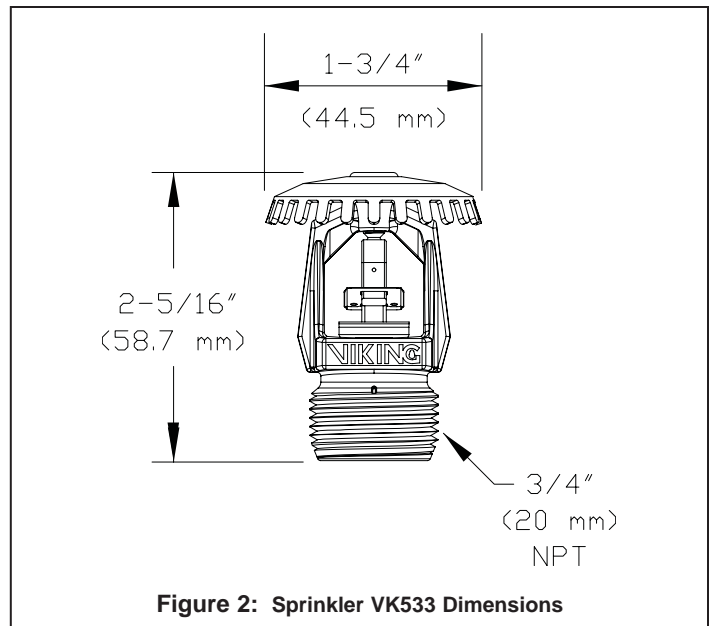
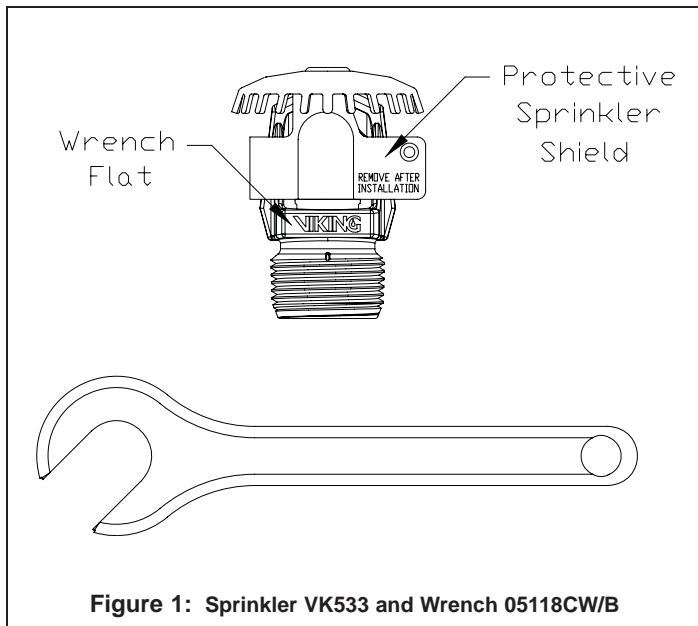
Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

7. AVAILABILITY

The Viking Quick Response ELO Upright Sprinkler 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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TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating ¹	Maximum Ambient Ceiling Temperature ²	Frame Paint Color
Ordinary	165 °F (74 °C)	100 °F (38 °C)	None
Intermediate	205 °F (96 °C)	150 °F (65 °C)	White
High	280 °F (138 °C)	225 °F (107 °C)	Blue

Sprinkler Finishes: Brass, Chrome-Enloy[®], White Polyester³, Black Polyester³, and Black Teflon^{®3}

Footnotes

¹ Decorative sprinklers may not be color coded. The temperature rating is stamped on the deflector.
² 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.
³ For automatic sprinklers, the coatings indicated are applied to the exposed exterior surfaces only. Note that the spring is exposed on sprinklers with Polyester and Teflon[®] coatings. For Teflon[®] coated open sprinklers only, the waterway is coated.

Approval Chart
 Quick Response Fusible Element Extra-Large Orifice Upright Sprinkler VK533
 Maximum 175 PSI (12 Bar) WWP

Temperature	KEY
Finish	
A1X ← Escutcheon (if applicable)	

Base Part Number ¹	SIN	Sprinkler Style	Thread Size		Nominal K-Factor		Overall Length		Listings and Approvals ³ (Refer also to Design Criteria on pg 70z.)		
			NPT	BSP	U.S.	metric ²	Inches	mm	cULus ^{4,5}	FM	NYC
13978	VK533	Upright	3/4"	20 mm	11.2	161.3	2-5/16	58.7	A1	--	--

Approved Temperature Ratings A - 165 °F (74 °C), 205 °F (96 °C), 280 °F (138 °C)	Approved Finishes 1 - Brass, Chrome-Enloy [®] , White Polyester ⁶ , Black Polyester ⁶ , and Black Teflon [®]
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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 Other colors are available on request with the same Listings and Approvals as the standard colors.

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DESIGN CRITERIA
 (Also refer to the Approval Chart on page 70y.)

cULus Listing Requirements:

Quick Response Fusible Element ELO Upright Sprinkler VK533 is cULus Listed for installation in accordance with the latest edition of NFPA 13 for standard upright spray sprinklers:

- 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 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 upright sprinklers must be followed.

Also:

When acceptable to the Authority Having Jurisdiction, Viking Quick Response ELO Upright Sprinkler VK533 may be used as a specific-application head with a density of .6/2000 ft.² for wet systems (or preaction systems qualifying as wet systems) to protect single-, double-, multiple-row, and portable rack storage of Class I-IV, Group A and B Plastics, cartoned, expanded or unexpanded, as well as exposed unexpanded when the following conditions are met:

- A maximum storage height of 20 ft. (6.1 m).
- A maximum ceiling height of 25 ft. (7.6 m).
- A 36-inch (914 mm) minimum clearance from the deflector to the top of storage.

Otherwise, design to the appropriate density/area requirements.

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to pages QR1-3 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.

