



TECHNICAL DATA

QUICK RESPONSE EXTENDED COVERAGE HORIZONTAL SIDEWALL SPRINKLER VK638 (K8.0)

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 Quick Response Extended Coverage Horizontal Sidewall Sprinkler VK638 is a thermosensitive spray sprinkler available in several different finishes and temperature ratings to meet varying design requirements. The glass bulb operating element and special deflector characteristics meet the challenges of quick response extended coverage standards. The special Polyester and Polytetrafluoroethylene (PTFE) coatings can be used in decorative applications where colors are desired. In addition, these finishes are cULus listed as corrosion resistant as indicated in the Approval Chart.

2. LISTINGS AND APPROVALS



cULus Listed: Category VNIV

Refer to the Approval Chart and Design Criteria for cULus Listing requirements that must be followed.

3. TECHNICAL DATA

Specifications:

Available since 2012.

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: 8.0 U.S. (115.2 metric†)

† Metric K-factor measurement shown is 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: 2-3/4" (70 mm)

Covered by the following US Patent Nos: 7,854,269; 7,712,218; and 8,662,190

Material Standards:

Sprinkler Frame: Brass UNS-C84400

Flow Shaper: Brass UNS-C23000

Bulb: Glass, nominal 3 mm diameter

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

Compression Screws: 18-8 Stainless Steel

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

Yoke: Bronze UNS-C51000

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

For Polyester Coated Sprinklers: Belleville Spring-Exposed

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

Order Sprinkler VK638 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 = F, White Polyester = M-/W, Black Polyester = M-/B, and Black PTFE = N

Temperature Suffix: 135 °F (57 °C) = A, 155 °F (68 °C) = B, 175 °F (79 °C) = D, 200 °F (93 °C) = E

For example, sprinkler VK638 with a Brass finish and a 155 °F (68 °C) temperature rating = Part No. 17375AB.

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. Standard Wrench: Part No. 10896W/B (available since 2000)

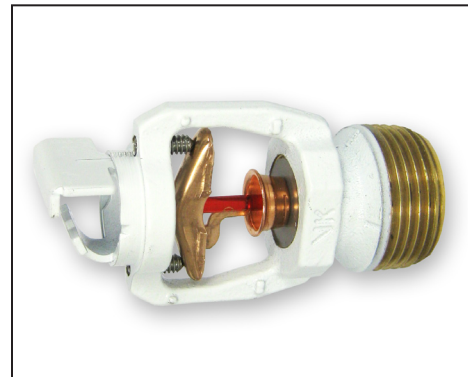
B. Wrench for coated and/or recessed sprinklers: Part No. 13655W/B†† (available since 2006)

††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)



SPECIAL FEATURES:

- For Light Hazard Occupancies Only
- Designed for Corridor Applications
- 28' Maximum Width Spacing

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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4. INSTALLATION

Refer to appropriate NFPA Installation Standards.

5. OPERATION

During fire conditions, the heat-sensitive liquid in the glass bulb expands, causing the bulb to shatter, releasing the yoke, pip cap, and sealing spring assembly. Water flowing through the sprinkler orifice strikes the sprinkler flow shaper, 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 VK638 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.

TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating ¹	Maximum Ambient Ceiling Temperature ²	Bulb Color
Ordinary	135 °F (57 °C)	100 °F (38 °C)	Orange
Ordinary	155 °F (68 °C)	100 °F (38 °C)	Red
Intermediate	175 °F (79 °C)	150 °F (65 °C)	Yellow
Intermediate	200 °F (93 °C)	150 °F (65 °C)	Green

Available Sprinkler Finishes: Brass, Chrome, White Polyester, Black Polyester, and Black PTFE

Corrosion-Resistant Coatings³: White Polyester, Black Polyester, and Black PTFE

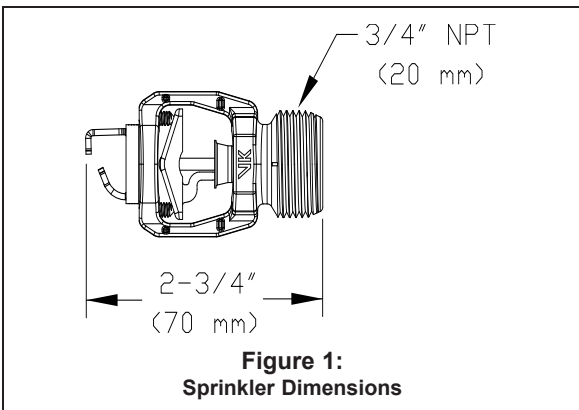
Footnotes

¹ The sprinkler 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 The corrosion-resistant coatings have passed standard corrosion tests required by particular approving agencies as indicated in the Approval Chart. 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. The coatings indicated are applied to the exposed exterior surfaces only. For PTFE coated open sprinklers only, the waterway is coated.

NOTE: The spring is exposed on sprinklers with PTFE and Polyester coatings.



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Sprinkler Base Part Number ¹	NPT Thread Size		Nominal K-Factor		Maximum Water Working Pressure	Overall Length	
	Inches	mm	U.S.	metric ²		Inches	mm
17375	3/4	20	8.0	115.2	175 psi (12 Bar)	2-3/4	70

<h3 style="margin: 0;">Approval Chart</h3> <p style="margin: 0;">Quick Response Extended Coverage HSW Sprinkler VK638 For Light Hazard Occupancies Only. For installation below smooth, flat, horizontal ceilings only.</p>	<table border="1" style="border-collapse: collapse;"> <tr> <td style="padding: 2px;">Temperature</td> <td rowspan="3" style="text-align: center; vertical-align: middle;">KEY</td> </tr> <tr> <td style="padding: 2px;">Finish</td> </tr> <tr> <td style="padding: 2px;">A1X ← Escutcheon (if applicable)</td> </tr> </table>	Temperature	KEY	Finish	A1X ← Escutcheon (if applicable)
Temperature	KEY				
Finish					
A1X ← Escutcheon (if applicable)					

Maximum Areas of Coverage ³ (Width x Throw)	Minimum Water Supply Requirements ³	Deflector-to-Ceiling Distance	Listings and Approvals ⁴ (Refer also to Design Criteria below.)		
			cULus ⁵	FM	NYC
28' x 12' (8.5 m x 3.7 m)	34 gpm @ 18.1 psi (128.7 L/min @ 1.24 Bar)	4 to 12" (102 to 305 mm)	A1X	--	See Footnote 6.
28' x 14' (8.5 m x 4.3 m)	40 gpm @ 25.0 psi (151.4 L/min @ 1.73 Bar)	4 to 12" (102 to 305 mm)	A1X	--	See Footnote 6.

Approved Temperature Ratings	Approved Finishes	Approved Escutcheons
A - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)	1 - Brass, Chrome, White Poly-ester ⁷ , Black Polyester ⁷ , and Black PTFE ⁷	X - Standard surface-mounted escutcheon or the Viking Microfast [®] Model F-1 Adjustable Escutcheon, or Recessed with the Viking Micromatic [®] Model E-1 or E-2 Recessed Escutcheon, or the Model G-1 Recessed Escutcheon.

Footnotes

¹ Part number shown is the base part number. For complete part number, refer to current Viking price list 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 For areas of coverage smaller than shown, use the "Minimum Water Supply Requirement" for the next larger area listed. Flows and pressures listed are per sprinkler.

⁴ 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.

⁵ Listed by Underwriter's Laboratories, Inc. for use in the U.S. and Canada for Light-Hazard occupancies with smooth, flat, horizontal ceilings only.

⁶ Meets New York City requirements, effective July 1, 2008.

⁷ cULus Listed as corrosion resistant.

DESIGN CRITERIA
(Also refer to the Approval Chart above.)

cULus Listing Requirements:

Quick Response Extended Coverage HSW Sprinkler VK638 is cULus Listed as indicated in the Approval Chart for installation in accordance with the latest edition of NFPA 13 for extended coverage sidewall spray sprinklers:

- Limited to Light Hazard occupancies with smooth, flat, horizontal ceilings only.
- Locate the the deflector 4" to 12" (102 mm to 305 mm) below the ceiling. Install with the leading edge of the deflector oriented parallel to the ceiling and with the sprinkler frame arms oriented perpendicular to the ceiling (see Figure 3). **THE TOP SURFACE OF THE DEFLECTOR IS MARKED "TOP"**. The sprinkler must be oriented as shown in Figure 3.
- Minimum distance between sprinklers is 12 ft. (3.7 m).
- Minimum distance from end walls is 4 in. (102 mm).
- Maximum distance from the end wall shall be no more than one-half of the allowable distance between sprinklers. The distance shall be measured perpendicular to the wall.
- The sprinkler installation and obstruction rules contained in NFPA 13 for extended coverage sidewall spray sprinklers must be followed.

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to pages EC1-3 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.



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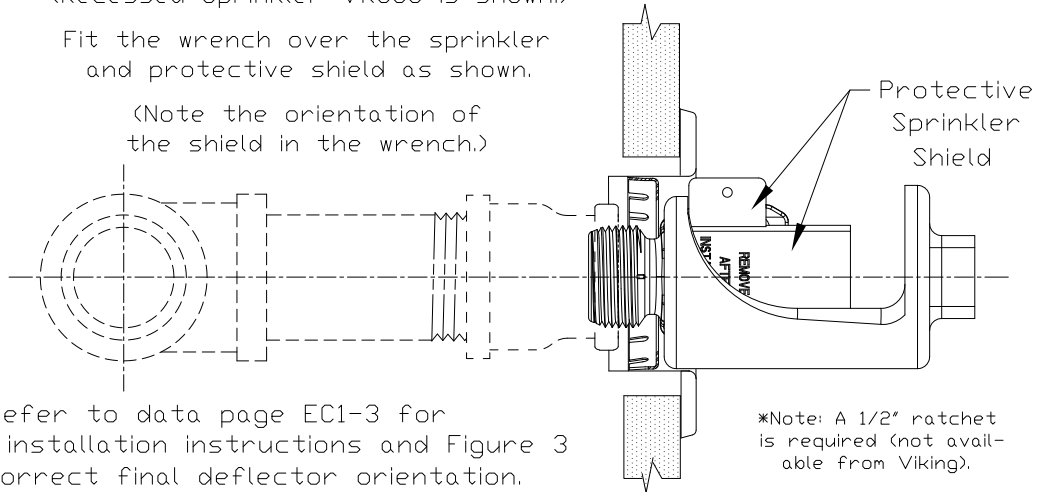
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Sprinkler Wrench Part No. 13655W/B* must be used with Coated and/or Recessed Sprinkler VK638. (Recessed Sprinkler VK638 is shown.)

Fit the wrench over the sprinkler and protective shield as shown.

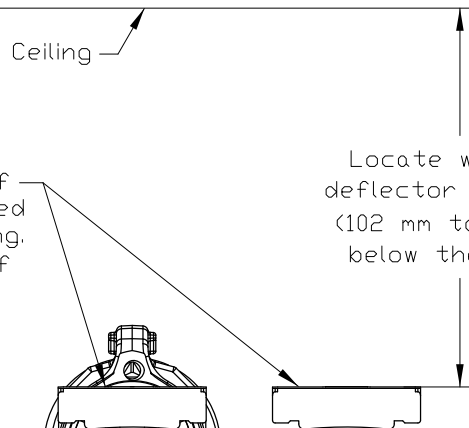
(Note the orientation of the shield in the wrench.)



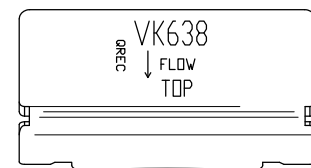
Refer to data page EC1-3 for complete installation instructions and Figure 3 for correct final deflector orientation.

**Figure 2:
Installation of Coated and/or Recessed Sprinkler VK638**

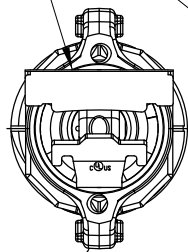
Keep leading edge of the deflector oriented parallel to the ceiling. Measure from top of deflector to ceiling.



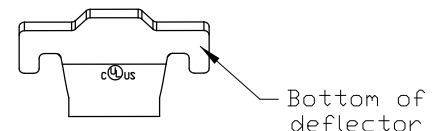
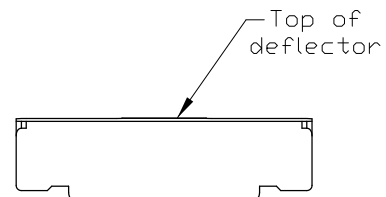
NOTE: The top of the deflector is marked as follows:



Keep the sprinkler frame arms oriented perpendicular to the ceiling.



Note top and bottom of the deflector. The top surface is marked "TOP". The sprinkler MUST be oriented as shown.



**Figure 3:
Correct Deflector Orientation**



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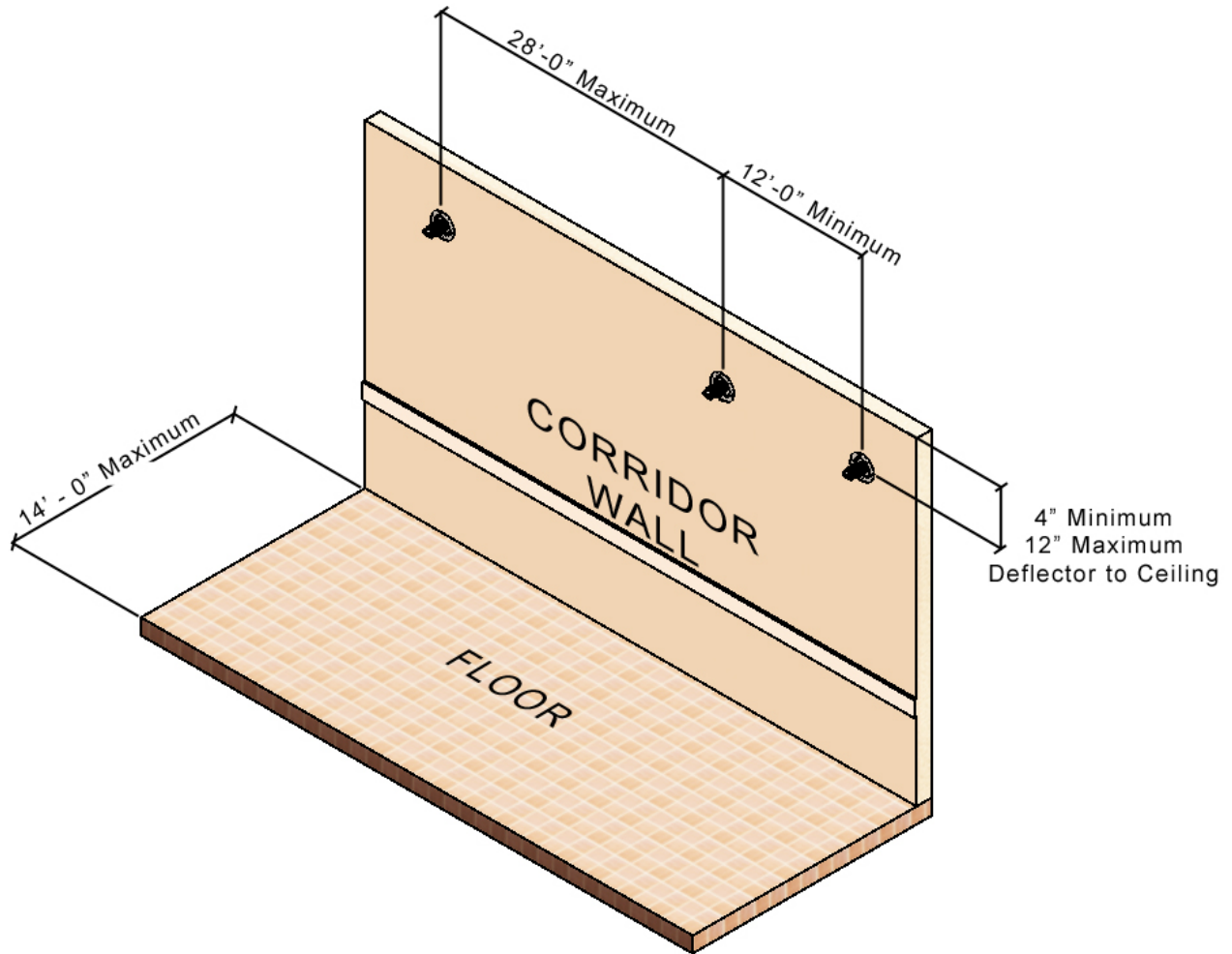


Figure 4:
Sprinkler VK638 Installed