



## TECHNICAL DATA

## DRY VERTICAL SIDEWALL SPRINKLERS

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 dry vertical sidewall sprinklers are suitable for use in areas subject to freezing. They may be installed either upright or pendent, and are suitable for use on dry systems, preaction systems, or wet systems. They are ideal for use in unheated spaces above ceilings of heated rooms equipped with wet pipe sprinkler systems.

Viking Standard Response Dry Vertical Sidewall Sprinklers are available in various finishes and temperature ratings to meet design requirements.

### 2. LISTINGS AND APPROVALS

**NOTE: Viking Dry Vertical Sidewall Sprinklers are NOT listed or approved.**

### 3. TECHNICAL DATA

#### Specifications:

Available since 1994.

Minimum Operating Pressure: 7 psi (0.5 bar)

Maximum Working Pressure: 175 psi (12 bar).

Factory tested pneumatically to 100 psi (6.89 bar)

Thread size: 1" NPT or 25 mm BSP

Nominal K-Factor: 5.6 U.S. (80.6 metric\*) for all standard lengths.

\* 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)

Covered by the following U.S. Patents: 8,636,075 and 10,220,231

#### Material Standards:

Frame Casting: Brass UNS-C84400

Deflector: Brass UNS-C23000

Bulb: Glass, nominal 5 mm diameter

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

Compression Screw: Brass UNS-C36000

Pip Cap: UNS-C31400 or UNS-C31600 Brass

Pip Cap Adapter: Brass UNS-C36000

Orifice: Copper UNS-C22000

Tube: ERW Hydraulic Steel Tube

Support (Internal): Stainless Steel UNS-S30400

Barrel: Steel Pipe UNS-G10260, Electrodeposited Epoxy Base finish

Barrel End and Threads: QM Brass

Sleeve (for Adjustable Standard style only): Brass UNS-C26000 or UNS-C26800

#### Escutcheon Materials:

Adjustable Standard Dry Escutcheons: Brass UNS-C26000 or UNS-C26800

Recessed Dry Escutcheons: Cold Rolled Steel UNS-G10080

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

Order Standard Response Dry Vertical Sidewall Sprinklers by first adding the appropriate suffix for the sprinkler finish, the appropriate suffix for the temperature rating, and then the suffix for the length ("A" or "B" dimension) to sprinkler base part number.

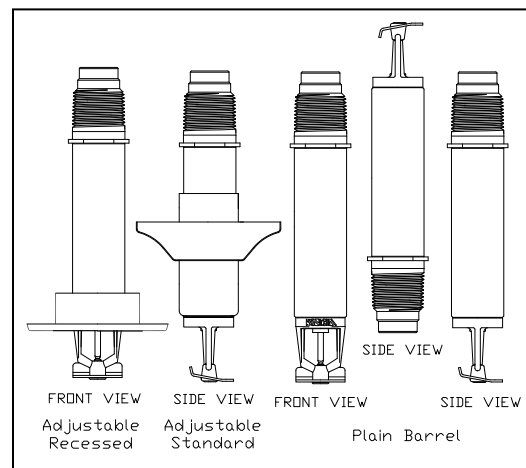
Order in a specific length noted as the "A" or "B" dimension (see Figures 4 through 6). For Adjustable Recessed or Adjustable Standard Dry Vertical Sidewall Sprinklers, the "A" dimension is the distance from the face of the fitting (tee) to the desired finished surface of the ceiling. For Plain Barrel Dry Vertical Sidewall Sprinklers, the "B" dimension is the distance from the face of the fitting (tee) to the top of the deflector.

These sprinklers are available in lengths from 3" to 45-1/2" (76.2 mm to 1,156 mm) for the adjustable standard style, 4-1/2" to 47" (114.3 mm to 1,194 mm) for the plain barrel style, and 3-1/4" to 47-1/2" (82.5 mm to 1,207 mm) for the adjustable recessed style.

Finish Suffix: Brass = A, Chrome-Enloy® = F, and White Polyester = M/W

Temperature Suffix: 155 °F (68 °C) = B, 175 °F (79 °C) = D, 200 °F (93 °C) = E, 286 °F (141 °C) = G

For example, sprinkler VK157 with 1" NPT Threads, a Chrome finish and a 155 °F (68 °C) temperature rating, and "A" length of 10" = Part No. 09123UFB10.



**(Not Listed or Approved)**



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

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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### 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. 07297W/B (available since 1991)

B. Wrench for recessed sprinklers: Part No. 07565W/B\*\* (available since 1991)

\*\*A ½" ratchet is required (not available from Viking).

**Dry Sprinkler Protective Cover:** Part No. 15610

### Replacement Escutcheons:

A. Adjustable Standard Dry Escutcheon: Base Part No. 07741

B. Recessed Dry Escutcheon Cup: Base Part No. 05459A

## 4. INSTALLATION

Refer to appropriate NFPA Installation Standards.

## 5. OPERATION

During fire conditions, the heat-sensitive liquid in the glass bulb expands, causing the glass to shatter, releasing the internal parts to open the waterway. Water flowing through the sprinkler orifice strikes the sprinkler deflector, forming a semi-circular spray pattern to extinguish or control the fire.

## 6. INSPECTIONS, TESTS AND MAINTENANCE

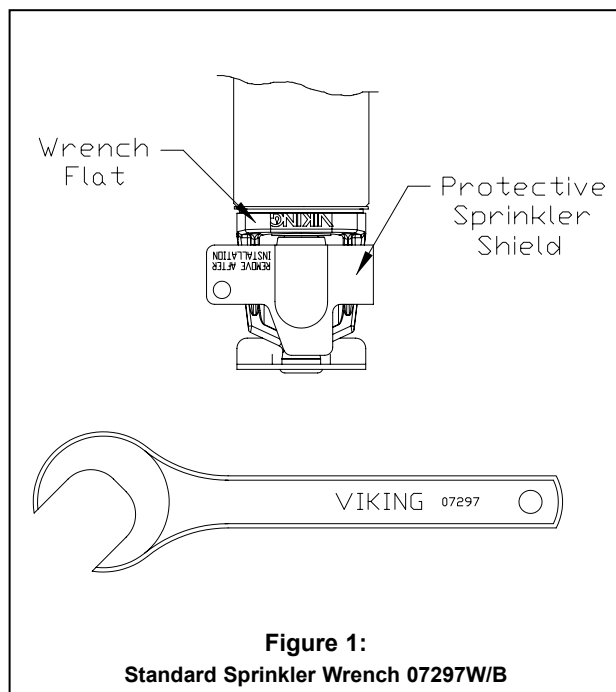
Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

## 7. AVAILABILITY

The Viking Standard Response Dry Vertical Sidewall 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.



**Figure 1:**  
Standard Sprinkler Wrench 07297W/B



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**TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES**

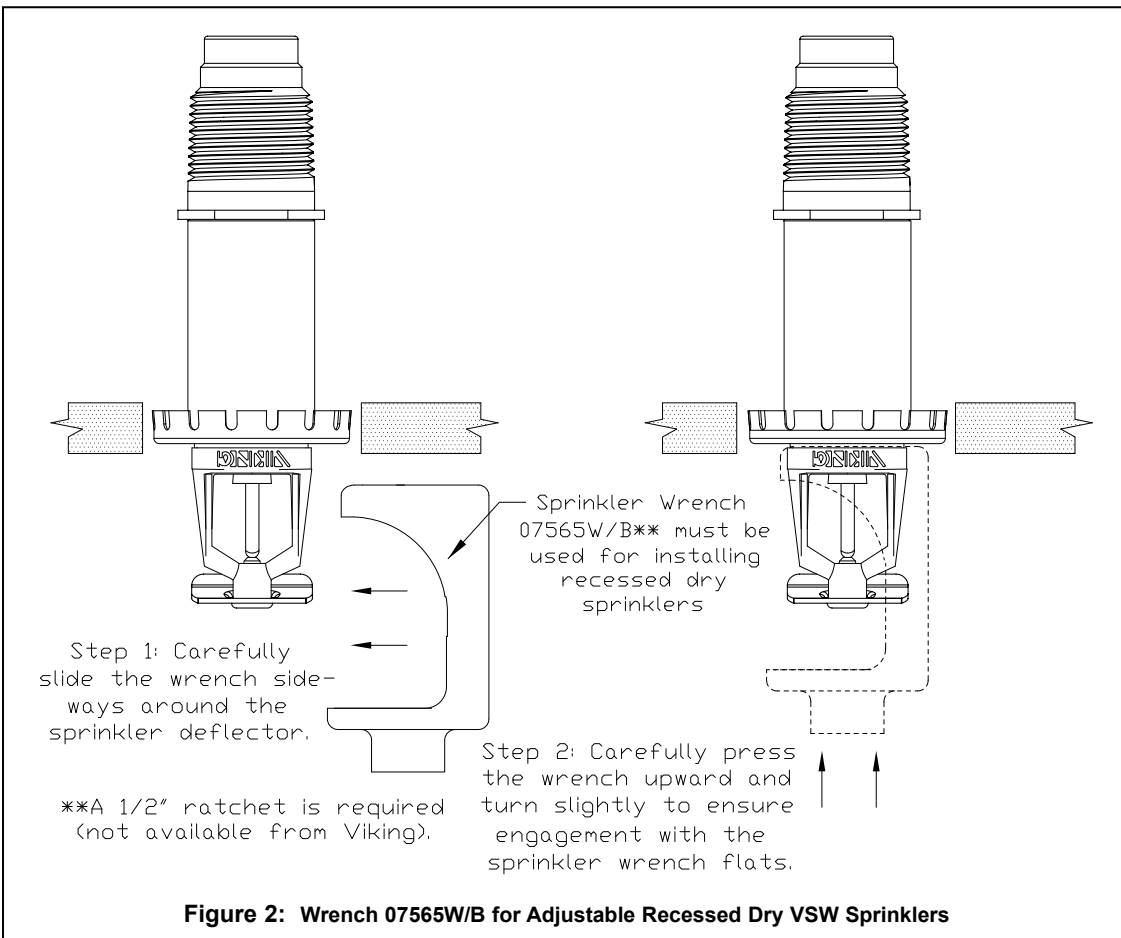
Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating <sup>1</sup>	Maximum Ambient Ceiling Temperature <sup>2</sup>	Bulb Color
Ordinary	155 °F (68 °C)	100 °F (38 °C)	Red
Intermediate	175 °F (79 °C)	150 °F (65 °C)	Yellow
Intermediate	200 °F (93 °C)	150 °F (65 °C)	Green
High	286 °F (141 °C)	225 °F (107 °C)	Blue

**Sprinkler Finishes:** Brass, Chrome-Enloy® (patents pending), and White Polyester

**Footnotes**

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

<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.





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### Approval Chart

Standard Response Dry Vertical Sidewall Sprinklers  
Maximum 175 PSI (12 bar) WWP

KEY	
Temperature	↓
Finish	↙
Escutcheon (if applicable)	←

Sprinkler Base Part Number <sup>1</sup>	SIN	Style	Thread Size		Nominal K-Factor <sup>2</sup>		Order Length Increment		Listings and Approvals <sup>4</sup>							
			NPT	BSP	U.S.	metric <sup>3</sup>	Inches	mm	cULus	FM	NYC	VdS	LPCB	CE	⚙	
09123U	VK157	Adjustable Standard	1"	--	5.6	--	1/2"	12.7	--	--	--	--	--	--	--	--
08961U	VK157		--	25 mm	--	80.6	1/2"	12.7	--	--	--	--	--	--	--	--
09124U	VK161	Adjustable Recessed	1"	--	5.6	--	1/4"	6.35	--	--	--	--	--	--	--	--
08962U	VK161		--	25 mm	--	80.6	1/4"	6.35	--	--	--	--	--	--	--	--
09125U	VK153	Plain Barrel	1"	--	5.6	--	1/2"	12.7	--	--	--	--	--	--	--	--
08963U	VK153		--	25 mm	--	80.6	1/2"	12.7	--	--	--	--	--	--	--	--

#### Available Temperature Ratings

A - 155 °F (68 °C), 175 °F (79°C), 200 °F (93 °C), and 286 °F (141 °C) for the Adjustable Standard and Plain Barrel Styles

B - 155 °F (68 °C), 175 °F (79°C), and 200 °F (93 °C) for the Adjustable Recessed Style

#### Available Finishes and "A" and "B" Dimensions

1 - Chrome-Enloy® or White with "A" dimensions 3" to 45-1/2" (76.2 mm to 1,156 mm) for the Adjustable Standard Style

2 - Chrome-Enloy® or White with "A" dimensions 3-1/4" to 47-1/2" (82.5 mm to 1,207 mm) for the Adjustable Recessed Style

3 - Chrome-Enloy® or Brass with "B" dimensions 4-1/2" to 47" (114 mm to 1,194 mm) for the Plain Barrel Style

#### 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> K-Factor applies for standard lengths ("A" and "B" Dimensions indicated above).

<sup>3</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>4</sup> Viking dry vertical sidewall sprinklers are NOT listed or approved.

**NOTE:** When using CPVC fittings with Viking dry sprinklers, use only new Nibco Model 5012-S-BI tees. When selecting other CPVC fittings, contact Viking Technical Services.

**IMPORTANT:** Always refer to Bulletin Form No. F\_091699 - Care and Handling of Sprinklers. Also refer to page DRY1-3 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.

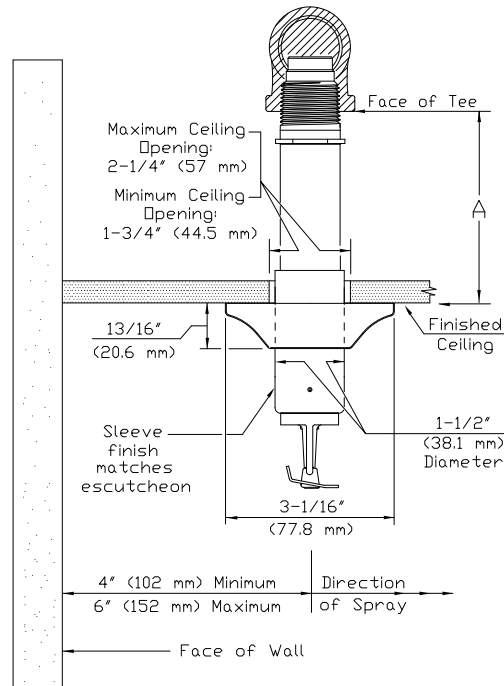


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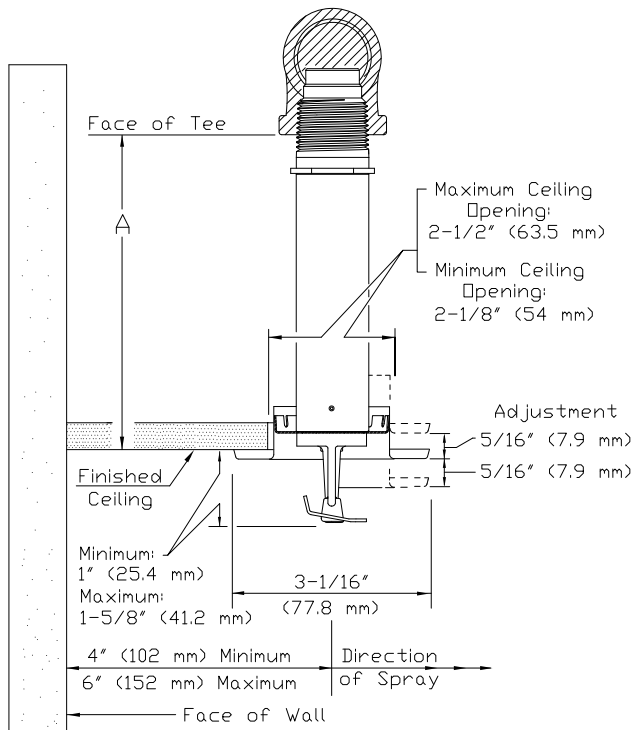
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- For "A" Dimension:
- 1: Determine the distance from the face of the tee to the finished ceiling
  - 2: Round to the nearest 1/2" (12.7 mm) between 3" (76.2 mm) and 45-1/2" (1,156 mm).

NOTE:  
Deflector will be located approximately 3-7/16" (87.3 mm) below the ceiling with 1" (25.4 mm) upward and 1" (25.4 mm) downward adjustment available.

**Figure 3: Adjustable Standard Dry VSW Sprinkler**



- For "A" Dimension
- 1: Determine the distance from the face of the tee to the finished ceiling.
  - 2: Round to the nearest 1/4" (6.35 mm) between 3-1/4" (82.5 mm) and 47-1/2" (1,207 mm).

NOTE:  
The base of the sprinkler wrench boss will be recessed approximately 5/16" (7.9 mm) above the finished ceiling with 5/8" (15.8 mm) of vertical adjustment available.

**Figure 4: Adjustable Recessed Dry VSW Sprinkler**



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