



TECHNICAL DATA

MICROMATIC® AND MicromaticHP® STANDARD RESPONSE PENDENT 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 Micromatic® and MicromaticHP® Standard Response Pendent Sprinklers are small, thermosensitive, glass-bulb spray sprinklers available in several different finishes, temperature ratings, and K-Factors to meet design requirements. The special Polyester, Polytetrafluoroethylene (PTFE), 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 atmospheres and are cULus listed as corrosion resistant as indicated in the Approval Chart. (Note: FM Global has no approval classification for PTFE and Polyester coatings as corrosion resistant.)

Viking standard 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 on page 11b.



2. LISTINGS AND APPROVALS



cULus Listed: Category VNIV



FM Approved: Classes 2001, 2002, 2015, 2017, 2043

NYC Approved: MEA 89-92-E, Volume 12



ABS Certified: Certificate 04-HS407984A-PDA

VdS Approved: Certificate G4040096, G4040098, G4060058, G4060059, G4980001, G4980002, G4980005, and G4980007



LPC Approved: Ref. No. 096e/06 and 167a/04



CE Certified: Standard EN 12259-1, EC-certificate of conformity 0786-CPD-40181, 0832-CPD-2001, and 0832-CPD-2003



MED Certified: Standard EN 12259-1, EC-certificate of conformity 0832-MED-1003 and 0832-MED-1008, and RINA Certificate No. MED497705C5

NOTE: Other International approval certificates are available upon request.

Refer to Approval Charts 1-3 and Design Criteria on pages 11d-f for cULus Listing requirements, and refer to Approval Charts 4-5 and Design Criteria on pages 11g-h for FM Approval requirements that must be followed.

3. TECHNICAL DATA

Specifications:

Available since 1997.

Minimum Operating Pressure: 7 psi (0.5 bar)†

Maximum Working Pressure: Sprinklers VK023 and VK122 are rated for use with water working pressures ranging from the minimum 7 psi (0.5 bar) up to 250 psi (17 bar) for high-pressure systems. High-pressure (HP) sprinklers can be identified by locating "250" stamped on the deflector. All other Part Nos. not mentioned above are rated to a maximum 175 psi (12 bar) wwp.

Factory tested hydrostatically to 500 psi (34.5 bar)

Thread size: Refer to the Approval Charts

Nominal K-Factor: Refer to the Approval Charts

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

Overall Length: Refer to the Approval Charts

† cULus Listing, FM Approval, and NFPA 13 installs require a minimum of 7 psi (0.5 bar). The minimum operating pressure for LPCB and CE Approvals ONLY is 5 psi (0.35 bar).

Material Standards:

Frame Casting: Brass UNS-C84400 or QM Brass for Sprinkler 10139. Brass UNS-C84400 for all other sprinklers.

Deflector: Phosphor Bronze UNS-C51000†† or Copper UNS-C19500 for Sprinklers 10139, 10142, 10170, 10173, and 10223. Brass UNS-C26000 for all other Sprinklers.

Bushing (for Sprinklers 09994, 10189, 10221, and 10222): Brass UNS-C36000

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.



TECHNICAL DATA

MICROMATIC® AND MicromaticHP® STANDARD RESPONSE PENDENT SPRINKLERS

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Bulb: Glass, nominal 5 mm diameter

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

Screw: Brass UNS-C36000

Pip Cap for Sprinklers 09994: Brass UNS-C31400 or UNS-C31600

Pip Cap and Insert Assembly for all other Sprinklers: Copper UNS-C11000 and Stainless Steel UNS-S30400

Pip Cap Attachment (for Sprinklers 10189 and 10221): Brass UNS-C36000

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

For Polyester Coated Sprinklers: Belleville Spring-Exposed

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

††Not for FM Approval.

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

Order Micromatic® and MicromaticHP® Standard Response Pendent Sprinklers 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 PTFE = N, Wax Coated = C, Wax Over Polyester = V-W, ENT = JN

Temperature Suffix: 135 °F (57 °C) = A, 155 °F (68 °C) = B, 175 °F (79 °C) = D, 200 °F (93 °C) = E, 212 °F (100 °C) = M, 286 °F (141 °C) = G, 360 °F (182 °C) = H, 500 °F (260 °C) = L, OPEN = Z (PTFE only).

For example, sprinkler VK102 with a 1/2" thread, Brass finish and a 155 °F (68 °C) temperature rating = Part No. 10139AB

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 Recessed Pendent Sprinklers: Part No. 16036W/B* (available since 2011)

C. Optional Protective Sprinkler Cap Remover/Escutcheon Installer Tool** Part No. 15915 (available since 2010.)

D. Wrench for Wax Coated Sprinklers: Part No. 13577W/B* (available since 2006)

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

**Allows use from the floor by attaching a length of 1" diameter CPVC tubing to the tool. Ideal for sprinkler cabinets. Refer to Bulletin F_051808.

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 liquid in the glass bulb expands, causing the glass to shatter, releasing the pip cap and sealing spring 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

The Viking Micromatic® and MicromaticHP® Standard Response Pendent 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.

	TECHNICAL DATA	MICROMATIC® AND MicromaticHP® STANDARD RESPONSE PENDENT SPRINKLERS
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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	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
Intermediate	212 °F (100 °C)	150 °F (65 °C)	Green
High	286 °F (141 °C)	225 °F (107 °C)	Blue
Extra High	360 °F (182 °C)	300 °F (149 °C)	Mauve
Ultra High ³	500 °F (260 °C)	465 °F (240 °C)	Black

Sprinkler Finishes: Brass, Chrome-Enloy®, White Polyester, Black Polyester, Black PTFE, and ENT
Corrosion-Resistant Coatings⁴: White Polyester, Black Polyester, and Black PTFE in all temperature ratings. ENT in all temperature ratings except 135 °F (57 °C). **Wax-Coated Brass and Wax over Polyester⁵** for sprinklers with the following temperature ratings:
 135 °F (57 °C) Off-White Wax 155 °F (68 °C) Lt. Brown Wax 175 °F (79 °C) Brown Wax 200 °F (93 °C) Brown Wax
 212 °F (100 °C) Dk. Brown Wax⁶ 286 °F (141 °C) Dk. Brown Wax⁶

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 Sprinklers of Ultra-High temperature rating are intended for use inside ovens, dryers, or similar enclosures with normal operating temperatures above 300 °F (149 °C). Where the ambient temperature around the Ultra-High temperature rated sprinkler is significantly reduced below 300 °F (149 °C), response time may be severely retarded.
- ⁴ The corrosion-resistant coatings have 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 coatings indicated are applied to the exposed exterior surfaces only. Note that the spring is exposed on sprinklers with Polyester, ENT, and PTFE coatings. For PTFE coated open sprinklers only, the waterway is coated. For ENT coated automatic sprinklers, the waterway is coated.
- ⁵ Wax Over Polyester is unavailable for Sprinklers VK023 and VK122.
- ⁶ Wax melting point is 170 °F (76 °C) for 212 °F (100 °C) and 286 °F (141 °C) temperature rated sprinklers.

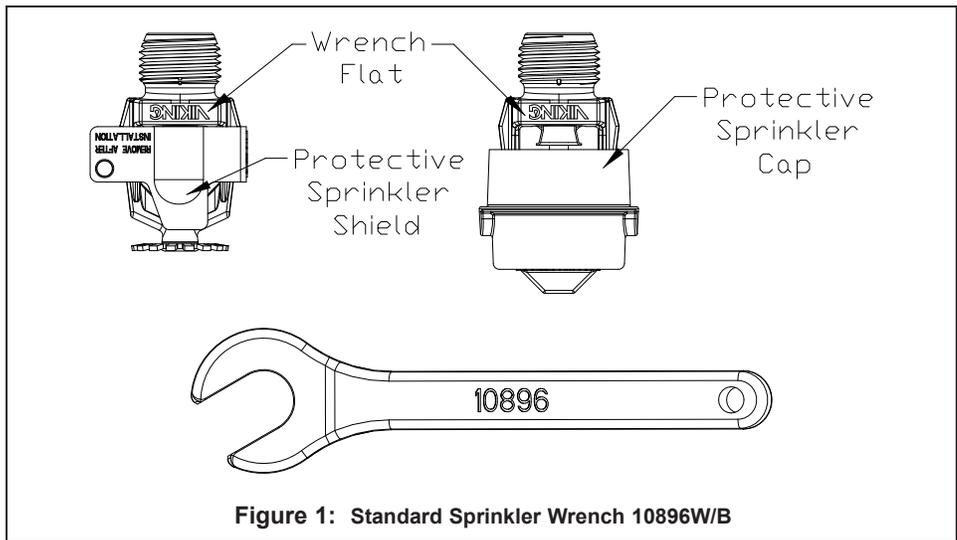


Figure 1: Standard Sprinkler Wrench 10896W/B

	<h2 style="margin: 0;">TECHNICAL DATA</h2>	<h3 style="margin: 0;">MICROMATIC® AND MicromaticHP® STANDARD RESPONSE PENDENT SPRINKLERS</h3>
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<h3 style="margin: 0;">Approval Chart 1 (UL)</h3> <p style="margin: 0;">Micromatic® Standard Response Pendent Sprinklers Maximum 175 PSI (12 bar) WWP</p>	<table border="1" style="border-collapse: collapse;"> <tr> <td style="font-size: small;">Temperature</td> <td rowspan="3" style="text-align: center; vertical-align: middle;">KEY</td> </tr> <tr> <td style="font-size: small;">Finish</td> </tr> <tr> <td style="font-size: small;">Escutcheon (if applicable)</td> </tr> </table>	Temperature	KEY	Finish	Escutcheon (if applicable)
Temperature	KEY				
Finish					
Escutcheon (if applicable)					

Sprinkler Base Part Number ¹	SIN	Thread Size		Nominal K-Factor		Overall Length		Listings and Approvals ³ (Refer also to Design Criteria on page 11f.)					
		NPT	BSP	U.S.	metric ²	Inches	mm	cULus ⁴	NYC ⁷	VdS	LPCB	CE	⚙
Standard Orifice													
10139	VK102	1/2"	15 mm	5.6	80.6	2-3/16"	56	A1, B4, C5, D3, F6	A1, B4, C5	--	--	--	E2 ^{14,15}
10173 ¹²	VK102	--	15 mm	5.6	80.6	2-3/16"	56	A1, B4, C5, D3, F6	A1, B4, C5	A2	A2, B4	--	--
18020	VK102	1/2"	15 mm	5.6	80.6	2-3/16"	56	A1, B4, C5, D3	A1, B4, C5	A2	A2, B4	E2 ¹³	E2 ^{14,15}
Large Orifice													
10223	VK202	1/2"	15 mm	8.0	115.2	2-3/8"	60	A1, B4, C5, D3, F6	A1, B4, C5	A2	--	--	--
10142	VK202	3/4"	20 mm	8.0	115.2	2-5/16"	59	A1, B4, C5, D3, F6	A1, B4, C5	A2	A2	E3 ¹³	E3 ¹⁴
10170	VK202	--	20 mm	8.0	115.2	2-3/8"	60	A1, B4, C5, F6	--	A2	A2	E3 ¹³	E3 ¹⁴
Small Orifice¹⁰													
10221 ¹¹	VK003	1/2"	15 mm	2.8	40.3	2-3/16"	56	A1, B4, C5	See Footnote 8.	--	--	--	--
10189 ^{11,12}	VK003	--	15 mm	2.8	40.3	2-3/16"	56	A1, B4, C5	--	--	--	--	--
10222 ¹¹	VK004	1/2"	15 mm	4.2	57	2-1/4"	58	A1, B4, C5	See Footnote 8.	--	--	--	--

<p style="text-align: center;">Approved Temperature Ratings</p> <p>A - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), 286 °F (141 °C), and 360 °F (182 °C)</p> <p>B - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)</p> <p>C - 286 °F (141 °C)</p> <p>D - 500 °F (260 °C)⁹</p> <p>E - 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), 286 °F (141 °C), and 360 °F (182 °C)</p> <p>F - 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), 286 °F (141 °C), 360 °F (182 °C), and 500 °F (260 °C)⁹</p>	<p style="text-align: center;">Approved Finishes</p> <p>1 - Brass, Chrome-Enloy®, White Polyester^{5,6}, Black Polyester^{5,6}, and Black PTFE⁵</p> <p>2 - Brass, Chrome-Enloy®, White Polyester⁶, and Black Polyester⁶</p> <p>3 - Brass and Chrome-Enloy®</p> <p>4 - Wax-Coated Brass and Wax Over Polyester⁵</p> <p>5 - High Temperature 200 °F (93 °C) Wax Coating (corrosion resistant); maximum ambient temperature allowed at ceiling = 150 °F (65 °C)</p> <p>6 - ENT⁵</p>
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Footnotes

¹ Base part number is shown. For complete part number, refer to Viking's current price schedule.

² Metric K-factor shown is for use 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. Check with the manufacturer for any additional approvals.

⁴ Listed by Underwriters Laboratories Inc. for use in the U.S. and Canada.

⁵ cULus Listed as corrosion resistant.

⁶ Other colors are available on request with the same Listings and Approvals as the standard colors.

⁷ Accepted for use, City of New York Department of Buildings, MEA Number 89-92-E, Vol. 12.

⁸ Meets New York City requirements, effective July 1, 2008.

⁹ Sprinklers of Ultra-High temperature rating are intended for use inside ovens, dryers, or similar enclosures with normal operating temperatures above 300 °F (149 °C). Where the ambient temperature around the Ultra-High temperature rated sprinkler is significantly reduced below 300 °F (149 °C), the response time of the Ultra-High temperature rated sprinkler may be severely retarded.

¹⁰ Listings and Approvals limited to Light Hazard Occupancies where allowed by the installation standards being applied, with hydraulically calculated wet systems only. **Exception:** 4.2K sprinklers may be installed on hydraulically calculated dry pipe systems where piping is corrosion resistant or internally galvanized.

¹¹ The sprinkler orifice is bushed.

¹² Sprinklers 10173 and 10189 are available on special order.

¹³ CE Certified, Standard EN 12259-1, EC-certificate of conformity 0832-CPD-2001 and 0832-CPD-2003.

¹⁴ ⚙ MED Certified, Standard EN 12259-1, EC-certificate of conformity 0832-MED-1003 and 0832-MED-1008.

¹⁵ ⚙ MED Certified, RINA Certificate No. MED497705C5.

	<h2 style="margin: 0;">TECHNICAL DATA</h2>	<h3 style="margin: 0;">MICROMATIC® AND MicromaticHP® STANDARD RESPONSE PENDENT SPRINKLERS</h3>
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Approval Chart 2 (UL) Micromatic® Standard Response Pendent Sprinklers Maximum 175 PSI (12 bar) WWP													
Sprinkler Base Part Number ¹	SIN	Thread Size		Nominal K-Factor		Overall Length		Listings and Approvals ³ (Refer also to Design Criteria on page 11f.)					
		NPT	BSP	U.S.	metric ²	Inches	mm	cULus ⁴	NYC ⁷	VdS	LPCB	CE ¹²	
Installed with the Viking Micromatic® Model E-1 Recessed Escutcheon													
10139	VK102	1/2"	15 mm	5.6	80.6	2-3/16"	56	B3	--	--	--	--	--
10173 ¹¹	VK102	--	15 mm	5.6	80.6	2-3/16"	56	B3	--	--	--	--	--
10223	VK202	1/2"	15 mm	8.0	115.2	2-3/8"	60	B3	--	--	--	--	--
10142	VK202	3/4"	20 mm	8.0	115.2	2-5/16"	59	B3	--	--	--	--	--
10170	VK202	--	20 mm	8.0	115.2	2-3/8"	60	B3	--	--	--	--	--
Installed with the Viking Micromatic® Model E-1 or E-2 Recessed Escutcheon													
10139	VK102	1/2"	15 mm	5.6	80.6	2-3/16"	56	A1	A1	--	--	--	--
10173 ¹¹	VK102	--	15 mm	5.6	80.6	2-3/16"	56	A1	--	--	A2	--	--
18020	VK102	1/2"	15 mm	5.6	80.6	2-3/16"	56	A1	A1	--	A2	B2	--
10223	VK202	1/2"	15 mm	8.0	115.2	2-3/8"	60	A1	A1	--	--	--	--
10142	VK202	3/4"	20 mm	8.0	115.2	2-5/16"	59	A1	A1	--	A2	B2	--
10170	VK202	--	20 mm	8.0	115.2	2-3/8"	60	A1	--	--	A2	B2	--
10221 ^{9,10}	VK003	1/2"	15 mm	2.8	40.3	2-3/16"	56	A1	A1	--	--	--	--
10222 ^{9,10}	VK004	1/2"	15 mm	4.2	57	2-1/4"	58	A1	A1	--	--	--	--
Installed with the Viking Microfast® Model F-1 Adjustable Escutcheon													
10139	VK102	1/2"	15 mm	5.6	80.6	2-3/16"	56	A1	A1	--	A2	--	--
10223	VK202	1/2"	15 mm	8.0	115.2	2-3/8"	60	A1	A1	--	--	--	--
10221 ^{9,10}	VK003	1/2"	15 mm	2.8	40.3	2-3/16"	56	A1	A1	--	--	--	--
Approved Temperature Ratings							Approved Finishes						
A - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C) B - 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C) C - 286 °F (141 °C)							1 - Brass, Chrome-Enloy®, White Polyester ^{6,6} , Black Polyester ^{6,6} , and Black PTFE ⁵ 2 - Brass, Chrome-Enloy®, White Polyester ⁶ , and Black Polyester ⁶ 3 - ENT ⁵						
Footnotes													
¹ Base part number is 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. Check with the manufacturer for any additional approvals. ⁴ Listed by Underwriters Laboratories Inc. for use in the U.S. and Canada. ⁵ cULus Listed as corrosion resistant. ⁶ Other colors are available on request with the same Listings and Approvals as the standard colors. ⁷ Accepted for use, City of New York Department of Buildings, MEA Number 89-92-E, Vol. 12. ⁸ Listings and Approvals limited to Light Hazard Occupancies where allowed by the installation standards being applied, with hydraulically calculated wet systems only. Exception: 4.2K sprinklers may be installed on hydraulically calculated dry pipe systems where piping is corrosion resistant or internally galvanized. ⁹ The sprinkler orifice is bushed. ¹⁰ Sprinkler 10173 is available on special order. ¹¹ CE Certified, Standard EN 12259-1, EC-certificate of conformity 0786-CPD-40181, 0832-CPD-2001, and 0832-CPD-2003.													

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Approval Chart 3 (UL)													
MicromaticHP® Standard Response Pendent Sprinklers (High Pressure) Maximum 250 PSI (17 bar) WWP													
Sprinkler Base Part Number ¹	SIN	Thread Size		Nominal K-Factor		Overall Length		Listings and Approvals ³ (Refer also to Design Criteria below.)					
		NPT	BSP	U.S.	metric ²	Inches	mm	cULus ⁴	NYC	VdS	LPCB	CE	⚙
Standard Orifice													
09992	VK122	1/2"	15 mm	5.6	80.6	2-1/4"	58	A1, D2	See Footnote 5.	--	--	--	--
Small Orifice⁷													
09994 ^{8,9}	VK023	1/2"	15 mm	2.8	40.3	2-1/4"	58	A1	See Footnote 5.	--	--	--	--
Installed with the Viking Micromatic® Model E-1 or E-2 Recessed Escutcheon													
09992	VK122	1/2"	15 mm	5.6	80.6	2-1/4"	58	C1	See Footnote 5.	--	--	--	--
09994 ^{8,9}	VK023	1/2"	15 mm	2.8	40.3	2-1/4"	58	C1	See Footnote 5.	--	--	--	--
Installed with the Viking Microfast® Model F-1 Adjustable Escutcheon													
09992	VK122	1/2"	15 mm	5.6	80.6	2-1/4"	58	B1	See Footnote 5.	--	--	--	--
09994 ^{8,9}	VK023	1/2"	15 mm	2.8	40.3	2-1/4"	58	B1	See Footnote 5.	--	--	--	--
Approved Temperature Ratings								Approved Finishes					
A - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), 286 °F (141 °C), and 360 °F (182 °C) B - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141 °C) C - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C) D - 500 °F (260 °C) ¹⁰								1 - Brass, Chrome-Enloy®, White Polyester ^{6,7} , Black Polyester ^{6,7} , and Black PTFE ⁶ 2 - Brass and Chrome-Enloy®					
Footnotes													
¹ Base part number is shown. For complete part number, refer to Viking's current price schedule. ² Metric K-factor shown is for use 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. Check with the manufacturer for any additional approvals. ⁴ Listed by Underwriters Laboratories Inc. for use in the U.S. and Canada. ⁵ Meets New York City requirements, effective July 1, 2008. ⁶ cULus Listed as corrosion resistant. ⁷ Other colors are available on request with the same Listings and Approvals as the standard colors. ⁸ Listings and Approvals limited to Light Hazard Occupancies where allowed by the installation standards being applied, with hydraulically calculated wet systems only. ⁹ The sprinkler orifice is bushed. ¹⁰ Sprinklers of Ultra-High temperature rating are intended for use inside ovens, dryers, or similar enclosures with normal operating temperatures above 300 °F (149 °C). Where the ambient temperature around the Ultra-High temperature rated sprinkler is significantly reduced below 300 °F (149 °C), the response time of the Ultra-High temperature rated sprinkler may be severely retarded.													

DESIGN CRITERIA - UL
(Also refer to Approval Charts 1-3 on pages 11d-f.)

cULus Listing Requirements:
 Micromatic® and MicromaticHP® Standard Pendent Sprinklers are cULus Listed as indicated in Approval Charts 1-3 for installation in accordance with the latest edition of NFPA 13 for standard spray sprinklers.

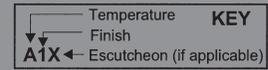
- Designed for use in Light, Ordinary, and Extra Hazard occupancies. (Small orifice sprinklers are limited to Light Hazard where allowed by the installation standards being applied, with hydraulically calculated wet systems only. *Exception: 4.2K sprinklers may be installed on hydraulically calculated dry pipe systems where piping is corrosion resistant or internally galvanized.*)
- The sprinkler installation rules contained in NFPA 13 for standard spray pendent sprinklers must be followed.

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.

	<h2 style="margin: 0;">TECHNICAL DATA</h2>	<h3 style="margin: 0;">MICROMATIC® AND MicromaticHP® STANDARD RESPONSE PENDENT SPRINKLERS</h3>
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Approval Chart 4 (FM) Micromatic® Standard Response Pendent Sprinklers Maximum 175 PSI (12 bar) WWP									
Sprinkler Base Part Number ¹		SIN	Thread Size		Nominal K-Factor		Overall Length		FM Approvals ³ (Refer also to Design Criteria below.)
			NPT	BSP	U.S.	metric ²	Inches	mm	
Standard Orifice									
10139	VK102	1/2"	15 mm	5.6	80.6	2-3/16"	56	A1 C3, E4, F1, G5	
10173 ⁸	VK102	--	15 mm	5.6	80.6	2-3/16"	56	A1, C3 E4, F1, G5	
18020	VK102	1/2"	15 mm	5.6	80.6	2-3/16"	56	A1 C3, E4, F1	
Large Orifice									
10223	VK202	1/2"	15 mm	8.0	115.2	2-3/8"	60	B2, D3, F2, G5	
10142	VK202	3/4"	20 mm	8.0	115.2	2-5/16"	59	B2, D3, F2, G5	
10170	VK202	--	20 mm	8.0	115.2	2-3/8"	60	B2, D3, F2, G5	
Small Orifice⁴									
10221 ⁷	VK003	1/2"	15 mm	2.8	40.3	2-3/16"	56	D2	
10189 ^{7,8}	VK003	--	15 mm	2.8	40.3	2-3/16"	56	D2	
Approved Temperature Ratings A - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), 212 °F (100 °C), 286 °F (141 °C), and 360 °F (182 °C) B - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), 286 °F (141 °C), and 360 °F (182 °C) C - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 212 °F (100 °C) D - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C) E - 286 °F (141 °C) F - 500 °F (260 °C) ⁶ G - 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), 286 °F (141 °C), 360 °F (182 °C), and 500 °F (260 °C) ⁶					Approved Finishes 1 - Brass, Chrome-Enloy®, White Polyester ⁵ , and Black Polyester ⁵ 2 - Brass and Chrome-Enloy® 3 - Wax-Coated Brass (corrosion resistant) 4 - High Temperature 200 °F (93 °C) Wax Coating (corrosion resistant); maximum ambient temperature allowed at the ceiling = 150 °F (65 °C) 5- ENT				
Footnotes									
¹ Base part number is shown. For complete part number, refer to Viking's current price schedule. ² Metric K-factor shown is for use 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. Check with the manufacturer for any additional approvals. ⁴ FM Approved as standard response Non-Storage pendent sprinklers. For specific application and installation requirements, reference the latest applicable FM Loss Prevention Data Sheets (including Data Sheet 2-0). ⁵ Other colors are available on request with the same Approvals as the standard colors. ⁶ Sprinklers of Ultra-High temperature rating are intended for use inside ovens, dryers, or similar enclosures with normal operating temperatures above 300 °F (149 °C). Where the ambient temperature around the Ultra-High temperature rated sprinkler is significantly reduced below 300 °F (149 °C), the response time of the Ultra-High temperature rated sprinkler may be severely retarded. ⁷ The sprinkler orifice is bushed. ⁸ Sprinklers 10173 and 10189 are available on special order.									



	<h2 style="margin: 0;">TECHNICAL DATA</h2>	<h3 style="margin: 0;">MICROMATIC® AND MicromaticHP® STANDARD RESPONSE PENDENT SPRINKLERS</h3>
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Approval Chart 5 (FM)								
Micromatic® Standard Response Recessed Pendent Sprinklers Maximum 175 PSI (12 bar) WWP								
Sprinkler Base Part Number ¹	SIN	Thread Size		Nominal K-Factor		Overall Length		FM Approvals ³ (Refer also to Design Criteria on page 11i.)
		NPT	BSP	U.S.	metric ²	Inches	mm	
Installed with the Viking Micromatic® Model E-1 Recessed Escutcheon								
10139	VK102	1/2"	15 mm	5.6	80.6	2-3/16"	56	C4
10173 ⁷	VK102	--	15 mm	5.6	80.6	2-3/16"	56	C4
10223	VK202	1/2"	15 mm	8.0	115.2	2-3/8"	60	C4
10142	VK202	3/4"	20 mm	8.0	115.2	2-5/16"	59	C4
10170	VK202	--	20 mm	8.0	115.2	2-3/8"	60	C4
Installed with the Viking Micromatic® Model E-1 or E-2 Recessed Escutcheon								
10139	VK102	1/2"	15 mm	5.6	80.6	2-3/16"	56	C1
10173 ⁷	VK102	--	15 mm	5.6	80.6	2-3/16"	56	C1
18020	VK102	1/2"	15 mm	5.6	80.6	2-3/16"	56	C1
10223	VK202	1/2"	15 mm	8.0	115.2	2-3/8"	60	B2
10142	VK202	3/4"	20 mm	8.0	115.2	2-5/16"	59	B2
10170	VK202	--	20 mm	8.0	115.2	2-3/8"	60	B2
10221 ⁶	VK003	1/2"	15 mm	2.8	40.3	2-3/16"	56	A3 ⁴
Approved Temperature Ratings						Approved Finishes		
A - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 212 °F (100 °C) B - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C) C - 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)						1 - Brass, Chrome-Enloy®, White Polyester ⁵ , and Black Polyester ⁵ 2 - Brass and Chrome-Enloy® 3 - Brass 4 - ENT		
Footnotes								
¹ Base part number is 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. Check with the manufacturer for any additional approvals. ⁴ FM Approved as standard response pendent Non-Storage sprinklers. For specific application and installation requirements, reference the latest applicable FM Loss Prevention Data Sheets (including Data Sheet 2-0). ⁵ Other colors are available on request with the same Listings and Approvals as the standard colors. ⁶ The sprinkler orifice is bushed. ⁷ Sprinkler 10173 is available on special order.								

DESIGN CRITERIA - FM
(Also refer to Approval Charts 4 and 5 on pages 11g-h.)
<p>FM Approval Requirements:</p> <p>The sprinklers indicated in Approval Charts 4 and 5 are FM Approved as standard response Non-Storage pendent sprinklers 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>NOTE: The FM installation guidelines may differ from cULus and/or NFPA criteria.</p> <p>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, FM Global, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.</p>

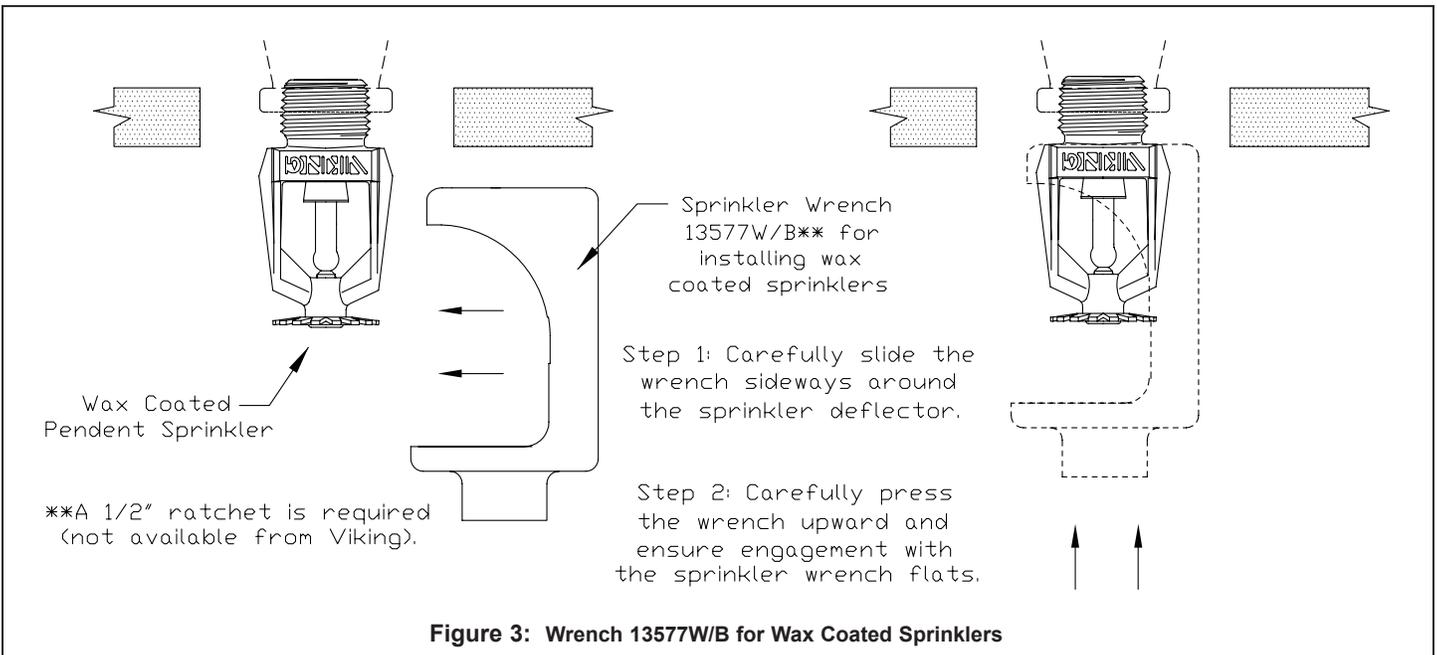
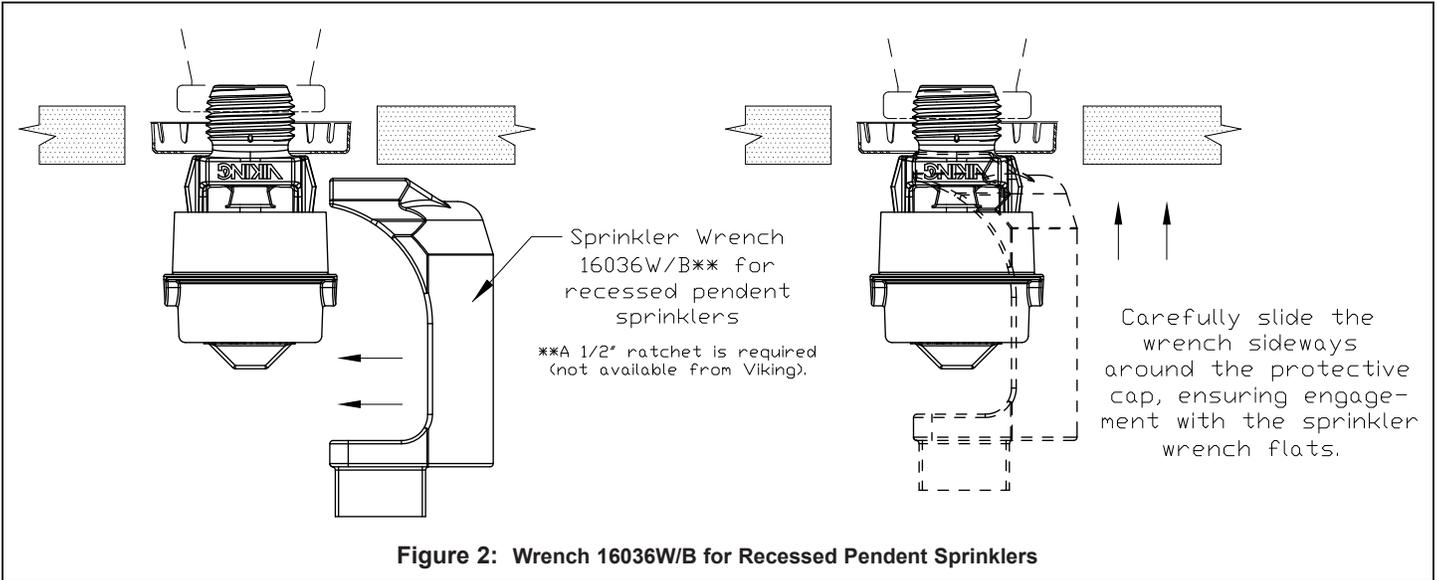


TECHNICAL DATA

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