



TECHNICAL DATA SHEET

QUICK RESPONSE DRY FLAT PLATE CONCEALED PENDENT SPRINKLER VK197

1. PRODUCT IDENTIFICATION

This document covers the following products:

QUICK RESPONSE DRY FLAT PLATE CONCEALED PENDENT SPRINKLER VK197

2. DESCRIPTION AND INTENDED USE

Viking Quick Response Dry Concealed Pendent Sprinklers are thermo-sensitive spray sprinklers suitable for use in areas subject to freezing. The sprinklers are designed for dry systems and preaction systems where it is necessary to prevent water or condensation from entering the drop nipple before sprinkler operation. They may also be installed in spaces subject to freezing and supplied from a wet system in an adjacent heated area.

The dry concealed sprinkler is pre-assembled with a threaded adapter for installation with the flat plate cover that provides up to ½" (13 mm) of vertical adjustment. The cover slips on from below the ceiling to allow installation of the sprinkler prior to ceiling construction.

The sprinkler is intended to be used in automatic fire sprinkler systems as allowed by applicable approval authorities. The sprinkler must be used in accordance with:

1. the sprinkler's Listings, Approvals, and associated design requirements.
2. the recognized design and installations standards issued, for example NFPA.
3. the latest revisions of all applicable manufacturer's documentation.



Governmental codes, ordinances, and standards may apply and may differ from one another.

3. LISTING



4. TECHNICAL SPECIFICATIONS

4.1 Markings, Ratings, and Physical Characteristics

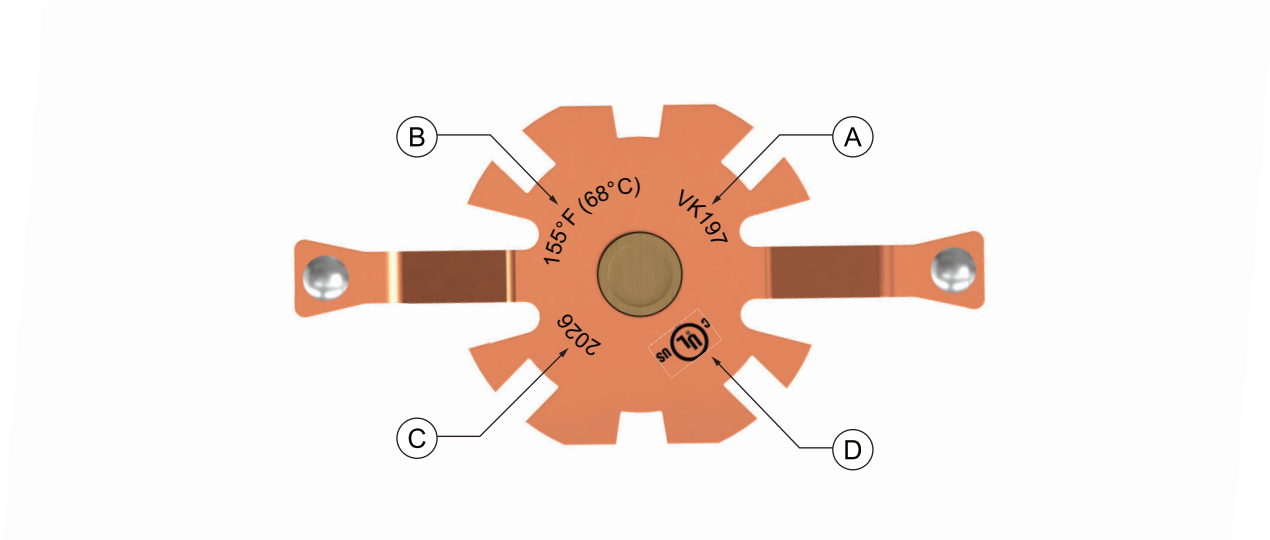


Figure – 1: Deflector Markings

Ref	Parameter	Value
Markings (see Figure 1)		
A	Sprinkler Identification Number (SIN)	VK197
B	Nominal temperature rating	See product
C	Year of manufacture	See product
D	Listing mark	See product
Ratings and Physical Characteristics		
	Minimum Operating Pressure	7 psi (0.5 bar)
	Maximum Working Pressure	175 psi (12 bar). Factory tested hydrostatically to 500 psi (34.5 bar)
	Connection thread sizes	1" NPT 25 mm BSPT
	Nominal K-factor	5.6 U.S. (80.6 metric*) for all listed and approved lengths.
	Glass-bulb fluid temperature rating	-65 °F (-55 °C)
	Adjustment	1/2" (13 mm)
	Finishes	See ordering procedure
	Temperature Ratings	155 °F (68 °C) with 139 °F (59 °C) cover plate 200 °F (93 °C) with 165 °F (74 °C) cover plate



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4.2 Materials of Construction

NOTICE

Do NOT disassemble the sprinkler.

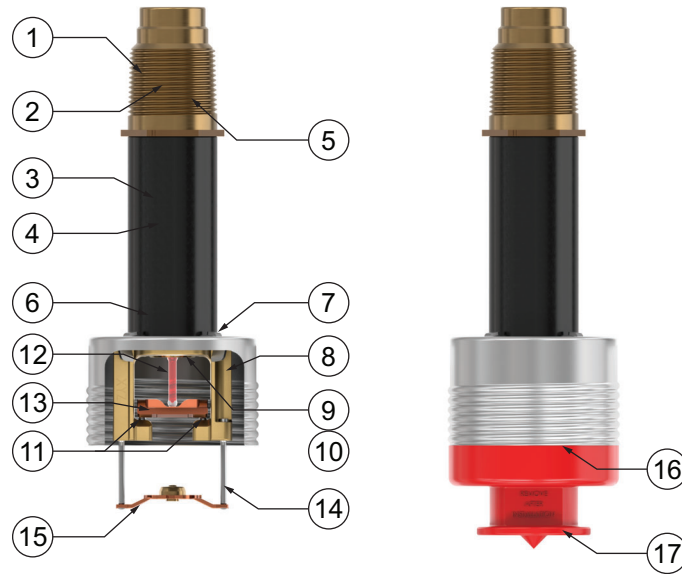


Figure – 2: Components

Item	Decription	Material
1	Inlet	QM Brass
2*	Support	Brass UNS C36000
3*	Barrel	Steel Pipe UNS-G10260, Electrodeposited Epoxy Base finish
4*	Tube	ERW Hydraulic Steel Tube
5*	Tube adapter	Phosphor bronze UNS C51000
6*	Orifice	Copper UNS-C22000
7	Adapter mounting plate	Carbon steel per JIS G3141
8	Frame	DZR Brass UNS-C35330
9	Pipcap assembly	Brass UNS C31400, C31600, and C36000
10	Pipcap T-hinge	Phosphor bronze C51000
11	Screw	Stainless steel UNS-S30430
12	Bulb	Glass, nominal 3 mm diameter
13	Yoke	Phosphor bronze UNS C51000
14	Pins	Stainless steel UNS-S34000
15	Deflector	Phosphor bronze UNS C51000
16	Cover Adapter	Cold Rolled Steel UNS-G10080, Finish Clear Chromate over Zinc Plating
17	Protective cap	HDPE
*Part not shown (internal to sprinkler assembly)		



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5. OPERATION

During fire conditions, when the temperature around the sprinkler approaches its rated operating temperature, the temperature-sensitive cover plate detaches and falls away from the ceiling. The deflector then slides downward on the pins and stops below the ceiling surface. Continued heating of the exposed sprinkler causes the heat-sensitive liquid in the glass bulb to expand and the bulb to shatter, releasing the internal parts 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. DESIGN CRITERIA

6.1 cULus Design Criteria

Concealed Dry Pendent Sprinkler VK197 is cULus Listed as quick response for installation in accordance with the latest edition of NFPA 13 for standard coverage pendent spray sprinklers as indicated below.

- For hazard occupancies up to and including Ordinary Hazard, Group II.
- Protection areas and maximum spacing shall be in accordance with the tables provided in NFPA 13.
- Maximum spacing allowed is 15 ft. (4.6 m).
- Minimum spacing allowed is 6 ft. (1.8 m) unless baffles are installed in accordance with NFPA 13.
- Minimum distance from walls is 4 in. (102 mm).
- Maximum distance from walls shall be no more than one-half of the allowable distance between sprinklers. The distance shall be measured perpendicular to the wall.
- The sprinkler obstruction rules contained in NFPA 13 for standard coverage pendent spray sprinklers must be followed.
- Concealed sprinklers must be installed in neutral or negative pressure plenums only.

6.2 Minimum Exposed Barrel Length

Table 1: Exposed Barrel Lengths for Dry Sprinklers

Ambient Temperature of the Protected Area ¹ at the discharge end of the Sprinkler	Exposed Barrel Ambient Temperature		
	40 °F (4 °C)	50 °F (10 °C)	60 °F (16 °C)
	Minimum Exposed Barrel Length ^{2, 3} (Face of tee to top of ceiling) Inches (mm)		
40 °F (4 °C)	0	0	0
30 °F (-1 °C)	0	0	0
20 °F (-7 °C)	4 (100)	0	0
10 °F (-12 °C)	8 (200)	1 (25)	0
0 °F (-18 °C)	12 (300)	3 (75)	0
-10 °F (-23 °C)	14 (350)	4 (100)	1 (25)
-20 °F (-29 °C)	14 (350)	6 (150)	3 (75)
-30 °F (-34 °C)	16 (400)	8 (200)	4 (100)
-40 °F (-40 °C)	18 (450)	8 (200)	4 (100)
-50 °F (-46 °C)	20 (500)	10 (250)	6 (150)
-60 °F (-51 °C)	20 (500)	10 (250)	6 (150)

1. The term "protected area" refers to the area below the ceiling. The ambient temperature is the temperature at the discharge end of the sprinkler.

2. The Minimum required barrel length is NOT the same as the "A" Dimension. Refer to Figure 6 for the definition of "A" Dimension.

3. Minimum Exposed barrel lengths are inclusive up to 30 mph wind velocities.

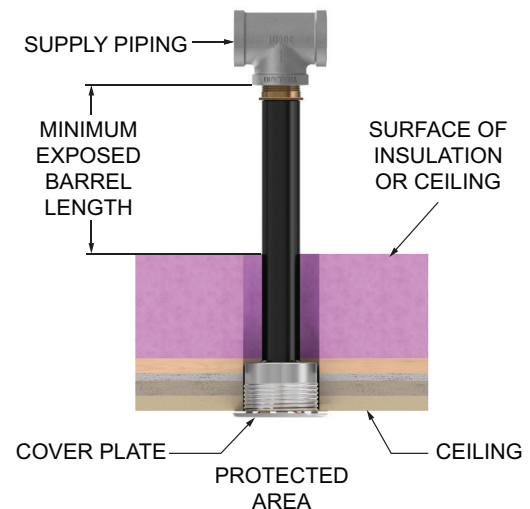


Figure – 3: Minimum Exposed Barrel Lengths



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6.3 cULus Listing Specifications

Table 2: Approval Chart for Dry Concealed Pendent Sprinkler VK197

Sprinkler Base Part Number	Maximum WWP	Order Lengths and Increments	cULus
Quick Response (cULus)			
29340	175 PSI (12 bar)	5" - 48" (127 - 1225 mm); 1/4" (6.35mm) increments	AX, BY
29340JN	175 PSI (12 bar)	5" - 48" (127 - 1225 mm); 1/4" (6.35mm) increments	AX, BY
29341	175 PSI (12 bar)	5" - 48" (127 - 1225 mm); 1/4" (6.35mm) increments	AX, BY
29341JN	175 PSI (12 bar)	5" - 48" (127 - 1225 mm); 1/4" (6.35mm) increments	AX, BY
Listing Specification (Temperature Ratings) Key: A = 155 °F (68 °C) B = 200 °F (93 °C)			
Listing Specification (Cover Plate Temperature Ratings) Key: X = 139°F (59°C) cover 23495 or 15765 Y = 165°F (74°C) cover 23495 or 15765			

6.4 Definitions

Dry Sprinkler:

A special-service sprinkler intended for installation on dry pipe systems or wet pipe systems where the sprinkler is subject to freezing temperatures. The unit consists of a sprinkler permanently secured to an extension nipple with a sealed inlet end to prevent water from entering the nipple until the sprinkler operates. Dry pendent sprinklers are marked with the "A" dimension [the distance from the face of fitting (tee) to the finished surface of the ceiling].

Concealed Sprinkler

A decorative spray sprinkler intended for installation with a concealed piping system. The sprinkler is hidden from view by a cover plate installed flush with the ceiling or wall. During fire conditions, the cover plate detaches, and upon sprinkler actuation, the deflector extends beyond the ceiling to distribute water discharge.

Corrosion Resistant Sprinkler:

A special service sprinkler with non-corrosive protective coatings, or that is fabricated from non-corrosive material, for use in atmospheres that would normally corrode sprinklers. Sprinklers can be ordered as corrosion resistant sprinklers and can be used with escutcheons when allowed by the approval body.



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6.5 Installation Requirements

- Sprinkler Fittings: Install the dry sprinkler into the outlet of malleable iron tee fittings per ANSI B 16.3 (Class 150) or cast iron threaded tee fittings per ANSI 16.4 (Class 125) only. Do NOT install the dry sprinkler into elbow fittings.
- Piping connected to the dry sprinkler system must be pitched for proper drainage.
- The minimum exposed barrel length shall be within the values indicated in "Table 1: Exposed Barrel Lengths for Dry Sprinklers"
- The installation dimensions shall be within the values indicated in Figure 4.

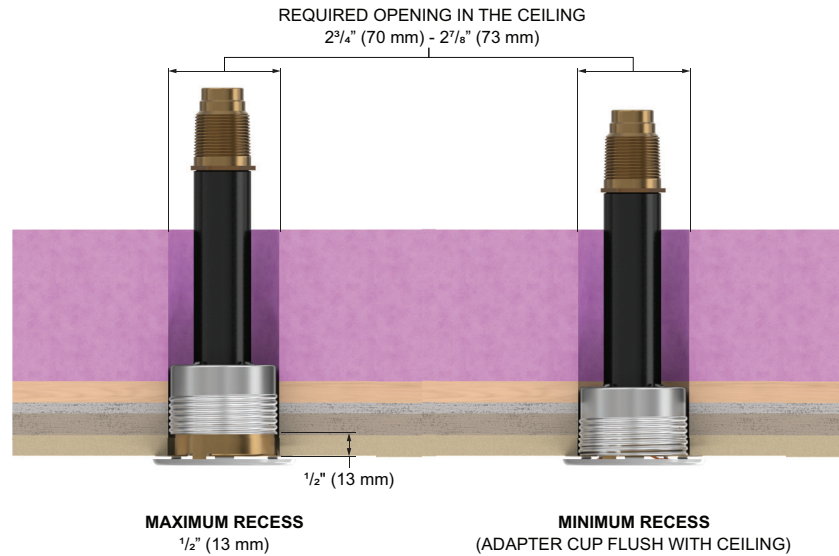


Figure – 4: Installation Dimensions



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7. ORDERING PROCEDURE

7.1 Sprinkler

IMPORTANT: DRY SPRINKLERS ARE CUSTOM-MADE TO ORDER AND ARE NOT RETURNABLE

NOTE: The sprinkler and cover plate must be ordered separately but are **REQUIRED** to be used together.

Follow the ordering procedure below.

1. Determine the "A" Dimension while observing the required Minimum Exposed Barrel Length detailed in Figure 6.
2. Using the base part number, (refer to "Design Criteria"), add the suffix for the desired finish.
3. Add the suffix for the desired temperature rating.
4. Add the "A" Dimension (refer to Figure 6). **NOTE: The MINIMUM VALUE IS 5" (127 mm).**
5. Order a cover plate (refer "Cover Plates").
6. Order a sprinkler wrench, if needed (**REQUIRED** for proper installation).

EXAMPLE: 29340AB12 = VK197 with brass finish (A), a 155 °F (68 °C) nominal temperature rating (B), a 12 inch "A" dimension. This sprinkler is to be installed into an area with a maximum ambient temperature of 100 °F (38 °C).

1. Part Number		2. Finish		3. Sprinkler Temperature Rating			
Base Part Number	Thread Size	Description	Suffix	Nominal Temperature Rating	Glass Bulb Color	Maximum Ambient Ceiling Temperature	Suffix
29340	1" NPT	Brass	A	155 °F (68 °C)	Red	100 °F (38 °C)	B
29341	25 mm BSPT	ENT	JN	200 °F (93 °C)	Green	150 °F (65 °C)	E

Sprinkler Accessories

SPRINKLER WRENCH PART NUMBER 28852M/B

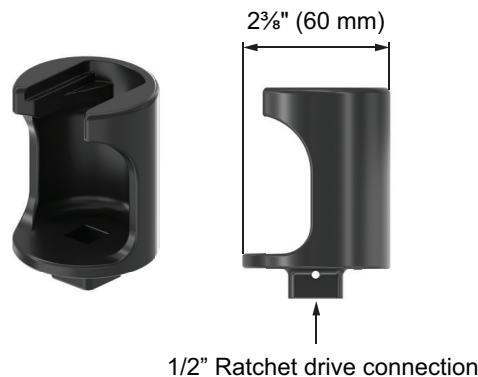


Figure – 5: Sprinkler Accessories



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Determining the "A" Dimension

To determine the "A" dimension (required for ordering):

1. Measure the distance from the face of the fitting in which the sprinkler will be installed to the surface of the finished ceiling.
2. Round to the nearest **1/4" (6 mm) increment between the 5 and 48". (127 to 1225 mm).**

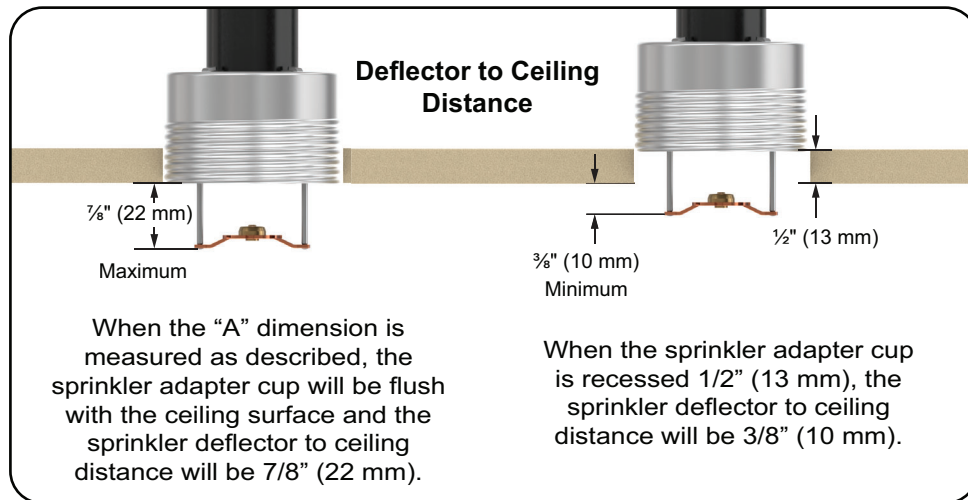
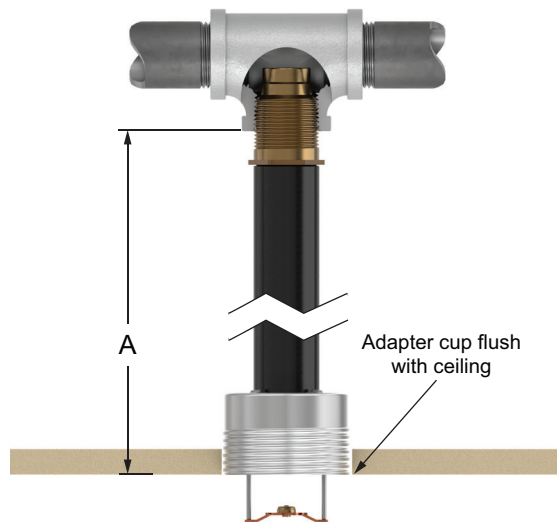


Figure – 6: Measuring the "A" Dimension



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7.2 Cover Plates

Follow the ordering procedure below.

1. Select a base cover plate part number for the desired style (refer to Table 2)
2. Add the suffix for the desired finish*.
3. Add the suffix for the desired temperature rating.

EXAMPLE: 23495FA = Thread-on round cover plate with a polished chrome finish (F) and a 139°F (58°C) temperature rating (A). The maximum ambient ceiling temperature is 100°F (38°C)

1. Cover Plate Base Part Number		
Base Part Number	Size Inch (mm)	Type
Thread-on style		
23495	3-5/16 (84)	Round
Push-on style		
15765	3-5/16 (84)	Round

*Cover plates can be custom painted or screen-printed at the factory. Contact Viking SupplyNet for details.

2. Cover Plate Finishes*	
Description	Suffix
Polished chrome	F
Brushed chrome	F-/B
Bright brass	B
Antique brass	B-/A
Brushed brass	B-/B
Brushed copper	E-/B
Painted white	M-/W
Painted ivory	M-/I
Painted black	M-/B

3. Cover Plate Temperature Rating Matrix				
Sprinkler Nominal Temperature Rating	Required Cover Plate Nominal Temperature Rating	Temperature Classification	Maximum Ambient Ceiling Temperature	Suffix
155 °F (68 °C)	139 °F (59 °C)	Ordinary	100 °F (38 °C)	A
200 °F (93 °C)	165 °F (74 °C)	Intermediate	150 °F (65 °C)	C

8. CONTACT

The sprinkler and accessories are available through Viking distributors only. Contact your local Viking sales office which can be found on our website:

Americas and Asia: www.vikinggroupinc.com/locations OR Europe, Middle East, Africa (EMEA): www.viking-emea.com/contact

Manufacturer:

The Viking Corporation
5150 Beltway SE
Caledonia, MI 49316
Tel.: (800) 968-9501
Fax: 269-818-1680
Technical Services: 1-877-384-5464
techsvcs@vikingcorp.com

Importer EU:

Viking S.A.
21, Z.I. Haneboesch
L-4562 Differdange / Niederkorn
Tel.: +352 58 37 37 – 1
Fax: +352 58 37 36
vikinglux@viking-emea.com

Asia Pacific (APAC) Main Office:

The Viking Corporation (Far East) Pte. Ltd.
69 Tuas View Square
Westlink Techpark, Singapore 637621
Tel: (+65) 6 278 4061
Fax: (+65) 6 278 4609
vikingAPAC@vikingcorp.com



HANDLING AND INSTALLATION INSTRUCTIONS

DRY CONCEALED PENDENT SPRINKLERS

	bg	Инсталирайте и пуснете продукта в експлоатация само ако следната инструкция е ясно разбрана.	lv	Produkta iemontēšanu un ekspluatācijas sākšanu veikt tikai tad, ja dotā instrukcija ir pilnībā saprasta.
	cs	Namontujte a spusťte do provozu produkt pouze tehdy, když jste jasně pochopili tento návod.	lt	Produkta montuokite ir pradėkite eksploatuoti tik tuomet, jei aiškiai suprantate šią instrukciją.
	de	Du må kun montere og idriftsætte produktet, hvis du har forstået følgende vejledning til fulde.	mt	Installa u faddem il-prodott biss jekk l-istruzzjonijiet li ġejjin jinftiehm b'mod ċar.
	de	Produkt nur einbauen und in Betrieb nehmen, wenn die nachfolgende Anleitung klar verstanden wird.	nl	Product alleen installeren en in gebruik nemen, als de volgende instructies begrepen zijn.
	el	Η εγκατάσταση και θέση σε λειτουργία του προϊόντος επιτρέπονται μόνο εάν οι ακόλουθες οδηγίες έχουν γίνει κατανοητές.	no	Ikke installer og ta i bruk produktet uten at følgende anvisninger er tydelig forstått.
	en	Do not install and commission the product unless you have clearly understood the instructions below.	pl	Produkt należy montować i uruchamiać tylko wtedy, gdy poniższe instrukcje są w pełni zrozumiałe.
	es	Instalar el producto y ponerlo en funcionamiento solo cuando se hayan comprendido claramente las siguientes instrucciones.	pt	Instalar e colocar o produto em funcionamento somente se as instruções a seguir forem claramente compreendidas.
	et	Paigaldage toode ja kasutage seda ainult siis, kui saate alljärgnevast juhendist selgelt aru.	ro	Montați produsul și puneți-l în funcțiune numai dacă instrucțiunea următoare este înțeleasă clar.
	fi	Tuotteen saa asentaa ja ottaa käyttöön vain, jos jäljempänä oleva ohje ymmärretään selvästi.	ru	Не устанавливайте и не принимайте оборудование в эксплуатацию, если вы четко не поняли инструкции ниже
	fr	N'installer et ne mettre en service le produit que si les instructions suivantes ont été clairement comprises.	sk	Namontujte a spusťte do prevádzky výrobok iba vtedy, pokiaľ ste jasne pochopili tento návod.
	ga	Ná déan an táirge a shuiteail agus a choimisiúnu mura dtuigeann tu na teoracha thíos go soileir.	sl	Izdelek vgradite in zaženite samo, če ste dobro razumeli navodila v nadaljevanju.
	hr	Ne instalirajte i ne puštajte proizvod u rad ako niste jasno razumjeli donje upute.	sr	Ne instalirajte i ne puštajte proizvod u rad ako niste jasno razumeli uputstva u nastavku.
	hu	Csak akkor építse be a terméket és helyezze üzembe, ha a következő útmutatót egyértelműen megértette.	sv	Montera och driftsätt produkten endast om du förstår den efterföljande instruktionen.
	is	Settu ekki upp eða taktu vöruna í notkun nema þú hafir skilið greinilega leiðbeiningarnar hér að neðan.	tr	Aşağıdaki talimatları açıkça anlamadan ürünü kurmayın ve devreye almayın.
	it	Montare il prodotto e metterlo in funzione solo se si sono comprese appieno le seguenti istruzioni.		



HANDLING AND INSTALLATION INSTRUCTIONS

DRY CONCEALED PENDENT SPRINKLERS

1. PRODUCT IDENTIFICATION

This document covers the following products, hereafter referred to as “dry sprinkler”:

- Quick/Standard Response Dry Flat Plate Concealed Pendent Sprinkler VK197

2. OTHER APPLICABLE DOCUMENTS

For intended use and relevant conditions for the safe use of the specific sprinkler, refer to the appropriate *Technical Data Sheet*.

3. TRANSPORT AND HANDLING

Refer to the table below for proper transport and handling temperature conditions.

Table-1: Nominal Sprinkler Temperature Specifications and Ambient Temperature Limitations

Temperature Rating		
Nominal Sprinkler Temperature Rating	Glass Bulb Color	Maximum Ambient Ceiling Temperature *
155 °F (68 °C)	Red	100 °F (38 °C)
200 °F (93 °C)	Green	150 °F (65 °C)
*Ambient temperature indicates the minimum and maximum temperatures in which the sprinkler can be installed without activation or damage.		

WARNING

A damaged or compromised sprinkler poses the risk of fatal consequences. Damaged or compromised sprinklers will not operate properly which could lead to loss of life.

- ALWAYS use ordinary or intermediate temperature-rated sprinklers where the maximum ambient temperature is below 100°F (38°C), in accordance with NFPA 13.
- ALWAYS use intermediate temperature-rated sprinklers where the ambient temperature is equal to or exceeds 101°F (38°C) through 150°F (66°C), in accordance with NFPA 13, 13R, and 13D.
- ALWAYS store sprinklers in a cool, dry place.
- NEVER use a sprinkler that has been exposed to temperatures exceeding the maximum allowed ambient temperature. Refer to Table 1.
- NEVER use a sprinkler with a loss of liquid from the glass bulb or damage to the fusible element. A small bubble should be visible within the glass bulb; rotate the sprinkler to a horizontal position while observing the bulb to see the bubble.
- NEVER use a sprinkler that has been dropped or damaged.
- ALWAYS Protect the sprinkler from mechanical damage during storage, transport, and handling.
- NEVER use sprinklers or cover plates that have been painted by anyone other than the manufacturer.
- ALWAYS protect sprinklers from being painted during installation or replacement in accordance with the installation standards.
- NEVER clean sprinklers with anything other than 7 PSI or lower compressed air.
- NEVER apply soap, water, ammonia, adhesives, solvents or any other fluids on sprinklers.
- Destroy every damaged or compromised sprinkler.



HANDLING AND INSTALLATION INSTRUCTIONS

DRY CONCEALED PENDENT SPRINKLERS

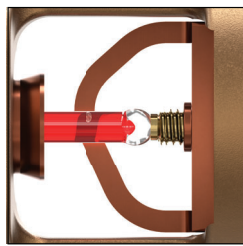
NOTICE

Protect sprinklers during transport and handling. Refer to Figure 1.

- ALWAYS handle the sprinkler with care.
- ALWAYS keep the protective cap on the sprinkler during transport and handling.
- NEVER remove the protective cap until the fire sprinkler system is placed in service and the potential for mechanical damage no longer exists.
- ALWAYS protect the sprinkler from direct sunlight during transport and handling.
- ALWAYS store sprinkler in a cool, dry, protected area.
- ALWAYS use original manufacturer's shipping containers.
- NEVER store a sprinkler loose in a box, bin, bucket, or other type of container.
- ALWAYS keep the sprinkler separated from other sprinklers.
- NEVER allow metal parts to contact the sprinkler operating elements.

NOTE: If the glass bulb included on the sprinkler has been exposed to ultraviolet light, the color inside the bulb may fade. This color change does not affect the operation of the sprinkler.

Images are representative only. Your sprinkler may vary.



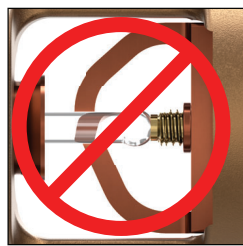
Correct
(Bulb intact, bubble visible)



Correct
(Protective caps in place)



Correct container



Incorrect
(Bulb cracked, fluid missing)



Incorrect
(Protective caps missing)



Incorrect
(Stored loose in a box)

Figure – 1: Sprinkler Handling Best Practices



HANDLING AND INSTALLATION INSTRUCTIONS

DRY CONCEALED PENDENT SPRINKLERS

4. INSTALLATION

When implementing a Viking sprinkler assembly, first install the Viking sprinkler. Then, once the finish work is completed, install the cover plate onto the Viking sprinkler.

For information on how to install the Viking sprinkler, refer to the “Pre-Installation Instructions” section below. For information on how to install the cover plate assembly, refer to “Cover Plate Installation” section below. For additional information, refer to the sprinkler’s appropriate technical document.

WARNING

Installation by insufficiently qualified personnel poses the risk of fatal consequences.

- This sprinkler must be installed properly by qualified personnel familiar with safe practices and applicable and recognized design and installation standards issued, for example, by NFPA, FM, VdS, or LPCB, and trained how to properly perform the installation procedures.

WARNING

Incorrect installation poses the risk of fatal consequences.

- **ALWAYS** use the designated sprinkler wrench. Refer to the sprinkler’s Technical Data Sheet.
- For concealed applications, this sprinkler must be installed according to the dimensions shown in figure 2.

WARNING

Modified sprinklers pose a risk of fatal consequences. Deviating from the installation standards or altering the sprinkler or cover plate in any way, including but not limited to: painting, plating, coating, or attaching foreign objects to them, may render the sprinkler inoperative and will automatically nullify the listings, approvals, or any guarantees made by The Viking Corporation.

- **NEVER** paint, plate, coat, modify, or attach any foreign items to sprinklers.

CAUTION

Cutting Hazard. Sprinklers, accessories, cabinets, and packaging can have sharp edges that can cause cuts.

- Wear appropriate personal protective equipment (gloves) while handling product.

NOTICE

Over-tightening the sprinkler can cause permanent damage.

- For 1" NPT (25 mm BSPT) sprinkler in a standard fitting, tighten up to a maximum torque of 30 ft-lbs (40.7 N-m).



HANDLING AND INSTALLATION INSTRUCTIONS

DRY CONCEALED PENDENT SPRINKLERS

4.1 Pre-Installation Instructions

- Install all required piping in the intended installation location.
- Verify that the sprinkler model/style, K-factor, temperature rating, and response characteristics are appropriate for the intended installation location. See Table 2 and Figure 5 below. Also refer to the sprinkler's Technical Data Sheet.
- Verify that the cover plate is compatible with the sprinkler being installed. If necessary, refer to the sprinkler's technical data sheet for more information.
- Do not install the cover plate until all finish work has been completed.
- Refer to the sprinkler's technical data page for the designated wrench.
- Prepare the ceiling structure for sprinkler installation. Refer to Figure 2 for required installation dimensions.

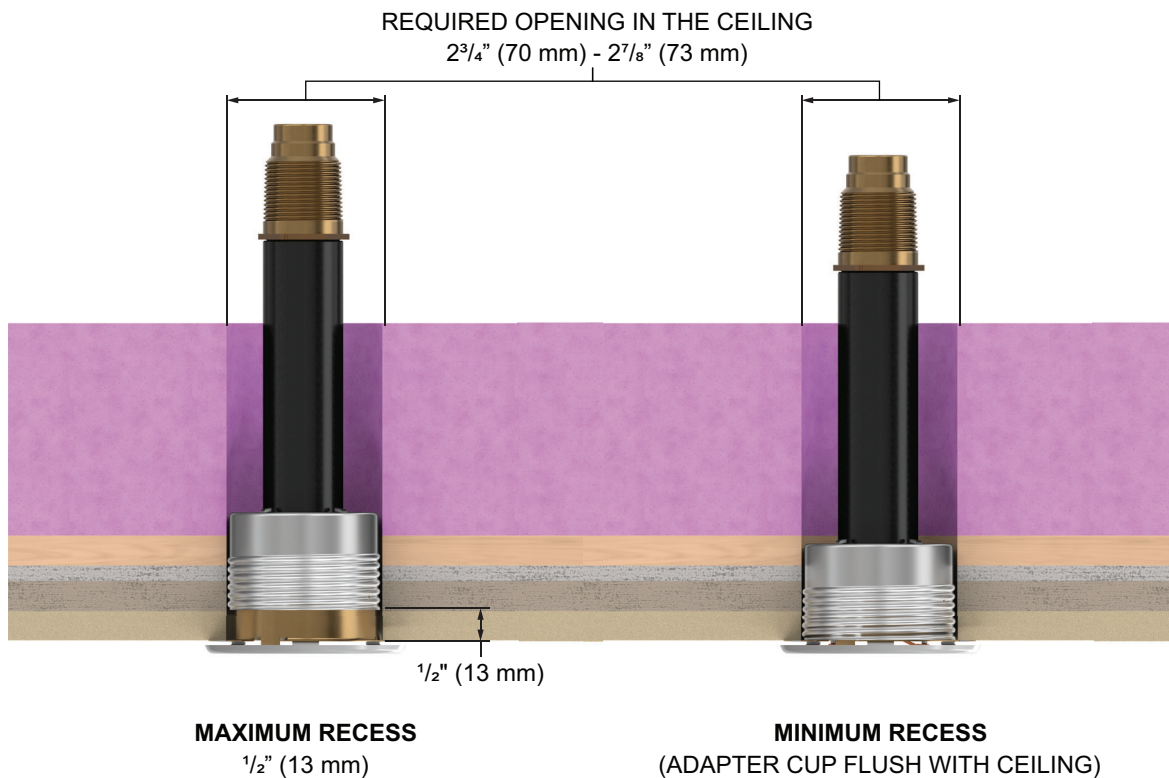


Figure – 2: Installation Dimensions



HANDLING AND INSTALLATION INSTRUCTIONS

DRY CONCEALED PENDENT SPRINKLERS

4.2 Sprinkler Installation

1. Inspect the sprinkler for damage. Destroy every damaged or compromised sprinkler. The following are examples in which sprinklers are considered damaged or compromised. Replace the sprinkler in the following cases:
 - Sprinkler with a loss of fluid from the glass bulb or damage to the fusible element.
 - Sprinklers that have been field-painted, caulked, or mechanically damaged.
 - Sprinklers showing signs of corrosion.
2. If applicable, apply a small amount of pipe-joint compound or tape to the external threads of the sprinkler only. Do not allow a build-up of compound inside the sprinkler inlet.
3. Remove the sprinkler's protective cap.

WARNING: RISK OF FATAL CONSEQUENCES. Using the wrong wrench can permanently damage the sprinkler and lead to fatal consequences. **ALWAYS** use the designated sprinkler wrench to install the sprinkler. Refer to the sprinkler's Technical Data Sheet.

4. Using **ONLY** the designated sprinkler wrench, **CAREFULLY** position the wrench sideways around the deflector and pins.
5. **CAREFULLY** press the wrench upwards until it engages on the wrench flats.

NOTICE: Over-tightening the sprinkler can cause permanent damage.

- For 1" NPT (25 mm BSPT) sprinklers, tighten up to a maximum torque of 30 ft-lbs (40.7 N-m).
- Do not use the deflector or the adapter cup to start threading the sprinkler into a fitting.

6. Tighten the sprinkler. **DO NOT EXCEED THE MAXIMUM TORQUE SPECIFIED ABOVE.**

ALL PIPING AND CEILING STRUCTURES HIDDEN FOR CLARITY.



Figure – 3: Installation

7. Once the sprinkler installation is completed, install the cover plate. For cover plate installation, refer to "Cover Plate Installation" and Figure 4 below.

NOTE: If the cover plate installation will not immediately follow the completed sprinkler installation, then the shipping cap must be re-installed onto the sprinkler.



HANDLING AND INSTALLATION INSTRUCTIONS

DRY CONCEALED PENDENT SPRINKLERS

4.3 Cover Plate Installation

NOTE: For information pertaining to the sprinkler cover plate, such as the available part number(s), refer to the sprinkler's technical documentation.

1. If the sprinkler's protective cap is in place, remove it.
2. Install the cover plate by inserting the adapter (D) into the adapter cup (C). See Figure 4.
3. Depending on the style, push or thread the cover plate into place. The base of the adapter should be flush against the ceiling surface.

NOTE: Ensure the cover plate adapter is flush with the ceiling, as in Figure 4, to allow airflow through the sprinkler assembly.

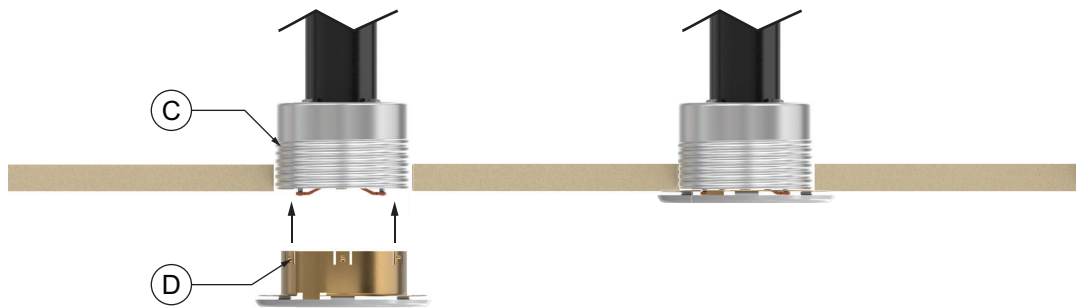


Figure – 4: Installing the Sprinkler Cover Plate

NOTICE: Test the entire sprinkler system. Refer to the applicable system documentation, regulations, and standards to ensure compliance.

4.4 Sprinkler Deflector Markings

Table-2: Sprinkler Markings

Ref	Parameter	
A	Manufacturer's Sprinkler Identification Number (SIN)	
B	Nominal temperature rating	
C	Manufacture date (year)	
D	Listing(s)/Approval(s)	

Figure – 5: Deflector Markings



HANDLING AND INSTALLATION INSTRUCTIONS

DRY CONCEALED PENDENT SPRINKLERS

5. CONTACT

The sprinkler and accessories are available through Viking distributors only. Contact your local Viking sales office which can be found on our website:

Americas and Asia: www.vikinggroupinc.com/locations OR Europe, Middle East, Africa (EMEA): www.viking-emea.com/contact

Manufacturer:

The Viking Corporation
5150 Beltway SE
Caledonia, MI 49316
Tel.: (800) 968-9501
Fax: 269-818-1680
Technical Services: 1-877-384-5464
techsvcs@vikingcorp.com

Importer EU:

Viking S.A.
21, Z.I, Haneboesch
L-4562 Differdange / Niederkorn
Tel.: +352 58 37 37 – 1
Fax: +352 58 37 36
vikinglux@viking-emea.com

Asia Pacific (APAC) Main Office:

The Viking Corporation (Far East) Pte. Ltd.
69 Tuas View Square
Westlink Techpark, Singapore 637621
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Fax: (+65) 6 278 4609
vikingAPAC@vikingcorp.com



Operation and Maintenance Instructions

Dry Concealed Pendent Sprinklers

1. PRODUCT IDENTIFICATION

This document covers the following product, hereafter referred to as “sprinkler”:

- Quick/Standard Response Dry Flat Plate Concealed Pendent Sprinkler VK197

WARNING

Cancer and Reproductive Harm www.P65Warning.ca.gov

2. OTHER APPLICABLE DOCUMENTS

For intended use and relevant conditions for the safe use of the specific sprinkler, refer to the appropriate Technical Data Sheet. In case an installed sprinkler needs to be replaced, refer to the appropriate Handling and Installation Instructions for the installation of the new sprinkler.

3. MAINTAINING OPERATIONAL READINESS

Functionality

During fire conditions, the operating element fuses or shatters (depending on the type of sprinkler), releasing the pip cap and sealing assembly. Water flowing through the sprinkler orifice strikes the sprinkler deflector, forming a uniform spray pattern to control or extinguish the fire.

WARNING

This section contains important safety information. Read and follow all information.

Damaged or Compromised Sprinklers

Damaged or compromised sprinklers will not operate properly which could lead to loss of life.

- **NEVER** clean, paint, or caulk sprinklers.
- **NEVER** apply soap, water, ammonia, adhesives, solvents or any other fluids on sprinklers.
- **NEVER** expose sprinklers to temperatures exceeding the maximum allowed ambient ceiling temperature. See the Technical Data Sheet.
- **ALWAYS** replace a compromised or damaged sprinkler.
- **NEVER** attempt to repair or reassemble a sprinkler.
- **ALWAYS** replace operated sprinklers and cover assemblies and sprinklers exposed to corrosive products of combustion.
- Replacement of sprinklers must only be performed following the instructions in the “Removal and replacement” section below.

The following are examples in which sprinklers are considered damaged or compromised. Replace the sprinkler in the following cases:

- Sprinkler with a loss of fluid from the glass bulb or damage to the fusible element.
- Sprinklers or cover plate assemblies that have been field painted, caulked, or mechanically damaged.
- Sprinklers showing signs of extraordinary corrosion.

Obstructions and obstacles

Obstructions and obstacles may compromise sprinkler discharge patterns which are critical for proper fire protection.

- **NEVER** attach items to sprinklers or hang items from the ceiling in an area protected with sprinklers.
- **NEVER** install walls in areas protected with sprinklers without having a specialized company verifying the design of the sprinkler system.
- **ALWAYS** remove obstructions and obstacles to sprinkler spray patterns.



Sprinkler systems that have been subjected to a fire

Sprinkler systems that have been subjected to a fire must be returned to service as soon as possible.

- After an event of fire, the entire sprinkler system must be inspected for damage and repaired as necessary.
- Refer to the minimum requirements of the Authority Having Jurisdiction for replacement of sprinklers.
- Consider the employment of a fire patrol as long as the sprinkler system is out of service.

Inspections and testing

The owner is responsible for having the sprinklers inspected and tested according to standards of the applicable approval body and to the requirements of the Authority Having Jurisdiction to maintain proper operating condition of the system.

- Sprinklers must be inspected on a regular basis for corrosion, mechanical damage, obstructions, paint, etc. Frequency of inspections may vary due to corrosive atmospheres, water supplies, and activity around the sprinkler.

The applicable approval body or Authority Having Jurisdiction may require sprinklers to be replaced after a specified term of service.

- Refer to the standards of the applicable approval body, such as NFPA, UL, or FM, and the requirements of the Authority Having Jurisdiction for detailed inspection, testing and replacements requirements.

Sprinklers removed from the system for testing or for any other purpose must be replaced according to the "Removal and replacement" section below.

4. REMOVAL AND REPLACEMENT

⚠ WARNING

Removal and replacement of sprinklers by insufficiently qualified personnel poses the risk of fatal consequences in case of fire.

- Removal or replacement of sprinklers must be performed by qualified personnel familiar with safe practices and applicable and recognized design and installation standards issued, for example, by NFPA, FM, VdS, or LPCB, and trained how to properly perform the installation procedures.

⚠ WARNING

Removal and replacement of sprinklers will temporarily eliminate the fire protection capabilities of the sprinkler system.

- Consider the employment of a fire patrol in the affected area.
- Prior to proceeding, notify all Authorities Having Jurisdiction.

⚠ WARNING

Re-installation of a removed sprinkler may compromise the operational safety of the sprinkler system.

- NEVER reinstall a removed sprinkler.
 - ALWAYS use new sprinklers for replacement.
1. Select new sprinklers with identical performance characteristics as well as respective accessories, such as escutcheons, cover plates, and protective caps. A stocked spare sprinkler cabinet may be provided for this purpose onsite.



Operation and Maintenance Instructions

Dry Concealed Pendent Sprinklers

2. According to appropriate system description and/or valve instructions, remove the system from service, drain all water, and relieve all pressure on the piping.
3. Only for flush and concealed style sprinklers: Remove the ceiling ring or cover plate assembly of the old sprinkler by gently unthreading or pulling it off the sprinkler body (depends on the sprinkler model used).
4. Use the proper sprinkler wrench for the old sprinkler according to its Technical Data Sheet.
5. Only for flush and concealed style sprinklers, but not for domed concealed sprinklers: Replace the plastic protective cap over the old sprinkler and fit the wrench over the cap.
6. Use the wrench to remove the old sprinkler by turning it counterclockwise to unthread it from the piping.
7. Install the new sprinkler by following its Handling and Installation Instructions.
8. Place the system back in service and secure all valves.
9. Check for and repair all leaks.

5. DISPOSAL

At end of use the product described here should be disposed of via the national recycling system.

6. CONTACT

The sprinkler and accessories are available through Viking distributors only. Contact your local Viking sales office which can be found on our website:

Americas and Asia: www.vikinggroupinc.com/locations OR Europe, Middle East, Africa (EMEA): www.viking-emea.com/contact

Manufacturer:

The Viking Corporation
5150 Beltway SE
Caledonia, MI 49316
Tel.: (800) 968-9501
Fax: 269-818-1680
Technical Services: 1-877-384-5464
techsvcs@vikingcorp.com

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**BULLETIN****REGULATORY AND HEALTH
WARNINGS**

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

Visit the Viking website for the latest edition of this technical data page www.vikinggroupinc.com

1. DESCRIPTION

Regulatory and Health Warnings applying to materials used in the manufacture and construction of fire protection products are provided herein as they relate to legally mandated jurisdictional regions.

⚠ WARNING**STATE OF CALIFORNIA, USA**

Installing or servicing fire protection products such as sprinklers, valves, piping etc. can expose you to chemicals including, but not limited to, lead, nickel, butadiene, titanium dioxide, chromium, carbon black, and acrylonitrile which are known to the State of California to cause cancer or birth defects or other reproductive harm.

For more information, go to www.P65Warnings.ca.gov

2. WARRANTY TERMS AND CONDITIONS

For details of warranty, refer to Viking's current list price schedule at www.vikinggroupinc.com or contact Viking directly.