TECHNICAL DATA

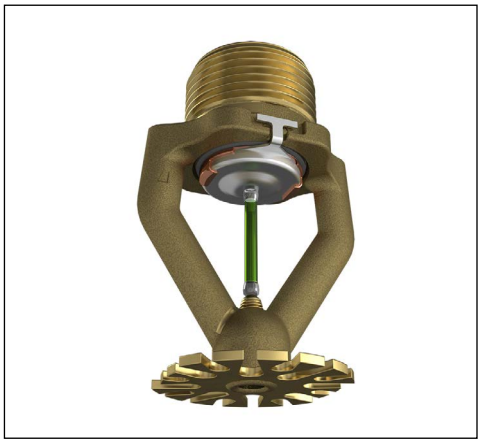
SPECIFIC APPLICATION ESFR PENDENT SPRINKLER VK5141 (K28.0)

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

1. DESCRIPTION

Viking Early Suppression Fast Response (ESFR) Pendent Sprinkler VK5141 is a fast response glass bulb type sprinkler designed for use in storage areas prone to high-challenge fires. With a 28.0 (404 metric) nominal K-Factor and special deflector, this sprinkler produces large, high-momentum water droplets in a hemispheric pattern below the deflector. This permits penetration of the fire plume and direct wetting of the burning fuel surface while cooling the atmosphere early in the development of a high-challenge fire.

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



2. LISTINGS AND APPROVALS

UL Listed: Category VNWH (Listed as a Specific Application ESFR Sprinkler)

3. TECHNICAL DATA

Specifications:

Available since 2024
Maximum Working Pressure: 175 psi (12 bar).
Factory tested pneumatically to 95 psi (6.55 bar)
Thread size: 1” NPT or 25 mm BSPT
Nominal K-Factor: 28.0 U.S. (404 metric*)
* Metric K-factor measurement shown is in bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.
Overall Length: 3-1/4” (83 mm)
Deflector Diameter: 1-3/4” (45 mm)
Glass-bulb fluid temperature rated to -65 °F (-55 °C)

Material Standards:

Frame: Brass CW602N
Deflector: Phosphor Bronze UNS-C51000
Pip cap and Insert assembly: Copper UNS-C11000, Stainless Steel UNS-S30400 and UNS-S31600
Belleville Spring Sealing Assembly: Nickel Beryllium, coated on both sides with PTFE Tape
Compression Screw: Brass, UNS-C36000
Bulb: Glass, Nominal 3mm diameter

TABLE 1
SPRINKLER GENERAL INFORMATION

Item	Description
Sprinkler Identification Number (SIN)	VK5141
K-factor, gpm/psi½ (lpm/bar½)	28.0 (404)
Thread Size	1” NPT 25 mm BSPT
Sprinkler Orientation	Pendent
Maximum Working Pressure PSI (bar)	175 psi (12 bar)

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

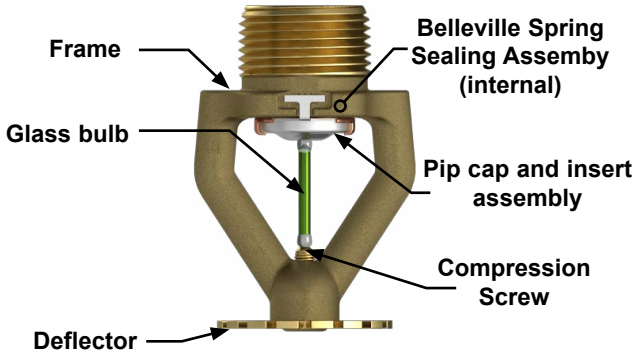


Figure 1: Sprinkler Components

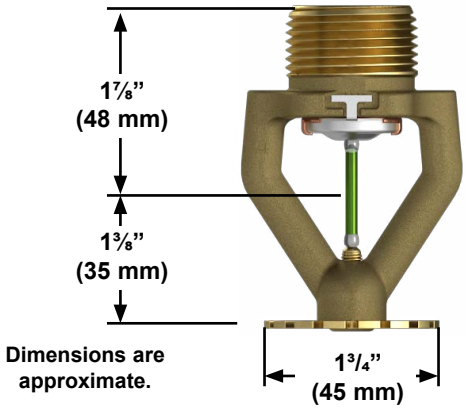


Figure 2: Sprinkler Dimensions

Replaces Form No. F_080622 Rev 05
(Switched 26519 wrench side to “B” in Accessories section and Fig 4.)

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Ordering Instructions

1. Choose a sprinkler base part number with the required thread size and listing or approval (refer to the approval chart).
2. Add the suffix for the desired finish.
3. Add the suffix for the desired temperature rating.

EXAMPLE: 25247AB = VK5141 with brass finish and 155 °F (68 °C) nominal temperature rating. This sprinkler is to be installed into an area with a maximum ambient temperature of 100 °F (38 °C).

NOTE: *The "TQ" suffix for the part numbers below indicates a special protective cap (Figure 3) intended for use with InstaSeal® fittings. When ordering sprinklers with TQ suffixes in combination with InstaSeal® fittings, refer to Form No. F_021223 for installation instructions.*

1. Sprinkler Base Part Number	
Part Number	**Thread Size**
25247XX-TQ*	1" NPT
25248XX-TQ*	25 mm BSPT

2. Finish	
Description	**Suffix**
Brass	A

3. Temperature Ratings			
Temperature Rating	**Bulb Color**	**Maximum Ambient Ceiling Temperature**	**Suffix**
155 °F (68 °C)	Red	100 °F (38 °C)	B
200 °F (93 °C)	Green	150 °F (66 °C)	E

*** Where "XX" is shown in the base part number, enter the desired suffixes for Finish and Temperature Rating (EXAMPLE: 25247AE-TQ)**

Accessories
Sprinkler wrench: 13635W/B (Use side B)
Sprinkler wrench: 26519M/B (Use Side B)
Sprinkler cabinet: 01731A (holds up to 6 sprinklers)

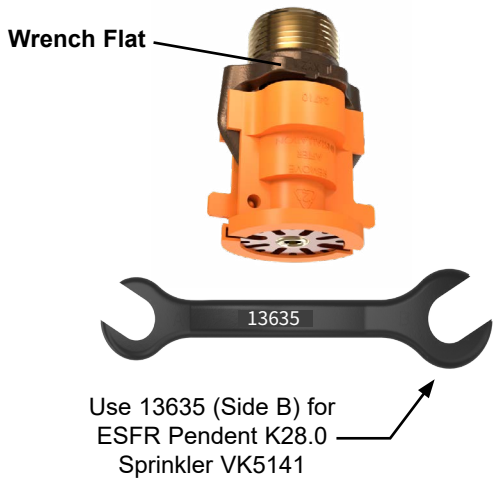

Figure 3:
Protective Caps and ESFR Pendent Sprinkler Wrench

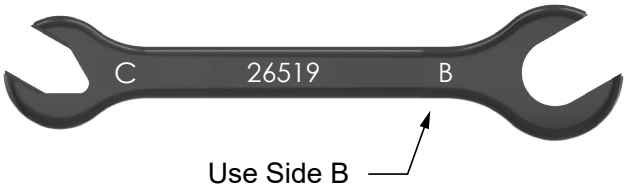

Figure 4:
ESFR Sprinkler Wrench 26519M/B

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4. INSTALLATION

⚠ WARNINGS

Viking sprinklers are manufactured and tested to meet rigid requirements of the approving agencies. The sprinklers are designed to be installed in accordance with recognized installation standards.

System design must be based on ESFR design guidelines described in the latest edition of NFPA Standards, the Authorities Having Jurisdiction, and also with the provisions of governmental codes, ordinances, and standards whenever applicable. Deviation from the standards or any alteration to the sprinkler after it leaves the factory including, but not limited to painting, plating, coating, or modification, may render the sprinkler inoperative and will automatically nullify the approval and any guarantee made by The Viking Corporation.

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.**

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.

- **NEVER use a sprinkler that has been exposed to temperatures exceeding the maximum allowed ambient temperature.**
- **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 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.**
- **ALWAYS provide adequate heat to wet pipe systems.**

NOTES:

- **If the sprinkler will be installed into an InstaSeal® IS-W2 fitting, refer to Form No. F_021223.**
- **Use ONLY the designated sprinkler wrench. DO NOT use any other type of wrench; doing so may damage the sprinkler.**
- **Install the sprinklers AFTER the piping is installed. Installing sprinklers on loose pipe can lead to damage.**
- **The sprinkler is designed to be installed while the protective cap is in place.**
- **DO NOT use the sprinkler deflector or glass bulb to start or thread the sprinkler into a fitting.**

1. Apply a small amount of pipe-joint compound or tape to the male threads only, while taking care not to allow a build-up of compound in the sprinkler orifice.

   NOTICE: Over-tightening the sprinkler can cause permanent damage. Tighten the sprinkler to a MAXIMUM torque of 30 ft-lbs. (40.7 N-m).
2. Install the sprinkler onto the piping by applying the sprinkler wrench (side B only) to the sprinkler wrench flats only, while taking care not to damage the sprinkler operating parts.

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After Sprinkler Installation

1. After installation, the entire sprinkler system must be tested. The test must be conducted to comply with the Installation Standards. Make sure the sprinkler has been properly tightened. If a thread leak occurs, normally the unit must be removed, new pipe-joint compound or tape applied, and then reinstalled. This is due to the fact that when the joint seal is damaged, the sealing compound or tape is washed out of the joint. Immediately replace any damaged units, using the special sprinkler wrench only.
2. **After installation and testing and repairing of all leaks, remove the protective caps from the sprinklers.**
   ***NOTICE:* When removing caps, use care to prevent dislodging or damaging the sprinkler's glass bulb.**
   - Do NOT use any type of tool to remove the cap.
   - Remove the cap by hand.

5. THE CAPS MUST BE REMOVED FROM SPRINKLERS BEFORE PLACING THE SYSTEM IN SERVICE.

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

NOTICE

The owner is responsible for maintaining the fire protection system and devices in proper operating condition. For minimum maintenance and inspection requirements, refer to the NFPA standard that describes care and maintenance of sprinkler systems. In addition, the Authorities Having Jurisdiction may have additional maintenance, testing, and inspection requirements that must be followed.

A. The sprinklers must be inspected on a regular basis for corrosion, mechanical damage, obstructions, paint, etc. The frequency of inspections may vary due to corrosive atmosphere, water supplies, and activity around the device.
B. Sprinklers that have been painted or mechanically damaged must be replaced immediately. Sprinklers showing signs of corrosion shall be tested and/or replaced immediately as required. Installation standards require sprinklers to be tested and, if necessary, replaced after a specified term of service. For Viking ESFR Pendent Sprinklers, refer to the Installation Standards (e.g., NFPA 25) and the Authorities Having Jurisdiction for the specified period of time after which testing and/or replacement is required. Sprinklers that have operated cannot be reassembled or reused, but must be replaced. When replacing sprinklers, use only new sprinklers.
C. The sprinkler discharge pattern is critical for proper fire protection. Therefore, nothing should be hung from, attached to, or otherwise obstruct the discharge pattern. All obstructions must be immediately removed or, if necessary, additional sprinklers installed.
D. When replacing existing sprinklers, the system must be removed from service. Refer to the appropriate system description and/or valve instructions. Prior to removing the system from service, notify all Authorities Having Jurisdiction. Consideration should be given to employment of a fire patrol in the affected area.
   1. Remove the system from service, drain all water, and relieve all pressure on the piping.
   2. Using the special sprinkler wrench, remove the old sprinkler and install the new sprinkler. Care must be taken to ensure that the replacement sprinkler is the proper model and style, with the correct orifice size, temperature rating, and response characteristics. A fully stocked spare sprinkler cabinet should be provided for this purpose.
   3. Place the system back in service and secure all valves. Check the replaced sprinklers and repair all leaks.
E. Sprinkler systems that have been subject to a fire must be returned to service as soon as possible. The entire system must be inspected for damage and repaired or replaced as necessary. Sprinklers that have been exposed to corrosive products of combustion, but have not operated, should be replaced. Refer to the Authorities Having Jurisdiction for minimum replacement requirements.

7. AVAILABILITY

The Viking Model VK5141 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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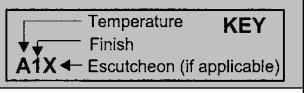
Approval Chart - UL

ESFR Pendent Sprinkler VK5141
Maximum 175 PSI (12 bar) WWP



Base Part Number[1]	SIN	Thread Size	Nominal K-Factor		Overall Length		Listings[3,4] (Refer also to Design Criteria.)
			U.S.	metric[2]	Inches	mm	UL[5]
25247	VK5141	1” NPT	28.0	404	3-3/16	81	A1
25248	VK5141	25 mm BSPT	28.0	404	3-3/16	81	A1

Approved Temperature Ratings	Approved Finish
A - 155 °F (68 °C) and 200 °F (93 °C)	1 - Brass

Footnotes

1. Base part number shown. For complete part number, refer to the price list.
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 chart shows listings and approvals available at the time of printing. Other approvals may be in process.
4. Refer to the latest standards of NFPA 13.
5. Listed by Underwriters Laboratories Inc. for use in the U.S. as an ESFR Sprinkler.

TABLE 3:
COMMODITY SELECTION AND DESIGN CRITERIA OVERVIEW FOR MODEL VK5141 ESFR PENDENT SPRINKLERS

Storage Type	NFPA
Sprinkler Type	ESFR
Response Type	ESFR
System Type	Wet Pipe system only
Temperature Rating(s) ºF (ºC)	155 ºF (68 ºC) and 200 ºF (93 ºC)
Open Frame Single, Double, or Portable Rack Storage of Class I-IV and Group A or B Plastics	Refer to NFPA 13.
Solid Pile or Palletized Storage of Class I-IV and Group A or B Plastics	Refer to NFPA 13.

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Viking ESFR Pendent Sprinklers are to be installed in accordance with the latest edition of Viking technical data, the latest standards of NFPA, VdS, LPCB, and any other Authorities Having Jurisdiction, and also with provisions of governmental codes, ordinances, and standards whenever applicable.

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TABLE 4:
COMMODITY SELECTION AND DESIGN CRITERIA OVERVIEW FOR MODEL VK5141
SPECIFIC APPLICATION LISTING - UL

Description	For all building heights
Sprinkler Type	ESFR
Temperature Rating	155 ºF (68 ºC) and 200 ºF (93 ºC)
Response Type	ESFR
Sprinkler Position	Pendent, frame arms aligned with pipe, deflectors parallel with ceiling or roof
System Type	Wet Pipe System only
Maximum Area of Coverage*	100 ft^2 (9,3 m^2)
Minimum Area of Coverage	64 ft^2 (5,9 m^2)
Maximum Ceiling Slope	Refer to NFPA 13.
Maximum Spacing	10 ft. spacing (3,0 m)
Minimum Spacing	8 ft. spacing (2,4 m)
Deflector Distance from Walls	Minimum of 4 in. (102 mm) from walls but no more than 1/2 the allowable distance permitted between sprinklers
Deflector to Top of Storage	Minimum of 36 in. (914 mm)
Deflector to Ceiling Distance	For all building heights 6–14 in. (152–356 mm)
Maximum Ceiling Height	48 ft. (14,6 m)
Maximum Storage Height	43 ft. (13,1 m)
Storage Arrangement**	Single- and double-row rack storage (no open top containers or solid shelves) and palletized and solid pile storage (no open top containers or solid shelves).
Commodity	Class I-IV commodities encapsulated or nonencapsulated and cartoned, nonexpanded Group A plastics.
Sprinkler System Design	NFPA 13 for ESFR Sprinklers based upon 35 psi (2,4 bar) design pressure 166 gpm (628,4 lpm) with 12 sprinkler remote area (4x3)
Obstruction Critera	Refer to NFPA 13
Minimum Aisle Width	5 ft. (1.52 m)
Hose Stream Allowance and Water Supply Duration	250 gpm (946 lpm) for 60 minutes

* The maximum coverage area must not exceed 100 ft^2 (9,29 m^2).
**Does not include the protection of multiple-row racks.

Replaces Form No. F_080622 Rev 05
(Switched 26519 wrench side to “B” in Accessories section and Fig 4.)

BULLETIN

CARE AND HANDLING OF SPRINKLERS

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SPRINKLERS ARE FRAGILE - HANDLE WITH CARE!

General Handling and Storage:

- Store sprinklers in a cool, dry place.
- Protect sprinklers during storage, transport, handling, and after installation.
- Use the original shipping containers. DO NOT place sprinklers loose in boxes, bins, or buckets.
- Keep sprinklers separated at all times. DO NOT allow metal parts to contact sprinkler operating elements.

For Pre-Assembled Drops:

- Protect sprinklers during handling and after installation.
- For recessed assemblies, use the protective sprinkler cap (Viking Part Number 10364).

Sprinklers with Protective Shields or Caps:

- DO NOT remove shields or caps until after sprinkler installation and there no longer is potential for mechanical damage to the sprinkler operating elements.
- **Sprinkler shields or caps MUST be removed BEFORE placing the system in service!**
- Remove the sprinkler shield by carefully pulling it apart where it is snapped together.
- Remove the cap by turning it slightly and pulling it off the sprinkler.

Sprinkler Installation:

- DO NOT use the sprinkler deflector or operating element to start or thread the sprinkler into a fitting.
- **Use only the designated sprinkler head wrench!** Refer to the current sprinkler technical data page to determine the correct wrench for the model of sprinkler used.
- DO NOT install sprinklers onto piping at the floor level.
- Install sprinklers after the piping is in place to prevent mechanical damage.
- DO NOT allow impacts such as hammer blows directly to sprinklers or to fittings, pipe, or couplings in close proximity to sprinklers. Sprinklers can be damaged from direct or indirect impacts.
- DO NOT attempt to remove drywall, paint, etc., from sprinklers.
- **Take care not to over-tighten the sprinkler and/or damage its operating parts!**

  Maximum Torque:

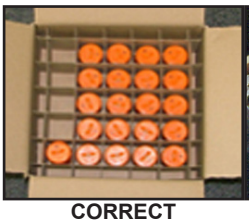
  1/2" NPT: 14 ft-lbs. (19.0 N-m)

  3/4" NPT: 20 ft-lbs. (27.1 N-m)

  1" NPT: 30 ft-lbs. (40.7 N-m)

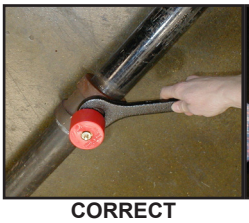
CORRECT
(Original container used)

INCORRECT
(Placed loose in box)



CORRECT
(Protected with caps)

INCORRECT
(Protective caps not used)



CORRECT
(Piping is in place at the ceiling)

INCORRECT
(Sprinkler at floor level)

CORRECT
(Special installation wrenches)

INCORRECT
(Designated wrench not used)

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

⚠ WARNING

Any sprinkler with a loss of liquid from the glass bulb or damage to the fusible element should be destroyed. Never install sprinklers that have been dropped, damaged, or exposed to temperatures exceeding the maximum ambient temperature allowed. Sprinklers that have been painted in the field must be replaced per NFPA 13. Protect sprinklers from paint and paint overspray in accordance with the installation standards. Do not clean sprinklers with soap and water, ammonia, or any other cleaning fluid. Do not use adhesives or solvents on sprinklers or their operating elements.

Refer to the appropriate technical data page and NFPA standards for complete care, handling, installation, and maintenance instructions. For additional product and system information Viking data pages and installation instructions are available on the Viking Web site at www.vikinggroupinc.com.

VIKING | BULLETIN | CARE AND HANDLING OF SPRINKLERS

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PROTECTIVE SPRINKLER SHIELDS AND CAPS

General Handling and Storage:

Many Viking sprinklers are available with a plastic protective cap or shield temporarily covering the operating elements. The snap-on shields and caps are factory installed and are intended to help protect the operating elements from mechanical damage during shipping, storage, and installation. NOTE: It is still necessary to follow the care and handling instructions on the appropriate sprinkler technical data sheets* when installing sprinklers with bulb shields or caps.

WHEN TO REMOVE THE SHIELDS AND CAPS:

NOTE: SHIELDS AND CAPS MUST BE REMOVED FROM SPRINKLERS BEFORE PLACING THE SYSTEM IN SERVICE!

Remove the shield or cap from the sprinkler only after checking all of the following:

- The sprinkler has been installed*.
- The wall or ceiling finish work is completed where the sprinkler is installed and there no longer is a potential for mechanical damage to the sprinkler operating elements.

SHIELDS AND CAPS MUST BE REMOVED FROM SPRINKLERS BEFORE PLACING THE SYSTEM IN SERVICE!

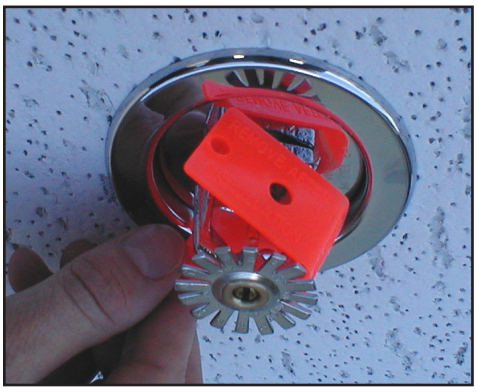

Figure 1: Sprinkler shield being removed from a pendent sprinkler.

Figure 2: Sprinkler cap being removed from a pendent sprinkler.

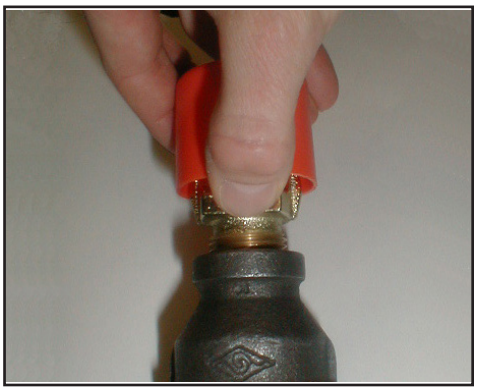

Figure 3: Sprinkler cap being removed from and upright sprinkler.

HOW TO REMOVE SHIELDS AND CAPS:

No tools are necessary to remove the shields or caps from sprinklers. DO NOT use any sharp objects to remove them! **Take care not to cause mechanical damage to sprinklers when removing the shields or caps.** When removing caps from fusible element sprinklers, use care to prevent dislodging ejector springs or damaging fusible elements. NOTE: Squeezing the sprinkler cap excessively could damage sprinkler fusible elements.

- To remove the shield, simply pull the ends of the shield apart where it is snapped together. Refer to Figure 1.
- To remove the cap, turn it slightly and pull it off the sprinkler. Refer to Figures 2 and 3.

NOTICE Refer to the current sprinkler technical data page to determine the correct sprinkler wrench for the model of sprinkler used.

WARNING Never install sprinklers that have been dropped, damaged, or exposed to temperatures in excess of the maximum ambient temperature allowed.

*** Refer to the appropriate current technical data pages for complete care, handling, and installation instructions. Data pages are included with each shipment from Viking or Viking distributors. They can also be found on the Web site at www.vikinggroupinc.com.**

BULLETIN

CARE AND HANDLING OF SPRINKLERS

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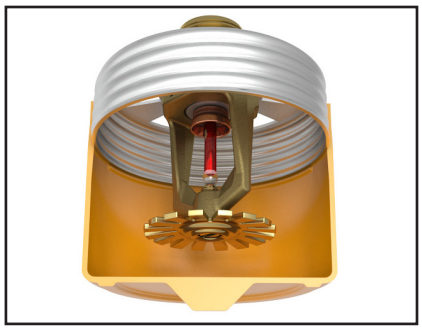
CAUTION CONCEALED COVER ASSEMBLIES ARE FRAGILE!
TO ASSURE SATISFACTORY PERFORMANCE OF THE PRODUCT, HANDLE WITH CARE.



Concealed Sprinkler and Adapter Assembly with Protective Cap

Concealed Sprinkler and Adapter Assembly (Protective Cap Removed)

Cover Plate Assembly (Pendent Cover 12381 shown)

GENERAL HANDLING AND STORAGE INSTRUCTIONS:

- Do not store in temperatures exceeding 100 °F (38 °C). Avoid direct sunlight and confined areas subject to heat.
- Protect sprinklers and cover assemblies during storage, transport, handling, and after installation.
  -- Use original shipping containers.
  -- Do not place sprinklers or cover assemblies loose in boxes, bins, or buckets.
- Keep the sprinkler bodies covered with the protective sprinkler cap any time the sprinklers are shipped or handled, during testing of the system, and while ceiling finish work is being completed.
- Use only the designated Viking recessed sprinkler wrench (refer to the appropriate sprinkler data page) to install these sprinklers. **NOTE:** The protective cap is temporarily removed during installation and then placed back on the sprinkler for protection until finish work is completed.
- Do not over-tighten the sprinklers into fittings during installation.
- Do not use the sprinkler deflector to start or thread the sprinklers into fittings during installation.
- Do not attempt to remove drywall, paint, etc., from the sprinklers.
- Remove the plastic protective cap from the sprinkler before attaching the cover plate assembly. **PROTECTIVE CAPS MUST BE REMOVED FROM SPRINKLERS BEFORE PLACING THE SYSTEM IN SERVICE!**

Refer to the appropriate current technical data pages for complete care, handling, and installation instructions. Data pages are included with each shipment from Viking or Viking distributors. They can also be found on the Web site at www.vikinggroupinc.com.

VIKING

BULLETIN

CARE AND HANDLING OF SPRINKLERS

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
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USE THE FOLLOWING PRECAUTIONS WHEN HANDLING WAX-COATED SPRINKLERS

Many of Viking's sprinklers are available with factory-applied wax coating for corrosion resistance. These sprinklers MUST receive appropriate care and handling to avoid damaging the wax coating and to assure satisfactory performance of the product.

General Handling and Storage of Wax-Coated Sprinklers:

- Store the sprinklers in a cool, dry place (in temperatures below the maximum ambient temperature allowed for the sprinkler temperature rating. Refer to Table 1 below.)
- Store containers of wax-coated sprinklers separate from other sprinklers.
- Protect the sprinklers during storage, transport, handling, and after installation.
- Use original shipping containers.
- Do not place sprinklers in loose boxes, bins, or buckets.

Installation of Wax-Coated Sprinklers:

Use only the special sprinkler head wrench designed for installing wax-coated Viking sprinklers (any other wrench may damage the unit).

- Take care not to crack the wax coating on the units.
- For touching up the wax coating after installation, wax is available from Viking in bar form. Refer to Table 1 below. The coating MUST be repaired after sprinkler installation to protect the corrosion-resistant properties of the sprinkler.
- Use care when locating sprinklers near fixtures that can generate heat. Do not install sprinklers where they would be exposed to temperatures exceeding the maximum recommended ambient temperature for the temperature rating used.
- Inspect the coated sprinklers frequently soon after installation to verify the integrity of the corrosion resistant coating. Thereafter, inspect representative samples of the coated sprinklers in accordance with NFPA 25. Close up visual inspections are necessary to determine whether the sprinklers are being affected by corrosive conditions.

TABLE 1

Sprinkler Temperature Rating (Fusing Point)	Wax Part Number	Wax Melting Point	Maximum Ambient Ceiling Temperature[1]	Wax Color
155 °F (68 °C) / 165 °F (74 °C)	02568A	148 °F (64 °C)	100 °F (38 °C)	Light Brown
175 °F (79 °C)	04146A	161 °F (71 °C)	150 °F (65 °C)	Brown
200 °F (93 °C)	04146A	161 °F (71 °C)	150 °F (65 °C)	Brown
220 °F (104 °C)	02569A	170 °F (76 °C)	150 °F (65 °C)	Dark Brown
286 °F (141 °C)	02569A	170 °F (76 °C)	150 °F (65 °C)	Dark Brown

[1] 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.

⚠WARNING Never install sprinklers that have been dropped, damaged, or exposed to temperatures in excess of the maximum ambient temperature allowed.

Refer to the appropriate current technical data pages for complete care, handling, and installation instructions. Data pages are included with each shipment from Viking or Viking distributors. They can also be found on the Web site at www.vikinggroupinc.com.

USE OF CORRECT INSTALLATION WRENCHES FOR ESFR SPRINKLERS

(VK500, VK503, VK510, VK514 AND VK520)

TECHNICAL DATA

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

CORRECT INSTALLATION WRENCHES FOR USE WITH VIKING ESFR SPRINKLERS

ESFR sprinklers must be installed using the manufacturer's special installation wrench only, while taking care not to over-tighten or damage the sprinkler operating parts. Figure 1 below shows an example of correct use of a designated ESFR sprinkler wrench. Use of any other wrench, such as those shown in Figures 2 through 4 below, could damage the unit.

- Viking ESFR Upright Sprinklers: Use Viking Wrench Part Number 05118CW/B.
- Viking ESFR Pendent K14 and K16.8 Sprinklers: Use Viking Wrench Part Number 10285W/B or double-ended 13635W/B (Side A).
- Viking ESFR Pendent K25.2 Sprinklers: Use Viking Wrench Part Number 12143W/B or double-ended 13635W/B (Side B).
- Viking ESFR Pendent K28 Sprinklers: Viking Wrench Part Number (double-ended) 13635W/B (Side B only).

The sprinkler is contained in a plastic cap for protection during shipping and installation. With the sprinkler contained in the plastic cap, apply a small amount of pipe-joint compound or tape to the male threads of the sprinkler and then install the ESFR sprinkler by applying the wrench to the sprinkler wrench flats only. DO NOT use the deflector or fusible element to start or thread the sprinkler into a fitting.

Take care not to over-tighten the sprinkler and/or damage its operating parts!

Maximum Torque: 3/4" NPT: 20 ft-lbs. (27.1 N-m) 1" NPT: 30 ft-lbs. (40.7 N-m)

DO NOT install sprinklers onto piping at the floor level. Install sprinklers after the piping is in place at the ceiling to prevent mechanical damage.

Figure 1: Correct use of designated installation wrench with ESFR Pendent K14 Sprinkler SIN VK500 and sprinkler cap

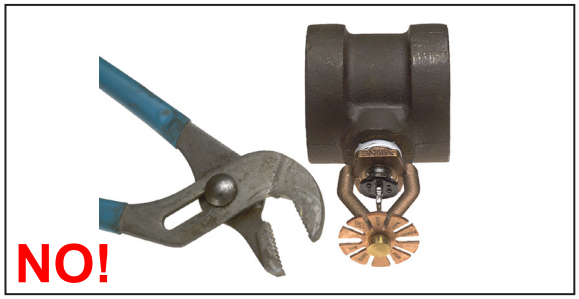

Figure 2: Incorrect installation wrench
(ESFR sprinkler shown with Channel Locks)

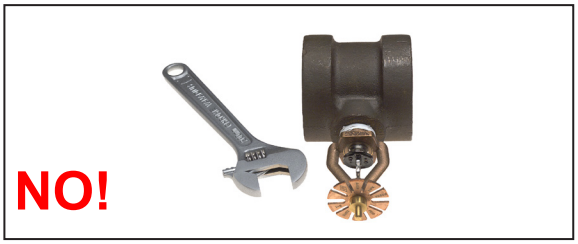

Figure 3: Incorrect installation wrench
(ESFR sprinkler shown with a crescent wrench)

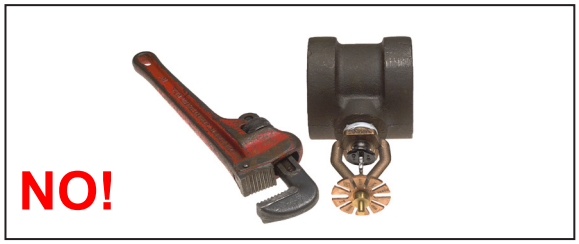

Figure 4: Incorrect installation wrench
(ESFR sprinkler shown with a pipe wrench)

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

NOTE: The sprinklers are contained in plastic caps for protection during shipping and installation. Remove the caps from the sprinklers AFTER installation. Use care when removing the caps to prevent dislodging the ejector spring or damaging the fusible element. The caps MUST be removed from sprinklers BEFORE placing the system in service!

Refer to the latest appropriate technical data pages for complete care, handling, and installation instructions. Data pages are included with each shipment from Viking or Viking distributors. They can also be found on the Viking Web site at www.vkinggroupinc.com.

⚠ WARNING

Never install sprinklers that have been dropped, damaged, or exposed to temperatures in excess of the maximum ambient temperature allowed. Any sprinkler with damage to the operating element should be destroyed.

VIKING®

BULLETIN

REGULATORY AND HEALTH WARNINGS

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1. DESCRIPTION

Regulatory and Health Warnings applying to materials used in the manufacture and construction of fire protection products are provided herin 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, titaninum 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.