



TECHNICAL DATA SHEET

ESFR IN-RACK SPRINKLERS

1. DESCRIPTION AND INTENDED USE

The Model EG series guard/water shields are hard-wire cages with an integrated carbon steel plate designed to surround the sprinkler and protect it from mechanical damage as well as water spray from above. The guard/water shield is intended for areas where sprinklers are installed at a low elevation and/or near a high degree of human or mechanical activity as well as where water shielding is required. The Model ES series water shields are intended for use on pendent ESFR sprinklers to protect the sprinkler's heat sensing operating element from water spray from above.

Viking Model EG-100 Sprinkler Guards/Water Shields and Model ES Water Shields are intended to be used in conjunction with ESFR style sprinklers where allowed by the approvals. (Refer to the Approval Charts). 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, FM, EN, VdS, or LPCB.
3. the latest revisions of all applicable manufacturer's documentation.



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

WARNING

Cancer and Reproductive Harm www.P65Warnings.ca.gov

2. LISTING AND APPROVALS

Refer to section 5 for details and requirements that must be followed.



FM Approved: Class 2091

- EG-100 Guard/Water Shield is FM Approved for use with VK506, VK510, and VK514 sprinklers.
- ES-75 Water Shield is FM Approved for use with VK500 and VK503 sprinklers.
- ES-100 Water Shield is FM Approved for use with VK506, VK510, and VK514 sprinklers.
- The Model EG Guard/Water Shield and ES Water Shields are also FM approved for intermediate-level use, such as in-rack, under conveyors, mezzanines, or other similar obstructions. Refer to the Approval Chart.

Approval Chart						
Sprinkler Identification Number (SIN)	Compatible Devices	Thread Sizes		Nominal K-factor		FM ¹
		NPT	BSPT	U.S.	Metric	
VK500	ES-75	3/4"	20 mm	14.0	202	✓
VK503	ES-75	3/4"	20 mm	16.8	242	✓
VK506	EG-100 or ES-100	1"	25 mm	22.4	320	✓
VK510	EG-100 or ES-100	1"	25 mm	25.2	363	✓
VK514	EG-100 or ES-100	1"	25 mm	28.0	404	✓

1. FM approved for intermediate-level use, such as in-rack, under conveyors, mezzanines, or other similar obstructions.



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3. TECHNICAL SPECIFICATIONS

3.1 Materials of Construction

Parameter	Value
EG series water shield (top plate)	JIS G314 Carbon steel
EG series rivet and pins	AISI 12L14 Carbon steel
Guard (wire)	Q235 Cold drawn steel wire
Screw 6-32 x 3/8 (R.H. Phillips-slotted combination drive)	Steel with Zinc plating
ES series water shield	1075 steel per ASTM A684, 0.039" thick
In-rack ESFR sprinkler wrench	Ductile iron

3.2 Markings and Dimensions

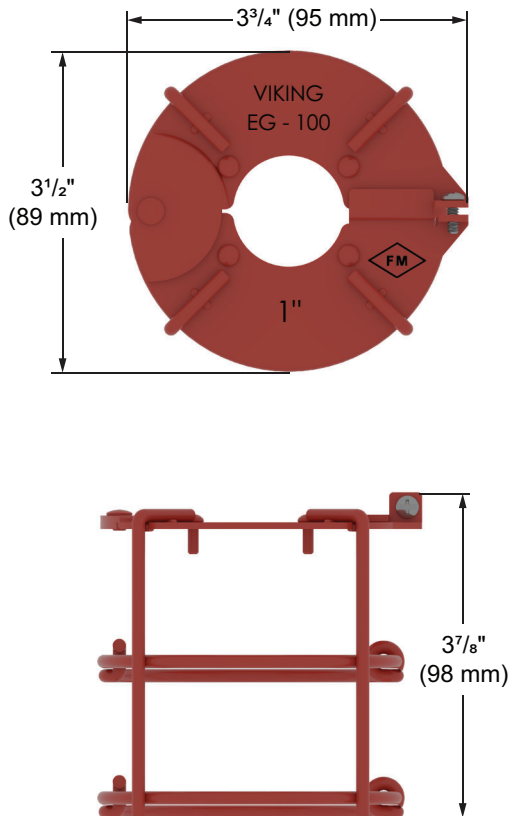


Figure – 1: EG Series Guard/Water Shield Markings and Dimensions

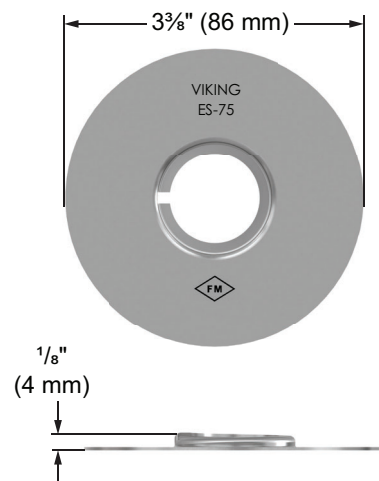


Figure – 2: ES Series Water Shield Markings and Dimensions (ES-75 Shown)



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4. INSTALLATION

4.1 EG-100 Guard/Shield

NOTICE

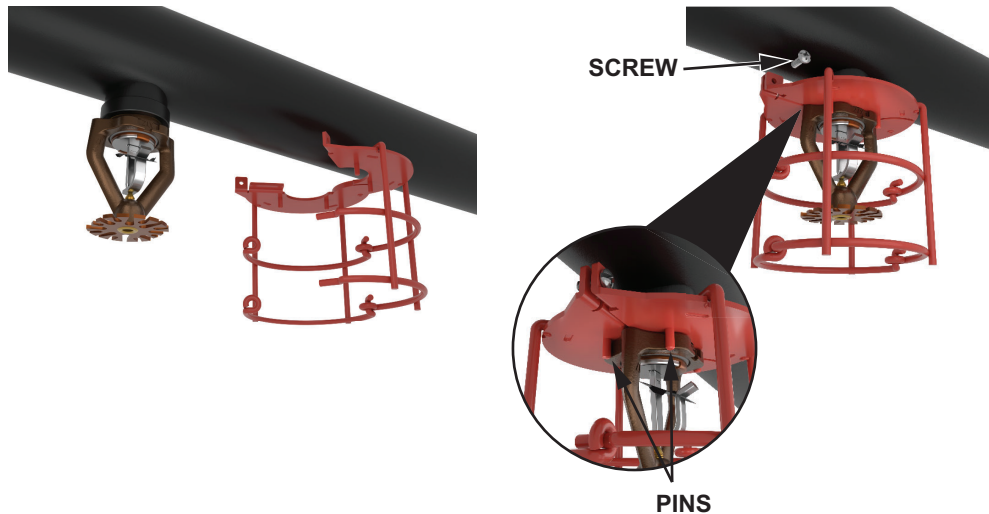
Improper installation may impede the sprinkler operation/activation.

- Follow the procedure below to properly install the sprinkler guard/water shield.

A #2 R.H. Phillips or Flat Head screwdriver is required for installation.

1. If not already installed, install the sprinkler in the pipe fitting.
2. Loosen the screw and open the guard/water shield.
3. Place the guard/water shield around the sprinkler. Verify the sprinkler is correctly oriented inside the guard.
4. Close the guard/water shield and tighten the screw.

NOTE: Be sure the pins line up with the sprinkler frame as shown.



Improper installation will impede sprinkler operation. Ensure that the sprinkler is installed in the correct position.

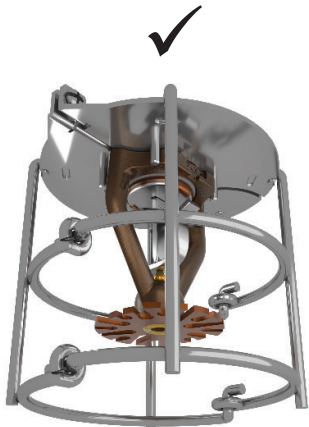


Figure – 3: Installing the EG Series Guard/Water Shield



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4.2 ES Series Water Shield

The concave surface of the water shield should face the sprinkler deflector as shown.

1. Install the water shield onto the sprinkler threads.
2. Rotate the water shield (or spin the sprinkler) until it is as far onto the sprinkler as possible.

NOTICE

DO NOT use the water shield to start or thread the sprinkler into the pipe fitting.

3. Install the sprinkler:
 - a. If the pipe fitting is standard, use the In-Rack ESFR sprinkler wrench. Slide the wrench sideways over the wrench boss.
 - b. If the pipe fitting is an InstaSeal fitting, do NOT use a sprinkler wrench. Refer to the IS-W2 Technical Data. For 3/4" NPT sprinklers, refer to F_021123. For 1" NPT sprinklers, refer to F_021223.
4. Tighten the sprinkler.

NOTICE

Over-tightening the sprinkler can cause permanent damage. For 3/4" NPT (or 20 mm BSPT) sprinkler, tighten up to a maximum of 20 ft-lbs (27,1 Nm). For 1" sprinkler, tighten up to a maximum of 30 ft-lbs. (40.7 N-m). Do not exceed the maximum torque for the sprinkler.



Figure – 4: Installing the ES Series Water Shield



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5. ORDERING INFORMATION

The Model EG series ESFR Sprinkler Guard/Water Shield can be ordered pre-assembled with select sprinklers and ready for installation into an InstaSeal fitting. Refer to Section 5.1. To order the sprinkler accessories individually, refer to Section 5.2

5.1 Pre-assembled Units

NOTICE

The ESFR guard/water shield with pre-assembled sprinkler can only be installed by hand into an InstaSeal fitting. The pre-assembled units are NOT to be installed into standard pipe fittings or by using any type of sprinkler wrench. Attempting to install the pre-assembled units with any type of tool may permanently damage the sprinkler.

Pre-assembled units are available with the following sprinklers and a chrome guard/water shield:

Sprinkler	Base Part Numbers
VK506	18493, 24180
VK510	12080, 23169, 24181
VK514	22894, 23141, 24182

NOTE: Refer to the specific sprinkler's technical data sheet for Listing and Approval information and available finishes and temperature ratings.

When ordering the pre-assembled unit:

1. Choose the sprinkler base part number preferred.
2. Add the sprinkler finish suffix.
3. Add the desired sprinkler temperature rating.
4. Add the letter "G" for the pre-assembled 1" guard/water shield.

Example: 12080ACG = The VK510 with the pre-assembled chrome guard/water shield, a brass finish, and 165°F (74°C) nominal temperature rating.

NOTE: For installation instructions concerning the factory pre-assembled guard/water shield, refer to Form No. F_021223. The pre-assembled sprinkler guard/water shields must be installed by hand and cannot be installed with any type of tool.



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5.2 Individual Accessories

The EG series sprinkler guard/water shields, ES series water shields, and required installation wrenches are available separately as indicated below.

Compatible Sprinklers	Part Number	Description	Size (NPT)
VK506, VK510, VK514	24988F	EG-100 ESFR Guard/Water Shield, chrome finish	1"
VK506, VK510, VK514	24988M/R	EG-100 ESFR Guard/Water Shield, painted red	1"
VK500 and VK503	27489	ES-75 Water Shield	3/4"
VK506, VK510, VK514	27490	ES-100 Water Shield	1"
VK500 and VK503	27512M/B	In-rack ESFR Sprinkler wrench, socket style, for sprinklers with ES-75 water shield (requires a 1/2" ratchet drive, not available from Viking).	3/4"
VK506, VK510, VK514	27731M/B	In-rack ESFR Sprinkler wrench, socket style, for sprinklers with ES-100 water shield (requires a 1/2" ratchet drive, not available from Viking)	1"

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

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