

# Reliable®

## Model N25 (SIN RA0912) Early Suppression Fast Response Sprinkler

### Product Description

The Reliable Model N25 Early Suppression Fast Response Sprinkler (ESFR/Quick Response Storage Sprinkler) is intended for use against severe fire challenges. This sprinkler is designed to respond quickly to growing fires and will deliver a heavy water discharge to “suppress” rather than “control.”

**Note:** The Model N25 ESFR sprinkler utilizes a levered fusible alloy solder link in either a 165°F (74°C) or a 212°F (100°C) rating. FM Global considers this a “Quick Response” storage sprinkler for use per FM Data Sheet 8-9.

The sprinkler has a Nominal K Factor of 25.2 (metric 362) and will deliver approximately 98 gpm (371 L/min) of water at 15 psi (1 bar).

The smaller deflector and frame provide a broad, very symmetrical, hemispherical pattern capable of suppressing fires between sprinklers in high storage height areas and at the same time retaining a high momentum central core to penetrate and suppress fires occurring directly beneath the sprinkler in low storage height areas.

The N25 ESFR sprinkler is also less susceptible to damage due to smaller deflector and frame design. The lighter N25 ESFR passed rough use and abuse test in the labs without plastic protectors.

### Application and Installation

The Model N25 is an ESFR sprinkler is intended for installation in accordance with NFPA 13 and is a QR Storage Sprinkler for use in all FM Loss Prevention Data Sheets as well as approval of the Authority Having Jurisdiction.

The Model N25 ESFR sprinkler is designed for ceiling only sprinkler system with no in-rack sprinklers required. Protection of (but not limited to) most encapsulated or non-encapsulated (including cartoned unexpanded) plastics. Model N25 ESFR is also use for protection of cartoned exposed expanded plastics as well as some storage arrangements of rubber tires, rolled paper, and aerosols.



**Model N25 ESFR Sprinkler**

### Design Criteria

#### General guidelines:

**Sprinkler Position:** Pendent, align frame arms with the pipe. Deflectors should be parallel with the ceiling or roof.

**System Type:** Wet Pipe Systems Only

**Maximum area of coverage:** 100 ft<sup>2</sup> (9.3m<sup>2</sup>), greater coverage area are allowable in some cases.

**Minimum area of coverage:** 64 ft<sup>2</sup> (5.8m<sup>2</sup>)

**Maximum slope ceiling:** 2/12 pitch (9.5°)

**Maximum spacing:** 12 ft (3.7m) for building heights up to 30 ft (9.1m) and 10 feet (3.1m) for building heights greater than 30 ft (9.1m)

**Minimum spacing:** 8 feet (2.4m)

**Deflector distance from walls:** At least 4 inches (102mm) from walls, and no more than one-half the allowable distance permitted between sprinklers.

**Deflector to Top of Storage:** at least 36 in (914mm).

**Deflector to ceiling Distance:** 6 - 18 in (152 - 457mm).

**Center Line of Thermal Sensing**

**Element To Ceiling Distance:** 4 - 17 in (101.6 - 425mm).

### Listings and Approvals

1. FM Approved as a quick response storage sprinkler.

**Technical Data:**

Classification	Sprinkler Temperature		Link Color	Frame Color	Maximum Ambient Temperature		Approvals	Sprinkler Identification Number (SIN)
	°F	°C			°F	°C		
Ordinary Intermediate	165 212	74 100	Black White	Uncolored White	100 150	38 66	FM FM	RA0912

**Material Data:**

Frame	Deflector	Load Screw	Lever	Strut	Link Assembly	Cap	Washer	Kick Spring
Brass	Bronze	Stainless Steel	Stainless Steel	Stainless Steel	Beryllium Nickel, Soldered	Brass	Beryllium Nickel	Stainless Steel

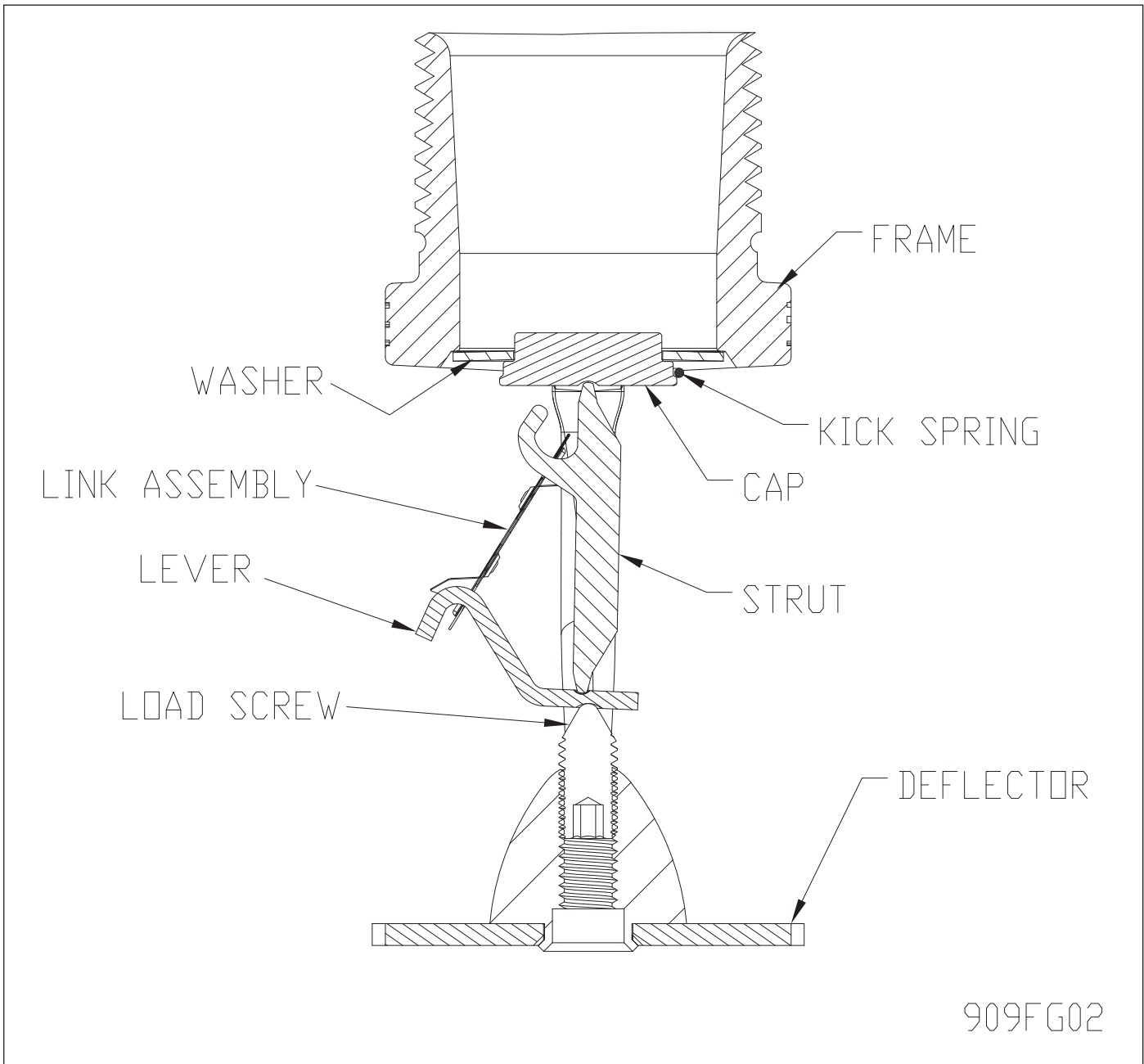


Fig. 1

<b>Storage Type</b>	<b>NFPA</b>	<b>FM</b>
Open Frame (that is, no solid shelves) Single, Double, Multiple-Row, or Portable Rack Storage of Class I-IV and Group A or B Plastics	Refer to NFPA 13, Chapters 16 and 17.	Refer to FM 8-9.
Solid Pile or Palletized Storage of Class I-IV and Group A or B Plastics	Refer to NFPA 13, Chapters 14 and 15.	Refer to FM 8-9.
Idle Pallet Storage	Refer to NFPA 13, Chapter 12.	Refer to FM 8-24.
Rubber Tire Storage	Refer to NFPA 13, Chapter 18.	Refer to FM 8-3.
Rolled Paper Storage (Refer to the standard)	Refer to NFPA 13, Chapter 19.	Refer to FM 8-21.
Flammable Liquid Storage (Refer to standard)	Refer to NFPA 30.	Refer to FM 7-29.
Aerosol Storage (Refer to the standard)	Refer to NFPA 30B.	Refer to FM 7-31.
Automotive Components In Portable Racks (Control mode only; refer to the standard)	Refer to NFPA 13, Chapter 20.	Refer to FM 8-1 and 8-9.
<b>TABLE 1</b> <b>COMMODITY SELECTION AND DESIGN CRITERIA OVERVIEW FOR</b> <b>MODEL ESFR-25 PENDENT SPRINKLERS</b>		

## Installation Data

Sprinkler Type	Thread Size	"K" Factor		Maximum Working Pressure	Finish
		US	Metric		
Pendent Only	1" NPT (R1)	25.2	362	175 psi (12,1 bar)	Bronze

## Maintenance

The Model N25 ESFR Sprinkler should be inspected and the sprinkler system maintained in accordance with NFPA 25. Do not clean sprinkler with soap and water, ammonia or any other cleaning fluid. Remove any sprinkler that has been painted (other than factory applied) or damaged in any way. A stock of spare sprinklers should be maintained to allow quick replacement of damaged or operated sprinklers. Prior to installation, sprinklers should be maintained in the original cartons and packaging until used, to minimize the potential for damage to sprinklers that would cause improper operation or non-operation.

Once operated, automatic sprinklers cannot be reassembled and reused. New sprinklers of the same size, type and temperature rating must be installed. A cabinet of replacement sprinklers should be provided for this purpose.

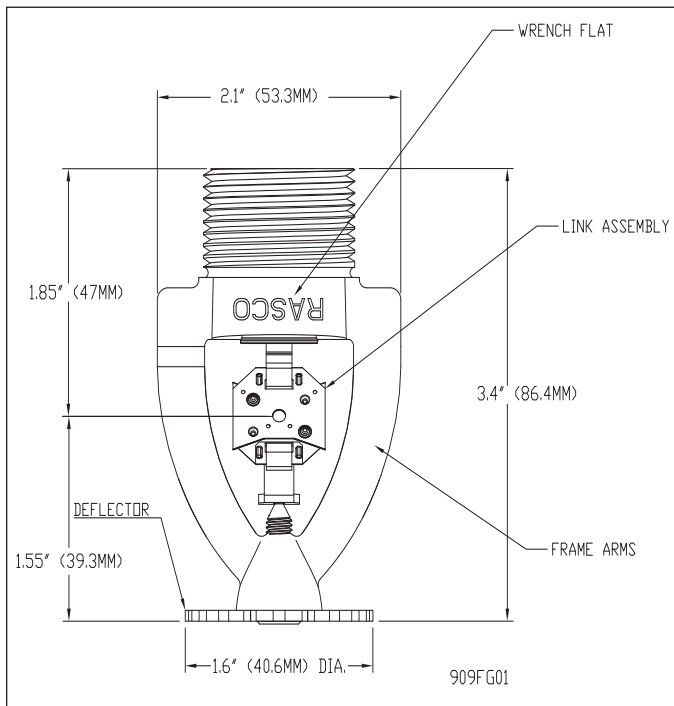


Fig. 2

## Model N25 ESFR Sprinkler Specification

Sprinklers shall be Early Suppression Fast Response (ESFR) pendent suppression mode sprinklers specifically tested and [FM Approved] for commodity storage applications. Sprinkler frame and deflector to be of bronze construction. Fusible link assembly shall utilize the strut and lever principle of operation with approved fast response black-painted or white-painted beryllium-nickel thermal element. Water seal shall consist of a Teflon-coated Bellville spring washer and brass cap assembly containing no plastic parts. ESFR sprinklers shall have a nominal K-factor of 25.2 with 1" NPT threaded end connections. Sprinkler temperature rating shall be [Ordinary 165°F (74°C)] [Intermediate 212°F (100°C)].

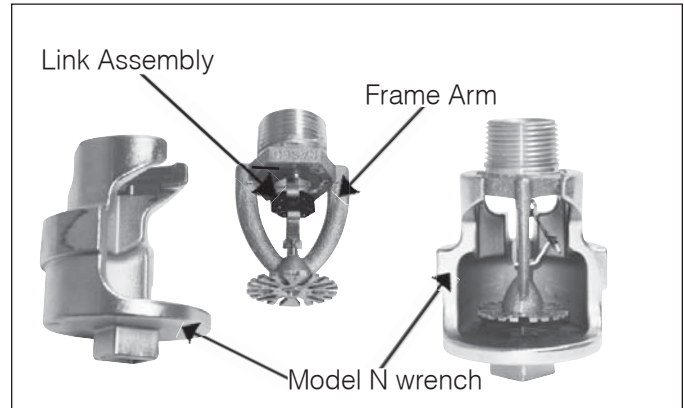


Fig. 3 - Model N Wrench

Use only the Model N sprinkler wrench for removal and installation. Any other type of wrench may damage the sprinkler.

**Note:** When handling sprinklers, hold sprinklers only on frame arms and do not apply any force on the link assembly. Sprinklers should be tightened between 22 - 30 ft-lbs (29.8 - 40.7 Nm) torque. Sprinklers not tightened to recommended torque may cause leakage or impairment of the sprinkler. Damage sprinklers must be replaced immediately.

## Ordering Information

### Specify:

1. Temperature rating
2. Thread type 1" NPT or ISO 7-R1

The equipment presented in this bulletin is to be installed in accordance with the latest published Standards of the National Fire Protection Association, Factory Mutual Research Corporation, or other similar organizations and also with the provisions of governmental codes or ordinances whenever applicable.

Products manufactured and distributed by Reliable have been protecting life and property for over 90 years, and are installed and serviced by the most highly qualified and reputable sprinkler contractors located throughout the United States, Canada and foreign countries.

Manufactured by

**Reliable**<sup>®</sup>

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