

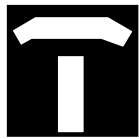
Model LD

11.2 K-factor Standard Response Control Mode - Large Drop



Upright Glass Bulb Automatic Sprinkler

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General Description

The Central Model LD, 11.2 K-factor, Standard Response, Upright Large Drop Storage Sprinklers are glass bulb type automatic sprinklers. They are intended for use with National Fire Protection Association and Factory Mutual Research Corporation "large drop sprinkler" installation criteria for the protection of high piled storage. The Model LD Sprinklers can provide a higher level of protection than standard spray sprinklers and, in some cases, they can provide an economic advantage by eliminating in-rack sprinklers.

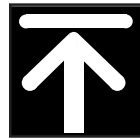
Applications for the Model LD Sprinklers are expanding beyond the current recognized installation standards. For information regarding research fire tests which may be acceptable to an Authority Having Jurisdiction (e.g., the protection of class II commodity in a 40 foot freezer using a double interlock preaction system), please contact the Technical Services Department.

Operation: The glass bulb contains a fluid which expands when exposed to heat. When the rated temperature is reached, the fluid expands sufficiently to shatter the glass bulb, which then allows the sprinkler to activate and flow water.

WARNING

The Model LD Large Drop Storage Sprinklers described herein must be installed and maintained in compliance with this document, as well as with the applicable standards of the National Fire Protection Association, in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the integrity of these devices.

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. The installing contractor or sprinkler manufacturer should be contacted relative to any questions.



Technical Data

Sprinkler Identification Number
SIN C5153

Approvals
UL & C-UL Listed. FM & NYC Approved.
(The approvals apply only to the service conditions indicated in the Design Criteria Section)

Maximum Working Pressure
175 psi (12,1 bar)

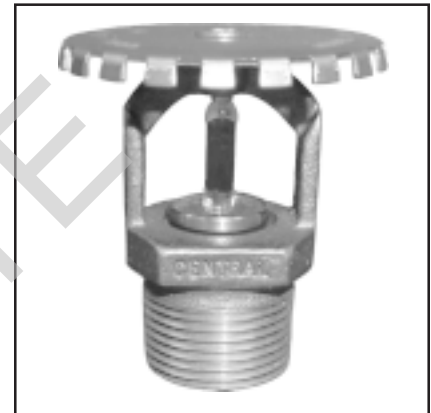
Pipe Thread Connection
3/4 inch NPT

Discharge Coefficient
 $K = 11.2 \text{ GPM/psi}^{1/2}$ (161,3 LPM/bar^{1/2})

Temperature Ratings
155°F/68°C, 200°F/93°C & 286°F/121°C

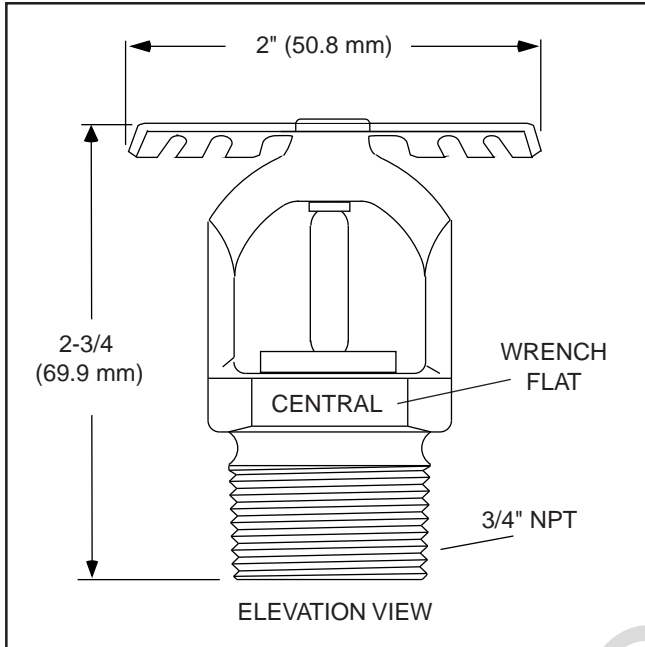
Finishes
Sprinkler: Natural Brass

Physical Characteristics
The Model LD Large Drop Storage Sprinklers utilize a dezincification resistant (DZR) bronze frame and a 5 mm bulb. The sprinkler frame orifice is sealed with a gasketed spring plate (Belleville Seal) consisting of a beryllium nickel disc spring that is sealed on both its inside and outside edges with a Teflon™ gasket. The compression screw is bronze, and the deflector is brass.



Large Drop Upright Sprinklers

**Figure 1 - Model LD,
Large Drop Storage Sprinkler**



**Figure 2 - Cross Section Model LD,
Large Drop Storage Sprinkler**

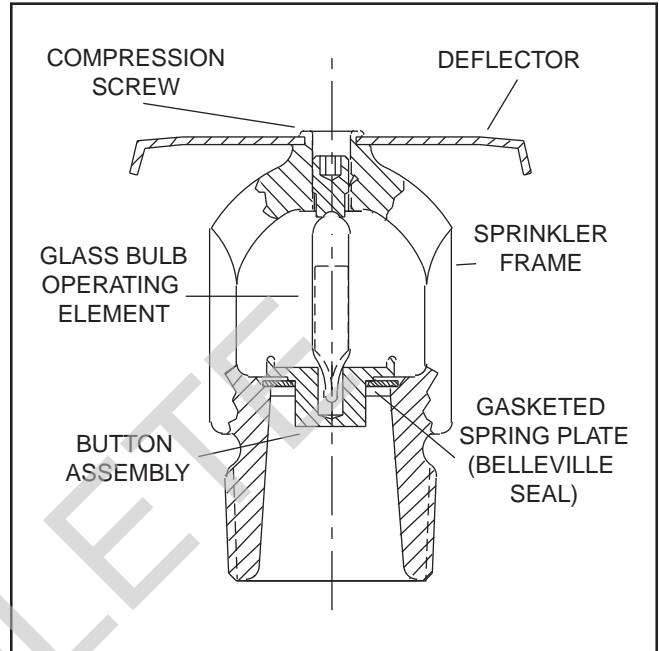
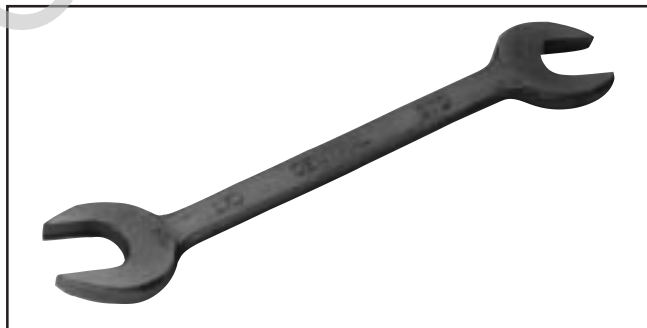


Figure 3 - W-Type 3 Sprinkler Wrench (Part #1073)





Design Criteria

The Model LD, 11.2 K-factor Large Drop Storage Sprinklers are UL and C-UL Listed and NYC Approved (MEA 466-92-E Vol. III), for use in accordance with current NFPA 13 Standards for Large Drop Sprinklers.

The Model LD, 11.2 K-factor Large Drop Storage Sprinklers are FM Approved as "Control Mode Specific Application Large Drop Sprinklers" for use in accordance with the FM Loss Prevention Data Sheets.



Installation

The Model LD Large Drop Storage Sprinklers must be installed in accordance with the following instructions.

NOTES

Do not install any bulb type sprinkler if the bulb is cracked or there is a loss of liquid from the bulb. With the sprinkler held horizontally, a small air bubble should be present. The diameter of the air bubble is approximately 1/16 inch (1,6 mm) for the 155°F/68°C to 3/32 inch (2,4 mm) for the 286°F/141°C rating.

A leak tight 3/4 inch NPT sprinkler joint should be obtained with a torque of 10 to 20 ft.lbs. (13,4 to 26,8 Nm). A maximum of 30 ft.lbs. (40,7 Nm) of torque is to be used to install 3/4 inch NPT sprinklers. Higher levels of torque may distort the sprinkler inlet with consequent leakage or impairment of the sprinkler.

Step 1. The Model LD Large Drop Storage Sprinklers must only be installed in the upright position.

Step 2. With pipe thread sealant applied to the pipe threads, wrench tighten the LD by using only the W-Type 3 Sprinkler Wrench (Ref. Fig. 3). The W-Type 3 Sprinkler Wrench is to be applied to the sprinkler wrench flats only.



Care & Maintenance

The Model LD Large Drop Storage Sprinklers must be maintained and serviced in accordance with the following instructions.

NOTES

Before closing a fire protection system main control valve for maintenance work on the fire protection system it controls, permission to shut down the affected fire protection systems must be obtained from the proper authorities. All personnel who may be affected by this action must be notified.

Sprinklers which are found to be leaking or exhibiting visible signs of corrosion must be replaced.

Automatic sprinklers must never be shipped or stored where their temperatures will exceed 100°F/38°C and they must never be painted, plated, coated or otherwise altered after leaving the factory. Modified sprinklers must be replaced. Sprinklers that have been exposed to corrosive products of combustion, but have not operated, should be replaced if they cannot be completely cleaned by wiping the sprinkler with a cloth or by brushing it with a soft bristle brush.

Care must be exercised to avoid damage - before, during, and after installation. Sprinklers damaged by dropping, striking, wrench twist/slippage, or the like, must be replaced. Also, replace any sprinkler that has a cracked bulb or that has lost liquid from its bulb (Ref. Installation Section).

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of the National Fire Protection Association (e.g., NFPA 25), in addition to the standards of any other authorities having jurisdiction. The installing contractor or sprinkler manufacturer should be contacted relative to any questions.

It is recommended that automatic sprinkler systems be inspected, tested, and maintained by a qualified Inspection Service.

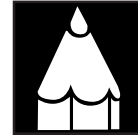


Limited Warranty

Products manufactured by Tyco Fire Products are warranted solely to the original Buyer for ten (10) years against defects in material and workmanship when paid for and properly installed and maintained under normal use and service. This warranty will expire ten (10) years from date of shipment by Tyco Fire Products. No warranty is given for products or components manufactured by companies not affiliated by ownership with Tyco Fire Products or for products and components which have been subject to misuse, improper installation, corrosion, or which have not been installed, maintained, modified or repaired in accordance with applicable Standards of the National Fire Protection Association, and/or the standards of any other Authorities Having Jurisdiction. Materials found by Tyco Fire Products to be defective shall be either repaired or replaced, at Tyco Fire Products' sole option. Tyco Fire Products neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of products or parts of products. Tyco Fire Products shall not be responsible for sprinkler system design errors or inaccurate or incomplete information supplied by Buyer or Buyer's representatives.

IN NO EVENT SHALL TYCO FIRE PRODUCTS BE LIABLE, IN CONTRACT, TORT, STRICT LIABILITY OR UNDER ANY OTHER LEGAL THEORY, FOR INCIDENTAL, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LABOR CHARGES, REGARDLESS OF WHETHER TYCO FIRE PRODUCTS WAS INFORMED ABOUT THE POSSIBILITY OF SUCH DAMAGES, AND IN NO EVENT SHALL TYCO FIRE PRODUCTS' LIABILITY EXCEED AN AMOUNT EQUAL TO THE SALES PRICE.

THE FOREGOING WARRANTY IS MADE IN LIEU OF ANY AND ALL OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.



Ordering Information

Ordering Information: When placing an order, indicate the full product name. Please specify the quantity, model, style, orifice size, temperature rating, type of finish or coating, and sprinkler wrench. Refer to price list for complete listing of Part Numbers.

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