

Model DSB-2 Dry Sprinkler Boot For Use with TYCO Dry Type Sprinklers

IMPORTANT

Refer to Technical Data Sheet TFP2300 for warnings pertaining to regulatory and health information. Always refer to Technical Data Sheet TFP700 for the "INSTALLER WARNING" that provides cautions with respect to handling and installation of sprinkler systems and components. Improper handling and installation can permanently damage a sprinkler system or its components and cause the sprinkler to fail to operate in a fire situation or cause it to operate prematurely.

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General Description

The TYCO Model DSB-2 Dry Sprinkler Boot (see Figure 1) is designed for use with TYCO Dry Type Sprinklers. When properly installed, it will help close the air gap created by the clearance hole through a wall or ceiling through which the dry type sprinkler has penetrated.

The sprinkler boot is intended predominantly for use with clearance holes through freezer ceiling structures. In these types of installations, due to the greater temperature difference between the inside and outside of the freezer than found with other type installations, the potential for the for-

mation of condensation in the sprinkler and subsequent ice build-up is increased. If this condensation is not controlled, ice build-up can occur that might damage the dry type sprinkler and/or prevent proper operation in a fire situation.

The sprinkler boot is intended to help stop the air exchange between the inside and outside of the freezer (or any other type of similar construction) to help prevent transfer of moist air into the freezer space. The use of the boot provides a quick and efficient means of closing the air gap created by the dry type sprinkler clearance hole. The boot provides the added feature of eliminating the occurrence of cracking of some commonly used sealants, that subsequently allows the passage of moist air.

NOTICE

The TYCO Model DSB-2 Dry Sprinkler Boot 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 (NFPA), in addition to the standards of any other authorities having jurisdiction. Failure to do so may impair the performance of these devices.

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. Contact the installing contractor or product manufacturer with any questions.

Technical Data

Approvals

The TYCO Model DSB-2 Dry Sprinkler Boot does not require laboratory approval for installation in accordance with the applicable standards of the NATIONAL FIRE PROTECTION ASSOCIATION. The use of the sprinkler boot does not alter any of the applicable laboratory approvals for TYCO Dry Type Sprinklers.

NFPA 13, section 15.3.3 (2022 Edition), requires that dry sprinklers connected to wet pipe sprinkler systems protecting insulated freezer structures, the



clearance space around the sprinkler barrel shall be sealed.

Note: Use of the TYCO Model DSB-2 Dry Sprinkler Boot with dry type sprinklers branded other than TYCO voids the warranty. Failure may result due to dimensional differences in the outside diameter of the barrel. The fit or performance of the sprinkler boot has not been tested with other brands of dry type sprinklers.

Physical Characteristics

Boot.....EPDM* and Rubber
Strap Ties.....Nylon
Adhesive.....Ethyl Cyano-acrylate based**

* Ethylene propylene diene monomer

** The adhesive is formulated for instant bonding of the sprinkler boot to metal, plastic, or rubber surfaces.

Design Criteria

When designing a fire protection sprinkler system using the TYCO Model DSB-2 Dry Sprinkler Boot, consider the following criteria:

- Dry type sprinkler selection
- Clearance hole size
- Exposure length
- Sprinkler fitting

Dry Type Sprinkler

See Table A for compatible dry type sprinklers and their associated technical data sheets. Refer to the applicable technical data sheet for installation and maintenance information for the sprinkler being utilized..

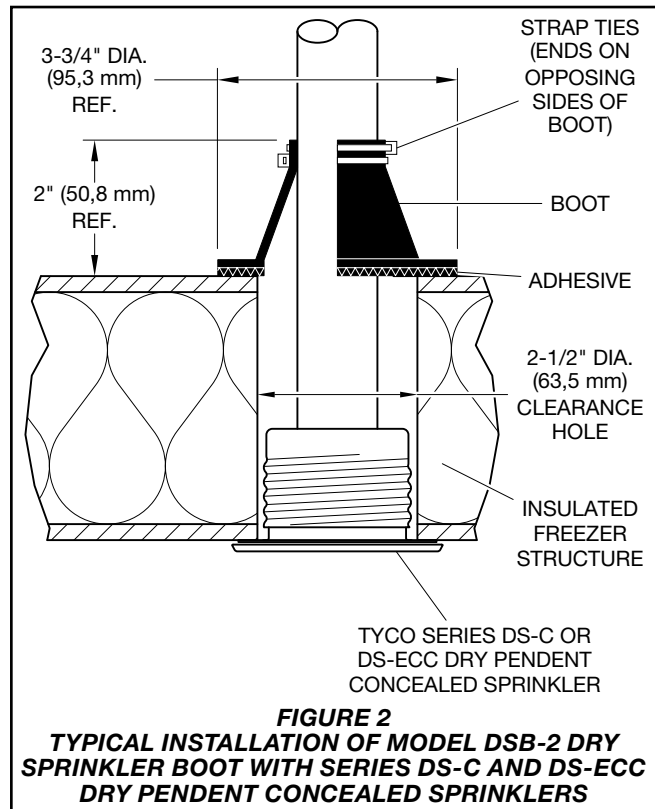
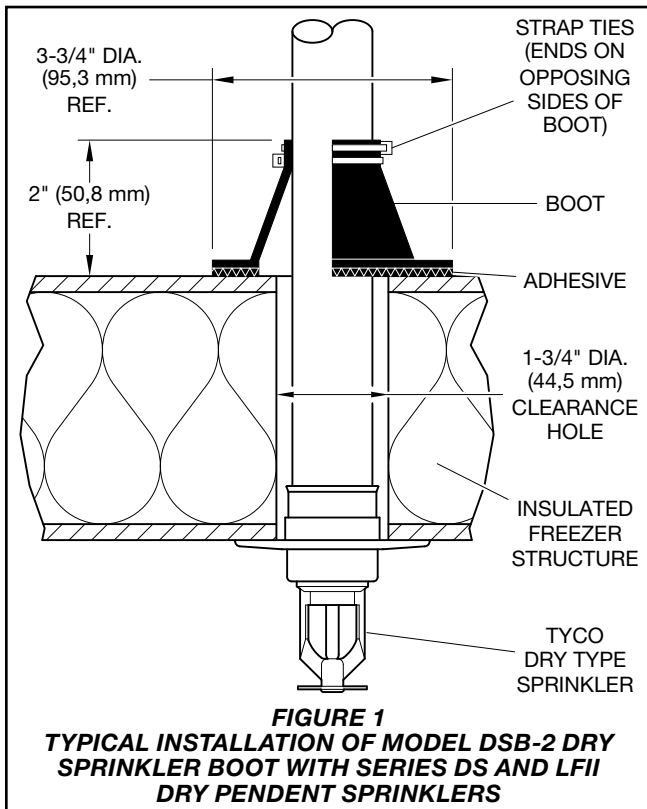
NOTICE

The TYCO Dry Type Sprinklers must be installed and maintained in compliance with the applicable technical data sheet. Failure to do so may impair the performance of these devices.

Sprinkler Series	Description	TDS	Sprinkler Series	Description	TDS
DS-1	5.6K, Standard Response, Standard Coverage, Pendant and HSW	TFP500	DS-2	11.2K, Standard and Quick Response, Standard Coverage, Pendant	TFP530
DS-8	8.0K, Standard Response, Standard Coverage, Pendant and HSW	TFP503	DS-2	11.2K, Standard and Quick Response, Extended Coverage, Light and Ordinary Hazard, Pendant	TFP540
DS-1	5.6K, Quick Response, Standard Coverage, Pendant and HSW	TFP510	DS-3	11.2K, Standard Response, Extended Coverage, HSW	TFP550
DS-8	8.0K, Quick Response, Standard Coverage, Pendant and HSW	TFP513	DS-1	5.6K, Stainless Steel, Standard and Quick Response, Standard and Extended Coverage, Pendant and HSW	TFP560
DS-C	5.6K, Standard and Quick Response, Standard Coverage, Concealed Pendant	TFP515	LFII	4.9K, Residential, Recessed Pendant	TFP460
DS-ECC	5.6K, Quick Response, Extended Coverage, Concealed Pendant	TFP518	LFII	4.4K, Residential, Recessed HSW	TFP461
DS-1	5.6K, Standard and Quick Response, Extended Coverage, HSW	TFP520			

Notes:
1. TDS = Technical Data Sheet 2. HSW = Horizontal Sidewall

TABLE A
MODEL DSB-2 DRY SPRINKLER BOOT
SPRINKLER COMPATIBILITY



Clearance Hole Size

The Model DSB-2 Sprinkler Boot may be installed over a TYCO dry type sprinkler to close the gap between the barrel and clearance hole. The minimum and maximum clearance hole sizes, based on the TYCO dry type sprinkler data-sheets, are as follows:

- Minimum 1-3/4 in. (44,5 mm) diameter as shown in Figure 1
- Maximum 2-1/2 in. (63,5 mm) diameter as shown in Figure 2

Considering the sprinkler barrel diameter compared with the boot flange diameter, the maximum clearance hole

diameter is sufficient to compensate for off-center sprinkler installations.

Note: The clearance hole cannot be larger than 2 1/2 in. (63,5 mm) diameter for an off-center installation otherwise, the Model DSB-2 Sprinkler Boot cannot close the air gap as intended.

As an exception, where sprinkler centering can be maintained, the sprinkler boot will accommodate an installation through a clearance hole as large as 3 in. (76,2 mm) diameter.

Note: For the sprinkler boot to be effective in closing the air gap, the boot must seat and seal against the smooth material of the ceiling or wall. Clearance holes greater than the specified sizes cannot be filled in with foam insulation or any other filler.

Exposure Length

When Dry Sprinklers are to be used in wet pipe sprinkler systems protecting areas subject to freezing temperatures (for example, sprinkler drops into freezers), consideration must be given to the appropriate length of the sprinkler that will prevent freezing of the water in the connecting pipes due to conduction. When the temperature surrounding the wet pipe sprinkler system is maintained at a minimum temperature of 40°F (4°C), the following are the minimum recommended lengths between the face of the sprinkler fitting and the outside surface of the protected area (for example length exposed to minimum ambient temperature of 40°F (4°C), see Figure 3):

- 12 in. (300 mm) when the temperature within the protected area is -20°F (-29°C)
- 18 in. (450 mm) when the temperature within the protected area is -40°F (-40°C)
- 24 in. (600 mm) when the temperature within the protected area is -60°F (-51°C)

For other protected area temperatures, the minimum recommended exposure length can be determined by interpolating between the indicated values.

Note: The temperature within the protected area must be based on the lowest expected temperature. For example, a freezer may be rated at -20°F (-29°C), yet the condenser is emitting -30°F (-35°C). The dry sprinkler length must be calculated based on the lower temperature of -30°F (-35°C).

Sprinkler Fitting

TYCO dry type sprinklers must be installed in the 1 in. NPT outlet or run of a malleable or cast iron threaded tee as described in the applicable technical data sheets. For sprinkler usage in a wet pipe system, the sprinkler drop may be installed as shown in Figure 4. The information in Figure 4 may only be used where the sprinkler fitting and water filled pipe above the sprinkler fitting is not subject to freezing. In areas subject to freezing, the pipe connected to the dry type sprinkler must be configured to allow complete drainage as shown in Figure 5.

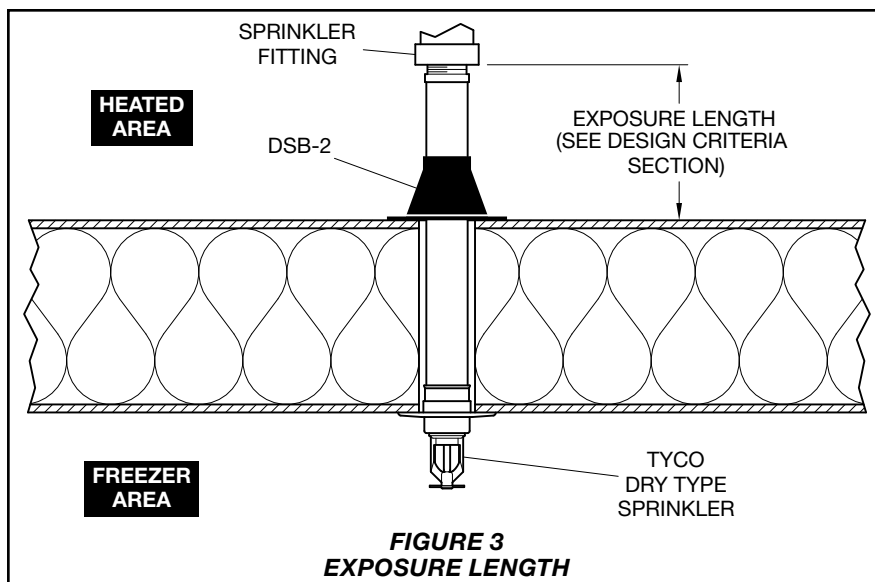


FIGURE 3
EXPOSURE LENGTH

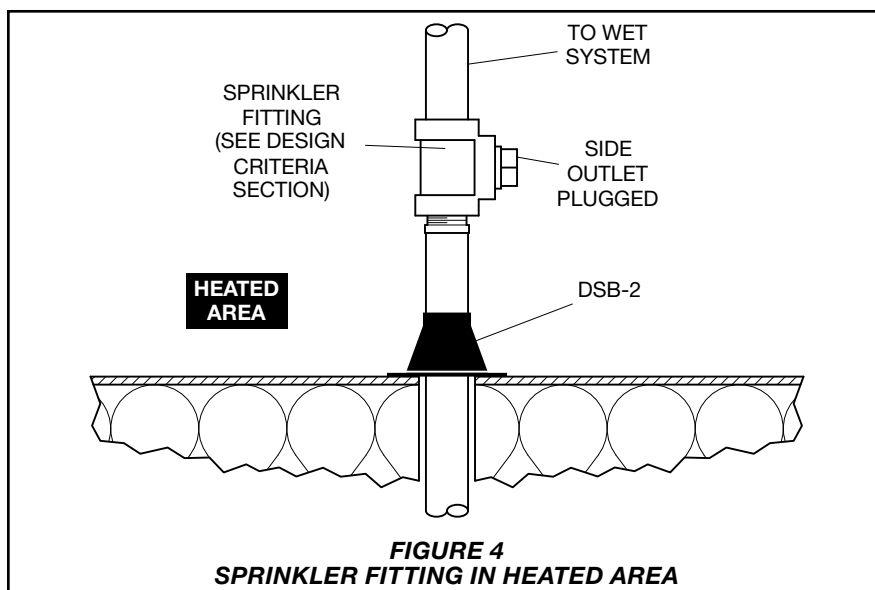


FIGURE 4
SPRINKLER FITTING IN HEATED AREA

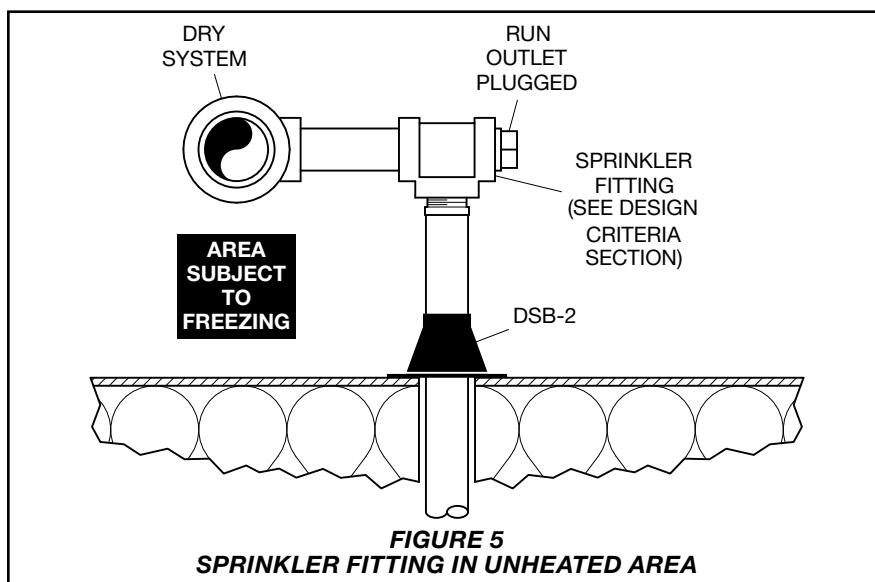


FIGURE 5
SPRINKLER FITTING IN UNHEATED AREA

Installation

The TYCO Model DSB-2 must be installed in accordance with this section.

WARNING

The Adhesive contains cyanoacrylate ester. Irritation will occur when inhaled. This adhesive bonds skin in seconds. Contact through clothing may cause burns. The adhesive is an EYE IRRITANT.

Always refer to the Material Safety Data Sheet for additional adhesive handling recommendations. The Material Safety Data Sheet should be obtained from the adhesive manufacturer web site noted on the adhesive container label before use.

In case of skin contact, flush with water, and for eye contact seek medical attention.

Provide adequate ventilation in area of usage. When possible ventilation should be achieved by the use of local exhaust ventilation and good general ventilation. Vapors are heavier than air, therefore, downward ventilation should be used. When handling cyanoacrylate adhesives, goggles or safety glasses should always be worn. Polyethylene gloves should be used to protect the hands.

WARNING

Do not use rubber or cloth gloves. Rubber gloves will bond when brought in contact with the adhesive and porous cotton gloves will absorb the adhesive and bond the gloves to the skin.

Step 1. Prepare the clearance hole according to the applicable TYCO dry sprinkler technical data sheet.

Step 2. Insert the dry sprinkler through the clearance hole and slide the sprinkler boot over the threaded inlet of the dry sprinkler.

Note: *When installing on Series DS-2 Dry Sprinklers, the boot will require stretching. The use of a grooved coupling gasket lubricant eases installation. Use only a petroleum free silicone grooved coupling gasket lubricant to avoid freezing of the sprinkler boot to the dry sprinkler.*

Note: *When sliding the sprinkler boot over the length of the dry sprinkler, sliding is easily accomplished by slightly squeezing the sprinkler boot around the cone area.*

Step 3. Thread the dry sprinkler into the sprinkler fitting according to the applicable TYCO dry sprinkler technical data sheet.

Note: *Refer to the sprinkler technical data sheet for tightening torque specifications. The use of higher levels of torque than specified may distort the sprinkler inlet with consequent leakage or impairment of the sprinkler.*

Step 4. Clean the contact surfaces of the sprinkler boot and the building (ceiling or wall) structure with a damp cloth. Moist surfaces aid a quick adhesion.

Note: *Use only a cloth that is dampened with water. The use of other cleaning techniques, such as solvents or otherwise, may render the adhesive incapable of sealing.*

Step 5. Apply the provided adhesive to the building structure in a zig-zag pattern. Refer to the WARNING regarding the adhesive.

Step 6. Slide the sprinkler boot until the assembly comes in contact with the building structure, and press the boot firmly against the building structure to help ensure the adhesive is fully applied to both surfaces.

Note: *When sliding the sprinkler boot over the length of the dry sprinkler, sliding is easily accomplished by slightly squeezing the sprinkler boot around the cone area.*

Step 7. Wait two minutes to allow the adhesive to sufficiently cure. Apply the two strap ties to the straight section of the sprinkler as shown in Figure 1, so that the ends are on opposing sides of the boot.

Note: *The strap ties must be pulled sufficiently tight to the point that there is no gap between the sprinkler boot and the dry sprinkler. When properly installed a paper clip or wire of similar dimension cannot be slipped between the sprinkler boot and the dry sprinkler.*

Care and Maintenance

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 such as NFPA 25, in addition to the standards of any other authorities having jurisdiction. Contact the installing contractor or product manufacturer with any questions.

Automatic sprinkler systems should be inspected, tested, and maintained by a qualified Inspection Service in accordance with local requirements and/or national codes.

Limited Warranty

For warranty terms and conditions, visit www.tyco-fire.com.

Ordering Procedure

Contact your local distributor for availability. When placing an order, indicate the full product name and Part Number (P/N).

Model DSB-2

Model DSB-2 Dry Sprinkler Boot includes one boot, two strap ties, and 1/3 oz of adhesive, quantity of adhesive is sufficient for one boot installation.

Specify: Model DSB-2 Dry Sprinkler Boot, P/N 63-000-0-00