

CODE: **KX04-042-00 (Pendent)**ERP: **0126024**CODE: **MBK06 - ST - 68UL (Upright)**ERP: **0126031**

Pendent & Upright Sprinklers

STANDARD SPRAY, STANDARD / QUICK RESPONSE, 5/3 mm BULB TYPE, K5.6, 1/2" CONNECTING THREAD

GENERAL DESCRIPTION

The MBK06-ST-68UL (Upright) Standard/Quick Response Upright and KX04-042-00 (Pendent) Standard/Quick Response Pendent Sprinklers (Ref. Figure A) are automatic sprinklers of the frangible bulb type.

They are "standard/quick response- standard orifice spray sprinkler" intended for use in fire sprinkler systems designed in accordance with the standard installation rules recognized by the applicable Listing or Approval agency (e.g., UL Listing is based on NFPA 13 requirements). The Upright, Pendent Sprinklers all produce a hemispherical water distribution pattern below the deflector.

SPRINKLER OPERATION

During a fire conditions, the thermal-sensitive liquid in the glass bulb expands, causing the bulb to shatter, releasing the button and spring seal assembly. Water flowing through the sprinkler orifice strikes the sprinkler deflector, forming a uniform spray pattern to extinguish or control the fire.

COVERAGE

For coverage area and sprinkler placement, refer to NFPA13 standards.

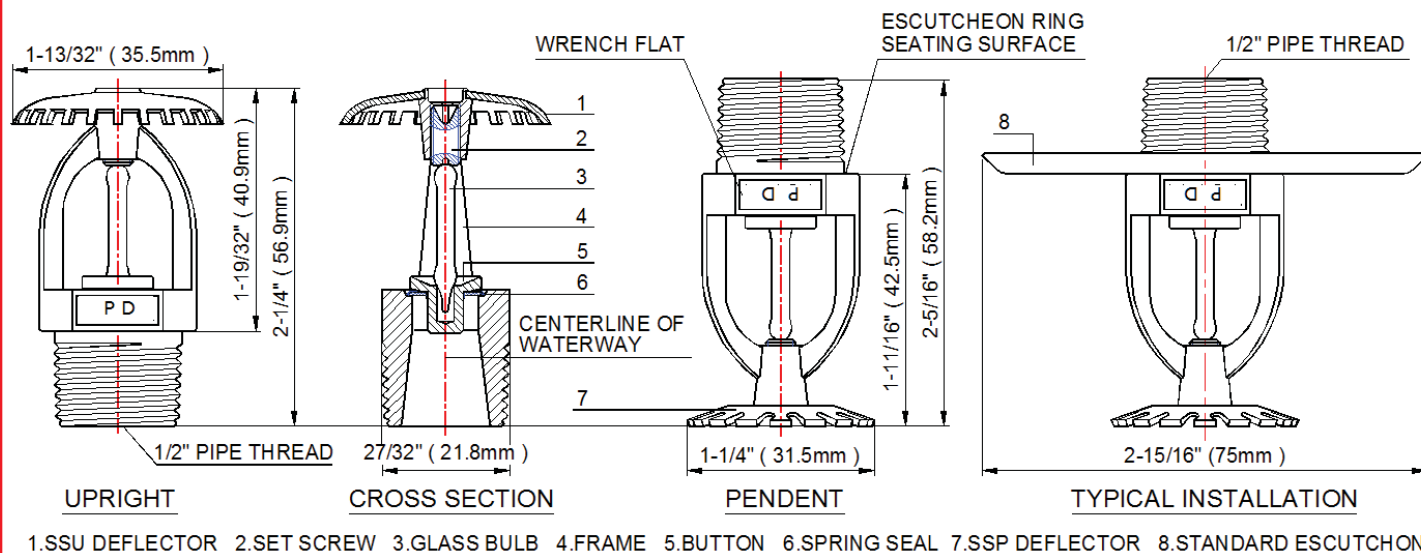


FIGURE A: MBK06 - ST - 68UL (Upright) & KX04-042-00 (Pendent)



TECHNICAL SPECIFICATIONS

Model & Sprinkler I.D. No.	MBK06 - ST - 68UL (Upright)		KX04-042-00 (Pendent)	
Style	Upright		Pendent	
Bulb Nominal Dia. & Response	Ø5mm, Standard Response	Ø3mm, Quick Response	Ø5mm, Standard Response	Ø3mm, Quick Response
Thread Size [Optional]	NPT1/2 or R1/2			
Nominal Orifice Size	1/2 Inch			
Nominal K-Factor	5.6 (U.S.) / 80 (metric)			
Max. Working Pressure	175 psig / 1.2 MPa (12 bar)			
Factory Hydrostatic Test	100% @ 500psig (3.4 MPa)			
Min. Operating Pressure	7 psig / 0.048 MPa (0.48 bar)			
Sprinkler Finish [Optional]	Natural Brass Chrome Plated White Color Coated			
Escutcheon Finish	Chrome Plated or Color Coated In Any Color			
Listings and Approvals	UL(United States) / ULC(Canada)			

AVAILABLE TEMPERATURE RATING

Temp. Classification	Ordinary	Ordinary	Intermediate	Intermediate
Nominal Temp. Rating	135°F/ 57°C	155°F/ 68°C	175°F/ 79°C	200°F/ 93°C
Max. Ambient Temp. Allowed ⁵	115°F/ 46°C	135°F/ 57°C	155°F/ 68°C	180°F/ 82°C
Max. Recommended Ambient Temp. ⁶	100°F/ 38°C	100°F/ 38°C	150°F/ 65°C	150°F/ 65°C
Glass Bulb Color ⁷	Orange	Red	Yellow	Green

Footnotes:

¹ Sprinkler I.D. Nos. and nominal U.S. K-factors provided in accordance with the 2002 edition of NFPA 13.

² The pipe thread connections accord with ISO7/1.

³ This table shows the listings and approvals available at the time of printing. Check with the manufacturer for any additional approvals.

⁴ UL and ULC Listed for both Light-Hazard and Ordinary-Hazard occupancies.

⁵ Based on National Fire Prevention and Control Administration Contract No. 7-34860.

⁶ 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.

⁷ The temperature rating is stamped on the deflector or adjacent to orifice seat on frame.

SPRINKLER MATERIALS

Frame	Brass Casting DZR
Deflector	Brass UNS-28000
Glass Bulb	Glass with Glycerin Solution, JOB® G5 for PD003/ PD005 JOB® F3 for PD004/ PD006
Set Screw	Brass UNS-28000
Button	Brass UNS-28000
Spring	Stainless Steel
Seal	Teflon® Tape
Standard Escutcheon (Type E-1)	Cold Rolled Steel

ACCESSORIES

Standard Escutcheon	
Type	E-1
Installation Wrench	
Type	T-1

DISCHARGE COEFFICIENT

Model Upright and Model Pendent Sprinklers are rated for use at a maximum service pressure of 175 psig (12 bar).

The nominal discharge curve plotted in Figure B represents the flow "Q" in GPM (LPM) as determined by the following formula:





$$Q = K (P)^{0.5}$$

Where:

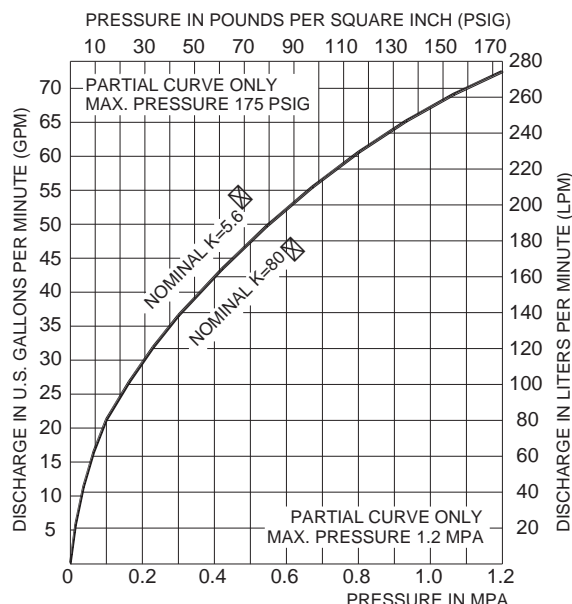


FIGURE B : NOMINAL DISCHARGE CURVE

Q — Flow, GPM (LPM)

K — Discharge Coefficient, K=5.6 (80)

P—Discharge Pressure, psig (bar) Listing standards permit the actual value of "K" to vary from 5.3 to 5.8 (76,4 to 83,6); however, for hydraulic calculations, a K-factor of 5.6 (80,7) is to be applied.

WARNING

The Model Upright Sprinklers and Model Pendent Sprinklers described here in must be installed and maintained in compliance with this document, as well as 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 manufacturer should be contacted relative to any questions.

INSTALLATIONS

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 horizontal, a small air bubble should be present.

The Model Upright Sprinklers and Model Pendent Sprinklers must be installed in accordance with the following instructions.

1. Prior to installing the sprinklers, if applicable, verify that the face of the sprinkler fitting is within the proper range of distance, which can be accommodated by the type of escutcheon being used.
2. With pipe thread sealant applied to the pipe threads and after installing standard escutcheon, over the sprinkler threads, hand tighten the sprinkler into the sprinkler fitting.
3. Refer to Figure D and select the appropriate Sprinkler Wrench for tightening the sprinkler into the sprinkler fitting.



NOTES

A leak tight 1/2" pipe thread sprinkler joint should be obtained with a torque of 7 to 14 ft.lbs. (9.5 to 19.0 Nm). A maximum of 21 ft.lbs. (28.5Nm) of torque is to be used to install the sprinkler. Higher levels of torque may distort the sprinkler inlet with consequent leakage or impairment of the sprinkler.

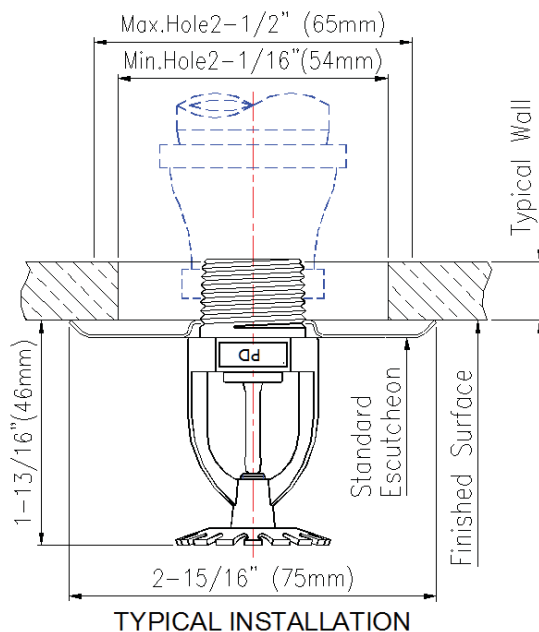


FIGURE C: PENDENT SPRINKLER INSTALLED WITH A STANDARD ESCUTCHEON

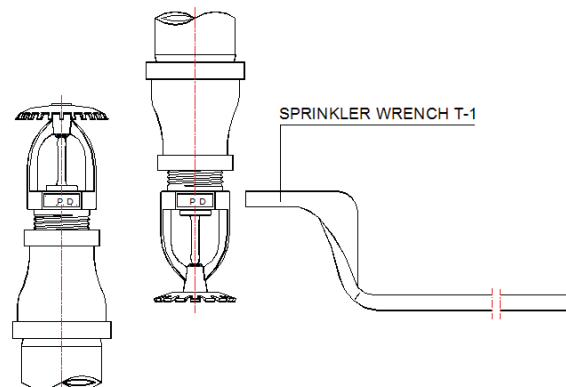


FIGURE D: SPRINKLER WRENCH SELECTION & USE

Push on the Sprinkler Wrench, while it is being turned, to ensure that the Wrench recess stays fully engaged with the sprinkler wrench flats. Carefully remove the Sprinkler Wrench by disengaging it from the sprinkler wrench flats, and then lowering it down over the sprinkler deflector.

CARE & MAINTENANCE

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 to the sprinklers — both before 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 Note).

NOTES

Absence of an escutcheon, which is used to cover a clearance hole, may delay the time to sprinkler operation in a fire situation. Before closing a fire protection system control valve for maintenance work on the fire protection system, which it controls, permission to shut down the affected fire protection system must be obtained from the proper authorities and all personnel who may be affected by this action must be notified. It is recommended that automatic sprinkler systems be inspected quarterly by a qualified Inspection Service.



ORDERING PROCEDURE

A Product Symbol Number (PSN) shall be specified when ordering sprinklers. And it is suggested that a color chip be provided when ordering special color coated Escutcheons. Otherwise, responsibility for duplication cannot be accepted.
Contact your local distributor for availability.

Sprinkler Assemblies:

Specify: 1/2" orifice, (specify temperature rating), Model Upright Sprinklers with (specify type of finish), PSN (specify as follows).

Standard/Quick Response Upright Sprinklers:

PSN 020381 **X₁** **X₂**

X ₁	Class Bulb and Nominal Temperature Rating
1	135° F/ 57° C, Standard Response
2	135° F/ 57° C, Quick Response
3	155° F/ 68° C, Standard Response
4	155° F/ 68° C, Quick Response
5	175° F/ 79° C, Standard Response
6	175° F/ 79° C, Quick Response
7	200° F/ 93° C, Standard Response
8	200° F/ 93° C, Quick Response
X ₂	Thread Size and Sprinkler Finish
1	NPT1/2 Natural Brass
2	NPT1/2 Chrome Plated
3	R1½ per ISO 7/1 Natural Brass
4	R1½ per ISO 7/1 Chrome Plated
5	NPT1/2 White Color Coated
6	R1½ White Color Coated

Standard/Quick Response Pendent Sprinklers:

PSN 020382 **X₁** **X₂**

X ₁	Class Bulb and Nominal Temperature Rating
1	135° F/ 57° C, Standard Response
2	135° F/ 57° C, Quick Response
3	155° F/ 68° C, Standard Response
4	155° F/ 68° C, Quick Response
5	175° F/ 79° C, Standard Response
6	175° F/ 79° C, Quick Response
7	200° F/ 93° C, Standard Response
8	200° F/ 93° C, Quick Response
X ₂	Thread Size and Sprinkler Finish
1	NPT1/2 Natural Brass
2	NPT1/2 Chrome Plated
3	R1½ per ISO 7/1 Natural Brass
4	R1½ per ISO 7/1 Chrome Plated
5	NPT1/2 White Color Coated
6	R1½ White Color Coated





Accessories:

Order the following accessories, as applicable:

Type E-1 1/2" Standard Escutcheon with chromate finishes:

.....**PSN 0608 111**

Type E-1 1/2" Standard Escutcheon with white painted finish:

..... **PSN 0608 112**

Type T-1 Wrench:

.....**PSN0109**

WEIGHT

The nominal weights are as follows.

1/2" Orifice Model PD003/ PD004 Upright	2.8 ozs. (80 g)
1/2" Orifice Model PD005/ PD006 Pendent	2.8 ozs. (80 g)
E-1 Standard Escutcheon	0.6 ozs. (18 g)
T-1 Sprinkler Wrench	18 ozs. (510 g)

CONVERSION TABLE

Name of Unit	Unit Symbol	Conversion Factor
Millimeter	mm	1 in.=25.4 mm
Square meter	m ²	1 ft ² =0.0929 m ²
Liter	L	1 gal=3.785 L
Cubic decimeter	dm ³	1 gal=3.785 dm ³
Cubic meter	m ³	1 ft ³ =0.0283 m ³
Kilogram	kg	1 lb=16 ozs.=0.4536 kg
Kilograms per cubic meter	Kg/m ³	1 lb/ft ³ =16.0183kg/m ³
Pascal	Pa	1 psi=6895 Pa
Bar	bar	1 psi=0.0689 bar
Newton meter	N·m	1 ft·lbs=1.355 N·m

! WARNING



This product must be installed by an experienced, trained installer, in accordance with the instructions provided with each valve. These instructions contain important information. Failure to follow these instructions may result in serious personal injury, property damage, or valve leakage. We reserve the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

