PRODUCT DESCRIPTION

The Model A SD1133 and SD1121, ½" orifice, standard horizontal sidewall sprinkler (HSW), standard and quick response glass bulb type are designed for standard coverage or recessed installation. All SHIELD sprinklers are manufactured by using time-proven Belleville seal to ensure long life and safe operation. The forged frame is stronger and more streamlined than traditional die cast and sand cast frames. The design provides a crescent-shaped water discharge pattern for installation along a wall or under a beam or ceiling. The state-of-the-art design incorporates highly thermal sensitive glass bulb actuating for prompt and precise operation. For easy tightening from different angles and reducing assembly effort, SHIELD standard tools (wrench and key) are highly recommended to be exerted in the installation of SHIELD sprinklers.This sprinkler is available in various temperature ratings (see chart on page 2) and finishes to meet many design requirements. The recessed HSW should be utilized with a Model A recessed escutcheon plate which provides up to ¾" of adjustments.

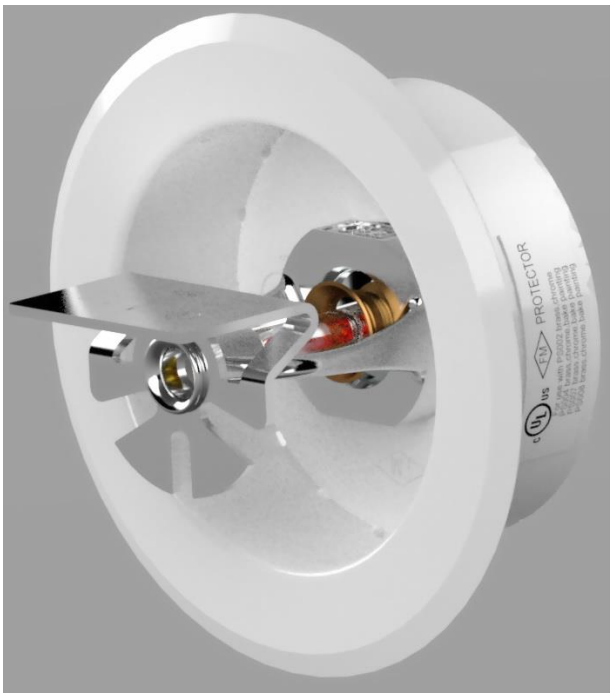
SPRINKLER OPERATION

The operating mechanism is a frangible glass bulb which contains a heat responsive liquid. During a fire, the ambient temperature rises, causing the liquid in the bulb to expand. When the ambient temperature reaches the rated temperature of the sprinkler, the bulb shatters. As a result the waterway is cleared of all sealing parts and water is discharged towards the deflector. The special designed deflector enables to transform the discharging water into a more efficient and well-distributed spray pattern and effectively cool down the heat to suppress fire spread.

MAXIMUM COVERAGE

Standard spray coverage is up to: Ordinary Hazard = 100 square feet (9.3 m^2) per NFPA 13.

Standard Horizontal Sidewall



Recessed Horizontal Sidewall

TECHNICAL SPECIFICATION

SIN：SD1133 Standard Response (5mm bulb) / SD1121 Quick Response (3mm bulb)
Style：Standard Horizontal Sidewall
K-Factor：5.6 Imp. (80 S.I)
Response Time Index (RTI)：Standard Response < 90 ($m/s^{1/2}$) / Quick Response 33< ($m/s^{1/2}$)
Nominal Thread Size：1/2” NPT (15 mm)
Max. Working Pressure：175 PSI (1200kPa)
Factory Hydrostatic Test：100%@500 PSI (3450 kPa)
Min. Operation Pressure：7 PSI (48 kPa)

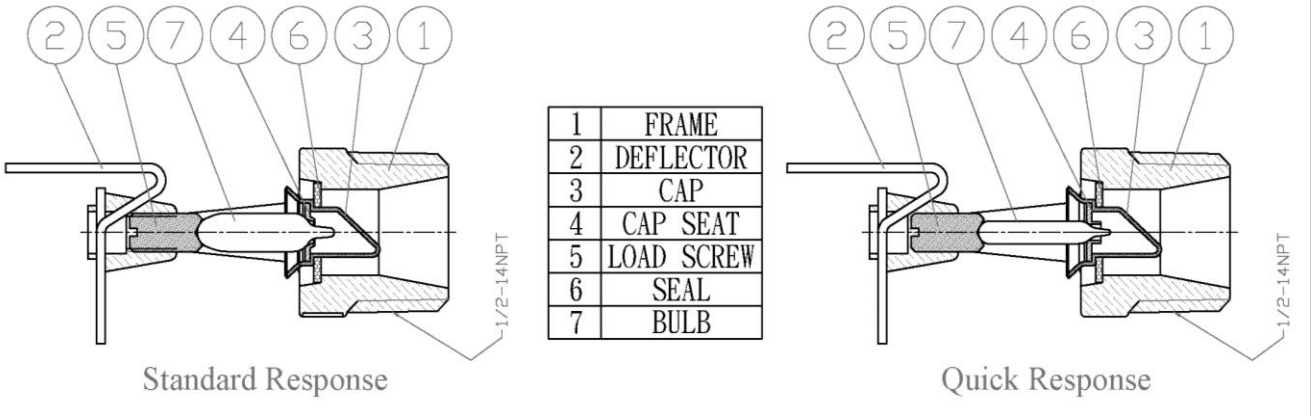
FINISHES AVAILABLE

Brass
Chrome Plated
White Coated - Polyester
Custom Paint.

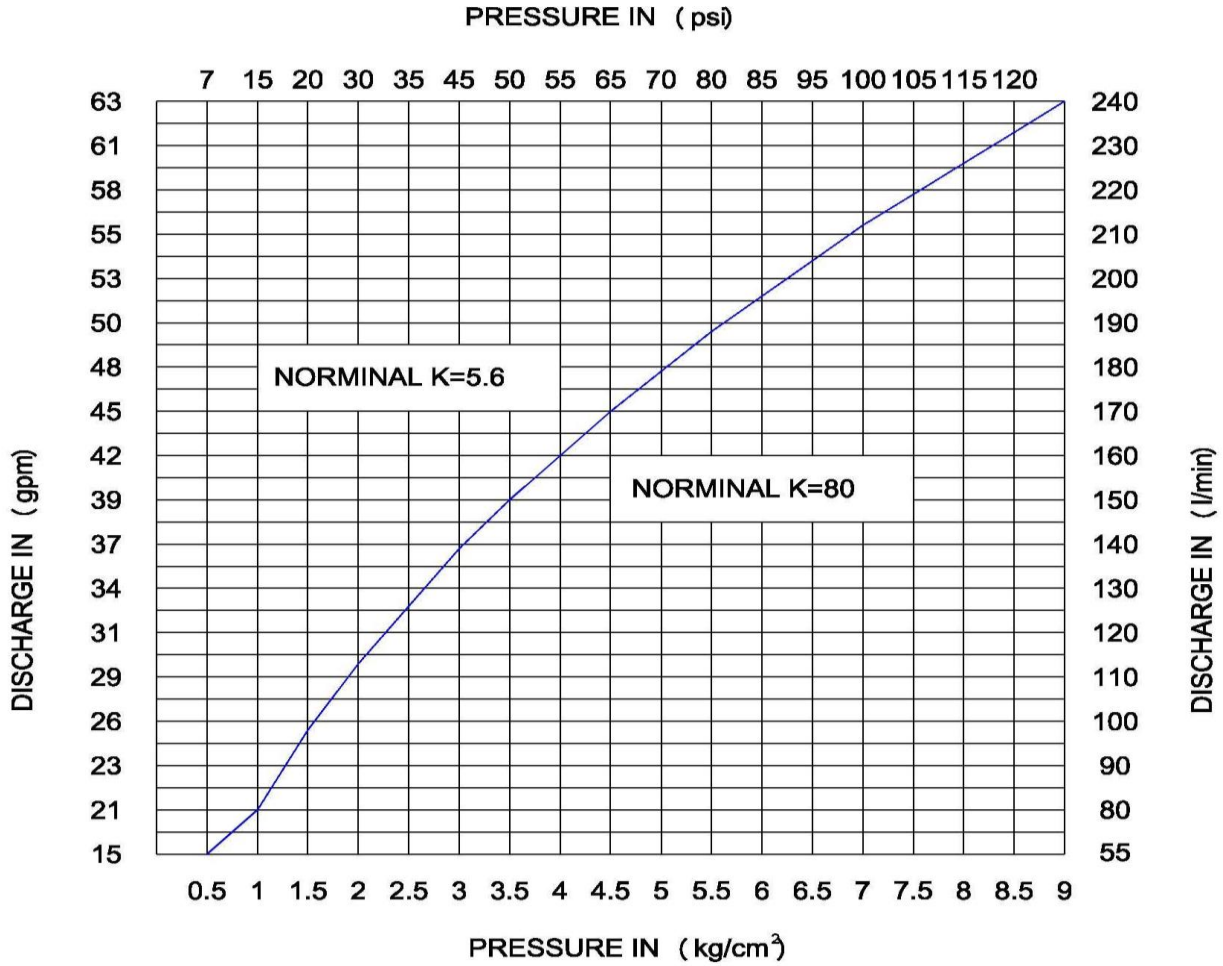
RATINGS

SPRINKLER TEMPERATURE CLASSIFICATION	RESPONSE	NOMINAL SPRINKLER TEMPE RATURE RATING	N.F.P.A MAXIMUM AMBIENT (CEILING) TEMP.(ALLOWED)	GLASS BULB COLOR	APPROVALS		
					UL	CUL	FM
Ordinary	Standard	135℉/57℃	100℉/38℃	Orange	Yes	Yes	Yes
Ordinary	Standard	135℉/57℃	100℉/38℃	Orange	Yes	Yes	Yes
Ordinary	Standard	155℉/68℃	100℉/38℃	Red	Yes	Yes	Yes
Intermediate	Standard	175℉/79℃	150℉/65℃	Yellow	Yes	Yes	Yes
Intermediate	Standard	200℉/93℃	150℉/65℃	Green	Yes	Yes	Yes
Ordinary	Quick	135℉/57℃	100℉/38℃	Orange	Yes	Yes	N/A
Ordinary	Quick	155℉/68℃	100℉/38℃	Red	Yes	Yes	Yes
Intermediate	Quick	175℉/79℃	150℉/65℃	Yellow	Yes	Yes	Yes
Intermediate	Quick	200℉/93℃	150℉/65℃	Green	Yes	Yes	Yes

COMPONENTS

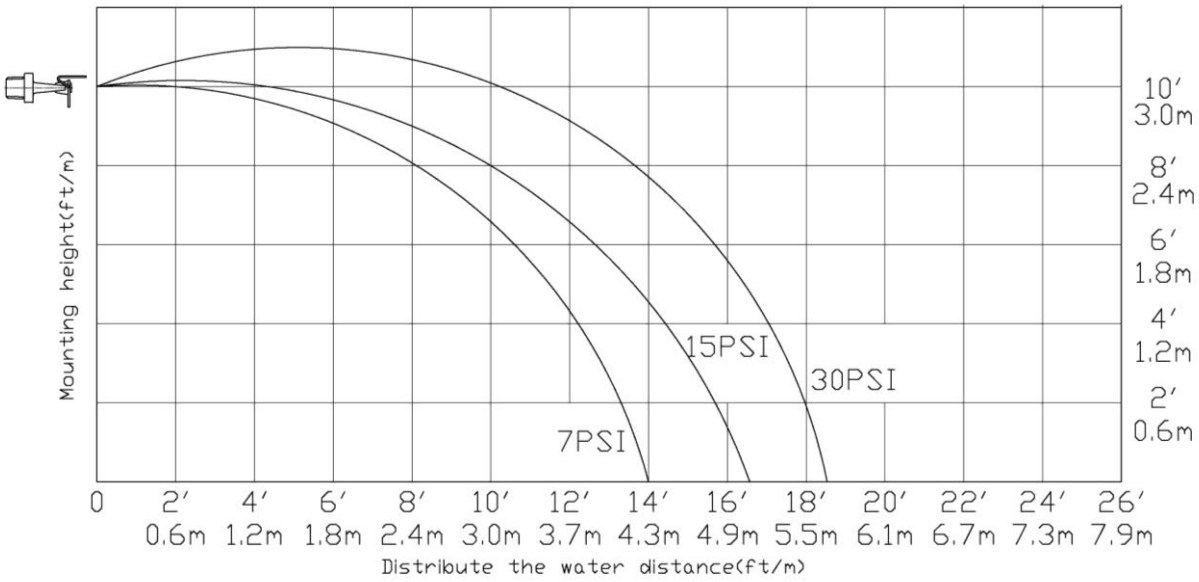


DISCHARGE CURVE

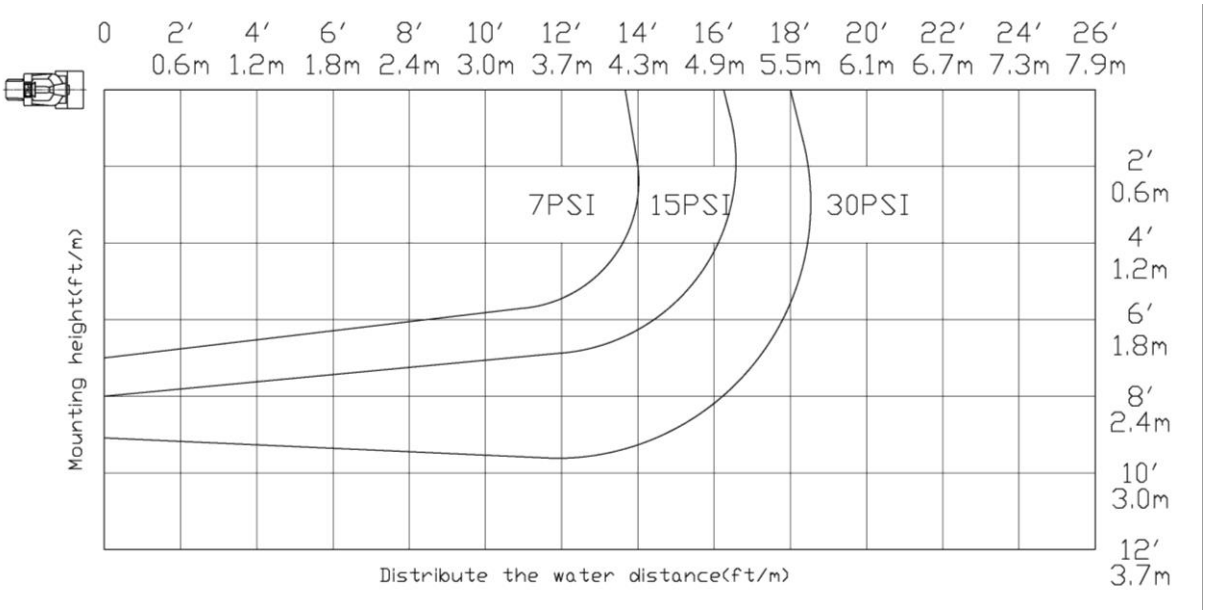


DISTRIBUTION PATTERNS

K5.6 STANDARD HORIZONTAL SIDEWALL AND RECESSED HORIZONTAL SIDEWALL
DISTRIBUTION PATTERNS - TRAJECTORY



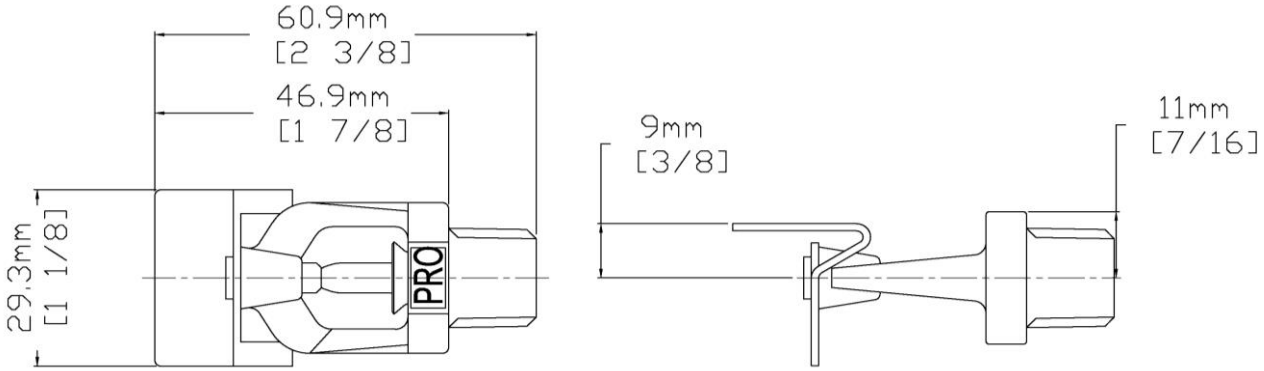
K5.6 STANDARD HORIZONTAL SIDEWALL
DISTRIBUTION PATTERNS - PLAN VIEW



INSTALLATION

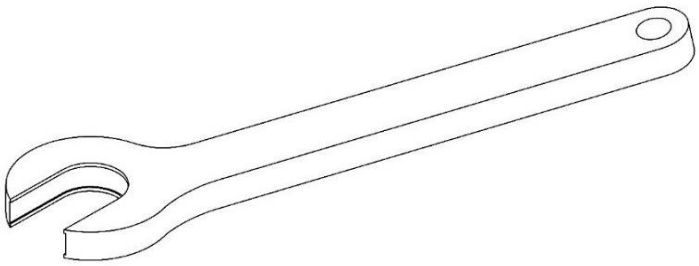
All SHIELD Sprinklers must be installed according to NFPA 13 Standards. Deviations from these requirements and standards or any alteration to the sprinkler itself will void any warranty made by SHIELD Safety Company. In addition, installation must follow local government provisions, codes and standards as applicable. The system piping must be properly sized to ensure the minimum required flow rate at the sprinkler. Check for the proper model, style, orifice size and temperature rating prior to installation. Install sprinklers after the piping is in place to avoid mechanical damage, replace any damaged units. Wet pipe systems must be protected from freezing. Upon completion of the installation, the system must be tested per recognized standards. In the event of a thread task, remove the unit, apply new pipe joint compound or tape, and reinstall.

DIMENSIONS

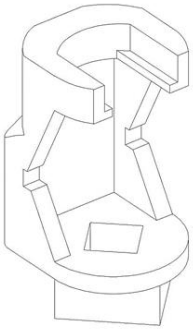


SHIELD STANDARD TOOLS

SHIELD Sprinklers can be installed only by using SHIELD standard tools, either wrench or key. The standard wrench or key provides the proper leverage when tightening the sprinkler and minimizes slippage during installation. Any other wrench or key may damage the sprinkler.



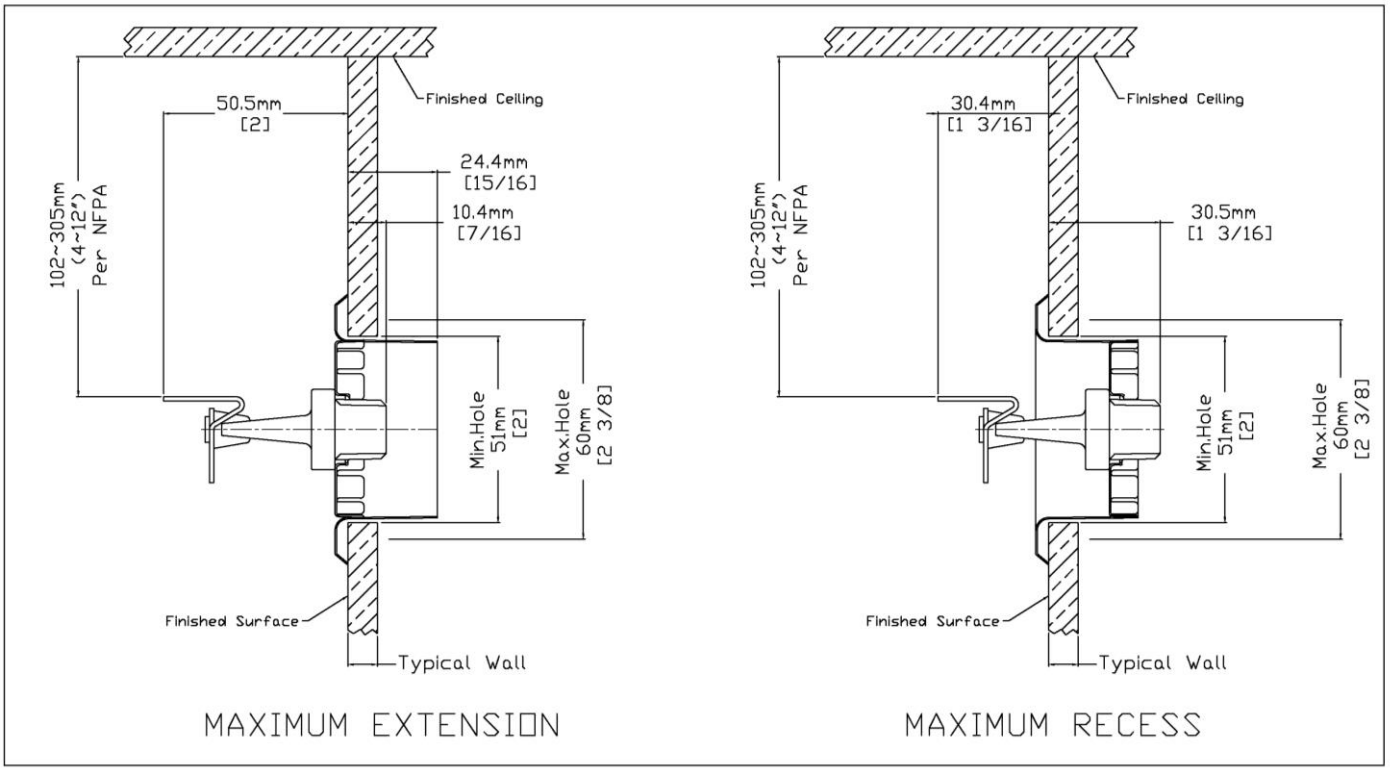
SHIELD Sprinkler Wrench



SHIELD Sprinkler Key

ESCUTCHEON INSTALLATION

Use SHIELD escutcheon plate to ensure proper sprinkler distribution and coverage. To install the escutcheon plate on recessed sprinklers, align with it and push or thread over the sprinkler body into the upper support piece, until the outer edge of the escutcheon meets the mounting surface.



INSTALLATION SEQUENCE

Step 1. The unit must be installed in the horizontal position for the Hori. Sidewall Sprinkler and the Recessed Hori. Sidewall Sprinkler.

Step 2. Use only a non-hardening pipe joint compound or tape seal. Apply only to the male-threads.

Step 3. Hand tighten the sprinkler into fitting.

Step 4. For Hori. Sidewall Sprinklers, use a standard wrench. Tighten the unit into the fitting. A lead-tight joint requires only 150 to 200 kgf-cm (14.7 to 19.6 N-m) of torque. Once torque level reach over 300 kgf-cm (29.4 N-m) it may distort the orifice seal, resulting in leakage. For exposed piping systems, the sprinkler should be oriented so the frame is paralleled with the branch line pipe.

CAUTION

Do not over- or under-tighten the sprinkler to compensate for the insufficient adjustment in the escutcheon plate. Re-adjust the position of the sprinkler fitting to match. Protection clips are used to protect its bulb. Please have clip on at all times during transportation.

MAINTENANCE

Sprinklers must never be altered after manufacture. Any alteration such as painting and coating will directly harm the sprinkler and cause malfunction. Sprinkler in contact with corrosive products should be replaced if they cannot be cleaned completely. Visual inspection are recommended after installation. After installation, an annual close-up inspection will be sufficient. Inspection and maintenance of fire protection system is the responsibility of the owner. It is recommended that automatic sprinkler system be inspected and tested according to local and/or national regulations.