

## SPRINKLER HEAD

UPRIGHT, PENDENT & RECESSED PENDENT SPRINKLERS

MODEL: **SD5120**, SD5220, SD6120, SD6220



### DESCRIPTION

The Model A SD5120/SD6120/SD5220/SD6220(Glass Bulb Type) ¾" Standard Orifice Upright, Pendent and Recessed Pendent Standard and Quick Response. The Model A Pendent Sprinkler Identification Number (SIN). SD6120(standard) SD6220(quick) Recessed Pendent. The Model A Upright Sprinkler Identification Number (SIN) SD5120(standard) SD5220(quick). The design incorporates state-of-the-art, heat responsive, frangible glass bulb design (standard or quick response) for prompt, precise operation.

The die cast frame is more streamlined and attractive than traditional sand cast frames. It is cast with a hex-shaped wrench boss to allow easy tightening from many angles, reducing assembly effort. This sprinkler is available in various temperature ratings (see chart on page 2) and finishes to meet many design requirements. The recessed pendent should be utilized with a Model A recessed escutcheon which provides up 1" of adjustments. All SHIELD Sprinklers are manufactured using the time proven Belleville seal used exclusively by all major manufactures to ensure long life and safe operation.

### 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 deflector is designed to distribute the water in a pattern that is most effective in controlling the fire.

### MAXIMUM COVERAGE

Standard spray coverage is up to: Light Hazard = 225 sq. ft. (20.9 m<sup>2</sup>); Ordinary Hazard = 130 sq. ft.(12.1m<sup>2</sup>) per NFPA 13.



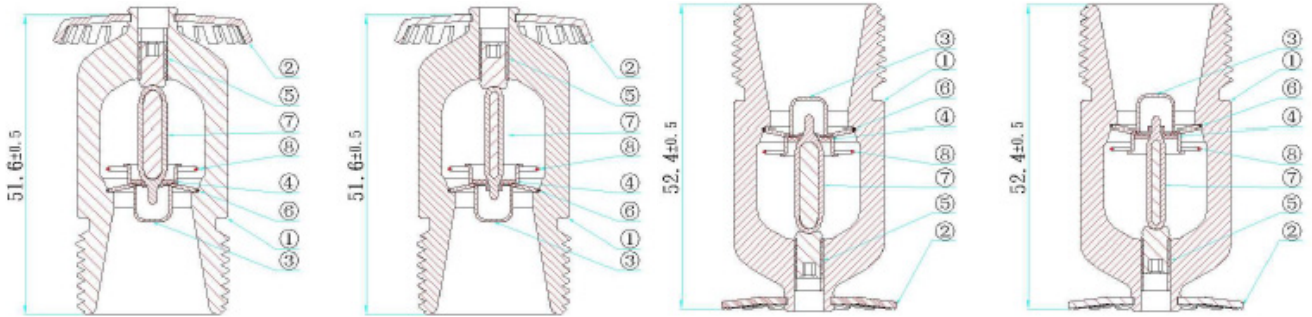
### TECHNICAL SPECIFICATION

Sprinkler Identification Number	Standard SD5120, SD6120 (bulb 5mm), Quick Response SD5220, SD6220 (bulb 3mm)
Style	Upright Sprinkler SD5120, SD5220, Pendent & Recessed Pendent SD6120, SD6220
Finish	Brass/Chrome
K Factor	8gpm/psi <sup>1/2</sup> . (114lpm/bar <sup>1/2</sup> )
Response Time Index (RTI)	Standard 50 (m.s) <sup>1/2</sup> Quick Response 30 (m.s) <sup>1/2</sup>
Nominal Thread Size	¾"NPT(20mm)
Max. Working Pressure	175PSI(1200kPa)
Factory Hydrostatic Test	100%@500PSI(3450 kPa)
Min. Operation Pressure	7 PSI(48 kPa)

### TEMPERATURE RATINGS

Sprinkler Temperature Classification	Nominal Sprinkler Temperature Rating	N.F.P.A Maximum Ambient (Ceiling) Temp.(Allowed)	Glass Bulb Color
Ordinary	135°F/57°C	100°F/38°C	Orange
Ordinary	155°F/68°C	100°F/38°C	Red
Intermediate	175°F/79°C	150°F/65°C	Yellow
Intermediate	200°F/93°C	150°F/65°C	Green

## FRAME & DEFLECTOR FINISH PENDENT BRASS, CHROME



**SD5120**

SD5220

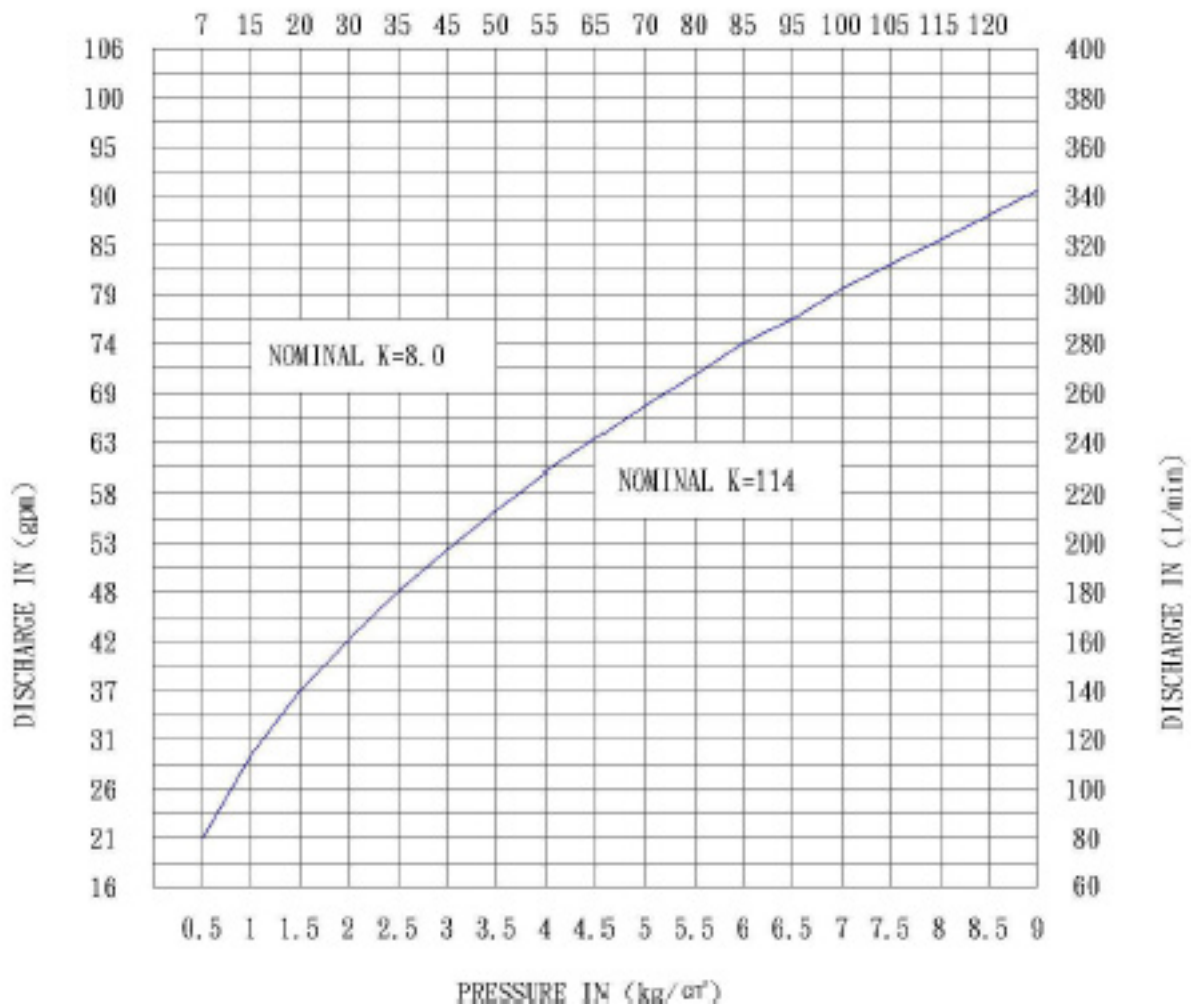
SD6120

SD6220

1. Frame 2. Deflector 3. Cap 4. Cap Seat 5. Load Screw 6. Seal 7. Bulb 8. Spring

### DISCHARGE CURVE

PRESSURE IN (psi)



## WARNINGS

The SHIELD sprinklers must be installed and maintained in compliance with this document. Depressurize and drain the piping system before attempting to install, remove, or adjust any Sprinklers. Failure to do so may impair the performance of these sprinklers. The owner is responsible for maintaining the fire protection system and devices in operation.

## 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 also must local government provisions, codes and standards as applicable.

The system piping must be properly sized to insure 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.



Sprinkler Wrench

## WRENCH DESCRIPTION

All SHIELD sprinklers must be installed according to the Sprinkler Wrench is a tool specifically designed for installing SHIELD sprinklers. These special wrenches must be used to provide the proper leverage when tightening the sprinkler and to minimize slippage during installation. Any other wrench may damage the sprinkler. The following wrenches are available for installing SHIELD sprinklers.

## 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

1. The unit must be installed in the upright position for the upright Sprinkler and the Recessed upright Sprinkler. And in the pendent position for the pendent Sprinkler and the Recessed pendent Sprinkler.
2. Use only a non-hardening pipe joint compound or tape seal. Apply only to the male-threads.
3. Hand tighten the sprinkler into fitting.
4. For upright and pendent Sprinklers, use a standard wrench. Tighten the unit into the fitting. A lead-tight joint requires only 150 to 200 kg-cm(14.7 to 19.6 N-m)of torque. Once torque level reach over 300 kg-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 are parallel with the branch line pipe.

## CAUTION

Do not over-tighten or under-tighten the sprinkler to compensate for inaccurate escutcheon plate adjustment. Protection clips are used to protect its bulb. Please have clip on at all times during transportation.

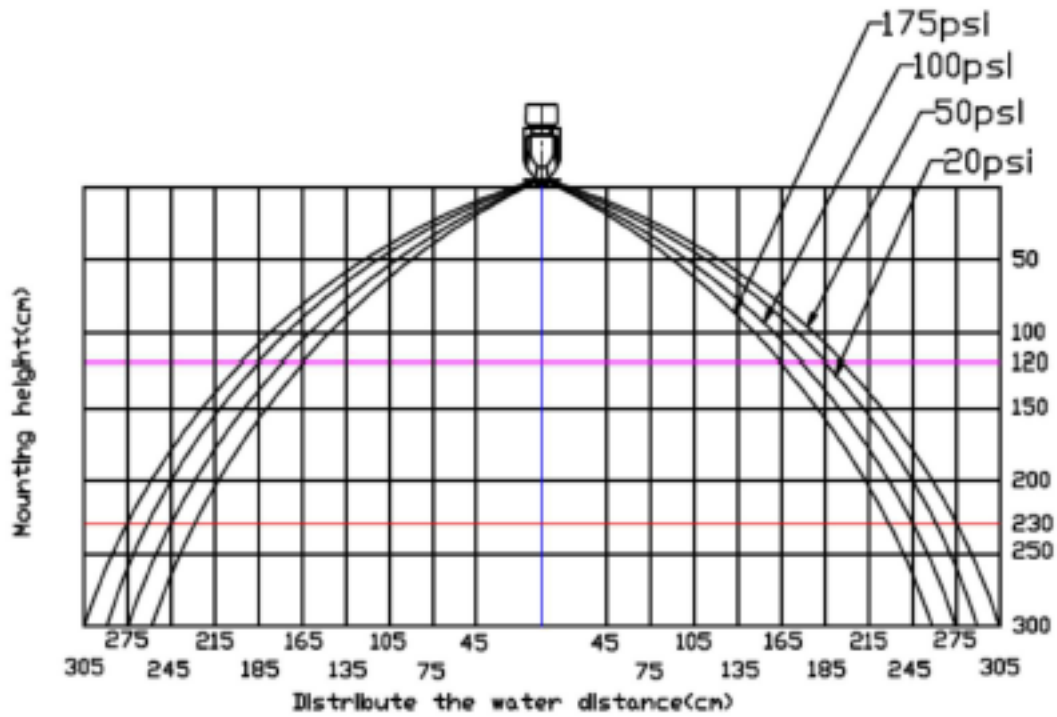
## MAINTENANCE

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.

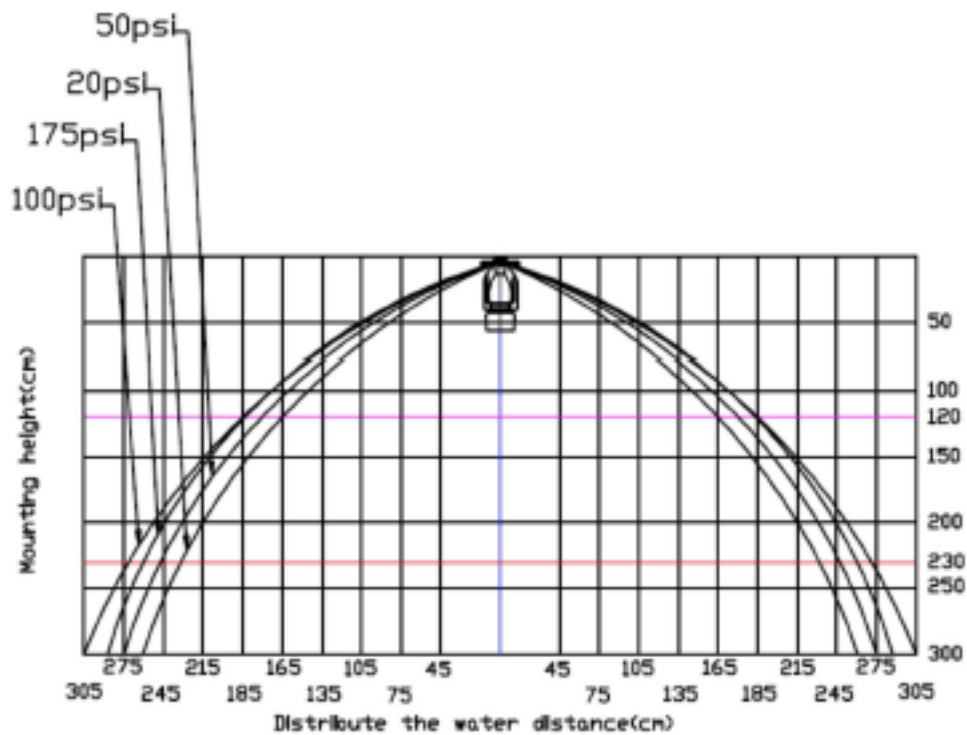
Visual inspection are recommended after installation. After installation, an annual close-up inspection will suffice. Inspection and maintenance of fire protection system is the responsibility of the owner. It is recommended that automatic sprinkler system be inspected and tested according to local and/or national regulations.

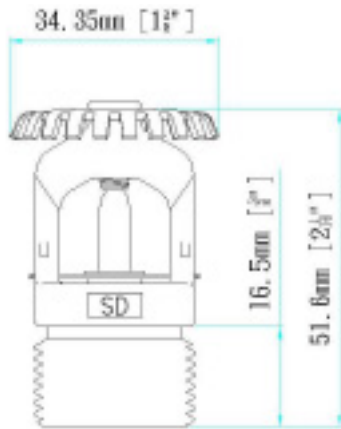
## DISTRIBUTION PATTERNS

K8.0 PENDENT SPRINKLER  
DISTRIBUTION PATTERNS - TRAJECTORY

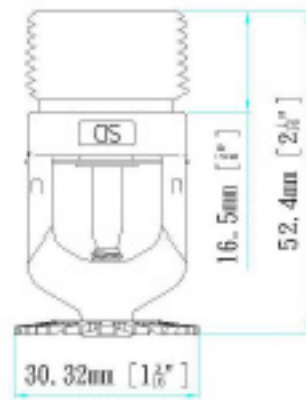


K8.0 UPRIGHT SPRINKLER  
DISTRIBUTION PATTERNS - TRAJECTORY

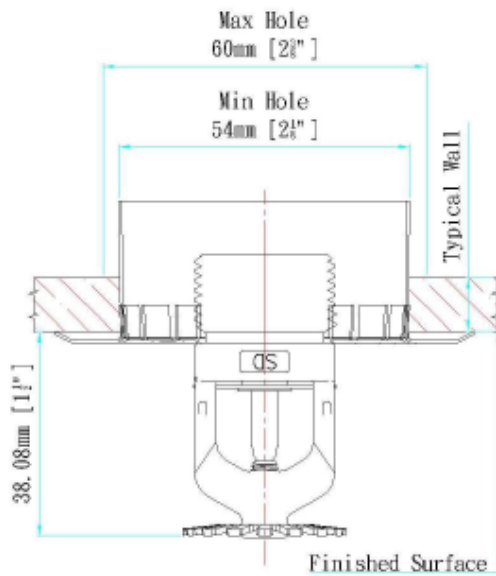




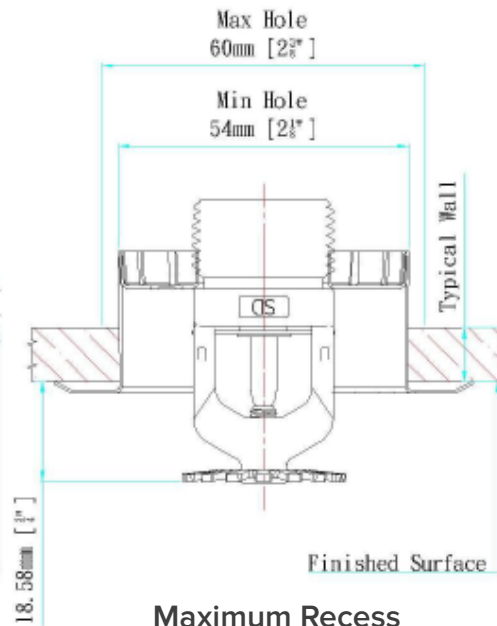
Upright Sprinkler



Pendent Sprinkler



Maximum Extension



Maximum Recess