

## SPRINKLER HEAD

### Upright, Pendent & Recessed Pendent Sprinklers

**MODEL: SD1010, SD1015, SD1030, SD1032**

#### DESCRIPTION

The SHIELD Sprinklers, SD1010, SD1015, SD1030, SD1032 (Glass Bulb Type), Standard Orifice, Upright, Pendent and Recessed Pendent type, 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 and finishes to meet many design requirements. The recessed pendent should be utilized with a recessed escutcheon which provides up  $\frac{3}{4}$ " of adjustments. All Sprinklers are manufactured using the time proven Belleville seal used exclusively by all major manufacturers 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 square feet(20.9 sq.m); Ordinary Hazard = 130 square feet(12.1 sq.m) per NFPA 13.



#### TECHNICAL SPECIFICATION

Sprinkler Identification Number	Standard SD1015, SD1010 (bulb 5mm), Quick Response SD1030, SD1032 (bulb 3mm)
Style	Upright Sprinkler SD1015, SD1032, Pendent & Recessed Pendent SD1010, SD1030
K Factor	5.6gpm/psi $^{\frac{1}{2}}$ . (80lpm/bar $^{\frac{1}{2}}$ )
Response Time Index (RTI)	Standard 50 Quick Response 30
Nominal Thread Size	1/2"NPT(15mm)
Orifice Size	13mm
Max. Working Pressure	175PSI(1200kPa)
Factory Hydrostatic Test	100%@500PSI(3450 kPa)
Min. Operation Pressure	7 PSI(48 kPa)

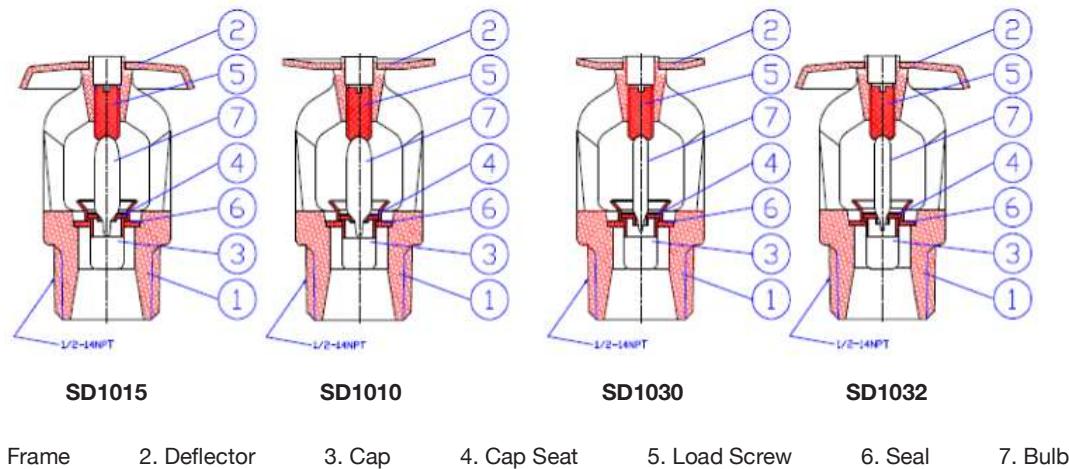
#### RATINGS

Sprinkler Temperature Classification	Normal Sprinkler Temperature Rating	N.F.P.A Maximum Ambient (Ceiling) Temp.(Allowed)	Glass Bulb Color
Ordinary**	155°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
High*	286°F/141°C	225°F/107°C	Blue
Extra High*	360°F/182°C	300°F/149°C	Mauve
Open*	Open	-	No Bulb

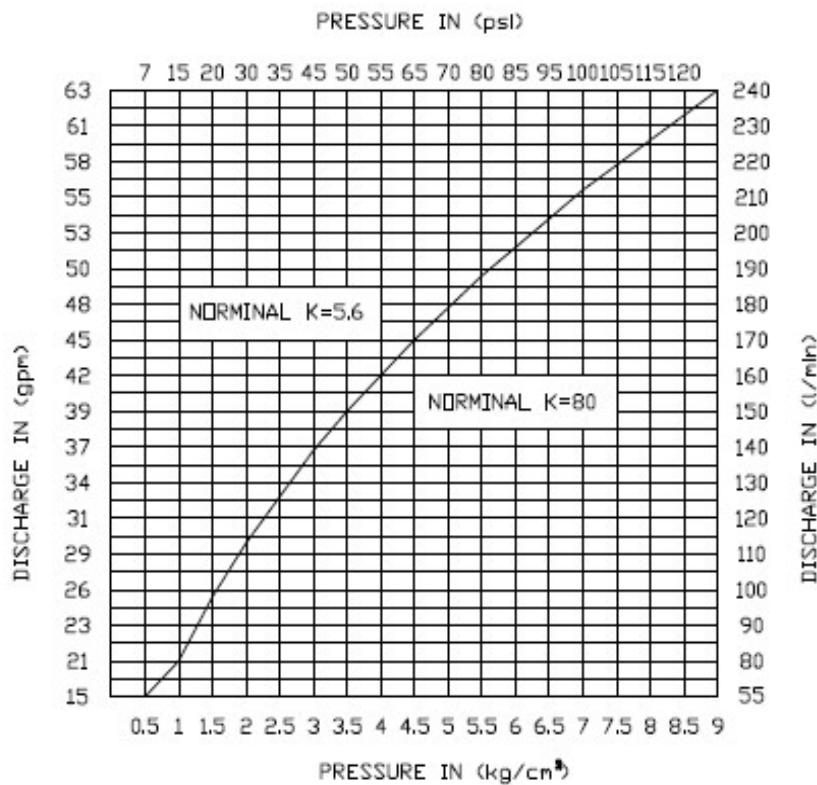
\* Non-Approved

\*\*UL Listed only.

## PART LIST



## DISCHARGE CURVE



## 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.

## WRENCH DESCRIPTION

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.



Sprinkler Wrench

## 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 manufacturer. In addition, installation must also meet 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.

## ADDITIONAL

Recessed Sprinkler - To install the escutcheon plate, 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 upright position for the Upright Sprinklers, and in the Pendent position for the Pendent Sprinkler, Pendent Recessed 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 Upright and Pendent Sprinklers, use a standard wrench. Tighten the unit into the fitting. A lead-tight joint requires only 7 to 14ft.lbs (9.5 to 19.0Nm) of torque. A tangential force of 14 to 28 ft.lbs (62.3 to 124.5N) delivered through a 6"(150mm) handle will deliver adequate torque. Once torque level reach over 21ft.lbs (28.6Nm) it may distort the orifice seal, resulting in leakage. For exposed piping systems, the sprinkler should be oriented so the frame arms 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 malfunctions.

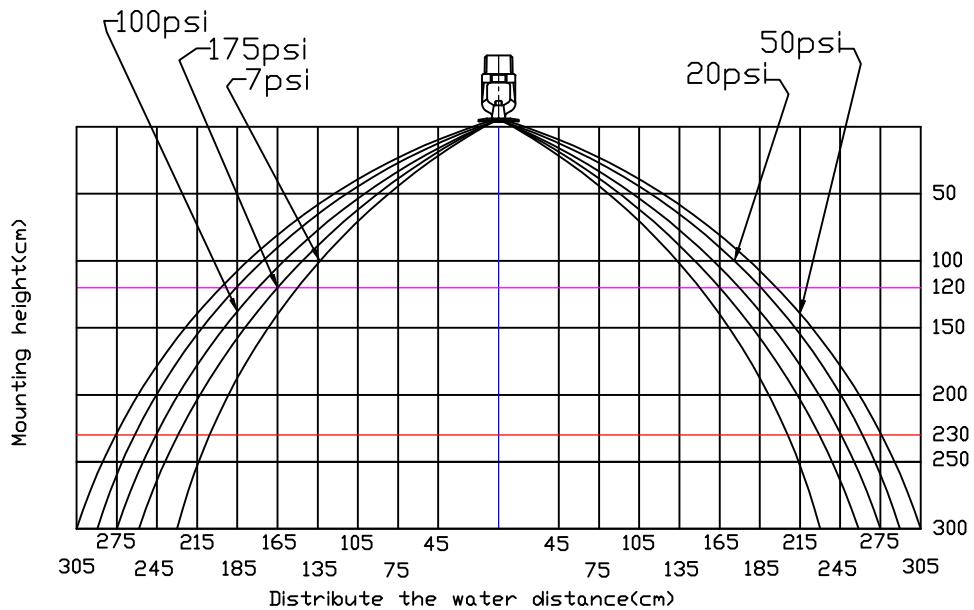
Sprinkler in contact with corrosive products should be replaced if they cannot be cleaned completely.

Visual inspections are recommended after installation. After installation, a close-up inspection annually will suffice.

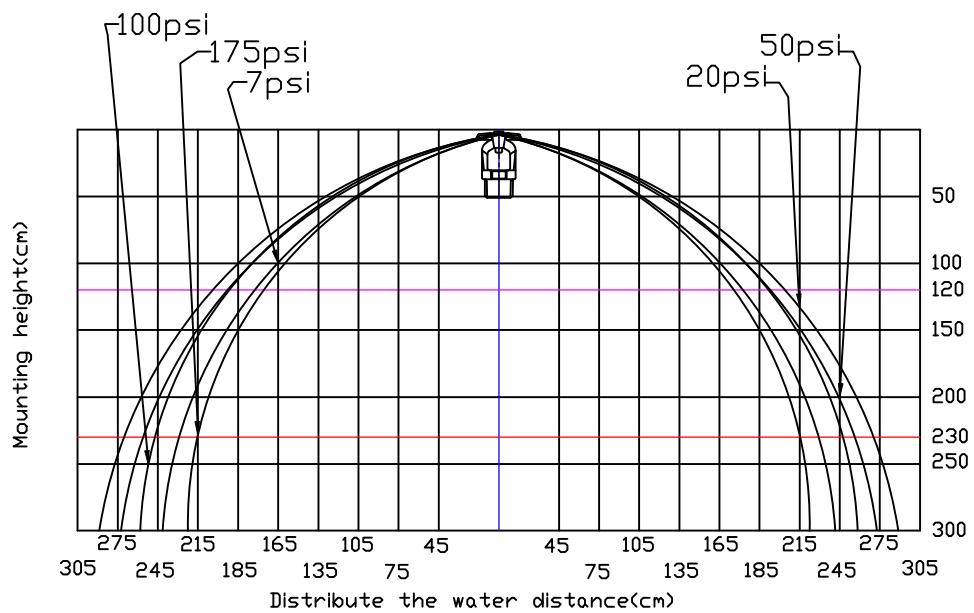
Inspection and maintenance of fire protection system is the responsibility of the owner. It is recommended that automatic sprinkler system be inspected and tested according to local and/or national regulations.

## DISTRIBUTION PATTERNS

K5.6 PENDENT SPRINKLER  
DISTRIBUTION PATTERNS - TRAJECTORY

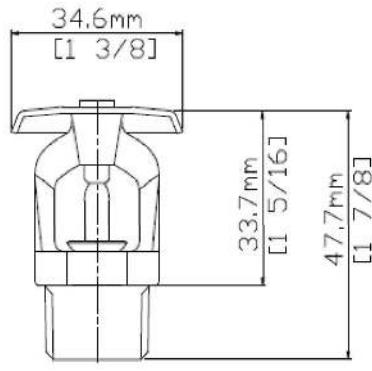


K5.6 UPRIGHT SPRINKLER  
DISTRIBUTION PATTERNS - TRAJECTORY

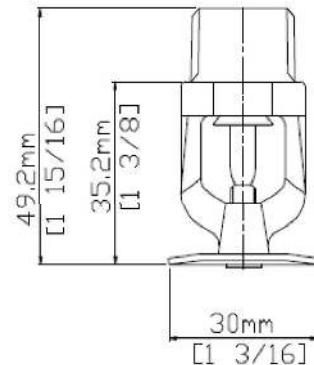


## DIMENSIONS

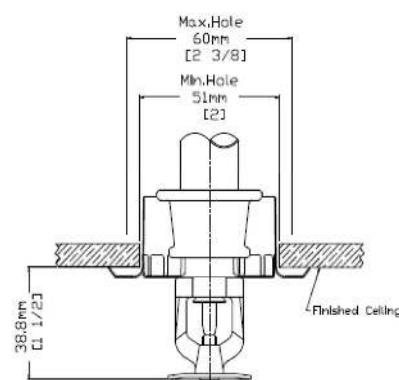
UPRIGHT SPRINKLER



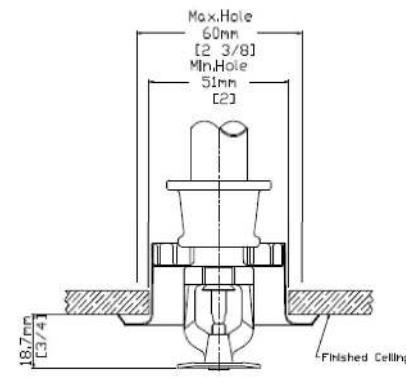
PENDENT SPRINKLER



RECESSED PENDENT SPRINKLER



Maximum Extension



Maximum Recess

## SPRINKLER HEAD

### Horizontal Sidewall Sprinkler

**MODEL: SD1133, SD1121**

#### DESCRIPTION

The SD1133, SD1121,  $\frac{1}{2}$ " orifice, standard horizontal sidewall sprinkler is designed for standard or recessed installation. The design provides a crescent-shaped water discharge pattern for installation along a wall or under a beam or ceiling. 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 and finishes to meet many design requirements. The recessed pendent should be utilized with a recessed escutcheon which provides up  $\frac{3}{4}$ " 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 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 = 196 square feet(18.2 sq.m); Ordinary Hazard = 100 square feet(9.3 sq.m)per NFPA 13.



#### TECHNICAL SPECIFICATION

Sprinkler Identification Number	Standard SD1133 (bulb 5mm), Quick Response SD1121 (bulb 3mm)
Style	Horizontal Sidewall
K Factor	5.6gpm/psi $^{\frac{1}{2}}$ . (80lpm/bar $^{\frac{1}{2}}$ )
Response Time Index (RTI)	Standard 50 Quick Response 30
Nominal Thread Size	$\frac{1}{2}$ "NPT(15mm)
Orifice Size	13mm
Max. Working Pressure	175PSI(1200kPa)
Factory Hydrostatic Test	100%@500PSI(3450 kPa)
Min. Operation Pressure	7 PSI(48 kPa)

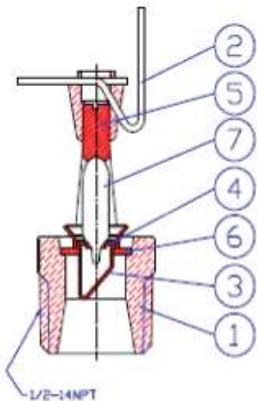
#### RATINGS

Sprinkler Temperature Classification	Norminal Sprinkler Temperature Rating	N.F.P.A Maximum Ambient (Ceiling) Temp.(Allowed)	Glass Bulb Color
Ordinary	155°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
High*	286°F/141°C	225°F/107°C	Blue
Extra High*	360°F/182°C	300°F/149°C	Mauve
Open*	Open	-	No Bulb

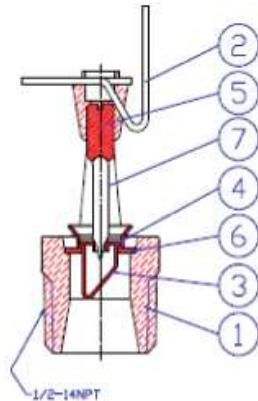
\* Non-Approved

\*\* FM Approved only

## PART LIST



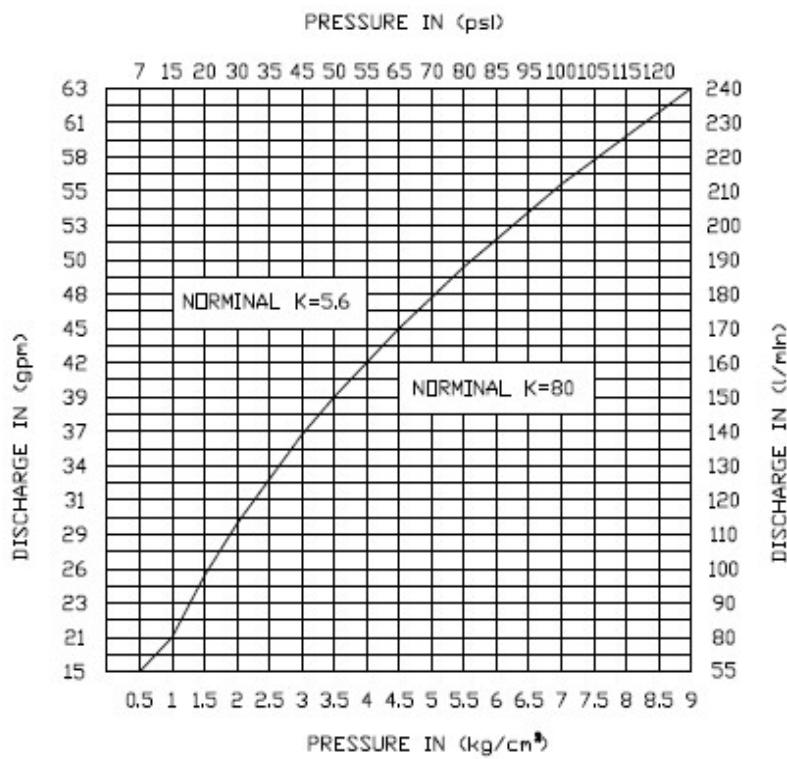
SD1133



SD1121

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

## DISCHARGE CURVE



## 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.

## WRENCH DESCRIPTION

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.

Sprinkler Wrench



## 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 manufacturer. In addition, installation must also meet 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.

## ADDITIONAL

**Recessed Sprinkler** - To install the escutcheon plate, 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 sidewall position for the Horizontal Sidewall Sprinklers.

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 Horizontal Sidewall Sprinklers, use a standard wrench. Tighten the unit into the fitting. A lead-tight joint requires only 7 to 14ft.-lbs(9.5 to 19.0Nm) of torque. A tangential force of 14 to 28ft.-lbs(62.3 to 124.5N) delivered through a 6"(150mm) handle will deliver adequate torque. Once torque level reach over 21ft.-lbs(28.6Nm) it may distort the orifice seal, resulting in leakage. For exposed piping systems, the sprinkler should be oriented so the frame arms 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

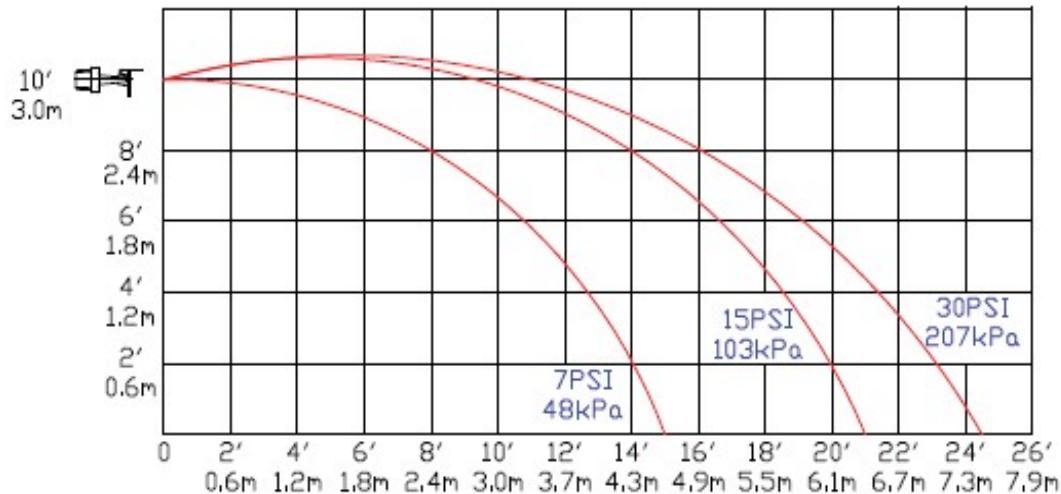
Sprinklers must never be altered after manufacture. Any alteration such as painting and coating will directly harm the sprinkler and cause malfunctions. Sprinkler in contact with corrosive products should be replaced if they cannot be cleaned completely.

Visual inspections are recommended after installation. After installation, a close-up inspection annually will suffice.

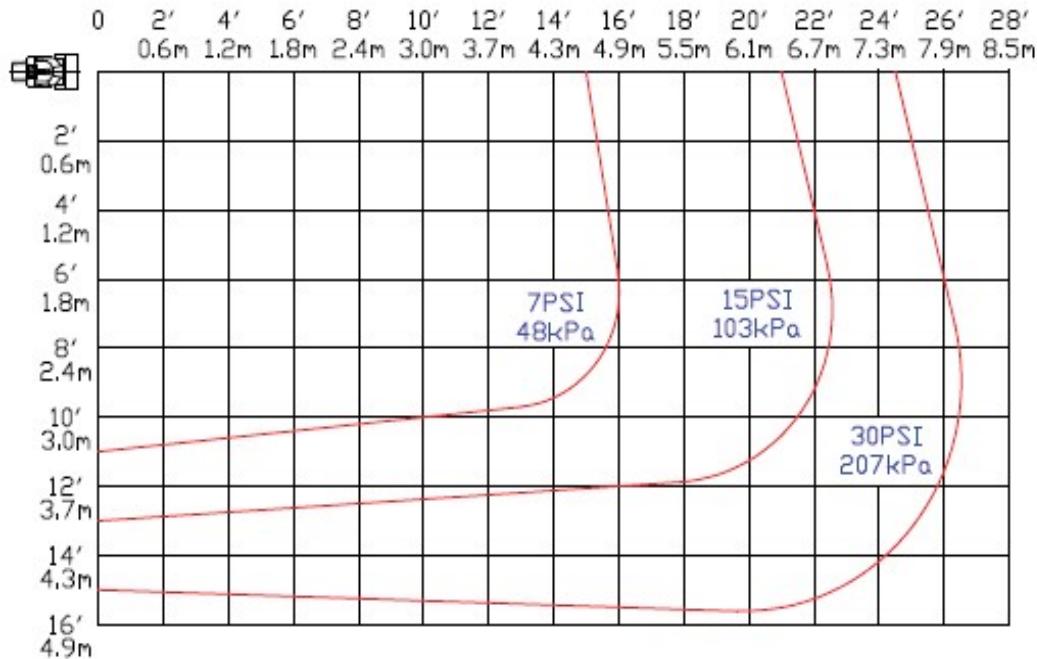
Inspection and maintenance of fire protection system is the responsibility of the owner. It is recommended that automatic sprinkler system be inspected and tested according to local and/or national regulations.

## DISTRIBUTION PATTERNS

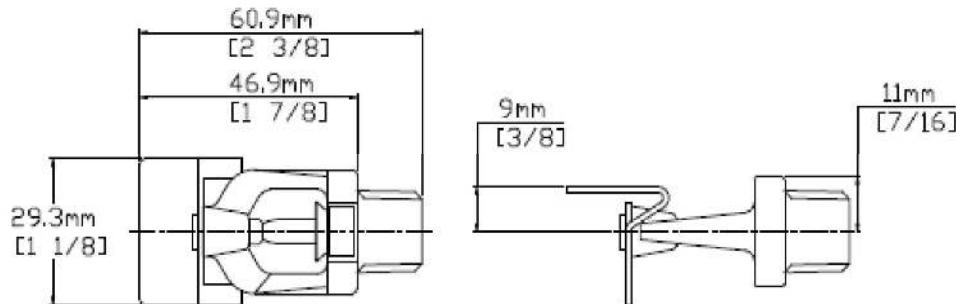
K5.6 STANDARD HORIZONTAL SIDEWALL AND RECESSED HORIZONTAL SIDEWALL  
DISTRIBUTION PATTERNS - TRAJECTORY



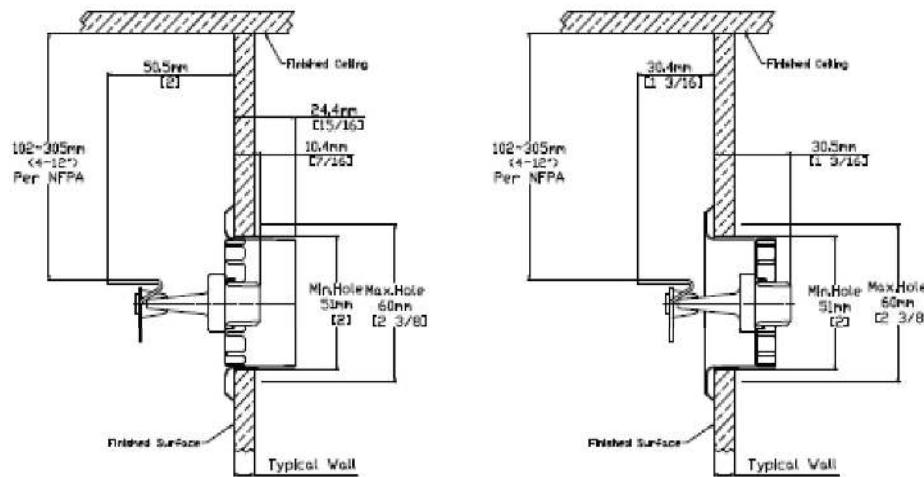
K5.6 STANDARD HORIZONTAL SIDEWALL  
DISTRIBUTION PATTERNS – PLAN VIEW



## DIMENSIONS



RECESSED PENDENT SPRINKLER



Maximum Extension

Maximum Recess

## SPRINKLER HEAD

### Vertical Sidewall Sprinkler

**MODEL: SD2133, SD2121**



### DESCRIPTION

The SD2133, SD2121,  $\frac{1}{2}$ " orifice, standard vertical sidewall sprinkler is designed for standard installation. The design provides a crescent-shaped water discharge pattern for installation along a wall or under a beam or ceiling. 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 and finishes to meet many design requirements. The recessed pendent should be utilized with a recessed escutcheon which provides up  $\frac{3}{4}$ " of adjustments. All sprinklers are manufactured using the time proven Belleville seal used exclusively by all major manufacturers 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 = 196 square feet(18,2 sq.m); Ordinary Hazard = 100 square feet(9,3 sq.m) per NFPA 13.

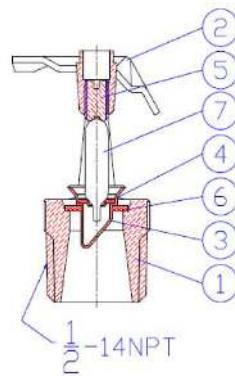
### TECHNICAL SPECIFICATION

Sprinkler Identification Number	Standard SD2133 (bulb 5mm), Quick Response SD2121 (bulb 3mm)
Style	Vertical Sidewall
K Factor	5.6gpm/psi $^{\frac{1}{2}}$ . (80lpm/bar $^{\frac{1}{2}}$ )
Response Time Index (RTI)	Standard 50 Quick Response 30
Nominal Thread Size	$\frac{1}{2}$ "NPT(15mm)
Orifice Size	13mm
Max. Working Pressure	175PSI(1200kPa)
Factory Hydrostatic Test	100%@500PSI(3450 kPa)
Min. Operation Pressure	7 PSI(48 kPa)

### RATINGS

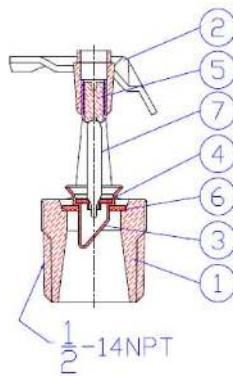
Sprinkler Temperature Classification	Nominal Sprinkler Temperature Rating	N.F.P.A Maximum Ambient (Ceiling) Temp.(Allowed)	Glass Bulb Color
Ordinary	135°F/57°C	100°F/38°C	Orange
Ordinary	155°F/68°C	100°F/38°C	Red
Intermediate	175°F/79°C	150°F/65°C	Yellow
Intermediate	200°F/93°C	150°F/65°C	Green

## PART LIST



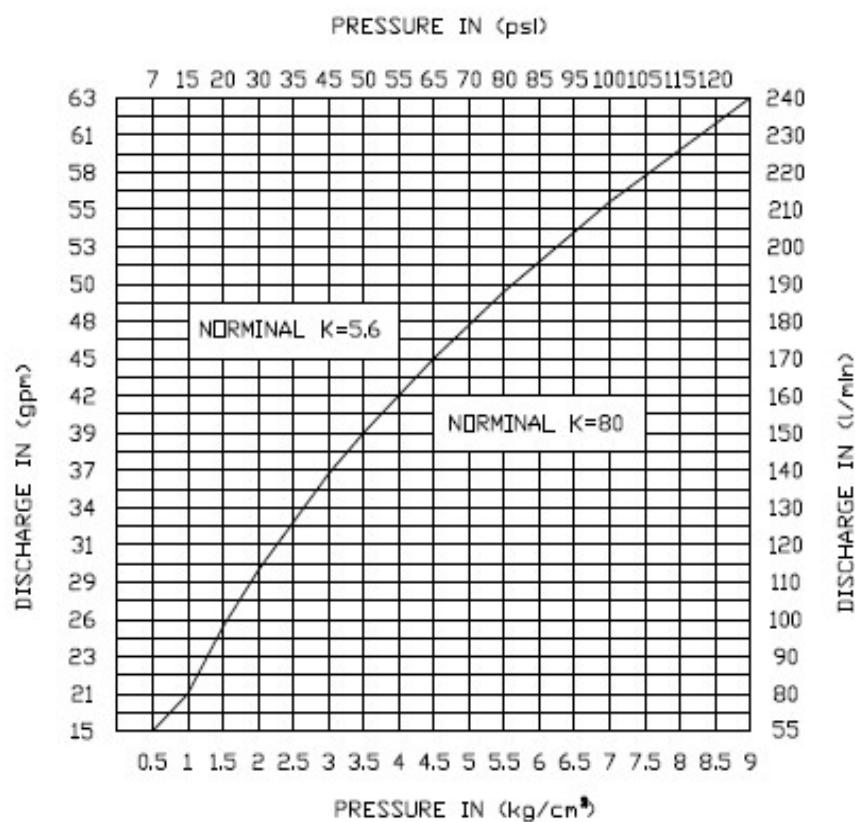
SD2133

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



SD2121

## DISCHARGE CURVE



## WARNINGS

The SHIELD 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.

## WRENCH DESCRIPTION

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.



Sprinkler Wrench

## 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 manufacturer. In addition, installation must also meet 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.

## ADDITIONAL

**Recessed Sprinkler** - To install the escutcheon plate, 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 sidewall position for the Horizontal Sidewall Sprinklers.

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 Horizontal Sidewall Sprinklers, use a standard wrench. Tighten the unit into the fitting. A lead-tight joint requires only 7 to 14ft.-lbs (9.5 to19.0Nm) of torque. A tangential force of 14 to28ft.-lbs(62.3 to 124.5N) delivered through a6"(150mm) handle will deliver adequate torque. Once torque level reach over 21ft.-lbs(28.6Nm) it may distort the orifice seal, resulting in leakage. For exposed piping systems, the sprinkler should be oriented so the frame arms 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

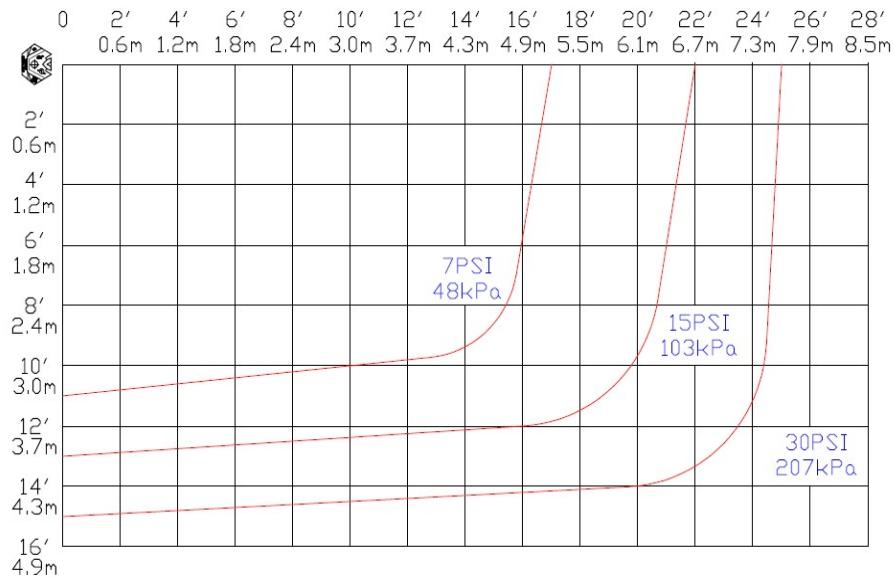
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Visual inspections are recommended after installation. After installation, a close-up inspection annually will suffice.

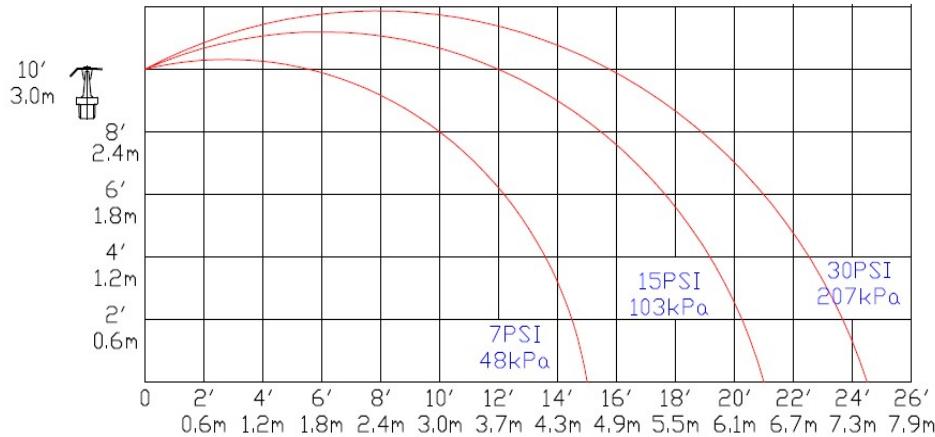
Inspection and maintenance of fire protection system is the responsibility of the owner. It is recommended that automatic sprinkler system be inspected and tested according to local and/or national regulations.

## DISTRIBUTION PATTERNS

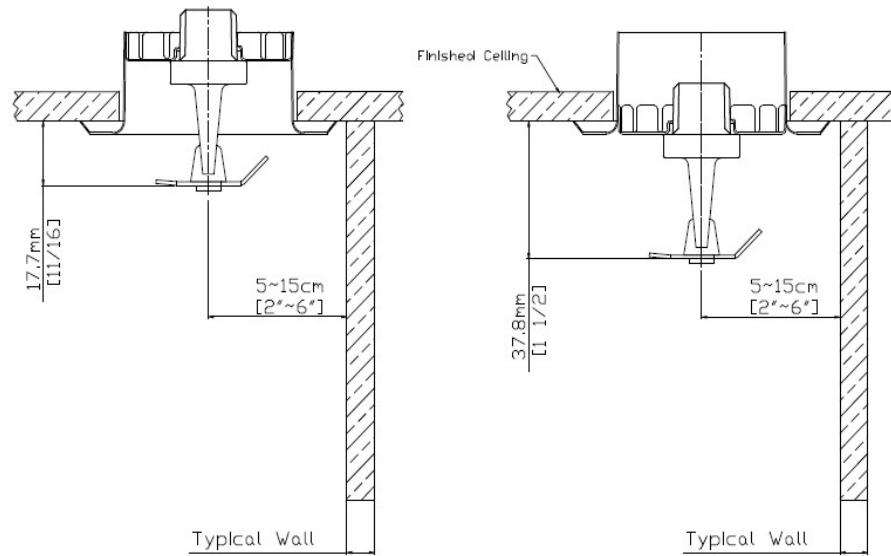
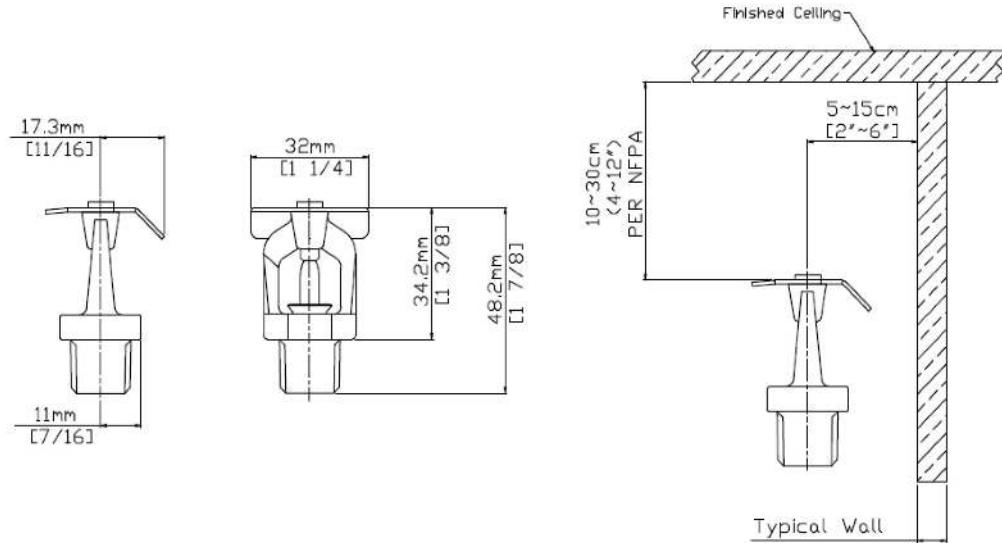
K5.6 STANDARD VERTICAL SIDEWALL  
DISTRIBUTION PATTERNS - TRAJECTORY



K5.6 STANDARD VERTICAL SIDEWALL  
DISTRIBUTION PATTERNS – PLAN VIEW



## DIMENSIONS



## SPRINKLER HEAD

### Concealed Sprinkler

**MODEL: SD1050, SD1055**

#### DESCRIPTION

The SHIELD Sprinklers, SD1050, SD1055 (Glass Bulb Type) Standard and Quick Response Concealed Sprinkler, design incorporates state-of-the-art, heat responsive, frangible glass bulb design 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 and finishes to meet many design requirements. The recessed pendent should be utilized with a recessed escutcheon which provides up  $\frac{1}{2}$ " of adjustments. All sprinklers are manufactured using the time proven Belleville seal used exclusively by all major manufacturers 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 square feet(20.9 sq.m); Ordinary Hazard = 130 square feet(12.1 sq.m) per NFPA 13.



#### TECHNICAL SPECIFICATION

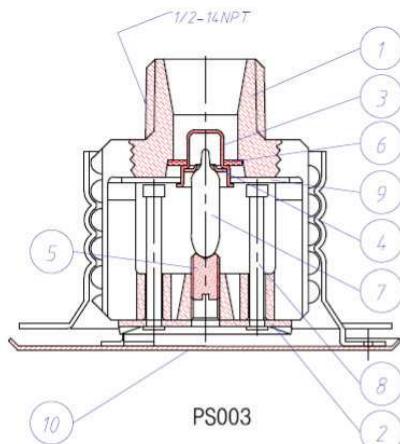
Sprinkler Identification Number	Standard SD1050 (bulb 5mm), Quick Response SD1055 (bulb 3mm)
Style	Concealed Sprinkler
K Factor	5.6gpm/psi $^{\frac{1}{2}}$ . (80lpm/bar $^{\frac{1}{2}}$ )
Response Time Index (RTI)	Standard 50 Quick Response 30
Nominal Thread Size	$\frac{1}{2}$ "NPT(15mm)
Orifice Size	13mm
Max. Working Pressure	175PSI(1200kPa)
Factory Hydrostatic Test	100%@500PSI(3450 kPa)
Min. Operation Pressure	7 PSI(48 kPa)

**Note:** Shield SD1055 (3-mm bulb) is FM Approved as standard response only. Factory Mutual do not approve any concealed sprinklers for quick response

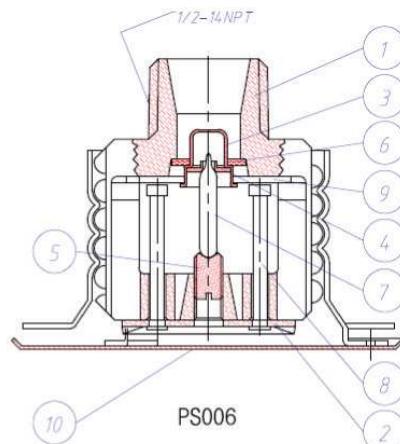
#### RATINGS

Sprinkler Temperature Classification	Norminal Sprinkler Temperature Rating	N.F.P.A Maximum Ambient (Ceiling) Temp.(Allowed)	Glass Bulb Color
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

## PART LIST



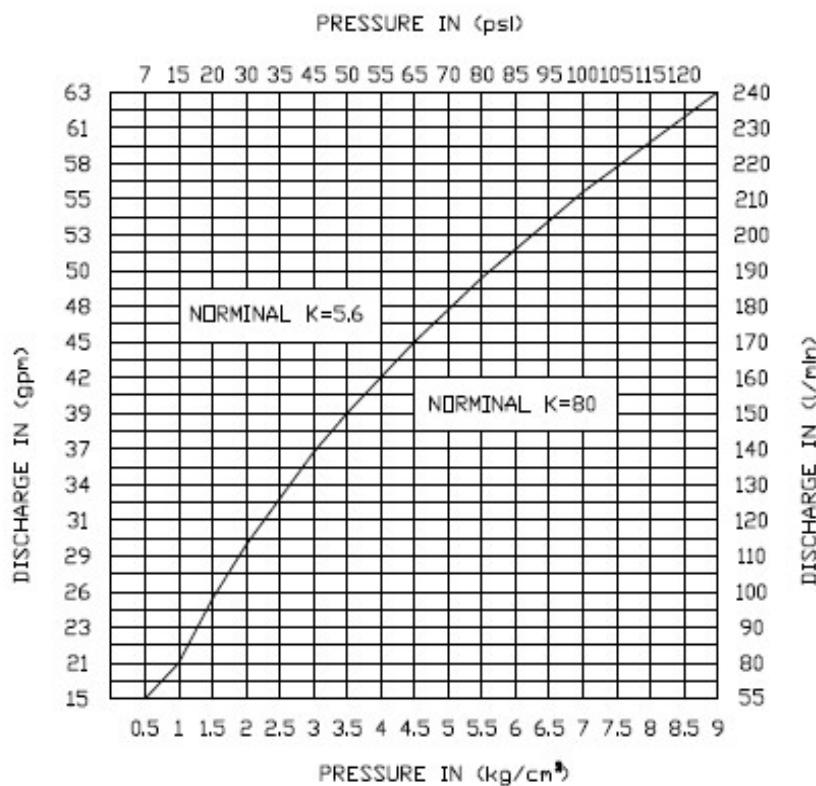
SD1050



SD1055

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

## DISCHARGE CURVE



## 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.

## WRENCH DESCRIPTION

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.

Concealed  
Sprinkler Wrench



## 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 manufacturer. In addition, installation must also meet 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.

## ADDITIONAL

**Cover Plate** - To install the conceal cover plate, align it with the sprinkler and slowly turn clockwise for the cover plates and sprinkler to lock in. Make sure the cover plate is securely locked in, fail to do so may cause the sprinkler to malfunction.

## INSTALLATION SEQUENCE

Step 1. The unit must be installed in the Pendent position for the Concealed 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 Concealed Sprinklers, use a standard wrench. Tighten the unit into the fitting. A lead-tight joint requires only 7 to 14ft.-lbs(9.5 to 19.0Nm) of torque. A tangential force of 14 to 28ft.-lbs(62.3 to 124.5N) delivered through a 6"(150mm) handle will deliver adequate torque. Once torque level reach over 21ft.-lbs(28.6Nm) it may distort the orifice seal, resulting in leakage. For exposed piping systems, the sprinkler should be oriented so the frame arms 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 caps are used to protect its bulb and deflector. Please have cap on at all times during transportation and interior decorating.

## MAINTENANCE

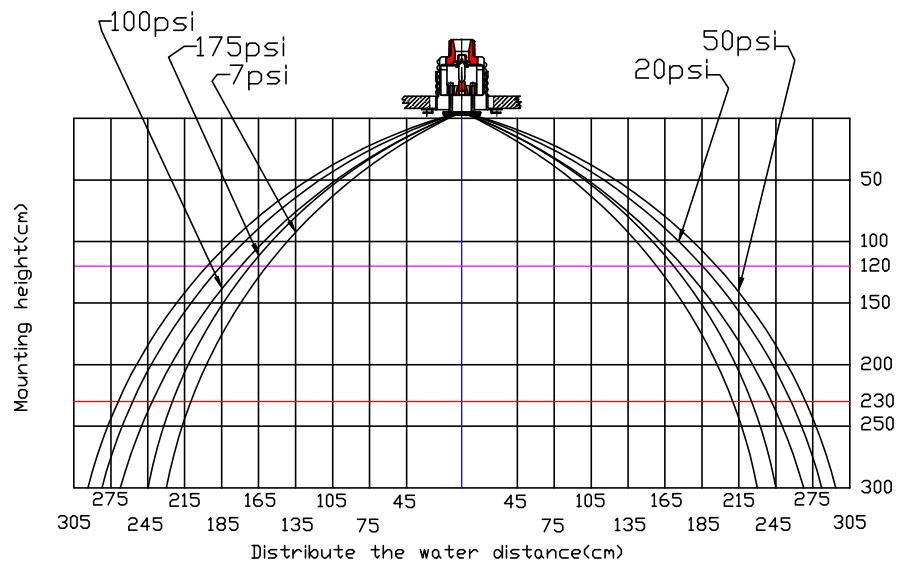
Sprinklers must never be altered after manufacture. Any alteration such as painting and coating will directly harm the sprinkler and cause malfunctions. Sprinkler in contact with corrosive products should be replaced if they cannot be cleaned completely.

Visual inspections are recommended after installation. After installation, a close-up inspection annually will suffice.

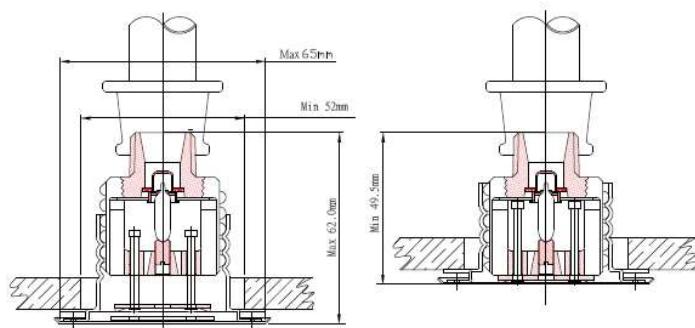
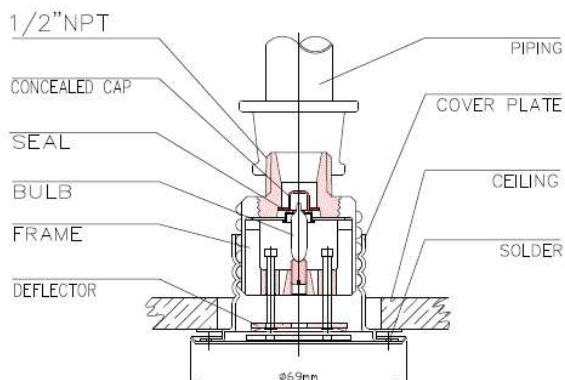
Inspection and maintenance of fire protection system is the responsibility of the owner. It is recommended that automatic sprinkler system be inspected and tested according to local and/or national regulations.

## DISTRIBUTION PATTERNS

K5.6 PENDENT SPRINKLER  
DISTRIBUTION PATTERNS - TRAJECTORY



## DIMENSIONS



## SPRINKLER HEAD

### Quick Response Upright & Pendent Sprinklers

**MODEL: SD1020, SD1021**

#### DESCRIPTION

The SHIELD Sprinkler, SD1020, SD1021 (Glass Bulb Type) 3/8" Standard Orifice, Upright, Pendent and Recessed Pendent, Quick Response, design incorporates state-of-the-art, heat responsive, frangible glass bulb design 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 and finishes to meet many design requirements. The recessed pendent should be utilized with a recessed escutcheon which provides up  $\frac{3}{4}$ " of adjustments. All 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 square feet(20.9 sq.m); Ordinary Hazard = 130 square feet(12.1 sq.m) per NFPA 13.

#### TECHNICAL SPECIFICATION

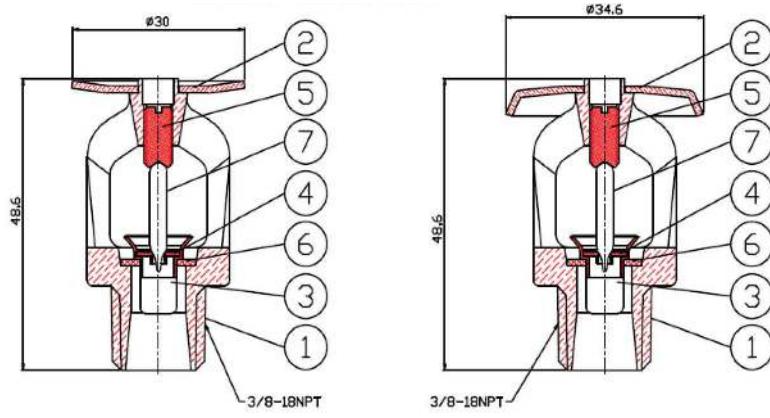
Sprinkler Identification Number	Quick Response SD1020, SD1021 (bulb 3mm)
Style	Pendent Sprinkler SD1020, Upright Sprinkler SD1021
K Factor	4.2gpm/psi $^{\frac{1}{2}}$ . (60lpm/bar $^{\frac{1}{2}}$ )
Response Time Index (RTI)	Quick Response 30
Nominal Thread Size	$\frac{3}{8}$ "NPT or $\frac{3}{8}$ "PT
Max. Working Pressure	175PSI(1200kPa)
Factory Hydrostatic Test	100%@500PSI(3450 kPa)
Min. Operation Pressure	7 PSI(48 kPa)

#### RATINGS

Sprinkler Temperature Classification	Norminal 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

## PART LIST

FRAME AND DEFLECTOR FINISH  
 Pendent - Brass, Chrome, White  
 Upright - Brass only

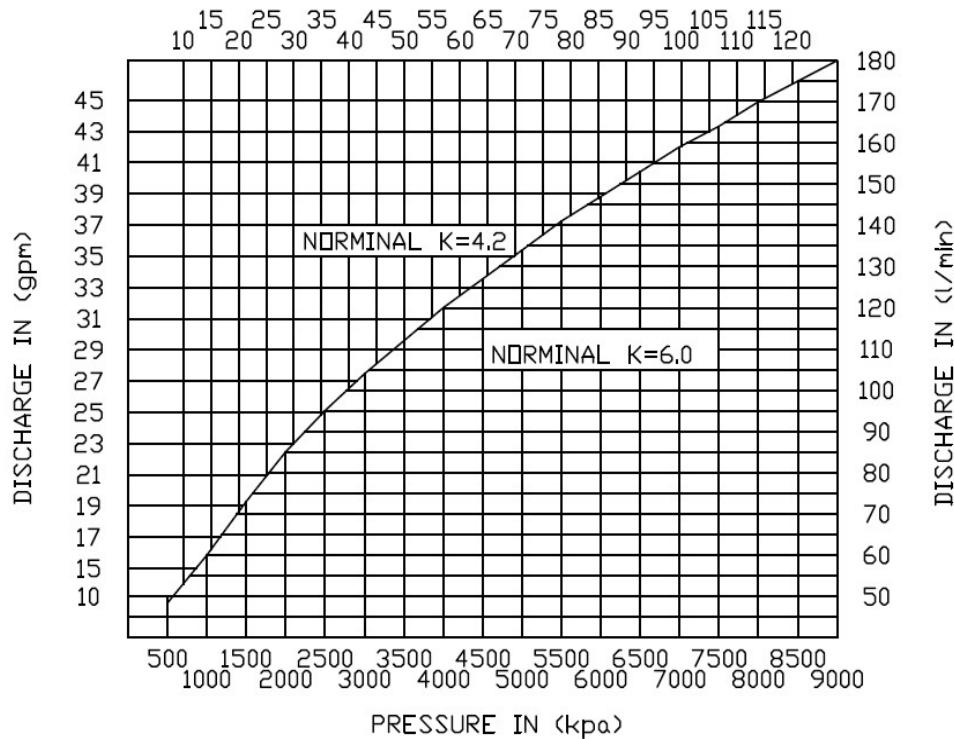


SD1020

SD1021

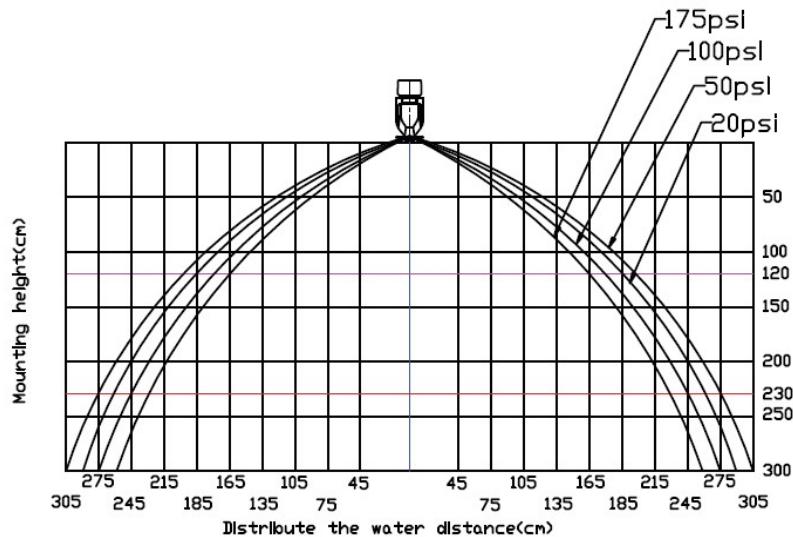
1. Frame      2. Deflector      3. Cap      4. Cap Seat      5. Load Screw      6. Seal      7. Bulb

## DISCHARGE CURVE

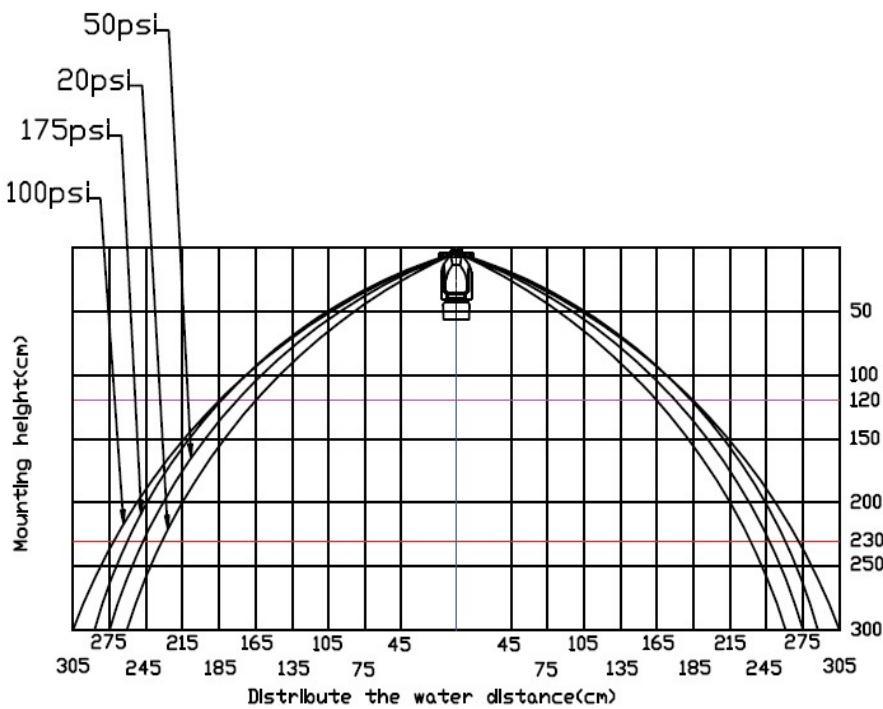


## DISTRIBUTION PATTERNS

K4.2 PENDENT SPRINKLER  
DISTRIBUTION PATTERNS - TRAJECTORY

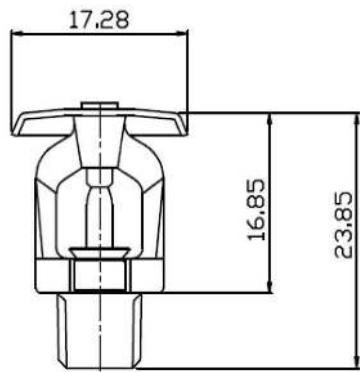


K4.2 UPRIGHT SPRINKLER  
DISTRIBUTION PATTERNS - TRAJECTORY

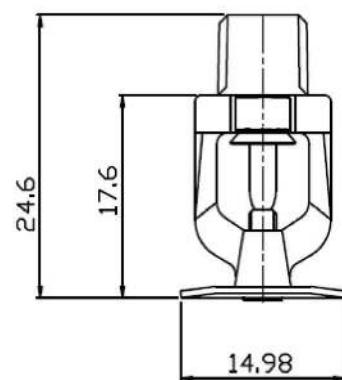


**DIMENSIONS**

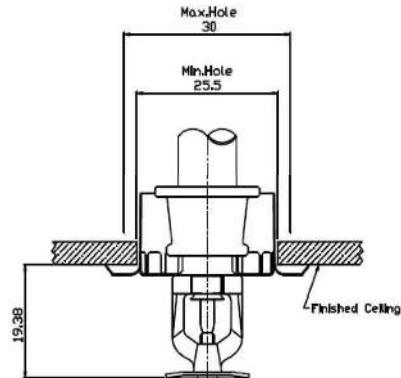
UPRIGHT SPRINKLER



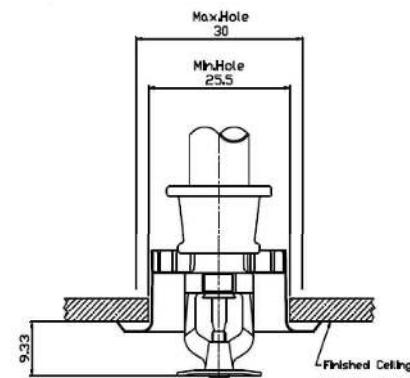
PENDENT SPRINKLER



RECESSED PENDENT SPRINKLER



Maximum Extension



Maximum Recess

## SPRINKLER HEAD

### Conventional Sprinkler

**MODEL: SD1025, SD1026**

#### DESCRIPTION

The SHIELD Sprinkler, SD1025, SD1026 (Glass Bulb Type)  $\frac{1}{2}$ " Orifice, Conventional sprinkler is designed for standard or recessed installation. 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 and finishes to meet many design requirements. The recessed pendent should be utilized with a recessed escutcheon which provides up  $\frac{3}{4}$ " of adjustments. All sprinklers are manufactured using the time proven Belleville seal used exclusively by all major manufacturers 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 = 229 square feet(20.9 sq.m); Ordinary Hazard = 130 square feet(12.1 sq.m)per NFPA 13.

#### TECHNICAL SPECIFICATION

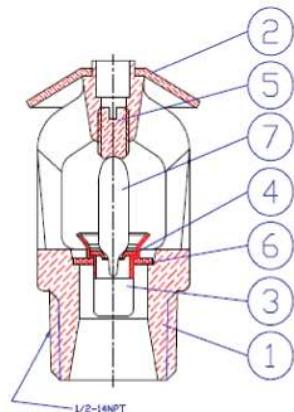
Sprinkler Identification Number	Standard SD1025 (bulb 5mm), Quick Response SD1026 (bulb 3mm)
Style	Conventional Sprinkler
K Factor	5.6gpm/psi $^{1/2}$ . (80lpm/bar $^{1/2}$ )
Response Time Index (RTI)	Standard Response 50 Quick Response 30
Nominal Thread Size	$\frac{1}{2}$ "NPT (15mm)
Orifice Size	13mm
Max. Working Pressure	175PSI(1200kPa)
Factory Hydrostatic Test	100%@500PSI(3450 kPa)
Min. Operation Pressure	7 PSI(48 kPa)

#### RATINGS

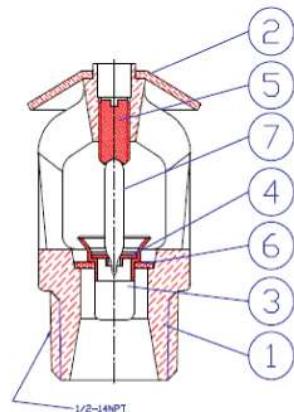
Sprinkler Temperature Classification	Norminal Sprinkler Temperature Rating	N.F.P.A Maximum Ambient (Ceiling) Temp.(Allowed)	Glass Bulb Color
Ordinary	135°F/57°C	100°F/38°C	Orange
Ordinary	155°F/68°C	100°F/38°C	Red
Intermediate	175°F/79°C	150°F/65°C	Yellow
Intermediate	200°F/93°C	150°F/65°C	Green
High*	286°F/141°C	225°F/107°C	Blue
Extra High*	360°F/182°C	300°F/149°C	Mauve
Open*	Open	-	No Bulb

\* Non-Approved

## PART LIST



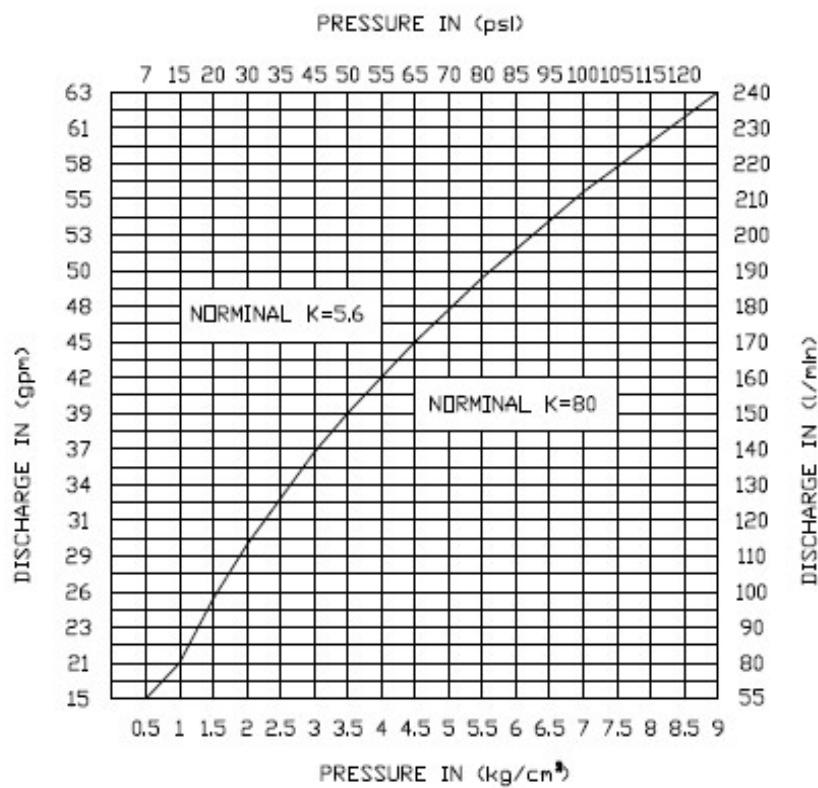
SD1025



SD1026

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

## DISCHARGE CURVE



## 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.

## WRENCH DESCRIPTION

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.

Sprinkler Wrench



## 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 manufacturer. In addition, installation must also meet 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.

## ADDITIONAL

**Recessed Sprinkler** - To install the escutcheon plate, 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 upright position for the Upright Sprinklers, and in the Pendent position for the Pendent Sprinkler, Pendent Recessed 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 Conventional Sprinklers, use a standard wrench. Tighten the unit into the fitting. A lead-tight joint requires only 7 to 14ft.-lbs (9.5 to 19.0Nm) of torque. A tangential force of 14 to 28ft.-lbs (62.3 to 124.5N) delivered through a 6"(150mm) handle will deliver adequate torque. Once torque level reach over 21ft.-lbs (28.6Nm) it may distort the orifice seal, resulting in leakage. For exposed piping systems, the sprinkler should be oriented so the frame arms 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

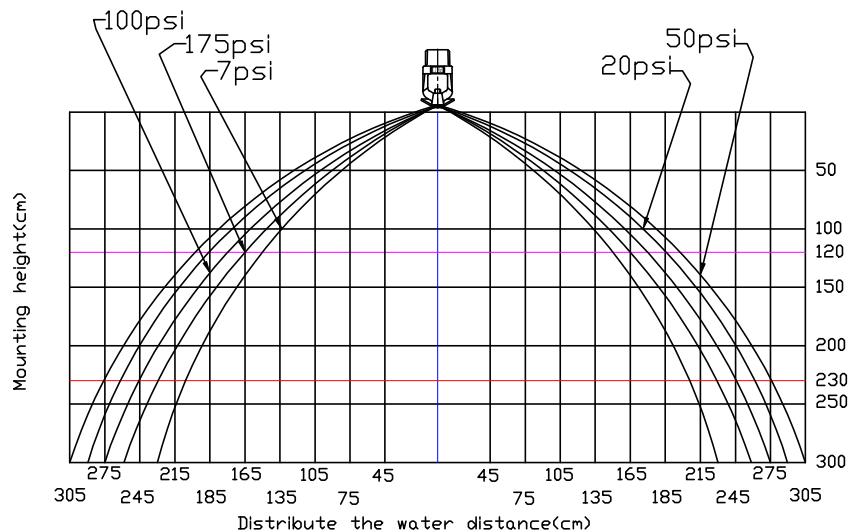
Sprinklers must never be altered after manufacture. Any alteration such as painting and coating will directly harm the sprinkler and cause malfunctions. Sprinkler in contact with corrosive products should be replaced if they cannot be cleaned completely.

Visual inspections are recommended after installation. After installation, a close-up inspection annually will suffice.

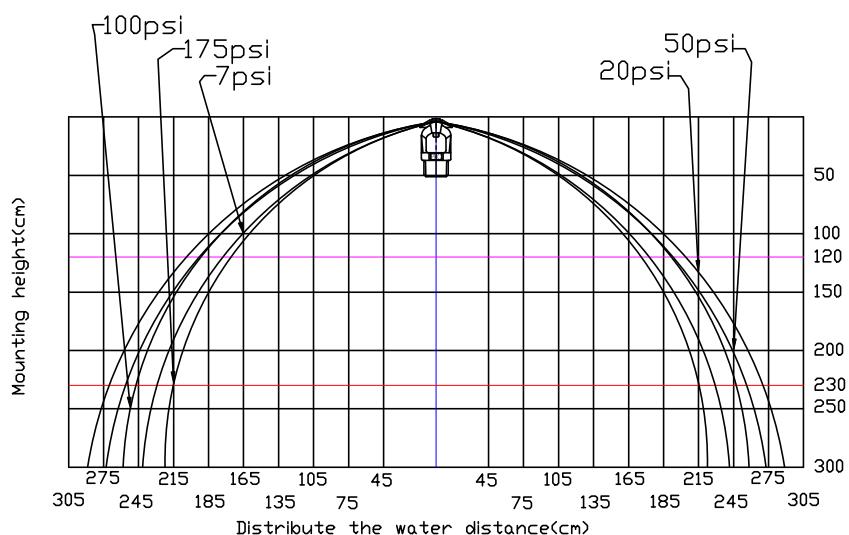
Inspection and maintenance of fire protection system is the responsibility of the owner. It is recommended that automatic sprinkler system be inspected and tested according to local and/or national regulations.

## DISTRIBUTION PATTERNS

K5.6 CONVENTIONAL SPRINKLER  
DISTRIBUTION PATTERNS - TRAJECTORY

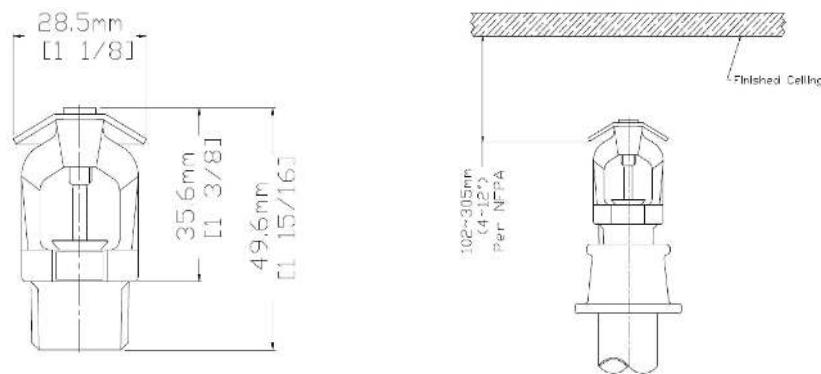


K5.6 CONVENTIONAL SPRINKLER  
DISTRIBUTION PATTERNS - TRAJECTORY

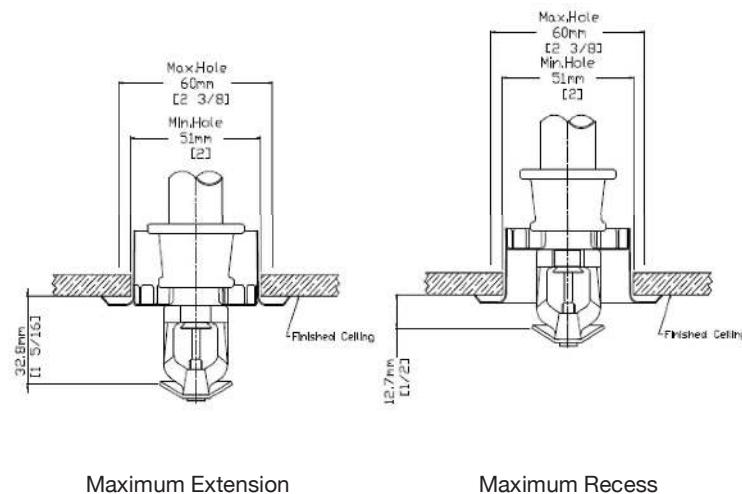


## DIMENSIONS

## STANDARD CONVENTIONAL SPRINKLER



## RECESSED CONVENTIONAL SPRINKLER



## ESCUTECHEONS PLATE

Escutcheon Plate - Single pieces  
Bright Chrome Finish  
Painted available upon request  
Suitable for 1/2" and 3/4" Sprinkler Head



## ESCUTECHEONS PLATE RECESSED

Adjustable Escutcheon Plate - Double pieces  
Bright Chrome Finish  
Painted available upon request  
Suitable for 1/2" and 3/4" Sprinkler Head



## HINGED ESCUTECHEONS PLATE FOR PIPE

Escutcheon Plate - Hinged  
Bright Chrome Finish  
Different sizes 1/2" upto 6"



## SPRINKLER GUARD

Steel Nickel / Chrome plated  
Suitable for 1/2" and 3/4" Sprinkler Head



## SPRINKLER CABINETS

Steel, painted Red  
Suitable for 1/2" Sprinkler Head  
Available for 6, 12, 24 Sprinkler Head

