SHIELD

FIRE PROTECTION PRODUCTS

SHIELD

Trusted Worldwide

www.shieldglobal.com

Introduction

Competence and innovation driven by consistent market development and customer requirements have shaped the successful development of the SHIELD Brand. The extensive product range of the market leader in the field of fire protection technology contains single, individually integrable system performances. In this way, a customized overall fire protection concept can be planned and realized for every need with optimally synchronized products.

Performance is in international demand, SHIELD is among the highly accredited fire protection companies that meet rigorous British and American standards for all projects from small conventional system to multi site networks. Certifications such as UL and FM approvals have earned SHIELD a world-renowned reputation with quality products and powerful solutions.

A strong brand is generally known to be a secure basis for close and lasting customer relationships. In accordance with this, SHIELD uses available potential in order to keep on growing in a dynamic competitive environment. And at the same time, SHIELD stands for innovative and high quality fire protection systems.

We invite you to explore and visit our website *www.shieldglobal.com.* You can also send us your feedback and inquiry through our user-friendly online forms.

In line with SHIELD policy for continuous product development, SHIELD has the right to change specifications without prior notice.
Images shown in this catalogue are for illustrations purposes only.

SHIELD

SPRINKLERS & VALVES

Contents

SHIELD SPRINKLERS & VALVES

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 ¾" 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

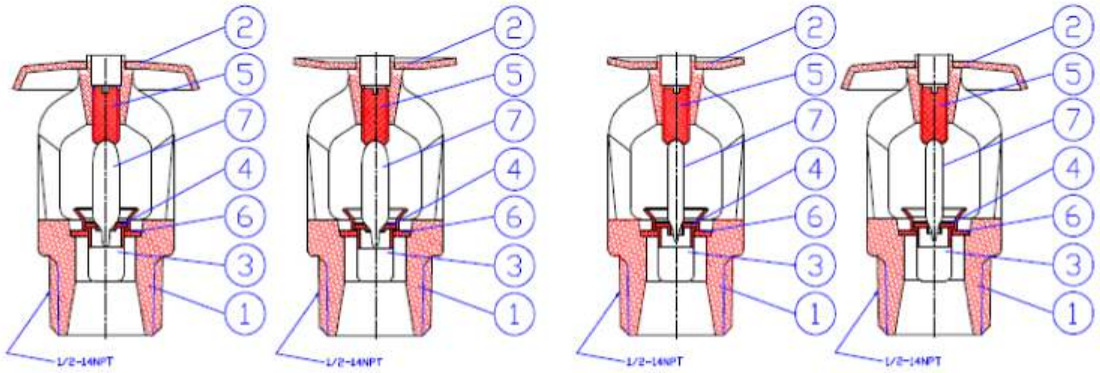
Sprinkler Identification Number	Standard SD1015, SD1010 (bulb 5mm), Quick Response SD1030, SD1032 (bulb 3mm)
Style	Upright Sprinkler SD1015, SD1032, Pendent & Recessed Pendent SD1010, SD1030
K Factor	5.6gpm/psi½. (80lpm/bar½)
Response Time Index (RTI)	Standard 50 Quick Response 30
Nominal Thread Size	½"NPT(15mm)
Orfice 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
**UL Listed only.

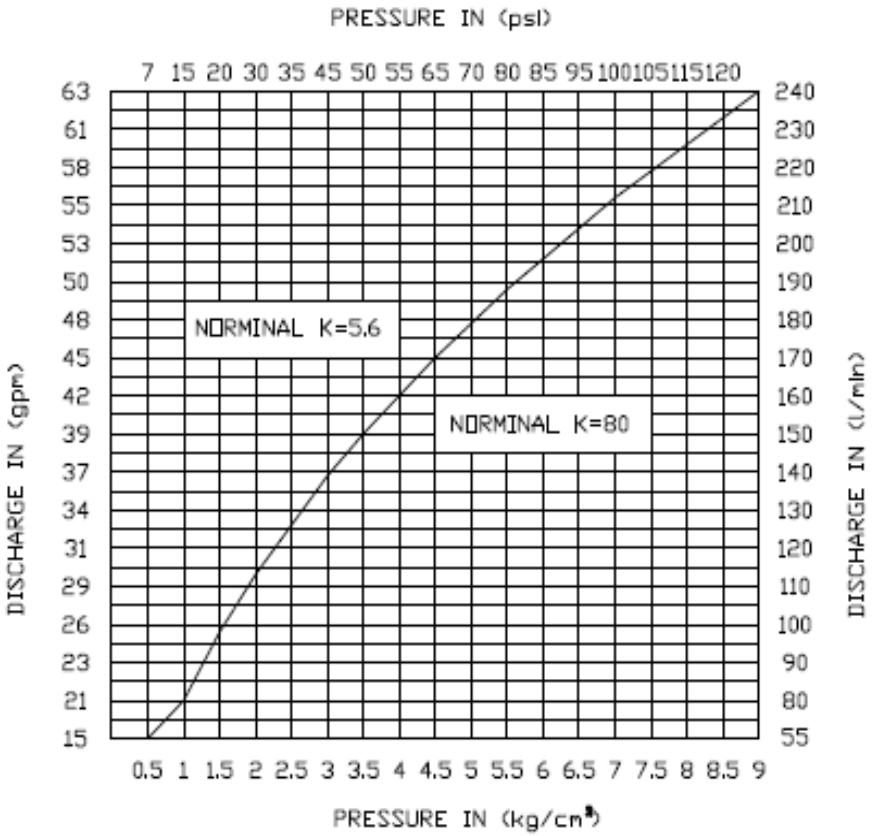
PART LIST



SD1015 **SD1010** **SD1030** **SD1032**

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 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.

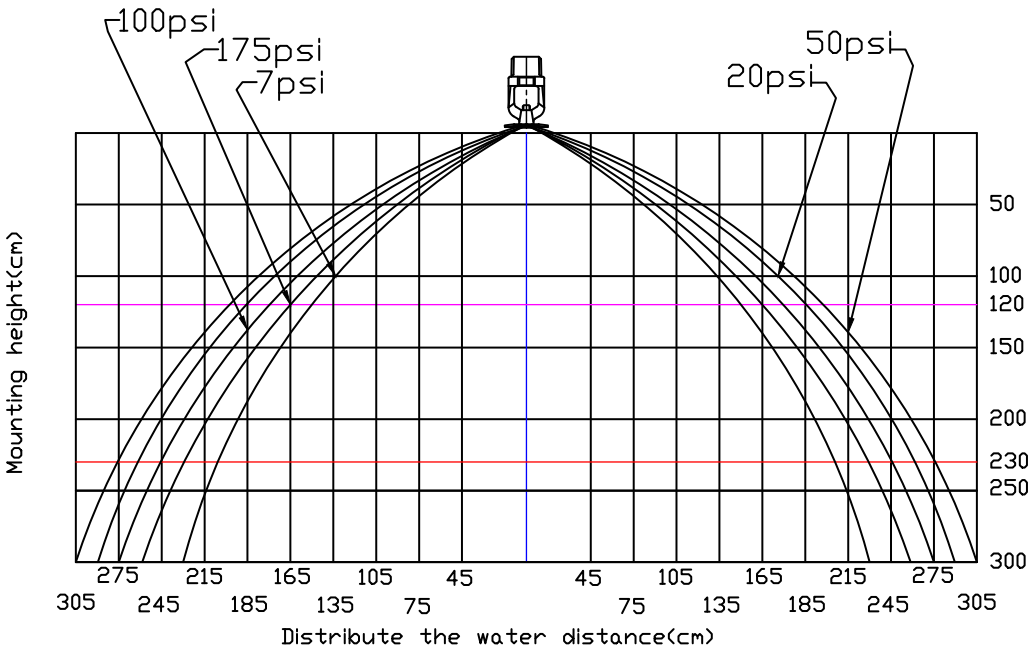
Sprinkler in contact with corrosive products should be replaced if they cannot be cleaned completely.

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

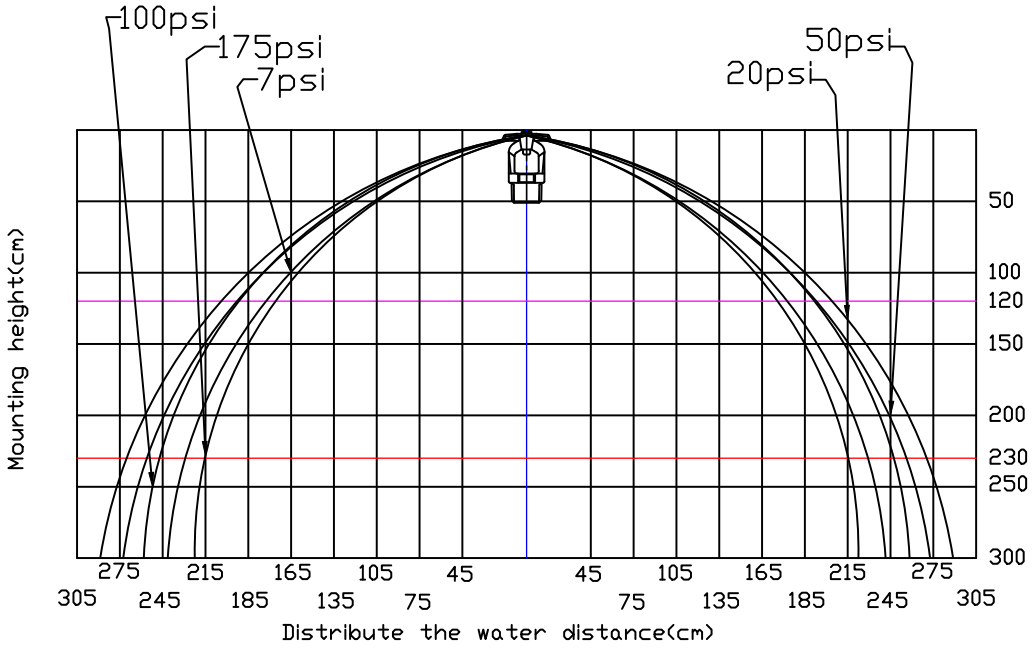
Inspection and maintenance of fire protection system is the responsibility of the owner. It is recommended that automatic sprinkler system be inspected and tested according to local and/or national regulations.

DISTRIBUTION PATTERNS

K5.6 PENDENT SPRINKLER
DISTRIBUTION PATTERNS - TRAJECTORY

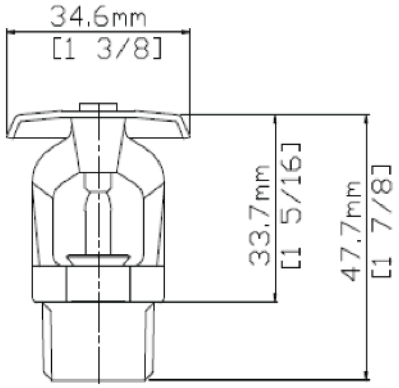


K5.6 UPRIGHT SPRINKLER
DISTRIBUTION PATTERNS - TRAJECTORY

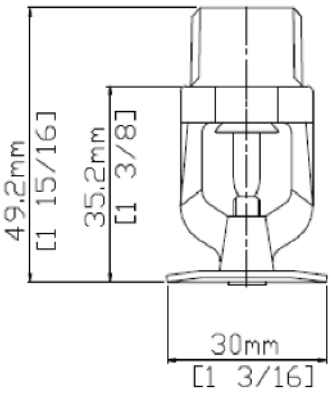


DIMENSIONS

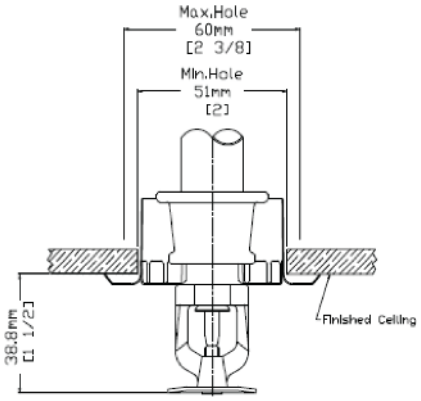
UPRIGHT SPRINKLER



PENDENT SPRINKLER



RECESSED PENDENT SPRINKLER



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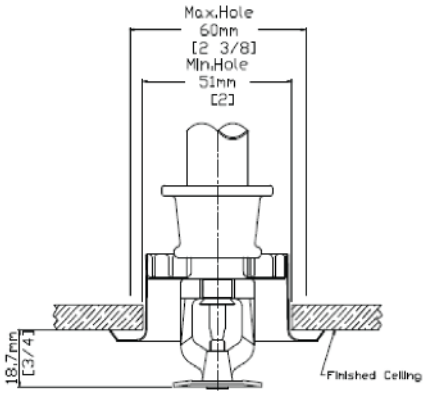


Maximum Recess

SPRINKLER HEAD

Horizontal Sidewall Sprinkler

MODEL: SD1133, SD1121

DESCRIPTION

The SD1133, SD1121, ½" 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 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 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

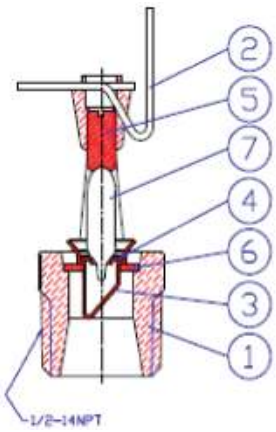
Sprinkler Identification Number	Standard SD1133 (bulb 5mm), Quick Response SD1121 (bulb 3mm)
Style	Horizontal Sidewall
K Factor	5.6gpm/psi^{½}. (80lpm/bar^{½})
Response Time Index (RTI)	Standard 50 Quick Response 30
Nominal Thread Size	½"NPT(15mm)
Orfice Size	13mm
Max. Working Pressure	175PSI(1200kPa)
Factory Hydrostatic Test	100%@500PSI(3450 kPa)
Min. Operation Pressure	7 PSI(48 kPa)

RATINGS

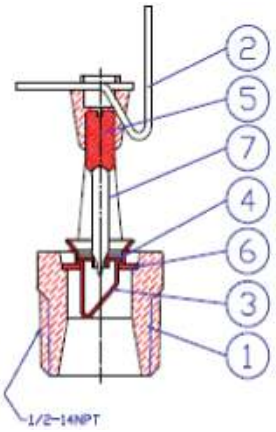
Sprinkler Temperature Classification	Norminal Sprinkler Temperature Rating	N.F.P.A Maximum Ambient (Ceiling) Temp.(Allowed)	Glass Bulb Color
Ordinary	155°F/57°C	100°F/38°C	Orange
Ordinary	155°F/68°C	100°F/38°C	Red
Intermediate**	175°F/79°C	150°F/65°C	Yellow
Intermediate**	200°F/93°C	150°F/65°C	Green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



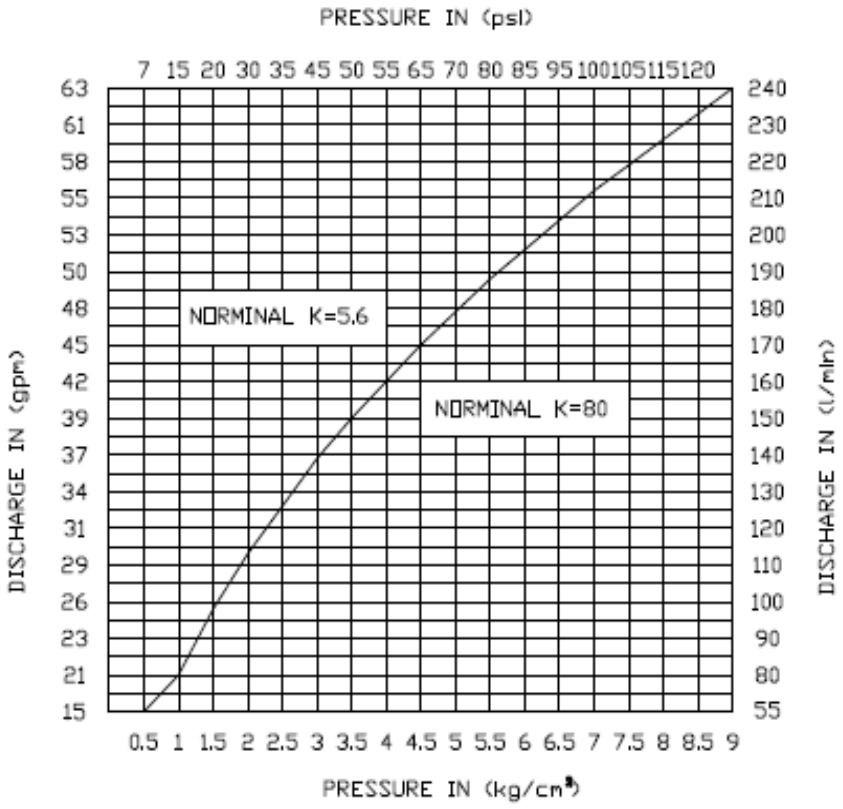
SD1133



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 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

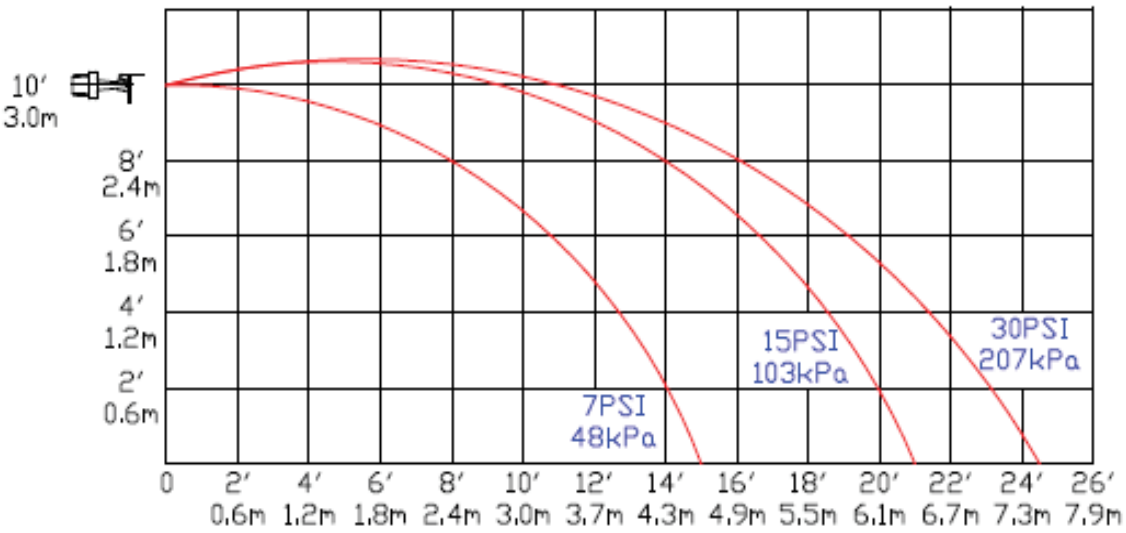
Sprinklers must never be altered after manufacture. Any alteration such as painting and coating will directly harm the sprinkler and cause malfunctions. Sprinkler in contact with corrosive products should be replaced if they cannot be cleaned completely.

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

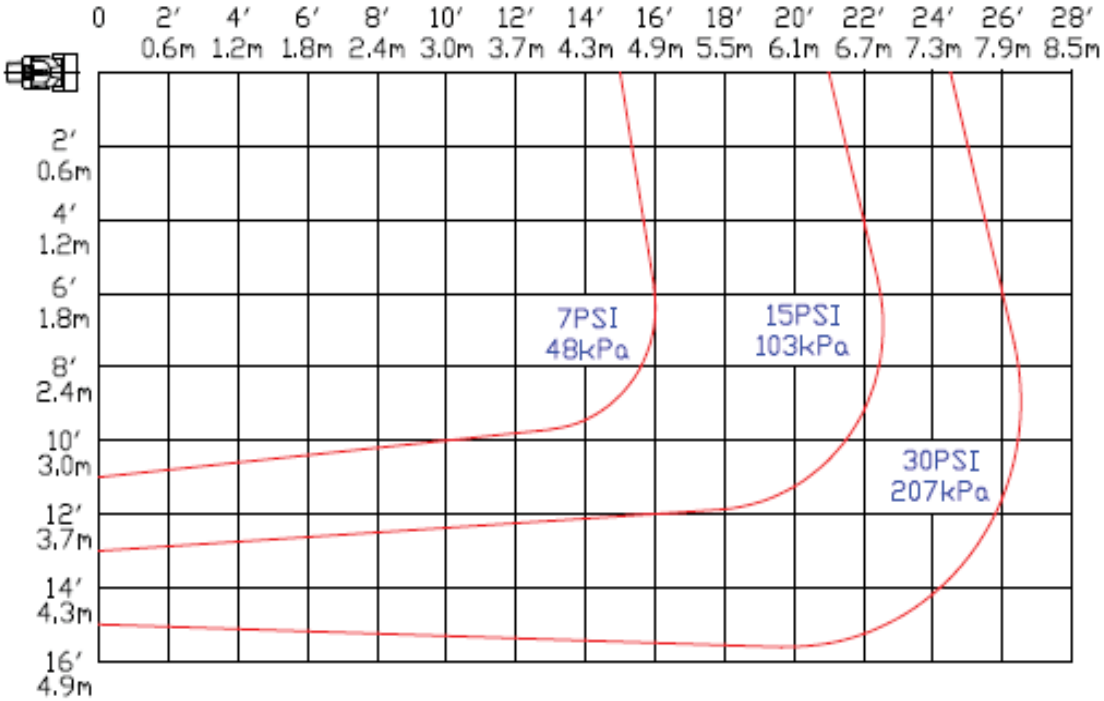
Inspection and maintenance of fire protection system is the responsibility of the owner. It is recommended that automatic sprinkler system be inspected and tested according to local and/or national regulations.

DISTRIBUTION PATTERNS

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



K5.6 STANDARD HORIZONTAL SIDEWALL
DISTRIBUTION PATTERNS – PLAN VIEW



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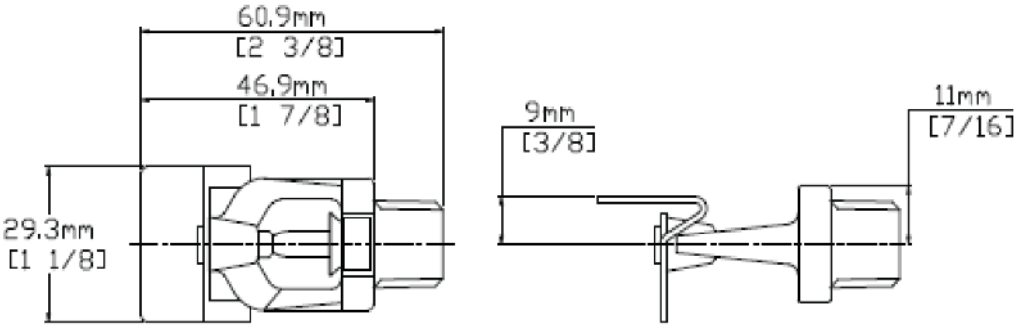
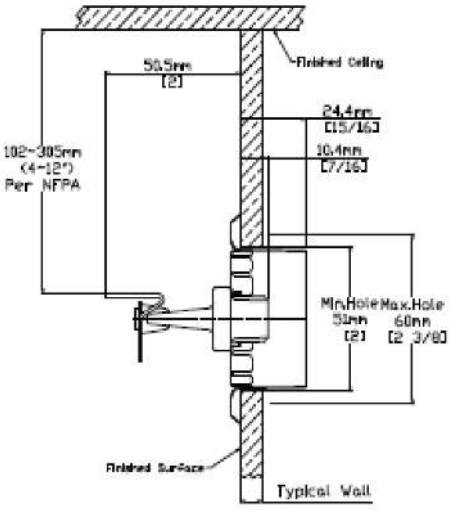


RECESSED PENDENT SPRINKLER



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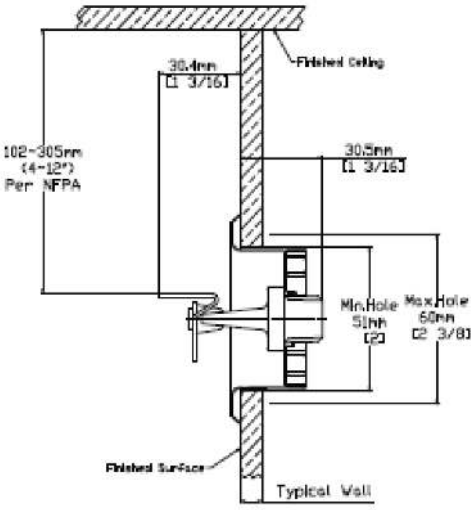


Maximum Recess

SPRINKLER HEAD

Vertical Sidewall Sprinkler

MODEL: SD2133, SD2121

DESCRIPTION

The SD2133, SD2121, ½" 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 ¾" 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 = 196 square feet(18,2 sq.m); Ordinary Hazard = 100 square feet(9,3 sq.m)per NFPA 13.

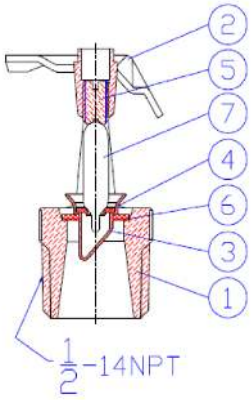
TECHNICAL SPECIFICATION

Sprinkler Identification Number	Standard SD2133 (bulb 5mm), Quick Response SD2121 (bulb 3mm)
Style	Vertical Sidewall
K Factor	5.6gpm/psi^{½}. (80lpm/bar^{½})
Response Time Index (RTI)	Standard 50 Quick Response 30
Nominal Thread Size	½"NPT(15mm)
Orfice Size	13mm
Max. Working Pressure	175PSI(1200kPa)
Factory Hydrostatic Test	100%@500PSI(3450 kPa)
Min. Operation Pressure	7 PSI(48 kPa)

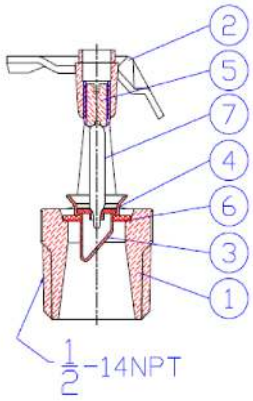
RATINGS

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

PART LIST



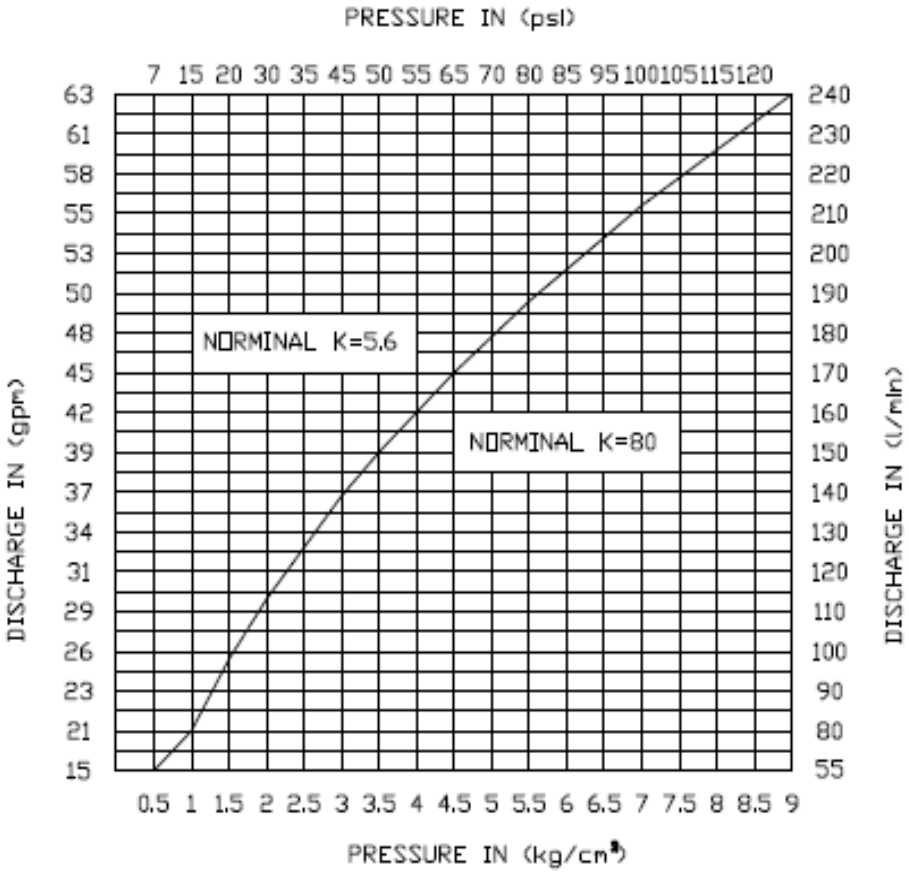
SD2133



SD2121

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

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

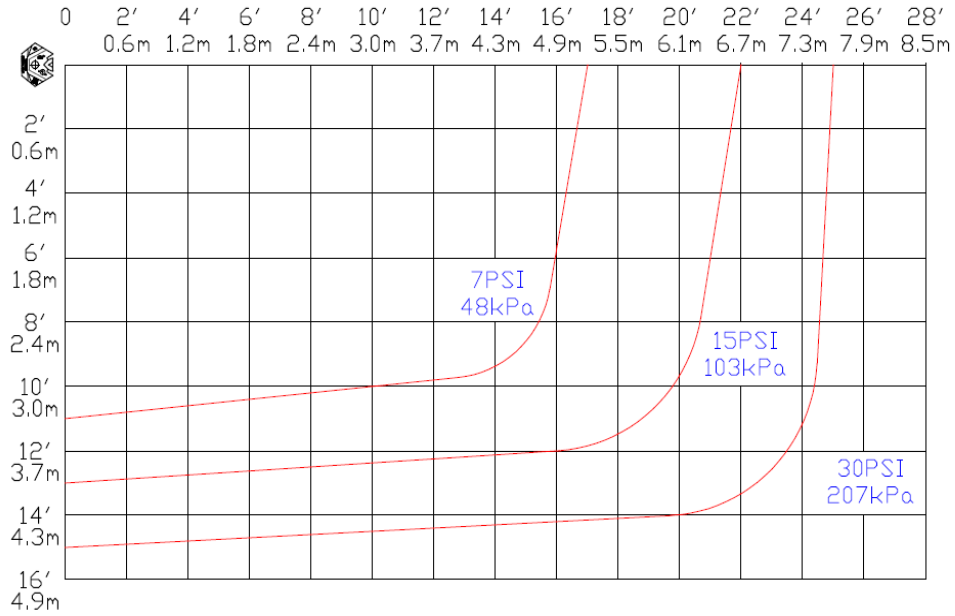
Sprinklers must never be altered after manufacture. Any alteration such as painting and coating will directly harm the sprinkler and cause malfunctions. Sprinkler in contact with corrosive products should be replaced if they cannot be cleaned completely.

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

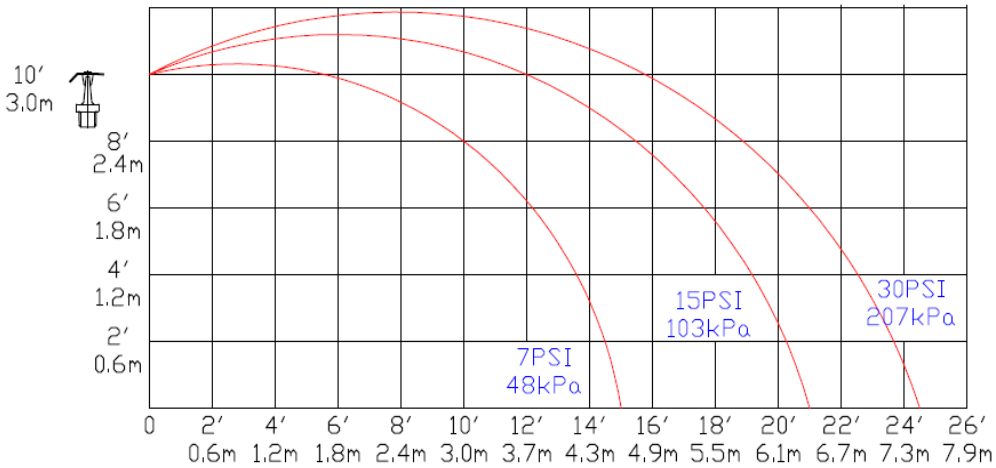
Inspection and maintenance of fire protection system is the responsibility of the owner. It is recommended that automatic sprinkler system be inspected and tested according to local and/or national regulations.

DISTRIBUTION PATTERNS

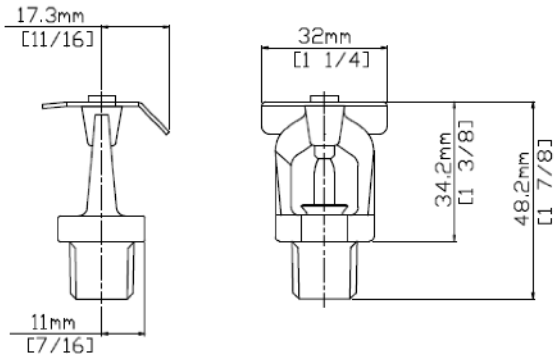
K5.6 STANDARD VERTICAL SIDEWALL
DISTRIBUTION PATTERNS - TRAJECTORY

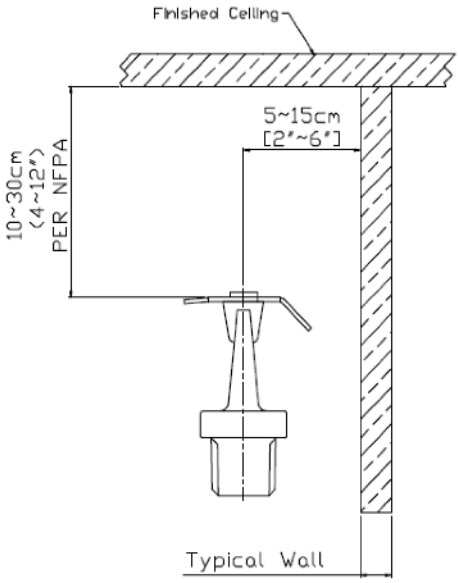


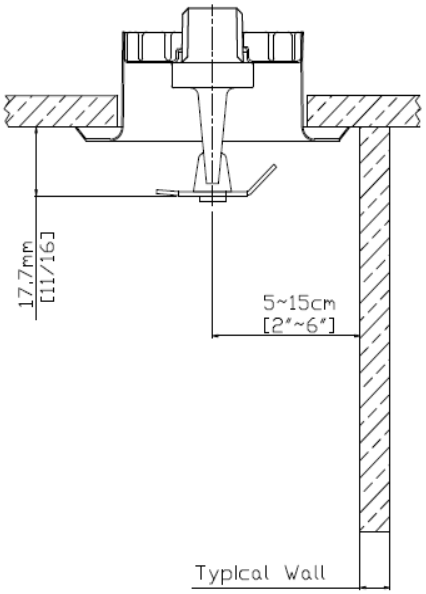
K5.6 STANDARD VERTICAL SIDEWALL
DISTRIBUTION PATTERNS – PLAN VIEW

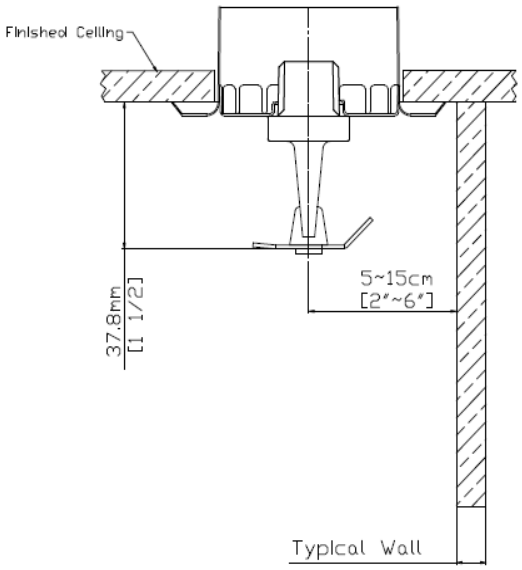


DIMENSIONS


17.3mm
[11/16]
11mm
[7/16]
32mm
[1 1/4]
34.2mm
[1 3/8]
48.2mm
[1 7/8]


Finished Ceiling
5~15cm
[2"~6"]
10~30cm
(4~12")
PER NFPA
Typical Wall


17.7mm
[11/16]
5~15cm
[2"~6"]
Typical Wall


Finished Ceiling
37.8mm
[1 1/2]
5~15cm
[2"~6"]
Typical Wall

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 ½" 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

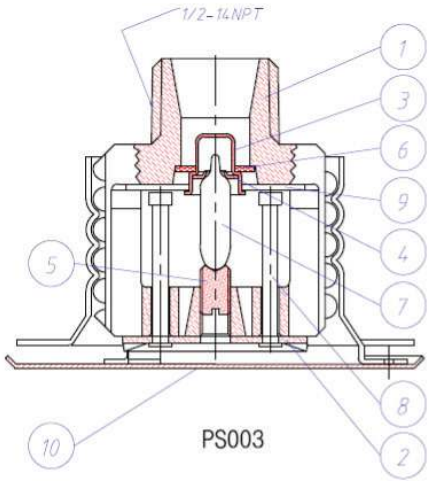
Sprinkler Identification Number	Standard SD1050 (bulb 5mm), Quick Response SD1055 (bulb 3mm)
Style	Concealed Sprinkler
K Factor	5.6gpm/psi^{½}. (80lpm/bar^{½})
Response Time Index (RTI)	Standard 50 Quick Response 30
Nominal Thread Size	½"NPT(15mm)
Orifice Size	13mm
Max. Working Pressure	175PSI(1200kPa)
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

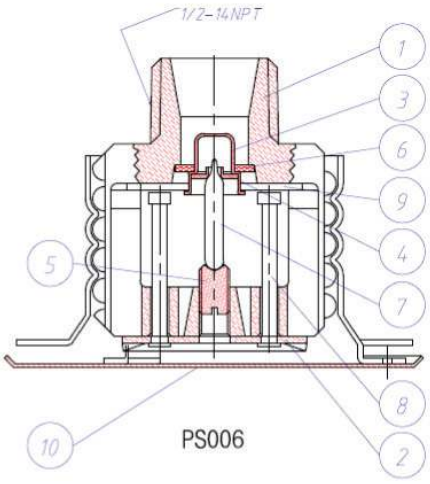
RATINGS

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



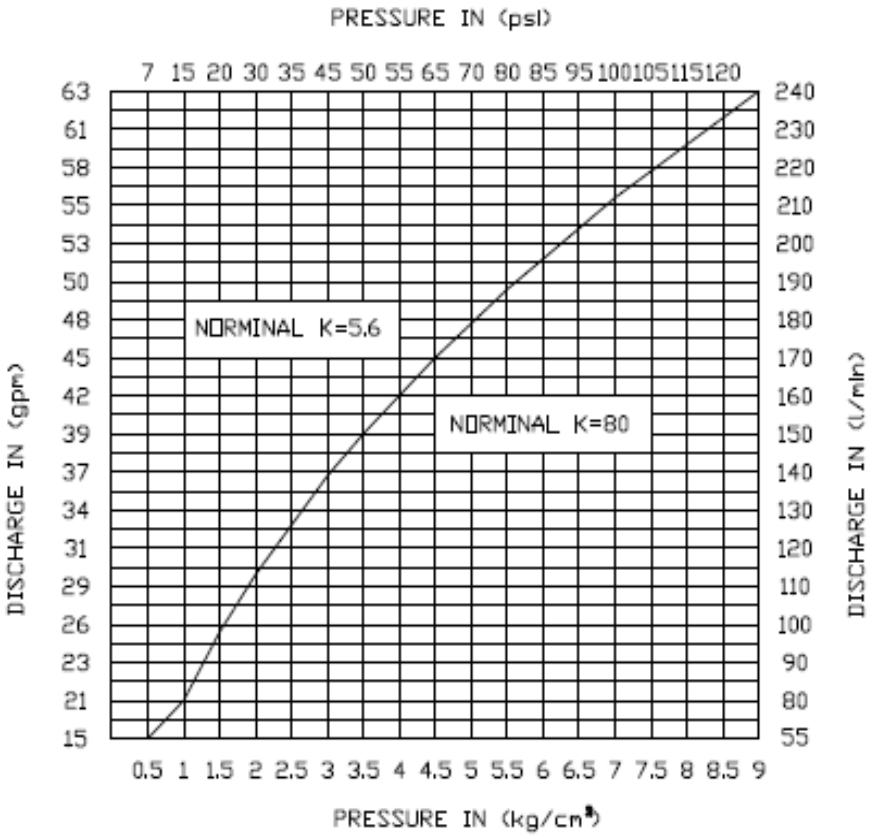
SD1050



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 to124.5N) 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

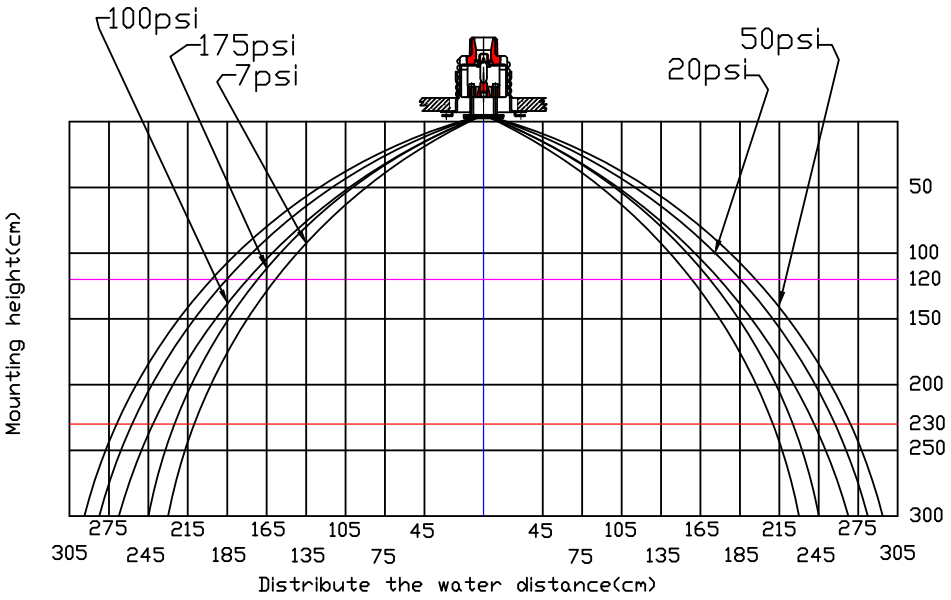
Sprinklers must never be altered after manufacture. Any alteration such as painting and coating will directly harm the sprinkler and cause malfunctions. Sprinkler in contact with corrosive products should be replaced if they cannot be cleaned completely.

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

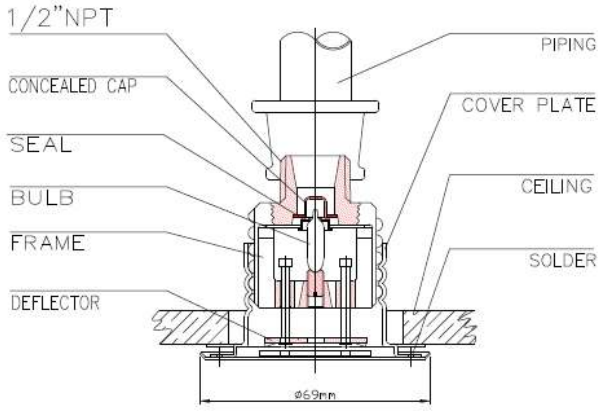
Inspection and maintenance of fire protection system is the responsibility of the owner. It is recommended that automatic sprinkler system be inspected and tested according to local and/or national regulations.

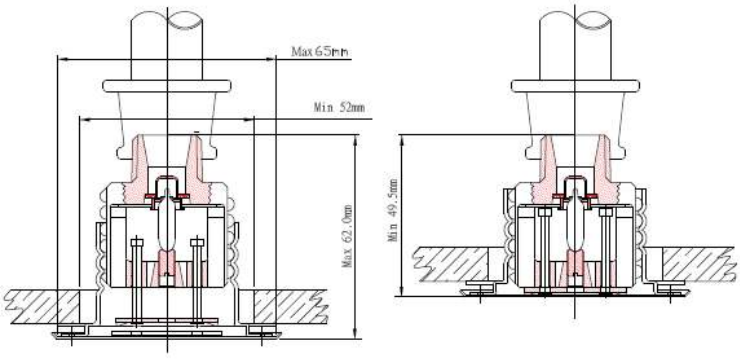
DISTRIBUTION PATTERNS

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 ¾" 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

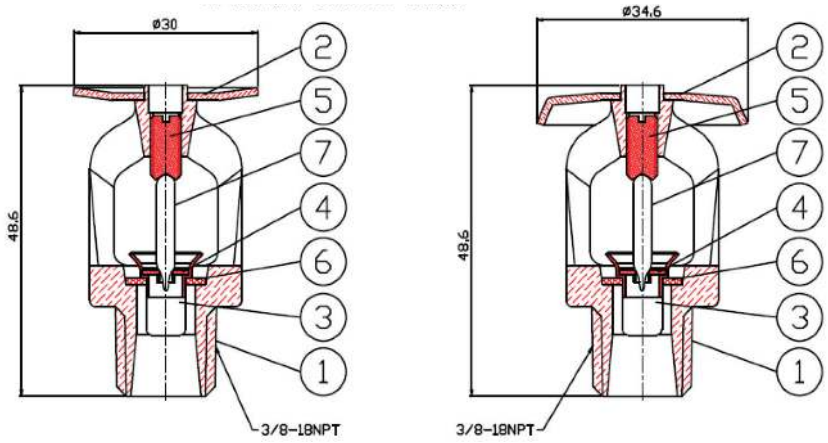
Sprinkler Identification Number	Quick Response SD1020, SD1021 (bulb 3mm)
Style	Pendent Sprinkler SD1020, Upright Sprinkler SD1021
K Factor	4.2gpm/psi$^{1/2}$. (60lpm/bar$^{1/2}$)
Response Time Index (RTI)	Quick Response 30
Nominal Thread Size	⅜"NPT or ⅜"PT
Max. Working Pressure	175PSI(1200kPa)
Factory 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

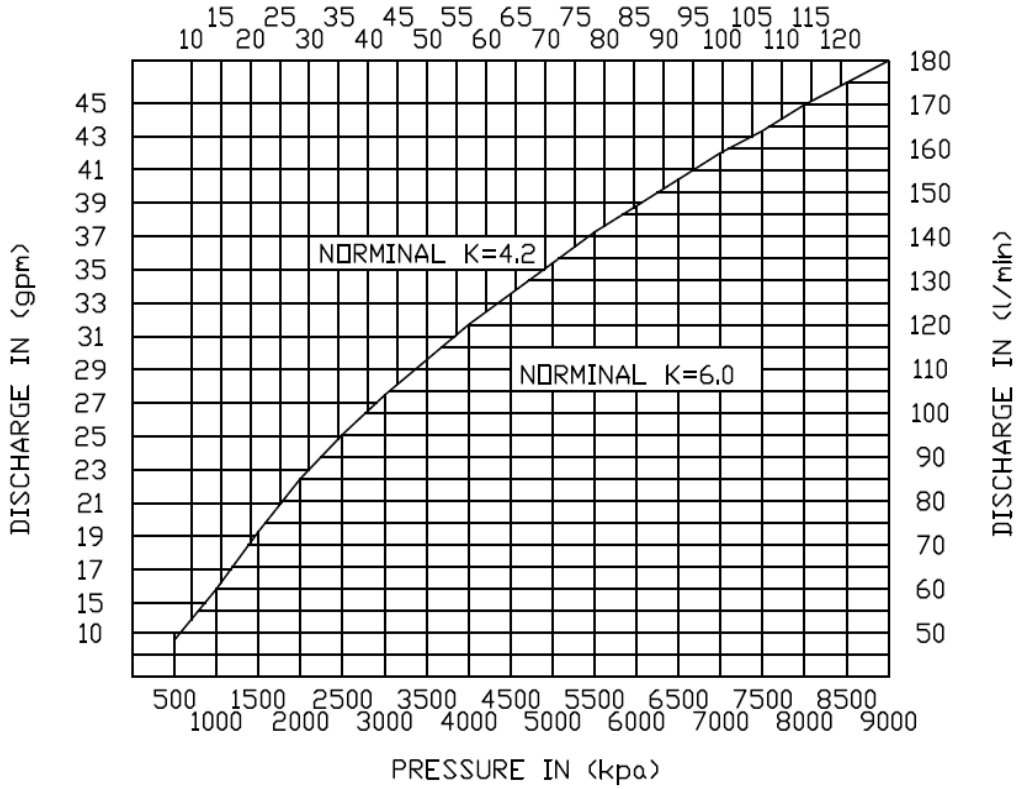
FRAME AND DEFLECTOR FINISH
Pendent - Brass, Chrome, White
Upright - Brass only



SD1020 **SD1021**

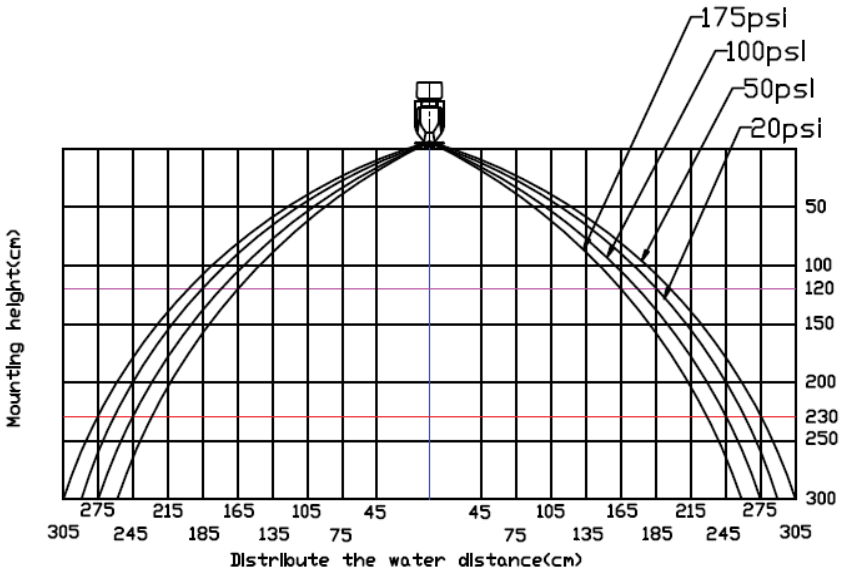
1. Frame 2. Deflector 3. Cap 4. Cap Seat 5. Load Screw 6. Seal 7. Bulb

DISCHARGE CURVE

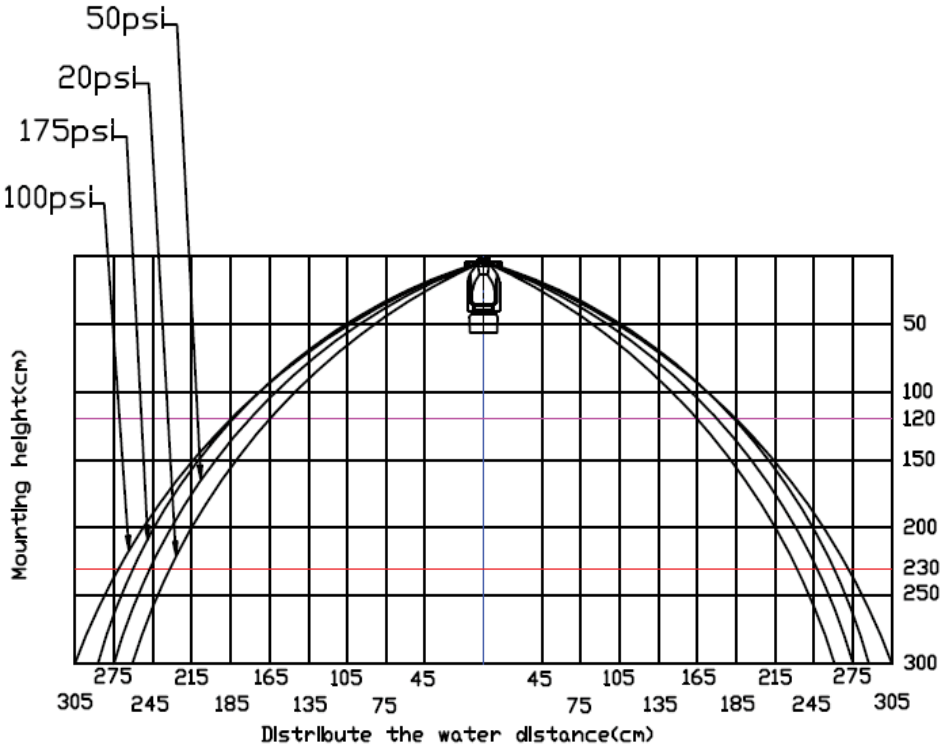


DISTRIBUTION PATTERNS

K4.2 PENDENT SPRINKLER
DISTRIBUTION PATTERNS - TRAJECTORY

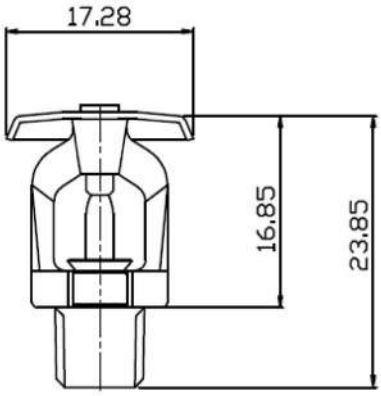


K4.2 UPRIGHT SPRINKLER
DISTRIBUTION PATTERNS - TRAJECTORY

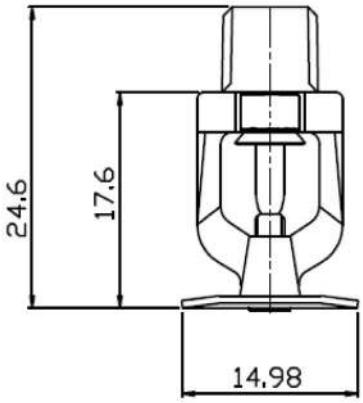


DIMENSIONS

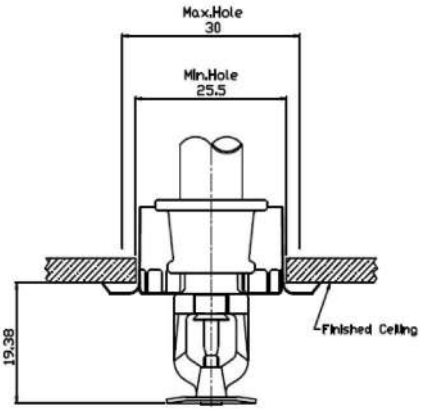
UPRIGHT SPRINKLER



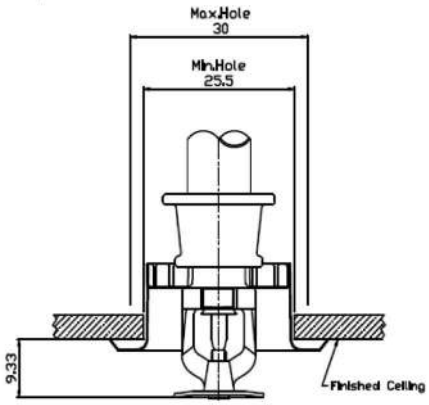
PENDENT SPRINKLER



RECESSED PENDENT SPRINKLER



Maximum Extension



Maximum Recess

SPRINKLER HEAD

Conventional Sprinkler

MODEL: SD1025, SD1026

DESCRIPTION

The SHIELD Sprinkler, SD1025, SD1026 (Glass Bulb Type) ½" 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 ¾" 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 = 229 square feet(20.9 sq.m); Ordinary Hazard = 130 square feet(12.1 sq.m)per NFPA 13.

TECHNICAL SPECIFICATION

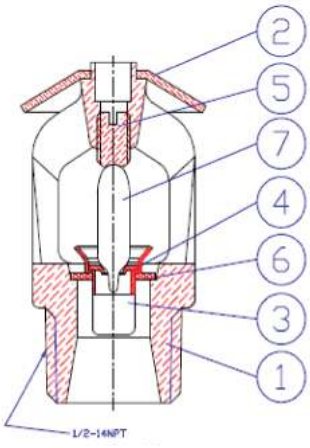
Sprinkler Identification Number	Standard SD1025 (bulb 5mm), Quick Response SD1026 (bulb 3mm)
Style	Conventional Sprinkler
K Factor	5.6gpm/psi½. (80lpm/bar½)
Response Time Index (RTI)	Standard Response 50 Quick Response 30
Nominal Thread Size	½"NPT (15mm)
Orifice Size	13mm
Max. Working Pressure	175PSI(1200kPa)
Factory Hydrostatic Test	100%@500PSI(3450 kPa)
Min. Operation Pressure	7 PSI(48 kPa)

RATINGS

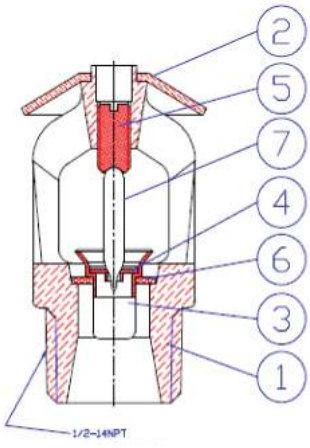
Sprinkler Temperature Classification	Norminal Sprinkler Temperature Rating	N.F.P.A Maximum Ambient (Ceiling) Temp.(Allowed)	Glass Bulb Color
Ordinary	135°F/57°C	100°F/38°C	Orange
Ordinary	155°F/68°C	100°F/38°C	Red
Intermediate	175°F/79°C	150°F/65°C	Yellow
Intermediate	200°F/93°C	150°F/65°C	Green
High*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



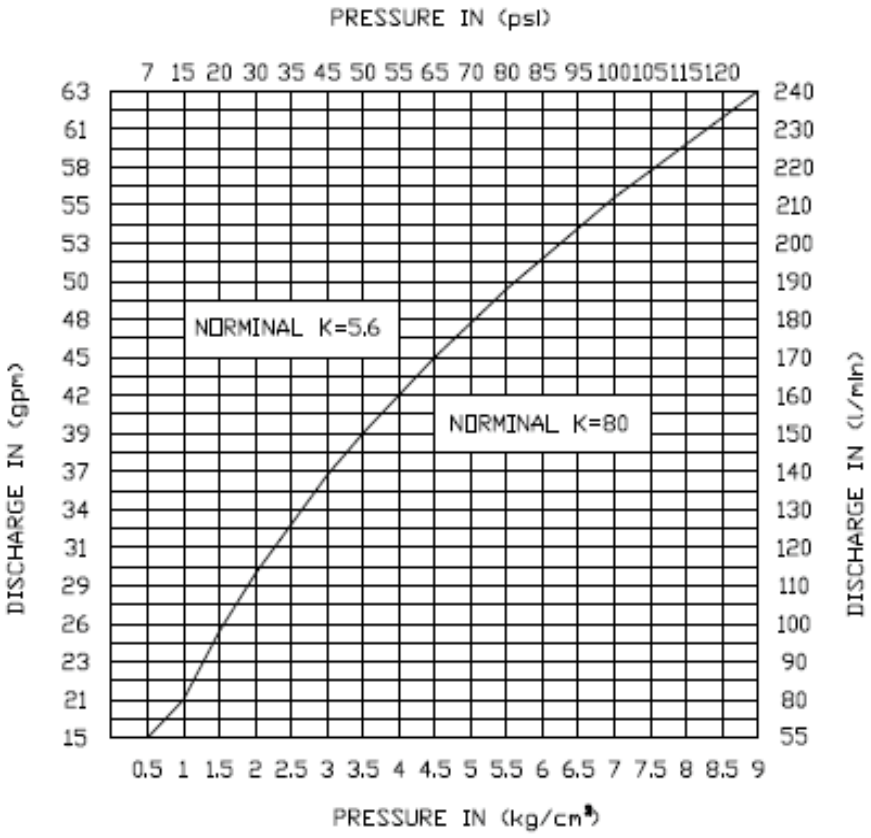
SD1025



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 compouind 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 to28ft.-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

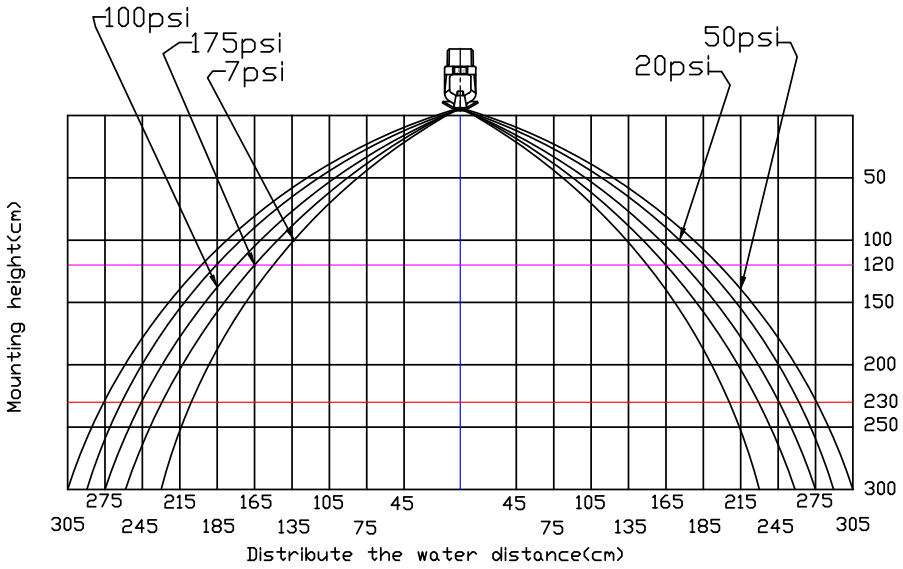
Sprinklers must never be altered after manufacture. Any alteration such as painting and coating will directly harm the sprinkler and cause malfunctions. Sprinkler in contact with corrosive products should be replaced if they cannot be cleaned completely.

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

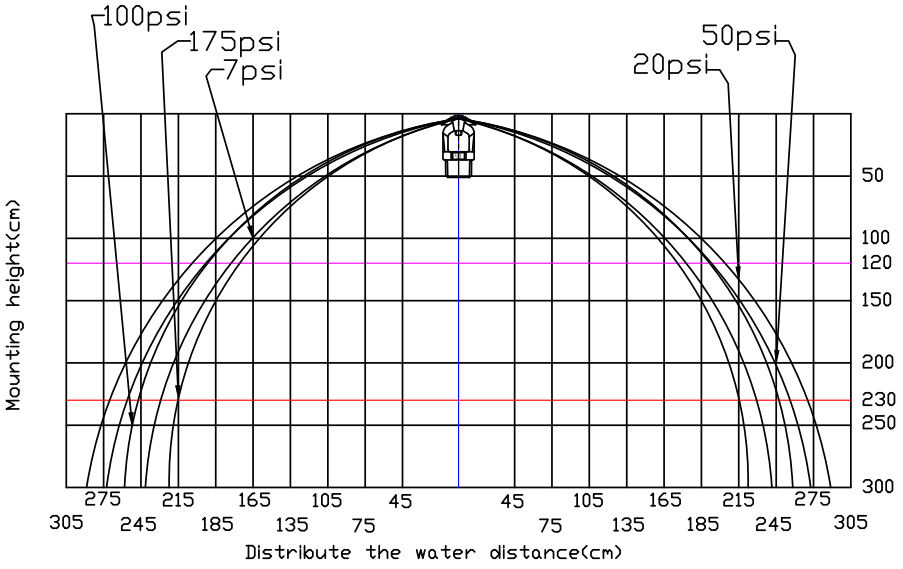
Inspection and maintenance of fire protection system is the responsibility of the owner. It is recommended that automatic sprinkler system be inspected and tested according to local and/or national regulations.

DISTRIBUTION PATTERNS

K5.6 CONVENTIONAL SPRINKLER
DISTRIBUTION PATTERNS - TRAJECTORY

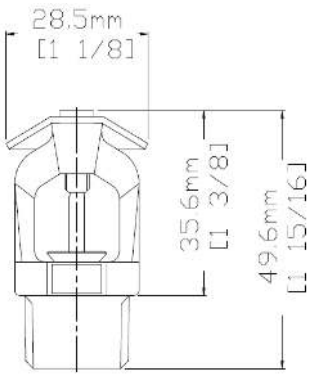


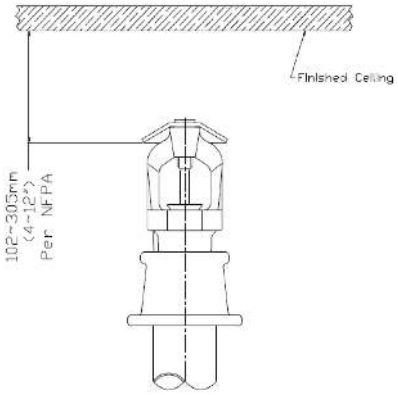
K5.6 CONVENTIONAL SPRINKLER
DISTRIBUTION PATTERNS - TRAJECTORY



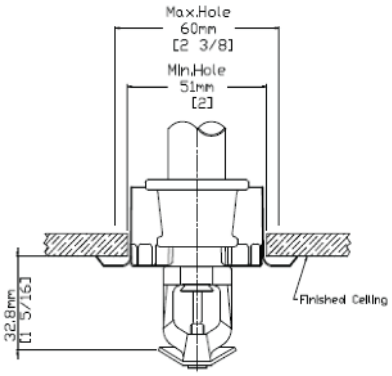
DIMENSIONS

STANDARD CONVENTIONAL SPRINKLER

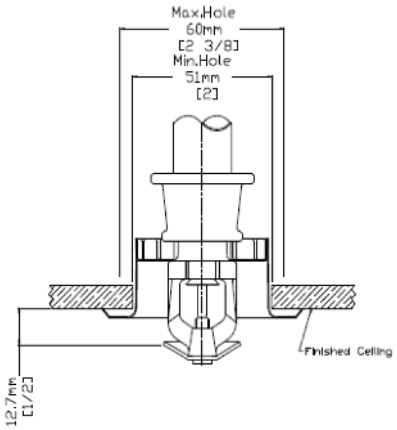




RECESSED CONVENTIONAL SPRINKLER



Maximum Extension



Maximum Recess

ESCUTECHEONS PLATE

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

ESCUTECHEONS PLATE RECESSED

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

HINGED ESCUTECHEONS PLATE FOR PIPE

Escutecheon 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

MEDIUM VELOCITY WATER SPRAY NOZZLE

MODEL: MV-A & MV-AS
MV-B & MV-BS
MV-E

TECHNICAL DATA :

MAXIMUM WORKING PRESSURE	12 Bar (175 PSI)
EFFECTIVE WORKING PRESSURE	1.4 to 3.5 Kg/Sq.cm (20 - 50 PSI)
END CONNECTION	1/2" BSPT (1/2" NPT OPTIONAL)
MATERIAL	Refer Table-I
INCLUDED WATER SPRAY ANGLE FOR EACH K-FACTOR	140°, 120°, 110°, 100°, 90°, 80° & 65°
K FACTOR	MV-A/MV-B & MV-E Metric (US): K-18 (1.26), K-22 (1.54), K-30 (2.10), K-35 (2.45), K-41 (2.87), K-51 (3.57), K-64 (4.48), K-79 (5.53), K-91 (6.37), K-102 (7.14) MV-AS/MV-BS Metric (US): K-18 (1.26), K-22 (1.54), K-30 (2.10), K-35 (2.45), K-41 (2.87)
WEIGHT (Approx)	0.110 Kg
FINISH	MV-A & MV-AS Natural Brass finish. Chrome plated Nickel, Electroless Nickel plated, Epoxy powder coated. MV-B, MV-BS & MV-E Natural Finish
ORDERING INFORMATION	Specify K-Factor, spray angle, finish, model and end connection.

The SHIELD Medium Velocity Water Spray Nozzles are open type (non-automatic nozzles, designed for directional spray application in fixed fire protection system.

Medium velocity water spray nozzle has an external deflector, which discharges water in a directional cone shaped pattern of small droplet size. The water is uniformly distributed over the surface to be protected.

The Nozzles are effectively designed to apply water to exposed vertical, horizontal, curved and irregular shaped surfaces to allow cooling to prevent excessive absorption of heat from external fire and avoid structural damage or spread of fire. In some application nozzles may be installed to control or extinguish the fire depending on water design density as per applicable codes. The nozzle is used in deluge water spray system for special hazard fire protection application.

As the design and intent of specific water spray system may vary considerably, MV nozzle is made available in several combinations of orifice sizes and spray angles.

The minimum desirable pressure to achieve a reasonable spray pattern is 1.4 Kg./Sq.cm. The water distribution pattern as shown in the graph in following pages is at an average pressure of 2.0 Kg/Sq.cm. The change in pressure between 1.4 to 3.5 Kg./sq.cm. does not affect considerable change in spray angle.

The spray pattern shown is with indoor application. System designer must consider wind velocity while designing the system for outdoor application. Field obstruction if any affecting the spray pattern of the nozzle must also be considered. The nozzle may be oriented to any position as deemed necessary to cover the hazard

The Blow-off plugs can be used to prevent the depositing of foreign materials in the waterway of the nozzles, which could interfere with discharge of the spray nozzle.

Blow-off Plugs have identification mark with respect to K factor. Blow off plug for nozzle having K factor 22 will have identification mark of 22. Minimum operating pressure for nozzle having Blow-off plug is 1.4 Kg./Sq.cm (20 PSI).

The main pipeline strainer as per NFPA-15 is required for system utilizing nozzle orifice diameter less than 9.5mm (3/8 inch), i.e. MV Nozzle having K-factor 51 and less, and also for the system water likely to contain obstructive materials.

INSTALLATION & MAINTENANCE

The spray nozzle must be handled with due care. For best results, the storage as well as any further shipment be made in original packing only.

Nozzle which is visibly damaged should not be installed. Use Teflon tape or soft thread sealant on male thread of the nozzle.

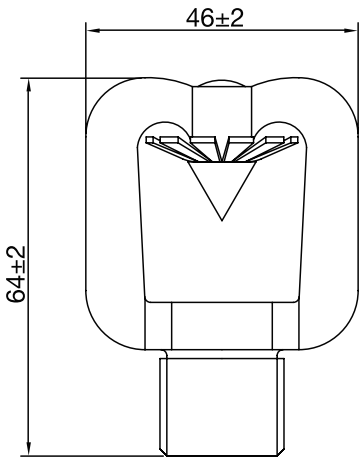
The nozzles must be hand tightened into the fitting. After hand tightening use Nozzle Wrench for wrench tightening in to nozzle fittings. Excessive tightening torque may result into serious damage to nozzle arms and the deflector, which may affect spray pattern of the nozzle and its performance.

It is recommended that water spray system be inspected regularly by authorised technical personnel.

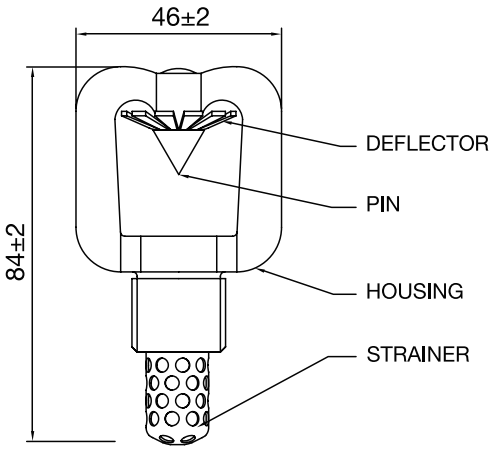
The nozzle must be checked for atmospheric effects, external and internal obstruction, blockage if any. The system must be operated with optimum water flow at least twice in a year or as per the provisions of NFPA /TAC or local authority having jurisdiction.

The owner is solely responsible for maintaining the water spray system and the components there in so that it performs properly when required.

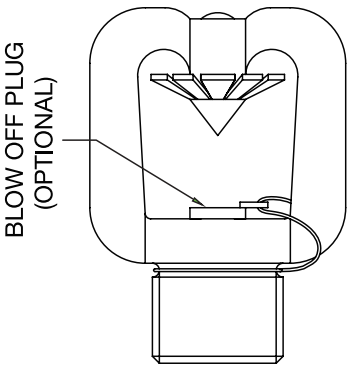
MODEL MV-A, MV-B & MV-E



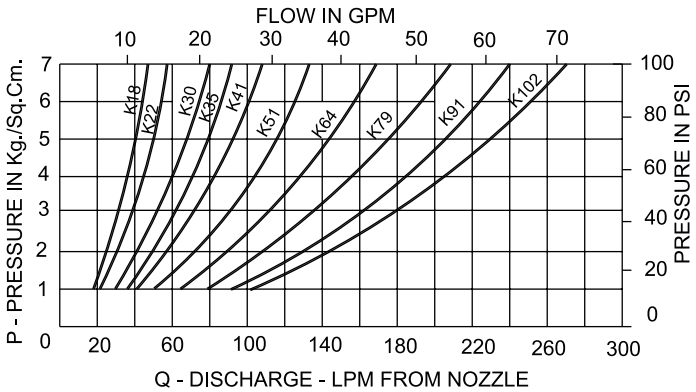
MODEL MV-AS, & MV-BS



NOZZLES WITH BLOW-OFF PLUG



DISCHARGE CHARACTERISTICS



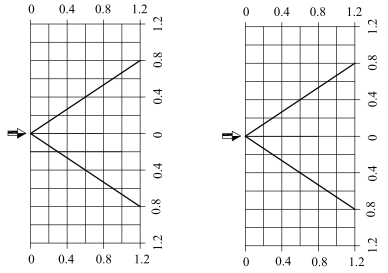
Q =K√P where P is supply pressure in Kg/sq.cm., K= nozzle constant (K-factor) in metric.

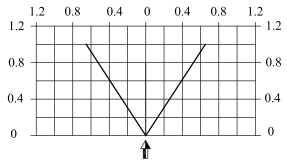
TABLE - I : MATERIAL OF CONSTRUCTION

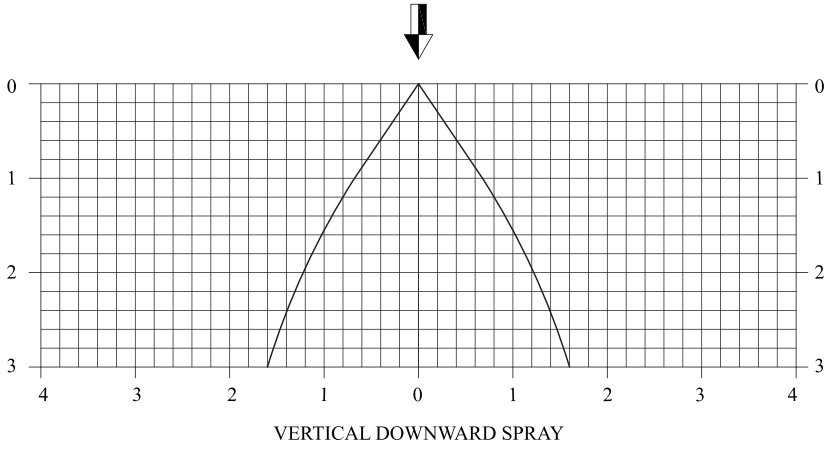
COMPONENT	MODEL MV-A & MV-AS	MODEL MV-B & MV-BS	MODEL MV-E
Housing	Brass, IS:291 GR.-1 (Equivalent to ASTM B21)	Stainless Steel, A351-CF8M	Aluminium Bronze IS:305-AB1 (Equivalent to ASTM-A148)
PIN	BRASS IS:291. GR. -1 (Equivalent to ASTM B21)	Stainless Steel, A479 GR 31803	Ph.Bronze IS:7811 (Equivalent to B139 / BS2874-PB102)
Deflector	BRASS IS:291. GR. -1 (Equivalent to ASTM B21)	Stainless Steel, A240 GR 2205	Ph.Bronze IS:7814-GR-II (Equivalent to BS2870-PB102)
Strainer	Copper (For MV-AS)	Stainless Steel 316 (For MV-BS)	---
Blow-Off Plug (Optional)	Elastomer	Elastomer	Elastomer

SPRAY PATTERN

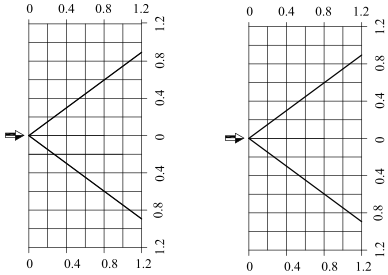
SPRAY ANGLE 65º

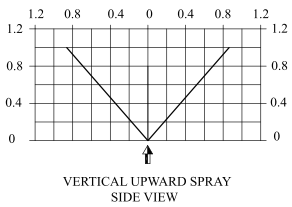


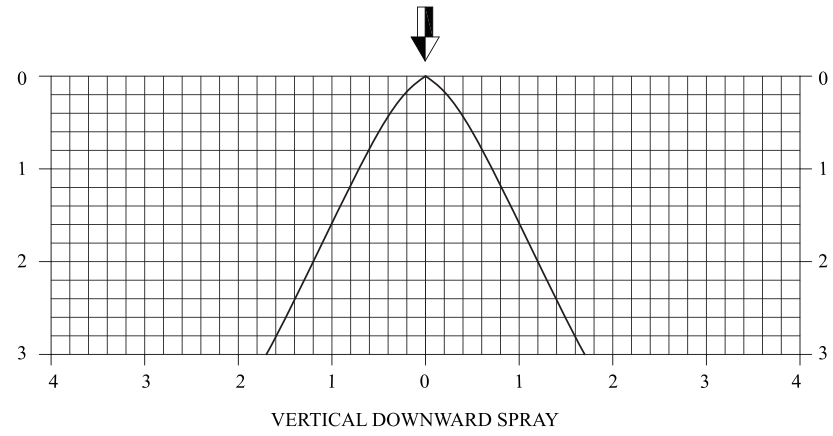




SPRAY ANGLE 80º

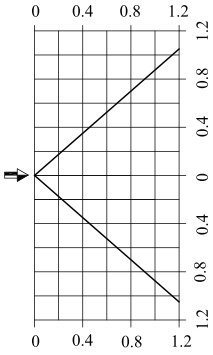




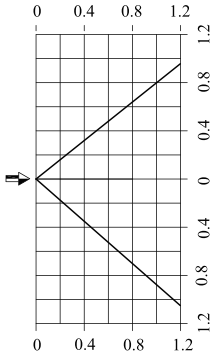


All dimensions are in meters.

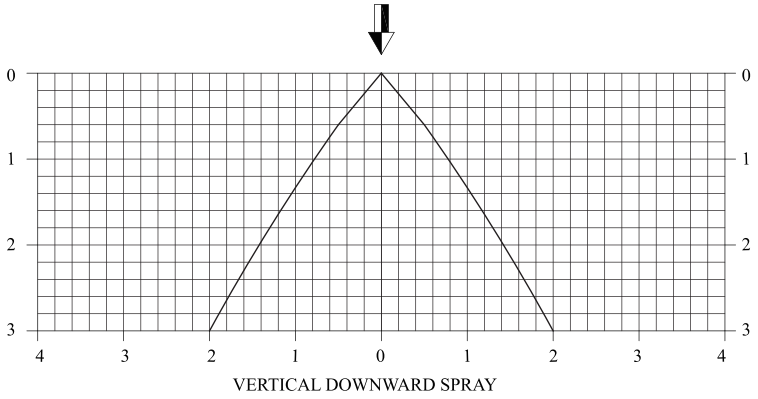
SPRAY ANGLE 90º



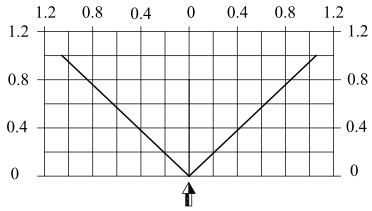
HORIZONTAL SPRAY
TOP VIEW



HORIZONTAL SPRAY
SIDE VIEW

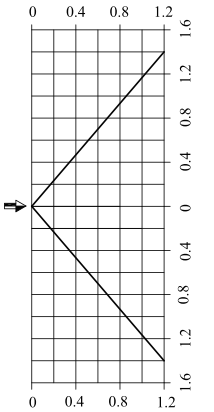


VERTICAL DOWNWARD SPRAY

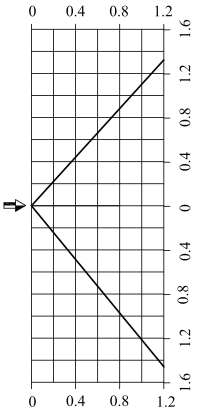


VERTICAL UPWARD SPRAY
SIDE VIEW

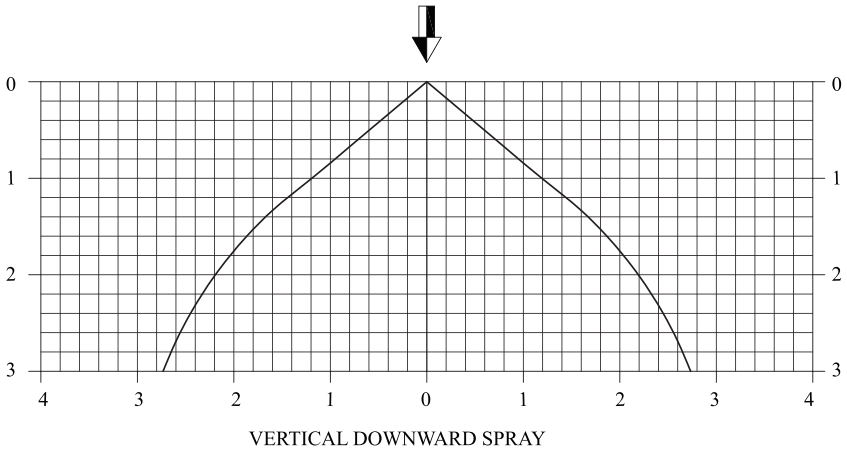
SPRAY ANGLE 100º



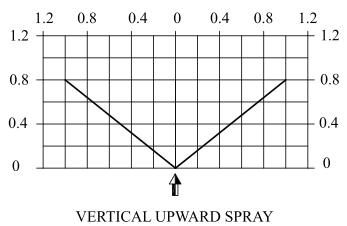
HORIZONTAL SPRAY
TOP VIEW



HORIZONTAL SPRAY
SIDE VIEW



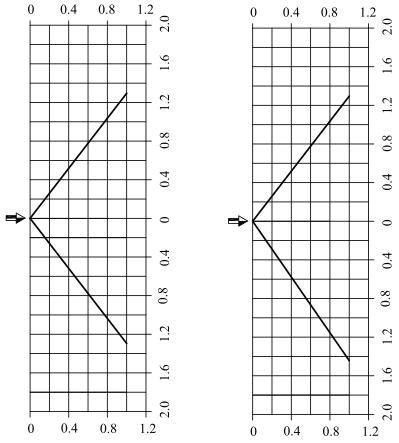
VERTICAL DOWNWARD SPRAY



VERTICAL UPWARD SPRAY
SIDE VIEW

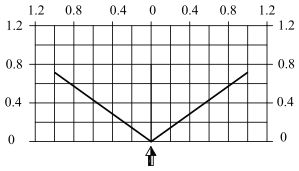
All dimensions are in meters.

SPRAY ANGLE 110º

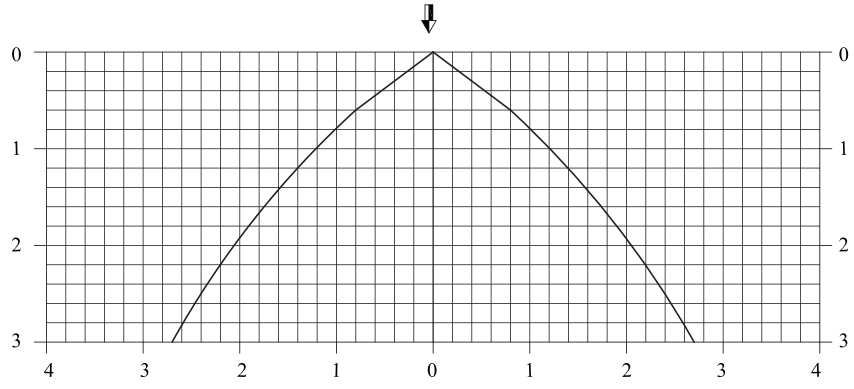


HORIZONTAL SPRAY
TOP VIEW

HORIZONTAL SPRAY
SIDE VIEW



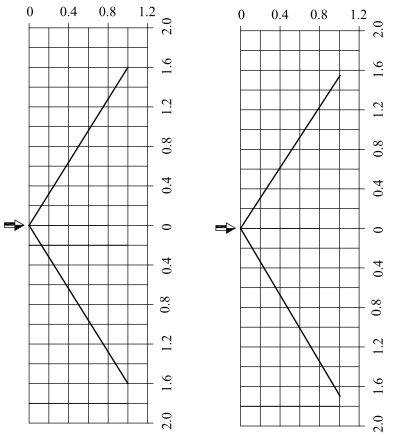
VERTICAL UPWARD SPRAY
SIDE VIEW



VERTICAL DOWNWARD SPRAY

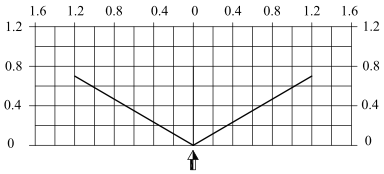
SPRAY ANGLE 120º

NOZZLE INLET PRESURE - MIN 1.4 KG/SQCM.

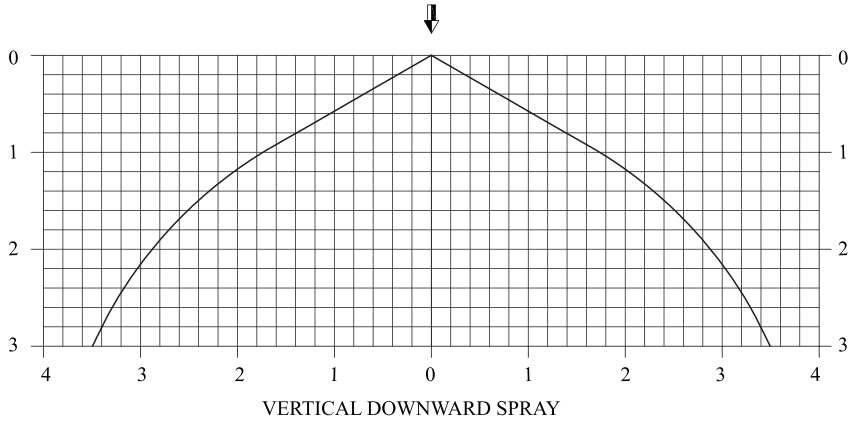


HORIZONTAL SPRAY
TOP VIEW

HORIZONTAL SPRAY
SIDE VIEW

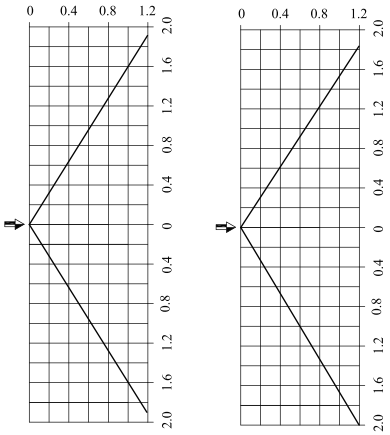


VERTICAL UPWARD SPRAY
SIDE VIEW



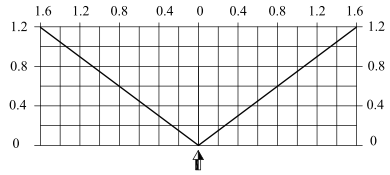
VERTICAL DOWNWARD SPRAY

NOZZLE INLET PRESURE - MIN 3.5 KG/SQCM.

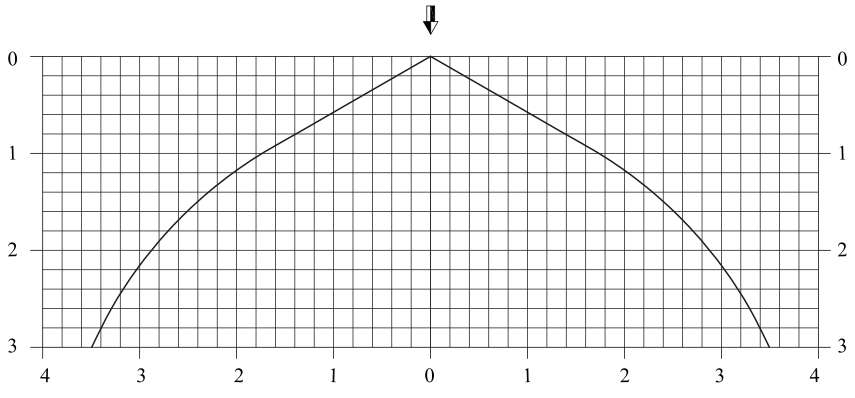


HORIZONTAL SPRAY
TOP VIEW

HORIZONTAL SPRAY
SIDE VIEW

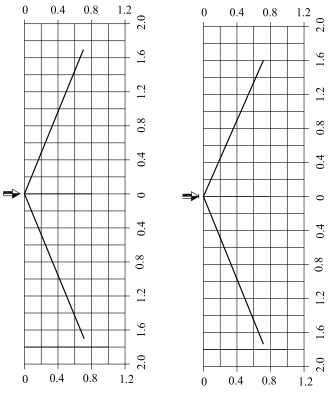


VERTICAL UPWARD SPRAY
SIDE VIEW



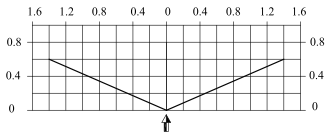
VERTICAL DOWNWARD SPRAY

SPRAY ANGLE 130°

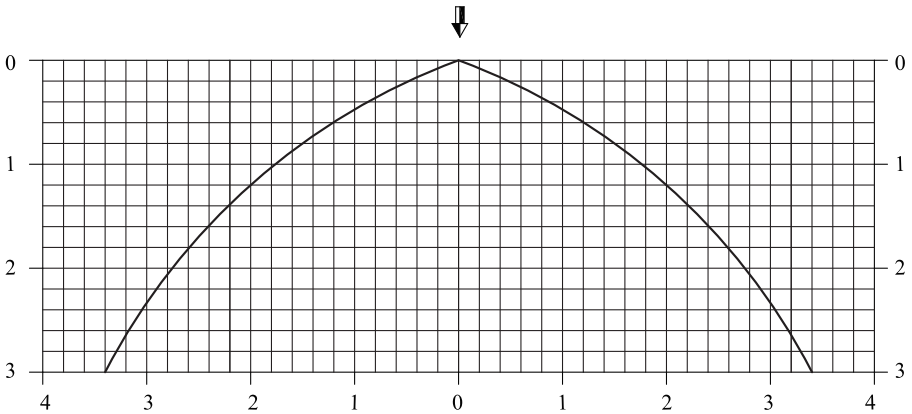


HORIZONTAL SPRAY
TOP VIEW

HORIZONTAL SPRAY
SIDE VIEW



VERTICAL UPWARD SPRAY

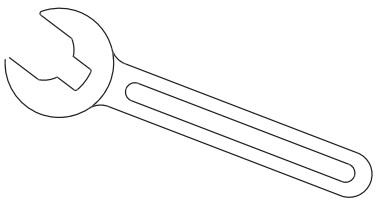


VERTICAL DOWNWARD SPRAY

NOTE - DIMENSIONS IN METERS

Note :
1) The design spray pattern given in graph are included spray angle of 65 Deg. to 140 Deg. at nozzle inlet pressure of1.4 to 3.5 Bar. When the nozzle pressure above 3.5 is applied, the coverage area will decrease because the spray pattern tends to draw inward at higher pressure.

2) The spray data are obtained from the test in still air.



MV NOZZLE WRENCH

HIGH VELOCITY WATER SPRAY NOZZLE

MODEL: HV-AS & HV-BS

TECHNICAL DATA :

MAXIMUM WORKING PRESSURE	12 Bar (175 PSI)
EFFECTIVE WORKING PRESSURE	3.5 Bar to 10.5 Bar (50 - 150 PSI)
END CONNECTION	3/4" BSPT (3/4" NPT OPTIONAL)
MATERIAL	HV-AS Housing & Scroll Brass IS : 291 (Equivalent to ASTM-B21) Strainer - Copper HV-BS Stainless Steel SS316

INCLUDED WATER SPRAY ANGLE AND K-FACTOR	SPRAY ANGLE	K-FACTOR METRIC (US)
	75°	22 (1.54)
	80°	18 (1.26)
	90°	32 (2.24)
	100°	26 (1.82)
	115°	42 (2.94)
	120°	23 (1.61)

WEIGHT (Approx)	0.200 Kg
FINISH	Natural Finish Nickel Chrome Plated (optional for HV-AS)
ORDERING INFORMATION	Specify Model, K-Factor, Spray angle and Finish

DESCRIPTION

High Velocity Water Spray Nozzles are internal swirl plate type open nozzles designed for use in fixed water spray or deluge system for the fire protection application.

These nozzles produce solid uniform and dense core of high velocity water spray to effect fire control. Nozzles are normally used to cool the surface as well as for extinguishment. High Velocity Water Spray Nozzles are typically used for Deluge protection of special hazards such as oil filled transformers, switch-gear, chemical process equipment, conveyor system and flammable liquid storage areas. The minimum desirable pressure to achieve a reasonable spray pattern is 3.5 Kg./sq.cm. (50 psi). The water distribution pattern is as shown in the graph in following pages giving maximum effective axial distance from the nozzle. The spray pattern shown is with indoor application. The system designer must consider wind velocity while designing the system for outdoor application. Field obstruction if any affecting the spray pattern of the nozzle must be considered. The nozzle may be oriented in any position as deemed necessary to cover the hazard.

3.5 bar to 7 bar pressure at Nozzle is recommended for effective application requiring high velocity water delivery for rapid extinguishment of all fires by emulsification.

The Nozzles are having inbuilt Strainer, but still main pipeline strainer is required in the system.

The Blow-off cap can be used to prevent the depositing of foreign material in the water way of the nozzle. Use of Blow-off cap is optional and not UL listed.

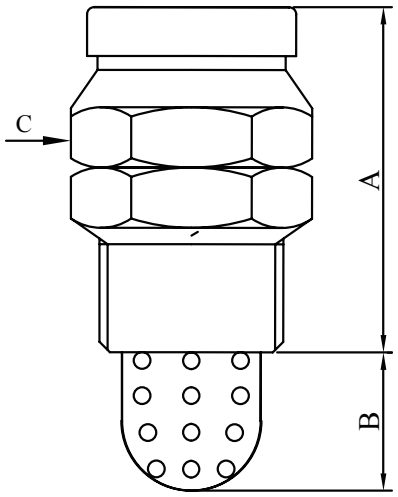
MAINTENANCE

The spray nozzle must be handled with due care. For best results, the storage as well as any further shipment be made in original packing only.

Nozzle which is visibly damaged should not be installed. Use Teflon tape or soft thread sealant on the male thread of the nozzle.

It is recommended that the water spray system be inspected by authorised technical personnel. The nozzle must be checked for corrosion, external and internal obstruction, blockage if any. The nozzle should be cleaned or replaced if required. The system must be operated with optimum water flow at least three times in a year or as per the provision of NFPA/ TAC or local authority having jurisdiction. The owner is solely responsible for maintaining the water spray system and components therein, so that it performs properly when required.

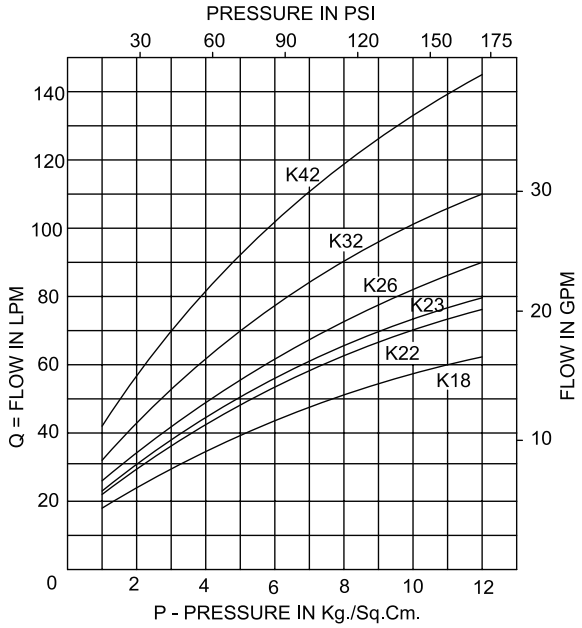
HV-AS



NOZZLE FACTOR & SPRAY ANGLE	A	B	C A/F
K 22 x 75°	49	21	30
K 18 x 80°	44	21	30
K 32 x 90°	49	21	30
K 26 x 100°	55	21	30
K 23 x 120°	49	21	30
K 42 x 115°	49	21	30

DIMENSION In millimeters (Approximate)

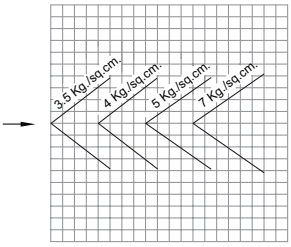
DISCHARGE CHARACTERISTICS



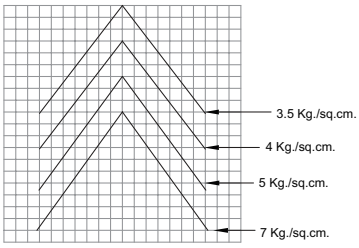
Q =K √ P where P is supply pressure in Kg/sq.cm., K= nozzle constant (K-factor) in metric.

SPRAY PATTERN

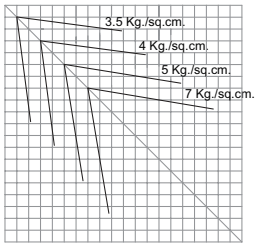
K22 X 75°



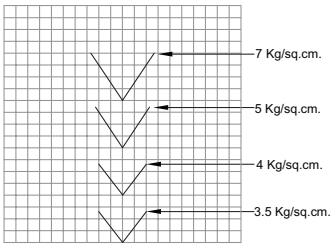
SPRAY HORIZONTAL



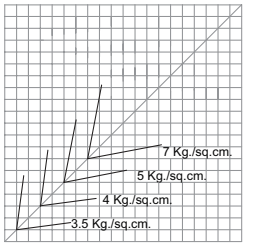
SPRAY VERTICALLY DOWNWARD



SPRAY AT 45° DOWNWARD

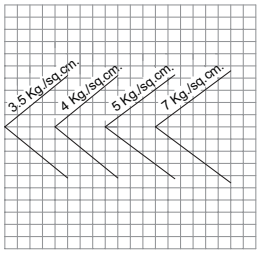


SPRAY VERTICALLY UPWARD

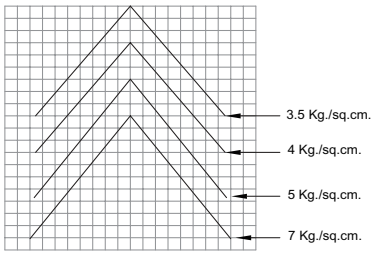


SPRAY AT 45° UPWARD

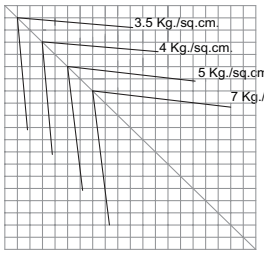
K18 X 80°



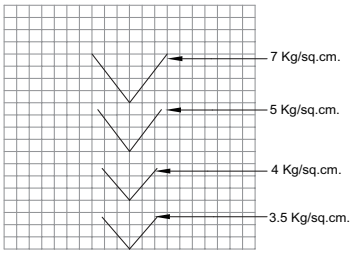
SPRAY HORIZONTAL



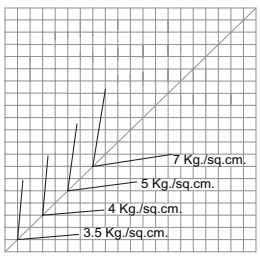
SPRAY VERTICALLY DOWNWARD



SPRAY AT 45° DOWNWARD

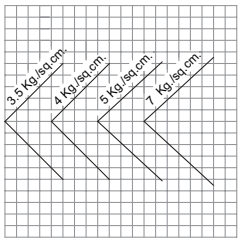


SPRAY VERTICALLY UPWARD

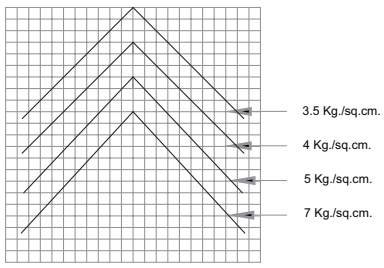


SPRAY AT 45° UPWARD

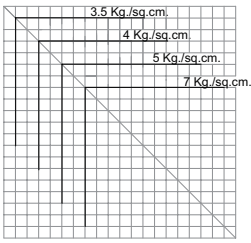
K32 X 90°



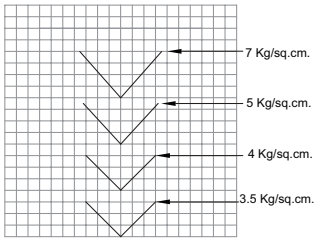
SPRAY HORIZONTAL



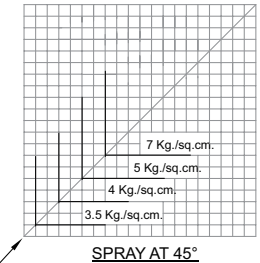
SPRAY VERTICALLY DOWNWARD



SPRAY AT 45° DOWNWARD



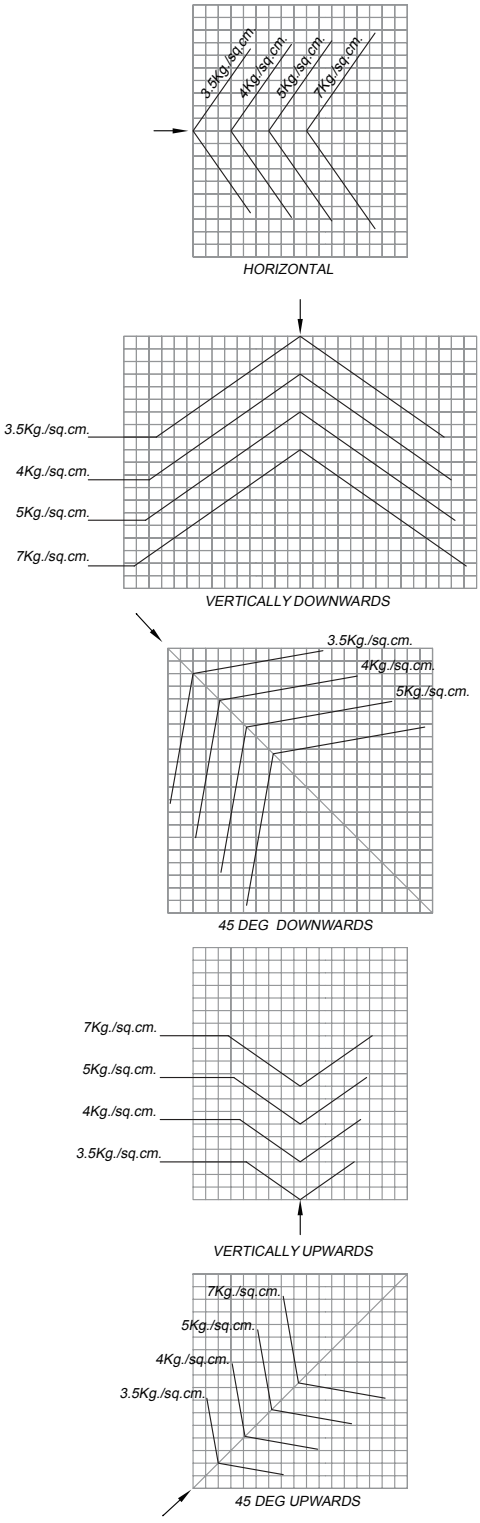
SPRAY VERTICALLY UPWARD



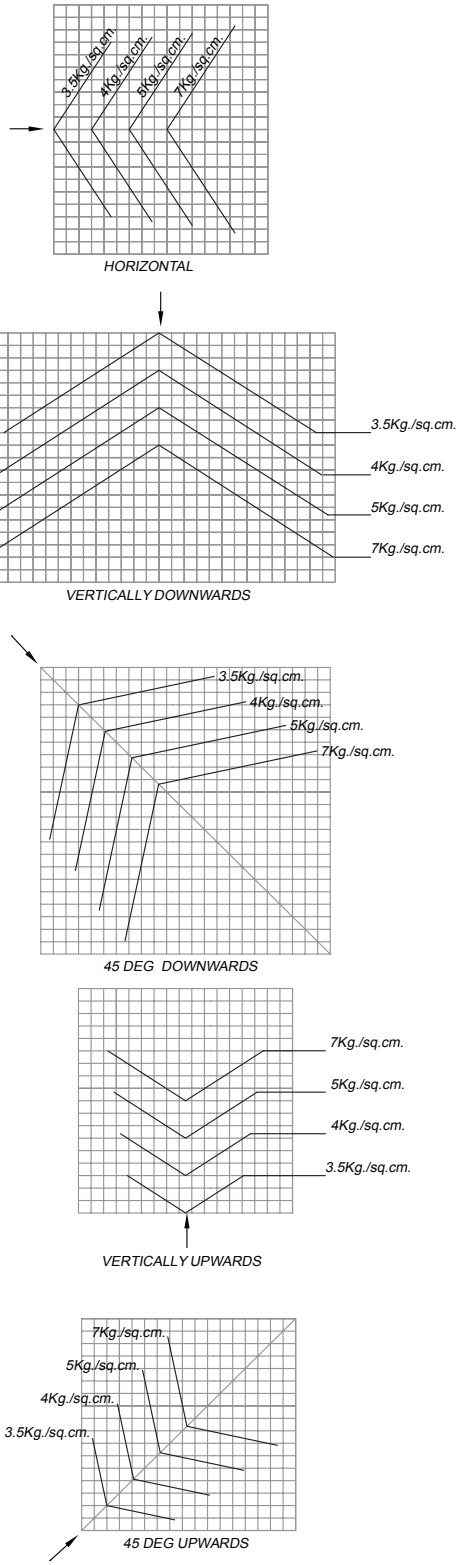
SPRAY AT 45° UPWARD

Note : One square is 200 X 200 mm.

K42 X 115°

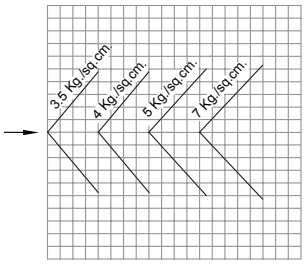


K23 X 120°

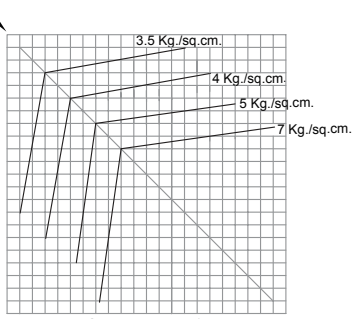


Note : One square is 200 X 200 mm.

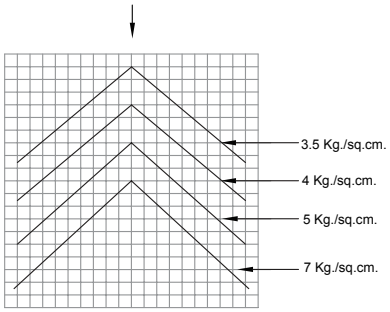
K26 X 100°



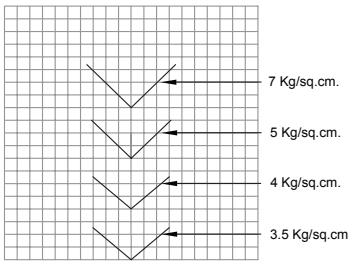
SPRAY HORIZONTAL



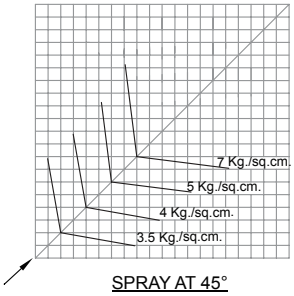
SPRAY AT 45°
DOWN WARD



SPRAY VERTICALLY
DOWN WARD



SPRAY VERTICALLY
UP WARD



SPRAY AT 45°
UP WARD

Note : One square is 200 X 200 mm.

HIGH VELOCITY WATER SPRAY NOZZLE

MODEL: SD-HB Brass
SD-H Stainless Steel

TECHNICAL DATA :

MAXIMUM WORKING PRESSURE	12 Bar (175 PSI)
EFFECTIVE WORKING PRESSURE	2.1 Bar to 6 Bar (30 - 80 PSI)
END CONNECTION	1" BSPT (1" NPT OPTIONAL)
MATERIAL	SD-HB Housing & Scroll Brass IS : 291 (Equivalent to ASTM-B21) Strainer - Copper SD-H SS316 Stainless Steel Housing Strainer - Stainless Steel

INCLUDED WATER SPRAY ANGLE AND K-FACTOR

SPRAY ANGLE	K-FACTOR METRIC
75°	61
90°	78
100°	48
100°	58

WEIGHT (Approx)	SD-HB 0.25 Kg SD-H 0.22 Kg
FINISH	Brass Finish Nickel Chrome Plated (optional for SD-HB) Natural (For SD-H)
ORDERING INFORMATION	Specify Model, K-Factor, Spray angle, Finish and end connection

DESCRIPTION

High Velocity Water Spray Nozzles are internal swirl plate type open nozzles designed for use in fixed water spray or deluge system for the fire protection application.

These nozzles produce solid uniform and dense core of high velocity water spray to affect fire control. Nozzles are normally used to cool the surface as well as for extinguishment. Nozzles are typically used for Deluge protection of special hazards such as oil filled transformers, switch-gear, chemical process equipment, conveyor system, diesel engines, flammable liquid storage areas and similar hazards. The minimum desirable pressure to achieve a reasonable spray pattern is 2.1 Kg./sq.cm. (30 psi). The water distribution pattern is as shown in the graph in following pages giving maximum effective axial distance from the nozzle. The spray pattern shown is with indoor application. The system designer must consider wind velocity while designing the system for outdoor application. The spray pattern is drawn considering maximum of 20 Km/hr. Field obstruction if any affecting the spray pattern of the nozzle must be considered. The nozzle may be oriented in any position as deemed necessary to cover the hazard.

2.1 bar to 6 bar pressure at Nozzle is recommended for effective application requiring High Velocity Water delivery for rapid extinguishment of all fires by emulsification.

The Nozzles are having inbuilt Strainer, but still main pipeline strainer is required in the system.

The Blow-off cap can be used to prevent the depositing of foreign material in the water way of the nozzle. Use of Blow-off cap is optional and not UL listed.

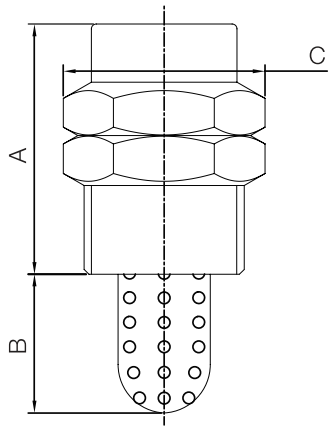
MAINTENANCE

The spray nozzle must be handled with due care. For best results , the storage as well as any further shipment be made in original packing only.

Nozzle which is visibly damaged should not be installed. Use Teflon tape or soft thread sealant on the male thread of the nozzle.

It is recommended that the water spray system be inspected by authorised technical personnel. The nozzle must be checked for corrosion, external and internal obstruction, blockage if any. The nozzle should be cleaned or replaced if required. The system must be operated with optimum water flow at least three times in a year or as per the provision of NFPA/TAC or local authority having jurisdiction.

The owner is solely responsible for maintaining the water spray system and components therein, so that it performs properly when required.



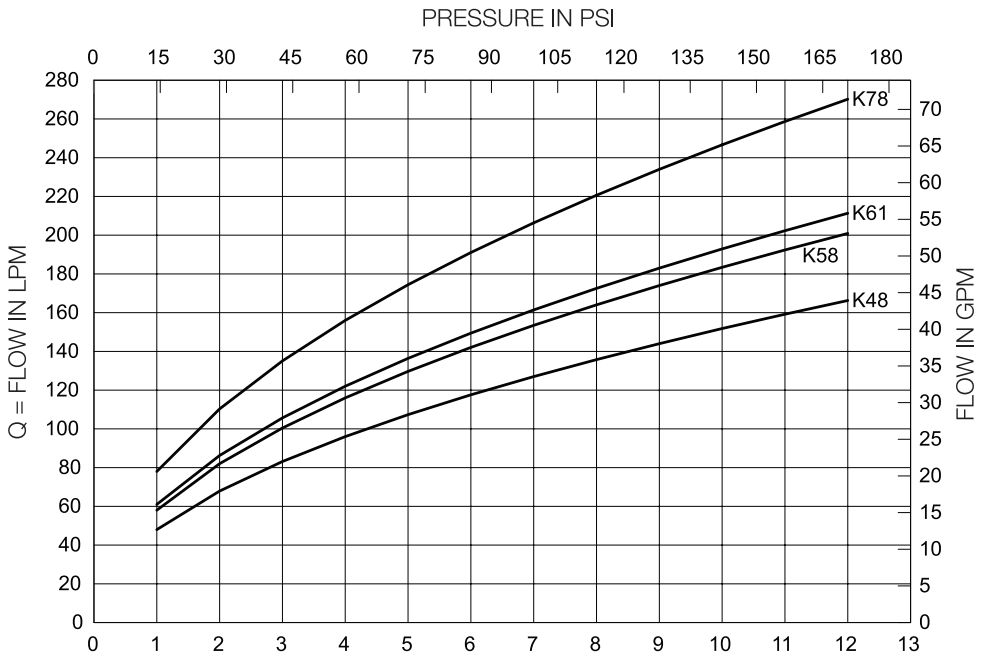
MATERIAL		
PART	SD-HB	SD-H
Body	Brass*	Stainless Steel CF8M
Swirl Plate	Brass*	SS 316
Strainer	Copper	SS 316

* Brass IS291 equivalant to B21

NOZZLE FACTOR & SPRAY ANGLE	A	B	C A/F
K 48 x 100°	52	29	36
K 58 x 100°	52	29	36
K 61 x 75°	52	29	36
K 78 x 90°	52	29	36

DIMENSION In millimeters (Approximate)

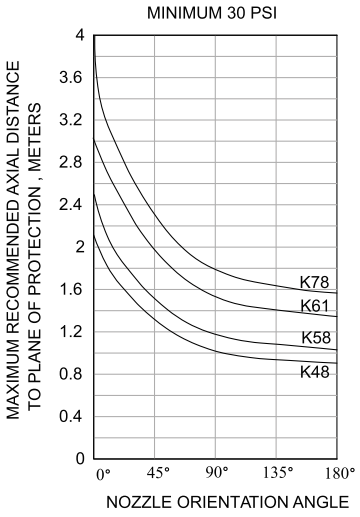
DISCHARGE CHARACTRESTICS

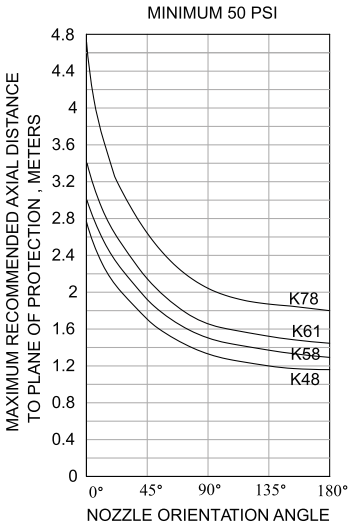


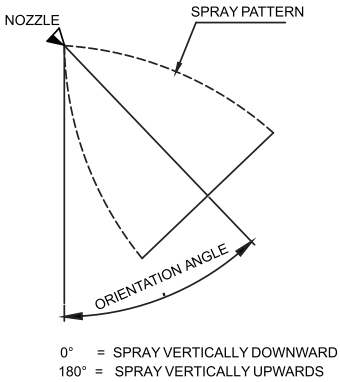
P - PRESSURE IN Kg./Sq.Cm.

Q = K √ P where P is supply pressure in Kg/sq.cm., K = nozzle constant (K-factor) in metric
US K factor = Metric K factor ÷ 14.2745

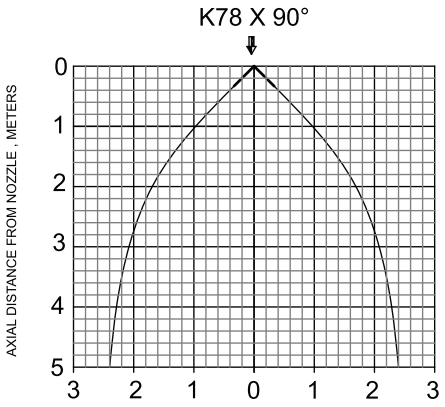
MAXIMUM RECOMMENDED AXIAL DISTANCE VS NOZZLE ORIENTATION

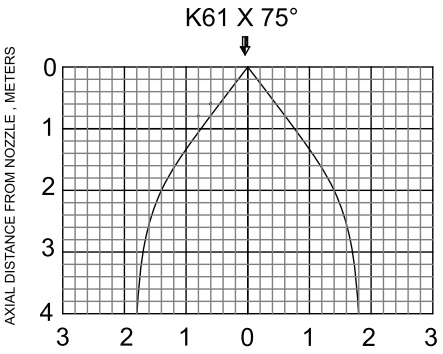


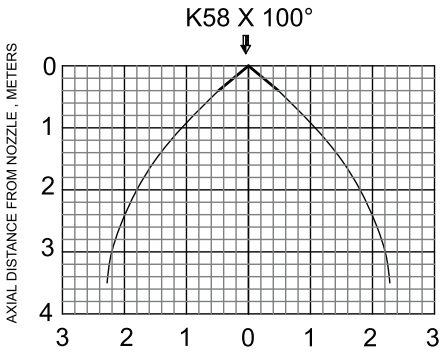


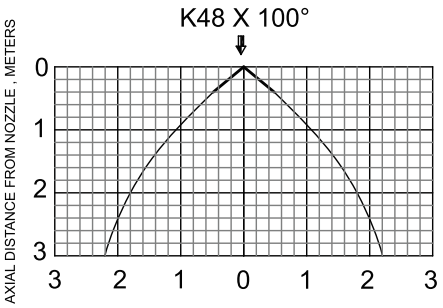


SPRAY PATTERN









ALARM VALVE

MODEL: SDH-AVA

TECHNICAL DATA :

NOMINAL SIZE	200, 150, 100, & 80 NB	
END CONNECTION	Flange X Flange Flange X Groove Groove X Groove	
MAXIMUM WORKING PRESSURE	17.5 Bar (250 PSI)*	
THREADED OPENING	BSPT	
MOUNTING	Vertical	
FLANGE CONNECTION	ANSI B16.42 #150 (Flange drilling mtaching to ANSI B 16.5 #150)	
TRIM	Galvanlsed fitting with Brass Valves	
FACTORY HYDROSTATIC TEST PRESSURE	35 Kg./ Sq.cm. (500PSI)	
FRICTIONAL LOSS IN TERMS OF EQUIVALENT LENGTH OF PIPE (C-120)	200 NB 150 NB 100 NB 80 NB	7.5 Mtrs. 7 Mtrs. 6.1 Mtrs. 4.7 Mtrs.
FINISH	Red RAL 3000	
ORDERING INFORMATION	Specify Size of valve, Flange Connection, Trim Details and Pipe OD	
REFERENCE	NFPA 13 and NFPA 25	

* For 200 NB FM Approval is rated upto 200PSI (14 Bar)

DESCRIPTION

Alarm Valve is a double seated clapper check valve with grooved seat design, which ensures positive water flow for alarm operation and is designed for installation in wet pipe sprinkler system. External bypass prevents false alarm under all supply pressure condition. In the event of variable pressure condition, false alarm is prevented with the provision of retard chamber, thus the design allows for installation under both variable and constant supply pressure condition.

Operation of one or more automatic fire sprinklers causes the water to flow into the sprinkler system causing the alarm valve to open, allowing continuous flow of water into the system and transmittal of alarm, both electrical and mechanical.

OPERATION

The fire protection system initially when being pressurized, will allow water to flow into the system until the water supply and system pressure is equalized and the clapper closes the waterway. Once the pressure is stabilized, the fire protection system is ready to be placed in service and then the alarm control valve must be opened. Under normal condition, the water pressure gauge connected to the system side of the alarm valve would show a higher or equal pressure reading than the water pressure gauge connected to the supply side of the valve. This occurs because of the bypass line connecting downstream
and upstream side of the alarm valve, which allows water pressure surge to pass without lifting the valve clapper off its seat, thereby causing excessive high pressure surge entrapped in the system side due to presence of a check valve, which generally prevents false alarm.

Sudden high pressure surge, as might be encountered by the start-up of a large fire pump may lead the valve clapper to lift momentarily, allowing water to flow through grooves in the valve seat to the retard
chamber. The water in the alarm line is automatically drained out, which helps to prevent false alarm due to successive transient surge in supply pressure. Restriction assembly located beneath the retard chamber consists of inlet and drain restriction orifices, which are established by considering the volume of the retard chamber to meet the listing and approval requirement with regard to time-to alarm. These requirements represent a balancing of the need to reduce the possible false alarm due to a transient surge in supply pressure and to achieve desired minimum time- to- alarm following a sprinkler operation.

In constant pressure installation, the retard chamber is not required and the water passing through the groove in the alarm valve seat flows directly through restriction nozzle assembly to activate the mechanical and electrical alarm.

INSTALLATION

1. SHIELD Sprinkler alarm valve, Model-SDH-AVA must be installed vertically.

2. The alarm valve must be installed in a readily visible and accessible location and provision to be made in such a way that alarm line drain is visible and accessible.

3. Where water pressure fluctuates, the variable pressure trim with retard chamber must be used. Under non-fluctuating water pressure condition, the constant pressure trim, which does not include retard chamber, may be used.

4. The valve must be installed with trim in accordance with the trim data. Failure to follow the appropriate trim connection guidelines may prevent the device from functioning properly as well as void listing, approval and the manufacturer's warranty.

5. Care must be exercised while installing the check valve in the trim to ascertain that they are located with the arrow mark on the check valve body and pointed in proper direction.

6. The contraction and expansion associated with an excessive volume of trapped air could cause the waterway clapper to cycle open and shut. This may result in false alarm or an intermittent alarm. To avoid these, it is recommended to have breather valve in the system piping network and a vent valve at the extreme end of the system to bleed-off the air.

7. The ball valve provided on the alarm line must be kept open and strapped in set position.

8. Pipe connecting the retard chamber and sprinkler alarm bell must be supported properly to avoid loading on the retard chamber.

9. All the newly installed system pipes must be flushed properly before alarm valve is put into service.

INSPECTION AND MAINTENANCE

A qualified and trained person must commission the system. After few initial successful tests an authorised person must be trained to perform inspection and testing of the system.

It is recommended to carry out physical inspection of the system at least twice a week. The inspection should verify that all the control valves are in proper position as per the requirement of the system and no damage has taken place to any component.

It is recommended that the alarm valve and its accessories should be examined and performed for following at least quarterly or as demanded by local authorities to ensure reliable and trouble free operation and service.

1. Inspection and testing is to be carried out only by an authorized person. DO NOT TURN OFF the water supply valve to undertake repair work or to test the valve, without placing a roving fire patrol in the area covered by the system. The patrol should continue until the system is back into service. Also do inform the local security personnel and alarm control station, so that a false alarm is not signaled.

2. Open the alarm test valve. Verify that the sprinkler alarm bell and/or the pressure alarm switch/ electric alarm properly actuate. Close the alarm test valve and verify that water has ceased to flow from the alarm line drain.

3. Clean the 20 NB (3/4") strainer provided on the sprinkler alarm bell line.

4. Clean the strainer of restriction assembly.

5. Inspect the check valve clapper located on the bypass line.

FALSE ALARM

1. Inspect the valve rubber clapper face. If worn or damaged, replace it. Be certain that dirt, stone or any other foreign object have not accumulated under the clapper face and lodged in the groove or holes. Clean the clapper face thoroughly. If the seat ring surface is nicked or scoured, it might be possible to repair the same using lapping compound. If not, replace the complete valve or return it to the manufacturer's works for repair.

2. If sprinkler alarm bell is not functioning or the impeller is jammed, please follow the maintenance guideline provided in the catalogue for sprinkler alarm bell.

3. If pressure alarm switch gives a steady signal, but sprinkler alarm generates an intermittent alarm, check sprinkler alarm bell shaft. If both the sprinkler alarm bell and pressure alarm switch are generating intermittent alarm then check for the possible air which is trapped within the sprinkler system. Trapped air is to be bled off. Also the intermittent alarm may occur due to sudden pressure drop and increase in the system. These problems can be corrected by maintaining a steady supply.

CAUTION

1. The UL Listing, FM Approval and manufacturer's warranty are valid only when the alarm valve is installed with trim set and installed as per installation guidelines.

2. Pressure relief valve is required with wet pipe system, when a rise in ambient temperature can cause system pressure to exceed 17.5 Bar (250 PSI). A 17.7 Bar relief valve setting should be used.

3. For proper operation of the wet system and to minimize unwanted false alarm, it is important to remove trapped air from the system. The air trapped in the system may also cause intermittent operation of the Water Motor Alarm during sustained flow of water.

WEIGHT IN KG

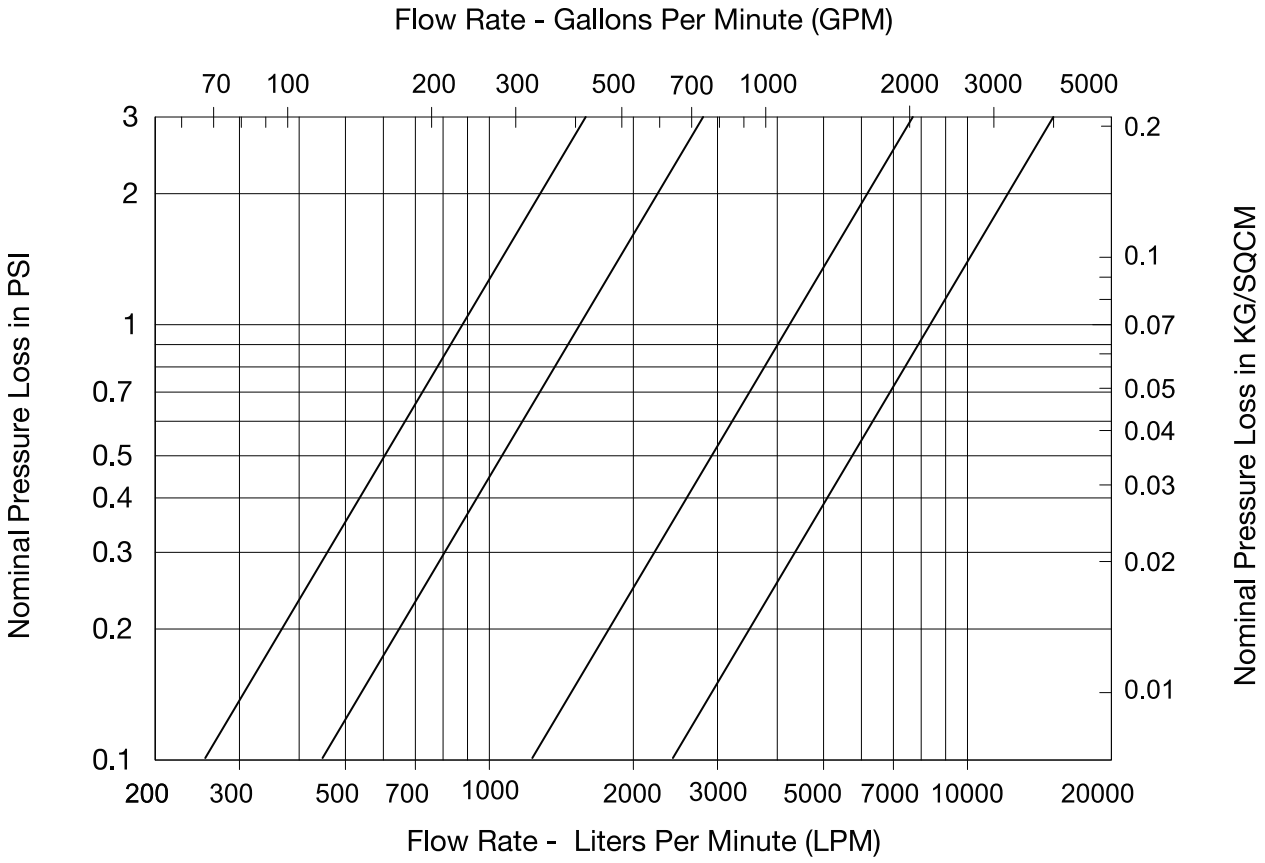
Valve Size	Flange x Flange	Flange x Groove	Groove x Groove
200	65	54	44
150	42	35.8	28
100	27	22.1	17.3
80	18	15	12.1

GROOVE PIPE SIZE

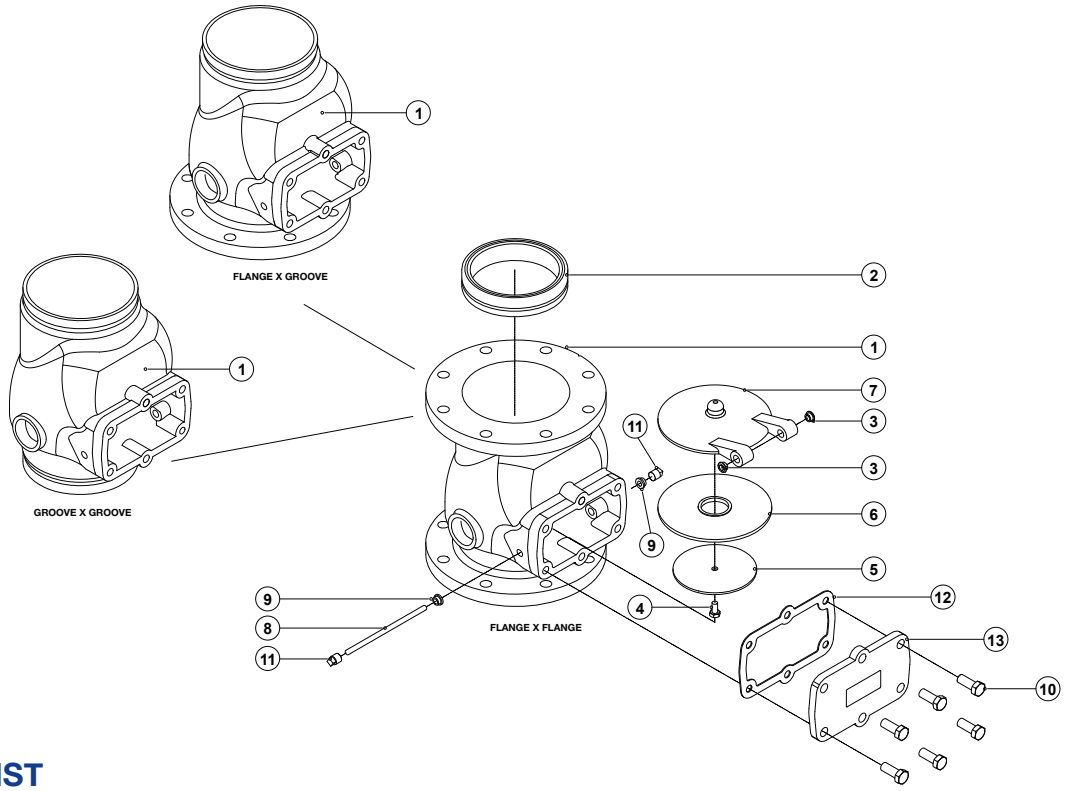
Normal Size	Pipe OD in MM
80 NB	89
100 NB	114.3
150 NB	165.1
150 NB	168.3
200 NB	219.1

Note: For 150 NB standard supply is 168.3 mm OD pipe Groove. For 165.1mm specify in order.

NOMINAL PRESSURE LOSS VS FLOW



ALARM VALVE, MODEL – SDH-AVA

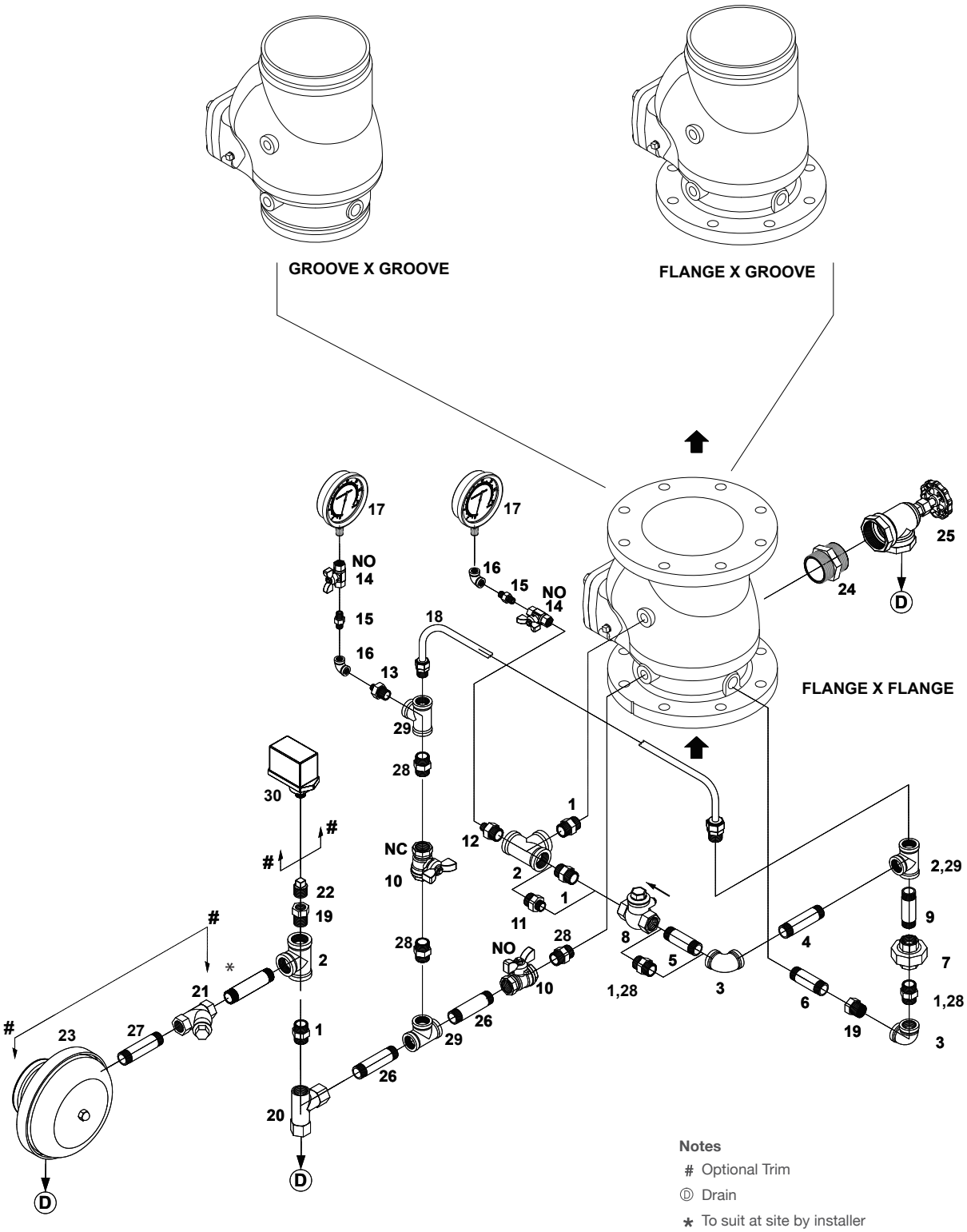


PART LIST

PART NO.					QTY.					
ITEM	200 NB	150 NB	100 NB	80 NB	DESCRIPTION	200 NB	150 NB	100 NB	80 NB	MATERIAL SPECIFICATION
1	NA	NA	NA	NA	Housing (Flange x Flange)	1	1	1	1	Ductile Iron
1	AV2014	AV1514	AV1014	AV8014	Housing (Flange x Groove)	1	1	1	1	Ductile Iron
1	AV2014	AV1515	AV1015	AV8015	Housing (Groove x Groove)	1	1	1	1	Ductile Iron
2	NA	NA	NA	NA	Seat	1	1	1	1	Bronze
3	AV2003	AV1503	AV1003	AV8003	Clapper Bush	2	2	2	2	Brass
4	AV2004	AV1504	AV1004	AV8004	Hex. Head Bolt	4	1	1	1	Stainless Steel
5	AV2005	AV1505	AV1005	AV8005	Rubber Clamp	1	1	1	1	Stainless Steel
6	AV2006	AV1506	AV1006	AV8006	Rubber Seat	1	1	1	1	Neoprene Rubber
7	AV2007	AV1507	AV1007	AV8007	Clapper	1	1	1	1	Ductile Iron
8	AV2008	AV1508	AV1008	AV8008	Hinge Pin	1	1	1	1	Stainless Steel
9	AV2009	AV1509	AV1009	AV8009	Body Bush	2	2	2	2	Brass
10	AV2010	AV1510	AV1010	AV8010	Hex. Head Bolt	6	6	4	4	Steel
11	AV2011	AV1511	AV1011	AV8011	Sq. Head Plug	2	2	2	2	Forged Steel
12	AV2012	AV1512	AV1012	AV8012	Cover Gasket	1	1	1	1	Neoprene Rubber
13	AV2013	AV1513	AV1013	AV8013	Cover	1	1	1	1	Ductile Iron

NA: Parts replacement not available

CONSTANT PRESSURE TRIM FOR ALARM VALVE



Notes

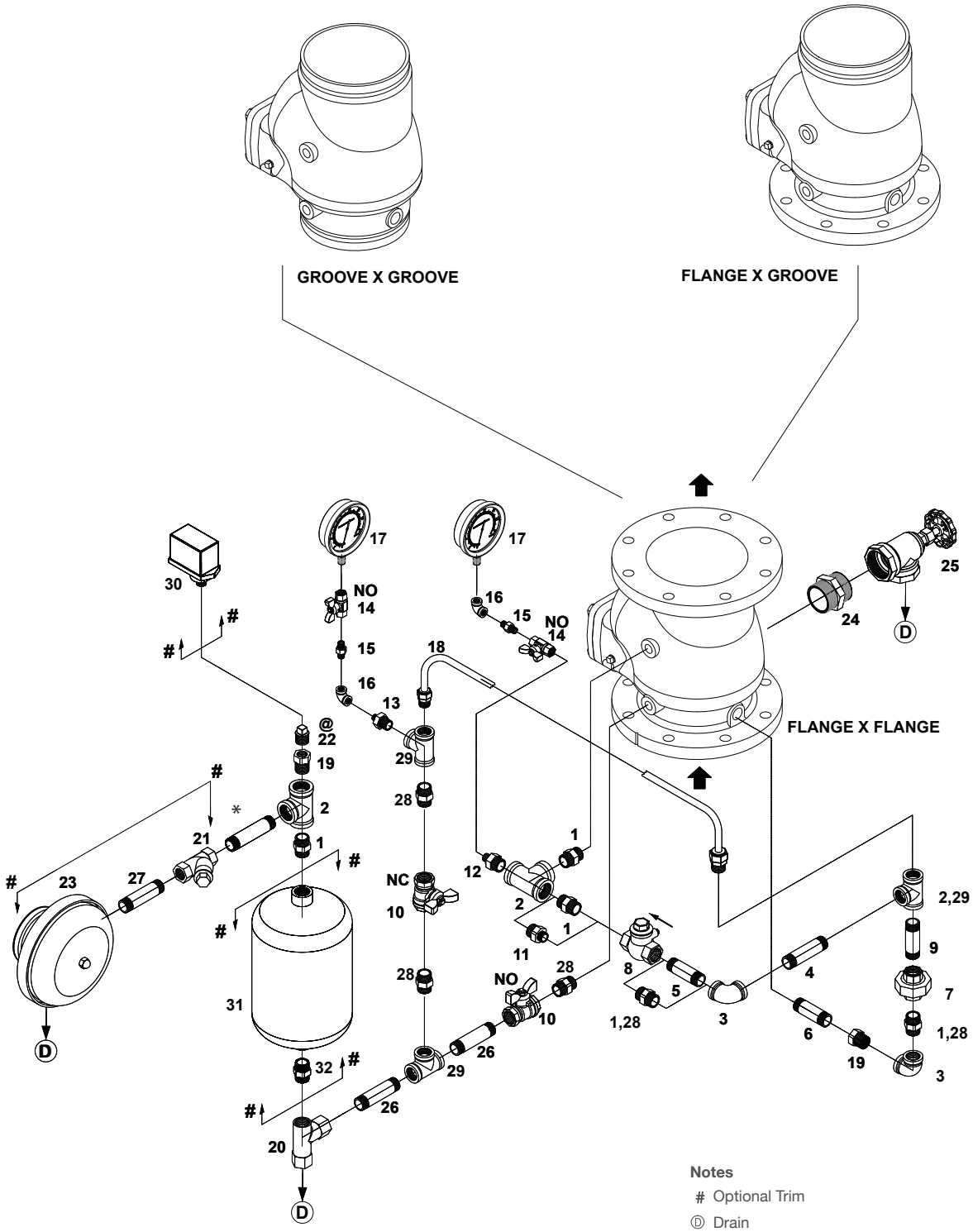
- # Optional Trim
- Ⓓ Drain
- ✱ To suit at site by installer
- NO Normally Open
- NC Normally Closed

When pressure switch is supplied then Sl.No. 22 plug not required.

CONSTANT PRESSURE TRIM FOR ALARM VALVE

ITEM NO.	CODE NO.	DESCRIPTION	SIZE	QTY			
				200NB	150 NB	100 NB	80 NB
1	AV01	Hex Nipple	¾"	4	4	5	2
2	AV02	Tee	¾"	3	3	3	2
3	AV03/1	Elbow	¾"	2	2	2	---
3	AV03/2	Elbow	½"	---	---	---	2
4	AV04/1	Pipe Nipple	¾" X 150 mm Long	1	---	---	---
4	AV04/2	Pipe Nipple	¾" X 130 mm Long	---	1	---	---
4	AV04/3	Pipe Nipple	¾" X 100 mm Long	---	---	1	---
4	AV04/4	Pipe Nipple	½" X 100 mm Long	---	---	---	1
5	AV05/1	Pipe Nipple	¾" X 100 mm Long	1	---	---	---
5	AV05/2	Pipe Nipple	¾" X 80 mm Long	---	1	---	---
6	AV06/1	Pipe Nipple	½" X 100 mm Long	1	---	---	1
6	AV06/2	Pipe Nipple	½" X 80 mm Long	---	1	1	---
7	AV07/1	Union	¾"	1	1	1	---
7	AV07/2	Union	½"	---	---	---	1
8	AV08/1	Swing Check Valve	¾"	1	1	1	---
8	AV08/2	Swing Check Valve	½"	---	---	---	1
9	AV09/1	Pipe Nipple	¾" X 70 mm Long	1	1	---	---
9	AV09/2	Pipe Nipple	¾" X 60 mm Long	---	---	1	---
9	AV09/3	Pipe Nipple	½" X 70 mm Long	---	---	---	1
10	AV10	Ball Valve	½"	2	2	2	2
11	AV11	Reducing Hex Nipple	¾" X ½"	---	---	---	1
12	AV12	Reducing Hex Nipple	¾" X ¼"	1	1	1	1
13	AV13	Reducing Hex Nipple	½" X ¼"	1	1	1	1
14	AV14	Ball Valve	¼"	2	2	2	2
15	AV15	Hex Nipple	¼"	2	2	2	2
16	AV16	Elbow	¼"	2	2	2	2
17	AV17	Pressure Gauge	¼"	2	2	2	2
18	AV18/1	Alarm Test Line Assembly	½"	---	---	---	1
18	AV18/2	Alarm Test Line Assembly	½"	---	---	1	---
18	AV18/3	Alarm Test Line Assembly	½"	---	1	---	---
18	AV18/4	Alarm Test Line Assembly	½"	1	---	---	---
19	AV19	Reducing Bush	¾" X ½"	2	2	2	1
20	AV20	Restriction Nozzle Assembly	---	1	1	1	1
21	AV21	Y Type Strainer	¾"	1	1	1	1
22	AV22	Plug	½"	1	1	1	1
23	AV23/1	Sprinkler Alarm	---	1	1	1	1
23	AV23/2	Sprinkler Alarm	---	1	1	1	1
24	AV24/1	Hex Nipple	2"	1	1	1	---
24	AV24/2	Hex Nipple	1¼"	---	---	---	1
25	AV25/1	Angle Valve	2"	1	1	1	---
25	AV25/2	Angle Valve	1¼"	---	---	---	1
26	AV26	Pipe Nipple	½" X 60 mm Long	2	2	2	2
27	AV27	Pipe Nipple	¾" X 80 mm Long	1	1	1	1
28	AV28	Hex Nipple	½"	3	3	3	5
29	AV29	Tee	½"	2	2	2	3
30	AV30	Pressure Switch (Optional)	½"	1	1	1	1

VARIABLE PRESSURE TRIM FOR ALARM VALVE



Notes

\# Optional Trim

Ⓓ Drain

* To suit at site by installer

NO Normally Open

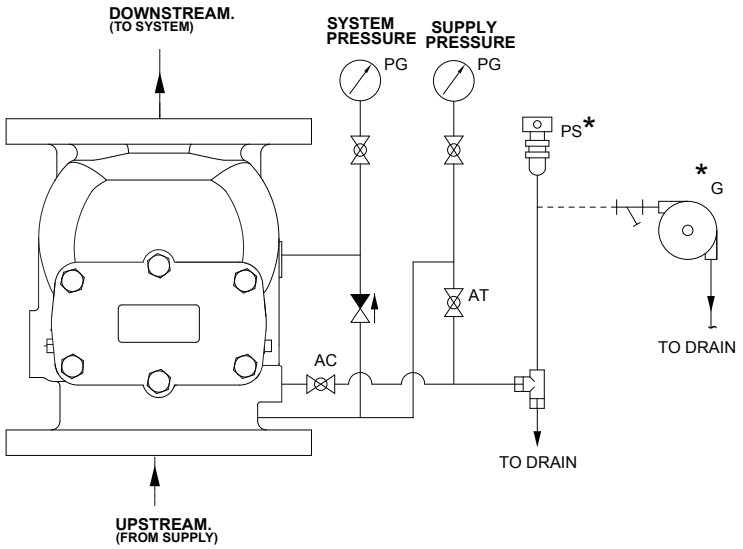
NC Normally Closed

When pressure switch is supplied then Sl.No. 22 plug not required.

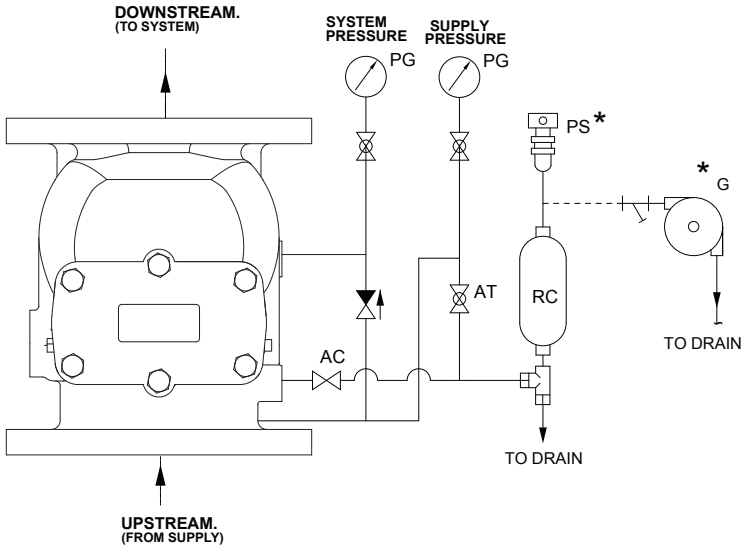
VARIABLE PRESSURE TRIM FOR ALARM VALVE

ITEM NO.	CODE NO.	DESCRIPTION	SIZE	QTY			
				200NB	150 NB	100 NB	80 NB
1	AV01	Hex Nipple	¾"	4	4	5	2
2	AV02	Tee	¾"	3	3	3	2
3	AV03/1	Elbow	¾"	2	2	2	---
3	AV03/2	Elbow	½"	---	---	---	2
4	AV04/1	Pipe Nipple	¾" X 150 mm Long	1	---	---	---
4	AV04/2	Pipe Nipple	¾" X 130 mm Long	---	1	---	---
4	AV04/3	Pipe Nipple	¾" X 100 mm Long	---	---	1	---
4	AV04/4	Pipe Nipple	½" X 100 mm Long	---	---	---	1
5	AV05/1	Pipe Nipple	¾" X 100 mm Long	1	---	---	---
5	AV05/2	Pipe Nipple	¾" X 80 mm Long	---	1	---	---
6	AV06/1	Pipe Nipple	½" X 100 mm Long	1	---	---	1
6	AV06/2	Pipe Nipple	½" X 80 mm Long	---	1	1	---
7	AV07/1	Union	¾"	1	1	1	---
7	AV07/2	Union	½"	---	---	---	1
8	AV08/1	Swing Check Valve	¾"	1	1	1	---
8	AV08/2	Swing Check Valve	½"	---	---	---	1
9	AV09/1	Pipe Nipple	¾" X 70 mm Long	1	1	---	---
9	AV09/2	Pipe Nipple	¾" X 60 mm Long	---	---	1	---
9	AV09/3	Pipe Nipple	½" X 70 mm Long	---	---	---	1
10	AV10	Ball Valve	½"	2	2	2	2
11	AV11	Reducing Hex Nipple	¾" X ½"	---	---	---	1
12	AV12	Reducing Hex Nipple	¾" X ¼"	1	1	1	1
13	AV13	Reducing Hex Nipple	½" X ¼"	1	1	1	1
14	AV14	Ball Valve	¼"	2	2	2	2
15	AV15	Hex Nipple	¼"	2	2	2	2
16	AV16	Elbow	¼"	2	2	2	2
17	AV17	Pressure Gauge	¼"	2	2	2	2
18	AV18/1	Alarm Test Line Assembly	½"	---	---	---	1
18	AV18/2	Alarm Test Line Assembly	½"	---	---	1	---
18	AV18/3	Alarm Test Line Assembly	½"	---	1	---	---
18	AV18/4	Alarm Test Line Assembly	½"	1	---	---	---
19	AV19	Reducing Bush	¾" X ½"	2	2	2	1
20	AV20	Restriction Nozzle Assembly	---	1	1	1	1
21	AV21	Y Type Strainer	¾"	1	1	1	1
22	AV22	Plug	½"	1	1	1	1
23	AV23/1	Sprinkler Alarm	---	1	1	1	1
23	AV23/2	Sprinkler Alarm	---	1	1	1	1
24	AV24/1	Hex Nipple	2"	1	1	1	---
24	AV24/2	Hex Nipple	1¼"	---	---	---	1
25	AV25/1	Angle Valve	2"	1	1	1	---
25	AV25/2	Angle Valve	1¼"	---	---	---	1
26	AV26	Pipe Nipple	½" X 60 mm Long	2	2	2	2
27	AV27	Pipe Nipple	¾" X 80 mm Long	1	1	1	1
28	AV28	Hex Nipple	½"	3	3	3	5
29	AV29	Tee	½"	2	2	2	3
30	AV30	Pressure Switch (Optional)	½"	1	1	1	1
31	AV31	Retard Chamber, Model - RC9	---	1	1	1	1
32	AV32	Hex Nipple	¾"	1	1	1	1

CONSTANT PRESSURE TRIM - SCHEMATIC FLANGE X FLANGE



VARIABLE PRESSURE TRIM - SCHEMATIC FLANGE X FLANGE



Abbreviation & Symbols

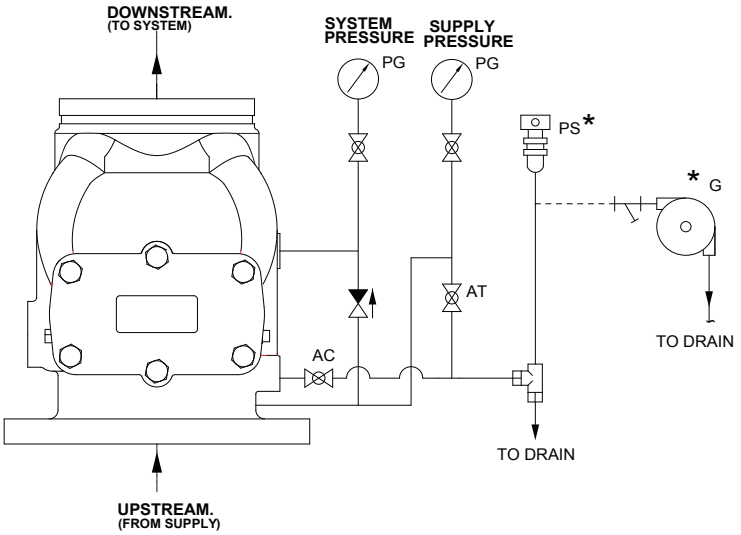
⋈	Non Return Valve	⋈	Stop Valve	AV	Alarm Valve
⋈	Valve	AC	Sprinkler Alarm Control Valve	G	Sprinkler Alarm
⋈	Angle Valve	✸	Optional	PS	Pressure Switch
⋈	Strainer	NO	Normally Open	RC	Retard Chamber
NC	Normally Closed	OD	Open Drain	AT	Sprinkler Alarm Test Valve
⋈	Restriction Nozzle Assembly	PG	Pressure Gauge	---	By User

NOTE:-

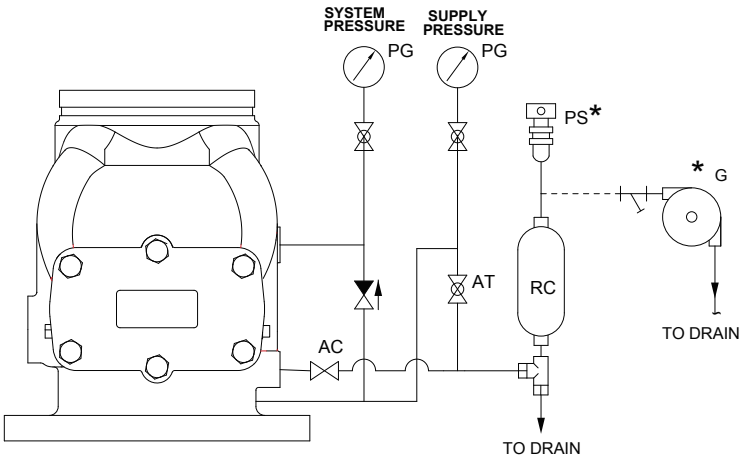
1) Sprinkler alarm control valve must be kept normally open if this valve is kept closed the sprinkler alarm bell/electric alarm will not signal.

2) Sprinkler alarm test valve must be kept normally closed condition. Valve is opened to test the sprinkler alarm bell/ electrical alarm.

CONSTANT PRESSURE TRIM - SCHEMATIC
FLANGE X GROOVE



VARIABLE PRESSURE TRIM - SCHEMATIC
FLANGE X GROOVE



Abbreviation & Symbols

⋈	Non Return Valve	⋈	Stop Valve	AV	Alarm Valve
⋈	Valve	AC	Sprinkler Alarm Control Valve	G	Sprinkler Alarm
	Angle Valve	✸	Optional	PS	Pressure Switch
	Strainer	NO	Normally Open	RC	Retard Chamber
NC	Normally Closed	OD	Open Drain	AT	Sprinkler Alarm Test Valve
	Restriction Nozzle Assembly	PG	Pressure Gauge	---	By User

NOTE:-

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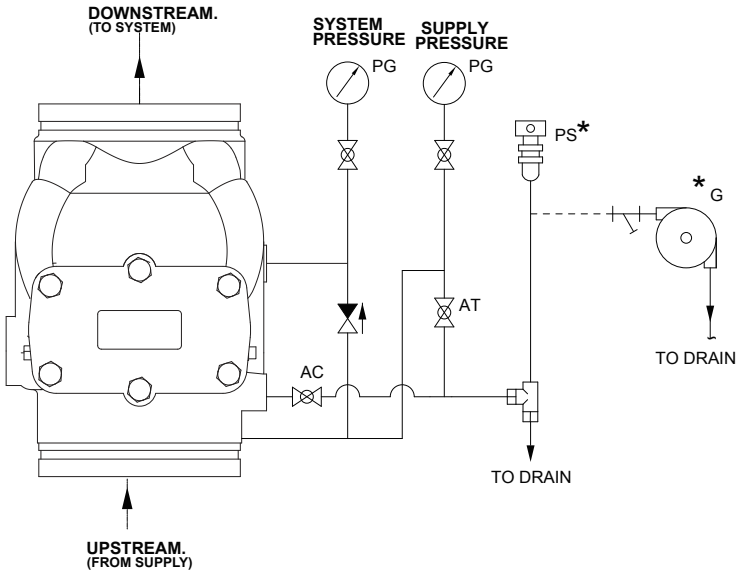
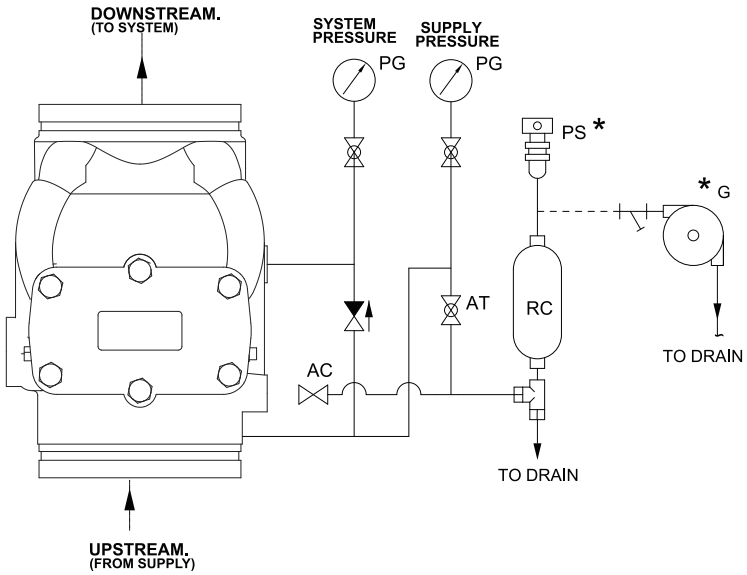
CONSTANT PRESSURE TRIM - SCHEMATIC
GROOVE X GROOVE



VARIABLE PRESSURE TRIM - SCHEMATIC
GROOVE X GROOVE



Abbreviation & Symbols

	Non Return Valve		Stop Valve	AV	Alarm Valve
	Valve	AC	Sprinkler Alarm Control Valve	G	Sprinkler Alarm
	Angle Valve			PS	Pressure Switch
	Strainer		Optional	RC	Retard Chamber
NC	Normally Closed	NO	Normally Open	AT	Sprinkler Alarm Test Valve
	Restriction Nozzle Assembly	OD	Open Drain		
		PG	Pressure Gauge	---	By User

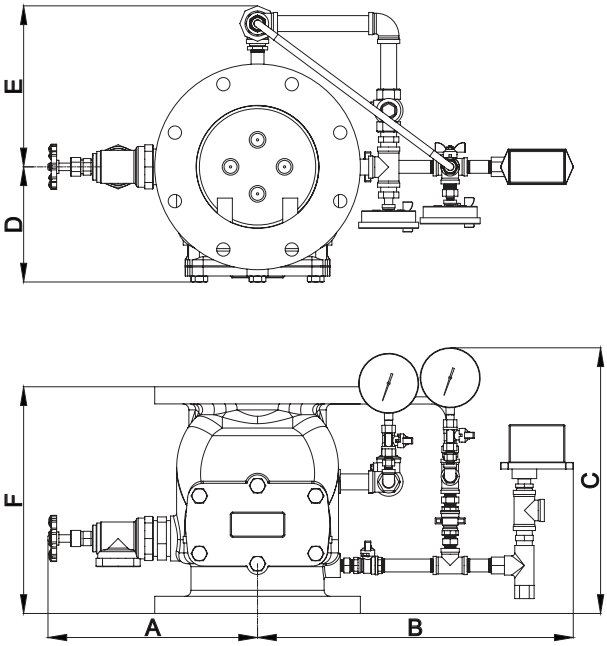
NOTE:-

1) Sprinkler alarm control valve must be kept normally open if this valve is kept closed the sprinkler alarm bell/electric alarm will not signal.

2) Sprinkler alarm test valve must be kept normally closed condition. Valve is opened to test the sprinkler alarm bell/ electrical alarm.

INSTALLATION DIMENSION WITH TRIM
FLANGE X FLANGE

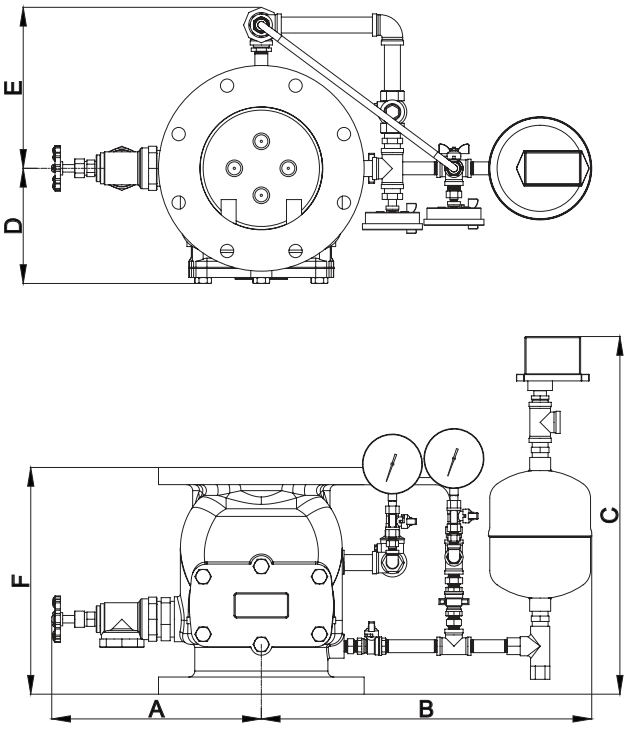
A) Constant Pressure Trim



WITH CONSTANT PRESSURE TRIM				
SIZE	80 NB	100 NB	150 NB	200 NB
A	279	312	331	350
B	457	464	486	527
C	434	434	434	443
D	127	140	173	192
E	201	219	234	269
F	262	274	320	378

Unit : mm

B) Variable Pressure Trim

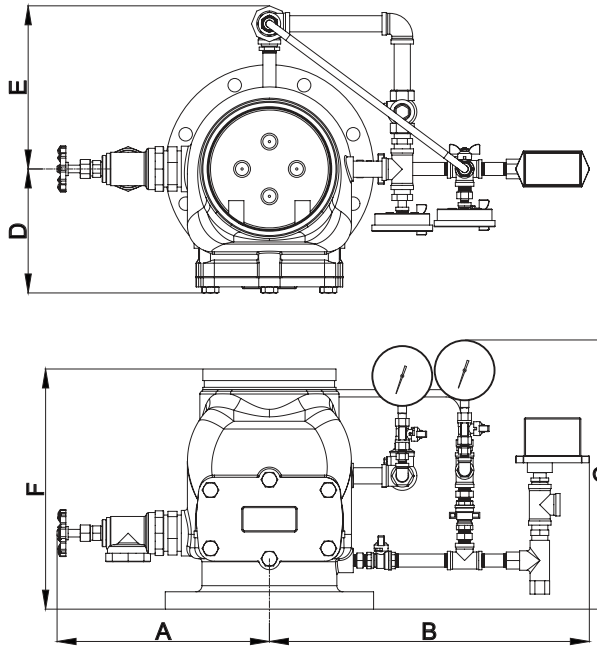


WITH VARIABLE PRESSURE TRIM				
SIZE	80 NB	100 NB	150 NB	200 NB
A	279	312	331	350
B	482	488	510	551
C	588	588	588	597
D	127	140	173	192
E	201	219	234	269
F	262	274	320	378

Unit : mm

INSTALLATION DIMENSION WITH TRIM
FLANGE X GROOVE

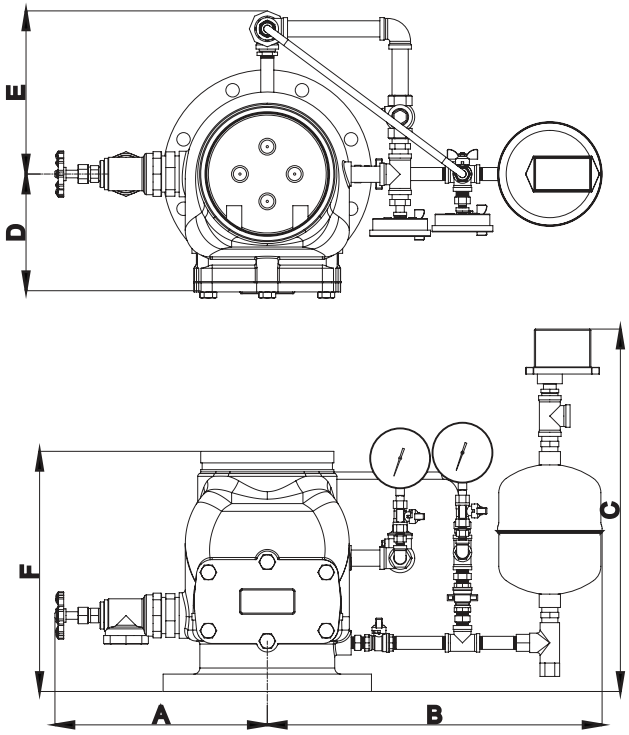
A) Constant Pressure Trim



WITH CONSTANT PRESSURE TRIM				
SIZE	80 NB	100 NB	150 NB	200 NB
A	279	312	331	350
B	457	464	486	527
C	434	434	434	443
D	127	140	173	204
E	201	219	234	269
F	275	291	317	395

Unit : mm

B) Variable Pressure Trim

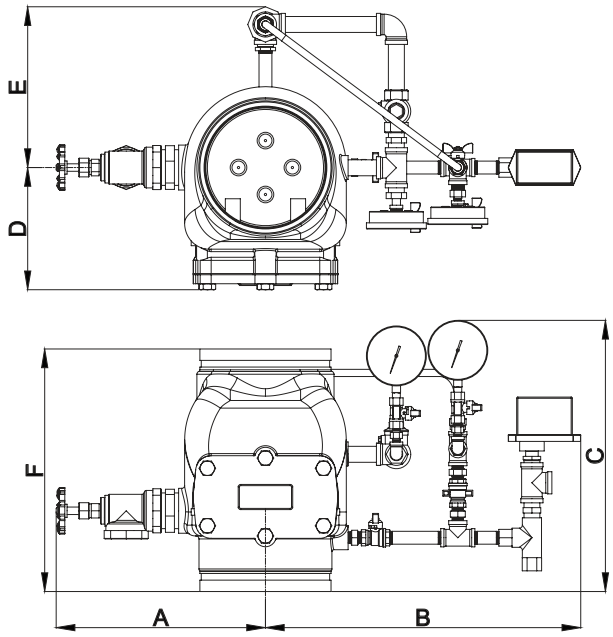


WITH VARIABLE PRESSURE TRIM				
SIZE	80 NB	100 NB	150 NB	200 NB
A	279	312	331	350
B	482	488	510	551
C	588	588	588	597
D	127	140	173	204
E	201	219	234	269
F	275	291	317	395

Unit : mm

INSTALLATION DIMENSION WITH TRIM
GROOVE X GROOVE

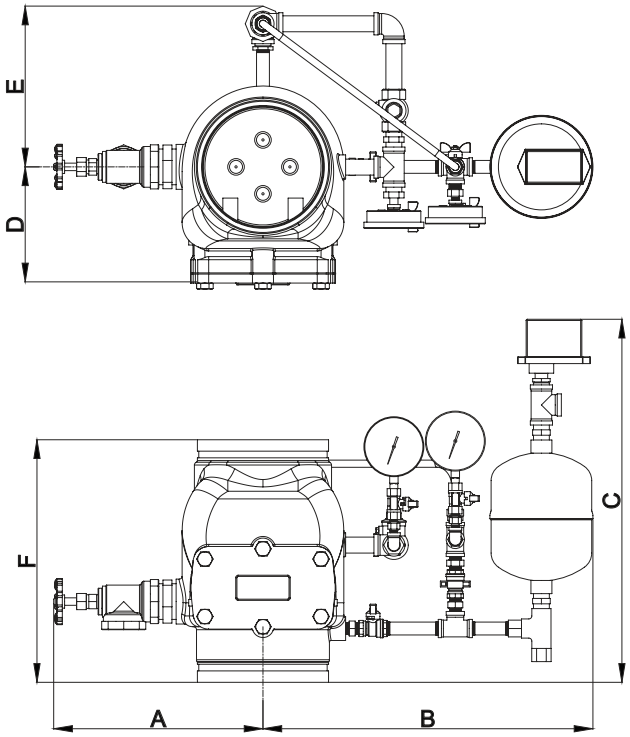
A) Constant Pressure Trim



WITH CONSTANT PRESSURE TRIM				
SIZE	80 NB	100 NB	150 NB	200 NB
A	279	312	331	350
B	457	464	486	527
C	434	434	434	443
D	127	140	173	204
E	201	219	234	269
F	280	300	324	405

Unit : mm

B) Variable Pressure Trim



WITH VARIABLE PRESSURE TRIM				
SIZE	80 NB	100 NB	150 NB	200 NB
A	279	312	331	350
B	482	488	510	551
C	588	588	588	597
D	127	140	173	204
E	201	219	234	269
F	280	300	324	405

Unit : mm

RETARD CHAMBER

MODEL: RC9

TECHNICAL DATA :

MATERIAL	Stainless Steel
CONNECTION	3/4” BSPT (F)
WEIGHT	2.6 Kg
RATED PRESSURE	17.5 Bar (250 PSI)

APPLICATION

Retarding Chamber is used with Alarm Valve Trim when variable pressure is anticipated in the system. It is a holding tank to prevent activation of the Sprinkler Alarm during water pressure surge, but permits the activation of alarm on sustained flow. The Retarding Chamber is part of UL Listed and FM Approved Alarm Valve Trim. The Retarding Chamber is made of stainless steel material and rated for 17.5 bar pressure.

OPERATION

Due to sprinkler operation, water starts flowing and clapper of Alarm Valve opens, allowing the water flow to Sprinkler Alarm port. The Sprinkler Alarm port is connected to Retarding Chamber through Restriction Nozzle assembly.

When the flow through inlet of Restriction Nozzle exceeds the drain nozzle flow, the Retarding Chamber begins to fill and there by flowing to sprinkler alarm and pressure switch to activate the alarm. Use of Retarding Chamber prevents the false alarm in variable pressure system.

MAINTENANCE

The Restriction Nozzle assembly needs to be inspected and cleaned for possible blockage of Orifice and Screen. More frequent cleaning may be required depending on water quality with respect to water borne debris. The owner is solely responsible for maintaining their fire protection system and devices in proper operating condition.

SPRINKLER ALARM

MODEL: SDGA

TECHNICAL DATA :

MOUNTING TYPE	Type - A & Type - B
WATER WORKING PRESSURE	17.5 Bar (250 PSI)
CONNECTION	Inlet: 3/4” BSPT (3/4” NPT) Drain: 1” BSPT (1” NPT)
GONG DIAMETER	205mm (8”)
GOING DEPTH	50mm (2”)
FINISH	Red RAL 3000
WEIGHT	3 Kg.
ORDERING INFORMATION	Mounting Type

DESCRIPTION

SHIELD Sprinkler Alarm is a hydraulically driven mechanical bell. It does sound a continuous alarm when the sprinkler system operates. The impeller and drive shaft are energy efficient, made from light weight nonmetallic material and do not require any external lubrication. The gong, protection cover and motor housing are made of corrosion resistant aluminium alloy.

Sprinkler Alarm with mounting Type-B is wall mounting type. Type-B is suitable for 50 to 250 mm thick wall and curves with 325 mm long drive shaft as standard supply. For wall thickness 250 to 450 mm or longer a special extension drive shaft can be supplied on request.

OPERATION

When the sprinkler system is activated by the fusing of one or more automatic sprinklers at fire condition, the water flows through the Alarm Valve/Deluge Valve and enters the sprinkler alarm through the nozzle, creating a high velocity jet which strikes the impeller causing the drive shaft and the striker arm assembly to rotate. The alarm arm assembly rotates and strikes to impact against the aluminium gong, producing a continuous alarm. The waste water then drains out through a 25NB drain outlet.

DESIGN REQUIREMENT

Strainer is required in the Sprinkler Alarm line to protect the 3.2 mm nozzle in the water motor housing from clogging.

The alarm line pipe must be 20NB (3/4”) size with 22.8 mtrs. (75 feet) maximum total length of pipe with minimum number of fittings. If the length of the pipe exceeds 22.8 mtrs. (75 feet), then higher size pipe must be used to reduce hydraulic friction loss. The Sprinkler Alarm should not be located more than 1.8 mtrs. (Six feet) above Alarm Valve / Deluge Valve.

One Sprinkler Alarm may be connected to one or maximum of three alarm lines of separate fire systems. For interconnecting more than one Sprinkler Alarm, a swing check valve in each line need to be provided.

MAINTENANCE

Qualified and trained person must commission the system. After few initial successful tests an authorised person must be trained to perform inspection and testing of the system.

Even though corrosion resistant material is used in the construction of the Sprinkler Alarm, it is suggested that the Sprinkler Alarm be examined and tested at regular intervals to ensure that the nozzle is free from obstruction and the impeller is free to rotate. The inspection should include the following, in addition to any specific requirement of NFPA, or as required by authority having jurisdiction.

1. Clean the 20 NB (3/4”) Strainer provided in the alarm line.

2. Open the 3/8” plug provided on the inlet of the Sprinkler Alarm and clean out any accumulated particles.

3. Detach the Gong, clean the internal surface and refit in proper sequence.

4. Activate the Sprinkler Alarm to verify clear and steady sound.

INSTALLATION OF SPRINKLER ALARM MOUNTING TYPE - A

The Sprinkler Alarm with mounting Type-A is supplied pre-assembled. Connect the Alarm port of the Alarm valve or Deluge valve to the inlet of the sprinkler alarm assembly with 20NB (3/4”) pipe with proper support.

A 20NB (3/4”) strainer is to be provided as close as possible to the Sprinkler Alarm assembly. Connect the 25NB (1”) drain pipe to the housing, taking due care that the drain discharge is running to a safe location and keep the drain free from obstruction. A blocked drain discharge may create back pressure and prevent the Sprinkler Alarm from operating properly.

The 20NB (3/4”) inlet and 25NB (1”) drain pipe should be properly supported with the help of the bracket so that in turn proper support is available for the Sprinkler Alarm. The inlet and the drain pipe is to be preferably connected with an union for easy removal and re-fixing of the Sprinkler Alarm during maintenance.

The Sprinkler Alarm must be installed in accordance with the requirement of NFPA, TAC or to the requirement of the local authority having jurisdiction.

INSTALLATION OF SPRINKLER ALARM MOUNTING TYPE - B

1. Locate and cut a hole through the building wall to accommodate a 20NB (3/4”) pipe with coupling (galvanised pipe to be supplied by the installer). The required length of support pipe is equal to the thickness of the wall minus 30 millimetres. The pipe is to be threaded with standard 20NB (3/4”) pipe threading on both the ends to a length of 20 millimetres. Cut the drive shaft length, equal to the wall thickness plus 43 millimeters.

2. Insert one end of the drive shaft into the square hole provided in the impeller of the Sprinkler Alarm gong assembly. One end of 20NB (3/4”) support pipe is to be screwed to the coupling provided with the assembly and the other end of the pipe is to be screwed to the housing of the Sprinkler Alarm motor assembly as shown in the figure. Position this assembly against the building wall through a washer with the support pipe extending through the wall.

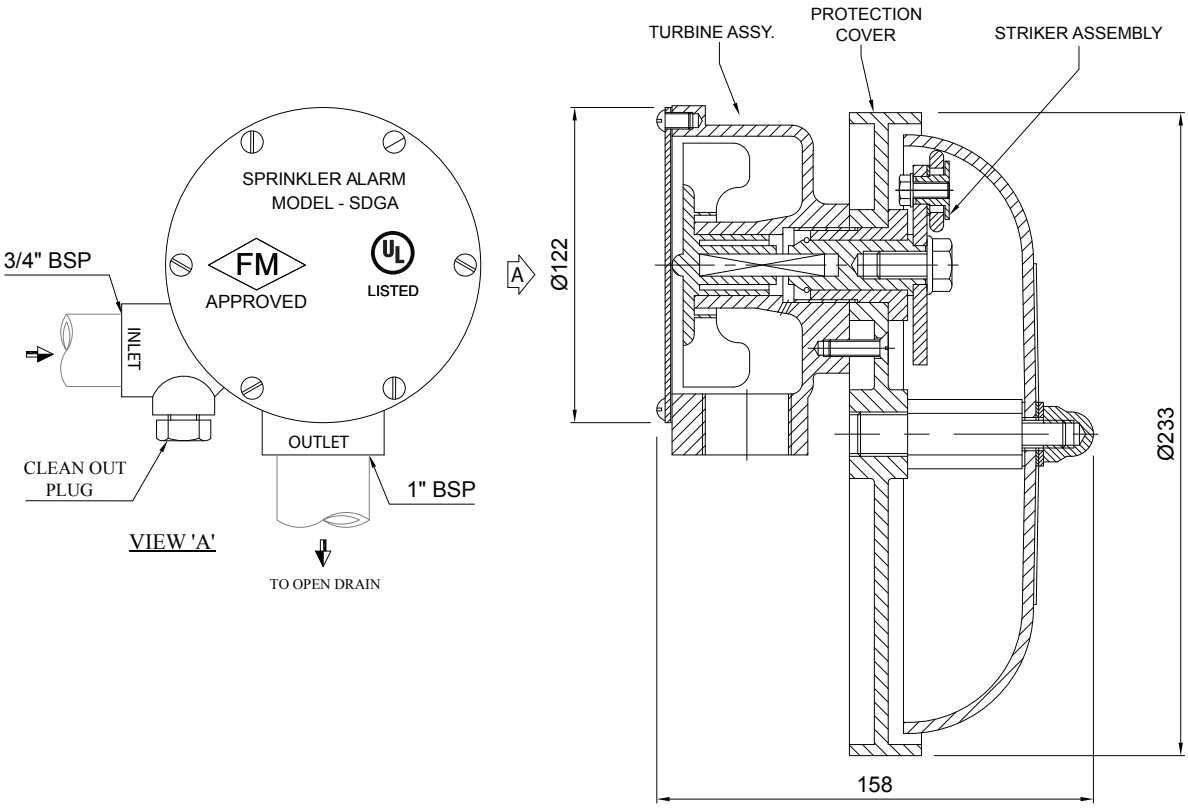
3. Connect the alarm port of the Alarm Valve or Deluge Valve to the inlet of the Sprinkler Alarm assembly with 20NB (3/4”) pipe, with proper support. A 20NB (3/4”) strainer is to be provided as close as possible to the Sprinkler Alarm assembly.

4. Move to the other side of the wall, place protection cover on to the pipe coupling (screwed to the pipe) and hold against the wall. Insert the bush (assembly with drive shaft adaptor) into the hole provided in the protection cover and thereby hand tighten the coupling extending through the wall. Make sure that the drive shaft is properly fitted in the square hole of impeller and drive shaft adaptor. This can be ensured by rotating the drive shaft adaptor. The drive shaft adaptor should rotate without any binding while tightening the bush. If any binding is noticed then unscrew the bush and refit. After ensuring that the drive shaft is properly placed in the square holes at both ends, wrench tight the bush.

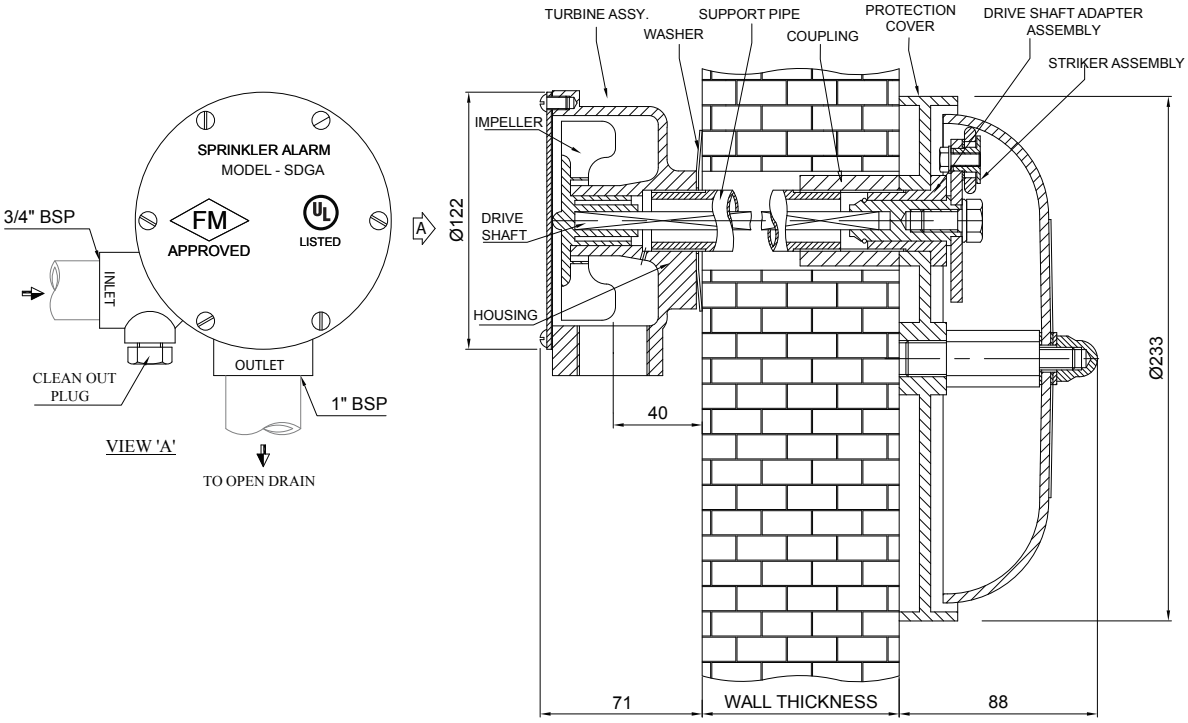
5. Place the gong over the gong post with washers as shown in the cross-sectional drawing and hand tighten the dome nut, rotate the gong until the lettering is properly originated. Wrench tighten the dome nut.

6. Connect the 25NB (1”) open drain pipe to the motor housing, taking due care that the drain discharge is running to a safe location and keep it free from obstruction.

SPRINKLER ALARM - SDGA MOUNTING TYPE - A



SPRINKLER ALARM - SDGA MOUNTING TYPE - B



Note: All dimensions in mm unless otherwise specified

DELUGE VALVE

MODEL: SD-DVA

TECHNICAL DATA :

NOMINAL SIZE	200, 150, 100, 80 & 50NB
MATERIAL	Cast Iron
MAXIMUM SERVICE PRESSURE	12 Bar (175 PSI)
THREADED OPENING	BSPT
MOUNTING	90° pattern inlet to outlet vertical mounting
FACTORY HYDROSTATIC TEST PRESSURE	25 Kg./sq.cm. (350 PSI)
FLANGE CONNECTION	ANSI B 16.1 FF # 125 (Flange drilling matching to ANSI B 16.5 # 150)
TRIM	Galvanized Steel with Brass Valves
WET PILOT SPRINKLER HEIGHT LIMITATION	As per graph in the catalogue
NET WEIGHT WITHOUT TRIM	200NB - 214 Kg 150NB - 131 Kg 100NB - 77 Kg 80NB - 50 Kg 50NB - 47 Kg
FINISH	Red RAL 3000
ORDERING INFORMATION	Specify 1) Size of valve 2) Trim type - Dry Pilot Wet Pilot Electric Release Test & Alarm

DESCRIPTION

Deluge Valve is known as a system control valve in a deluge system, used for fast application of water in a spray system. Deluge valve protects areas such as power transformer installation, storage tank, conveyor protection and other industrial application etc. With the addition of foaming agent deluge valve can be used to protect aircraft hangar and inflammable liquid fire.

VALVE OPERATION

Deluge valve is a quick release, hydraulically operated diaphragm valve. It has three chambers, isolated from each other by the diaphragm operated clapper and seat seal. While in 'SET' position, water pressure is transmitted through an external bypass check valve and restriction orifice from the system supply side to the top chamber, so that supply pressure in the top chamber acts across the diaphragm operated clapper which holds the seat against the inlet supply pressure because of differential pressure design.

On detection of fire the top chamber is vented to atmosphere through the outlet port via opened actuation device(s). The top chamber pressure cannot be replenished through the restricted inlet port, thus it reaches less than half the supply pressure instantaneously and the upward force of the supply pressure lifts the clapper allowing water to enter the system piping network and alarm devices.

TRIM DESCRIPTION

a) BASIC TRIM

The basic trim is required on deluge valve regardless of the release system. It contain those components which are required in all types of installation, such as the main drain valve, priming connection, drip check valve, emergency release valve and pressure gauges.

b) DRY PILOT TRIM (PNEUMATIC RELEASE)

Dry pilot operation uses a pilot line of closed Sprinklers / QB detectors containing air under pressure, located in the area to be protected. It requires regulated dry air supply with main supply point through restricted orifice.

The pilot line is connected directly to the top of Positive Drain Actuator (PDA). The bottom of PDA is connected to the top chamber of the deluge valve. When the air

pressure drops, due to release of any of the release devices on detection of fire, the diaphragm of PDA is lifted and allows the water to drain. This reduces the water pressure in the top chamber of the deluge valve and when the pressure in the top chamber reaches 50% of the supply pressure, the deluge valve opens.

The direct drain of PDA starts when the top chamber pressure of deluge valve reaches approximately 0.7 Kg/ sq.cm. This positive drain will not permit the deluge valve to close unless the PDA is set manually. The recommended air supply pressure is as per below table.

LINE WATER PRESSURE Kg./ Sq.cm. MAXIMUM	AIR PRESSURE IN DETECTION LINE Kg./ Sq.cm.	
	MINIMUM	MAXIMUM
2	1.2	3.0
4	1.5	3.0
6	2.0	3.5
8	2.5	3.5
10	3.0	3.5
12	3.5	4.0

c) WET PILOT TRIM (HYDRAULIC RELEASE)

Wet pilot operation uses a pilot line of closed sprinklers containing pressurised water, supplied through the upstream side of the deluge valve, through a restricted orifice. All the release lines are connected to a common release line. Due to release of any one of the release devices, the water pressure in the top chamber of the deluge valve reaches 50% of the supply pressure, the deluge valve opens.

CAUTION

While using a deluge valve in the wet pilot system the height and the length of the wet pilot detection line is to be limited as given in the wet pilot sprinkler height limitation graph.

d) ELECTRIC RELEASE TRIM

To actuate a deluge valve electrically, a solenoid valve is provided to drain the water from the top chamber of the deluge valve. A pressure switch is provided to activate an electric alarm, to shut down the desired equipment or to give “Tripped” indication to the panel.

In addition to this two nos of pressure switches can be used to monitor “Low air pressure” and “Fire condition” when used in dry pilot airline.

e) TEST AND ALARM TRIM WITH SPRINKLER ALARM

This trim is supplied with the sprinkler alarm bell, which bells on actuation of the deluge valve. A test valve is provided to test the normal operation of the sprinkler alarm bell.

Note: Trim without Test and Alarm trim, without Drain & drip valve can be supplied for which please contact marketing.

RESETTING PROCEDURE

(i) Close the upstream side stop valve provide below the deluge valve.

(ii) Open both the drain valves and close them when the flow of water has ceased.

(iii) Inspect and release if required, or close the section of the detection system subjected to “Fire condition”.

(iv) In case of dry pilot detection system, open the air supply valve to build-up air pressure as shown in TABLE-1. Open the priming valve fully and press hold the knob of PDA till the water pressure gauge indicate full service line pressure and then release the PDA knob. Open the upstream side of the stop valve provided below the deluge valve. No water should flow into the system, this can be checked by depressing the drip check valve knob.

CAUTION

a. Do not close the priming valve, downstream and upstream stop valves, while the system is in service.

b. The releasing device must be maintained in the open position, when actuated, to prevent the deluge valve from closure.

c. While using a Deluge valve in the wet pilot system the height and the length of the wet pilot detection line is to be limited as shown in the wet pilot sprinkler limitation graph.

d. Do not connect the Sprinkler Alarm outlet drain line to close a common drain as it may create back pressure and Sprinkler Alarm may not function.

e. Deluge valve must have support to absorb sudden opening or closing vibration shock to the piping.

f. The responsibility of maintenance of the protection system and devices in proper operating condition lies with the owner of the system.

g. Deluge Valve & its trim shall be maintained at a minimum temperature of 4°C, Heat tracing is not permitted.

h. Deluge Valve must be used in pressurised system

SYSTEM TESTING PROCEDURE

(i) Keep the upstream side of the stop valve partially open. Open the upstream side of the drain valve, to maintain a minimum pressure of 3 Kg./sq. cm on the upstream side of the deluge valve. To avoid water damage close the system side stop valve. This valve is to be kept in open position after the testing is completed.

(ii) Open the system side drain valve of the deluge valve.

(iii) Let any of the release devices to trip. This will result in a sudden drop of water pressure in the deluge valve top chamber resulting the deluge valve to open. The water flowing through the downstream side drain valve confirms that the deluge valve has actuated, immediately close the upstream side stop valve.

(iv) Once testing is over reset the valve as per procedure given under heading "RESETTING PROCEDURE FOR THE DELUGE VALVE".

INSPECTION AND MAINTENANCE

All the newly installed system piping network must be flushed properly before placing the deluge valve in service. A qualified and trained person must commission the system. After few initial successful tests an authorised person must be trained to perform inspection and testing of the system. It is recommended to have regular inspection and test run the system as per NFPA guidelines or in accordance with the guideline laid down by the organisation having local jurisdiction.

(i) WARNING

Inspection and testing is to be carried out only by authorised and trained personnel. DO NOT TURN OFF the water supply or close any valve to make repair(s) or test the valve, without placing a roving fire patrol in the area protected by the system. Also inform the local security personnel and central alarm station, so that a false alarm is not signaled. It is recommended to carry out physical inspection of the system at least twice in a week.

The inspection should verify that all the control valves are in proper position as per the system requirement and no damage has taken place to any component.

(ii) NORMAL CONDITION

(a) All main valves are open and are sealed withtamper proof seal.

(b) Drain valves must be kept closed.

(c) No leak or drip is detected from the drip valve.

(d) All the gauges except the system side water pressure gauge, should show the required pressure.

(e) There should be no leakage in the system.

(iii) NORMAL CONDITION TEST

(a) The system should be checked for normal condition at least once a month.

(b) Test the sprinkler alarm bell or electric alarm by turning the alarm test valve to the test position. The alarm should sound. This test should be carried out at least once in a week.

(c) Depress the drip valve knob. Significant water accumulation indicates a possible seat leakage.

(d) Conduct the water flow test as per the procedure of system testing at least once in a month.

(iv) PERIODIC CHECK

Conduct the water flow test by actuating few of the release devices provided in the system.

Clean all strainer(s) and priming line restriction. This test is to be carried out at least once in six months.

ABNORMAL CONDITION

(i) ALARM FAILS TO SOUND

(a) Check for any obstruction in the alarm test line, Ensure that the sprinkler alarm is freely operating.

(b) If an electric alarm is provided, check the electrical circuitry to the alarm.

(ii) FALSE TRIPS

(a) Check for clogging in priming line, restriction orifice check valve, priming valve & strainer.

(b) Leakage in the release system.

(c) The deluge air panel orifice clogged or low supply pressure.

(iii) LEAKAGE THROUGH THE DELUGE VALVE

(a) Damaged deluge valve seat or obstruction on the seat face by foreign object.

(b) Leakage in release system.

(c) Partly clogged priming line, restriction check valve.

(d) Low air pressure on system line or leakage in release system.

(e) PDA seat leakage due to seat damage or obstruction on seat face by foreign objects (in dry pilot system only)

(f) Leakage through bypass valve if installed in the system.

NOTE:

(1) UL Listing is valid only when Deluge Valve is installed with trim set as per trim drawing.

(2) The trip time of deluge valve on of device through detection network, will depend on volume of detection network. If the trip time of deluge valve is more, then it can be substantially reduced by installing check valve in branch of release line in the detection network. The check valve flow shall be towards releasing device.

(3) The pneumatic system must have restricted orifice at air or gas supply point. The restriction nozzle are supplied with dry pilot actuation trim.

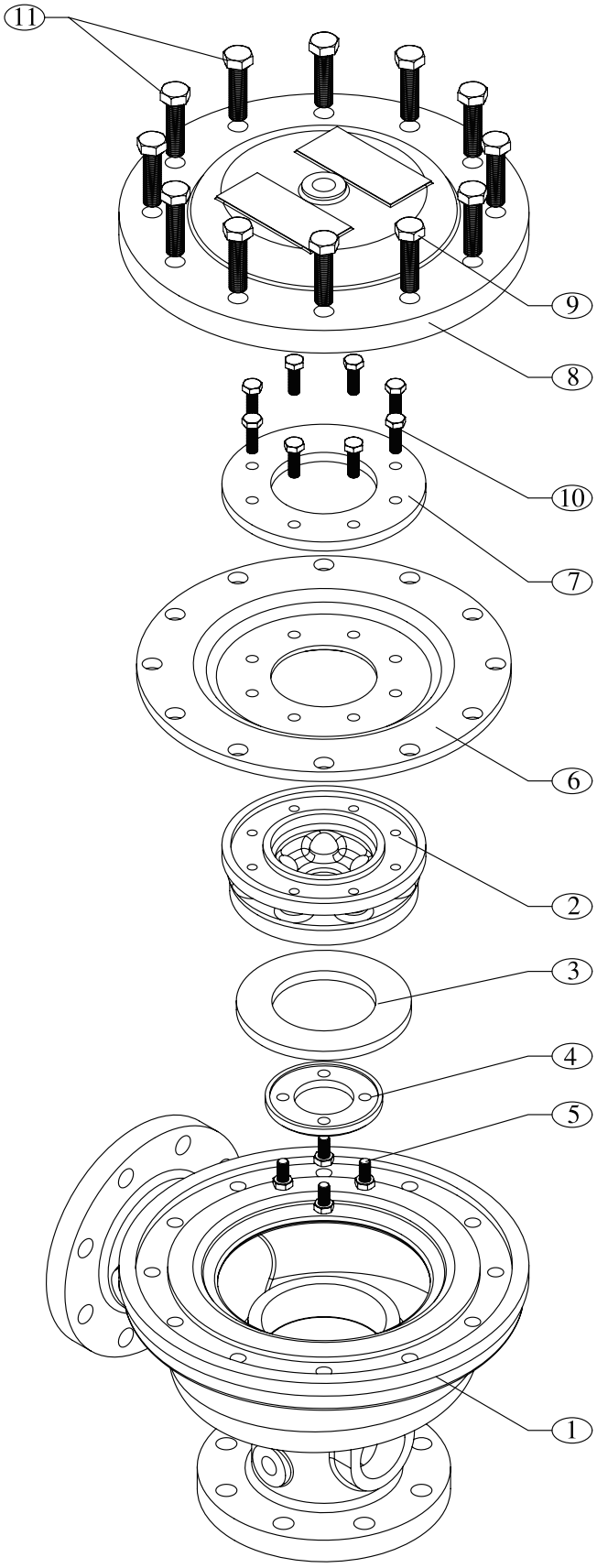
(4) The Solenoid Valve provided for electric operation of the deluge valve and all released device must have minimum of 9.5mm orifice diameter, otherwise the deluge valve trip time will be quite high or deluge valve may not trip.

DELUGE VALVE PART LIST

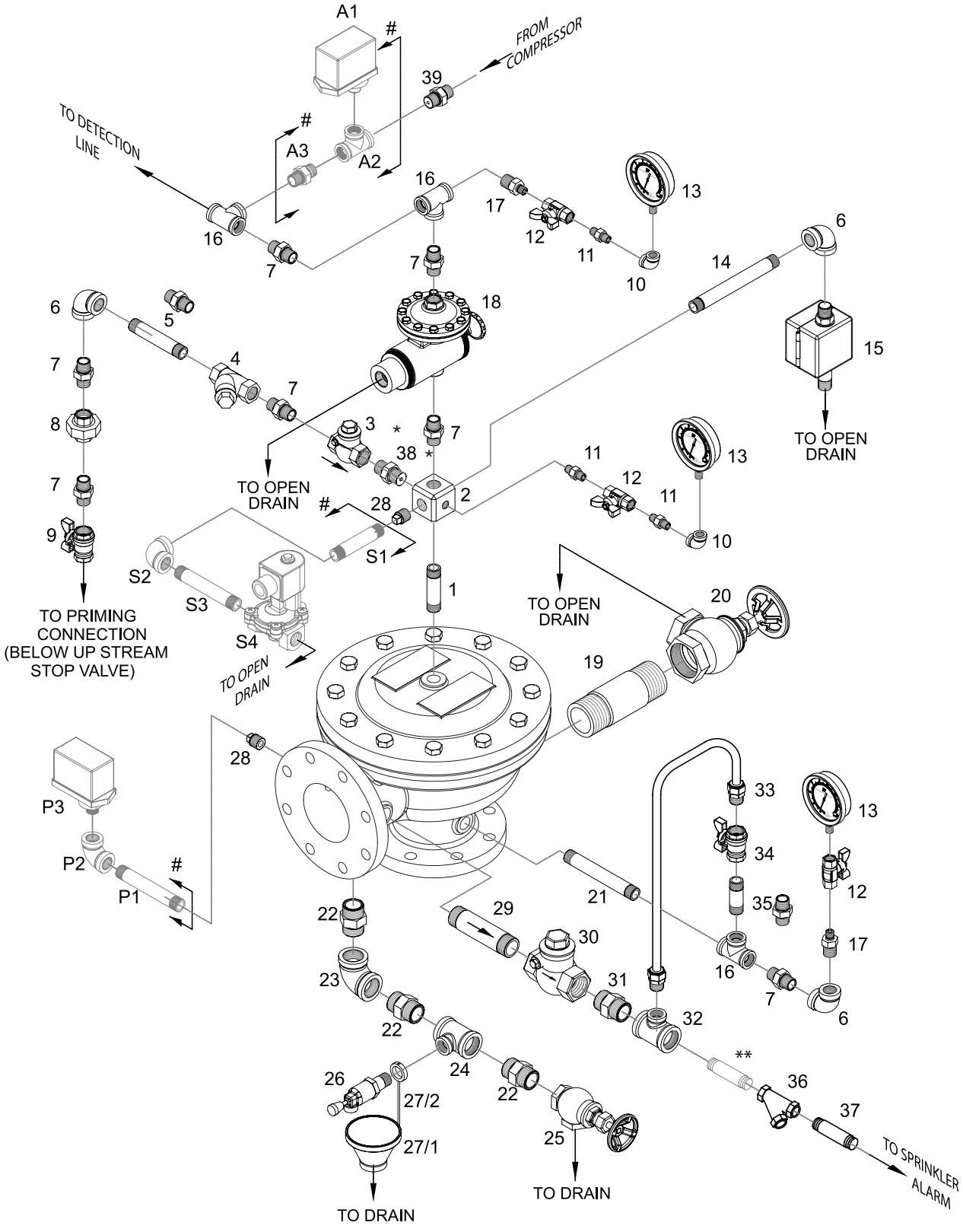
ITEM	PART NO.					DESCRIPTION	QTY.					MATERIAL SPECIFICATION
	200 NB	150 NB	100 NB	80 NB	50 NB		200 NB	150 NB	100 NB	80 NB	50 NB	
1	NA	NA	NA	NA	NA	Housing	1	1	1	1	1	Cast Iron
2	A2002	A1502	A1002	A8002	A5002	Clapper	1	1	1	1	1	Ductile Iron
3	A2003	A1503	A1003	A8003	A5003	Rubber Seat	1	1	1	1	1	Neoprene Rubber
4	A2004	A1504	A1004	A8004	A5004	Rubber Clamp	1	1	1	1	1	Ductile Iron*
5	A2005	A1505	A1005	A8005	A5005	Bolt (M10X20)	6	4	4	3	3	Stainless Steel
6	A2006	A1506	A1006	A8006	A5006	Diaphragm	1	1	1	1	1	Neoprene Rubber
7	A2007	A1507	A1007	A8007	A5007	Clamp Ring	1	1	1	1	1	Ductile Iron*
8	NA	NA	NA	NA	NA	Cover	1	1	1	1	1	Cast Iron
9	A2009	A1509	---	----	---	Bolt (M20X70)	14	14	---	---	---	Carbon Steel
	---	---	A1009	---	---	Bolt (M16x60)	---	---	10	---	---	Carbon Steel
	---	---	---	A8009	A5009	Bolt (M16X55)	---	---	---	10	12	Carbon Steel
10	A2010	A1510	A1010	A8010	A5010	Bolt (M10X30)	12	12	8	8	8	Stainless Steel
11	A2011	A1511	---	---	---	Bolt (M20X50)	2	2	---	---	---	Carbon Steel
	---	---	A1011	---	---	Bolt (M16X50)	---	---	2	---	---	Carbon Steel
	---	---	---	A8011	---	Bolt (M16X45)	---	---	---	2	---	Carbon Steel

NA- Parts replacement not available.
* Ductile Iron is standard supply, bronze & stainless steel is optional supply.

DELUGE VALVE MODEL - SD-DVA



PNEUMATIC & ELECTRIC RELEASE TRIM WITH TEST & ALARM TRIM FOR DELUGE VALVE



Note: When electric trim is supplied then Sl.No. 28 Plug not required.

\# Electric Trim optional.

** Suit at site by installer.

* Supplied fitted together.

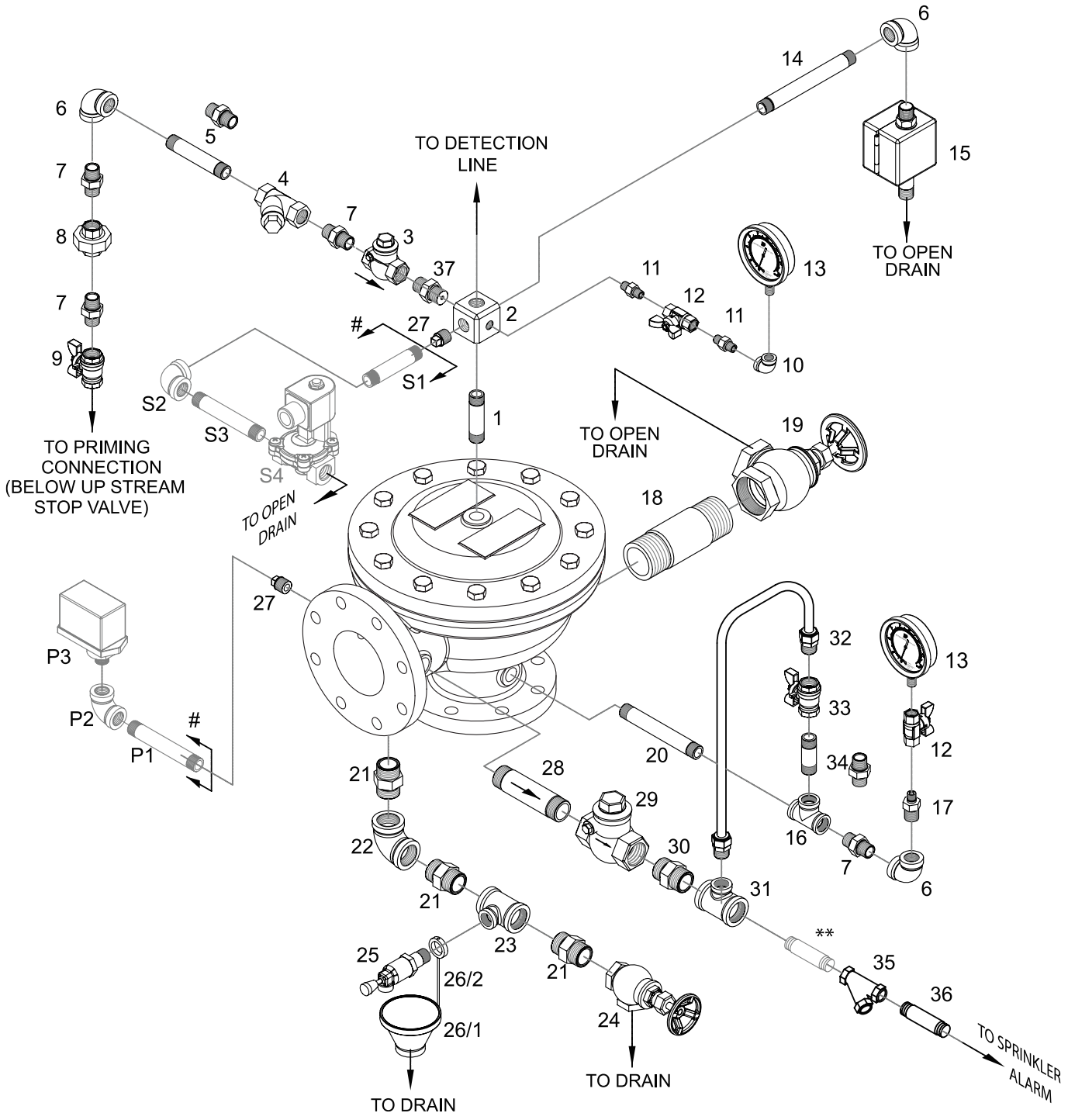
PNEUMATIC & ELECTRIC RELEASE TRIM WITH TEST & ALARM TRIM FOR DELUGE VALVE

ITEM NO.	CODE NO.	DESCRIPTION	SIZE	QTY				
				200NB	150 NB	100 NB	80 NB	50 NB
1	A01	Pipe Nipple	1/2" X 80 mm Long	1	1	1	1	1
2	A02	6 Way Manifold	---	1	1	1	1	1
3	A03	Swing Check Valve*	1/2"	1	1	1	1	1
4	A04	Y Strainer	1/2"	1	1	1	1	1
5	A05/1	Pipe Nipple	1/2" X 110 mm Long	1	1	----	----	----
5	A05/2	Hex Nipple	1/2"	---	----	1	1	1
6	A06	Elbow	1/2"	3	3	3	3	3
7	A07	Hex Nipple	1/2"	7	7	7	7	7
8	A08	Union	1/2"	1	1	1	1	1
9	A09	Ball Valve	1/2"	1	1	1	1	1
10	A10	Elbow	1/4"	2	2	2	2	2
11	A11	Hex Nipple	1/4"	3	3	3	3	3
12	A12	Gauge Valve	1/4"	3	3	3	3	3
13	A13	Pressure Gauge	1/4"	3	3	3	3	3
14	A14/1	Pipe Nipple	1/2" X 300 mm Long	1	----	----	----	----
14	A14/2	Pipe Nipple	1/2" X 255 mm Long	----	1	----	----	----
14	A14/3	Pipe Nipple	1/2" X 210 mm Long	----	----	1	----	----
14	A14/4	Pipe Nipple	1/2" X 180 mm Long	----	----	----	1	1
15	A15	Emergency Release station	---	1	1	1	1	1
16	A16	Tee	1/2"	3	3	3	3	3
17	A17	Reducing Hex Nipple	1/2" X 1/4"	2	2	2	2	2
18	A18	Positive Drain Actuator	---	1	1	1	1	1
19	A19/1	Pipe Nipple	2" X 110 mm Long	1	1	1	---	---
19	A19/2	Pipe Nipple	1-1/4" X 110 mm Long	---	---	---	1	1
20	A20/1	Angle Valve	2"	1	1	1	---	---
20	A20/2	Angle Valve	1 -1/4"	---	---	---	1	1
21	A21/1	Pipe Nipple	1/2" X 150 mm Long	1	1	---	---	---
21	A21/2	Pipe Nipple	1//2" X 130 mm Long	---	---	1	1	1
22	A22/1	Hex Nipple	1"	3	3	3	---	---
22	A22/2	Hex Nipple	3/4"	---	---	---	3	3
23	A23/1	Elbow	1"	1	1	1	---	---
23	A23/2	Elbow	3/4"	---	---	---	1	1
24	A24/1	Reducing Tee	1" X 1/2" X 1"	1	1	1	---	---
24	A24/2	Reducing Tee	3/4" x 1/2" X 3/4"	---	---	---	1	1
25	A25/1	Angle Valve	1"	1	1	1	---	---
25	A25/2	Angle Valve	3/4"	---	---	---	1	1
26	A26	Drip Valve	1/2"	1	1	1	1	1
27/1	A27/1	Funnel	---	1	1	1	1	1
27/2	A27/2	Funnel Holder	---	1	1	1	1	1
28	A28	Plug	1/2"	2	2	2	2	2
29	A29	Pipe Nipple	3/4" X 100 mm Long	1	1	1	1	1
30	A30	Swing Check Valve	3/4"	1	1	1	1	1

ITEM NO.	CODE NO.	DESCRIPTION	SIZE	QTY				
				200NB	150 NB	100 NB	80 NB	50 NB
31	A31	Hex Nipple	3/4”	1	1	1	1	1
32	A32	Reducing Tee	3/4” X 1/2” X 3/4”	1	1	1	1	1
33	A33/1	Copper Tube Assembly	1/2”	1	---	---	---	---
33	A33/2	Copper Tube Assembly	1/2”	---	1	---	---	---
33	A33/3	Copper Tube Assembly	1/2”	---	---	1	---	---
33	A33/4	Copper Tube Assembly	1/2”	---	---	---	1	1
34	A34	Ball Valve	1/2”	1	1	1	1	1
35	A35/1	Pipe Nipple	1/2” X 80 mm Long	1	---	---	---	---
35	A35/2	Hex Nipple	1/2”	---	1	1	1	1
36	A36	Y Type Strainer	3/4”	1	1	1	1	1
37	A37	Pipe Nipple	3/4” X 80 mm Long	1	1	1	1	1
38	A38	Orifice Nozzle (Priming Line)*	1/2”	1	1	1	1	1
39	A39	Orifice Nozzle (Air Line)	1/2”	1	1	1	1	1
Electric Trim for Pressure Switch (Optional)								
P1	A40	Pipe Nipple	1/2” X 135 mm Long	1	1	1	1	1
P2	A41	Elbow	1/2”	1	1	1	1	1
P3	A42	Pressure Switch (DV Outlet)	1/2”	1	1	1	1	1
A1	A43	Pressure Switch (Air Line)	1/2”	1	1	1	1	1
A2	A44	Tee	1/2”	1	1	1	1	1
A3	A45	Hex Nipple	1/2”	1	1	1	1	1
Electric Trim for Solenoid Valve (Optional)								
S1	A46	Pipe Nipple	1/2” X 130 mm Long	1	1	1	---	---
S1	A47	Pipe Nipple	1/2” X 130 mm Long	---	---	---	1	1
S2	A48	Elbow	1/2”	1	1	1	1	1
S3	A49	Pipe Nipple	1/2” X 180 mm Long	1	1	1	---	---
S3	A50	Pipe Nipple	1/2” X 135 mm Long	---	---	---	1	1
S4	A51	Solenoid Valve	1/2” Size, Two Way	1	1	1	1	1

* Supplied fitted together.

HYDRAULIC & ELECTRIC RELEASE TRIM WITH TEST & ALARM TRIM FOR DELUGE VALVE



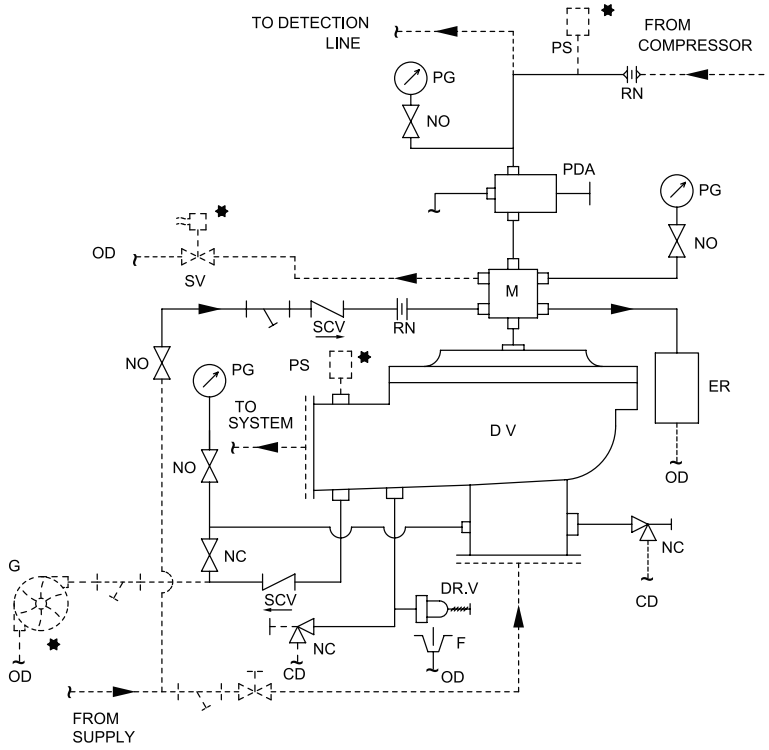
Note: When electric trim is supplied then Sl.No. 28 Plug not required.
Electric Trim optional.
** Suit at site by installer.

HYDRAULIC & ELECTRIC RELEASE TRIM WITH TEST & ALARM TRIM FOR DELUGE VALVE

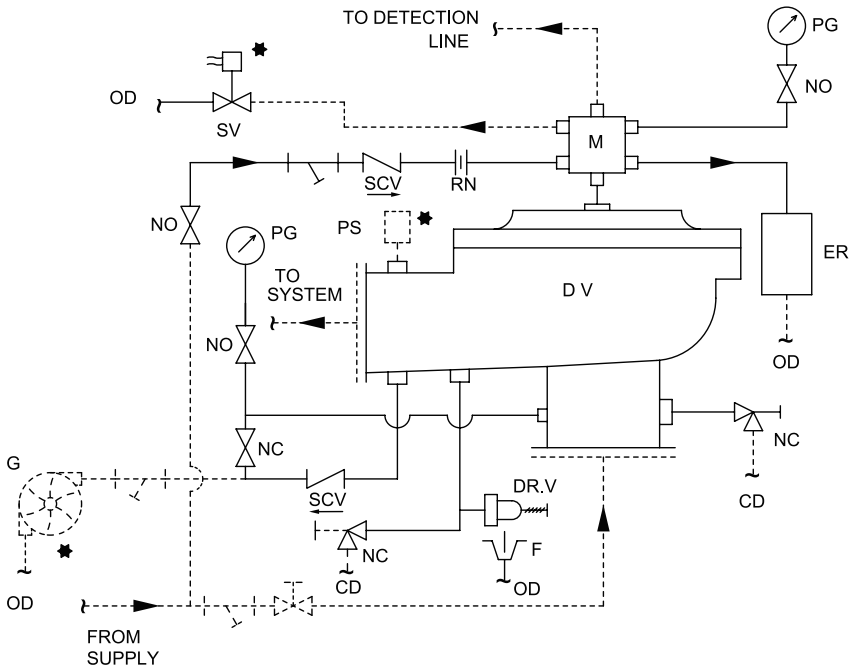
ITEM NO.	CODE NO.	DESCRIPTION	SIZE	QTY				
				200NB	150 NB	100 NB	80 NB	50 NB
1	A01	Pipe Nipple	1/2" X 80 mm Long	1	1	1	1	1
2	A02	6 Way Manifold	---	1	1	1	1	1
3	A03	Swing Check Valve	1/2"	1	1	1	1	1
4	A04	Y Strainer	1/2"	1	1	1	1	1
5	A05/1	Pipe Nipple	1/2" X 110 mm Long	1	1	----	----	----
5	A05/2	Hex Nipple	1/2"	---	----	1	1	1
6	A06	Elbow	1/2"	3	3	3	3	3
7	A07	Hex Nipple	1/2"	4	4	4	4	4
8	A08	Union	1/2"	1	1	1	1	1
9	A09	Ball Valve	1/2"	1	1	1	1	1
10	A10	Elbow	1/4"	1	1	1	1	1
11	A11	Hex Nipple	1/4"	2	2	2	2	2
12	A12	Gauge Valve	1/4"	2	2	2	2	2
13	A13	Pressure Gauge	1/4"	2	2	2	2	2
14	A14/1	Pipe Nipple	1/2" X 300 mm Long	1	----	----	----	----
14	A14/2	Pipe Nipple	1/2" X 255 mm Long	----	1	----	----	----
14	A14/3	Pipe Nipple	1/2" X 210 mm Long	----	----	1	----	----
14	A14/4	Pipe Nipple	1/2" X 180 mm Long	----	----	----	1	1
15	A15	Emergency Release station	---	1	1	1	1	1
16	A16	Tee	1/2"	1	1	1	1	1
17	A17	Reducing Hex Nipple	1/2" X 1/4"	1	1	1	1	1
18	A19/1	Pipe Nipple	2" X 110 mm Long	1	1	1	---	---
18	A19/2	Pipe Nipple	1 - 1/4" X 110 mm Long	---	---	---	1	1
19	A20/1	Angle Valve	2"	1	1	1	---	---
19	A20/2	Angle Valve	1 -1/4"	---	---	---	1	1
20	A21/1	Pipe Nipple	1/2" X 150 mm Long	1	1	---	---	---
20	A21/2	Pipe Nipple	1//2" X 130 mm Long	---	---	1	1	1
21	A22/1	Hex Nipple	1"	3	3	3	---	---
21	A22/2	Hex Nipple	3/4"	---	---	---	3	3
22	A23/1	Elbow	1"	1	1	1	---	---
22	A23/2	Elbow	3/4"	---	---	---	1	1
23	A24/1	Reducing Tee	1" X 1/2" X 1"	1	1	1	---	---
23	A24/2	Reducing Tee	3/4" x 1/2" X 3/4"	---	---	---	1	1
24	A25/1	Angle Valve	1"	1	1	1	---	---
24	A25/2	Angle Valve	3/4"	---	---	---	1	1
25	A26	Drip Valve	1/2"	1	1	1	1	1
26/1	A27/1	Funnel	---	1	1	1	1	1
26/2	A27/2	Funnel Holder	---	1	1	1	1	1
27	A28	Plug	1/2"	2	2	2	2	2
28	A29	Pipe Nipple	3/4" X 100 mm Long	1	1	1	1	1
29	A30	Swing Check Valve	3/4"	1	1	1	1	1
30	A31	Hex Nipple	3/4"	1	1	1	1	1

ITEM NO.	CODE NO.	DESCRIPTION	SIZE	QTY				
				200 NB	150 NB	100 NB	80 NB	50 NB
31	A32	Reducing Tee	3/4" X 1/2" X 3/4"	1	---	1	1	1
32	A33/1	Copper Tube Assembly	1/2"	1	---	---	---	---
32	A33/2	Copper Tube Assembly	1/2"	---	1	---	---	---
32	A33/3	Copper Tube Assembly	1/2"	---	---	1	---	---
32	A33/4	Copper Tube Assembly	1/2"	---	---	---	1	1
33	A34	Ball Valve	1/2"	1	1	1	1	1
34	A35/1	Pipe Nipple	1/2" X 80 mm Long	1	1	1	1	1
34	A35/2	Hex Nipple	1/2"	---	1	1	1	1
35	A36	Y Type Strainer	3/4"	1	1	1	1	1
36	A37	Pipe Nipple	3/4" X 80 mm Long	1	1	1	1	1
37	A38	Orifice Nozzle (Priming Line)	1/2"	1	1	1	1	1
Electric Trim for Pressure Switch (Optional)								
P1	A40	Pipe Nipple	1/2" X 135 mm Long	1	1	1	1	1
P2	A41	Elbow	1/2"	1	1	1	1	1
P3	A42	Pressure Switch (DV Outlet)	1/2" (M)	1	1	1	1	1
Electric Trim for Solenoid Valve (Optional)								
S1	A46	Pipe Nipple	1/2" X 130 mm Long	1	1	1	---	---
S1	A47	Pipe Nipple	1/2" X 130 mm Long	---	---	---	1	1
S2	A48	Elbow	1/2"	1	1	1	1	1
S3	A49	Pipe Nipple	1/2" X 180 mm Long	1	1	1	---	---
S3	A50	Pipe Nipple	1/2" X 135 mm Long	---	---	---	1	1
S4	A51	Solenoid Valve	1/2" Size, Two Way	1	1	1	1	1

ELECTRIC & PNEUMATIC RELEASE TRIM - SCHEMATIC



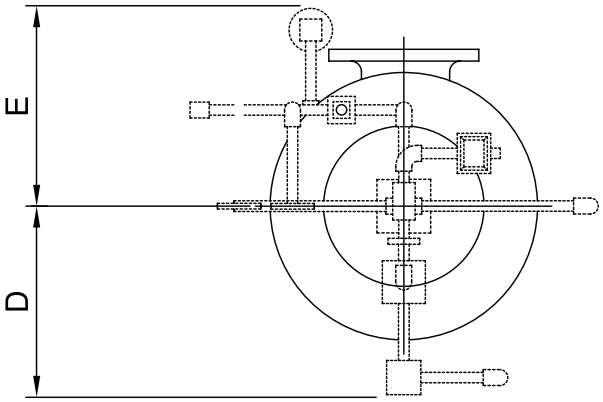
ELECTRIC & HYDRAULIC RELEASE TRIM - SCHEMATIC

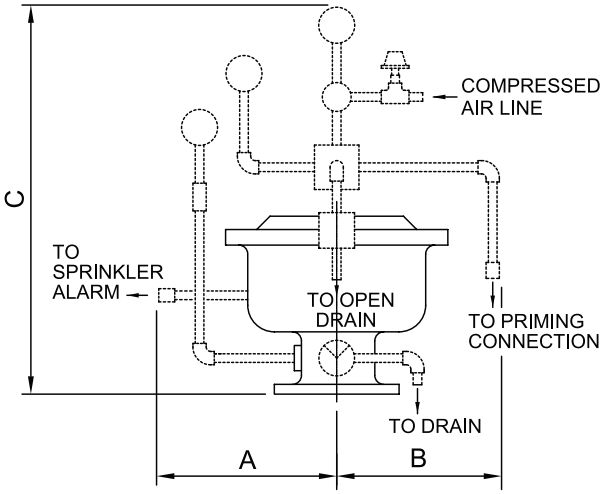


Abbreviation & Symbols

⋈	Valve	⩘	Angle Valve	PS	Pressure Switch	DRV	Drip Valve
NR	Non Return Valve	DV	Deluge Valve	⋈	Stop Valve	F	Funnel
ER	Emergency Release Box	✸	Optional	CD	Commen Drain	---	By User
M	Six Way Manifold	G	Sprinkler Alarm	SCV	Swing Check Valve	OD	Open Drain
RN	Restriction Nozzle	PG	Pressure Gauge	SV	Solenoid Valve	⊢	Strainer
PDA	Positive Drain Actuator	NO	Normally Open	NC	Normally Closed		

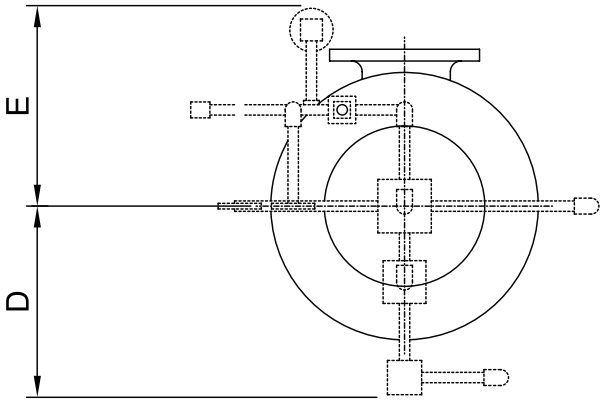
PNEUMATIC AND ELECTRIC RELEASE TRIM

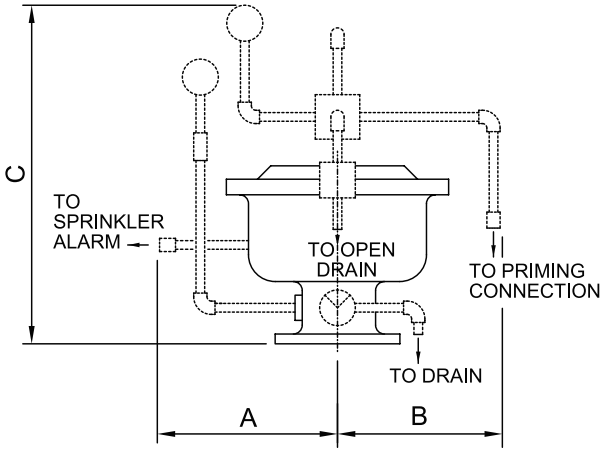




Installation measurement in mm. (Approximate)					
SIZE	200 NB	150 NB	100 NB	80 NB	50 NB
A	390	370	370	350	350
B	525	500	450	450	450
C	1050	1025	950	930	930
D	510	500	450	450	450
E	500	480	420	410	410

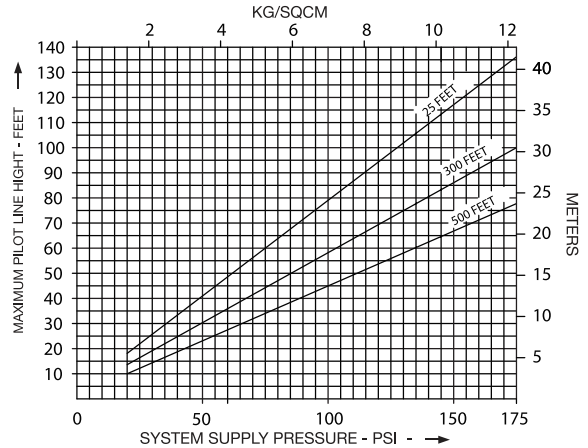
HYDRAULIC AND ELECTRIC RELEASE TRIM



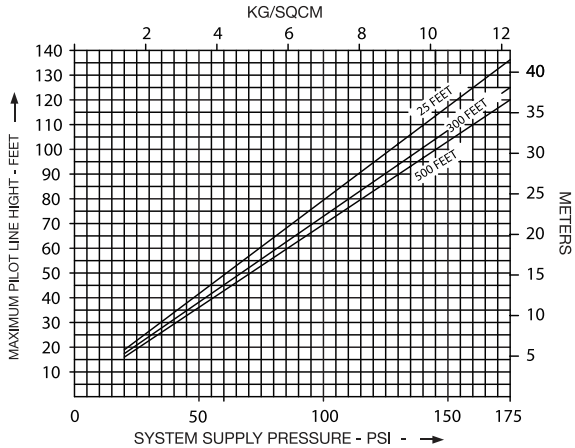


Installation measurement in mm. (Approximate)					
SIZE	200 NB	150 NB	100 NB	80 NB	50 NB
A	390	370	370	350	350
B	525	500	450	450	450
C	875	800	750	700	700
D	510	500	450	450	450
E	500	480	420	410	410

WET PILOT SPRINKLER HEIGHT LIMITATION OF 200 NB

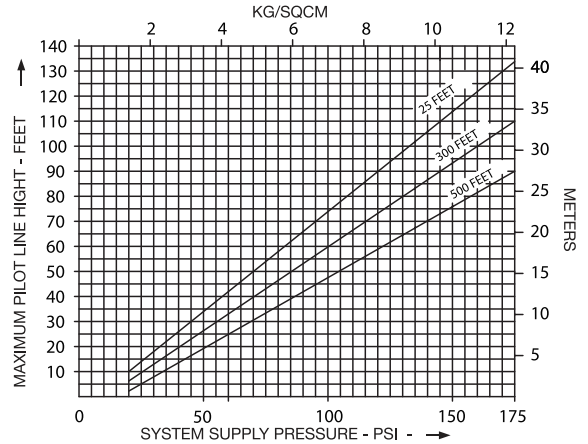


EQUIVALENT LENGTH BASED ON 1/2" SCHEDULE 40 PIPE WITH C=120

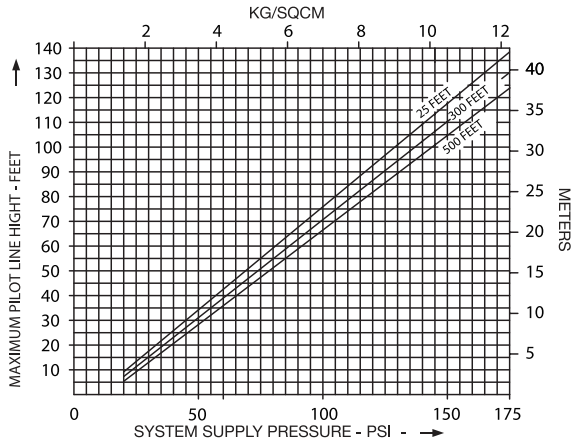


EQUIVALENT LENGTH BASED ON 3/4" SCHEDULE 40 PIPE WITH C=120

WET PILOT SPRINKLER HEIGHT LIMITATION OF 150 NB

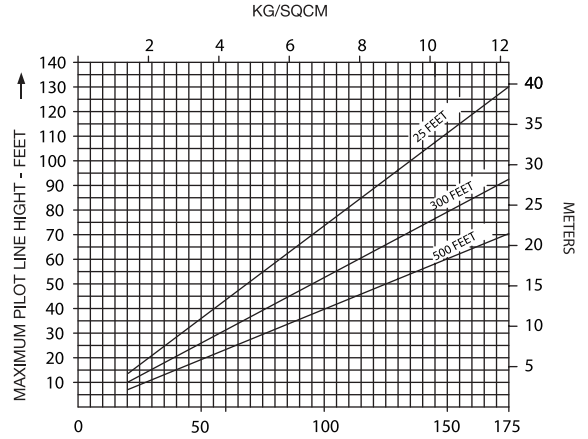


EQUIVALENT LENGTH BASED ON 1/2" SCHEDULE 40 PIPE WITH C=120

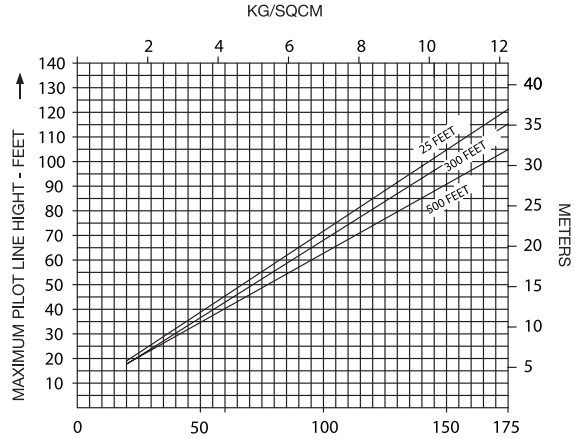


EQUIVALENT LENGTH BASED ON 3/4" SCHEDULE 40 PIPE WITH C=120

WET PILOT SPRINKLER HEIGHT LIMITATION OF 100 NB

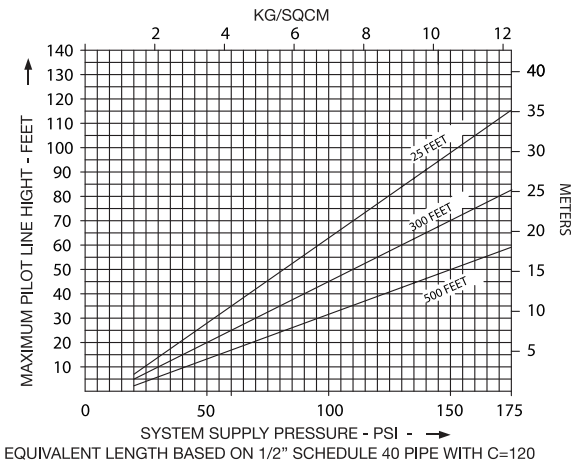


EQUIVALENT LENGTH BASED ON 1/2" SCHEDULE 40 PIPE WITH C=120

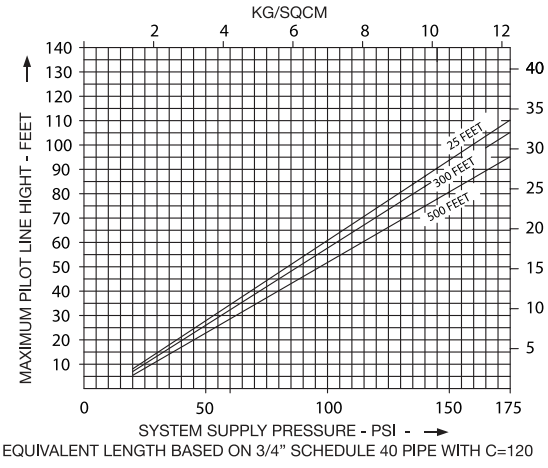


EQUIVALENT LENGTH BASED ON 3/4" SCHEDULE 40 PIPE WITH C=120

WET PILOT SPRINKLER HEIGHT LIMITATION OF 80 NB

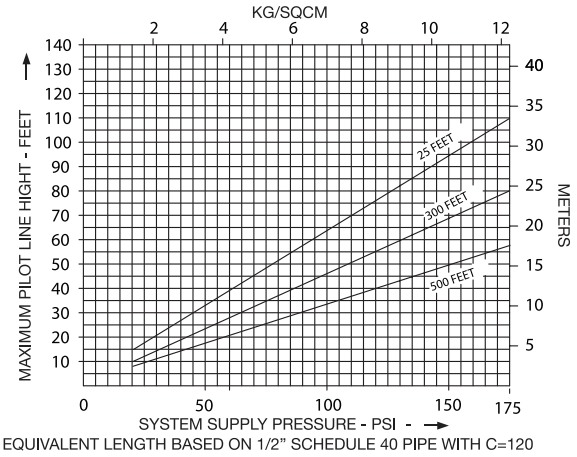


EQUIVALENT LENGTH BASED ON 1/2" SCHEDULE 40 PIPE WITH C=120

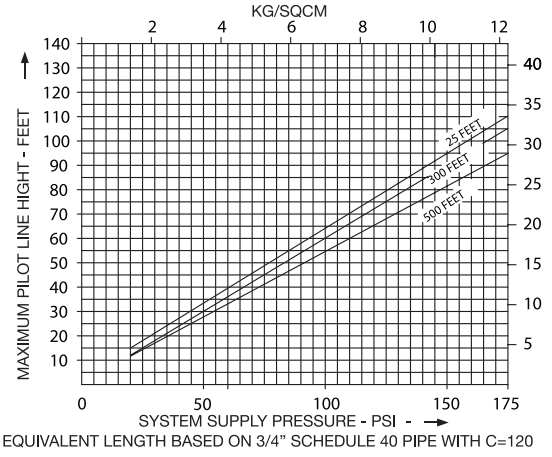


EQUIVALENT LENGTH BASED ON 3/4" SCHEDULE 40 PIPE WITH C=120

WET PILOT SPRINKLER HEIGHT LIMITATION OF 50 NB

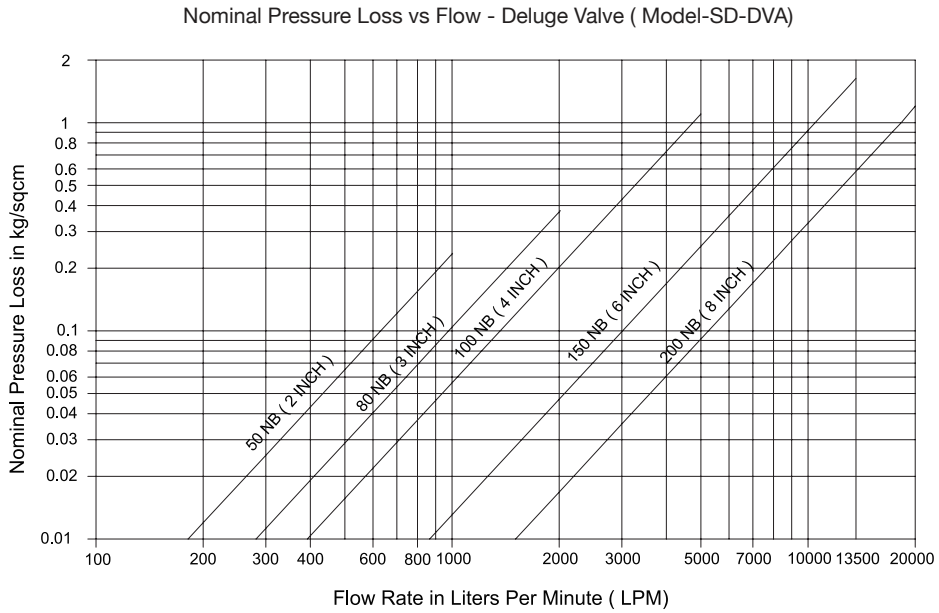


EQUIVALENT LENGTH BASED ON 1/2" SCHEDULE 40 PIPE WITH C=120



EQUIVALENT LENGTH BASED ON 3/4" SCHEDULE 40 PIPE WITH C=120

NOMINAL PRESSURE LOSS VS FLOW - DELUGE VALVE MODEL SD-DVA



DELUGE VALVE

MODEL: SD-DVH2

TECHNICAL DATA

NORMAL SIZE	200,150,100, 80, 50 NB
MATERIAL	Cast Steel ASTM A 216 WBC
SEVICE PRESSURE	1.4 to 17.5 Bar (20 to 250 PSI)
THREADED OPENING	BSPT
MOUNTING	Vertical or Horizontal
FACTORY HYDOSTATIC TEST PRESSURE	35 Kg/sq.cm. (500 PSI)
FLANGE CONNECTION	ANSI B 16.5 # 150 RF (FF-Optional)
WET PILOT SPRINKLER HEIGHT LIMITATION	As per graph in the catalogue
NET WEIGHT WIHTOUT TRIM	200 NB - 163 Kg 150 NB - 86 Kg 100 NB - 56 Kg 80 NB - 38 Kg 50 NB - 33 Kg
FINISH	RAL 3000
ORDERING INFORMATION	1. Size of Valve 2. Flange specification 3. Valve trim vertical or horizontal 4. Trim type

DESCRIPTION

Deluge Valve is known as a system control valve in a deluge system, used for fast application of water in a spray system. Deluge valve protects areas such as power transformer installation, storage tank, conveyor protection and other industrial application etc. With the addition of foaming agent deluge valve can be used to protect aircraft hangar and inflammable liquid fire.

VALVE OPERATION

SHIELD Deluge valve is a quick release, hydraulically operated diaphragm valve. It has three chambers, isolated from each other by the diaphragm operated clapper and seat seal. While in SET position, water pressure is transmitted through an external bypass check valve and restriction orifice from the system supply side to the top chamber, so that supply pressure in the top chamber act across the diaphragm operated clapper which holds the seat against the inlet supply pressure because of the differential pressure design.

On detection of fire the top chamber is vented to atmosphere through the outlet port via opened actuation devices. The top chamber pressure cannot be replenished through the restricted inlet port, and the upward force of the supply pressure lifts the clapper allowing the water flow to the system piping network and alarm devices.

TRIM DESCRIPTION

The trims are functionally termed as Dry Pilot Trim, Wet Pilot Trim, Electric Trim and Test and Alarm Trim as per the method of actuation of the deluge valve.
The functionality of these trims is described below.

a) BASIC TRIM

Dry pilot operation uses a pilot line of closed Sprinkles/QB detectors containing air under pressure, located in the area to be protected. It requires regulated dry air supply with main supply point through restricted orifice. The air pressure to be maintained as specified in the catalogue of Dry Pilot Actuator. The pilot line is connected to air inlet side of actuator. The top chamber of the deluge valve is connected to water inlet side of actuator. When there is an air pressure drop, or due to release of any of the release device on detection of fire, the diaphragm of actuator is lifted and allows the water to drain.

This releases the water pressure in the top chamber of the deluge valve, allowing the deluge valve to

open and water to flow into the system piping & alarm devices. Recommended air supply pressure for dry pilot trim system is 3.5 kg/sq.cm.

User must install non return valve at air supply connection to deluge valve trim.

b) DRY PILOT TRIM (PNEUMATIC RELEASE)

Wet pilot operation uses a pilot line of closed Sprinklers/ QB Detectors containing pressurized water, supplied through the upstream side of the Deluge valve, through a restricted orifice. All the release lines are connected to a common release line. Due to release of any one of the release device, the water pressure in the top chamber of the Deluge valve drops and the Deluge valve opens.

c) ELECTRIC RELEASE TRIM

To actuate a Deluge valve electrically, a solenoid valve is provided to drain the water from the top chamber of the Deluge valve. A pressure switch is provided to activate an electric alarm, to shut down the desired equipment or to give “Tripped” indication of the Deluge valve. In addition to this a pressure switch can also monitor “Low air pressure” and “Fire condition” when used in dry pilot airline.

d) TEST AND ALARM TRIM

This trim is supplied with a test valve is provided to test the normal operation of the sprinkler alarm bell. The sprinkler alarm can be supplied additionally, which bells on actuation of the Deluge valve.

e) DRAIN AND DRIP TRIM

This consists of main and system drain valve in addition with drip valve.

TRIM TYPES

The trims are designated as following.
W =Wet Pilot trim. D = Dry Pilot Trim

a) Type SH2-TW and SH2-TD

This type of trim is basic trim required to operate the deluge valve. A solenoid valve for electric remote actuation and pressure switch for sensing & annunciation are optional.

b) Type SH2-TWD and SH2-TDD

This trim type is a combination of components of normal trim along with the drip and drain trim. A solenoid valve for electric remote actuation and pressure switch for sensing & annunciation are optional.

c) Type SH2-TWT and SH2-TDT

This trim type is a combination of components of normal trim along with the test and alarm trim. In dry pilot trim, an actuator is provided. A solenoid valve for electric remote actuation and pressure switch for sensing & annunciation are optional.

TRIM MODEL NO.	TRIM DESCRIPTION	MOUNTING	SCHEMATIC NO.
SH2-TW	Basic Wet Pilot Trim	Vertical	Schematic 1
SH2-TD	Basic Dry Pilot Trim	Vertical	Schematic 2
SH2-TWT	Basic Wet Pilot Trim with Test and Alarm Trim	Vertical	Schematic 3
SH2-TDT	Basic Dry Pilot Trim with Test and Alarm Trim	Vertical	Schematic 4
SH2-TWD	Basic Wet Pilot Trim with Drip and Drain Trim	Vertical	Schematic 5
SH2-TDD	Basic Dry Pilot Trim with Drip and Drain Trim	Vertical	Schematic 6
SH2-NTW	Basic Wet Pilot Trim with Test and Alarm Trim & Drip and Drain Trim	Vertical	Schematic 7
SH2-NTD	Basic Dry Pilot Trim with Test and Alarm Trim & Drip and Drain Trim	Vertical	Schematic 8
SH2-TW	Basic Wet Pilot Trim	Horizontal	Schematic 9
SH2-TD	Basic Dry Pilot Trim	Horizontal	Schematic 10
SH2-TWT	Basic Wet Pilot Trim with Test and Alarm Trim	Horizontal	Schematic 11
SH2-TDT	Basic Dry Pilot Trim with Test and Alarm Trim	Horizontal	Schematic 12
SH2-TWD	Basic Wet Pilot Trim with Drip and Drain Trim	Horizontal	Schematic 13
SH2-TDD	Basic Dry Pilot Trim with Drip and Drain Trim	Horizontal	Schematic 14
SH2-NTW	Basic Wet Pilot Trim with Test and Alarm Trim & Drip and Drain Trim	Horizontal	Schematic 15
SH2-NTD	Basic Dry Pilot Trim with Test and Alarm Trim & Drip and Drain Trim	Horizontal	Schematic 16

d) Type SH2-NTW and SH2-NTD

This trim type is a combination of components of normal trim along with the test and alarm trim as well as the drip and drain trim. A solenoid valve for electric remote actuation and pressure switch for sensing & annunciation are optional.

RESETTING PROCEDURE

a. Close the upstream side stop valve provided below the deluge valve to cease the flow of water.

b. Open both the drain valves/ drain plugs and close when the flow of water has ceased.

c. Close the release device/replace the Sprinkler if release was through Sprinkler/ QB Detector.

d. Inspect and release if required, or close the section of the detection system subjected to “Fire condition”.

e. In case of dry pilot detection system, open the air supply valve to build-up air pressure. Open the priming valve fully. Open the upstream side of the stop valve provided below the Deluge valve. No water should flow into the system.

f. Where priming shut off valve (optional) is provided for resetting, then the water need to be drained from upstream side of valve.

Note: The valve can be reset without undergoing above procedure, by just closing/replacing the release device as valve is auto reset type. The reset time may be long or cause vibration while closing depending on back pressure at the outlet of the valve.

CAUTION

a. Do not close the downstream and upstream stop valves, while the system is in service.

b. The releasing device must be maintained in open position, when actuated, to prevent the deluge valve from closure if anti shut off valve is not provided.

c. While using a Deluge valve in the wet pilot system, the height and length of the wet pilot detection line is to be limited, as shown in the wet pilot sprinkler height limitation graph.

d. Do not connect the Sprinkler Alarm outlet drain line to close a common drain as it may create back pressure and Sprinkler Alarm may not function.

e. Deluge valve must have support to absorb sudden opening or closing vibration shock to the piping.

f. To avoid water damage, take precautions when opening the water supply main control valve, since water will flow from all open system valves.

g. The responsibility of maintenance of the protection system & devices in proper operating condition lies with the owner of the system.

h. Deluge Valve & its trim shall be maintained at a minimum temperature of 4°C, Heat tracing is not permitted.

I. Deluge Valve must be used in presssurised system.

SYSTEM TESTING PROCEDURE

(i) Keep the upstream side of the stop valve partially open. To avoid water flow to system side close the system side stop valve. This valve is to be kept in open position after the testing is completed.

(ii) Let any of the release devices to trip. This will result in sudden drop of water pressure in the deluge valve top chamber which in turn will open the deluge valve. Close the upstream side stop valve immediately.

(iii) Reset the valve as per the procedure given under heading “RESETTING PROCEDURE FOR THE DELUGE VALVE”.

INSPECTION AND MAINTENANCE

Installed system piping network must be flushed properly before placing the Deluge valve in service.

A qualified and trained person must commission the system. After few initial successful tests, an authorized person must be trained to perform inspection and testing of the system. It is recommended to have regular inspection and test run of the system as per NFPA guideline or in accordance to the organisation having local jurisdiction.

(i) WARNING

Inspection and testing is to be carried out only by authorised and trained personnel. DO NOT TURN OFF the water supply or close any valve to make repair(s) or test the valve, without placing a roving fire patrol in the area covered by the system. Also inform the local security personnel and central alarm station, so that there is no false alarm signal.

It is recommended to carry out physical inspection of the system at least twice in a week. The inspection should verify that all the control valves are in proper position as per the system requirement and that there are no damages to any component. The frequency of inspections must be increased in the presence of contaminated water supplies, corrosive/ scaling water supplies, and corrosive atmospheres.

(ii) NORMAL CONDITION

(a) All main valves are open and are sealed with tamper proof seal

(b) Drain valves must be kept closed

(c) No leak or drip is detected from the drip valve

(d) All the gauges except the system side water pressure gauge, should show the required pressure

(e) There should be no leakage in the system

(iii) NORMAL CONDITION TEST

(a) The system should be checked for normal condition at least once in a week

(b) Test the sprinkler alarm bell or electric alarm by turning the alarm test valve to the test position. The alarm should sound. This test should be carried out at least once in a week

(c) Depress the drip valve knob. Significant accumulation indicates a possible seat leakage

(d) Conduct the water flow test as per the procedure of system testing at least once a month.

(iv) PERIODIC CHECK

Conduct the water flow test by actuating few of the release devices provided in the system. Clean all strainer(s) and priming line restriction. This test is to be carried out at least once in three months.

ABNORMAL CONDITION

(i) ALARM FAILS TO SOUND

(a) Check for any obstruction in the alarm test line, make certain that the sprinkler alarm is free to operate

(b) If an electric alarm is provided, check the electrical circuitry to the alarm

(ii) FALSE TRIPS

(a) Check for clogging in priming line, restriction orifice check valve, priming valve & strainer

(b) Leakage in the release system

(c) The deluge air panel orifice clogged or low supply pressure

(iii) LEAKAGE THROUGH THE DELUGE VALVE

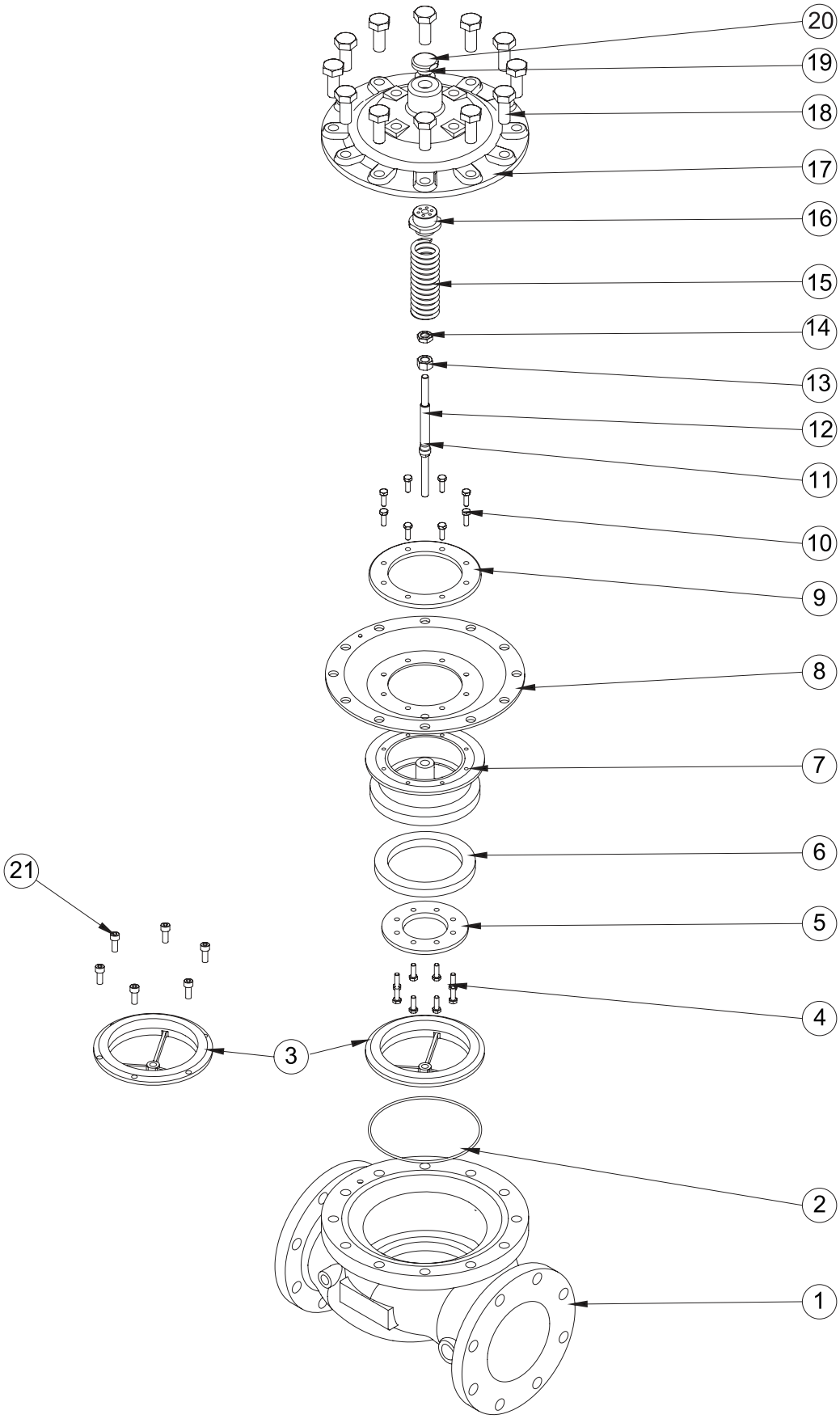
(a) Damaged deluge valve seat or obstruction on the seat face by foreign object

(b) Leakage in release system

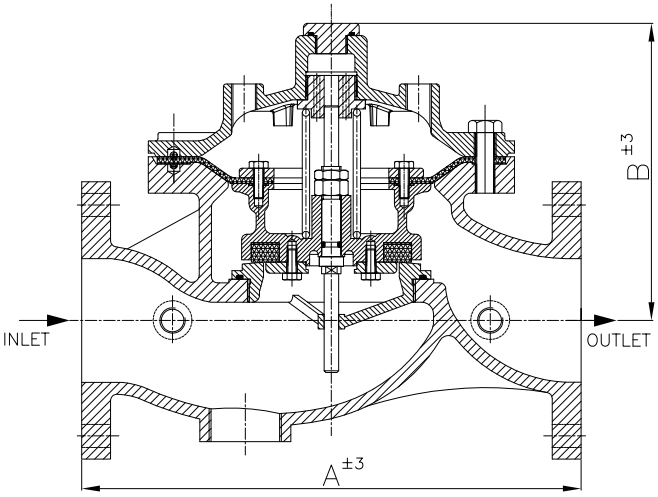
(c) Partly clogged priming line restriction orifice check valve

(d) Low air pressure on release system line or leakage in release system

DELUGE VALVE MODEL - SD-DVH2



DELUGE VALVE MODEL - SD-DVH2



Dimension in mm. (Approximate)

Valve Nominal Size	'A'	'B'
200 NB	552	332
150 NB	462	282
100 NB	412	245
80 NB	372	232
50 NB	320	232

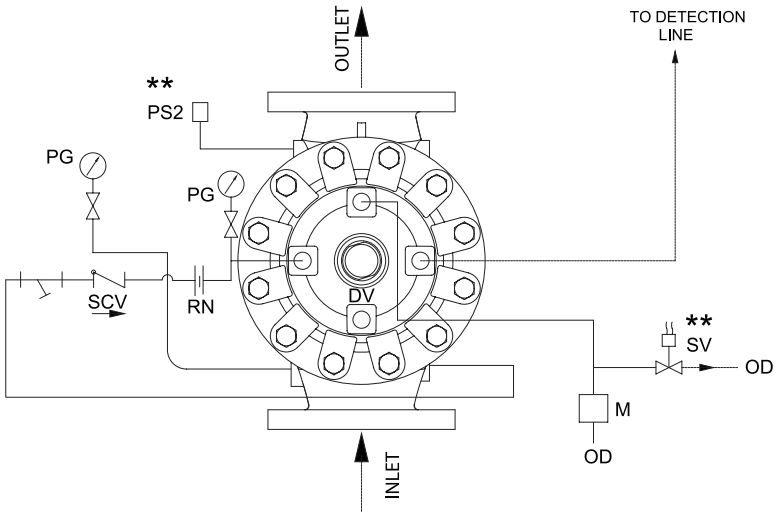
PART LIST

ITEM	PART NO.					DESCRIPTION	QTY.				MATERIAL SPECIFICATION
	200 NB	150 NB	100 NB	80 NB	50 NB		200 NB	150 NB	100 NB	80/50 NB	
1	NA	NA	NA	NA	NA	Housing	1	1	1	1	Cast Steel
2	H2202	H2602	H2102	H2802	H2502	"O" Ring	1	1	1	1	Neoprene Rubber
3	H2203	H2603	H2103	H2803	H2503	Seat	1	1	1	1	Stainless Steel*
4	H2204	H2604	H2104	---	---	Bolt	8	4	4	---	Stainless Steel
5	H2205	H2605	H2105	H2805	H2505	Rubber Clamp	1	1	1	1	Ductile Iron**
6	H2206	H2606	H2106	H2806	H2506	Rubber Seat	1	1	1	1	Neoprene Rubber
7	H2207	H2607	H2107	H2807	H2507	Clapper	1	1	1	1	Ductile Iron**
8	H2208	H2608	H2108	H2808	H2508	Diaphram	1	1	1	1	Neoprene Rubber
9	H2209	H2609	H2109	H2809	H2509	Clamp Ring	1	1	1	1	Ductile Iron**
10	H2210	H2610	H2110	H2810	H2510	Bolt	12	8	8	8	Stainless Steel
11	H2211	H2611	H2111	H2811	H2511	"O" Ring	1	1	1	1	Neoprene Rubber
12	H2212	H2612	H2112	H2812	H2512	Spindle	1	1	1	1	Stainless Steel
13	H2213	H2613	H2113	H2813	H2513	Nut	1	1	1	1	Stainless Steel
14	H2214	H2614	H2114	H2814	H2514	Lock Nut	1	1	1	1	Stainless Steel
15	H2215	H2615	H2115	H2815	H2515	Spring	1	1	1	1	Stainless Steel
16	H2216	H2616	H2116	H2816	H2516	Adaptor	1	1	1	1	Brass
17	NA	NA	NA	NA	NA	Cover	1	1	1	1	Cast Steel
18	H2218	H2618	H2118	H2818	H2518	Bolt	16	12	12	12	Carbon Steel
19	H2219	H2619	H2119	H2819	H2519	"O" Ring	1	1	1	1	Neoprene Rubber
20	H2220	H2620	H2120	H2820	H2520	Plug	1	1	1	1	Steel Plated
21	H2221	---	---	---	---	Allen Bolt	6	---	---	---	Stainless Steel

NA - Part Replacement Not Available
* Stainless Steel is standard supply Bronze is optional supply.
** Ductile Iron is standard supply Bronze/Stainless Steel is optional supply.

SCHEMATIC FOR WET PILOT BASIC TRIM FOR VERTICAL MOUNTING

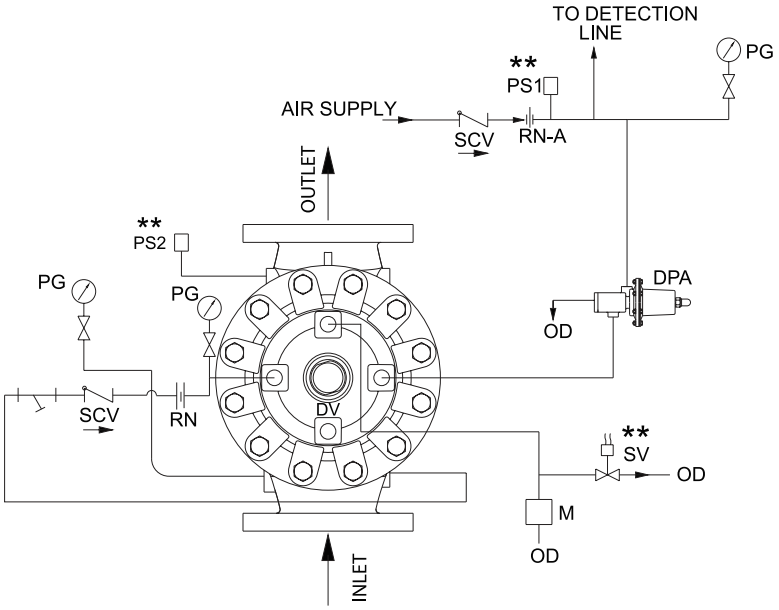
SH2-TW



SCHEMATIC 1

SCHEMATIC FOR DRY PILOT BASIC TRIM FOR VERTICAL MOUNTING

SH2-TD

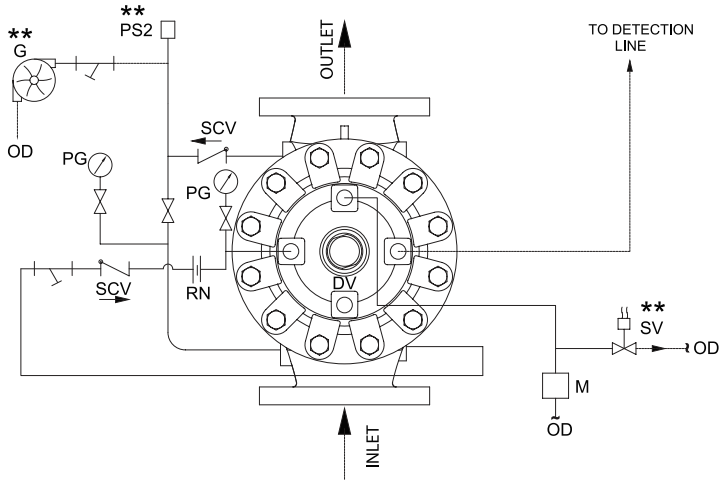


SCHEMATIC 2

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM WITH TEST & ALARM TRIM FOR VERTICAL MOUNTING

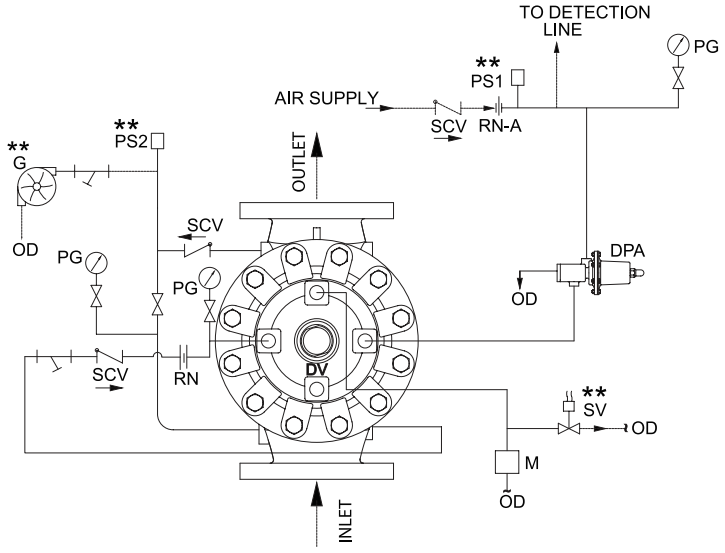
SH2-TWT



SCHEMATIC 3

SCHEMATIC FOR DRY PILOT BASIC TRIM WITH TEST & ALARM TRIM FOR VERTICAL MOUNTING

SH2-TDT

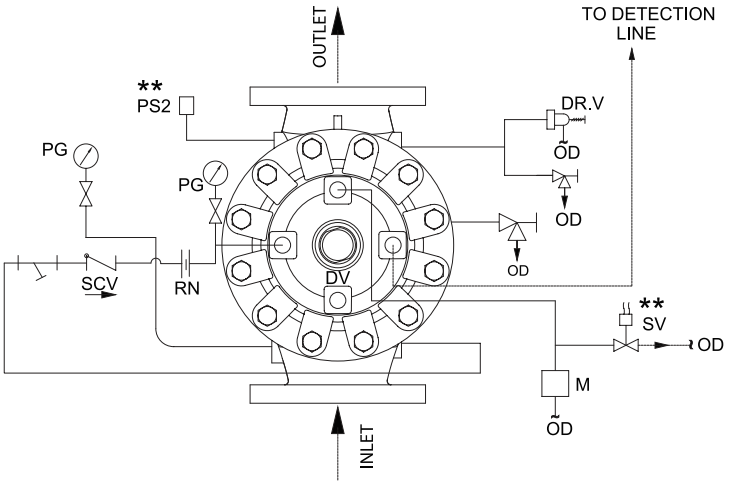


SCHEMATIC 4

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM WITH DRIP & DRAIN TRIM FOR VERTICAL MOUNTING

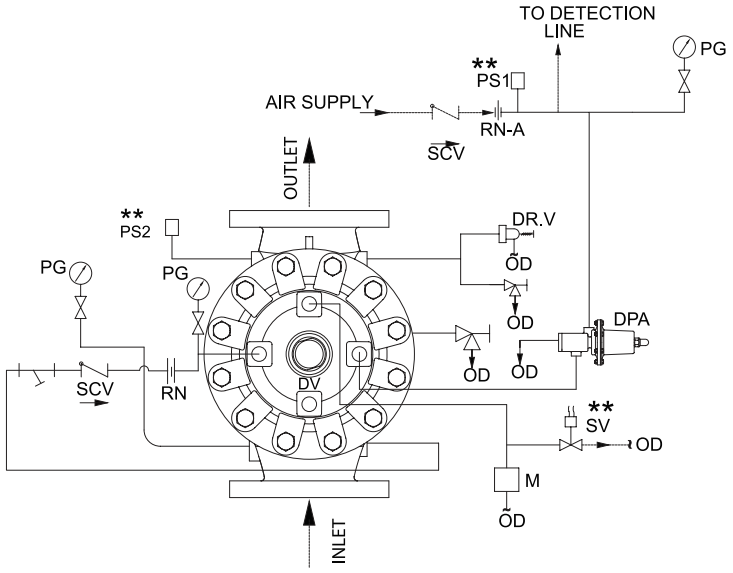
SH2-TWD



SCHEMATIC 5

SCHEMATIC FOR DRY PILOT BASIC TRIM WITH DRIP & DRAIN TRIM FOR VERTICAL MOUNTING

SH2-TDD

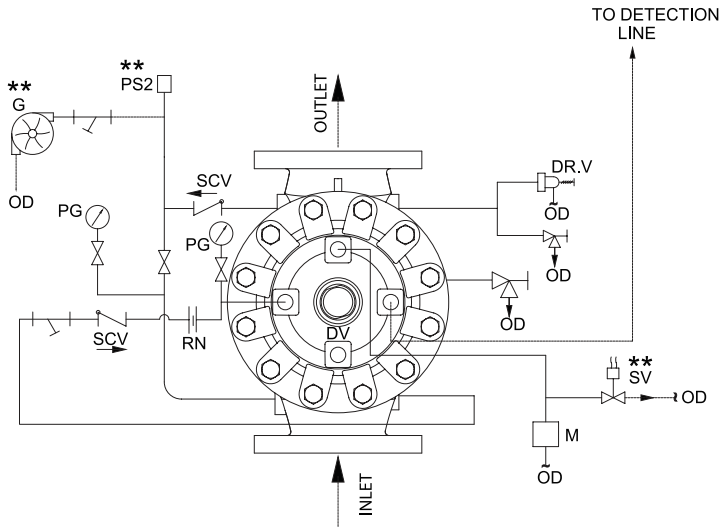


SCHEMATIC 6

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM WITH TEST AND ALARM TRIM & DRIP AND DRAIN TRIM FOR VERTICAL MOUNTING

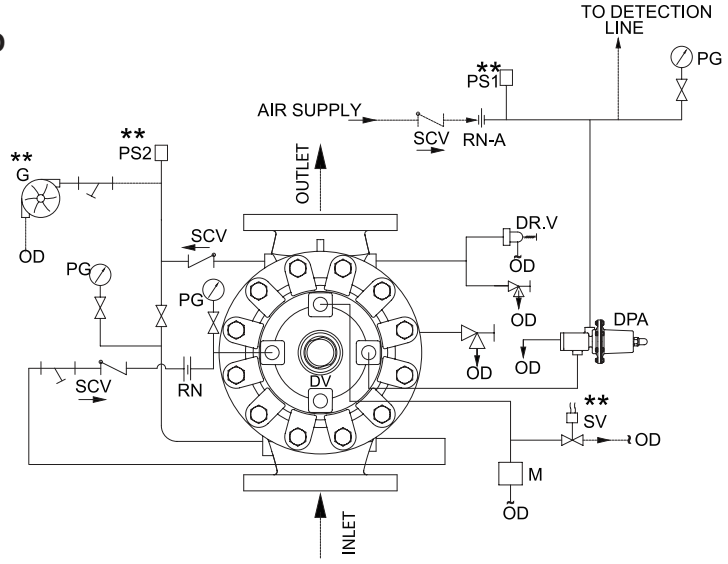
SH2-NTW



SCHEMATIC 7

SCHEMATIC FOR DRY PILOT BASIC TRIM WITH TEST AND ALARM TRIM & DRIP AND DRAIN TRIM FOR VERTICAL MOUNTING

SH2-NTD

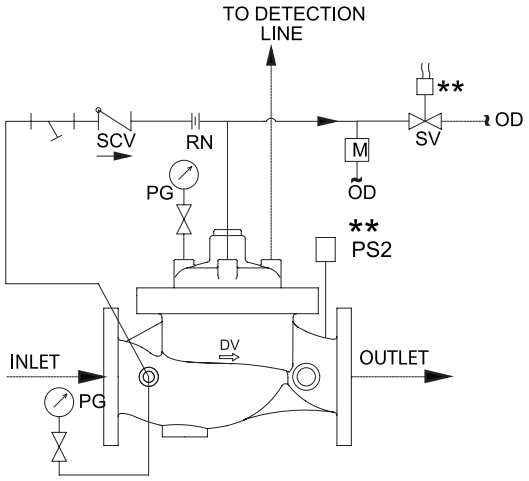


SCHEMATIC 8

DV	Deluge Valve	⋈	Valve	⟀	Swing Check Valve
SV	Solenoid Valve	---	By User	⋈	Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station	⋈	Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM FOR HORIZONTAL MOUNTING

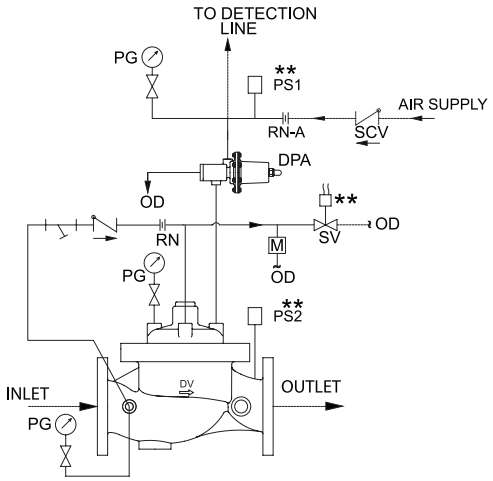
SH2-TW



SCHEMATIC 9

SCHEMATIC FOR DRY PILOT BASIC TRIM FOR HORIZONTAL MOUNTING

SH2-TD

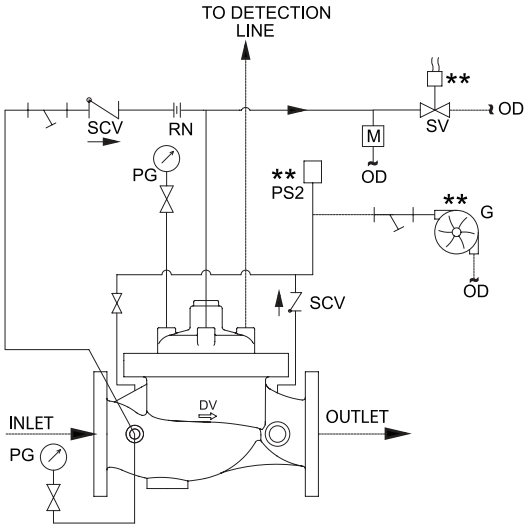


SCHEMATIC 10

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM WITH TEST AND ALARM TRIM FOR HORIZONTAL MOUNTING

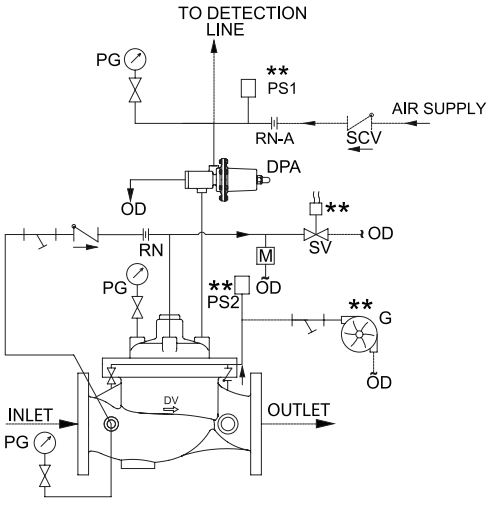
SH2-TWT



SCHEMATIC 11

SCHEMATIC FOR DRY PILOT BASIC TRIM WITH TEST AND ALARM TRIM FOR HORIZONTAL MOUNTING

SH2-TDT

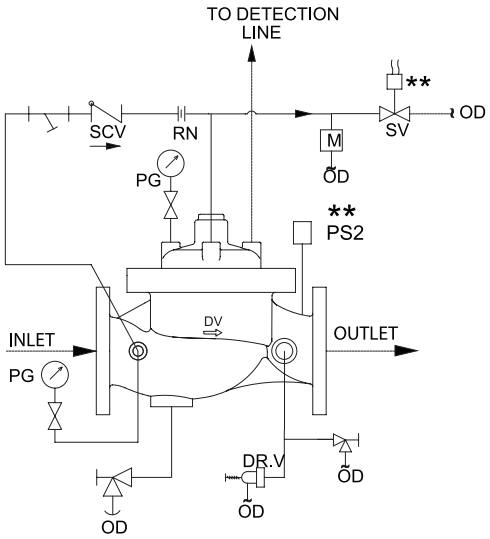


SCHEMATIC 12

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM WITH DRIP AND DRAIN TRIM FOR HORIZONTAL MOUNTING

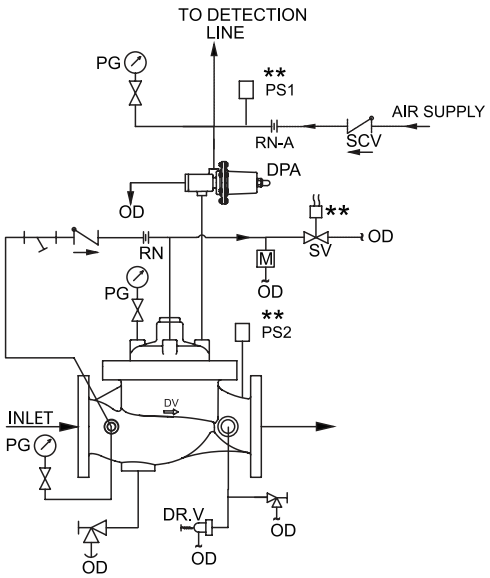
SH2-TWD



SCHEMATIC 13

SCHEMATIC FOR DRY PILOT BASIC TRIM WITH DRIP AND DRAIN TRIM FOR HORIZONTAL MOUNTING

SH2-TDD

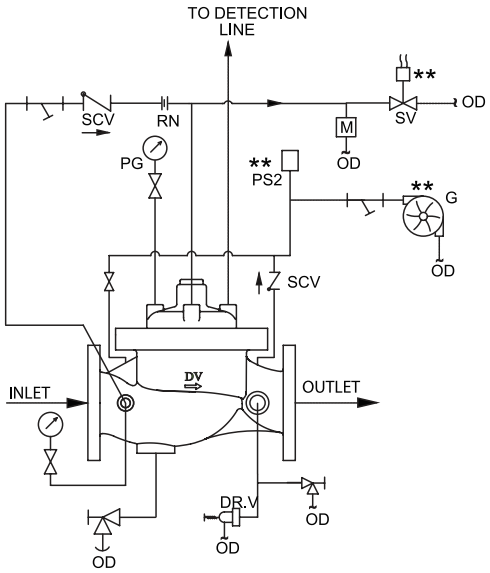


SCHEMATIC 14

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM WITH TEST AND ALARM TRIM & DRIP AND DRAIN TRIM FOR HORIZONTAL MOUNTING

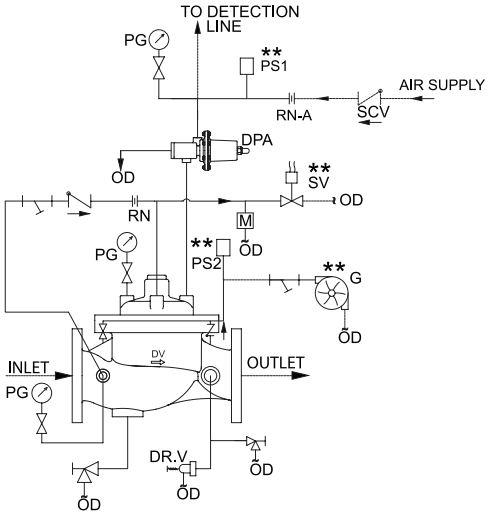
SH2-NTW



SCHEMATIC 15

SCHEMATIC FOR DRY PILOT BASIC TRIM WITH TEST AND ALARM TRIM & DRIP AND DRAIN TRIM FOR HORIZONTAL MOUNTING

SH2-NTD

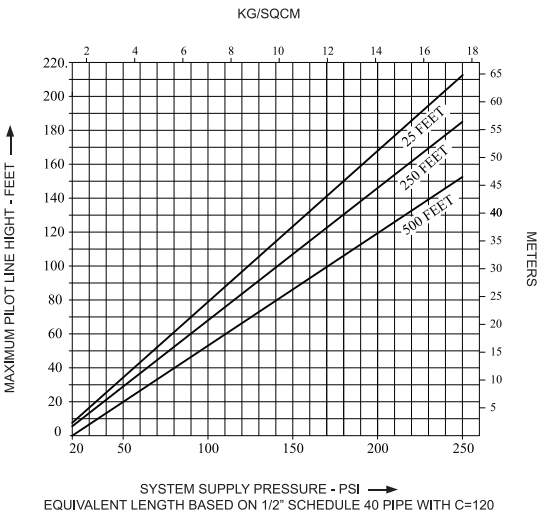


SCHEMATIC 16

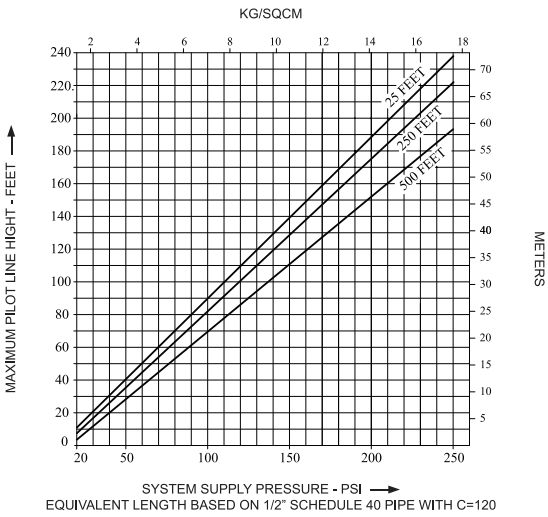
DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SPRINKLER HEIGHT LIMITATION

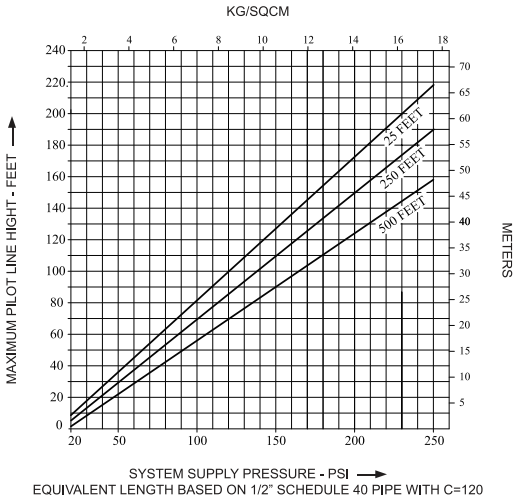
DV 200NB



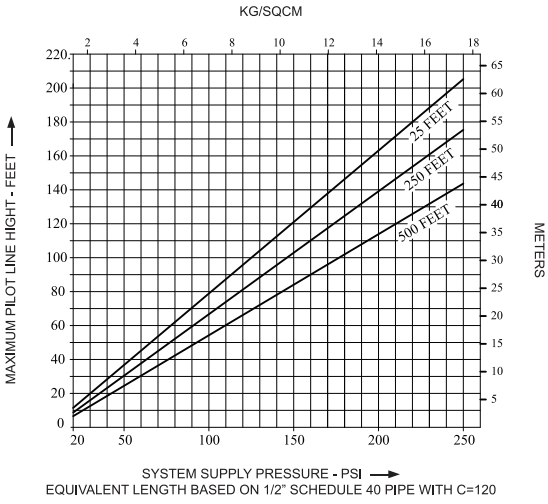
DV 150NB



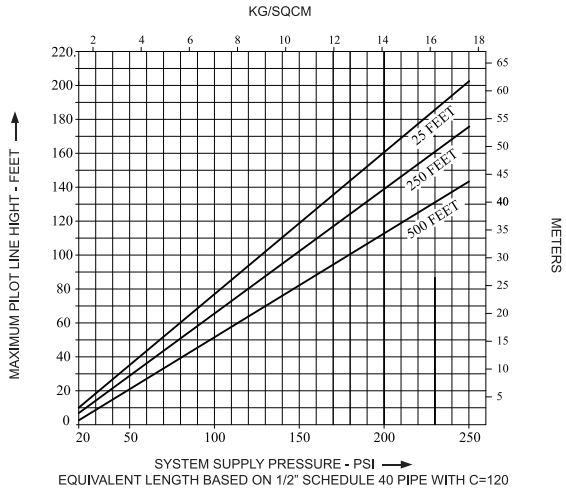
DV 100NB



DV 80NB

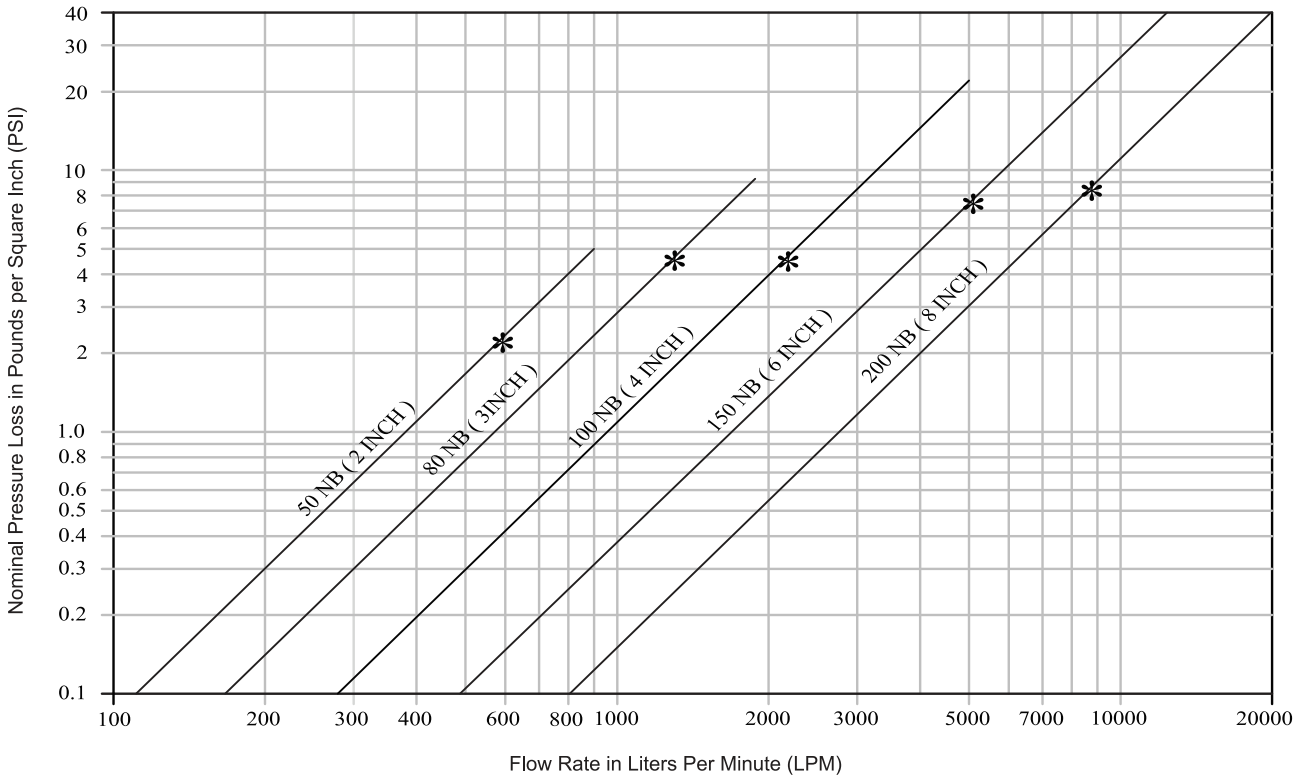


DV - 50NB



NOMINAL PRESSURE LOSS VS FLOW

(* Flow at 15 feet per second [4.57 meter per second])



* 2.3 PSI Pressure loss @ 15 feet per second (4.57 met/sec) velocity having flow of 594 LPM thru 50NB DV
* 4.7 PSI Pressure loss @ 15 feet per second (4.57 met/sec) velocity having flow of 1308 LPM thru 80NB DV
* 4.7 PSI Pressure loss @ 15 feet per second (4.57 met/sec) velocity having flow of 2255 LPM thru 100NB DV
* 7.5 PSI Pressure loss @ 15 feet per second (4.57 met/sec) velocity having flow of 5117 LPM thru 150NB DV
* 8.4 PSI Pressure loss @ 15 feet per second (4.57 met/sec) velocity having flow of 8854 LPM thru 200NB DV

DELUGE VALVE

MODEL: SD-DVH3

TECHNICAL DATA

NORMAL SIZE	200,150,100, 80, 50 NB
MATERIAL	Ductile Iron ASTM A536-77 Grade 65-45-12
SEVICE PRESSURE	1.4 to 17.5 Bar (20 to 250 PSI)
THREADED OPENING	BSPT
MOUNTING	Vertical or Horizontal
FACTORY HYDOSTATIC TEST PRESSURE	35 Kg/sq.cm. (500 PSI)
FLANGE CONNECTION	ANSI B 16.5 # 150 FF (RF-Optional)
WET PILOT SPRINKLER HEIGHT LIMITATION	As per graph in the catalogue
NET WEIGHT WIHTOUT TRIM	200 NB - 153 Kg 150 NB - 79 Kg 100 NB - 50 Kg 80 NB - 35 Kg 50 NB - 32 Kg
FINISH	RAL 3000
ORDERING INFORMATION	1. Size of Valve 2. Flange specification 3. Valve trim vertical or horizontal 4. Trim type

DESCRIPTION

Deluge Valve is known as a system control valve in a deluge system, used for fast application of water in a spray system. Deluge valve protects areas such as power transformer installation, storage tank, conveyor protection and other industrial application etc. With the addition of foaming agent deluge valve can be used to protect aircraft hanger and inflammable liquid fire.

VALVE OPERATION

SHIELD Deluge valve is a quick release, hydraulically operated diaphragm valve. It has three chambers, isolated from each other by the diaphragm operated clapper and seat seal. While in SET position, water pressure is transmitted through an external bypass check valve and restriction orifice from the system supply side to the top chamber, so that supply pressure in the top chamber act across the diaphragm operated clapper which holds the seat against the inlet supply pressure because of the differential pressure design.

On detection of fire the top chamber is vented to atmosphere through the outlet port via opened actuation devices. The top chamber pressure cannot be replenished through the restricted inlet port, and the upward force of the supply pressure lifts the clapper allowing the water flow to the system piping network and alarm devices.

TRIM DESCRIPTION

The trims are functionally termed as Dry Pilot Trim, Wet Pilot Trim, Electric Trim and Test and Alarm Trim as per the method of actuation of the deluge valve.
The functionality of these trims is described below.

a) DRY PILOT TRIM (PNEUMATIC RELEASE)

Dry pilot operation uses a pilot line of closed Sprinkles/QB detectors containing air under pressure, located in the area to be protected. It requires regulated dry air supply with main supply point through restricted orifice. The air pressure to be maintained as specified in the catalogue of Dry Pilot Actuator. The pilot line is connected to air inlet side of actuator. The top chamber of the deluge valve is connected to water inlet side of actuator.

When there is an air pressure drop, or due to release of any of the release device on detection of fire, the diaphragm of actuator is lifted and allows the water to drain. This releases the water pressure in the top chamber of the deluge valve, allowing the deluge valve to open and water to flow into the system piping & alarm devices. Recommended air

supply pressure for dry pilot trim system is 3.5 kg/sq.cm.

User must install non return valve at air supply connection to deluge valve trim.

b) WET PILOT TRIM (HYDRAULIC RELEASE)

Wet pilot operation uses a pilot line of closed Sprinklers/ QB detectors containing pressurized water, supplied through the upstream side of the Deluge valve, through a restricted orifice. All the release lines are connected to a common release line. Due to release of any one of the release device, the water pressure in the top chamber of the Deluge valve drops and the Deluge valve opens.

c) ELECTRIC RELEASE TRIM

To actuate a Deluge valve electrically, a solenoid valve is provided to drain the water from the top chamber of the Deluge valve. A pressure switch is provided to activate an electric alarm, to shut down the desired equipment or to give “Tripped” indication of the Deluge valve. In addition to this a pressure switch can also monitor “Low air pressure” and “Fire condition” when used in dry pilot air line.

d) TEST AND ALARM TRIM

This trim is supplied with a test valve is provided to test the normal operation of the sprinkler alarm bell. The sprinkler alarm can be supplied additionally, which bells on actuation of the Deluge valve.

e) DRAIN AND DRIP TRIM

This consists of main and system drain valve in addition with drip valve.

TRIM TYPES

The trims are designated as following.
W =Wet Pilot trim. D = Dry Pilot Trim

a) Type SH3-TW and SH3-TD

This type of trim is basic trim required to operate the deluge valve. A solenoid valve for electric remote actuation and pressure switch for sensing & annunciation are optional.

b) Type SH3-TWD and SH3-TDD

This trim type is a combination of components of normal trim along with the drip and drain trim. A solenoid valve for electric remote actuation and pressure switch for sensing & annunciation are optional.

c) Type SH3-TWT and SH3-TDT

This trim type is a combination of components of normal trim along with the test and alarm trim. In dry pilot trim, an actuator is provided. A solenoid valve for electric remote actuation and pressure switch for sensing & annunciation are optional.

TRIM MODEL NO.	TRIM DESCRIPTION	MOUNTING	SCHEMATIC NO.
SH3-TW	Basic Wet Pilot Trim	Vertical	Schematic 1
SH3-TD	Basic Dry Pilot Trim	Vertical	Schematic 2
SH3-TWT	Basic Wet Pilot Trim with Test and Alarm Trim	Vertical	Schematic 3
SH3-TDT	Basic Dry Pilot Trim with Test and Alarm Trim	Vertical	Schematic 4
SH3-TWD	Basic Wet Pilot Trim with Drip and Drain Trim	Vertical	Schematic 5
SH3-TDD	Basic Dry Pilot Trim with Drip and Drain Trim	Vertical	Schematic 6
SH3-NTW	Basic Wet Pilot Trim with Test and Alarm Trim & Drip and Drain Trim	Vertical	Schematic 7
SH3-NTD	Basic Dry Pilot Trim with Test and Alarm Trim & Drip and Drain Trim	Vertical	Schematic 8
SH3-TW	Basic Wet Pilot Trim	Horizontal	Schematic 9
SH3-TD	Basic Dry Pilot Trim	Horizontal	Schematic 10
SH3-TWT	Basic Wet Pilot Trim with Test and Alarm Trim	Horizontal	Schematic 11
SH3-TDT	Basic Dry Pilot Trim with Test and Alarm Trim	Horizontal	Schematic 12
SH3-TWD	Basic Wet Pilot Trim with Drip and Drain Trim	Horizontal	Schematic 13
SH3-TDD	Basic Dry Pilot Trim with Drip and Drain Trim	Horizontal	Schematic 14
SH3-NTW	Basic Wet Pilot Trim with Test and Alarm Trim & Drip and Drain Trim	Horizontal	Schematic 15
SH3-NTD	Basic Dry Pilot Trim with Test and Alarm Trim & Drip and Drain Trim	Horizontal	Schematic 16

d) Type SH3-NTW and SH3-NTD

This trim type is a combination of components of normal trim along with the test and alarm trim as well as the drip and drain trim. A solenoid valve for electric remote actuation and pressure switch for sensing & annunciation are optional.

RESETTING PROCEDURE FOR THE DELUGE VALVE

(i) Close the upstream side stop valve provided below the deluge valve

ii) Open both the drain valves/ drain plugs and close when the flow of water has ceased

(iii) Close the release device/replace the Sprinkler if release was through Sprinkler/QB Detector

iv) Inspect and release if required, or close the section of the detection system subjected to “Fire condition”

(v) In case of dry pilot detection system, open the air supply valve to build-up air pressure. Open the priming valve fully. Open the upstream side of the stop valve provided below the Deluge valve. No water should flow into the system.

vi) Where priming shut off valve is provided for resetting, in addition to above steps press the knob on actuator while resetting

CAUTION

(a) Do not close the priming valve, downstream and upstream stop valves, while the system is in service.

(b) The releasing device must be maintained in the open position, when actuated, to prevent the deluge valve from closure if anti shut off valve is not provided.

(c) While using a Deluge valve in the wet pilot system the height and the length of the wet pilot detection line is to be limited as shown in the wet pilot sprinkler height limitation graph.

(d) Do not connect the Sprinkler Alarm outlet drain line to close a common drain as it may create back pressure and Sprinkler Alarm may not function.

(e) Deluge valve must have support to absorb sudden opening or closing vibration shock to the piping.

(f) To avoid water damage, take precautions when opening the water supply main control valve, since water will flow from all open system valves.

(g) The responsibility of maintenance of the protection system and devices in proper operating condition lies with the owner of the system.

SYSTEM TESTING PROCEDURE

(i) Keep the upstream side of the stop valve partially open. To avoid water flow to system side close the system side stop valve. This valve is to be kept in open position after the testing is completed.

(ii) Let any of the release devices to trip. This will result in a sudden drop of water pressure in the deluge valve top chamber which in turn will open the deluge valve. Close the upstream side stop valve immediately.

(iii) Reset the valve as per the procedure given under heading “RESETTING PROCEDURE FOR THE DELUGE VALVE”

INSPECTION AND MAINTENANCE

Installed system piping network must be flushed properly before placing the Deluge valve in service.

A qualified and trained person must commission the system. After few initial successful tests, an authorized person must be trained to perform inspection and testing of the system. It is recommended to have regular inspection and test run of the system as per NFPA guideline or in accordance to the organisation having local jurisdiction.

(i) WARNING

Inspection and testing is to be carried out only by authorised and trained personnel. DO NOT TURN OFF the water supply or close any valve to make repair(s) or test the valve, without placing a roving fire patrol in the area covered by the system. Also inform the local security personnel and central alarm station, so that there is no false alarm signal.

It is recommended to carry out physical inspection of the system at least twice in a week. The inspection should verify that all the control valves are in proper position as per the system requirement and that there are no damages to any component.

The frequency of inspections must be increased in the presence of contaminated water supplies, corrosive/ scaling water supplies, and corrosive atmospheres.

(ii) NORMAL CONDITION

(a) All main valves are open and are sealed with tamper proof seal

(b) Drain valves must be kept closed

(c) No leak or drip is detected from the drip valve

(d) All the gauges except the system side water pressure gauge, should show the required pressure

(e) There should be no leakage in the system

(iii) NORMAL CONDITION TEST

(a) The system should be checked for normal condition at least once in a week

(b) Test the sprinkler alarm bell or electric alarm by turning the alarm test valve to the test position. The alarm should sound. This test should be carried out at least once in a week

(c) Depress the drip valve knob. Significant accumulation indicates a possible seat leakage

(d) Conduct the water flow test as per the procedure of system testing at least once a month

(iv) PERIODIC CHECK

Conduct the water flow test by actuating few of the release devices provided in the system. Clean all strainer(s) and priming line restriction. This test is to be carried out at least once in three months.

ABNORMAL CONDITION

(i) ALARM FAILS TO SOUND

(a) Check for any obstruction in the alarm test line, make certain that the sprinkler alarm is free to operate

(b) If an electric alarm is provided, check the electrical circuitry to the alarm

(ii) FALSE TRIPS

(a) Check for clogging in priming line, restriction orifice check valve, priming valve & strainer

(b) Leakage in the release system

(c) The deluge air panel orifice clogged or low supply pressure

(iii) LEAKAGE THROUGH THE DELUGE VALVE

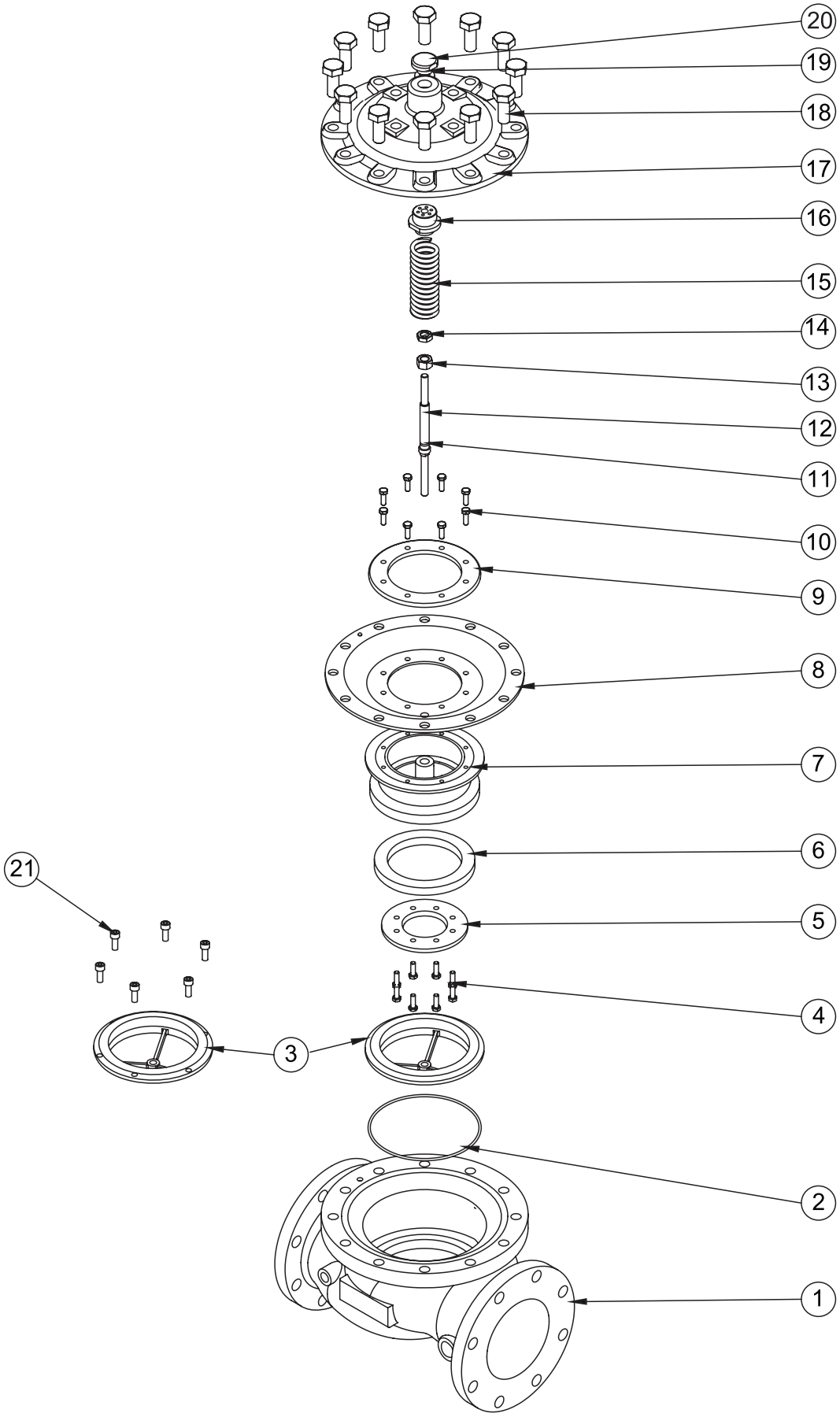
(a) Damaged deluge valve seat or obstruction on the seat face by foreign object

(b) Leakage in release system

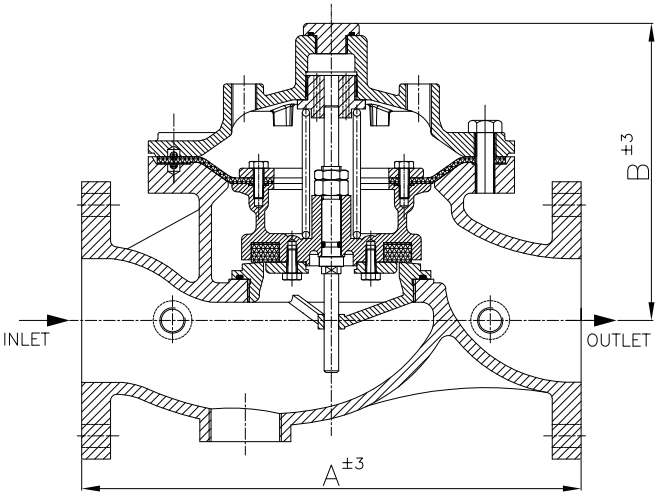
(c) Partly clogged priming line restriction orifice check valve

(d) Low air pressure on release system line or leakage in release system

NOMINAL PRESSURE LOSS VS FLOW



DELUGE VALVE MODEL - SD-DVH3



Dimension in mm. (Approximate)

Valve Nominal Size	'A'	'B'
200 NB	552	332
150 NB	462	282
100 NB	412	245
80 NB	372	232
50 NB	320	232

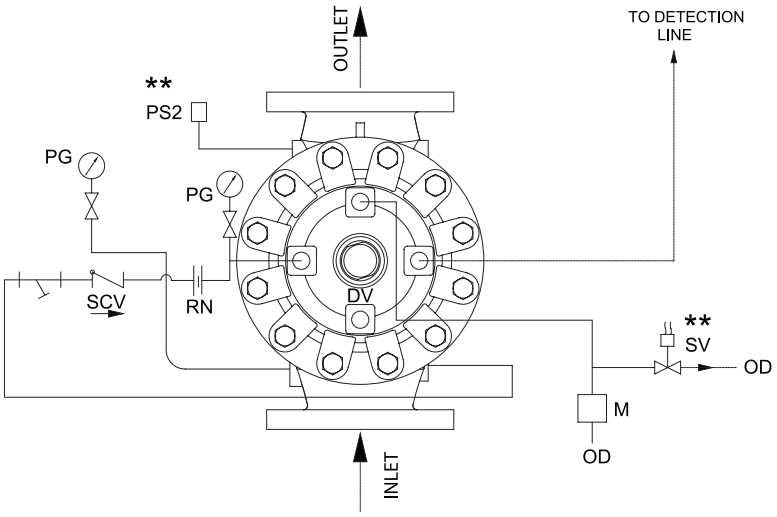
PART LIST

ITEM	PART NO.					DESCRIPTION	QTY.				MATERIAL SPECIFICATION
	200 NB	150 NB	100 NB	80 NB	50 NB		200 NB	150 NB	100 NB	80/50NB	
1	NA	NA	NA	NA	NA	Housing	1	1	1	1	Ductile Iron
2	H3202	H3602	H3102	H3802	H3502	"O" Ring	1	1	1	1	Neoprene Rubber
3	H3203	H3603	H3103	H3803	H3503	Seat	1	1	1	1	Stainless Steel*
4	H3204	H3604	H3104	---	---	Bolt	8	4	4	---	Stainless Steel
5	H3205	H3605	H3105	H3805	H3505	Rubber Clamp	1	1	1	1	Ductile Iron**
6	H3206	H3606	H3106	H3806	H3506	Rubber Seat	1	1	1	1	Neoprene Rubber
7	H3207	H3607	H3107	H3807	H3507	Clapper	1	1	1	1	Ductile Iron**
8	H3208	H3608	H3108	H3808	H3508	Diaphram	1	1	1	1	Neoprene Rubber
9	H3209	H3609	H3109	H3809	H3509	Clamp Ring	1	1	1	1	Ductile Iron**
10	H3210	H3610	H3110	H3810	H3510	Bolt	12	8	8	8	Stainless Steel
11	H3211	H3611	H3111	H3811	H3511	"O" Ring	1	1	1	1	Neoprene Rubber
12	H3212	H3612	H3112	H3812	H3512	Spindle	1	1	1	1	Stainless Steel
13	H3213	H3613	H3113	H3813	H3513	Nut	1	1	1	1	Stainless Steel
14	H3214	H3614	H3114	H3814	H3514	Lock Nut	1	1	1	1	Stainless Steel
15	H3215	H3615	H3115	H3815	H3515	Spring	1	1	1	1	Stainless Steel
16	H3216	H3616	H3116	H3816	H3516	Adaptor	1	1	1	1	Brass
17	NA	NA	NA	NA	NA	Cover	1	1	1	1	Ductile Iron
18	H3218	H3618	H3118	H3818	H3518	Bolt	16	12	12	12	Carbon Steel
19	H3219	H3619	H3119	H3819	H3519	"O" Ring	1	1	1	1	Neoprene Rubber
20	H3220	H3621	H3120	H3820	H3520	Plug	1	1	1	1	Steel Plated
21	H3221	---	---	---	---	Allen Bolt	6	---	---	---	Stainless Steel

NA - Part Replacement Not Available
* Stainless Steel is standard supply Bronze is optional supply.
** Ductile Iron is standard supply Bronze/Stainless Steel is optional supply.

SCHEMATIC FOR WET PILOT BASIC FOR VERTICAL MOUNTING

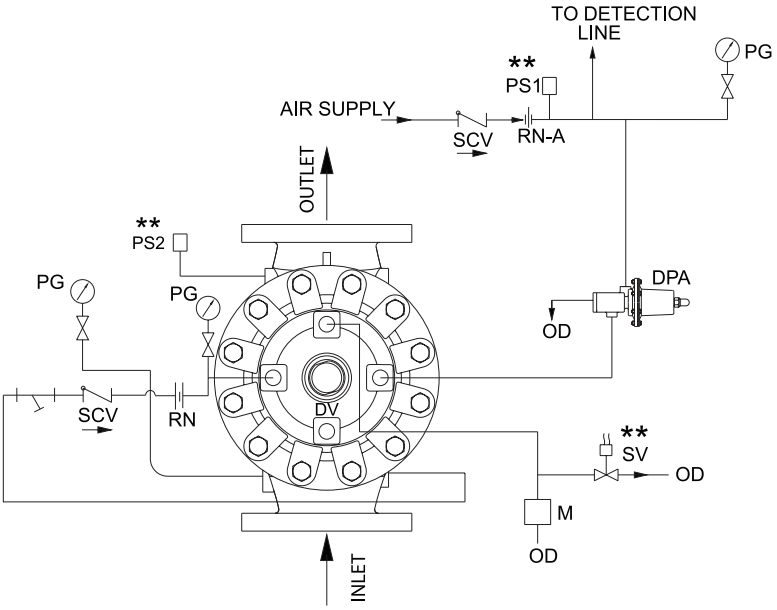
SH3-TW



SCHEMATIC 1

SCHEMATIC FOR DRY PILOT BASIC TRIM FOR VERTICAL MOUNTING

SH3-TD

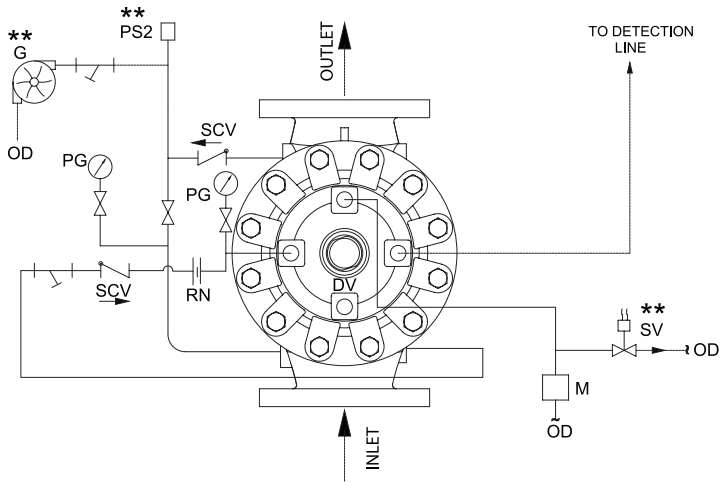


SCHEMATIC 2

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM WITH TEST AND ALARM TRIM FOR VERTICAL MOUNTING

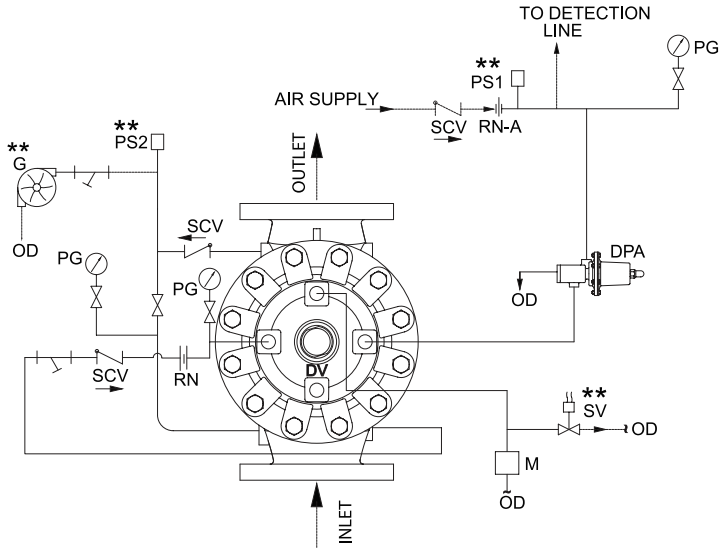
SH3-TWT



SCHEMATIC 3

SCHEMATIC FOR DRY PILOT BASIC TRIM WITH TEST AND ALARM TRIM FOR VERTICAL MOUNTING

SH3-TDT

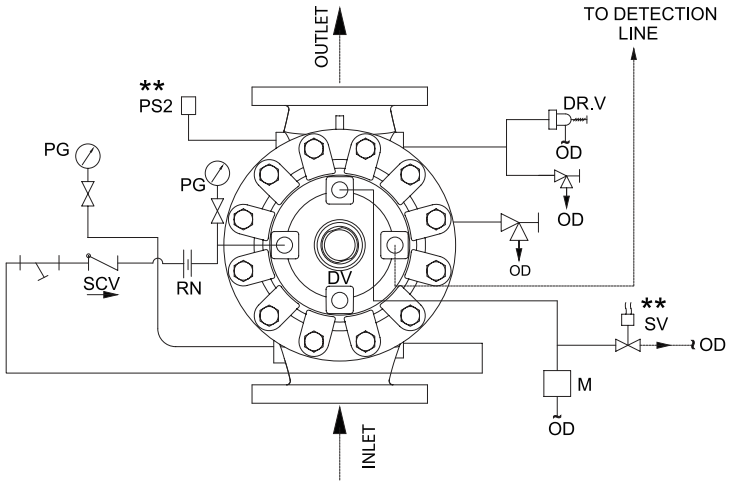


SCHEMATIC 4

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM WITH DRIP AND DRAIN TRIM FOR VERTICAL MOUNTING

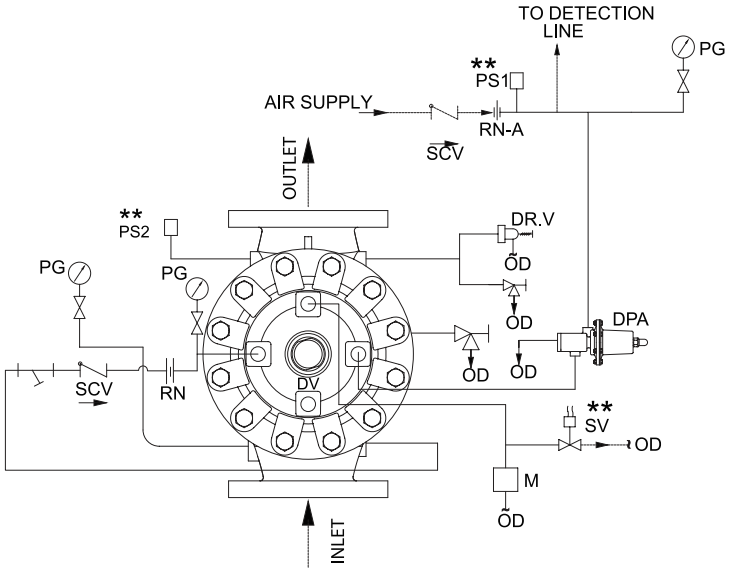
SH3-TWD



SCHEMATIC 5

SCHEMATIC FOR DRY PILOT BASIC TRIM WITH DRIP AND DRAIN TRIM FOR VERTICAL MOUNTING

SH3-TDD

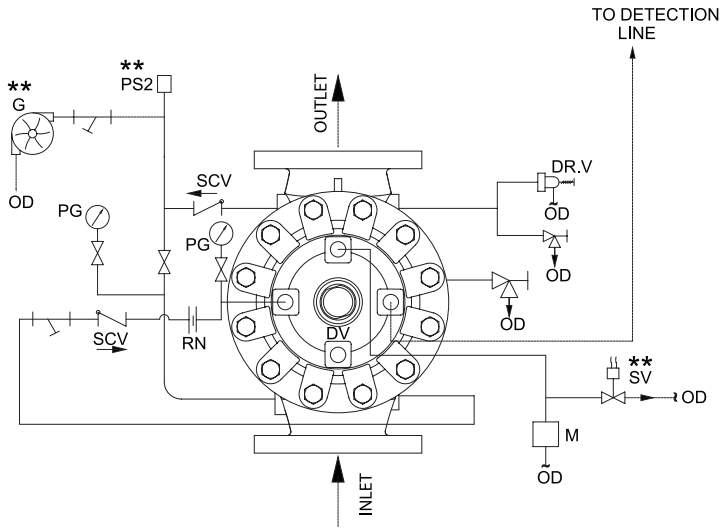


SCHEMATIC 6

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM WITH TEST AND ALARM TRIM & DRIP AND DRAIN TRIM FOR VERTICAL MOUNTING

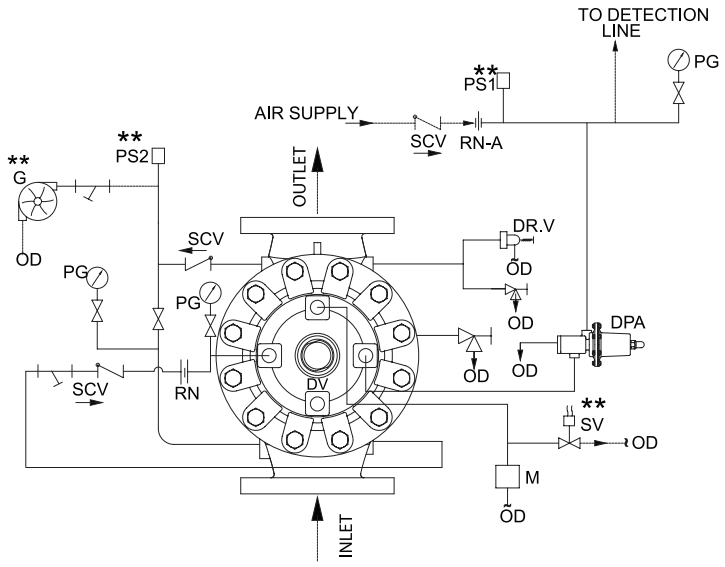
SH3-NTW



SCHEMATIC 7

SCHEMATIC FOR DRY PILOT BASIC TRIM WITH TEST AND ALARM TRIM & DRIP AND DRAIN TRIM FOR VERTICAL MOUNTING

SH3-NTD

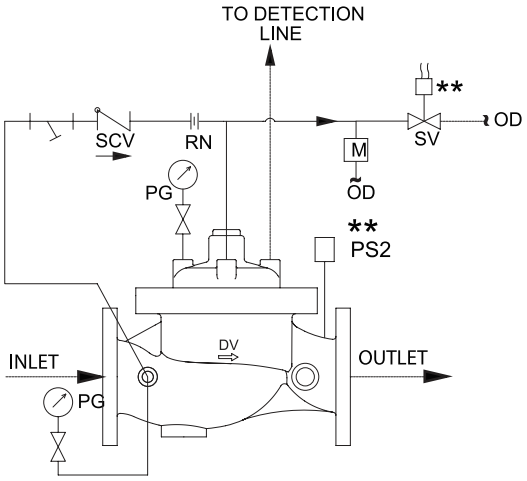


SCHEMATIC 8

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM FOR HORIZONTAL MOUNTING

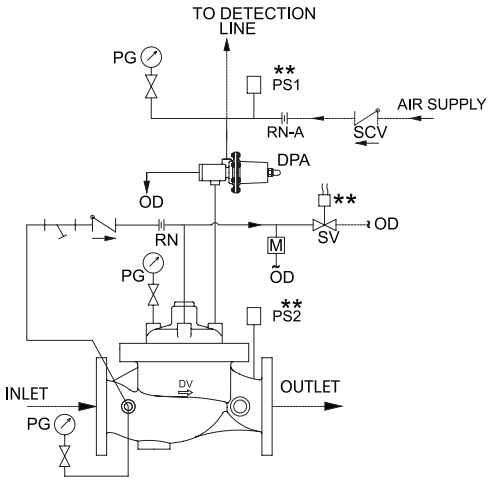
SH3-TW



SCHEMATIC 9

SCHEMATIC FOR DRY PILOT BASIC TRIM FOR HORIZONTAL MOUNTING

SH3-TD

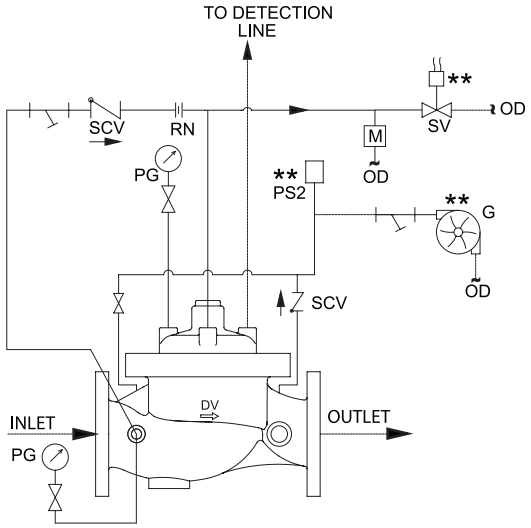


SCHEMATIC 10

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM WITH TEST AND ALARM TRIM FOR HORIZONTAL MOUNTING

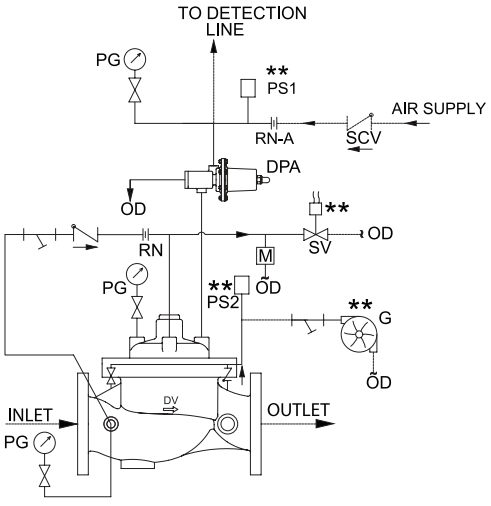
SH3-TWT



SCHEMATIC 11

SCHEMATIC FOR DRY PILOT BASIC TRIM WITH TEST AND ALARM TRIM FOR HORIZONTAL MOUNTING

SH3-TDT

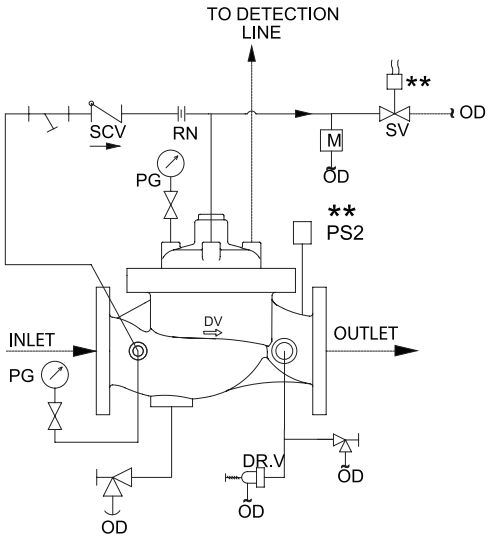


SCHEMATIC 12

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM WITH DRIP AND DRAIN TRIM FOR HORIZONTAL MOUNTING

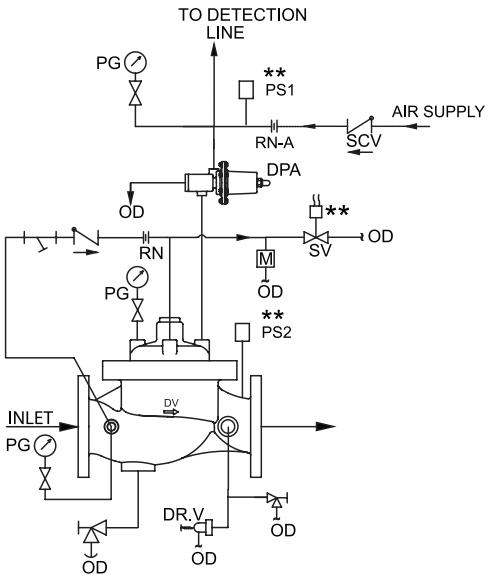
SH3-TWD



SCHEMATIC 13

SCHEMATIC FOR DRY PILOT BASIC TRIM WITH DRIP AND DRAIN TRIM FOR HORIZONTAL MOUNTING

SH3-TDD

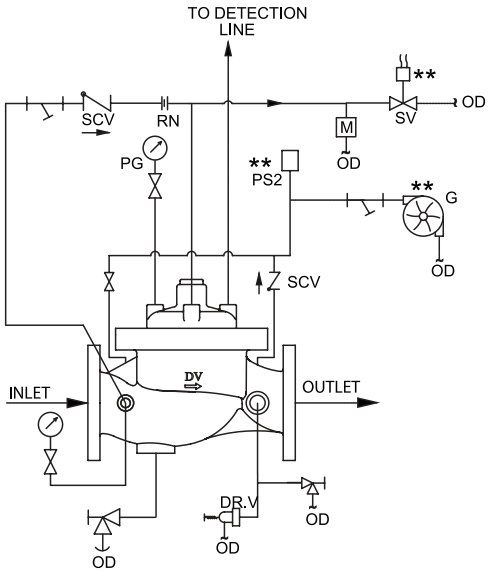


SCHEMATIC 14

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM WITH TEST AND ALARM TRIM & DRIP AND DRAIN TRIM FOR HORIZONTAL MOUNTING

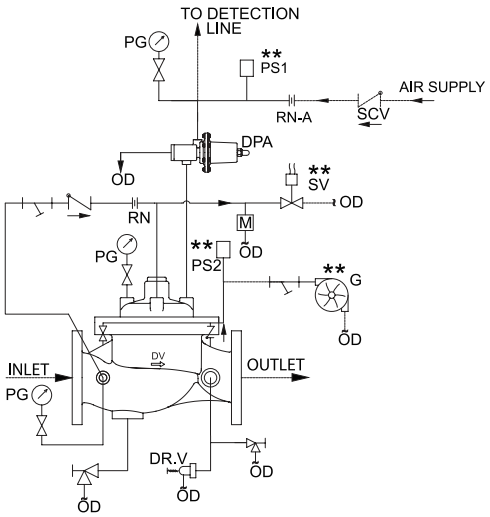
SH3-NTW



SCHEMATIC 15

SCHEMATIC FOR DRY PILOT BASIC TRIM WITH TEST AND ALARM TRIM & DRIP AND DRAIN TRIM FOR HORIZONTAL MOUNTING

SH3-NTD

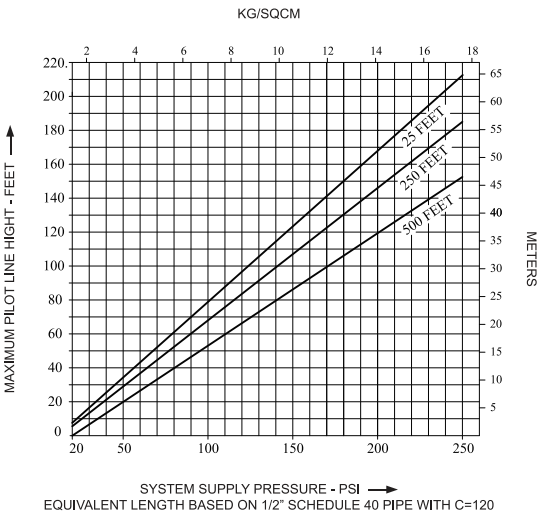


SCHEMATIC 16

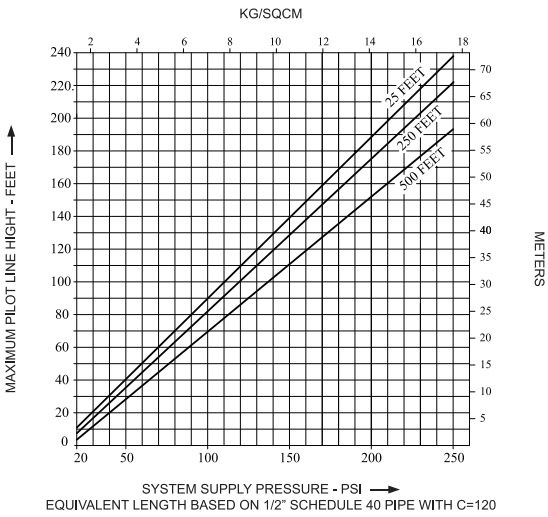
DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SPRINKLER HEIGHT LIMITATION

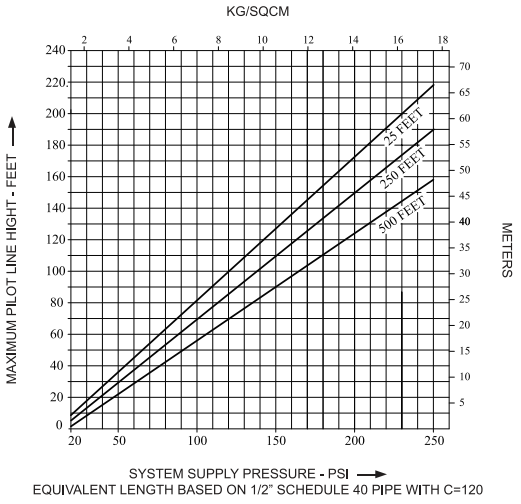
DV 200NB



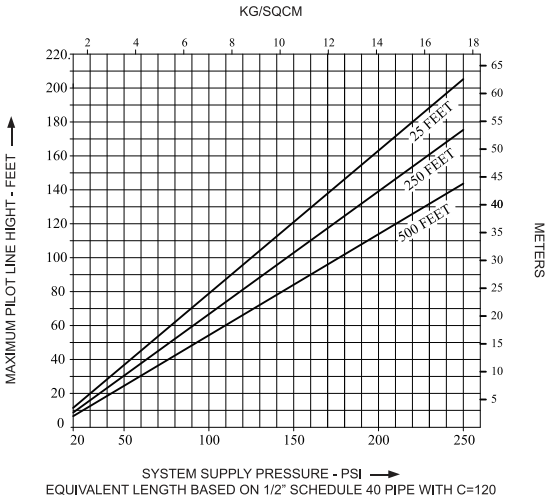
DV 150NB



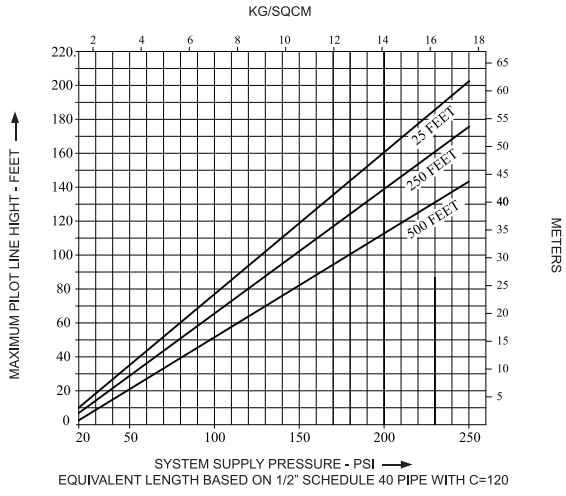
DV 100NB



DV 80NB

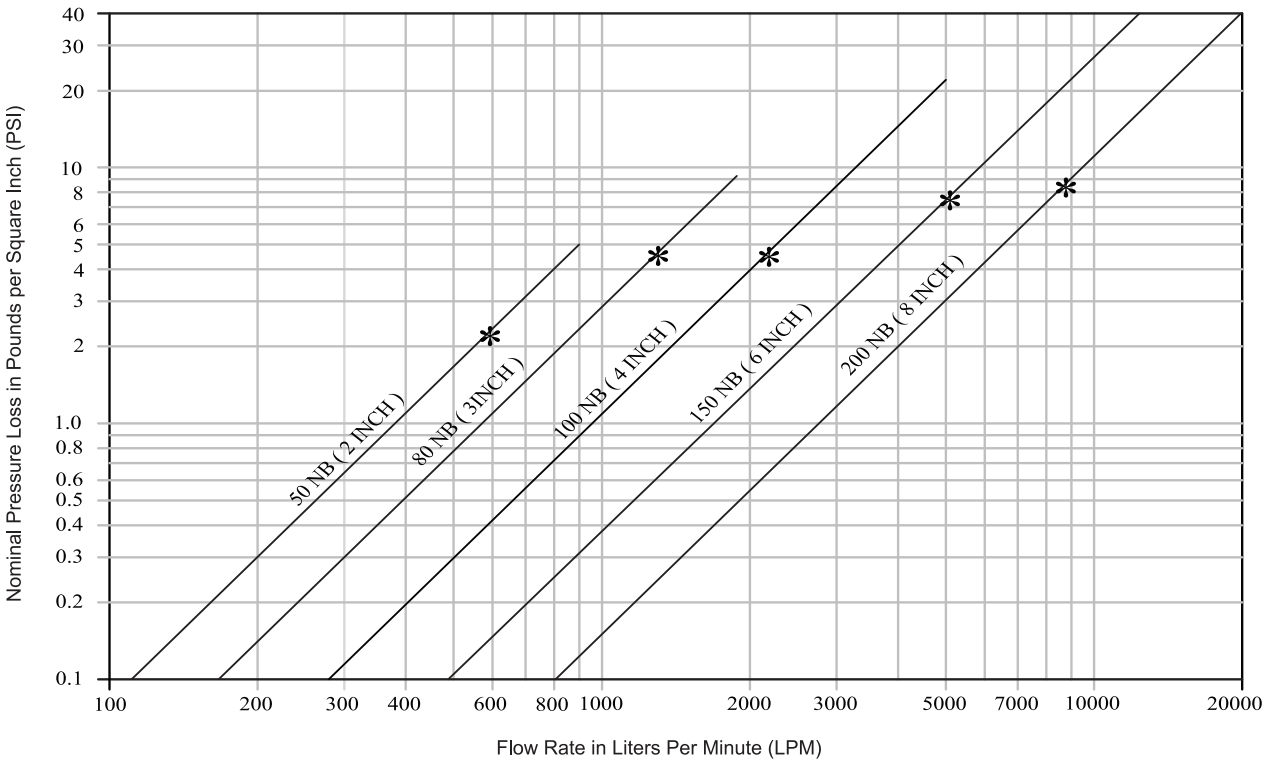


DV - 50NB



NOMINAL PRESSURE LOSS VS FLOW

(* Flow at 15 feet per second [4.57 meter per second])



* 2.3 PSI Pressure loss @ 15 feet per second (4.57 met/sec) velocity having flow of 594 LPM thru 50NB DV
* 4.7 PSI Pressure loss @ 15 feet per second (4.57 met/sec) velocity having flow of 1308 LPM thru 80NB DV
* 4.7 PSI Pressure loss @ 15 feet per second (4.57 met/sec) velocity having flow of 2255 LPM thru 100NB DV
* 7.5 PSI Pressure loss @ 15 feet per second (4.57 met/sec) velocity having flow of 5117 LPM thru 150NB DV
* 8.4 PSI Pressure loss @ 15 feet per second (4.57 met/sec) velocity having flow of 8854 LPM thru 200NB DV

DELUGE VALVE

MODEL: SD-DVH5

TECHNICAL DATA

NORMAL SIZE	200,150,100, 80, 50 NB
MATERIAL	Nickel Aluminium Bronze
SEVICE PRESSURE	1.4 to 17.5 Bar (20 to 250 PSI)
THREADED OPENING	BSPT
MOUNTING	Vertical or Horizontal
FACTORY HYDROSTATIC TEST PRESSURE	35 Kg/sq.cm. (500 PSI)
FLANGE CONNECTION	ANSI B 16.5 # 150 FF
WET PILOT SPRINKLER HEIGHT LIMITATION	As per graph in the catalogue
NET WEIGHT WIHTOUT TRIM	200 NB - 154 Kg 150 NB - 82 Kg 100 NB - 55 Kg 80 NB - 36 Kg 50 NB - 31 Kg
FINISH	RAL 3000
ORDERING INFORMATION	1. Size of Valve 2. Flange specification 3. Valve trim vertical or horizontal 4. Trim type

DESCRIPTION

Deluge Valve is known as a system control valve in a deluge system, used for fast application of water in a spray system. Deluge valve protects areas such as power transformer installation, storage tank, conveyor protection and other industrial application etc. With the addition of foaming agent deluge valve can be used to protect aircraft hanger and inflammable liquid fire.

VALVE OPERATION

SHIELD Deluge valve is a quick release, hydraulically operated diaphragm valve. It has three chambers, isolated from each other by the diaphragm operated clapper and seat seal. While in SET position, water pressure is transmitted through an external bypass check valve and restriction orifice from the system supply side to the top chamber, so that supply pressure in the top chamber act across the diaphragm operated clapper which holds the seat against the inlet supply pressure because of the differential pressure design. On detection of fire the top chamber is vented to atmosphere through the outlet port via opened actuation devices.

The top chamber pressure cannot be replenished through the restricted inlet port, and the upward force of the supply pressure lifts the clapper allowing the water flow to the system piping network and alarm devices.

TRIM DESCRIPTION

The trims are functionally termed as Dry Pilot Trim, Wet Pilot Trim, Electric Trim and Test and Alarm Trim as per the method of actuation of the deluge valve. The functionality of these trims is described below.

a) DRY PILOT TRIM (PNEUMATIC RELEASE)

Dry pilot operation uses a pilot line of closed Sprinkles/QB detectors containing air under pressure, located in the area to be protected. It requires regulated dry air supply with main supply point through restricted orifice. The air pressure to be maintained as specified in the catalogue of Dry Pilot Actuator. The pilot line is connected to air inlet side of actuator. The top chamber of the deluge valve is connected to water inlet side of actuator.

When there is an air pressure drop, or due to release of any of the release device on detection of fire, the diaphragm of actuator is lifted and allows the water to drain. This releases the water pressure in the top

chamber of the deluge valve, allowing the deluge valve to open and water to flow into the system piping & alarm devices. Recommended air supply pressure for dry pilot trim system is 3.5 kg/sq.cm.

User must install non return valve at air supply connection to deluge valve trim.

b) WET PILOT TRIM (HYDRAULIC RELEASE)

Wet pilot operation uses a pilot line of closed Sprinklers/ QB detectors containing pressurized water, supplied through the upstream side of the Deluge valve, through a restricted orifice. All the release lines are connected to a common release line. Due to release of any one of the release device, the water pressure in the top chamber of the Deluge valve drops and the Deluge valve opens.

c) ELECTRIC RELEASE TRIM

To actuate a Deluge valve electrically, a solenoid valve is provided to drain the water from the top chamber of the Deluge valve. A pressure switch is provided to activate an electric alarm, to shut down the desired equipment or to give “Tripped” indication of the Deluge valve. In addition to this a pressure switch can also monitor “Low air pressure” and “Fire condition” when used in dry pilot air line.

d) TEST AND ALARM TRIM

This trim is supplied with a test valve is provided to test the normal operation of the sprinkler alarm bell. The sprinkler alarm can be supplied additionally, which bells on actuation of the Deluge valve.

e) DRAIN AND DRIP TRIM

This consists of main and system drain valve in addition with drip valve.

TRIM TYPES

The trims are designated as following.
W =Wet Pilot trim. D = Dry Pilot Trim

a) Type SH5-TW and SH5-TD

This type of trim is basic trim required to operate the deluge valve. A solenoid valve for electric remote actuation and pressure switch for sensing & annunciation are optional.

b) Type SH5-TWD and SH5-TDD

This trim type is a combination of components of normal trim along with the drip and drain trim. A solenoid valve for electric remote actuation and pressure switch for sensing & annunciation are optional.

c) Type SH5-TWT and SH5-TDT

This trim type is a combination of components of normal trim along with the test and alarm trim. In dry pilot trim, an actuator is provided. A solenoid valve for electric remote actuation and pressure switch for sensing & announciation are optional.

TRIM MODEL NO.	TRIM DESCRIPTION	MOUNTING	SCHEMATIC NO.
SH5-TW	Basic Wet Pilot Trim	Vertical	Schematic 1
SH5-TD	Basic Dry Pilot Trim	Vertical	Schematic 2
SH5-TWT	Basic Wet Pilot Trim with Test and Alarm Trim	Vertical	Schematic 3
SH5-TDT	Basic Dry Pilot Trim with Test and Alarm Trim	Vertical	Schematic 4
SH5-TWD	Basic Wet Pilot Trim with Drip and Drain Trim	Vertical	Schematic 5
SH5-TDD	Basic Dry Pilot Trim with Drip and Drain Trim	Vertical	Schematic 6
SH5-NTW	Basic Wet Pilot Trim with Test and Alarm Trim & Drip and Drain Trim	Vertical	Schematic 7
SH5-NTD	Basic Dry Pilot Trim with Test and Alarm Trim & Drip and Drain Trim	Vertical	Schematic 8
SH5-TW	Basic Wet Pilot Trim	Horizontal	Schematic 9
SH5-TD	Basic Dry Pilot Trim	Horizontal	Schematic 10
SH5-TWT	Basic Wet Pilot Trim with Test and Alarm Trim	Horizontal	Schematic 11
SH5-TDT	Basic Dry Pilot Trim with Test and Alarm Trim	Horizontal	Schematic 12
SH5-TWD	Basic Wet Pilot Trim with Drip and Drain Trim	Horizontal	Schematic 13
SH5-TDD	Basic Dry Pilot Trim with Drip and Drain Trim	Horizontal	Schematic 14
SH5-NTW	Basic Wet Pilot Trim with Test and Alarm Trim & Drip and Drain Trim	Horizontal	Schematic 15
SH5-NTD	Basic Dry Pilot Trim with Test and Alarm Trim & Drip and Drain Trim	Horizontal	Schematic 16

d) Type SH5-NTW and SH5-NTD

This trim type is a combination of components of normal trim along with the test and alarm trim as well as the drip and drain trim. A solenoid valve for electric remote actuation and pressure switch for sensing & annunciation are optional.

RESETTING PROCEDURE FOR THE DELUGE VALVE

(i) Close the upstream side stop valve provided below the deluge valve

ii) Open both the drain valves/ drain plugs and close when the flow of water has ceased

(iii) Close the release device/replace the Sprinkler if release was through Sprinkler/QB Detector

iv) Inspect and release if required, or close the section of the detection system subjected to “Fire condition”

(v) In case of dry pilot detection system, open the air supply valve to build-up air pressure. Open the priming valve fully. Open the upstream side of the stop valve provided below the Deluge valve. No water should flow into the system.

vi) Where priming shut off valve (optional) is provided for resetting, then the water need to be drained from upstream side of valve.

NOTE :

The valve can be reset without undergoing above procedure, by just closing/replacing the release device as valve is auto reset type. The reset time may be long or cause vibration while closing depending on back pressure at the outlet of the valve.

CAUTION

(a) Do not close the priming valve, downstream and upstream stop valves, while the system is in service.

(b) The releasing device must be maintained in the open position, when actuated, to prevent the deluge valve from closure if anti shut off valve is not provided.

(c) While using a Deluge valve in the wet pilot system the height and the length of the wet pilot detection line is to be limited as shown in the wet pilot sprinkler height limitation graph.

(d) Do not connect the Sprinkler Alarm outlet drain line to close a common drain as it may create back pressure and Sprinkler Alarm may not function.

(e) Deluge valve must have support to absorb sudden opening or closing vibration shock to the piping.
(f) To avoid water damage, take precautions when opening the water supply main control valve, since water will flow from all open system valves.

(g) The responsibility of maintenance of the protection system and devices in proper operating condition lies with the owner of the system.

(h) Deluge Valve & its trim shall be maintained at a minimum temperature of 4°C, Heat tracing is not permitted.

(i) Deluge Valve must be used in presssurised system

SYSTEM TESTING PROCEDURE

(i) Keep the upstream side of the stop valve partially open. To avoid water flow to system side close the system side stop valve. This valve is to be kept in open position after the testing is completed.

(ii) Let any of the release devices to trip. This will result in a sudden drop of water pressure in the deluge valve top chamber which in turn will open the deluge valve. Close the upstream side stop valve immediately.

(iii) Reset the valve as per the procedure given under heading “RESETTING PROCEDURE FOR THE DELUGE VALVE”

INSPECTION AND MAINTENANCE

Installed system piping network must be flushed properly before placing the Deluge valve in service.

A qualified and trained person must commission the system. After few initial successful tests, an authorized person must be trained to perform inspection and testing of the system. It is recommended to have regular inspection and test run of the system as per NFPA guideline or in accordance to the organisation having local jurisdiction.

(i) WARNING

Inspection and testing is to be carried out only by authorised and trained personnel. DO NOT TURN OFF the water supply or close any valve to make repair(s) or test the valve, without placing a roving fire patrol in the area covered by the system. Also inform the local security personnel and central alarm station, so that there is no false alarm signal.

It is recommended to carry out physical inspection of the system at least twice in a week. The inspection should verify that all the control valves are in proper position as per the system requirement and that there are no damages to any component.

The frequency of inspections must be increased in the presence of contaminated water supplies, corrosive/ scaling water supplies, and corrosive atmospheres.

(ii) NORMAL CONDITION

(a) All main valves are open and are sealed with tamper proof seal

(b) Drain valves must be kept closed

(c) No leak or drip is detected from the drip valve

(d) All the gauges except the system side water pressure gauge, should show the required pressure

(e) There should be no leakage in the system

(iii) NORMAL CONDITION TEST

(a) The system should be checked for normal condition at least once in a week

(b) Test the sprinkler alarm bell or electric alarm by turning the alarm test valve to the test position. The alarm should sound. This test should be carried out at least once in a week

(c) Depress the drip valve knob. Significant accumulation indicates a possible seat leakage

(d) Conduct the water flow test as per the procedure of system testing at least once a month

(iv) PERIODIC CHECK

Conduct the water flow test by actuating few of the release devices provided in the system. Clean all strainer(s) and priming line restriction. This test is to be carried out at least once in three months.

ABNORMAL CONDITION

(i) ALARM FAILS TO SOUND

(a) Check for any obstruction in the alarm test line, make certain that the sprinkler alarm is free to operate

(b) If an electric alarm is provided, check the electrical circuitry to the alarm

(ii) FALSE TRIPS

(a) Check for clogging in priming line, restriction orifice check valve, priming valve & strainer

(b) Leakage in the release system

(c) The deluge air panel orifice clogged or low supply pressure

(iii) LEAKAGE THROUGH THE DELUGE VALVE

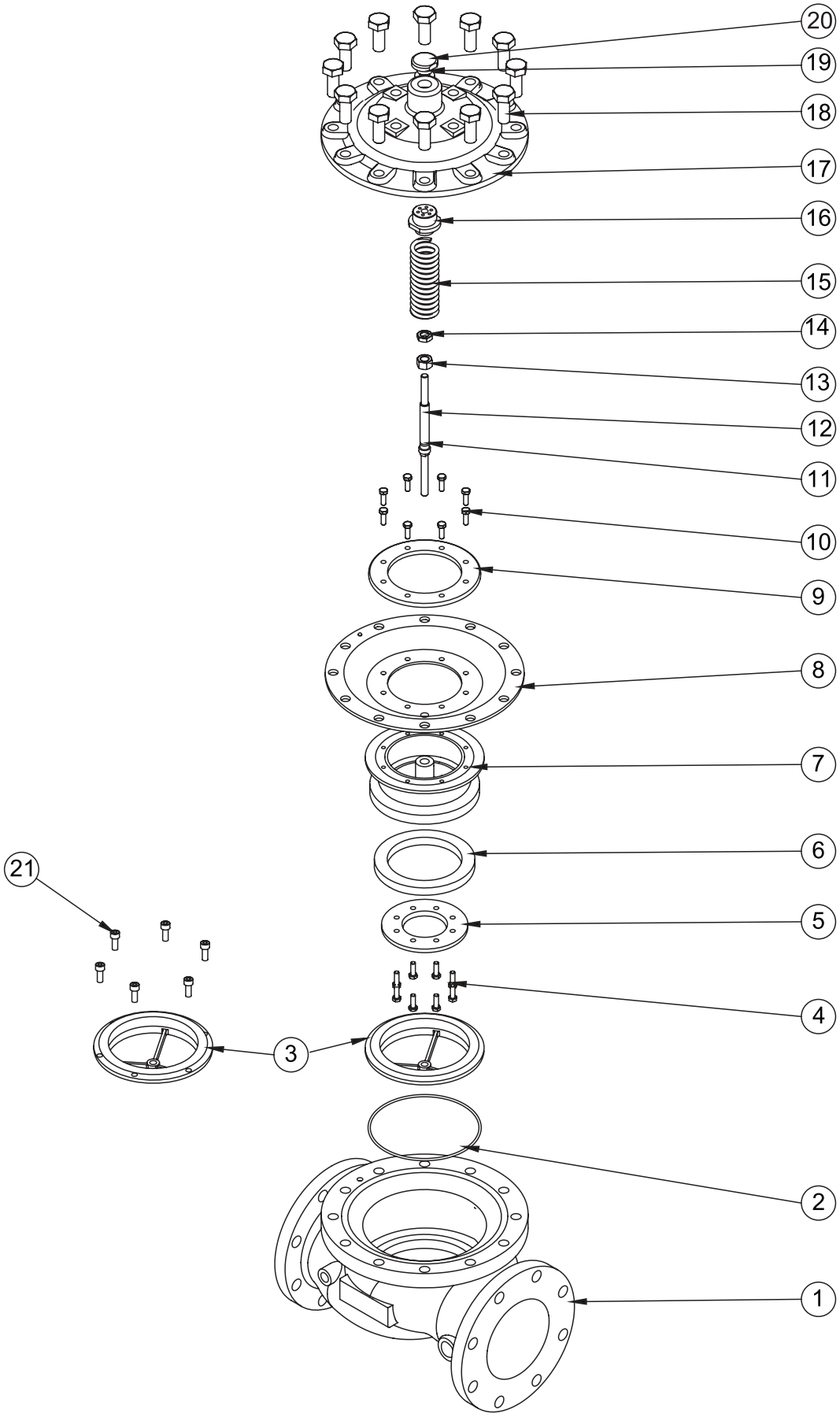
(a) Damaged deluge valve seat or obstruction on the seat face by foreign object

(b) Leakage in release system

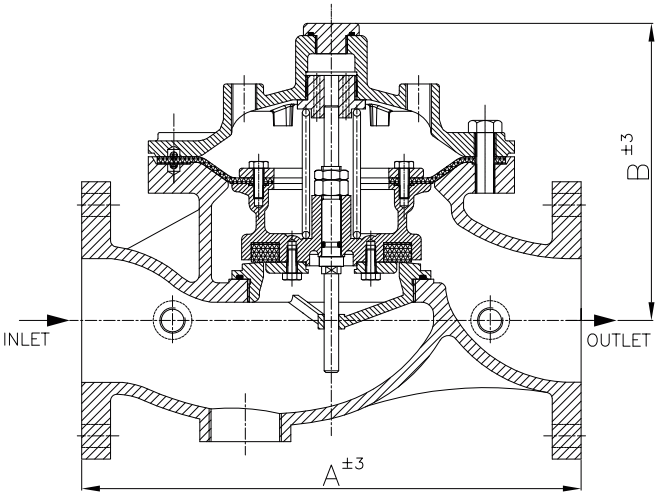
(c) Partly clogged priming line restriction orifice check valve

(d) Low air pressure on release system line or leakage in release system

NOMINAL PRESSURE LOSS VS FLOW



DELUGE VALVE MODEL - SD-DVH5



Dimension in mm. (Approximate)

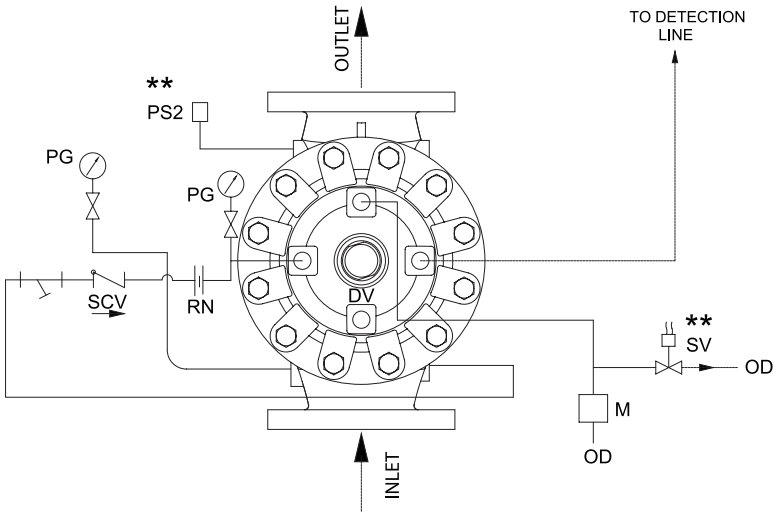
Valve Nominal Size	'A'	'B'
200 NB	552	332
150 NB	462	282
100 NB	412	245
80 NB	372	232
50 NB	320	232

PART LIST

ITEM	PART NO.					DESCRIPTION	QTY.				MATERIAL SPECIFICATION
	200 NB	150 NB	100 NB	80 NB	50 NB		200 NB	150 NB	100 NB	80/50NB	
1	H5201	H5601	H5101	H5801	H5501	Housing	1	1	1	1	Aluminium Bronze BS1400-AB2
2	H5202	H5602	H5102	H5802	H5502	"O" Ring	1	1	1	1	Neoprene Rubber
3	H5203	H5603	H5103	H3803	H5503	Seat	1	1	1	1	Aluminium Bronze BS1400-AB2
4	H5204	H5604	H5104	---	---	Bolt	8	4	4	---	Monel 400
5	H5205	H5605	H5105	H5805	H5505	Rubber Clamp	1	1	1	1	Aluminium Bronze BS1400-AB2
6	H5206	H5606	H5106	H5806	H5506	Rubber Seat	1	1	1	1	Neoprene Rubber
7	H5207	H5607	H5107	H5807	H5507	Clapper	1	1	1	1	Aluminium Bronze BS1400-AB2
8	H5208	H5608	H5108	H5808	H5508	Diaphram	1	1	1	1	Neoprene Rubber
9	H5209	H5609	H5109	H5809	H5509	Clamp Ring	1	1	1	1	Aluminium Bronze BS1400-AB2
10	H5210	H5610	H5110	H5810	H5510	Bolt	12	8	8	8	Monel 400
11	H5211	H5611	H5111	H5811	H5511	"O" Ring	1	1	1	1	Neoprene Rubber
12	H5212	H5612	H5112	H5812	H5512	Spindle	1	1	1	1	Monel 400
13	H5213	H5613	H5113	H5813	H5513	Nut	1	1	1	1	Monel 400
14	H5214	H5614	H5114	H5814	H5514	Lock Nut	1	1	1	1	Monel 400
15	H5215	H5615	H5115	H5815	H5515	Spring	1	1	1	1	Inconel-X-750
16	H5216	H5616	H5116	H5816	H5516	Adaptor	1	1	1	1	Aluminium Bronze BS1400-AB2
17	H5217	H5617	H5117	H5817	H5517	Cover	1	1	1	1	Aluminium Bronze BS1400-AB2
18	H5218	H5618	H5118	H5818	H5518	Bolt	16	12	12	12	Stainless Steel
19	H5219	H5619	H5119	H5819	H5519	"O" Ring	1	1	1	1	Neoprene Rubber
20	H5220	H5621	H5120	H5820	H5520	Plug	1	1	1	1	Aluminium Bronze BS1400-AB2
21	H5221	---	---	---	---	Allen Bolt	6	---	---	---	Monel 400

SCHEMATIC FOR WET PILOT BASIC TRIM FOR VERTICAL MOUNTING

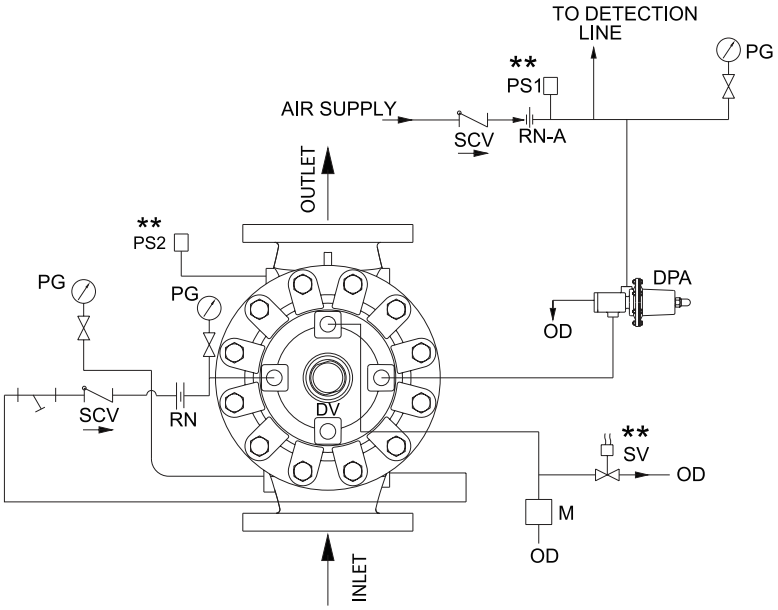
SH5-TW



SCHEMATIC 1

SCHEMATIC FOR DRY PILOT BASIC TRIM FOR VERTICAL MOUNTING

SH5-TD

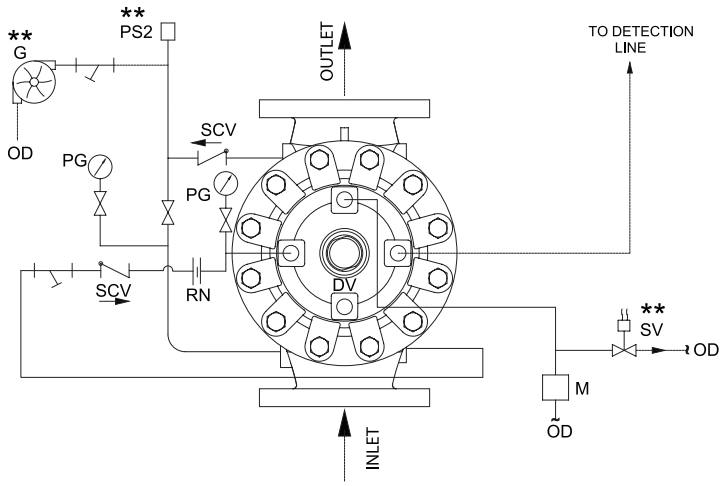


SCHEMATIC 2

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM WITH TEST AND ALARM TRIM FOR VERTICAL MOUNTING

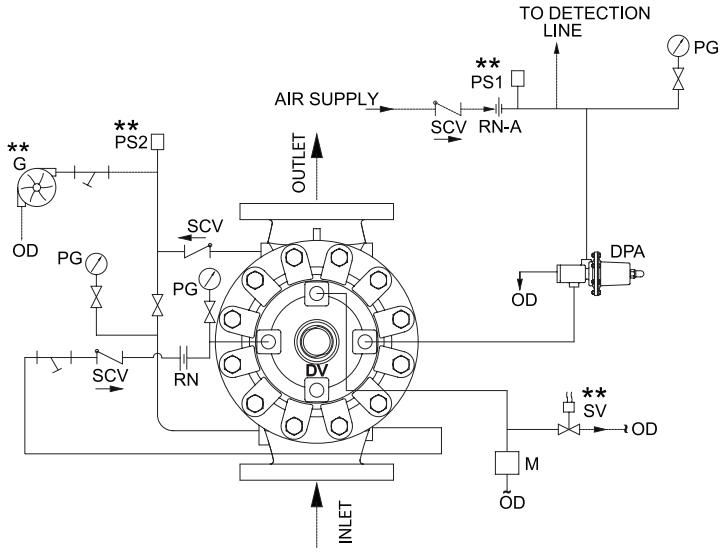
SH5-TWT



SCHEMATIC 3

SCHEMATIC FOR DRY PILOT BASIC TRIM WITH TEST AND ALARM TRIM FOR VERTICAL MOUNTING

SH5-TDT

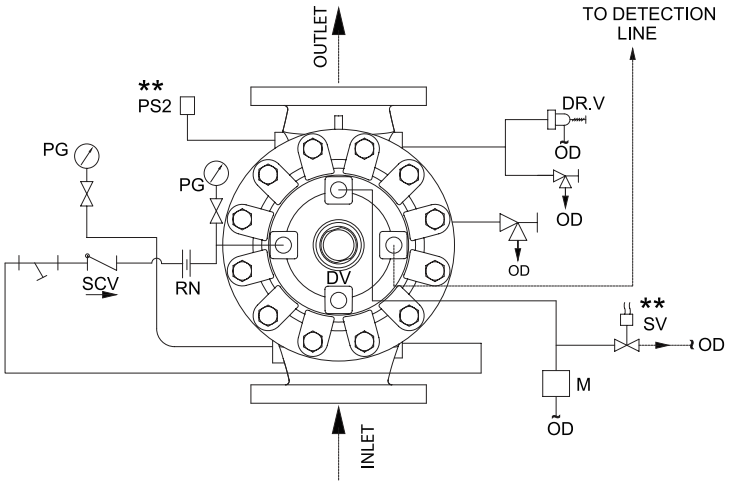


SCHEMATIC 4

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM WITH DRIP AND DRAIN TRIM FOR VERTICAL MOUNTING

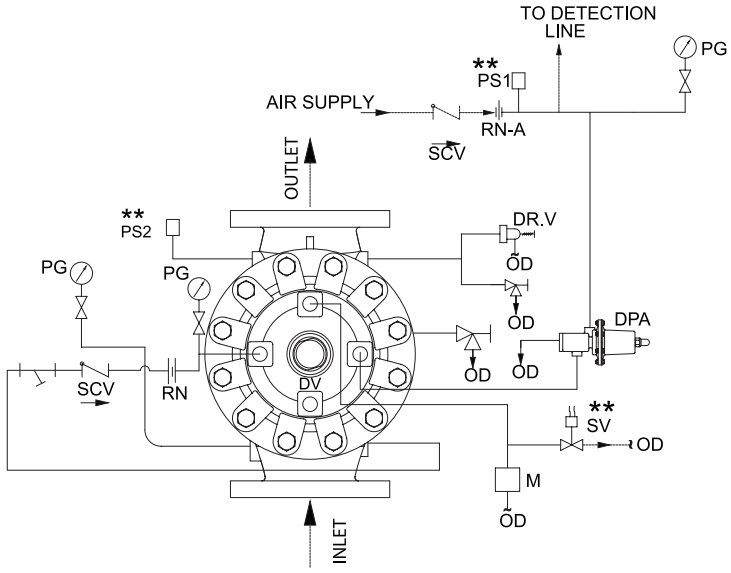
SH5-TWD



SCHEMATIC 5

SCHEMATIC FOR DRY PILOT BASIC TRIM WITH DRIP AND DRAIN TRIM FOR VERTICAL MOUNTING

SH5-TDD

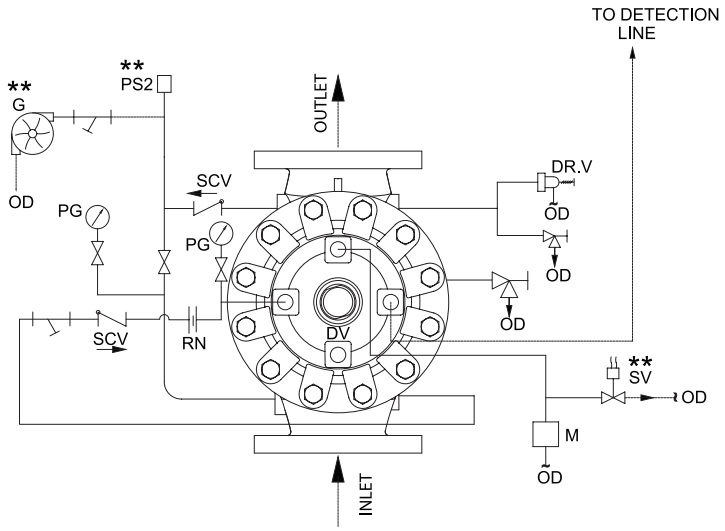


SCHEMATIC 6

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM WITH TEST AND ALARM TRIM & DRIP AND DRAIN TRIM FOR VERTICAL MOUNTING

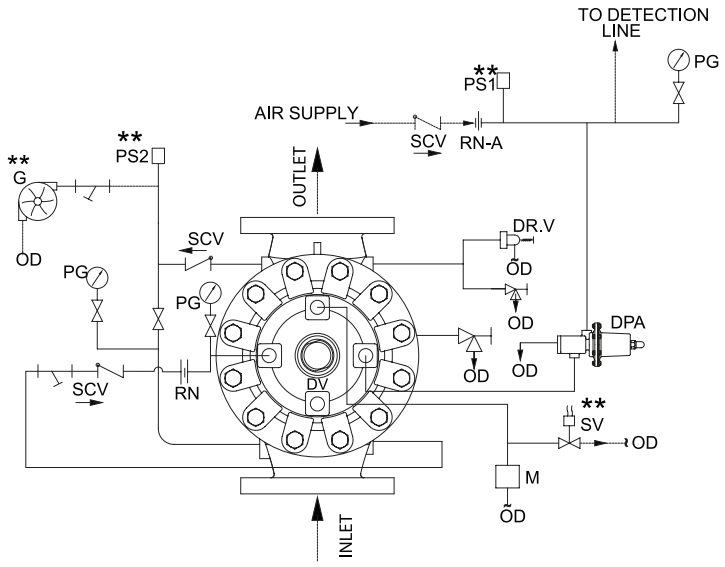
SH5-NTW



SCHEMATIC 7

SCHEMATIC FOR DRY PILOT BASIC TRIM WITH TEST AND ALARM TRIM & DRIP AND DRAIN TRIM FOR VERTICAL MOUNTING

SH5-NTD

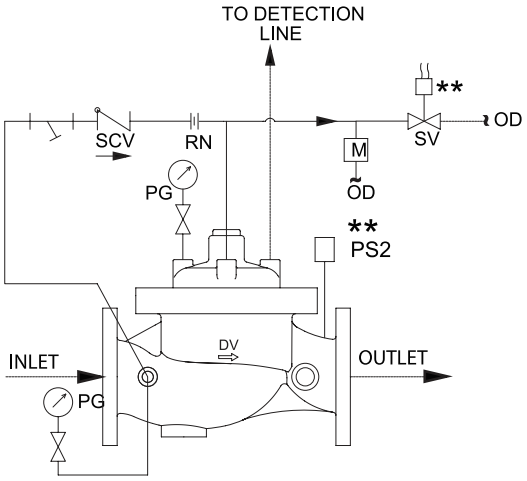


SCHEMATIC 8

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM FOR HORIZONTAL MOUNTING

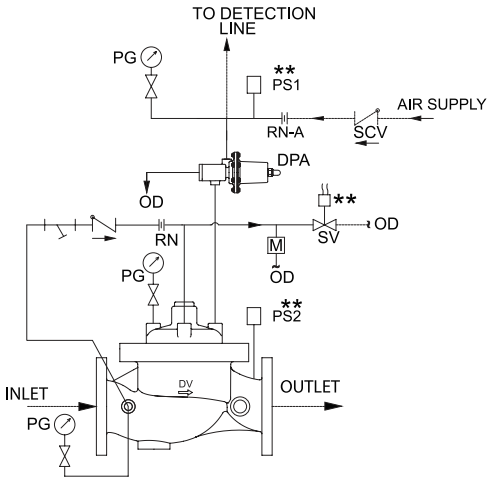
SH5-TW



SCHEMATIC 9

SCHEMATIC FOR DRY PILOT BASIC TRIM FOR HORIZONTAL MOUNTING

SH5-TD

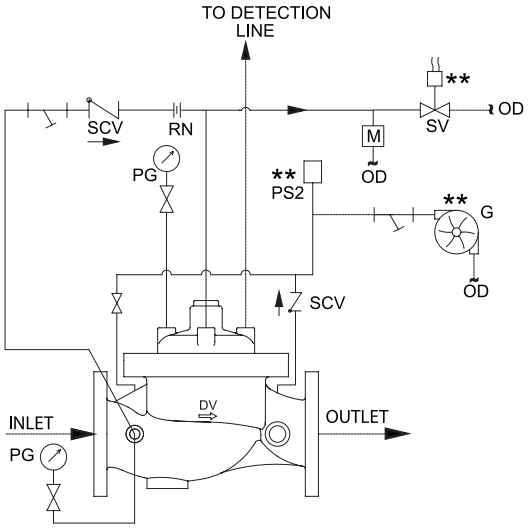


SCHEMATIC 10

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM WITH TEST AND ALARM TRIM FOR HORIZONTAL MOUNTING

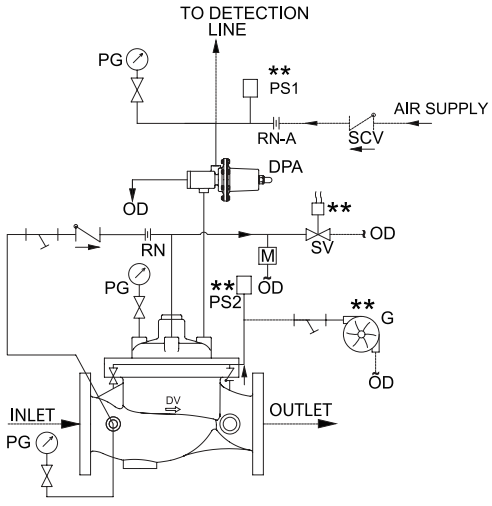
SH5-TWT



SCHEMATIC 11

SCHEMATIC FOR DRY PILOT BASIC TRIM WITH TEST AND ALARM TRIM FOR HORIZONTAL MOUNTING

SH5-TDT

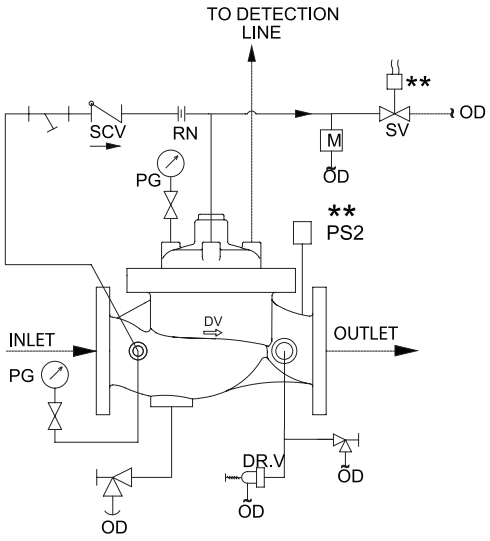


SCHEMATIC 12

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM WITH DRIP AND DRAIN TRIM FOR HORIZONTAL MOUNTING

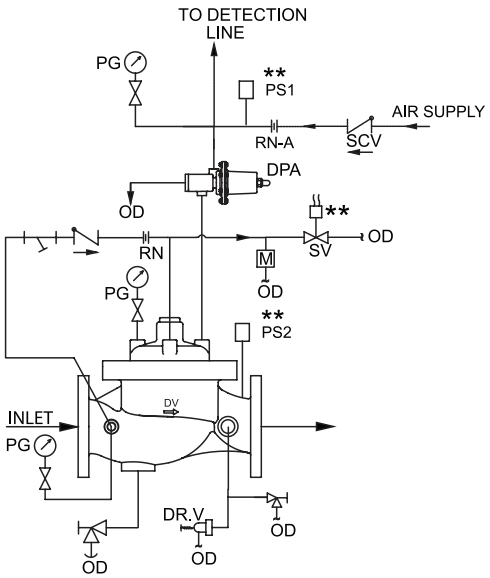
SH5-TWD



SCHEMATIC 13

SCHEMATIC FOR DRY PILOT BASIC TRIM WITH DRIP AND DRAIN TRIM FOR HORIZONTAL MOUNTING

SH5-TDD

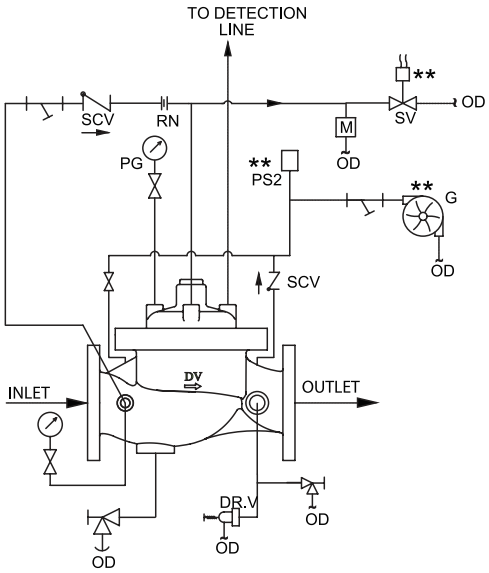


SCHEMATIC 14

DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SCHEMATIC FOR WET PILOT BASIC TRIM WITH TEST AND ALARM TRIM & DRIP AND DRAIN TRIM FOR HORIZONTAL MOUNTING

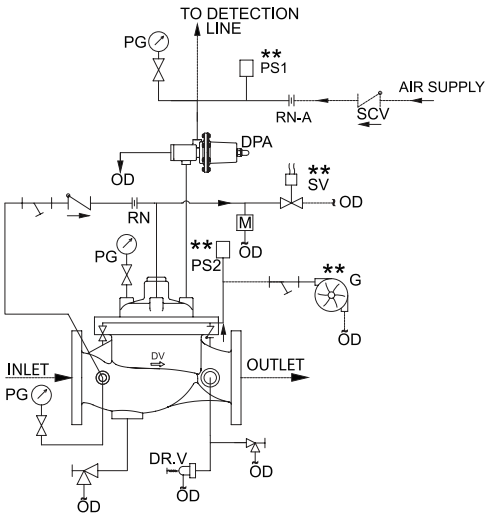
SH5-NTW



SCHEMATIC 15

SCHEMATIC FOR DRY PILOT BASIC TRIM WITH TEST AND ALARM TRIM & DRIP AND DRAIN TRIM FOR HORIZONTAL MOUNTING

SH5-NTD

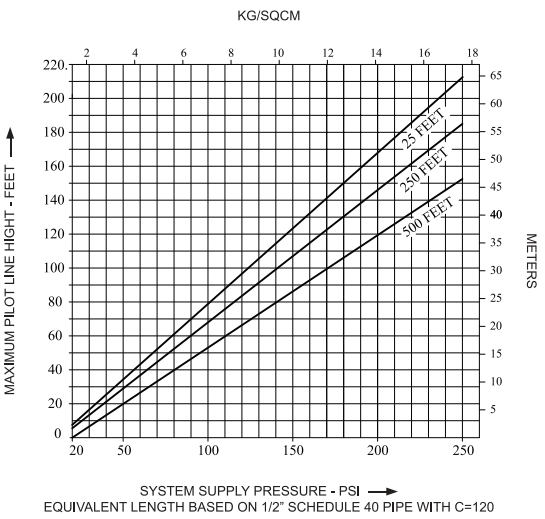


SCHEMATIC 16

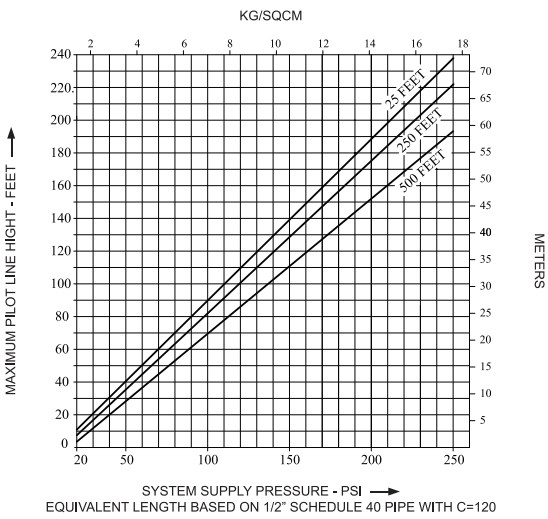
DV	Deluge Valve		Valve		Swing Check Valve
SV	Solenoid Valve	---	By User		Angle Valve
G	Sprinkler Alarm (WMG)	**	Optional	DPA	Dry Pilot Actuator
M	Emergency Release Station		Strainer	RN-A	Restriction Nozzle (Air Line)
RN	Restriction Nozzle (Priming Line)	OD	Open Drain	SCV	Swing Check Valve
PS1	Low Air Alarm Pressure Switch	PG	Pressure Guage		
PS2	Waterflow Pressure Alarm Switch				

SPRINKLER HEIGHT LIMITATION

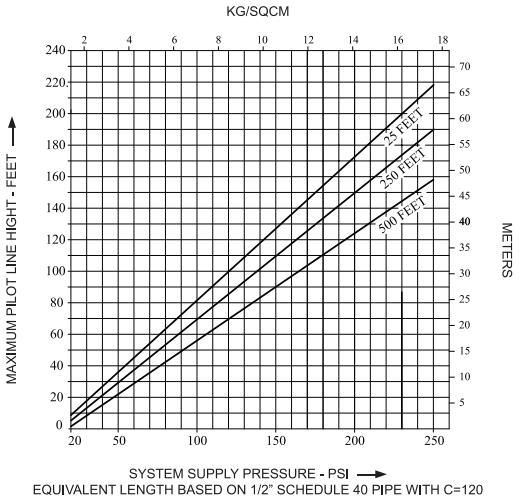
DV 200NB



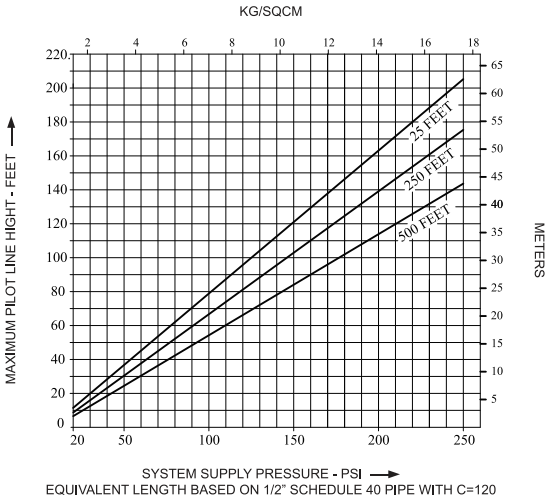
DV 150NB



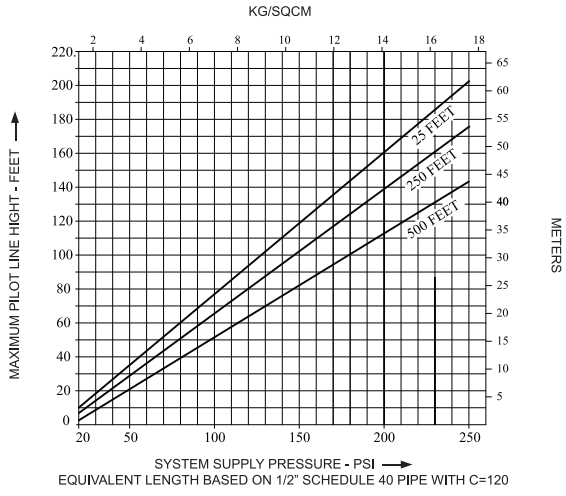
DV 100NB



DV 80NB

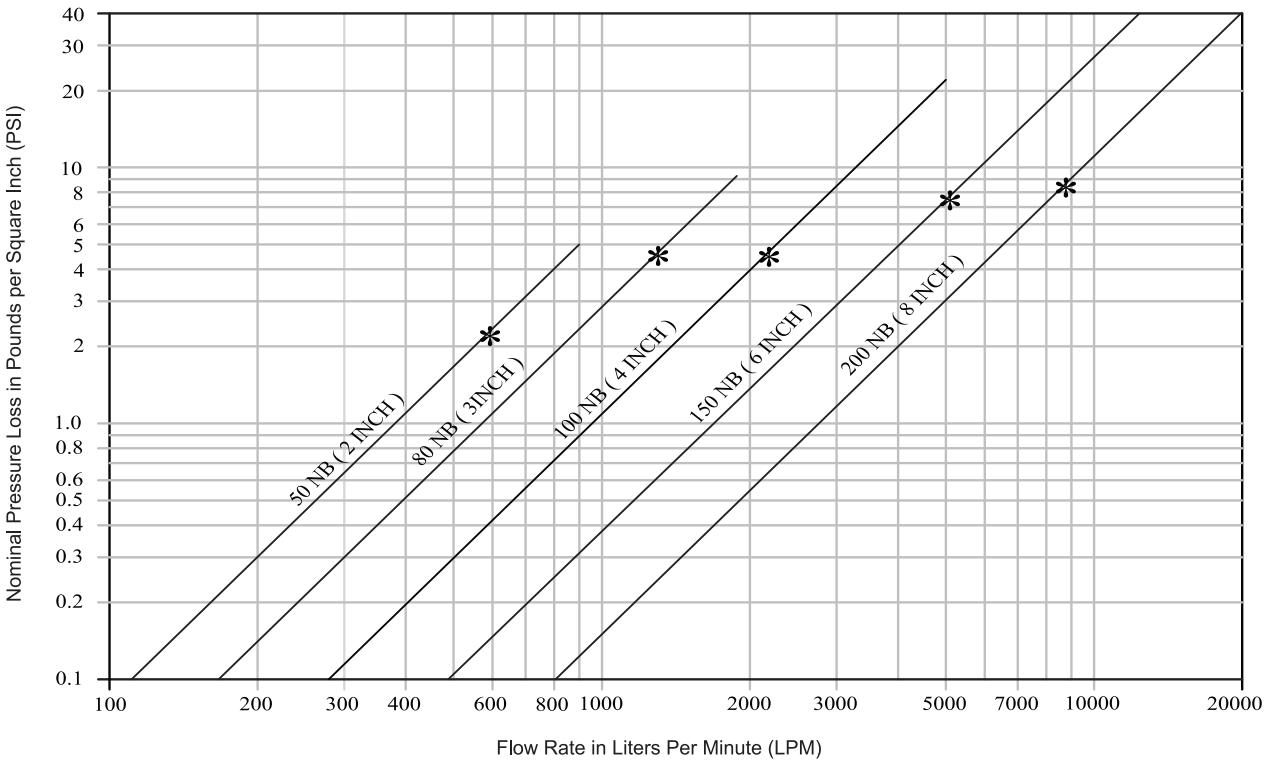


DV - 50NB



NOMINAL PRESSURE LOSS VS FLOW

(* Flow at 15 feet per second [4.57 meter per second])



* 2.3 PSI Pressure loss @ 15 feet per second (4.57 met/sec) velocity having flow of 594 LPM thru 50NB DV
* 4.7 PSI Pressure loss @ 15 feet per second (4.57 met/sec) velocity having flow of 1308 LPM thru 80NB DV
* 4.7 PSI Pressure loss @ 15 feet per second (4.57 met/sec) velocity having flow of 2255 LPM thru 100NB DV
* 7.5 PSI Pressure loss @ 15 feet per second (4.57 met/sec) velocity having flow of 5117 LPM thru 150NB DV
* 8.4 PSI Pressure loss @ 15 feet per second (4.57 met/sec) velocity having flow of 8854 LPM thru 200NB DV

INTEGRATED DELUGE SKID

MODEL: SD-DSK-AD, SD-DSK-AW
SD-DPACK-AD, SD-DPACK-AW
SD-DVCH2, SD-DVCH3

TECHNICAL DATA

NORMAL SIZE	200,150,100, 80, 50 NB
ACTUATION	Electric, Dry Pilot or Wet Pilot and Manual Release
TRIM	Galvanized steel with brass valves as standard supply. Optional Stainless Steel
FINISH	RAL 3000 Painted
ORDERING INFORMATION	Size, Deluge valve model, Trim Type Mounting (Vertical or Horizontal)

DESCRIPTION

Models SD-DPACK and SD-DSK are integrated deluge skid systems. SD-DSK is pre-assembled open skid mounted on frame, while SD-DPACK is cabinet mounted. The entire package is pre wired and all water connections have flanged ends to provide minimal installation time. The package includes inlet, outlet, bypass valves, pressure switches, solenoid valve, common drain and flanged connection for detection network.

FEATURES

1. Professionally pre-assembled and factory tested
2. UL Listed modular package
3. Quick and convenient installation
4. Internally wired
5. Cost effective and reduced installation time
6. Compact, asthetically pleasing appearance

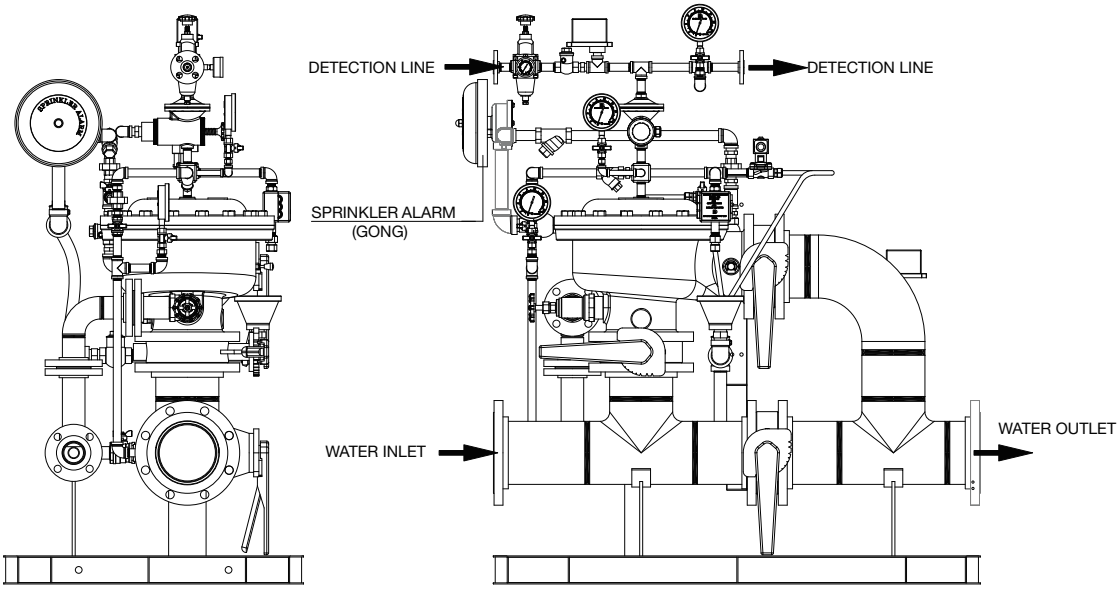
Note: Support the external piping firmly to prevent strain and stresses on the piping of the skid/cabinet and its components.

INSTALLATION

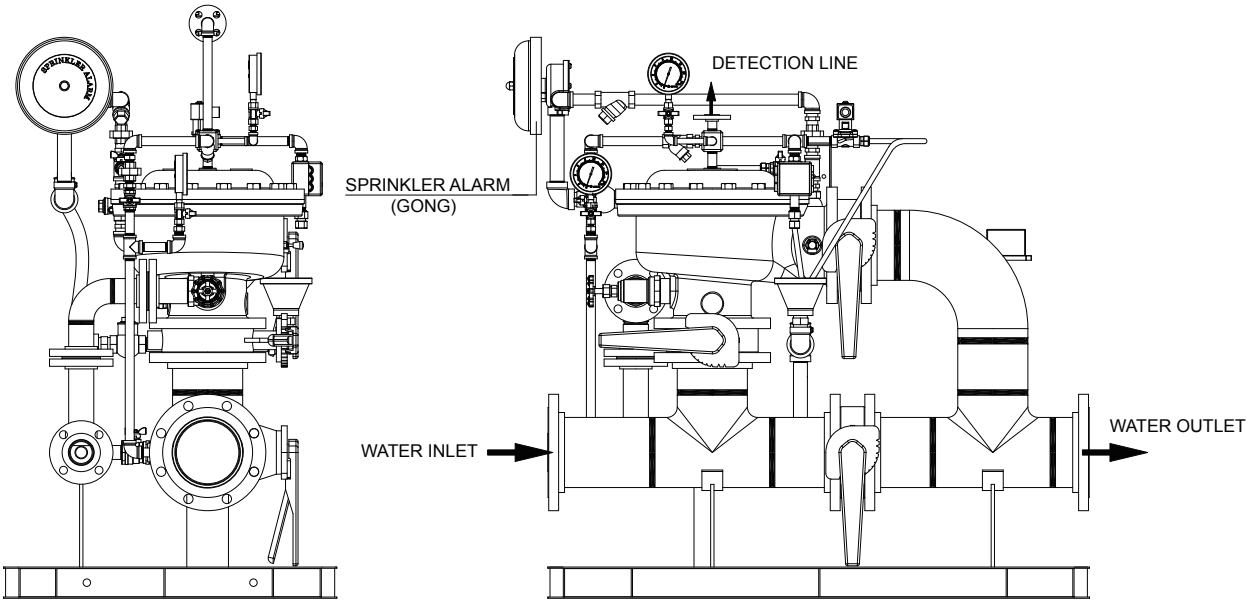
1. Place the skid at the desired location on the proper foundation and secure it with the anchoring bolts.
2. Connect the water inlet and system piping.
3. Connect the common drain connection to an open drain.
4. Do not restrict or reduce the drain piping.
5. Connect the detection network piping
6. Complete the field wiring of junction box.
7. Refer to appropriate deluge valve catalogue for valve commissioning, installation and troubleshooting instructions.

Model of Skid	Deluge Valve Model	Skid Type	Pressure Rating PSI	Actuation Type			
				Dry Pilot	Wet Pilot	Electric	Manual Release
SD-DSK-AD	SD-DVA	Open Skid	175	✓	-	✓	✓
SD-DSK-AW	SD-DVA	Open Skid	175	-	✓	✓	✓
SD-DPACK-AD	SD-DVA	Cabinet	175	✓	-	✓	✓
SD-DPACK-AW	SD-DVA	Cabinet	175	-	✓	✓	✓
SD-DVCH2	SD-DVH2	Cabinet	250	✓	✓	✓	✓
SD-DVCH3	SD-DVH3	Cabinet	250	✓	✓	✓	✓

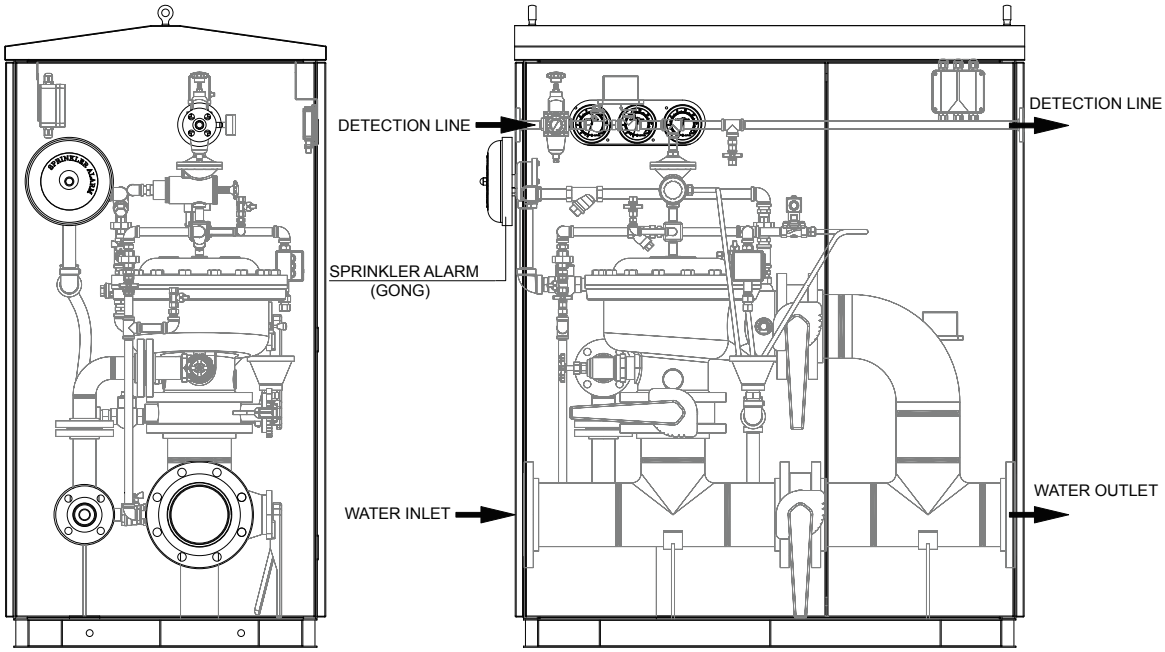
DELUGE VALVE SKID MODEL SD-DSK-AD WITH DRY PILOT & ELECTRIC ACTUATION TRIM



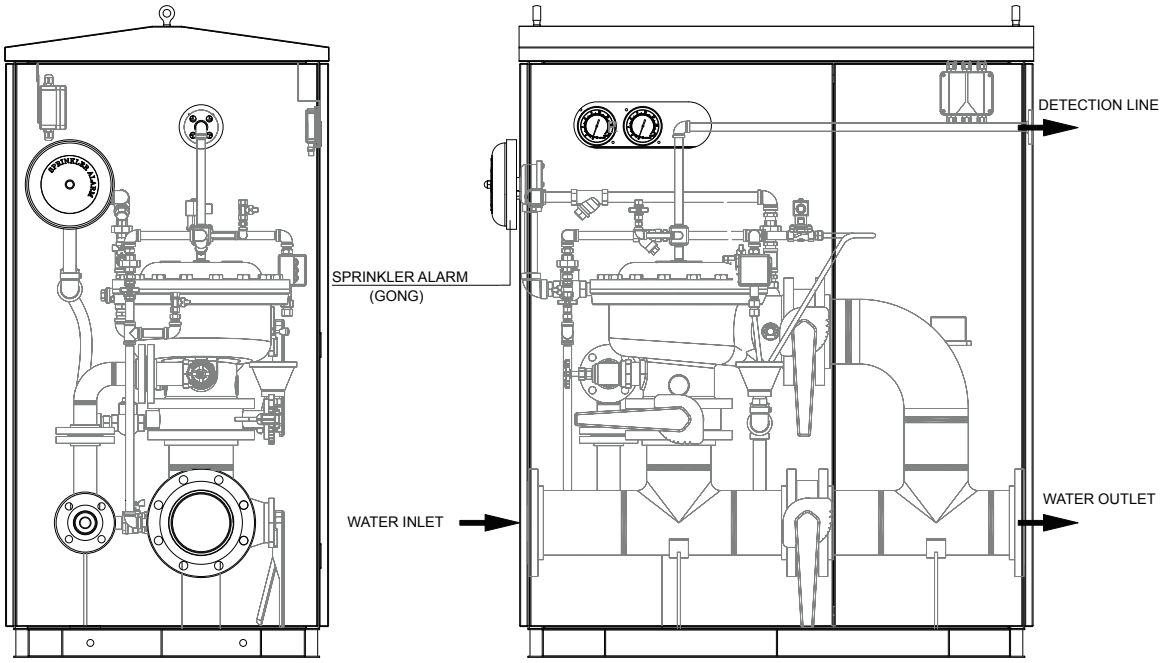
DELUGE VALVE SKID MODEL SD-DSK-AW WITH WET PILOT & ELECTRIC ACTUATION TRIM



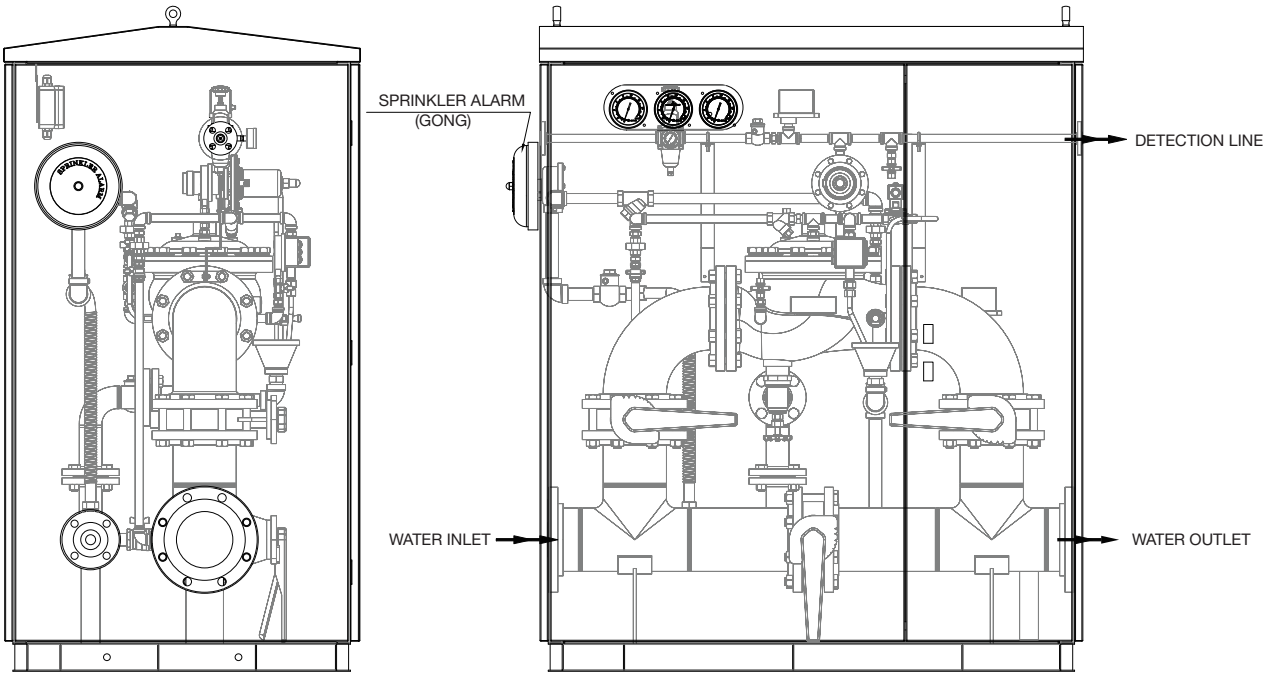
DELUGE VALVE SKID MODEL SD-DPACK-AD WITH DRY PILOT & ELECTRIC ACTUATION TRIM



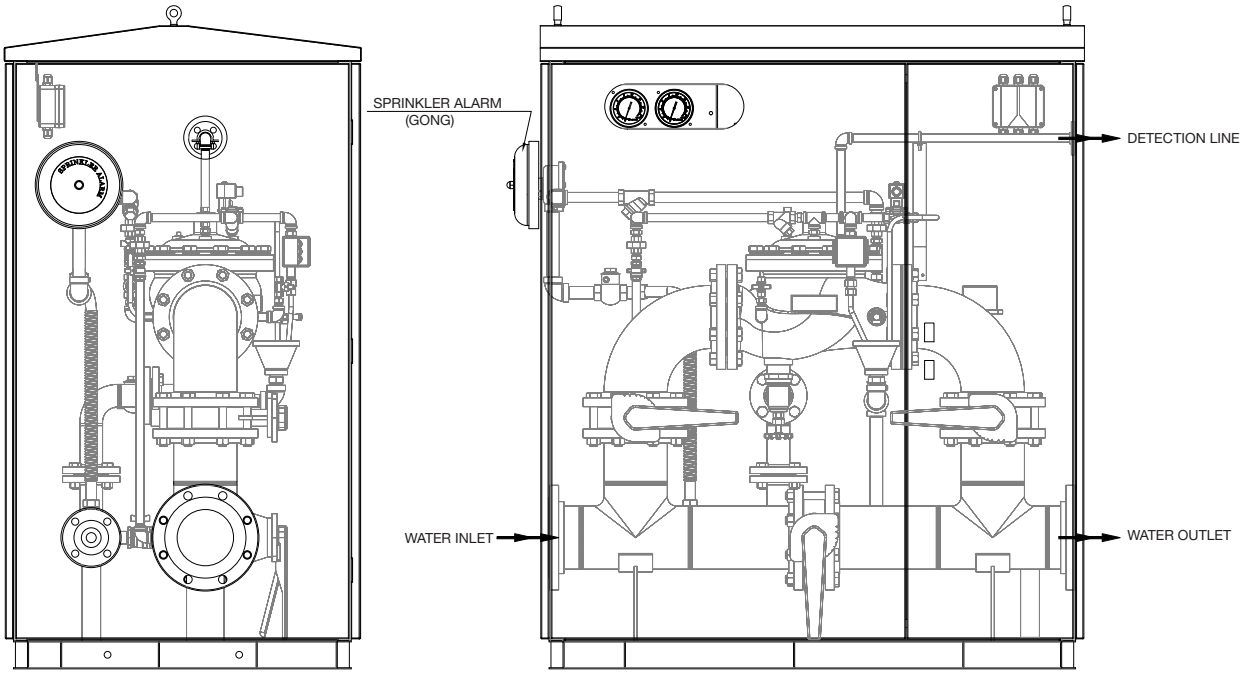
DELUGE VALVE SKID MODEL SD-DPACK-AW WITH WET PILOT & ELECTRIC ACTUATION TRIM



DELUGE VALVE SKID MODEL SD-DVCH2 & SD-DVCH3 WITH DRY PILOT & ELECTRIC ACTUATION TRIM



DELUGE VALVE SKID MODEL SD-DVCH2 & SD-DVCH3 WITH WET PILOT & ELECTRIC ACTUATION TRIM

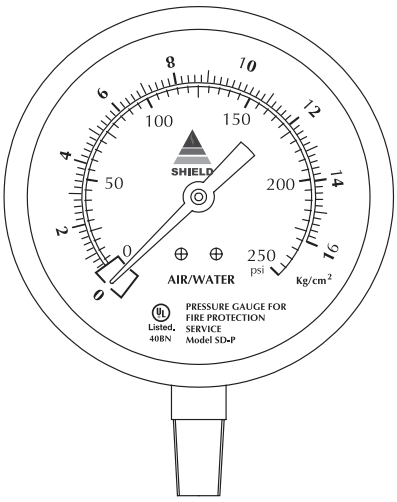


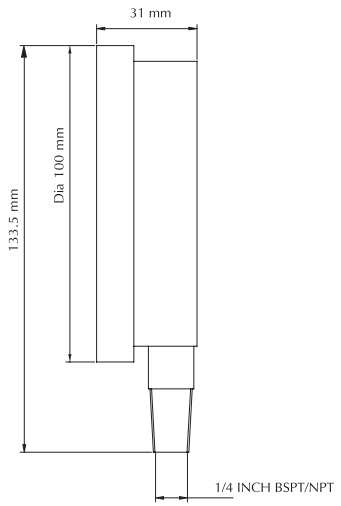
PRESSURE GAUGE

MODEL: SD-P

TECHNICAL DATA

DIAL SIZE	90mm (3½")
CONNECTION	¼" BSPT (¼" NPT Optional)
RANGE	0-16 KG/SQCM & 0-250 PSI
BURDON TUBE & MOVEMENT	Phosphorus Bronze Brudon tube and brass moving parts
DIAL TYPE	White background, Black graduation scale with dual reading in KG/SQM. and PSI
CASE AND BAZEL	Polished Stainless Steel Case Positive seal against weather moisture and dust
MOUNTING	Direct
WINDOW	Hardened Glass
ACCURACY	± 2% of FSD for middle half of scale
REFERENCE STANDARD	UL 393, NFPA-13





DESCRIPTION

SD-P Pressure Gauge are specifically designed for Fire Sprinkler Services. The pressure gauge is UL Listed. It has corrosion resistant polished stainless steel case and Bezel and Brass wetted parts. The dial has pressure reading in KG/SQCM and PSI. The gauge window is hardened glass.

The pressure gauge must be mounted by square provided for spanner grip on the socket and not by turning the case. Turning of case will damage the gauge. Use PTFE tape around male threads of the gauge for sealing. Pressure gauge must be mounted in vertical position and isolated with valve or cock. The pressure gauge must be handled with due care for best results, the gauge should be stored in the original packing in which it has been shipped. It is advisable to ship the gauge in the same package for future transit.

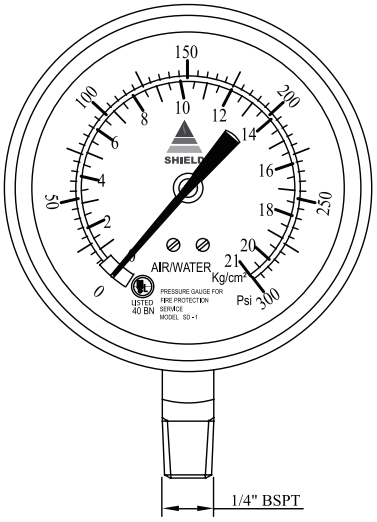
The pressure gauge, which is visibly damaged, should not be installed. It is recommended that the pressure gauges must be inspected regularly for possible corrosion or damage. The gauge must be periodically calibrated as per requirement or as per local authority having jurisdiction.

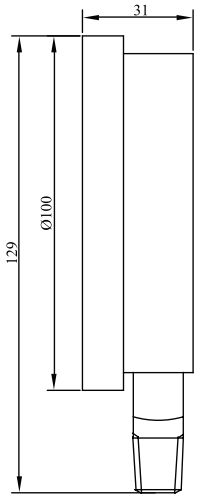
PRESSURE GAUGE

MODEL: SD-P1

TECHNICAL DATA

DIAL SIZE	90mm (3½")
CONNECTION	¼" BSPT (¼" NPT Optional)
RANGE	0-21 Kg/Sq. CM & 0-300 PSI
BURDON TUBE & MOVEMENT	Phosphorus Bronze Brudon tube and brass moving parts
DIAL TYPE	White background black graduation scale with dual reading in Kg. / Sq. Cm & PSI
CASE AND BAZEL	Polished Stainless Steel Case Positive seal against weather moisture and dust
MOUNTING	Direct
WINDOW	Hardened Glass
ACCURACY	± 2% of FSD for middle half of scale
WEIGHT (Approx)	0.3 Kg
REFERENCE STANDARD	UL 393, FM Approvals Class:2311, NFPA-13





DESCRIPTION

SD-P1 Pressure Gauge are specifically designed for Fire Sprinkler Services. The pressure gauge is UL Listed and FM approved. It has corrosion resistant polished stainless steel case and Bezel and Brass wetted parts. The dial has pressure reading in KG/ SQCM and PSI. The gauge window is hardened glass.

The pressure gauge must be mounted by square provided for spanner grip on the socket and not by turning the case. Turning of case will damage the gauge. Use PTFE tape around male threads of the gauge for sealing. Pressure gauge must be mounted in vertical position and isolated with valve or cock. The pressure gauge must be handled with due care for best results, the gauge should be stored in the original packing in which it has been shipped. It is advisable to ship the gauge in the same package for future transit.

The pressure gauge, which is visibly damaged, should not be installed. It is recommended that the pressure gauges must be inspected regularly for possible corrosion or damage. The gauge must be periodically calibrated as per requirement or as per local authority having jurisdiction.

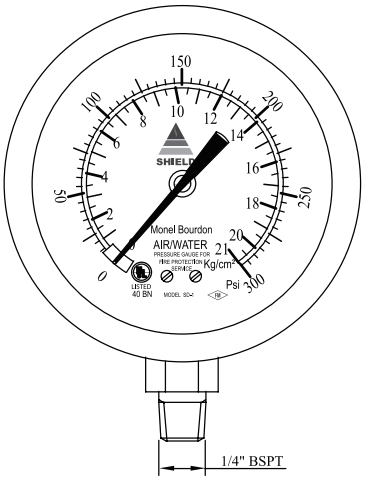
PRESSURE GAUGE

MODEL: SD-P2

Glycerine filled with Monel internals for seawater application

TECHNICAL DATA

DIAL SIZE	100mm (4”)
CONNECTION	¼” BSPT (¼” NPT Optional)
RANGE	0-21 Kg/Sq. CM & 0-300 PSI
BURDON TUBE & WETTED PARTS	Monel
DIAL TYPE	White background black graduation scale with dual reading in Kg. / Sq. Cm & PSI
CASE AND BAZEL	Polished Stainless Steel Case Glycerine filled
MOUNTING	Direct
WINDOW	Hardened Glass
ACCURACY	± 2% of FSD for middle half of scale
WEIGHT (Approx)	0.8 Kg
REFERENCE STANDARD	UL 393, FM Approvals Class:2311, NFPA-13

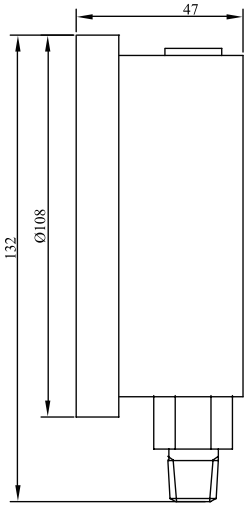


DESCRIPTION

SD-P2 Pressure Gauge are specifically designed for Fire Sprinkler Services. The pressure gauge is UL Listed and FM approved. It has corrosion resistant polished stainless steel case and Bezel and Brass wetted parts. The dial has pressure reading in KG/ SQCM and PSI. The gauge window is hardened glass.

The pressure gauge must be mounted by square provided for spanner grip on the socket and not by turning the case. Turning of case will damage the gauge. Use PTFE tape around male threads of the gauge for sealing. Pressure gauge must be mounted in vertical position and isolated with valve or cock. The pressure gauge must be handled with due care for best results, the gauge should be stored in the original packing in which it has been shipped. It is advisable to ship the gauge in the same package for future transit.

The pressure gauge, which is visibly damaged, should not be installed. It is recommended that the pressure gauges must be inspected regularly for possible corrosion or damage. The gauge must be periodically calibrated as per requirement or as per local authority having jurisdiction.



BRONZE BUTTERFLY VALVES, GROOVED

MODEL: SDBB-G

SPECIFICATIONS

Size	2” Through 2 ½”
Working Pressure	175 psi
Max. Test Pressure	350 psi
Working Temperature	250° F (120° C)

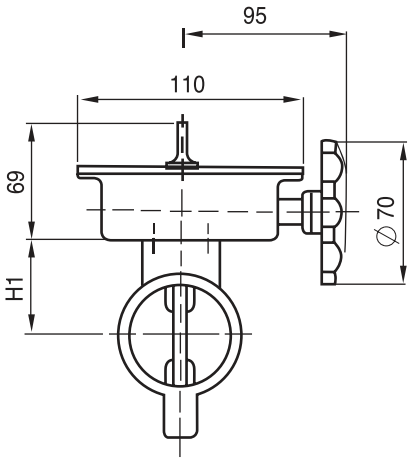
Factory Installed UL Approved Tamper Switch for indoor use only.

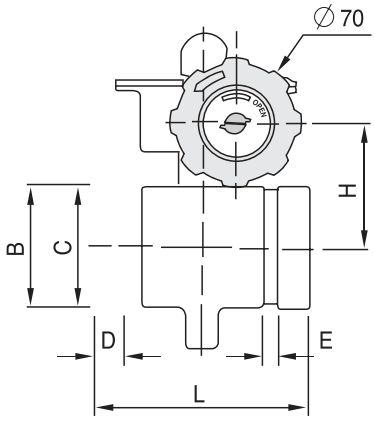
MATERIAL

Body	Brass, Bronze
Disc	Brass, Ductile Iron, EPDM Encapsulated
Stem	Stainless Steel

TECHNICAL DATA

Dimension (SCH 40, C=120)





Size	L	H	H1	A	B	C	D	E	Weight Kg (lbs)
2”	114	65	50	---	60.3	57.1	15.8	7.9	2.2
2 ½”	114	65	50	---	73.0	69.0	15.8	7.9	2.4

Unit : mm

BRONZE BUTTERFLY VALVES, THREADED

MODEL: SDBB-T

SPECIFICATIONS

Size	1" Through 2 ½"
Working Pressure	175 psi
Max. Test Pressure	350 psi
Working Temperature	250° F (120° C)

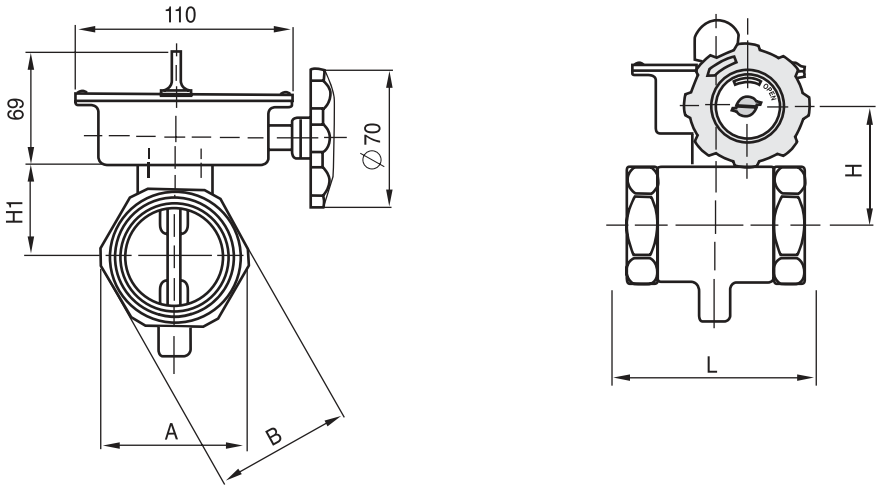
Factory Installed UL Approved Tamper Switch for indoor use only.

MATERIAL

Body	Brass, Bronze
Disc	Brass, Ductile Iron, EPDM Encapsulated
Stem	Stainless Steel

TECHNICAL DATA

Dimension (SCH 40, C=120)



Size	L	H	H1	A	B	C	D	E	Weight Kg (lbs)
1"	54	52	37	43.7	39.7	54	---	---	1.5
1 ¼"	67	56	41	53.2	49	67	---	---	1.7
1 ½"	73	59	44	58.5	56	73	---	---	1.8
2"	82.4	64	49	76	70	82.4	---	---	2.4
2 ½"	104	65	50	84	84	104	---	---	3.1

Unit : mm

BUTTERFLY VALVES, GROOVED

MODEL: SDBV-G

SPECIFICATIONS

Size	2 ½" through 8"
Working Pressure	175 psi
Max. Test Pressure	350 psi
Working Temperature	250° F (120° C)

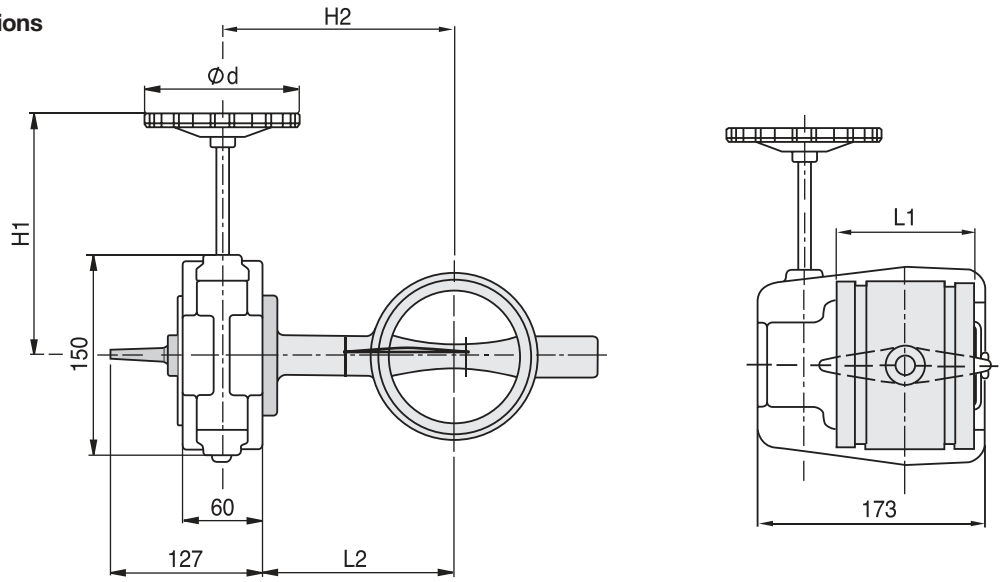
Factory Installed UL Approved Tamper Switch for indoor use only.

MATERIAL

Body	Ductile Iron, Nylon - 11 Coated
Disc	Al-Bronze, Ductile Iron, EPDM Encapsulated
Stem	Stainless Steel

TECHNICAL DATA

Dimensions



Size	Pipe O.D	L1	L2	H1	H2	d	Weight Kg (lbs)
2 ½"	73	96.4	105	135	135	125	8.2
3"	88.9	96.4	112	135	142	125	9.0
4"	114.3	115.4	145	135	175	125	10.7
6"	168.3	132.4	179	193	209	225	15.2
8"	219.1	147.4	204	193	234	225	20.4

Unit : mm

BUTTERFLY VALVES, GROOVED

MODEL: SDBV-G300

SPECIFICATIONS

Size	2 ½" through 8"
Working Pressure	300 psi (21.5 Bar)
Max. Test Pressure	600 psi (43 Bar)
Working Temperature	250° F (120° C)

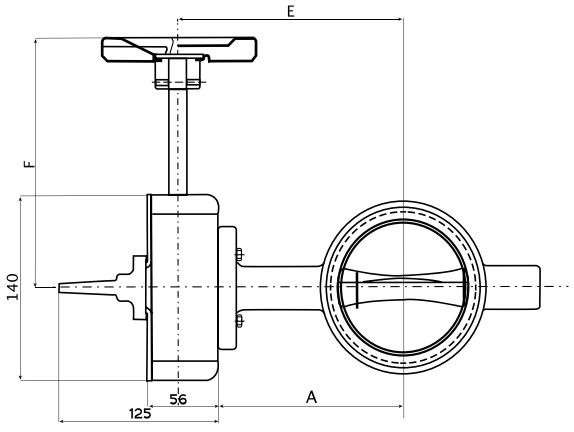
Factory Installed UL Approved Tamper Switch for indoor use only.

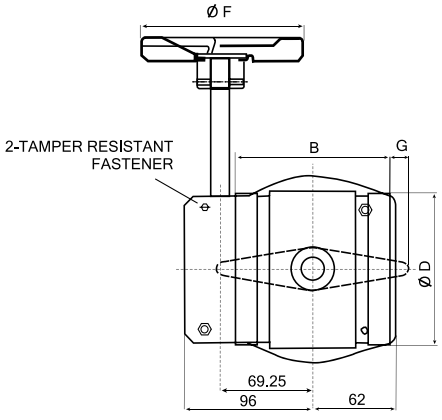
MATERIAL

Body	Ductile Iron, Nylon - 11 Coated
Disc	Al-Bronze, Ductile Iron, EDPM
Stem	Stainless Steel, Hardened & Tempered
Housing	Ductile Iron (ASTM A-536)
Hand Wheel	Ductile Iron (ASTM A-536)

TECHNICAL DATA

Dimensions





Size	A	B	C	D	E	F	G
2 ½"	105	96.4	168	73.1	137	125	---
3"	112	96.4	168	88.9	144	125	---
4"	145	115.4	168	114.3	177	125	---
6"	179	132.4	208	168.3	2111	225	6.8
8"	204	147.4	208	219.1	236	225	24.2

Unit : mm

BUTTERFLY VALVES, WAFER

MODEL: SDBV-W

SPECIFICATIONS

Size	2 ½" through 8"
Working Pressure	175 psi
Max. Test Pressure	350 psi
Working Temperature	250° F (120° C)

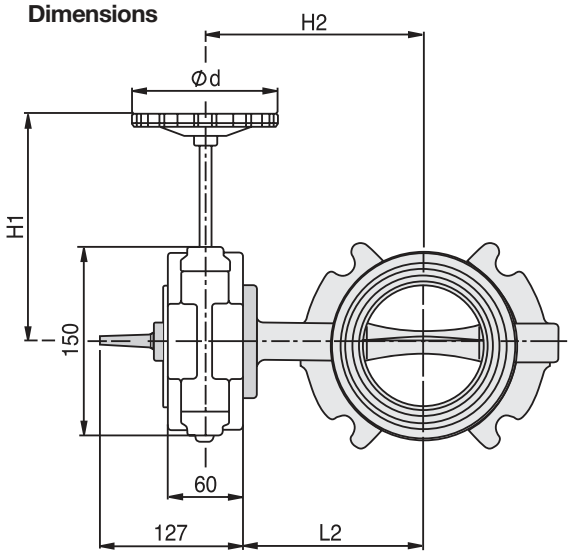
Factory Installed UL Approved Tamper Switch for indoor use only.

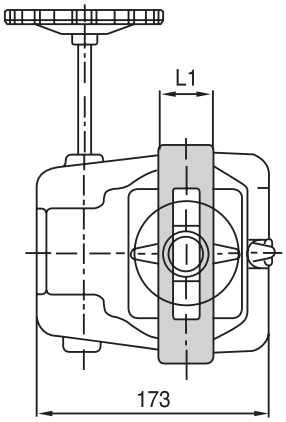
MATERIAL

Body	Ductile Iron, Nylon - 11 Coated
Disc	Al-Bronze, Ductile Iron, EPDM Encapsulated
Stem	Stainless Steel

TECHNICAL DATA

Dimensions





Size	Pipe C.D	L1	L2	H1	H2	d	Weight Kg (lbs)
2 ½"	139.5	49.0	120	135	150	125	8.8
3"	152.5	49.0	127	135	157	125	9.3
4"	180.5	55.0	145	135	175	125	9.8
6"	241.0	59.0	180	193	210	225	13.1
8"	298.5	63.0	204	193	234	225	17.0

Unit : mm

BUTTERFLY VALVES, WAFER

MODEL: SDBV-W300

SPECIFICATIONS

Size	2 ½" through 8"
Working Pressure	300 psi (21.5 Bar)
Max. Test Pressure	600 psi (43 Bar)
Working Temperature	250° F (120° C)

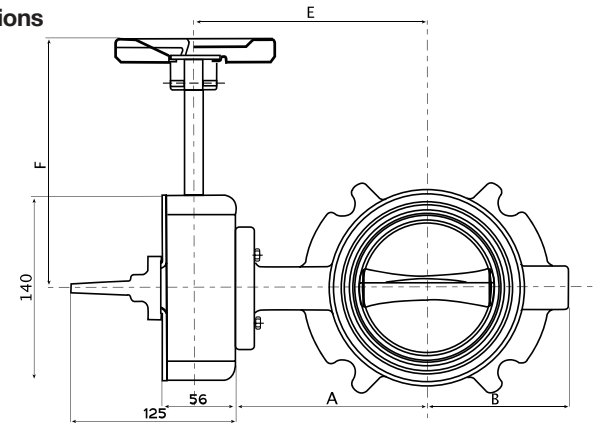
Factory Installed UL Approved Tamper Switch for indoor use only.

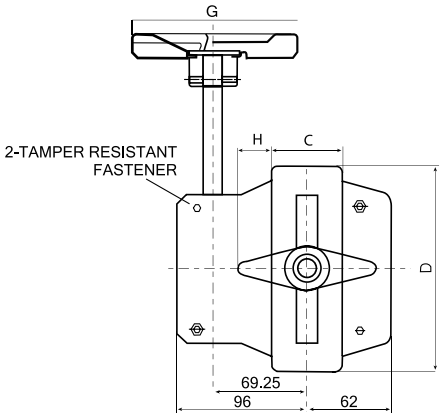
MATERIAL

Body	Ductile Iron, Nylon - 11 Coated
Disc	Al-Bronze, Ductile Iron, EDPM
Stem	Stainless Steel, Hardened & Tempered
Housing	Ductile Iron (ASTM A-536)
Hand Wheel	Ductile Iron (ASTM A-536)

TECHNICAL DATA

Dimensions





Size	A	B	C	D	E	F	G	H
2 ½"	120	85	49	116	150	168	125	9.5
3"	127	92	49	132	157	168	125	16
4"	145	108	55	152	175	168	125	25
6"	180	145	59	207	210	208	225	45.3
8"	204	170	63	262	234	208	225	68.5

Unit : mm

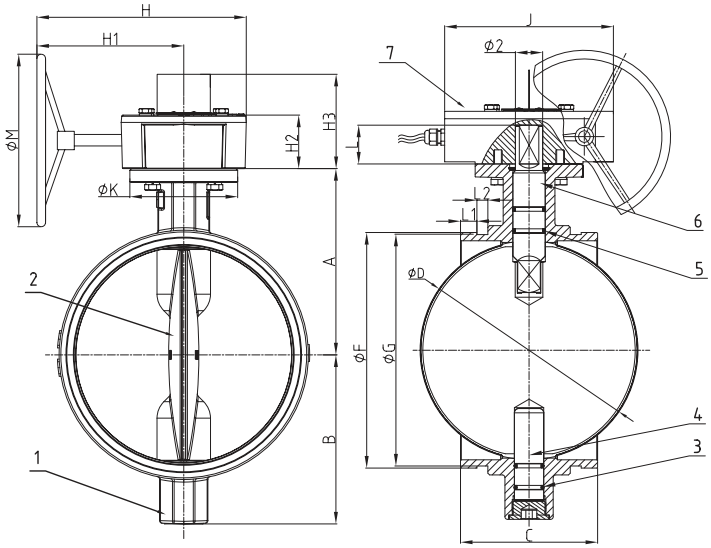
GROOVED BUTTERFLY VALVE WITH TAMPER SWITCH

MODEL: SDBV-GTEC-175

- Design Standard: MSS SP-67
- Connection Ends: Groove to AWWA C606
- Top Flange Standard: ISO 5211 Stem drive by keys, parallel or diagonal square or flat head
- Working Pressure: 175 PSI
- Temperature Range: 0ºC - 80ºC
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550 or painting upon request

MATERIAL SPECIFICATION

Part No.	Part	Standard Specification
1	Valve Body	ASTM A536, 65-45-12
2	Disc	ASTM A536, 65-45-12 + EPDM
3	O-Ring	NBR
4	Stem	AISI 431
5	O-Ring	NBR
6	Stem	AISI 431
7	Signal Gear Box	ASTM A536, 65-45-12



DN		Dimensions																
Inch	mm	A	B	C	Φ D	Φ F	Φ G	L1	L2	L	Φ K	H	H1	H2	H3	J	Φ M	Φ 2
2”	50	89	65	81	50.3	60.3	57.15	15.88	7.93	32	90	208	151	65	108	147	150	14
2.5”	65	102	71	97	60.8	73.0	69.09	15.88	7.93	32	90	208	151	65	108	147	150	14
3”	80	109	81	97	76	88.9	84.94	15.88	7.93	32	90	208	151	65	108	147	150	14
4”	100	128	95	116	98.5	114.3	110.08	15.88	9.53	32	90	208	151	65	108	147	150	16
5”	125	141	111	148	122.6	141.3	137.03	15.88	9.53	32	90	208	151	65	108	147	150	16
6”	150	153	133	148	148	168.3	163.96	15.88	9.53	32	90	208	151	65	108	147	150	20
8”	200	184	164	133	199	219.1	214.4	19.05	11.10	45	125	303	239	73	115	190	250	26
10”	250	216	196	159	252	273.1	268.28	19.05	12.70	45	125	303	239	73	115	190	250	26
12”	300	254	226	165	300.5	323.9	318.29	19.05	12.70	45	125	303	229	73	120	190	250	28

Unit : mm

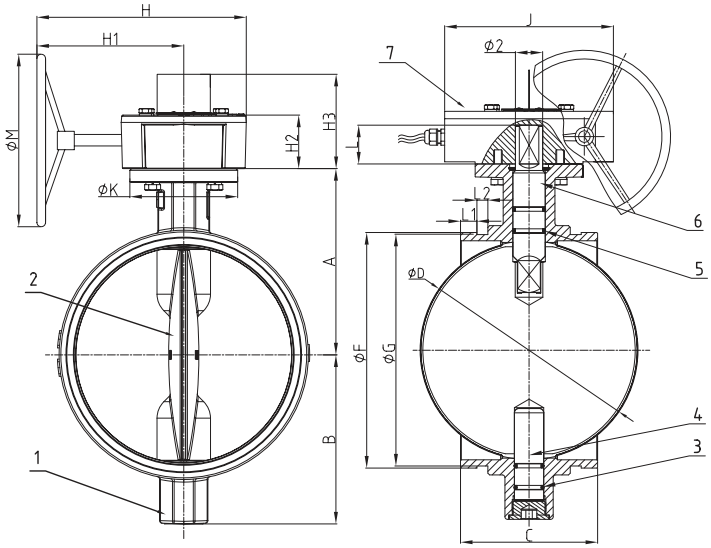
GROOVED BUTTERFLY VALVE WITH TAMPER SWITCH

MODEL: SDBV-GTEC-200

- Design Standard: MSS SP-67
- Connection Ends: Groove to AWWA C606
- Top Flange Standard: ISO 5211 Stem drive by keys, parallel or diagonal square or flat head
- Working Pressure: 200 PSI
- Temperature Range: 0ºC - 80ºC
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550 or painting upon request

MATERIAL SPECIFICATION

Part No.	Part	Standard Specification
1	Valve Body	ASTM A536, 65-45-12
2	Disc	ASTM A536, 65-45-12 + EPDM
3	O-Ring	NBR
4	Stem	AISI 431
5	O-Ring	NBR
6	Stem	AISI 431
7	Signal Gear Box	ASTM A536, 65-45-12



DN		Dimensions																
Inch	mm	A	B	C	Φ D	Φ F	Φ G	L1	L2	L	Φ K	H	H1	H2	H3	J	Φ M	Φ 2
2”	50	89	65	81	50.3	60.3	57.15	15.88	7.93	32	90	208	151	65	108	147	150	14
2.5”	65	102	71	97	60.8	73.0	69.09	15.88	7.93	32	90	208	151	65	108	147	150	14
3”	80	109	81	97	76	88.9	84.94	15.88	7.93	32	90	208	151	65	108	147	150	14
4”	100	128	95	116	98.5	114.3	110.08	15.88	9.53	32	90	208	151	65	108	147	150	16
5”	125	141	111	148	122.6	141.3	137.03	15.88	9.53	32	90	208	151	65	108	147	150	16
6”	150	153	133	148	148	168.3	163.96	15.88	9.53	32	90	208	151	65	108	147	150	20
8”	200	184	164	133	199	219.1	214.4	19.05	11.10	45	125	303	239	73	115	190	250	26
10”	250	216	196	159	252	273.1	268.28	19.05	12.70	45	125	303	239	73	115	190	250	26
12”	300	254	226	165	300.5	323.9	318.29	19.05	12.70	45	125	303	229	73	120	190	250	28

Unit : mm

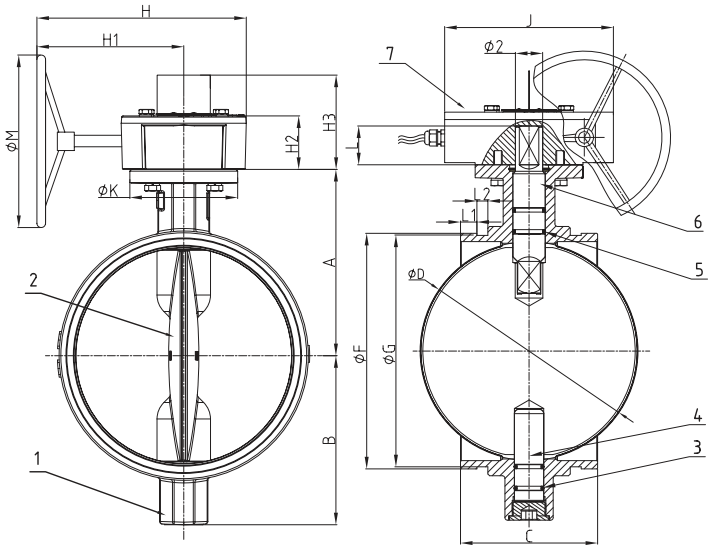
GROOVED BUTTERFLY VALVE WITH TAMPER SWITCH

MODEL: SDBV-GTEC-250

- Design Standard: MSS SP-67
- Connection Ends: Groove to AWWA C606
- Top Flange Standard: ISO 5211 Stem drive by keys, parallel or diagonal square or flat head
- Working Pressure: 250 PSI
- Temperature Range: 0ºC - 80ºC
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550 or painting upon request

MATERIAL SPECIFICATION

Part No.	Part	Standard Specification
1	Valve Body	ASTM A536, 65-45-12
2	Disc	ASTM A536, 65-45-12 + EPDM
3	O-Ring	NBR
4	Stem	AISI 431
5	O-Ring	NBR
6	Stem	AISI 431
7	Signal Gear Box	ASTM A536, 65-45-12



DN		Dimensions																
Inch	mm	A	B	C	Φ D	Φ F	Φ G	L1	L2	L	Φ K	H	H1	H2	H3	J	Φ M	Φ 2
2”	50	89	65	81	50.3	60.3	57.15	15.88	7.93	32	90	208	151	65	108	147	150	14
2.5”	65	102	71	97	60.8	73.0	69.09	15.88	7.93	32	90	208	151	65	108	147	150	14
3”	80	109	81	97	76	88.9	84.94	15.88	7.93	32	90	208	151	65	108	147	150	14
4”	100	128	95	116	98.5	114.3	110.08	15.88	9.53	32	90	208	151	65	108	147	150	16
5”	125	141	111	148	122.6	141.3	137.03	15.88	9.53	32	90	208	151	65	108	147	150	16
6”	150	153	133	148	148	168.3	163.96	15.88	9.53	32	90	208	151	65	108	147	150	20
8”	200	184	164	133	199	219.1	214.4	19.05	11.10	45	125	303	239	73	115	190	250	26
10”	250	216	196	159	252	273.1	268.28	19.05	12.70	45	125	303	239	73	115	190	250	26
12”	300	254	226	165	300.5	323.9	318.29	19.05	12.70	45	125	303	229	73	120	190	250	28

Unit : mm

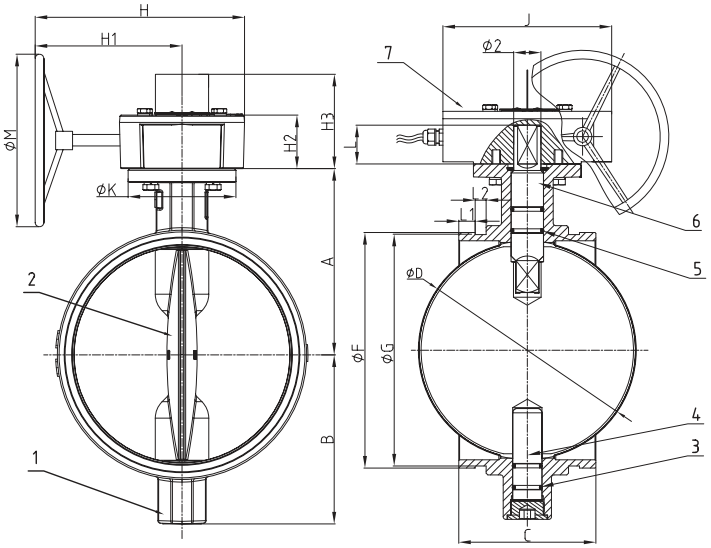
GROOVED BUTTERFLY VALVE WITH TAMPER SWITCH

MODEL: SDBV-GTEC-300

- Design Standard: MSS SP-67
- Connection Ends: Groove to AWWA C606
- Top Flange Standard: ISO 5211 Stem drive by keys, parallel or diagonal square or flat head
- Working Pressure: 300 PSI
- Temperature Range: 0ºC - 80ºC
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550 or painting upon request

MATERIAL SPECIFICATION

Part No.	Part	Standard Specification
1	Valve Body	ASTM A536, 65-45-12
2	Disc	ASTM A536, 65-45-12 + EPDM
3	O-Ring	NBR
4	Stem	AISI 431
5	O-Ring	NBR
6	Stem	AISI 431
7	Signal Gear Box	ASTM A536, 65-45-12



DN		Dimensions																
Inch	mm	A	B	C	Φ D	Φ F	Φ G	L1	L2	L	Φ K	H	H1	H2	H3	J	Φ M	Φ 2
2”	50	89	65	81	50.3	60.3	57.15	15.88	7.93	32	90	208	151	65	108	147	150	14
2.5”	65	102	71	97	60.8	73.0	69.09	15.88	7.93	32	90	208	151	65	108	147	150	14
3”	80	109	81	97	76	88.9	84.94	15.88	7.93	32	90	208	151	65	108	147	150	14
4”	100	128	95	116	98.5	114.3	110.08	15.88	9.53	32	90	208	151	65	108	147	150	16
5”	125	141	111	148	122.6	141.3	137.03	15.88	9.53	32	90	208	151	65	108	147	150	16
6”	150	153	133	148	148	168.3	163.96	15.88	9.53	32	90	208	151	65	108	147	150	20
8”	200	184	164	133	199	219.1	214.4	19.05	11.10	45	125	303	239	73	115	190	250	26
10”	250	216	196	159	252	273.1	268.28	19.05	12.70	45	125	303	239	73	115	190	250	26
12”	300	254	226	165	300.5	323.9	318.29	19.05	12.70	45	125	303	229	73	120	190	250	28

Unit : mm

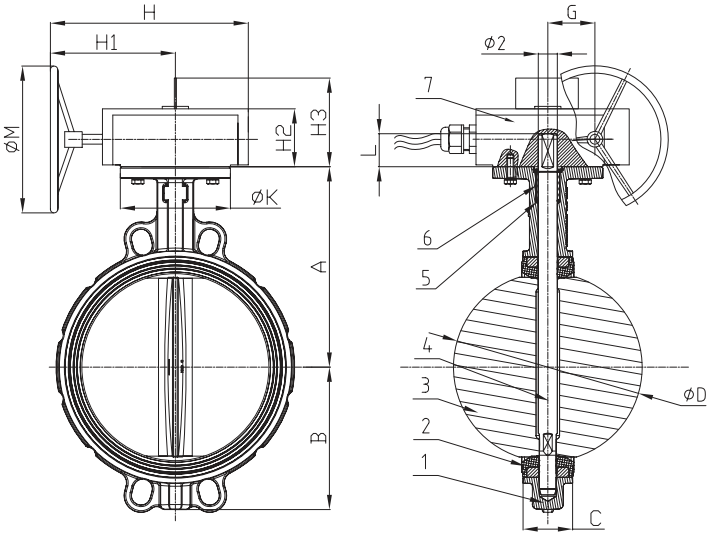
WAFER BUTTERFLY VALVE WITH TAMPER SWITCH

Model: SDBV-WTEC-175

- Design Standard: MSS SP-67
- Connection Ends: ASME B16.1 CL 125, ASME B16.5 CL 150
- Top Flange Standard: ISO 5211 Stem drive by keys, parallel or diagonal square or flat head
- Working Pressure: 175 PSI
- Temperature Range: 0°C - 80°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550

MATERIAL SPECIFICATION

Part No.	Part	Standard Specification
1	Valve Body	ASTM A536, 65-45-12
2	Seat	EPDM & Backing
3	Disc	ASTM A536, 65-45-12
4	Stem	AISI 420
5	O-Ring	NBR
6	Bushing	PTFE
7	Signal Gear Box	ASTM A536, 65-45-12



DN		Dimensions												
Inch	mm	A	B	M	H	HI	H2	H3	K	G	Φ D	C	Φ 2	L
2”	50	140.5	64.5	150	208	151	65	108	90	59	53.9	43	14	32
2.5”	65	153	72	150	208	151	65	108	90	59	65.2	46	14	32
3”	80	157.5	86	150	208	151	65	108	90	59	79.7	46	14	32
4”	100	176	100	150	208	151	65	108	90	59	105	52	16	32
5”	125	191	112	150	208	151	65	108	90	59	130	56	16	32
6”	150	202.5	128	150	208	151	65	108	90	59	156	56	20	32
8”	200	243.5	162	200	298	223	77	121	125	75	207	60	26	45
10”	250	273	194	200	298	223	77	121	125	75	253.3	68	26	45
12”	300	311	223	250	298	223	77	121	125	75	301.9	78	28	45

Unit : mm

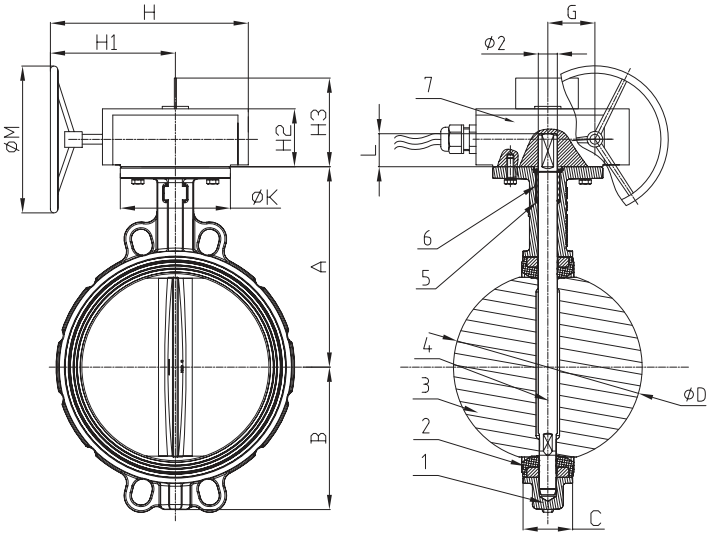
WAFER BUTTERFLY VALVE WITH TAMPER SWITCH

Model: SDBV-WTEC-200

- Design Standard: MSS SP-67
- Connection Ends: ASME B16.1 CL 125, ASME B16.5 CL 150
- Top Flange Standard: ISO 5211 Stem drive by keys, parallel or diagonal square or flat head
- Working Pressure: 200 PSI
- Temperature Range: 0°C - 80°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550

MATERIAL SPECIFICATION

Part No.	Part	Standard Specification
1	Valve Body	ASTM A536, 65-45-12
2	Seat	EPDM & Backing
3	Disc	ASTM A536, 65-45-12
4	Stem	AISI 420
5	O-Ring	NBR
6	Bushing	PTFE
7	Signal Gear Box	ASTM A536, 65-45-12



DN		Dimensions												
Inch	mm	A	B	M	H	HI	H2	H3	K	G	Φ D	C	Φ 2	L
2”	50	140.5	64.5	150	208	151	65	108	90	59	53.9	43	14	32
2.5”	65	153	72	150	208	151	65	108	90	59	65.2	46	14	32
3”	80	157.5	86	150	208	151	65	108	90	59	79.7	46	14	32
4”	100	176	100	150	208	151	65	108	90	59	105	52	16	32
5”	125	191	112	150	208	151	65	108	90	59	130	56	16	32
6”	150	202.5	128	150	208	151	65	108	90	59	156	56	20	32
8”	200	243.5	162	200	298	223	77	121	125	75	207	60	26	45
10”	250	273	194	200	298	223	77	121	125	75	253.3	68	26	45
12”	300	311	223	250	298	223	77	121	125	75	301.9	78	28	45

Unit : mm

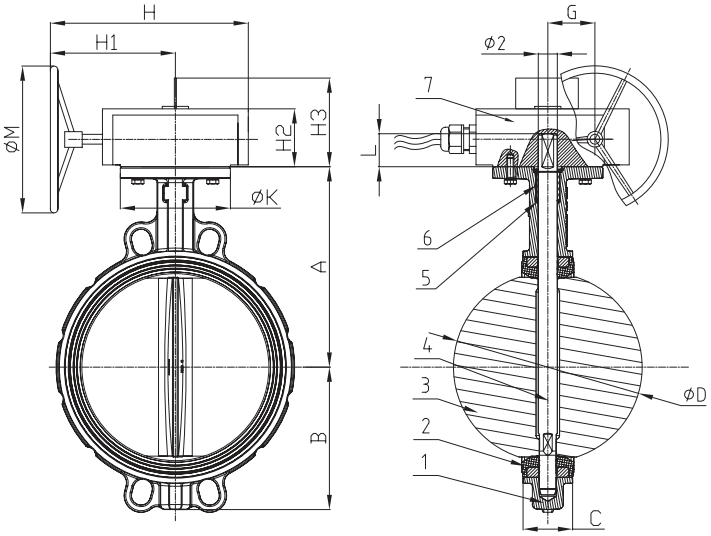
WAFER BUTTERFLY VALVE WITH TAMPER SWITCH

Model: SDBV-WTEC-250

- Design Standard: MSS SP-67
- Connection Ends: ASME B16.1 CL 125, ASME B16.5 CL 150
- Top Flange Standard: ISO 5211 Stem drive by keys, parallel or diagonal square or flat head
- Working Pressure: 250 PSI
- Temperature Range: 0°C - 80°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550

MATERIAL SPECIFICATION

Part No.	Part	Standard Specification
1	Valve Body	ASTM A536, 65-45-12
2	Seat	EPDM & Backing
3	Disc	ASTM A536, 65-45-12
4	Stem	AISI 420
5	O-Ring	NBR
6	Bushing	PTFE
7	Signal Gear Box	ASTM A536, 65-45-12



DN		Dimensions												
Inch	mm	A	B	M	H	HI	H2	H3	K	G	Φ D	C	Φ 2	L
2”	50	140.5	64.5	150	208	151	65	108	90	59	53.9	43	14	32
2.5”	65	153	72	150	208	151	65	108	90	59	65.2	46	14	32
3”	80	157.5	86	150	208	151	65	108	90	59	79.7	46	14	32
4”	100	176	100	150	208	151	65	108	90	59	105	52	16	32
5”	125	191	112	150	208	151	65	108	90	59	130	56	16	32
6”	150	202.5	128	150	208	151	65	108	90	59	156	56	20	32
8”	200	243.5	162	200	298	223	77	121	125	75	207	60	26	45
10”	250	273	194	200	298	223	77	121	125	75	253.3	68	26	45
12”	300	311	223	250	298	223	77	121	125	75	301.9	78	28	45

Unit : mm

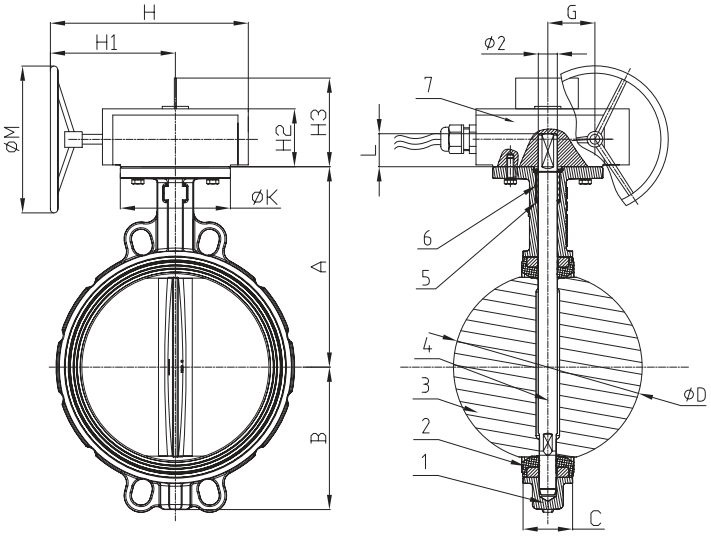
WAFER BUTTERFLY VALVE WITH TAMPER SWITCH

Model: SDBV-WTEC-300

- Design Standard: MSS SP-67
- Connection Ends: ASME B16.1 CL 125, ASME B16.5 CL 150
- Top Flange Standard: ISO 5211 Stem drive by keys, parallel or diagonal square or flat head
- Working Pressure: 300 PSI
- Temperature Range: 0°C - 80°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550

MATERIAL SPECIFICATION

Part No.	Part	Standard Specification
1	Valve Body	ASTM A536, 65-45-12
2	Seat	EPDM & Backing
3	Disc	ASTM A536, 65-45-12
4	Stem	AISI 420
5	O-Ring	NBR
6	Bushing	PTFE
7	Signal Gear Box	ASTM A536, 65-45-12



DN		Dimensions												
Inch	mm	A	B	M	H	HI	H2	H3	K	G	Φ D	C	Φ 2	L
2”	50	140.5	64.5	150	208	151	65	108	90	59	53.9	43	14	32
2.5”	65	153	72	150	208	151	65	108	90	59	65.2	46	14	32
3”	80	157.5	86	150	208	151	65	108	90	59	79.7	46	14	32
4”	100	176	100	150	208	151	65	108	90	59	105	52	16	32
5”	125	191	112	150	208	151	65	108	90	59	130	56	16	32
6”	150	202.5	128	150	208	151	65	108	90	59	156	56	20	32
8”	200	243.5	162	200	298	223	77	121	125	75	207	60	26	45
10” *	250	273	194	200	298	223	77	121	125	75	253.3	68	26	45
12” *	300	311	223	250	298	223	77	121	125	75	301.9	78	28	45

* Non-Approved

Unit : mm

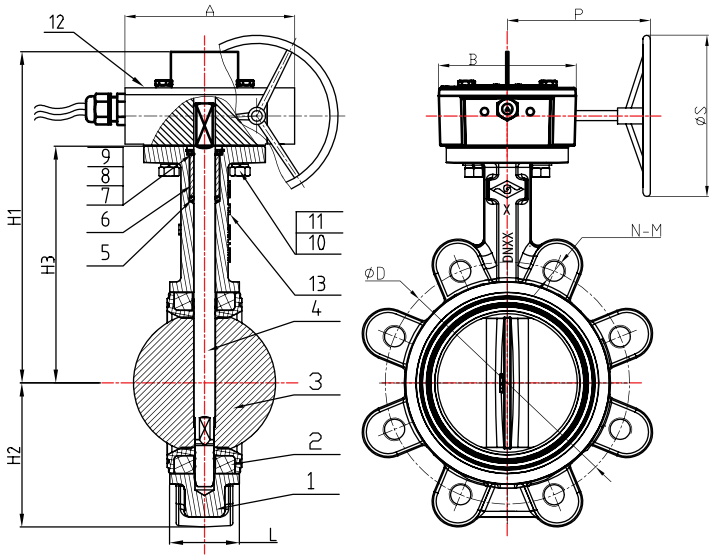
LUG TYPE BUTTERFLY VALVE WITH TAMPER SWITCH

Model: SDBV-LTEC-175

- Design Standard: MSS SP-67
- Face to Face Dimension: ISO 5752
- Connection Ends: ASME B16.1 CL 125, ASME B16.5 CL 150
- Top Flange Standard: ISO 5211
- Working Pressure: 175 PSI
- Temperature Range: 0°C - 80°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550

MATERIAL SPECIFICATION

Part No.	Part	Standard Specification
1	Valve Body	ASTM A536, 65-45-12
2	Seat	EPDM
3	Disc	ASTM A536, 65-45-12
4	Stem	AISI 420
5	O-Ring	NBR
6	Bushing	PTFE
7	Circlip for Shaft	Spring Steel, 65MN
8	Retaining Plate	AISI 420
9	Circlip for Hole	Spring Steel, 65MN
10	Hexbolt	Carbon Steel Zinc Plated
11	Spring Washer	Spring Steel, 65MN
12	Gear Box	ASTM A536, 65-45-12
13	Name Plate	Stainless Steel Plate



DN											
Inch	mm	A	B	P	S	H1	H2	H3	L	N - M	Φ D
2”	50	147	113	151.5	150	248.5	64.5	140.5	43	4 - 5/8	120.7
2.5”	65	147	113	151.5	150	261	72	153	46	4 - 5/8	139.7
3”	80	147	113	151.5	150	265.5	86	157.5	46	4 - 5/8	152.4
4”	100	147	113	151.5	150	284	100	176	52	8 - 5/8	190.5
5”	125	147	113	151.5	150	299	112	191	56	8 - 3/4	215.9
6”	150	147	113	151.5	150	310.5	128	202.5	56	8 - 3/4	241.3
8”	200	184	150	223	200	364.5	162	243.5	60	8 - 3/4	298.5
10”	250	184	355	223	200	394	194	273	68	12 - 7/8	362
12”	300	184	410	224	250	432	223	311	78	12 - 7/8	431.8

Unit : mm

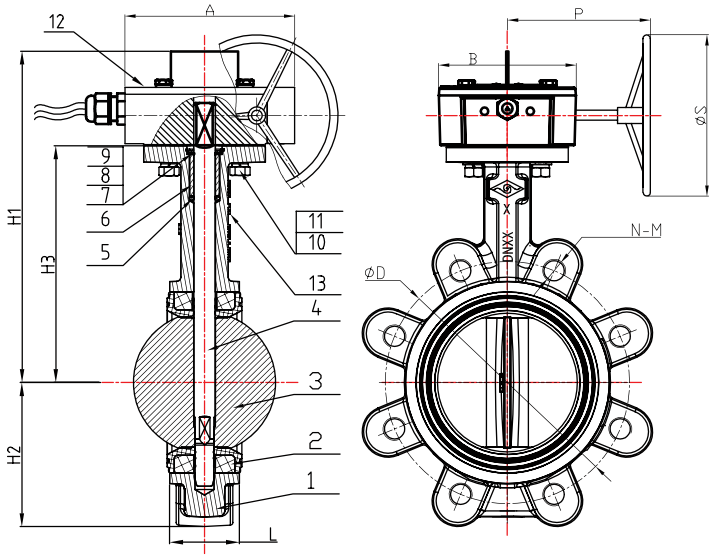
LUG TYPE BUTTERFLY VALVE WITH TAMPER SWITCH

Model: SDBV-LTEC-200

- Design Standard: MSS SP-67
- Face to Face Dimension: ISO 5752
- Connection Ends: ASME B16.1 CL 125, ASME B16.5 CL 150
- Top Flange Standard: ISO 5211
- Working Pressure: 200 PSI
- Temperature Range: 0°C - 80°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550

MATERIAL SPECIFICATION

Part No.	Part	Standard Specification
1	Valve Body	ASTM A536, 65-45-12
2	Seat	EPDM
3	Disc	ASTM A536, 65-45-12
4	Stem	AISI 420
5	O-Ring	NBR
6	Bushing	PTFE
7	Circlip for Shaft	Spring Steel, 65MN
8	Retaining Plate	AISI 420
9	Circlip for Hole	Spring Steel, 65MN
10	Hexbolt	Carbon Steel Zinc Plated
11	Spring Washer	Spring Steel, 65MN
12	Gear Box	ASTM A536, 65-45-12
13	Name Plate	Stainless Steel Plate



DN											
Inch	mm	A	B	P	S	H1	H2	H3	L	N - M	Φ D
2”	50	147	113	151.5	150	248.5	64.5	140.5	43	4 - 5/8	120.7
2.5”	65	147	113	151.5	150	261	72	153	46	4 - 5/8	139.7
3”	80	147	113	151.5	150	265.5	86	157.5	46	4 - 5/8	152.4
4”	100	147	113	151.5	150	284	100	176	52	8 - 5/8	190.5
5”	125	147	113	151.5	150	299	112	191	56	8 - 3/4	215.9
6”	150	147	113	151.5	150	310.5	128	202.5	56	8 - 3/4	241.3
8”	200	184	150	223	200	364.5	162	243.5	60	8 - 3/4	298.5
10”	250	184	355	223	200	394	194	273	68	12 - 7/8	362
12”	300	184	410	224	250	432	223	311	78	12 - 7/8	431.8

Unit : mm

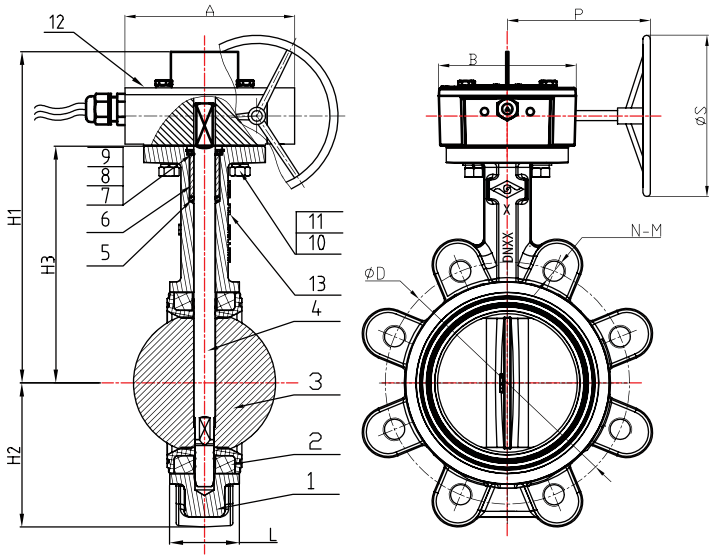
LUG TYPE BUTTERFLY VALVE WITH TAMPER SWITCH

Model: SDBV-LTEC-250

- Design Standard: MSS SP-67
- Face to Face Dimension: ISO 5752
- Connection Ends: ASME B16.1 CL 125, ASME B16.5 CL 150
- Top Flange Standard: ISO 5211
- Working Pressure: 250 PSI
- Temperature Range: 0°C - 80°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550

MATERIAL SPECIFICATION

Part No.	Part	Standard Specification
1	Valve Body	ASTM A536, 65-45-12
2	Seat	EPDM
3	Disc	ASTM A536, 65-45-12
4	Stem	AISI 420
5	O-Ring	NBR
6	Bushing	PTFE
7	Circlip for Shaft	Spring Steel, 65MN
8	Retaining Plate	AISI 420
9	Circlip for Hole	Spring Steel, 65MN
10	Hexbolt	Carbon Steel Zinc Plated
11	Spring Washer	Spring Steel, 65MN
12	Gear Box	ASTM A536, 65-45-12
13	Name Plate	Stainless Steel Plate



DN											
Inch	mm	A	B	P	S	H1	H2	H3	L	N - M	Φ D
2”	50	147	113	151.5	150	248.5	64.5	140.5	43	4 - 5/8	120.7
2.5”	65	147	113	151.5	150	261	72	153	46	4 - 5/8	139.7
3”	80	147	113	151.5	150	265.5	86	157.5	46	4 - 5/8	152.4
4”	100	147	113	151.5	150	284	100	176	52	8 - 5/8	190.5
5”	125	147	113	151.5	150	299	112	191	56	8 - 3/4	215.9
6”	150	147	113	151.5	150	310.5	128	202.5	56	8 - 3/4	241.3
8”	200	184	150	223	200	364.5	162	243.5	60	8 - 3/4	298.5
10”	250	184	355	223	200	394	194	273	68	12 - 7/8	362
12”	300	184	410	224	250	432	223	311	78	12 - 7/8	431.8

Unit : mm

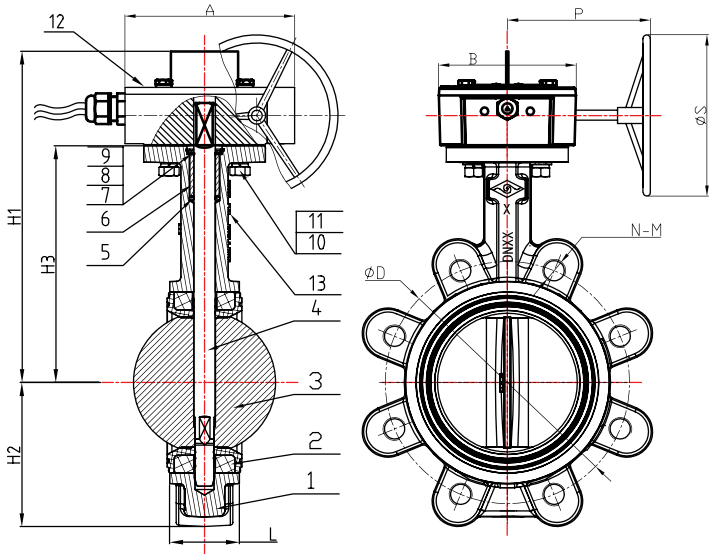
LUG TYPE BUTTERFLY VALVE WITH TAMPER SWITCH

Model: SDBV-LTEC-300

- Design Standard: MSS SP-67
- Face to Face Dimension: ISO 5752
- Connection Ends: ASME B16.1 CL 125, ASME B16.5 CL 150
- Top Flange Standard: ISO 5211
- Working Pressure: 300 PSI
- Temperature Range: 0°C - 80°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550

MATERIAL SPECIFICATION

Part No.	Part	Standard Specification
1	Valve Body	ASTM A536, 65-45-12
2	Seat	EPDM
3	Disc	ASTM A536, 65-45-12
4	Stem	AISI 420
5	O-Ring	NBR
6	Bushing	PTFE
7	Circlip for Shaft	Spring Steel, 65MN
8	Retaining Plate	AISI 420
9	Circlip for Hole	Spring Steel, 65MN
10	Hexbolt	Carbon Steel Zinc Plated
11	Spring Washer	Spring Steel, 65MN
12	Gear Box	ASTM A536, 65-45-12
13	Name Plate	Stainless Steel Plate



DN											
Inch	mm	A	B	P	S	H1	H2	H3	L	N - M	Φ D
2”	50	147	113	151.5	150	248.5	64.5	140.5	43	4 - 5/8	120.7
2.5”	65	147	113	151.5	150	261	72	153	46	4 - 5/8	139.7
3”	80	147	113	151.5	150	265.5	86	157.5	46	4 - 5/8	152.4
4”	100	147	113	151.5	150	284	100	176	52	8 - 5/8	190.5
5”	125	147	113	151.5	150	299	112	191	56	8 - 3/4	215.9
6”	150	147	113	151.5	150	310.5	128	202.5	56	8 - 3/4	241.3
8”	200	184	150	223	200	364.5	162	243.5	60	8 - 3/4	298.5
10” *	250	184	355	223	200	394	194	273	68	12 - 7/8	362
12” *	300	184	410	224	250	432	223	311	78	12 - 7/8	431.8

* Non-Approved

Unit : mm

BRONZE OS & Y GATE VALVE, THREADED

MODEL: SDOSY-T

DESCRIPTION

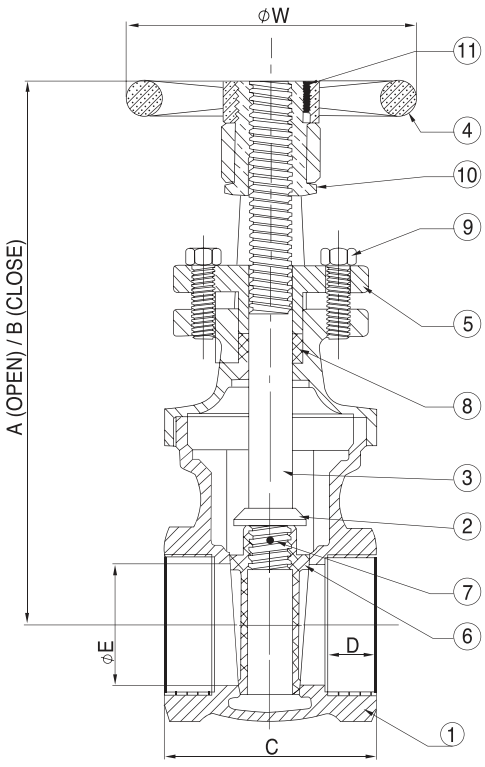
These UL Listed valves are manufactured in accordance with the Standard UL 262 Gate Valves for Fire Protection Service. They are intended to be installed in accordance with the National Fire Protection association Standards, NFPA I3, 14 and 15.

These valves utilize ASTM B62 C83600 cast bronze for body, bonnet, disc and packing gland. ASTM B271 C86700 brass alloy for the stem, and ASTM B584 C84400 cast bronze for the yoke sleeve. The hand wheel is made of ASTM A48 class 30 cast iron.

This valve is ideal for use of water piping in the fire protection service, in accordance with the Standard for the installation of Sprinkler System, NFPA 13, 14 and 15.

The rated pressure is 175 psi, the leakage test pressure, both at the seat and body are 350 psi which is, twice the rated pressure. Hydrostatic test pressure is 875 psi, which is 5 times the rated pressure.

- Wall Thickness Comply to ANSI B16-15, Threads to ANSI B1.20-1.



No.	PART NAME	MATERIAL
1	Body	Bronze C83600
2	Bonnet	Bronze C83600
3	Stem	Brass
4	Handwheel	Cast Iron
5	Packing Gland	Bronze C83600
6	Disc	Bronze C83600
7	Disc Pin	Brass
8	Gland Packing	Graphite
9	Stud	Steel
10	Yoke Bushing	Brass
11	Set Screw	Steel

Size	A	B	C	ØE	ØW	CV	D
¾”	170.5	140.5	56	20	71	32	14.5
1”	195	158.5	66	25	71	54	18
1¼”	221	177	73	32	93	97	18.5
1½”	243	196	79	37.5	93	135	19.5
2”	271	219	88	50	102	230	21

Unit : mm

BRONZE GLOBE VALVE, THREADED

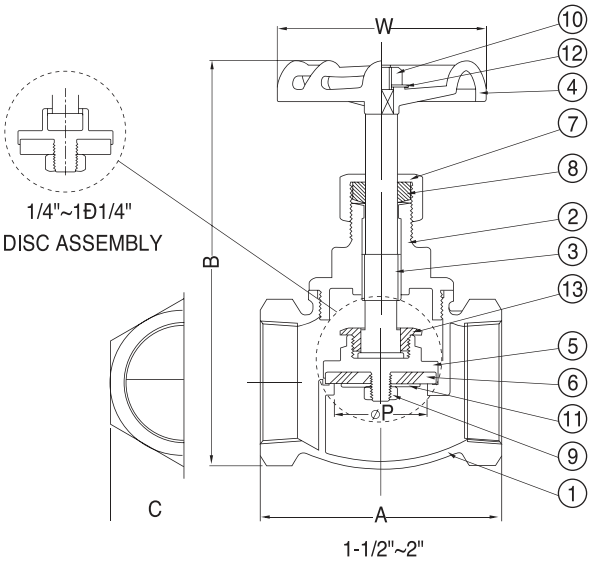
MODEL: SD-GV

DESCRIPTION

These UL Listed valves are manufactured in accordance with the Standard UL 258 Valves, Trim and Drain components. The globe valves are intended to be installed in accordance with the National Fire Protection Association Standards, NFPA 13, 14 and 15. The valve utilizes ASTM B584 C84400 cast bronze for body, ASTM B124 C37700 forged brass for bonnet, disc holder and packing nut, ASTM B271 C86700 brass alloy for the stem, the handwheel is made of ASTM A126 Gr. B cast iron. The valve is intended for use in the water piping of fire protection service in accordance with the Standard for the installation of Sprinkler System, NFPA 13, 14, 15.

Rated pressure 175 psi, the leakage test pressure at both seat and body are 350 psi twice the rated pressure, hydrostatic test pressure 875 psi 5 times the rated pressure.

- Wall Thickness Comply to ANSI B16-15, Threads to ANSI B1.20-1.



No.	PART NAME	MATERIAL
1	Body	Bronze C84400
2	Bonnet	Brass B16 (¼" - ¾")
		Bronze C84400 (1" - 2")
3	Stem	Brass
4	Handwheel	Cast Iron
5	Disc	Forged Brass B124
6	Seat	Buna-N
7	Packing Nut	Brass
8	Gland Packing	Teflon
9	Lock Nut	Brass
10	Wheel Nut	Steel
11	Washer	Brass
12	Name Plate	Aluminium
13	Disc Nut	Brass

Size	A	B		C	W	A1	ØP
¼"	43	81	86.8	23	53.4	65	8
⅜"	46.5	80.5	88.2	27.5	53.4	65	8
½"	54.7	91.5	101.5	31.5	54.6	72	14
¾"	60.5	98	103	39	61.2	92	16.5

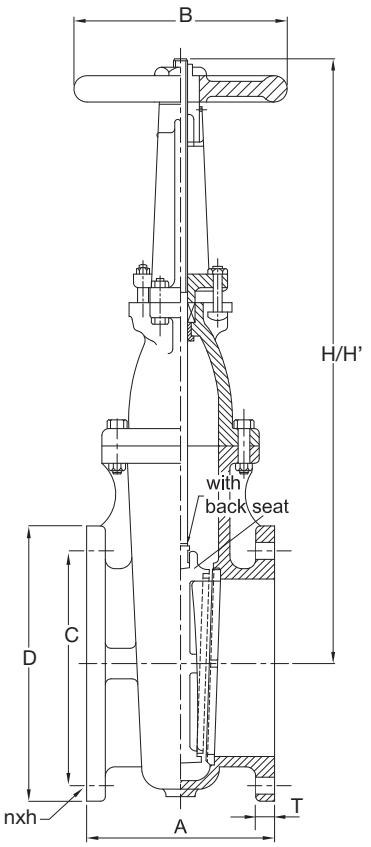
Size	A	B		C	W	A1	ØP
1"	76	122.4	130	48	62.3	108	23
1¼"	91.8	151.5	166	56.4	79	128	28
1½"	101.5	171	187	66	80	146	34
2"	116.5	198	219	71	100	180	45

Unit : mm

OS & Y RESILIENT WEDGE GATE VALVE

MODEL: SD-OSY175GV

- Outside screw and yoke
- Iron body. Bronze mounted. Solid wedge
- Flanged ends to ANSI B16.1 Class 125
- Working pressure: 175 psi (non-shock cold water pressure)
- Conform to MSS SP-70
- Pregrooved stem for supervisory switch



PART NAME	MATERIAL	ASTM SPEC.
Body	Cast Iron	ASTM A126-B
Disc	Cast Iron	ASTM A126-B
Bonnet	Cast Iron	ASTM A126-B
Packing	Non-Asbestos packing	
Gland	Ductile Iron	A536 65-45-12
Yoke	Cast Iron	ASTM A126-B
Stem	Stainless Steel	AISI 420
Handwheel	Cast Iron	ASTM A126-B

Size	A	B	C	D	H	H'	T	nxh	Net. Wt. Lbs.
2"	178	178	121	152	375	394	15.8	4 x19.1	36
2½"	190	178	140	178	422	454	17.4	4 x19.1	48
3"	203	203	152	191	479	514	19.1	4 x19.1	60
4"	229	254	191	229	594	644	23.8	8 x19.1	103
6"	267	305	241	279	819	860	25.4	8 x 22.2	186
8"	292	356	298	343	1003	1102	28.5	8 x 22.2	298
10"	330	406	363	406	1222	1324	30.1	12 x 25.4	441
12"	356	457	432	483	1422	1524	31.7	12 x 25.4	628

Unit : mm

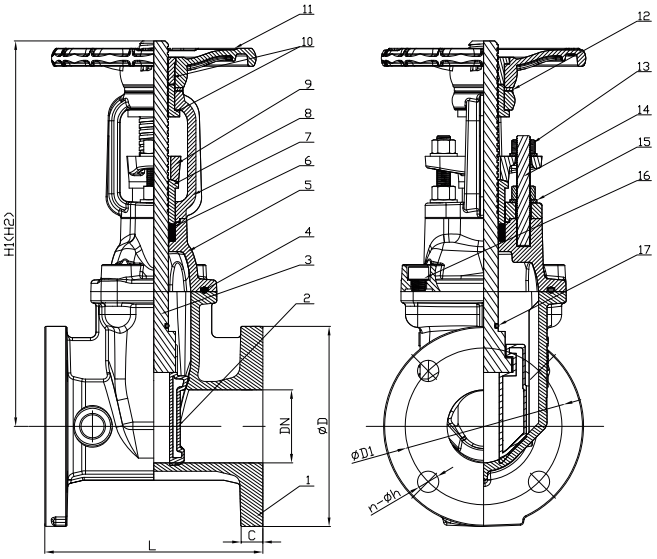
OS & Y RESILIENT WEDGE GATE VALVE

MODEL: SD-OSY200FF-D

- Working pressure: 200 psi
- Connection ends: Flange to ASME B16.1 Class 125
- Temperature range: 0ºC to 80ºC
- Coating: Fusion bonded epoxy coating internally and externally in accordance with ANSI/AWWA C550

PART NO.	PART NAME	ASTM SPEC.
1	Valve Body	ASTM A536, 65-45-12
2	Resilient Wedge Disc	ASTM A536, 65-45-12+EPDM
3	Stem	AISI420
4	Bonnet Gasket	EPDM
5	Bonnet	ASTM A536, 65-45-12
6	Washer	Brass Hpb59-1
7	Yoke	ASTM A536, 65-45-12
8	Stem Bushing	Brass Hpb59-1
9	Gland	ASTM A536, 65-45-12
10	Stem Nut	Brass Hpb59-1
11	Hand Wheel	ASTM A536, 65-45-12
12	Washer	Brass Hpb59-1
13	Gland Nut	Carbon Steel Zinc Plated
14	Stud	Carbon Steel Zinc Plated
15	Flat Washer	Carbon Steel Zinc Plated
16	Nut	Carbon Steel Zinc Plated
17	O Ring	EPDM

* Optional for Stem AISI316



Size	L	H1	H2	D	D1	C	n x ø h	Net. Wt. Kg.
2”	178	318	370	152	120.7	16	4 x19.1	14.38
2.5”	190	343	410	178	139.7	17.5	4 x19.1	17.42
3”	203	386	468	191	152.4	19.1	4 x19.1	22.83
4”	229	436	538	229	190.5	19.1	8 x19.1	31.56
5”	254	516	640	254	215.9	19.1	8 x 22.2	41.86
6”	267	576	730	279	241.3	19.1	8 x 22.2	52.23
8”	292	749	950	343	298.5	22.2	8 x 22.2	91.04
10”	330	904	1158	406	362	23.8	12 x 25.4	133.44
12”	356	1030	1335	483	431.8	25.4	12 x 25.4	197.50

* 5” - Only UL Listing

Unit : mm

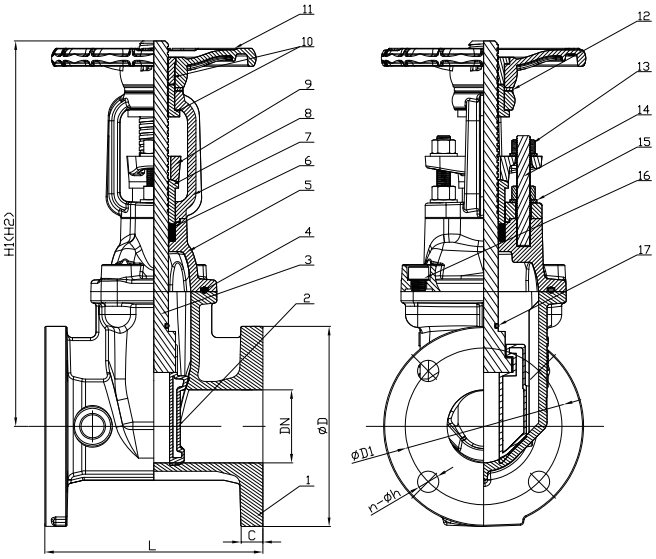
OS & Y RESILIENT WEDGE GATE VALVE

MODEL: SD-OSY250FF-D

- Working pressure: 250 psi
- Connection ends: Flange to ASME B16.1 Class 125
- Temperature range: 0ºC to 80ºC
- Coating: Fusion bonded epoxy coating internally and externally in accordance with ANSI/AWWA C550

PART NO.	PART NAME	ASTM SPEC.
1	Valve Body	ASTM A536, 65-45-12
2	Resilient Wedge Disc	ASTM A536, 65-45-12+EPDM
3	Stem	AISI420
4	Bonnet Gasket	EPDM
5	Bonnet	ASTM A536, 65-45-12
6	Washer	Brass Hpb59-1
7	Yoke	ASTM A536, 65-45-12
8	Stem Bushing	Brass Hpb59-1
9	Gland	ASTM A536, 65-45-12
10	Stem Nut	Brass Hpb59-1
11	Hand Wheel	ASTM A536, 65-45-12
12	Washer	Brass Hpb59-1
13	Gland Nut	Carbon Steel Zinc Plated
14	Stud	Carbon Steel Zinc Plated
15	Flat Washer	Carbon Steel Zinc Plated
16	Nut	Carbon Steel Zinc Plated
17	O Ring	EPDM

* Optional for Stem AISI316



Size	L	H1	H2	D	D1	C	n x ø h	Net. Wt. Kg.
2”	178	318	370	152	120.7	16	4 x19.1	14.38
2.5”	190	343	410	178	139.7	17.5	4 x19.1	17.42
3”	203	386	468	191	152.4	19.1	4 x19.1	22.83
4”	229	436	538	229	190.5	19.1	8 x19.1	31.56
5”	254	516	640	254	215.9	19.1	8 x 22.2	41.86
6”	267	576	730	279	241.3	19.1	8 x 22.2	52.23
8”	292	749	950	343	298.5	22.2	8 x 22.2	91.04
10”	330	904	1158	406	362	23.8	12 x 25.4	133.44
12”	356	1030	1335	483	431.8	25.4	12 x 25.4	197.50

* 5” - Only UL Listing

Unit : mm

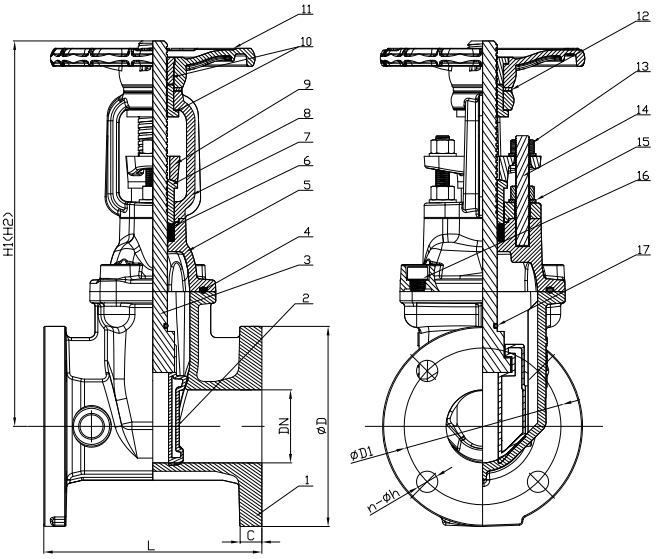
OS & Y RESILIENT WEDGE GATE VALVE

MODEL: SD-OSY300FF-D

- Working pressure: 300 psi
- Connection ends: Flange to ASME B16.1 Class 125
- Temperature range: 0ºC to 80ºC
- Coating: Fusion bonded epoxy coating internally and externally in accordance with ANSI/AWWA C550

PART NO.	PART NAME	ASTM SPEC.
1	Valve Body	ASTM A536, 65-45-12
2	Resilient Wedge Disc	ASTM A536, 65-45-12+EPDM
3	Stem	AISI420
4	Bonnet Gasket	EPDM
5	Bonnet	ASTM A536, 65-45-12
6	Washer	Brass Hpb59-1
7	Yoke	ASTM A536, 65-45-12
8	Stem Bushing	Brass Hpb59-1
9	Gland	ASTM A536, 65-45-12
10	Stem Nut	Brass Hpb59-1
11	Hand Wheel	ASTM A536, 65-45-12
12	Washer	Brass Hpb59-1
13	Gland Nut	Carbon Steel Zinc Plated
14	Stud	Carbon Steel Zinc Plated
15	Flat Washer	Carbon Steel Zinc Plated
16	Nut	Carbon Steel Zinc Plated
17	O Ring	EPDM

* Optional for Stem AISI316



Size	L	H1	H2	D	D1	C	n x ø h	Net. Wt. Kg.
2”	178	318	370	152	120.7	16	4 x19.1	14.38
2.5”	190	343	410	178	139.7	17.5	4 x19.1	17.42
3”	203	386	468	191	152.4	19.1	4 x19.1	22.83
4”	229	436	538	229	190.5	19.1	8 x19.1	31.56
5”	254	516	640	254	215.9	19.1	8 x 22.2	41.86
6”	267	576	730	279	241.3	19.1	8 x 22.2	52.23
8”	292	749	950	343	298.5	22.2	8 x 22.2	91.04
10”	330	904	1158	406	362	23.8	12 x 25.4	133.44
12”	356	1030	1335	483	431.8	25.4	12 x 25.4	197.50

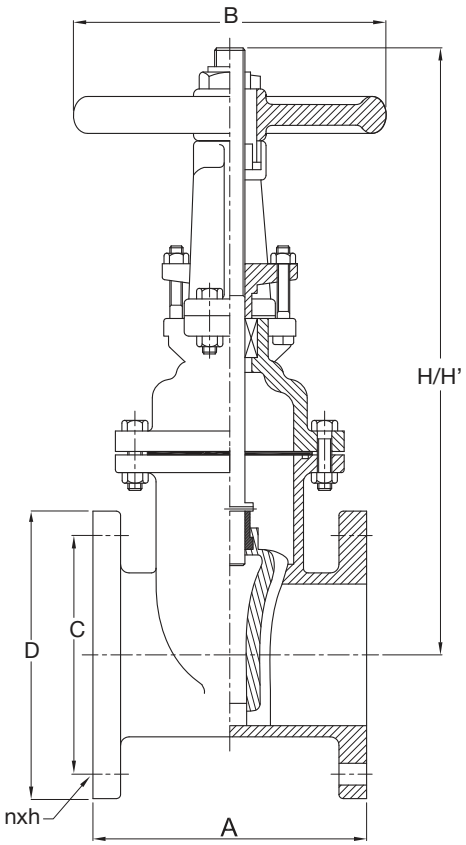
* 5” - Only UL Listing

Unit : mm

OS & Y RESILIENT WEDGE GATE VALVE

MODEL: SD-OSY250GV-D

- Valve complies with AWWA C515
- Working Pressure 250 psi. Cold water pressure (Max. temp. 63ºC)
- Flanged Ends to ANSI B16.1 Class 125
- Pre-grooved stem for supervisory switch
- Epoxy coated interior / exterior to AWWA C550



PART NAME	MATERIAL	ASTM SPEC.
Body	Ductile Iron	ASTM A536 65-45-12
Wedge	Ductile Iron coated with EPDM	
Bonnet	Ductile Iron	ASTM A536 65-45-12
Packing	Graphite packing	
Gland Flange	Ductile Iron	A536 65-45-12
Yoke Sleeve	Cast Bronze	ASTM B62
Stem	Stainless Steel	AISI 420
Handwheel	Cast Iron	ASTM A126-B

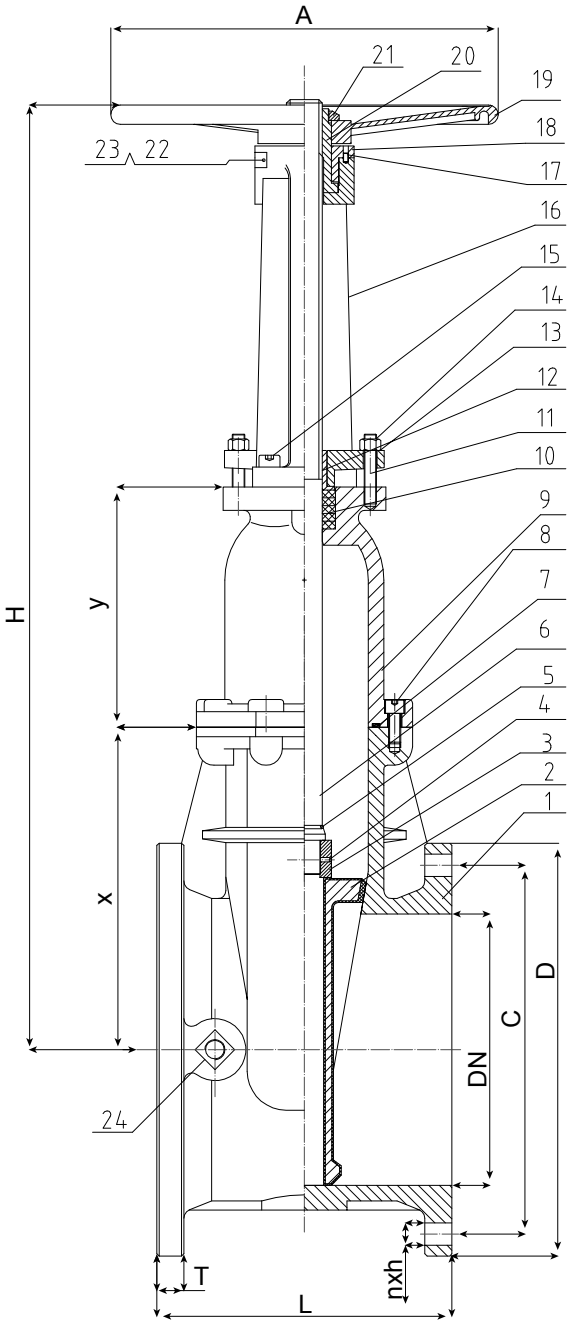
Size	A	B	C	D	H	H'	nxh
2½"	190	178	140	178	324	378	4 x19.1
3"	203	254	152	191	483	559	4 x19.1
4"	229	254	191	229	495	597	8 x19.1
6"	267	305	241	279	664	816	8 x 22.2
8"	292	356	298	343	816	1019	8 x 22.2
10"	330	406	363	406	1019	1273	12 x 25.4
12"	356	457	432	483	1191	1505	12 x 25.4

Unit : mm

OS & Y RESILIENT WEDGE GATE VALVE

MODEL: SD-OSY250FF-D1

Sl No.	Part Name	ASTM Spec.	Material
1	Body	ASTM A536	Ductile Iron
2	Wedge	ASTM A536 + ASTM D2000	Ductile Iron + EPDM
3	Stem Trim	ASTM B584	Bronze
4	Retainer	ASTM A276, SS304	Stainless Steel
5	O-Ring	ASTM D2000	EPDM
6	Stem	ASTM A276, SS304	Stainless Steel
7	Stem Gasket	ASTM D2000	EPDM
8	Inside Hexgonal Bolt	ASTM A574M	Alloy Steel, Zinc Plated
9	Bonnet	ASTM A536	Ductile Iron
10	Stuffing	ASTM D2000	EPDM
11	Threaded Rod	ASTM A307	Carbon Steel
12	Stuffing Bushing	ASTM B584	Bronze
13	Stuffing Gland	ASTM A536	Ductile Iron
14	Nut	ASTM B16-H02	Brass
15	Inside Hexgonal Bolt	ASTM A574M	Alloy Steel, Zinc Plated
16	Yoke	ASTM A536	Ductile Iron
17	Flat Point Set Screw	ASTM F912M	Alloy Steel
18	Gland	ASTM A126-B	Cast Iron
19	Handwheel	ASTM A536	Ductile Iron
20	Stem Nut	ASTM B584	Bronze
21	Handwheel Nut	ASTM A194-2H	Carbon Steel
22	Label	---	Aluminium
23	Screw	ASTM A276, SS304	Stainless Steel
24	Plug, Pipe	---	Steel, ASME B16.14



Size	L	H	A	C	D	T	nxh	x	y
14”	381 ± 1.5	1219	500	476	533	35	12x29	416	310
16”	406 ± 1.5	1288	500	539.5	597	37	16x29	406	381

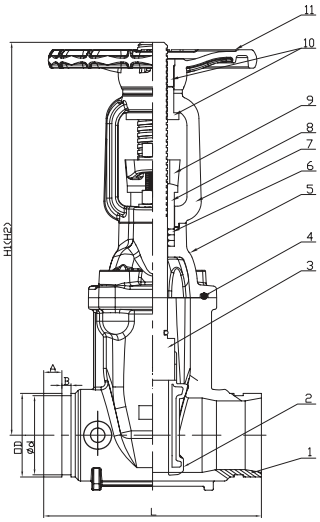
Unit : mm

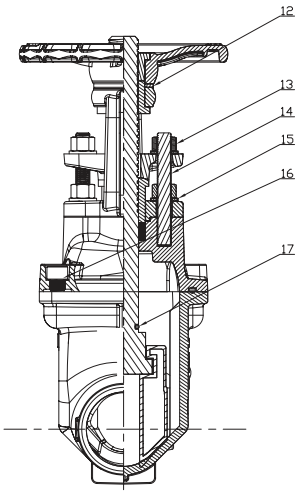
OS & Y GROOVED RESILIENT GATE VALVE

MODEL: SD-OSY200GG-D

- Working pressure: 200 psi
- Connection ends: Grooved to AWWA C606
- Temperature range: 0°C to 80°C
- Coating: Fusion bonded epoxy coating internally and externally in accordance with ANSI/AWWA C550

PART NO.	PART NAME	ASTM SPEC.
1	Valve Body	ASTM A536, 65-45-12
2	Resilient Wedge Disc	ASTM A536, 65-45-12+EPDM
3	Stem	AISI420
4	Bonnet Gasket	EPDM
5	Bonnet	ASTM A536, 65-45-12
6	Washer	Brass Hpb59-1
7	Yoke	ASTM A536, 65-45-12
8	Stem Bushing	Brass Hpb59-1
9	Gland	ASTM A536, 65-45-12
10	Stem Nut	Brass Hpb59-1
11	Hand Wheel	ASTM A536, 65-45-12
12	Washer	Brass Hpb59-1
13	Gland Nut	Carbon Steel Zinc Plated
14	Stud	Carbon Steel Zinc Plated
15	Flat Washer	Carbon Steel Zinc Plated
16	Nut	Carbon Steel Zinc Plated
17	O Ring	EPDM





* Optional for Stem AISI316

Size	L	H1	H2	OD	d	A	B	Net. Wt. Kg.
2”	178	318	370	60.3	57.15	15.88	7.92	11.08
2.5”	190	343	410	73	69.09	15.88	7.92	12.22
3”	203	386	468	88.9	84.94	15.88	7.92	16.67
4”	229	436	538	114.3	110.08	15.88	9.52	23.89
5”	254	516	640	141.3	137.03	15.88	9.52	33.08
6”	267	576	730	168.3	163.96	15.88	9.52	40.41
8”	292	749	950	219.1	214.4	19.05	11.13	73.40
10”	330	904	1158	273	268.28	19.05	12.7	121.16
12”	356	1030	1335	323.9	318.29	19.05	12.7	172.02

* 5” - Only UL Listing

Unit : mm

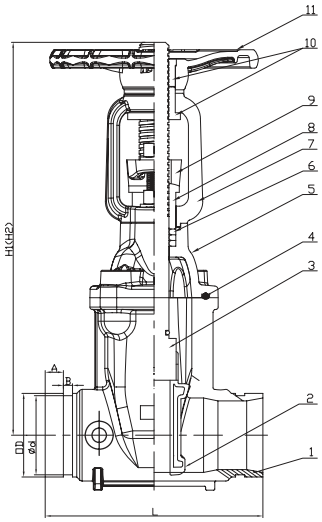
OS & Y GROOVED RESILIENT GATE VALVE

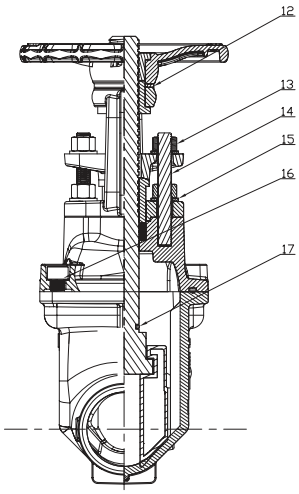
MODEL: SD-OSY250GG-D

- Working pressure: 250 psi
- Connection ends: Grooved to AWWA C606
- Temperature range: 0°C to 80°C
- Coating: Fusion bonded epoxy coating internally and externally in accordance with ANSI/AWWA C550

PART NO.	PART NAME	ASTM SPEC.
1	Valve Body	ASTM A536, 65-45-12
2	Resilient Wedge Disc	ASTM A536, 65-45-12+EPDM
3	Stem	AISI420
4	Bonnet Gasket	EPDM
5	Bonnet	ASTM A536, 65-45-12
6	Washer	Brass Hpb59-1
7	Yoke	ASTM A536, 65-45-12
8	Stem Bushing	Brass Hpb59-1
9	Gland	ASTM A536, 65-45-12
10	Stem Nut	Brass Hpb59-1
11	Hand Wheel	ASTM A536, 65-45-12
12	Washer	Brass Hpb59-1
13	Gland Nut	Carbon Steel Zinc Plated
14	Stud	Carbon Steel Zinc Plated
15	Flat Washer	Carbon Steel Zinc Plated
16	Nut	Carbon Steel Zinc Plated
17	O Ring	EPDM

* Optional for Stem AISI316





Size	L	H1	H2	OD	d	A	B	Net. Wt. Kg.
2”	178	318	370	60.3	57.15	15.88	7.92	11.08
2.5”	190	343	410	73	69.09	15.88	7.92	12.22
3”	203	386	468	88.9	84.94	15.88	7.92	16.67
4”	229	436	538	114.3	110.08	15.88	9.52	23.89
5”	254	516	640	141.3	137.03	15.88	9.52	33.08
6”	267	576	730	168.3	163.96	15.88	9.52	40.41
8”	292	749	950	219.1	214.4	19.05	11.13	73.40
10”	330	904	1158	273	268.28	19.05	12.7	121.16
12”	356	1030	1335	323.9	318.29	19.05	12.7	172.02

* 5” - Only UL Listing

Unit : mm

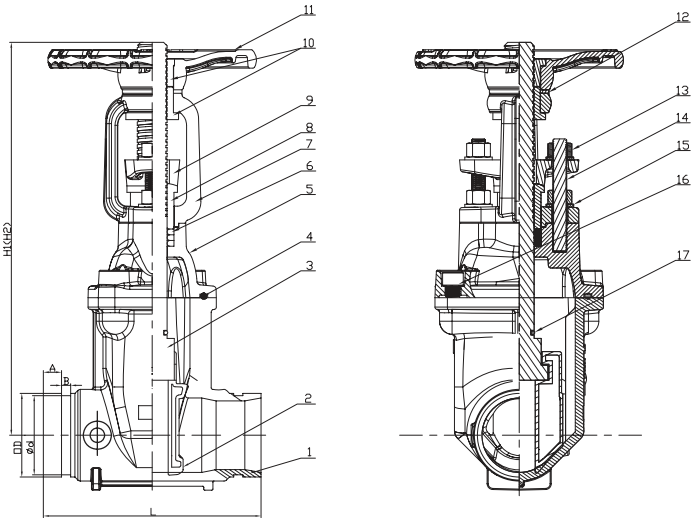
OS & Y GROOVED RESILIENT GATE VALVE

MODEL: SD-OSY300GG-D

- Working pressure: 300 psi
- Connection ends: Grooved to AWWA C606
- Temperature range: 0ºC to 80ºC
- Coating: Fusion bonded epoxy coating internally and externally in accordance with ANSI/AWWA C550

PART NO.	PART NAME	ASTM SPEC.
1	Valve Body	ASTM A536, 65-45-12
2	Resilient Wedge Disc	ASTM A536, 65-45-12+EPDM
3	Stem	AISI420
4	Bonnet Gasket	EPDM
5	Bonnet	ASTM A536, 65-45-12
6	Washer	Brass Hpb59-1
7	Yoke	ASTM A536, 65-45-12
8	Stem Bushing	Brass Hpb59-1
9	Gland	ASTM A536, 65-45-12
10	Stem Nut	Brass Hpb59-1
11	Hand Wheel	ASTM A536, 65-45-12
12	Washer	Brass Hpb59-1
13	Gland Nut	Carbon Steel Zinc Plated
14	Stud	Carbon Steel Zinc Plated
15	Flat Washer	Carbon Steel Zinc Plated
16	Nut	Carbon Steel Zinc Plated
17	O Ring	EPDM

* Optional for Stem AISI316



Size	L	H1	H2	OD	d	A	B	Net. Wt. Kg.
2”	178	318	370	60.3	57.15	15.88	7.92	11.08
2.5”	190	343	410	73	69.09	15.88	7.92	12.22
3”	203	386	468	88.9	84.94	15.88	7.92	16.67
4”	229	436	538	114.3	110.08	15.88	9.52	23.89
5”	254	516	640	141.3	137.03	15.88	9.52	33.08
6”	267	576	730	168.3	163.96	15.88	9.52	40.41
8”	292	749	950	219.1	214.4	19.05	11.13	73.40
10”	330	904	1158	273	268.28	19.05	12.7	121.16
12”	356	1030	1335	323.9	318.29	19.05	12.7	172.02

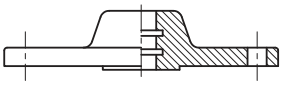
* 5” - Only UL Listing

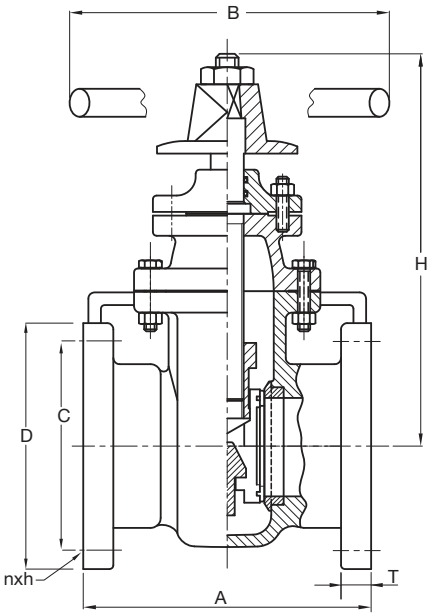
Unit : mm

NON RISING STEM GATE VALVE

MODEL: SD-NRS175GV

- Working pressure is 175 psi (non-shock cold water pressure, max. temp. 63°C)
- Iron body, Bronze mounted, Non-rising stem, Parallel seats, Double disc
- Mechanical Joint ends conform to AWWA C111 and ANSI A21.11
- Flanged ends to ANSI B16.1 Class 125





PART NAME	MATERIAL	ASTM SPEC.
Body	Cast Iron	ASTM A126-B
Disc	Cast Iron	ASTM A126-B
Bonnet	Cast Iron	ASTM A126-B
Box	Cast Iron	ASTM A126-B
Stem	Stainless Steel	AISI 420
Stem Nut	Cast Bronze	ASTM B62
Hand Weel	Cast Iron	ASTM A126-B

Size	A	B	C	D	H	T	nxh
2.5”	190	178	140	178	337	17.4	4 x19.1
3”	203	254	152	191	306	19.1	4 x19.1
4”	229	254	191	229	347	23.8	8 x19.1
6”	267	305	241	279	459	25.4	8 x 22.2
8”	292	356	298	343	533	28.5	8 x 22.2
10”	330	406	363	406	625	30.1	12 x 25.4

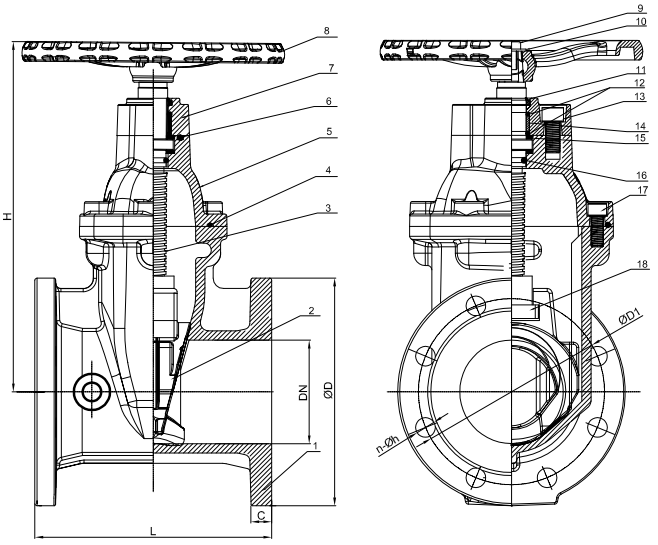
Unit : mm

NON RISING STEM GATE VALVE

MODEL: SD-NRS200FF-D

- Working pressure: 200 psi
- Valve available with handwheel or with post indicator flange (without handwheel)
- Connection ends: Flange to ASME B16.1 Class 125
- Temperature range: 0ºC to 80ºC
- Coating: Fusion bonded epoxy coating internally and externally in accordance with ANSI/AWWA C550

PART NO.	PART NAME	ASTM SPEC.
1	Valve Body	ASTM A536, 65-45-12
2	Resilient Wedge Disc	ASTM A536, 65-45-12+EPDM
3	Stem	AISI431
4	Bonnet Gasket	EPDM
5	Bonnet	ASTM A536, 65-45-12
6	O Ring	NBR
7	Gland	ASTM A536, 65-45-12
8	Hand Wheel	ASTM A536, 65-45-12
9	Bolt	Carbon Steel Zinc Plated
10	Flat Washer	Carbon Steel Zinc Plated
11	Ring Wiper	EPDM
12	O Ring	NBR
13	Nut	Carbon Steel Zinc Plated
14	Axis Guide	Brass Hpb59-1
15	Washer	Brass Hpb59-1
16	O Ring	EPDM
17	Nut	Carbon Steel Zinc Plated
18	Wedge Nut	Brass Hpb59-1



* Optional for Stem AISI316

Size	L	H (with hand-wheel)	H (with post indicator flange)	D	D1	C	n x ø h	Net. Wt. Kg.
2”	178	254	278	152	120.7	16	4 x19.1	13.03
2.5”	190	275	300	178	139.7	17.5	4 x19.1	16.01
3”	203	301	321	191	152.4	19.1	4 x19.1	21.23
4”	229	355	375	229	190.5	19.1	8 x19.1	29.22
5”	254	593	415	254	215.9	19.1	8 x 22.2	39.00
6”	267	448	455	279	241.3	19.1	8 x 22.2	49.01
8”	292	548	565	343	298.5	22.2	8 x 22.2	84.93
10”	330	626	636	406	362	23.8	12 x 25.4	118.19
12”	356	722	731	483	431.8	25.4	12 x 25.4	181.46

* 2” - Only FM Approval, 5” - Only UL Listing

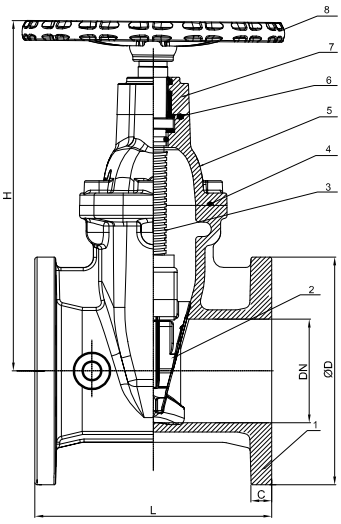
Unit : mm

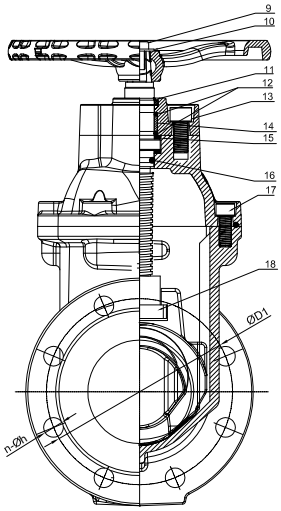
NON RISING STEM GATE VALVE

MODEL: SD-NRS250FF-D

- Working pressure: 250 psi
- Valve available with handwheel or with post indicator flange (without handwheel)
- Connection ends: Flange to ASME B16.1 Class 125
- Temperature range: 0ºC to 80ºC
- Coating: Fusion bonded epoxy coating internally and externally in accordance with ANSI/AWWA C550

PART NO.	PART NAME	ASTM SPEC.
1	Valve Body	ASTM A536, 65-45-12
2	Resilient Wedge Disc	ASTM A536, 65-45-12+EPDM
3	Stem	AISI431
4	Bonnet Gasket	EPDM
5	Bonnet	ASTM A536, 65-45-12
6	O Ring	NBR
7	Gland	ASTM A536, 65-45-12
8	Hand Wheel	ASTM A536, 65-45-12
9	Bolt	Carbon Steel Zinc Plated
10	Flat Washer	Carbon Steel Zinc Plated
11	Ring Wiper	EPDM
12	O Ring	NBR
13	Nut	Carbon Steel Zinc Plated
14	Axis Guide	Brass Hpb59-1
15	Washer	Brass Hpb59-1
16	O Ring	EPDM
17	Nut	Carbon Steel Zinc Plated
18	Wedge Nut	Brass Hpb59-1





* Optional for Stem AISI316

Size	L	H (with hand-wheel)	H (with post indicator flange)	D	D1	C	n x ø h	Net. Wt. Kg.
2”	178	254	278	152	120.7	16	4 x19.1	13.03
2.5”	190	275	300	178	139.7	17.5	4 x19.1	16.01
3”	203	301	321	191	152.4	19.1	4 x19.1	21.23
4”	229	355	375	229	190.5	19.1	8 x19.1	29.22
5”	254	593	415	254	215.9	19.1	8 x 22.2	39.00
6”	267	448	455	279	241.3	19.1	8 x 22.2	49.01
8”	292	548	565	343	298.5	22.2	8 x 22.2	84.93
10”	330	626	636	406	362	23.8	12 x 25.4	118.19
12”	356	722	731	483	431.8	25.4	12 x 25.4	181.46

* 2” - Only FM Approval, 5” - Only UL Listing

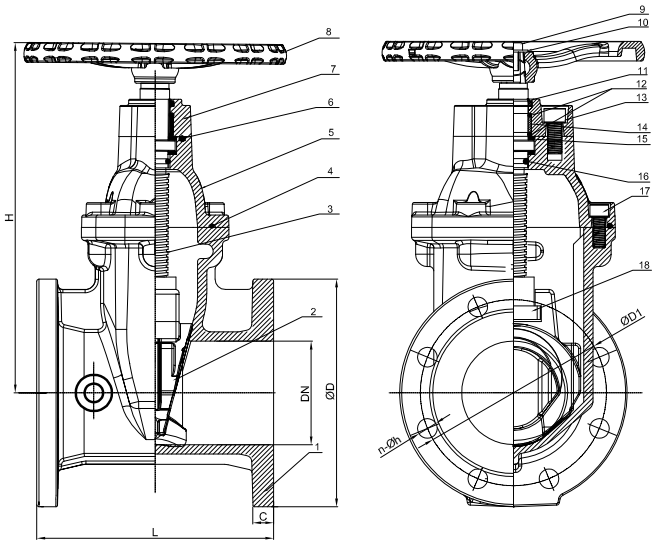
Unit : mm

NON RISING STEM GATE VALVE

MODEL: SD-NRS300FF-D

- Working pressure: 300 psi
- Valve available with handwheel or with post indicator flange (without handwheel)
- Connection ends: Flange to ASME B16.1 Class 125
- Temperature range: 0ºC to 80ºC
- Coating: Fusion bonded epoxy coating internally and externally in accordance with ANSI/AWWA C550

PART NO.	PART NAME	ASTM SPEC.
1	Valve Body	ASTM A536, 65-45-12
2	Resilient Wedge Disc	ASTM A536, 65-45-12+EPDM
3	Stem	AISI431
4	Bonnet Gasket	EPDM
5	Bonnet	ASTM A536, 65-45-12
6	O Ring	NBR
7	Gland	ASTM A536, 65-45-12
8	Hand Wheel	ASTM A536, 65-45-12
9	Bolt	Carbon Steel Zinc Plated
10	Flat Washer	Carbon Steel Zinc Plated
11	Ring Wiper	EPDM
12	O Ring	NBR
13	Nut	Carbon Steel Zinc Plated
14	Axis Guide	Brass Hpb59-1
15	Washer	Brass Hpb59-1
16	O Ring	EPDM
17	Nut	Carbon Steel Zinc Plated
18	Wedge Nut	Brass Hpb59-1



* Optional for Stem AISI316

Size	L	H (with hand-wheel)	H (with post indicator flange)	D	D1	C	n x ø h	Net. Wt. Kg.
2”	178	254	278	152	120.7	16	4 x19.1	13.03
2.5”	190	275	300	178	139.7	17.5	4 x19.1	16.01
3”	203	301	321	191	152.4	19.1	4 x19.1	21.23
4”	229	355	375	229	190.5	19.1	8 x19.1	29.22
5”	254	593	415	254	215.9	19.1	8 x 22.2	39.00
6”	267	448	455	279	241.3	19.1	8 x 22.2	49.01
8”	292	548	565	343	298.5	22.2	8 x 22.2	84.93
10”	330	626	636	406	362	23.8	12 x 25.4	118.19
12”	356	722	731	483	431.8	25.4	12 x 25.4	181.46

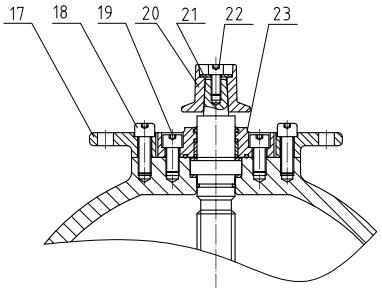
* 2” - Only FM Approval, 5” - Only UL Listing

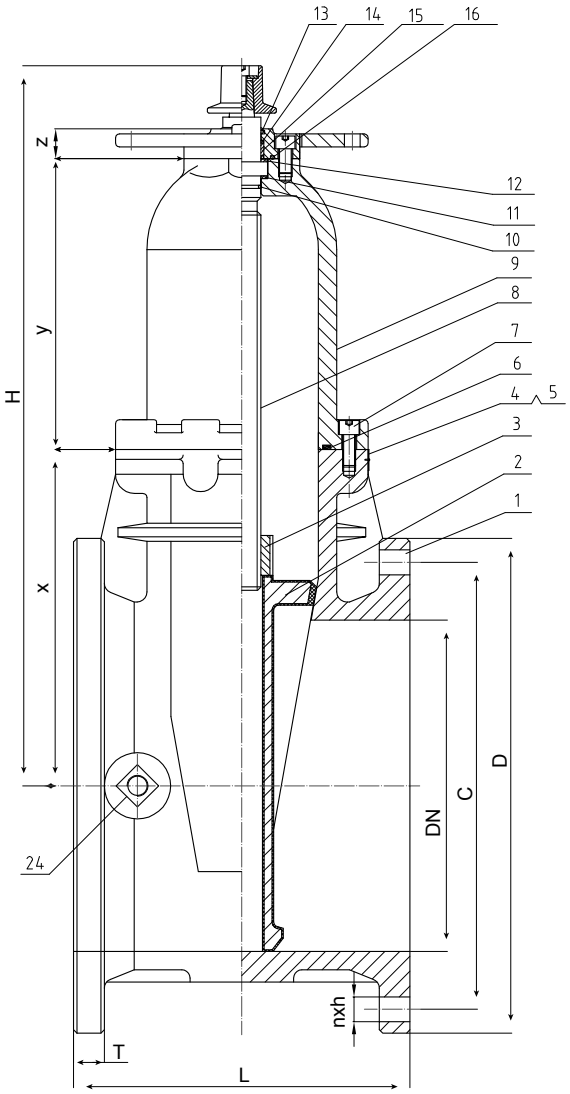
Unit : mm

NON RISING STEM GATE VALVE

MODEL: SD-NRS150FF-D1

Sl No.	Part Name	ASTM Spec.	Material
1	Body	ASTM A536	Ductile Iron
2	Wedge	ASTM A536 + ASTM D2000	Ductile Iron + EPDM
3	Stem Nut	ASTM B584	Bronze
4	Label	---	Aluminium
5	Screw	ASTM A276, SS304	Stainless Steel
6	Seal Gasket	ASTM D2000	EPDM
7	Screw Bonnet	ASTM A574M	Alloy Steel, Zinc Plated
8	Stem	ASTM A276, SS 304	Stainless Steel
9	Bonnet	ASTM A536	Ductile Iron
10	O-Ring	ASTM D2000	EPDM
11	Washer, Stem Thrust – Lower	ASTM B584	Bronze
12	Washer, Stem Thrust – Upper	ASTM A276, SS 410	Stainless Steel
13	Ring Wiper	ASTM D2000	EPDM
14	O-Ring	ASTM D2000	EPDM
15	Bushing, Stem Seal	ASTM B584	Bronze
16	O-Ring	ASTM D2000	EPDM
17	Flange, Indicator Post	ASTM A126-B	Cast Iron
18	Screw, Ind. Flg.	ASTM A574M	Alloy Steel, Zinc Plated
19	Screw, Gland Flg.	ASTM A574M	Alloy Steel, Zinc Plated
20	Cap	ASTM A126-B	Cast Iron
21	Washer	---	DIN 9021B
22	Screw, Gland Flg.	ASTM A574M	Alloy Steel, Zinc Plated
23	Gland	ASTM A536	Ductile Iron
24	Plug, Pipe	---	Steel, ASME B16.14





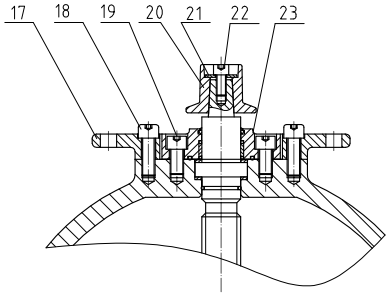
Size	L	H	C	D	T	nxh	x	y	z
16”	406 ± 1.5	869	539.5	597	37	16 x 29	406	351	36

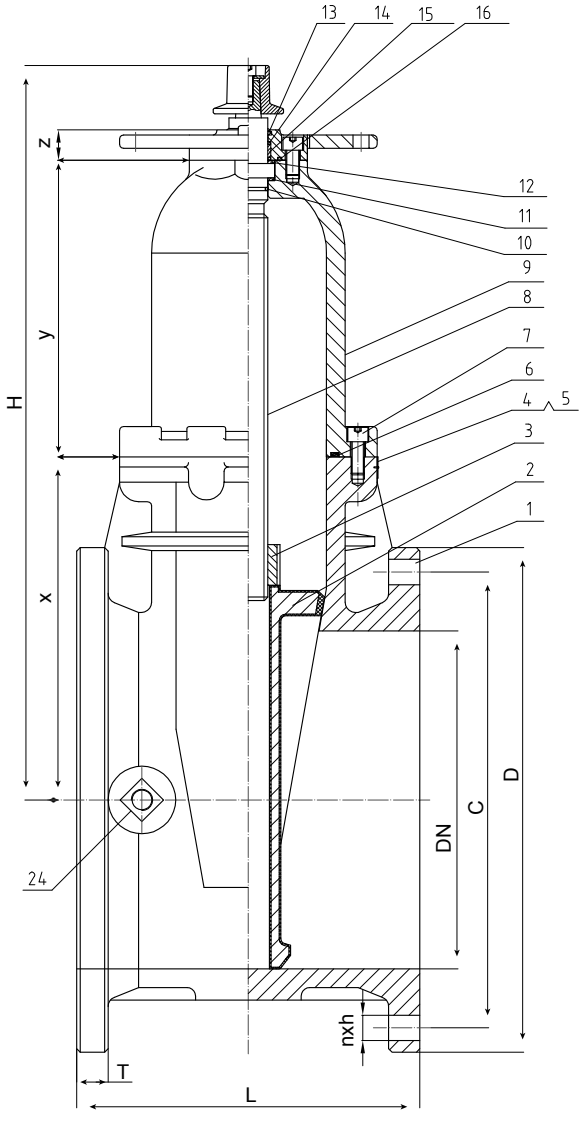
Unit : mm

NON RISING STEM GATE VALVE

MODEL: SD-NRS250FF-D1

Sl No.	Part Name	ASTM Spec.	Material
1	Body	ASTM A536	Ductile Iron
2	Wedge	ASTM A536 + ASTM D2000	Ductile Iron + EPDM
3	Stem Nut	ASTM B584	Bronze
4	Label	---	Aluminium
5	Screw	ASTM A276, SS304	Stainless Steel
6	Seal Gasket	ASTM D2000	EPDM
7	Screw Bonnet	ASTM A574M	Alloy Steel, Zinc Plated
8	Stem	ASTM A276, SS 304	Stainless Steel
9	Bonnet	ASTM A536	Ductile Iron
10	O-Ring	ASTM D2000	EPDM
11	Washer, Stem Thrust – Lower	ASTM B584	Bronze
12	Washer, Stem Thrust – Upper	ASTM A276, SS 410	Stainless Steel
13	Ring Wiper	ASTM D2000	EPDM
14	O-Ring	ASTM D2000	EPDM
15	Bushing, Stem Seal	ASTM B584	Bronze
16	O-Ring	ASTM D2000	EPDM
17	Flange, Indicator Post	ASTM A126-B	Cast Iron
18	Screw, Ind. Flg.	ASTM A574M	Alloy Steel, Zinc Plated
19	Screw, Gland Flg.	ASTM A574M	Alloy Steel, Zinc Plated
20	Cap	ASTM A126-B	Cast Iron
21	Washer	---	DIN 9021B
22	Screw, Gland Flg.	ASTM A574M	Alloy Steel, Zinc Plated
23	Gland	ASTM A536	Ductile Iron
24	Plug, Pipe	---	Steel, ASME B16.14





Size	L	H	C	D	T	nxh	x	y	z
14”	381 ± 1.5	808	476	533	35	12x29	416	280	36
16”	406 ± 1.5	869	539.5	597	37	16 x 29	406	351	36

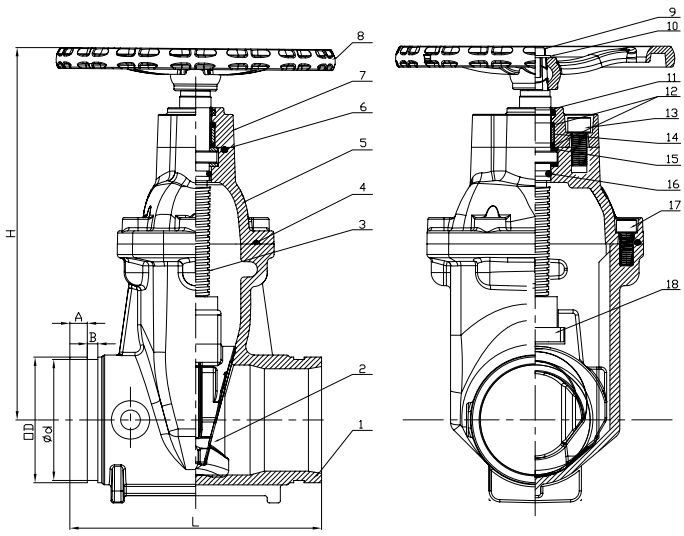
Unit : mm

NON RISING STEM GROOVED GATE VALVE

MODEL: SD-NRS200GG-D

- Working pressure: 200 psi
- Valve available with handwheel or with post indicator flange (without handwheel)
- Connection ends: Grooved to AWWA C606
- Temperature range: 0ºC to 80ºC
- Coating: Fusion bonded epoxy coating internally and externally in accordance with ANSI/AWWA C550

PART NO.	PART NAME	ASTM SPEC.
1	Valve Body	ASTM A536, 65-45-12
2	Resilient Wedge Disc	ASTM A536, 65-45-12+EPDM
3	Stem	AISI431
4	Bonnet Gasket	EPDM
5	Bonnet	ASTM A536, 65-45-12
6	O Ring	NBR
7	Gland	ASTM A536, 65-45-12
8	Hand Wheel	ASTM A536, 65-45-12
9	Bolt	Carbon Steel Zinc Plated
10	Flat Washer	Carbon Steel Zinc Plated
11	Ring Wiper	EPDM
12	O Ring	NBR
13	Nut	Carbon Steel Zinc Plated
14	Axis Guide	Brass Hpb59-1
15	Washer	Brass Hpb59-1
16	O Ring	NBR
17	Nut	Carbon Steel Zinc Plated
18	Wedge Nut	Brass Hpb59-1



* Optional for Stem AISI316

Size	L	H	OD	d	A	B	Net. Wt. Kg.
2”	178	254	60.3	57.15	15.88	7.92	9.73
2.5”	190	275	73	69.09	15.88	7.92	10.82
3”	203	301	88.9	84.94	15.88	7.92	15.07
4”	229	355	114.3	110.08	15.88	9.52	21.56
5”	254	593	141.3	137.03	15.88	9.52	30.21
6”	267	448	168.3	163.96	15.88	9.52	37.14
8”	292	548	219.1	214.4	19.05	11.13	67.28
10”	330	626	273	268.28	19.05	12.7	106.53
12”	356	722	323.9	318.29	19.05	12.7	157.53

* 2” - Only FM Approval, 5” - Only UL Listing

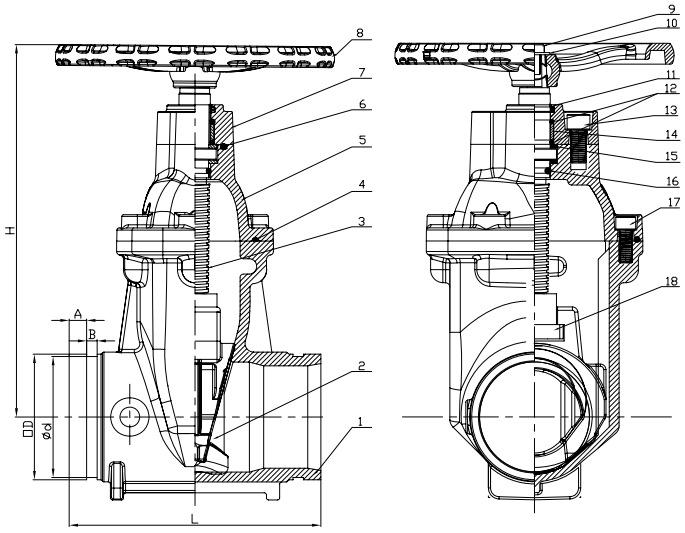
Unit : mm

NON RISING STEM GROOVED GATE VALVE

MODEL: SD-NRS250GG-D

- Working pressure: 250 psi
- Valve available with handwheel or with post indicator flange (without handwheel)
- Connection ends: Grooved to AWWA C606
- Temperature range: 0ºC to 80ºC
- Coating: Fusion bonded epoxy coating internally and externally in accordance with ANSI/AWWA C550

PART NO.	PART NAME	ASTM SPEC.
1	Valve Body	ASTM A536, 65-45-12
2	Resilient Wedge Disc	ASTM A536, 65-45-12+EPDM
3	Stem	AISI431
4	Bonnet Gasket	EPDM
5	Bonnet	ASTM A536, 65-45-12
6	O Ring	NBR
7	Gland	ASTM A536, 65-45-12
8	Hand Wheel	ASTM A536, 65-45-12
9	Bolt	Carbon Steel Zinc Plated
10	Flat Washer	Carbon Steel Zinc Plated
11	Ring Wiper	EPDM
12	O Ring	NBR
13	Nut	Carbon Steel Zinc Plated
14	Axis Guide	Brass Hpb59-1
15	Washer	Brass Hpb59-1
16	O Ring	NBR
17	Nut	Carbon Steel Zinc Plated
18	Wedge Nut	Brass Hpb59-1



* Optional for Stem AISI316

Size	L	H	OD	d	A	B	Net. Wt. Kg.
2”	178	254	60.3	57.15	15.88	7.92	9.73
2.5”	190	275	73	69.09	15.88	7.92	10.82
3”	203	301	88.9	84.94	15.88	7.92	15.07
4”	229	355	114.3	110.08	15.88	9.52	21.56
5”	254	593	141.3	137.03	15.88	9.52	30.21
6”	267	448	168.3	163.96	15.88	9.52	37.14
8”	292	548	219.1	214.4	19.05	11.13	67.28
10”	330	626	273	268.28	19.05	12.7	106.53
12”	356	722	323.9	318.29	19.05	12.7	157.53

* 2” - Only FM Approval, 5” - Only UL Listing

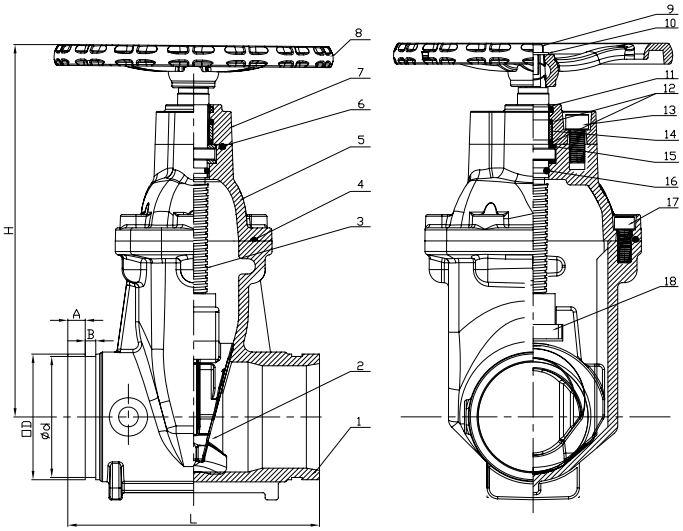
Unit : mm

NON RISING STEM GROOVED GATE VALVE

MODEL: SD-NRS300GG-D

- Working pressure: 300 psi
- Valve available with handwheel or with post indicator flange (without handwheel)
- Connection ends: Grooved to AWWA C606
- Temperature range: 0ºC to 80ºC
- Coating: Fusion bonded epoxy coating internally and externally in accordance with ANSI/AWWA C550

PART NO.	PART NAME	ASTM SPEC.
1	Valve Body	ASTM A536, 65-45-12
2	Resilient Wedge Disc	ASTM A536, 65-45-12+EPDM
3	Stem	AISI431
4	Bonnet Gasket	EPDM
5	Bonnet	ASTM A536, 65-45-12
6	O Ring	NBR
7	Gland	ASTM A536, 65-45-12
8	Hand Wheel	ASTM A536, 65-45-12
9	Bolt	Carbon Steel Zinc Plated
10	Flat Washer	Carbon Steel Zinc Plated
11	Ring Wiper	EPDM
12	O Ring	NBR
13	Nut	Carbon Steel Zinc Plated
14	Axis Guide	Brass Hpb59-1
15	Washer	Brass Hpb59-1
16	O Ring	NBR
17	Nut	Carbon Steel Zinc Plated
18	Wedge Nut	Brass Hpb59-1



* Optional for Stem AISI316

Size	L	H	OD	d	A	B	Net. Wt. Kg.
2”	178	254	60.3	57.15	15.88	7.92	9.73
2.5”	190	275	73	69.09	15.88	7.92	10.82
3”	203	301	88.9	84.94	15.88	7.92	15.07
4”	229	355	114.3	110.08	15.88	9.52	21.56
5”	254	593	141.3	137.03	15.88	9.52	30.21
6”	267	448	168.3	163.96	15.88	9.52	37.14
8”	292	548	219.1	214.4	19.05	11.13	67.28
10”	330	626	273	268.28	19.05	12.7	106.53
12”	356	722	323.9	318.29	19.05	12.7	157.53

* 2” - Only FM Approval, 5” - Only UL Listing

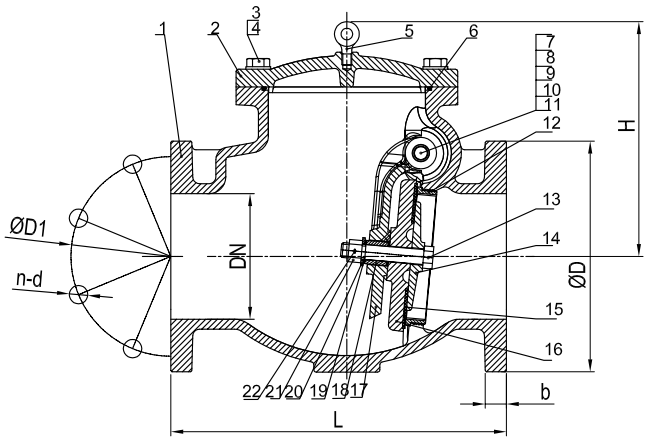
Unit : mm

SWING CHECK VALVE

MODEL: SD-NRV200FF-D

- Working pressure: 200 psi
- Connection ends: Flange to ASME B16.1 Class 125
- Temperature range: 0°C to 80°C
- Coating: Fusion bonded epoxy coating internally and externally in accordance with ANSI/AWWA C550

PART NO.	PART NAME	ASTM SPEC.
1	Valve Body	Ductile Iron 65-45-12
2	Bonnet	Ductile Iron 65-45-12
3	Bolts	Stainless Steel 316
4	Washer	Stainless Steel 316
5	Sling Ring	Carbon Steel Zinc Plated
6	O Ring	NBR
7	Hinge Bushing	Stainless Steel 316
8	O Ring	NBR
9	Hinge Pin	Stainless Steel 316
10	Washer	Brass ASTM B36
11	Hinge Bushing	Brass ASTM B36
12	Seat Ring	Bronze ASTM B62
13	Disc Seat Bolt	Stainless Steel 316
14	Retainer Washer	Bronze ASTM B62
15	Disc Seat Ring	EPDM
16	Disc	Ductile Iron 65-45-12
17	Clapper Arm	Ductile Iron 65-45-12
18	Stud Bushing	Brass ASTM B36
19	O Ring	NBR
20	Washer	Stainless Steel 316
21	Nuts	Stainless Steel 316
22	Cotter Pin	Stainless Steel 304



Size	L	D	D1	b	n x d	H	Net. Wt. Kg.
2”	203	152	120.5	16	4 x19.1	133	11.21
2.5”	254	178	139.5	17.5	4 x19.1	150	16.67
3”	278	191	152.5	19	4 x19.1	243	22.52
4”	330	229	190.5	24	8 x19.1	284	34.93
6”	406	279	241.5	25.5	8 x 22.2	290	65.16
8”	495	343	298.5	28.5	8 x 22.2	330	120.65
10”	622	406	362	30.5	12 x 25.4	350	180.86
12”	660	483	432	32	12 x 25.4	376	241.27

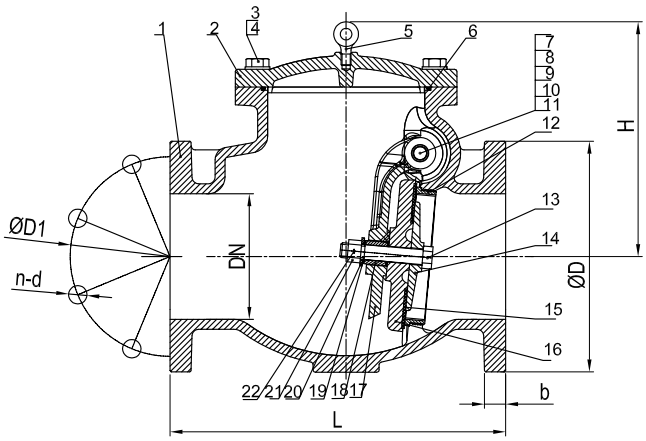
Unit : mm

SWING CHECK VALVE

MODEL: SD-NRV300FF-D

- Working pressure: 300 psi
- Connection ends: Flange to ASME B16.1 Class 125
- Temperature range: 0ºC to 80ºC
- Coating: Fusion bonded epoxy coating internally and externally in accordance with ANSI/AWWA C550

PART NO.	PART NAME	ASTM SPEC.
1	Valve Body	Ductile Iron 65-45-12
2	Bonnet	Ductile Iron 65-45-12
3	Bolts	Stainless Steel 316
4	Washer	Stainless Steel 316
5	Sling Ring	Carbon Steel Zinc Plated
6	O Ring	NBR
7	Hinge Bushing	Stainless Steel 316
8	O Ring	NBR
9	Hinge Pin	Stainless Steel 316
10	Washer	Brass ASTM B36
11	Hinge Bushing	Brass ASTM B36
12	Seat Ring	Bronze ASTM B62
13	Disc Seat Bolt	Stainless Steel 316
14	Retainer Washer	Bronze ASTM B62
15	Disc Seat Ring	EPDM
16	Disc	Ductile Iron 65-45-12
17	Clapper Arm	Ductile Iron 65-45-12
18	Stud Bushing	Brass ASTM B36
19	O Ring	NBR
20	Washer	Stainless Steel 316
21	Nuts	Stainless Steel 316
22	Cotter Pin	Stainless Steel 304



Size	L	D	D1	b	n x d	H	Net. Wt. Kg.
2”	203	152	120.5	16	4 x19.1	133	11.21
2.5”	254	178	139.5	17.5	4 x19.1	150	16.67
3”	278	191	152.5	19	4 x19.1	243	22.52
4”	330	229	190.5	24	8 x19.1	284	34.93
6”	406	279	241.5	25.5	8 x 22.2	290	65.16
8”	495	343	298.5	28.5	8 x 22.2	330	120.65
10”	622	406	362	30.5	12 x 25.4	350	180.86
12”	660	483	432	32	12 x 25.4	376	241.27

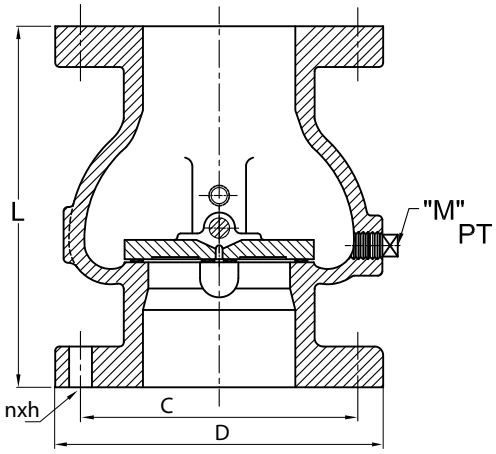
Unit : mm

SWING CHECK VALVE

MODEL: SD-NRV250CV

- Working Pressure 250 psi. Cold water pressure (Max. temp. 63°C)
- Flanged Ends to ANSI B16.1 Class 125
- Ductile Iron Body with EPDM
- Epoxy coated interior / exterior to AWWA C550
- Dual Plate Construction

PART NAME	MATERIAL	ASTM SPEC.
Body	Ductile Iron	ASTM A536, 65-45-12
Body Seal	EPDM	
Plate	Stainless Steel	ASTM A351.CF8
Spring	Stainless Steel	AISI 316
Hinge Pin	Stainless Steel	AISI 316
Washer	Teflon	
Thrust Washer	Teflon	
Plug	Mild Steel	A105-80
Square Plug	Mild Steel	A105-80
Packing	Buna"N"	



Size	L	C	D	"M"PT	n x h	Net. Wt. Lbs.
3"	168	152	191	12.7	4 x19.1	23.2
4"	190	191	229	12.7	8 x19.1	36.7
6"	229	241	279	19.1	8 x 22.2	62.9
8"	267	298	343	19.1	8 x 22.2	101.6

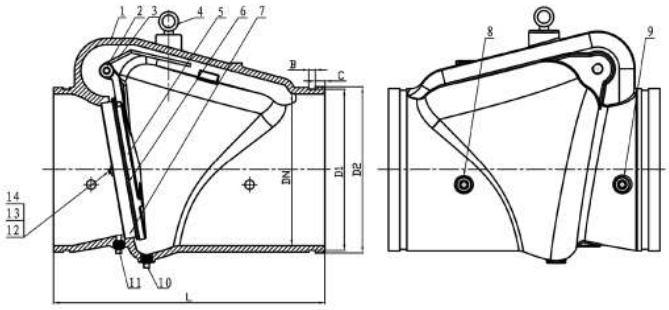
Unit : mm

SWING CHECK VALVE

MODEL: SD-NRV200GG-D

- Working pressure: 200 psi
- Connection ends: Groove to AWWA C606
- Temperature range: 0ºC to 80ºC
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550 or painting upon request

PART NO.	PART NAME	ASTM SPEC.
1	Valve Body	ASTM A536, 65-45-12
2	Hinge Pin	AISI 420
3	Spring	AISI 304
4	Eye Bolt	Carbon Steel Zinc Plated
5	Disc	DN50-100 AISI 304 DN150-300 ASTM A536, 65-45-12
6	Disc Sealing Ring	EPDM
7	Seat Ring	ASTM B62 C83600
8	Plug	Malleable Iron Galvanized
9	Plug	Malleable Iron Galvanized
10	Plug	Malleable Iron Galvanized
11	Plug	Malleable Iron Galvanized
12	Bolt	AISI 304
13	Washer	AISI 304
14	Nut	AISI 304



Size	L	D1	D2	b	c
2”	171	57.15	60.3	7.93	15.88
2.5”	184	69.09	73	7.93	15.88
3”	197	84.94	88.9	7.93	15.88
4”	210	110.08	114.3	9.53	15.88
5”	248	137.03	141.3	9.53	15.88
6”	324	163.96	168.3	9.53	15.88
8”	371	214.4	219.1	11.13	19.05
10”	457	268.28	273	12.7	19.05
12”	535	318.29	323.9	12.7	19.05

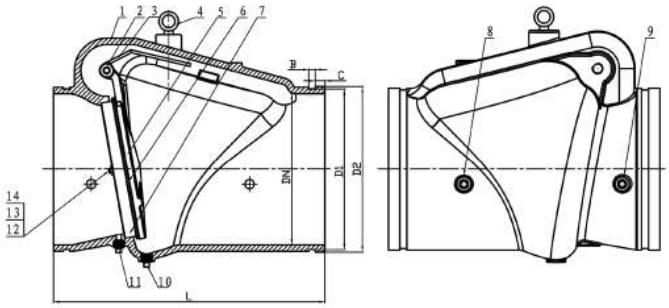
Unit : mm

SWING CHECK VALVE

MODEL: SD-NRV250GG-D

- Working pressure: 250 psi
- Connection ends: Groove to AWWA C606
- Temperature range: 0°C to 80°C
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550 or painting upon request

PART NO.	PART NAME	ASTM SPEC.
1	Valve Body	ASTM A536, 65-45-12
2	Hinge Pin	AISI 420
3	Spring	AISI 304
4	Eye Bolt	Carbon Steel Zinc Plated
5	Disc	DN50-100 AISI 304 DN150-300 ASTM A536, 65-45-12
6	Disc Sealing Ring	EPDM
7	Seat Ring	ASTM B62 C83600
8	Plug	Malleable Iron Galvanized
9	Plug	Malleable Iron Galvanized
10	Plug	Malleable Iron Galvanized
11	Plug	Malleable Iron Galvanized
12	Bolt	AISI 304
13	Washer	AISI 304
14	Nut	AISI 304



Size	L	D1	D2	b	c
2”	171	57.15	60.3	7.93	15.88
2.5”	184	69.09	73	7.93	15.88
3”	197	84.94	88.9	7.93	15.88
4”	210	110.08	114.3	9.53	15.88
5”	248	137.03	141.3	9.53	15.88
6”	324	163.96	168.3	9.53	15.88
8”	371	214.4	219.1	11.13	19.05
10”	457	268.28	273	12.7	19.05
12”	535	318.29	323.9	12.7	19.05

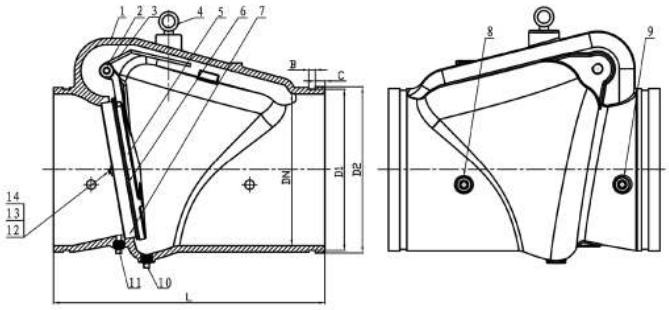
Unit : mm

SWING CHECK VALVE

MODEL: SD-NRV300GG-D

- Working pressure: 300 psi
- Connection ends: Groove to AWWA C606
- Temperature range: 0ºC to 80ºC
- Coating: Fusion Bonded Epoxy Coating in accordance with ANSI/AWWA C550 or painting upon request

PART NO.	PART NAME	ASTM SPEC.
1	Valve Body	ASTM A536, 65-45-12
2	Hinge Pin	AISI 420
3	Spring	AISI 304
4	Eye Bolt	Carbon Steel Zinc Plated
5	Disc	DN50-100 AISI 304 DN150-300 ASTM A536, 65-45-12
6	Disc Sealing Ring	EPDM
7	Seat Ring	ASTM B62 C83600
8	Plug	Malleable Iron Galvanized
9	Plug	Malleable Iron Galvanized
10	Plug	Malleable Iron Galvanized
11	Plug	Malleable Iron Galvanized
12	Bolt	AISI 304
13	Washer	AISI 304
14	Nut	AISI 304



Size	L	D1	D2	b	c
2”	171	57.15	60.3	7.93	15.88
2.5”	184	69.09	73	7.93	15.88
3”	197	84.94	88.9	7.93	15.88
4”	210	110.08	114.3	9.53	15.88
5”	248	137.03	141.3	9.53	15.88
6”	324	163.96	168.3	9.53	15.88
8”	371	214.4	219.1	11.13	19.05
10”	457	268.28	273	12.7	19.05
12”	535	318.29	323.9	12.7	19.05

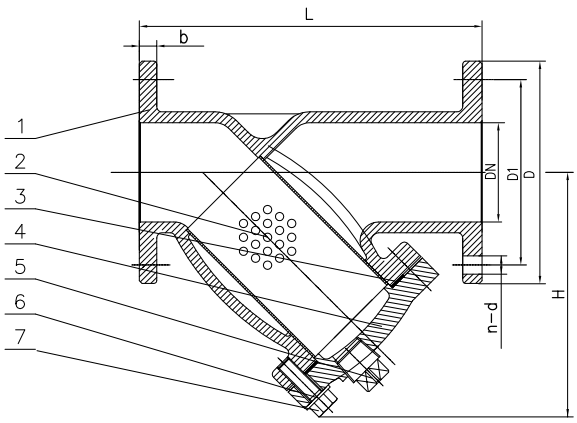
Unit : mm

Y STRAINER

MODEL: SD-YS300FF-D

- Working pressure: 300 psi
- Connection ends: Flange to ASME B16.1 Class 125
- Temperature range: 0ºC to 80ºC Rubber Gasket
  -10ºC to 350ºC Graphite Gasket
- Coating: Fusion bonded epoxy coating internally and externally in accordance with ANSI/AWWA C550

PART NO.	PART NAME	ASTM SPEC.
1	Valve Body	ASTM A536, 65-45-12
2	Screen	AISI 304
3	Gasket	EPDM
4	Bonnet	ASTM A536, 65-45-12
5	Plug	Bronze ASTM B584
6	Bolt	Carbon Steel Zinc Plated
7	Flat Washer	Carbon Steel Zinc Plated



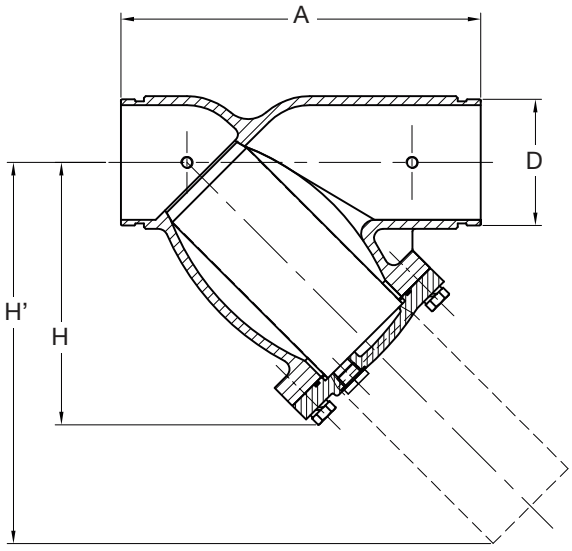
Size	L	D	D1	b	nxd	H	Net. Wt. Kg.	Screen Details		
								Screen hole diam-eter	Sleve No.	Free flow area (%)
2”	200	152	120.5	16	4 x19.1	155	8.70	4	25	48
2½”	254	178	139.5	17.5	4 x19.1	165	12.20	4	25	48
3”	257	191	152.5	19	4 x19.1	180	13.84	5	19	59
4”	308	229	190.5	24	8 x19.1	229	23.88	5	19	59
5”	397	254	216	24	8 x 22.2	285	43.79	6	14	63
6”	470	279	241.5	25.5	8 x 22.2	311	43.79	6.3	13	64
8”	549	343	298.5	28.5	8 x 22.2	394	75.27	6.3	13	64
10”	654	406	362	30.5	12 x 25.4	487	109.25	6.3	13	64
12”	759	483	432	32	12 x 25.4	547	173.10	6.3	13	64

Unit : mm

Y STRAINER

MODEL: SD-YS300GG-D

- Groove - Groove ends
- Working pressure is 300 psi
- Working temperature -10ºC to 120ºC
- Valve comply to AWWA C 606
- FBE coating internally and externally



PART NAME	MATERIAL	ASTM SPEC.
Body	Ductile Iron	A536 65-45-12
Cover	Ductile Iron	A536 65-45-12
O Ring	EPDM	
Screen	Stainless Steel	SS304
Plug	Steel	Q235+Zn
Test Screw	Brass	ASTM B16

Size	A	D	H	H'	Screen Details		
					Screen hole diameter	Area of opening (cm^2)	Friction lost at 15 FPS
2”	203.2	60.3	130	195	3.3	9503.67	7.22
2½”	254	73	158	240	3.3	13761.30	5.89
3”	260	88.9	175	270	3.3	19105.64	8.24
4”	308.1	114.3	202	320	4.78	32638.60	5.88
5”	398.3	139.7	290	425	4.78	52587.00	7.63
6”	471.4	168.3	334	495	6	80637.67	4.82
8”	549.4	219.1	391	570	6.4	132617.48	5.83
10”	654.1	273	459.4	700	6.4	205850.99	7.25
12”	762	323.9	590	840	6.4	293121.82	5.73

Unit : mm

INDICATOR POST

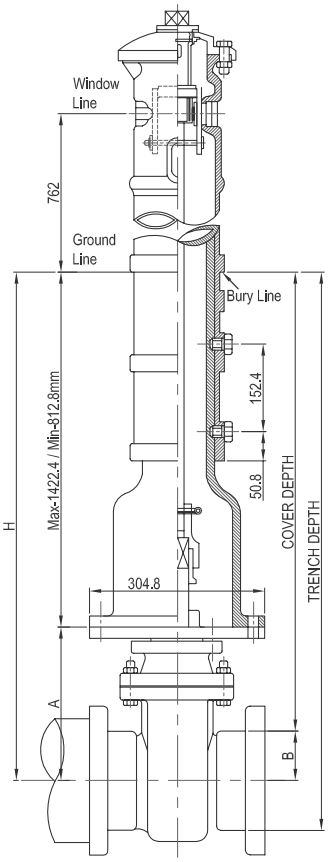
MODEL: SD-800

- Adjustable type vertical mounted
- Vertical type enables underground fire line valves to be operated at ground level with operating wrench
- Compactable to be used with supervisory switches

PART NAME	MATERIAL	ASTM SPEC.
Body	Cast Iron	ASTM A126-B
Extension Sleeve	Cast Iron	ASTM A126-B
Socket	Cast Iron	ASTM A126-B
Cotter Pin	Stainless Steel	AISI 304
Hex. Head Bolt	Steel	ASTM A307-A
Extension Rod	Mild Steel	A105-80
Hexagon Nut	Steel	ASTM A307-A
Target Frame	Cast Bronze	ASTM B62
Round Head Bolt	Steel	ASTM A307-A
Window Glass	Plexi Glass	
Operating Stem	Cast Bronze	ASTM B62
Retaining Ring	Steel	SAE 1065-1090
Plug	Mild Steel	A105-80
Cap	Cast Iron	ASTM A126-B
Operating Wrench	Ductile Iron	
Sign Plate	Aluminium	
Window Frame	Steel	Commercial

Extension Sleeve Length	Exten-sion Rod Length	Trench Depth					Weight Lbs
		4”	6”	8”	10”	12”	
A Post 3’	6’	1117 to 1727	1244 to 1854	1346 to 1956	1460 to 2070	1574 to 2184	252
Turns to open		10½	12½	16½	20½	24½	

Unit : mm



Size	A	B	H
4”	268	61	1081 - 1690
6”	353	88	1166 - 1775
8”	440	116	1253 - 1862
10”	539	145	1352 - 1961
12”	628	172	1441 - 2050

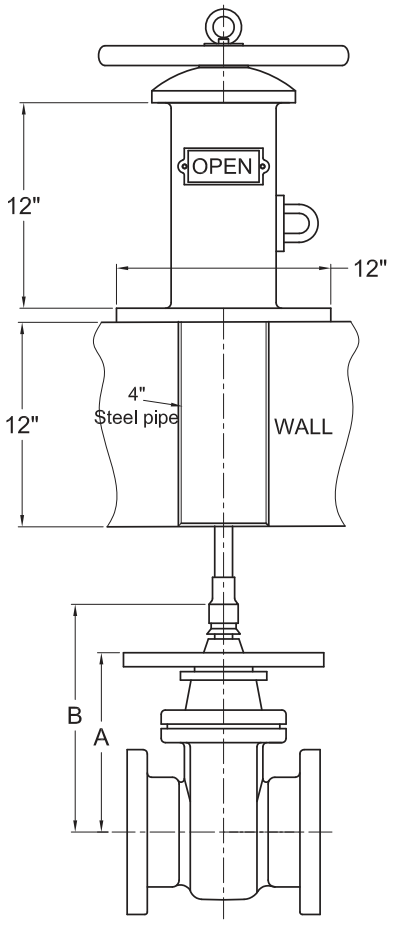
Unit : mm

INDICATOR POST

MODEL: SD-800W

- Used for application where a valve is install behind a wall
- The wall flange of the wall type indicator post is tapped for 4” schedule 40 steel pipe which extends through the wall
- Handwheel operation
- Compactable to be used with supervisory switches

PART NAME	MATERIAL	ASTM SPEC.
Body	Cast Iron	ASTM A126-B
Cap	Cast Iron	ASTM A126-B
Socket	Cast Iron	ASTM A126-B
Cotter Pin	Stainless Steel	AISI 304
Hex. Head Bolt	Steel	ASTM A307-A
Extension Rod	Mild Steel	A105-80
Hexagon Nut	Steel	ASTM A307-A
Target Frame	Cast Bronze	ASTM B62
Window Glass	Plexi Glass	
Operating Stem	Cast Bronze	ASTM B62
Retaining Ring	Steel	SAE 1065-1090
Handwheel	Cast Iron	ASTM A126-B
Sign Plate	Aluminium	
Washer	Steel	Commercial
Window Frame	Steel	Commercial



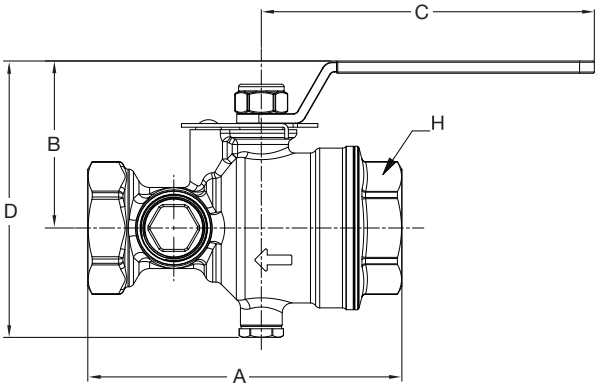
Nominal Size	Extension Rod Length	Dimensions in Inches		Weight Lbs
		4”	6”	
4”	3’	9.56	13.63	90
6”	3’	13.69	18	
8”	3’	16.5	21	
10”	3’	19.88	24.63	
12”	3’	23.5	28.25	

TEST AND DRAIN VALVE

MODEL: SD-A61

- Female NPT inlet and outlet, forged brass body, chrome plated ball with teflon seats
- Rated Pressure 175 psi
- Manufactured in accordance with UL258

Size	Orifice	K Factor
1”	12.7	5.6
1”	13.49	8.0
1¼”	12.7	5.6
1¼”	13.49	8.0



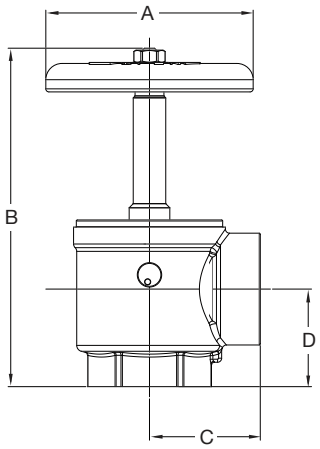
Dimensions	Port	A	B	C	D	H
1” & 1¼”	26.98	127.79	67.86	135.73	112.31	48.02

Unit : mm

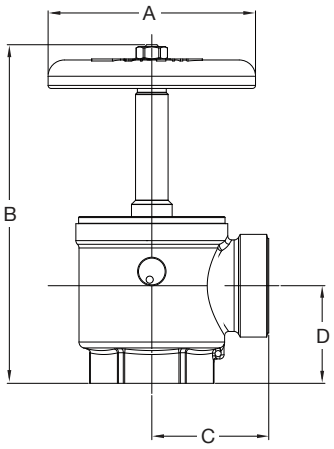
ANGLE HOSE VALVE

MODEL: SD-AV

- Used with hose rack assembly or as a fire department outlet connection
- Double Female NPT inlet and outlet or female NPT inlet x male hose thread outlet standard connections
- Forged brass valve body with red hand wheel
- Working pressure of 300 psi
- Maximum test pressure of 600 psi
- Optional finishes - polished brass, royal chrome plated, polished chrome plated



Double Female



Female x Male

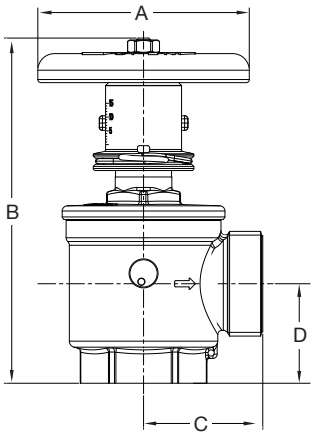
		1½" x 1½"	2½" x 2½"
A		102	130.17
B		195.26	268.28
C	Double Female	54.37	80.16
	Female x Male	57.54	80.96
D		48.02	67.07

Unit : mm

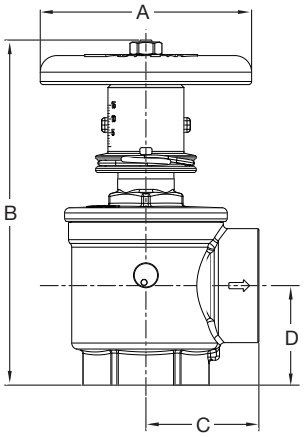
PRESSURE REDUCING ANGLE VALVE

MODEL: SD-A155
SD-A156

- Adjustable restriction of residual pressure
- Working pressure of 175 psi as per UL listing and 300 psi as per FM approval
- Locking pin device restricts full opening of valve by untrained personnel, pin may be removed by fire fighters to allow full opening of valve
- Double Female NPT inlet and outlet or female NPT inlet x male hose thread outlet standard connections
- Forged brass valve body with red hand wheel
- Maximum test pressure of 350 psi
- Optional finishes - polished brass, royal chrome plated, polished chrome plated



Female x Male
SD-A156



Double Female
SD-A155

		1½" x 1½"	2½" x 2½"
A		102	130.17
B		180.18	253.21
C	Double Female	54.37	84.13
	Female x Male	57.54	76.20
D		48.02	67.07

Unit : mm

FOG NOZZLE

MODEL: SD-FN40
SD-FN65

The Bronze Fog Bumper Nozzle has an adjustable annular orifice which enable the jet of water to be controlled from shut-off to a small jet through a large jet and then to a spray pattern by turning the rubber tyred sleeve for class A and class B fire.

Size NH Female	Nozzle Pressure (psi)	Discharge (gpm) wide open
1½"	100	130
2½"	100	205

MODEL: SD-A7P

The Plastic Fog Bumper Nozzle has an adjustable annular orifice which enable the jet of water to be controlled from shut-off to a small jet through a large jet and then to a spray pattern by turning the rubber tyred sleeve for class A and class B fire.

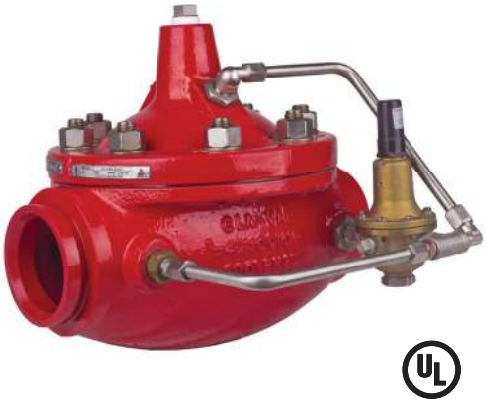
Size NH Female	Nozzle Pressure (psi)	Discharge (gpm) wide open
1½"	100	115* / 84.5**

* UL approved flow discharge

** FM approved flow discharge

PRESSURE REDUCING VALVE

MODEL: SD-PRV-G150
SD-PRV-A150



- Globe or Angle Pattern
- Available in rated inlet pressure of 300psi with model numbers : SD-PRV-G300 and SD-PRV-A300
- Available in Iron Body, Ductile Iron and Bronze body material
- Accurate Pressure Control
- In Line Service
- Grooved Ends and Flanged ends

DESCRIPTION

SD-PRV-G (globe) and SD-PRV-A (angle) Pressure Reducing Valves are indispensable in any fire protection system. Our diaphragm actuated design is proven highly reliable and easy to maintain. We offer both a globe or angle pattern with a full range of adjustments. These valves are also available in a variety of material options. Epoxy coating is strongly recommended for all fire system valves (excluding bronze valves). The SD-PRV-G and SD-PRV-A can be supplied with optional internal and external epoxy coating of the main valve wetted surfaces.

FUNCTION

SD-PRV-G (globe) and SD-PRV-A (angle Pressure Reducing Valves automatically reduce a higher inlet pressure to a steady lower outlet pressure regardless of changing flow rate and/or varying inlet pressure. The valves pilot control system is very sensitive to slight downstream pressure fluctuations, and will automatically open or close to maintain the desired pressure setting. The downstream pressure can be set over a wide range by turning the adjustment screw on the CRD pilot control. The adjustment screw is protected by a screw-on cover, which can be sealed to discourage tampering.

SPECIFICATIONS

Size:	175 lb. Class	1 1/2” - 8” (Globe) 2” - 6” (Angle)
	300 lb. Class	1 1/2” - 8” (Globe) 2” - 6” (Angle)
End Details:	150 ANSI B16.42 (Ductile Iron) (Bronze) 300# (Ductile Iron) 300# (Cast Steel) 300# (Ductile Grooved End)	

Pressure Differential: 10 PSI Min.

Pressure Adjustment Range:

175 lb. Class	30 – 165 psi
300 lb. Class	30 – 165 psi

Temperature Range:	Water to 180°F Max.

MATERIALS

Main valve body & cover	Ductile Iron - ASTM A536
Main valve internal trim	Bronze ASTM B61
Pilot control system– Pilot control valve	Bronze ASTM B62 with Stainless Steel 303 internal trim
	Copper tubing with brass fittings
Main valve and pilot valve diaphragm and disc	Buna-N synthetic rubber

TYPICAL APPLICATION

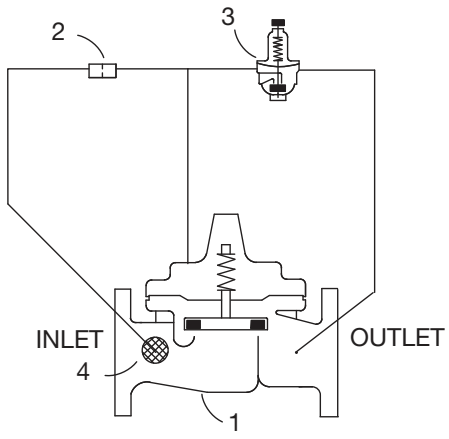
Underwriters Laboratories requires the installation of pressure gauges upstream and downstream of the Pressure Reducing Valve. Also, a relief valve of not less than 1/2 inch in size must be installed on the downstream side of the pressure control valve. Adequate drainage for the relief valve discharge must be provided.

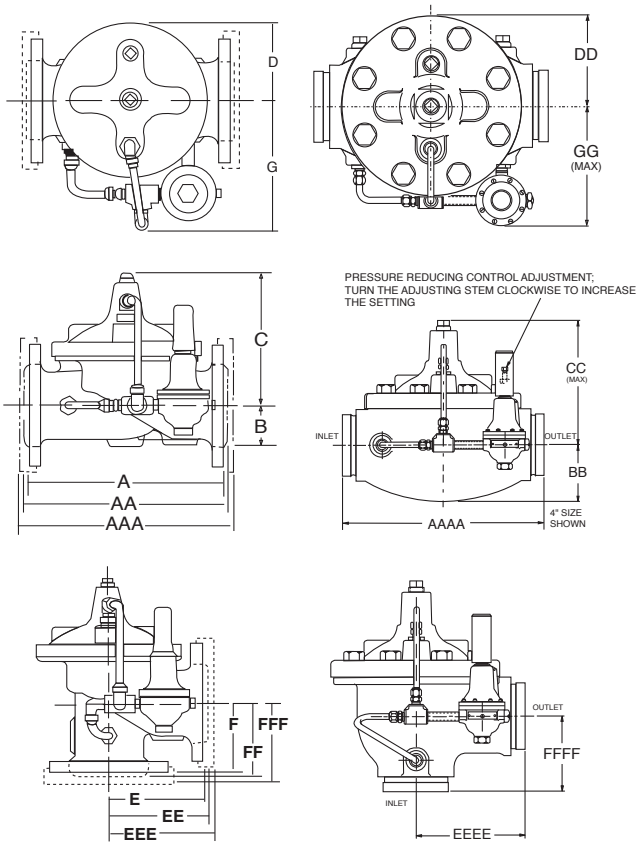
SCHEMATIC DIAGRAM

Item Description

1 Hytrol (Globe or Angle) 2 Restriction Tube Fitting

3 Pressure Reducing Control 4 Flow Clean Strainer





FLOW CAPACITY TABLE

Valve Size	1½	2	2½	3	4	6	8
Maximum Flow Rate (GPM of Water)	160	262	373	576	992	2251	3900

Valve size	1½”	2”	2½”	3”	4”	6”	8”
A Threaded	184	238	279	318	---	---	---
AA 150 ANSI	216	238	279	305	381	508	645
AAA 300 ANSI	229	254	295	337	397	533	670
AAAA Grooved End	216	228	279	318	381	508	645
B	28	38	43	65	81	109	135
BB Grooved End	52	54	64	79	105	152	184
C Max.	140	161	192	208	270	340	496
CC Max. Grooved End	104	127	175	165	223	281	369
D	71	84	102	116	146	200	254
DD Grooved End	71	84	102	116	146	200	254
E Threaded	83	121	140	159	---	---	---
EE 150 ANSI	102	121	140	152	191	254	324
EEE 300 ANSI	108	127	149	162	200	267	349
EEEE Grooved End	---	121	---	152	191	---	---
F Threaded	48	83	102	114	---	---	---
FF 150 ANSI	102	83	102	102	127	152	203
FFF 300 ANSI	108	89	109	111	135	165	216
FFFF Grooved End	---	121	---	114	127	---	---
G Max.	191	197	197	203	228	241	267
GG Max.	206	203	---	207	236	267	292

Unit : mm

ZONECHECK ASSEMBLY

MODEL: Zonecheck

DESCRIPTION

Zonecheck is installed in a sprinkler protected premises to carryout flow-switch testing. A functional flow-switch test is a mandatory requirement as per NFPA/LPCB standards. Zonecheck is the modern way to quickly, efficiently & inexpensively carryout this mandatory flow-switch test. Zonecheck simplifies testing by recirculating the water within the pipe around the flow-switch to simulate the flow of one sprinkler head in operation.

Zonecheck key-switch controllers are then wired to conventional low eye location for ease of testing without access equipment ideally adjacent to any interconnected fire alarm panels. Zonecheck is 100% water saving as does not discharge any water and supports ISO 14001 water conservation objectives.

Zonecheck has so far been specified extensively by consulting engineers. It has been installed in a wide range of buildings in both new build and retrofit applications. These include shopping centres, Multistory offices, major retailers, airports, hotels and warehouses.

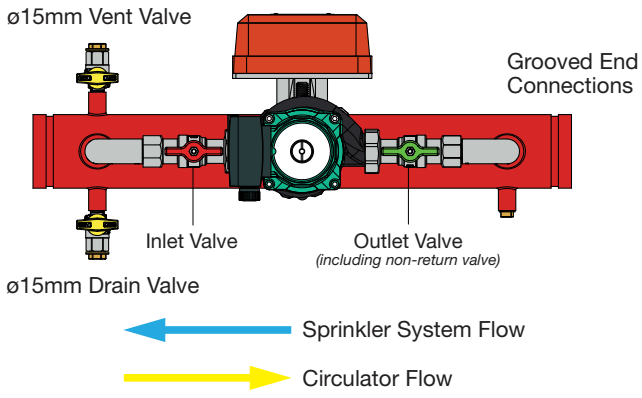
A Zonecheck Flow-switch Tester includes:

- 1 Zonecheck circulating pump
- 1 Zonecheck Key-switch
- 1 Flow-switch
- 1 Inlet valves complete with union tail
- 1 Outlet valves complete with NRV union tail
- 1 650mm long Schedule 40 (assembly)
- 1 set of labels and installation guide

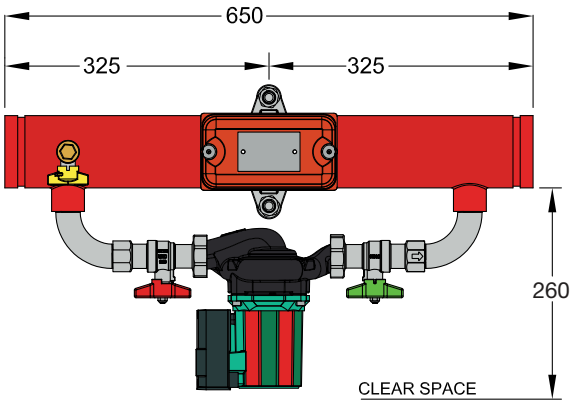
SPECIFICATIONS

Available in pipe sizes	2” to 6”
Standard Type	Right/Left Handed
Maximum Working Pressure	12 Bar (175psi)
Test Pressure	18 Bar (260psi)

TYPICAL INSTALLATION DETAILS



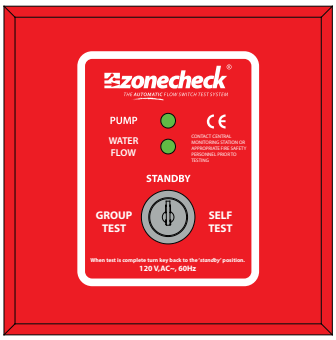
FRONT ELEVATION



PLAN VIEW

KEYSWITCH SPECIFICATIONS

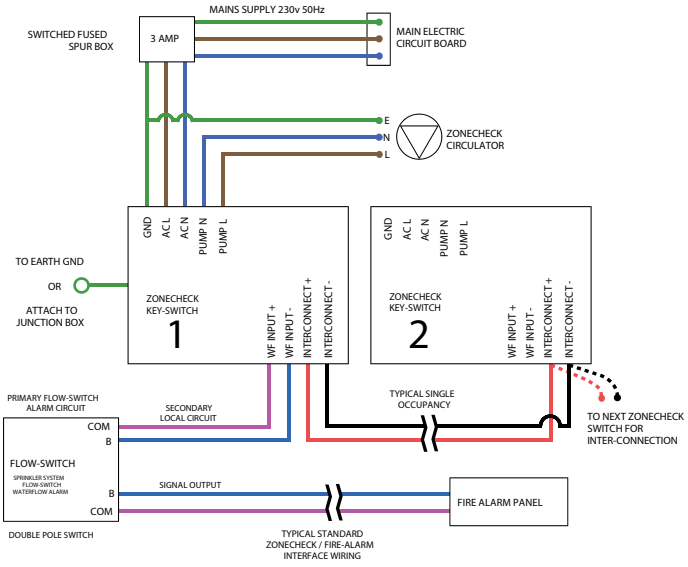
- Zonecheck key-switch unit has settings for ‘SELF TEST’, ‘GROUP TEST’ & ‘STANDBY’
- To test a single Zonecheck unit, turn the key to ‘SELF TEST’. To test all Zonecheck’s in the group, turn the key to ‘GROUP TEST’
- Test initiation is given by a green light marked ‘PUMP’
- When the flow-switch activates, the ‘WATERFLOW’ light will give an additional signal
- The key can only be moved in the ‘STANDBY’ position
- The ‘STANDBY’ mode will not give any false alarms when fitted in conjunction with an appropriate flow-switch



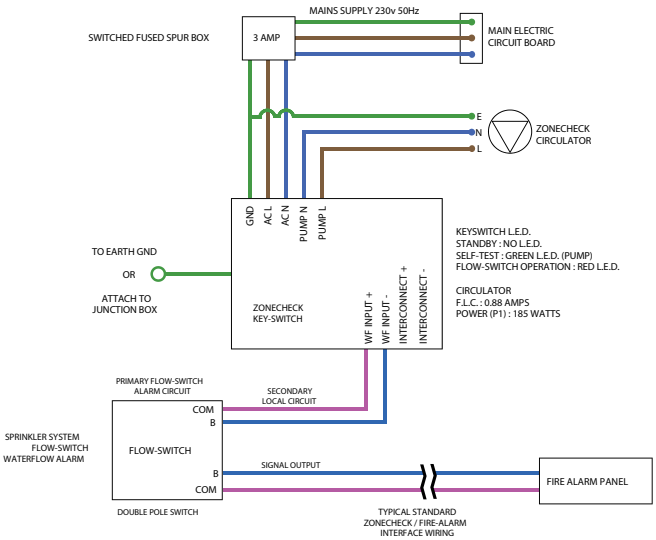
ELECTRICAL DATA

- Single Phase: 230v-50Hz
- Full Load Current: 0.88 A
- Power Rating (P1): 185 W
- Rated Power (P2): 90 W
- IP Rating: IP44
- Capacitor: 5.0 µF/400 VDB

TYPICAL WIRING DIAGRAMS



GROUP TEST CIRCUIT



SINGLE TEST CIRCUIT

The tenants key-switch facilities should be located outside the demise of the unit in the service area.

GROUP TEST

- The Zonecheck Interconnect facility can be used to wire key-switches in a group of upto 20 Zonechecks.
- The primary circuit for each flow-switch is wired to the building’s central fire alarm panel, the second circuit shall be wired to each local key-switch.

SINGLE ‘SELF’ TEST

- The tenants key-switch facilities should be located out side the demise of the unit in the service area.
- The primary circuit for each flow-switch is wired to the building’s central fire alarm panel, the second circuit shall be wired to each local key-switch.

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