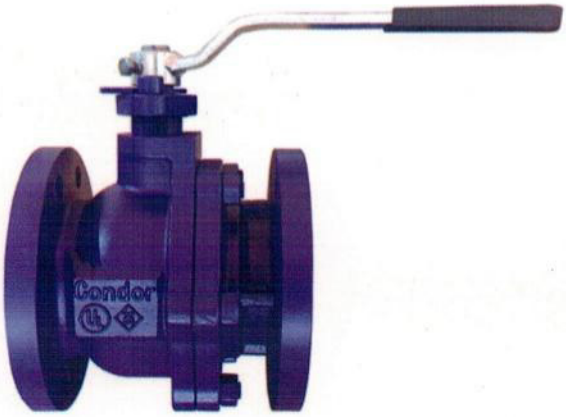
Condor®



INTERNATIONAL APPROVAL

Certificate of Compliance

This certificate is issued for the following:

INSIDE SCREW GATE VALVES
OUTSIDE SCREW AND YOKE GATE VALVES
INIDICATOR POSTS
SINGLE CHECK VALVES

Prepared for:

Thai Steel For Import & Export Com.
1139/6-7 Rama 3 Road, Chongnonsee,
Bangkok 10120, Thailand

FM Approvals Classes: 1120, 1110, 1210

Approval Identification: 3037775 Approval Granted: November 6, 2009

Said Approval is subject to satisfactory field performance, continuing follow-up Facilities and Procedures Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

For more than 160 years FM Approvals has partnered with business and industry to reduce property losses.

Richard B. Dunne
Group Manager – Hydraulics Group
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062

November 16, 2009

CERTIFICATE OF COMPLIANCE

Certificate Number 20120829-EX15799
Report Reference EX15799-20120829
Issue Date 2012-AUGUST-29

Issued to: THAI STEEL FOR IMPORT & EXPORT COM,
1139/6-7 RAMA 3 ROAD, CHONGNONSEE,
BANGKOK 10120, THAILAND

This is to certify that representative samples of: GATE VALVES
T-1425

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 262, Gate Valves for Fire-Protection Service
Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Listing Mark for the US and Canada should be considered as being covered by UL's Listing and Follow-Up Service meeting the appropriate requirements for US and Canada.
The UL Listing Mark for the US and Canada generally includes: the UL in a circle symbol with "C" and "US" identifiers, the word "LISTED", a control number (may be alphanumeric) assigned by UL, and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product.

Page 1 of 1

Certificate of Compliance

This certificate is issued for the following:

FIRE SERVICE WATER CONTROL VALVES (OS&Y AND NRS TYPE GATE VALVES)

Model Y-4005, Model Y-4045
Sizes 2, 2 1/2, 3, 4, 5, 6, 8, 10, 12 inch NPS
(50, 65, 80, 100, 125, 150, 200, 250, 300)

INDICATING VALVES (BUTTERFLY TYPE)

Model Nos. Y-4020, Y-4025
Sizes 2-1/2, 3, 4, 5, 6, 8 inch NPS
(65, 80, 100, 125, 150, 200 mm)

INDICATOR POSTS

Model POST-1
Vertical type

FIRE HYDRANTS (DRY BARREL TYPE) FOR PRIVATE FIRE SERVICE

Model T-1700
Size 6 inch NPS
(150 mm)

Prepared for:

Thai Steel For Import & Export Com.
1139/6-7 Rama 3 Road, Chongnonsee, Bangkok 10120, Thailand
FM Approvals Class: 1110, 1112, 1120, 1510

Approval Identification: 0003057139 Approval Granted: December 10, 2015

To verify the availability of the Approved product, please refer to www.approvalguide.com

Said Approval is subject to satisfactory field performance, continuing Surveillance Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

David B. Fuller
AVP, Manager – Fire Protection
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062 USA

ONLINE CERTIFICATIONS DIRECTORY

VNIV.EX6973 THAI STEEL FOR IMPORT & EXPORT COM
Sprinklers, Automatic and Open

Sprinklers, Automatic and Open

THAI STEEL FOR IMPORT & EXPORT COM.
BANGKOK 10120, THAILAND

UPRIGHT AND PENDENT STANDARD SPRAY SPRINKLERS

SIN	Response Type	Type	System Working Pressure, psig	Temp Rating, °F
[illegible]	[illegible]	Upright	175	155, 175, 200
[illegible]	QR	Upright	175	155, 175, 200
[illegible]	[illegible]	Pendent	175	155, 175, 200
[illegible]	QR	Pendent	175	155, 175, 200

STANDARD SIDEWALL SPRAY SPRINKLERS

SIN	Response Type	Type	Nom K-Factor	System Working Pressure, psig	Temp Rating, °F
[illegible]	[illegible]	Horizontal	5.6	175	155, 175, 200
[illegible]	QR	Horizontal	5.6	175	155, 175, 200

Certificate of Compliance

This certificate is issued for the following equipment:

Model	K	Type	Resp.	Element	NPT (in.)	Finishes	Temperature Ratings °F (°C)
DY3323	5.6	Upright	SR	5mm	1/2	Brass	155 (68)

Prepared for: Thai Steel For Import & Export Com.1139/6-7 Rama 3 Road. Chongnonsee. Bangkok 10120, Thailand

Manufacturing Location: Thai Steel For Import & Export Com.1139/6-7 Rama 3 Road. Chongnonsee. Bangkok 10120, Thailand

FM Approvals Class: 2016
FM Approval Standard: Class Series 2000 (March 2006)

Approval Identification: 3049450 Approval Granted: February 17, 2015

To verify the availability of the Approved product, please refer to www.approvalguide.com

Said Approval is subject to satisfactory field performance, continuing Surveillance Audits, and strict conformity to the constructions as shown in the Approval Guide, an online resource of FM Approvals.

Richard B. Dunne
Manager, Fire Protection
FM Approvals
1151 Boston-Providence Turnpike
Norwood, MA 02062
USA

QUICK RESPONSE AUTOMATIC SPRINKLERS

GL SERIES UPRIGHT• PENDENT RECESSED PENDENT

DESCRIPTION AND OPERATION

The Condor Quick Response GL Series Sprinklers are a low profile yet durable design which utilizes a 3mm frangible glass ampule as the thermosensitive element. This provides sprinkler operation approximately six times faster than ordinary sprinklers. While the Quick Response Sprinkler provides an aesthetically pleasing appearance, it can be installed wherever standard spray sprinklers are specified when allowed by the applicable standards. It offers the additional feature of greatly increased safety to life and is available in various styles, orifices, temperature ratings and finishes to meet many varying design requirements. Quick Response Sprinklers should be used advisedly and under the direction of approving authorities having jurisdiction.

The heart of Globe's GL Series sprinkler proven actuating assembly is a hermetically sealed frangible glass ampule that contains a precisely measured amount of fluid. When heat is absorbed, the liquid within the bulb expands increasing the internal pressure. At the prescribed temperature the internal pressure within the ampule exceeds the strength of the glass causing the glass to shatter. This results in water discharge which is distributed in an approved pattern depending upon the deflector style used.

The sprinkler and escutcheon are not factory assembled. Assembly is done in the field.

UPRIGHT

PENDENT

RECESSED PENDENT

TECHNICAL DATA

- See reverse side for Approvals and Specifications.
- Temperature Ratings - 135°F (57°C), 155°F (68°C), 175°F (79°C), 200°F (93°C), 286°F (141°C)
- Water Working Pressure Rating - 175 psi (12 Bars)
- Factory tested hydrostatically to 500 psi (34 Bars)
- Maximum low temperature glass bulb rating is -67°F (-55°C)
- Frame - bronze • Deflector - brass • Screw - brass
- Bulb seat - copper • Spring - nickel alloy • Seal - teflon
- Bulb - glass with alcohol based solution, 3mm size

• SPRINKLER TEMPERATURE RATING/CLASSIFICATION and COLOR CODING

CLASSIFICATION	AVAILABLE SPRINKLER TEMPERATURES		BULB COLOR	N.F.P.A. MAXIMUM CEILING TEMPERATURE	
ORDINARY	135°F/155°F	57°C/68°C	ORANGE/RED	100°F	38°C
INTERMEDIATE	175°F/200°F	79°C/93°C	YELLOW/GREEN	150°F	66°C
HIGH	286°F	141°C	BLUE	225°F	107°C

Condor®

300 PSI WWP Iron Body Gate Valves

Fire Protection Valve • Bolted Bonnet • Outside Screw and Yoke • Solid Wedge • Pre-Grooved Stem for Supervisory Switch Mounting

300 PSI/12.1 Bar Non-Shock Cold Water

CONFORMS TO MSS SP-70 •
UL/ULC LISTED • FM APPROVED •
APPROVED BY THE NEW YORK CITY B.S.A. 143-69-SA

MATERIAL LIST

	PART	SPECIFICATION
1.	Stem	Brass ASTM B 16 Alloy C36000
2.	Handwheel Nut	Cast Bronze B 584 Alloy C84400
3.	Identification Plate	Aluminum
4.	Yoke Bushing	Cast Bronze B 584 Alloy C84400
5.	Handwheel	Cast Iron ASTM A 126 Class B
6.	Bonnet Cap Nut	Steel ASTM A 307
7.	Bonnet Cap	Ductile Iron ASTM A 536
[1]8.	Bonnet	Cast Iron ASTM A 126 Class B
9.	Bonnet Cap Bolt	Steel ASTM A 307
10.	Gland Follower Nut	Brass ASTM B 36
11.	Gland Follower	Ductile Iron ASTM A 536
12.	Packing Gland	Zinc Plated Powdered Iron ASTM B 310 or Cast Brass ASTM Alloy C36000
13.	Packing	Non Asbestos
14.	Gland Follower Bolt	Steel ASTM A 307
15.	Backseat Bushing	Cast Bronze B 584 Alloy C84400
16.	Body Nut	Steel ASTM A 307
17.	Body Bolt	Steel ASTM A 307
18.	Wedge Pin	Silicon Bronze B 140 Alloy C31600
19.	Body	Cast Iron ASTM A 126 Class B
20.	Seat Ring	Cast Bronze B 584 Alloy C84400
21.	Wedge Face Rings	Cast Bronze B 584 Alloy C84400
[2]22.	Wedge	Cast Bronze B 584 Alloy C84400
23.	Body Gasket	Non Asbestos
24.	Stem Collar	Brass ASTM B 16 Alloy C36000

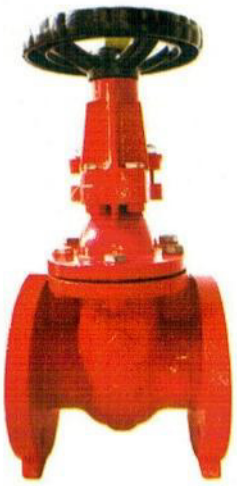
[1] Sizes up to 8" inclusive made with yoke integral with bonnet.
10" and 12" sizes made with separate yoke bolted to bonnet.

[2] Sizes 2½" thru 6" are all bronze wedges.
Sizes 8" thru 12" made with cast iron wedge with bronze wedge face rings

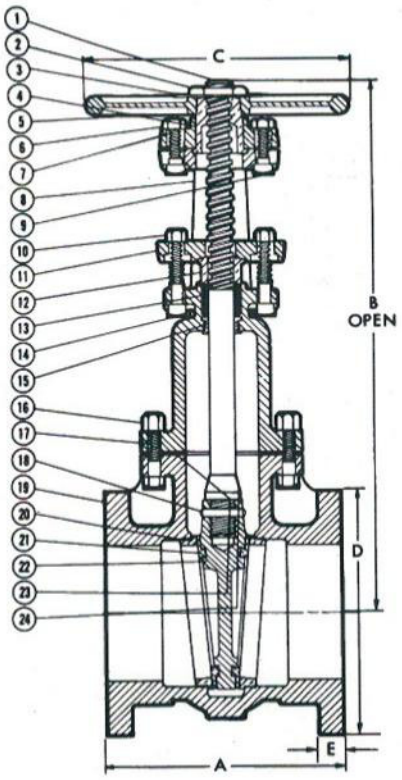
TS: pre-grooved stem for supervisory switch mounting.

DIMENSIONS—WEIGHTS—QUANTITIES

Size		Dimensions A		B		C		D		E		Weight	
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.
2½	65	7.50	191	16.88	429	8.00	203	7.00	178	.69	17	55	25
3	80	8.00	203	19.75	502	8.00	203	7.50	191	.75	19	66	30
4	100	9.00	229	24.00	610	10.00	254	9.00	229	.94	24	107	49
5	125	10.00	254	27.50	699	10.00	254	10.00	254	.94	24	145	66
6	150	10.50	267	31.50	800	12.00	305	11.00	279	1.00	25	179	81
8	200	11.50	292	40.75	1035	14.00	356	13.50	343	1.13	29	308	140
10	250	13.00	330	48.50	1232	16.00	406	16.00	406	1.19	30	481	219
12	300	14.00	356	57.00	1448	18.00	457	19.00	483	1.25	32	706	321



F-607-OTS
Flanged



F-607-OTS
Flg x Flg

FREEZING WEATHER PRECAUTION: Subsequent to testing a piping system, gate valve should be in an open position to allow complete drainage.

Note: Available to ISO Flange dimensions.

Condor®

ISO9001 FM APPROVED c UL us LISTED CE

300 PSI WWP Iron Body Check Valves

Fire Protection Valve • Bolted Bonnet • Horizontal Swing • Renewable Seat and Disc • Drilled and Tapped for Ball Drip Outlet

300 PSI/12.1 Bar Non-Shock Cold Water

CONFORMS TO MSS SP-71 •
UL/ULC LISTED • FM APPROVED •
APPROVED BY THE NEW YORK CITY B.S.A. 143-69-SA

MATERIAL LIST

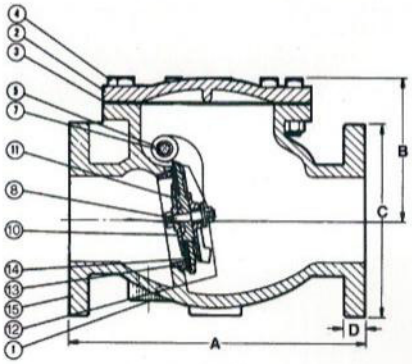
	PART	SPECIFICATION
1.	Pipe Plug	Cast Iron or Steel
2.	Bonnet	Cast Iron ASTM A 126 Class B
3.	Bonnet Gasket	Non Asbestos
4.	Bonnet Bolt and Nut	Steel ASTM A 307
5.	Hinge Plug	Cast Bronze B 584 Alloy C84400
6.	Hinge Pin	Brass ASTM B 16 (not shown)
7.	Disc Hanger Nut	Cast Bronze B 584 Alloy C84400
8.	Disc Stud Bolt	Brass ASTM B 16 Alloy C36000
9.	Disc Cage	Cast Iron ASTM A 126 Class B or Malleable Iron ASTM A 47 (not shown)
10.	Disc Plate	Cast Bronze B 584 Alloy C84400
11.	Disc Hanger	Cast Bronze B 584 Alloy C84400
12.	Disc Nut	Brass ASTM B 16 Alloy C36000
13.	Seat Ring	Cast Bronze B 584 Alloy C84400
14.	Disc	Rubber (W)
15.	Body	Cast Iron ASTM A 126 Class B

NOTE: Sizes 2½, 3, 5, & 10 are manufactured by Kennedy Valve and distributed by NIBCO.

Material list applies to sizes 4", 6", 8", 12" only.

All sizes are drilled and tapped ¾" at Boss "C" for ball drip.

F-908-W
Flanged



F-908-W
Flg x Flg

DIMENSIONS—WEIGHTS—QUANTITIES

Size		Dimensions A		B		C		D		Weight	
In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.	Lbs.	Kg.
2½	65	10.00	254	6.44	164	7.00	178	.69	17	53	24
3	80	10.25	260	6.63	168	7.50	191	.75	19	62	28
4	100	13.00	330	8.00	203	9.00	229	.94	24	103	47
5	125	15.00	381	9.19	233	10.00	254	1.00	25	145	66
6	150	16.25	413	10.31	262	11.00	279	1.00	25	174	79
8	200	19.50	495	11.50	292	13.50	343	1.13	29	290	132
10	250	22.00	559	13.31	338	16.00	406	1.19	30	490	223
12	300	27.50	699	15.56	395	19.00	483	1.25	32	683	310

NIBCO Iron Body check valves may be installed in both horizontal and vertical lines with upward flow.

Ball Drip

An automatic ball drip is available for NIBCO Underwriter's check valves. The ball drip is installed at boss location "C" on the check valve of the fire department connection. It will close against pressure, but will open when pressure is off allowing water to drain from the fire department connection.

½" Ball Drip # RG 22000
¾" Ball Drip # RG 22100

c UL us LISTED FM APPROVED

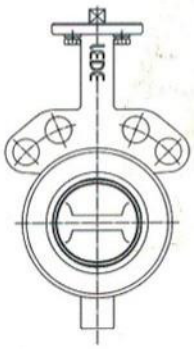
Condor®

Butterfly valve with lever handle wafer style

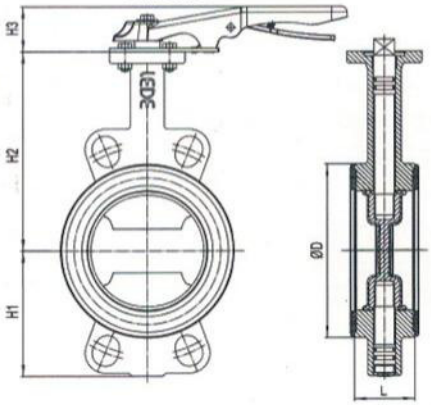
Model No. D71X

Name of parts	Material
Body	Ductile iron
Plug	EPDM
Driven shaft	1Cr17Ni2 or 2Cr13
Disc	Ductile iron and EPDM
Actuating shaft	1Cr17Ni2 or 2Cr13
Bearing bush	Bronze
O-rings	EPDM
Lever handle	Ductile iron and steel

DN50-80 Structure



DN100-300 Structure



Technical data >

- Sizs: DN50~DN300
- Working pressure: PN16/PN25
- Valve standard: EN593
- Flange standard: ASME-B16.1 Class125 and EN1092-2
- Top Flange standard: EN ISO 5211
- Temperature range: 0 ~ 80℃

Dimensions		Pressure rating	Size (mm)					
DN	inch	PN	ΦD	L	H1	H2	H3	Top Flange
50	2	10/16/25	91	43	70	125	39	F05
65	2.5	10/16/25	108	46	76	143.5	39	F05
80	3	10/16/25	124	46	94	151	39	F05
100	4	10/16/25	150	52	108	172	39	F07
125	5	10/16/25	178	56	127	190	39	F07
150	6	10/16/25	205	56	139	202	39	F07
200	8	10/16/25	260	60	175	235	39	F07

Condor®

ISO9001 FM APPROVED cULus LISTED CE

QUICK RESPONSE AUTOMATIC SPRINKLERS

GL SERIES UPRIGHT• PENDENT RECESSED PENDENT

SPECIFICATIONS

NOMINAL "K" FACTOR		THREAD SIZE	LENGTH [1]	FINISHES
2.8	(39 metric)	1/2" NPT	2 1/4" (5.7 cm)	Factory Bronze Satin Chrome [2] Bright Chrome White Polyester [3] Black Polyester [3] Lead Coated [2]
4.2	(59 metric)	1/2" NPT	2 1/4" (5.7 cm)	
5.6	(80 metric)	1/2" NPT	2 1/4" (5.7 cm)	
7.8	(111 metric)	1/2" NPT	2 1/4" (5.7 cm)	
8.1	(116 metric)	3/4" NPT	2 7/16" (6.2 cm)	

NOTE: METRIC CONVERSIONS ARE APPROXIMATE.

[1] HORIZONTAL SIDEWALL IS 2 9/16".
[2] FINISHES AVAILABLE ON SPECIAL ORDER.
[3] AVAILABLE AS cULus LISTED CORROSION RESISTANT WHEN SPECIFIED ON ORDER.

APPROVALS

STYLE	SIN MODEL	K FACTOR	135°F 57°C	155°F 68°C	175°F 79°C	200°F 93°C	286°F 141°C	cULus	F.M.	LPC	CE	NYC - DOB MEA 101-92-E
UPRIGHT	GL2815	2.8	X	X	X	X	X	X	—	—	—	X
	GL4215	4.2	X	X	X	X	X	X	—	—	—	X
	GL5615	5.6	X	X	X	X	X	X	X	X	X	X
	GL8115	7.8*	X	X	X	X	X	X	X	—	—	X
	GL8118	8.1	X	X	X	X	X	X	X	X	X	X
PENDENT	GL2801	2.8	X	X	X	X	X	X	—	—	—	X
	GL4201	4.2	X	X	X	X	X	X	—	—	—	X
	GL5601	5.6	X	X	X	X	X	X	X	X	X	X
	GL8101	7.8*	X	X	X	X	X	X	X	—	—	X
	GL8106	8.1	X	X	X	X	X	X	X	X	X	X
RECESSED PENDENT	GL5632	5.6	X	X	X	X	X	X	X	—	—	—
	GL8133	8.1	X	X	X	X	X	X	—	—	—	—

UPRIGHT

PENDENT

RECESSED PENDENT

Condor®

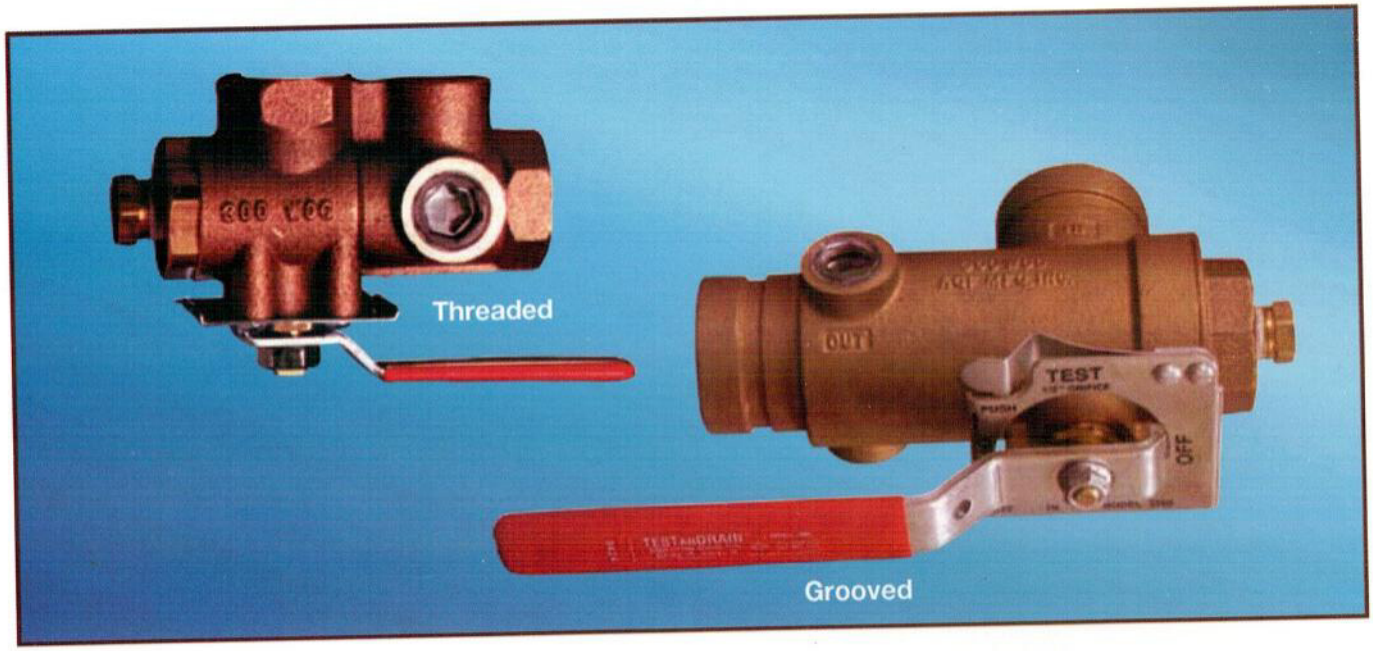
ISO9001 FM APPROVED c UL us LISTED CE

Model 2500
TESTANDRAIN®

Sectional Floor Control Test and Drain Valve

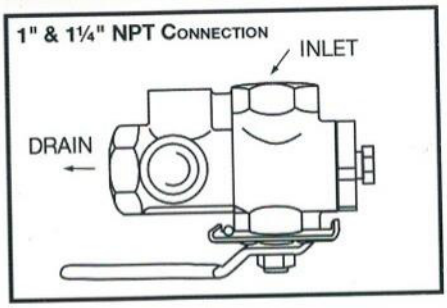
c UL us FM APPROVED

1"

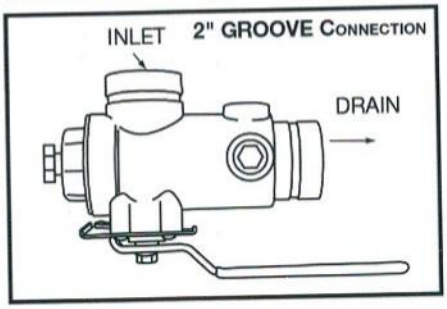


- The Valve Manufacturing Inc.**Model 2500 TESTANDRAIN®** provides both the test function and the express drain function for a wet fire sprinkler system.
- The 2" **Model 2500** features a groove x groove connection.
- The **Model 2500** complies with the requirements of NFPA-13, NFPA-13R, and NFPA-13D.
- The **Model 2500 TESTANDRAIN®** is a multi-direction, compact single handle ball valve which includes a tamper resistant test orifice and integral tamper resistant sight glasses, and is 300 PSI rated.
- The **Model 2500 TESTANDRAIN®** provides an alternate handle location from the **Model 1000** for difficult install situations
- Available in 1" And 1¼" NPT and 2" Groove, with all specifiable orifice sizes ⅜" (2.8K), 7/16" (4.2K), ½" (5.6K), 17/32" (8.0K), ⅝" (11.2K, ELO), ¾" (14.0K, ESFR), and K25 as required by NFPA 13, 2007 Edition (see reverse).
- The orifice size is noted on the indicator plate and the valve features a tapped and plugged port for system access.
- A locking kit is available and can be ordered with the valve to provide vandal resistance or prevent unintentional alarm activation.
- Repair kits including (1) adapter gasket, (1) ball, (2) valve seats, (1) stem packing, and (1) stem washer are available for all **TESTAN-**

MODEL 2500 - DRAIN TO LEFT



MODEL 2500 - DRAIN TO RIGHT



"THE INCH" AUTOMATIC SPRINKLERS

MODEL GL5653 ONE INCH ADJUSTABLE CONCEALED PENDENT

DESCRIPTION AND OPERATION

The Globe GL5653 Adjustable Concealed Pendent Sprinkler has a low profile, aesthetically pleasing design. It offers the additional feature of greatly increased safety to life and should be used advisedly and under the direction of approving authorities having jurisdiction. The sprinkler is available with a nominal 1" of adjustment and a low profile cover plate assembly. All that is seen at the ceiling is a 3 5/16" diameter ceiling plate or an optional 2¾" diameter ceiling plate color finished to match the specifier's exact requirements. The GL Series Concealed Sprinkler may be virtually invisible as it does not interrupt the "smooth flow" of the ceiling. Globe's Concealed Sprinkler utilizes its 5mm frangible glass ampule which is located above the ceiling and concealed from view by the ceiling plate.

The provided protective cap needs to be removed in order to install the sprinkler with the proper wrench. The protective cap must be replaced on the sprinkler until the time the cover plate is to be installed. The "push on - screw off" designed cover plate is easily installed and with a nominal 1" inch of adjustment makes it easier to get a proper fit at the ceiling.

Operation of the sprinkler occurs when heat build up causes the solder holding the cover plate to the support shell to melt allowing the cover plate to fall clear. Continued heat build up causes the 5mm glass bulb to burst allowing the deflector to drop down and distribute water in an approved pattern to extinguish or control the fire.

TECHNICAL DATA

- See reverse side for Approval and Specifications.
- Temperature Ratings-
  - 135°F (57°C) Sprinkler, 135°F (57°C) Cover Plate
  - 155°F (68°C) Sprinkler, 135°F (57°C) Cover Plate
  - 155°F (68°C) Sprinkler, 155°F (68°C) Cover Plate
  - 175°F (79°C) Sprinkler, 155°F (68°C) Cover Plate
  - 200°F (93°C) Sprinkler, 155°F (68°C) Cover Plate
- Water Working Pressure Rating - 175 psi (12 Bars)
- Factory tested hydrostatically to 500 psi (34 Bars)
- Maximum low temperature glass bulb rating is -67°F (-55°C)
- Frame - bronze • Deflector - brass • Screw - brass
- Bulb Seat - brass • Spring - nickel alloy • Seal teflon
- Bulb - glass with alcohol based solution, 5mm size
- Drop Pin - stainless steel • Cover Plate - brass
- Upper Escutcheon Assembly - plated steel

3 5/16" diameter plate

2 3/4" diameter plate

WHITE ADJUSTABLE CONCEALED PENDENT

NOTE: Globe's wrench P/N 332765 must be used to install the sprinkler.

• SPRINKLER TEMPERATURE RATING/CLASSIFICATION and COLOR CODING

CLASSIFICATION	AVAILABLE SPRINKLER TEMPERATURES		BULB COLOR	N.F.P.A. MAXIMUM CEILING TEMPERATURE	
ORDINARY	135°F/155°F	57°C/68°C	ORANGE/RED	100°F	38°C
INTERMEDIATE	175°F/200°F	79°C/93°C	YELLOW/GREEN	150°F	66°C

4077 AIRPARK DRIVE, STANDISH, MICHIGAN 48658 (989) 846-4583 • FAX 989-846-9231

AUTOMATIC SPRINKLERS
MODEL GL5653
ADJUSTABLE CONCEALED PENDENT

SPECIFICATIONS

NOMINAL "K" FACTOR	THREAD SIZE	LENGTH	FINISHES
5.6 (80 metric)	1/2" NPT	2 1/2" (6.4 cm)	Bright Chrome White Painted Bright Brass[1] Satin Chrome Other Painted Finishes[1]

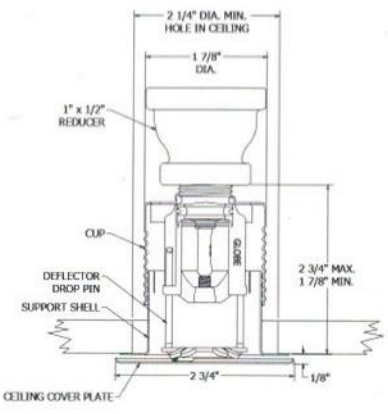
NOTE: METRIC CONVERSIONS ARE APPROXIMATE

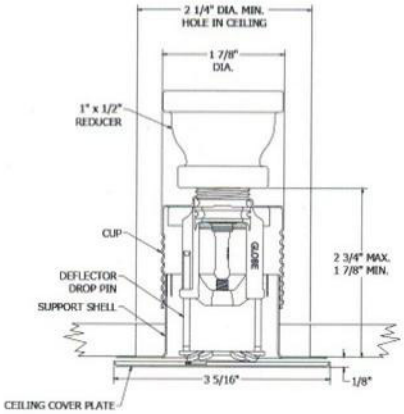
[1]FINISHES AVAILABLE ON SPECIAL ORDER.

APPROVALS

STYLE	SIN MODEL	K FACTOR	135°F (57°C) with plate 135°F (57°C)	155°F (68°C) with plate 135°F (57°C)	155°F (68°C) with plate 155°F (68°C)	175°F (79°C) with plate 155°F (68°C)	200°F (93°C) with plate 155°F (68°C)	cULus	FM	NYC-DOB MEA 101-92-E
Adjustable Concealed Pendent	GL5653	5.6	X	X	X	X	X	X	X	X

CROSS SECTION





OPTIONAL COVER PLATE SIZE	WHITE 135°F PART #	WHITE 155°F PART #	CHROME 135°F PART #	CHROME 155°F PART #
2 3/4"	332726	332731	332724	332729
3 5/16"	332706	332711	332704	332709

3 5/16" diameter plate

2 3/4" diameter plate

WHITE ADJUSTABLE CONCEALED PENDENT

ORDERING INFORMATION

SPECIFY

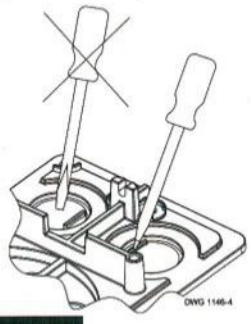
- Quantity • Model Number • Style
- Orifice • Thread Sizes • Temperature
- Finishes desired
- Quantity - Adjustable Concealed Wrenches - P/N 332765

Condor®

VSR

VANE TYPE WATERFLOW ALARM SWITCH WITH RETARD

Fig. 2
To remove knockouts: Place screwdriver at inside edge of knockouts, not in the center.



NOTICE
Do not drill into the base as this creates metal shavings which can create electrical hazards and damage the device. Drilling voids the warranty.

Fig. 3
Break out thin section of cover when wiring both switches from one conduit entrance.

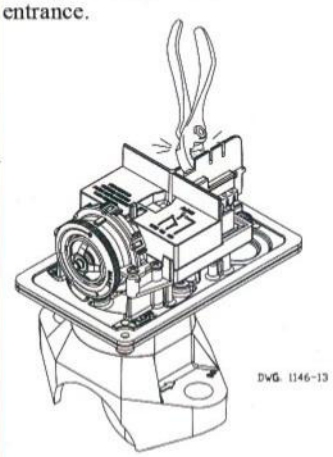
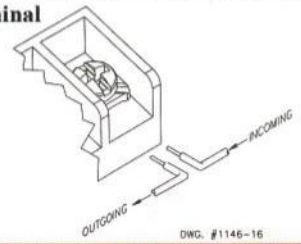


Fig. 4 Switch Terminal Connections Clamping Plate Terminal

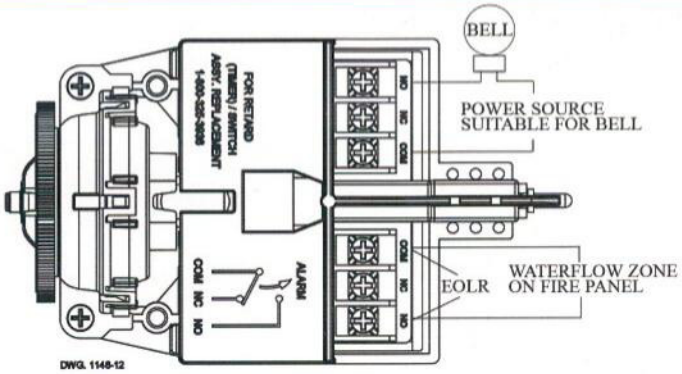


⚠ WARNING

An uninsulated section of a single conductor should not be looped around the terminal and serve as two separate connections. The wire must be severed, thereby providing supervision of the connection in the event that the wire become dislodged from under the terminal. Failure to sever the wire may render the device inoperable risking severe property damage and loss of life.

Do not strip wire beyond 3/8" of length or expose an uninsulated conductor beyond the edge of the terminal block. When using stranded wire, capture all strands under the clamping plate.

Fig. 5 Typical Electrical Connections



Notes:

1. The Model VSR has two switches, one can be used to operate a central station, proprietary or remote signaling unit, while the other contact is used to operate a local audible or visual annunciator.
2. A condition of LPC Approval of this product is that the electrical entry must be sealed to exclude moisture.
3. For supervised circuits, see "Switch Terminal Connections" drawing and warning note (Fig. 4).

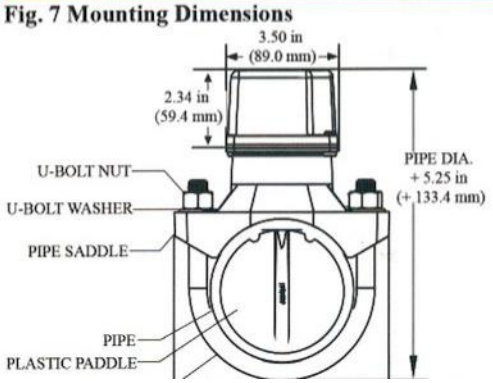
Testing

The frequency of inspection and testing for the Model VSR and its associated protective monitoring system shall be in accordance with applicable NFPA Codes and Standards and/or the authority having jurisdiction (manufacturer recommends quarterly or more frequently).

If provided, the inspector's test valve shall always be used for test purposes. If there are no provisions for testing the operation of the flow detection device on the system, application of the VSR is not recommended or advisable.
A minimum flow of 10 GPM (38 LPM) is required to activate this device.

NOTICE Advise the person responsible for testing of the fire protection system that this system must be tested in accordance with the testing instructions.

Fig. 7 Mounting Dimensions



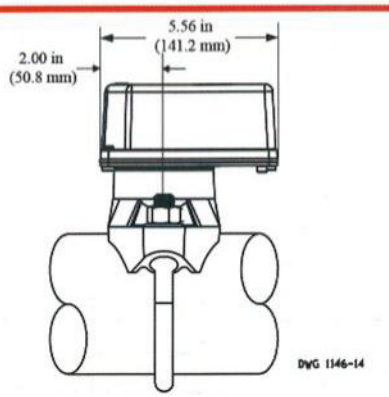
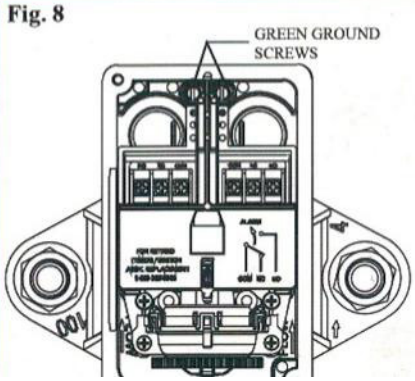


Fig. 8



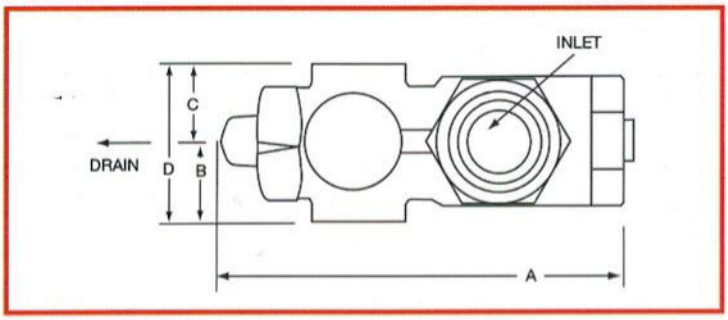
Condor®

Model 2500
TEST AN DRAIN®

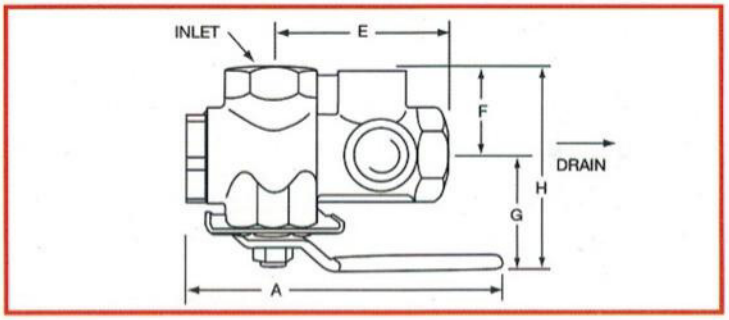
Sectional Floor Control Test and Drain Valve

1"

Model 2500 - Plan View



Model 2500 - Side View



Dimensions

Orifice Size Available: 3/8", 7/16", 1/2", 17/32", ELO (5/8"), ESFR (3/4")*, K25**

SIZE	A	B	C	D	E	F	G	H
1"	6 1/4" (159 mm)	1 1/4" (32 mm)	1 1/4" (32 mm)	2 1/2" (64 mm)	3 3/8" (86 mm)	1 13/16" (46 mm)	2 5/8" (67 mm)	4 3/16" (106 mm)
1 1/4"	7 9/16" (192 mm)	1 3/8" (35 mm)	1 3/8" (35 mm)	2 3/4" (70 mm)	3 3/8" (86 mm)	2 1/8" (159 mm)	3 1/16" (78 mm)	4 11/16" (119 mm)
2"†	10 1/4" (260 mm)	1 13/16" (460 mm)	1 13/16" (159 mm)	3 5/8" (92 mm)	5 5/8" (143 mm)	2 5/8" (67 mm)	3 3/4" (95 mm)	6 3/16" (157 mm)

* Available on 1 1/4" to 2" size units only
** Available on 2" size units only
† 2" M2500 is Groove x Groove only

Materials

Handle: Steel
Stem: Rod Brass
Ball: C.P. Brass
Body: Bronze
Valve Seat: Impregnated Teflon®
Indicator Plate: Steel
Handle Lock: Spring Steel

Approvals

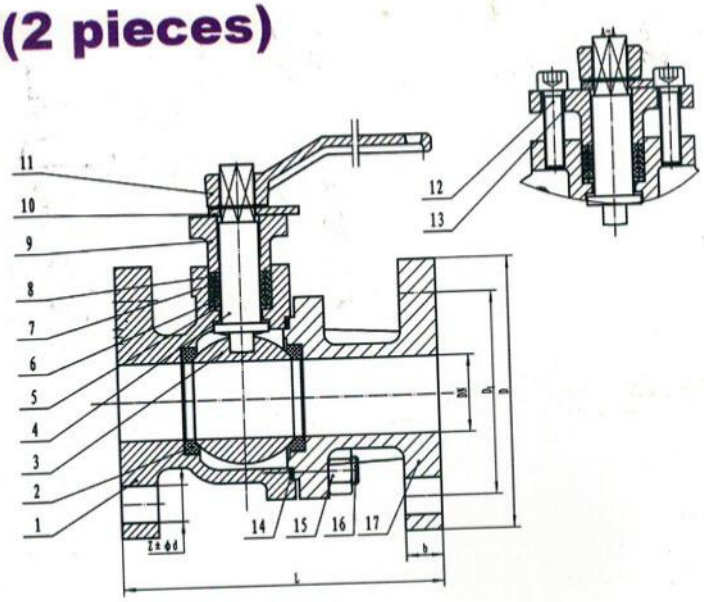
UL and ULC Listed: EX4019
FM Approved
NYC-BSA No. 720-87-SM

The Model 2500 provides all of the following...

Chapter 8.16.2.4.1*	Provisions shall be made to properly drain all parts of the system.
Chapter 8.16.2.4.2 & 8.16.2.4.3	Drain connections, interior sectional or floor control valve(s) – shall be provided with a drain connection having a minimum size as shown in Table 8.16.2.4.2.
Chapter 8.16.2.4.4	Drains shall discharge outside or to a drain capable of handling the flow of the drain.
Chapter A.8.17.4.2	(Wet Pipe System) test connection is permitted to terminate into a drain capable of accepting full flow... using an approved sight test connection containing a smooth bore corrosion-resistant orifice giving a flow equivalent to one sprinkler...
Chapter 8.17.4.2.2	The test connection valve shall be readily accessible.
Chapter 8.17.4.2.4	shall be permitted to be installed in any location... downstream of the waterflow alarm.
Chapter 8.17.4.3.1	(Dry Pipe System) a trip test connection not less than 1" in diameter, terminating in a smooth bore corrosion-resistant orifice, to provide a flow equivalent to one sprinkler...
Chapter 8.17.4.3.2	The trip test connection... with a shutoff valve and plug not less than 1", at least one of which shall be brass.

Condor®

FULL BORE BALL VALVE(2 pieces)



PN16
DN 25 ... DN 300

18	SCREW	35
17	RIGHT BODY	HT200
16	DOUBLE SCREW A	35
15	NUT	25
14	GASKET	PTFE
13	BEAD FLANGE A	65Mn
12	SCREW	35
11	HANDLE	QT450-10
10	STOP BLOCK	Q235
9	PACKING GLAND	QT450-10
8	PACKING	PTFE
7	PACKING	PTFE
6	PACKING	PTFE
5	PACKING SEAT	Q235
4	STEM	2Cr13
3	BALL	201
2	BALL SEAT	PTFE
1	LEFT BODY	HT200

DN 项次	L	D	D_1	b	Z-φd	D_2
25	125	115	85	16	4-φ14	65
40	165	150	110	18	4-φ19	--
50	180	165	125	20	4-φ19	--
65	190	185	145	20	4-φ19	---
80	200	200	160	22	8-φ19	---
100	230	220	180	24	8-φ19	---
125	300	250	210	26	8-φ19	---
150	340	285	240	26	8-φ23	---
200	450	340	295	30	12-φ23	---

Condor®

VSR

VANE TYPE WATERFLOW ALARM SWITCH WITH RETARD

UL, CUL and CSFM Listed, FM Approved, LPCB Approved, For CE Marked (EN12259-5) / VdS Approved model use VSR-EU

Service Pressure: 450 PSI (31 BAR) - UL

Flow Sensitivity Range for Signal:
4-10 GPM (15-38 LPM) - UL

Maximum Surge: 18 FPS (5.5 m/s)

Contact Ratings: Two sets of SPDT (Form C)
10.0 Amps at 125/250VAC
2.0 Amps at 30VDC Resistive
10 mAmps min. at 24VDC

Conduit Entrances: Two knockouts provided for 1/2" conduit. Individual switch compartments suitable for dissimilar voltages.

Environmental Specifications:

- NEMA 4/IP54 Rated Enclosure suitable for indoor or outdoor use with factory installed gasket and die-cast housing when used with appropriate conduit fitting.
- Temperature Range: 40°F - 120°F, (4.5°C - 49°C) - UL
- Non-corrosive sleeve factory installed in saddle.

Service Use:

Automatic Sprinkler	NFPA-13
One or two family dwelling	NFPA-13D
Residential occupancy up to four stories	NFPA-13R
National Fire Alarm Code	NFPA-72

Ordering Information			
Nominal Pipe Size		Model	Part Number
2"	DN50	VSR-2	1144402
2 1/2"	DN65	VSR-2 1/2	1144425
3"	DN80	VSR-3	1144403
3 1/2"	-	VSR-3 1/2	1144435
4"	DN100	VSR-4	1144404
5"	-	VSR-5	1144405
6"	DN150	VSR-6	1144406
8"	DN200	VSR-8	1144408

Optional: Cover Tamper Switch Kit, stock no. 0090148
Replaceable Components: Retard/Switch Assembly, stock no. 1029030

⚠ WARNING

- Installation must be performed by qualified personnel and in accordance with all national and local codes and ordinances.
- Shock hazard. Disconnect power source before servicing. Serious injury or death could result.
- Risk of explosion. Not for use in hazardous locations. Serious injury or death could result.

CAUTION

Waterflow switches that are monitoring wet pipe sprinkler systems shall not be used as the sole initiating device to discharge AFFF, deluge, or chemical suppression systems. Waterflow switches used for this application may result in unintended discharges caused by surges, trapped air, or short retard times.

General Information

The Model VSR is a vane type waterflow switch for use on wet sprinkler systems. It is UL Listed and FM Approved for use on steel pipe; schedules 10 through 40, sizes 2" thru 8" (50 mm thru 200 mm). LPC approved sizes are 2" thru 8" (50 mm thru 200 mm). See Ordering Information chart.

The VSR may also be used as a sectional waterflow detector on large systems. The VSR contains two single pole, double throw, snap action switches and an adjustable, instantly recycling pneumatic retard. The switches are actuated when a flow of 10 GPM (38 LPM) or more occurs downstream of the device. The flow condition must exist for a period of time necessary to overcome the selected retard period.

Enclosure

The VSR switches and retard device are enclosed in a general purpose, die-cast housing. The cover is held in place with two tamper resistant screws which require a special key for removal. A field installable cover tamper switch is available as an option which may be used to indicate unauthorized removal of the cover. See bulletin number 5401103 for installation instructions of this switch.

Condor®

VSR

VANE TYPE WATERFLOW ALARM SWITCH WITH RETARD

Installation (see Fig. 1)

These devices may be mounted on horizontal or vertical pipe. On horizontal pipe they shall be installed on the top side of the pipe where they will be accessible. The device should not be installed within 6" (15 cm) of a fitting which changes the direction of the waterflow or within 24" (60 cm) of a valve or drain.

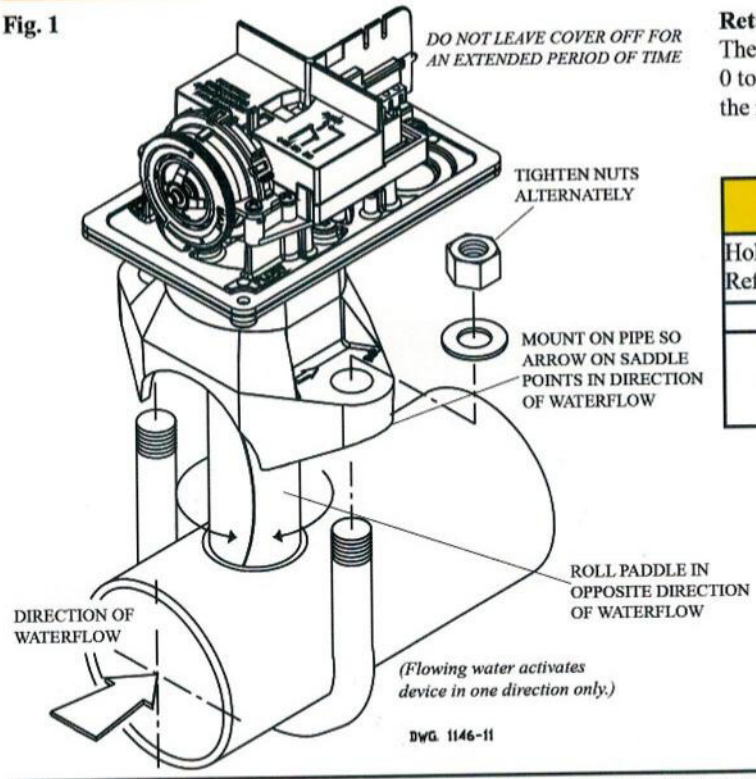
NOTE: Do not leave cover off for an extended period of time.

Drain the system and drill a hole in the pipe using a hole saw in a slow speed drill (see Fig. 1). Clean the inside pipe of all growth or other material for a distance equal to the pipe diameter on either side of the hole. Roll the vane so that it may be inserted into the hole; do not bend or crease it. Insert the vane so that the arrow on the saddle points in the direction of the waterflow. Take care not to damage the non-corrosive bushing in the saddle. The bushing should fit inside the hole in the pipe. Install the saddle strap and tighten nuts alternately to required torque (see the chart in Fig. 1). The vane must not rub the inside of the pipe or bind in any way.

⚠ CAUTION

Do not trim the paddle. Failure to follow these instructions may prevent the device from operating and will void the warranty.

Fig. 1

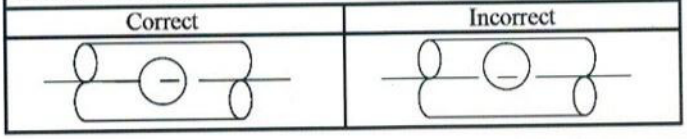


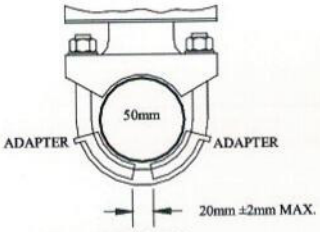
Retard Adjustment

The delay can be adjusted by rotating the retard adjustment knob from 0 to the max setting (60-90 seconds). The time delay should be set at the minimum required to prevent false alarms

CAUTION

Hole must be drilled perpendicular to the pipe and vertically centered. Refer to the Compatible Pipe/Installation Requirements chart for size.





DN50 ONLY

USE (2) 5180162 ADAPTERS AS SHOWN ABOVE

DWG# 1146-1F

Compatible Pipe/ Installation Requirements

Model	Nominal Pipe Size		Nominal Pipe O.D.		Pipe Wall Thickness								Hole Size		U-Bolt Nuts Torque	
					Schedule 10 (UL)		Schedule 40 (UL)		BS-1387 (LPC)		DN (VDS)					
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	ft-lb	n-m
VSR-2	2	DN50	2.375	60.3	0.109	2.77	0.154	3.91	0.142	3.6	0.091	2.3	1.25 + .125/-.062	33.0 ± 2.0	20	27
VSR-2 1/2	2.5	-	2.875	73.0	0.120	3.05	0.203	5.16	-	-	-	-				
VSR-2 1/2	-	DN65	3.000	76.1	-	-	-	-	0.142	3.6	0.102	2.6				
VSR-3	3	DN80	3.500	88.9	0.120	3.05	0.216	5.49	0.157	4.0	0.114	2.9	2.00 ± .125	50.8 ± 2.0		
VSR-3 1/2	3.5	-	4.000	101.6	0.120	3.05	0.226	5.74	-	-	-	-				
VSR-4	4	DN100	4.500	114.3	0.120	3.05	0.237	6.02	0.177	4.5	0.126	3.2				
VSR-5	5	-	5.563	141.3	0.134	3.40	0.258	6.55	-	-	-	-				
VSR-6	6	DN150	6.625	168.3	0.134	3.40	0.280	7.11	0.197	5.0	0.157	4.0				
VSR-8	8	DN200	8.625	219.1	0.148	3.76	0.322	8.18	0.248	6.3	0.177	4.5				