villagewalk AT SUN PEAKS

A&T Project Developments Inc.
102 – 1339 McGill Road
Kamloops, BC V2C 6K7
P: (250)851-9292
F: (250)851-9922

FIRE SUPPRESSION

Village Walk

3280 Village Way, Sun Peaks

Fire Sprinkler

Maintenance Manual

2017

RESPONSE
FIRE SYSTEMS
250-578-7779

Response Fire Systems Ltd.
891 Sumac Place
Kamloops, BC V2B 6R4
morgan@responsefire.ca

Date: November 6, 2017

Re: Village Walk – 3280 Village Way - Sun Peaks, BC

The entire building is protected by an automatic sprinkler system that is charged with water at all times. The water flow is controlled by individual sprinkler heads. These sprinkler heads are heat actuated and require a temperature of 155*F to discharge. Water will continue to flow after the sprinkler has discharged until the appropriate main control valve is shut off. Each floor level has an individual shut off valve (zone valve) and drain valve. The locations of these zone valves are on the as built drawings, maintenance manuals and on the valve identification chart located in the main mechanical room. Each individual valve station has a flow switch installed.

It is very important that the owners are familiar with the locations of the main control valves in case of an emergency due to a non-fire condition. A sprinkler system main control valve should never be closed until the fire department determines that a fire condition does not exist. Once a sprinkler head has discharged it must be replaced and pressure restored to the system. This work can only be performed by a qualified sprinkler fitter with the appropriate insurance.

Attached to this booklet is a complete list of material specifications and maintenance requirements of all the equipment installed on the fire sprinkler system.

For any questions, service, inspections or maintenance requirements please call Morgan Martel at Response Fire Systems Ltd. At 250-578-7779, cell 250-319-5604 or email morgan@responsefire.ca

Response Fire Systems Ltd.
891 Sumac Place
Kamloops, BC V2B 6R4

Date: November 6, 2017

Warranty

Re: Village Walk
Sun Peaks, BC

This letter verifies a warranty period of one year for parts and labor for the specified location and dates.

Location: Village Walk – 3280 Village way Sun Peaks, B.C.

From: November 6, 2017
To: November 6, 2018
Warranty coverage: All labor, piping, fittings, sprinklers & equipment attached to the new wet sprinkler and standpipe system. The water service pipe that connects the sprinkler system to the city mains was installed by others and is not covered under this warranty.

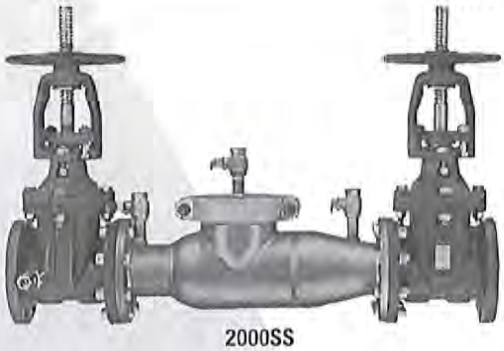
Sincerely, Morgan Martel - Principal

Series 2000SS

AMES
FIRE & WATERWORKS

Double Check Valve Assemblies
Sizes: 2½" – 12" (65 – 300mm)

LEAD FREE*



2000SS

Features

- Cam-Check Assembly provides low head loss
- Short lay length is ideally suited for retrofit installations
- Stainless Steel body is half the weight of competitive designs reducing installation and shipping cost
- Stainless steel construction provides long term corrosion protection and maximum strength
- Single top access cover with two-bolt grooved style coupling for ease of maintenance
- No special tools required for servicing
- Compact construction allows for smaller vaults and enclosures
- May be installed in horizontal or vertical "flow up" position

Available Models

Suffix:

NRS – non-rising stem resilient seated gate valves

OSY – UL/FM outside stem and yoke resilient seated gate valves

**OSY FxG – flanged inlet gate connection and grooved outlet gate connection

**OSY GxF – grooved inlet gate connection and flanged outlet gate connection

**OSY GxG – grooved inlet gate connection and grooved outlet gate connection

LG – less gates

Available with grooved NRS gate valves - consult factory**

Post indicator plate and operating nut available – consult factory**

**Consult factory for dimensions

*The wetted surface of this product contacted by consumable water contains less than one quarter of one percent (0.25%) of lead by weight.

Series 2000SS Double Check Valve Assemblies are designed to prevent the reverse flow of polluted water from entering into the potable water system. This series can be applied, where approved by the local authority having jurisdiction, on non-health hazard installations. Features short end-to-end dimensions, lightweight stainless steel body, and low head loss.

Specifications

A Double Check Valve Assembly shall be installed at each noted location to prevent the unwanted reversal of polluted water into the potable water supply. The main valve body shall be manufactured from 300 series stainless steel to provide corrosion resistance, 100% lead free through the waterway. The double check shall consist of two independently operated spring loaded cam-check valves, required test cocks, and optional inlet and outlet resilient seated shutoff valves. Each cam-check shall be internally loaded and provide a positive drip tight closure against the reverse flow of liquid caused by backsiphonage or backpressure. The modular cam-check includes a stainless steel spring and cam-arm, rubber faced disc and a replaceable seat. There shall be no brass or bronze parts used within the cam-check valve assembly. The valve cover shall be held in place through the use of a single grooved style two-bolt coupling. The main assembly shall consist of two independently operating torsion spring check assemblies, two resilient seated isolation valves, and four ball valve type test cocks. The assembly shall be an Ames Company Series 2000SS.

Materials

All internal metal parts: 300 Series stainless steel

Main valve body: 300 Series stainless steel

Check assembly: Noryl®

Flange dimension in accordance with AWWA Class D

Noryl® is a registered trademark of General Electric Company.

Pressure — Temperature

Temperature Range: 33°F – 110°F (5°C – 43°C)

Maximum Working Pressure: 175psi (12.06 bar)

Standards

AWWA C510-92, CSA B64.5

Approvals

ASSE 1015 (OSY ONLY)

c UL us CLASSIFIED

FM Approved

For 12" approvals consult factory

Job Name _____ Contractor _____

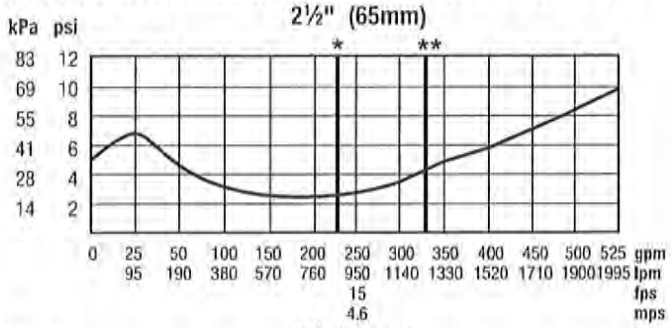
Job Location _____ Approval _____

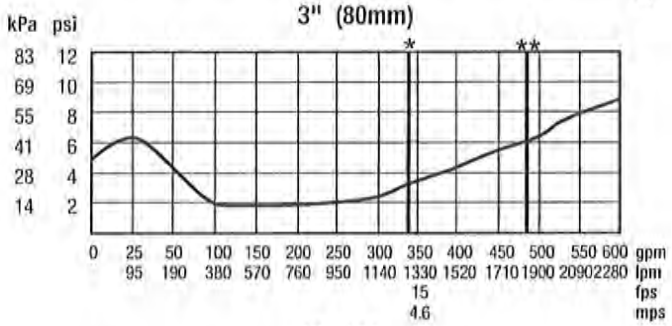
Engineer _____ Contractor's P.O. No. _____

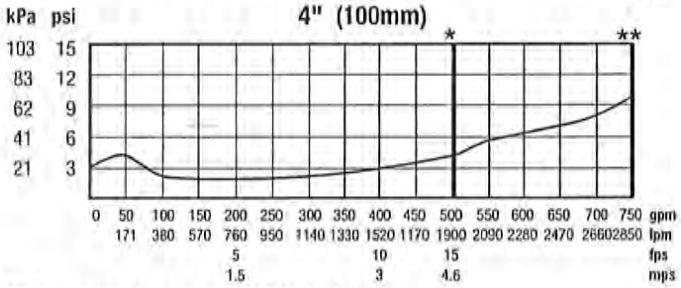
Approval _____ Representative _____

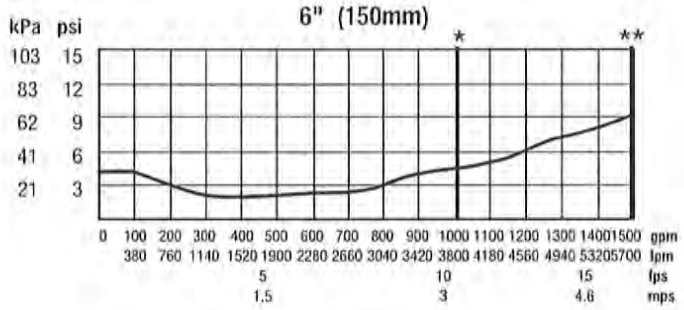
Capacities

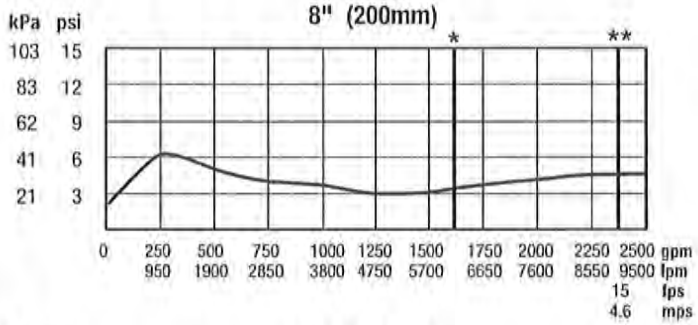
Rated working pressure 175psi (12.06 bar) * Rated flow **UL Tested

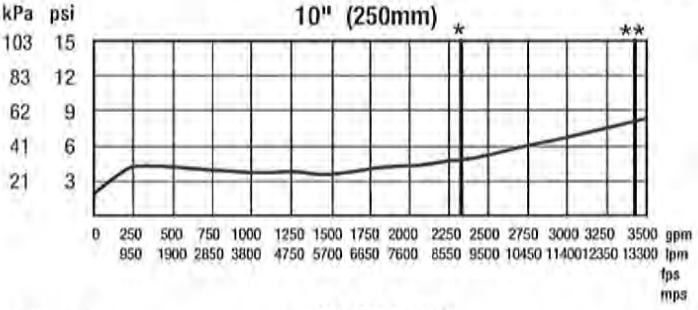


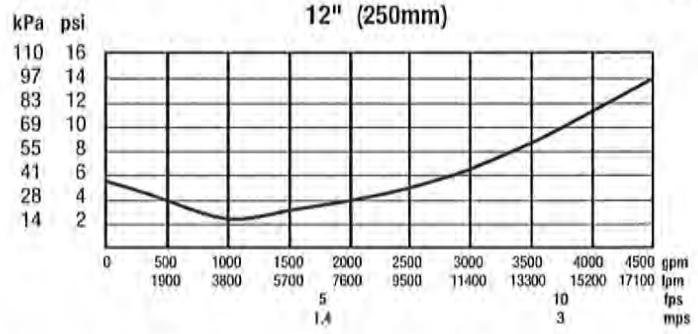




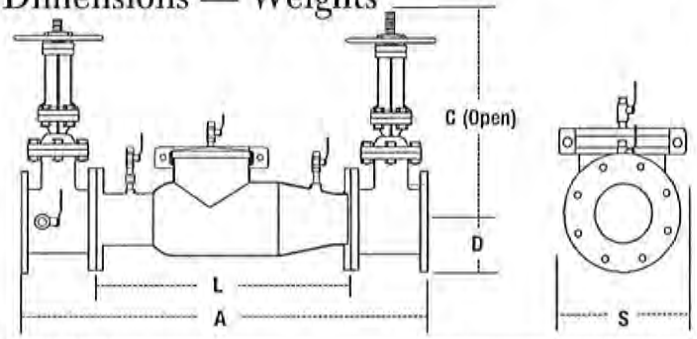








Dimensions — Weights



SIZE (DN)		DIMENSIONS												WEIGHT			
		A		C (OSY)		C(NRS)		D		L		S		w/Gates		w/o Gates	
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb.	kg.	lb.	kg.
2½	65	37	965	16⅜	416	9⅜	238	3½	89	22	559	7	178	140	64	53	24
3	80	38	965	18⅞	479	10¼	260	3¾	95	22	559	7½	191	215	98	55	25
4	100	40	1016	22¾	578	12 3/16	310	4½	114	22	559	9	229	225	102	58	26
6	150	48½	1232	30⅛	765	16	406	5½	140	27½	699	11	279	375	170	105	48
8	200	52½	1334	37¾	959	19 15/16	506	6¾	171	29½	749	13½	343	561	254	169	77
10	250	55½	1410	45¾	1162	23 13/16	605	8	200	29½	749	16	406	763	346	179	81
12	300	57½	1461	53⅛	1349	26¾	679	9½	241	29½	749	19	483	1033	469	209	95

AMES
FIRE & WATERWORKS

www.amesfirewater.com

ISO 9001-2008 CERTIFIED

A Watts Water Technologies Company

USA: Backflow- Sacramento, CA • Tel. (916) 928-0123 • Fax (916) 928-9333
Control Valves- Houston, TX • Tel. (713) 943-0688 • Fax (713) 944-9445
Canada: Burlington, ON • Tel. (905) 332-4090 • Fax (905) 332-7068

GLOBE
FIRE SPRINKLER CORPORATION

"THE INCH" RESIDENTIAL AUTOMATIC SPRINKLERS MODEL GL4906 ONE INCH ADJUSTABLE FLAT PLATE CONCEALED PENDENT

DESCRIPTION AND OPERATION

The Globe Model GL4906 Residential One Inch Adjustable Concealed Pendent Sprinkler has a flat plate profile that utilizes a 3mm frangible glass ampule as the thermosensitive element. It features economy, aesthetics and the lowest allowable water flow with a nominal 1" of adjustment for easier installation. The combination of the 3mm frangible glass ampule and specially designed deflector make the Model GL4906 the ultimate in life safety and fire control. It has met the strict requirements of Underwriters Laboratories Inc. as described in UL Standard, 1626, for Residential Sprinklers for Fire Protection Service, and should be used accordingly. This sprinkler should also be installed in accordance with the appropriate NFPA Standard 13, 13D or 13R and under the direction of the approving authorities having jurisdiction.

All that is seen at the ceiling is the 3 5/16" diameter flat ceiling plate color finished to match the specifier's exact requirements. The ceiling plate is soldered to the sprinkler's special upper support assembly in three places. Upon the application of sufficient heat, the plate falls to the floor exposing the residential pendent spray sprinkler. At the prescribed temperature the internal pressure within the ampule exceeds the strength of the glass causing the glass bulb to shatter. This results in water discharge which is distributed in an approved pattern.

TECHNICAL DATA

- See reverse side for Approvals and Specifications.
- Temperature Rating - 155°F (68°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
- Lodgement Wire - stainless steel • Bulb seat - copper
- Spring - nickel alloy • Seal - teflon
- Bulb - glass with alcohol based solution, 3mm size
- Cover Plate - brass • Upper Escutcheon Assembly - steel

RESIDENTIAL
FLAT PLATE CONCEALED PENDENT

• SPRINKLER TEMPERATURE RATING/CLASSIFICATION and COLOR CODING

CLASSIFICATION	AVAILABLE SPRINKLER TEMPERATURES		BULB COLOR	N.F.P.A. MAXIMUM CEILING TEMPERATURE	
ORDINARY	155°F	68°C	RED	100°F	38°C

"THE INCH"
RESIDENTIAL
AUTOMATIC SPRINKLERS
MODEL GL4906
ONE INCH ADJUSTABLE
FLAT PLATE CONCEALED PENDENT

SPECIFICATIONS AND APPROVALS

SIN MODEL	NOMINAL "K" FACTOR	THREAD SIZE	LENGTH	FLAT COVER PLATE FINISHES	cULus CE
GL4906	4.9 (68 metric)	1/2"NPT (15mm)	3" (7.6cm)	Chrome White Painted Other Painted Finishes[1,2]	X

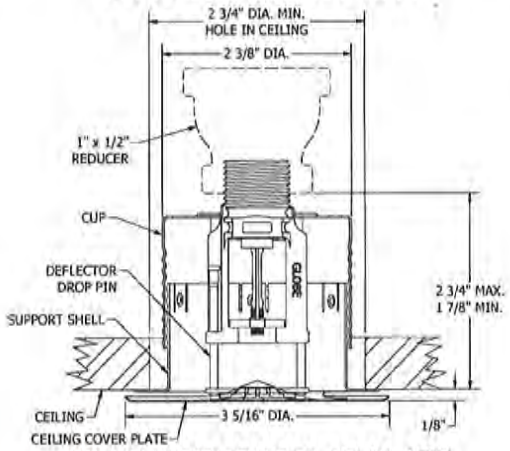
NOTE: METRIC CONVERSIONS ARE APPROXIMATE.
[1]FINISHES AVAILABLE ON SPECIAL ORDER.
[2]FOR PAINTED PLATES OTHER THAN WHITE, CONTACT GLOBE FOR ORDERING SPECIFICATIONS.

INSTALLATION DATA FOR FLAT AND SLOPED CEILINGS**

SIN MODEL	STYLE	SPRINKLER TEMPERATURE 155°F (68°C)	MAX. AREA OF COVERAGE[3] *Feet (Meters)*	*MIN. PRESSURE *P.S.I. (bars)*	*MIN. FLOW *G.P.M. (L/min.)*	MIN. DISTANCE BETWEEN SPRINKLERS *Feet (Meters)*
GL4906	"THE INCH" ONE INCH ADJUSTABLE CONCEALED PENDENT	X	12 (3.7) x 12 (3.7)	7.0 (.48)	13 (49)	9 (2.7)
		X	14 (4.3) x 14 (4.3)	7.0 (.48)	13 (49)	
		X	16 (4.9) x 16 (4.9)	7.0 (.48)	13 (49)	
		X	18 (5.5) x 18 (5.5)	12.0 (.83)	17 (64)	
		X	20 (6.1) x 20 (6.1)	16.7 (1.15)	20 (76)	

NOTE: METRIC CONVERSIONS ARE APPROXIMATE.
*WHEN THESE SPRINKLERS ARE USED IN NFPA 13 SYSTEMS, A 0.1 DESIGN DENSITY MINIMUM SHALL BE UTILIZED.
**REFER TO PAGE 2 OF GLOBE'S RESIDENTIAL SPRINKLER INSTALLATION GUIDE (BULLETIN R.S.I.G.) FOR NFPA 13D AND 13R REQUIREMENTS.
[3]FOR COVERAGE AREA DIMENSIONS LESS THAN OR BETWEEN THOSE INDICATED, USE THE MINIMUM REQUIRED FLOW FOR THE NEXT HIGHEST COVERAGE AREA FOR WHICH HYDRAULIC DESIGN CRITERIA ARE STATED.

CROSS SECTION



1" ADJUSTMENT FLAT PLATE CONCEALED PENDENT

FLAT COVER PLATE SIZE	WHITE 135°F (57°C) PART #	CHROME 135°F (57°C) PART #
3 5/16" DIA.	332892	332891

ORDERING INFORMATION

SPECIFY

- Quantity • Model Number • Style
- Orifice • Temperature • Finishes desired
- Quantity - Wrenches - P/N 332765
- Quantity - Protective Caps - P/N 332868

GLOBE® PRODUCT WARRANTY

Globe agrees to repair or replace any of its own manufactured products found to be defective in material or workmanship for a period of one year from date of shipment.

For specific details of our warranty please refer to Price List Terms and Conditions of Sale (Our Price List).

GLOBE FIRE SPRINKLER CORPORATION

4077 AIRPARK DRIVE, STANDISH, MICHIGAN 48658
989-846-4583 FAX 989-846-9231
1-800-248-0278 www.globesprinkler.com

DEC 2016

PRINTED U.S.A.

GFS-360 (Formerly A-10)

THREADED FITTINGS

SPRINKLER HUBS

END-ALL FITTINGS

Ductile Iron Threaded Fittings

SHURJOINT®

Connect with the best!

SHURJOINT®

Ductile Iron Threaded Fittings

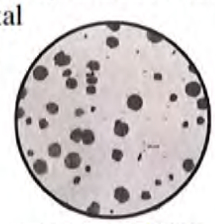
"Twice the strength at half the weight"

Ductile Iron
A brief history & overview

Ductile iron*1 was invented and first introduced in the United States and England in 1948*2. Cementite, a chemical compound of carbon and iron becomes molten at high temperatures and is transformed into graphite during the cooling process. In standard gray cast iron this graphite appears in the shape of flakes or lines which indicate the brittle nature of grey iron.

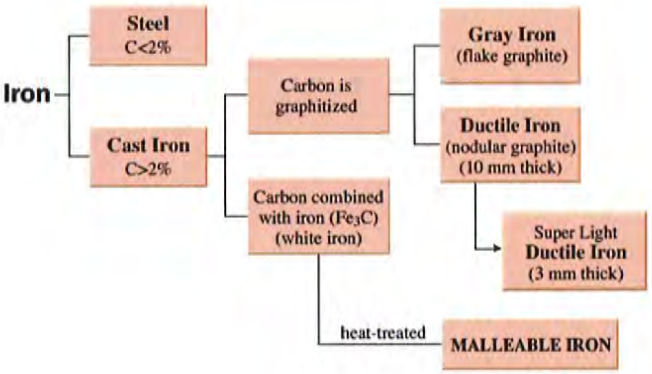
Gray Iron (x100)

By adding magnesium to the molten metal in combination with ferro silicon as an inoculant you can produce crystallized graphite in the shape of nodules. This nodular or ductile iron is very strong. The nodular graphite has a profound effect on the physical strength of the metal with the tensile strength increasing to a range of 65,000 - 80,000 psi, or two to three times stronger than gray cast iron. The tensile strength can be further increased to a range of 100,000 - 120,000 psi through proper heat treatment.



Ductile Iron (x100)

Soil pipe and fittings were among the first ductile iron applications due to the product strength requirements. Many automotive components also transitioned from gray and malleable iron to ductile iron, thus taking advantage of the strength and weight benefits. Further technological advances in the late 1970's along with the addition of rhenium (Re), a rare earth element, enabled the production of thin-wall castings to 1/8" or 3 mm. Over the past 60+ years ductile iron has and will continue to replace gray cast and malleable iron due to its superior properties.



Physical Properties Comparison

	Tensile Strength psi, min.	Yield Strength psi, min.	Elongation %, min.
Ductile iron (A536 Gr. 65-45-12)	65,000 (448 MPa)	45,000 (310 MPa)	12
Ductile iron (A536 Gr. 120-90-02)	120,000 (827 MPa)	90,000 (621 MPa)	2
Gray iron (A126 Class A)	21,000 (145 MPa)	Not specified	Not specified
Gray iron (A126 Class B)	31,000 (214 MPa)	Not specified	Not specified
Malleable iron (A47 Gr. 32510)	50,000 (345 MPa)	32,000 (224 MPa)	10
Carbon Steel (A234 Gr. WPB)	60,000 (415 MPa)	35,000 (240 MPa)	22

Advantages:

- ★ Stronger and more durable than cast iron
- ★ Lighter than equivalent cast iron fittings equals savings in freight, inventory and overall installation cost
- ★ 100% air under water tested and less prone to porosity than cast iron
- ★ Competitively priced and a better value than cast iron

*1 Ductile iron is also known as nodular graphite cast iron, spheroidal graphite cast iron, DCI or SG iron.

*2 Ductile iron was invented by H. Morrogh (England) and A.P. Gagnebin & K.D. Milles (U.S.A.) in 1948.

Product Description

The ***Shurjoint*** 800 series includes a complete line of ductile iron threaded fittings in a wide variety of configurations in sizes from 1/2" to 2-1/2". These fittings are all 100% air tested underwater and are rated for 300 psi(CWP). The 800 series fittings are UL, ULC listed and FM approved making them the ideal threaded fitting for fire protection and other applications.

Materials: Ductile iron ASTM A536 Gr. 65-45-12.
Max. Working Pressure: (UL, ULC listed/FM approved): 300psi (CWP)
General Dimension: ANSI 16.3 class 150*
Threads: NPT or BSPT
Finish: Black, hot dip galvanized or electro-zinc plated.

* Except bushing & plugs (B16.14), unions (B16.39 Class 150) & companion flanges (B16.42 Class 150).

Rated Working Pressures
Pressure-temperature ratings are as follows: Unit: Inch

Temperature Degree (°F)	Working Pressures, Non-Shock (PSIG)	
	Class 150 Flanged Fittings	Class 300 Threaded Fittings
-20 to 100	275	500
150	255	500
200	240	480
250	225	460
300	210	440
350	195	420
400	180	400
450	165	380
500	150	360
550	140	340
600	130	320
650	120	300

Brass to iron seat unions have a maximum temperature of 450° in accordance with the ASME Boiler Code ratings on brass seat materials.

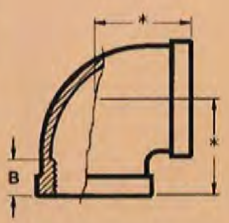
Sprinkler Hubs (See page 7)

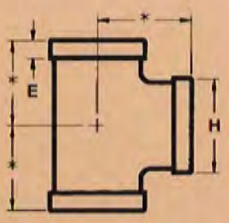
End-All (see page 6)

Note - Installers who have not used ductile iron threaded fittings before should be instructed that the fittings are stronger than the pipe in most cases. In general ductile iron fittings require about a one-half turn less than cast iron fittings. For more information, please refer to the installation instructions on page 8.

General Specifications and Dimensions

These dimensions apply to all standard fittings, both straight and reducing. For center-to-face dimensions(*), see fitting tables.

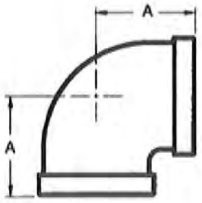




General Dimensions Unit: Inch

Pipe Size	O.D. of Band (H)	Width of Band (E)	Thread Length (min.) (B)
1/2"	1.20	0.25	0.43
3/4"	1.46	0.27	0.50
1"	1.77	0.30	0.58
1-1/4"	2.15	0.34	0.67
1-1/2"	2.43	0.37	0.70
2"	2.96	0.42	0.75
2-1/2"	3.59	0.48	0.92

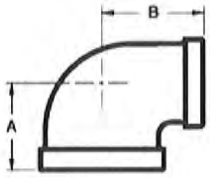
Model 811 90° Elbow



90° Elbow Unit: Inch

Size	A	Wt. Lbs.	Box Q'ty
1/2	1.12	0.25	240
3/4	1.31	0.40	120
1	1.50	0.64	70
1-1/4	1.75	0.95	40
1-1/2	1.94	1.24	30
2	2.25	1.74	20
2-1/2	2.70	3.28	10

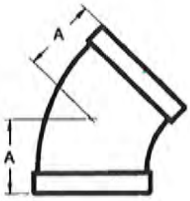
Model 812 90° Reducing Elbow



90° Reducing Elbow Unit: Inch

Size	A	B	Wt. Lbs.	Box Q'ty
3/4 x 1/2	1.20	1.22	0.33	160
1 x 1/2	1.26	1.36	0.44	110
1 x 3/4	1.18	1.45	0.53	90
1-1/4 x 1/2	1.34	1.53	0.64	75
1-1/4 x 3/4	1.45	1.62	0.75	60
1-1/4 x 1	1.58	1.67	0.77	55
1-1/2 x 1/2	1.41	1.66	0.92	45
1-1/2 x 3/4	1.52	1.75	0.95	45
1-1/2 x 1	1.65	1.80	0.99	40
1-1/2 x 1-1/4	1.82	1.88	1.14	35
2 x 3/4	1.60	1.97	1.28	30
2 x 1	1.73	2.02	1.58	25
2 x 1-1/2	2.02	2.16	1.67	20
2-1/2 x 2	2.39	2.60	3.01	15

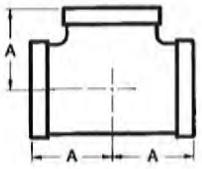
Model 813 45° Elbow



45° Elbow Unit: Inch

Size	A	Wt. Lbs.	Box Q'ty
1/2	0.88	0.22	250
3/4	0.98	0.33	150
1	1.12	0.49	90
1-1/4	1.29	0.73	50
1-1/2	1.43	0.93	35
2	1.68	1.54	18
2-1/2	1.95	2.71	12

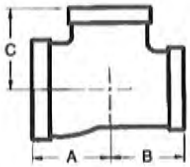
Model 814 Straight Tee



Straight Tee Unit: Inch

Size	A	Wt. Lbs.	Box Q'ty
1/2	1.12	0.33	150
3/4	1.31	0.51	90
1	1.50	0.86	60
1-1/4	1.75	1.30	35
1-1/2	1.94	1.63	24
2	2.25	2.64	12
2-1/2	2.70	4.51	8

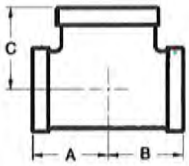
Model 815 Reducing Tee



Reducing Tee Unit: Inch

Size			A	B	C	Wt. Lbs.	Box Q'ty
3/4	3/4	1/2	1.20	1.20	1.22	0.46	95
1	1/2	1	1.50	1.36	1.50	0.71	55
	3/4	1/2	1.26	1.20	1.36	0.58	80
		3/4	1.37	1.31	1.45	0.68	65
		1	1.50	1.45	1.50	0.77	55
	1	1/2	1.26	1.26	1.36	0.66	65
		3/4	1.37	1.37	1.45	0.73	60
1-1/4	1	1/2	1.34	1.26	1.53	0.82	50
		3/4	1.45	1.37	1.62	0.90	50
		1	1.58	1.50	1.67	1.04	45
		1-1/4	1.75	1.67	1.75	1.10	40
	1-1/4	1/2	1.34	1.34	1.53	0.88	45
		3/4	1.45	1.45	1.62	0.94	45
		1	1.58	1.58	1.67	1.10	40
1-1/2	1	1/2	1.44	1.31	1.69	0.97	40
		3/4	1.50	1.37	1.75	1.15	40
		1	1.65	1.50	1.80	1.15	30
		1-1/2	1.94	1.80	1.94	1.52	30
	1-1/4	1/2	1.41	1.34	1.66	1.04	40
		3/4	1.52	1.45	1.75	1.10	40
		1	1.65	1.58	1.80	1.32	30
	1-1/2	1/2	1.41	1.41	1.66	1.15	35
		3/4	1.52	1.52	1.75	1.23	35
		1	1.65	1.65	1.80	1.39	30
		1-1/4	1.82	1.82	1.88	1.50	30
2	1	2	2.25	2.02	2.25	2.18	15
	1-1/4	2	2.25	2.10	2.25	2.31	15
	1-1/2	1/2	1.49	1.41	1.88	1.50	30
		3/4	1.60	1.52	1.97	1.61	25
		1	1.73	1.65	2.02	1.65	20
		1-1/2	2.02	1.94	2.16	2.02	20
		2	2.25	2.16	2.25	2.31	15
	2	1/2	1.49	1.49	1.88	1.54	30
		3/4	1.60	1.60	1.97	1.67	20
		1	1.73	1.73	2.02	1.92	20
		1-1/4	1.90	1.90	2.10	2.05	20
		1-1/2	2.02	2.02	2.16	2.11	15
2-1/2	2	3/4	1.74	1.60	2.32	2.22	15

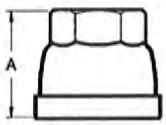
Model 815 Bullhead Tee



Bullhead Tee Unit: Inch

Size			A	B	C	Wt. Lbs.	Box Q'ty
3/4	3/4	1	1.45	1.45	1.37	0.66	65
1	1	1-1/4	1.67	1.67	1.58	0.97	45
		1-1/2	1.80	1.80	1.65	1.15	35
1-1/4	1	1-1/2	1.88	1.80	1.82	1.43	30
	1-1/4	1-1/2	1.88	1.88	1.82	1.52	30
		2	2.10	2.10	1.90	1.80	24
1-1/2	1-1/4	2	2.16	2.10	2.02	1.94	20
	1-1/2	2	2.16	2.16	2.02	2.00	20
2	2	2-1/2	2.60	2.60	2.39	3.61	10

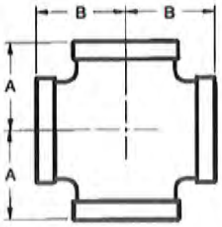
Model 816 Reducing Coupling



Reducing Coupling Unit: Inch

Size	A	Wrench Size	Wt. Lbs.	Box Q'ty
3/4 x 1/2	1.63	1-1/4	0.36	150
1 x 1/2	1.69	1-1/4	0.37	140
1 x 3/4	1.37	1-1/2	0.53	120
1-1/4 x 3/4	2.06	1-1/2	0.69	80
1-1/4 x 1	2.06	-	0.66	60
1-1/2 x 1	2.31	-	0.84	50
1-1/2 x 1-1/4	2.31	-	0.90	45
2 x 1	2.81	-	1.34	35
2 x 1-1/4	2.81	-	1.39	30
2 x 1-1/2	2.81	-	1.41	30
2-1/2 x 2	3.25	-	2.44	18

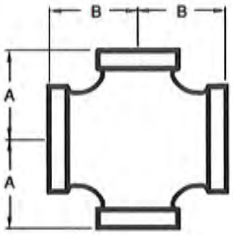
Model 817 Cross



Cross Unit: Inch

Size	A	B	Wt. Lbs.	Box Q'ty
1/2	1.12	1.12	0.40	90
3/4	1.31	1.31	1.80	60
1	1.50	1.50	0.97	45
1-1/4	1.75	1.75	1.58	25
1-1/2	1.94	1.94	1.89	20
2	2.25	2.25	0.73	10

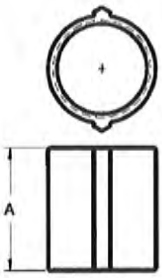
Model 817 Reducing Cross



Reducing Cross Unit: Inch

Size	A	B	Wt. Lbs.	Box Q'ty
1-1/4x1-1/4x1x1	1.67	1.58	1.25	30
1-1/2x1-1/2x1x1	1.80	1.65	1.47	24
2 x 2 x 1 x 1	2.02	1.73	2.64	10

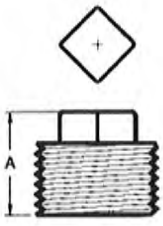
Model 818 Straight Coupling



Straight Coupling Unit: Inch

Size	A	Wrench Size	Wt. Lbs.	Box Q'ty
1/2	1.38	1-1/8"	0.18	360
3/4	1.61	1-3/8"	0.26	200
1	1.77	1-11/16"	0.44	110
1-1/4	2.00	2"	0.55	75
1-1/2	2.20	2-1/4"	0.71	60
2	2.60	2-3/4"	1.15	30
2-1/2	3.00	3-3/8"	2.29	18

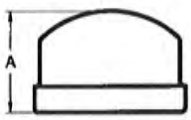
Model 819 Plug



Plug Unit: Inch

Size	A	Wt. Lbs.	Box Q'ty
1/2	0.93	0.09	500
3/4	1.13	0.18	300
1	1.25	0.25	200
1-1/4	1.36	0.51	110
1-1/2	1.45	0.71	80
2	1.50	0.99	45

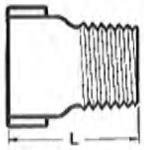
Model 820 Cap



Cap Unit: Inch

Size	A	Wt. Lbs.	Box Q'ty
1/2	0.89	0.14	500
3/4	1.00	0.20	300
1	1.18	0.33	180
1-1/4	1.32	0.46	110
1-1/2	1.38	0.57	80
2	1.48	0.88	45
2-1/2	1.77	1.54	25

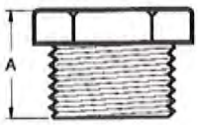
Model 825 Extension Piece



Extension Piece Unit: Inch

Size	L	Wt. Lbs.	Box Q'ty
1/2 x 1-1/2L	1.50	0.20	300
1/2 x 2L	2.00	0.26	250
3/4 x 1-1/2L	1.50	0.22	250
3/4 x 2L	2.00	0.31	200

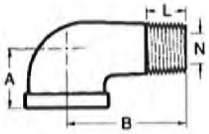
Model 827 Hex Bushing



Hex Bushing Unit: Inch

Size	A	Wt. Lbs.	Box Q'ty
1 x 1/2	1.06	0.22	280
1 x 3/4	1.06	0.18	280
1-1/4 x 1	1.18	0.31	150
1-1/2 x 1	1.26	0.53	100
1-1/2 x 1-1/4	1.26	0.35	100
2 x 1	1.34	0.68	80
2 x 1-1/4	1.34	0.66	80
2 x 1-1/2	1.34	0.62	80

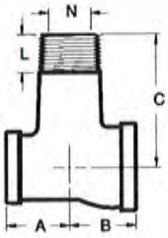
Model 831 90° Long Stree Elbow



90° Long Street Elbow Unit: Inch

Size	A	B	Wt. Lbs.	Box Q'ty
1 x 1/2M	1.50	3.00	0.68	80
1 x 1M	1.50	3.00	0.73	60

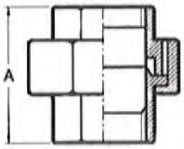
Model 832 Long Street Tee



Long Street Tee Unit: Inch

Size	A	B	C	Wt. Lbs.	Box Q'ty
1 x 1/2 x 1M	1.50	1.40	3.00	0.91	50
1 x 1 x 1M	1.50	1.50	3.00	0.99	45

Model 830 Brass Seat Union

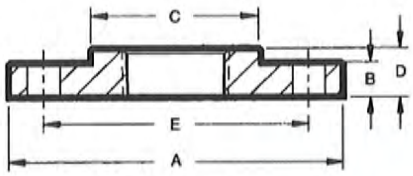


Brass Seat Union Unit: Inch

Size	A	Wt. Lbs.	Box Q'ty
1/2	1.81	0.46	110
3/4	1.99	0.66	80
1	2.17	1.08	50
1-1/4	2.52	1.54	35
1-1/2	2.64	2.02	25
2	3.15	3.15	18

Model 841 Companion Flange

The Model 841 is a traditional companion flange used for transition from a flanged to a threaded piping system.

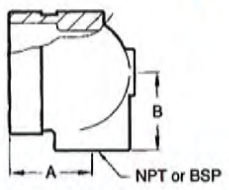


Class 150 Ductile Iron Flange Unit: Inch

Nominal Pipe Size	A	B	C	D	E	weight Lbs
1	4.25	0.56	1.94	0.69	3.12	1.75
1-1/4	4.62	0.62	2.31	0.81	3.50	2.20
1-1/2	5.00	0.69	2.56	0.88	3.88	2.55
2	6.00	0.75	3.06	1.00	4.75	4.20
2-1/2	7.00	0.88	3.56	1.12	5.50	5.85
3	7.50	0.94	4.25	1.19	6.00	6.60
4	9.00	0.94	5.31	1.31	7.50	11.75
6	11.00	1.00	7.56	1.56	9.50	16.50
8	13.50	1.12	9.69	1.75	11.75	26.00

Model 899 End-All Fitting

The Model 899 End-All fitting is a unique domed end cap fitting available with 1/2", 3/4" and 1" NPT or BSP threaded outlets. Designed as an end of line fitting the End-All features two multi-function bosses which can be used for the direct connection of sprinkler heads, sprigs, drops, drains and or gauges.



Unit: Inch

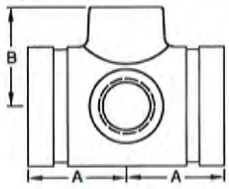
Nominal Size Grooved X Threaded	Dimensions A	Dimensions B	Weight Lbs
1-1/4 x 1/2	1.75	1.19	0.7
1-1/4 x 3/4	1.75	1.19	0.7
1-1/4 x 1	1.90	1.25	0.7
1-1/2 x 1/2	1.75	1.31	0.9
1-1/2 x 3/4	1.75	1.31	0.9
1-1/2 x 1	1.90	1.38	0.9
2 x 1/2	1.75	1.56	1.1
2 x 3/4	1.75	1.56	1.1
2 x 1	1.90	1.63	1.1
2-1/2 x 1/2	1.75	1.75	1.3
2-1/2 x 3/4	1.75	1.75	1.3
2-1/2 x 1	1.90	1.81	1.3

Sprinkler Hub

Models 850, 851 & 853

The Shurjoint Sprinkler Hubs are grooved-end manifold fittings with a number of threaded outlets to accommodate flexible sprinkler hoses. The Sprinkler Hubs can also be used in combination with flexible sprinkler hoses and traditional hard piping depending on your requirements. These fittings work as a hub for multiple flexible hoses and or hard pipe runs, thus reducing the number or headers, drop nipples and fittings required. All outlets are 1" NPT or BSPT. Maximum working pressure 300 psi (20 bar, 2.0 MPa) CWP. cULus listed and FM approved.

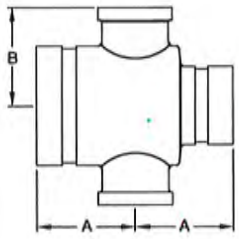
Model 850 Sprinkler Hub - 3 Outlets



Nominal Size mm/in	A mm/in	B mm/in	N.W. Kgs/Lbs
50 x 50 x 25 (3)	60	51	1.00
2 x 2 x 1 (3)	2.38	2.02	2.20
65 x 65 x 25 (3)	60	57	1.25
2-1/2 x 2-1/2 x 1 (3)	2.38	2.25	2.75

( ): Number of outlets

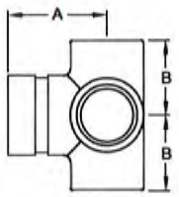
Model 851 Reducing Sprinkler Hub - 3 Outlets



Nominal Size mm/in	A mm/in	B mm/in	N.W. Kgs/Lbs
50 x 40 x 25 (3)	60	51	1.00
2 x 1-1/2 x 1 (3)	2.38	2.02	2.20
65 x 40 x 25 (3)	60	57	1.20
2-1/2 x 1-1/2 x 1 (3)	2.38	2.25	2.65
65 x 50 x 25 (3)	60	60	1.30
2-1/2 x 2 x 1 (3)	2.38	2.25	2.86

( ): Number of outlets

Model 853 Sprinkler End Hub - 4 Outlets



Nominal Size mm/in	A mm/in	B mm/in	N.W. Kgs/Lbs
40 x 25 (4)	60	46	0.8
1-1/2 x 1 (4)	2.38	1.80	1.76
50 x 25 (4)	60	51	1.00
2 x 1 (4)	2.38	2.02	2.20
65 x 25 (4)	60	57	1.20
2-1/2 x 1 (4)	2.38	2.25	2.64

( ): Number of outlets

Installation Instructions

Installers who have not used ductile iron fittings before should be aware that these fittings are stronger that than the pipe they are used in conjunction with in most cases. Therefore over-tightening the fitting can damage the pipe threads and create leaks. In general ductile iron fittings require about one-half turn less than the equivalent gray cast ion fitting.

(1) Pipe Threads: All pipe threads must be fabricated to ANSI B1.20.1 NPT (or BSPT threads to ISO 7 depending on countries installed).

☑ Improper threads and or depth will affect sealing.

(2) Clean Threads: All threads must be clean and free of rust and debris prior to application joint sealant (tape or paste).

(3) Sealant Application: Apply a moderate amount of high quality sealant (Teflon based pipe paste or Teflon tape is recommended). The sealant should be applied evenly across the full length of the pipe threads.

☑ If using Teflon tape, it should be applied with a minimum of three overlapping wraps along the full length of the threads. Wrap the tape from left to right starting at the beginning of the thread.

(4) Make-On Fitting: Firmly tighten the fitting by hand. With the pipe firmly secured, advance the fitting two to three complete revolutions using a pipe wrench.

☑ If using an automatic make-on machine, please note that the torque parameters for ductile iron fittings will be different from that of gray cast and malleable iron threaded fittings. Use caution when setting these parameters prior to tightening the fittings on to male threads. In general ductile iron fittings require about one-half turn less than the equivalent gray cast ion fitting.

(5) Test and Inspection: Upon completion of installation, pressurize the system and inspect for leaks. If a leak is detected, advance the fitting to tighten and retest and inspect.

☑ Over tightening fittings may result in joint failure.

☑ Do not back-off fittings during or after tightening. If necessary to remedy a leak begin again at step 2 and repeat the steps.

☑ Piping systems must always be depressurized and drained before attempting to disassemble, remove or adjust any piping component.

(6) Care & Maintenance: Ductile iron fittings in most applications do not require and special ongoing maintenance. Always follow generally accepted piping principles when caring for a piping system and ensure the entire system is maintained per all local codes and requirements including the most current version of NFPA Standard 25, entitled Inspection, Testing and Maintenance of a Water Based Fire Protection Systems.

Terms and Conditions

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These terms and conditions shall control with respect to any and all purchase orders or sales of ***Shurjoint*** products.

No alteration, modification or waiver of these terms and conditions whether on the customer's purchase order or otherwise shall be valid unless the alteration, modification or waiver is specifically accepted in writing by an authorized representative of Shurjoint Piping Products, Inc.

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All orders are quoted F.O.B. shipping point unless otherwise agreed upon in writing.

Orders are accepted subject to approval by our Head Office and Credit Department and are contingent upon acts of God, war, civil unrest or disturbance, strikes, labor difficulties, governmental regulations or rulings, delays of carriers (land, air or ocean), inability to obtain materials, accidents or any other cause beyond our control.

Shipping dates are estimated, and we will do our best to ship within the time estimated. We cannot guarantee shipping dates, and in the event of a production or shipment delay, we reserve the right to change the estimated shipping date. ***Under no circumstances shall Shurjoint be liable for damages of any kind, including but not limited to incidental or consequential damages for lost sales or profits or liquidated damages, directly or indirectly arising from delays or failure to meet shipping dates.***

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Orders for special (non-standard) goods may not be cancelled, nor will we accept return of these goods for credit.

Claims For Shortages:
All claims for shortages must be made within 10 days of receipt of goods. Our responsibillity ceases when the goods are delivered to the carrier in good condition. Carriers are responsible for goods lost, damaged or delayed in transit. For your own protection have the transportation company's agent verify any damage, shortage or delay and note them on the freight bill over his/her signature.

Weights :
All weights are approximate and subject to change without notice.

Always specify gasket grade when ordering and double check the gasket grade received to be sure it is suited for the service intended.

Shurjoint reserves the right to change or modify product designs, specifications and/or standard equipment without notice and without incurring obligation. Prices and Terms and Conditions of Sale are subject to change without notice.

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We warrant all ***Shurjoint*** products to be free from defects in materials and workmanship under normal conditions of use and service. Our obligation under this warranty is limited to repairing or replacing at our option at our factory or designated facility any product which shall within one year after delivery to the original buyer be returned with transportation charges prepaid, and which our examination and inspection shall show to our satisfaction to have been defective.

This warranty is made expressly in lieu of any other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular purpose. The buyer's sole and exclusive remedy shall be for the replacement or repair of defective products as provided herein. The buyer agrees that no other remedy (including but not limited of), incidental or consequential damages for lost profits, lost sales, injury to person or property or any other incidental or consequential loss shall be available to him/her.

Shurjoint neither assumes nor authorizes any person to assume for it any other liability in connection with the sale of such products.

This warranty shall not apply to any product which has been the subject to misuse, negligence or accident, which has been repaired or altered in any manner outside of ***Shurjoint's*** factory or designated facility or which has been used in a manner contrary to ***Shurjoint's instructions, recommendations or generally accepted practices. Shurjoint shall not be responsible for design errors due to inaccurate or incomplete information supplied by the buyer or his representatives. (Effective July 1, 1998)***

Packing & Weights
All ***Shurjoint*** ductile iron fittings are packaged in cartons measuring L - 12" x W - 10" x H - 8". See the specification table for box quantities and individual item weights. The standard crate/pallet quantity is 36 cartons. Use this information when order and selling to aid in your inventory control and to minimize handling.

Shurjoint Piping Products
4775 East Cheyenne Ave., Suite 100
Las Vegas, Nevada 89115
USA
Tel: 702-644-4492
Fax: 702-644-1091
Toll Free: 1-877-GROOVED
1-877-476-6833
E-mail: world@shurjoint.com

Shurjoint Piping Products
1380 Beverage Drive, Ste. P
Stone Mountain, GA 30083
USA
Tel: 770-817-0444
Fax: 770-817-0443
Toll Free: 1-877-880-6600

Shurjoint Piping Products
3 Ober Strasse (P.O. Box 1038)
Snoqualmie Pass, WA 98068
USA
Tel: 425-434-0080
Fax: 425-434-0081
Toll Free: 1-888-227-9695

Shurjoint Piping Products
260 S. Texas Blvd., Ste. 402
Weslaco. TX 78596
USA
Tel: 956-351-5662
Fax: 972-767-1853

Shurjoint Ibérica S.A.
Avda. Constitución, 37
24210 Mansilla De Las Mulas (León)
España
Telf.: 987-31-18-73
Fax: 987-31-18-64

Shurjoint Piping Products
3F 130 Xinhu 3rd Rd. (Neihu)
Taipei, Taiwan
Tel: 886-2-279-279-29
Fax: 886-2-279-251-59

Shurjoint Taiwan Inc.
3F, No. 219, Chengteh Rd., Sec. 3
Taipei, Taiwan
Tel: 886-2-2595-1255
Fax: 886-2-2595-6860

Shurjoint Korea Co., Ltd.
251-1 Sangjeok-dong
Sujeong-gu, Sungnam-si,
Gyeonggi-do,
South Korea
Tel: 82-2-549 4446
Fax: 82-2-549 4406

Your local distributor is:

Shurjoint specifications and or designs are subject to change without notice and or obligation

POTTER
The Symbol of Protection

FOR CPVC PIPE

VSR-SG
VANE TYPE WATERFLOW ALARM SWITCH WITH RETARD AND GLUE-IN UNION

UL, CUL and CSFM Listed, CE Marked

Service Pressure: Up to 175 PSI (12,07 BAR)

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 openings 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

Specifications subject to change without notice.

Stock Number: 1144460

Optional: Cover Tamper Switch Kit, stock no. 0090148

Replaceable Components: Retard/Switch Assembly, stock no. 1029030

Service Use:

British Standard	B59251
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

CAUTION

Waterflow switches that are monitoring wet pipe sprinkler systems shall not be used as the sole initiating switch 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.

⚠ 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.

General Information

The Model VSR-SG is a vane type waterflow switch for use on wet sprinkler systems using CPVC plastic fittings (manufactured by Tyco, Nibco, Victaulic, Ipex, and Spears Manufacturing Company) that use 1", 1 ¼", 1 ½", or 2" pipe sizes. It is equipped with a union to accommodate installation in confined spaces.

The VSR-SG 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 switch. The flow condition must exist for a period of time necessary to overcome the selected retard period.

Enclosure

The VSR-SG switches and retard switch 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.

Installation (see Fig. 1, 3, and 5)

These switches 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 switch 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. The unit has a 1" male fitting for gluing into a CPVC plastic tee.

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

Loosen the union nut and separate the 1" male fitting from the VSR-SG. Glue the 1" male fitting into the TEE following the TEE manufacturer's instructions for preparation and gluing of CPVC piping systems. (Note: The 1" male fitting must bottom out on the stop of the TEE for proper operation of the VSR-SG. See Fig. 1.) Wait 2 to 4 hours to allow the glue to dry before attaching the VSR-SG to the 1" male fitting. Select the proper paddle for the pipe size and type of TEE used. See Fig. 3 for instructions on how to change paddle. **Verify that the o-ring is properly positioned in its groove**. Hand tighten the nut on the union after orienting the switch in the appropriate direction to detect waterflow as shown in Fig. 5 & Fig. 7.

The vane must not rub the inside of the TEE or bind in any way. The stem should move freely when operated by hand.

⚠ CAUTION

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

⚠ CAUTION

Do not over-tighten the union nut, hand tighten only. Use of a wrench may damage the union nut.

Testing

The frequency of inspection and testing for the Model VSR-SG 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).

A method of testing the VSR-SG must be provided. The valve used for testing shall be easily reached and shall produce a minimum flow of 10 GPM to activate the switch. The discharge orifice shall be equal to the smallest sprinkler used in the system.

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. 1

Glue the 1" male fitting into the TEE following the TEE manufacturer's instructions for preparation and gluing of CPVC piping systems. Wait 2 to 4 hours to allow the glue to dry before attaching the VSR-SG to the 1" male fitting.

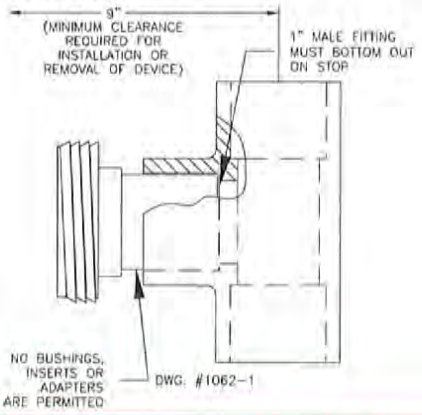


Fig. 2 Break out thin section of cover when wiring both switches from one conduit entrance.

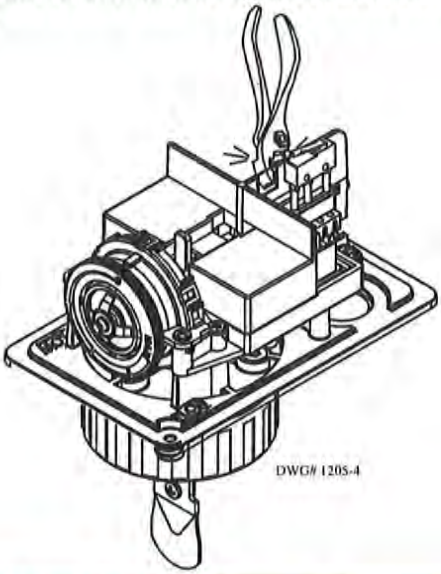
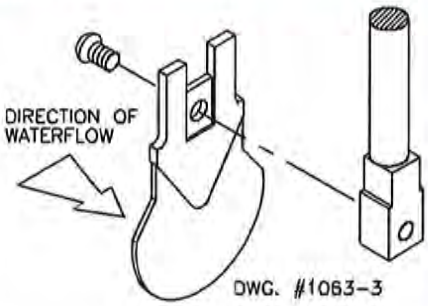


Fig. 3



Important:

11 paddles are furnished with each unit to accommodate the various sizes and manufacturers of TEES. *The paddles have raised lettering that show the pipe size and the TEE manufacturer they are to be used with. The proper paddle must be used.* The paddle must be properly attached (see Fig. 3) nd the screw that holds the paddle must be ecurely tightened.

Fig. 4 Typical Electrical Connections

Notes:

1. The Model VSR-SG 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. For supervised circuits, see "Switch Terminal Connections" drawing and warning note (Fig. 6).

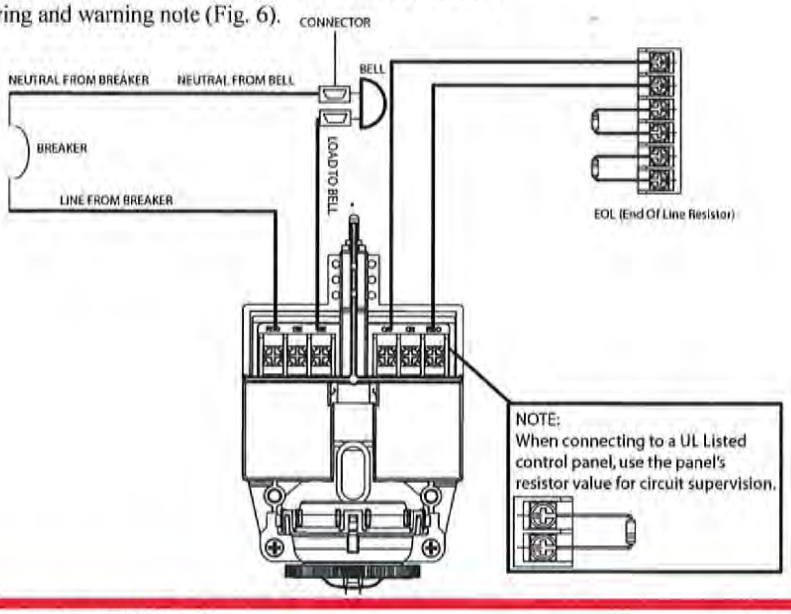


Fig. 5 Retard Adjustment

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.

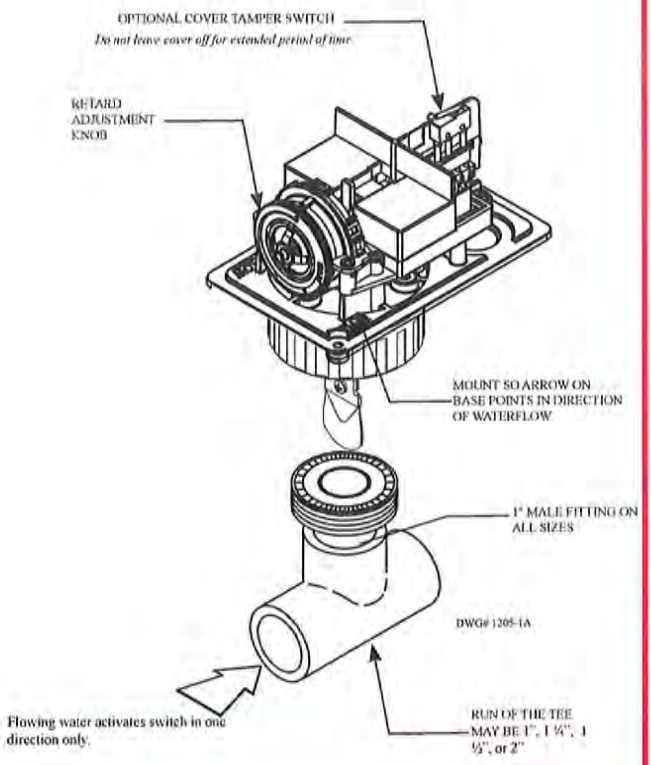
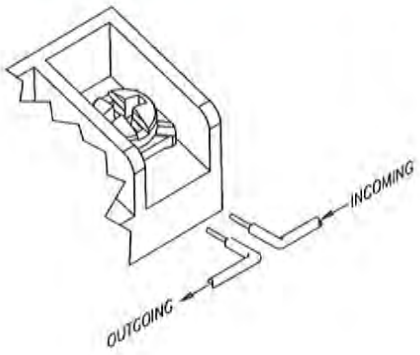


Fig. 6 Switch Terminal Connections Clamping Plate Terminal

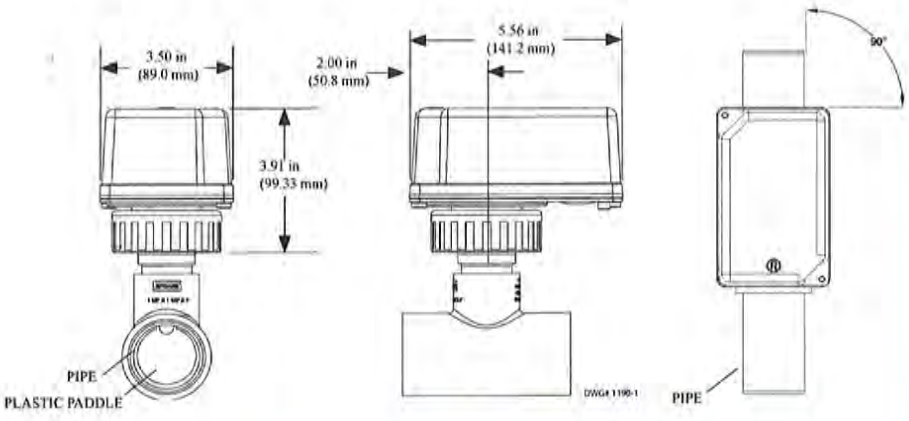


⚠ WARNING

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.

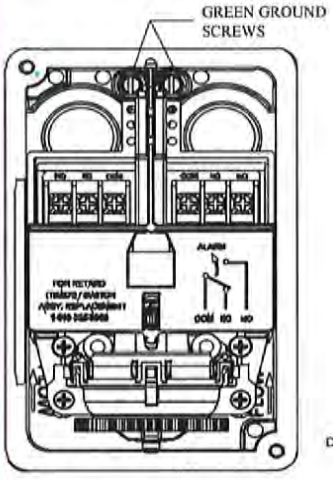
Fig. 7 Mounting Dimensions-Orientation



⚠ CAUTION

Flow switch must be properly orientated. Side of cover must be perpendicular with the pipe. Improper orientation could delay or prevent notification of waterflow.

Fig. 8



Maintenance

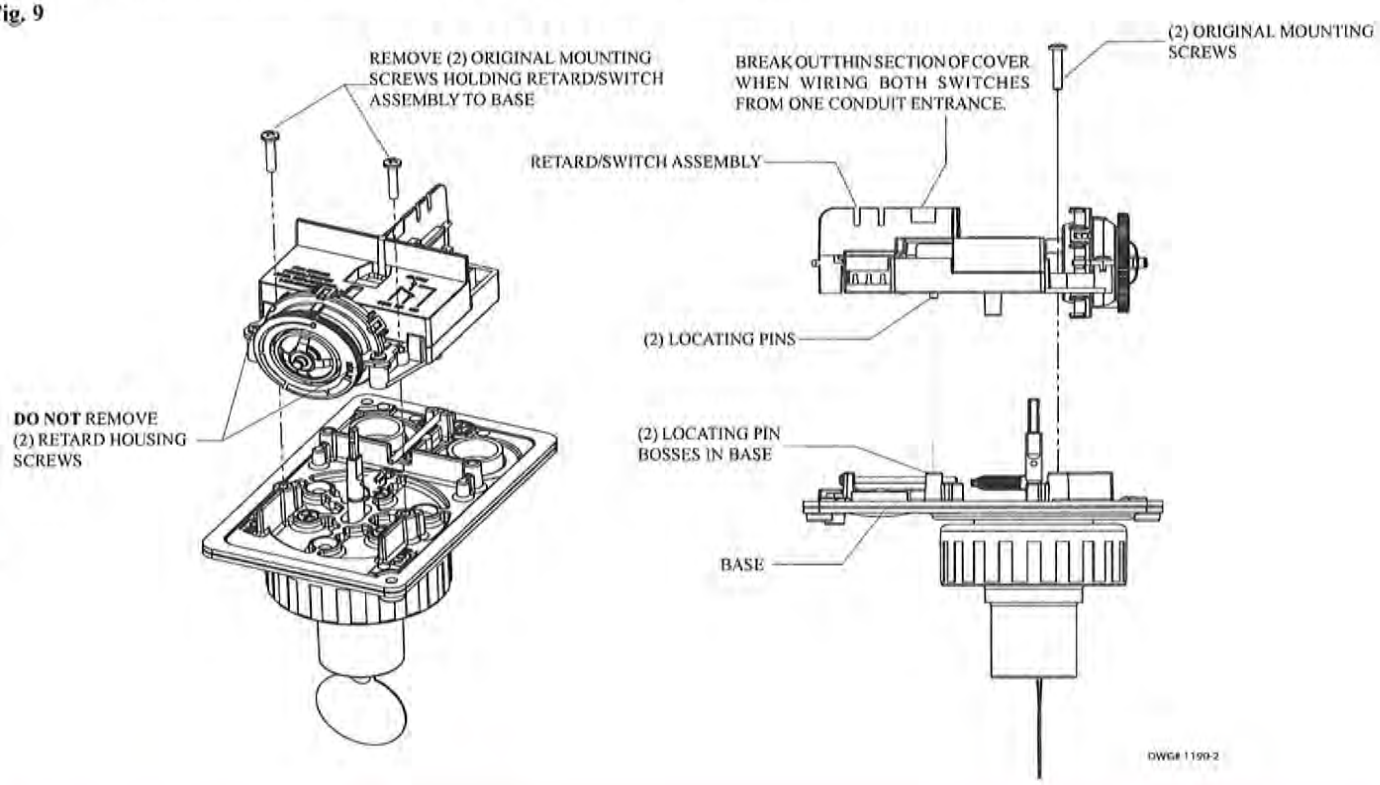
Inspect the waterflow switch monthly. If leaks are found, replace the waterflow switch. The VSR-SG waterflow switch should provide years of trouble-free service. The retard and switch assembly are easily field replaceable. In the unlikely event that either component does not perform properly, please order replacement retard switch assembly stock #1029030 (see Fig. 9). There is no maintenance required, only periodic testing and inspection.

Retard/Switch Assembly Replacement (See Fig. 9)

NOTICE The Retard/Switch Assembly is field-replaceable without draining the system or removing the waterflow switch from the pipe

1. Make sure the fire alarm zone or circuit connected to the waterflow switch is bypassed or otherwise taken out of service.
2. Disconnect the power source for local bell (if applicable).
3. Identify and remove all wires from the waterflow switch.
4. Remove the (2) mounting screws holding retard/switch assembly to the base. **Do not** remove the (2) retard housing screws.
5. Remove the retard assembly by lifting it straight up over the tripstem.
6. Install the new retard assembly. Make sure the locating pins on the retard/switch assembly fit into the locating pin bosses on the base.
7. Re-install the (2) original mounting screws.
8. Reconnect all wires. Perform a flow test and place the system back in service.

Fig. 9



Removal of Waterflow Switch

- To prevent accidental water damage, all control valves should be shut tight and the system completely drained before waterflow detectors are removed or replaced.
- Turn off electrical power to the detector, then disconnect wiring.
  Loosen nuts and seperate unit from the glued-in fittings
  Gently lift the unit far enough to get your fingers under it. With your fingers, roll the vane so it will fit through the hole while continuing to lift the waterflow detector.
- Lift detector clear of pipe.

V27, K4.2

Residential Horizontal Sidewall, Recessed Horizontal Sidewall

V2738 QUICK RESPONSE

c UL us LISTED
SEE VICTAULIC PUBLICATION 10.01 FOR DETAILS

These Model V2738 residential sprinklers are designed to meet the requirements of the 2002 or later NFPA 13, 13D and 13R for residential use. The Model V2738 is UL Listed for use under smooth flat horizontal ceilings. The design incorporates stateof- the-art, heat responsive, frangible glass bulb design (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 finishes to meet many design requirements.

HORIZONTAL SIDEWALL (V2738)

RECESSED HORIZONTAL SIDEWALL (V2738)

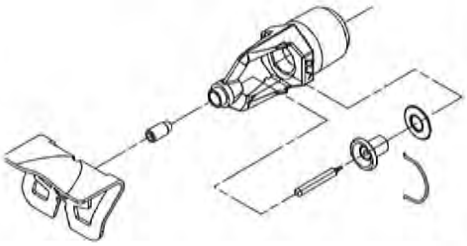
SPRINKLER OPERATION:

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.

COVERAGE:

Residential spray coverage up to 320sq.ft./29.9sq.m room sizes per NFPA.

TECHNICAL SPECIFICATIONS:



Models: V2738
Style: Residential Horizontal Sidewall and Recessed Horizontal Sidewall
Nominal Orifice Size: 3/16"/12mm
K-Factor: 4.2 Imp./6.1 S.I.^
Nominal Thread Size: 1/2" NPT/15mm
Max. Working Pressure: 175psi/1200kPa
Factory Hydrostatic Test:
100% @ 500psi/3450kPa
Min. Operating Pressure: 7psi/48kPa
Temperature Rating: See chart on page 2

Material Specifications
Deflector: Bronze per UNS C51000
Bulb: Glass with glycerin solution.
Bulb Nominal Diameter:
- Quick Response: 3.0mm

Load Screw: Bronze per UNS C65100
Pip Cap: Bronze per UNS C65100
Spring: Beryllium nickel
Seal: Teflon* tape
Frame: Die cast brass 65-30
Lodgement Spring:
Stainless steel per UNS S30200

Accessories
Installation Wrench:
- Open End: V27
- Recessed: V27-2

Sprinkler Finishes:
- Plain brass
- Chrome plated
- White painted**
- Custom painted**

For escutcheons, cabinets and other accessories refer to separate sheet.

NOTE: Weather resistant recessed escutcheons available upon request.

^ For K-Factor when pressure is measured in Bar, multiply S.I. units by 10.0.
* Teflon is a registered trademark of Dupont Co.
** UL Listed for corrosion resistance.

JOB/OWNER
System No._____
Location _____

CONTRACTOR
Submitted By_____
Date _____

ENGINEER
Spec Sect_____ Para_____
Approved _____
Date _____

www.victaulic.com

V27, K4.2

Residential Horizontal Sidewall, Recessed Horizontal Sidewall

V2738 QUICK RESPONSE

APPROVALS/LISTINGS

Model	Orifice Size	Nominal K-Factor	Response	Deflector Type	Approved Temperature Ratings F/C ‡		
	Inches mm	Imperial S.I.^	Standard or Quick		cULus	NYC/MEA†	CSFM
V2738	7/16 11	4.2 6.1	Quick	Horizontal Sidewall	155, 175 68, 79	155, 175 68, 79	155, 175 68, 79
V2738	7/16 11	4.2 6.1	Quick	Recessed Horizontal Sidewall Up to ¾" Adjustment	155, 175 68, 79	155, 175 68, 79	155, 175 68, 79

‡ Listings and approval as of printing.

^ For K-Factor when pressure is measured in Bar, multiply S.I. units by 10.0.

† MEA #62-99-E.

RATINGS

All glass bulbs are rated for temperatures from –67°F/–55°C to those shown in table below.

Sprinkler Temperature Classification	Victaulic Part Identification	Temperature - °F/°C		Glass Bulb Color
		Nominal Temperature Rating	Maximum Ambient Temperature Allowed	
Ordinary	C	155 68	100 38	Red
Intermediate	E	175 79	150 66	Yellow

ORDERING INFORMATION

Please specify the following when ordering:

Sprinkler Model Number	
Style	
Temperature Rating	
K-Factor	
Thread Size	
Quantity	
Sprinkler Finish	
Escutcheon Finish	
Wrench Model Number	

V27, K4.2

Residential Horizontal Sidewall, Recessed Horizontal Sidewall

V2738 QUICK RESPONSE

WARNING

⚠ WARNING

- **Always read and understand installation, care, and maintenance instructions, supplied with each box of sprinklers, before proceeding with installation of any sprinklers.**
- **Always wear safety glasses and foot protection.**
- **Depressurize and drain the piping system before attempting to install, remove, or adjust any Victaulic piping products.**
- **Installation rules, especially those governing obstruction, must be strictly followed.**
- **Painting, plating, or any re-coating of sprinklers (other than that supplied by Victaulic) is not allowed.**

Failure to follow these instructions could result in serious personal injury and/or property damage.

The owner is responsible for maintaining the fire protection system and devices in proper operating condition. For minimum maintenance and inspection requirements, refer to the current National Fire Protection Association pamphlet that describes care and maintenance of sprinkler systems. In addition, the authority having jurisdiction may have additional maintenance, testing, and inspection requirements that must be followed.

If you need additional copies of this publication, or if you have any questions about the safe installation of this product, contact Victaulic World Headquarters: P.O. Box 31, Easton, Pennsylvania 18044-0031 USA, Telephone: 001-610-559-3300.

AVAILABLE WRENCHES

Sprinkler Type	Open End	Recessed
V2738 - No escutcheon	V27	V27-2
V2738 - With escutcheon	—	V27-2

V27, K4.2

Residential Horizontal Sidewall, Recessed Horizontal Sidewall

V2738 QUICK RESPONSE

DIMENSIONS

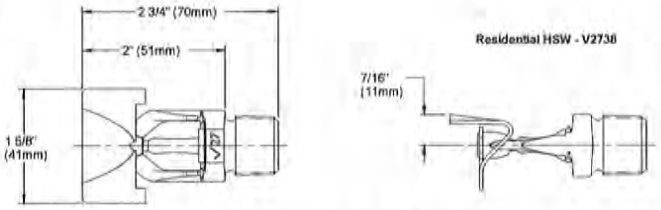
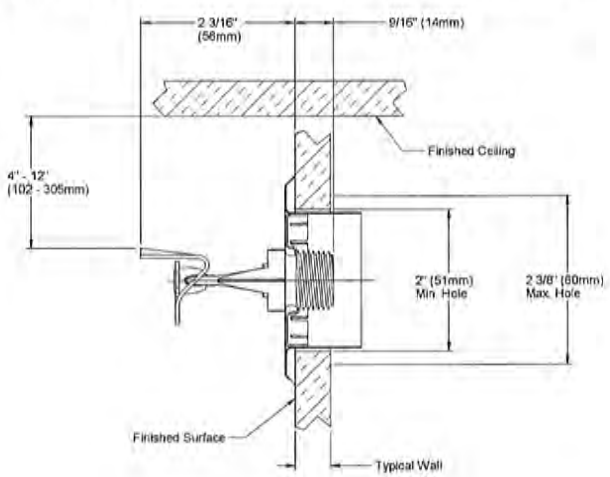
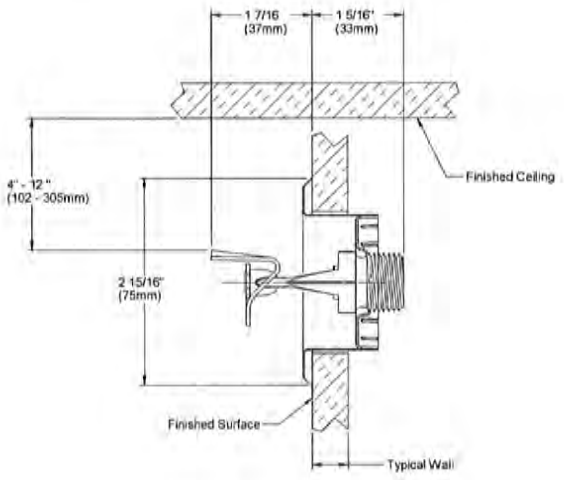


Figure 1 – ¾" Adjustment Recessed – V2738 (drawing not to scale)





V27, K4.2

Residential Horizontal Sidewall, Recessed Horizontal Sidewall

V2738 QUICK RESPONSE

ROOM SIZE

Victaulic V2738, 4.2 K-Factor Horizontal Sidewall Sprinkler
For Ceiling types refer to NFPA 13, 13R or 13D 2013 Editions

Max. Coverage Area[a] Width X Length[c]	Max. Spacing	Ordinary Temp Rating 155°F/68°C		Intermediate Temp Rating 175°F/79°C		Top of Deflector to Ceiling	Installation Type	Minimum Spacing
Ft. x Ft. m x m	Ft. m	Flow[b] GPM L/min	Pressure[b] PSI bar	Flow[b] GPM L/min	Pressure[b] PSI bar			Ft. m
12 X 12 3.7 X 3.7	12 3.7	14 53.0	11.1 0.76	14 53.0	11.1 0.76	4 to 6 inches	¾" recessed using Escutcheon or non-recessed per NFPA 13, 13R or 13D	8.0 2.4
14 X 14 4.3 X 4.3	14 4.3	14 53.0	11.1 0.76	14 53.0	11.1 0.76			
16 X 16 4.9 X 4.9	16 4.9	17 64.4	16.4 1.13	17 64.4	16.4 1.13			
16 X 18 4.9 X 5.5	16 4.9	19 72.0	20.5 1.4	19 72.0	20.5 1.4			
16 X 20 4.9 X 6.1	16 4.9	23 87.1	30.0 2.1	23 87.1	30.0 2.1			
12 X 12 3.7 X 3.7	12 3.7	15 56.8	12.8 0.88	15 56.8	12.8 0.88	6 to 12 inches		
14 X 14 4.3 X 4.3	14 4.3	17 64.4	16.4 1.13	17 64.4	16.4 1.13			
16 X 16 4.9 X 4.9	16 4.9	19 72.0	20.5 1.4	19 72.0	20.5 1.4			
16 X 18 4.9 X 5.5	16 4.9	24 90.8	32.6 2.25	24 90.8	32.6 2.25			
16 X 20 4.9 X 6.1	16 4.9	28 106.0	44.4 3.06	28 106.0	44.4 3.06			

(a) For coverage area dimensions less than or between those indicated, use the minimum required flow for the next highest coverage area for which hydraulic design criteria are stated.
(b) For NFPA 13 residential applications, the greater of 0.1gpm/ft^2 over the design area of the flow in accordance with the criteria in the table must be used.
(c) The Width X Length dimension refers to the Width (backwall where the sprinkler is located) times the Length (horizontal throw of sprinkler)

V27, K4.2

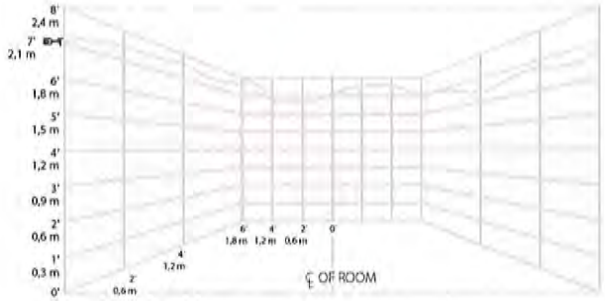
Residential Horizontal Sidewall, Recessed Horizontal Sidewall

V2738 QUICK RESPONSE

NOMINAL WETTING PATTERNS

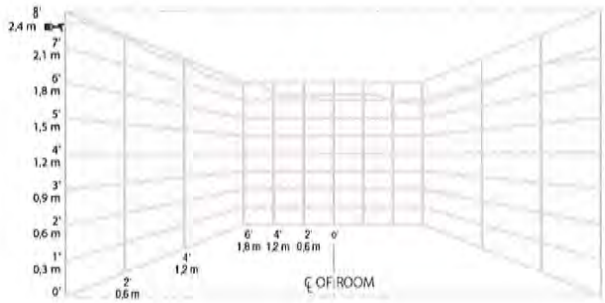
Model V2738
K4.2 Residential Horizontal Sidewall

15 GPM/56.8 LPM – 12' x 12'/3.7 x 3.7 m coverage area – 12"/304.8 mm from ceiling



Model V2738
K4.2 Residential Horizontal Sidewall

14 GPM/53.0 LPM – 12' x 12'/3.7 x 3.7 m coverage area – 4"/101.6 mm from ceiling



See notes on page 11.

V27, K4.2

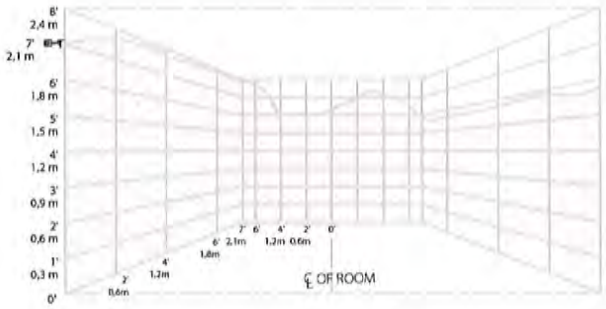
Residential Horizontal Sidewall, Recessed Horizontal Sidewall

V2738 QUICK RESPONSE

NOMINAL WETTING PATTERNS

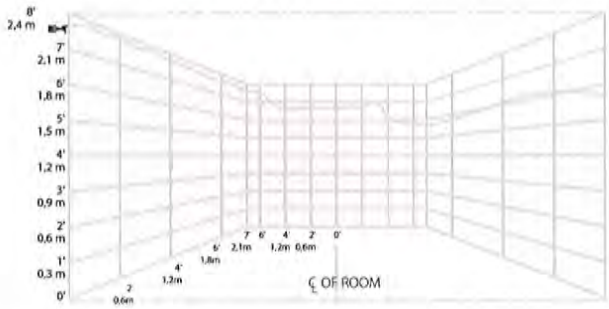
Model V2738
K4.2 Residential Horizontal Sidewall

17 GPM/64.3LPM – 14' x 14'/4.3 x 4.3m coverage area – 12"/304.8mm from ceiling



Model V2738
K4.2 Residential Horizontal Sidewall

14 GPM/53.0LPM – 14' x 14'/4.3 x 4.3m coverage area – 4"/101.6mm from ceiling



See notes on page 11.

V27, K4.2

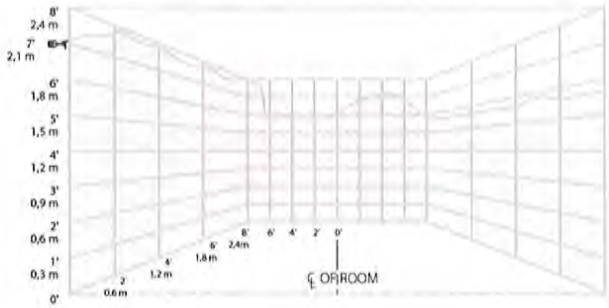
Residential Horizontal Sidewall, Recessed Horizontal Sidewall

V2738 QUICK RESPONSE

NOMINAL WETTING PATTERNS

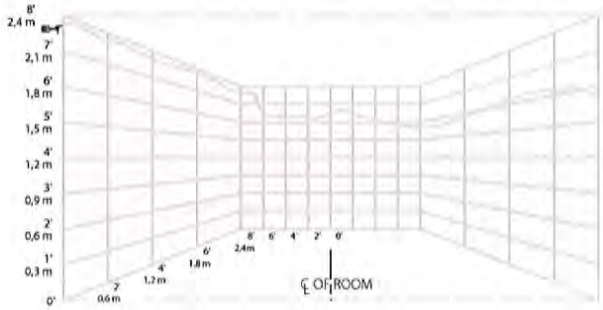
Model V2738
K4.2 Residential Horizontal Sidewall

19 GPM/71.9LPM – 16' x 16'/4.9 x 4.9 m coverage area – 12"/304.8 mm from ceiling



Model V2738
K4.2 Residential Horizontal Sidewall

17 GPM/64.3LPM – 16' x 16'/4.9 x 4.9m coverage area – 4"/101.6 mm from ceiling



See notes on page 11.

V27, K4.2

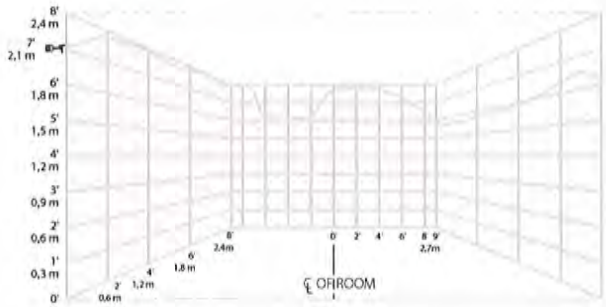
Residential Horizontal Sidewall, Recessed Horizontal Sidewall

V2738 QUICK RESPONSE

NOMINAL WETTING PATTERNS

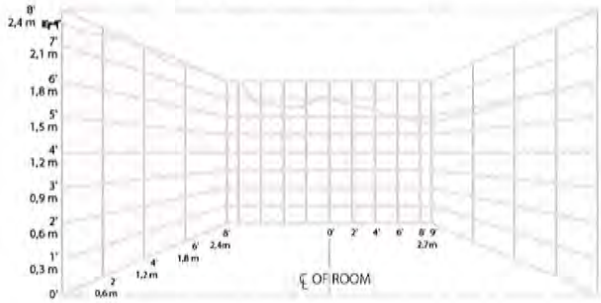
Model V2738
K4.2 Residential Horizontal Sidewall

24 GPM/90.8LPM – 16' x 18'/4.9 x 5.5m coverage area – 12"/304.8mm from ceiling



Model V2738
K4.2 Residential Horizontal Sidewall

19 GPM/71.9 LPM – 16' x 18'/4.9 x 5.5m coverage area – 4"/101.6mm from ceiling



See notes on page 11.

V27, K4.2

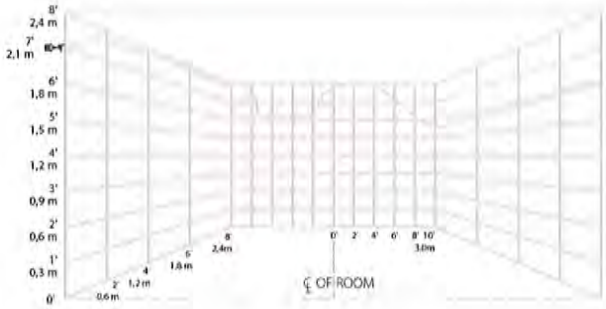
Residential Horizontal Sidewall, Recessed Horizontal Sidewall

V2738 QUICK RESPONSE

NOMINAL WETTING PATTERNS

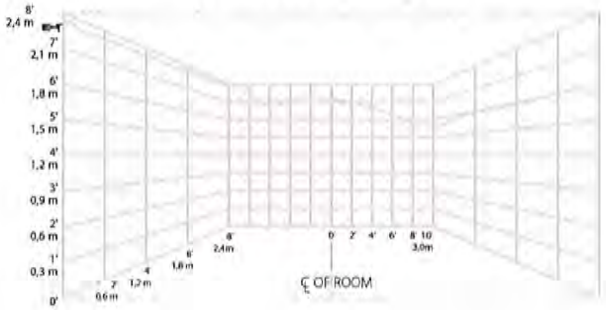
Model V2738
K4.2 Residential Horizontal Sidewall

28GPM/106.0LPM – 16' x 20'/4.9 x 6.1 m coverage area – 12"/304.8mm from ceiling



Model V2738
K4.2 Residential Horizontal Sidewall

23GPM/87.0 LPM – 16' x 20'/4.9 x 6.1m coverage area – 4"/101.6mm from ceiling



NOTES:

1 Data shown is approximate and can vary due to differences in installation.

2 These graphs illustrate approximate wall-wetting patterns for these specific Victaulic FireLock Automatic Sprinklers. They are provided as information for guidance and should not be used as minimum sprinkler spacing rules for installation. Sprinkler location shall be in accordance with the obstruction rules for residential sprinklers in NFPA 13 (2002 or later revision). Failure to follow these guidelines could adversely affect the performance of the sprinkler and will void all Listings, Approvals and Warranties.

3 All patterns are symmetrical to waterway.

V27, K4.2

Residential Horizontal Sidewall, Recessed Horizontal Sidewall

V2738 QUICK RESPONSE

WARRANTY

Refer to the Warranty section of the current Price List or contact Victaulic for details.

NOTE

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

BlazeMaster®

Submittal Data Sheet

Job or Customer: .....

Engineer: .....

Contractor: .....

Submitted by: ..... Date

Approved by: ..... Date

Order No: ..... Date

Specification: .....

Installation Date: .....

< STANDARDS >

ASTM D1784, F437, F438, F439, F442

UL 1821 1887

ULC C199 P-M

NSF-61

FM

NFPA 13, 13R 13D, 90A 24

introduction

IPEX BlazeMaster® pipe and fittings are designed specifically for fire sprinkler systems. They are made from a specialty thermoplastic known chemically as post-chlorinated polyvinyl chloride (CPVC). IPEX BlazeMaster pipe and fittings provide unique advantages in sprinkler installations including superior hydraulics, ease of joining, increased hanger spacing in comparison to other thermoplastics and ease of assembly. They also are based on a technology with a continuous and proven service history of more than 40 years.

Fire Performance

BlazeMaster is made with CPVC which offers an even greater fire safety profile than PVC. Like PVC, CPVC will not independently support combustion, and as such will not burn once the flame source is removed. CPVC's ignition resistance is demonstrated by its flash ignition temperature of 900°F.

CPVC also has a low flame spread. In addition, it provides outstanding smoke characteristics. In testing conducted to CAN/ULC S102.2, CPVC showed a flame spread of less than 15, and a smoke-developed classification of 15. And, like PVC, CPVC has a fuel contribution of 0.

BlazeMaster®

Submittal Data Sheet

material properties

Physical & Thermal Properties of BlazeMaster CPVC		
Property	CPVC	ASTM
Specific Gravity	1.55	D792
IZOD Impact Strength (ft. lbs./inch, notched)	3.0	D256A
Modulus of Elasticity, @ 73°F, psi	4.23×10^5	D638
Ultimate Tensile Strength, psi	8,400	D638
Compressive Strength, psi	9,600	D695
Poisson's Ratio	.35 - .38	-
Working Stress @ 73°F, psi	2,000	D1598
Hazen-Williams C Factor	150	-
Coefficient of Linear Expansion in./(in.°F)	3.4×10^{-5}	D696
Thermal Conductivity BTU/hr./ft.²/°F/in.	0.95	C177
Limiting Oxygen Index	60%	D2863
Electrical Conductivity	Non Conductor	

availability

Description	Size (in)
Pipe	3/4 to 3"
Fittings	
Tee (Soc)	3/4" to 3"
Reducing Tee (Soc)	3/4" to 3" x 3/4" 3" x 3/4" to 2-1/2"
Sprinkler Head Adapter Tee (Soc x Soc x SST FPT)	3/4" to 2" x 3/4" 2" x 1/2"
Sprinkler Head Adapter Tee (FPT x FPT x Soc)	1/2" x 1/2" 1"
90° Elbow (Soc)	3/4" - 3"
Sprinkler head Adapter 90° Elbow (Soc x SST FPT)	3/4" to 1-1/4" x 1/2" to 3/4"
45° Elbow (Soc)	3/4" to 3"
Cross (Soc)	3/4" to 2-1/2"
Coupling (Soc)	3/4" to 3"
Grooved Adapter Coupling (Soc x Groove)	1-1/4" to 3"
Female Adaptor (Soc x SST FPT)	3/4" to 2"
Sprinkler Head Adaptor (Soc x SST FPT)	3/4" to 1-1/4" x 1/2" to 3/4"
Sprinkler Head Adaptor (Sp x SST FPT)	3/4" to 1" x 1/2"
Reducer Bushing (Spig x Soc)	1" to 3" x 3/4" to 2-1/2"
Cap (Soc)	3/4" to 3"
Union (Soc)	3/4" to 2"
One Piece Flange (Soc)	3/4" to 3"

BlazeMaster®

Handling & Installation Procedures

Outdoor Installations

IPEX BlazeMaster pipe and fittings are not listed for exposed, outdoor applications.

Joining IPEX BlazeMaster Pipe and Fittings with Red One Step Solvent Cement

Note: BlazeMaster BM-5 One Step Cement requires no cleaner or primer. Refer to individual manufacturers' installation instructions.

Cutting

IPEX BlazeMaster pipe can be easily cut with a sharp ratchet cutter (except at temperatures below 10°C (50°F)), a wheel-type plastic tubing cutter, a power saw or a fine toothed saw. To ensure the pipe is cut square, a miter box is recommended when using a saw. A square cut provides the surface of the pipe with maximum bonding area. If any indication of damage or cracking is evident at the pipe end, cut off at least 50.8 mm (2") beyond any visible crack.

Deburring

Burrs and filings can prevent proper contact between pipe and fitting during assembly, and must be removed from the outside and the inside of the pipe. A chamfering tool or a file is suitable for this purpose. A slight bevel shall be placed at the end of the pipe to ease entry of the pipe into the socket and minimize the chances of wiping solvent cement from the fitting during insertion.

Fitting Preparation

Using a clean, dry rag, wipe loose dirt and moisture from the fitting socket and pipe end. Moisture can slow the cure time and at this stage of assembly, excessive water can reduce joint strength. Check the dry fit of the pipe and fitting. The pipe should enter the fitting socket easily 1/4 to 3/4 of the way. At this stage, the pipe should not bottom out in the socket.

Solvent Cement Application

Joining surfaces shall be penetrated and softened. Cement shall be applied (worked into pipe) with an applicator half the nominal size of the pipe diameter. Apply a heavy, even coat of cement to the outside pipe end. Apply a medium coat to the fitting socket.

Pipe sizes 1-1/4" (32 mm) and above shall always receive a second cement application on the pipe end. (Apply cement on the pipe end, in the fitting socket, and on the pipe again.) Only use solvent cements that have been specifically investigated and tested for use with BlazeMaster CPVC systems and approved by the pipe and fitting manufacturer. Too much cement can cause clogged waterways. Do not allow excess cement to puddle in the pipe and fitting assembly.

Special care shall be exercised when assembling BlazeMaster systems in extremely low temperatures (below 4°C (40°F)) or extremely high temperatures (above 38°C (100°F)). Extra set time shall be allowed in colder temperatures. When cementing pipe and fittings in extremely cold temperatures, make certain that the cement has not "gelled". Gelled cement must be discarded. In extremely hot temperatures, make sure both surfaces to be joined are still wet with cement when putting them together.

Assembly

After applying cement, immediately insert the pipe into the fitting socket, while rotating the pipe one-quarter turn. Properly align the fitting for the installation at this time. Pipe must bottom to the stop. Hold the assembly for 10 to 15 seconds to ensure initial bonding. A bead of cement should be evident around the pipe and fitting juncture. If this bead is not continuous around the socket shoulder, it may indicate that insufficient cement was applied.

If insufficient cement is applied, the fitting must be cut out and discarded.

Cement in excess of the bead can be wiped off with a rag. Care shall be exercised when installing sprinkler heads. Sprinkler head fittings shall be allowed to cure for a minimum of 30 minutes prior to installing the sprinkler head. When installing sprinkler heads, be sure to anchor or hold the pipe drop securely to avoid rotating the pipe in previously cemented connections. Previously cemented fittings shall also be permitted to cure for a minimum of 30 minutes.

Warning: Sprinkler heads shall be installed only after all the CPVC pipe and fittings, including the sprinkler head adapters, are solvent welded to the piping and allowed to cure for a minimum of 30 minutes. Sprinkler head fittings should be visually inspected and probed with a wooden dowel to ensure that the water way and threads are clear of any excess cement. Once the installation is complete and cured per Table I, II or III, the system shall be hydrostatically tested. Sprinklers shall not be installed in the fittings prior to the fittings being cemented in place.

Note: Safety and Health Precautions. Prior to using CPVC solvent cements, review and follow all precautions found on the container labels, material safety data sheet, and Standard Practice for Safe Handling ASTM F 402.

Set and Cure Times

Solvent cement set and cure times are a function of pipe size, temperature, relative humidity, and tightness of fit. Curing time is faster for drier environments, smaller pipe sizes, higher temperatures and tighter fits. The assembly must be allowed to set, without any stress on the joint, for 1 to 5 minutes, depending on pipe size and temperature. Following initial set period, the assembly can be handled carefully, avoiding significant stresses to the joint. Refer to the following tables for minimum cure times prior to pressure testing.

Table I: 552 kPa (225 psi) Test Pressure (maximum) Ambient Temperature During Cure Period

Pipe Size		Temperature		
inches	mm	16°C to 49°C (60°F to 120°F)	≥ 4.4°C (≥ 40°F)	≥17.8°C (≥ 0°F)
3/4	20	1 hr	4 hrs	48 hrs
1	25	1-1/2 hrs	4 hrs	48 hrs
1-1/4	32 & 40	3 hrs	32 hrs	10 days
2	50	8 hrs	48 hrs	Note 1
2-1/2 & 3	65 & 80	24 hrs	96 hrs	Note 1

Note: Cure times indicated in Table 1 are to be used for all LPCB approved pipe and fitting joints.

Table II: 1379 kPa (200 psi) Test Pressure (maximum) Ambient Temperature During Cure Period

Pipe Size		Temperature		
inches	mm	16°C to 49°C (60°F to 120°F)	≥ 4.4°C (≥ 40°F)	≥17.8°C (≥ 0°F)
3/4	20	45 mins	1-1/2 hrs	48 hrs
1	25	45 mins	1-1/2 hrs	48 hrs
1-1/4	32 & 40	1-1/2 hrs	16 hrs	10 days
2	50	6 hrs	36 hrs	Note 1
2-1/2 & 3	65 & 80	8 hrs	72 hrs	Note 1

Table III: 690 kPa (100 psi) Test Pressure (maximum) Ambient Temperature During Cure Period

Pipe Size		Temperature		
inches	mm	16°C to 49°C (60°F to 120°F)	≥ 4.4°C (≥ 40°F)	≥17.8°C (≥ 0°F)
3/4	20	15 mins	15 mins	30 mins
1	25	15 mins	30 mins	30 mins
1-1/4	32 & 40	15 mins	30 mins	2 hrs

Note: For these sizes, the solvent cement can be applied at temperatures below -17.8°C (0°F), however, the sprinkler system temperature must be raised to a temperature of 0°C (32°F) or above and allowed to cure per the above recommendations prior to pressure testing.

Threaded Connections

IPEX BlazeMaster CPVC female threaded adapters or flanges are listed for connecting a BlazeMaster fire sprinkler system to other materials, valves, and appurtenances.

A thread sealant shall be used in making threaded connections. TFE (Teflon®) thread tape is the recommended sealant. Some thread sealants other than TFE thread tape contain solvents or other materials that may be damaging to CPVC. Contact your authorized IPEX BlazeMaster distributor or IPEX Representative for approved thread sealants. Use of thread sealants other than those approved by IPEX will void the warranty on the IPEX BlazeMaster system.

Care shall be exercised when transitioning between IPEX BlazeMaster pipe and fittings and metal. Care must be taken to avoid over-torquing. Refer to section on instructions for torque requirements.

The following is the recommended method of installation to ensure a sound connection.

a) Begin by applying 2 to 3 wraps of TFE (Teflon®) thread tape.

b) Tighten the sprinkler head into the adapter taking care not to cross-thread the fitting. (Recommended torque values 15-25 ft/lbs)

c) Two to three turns beyond finger-tight is all that is required to make a sound plastic threaded connection.

CAUTION: Over-tightening will damage both the pipe and the fitting.

Flanged Connections

Flange Make-Up: Once a flange is joined to pipe, the method for joining two flanges is as follows:

1. Piping runs joined to the flanges must be installed in a straight line position to the flange to avoid stress at the flange due to misalignment. Piping must also be secured and supported to prevent lateral movement that can create stress and damage the flange.
2. With gasket in place, align the bolt holes of the mating flanges by rotating the ring into position. (Consideration should be given to alignment of One-Piece Flange prior to joining with pipe.)
3. Insert all bolts, washers (two standard flat washers per bolt), and nuts.
4. Make sure the faces of the mating surfaces are flush against gasket prior to bolting down the flanges.
5. Tighten the nuts by hand until they are snug. Establish uniform pressure over the flange face by tightening the bolts in 5 ft. lb. (6.8 M Kg) increments according to the sequence shown in Figure 8: Bol Tightening Sequence following a 180° opposing sequence.
6. Care must be taken to avoid "bending" the flange when joining a flange to a "raised face" flange, or a wafer-style valve. Do not use bolts to bring together improperly mated flanges.

Caution: Over-torquing will damage the flange. Torque given is for dry, non-lubricated bolt, standard washers, neoprene 3.18 mm (1/8²) thick full face gasket. If lubricant (non-petroleum based) is used, torque levels may vary. Actual field conditions may require a variation in these recommendations.

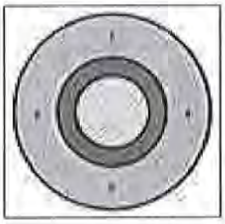


Figure 8: Bolt Tightening Sequence

Recommended Bolt Torque					
Flange Size		Bolt Diameter		Torque	
inches	mm	inches	mm	ft lbs	M Kg
3/4 - 1-1/2	19.05 - 38.10	1/2	12.70	10 - 15	13.6 - 20.3
2 - 3	50.80 - 76.20	5/8	15.88	20 - 30	27.1 - 40.7

Grooved Coupling Adapters

The following procedures are recommended for proper assembly of the Grooved Coupling Adapter. READ THESE INSTRUCTIONS CAREFULLY BEFORE BEGINNING INSTALLATION.

1. Inspect the fittings and pipe to insure that they are sufficiently free from indentations, projections or roll-marks on the gasket seating areas of the fitting and pipe. The pipe should be squarely cut with any loose scale, paint and/or dirt must be removed from the groove and seating surface. Use a standard grade E*, EPDM compound that is suitable for wet fire sprinkler service. A flexible coupling shall be used with grooved coupling adapters. Caution: Use of rigid style couplings may damage the grooved coupling adapter. Consult the coupling manufacturer for proper selection.

   *See manufacturer for temperature ratings.

2. Make sure the gasket is clean and free of any cracks, cuts or other defects which may cause leaks. Lubricate the gasket with a vegetable soap-based gasket lubricant. Caution: Use of petroleum based lubricants will damage the gasket and adapter resulting in stress failure of the CPVC adapter. A gasket/joint lubricant is recommended to prevent pinching the gasket and to assist in seating the gasket during the alignment process. Apply the appropriate lubricant to the gasket lips and exterior surface of the gasket.

3. Place the gasket over the metal pipe ends, being sure gasket lip does not overhang the pipe end. Insert the CPVC grooved coupling adapter into the gasket. Make sure that the gasket is centered between the two grooves. No portion of the gasket should extend into the grooves. Caution: Make sure the gasket is not pinched between the pipe and the fitting.

4. Place the metal housing over the gasket, making sure the metal housing key is into the grooves on the metal pipe and the CPVC coupling adapter. Insert the bolts and tighten by hand. Tighten the bolts alternately and equally until the bolt pads are touching metal-to-metal. In completing a proper joint, the gasket is also slightly compressed, adding to the strength of the seal from the gasket's durometer.

5. Inspect the joints before and after pressure testing. Look for gaps between the bolt pads and for housing keys that are not inside the grooves.

Penetrating Fire Rated Walls and Partitions

Before penetrating fire rated walls and partitions, consult building codes and authorities having jurisdiction in your area. Several classified through-penetration firestop systems are approved for use with CPVC pipe. Consult IPEX representative for further information. Warning: Some firestop sealants or wrap strips contain solvents or plasticizers that may be damaging to CPVC. Always consult the manufacturer of the firestop material for compatibility with IPEX BlazeMaster CPVC pipe and fittings.

Earthquake Bracing

Since IPEX BlazeMaster CPVC pipe is more ductile than metallic sprinkler pipe, it has a greater capacity to withstand earthquake damage. In areas subject to earthquakes, BlazeMaster fire sprinkler systems shall be designed and braced in accordance with local codes or NFPA 13, Section 6-4 (1999 Edition).

When it is required to earthquake brace BlazeMaster piping, it is important to use fittings, fasteners or clamps that do not have sharp edges or apply excessive compressive forces sufficient to distort the pipe.

Pressure Testing

Once an installation is completed and cured, per the previous recommendations, the system should be hydrostatically (water) pressure tested at 1379 kPa (200 psi), Table II, for 2 hours (or at 345 kPa (50 psi) in excess of the maximum pressure, Table I, when the maximum pressure to be maintained in the system is in excess of 1034 kPa (150 psi) in accordance with the requirements established by NFPA Standard 13, Section 10-2.2.1 (1999 Edition). Sprinkler systems in one- and two-family dwellings and mobile homes may be tested at line pressure, Table III in accordance with the requirements established by NFPA 13D, Section 1-5.4 (1999 Edition). When pressure testing, the sprinkler system shall be slowly filled with water and the air bled from the highest and farthest sprinkler heads before pressure testing is applied. Air must be removed from piping systems (plastic or metal) to prevent it from being locked in the system when pressure is applied. Entrapped air can generate excessive surge pressures that are potentially damaging, regardless of the piping materials used. **Air or compressed gas should never be used for pressure testing.** If a leak is found, the fitting must be cut out and discarded. A new section can be installed using couplings or a union. Unions should be used in accessible areas only.

BlazeMaster®

Specifications

Scope

This specification sheet covers IPEX Inc. requirements for for 3/4" through 3" (20 mm – 75 mm) **BlazeMaster CPVC SDR 13.5 Pipe** for wet pipe automatic sprinkler systems, having a rated working pressure of 175 psi (1205 kPa) at 150°F (66°C) or 315 psi (2172 kPa) at 73°F (22°C) and **BlazeMaster CPVC Schedule 80 Fittings**. The fittings, for wet pipe automatic sprinkler systems, having a rated working pressure of 175 psi (1205 kPa) at 150°F (66°C) or 315 psi (2172 kPa) @ 73°F (22°C). These products meet or exceed performance standards set by the American National Standards Institute (ANSI), the American Society for Testing and Materials (ASTM), Factory Mutual Research (FM), National Fire Protection Agency (NFPA), NSF International (NSF), Underwriters Laboratories Inc., and Underwriters' Laboratories of Canada (ULC).

Underwriters' Laboratories of Canada lists **BlazeMaster CPVC Schedule 80 Fittings** and **BlazeMaster CPVC SDR 13.5 Pipe** for use in the following applications; Residential occupancies as defined in the Standard for Sprinkler Systems in One and Two-Family Dwellings, NFPA 13D.

Multiple residential as defined in NFPA 13R.

Light-hazard occupancies as defined in the Standard for Installation of Sprinkler Systems, NFPA 13. **BlazeMaster CPVC Schedule 80 Fittings** and **BlazeMaster CPVC SDR 13.5 Pipe** can be used for both concealed and exposed installations. Refer to Ipex literature for any limitations.

Dimensions

IPEX BlazeMaster pipe is produced in SDR 13.5 dimensions to the specifications of ASTM F442. Fittings are produced to ASTM F437, F438 pr F439 specifications depending on the size and configuration.

Material

BlazeMaster CPVC SDR 13.5 Pipe are made from Lubrizol Inc. Chlorinated Polyvinyl Chloride (CPVC) raw material having a cell class of 23447 as defined in ASTM Standard D 1784 *"Standard Specification for Rigid Polyvinyl Chloride (PVC) and Chlorinated Polyvinyl Chloride (CPVC) Compounds"*. The compound is listed with NSF for potable water service.

The material has been tested in accordance with CAN/ULC Standard S102.2M88 *"Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering, and Miscellaneous Materials and Assemblies"* with the following results: Flame Spread 5 / Smoke Development 5-15.

BlazeMaster Schedule 80 Fittings are made from Lubrizol Inc. Chlorinated Polyvinyl Chloride (CPVC) raw material having a cell class of 23447 as defined in ASTM Standard D 1784 *"Standard Specification for Rigid Polyvinyl Chloride (PVC) and Chlorinated Polyvinyl Chloride (CPVC) Compounds"*. The compound is listed with NSF for potable water service.

Marking

BlazeMaster Schedule 80 Fittings and **BlazeMaster CPVC SDR 13.5 Pipe** are made from Lubrizol Inc. Chlorinated Polyvinyl Chloride (CPVC) raw material having a cell class of 23447 as defined in ASTM Standard D 1784 *"Standard Specification for Rigid Polyvinyl Chloride (PVC) and Chlorinated Polyvinyl Chloride (CPVC) Compounds"*. The compound is listed with NSF for potable water service.

Notes

About the IPEX Group of Companies

As leading suppliers of thermoplastic piping systems, the IPEX Group of Companies provides our customers with some of the world's largest and most comprehensive product lines. All IPEX products are backed by more than 50 years of experience. With state-of-the-art manufacturing facilities and distribution centers across North America, we have established a reputation for product innovation, quality, end-user focus and performance.

Markets served by IPEX group products are:

- Electrical systems
- Telecommunications and utility piping systems
- PVC, CPVC, PP, ABS, PEX, FR-PVDF and PE pipe and fittings (1/4" to 48")
- Industrial process piping systems
- Municipal pressure and gravity piping systems
- Plumbing and mechanical piping systems
- PE Electrofusion systems for gas and water
- Industrial, plumbing and electrical cements
- Irrigation systems

Products are manufactured by IPEX Inc. and distributed in the United States by IPEX USA LLC.
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