FIRE EQUIPMENT INC
Life Safety System Design and Service
20 Hall Street, Medford, MA 02155
Main: 888-296-1381 FAX: 888-296-1384
www.firefire.com

City of Portland City Hall
389 Congress Street,
Portland, Maine 04101
USA

Date: 12/3/2018

REF: 212 Canco Road, Portland ME 04103; Sprinkler Renovations

Statement of Warranty

Fire Equipment, Inc. (here and after referred to FEI) will replace or repair any product FEI provides or CUSTOMER procures under this Agreement that fails within the warranty period (Typically one-year) due to defective workmanship or materials. The failure must not result from CUSTOMER's negligence; or from fire, lightning, water damage, or any other cause beyond FEI control. This warranty applies to FEI fabricated and outside-purchased products. The warranty effective date is the date of CUSTOMER acceptance of the product or the date CUSTOMER begins to receive beneficial use of the product, whichever comes first.

THE WARRANTIES SET FORTH HEREIN ARE EXCLUSIVE, AND FEI EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, WHETHER WRITTEN OR ORAL, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE SERVICES, EQUIPMENT, AND MATERIALS PROVIDED HEREUNDER. FEI SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM, OR RELATING TO, THIS LIMITED WARRANTY OR ITS BREACH.

FEI shall not be liable for damages caused by delay or interruption in Services due to fire or flood; corrosive substances in the air or water supply that may enter or otherwise affect sprinkler piping and sprinkler systems including but not limited to biological growth, Calcium Carbonate Deposits and microbiologically influenced corrosion (MIC); strike, lockout, dispute with workmen, inability to obtain material or services, war, acts of God or any other cause beyond FEI reasonable control. Should any part of the system or any Equipment be damaged by fire, water, water leakage, freezing pipes, lightning, acts of God, third parties or any other cause beyond the control of FEI, any repairs or replacement shall be paid for by CUSTOMER.

Indemnity and Limitation of Liability: FEI agrees to indemnify and hold CUSTOMER and its agents and employees harmless from all claims for bodily injury and property damages to the extent such claims result from or arise under FEI negligent actions or willful misconduct in its performance of the Services. **PROVIDED, THAT NOTHING IN THIS ARTICLE SHALL BE CONSTRUED OR UNDERSTOOD TO ALTER THE LIMITATIONS OF LIABILITY CONTAINED IN THIS ARTICLE OR THE INDEMNIFICATION CONTAINED IN SECTION 4. IN NO EVENT SHALL FEI BE LIABLE FOR ANY SPECIAL, INCIDENTAL, INDIRECT, SPECULATIVE, REMOTE, OR CONSEQUENTIAL DAMAGES ARISING FROM, RELATING TO, OR CONNECTED WITH THE SERVICES, EQUIPMENT, MATERIALS, OR ANY GOODS PROVIDED HEREUNDER. SUCH INDEMNITY OBLIGATION IS VALID ONLY TO THE EXTENT CUSTOMER GIVES FEI REASONABLY PROMPT NOTICE IN WRITING OF ANY SUCH CLAIMS AND PERMITS FEI, THROUGH COUNSEL OF ITS CHOICE, TO ANSWER THE CLAIMS AND DEFEND ANY RELATED SUIT.**

The parties further agree that FEI is not an insurer; that the Services purchased herein is designed only to reduce the risk of loss; that CUSTOMER chose the level and scope of services being provided by FEI from a variety of service options; that FEI will not be held liable for any loss, in tort or otherwise, which may arise from the failure of the system(s) and/or service(s) or any errors and omissions in the above referenced specifications. The parties further agree that this Agreement shall not confer any rights on the part of any person or entity not a party hereto, whether as a third-party beneficiary or otherwise.

MISCELLANEOUS

Extent of Agreement: Except as and to the extent provided in the Contract, this Agreement represents the entire Agreement between CUSTOMER and FEI for the Services described herein and supersedes all prior negotiations, representations or Agreements between the Parties related to the Services described herein.

None of the provisions of this Agreement shall be modified, altered, changed or voided by any subsequent document unilaterally issued by CUSTOMER that relates to the subject matter of this Agreement. This Agreement may be amended only by written instrument signed by both Parties.

FEI shall not be liable for any delay in producing, delivering, installing, or giving advice and technical assistance for any of the equipment or software covered hereunder if such delay shall be due to one or more of the following causes: fire, strike, lockout, dispute with workmen, flood, lightning, accident, delay in transportation, shortage of fuel, inability to obtain material, war, embargo, demand or requirement of the United States or any governmental or war activity, or any other cause whatsoever beyond the reasonable control of FEI. In addition, FEI shall not be liable for any delays caused by failure of CUSTOMER, or its agent, or any person or entity not a party hereto, to perform any of its obligations in a timely manner. It is acknowledged and understood that it is solely responsibility of CUSTOMER (owner) that the system environmental temperature shall be maintained at or above 36°F as specified on contract drawings and as specified by NFPA 13.

DISPUTE RESOLUTION

This Agreement shall be deemed to be made in Middlesex County, Massachusetts, regardless of the location of any office or representative of CUSTOMER, or the location of the equipment, or the place of signing by any party. This Agreement will be governed by Massachusetts law. The venue for any claim arising under this Agreement shall be in Middlesex County, Massachusetts.

In the event of a dispute regarding the interpretation or enforcement of this Agreement which results in litigation, the prevailing party shall have its attorney's fees and costs paid by the losing party.

ACKNOWLEDGED

Fire Equipment, Inc.

Pierre A. Lemieux
Life Safety Consultant

City of Portland, ME

Authorized Agent
Title

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

CITY OF PORTLAND
BUILDING PERMIT

PERMIT ID: FIRE2018-00082 **ISSUE DATE:** 8/10/2018 **CBL:** 148 A007001

This is to certify **City of Portland Purchasing Department** located at **212 CANCO RD** has permission to:

Provide Fire Protection Modifications for new administration offices & storage vault

provided that the person or persons, firm, or corporation accepting this permit shall comply with all of the provisons of the Statutes of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance, and use of the building and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 hour notice is required.	A final inspection must be completed before this building or part thereof is occupied. If a certificate of occupancy is required, it must be procured prior to occupancy.

Director

FIRE EQUIPMENT INC
Life Safety System Design and Service
20 Hall Street, Medford MA 02155
Tel: 888-296-1381 • Fax: 888-296-1384

Contractor's Material and Test Certificate for Fire Sprinkler Systems

Project Name	Benchmark / City of Portland		Date 9/13/2014
Project Address	212 Canco Rd.		
City	Portland	State ME	Zip 04103

AHJ

PLANS

Installation conforms to accepted plans? ☒ Yes ☐ No
Equipment used is approved? ☒ Yes ☐ No
If no, explain deviations

INSTRUCTIONS

Has person in charge of fire equipment been instructed as to location of Control valves and care and maintenance of this new equipment? ☒ Yes ☐ No
If no, explain

Have copies of the following been left on the premises?
1. Record Drawings & System Components Instructions ☒ Yes ☐ No
2. Care & Maintenance Instructions ☒ Yes ☐ No
3. NFPA 25 ☒ Yes ☐ No

ALARM VALVE or FLOW INDICATOR

Alarm device			Maximum time to operate Through test connection	
Type	Make	Model	Minutes	Seconds
Manifold	4" Victaulic	#747	0	40
w/ water flow	4" Vane			

SPRINKLERS

Make	Model	Year of Mfg.	Orifice Size	Quantity	Temp. Rating
Victaulic Concealed	V36	2014	5.6	200	155
Victaulic uprights	V27	2014	5.6	150	155
Victaulic uprights	V27	2014	5.6	50	200

N/A

DRY PIPE OPERATING TEST

Dry valve			QOD		
Make	Model	Serial #	Make	Model	Serial #

	Time to trip through test connection (a,b)	Water pressure	Air pressure	Trip point Air pressure	Time water reached test outlet (a,b)	Alarm operated properly	
	Seconds	psi	psi	psi	Seconds	Yes	No
Without QOD							
With QOD							

a Measured from time inspector's test connection is opened
b NFPA 13 only requires the 60 second limitation in specific sections

DELUGE & PREACTION VALVES — N/A

Operation ☐ Pneumatic ☐ Electric ☐ Hydraulic								
Does valve operate from the manual trip, remote, or both stations ☐ Yes ☐ No								
Is there an accessible facility in each circuit for testing ☐ Yes ☐ No								
If no, explain								
Make				Model				
Detection media supervised		Piping supervised		Does each circuit operate supervision loss alarm		Does each circuit operate valve release		Maximum time to operate release
Yes ☐	No ☐	Yes ☐	No ☐	Yes ☐	No ☐	Yes ☐	No ☐	Seconds

TESTS

All piping hydrostatically tested at 200 Psi for 2 hrs. ☒ Yes ☐ No — If no, state reason:

Dry pipe pneumatically tested, per NFPA ☒ Yes ☐ No

Equipment operates properly ☒ Yes ☐ No

Do you certify as the sprinkler contractor that additives and corrosive chemicals, sodium silicate or derivatives of sodium silicate, brine, or other corrosive chemicals were not used for testing systems or stopping leaks? ☒ Yes ☐ No

Drain Test — Reading of gauge located near water supply test connection: 82 psi

Residual pressure with valve in test Connection open wide: 76 psi

Underground mains and lead-in connections to system risers flushed before connection made to sprinkler piping: ☐ Yes ☐ No

Verified by copy of the Contractor's Material and Test Certificate for Underground Piping ☐ Yes ☐ No

Flushed by installer of underground piping ☐ Yes ☐ No

Other, explain: existing service

BLANK TESTING GASKETS — Number used: N/A — Locations: — Number removed:

CUTOUTS (DISCS) — All cutout discs have been removed from all sprinkler piping? ☒ Yes ☐ No

If no, explain

WELDING

Welding piping? ☐ Yes ☒ No

If Yes:

Do you certify as the sprinkler contractor that welding procedures comply with the requirements of at least AWS B2.1? ☐ Yes ☐ No

Do you certify that the welding was performed by welders qualified in compliance with the requirements of at least AWS B2.1? ☐ Yes ☐ No

Do you certify that the welding was carried out in compliance with a documented quality control procedure to ensure that all discs are retrieved, that openings in piping are smooth, that slag and other welding residue are removed, and that the internal diameters of piping are not penetrated? ☐ Yes ☐ No

FORWARD TEST OF BACKFLOW (see attached memo) — Backflow device forward tested at a minimum of the highest challenge system demand plus inside hose stream allowance (if applicable) ☐ Yes ☐ No — Test readings: Psi: gpm: N/A

HYDRAULIC DATA NAMEPLATE — Hydraulic Data Nameplate placed on system riser (s) ☐ Yes ☐ No

If no, explain: existing system

REMARKS — Date left in service with all control valves open:

SIGNATURES

Sprinkler contractor: Fire Equipment, Inc.

Contractor's address: 20 Hall Street

City: Medford — State: MA — Zip: 02155

Tests witnessed by

Owner/Agent:	Title:	Date:
Contractor: Fire Equipment, Inc. Brent G.	Title: Project Manager	Date: 4/15/16
AHJ	Title:	Date:

Master License #: SC-110119

Job Name Benchmark City of Portland
Job Location 212 Cenco Rd.
Engineer Sole
Approval

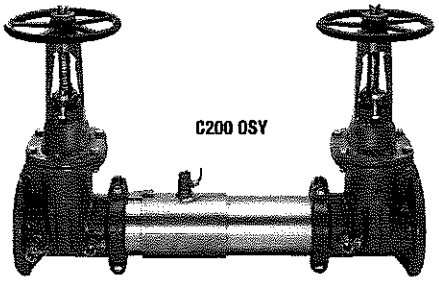
Contractor Fire Equipment Inc.
Approval
Contractor's P.O. No.
Representative

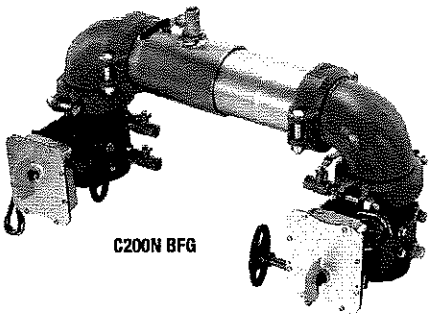
LEAD FREE*

Colt™ Series C200 (Colt 200), C200N (Colt 200N)

Double Check Valve Assemblies

Sizes: 2½" – 10" (65 – 250mm)


C200 OSY


C200N BFG

The Colt C200, C200N Double Check Valve Assemblies are used to prevent backflow of pollutants, that are objectionable but not toxic, from entering the potable water supply system. The Colt C200, C200N may be installed under continuous pressure service and may be subjected to backpressure. The Colt C200, C200N consists of two independently operating check valves, two shutoff valves, and four test cocks. For use in non-health hazard applications. The Colt C200, C200N features Lead Free* construction to comply with Lead Free* installation requirements.

Features

- Extremely Compact Design
- 70% Lighter than Traditional Designs
- 304 (Schedule 40) Stainless Steel Housing & Sleeve
- Groove Fittings Allow Integral Pipeline Adjustment
- Patented Tri-Link Check Provides Lowest Pressure Loss
- Unmatched Ease of Serviceability
- Available with Grooved Butterfly Valve Shutoffs
- Available for Horizontal, Vertical or N Pattern Installations
- Replaceable Check Disc Rubber

Specifications

The Colt C200, C200N Double Check Valve Assembly shall consist of two independent Tri-Link Check modules within a single housing, sleeve access port, four test cocks and two drip tight shutoff valves. Tri-Link Checks shall be removable and serviceable, without the use of special tools. The housing shall be constructed of 304 (Schedule 40) stainless steel pipe with groove end connections. Tri-Link checks shall have reversible elastomer discs and in operation shall produce drip tight closure against the reverse flow of liquid caused by backpressure or backsiphonage. Lead Free* Double Check Valve Assembly shall be constructed using Lead Free* materials. It shall comply with state codes and standards, where applicable, requiring reduced lead content. Assembly shall be an Ames Fire & Waterworks Colt C200, C200N.

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

*The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

AMES
FIRE & WATERWORKS
A WATTS Brand

Configurations

- Horizontal
- Vertical up
- "N" pattern horizontal

Materials

- Housing & Sleeve: 304 (Schedule 40) Stainless Steel
- Elastomers: EPDM, Silicone and Buna 'N'
- Tri-Link Checks: Noryl®, Stainless Steel
- Check Discs: Reversible Silicone or EPDM
- Test Cocks: Bronze Body Nickel Plated
- Pins & Fasteners: 300 Series Stainless Steel
- Springs: Stainless Steel

Available Models

Suffix:

NRS — non-rising stem resilient seated gate valves

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

BFG — UL/FM grooved gear operated butterfly valves with tamper switch

*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

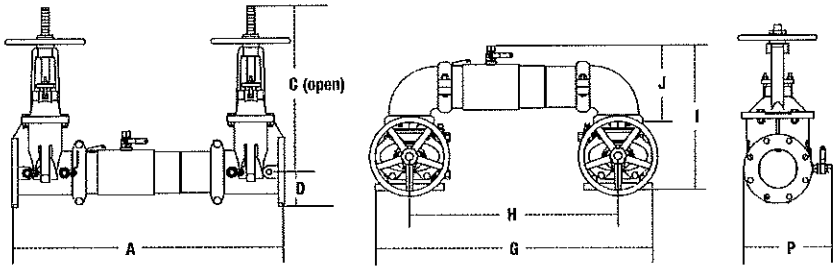
Available with grooved NRS gate valves - consult factory*
Post indicator plate and operating nut available — consult factory*
*Consult factory for dimensions

Pressure – Temperature

Temperature Range: 33°F – 140°F (0.5°C – 60°C)

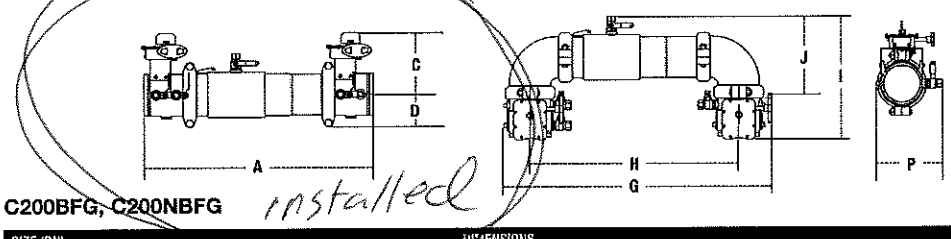
Maximum Working Pressure: 175 psi (12.1 bar)

Dimensions – Weights



C200, C200N

SIZE (DN)		DIMENSIONS														WEIGHT					
		A		C (OSY)		C (NRS)		D		G		H		I		J		P		C200NRS		C200OSY		C200N NRS		C200N OSY	
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	lbs.	kgs.	lbs.	kgs.	lbs.	kgs.
2½	65	30¾	781	16⅜	416	9⅜	238	3½	89	29⅛	738	21½	546	15½	393	8¹³⁄₁₆	223	9³⁄₁₆	234	115	52	125	57	123	56	133	60
3	80	31¾	806	18⅞	479	10¼	260	3¹³⁄₁₆	94	30¼	768	22¼	565	17⅛	435	9³⁄₁₆	233	10½	267	131	59	145	66	144	65	158	72
4	100	33¾	857	22¾	578	12⁹⁄₁₆	310	4	102	33	838	23½	597	18½	470	9¹⁵⁄₁₆	252	11³⁄₁₆	284	161	73	161	73	184	83	184	83
6	150	43½	1105	30⅛	765	16	406	5½	140	44¾	1137	33¼	845	23⁹⁄₁₆	589	13¹³⁄₁₆	332	15	381	273	124	295	134	314	142	336	152
8	200	49¾	1264	37¾	959	19¹⁵⁄₁₆	506	6¹¹⁄₁₆	170	54⅛	1375	40⅛	1019	27⁷⁄₁₆	697	15¹¹⁄₁₆	399	17³⁄₁₆	437	438	199	480	218	513	233	555	252
10	250	57¾	1467	45¼	1162	23¹³⁄₁₆	605	8³⁄₁₆	208	66	1676	49½	1257	32½	826	17⁵⁄₁₆	440	20	508	721	327	781	354	891	404	951	431



C200BFG, C200NBFG installed

SIZE (DN)		DIMENSIONS														WEIGHT			
		A		C		D		G		H		I		J		P		C200BFG		C200NBFG	
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs.	kgs.	lbs.	kgs.
2½	65	27¼	705	8	203	3½	89	29⅜	759	21½	546	14¹⁵⁄₁₆	379	8¹³⁄₁₆	223	9	229	56	25	64	29
3	80	28¼	718	8⁵⁄₁₆	211	3¹¹⁄₁₆	94	30¹¹⁄₁₆	779	22¼	565	15⁷⁄₁₆	392	9³⁄₁₆	233	9½	241	54	24	67	30
4	100	29	737	8¹⁵⁄₁₆	227	3¹¹⁄₁₆	94	31¹⁵⁄₁₆	811	23½	597	16¼	412	9¹⁵⁄₁₆	252	10	254	61	28	84	38
6	150	36½	927	10	254	5	127	43⅜	1097	33¼	845	19¹¹⁄₁₆	500	13⅛	332	10½	267	117	53	157	71
8	200	42¾	1086	12¼	311	6½	165	51⅛	1297	40⅛	1019	23⅝	592	15¹¹⁄₁₆	399	14⅜	361	261	118	337	153

Noryl® is a registered trademark of SABIC Innovative Plastics™.

Approvals

- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at The University of Southern California (FCCCHR-USC)
- AWWA C551-92

For additional approval information please contact the factory or visit our website at www.amesfirewater.com

1015 B64.5 (**BFG & OSY Only)

Capacity

UL/FM Certified Flow Characteristics

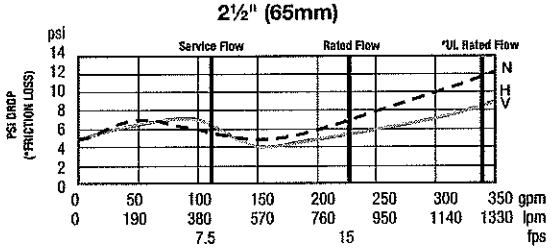
Flow characteristics collected using butterfly shutoff valves.

Flow capacity chart identifies valve performance based upon rated water velocity up to 25fps

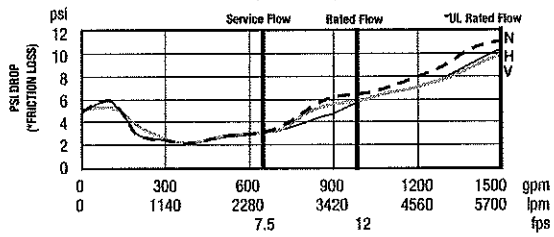
- Service Flow is typically determined by a rated velocity of 7.5fps based upon schedule 40 pipe.
- Rated Flow identifies maximum continuous duty performance determined by AWWA.
- UL Flow Rate is 150% of Rated Flow and is not recommended for continuous duty.
- AWWA Manual M22 [Appendix C] recommends that the maximum water velocity in services be not more than 10fps.

_____ Horizontal _____ Vertical - - - - - - N - Pattern

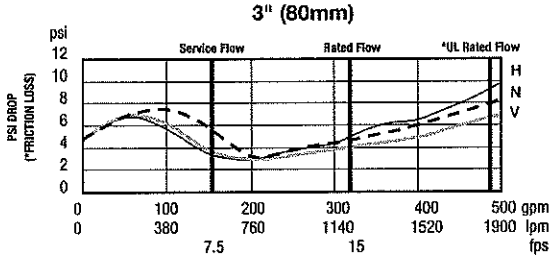
2½" (65mm)



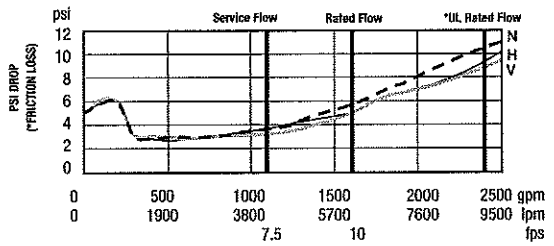
6" (150mm)



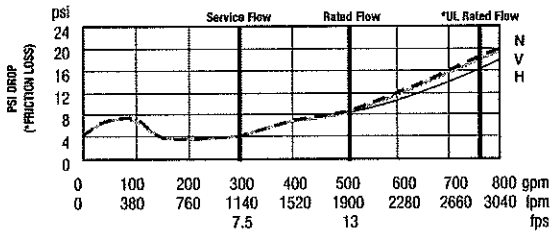
3" (80mm)



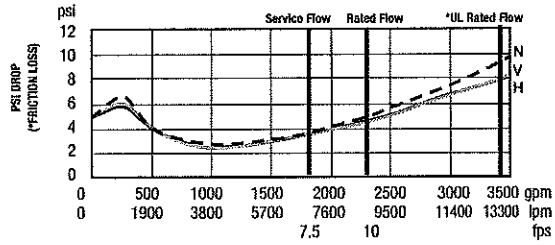
8" (200mm)



4" (100mm)



10" (250mm)

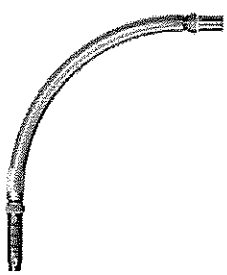


NOTICE

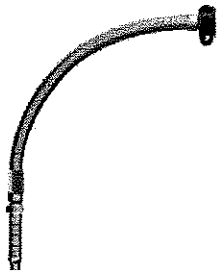
Inquire with governing authorities for local installation requirements

Victaulic® VicFlex™ Sprinkler Fittings
Series AH2 and AH2-CC Braided Flexible Hoses

Victaulic
10.85



Series AH2



Series AH2-CC

1.0 PRODUCT DESCRIPTION

Available Sizes by Component

- **Series AH2 Braided Hose:** 31, 36, 48, 60, 72"/790, 915, 1220, 1525, 1830 mm. Note: length includes adapter nipple and 5.75"/140 mm straight reducer.
- **Series AH2-CC Braided Hose:** 31, 36, 48, 60, 72"/790, 915, 1220, 1525, 1830 mm. Note: length includes captured coupling and 5.75"/140 mm straight reducer.
- **Sprinkler Reducers:**
  - **Sprinkler Connections:** ½ and ¾"/15 and 20mm
  - **Straight Lengths:** 5.75, 9, 13"/140, 230, 330 mm
  - **90° Elbows:**
    - Short (typically used with concealed sprinklers)
    - Long (typically used with recessed pendent sprinklers)
    - Low Profile Short (for use with Style AB5, AB11 and AB12 Bracket)
    - Low Profile Long (for use with Style AB5, AB11 and AB12 Bracket)
- **Inlet Connections:**
  - 1"/25 mm Grooved IGS
  - 1"/25 mm NPT or BSPT adapter nipples for attaching to pipe and fittings outlined in NFPA standards.
  - ¾"/20 mm NPT or BSPT adapter nipples available for VdS.
  - 1 ¼"/ 32mm BSPT adapter nipples available for LPCB.

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

System No.		Location	
Submitted By		Date	

Spec Section		Paragraph	
Approved		Date	

1.0 PRODUCT DESCRIPTION (Continued)

- **Brackets:**
  - Style AB1 for suspended and hard-lid ceilings and sidewalls, allows installation before most ceiling tiles in place
  - Style AB2 for suspended and hard-lid ceilings and sidewalls, allows for vertical sprinkler adjustment, and installation before most ceiling tiles in place
  - Style AB3 for surface mount applications, wood, metal and block walls, or ceilings
  - Style AB4 for hard-lid ceilings with hat furring channel grid systems, allows for vertical sprinkler adjustment
  - Style AB5 for hard-lid ceilings and sidewalls, allows for vertical sprinkler adjustment
  - Style AB7 for suspended and hard-lid ceilings
  - Style AB7 Adjustable for suspended and hard-lid ceilings
  - Style AB8 for hard-lid ceilings with CD 60/27 profile metal studs (regionally available)
  - Style AB9 for hard-lid ceilings with hat furring channel grid systems
  - Style AB10 for Armstrong® TechZone™ ceilings
  - Style AB11 for lay-in panel suspended t-grid ceilings or drywall suspended t-grid ceilings, allows for low profile installations (use only with 90° low profile elbows)
  - Style AB12 for suspended and hard-lid ceilings, allows for vertical sprinkler adjustment, and allows for low profile installation down to 4"/100mm.

Maximum Working Temperature

- 225°F/107°C

Maximum Working Pressure

- 200 psi/1375 kPa (FM Approval)
- 175 psi/1206 kPa (cULus Listed)
- 1600 kPa/232 psi (VdS/LPCB Approved)
- 1.4 MPa (CCCf Approved)

Connections

- To adapter nipple (inlet) via
  - 1"/25.4 mm Grooved IGS
  - 1"/25.4 mm NPT or BSPT male thread
  - ¾"/20 mm BSPT male thread (VdS only)
  - 1 ¼"/32 mm BSPT male thread (LPCB only)
- To sprinkler head (outlet) via ½" or ¾"/15 mm or 20 mm

Minimum Bend Radius

- 7"/178 mm (FM/CCCf Approval)
- 2"/51 mm (cULus Listed)
- 3"/76.2 mm (VdS/LPCB Approved)

Maximum Allowable Sprinkler K-Factors

- FM (½"/15mm reducer) K5.6/8,1 (S.I.), (¾"/20mm reducer) K14.0/20,2 (S.I.)
- cULus (½"/15mm reducer) K8.0/11,5 (S.I.), (¾"/20mm reducer) K14.0/20,2 (S.I.)
- VdS/LPCB (½"/15mm reducer) K5.6/8,1 (S.I.), (¾"/20mm reducer) K8.0/11,5 (S.I.)

2.0 CERTIFICATION/LISTINGS

NOTE

- The VicFlex™Series AH2 Hose has been tested and evaluated by Spears® for acceptable use with Spears® CPVC Products and is therefore covered under the Spears® FlameGaurd® Installer Protection Plan.

3.0 SPECIFICATIONS – MATERIAL

Series AH2

- **Flexible Hose:** 300-series Stainless Steel
- **Collar/Weld Fitting:** 300-series Stainless Steel
- **Gasket Seal:** Victaulic EPDM
- **Isolation Ring:** Nylon
- **Nut and Nipple:** Carbon Steel, Zinc Plated
- **Reducer (½"/15 mm or ¾"/20 mm):** Carbon Steel, Zinc-Plated
- **Low Profile Elbows:** Ductile Iron, Zinc-Plated

Brackets: Carbon Steel, Zinc-Plated

Series AH2-CC

- **Flexible Hose:** 300-series Stainless Steel
- **Collar/Weld Fitting:** 300-series Stainless Steel
- **Gasket Seal:** Victaulic EPDM
- **Isolation Ring:** Nylon
- **Coupling Retainer Ring:** Polyethelene
- **Nut and Nipple:** Carbon Steel, Zinc Plated
- **Reducer (½"/15 mm or ¾"/20 mm):** Carbon Steel, Zinc-Plated
- **Housing:** Ductile iron conforming to ASTM A 536, Grade 65-45-12. Ductile iron conforming to ASTM A 395, Grade 65-45-15, is available upon special request.

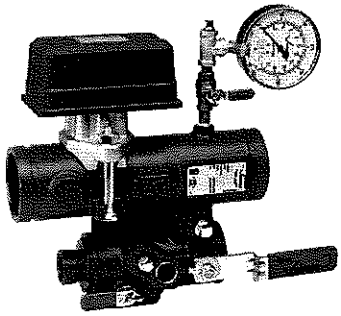
  Coupling Housing Coating:
  - Orange enamel (North America, Asia Pacific).
  - Red enamel (Europe).
  - Hot dipped galvanized.

  Gasket:[1]
  - **Grade "E" EPDM (Type A)**
    FireLock EZ products have been Listed by Underwriters Laboratories Inc., Underwriters Laboratories of Canada Limited, and Approved by Factory Mutual Research for wet and dry (oil free air) sprinkler services within the rated working pressure.

  [1] Services listed are General Service Guidelines only. It should be noted that there are services for which these gaskets are not compatible. Reference should always be made to the latest Victaulic Gasket Selection Guide for specific gasket service guidelines and for a listing of services which are not compatible.
- **Bolts/Nut:** Zinc electroplated carbon steel, trackhead meeting the physical and chemical requirements of ASTM A 449 and physical requirements of ASTM A 183.
- **Linkage:** CrMo Alloy Steel zinc electroplated per ASTM B633 Zn/Fe 5, Type III Finish

Victaulic® FireLock™ Zone Control Riser Module
Series 747M

10.96



1.0 PRODUCT DESCRIPTION

Available Sizes:

- 1 ¼ – 6"/DN32 – DN150

Pipe Material:

- Carbon steel, Schedule 10, Schedule 40

NOTE

- For use with alternative materials please contact Victaulic.

Maximum Working Pressure:

- Up to 365psi/2517kPa/25bar

Application:

- Fire protection system control modules integrated test and drain valve, with customizable test orifice, flow switch and pressure gauge.

Optional Accessories:

- Pressure Relief Kit - UL Listed and FM Approved for working pressures up to 174psi/1200kPa/12bar.

2.0 CERTIFICATION/LISTINGS

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

System No.		Location	
Submitted By		Date	

Spec Section		Paragraph	
Approved		Date	

3.0 SPECIFICATIONS – MATERIAL

Module Body:

- **Housing:** Cast ductile iron conforming to ASTM A536, Grade 65-45-12.
- **Finish:** Orange enamel.

Shut-off and Test/Drain Valve:

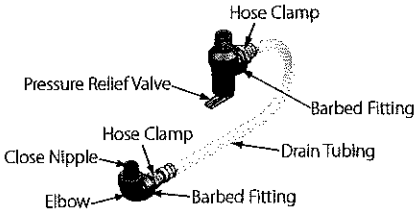
- Chrome plated brass ball, S 37700 brass clapper, 416SS or 410SS shafts, Delrin orifice, virgin Teflon[1], enhanced Teflon and EPDM rubber seals.

[1] Teflon is a registered trademark of Dupont.

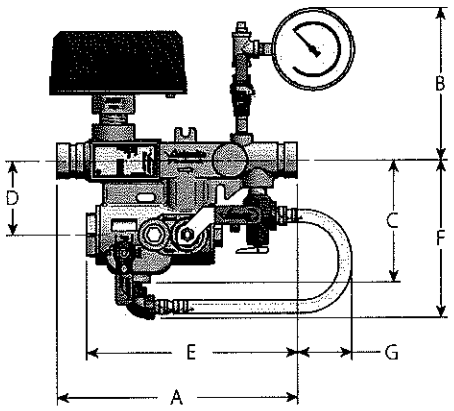
Waterflow Detector:

- Vane type waterflow detector with sealed retard, visual switch activation, and mechanical delay adjustment. Cover includes tamper resistant security screws and tool.

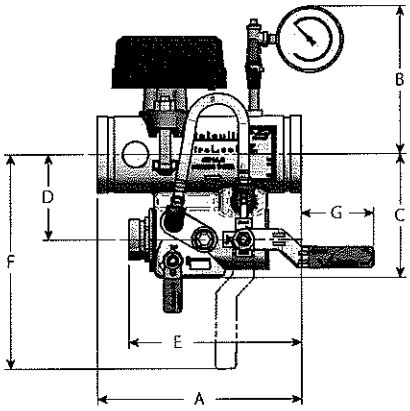
4.0 DIMENSIONS



Optional Pressure Relief Valve Kit Detail



1 ¼ – 2"/DN32 – DN50 sizes*



2 ½ – 6"/73.0 mm – DN150 sizes*

Module Body Size		Drain Size	Dimensions							Weight
Nominal Diameter inches DN	Actual Outside Diameter inches mm	inches mm	A inches mm	B inches mm	C inches mm	D inches mm	E (Groove) inches mm	F inches mm	G inches mm	Approximate (Each) lb kg
1 ¼	1.660	1	11.45	7.20	5.77	3.50	10.05	7.48	2.54	15.2
DN32	42.2	33.4	290.8	182.9	146.5	88.9	255.3	190.0	64.5	6.9
1 ½	1.900	1	11.45	7.32	5.77	3.50	10.05	7.48	2.54	15.5
DN40	48.3	33.4	290.8	185.9	146.5	88.9	255.3	190.0	64.5	7.0
2	2.375	1	11.45	7.55	5.77	3.50	10.05	7.48	2.54	19.9
DN50	60.3	33.4	290.8	191.8	146.5	88.9	255.3	190.0	64.5	9.0
2 ½	2.875	1 ¼	12.00	8.41	6.18	4.25	9.76	11.87	4.25	22.7
	73.0	42	305	214	157	108	248	302	108	10.3
3	3.500	1 ¼	12.00	9.42	6.18	4.25	9.76	11.87	4.25	23.2
DN80	88.9	42	305	239	157	108	248	302	108	10.6
4	4.500	2	12.00	9.90	7.25	5.00	10.15	12.62	4.21	30.3
DN100	114.3	60	305	252	184	127	258	321	107	13.8
6	6.625	2	12.00	10.85	8.31	6.00	10.15	13.62	4.24	36.7
DN150	168.3	60	305	276	211	154	258	346	107.7	16.7

* Valves shown in the "test" position and with optional Pressure Relief Valve Kit installed

5.0 PERFORMANCE

Nominal Size inches	Orifices
1.25	K2.8, K3.0, K3.5, K4.2, K4.9, K5.6
1.5	K2.8, K3.0, K3.5, K4.2, K4.9, K5.6
2	K2.8, K3.0, K3.5, K4.2, K4.9, K5.6
2.5	K4.2, K4.9, K5.6, K6.9, K8.0, K11.2, K14.0, K16.8
3	K4.2, K4.9, K5.6, K6.9, K8.0, K11.2, K14.0, K16.8
4	K4.2, K4.9, K5.6, K6.9, K8.0, K11.2, K14.0, K16.8, K25
6	K4.2, K4.8, K5.6, K6.9, K8.0, K11.0, K11.2, K14.0, K16.8, K25

Nominal Size inches	Drain Type	Drain Size inches
1.25	NPT	1
1.5	NPT	1
2	NPT	1
2.5	Grooved	1 ¼
3	Grooved	1 ¼
4	Grooved	2
6	Grooved	2

6.0 NOTIFICATIONS

⚠ WARNING

- **This product must be installed by an experienced, trained installer, in accordance with the instructions provided with each valve. These instructions contain important information.**

Failure to follow these instructions may result in serious personal injury, property damage, or valve leakage.

If you need additional copies of this product literature or the valve installation instructions, or if you have any questions about the safe installation and use of this device, contact Victaulic Company, P.O. Box 31, Easton, PA 18044-0031 USA, Telephone: 001-610-559-3300.

7.0 REFERENCE MATERIALS

26.01: Victaulic® Design Data

29.01: Victaulic® Terms and Conditions of Sale

I-100: Victaulic® Field Installation Handbook

I-101/103: Victaulic® FireLock™ No. 101 (90° Elbow) and No. 103 (45° Elbow) Installation-Ready™ Fittings

I-102: Victaulic® FireLock™ No. 102 (Straight Tee) Installation-Ready™ Fitting

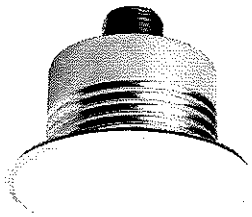
I-108: Style 108 FireLock™ Installation-Ready™ Coupling

I-747M: Victaulic® Installation Instructions Series 747M FireLock™ Zone Control Riser Module Assembly

FireLock® V38, K5.6
Models V3801, V3802

Victaulic
40.50

Adjustable Concealed Standard Spray Standard and Quick Response



V3801 and V3802

Approvals/Listings:

cULus LISTED FM CE 0832 LPCB 104-1a/02 CP CC

See Victaulic Publication 10.01 for more details.

Product Description:

This concealed, designer style sprinkler allows up to 1/2"/13 mm adjustment to accommodate concealment needs. The "standard" design provides a consistent hemispherical spray pattern. The separate two-piece mounting cup/cover plate allows easy installation and testing prior to ceiling installation. It also permits removal of suspended ceiling panels without system shutdown.

This sprinkler is available in various temperature ratings (see chart on page 3) and finishes to meet many design requirements.

Coverage:

For coverage area and sprinkler placement, refer to NFPA 13 or applicable standards.

Technical Specifications:

Models: V3801, V3802

Style: Adjustable concealed, ordinary hazard, light hazard

Nominal Orifice Size: 1/2"/13 mm

K-Factor: 5.6 Imp./8.1 S.I.[1]

Nominal Thread Size: 1/2"/15 mm

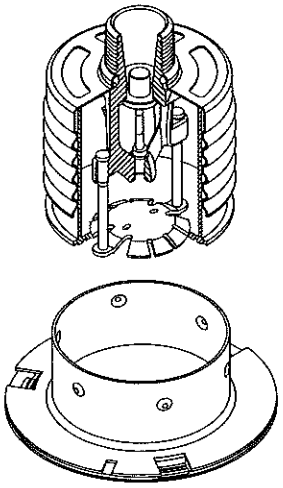
Max. Working Pressure: 175 psi/1200 kPa

Factory Hydrostatic Test: 100% @ 500 psi/3450 kPa

Min. Operating Pressure: 7 psi/48 kPa

Temperature Rating: See chart on page 3.

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



Exaggerated for clarity

Job/Owner

System No.	
Location	

Contractor

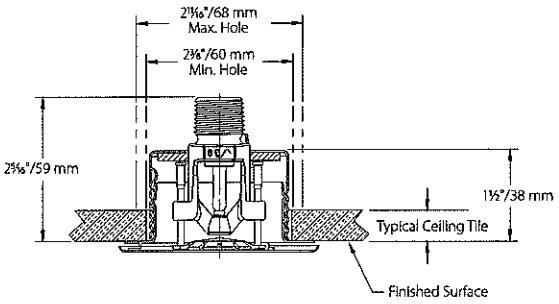
Submitted By	
Date	

Engineer

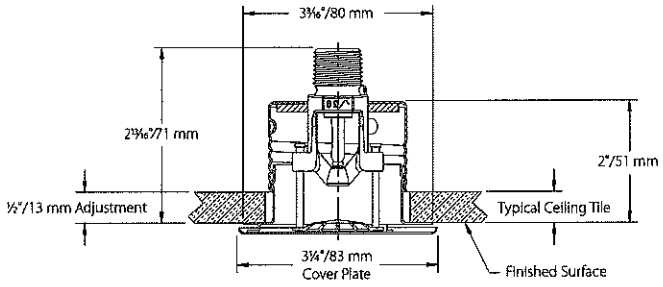
Spec Section	
Paragraph	
Approved	
Date	

Dimensions:

Models V3801, V3802 (drawings not to scale)



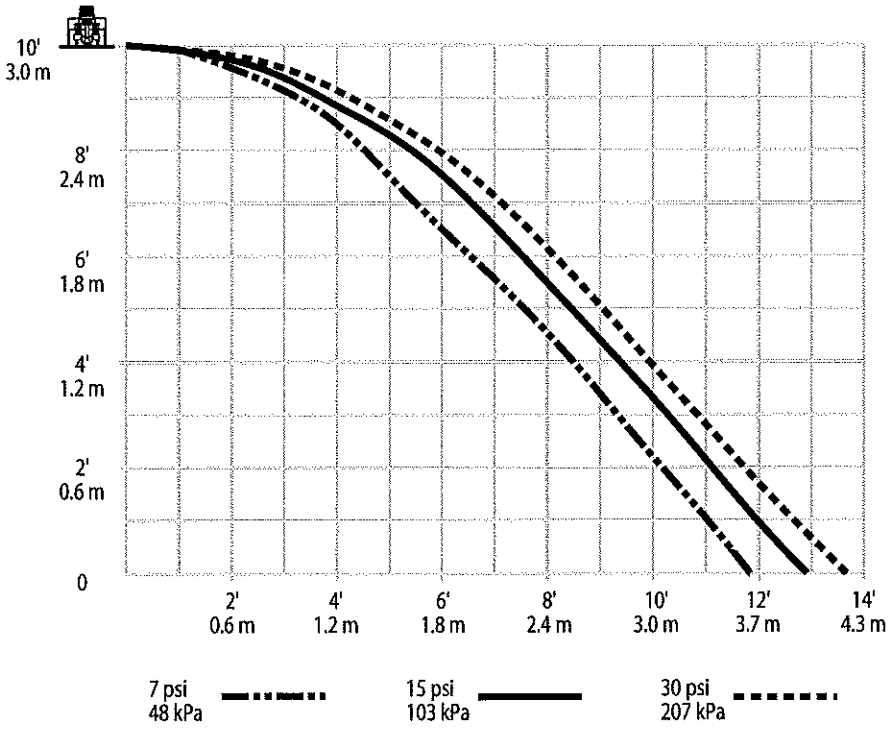
Minimum Extension



Maximum Extension

Distribution Patterns:

Models V3801, V3802
K5.6 standard concealed pendent distribution patterns – trajectory



NOTES:

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

2 These graphs illustrate approximate trajectories, floor-wetting, and wall-wetting patterns for these specific Victaulic FireLock automatic sprinklers. They are provided as information for guidance in avoiding obstructions to sprinklers and should not be used as minimum sprinkler spacing rules for installation. **Refer to the appropriate NFPA National Fire Code or the authority having jurisdiction for specific information regarding obstructions, spacing limitations and area of coverage requirements.** 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 the centerline of the waterway.

