MEPNN Supplier Scouting Opportunity Synopsis

Section 1: General Information

Scouting Number	2025-037
Item to be Scouted	BABA - Fire Suppression Products
Days to be scouted	14
Response Due By	02/19/2025
Description	United States manufacturers of BABAA-compliant Compliant Fire Suppression System Products (Backflow Preventer, Braided Flexible Hose Drops, Sprinkler Head Concealed Cover Plates, Air/Water Gauge) or use in an addition and remodel of an existing Hospital located in Iowa.
Notify Requester Immediately	No
State item to be used in	Iowa

Section 2: Technical Information

Type of supplier being sought	Other
Details	Manufacturer/Distributor
Reason	BABA
Describe the manufacturing processes (elaborate to provide as much detail as possible)	
Provide dimensions / size / tolerances / performance specifications for the item	Backflow Preventer 6 inch Stainless Steel Body Corrosion Resistant Internal Parts Stainless Steel Springs Two independently operating check valves with intervenient atmospheric vent Air/Water Gauge Lower mount process connection Copper Alloy wetted parts Black Plastic or Painted steel case 1/8 or ¼ NPT Receiver Scales 3 to 15 psi Pressure from 15 to 6000 psi Braided Flexible Hose Drops Length: 48 inches 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 Sprinkler Head Concealed Cover Plates Enamel White Escutcheon and Flush Type Compatible with manufacturers Sprinkler Heads, i.e. Reliable, that are proposed to be used on the project

List required materials needed to make the product, including materials of product components	See attached catalog cuts for proposed non BABA compliant basis of design equivalent products.
Are there applicable certification requirements?	Yes
Details	Build America, Buy America Act (BABAA) compliant. Domestic components in each of the BABAA compliant manufactured products must exceed 55% of the total component cost and be assembled in the United States. Must be able to submit BABAA manufactured product self-certification manufactured product letter for each product that details a compliant product.
Are there applicable regulations?	Yes
Details	American National Standards Institute (ANSI)/American Society of Safety Engineers (ASSE) 105, USC Approved.
Are there any other stndards, requirements, etc.?	No
NAICS 1	
NAICS 2	
Additional Technical Comments	Manufacturers shall specialize and have experience in the manufacturing of the designated components. Non domestic equivalent manufacturers of the BABA compliant required products are as follows: Backflow Preventer Colt C200N BFG Backflow DCVA OSY-TS F-F 6 inch Air/Water Gauge Wika Gauge 0250 THR Air Water Gauge ASSM-Left Horizontal Bourdon Tube Pressure Gauge Type 111.10 Braided Flexible Hose Drops Victaulic® VicFlex™ Sprinkler Fittings Series AH2 Braided Flexible Hoses. M-Threaded 48 inch Sprinkler Head Concealed Cover Plates Reliable Sprinkler Cover Plates

Section 4: Business Information

Estimated potential business volume	Description/Quantity Backflow Preventer 1 Air/Water Gauge 1 Braided Flexible Hose Drop (Multiple Sizes) 406 Sprinkler Head Concealed Cover Plates 122
Estimated target price / unit cost information (if unavailable explain)	Best available, as this is related to BABA, acceptable pricing is to be determined in negotiation.
When is it needed by?	Q3 2025
Describe packaging requirements	No specific requirements. Best available. Delivered undamaged. Specifics discussed in negotiation.
Where will this item be shipped?	Iowa

Additional Comments

Is there other information you would like to include?	Nationwide Search Provide written documentation in response to the Supplier Scouting request of being a current Build America Buy America Act compliant fire suppression system product equipment manufacturer with experience manufacturing the system components meeting the product performance requirements. Information on BABAA compliance requirements can be found at Made in America Office link https://www.madeinamerica.gov/. Agency - USDA by CBS Contact - Joe Edmondson

Engineering Specification

Job Name ___

Job Location _____ Approval _____

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

Approval _____ Representative _____

LEAD FREE

Colt™ Series C200, C200N

Double Check Valve Assemblies

Sizes: 2½" – 10"

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

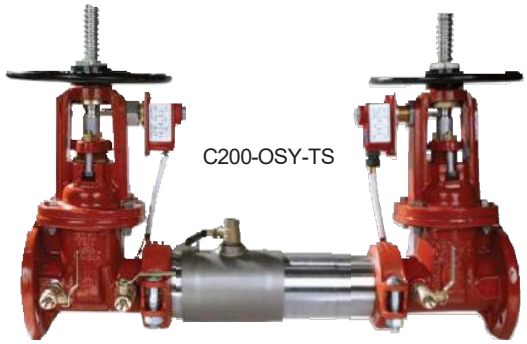
Features

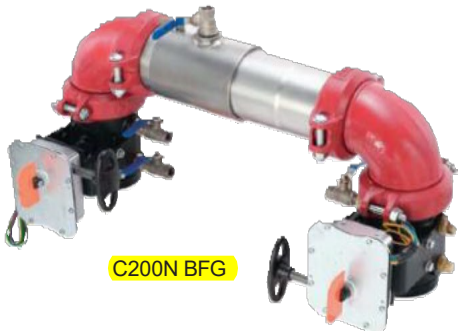
- Extremely compact design
- 70% Lighter than traditional designs
- 304 (Schedule 40) Stainless steel housing & sleeve
- Groove fittings allow integral pipeline adjustment
- Patented tri-link check provides lowest pressure loss
- Unmatched ease of serviceability
- Available with grooved butterfly valve shutoffs
- Available for horizontal, vertical or N pattern installations
- Replaceable check disc rubber
- Includes an integrated supervisory tamper switch on each gate valve of the OSY model

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.





Specification

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.

The integrated supervisory tamper switch on the OSY model shall have continuity with the valve fully open and activate within two (2) turns from open. The device consists of two SPDT switches and is designed to send a tamper signal when the valve is closed and when the switch is removed from the valve. In the neutral position, the switch indicates the valve is fully open. Closing the valve causes the switch rod to come out of the valve stem groove, activating the switch. Removing the tamper switch also activates the switch.

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.

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: Lead Free* bronze body
- Pins & Fasteners: 300 series stainless steel
- Springs: Stainless steel

Available Models

Suffix:

NRS – Non-rising stem 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

** Consult factory for the following:

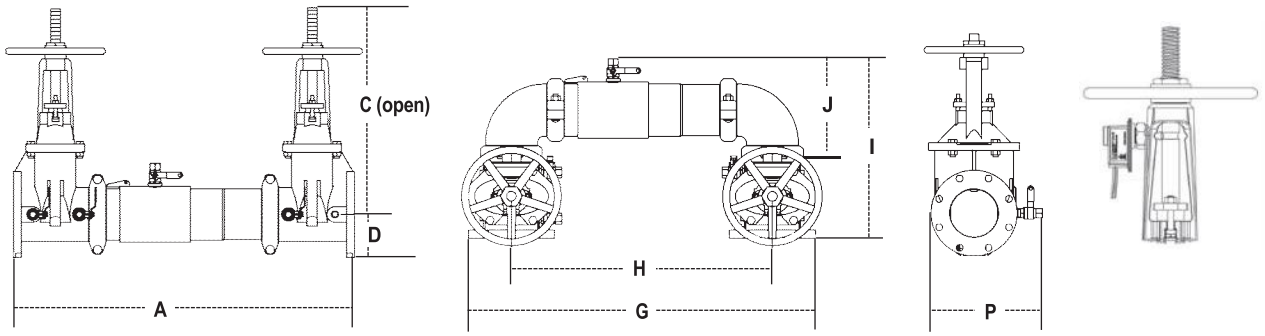
– Grooved NRS gate valves
– Post-indicator plate and operating nut
– Dimensions

Pressure – Temperature

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

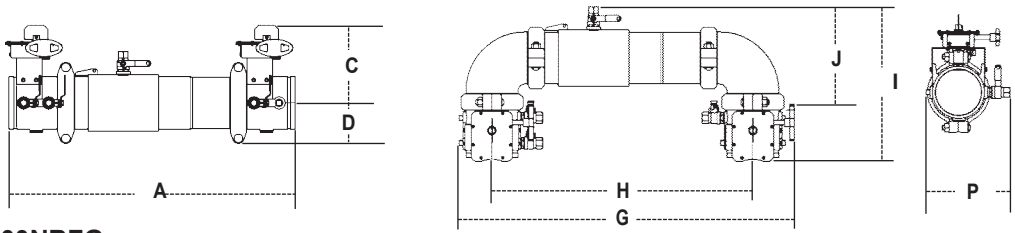
Maximum Working Pressure: 175 psi (12.1 bar)

Dimensions – Weights



C200, C200N

SIZE	DIMENSIONS																WEIGHT							
	A		C (OSY)		C (NRS)		D		G		H		I		J		P		C200NRS		C200OSY		C200N NRS	
in.	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg	lb	kg	lb	kg
2½	30¾	781	16⅜	416	9⅜	238	3½	89	29 1/16	738	21½	546	15½	393	8 13/16	223	9 3/16	234	115	52	130	59	123	56
3	31¾	806	18⅞	479	10¼	260	3 1/16	94	30¼	768	22¼	565	17⅛	435	9 3/16	233	10½	267	131	59	150	68	144	65
4	33¾	857	22¾	578	12 3/16	310	4	102	33	838	23½	597	18½	470	9 15/16	252	11 3/16	284	161	73	166	75	184	83
6	43½		30⅛	765			5½		¼		33½		3/16		1/1(		15	381	273	124	300	136	314	142
8	49¾	1264	37¾	959	19 15/16	506	6 1/16	170	54⅛	1375	40⅛	1019	27 7/16	697	15 1/16	399	17 3/16	437	438	199	485	220	513	233
10	57¾	1467	45¾	1162	23 13/16	605	8 3/16	208	66	1676	49½	1257	32½	826	17 5/16	440	20	508	721	327	786	356	891	404



C200BFG, C200NBFG

SIZE	DIMENSIONS																WEIGHT			
	A		C		D		G		H		I		J		P		C200BFG		C200NBFG	
in.	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg	lb	kg
2½	27¾	705	8	203	3½	89	29⅞	759	21½	546	14 15/16	379	8 13/16	223	9	229	56	25	64	29
3	28¼	718	8 5/16	211	3 1/16	94	30 1/16	779	22¼	565	15 7/16	392	9 3/16	233	9½	241	54	24	67	30
4	29	737	8 15/16	227	3 1/16	94	31 15/16	811	23½	597	16¼	412	9 15/16	252	10	254	61	28	84	38
6	36½	927	10	254	5	127	43 3/16	1097	33¼	845	19 1/16	500	13 1/16	332	10½	267	117	53	157	71
8	42¾	1086	12¼	311	6½	165	51 1/16	1297	40⅛	1019	23 5/16	592	15 1/16	399	14 3/16	361	261	118	337	153

Approvals

- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at The University of Southern California (FCCCHR-USC)
- AWWA C510-97

For additional approval information, contact the factory or check Ames Fire & Waterworks at watts.com.

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

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.

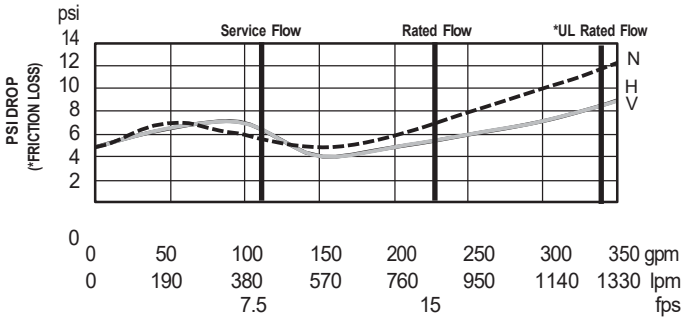
Capacity

UL/FM Certified Flow Characteristics

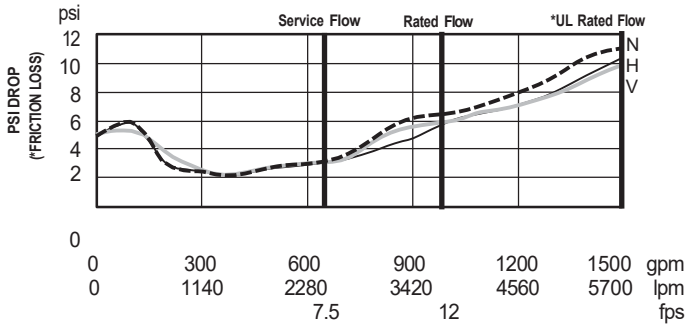
Flow characteristics collected using butterfly shutoff valves

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

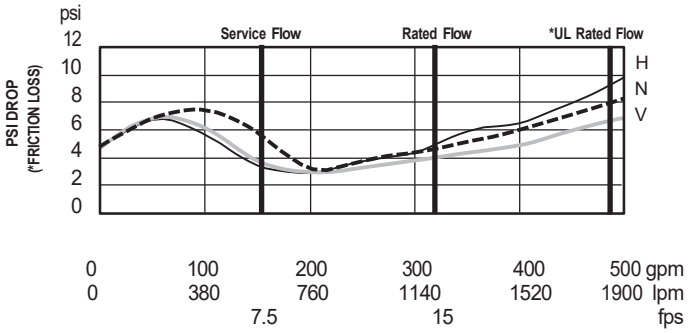
2½"



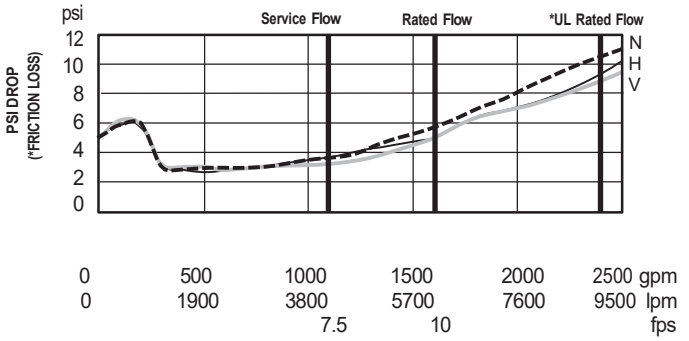
6"



3"



8"



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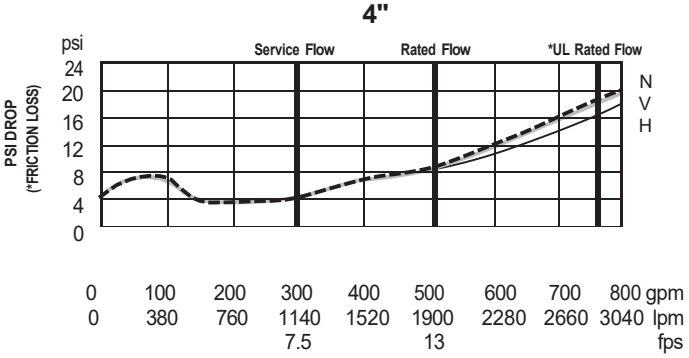
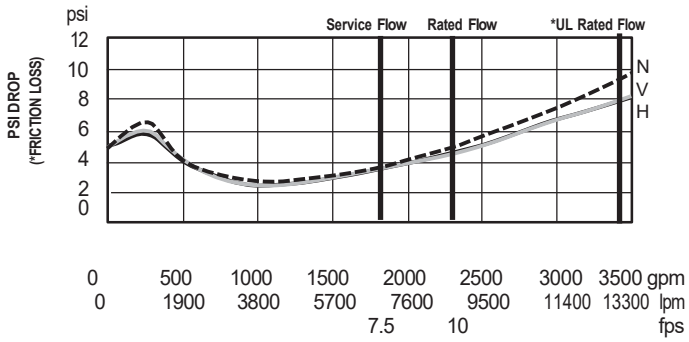


10"



NOTICE

Inquire with governing authorities for local installation requirements.

A WATTS Brand

USA: Backflow Tel: (978) 689-6066 • Fax: (978) 975-8350 • AmesFireWater.com
USA: Control Valves Tel: (713) 943-0688 • Fax: (713) 944-9445 • AmesFireWater.com
Canada: Tel: (888) 208-8927 • Fax: (905) 481-2316 • AmesFireWater.ca
Latin America: Tel: (52) 55-4122-0138 • AmesFireWater.com

Bourdon Tube Pressure Gauge
Type 111.10, Black Plastic or Painted Steel Case
Standard Series - Lower Mount

Applications

- Hydraulic and pneumatic systems
- Pumps, compressors, water systems, regulators
- Suitable for fluid medium which does not clog connection port or corrode copper alloy

Product features

- Copper alloy wetted parts
- Black plastic or painted steel case
- Lower mount (LM) process connection

Bourdon Tube Pressure Gauge Type 111.10

Specifications

Design
EN837-1 and ASME B40.100

Sizes (All sizes not stocked)
1½", 2", 2½" and 4" (40, 50, 63, and 100 mm)

Accuracy class
± 3/2/3% of span (ASME B40.100 Grade B)

Ranges (All ranges not stocked)
Vacuum/Compound to 30 "Hg (-1 bar) / 0/ 200 psi (16 bar)
Pressure from 15 psi (1 bar) to 6,000 psi (400 bar)
or other equivalent units of pressure or vacuum
Receiver scales 3...15 psi (0.2 ... 1 bar)

Working pressure
Steady: 3/4 of full scale value
Fluctuating: 2/3 of full scale value
Short time: full scale value

Operating temperature
Ambient: -40°F to 140°F (-40°C to 60°C)
Media: 140°F (+60°C) maximum

Temperature error
Additional error when temperature changes from reference temperature of 68°F (20°C) ±0.4% of span for every 18°F (10°K) rising or falling.

Pressure connection
Material: copper alloy
Lower mount (LM)
1/8" or 1/4" NPT

Bourdon Tube
Material: copper alloy
≤ 870 psi (60 bar): C-shape
> 870 psi (60 bar): Helical

Movement
Copper alloy

Dial
White plastic with stop pin (1½", 2", 2½")
White aluminum with stop pin (4")
Black or black and red lettering

Pointer
Black ABS plastic (1½", 2", 2½" LM)
Black aluminum (4" LM)

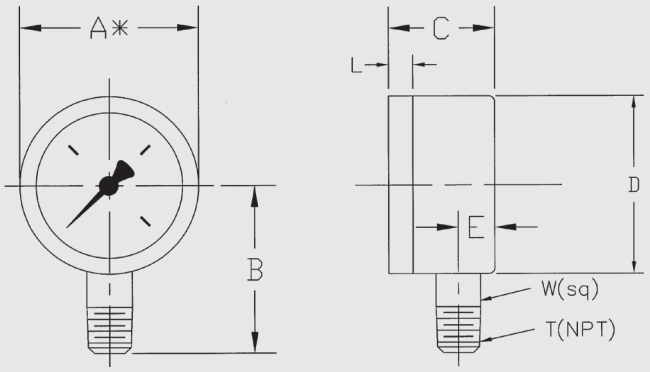
Case
Black plastic

Window
Crystal-clear plastic, snap-fit

Optional Extras

- Accuracy ± 2/1/2% of span (ASME B40.100 Grade A)
- Slip-fit or friction ring
- Case with blowout plug
- Glass window (requires slip-fit or friction ring)
- Black painted steel case
- Stainless steel case
- Special case colors
- Special connections (limited to wrench flat area)
- Cleaned for oxygen service
- Nickel plated connection
- Medical specification
- Rubber cover (2", 2½")
- Custom dial layout
- Other pressure scales available:
  bar, kPa, MPa, kg/cm² and dual scales
- EN standards
- Red set pointer on aluminum dial or on snap-on window
- External adjust red drag pointer
  (black steel - 2½" case only)

Dimensions



Type 111.10

Size		A	B	C	D	E	L	T	W
1.5"	mm	40	36	26	39	9.6	3.2		14
	in	1.50	1.42	1.02	1.54	0.38	0.13	1/8"	0.55
2"	mm	50	45	27	49	10	3.3		14
	in	1.97	1.77	1.06	1.93	0.39	0.13	1/4"	0.55
2.5"	mm	63	53.5	28	61.5	10	3.4		14
	in	2.48	2.11	1.10	2.42	0.39	0.14	1/4"	0.55
4"	mm	100	83.5	30	99	11.5	3.8		14
	in	3.94	3.29	1.18	3.9	0.45	0.15	1/4"	0.55

Ordering information
Pressure gauge model / Nominal size / Scale range / Size of connection / Optional extras required
Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing.
Modifications may take place and materials specified may be replaced by others without prior notice.

WIKA USA
1000 Wiegand Boulevard
Lawrenceville, GA 30043
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Fax (770) 338-5118
E-Mail info@wika.com
www.wika.com

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

Series AH2

Series AH2-CC

1.0 PRODUCT DESCRIPTION

Available Sizes by Component

Series AH2 1"/DN25 ID 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 1"/DN25 ID 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.

Connections

- **From Branchline**
  - ¾"/20mm BSPT female thread (VdS only)
  - 1 ¼"/32mm BSPT female thread (LPCB only)
  - 1"/25mm NPT or BSPT female Thread
  - 1"/25mm Grooved IGS (refer to Submittal 10.54 for additional IGS connections)
    - No. 116 CPVC Adapter (1"/25mm Female CPVC Socket x 1"/25mm Grooved IGS)
    - No. 142 Welded Outlet
    - Style 922 Outlet-T
    - Style 920N Mechanical-T Outlet
    - No. 65 Grooved End of Run Fitting
- **Hose Inlet**
  - 1"/25mm Grooved IGS
  - 1"/25mm NPT or BSPT male thread
  - ¾"/20mm BSPT male thread (VdS only)
  - 1 ¼"/32mm BSPT male thread (LPCB only)

1.0 PRODUCT DESCRIPTION (CONTINUED)

- **Sprinkler Reducer**
  - Sprinkler Connection: 1/2" and ¾"/15mm and 20mm NPT or BSPT female thread
  - Straight Lengths: 5.75", 9", 13"/140mm, 230mm, 330mm
  - 90˚ Elbows
    - Standard Short
    - Low Profile Short
    - Standard Long
    - Low Profile Long

  (Short elbows typically used with concealed sprinklers. Long elbows typically used with recessed pendent sprinklers)

Brackets

- 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 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.
- Style ABBA bracket for suspended, exposed, and hard-lid ceilings
- Style ABMM bracket for surface mount and stand off-mount applications, wood, metal and block walls, or ceilings and hard-lid ceilings
- Strut channel and pipe clamp, not supplied by Victaulic

Maximum Working Temperature

- 225˚F/107˚C
- 150˚F/65˚C (No. 116 CPVC Adapter)

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)
- 175 psi/1206 kPa (No. 116 CPVC Adapter)

Minimum Bend Radius

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

1.0 PRODUCT DESCRIPTION (CONTINUED)

Maximum Allowable Sprinkler K-Factors

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

2.0 CERTIFICATION/LISTINGS

LPS 1261: Issue 1.2
Cert/LPCB Ref. 104/01
104/04

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® FlameGuard® 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: Carbon Steel, Zinc-Plated
Reducer (½"/15 mm or ¾"/20 mm): Carbon Steel, Zinc-Plated
Low Profile Elbows: Ductile Iron, 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.

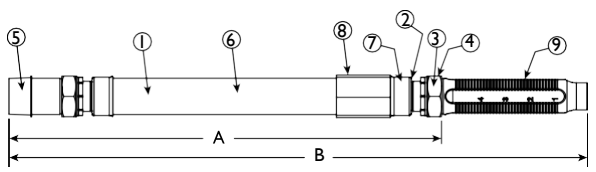
Bolts/Nut: Zinc electroplated carbon steel, trackhead meeting the physical and chemical requirements of ASTM A 449 and physical requirements of ASTM A 183.

Linkage: CrMo Alloy Steel zinc electroplated per ASTM B633 Zn/Fe 5, Type III Finish

No. 116 Adapter Fitting: CPVC and Brass
Seal: Victaulic EPDM

4.0 DIMENSIONS

Product Details - Series AH2 Braided Hose

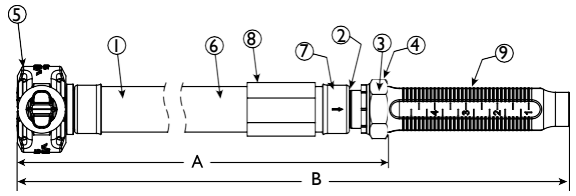


Item	Description
1	Flexible Hose
2	Isolation Ring
3	Gasket
4	Nut
5	Adapter Nipple
6	Braid
7	Collar/Weld Fitting
8	Sleeve
9	Reducer

Hose Length Dimensions

Hose Length inches mm	A inches mm	B inches mm
31 790	25.3 641	31 790
36 915	31.3 794	36 915
48 1219	42.3 1073	48 1220
60 1525	54.3 1378	60 1525
72 1830	66.3 1683	72 1830

Series AH2-CC Braided Hose



Item	Description
1	Flexible Hose
2	Isolation Ring
3	Gasket
4	Nut
5	Captured Coupling
6	Braid
7	Collar/Weld Fitting
8	Sleeve
9	Reducer

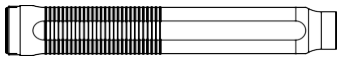
Hose Length inches mm	A inches mm	B inches mm
31 790	24.5 622	29.8 757
36 915	29.5 749	34.8 884
48 1219	41.5 1054	46.8 1189
60 1525	53.5 1359	58.8 1494
72 1830	65.5 1664	70.8 1798

4.0 DIMENSIONS (CONTINUED)

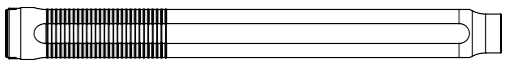
Standard Reducer

5.75"/140 mm straight reducer

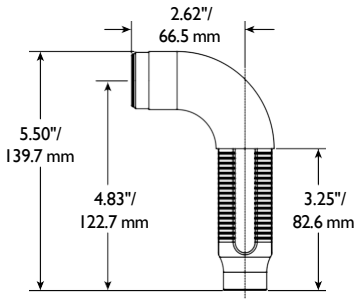
Optional Reducers



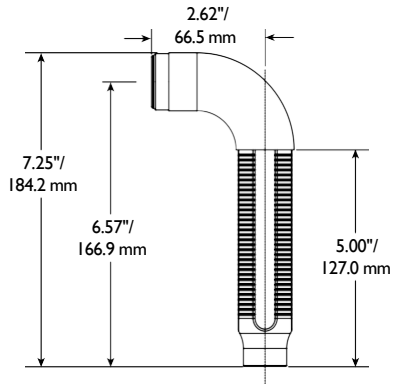
9.0"/229 mm straight reducer



13.0"/330 mm straight reducer



Short 90° elbow reducer

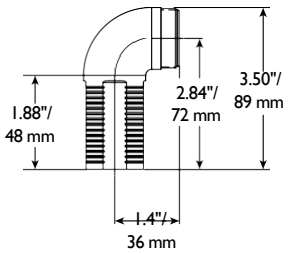


Long 90° elbow reducer

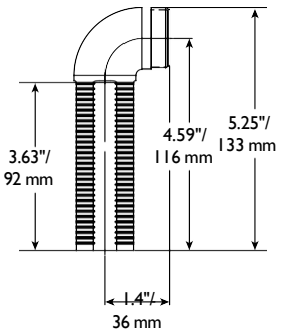
NOTE

- The Short 90° elbow reducer is typically used with concealed sprinklers while the longer 90° elbow is typically used in the installation of recessed pendent sprinklers.
- FM/VdS Approved only.

Low Profile



Short 90° elbow reducer

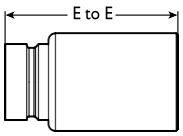


Long 90° elbow reducer

NOTE

- Style AB11: When low profiles elbows are with the Style AB11 bracket, the Low Profile Short Elbow is typically used with concealed sprinklers while the Low Profile Long Elbow is typically used in the installation of recessed pendent sprinklers.

No. 116 CPVC Adapter



NOTES

- E to E is 3.0"/76.0 mm
- The No. 116 CPVC Adapter has 2 ft. (0.6 m) EQL of 1" Schedule 40 pipe.

4.1 DIMENSIONS

VicFlex Brackets

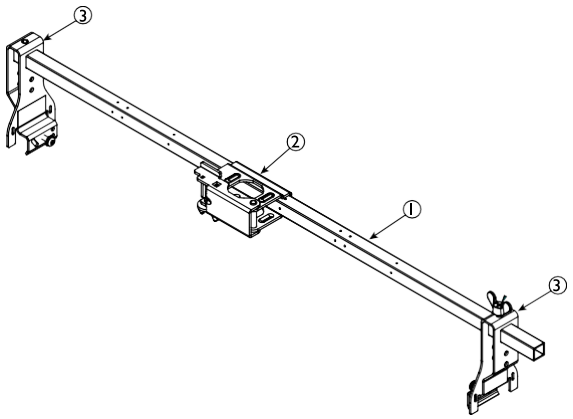
Style AB2

- Suspended Ceilings
- Hard-Lid Ceilings

Item	Description
1	24"/610 mm or 48"/1219 mm Square Bar
2	Patented Vertically Adjustable Center Bracket
3	End Bracket

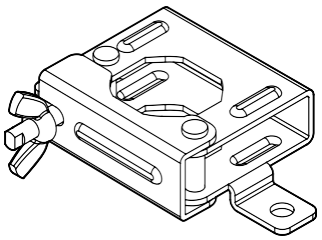
NOTE

- Both sizes FM/VdS/LPCB Approved, cULus listed



Style AB3

- Surface Mount Applications
- FM/LPCB Approved



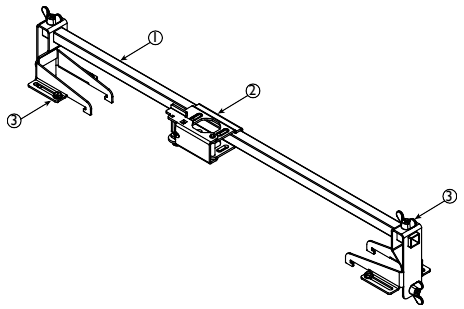
Style AB4

- Hard-Lid Ceilings with Hat furring channel grid system

Item	Description
1	24"/610 mm or 48"/1219 mm Square Bar
2	Patented Vertically Adjustable Center Bracket
3	End Bracket for Hat Furring Channel

NOTE

- Both sizes FM/VdS/LPCB Approved, cULus listed.



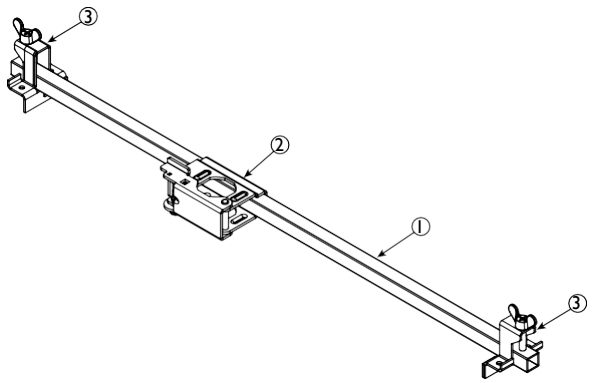
4.2 DIMENSIONS

VicFlex Brackets

Style AB5

- Hard-Lid Ceilings

Item	Description
1	24"/610 mm or 48"/1219 mm Square Bar
2	Patented Vertically Adjustable Center Bracket
3	End Bracket



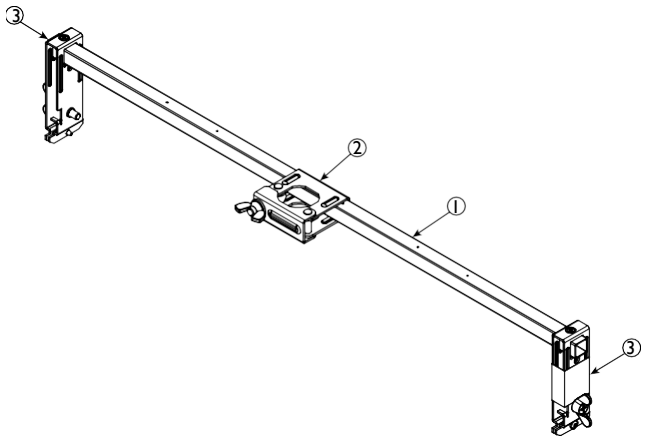
NOTE

- Both sizes FM/VdS/LPCB Approved, cULus listed.

Style AB7

- Suspended Ceilings
- Hard-Lid Ceilings

Item	Description
1	24"/610 mm or 48"/1219 mm Square Bar
2	Patented 1-Bee2® Center Bracket
3	End Bracket



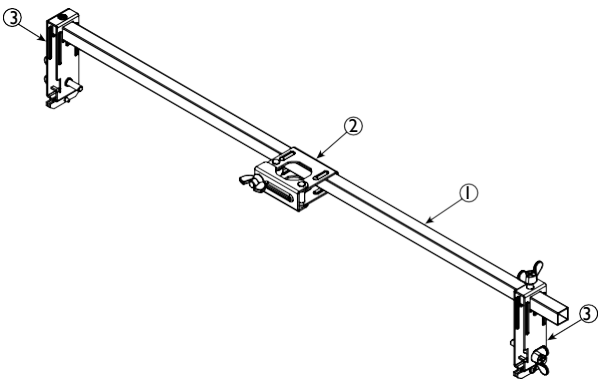
NOTE

- Both sizes FM/VdS/LPCB Approved.

Style AB7 Adjustable

- Suspended Ceilings
- Hard-Lid Ceilings

Item	Description
1	700 mm or 1400 mm Square Bar
2	Patented 1-Bee2® Center Bracket
3	End Bracket (adjustable)



NOTE

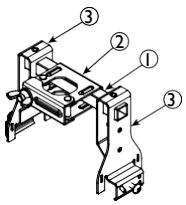
- Both sizes FM/VdS/LPCB Approved.

4.3 DIMENSIONS

VicFlex Brackets

Style AB10

- Suspended ceilings
- Armstrong® TechZone™



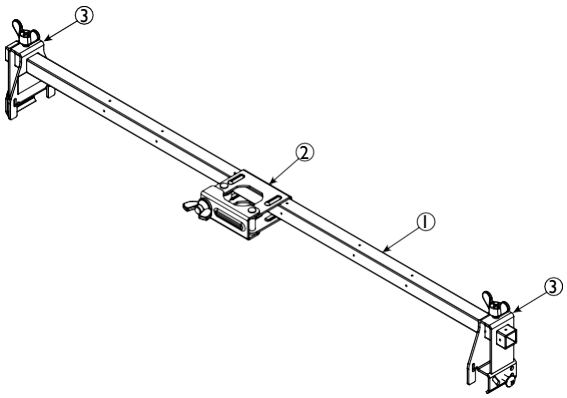
Item	Description
1	6"/152 mm Square Bar
2	Patented 1-Bee2® Center Bracket
3	End Bracket

NOTE

- FM/VdS/LPCB Approved, cULus listed.

Style AB11

- Suspended ceilings
- Hard-Lid ceilings



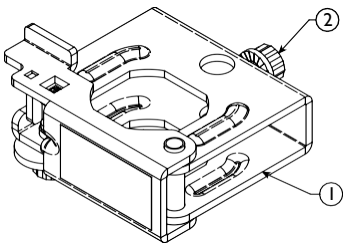
Item	Description
1	24"/610 mm or 48"/1219 mm Square Bar
2	Patented 1-Bee2® Center Bracket
3	End Bracket

NOTE

- FM/VdS Approved, cULus listed.

Style AB12

- Suspended ceilings
- Hard-Lid ceilings



Item	Description
1	Style AB12 Bracket Body
2	#2 Square Drive Set Screw

NOTE

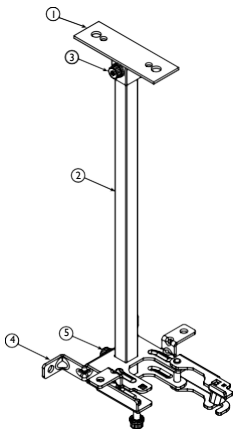
- FM/VdS Approved.

4.3 DIMENSIONS (CONTINUED)

VicFlex Brackets

Style ABBA

- Floor-above mount
- Cantilever mount
- Temporary mount in exposed ceilings



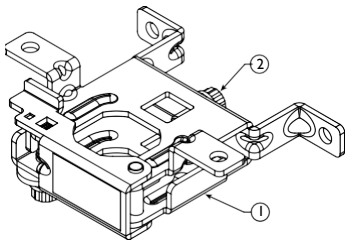
Item	Description
1	Style ABBA Mounting Plate
2	Style ABBA Square Bar
3	Cap Screw, Serated Flange, M6 x 1 x 20, T25 Torx Drive Recessed
4	Style ABMM Bracket Body
5	Cap Screw, Serated Flange, M6 x 1 x 15.24, T25 Torx Drive Recessed

NOTE

- FM Approved.

Style ABMM

- Surface mount
- Stand-off mount



Item	Description
1	Style ABMM Bracket Body
2	Cap Screw, Serated Flange, M6 x 1 x 15.24, T25 Torx Drive Recessed

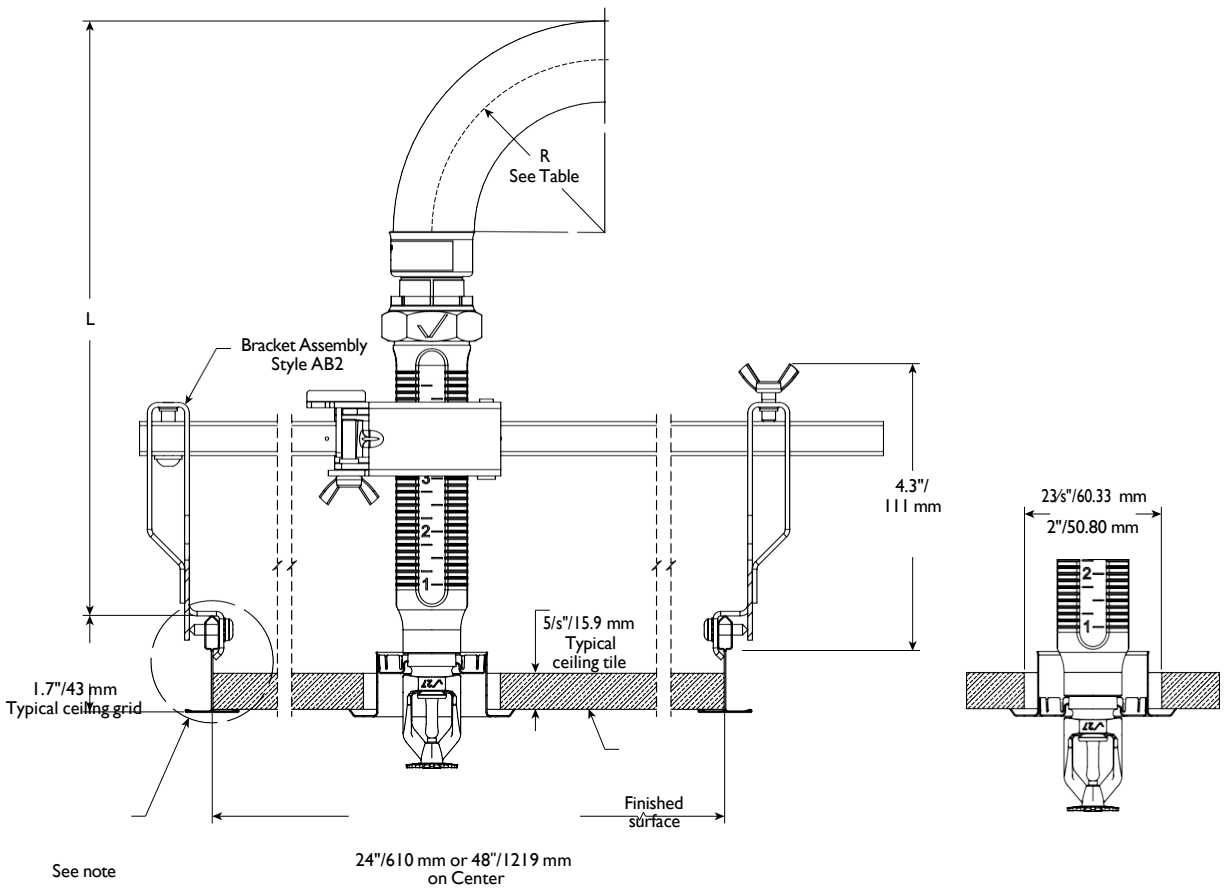
NOTE

- FM Approved.

4.4 DIMENSIONS

Clearances

Series AH2 Braided Hose and Style AB2 Bracket



V2707 ¾"/19 MM MAX. RECESS

V2707 MAX. EXTENSION

Hose Clearance Chart								
	Straight Reducer						Long Elbow	Short Elbow
	V2707 ¾" Max Recess inches mm	V3802 ½" Max Recess inches mm	V2707 ¾" Max Recess inches mm	V3802 ½" Max Recess inches mm	V2707 ¾" Max Recess inches mm	V3802 ½" Max Recess inches mm	V2707 ¾" Max Recess inches mm	V3802 ½" Max Recess inches mm
"R" Minimum Bend Radius	2.0 50		3.0 80		7.0 175		–	
"A" Minimum Required Installation Space	8.6 218	10.1 269	9.6 244	11.1 281	13.6 345	15.1 383	5.8 147	5.8 147

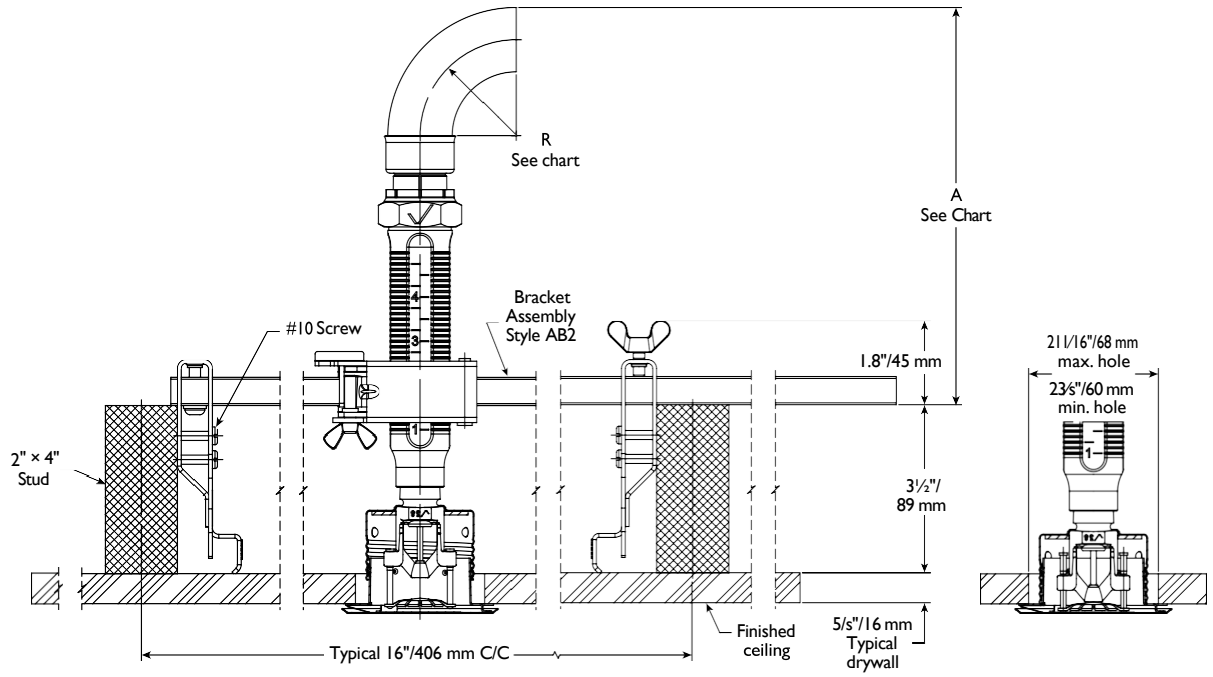
NOTE

- Variations of ceiling grids, sprinkler heads, brackets, and hoses are permitted but may result in clearance differences from the figures above.

4.5 DIMENSIONS

Clearances

Series AH2 Braided Hose and Style AB2 Bracket



V38 ½"/13 mm MAX. RECESS **V38 MAX. EXTENSION**

Hose Clearance Chart									
	Straight Reducer								
	V2707 ¾" | 20mm Max Recess" inches mm	**V3802 ½" | 13mm Max Recess** inches mm	**V2709 ¾" | 20mm Sidewall** inches mm	**V2707 ¾" | 20mm Max Recess** inches mm	**V3802 ½" | 13mm Max Recess** inches mm	**V2709 ¾" | 20mm Sidewall** inches mm	**V2707 ¾" | 20mm Max Recess** inches mm	**V3802 ½" | 13mm Max Recess** inches mm	**V2709 ¾" | 20mm Sidewall** inches mm
"R" Minimum Bend Radius	2.0 50			3.0 80			7.0 175		
"A" Minimum Required Installation Space	6.2 158	7.6 193	6.1 155	7.2 183	8.6 218	7.1 180	11.2 285	12.6 320	11.1 282

Hose Clearance Chart			
	Long Elbow		Short Elbow
	V2707 ¾" | 20mm Max Recess inches mm	**V2709 ¾" | 20mm Sidewall** inches mm	**V3802 ½" | 13mm Max Recess** inches mm
"R" Minimum Bend Radius	-		
"A" Minimum Required Installation Space	3.3 84	3.6 91	3.3 84

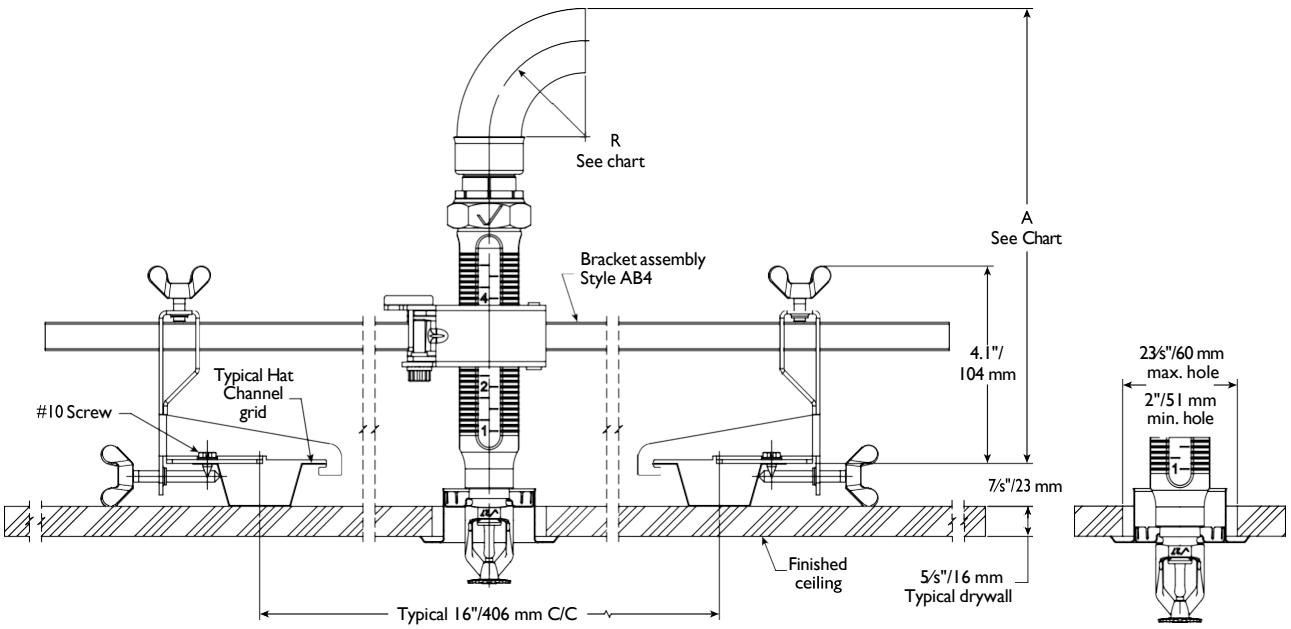
NOTE

- Variations of ceiling grids, sprinkler heads, brackets, and hoses are permitted but may result in clearance differences from the figures above.

4.6 DIMENSIONS

Clearances

Series AH2 Braided Hose and Style AB4 Bracket



V27 ¾"/19 mm MAX. RECESS

V27 MAX. EXTENSION

Hose Clearance Chart								
	Straight Reducer						Long Elbow	Short Elbow
	V2707 ¾" Max Recess inches mm	**V3802 ½" Max Recess** inches mm	**V2707 ¾" Max Recess** inches mm	**V3802 ½" Max Recess** inches mm	**V2707 ¾" Max Recess** inches mm	**V3802 ½" Max Recess** inches mm	**V2707 ¾" Max Recess** inches mm	**V3802 ½" Max Recess** inches mm
"R" Minimum Bend Radius	2.0 50	2.0 50	3.0 80	3.0 80	7.0 175	7.0 175	–	
"A" Minimum Required Installation Space	8.8 224	10.2 259	9.8 249	11.2 285	13.8 351	15.2 386	8.0 203	5.9 150

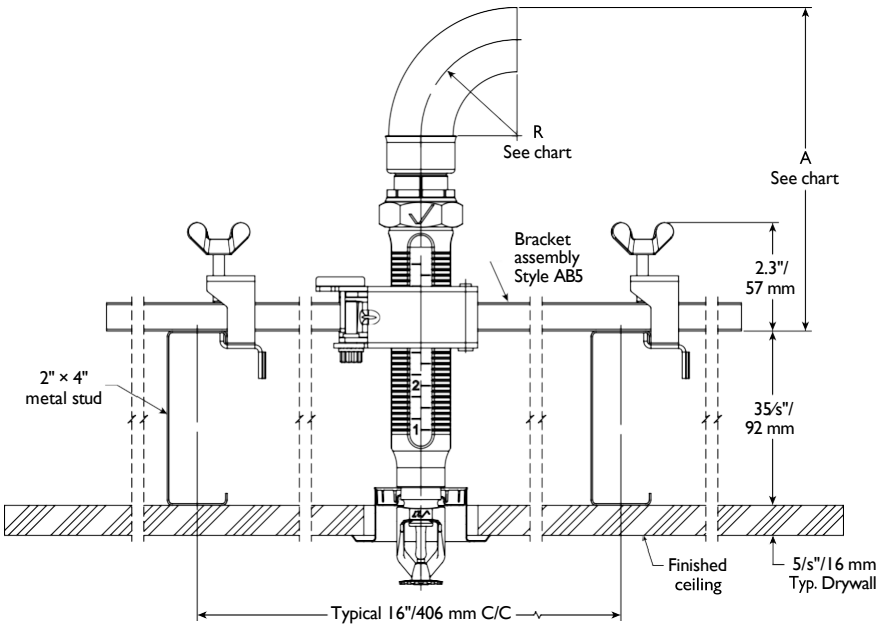
NOTE

Variations of ceiling grids, sprinkler heads, brackets, and hoses are permitted but may result in clearance differences from the figures above.

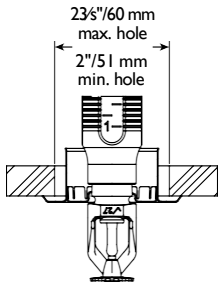
4.7 DIMENSIONS

Clearances

Series AH2 Braided Hose and Style AB5 Bracket



V27 ¾"/19 mm MAX. RECESS



V27 MAX. EXTENSION

Hose Clearance Chart									
	Straight Reducer								
	"V2707 ¾" | 20mm Max Recess" inches mm	V3802 ½" | 13mm Max Recess inches mm	V2709 ¾" | 20mm Sidewall inches mm	V2707 ¾" | 20mm Max Recess inches mm	V3802 ½" | 13mm Max Recess inches mm	V2709 ¾" | 20mm Sidewall inches mm	V2707 ¾" | 20mm Max Recess inches mm	V3802 ½" | 13mm Max Recess inches mm	V2709 ¾" | 20mm Sidewall inches mm
"R" Minimum Bend Radius		2.0 50			3.0 80			7.0 175	
"A" Minimum Required Installation Space	6.0 158	7.7 196	6.1 155	7.0 178	8.7 221	7.1 180	11.0 279	12.7 323	11.1 282

Hose Clearance Chart					
	Long Elbow			Low-Profile Long Elbow	Short Elbow
	V2707 ¾" | 20mm Max Recess inches mm	V3802 ½" | 13mm Max Recess inches mm	V2709 ¾" | 20mm Sidewall inches mm	V3802 ½" | 13mm Max Recess inches mm	V3802 ½" | 13mm Max Recess inches mm
"R" Minimum Bend Radius	-				
"A" Minimum Required Installation Space	3.5 89	4.9 124	3.6 91	2.9 74	3.3 84

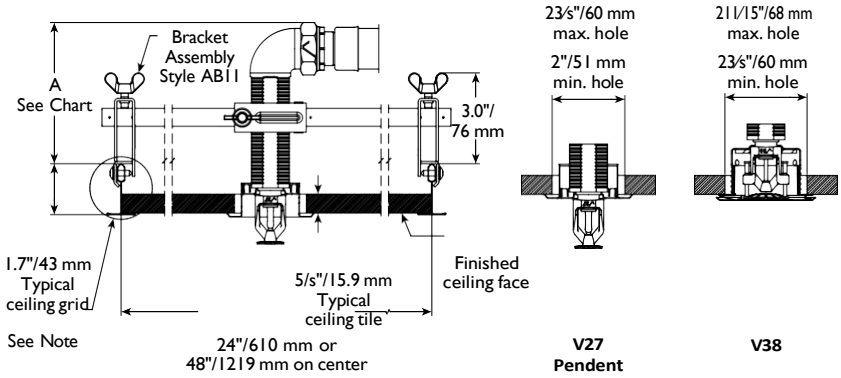
NOTE

- Variations of ceiling grids, sprinkler heads, brackets, and hoses are permitted but may result in clearance differences from the figures above.

4.8 DIMENSIONS

Clearances

Series AH2 Braided Hose and Style AB11 Bracket (LOW PROFILE SOLUTION)



Hose Clearance Chart		
	Low-Profile Long Elbow	**Low-Profile Short Elbow**
	V2707 ¾" | 20 mm Max Recess" inches mm	**V3802 ½" | 13 mm Max Recess** inches mm
"A" Minimum Required Installation Space	4.0 102	3.9 99

NOTE

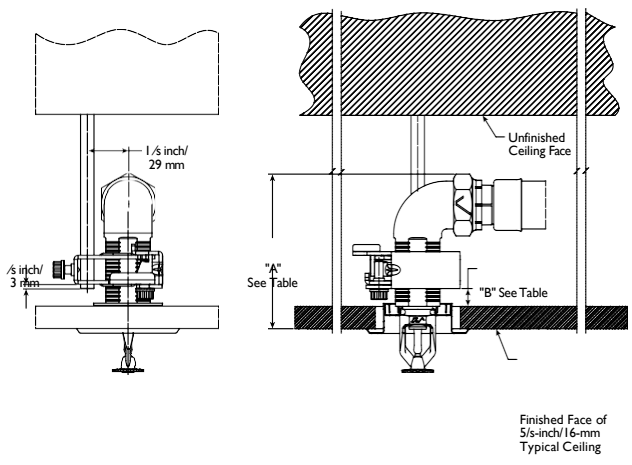
- Variations of ceiling grids, sprinkler heads, brackets, and hoses are permitted but may result in clearance differences from the figures above.

4.9 DIMENSIONS

Clearances

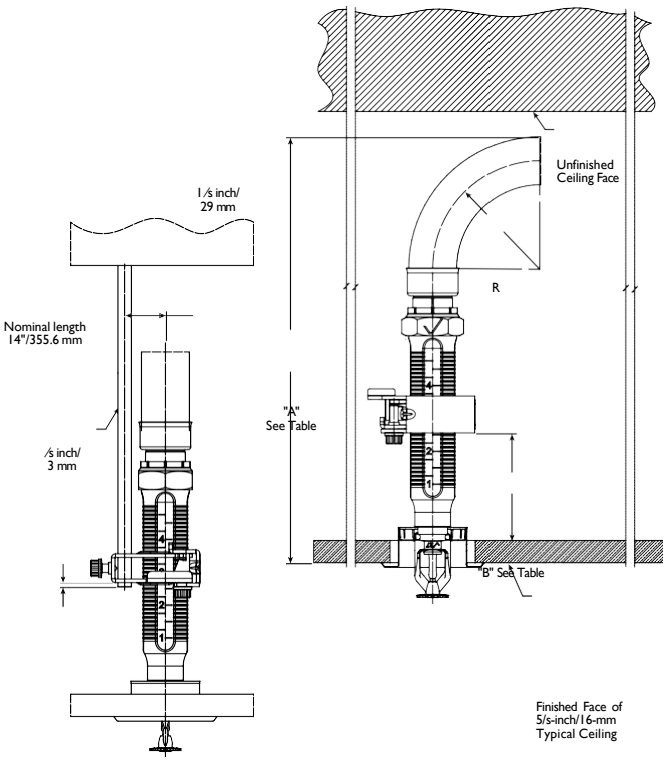
Style AB12 and ABBA Bracket

Suspended Ceiling Grid with Recessed Sprinkler with Low Profile Short Elbow



V2707 ½"/12.7 mm MAX. RECESS

Suspended Ceiling Grid with Recessed Sprinkler and Straight 5.75"/140 mm Reducer



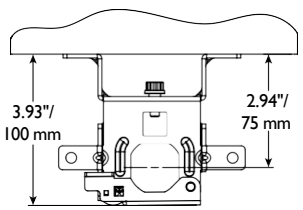
V2707 ¾"/19 mm MAX. RECESS

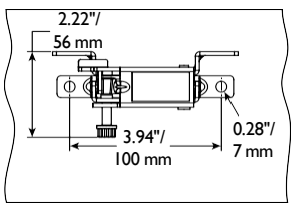
Dimension		Low Profile Short Elbow		Low Profile Long Elbow		Standard Short Elbow		Standard Long Elbow		Standard Straight Reducer	
		¾"/19 mm Recessed*	Concealed	¾"/19 mm Recessed	Concealed	¾"/19 mm Recessed	Concealed	¾"/19 mm Recessed	Concealed	¾"/19 mm Recessed	Concealed
		inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm	inches mm
A	Minimum Required Installation Space	4.0 101.6	5.5 139.7	5.6 142.2	7.2 182.9	5.9 149.9	7.5 190.5	7.7 195.6	9.3 236.2	15.0 381.0	16.6 421.6
B	Distance from Top of Typical Ceiling Tile to Bottom of Gate	0.5 12.7	2.0 50.8	1.5 38.1	1.5 38.1	1.5 38.1	1.5 38.1	3.0 76.2	3.0 76.2	3.0 76.2	3.0 76.2

* Adjustability will be limited

Style ABMM Bracket

Stand-off Dimensions



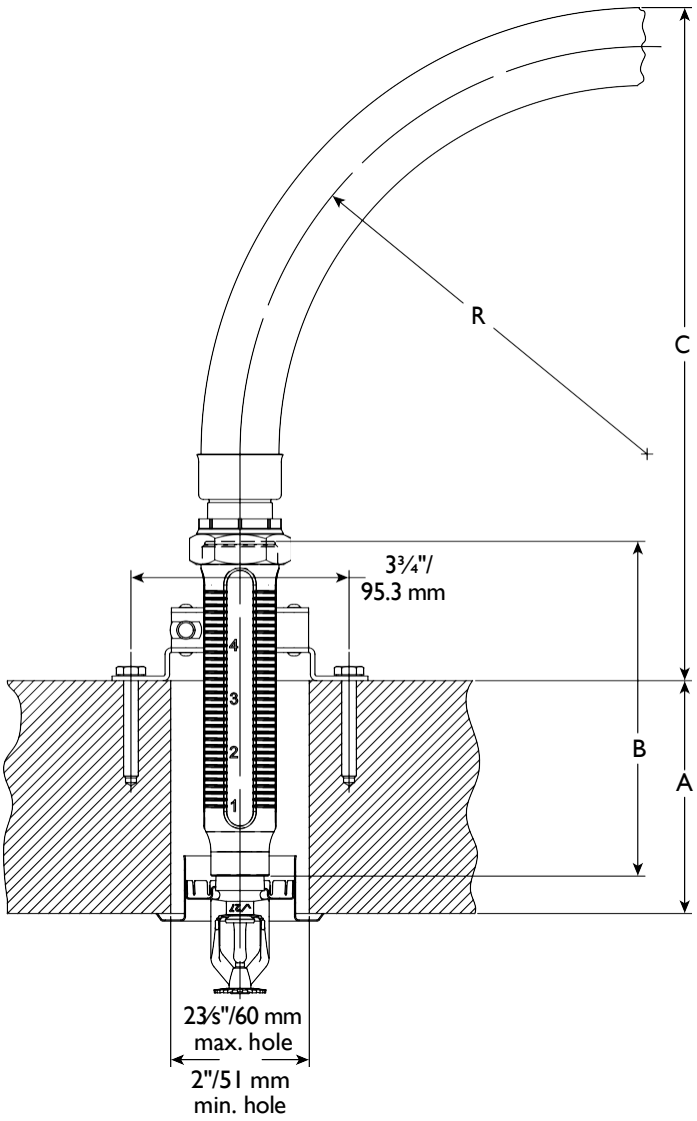


4.10 DIMENSIONS

Clearances

Style AB3 and ABMM Bracket

Surface Mount Application with Recessed Sprinkler



Hose Clearances																					
Dimension	inches mm			inches mm			inches mm		inches mm	inches mm	inches mm				inches mm			inches mm			inches mm	inches mm
Wall Thickness "A"	2 50			4 100			6 150		8 200	10 250	2 50			4 100			6 150			8 200	10 250
Outlet Length "B"	5.75 146.1	9 228.6	13 330.2	5.75 146.1	9 228.6	13 330.2	9 228.6	13 330.2	13 330.2	13 330.2	5.75 146.1	9 228.6	13 330.2	5.75 146.1	9 228.6	13 330.2	9 228.6	13 330.2	13 330.2	13 330.2
Hose Clearance "C"	11.6 294	14.8 376	18.8 478	9.6 243	12.8 325	16.8 427	10.8 275	14.8 376	12.8 325	10.8 275	12.6 319	15.8 402	19.8 503	10.6 268	13.8 351	17.8 452	11.8 300	15.8 402	13.8 351	11.8 300
Bend Radius "R"	7 175										8 200									

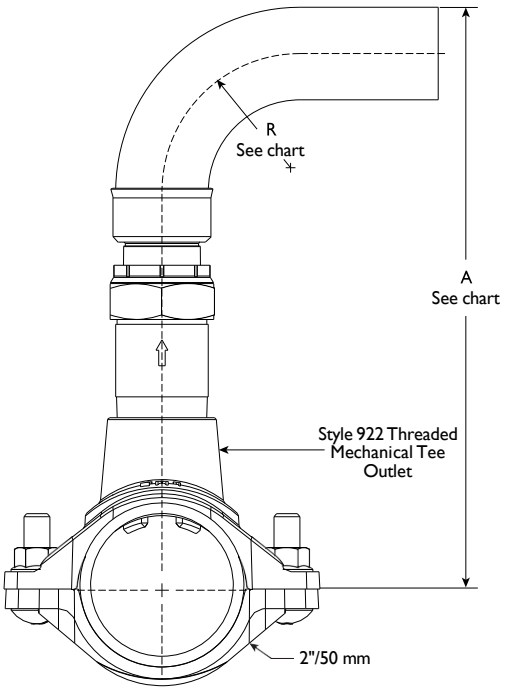
NOTE

- Variations of ceiling grids, sprinkler heads, brackets, and hoses are permitted but may result in clearance differences from the figures above.

4.11 DIMENSIONS

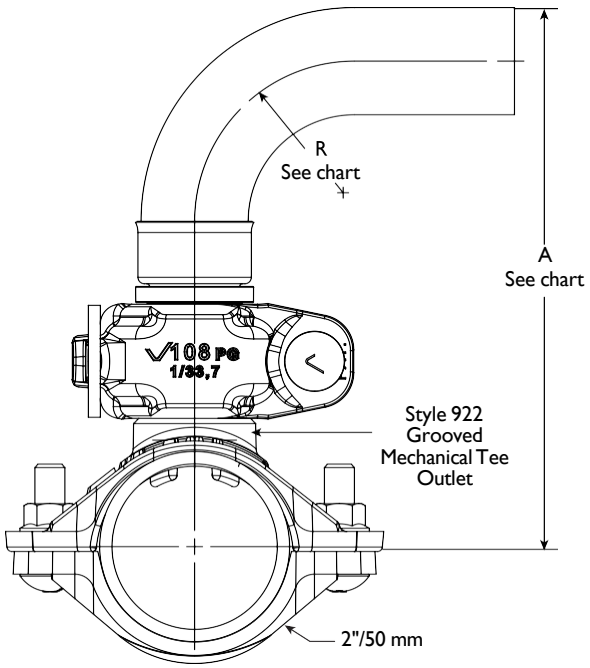
BRANCHLINE CLEARANCES

Series AH2 Braided Hose with Style 922 threaded outlet



Hose Clearance Chart						
Dimension		inches mm	inches mm	inches mm	inches mm	inches mm
R	Minimum Bend Radius	3 80	4 100	5 125	6 150	7 175
A	Min.	9.4 238	10.4 263	11.4 289	12.4 314	13.4 339

Series AH2-CC Braided Hose with Style 922 grooved outlet

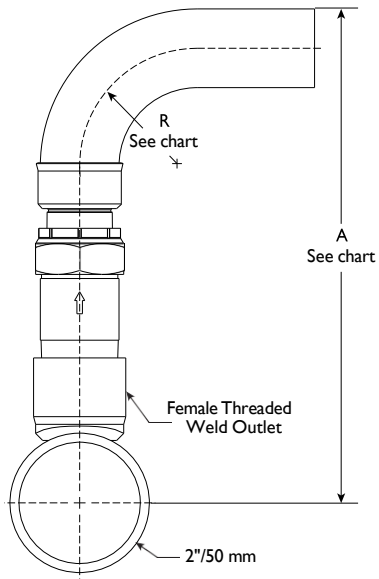


Hose Clearance Chart						
Dimension		inches mm	inches mm	inches mm	inches mm	inches mm
R	Minimum Bend Radius	3 80	4 100	5 125	6 150	7 175
A	Min.	7.7 197	8.7 222	9.7 247	10.7 273	11.7 298

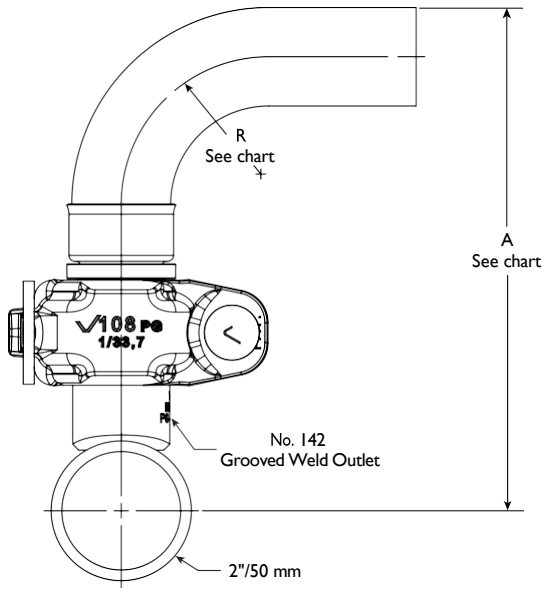
4.12 DIMENSIONS

BRANCHLINE CLEARANCES

Series AH2 Braided Hose with female threaded outlet



Series AH2-CC Braided Hose with grooved outlet



Hose Clearance Chart						
Dimension		inches mm	inches mm	inches mm	inches mm	inches mm
R	Minimum Bend Radius	3 80	4 100	5 125	6 150	7 175
A	Min.	9.4 239	10.4 264	11.4 290	12.4 315	13.41 341

Hose Clearance Chart						
Dimension		inches mm	inches mm	inches mm	inches mm	inches mm
R	Minimum Bend Radius	3 80	4 100	5 125	6 150	7 175
A	Min.	8.1 205	9.1 231	10.1 256	11.1 281	12.1 307

5.0 PERFORMANCE – FRICTION LOSS DATA

Series AH2 and AH2-CC Braided Hoses with Straight 5.75"/140 mm Reducers Style AB2, AB4, AB5 and AB10 Brackets

Hose	Reducer		UL	
Length inches mm	**Type**	**Nominal Outlet Size** inches DN	**Equivalent Length of 1"/33.7mm Sch. 40 pipe** feet meters	**Max Bends**
31 790	Straight	1/2 DN15	15.0 4.6	3
31 790	Straight	1/2 DN15	16.0 4.9	4
31 790	Straight	3/4 DN20	19.0 5.8	3
31 790	Straight	3/4 DN20	20.0 6.1	4
36 915	Straight	1/2 DN15	18.0 5.5	3
36 915	Straight	1/2 DN15	21.0 6.4	5
36 915	Straight	3/4 DN20	21.0 6.4	3
36 915	Straight	3/4 DN20	23.0 7.0	5
48 1220	Straight	1/2 DN15	21.0 6.4	3
48 1220	Straight	1/2 DN15	32.0 9.8	8
48 1220	Straight	3/4 DN20	26.0 7.9	3
48 1220	Straight	3/4 DN20	37.0 11.3	8
60 1525	Straight	1/2 DN15	27.0 8.2	3
60 1525	Straight	1/2 DN15	46.0 14.0	10
60 1525	Straight	3/4 DN20	27.0 8.2	3
60 1525	Straight	3/4 DN20	46.0 14.0	10
72 1830	Straight	1/2 DN15	31.0 9.4	3
72 1830	Straight	1/2 DN15	55.0 16.8	12
72 1830	Straight	3/4 DN20	30.0 9.1	3
72 1830	Straight	3/4 DN20	60.0 18.3	12

5.0 PERFORMANCE – FRICTION LOSS DATA (CONTINUED)

Series AH2 and AH2-CC Braided Hose with 90° Low Profile Elbows
Style AB11 *VicFlex* Bracket

Hose	Reducer		UL	
Length inches mm	**Type**	**Nominal Outlet Size** inches DN	**Equivalent Length of 1"/33.7mm Sch. 40 pipe** feet meters	**Max Bends**
31 790	LP Elbow	1/2 DN15	18.0 5.5	3
31 790	LP Elbow	1/2 DN15	24.0 7.3	4
31 790	LP Elbow	3/4 DN20	21.0 6.4	3
31 790	LP Elbow	3/4 DN20	24.0 7.3	4
36 915	LP Elbow	1/2 DN15	19.0 5.8	3
36 915	LP Elbow	1/2 DN15	26.0 7.9	5
36 915	LP Elbow	3/4 DN20	23.0 7.0	3
36 915	LP Elbow	3/4 DN20	28.0 8.5	5
48 1220	LP Elbow	1/2 DN15	23.0 7.0	3
48 1220	LP Elbow	1/2 DN15	43.0 13.1	8
48 1220	LP Elbow	3/4 DN20	30.0 9.1	3
48 1220	LP Elbow	3/4 DN20	42.0 12.8	8
60 1525	LP Elbow	1/2 DN15	28.0 8.5	3
60 1525	LP Elbow	1/2 DN15	49.0 14.9	10
60 1525	LP Elbow	3/4 DN20	31.0 9.4	3
60 1525	LP Elbow	3/4 DN20	50.0 15.2	10
72 1830	LP Elbow	1/2 DN15	31.0 9.4	3
72 1830	LP Elbow	1/2 DN15	65.0 19.8	12
72 1830	LP Elbow	3/4 DN20	36.0 11.0	3
72 1830	LP Elbow	3/4 DN20	63.0 19.2	12

5.0 PERFORMANCE – FRICTION LOSS DATA (CONTINUED)

Series AH2 and AH2-CC Braided Hoses Equivalent Length Design Guide

Equivalent length values at various numbers of 90 degree bends at 2"/51 mm center line bend radius

Length inches mm	**Nominal Outlet Size** inches DN	**1 Bend** feet meters	**2 Bends** feet meters	**3 Bends** feet meters	**4 Bends** feet meters	**5 Bends** feet meters	**6 Bends** feet meters	**7 Bends** feet meters	**8 Bends** feet meters	**9 Bends** feet meters	**10 Bends** feet meters	**11 Bends** feet meters	**12 Bends** feet meters
31 790	1/2 DN15	11.0 3.4	13.0 4.0	15.0 4.6	16.0 4.9	–	–	–	–	–	–	–	–
31 790	3/4 DN20	12.0 3.7	14.0 4.3	19.0 5.8	20.0 6.1	–	–	–	–	–	–	–	–
36 915	1/2 DN15	14.0 4.3	16.0 4.9	18.0 5.5	19.0 5.8	21.0 6.4	–	–	–	–	–	–	–
36 915	3/4 DN20	17.0 5.2	19.0 5.8	21.0 6.4	22.0 6.7	23.0 7.0	–	–	–	–	–	–	–
48 1220	1/2 DN15	18.0 5.5	19.0 5.8	21.0 6.4	23.0 7.0	25.0 7.6	27.0 8.2	30.0 9.1	32.0 9.8	–	–	–	–
48 1220	3/4 DN20	21.0 6.4	24.0 7.3	26.0 7.9	28.0 8.5	31.0 9.4	33.0 10.1	35.0 10.7	37.0 11.3	–	–	–	–
60 1525	1/2 DN15	21.0 6.4	24.0 7.3	27.0 8.2	30.0 9.1	32.0 9.8	35.0 10.7	37.0 11.3	40.0 12.2	43.0 13.1	46.0 14.0	–	–
60 1525	3/4 DN20	23.0 7.0	25.0 7.6	27.0 8.2	29.0 8.8	32.0 9.8	34.0 10.4	37.0 11.3	40.0 12.2	43.0 13.1	46.0 14.0	–	–
72 1830	1/2 DN15	27.0 8.2	29.0 8.8	31.0 9.4	34.0 10.4	37.0 11.3	40.0 12.2	43.0 13.1	46.0 14.0	48.0 14.6	50.0 15.2	52.0 15.8	55.0 16.8
72 1830	3/4 DN20	26.0 7.9	28.0 8.5	30.0 9.1	33.0 10.1	37.0 11.3	40.0 12.2	44.0 13.4	48.0 14.6	51.0 15.5	54.0 16.5	57.0 17.4	60.0 18.3

NOTES

- Values for use with 5.75"/140 mm straight reducers.
- The values in this table are provided by the manufacturer for reference only. For friction loss data in accordance with the UL Certification, please refer to pages 19 and 20 of this publication.

How to use this Design Guide:

- For some systems, it may be advantageous for the designer to calculate the system hydraulics using shorter equivalent lengths associated with fewer than the maximum allowable number of bends. In this case, the designer may select a design number of bends for the job and use the associated equivalent length from the design guide to determine the system hydraulics.
- It is possible that the actual installed condition of some of the flexible drops may have more bends than the designer selected. When this happens, the design guide may be used to find equivalent lengths based on the actual installed number of bends for particular sprinkler installations. The system hydraulics can be recalculated using actual equivalent lengths to verify the performance of the system.

5.1 PERFORMANCE – FRICTION LOSS DATA

FM

Series AH2 and AH2-CC Braided Hoses
Style AB2, AB3, AB4, AB5, AB7, AB7 Adj., AB8, AB10, AB12, ABBA and ABMM *VicFlex* Brackets

Length of Stainless Steel Flexible Hose inches mm	K-Factor Imperial S.I.	Outlet Size inches mm type	Equivalent Length of 1"/33.7 mm Sch. 40 Pipe feet meters	Maximum Number of 90° Bends at 7"/178 mm Bend Radius
31 790	5.6 8.1	1/2 15 Straight	13.8 4.2	2
		1/2 15 90˚ Elbow	23.5 7.1	
36 915	5.6 8.1	1/2 15 Straight	16.6 5.1	2
		1/2 15 90˚ Elbow	25.6 7.8	
48 1220	5.6 8.1	1/2 15 Straight	23.4 7.1	3
		1/2 15 90˚ Elbow	30.7 9.3	
60 1525	5.6 8.1	1/2 15 Straight	30.2 9.2	4
		1/2 15 90˚ Elbow	35.9 10.9	
72 1830	5.6 8.1	1/2 15 Straight	37.0 11.3	4
		1/2 15 90˚ Elbow	41.1 12.5	
31 790	8.0 11.5	3/4 20 Straight	16.8 5.1	2
		3/4 20 90˚ Elbow	16.8 5.1	
36 915	8.0 11.5	3/4 20 Straight	20 6.0	2
		3/4 20 90˚ Elbow	19.7 6.0	
48 1220	8.0 11.5	3/4 20 Straight	27.8 8.4	3
		3/4 20 90˚ Elbow	26.6 8.1	

FM NOTES

- The Series AH2 hose has been tested and Approved by FM Global for use in wet, dry and preaction systems per NFPA 13, 13R, and 13D and FM data sheets 2-0, 2-5, and 2-8. FM 1637 standard for safety include, but are not limited to, pressure cycling, corrosion resistance, flow characterisitics, vibration resistance, leakage, mechanical and hydrostatic strength.
- EXAMPLE: A 48-inch hose installed with two 30˚ bends and two 90˚ bends is permitted and considered equivalent to the data in the table shown above. In this example, the total number of degrees is 240˚, which is less than the allowable 270˚.

5.1 PERFORMANCE – FRICTION LOSS DATA (CONTINUED)

FM

Series AH2 and AH2-CC Braided Hoses
Style AB2, AB3, AB4, AB5, AB7, AB7 Adj., AB8, AB10, AB12, ABBA and ABMM *VicFlex* Brackets

Length of Stainless Steel Flexible Hose inches mm	K-Factor Imperial S.I.	Outlet Size inches mm type	Equivalent Length of 1"/33.7 mm Sch. 40 Pipe feet meters	Maximum Number of 90° Bends at 7"/178 mm Bend Radius
60 1525	8.0 11.5	3/4 20 Straight	35.7 10.9	4
		3/4 20 90˚ Elbow	33.6 10.2	
72 1830	8.0 11.5	3/4 20 Straight	43.5 13.2	4
		3/4 20 90˚ Elbow	40.6 12.2	
31 790	11.2 16.1	3/4 20 Straight	16.5 5.0	2
		3/4 20 90˚ Elbow	17.8 5.4	
36 915	11.2 16.1	3/4 20 Straight	19.5 5.9	2
		3/4 20 90˚ Elbow	20.7 6.3	
48 1220	11.2 16.1	3/4 20 Straight	26.7 8.1	3
		3/4 20 90˚ Elbow	27.9 8.5	
60 1525	11.2 16.1	3/4 20 Straight	33.9 10.3	4
		3/4 20 90˚ Elbow	35 10.7	
72 1830	11.2 16.1	3/4 20 Straight	41.3 12.5	4
		3/4 20 90˚ Elbow	42.2 12.8	
31 790	14.0 20.2	3/4 20 Straight	14.9 4.5	2
		3/4 20 90˚ Elbow	15.5 4.72	

FM NOTES

- The Series AH2 hose has been tested and Approved by FM Global for use in wet, dry and preaction systems per NFPA 13, 13R, and 13D and FM data sheets 2-0, 2-5, and 2-8. FM 1637 standard for safety include, but are not limited to, pressure cycling, corrosion resistance, flow characterisitics, vibration resistance, leakage, mechanical and hydrostatic strength.
- EXAMPLE: A 48-inch hose installed with two 30˚ bends and two 90˚ bends is permitted and considered equivalent to the data in the table shown above. In this example, the total number of degrees is 240˚, which is less than the allowable 270˚.

5.1 PERFORMANCE – FRICTION LOSS DATA (CONTINUED)

Series AH2 and AH2-CC Braided Hoses
Style AB2, AB3, AB4, AB5, AB7, AB7 Adj., AB8, AB10, AB12, ABBA and ABMM *VicFlex* Brackets

Length of Stainless Steel Flexible Hose inches mm	K-Factor Imperial S.I.	Outlet Size inches mm type	Equivalent Length of 1"/33.7 mm Sch. 40 Pipe feet meters	Maximum Number of 90° Bends at 7"/178 mm Bend Radius
36 915	14.0 20.2	3/4 20 Straight	19.4 5.9	2
		3/4 20 90˚ Elbow	19.6 5.9	
48 1220	14.0 20.2	3/4 20 Straight	30.3 9.2	3
		3/4 20 90˚ Elbow	29.5 8.9	
60 1525	14.0 20.2	3/4 20 Straight	33.9 10.3	4
		3/4 20 90˚ Elbow	34.1 10.4	
72 1830	14.0 20.2	3/4 20 Straight	37.5 11.4	4
		3/4 20 90˚ Elbow	38.6 11.7	

FM NOTES

- The Series AH2 hose has been tested and Approved by FM Global for use in wet, dry and preaction systems per NFPA 13, 13R, and 13D and FM data sheets 2-0, 2-5, and 2-8. FM 1637 standard for safety include, but are not limited to, pressure cycling, corrosion resistance, flow characterisitics, vibration resistance, leakage, mechanical and hydrostatic strength.
- EXAMPLE: A 48-inch hose installed with two 30˚ bends and two 90˚ bends is permitted and considered equivalent to the data in the table shown above. In this example, the total number of degrees is 240˚, which is less than the allowable 270˚.

5.2 PERFORMANCE – FRICTION LOSS DATA

Series AH2 Braided Hose with 90° Low Profile Elbows Style AB5, AB11, AB12, ABBA and ABMM *VicFlex* Bracket

Length of Stainless Steel Flexible Hose inches mm	K-Factor Imperial S.I.	Outlet Size inches mm	Equivalent Length of 1"/33.7mm Sch. 40 Pipe feet meters	Maximum Number of 90° Bends at 7"/178mm Bend Radius
31 790	5.6 8.1	1/2 15	13.7 4.2	2
36 915	5.6 8.1	1/2 15	17.0 5.2	2
48 1220	5.6 8.1	1/2 15	25.0 7.6	3
60 1525	5.6 8.1	1/2 15	33.0 10.1	4
72 1830	5.6 8.1	1/2 15	41.1 12.5	4
31 790	8.0 11.5	3/4 20	13.6 4.14	2
36 915	8.0 11.5	3/4 20	16.9 5.2	2
48 1220	8.0 11.5	3/4 20	27.8 8.5	3
60 1525	8.0 11.5	3/4 20	32.6 9.9	4
72 1830	8.0 11.5	3/4 20	40.6 12.4	4
31 790	11.2 16.1	3/4 20	13.7 4.2	2
36 915	11.2 16.1	3/4 20	17.0 5.2	2
48 1220	11.2 16.1	3/4 20	24.9 7.6	3
60 1525	11.2 16.1	3/4 20	32.9 10.0	4
72 1830	11.2 16.1	3/4 20	40.9 12.5	4
31 790	14.0 20.2	3/4 20	13.5 4.1	2
36 915	14.0 20.2	3/4 20	16.8 5.1	2
48 1220	14.0 20.2	3/4 20	24.7 7.5	3
60 1525	14.0 20.2	3/4 20	32.7 9.9	4
72 1830	14.0 20.2	3/4 20	40.7 12.4	4

FM NOTES

- The Series AH2 hose has been tested and Approved by FM Global for use in wet, dry and preaction systems per NFPA 13, 13R, and 13D and FM data sheets 2-0, 2-5, and 2-8. FM 1637 standard for safety include, but are not limited to, pressure cycling, corrosion resistance, flow characterisitics, vibration resistance, leakage, mechanical and hydrostatic strength.
- EXAMPLE: A 48-inch hose installed with two 30˚ bends and two 90˚ bends is permitted and considered equivalent to the data in the table shown above. In this example, the total number of degrees is 240˚, which is less than the allowable 270˚.

5.3 PERFORMANCE – FRICTION LOSS DATA

Series AH2 and AH2-CC Braided Hose
Style AB2, AB4, AB5, AB7, AB7 Adj., AB8, AB10, AB11 and AB12 Brackets

Length of Stainless Steel Flexible Hose mm inches	Outlet Size DN inches	Equivalent Length of steel pipe according to EN 10255 DN 25 (33,7 x 3,25) meters feet	Maximum Number of 90° Bends at 3"/76.2mm Bend Radius
790 31	DN15 1/2 DN20 3/4	5.5 18.0	3
915 36	DN15 1/2 DN20 3/4	6.4 21.0	3
1220 48	DN15 1/2 DN20 3/4	8.5 27.9	3
1525 60	DN15 1/2 DN20 3/4	10.7 35.1	4
1830 72	DN15 1/2 DN20 3/4	12.8 42.0	4

VdS Ceiling Manufacturers List

AB2, AB7, AB10 ,AB11

1. AMF
2. Armstrong
3. Chicago Metallic
4. Dipling
5. Durlum
6. Geipel
7. Gema-Armstrong
8. Hilti
9. Knauf
10. Lafarge
11. Linder
12. Odenwald
13. Richter
14. Rigips
15. Rockfon Pagos
16. Suckow & Fischer
17. USG Donn

AB4

No specific approval

AB5, AB8

1. Hilti
2. Knauf
3. Lafarge
4. Lindner
5. Rigips

5.3 PERFORMANCE – FRICTION LOSS DATA

Series AH2 and AH2-CC Braided Hose Style AB2, AB3, AB4, AB5, AB7, AB8, and AB10 Brackets

LPS 1261: Issue 1.2
Cert/LPCB Ref. 104/01
104/04

Length of Stainless Steel Flexible Hose mm inches	Outlet Size mm inches type	Equivalent Length of steel pipe according to EN 10255 DN 25 (33,7 x 3,25) meters feet	Maximum Number of 90º Bends at 3"/76.2mm Bend Radius
790 31	15mm 1/2 Straight 20mm 3/4 Straight	1.8 6.0	2
915 36	15mm 1/2 Straight 20mm 3/4 Straight	3.6 11.9	3
1220 48	15mm 1/2 Straight 20mm 3/4 Straight	4.3 14.0	3
1525 60	15mm 1/2 Straight 20mm 3/4 Straight	4.1 13.6	3
1830 72	15mm 1/2 Straight 20mm 3/4 Straight	5.5 18.1	3

Series AH2 Braided Hose Style AB2, AB3, AB4, AB5, AB7, AB8, AB10 and AB12 Brackets

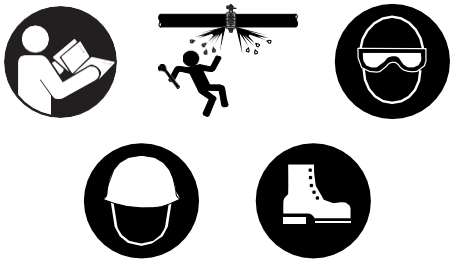
Length of Flexible Hose mm inches	Equivalent Length of 1"/33.7mm Sch. 40 Pipe	
	Straight Configuration meters feet	Bend Configuration meters feet
790 31	0.87 2.9	2.70 8.9
915 36	1.00 3.3	2.80 9.2
1220 48	2.23 7.3	4.66 15.3
1525 60	2.90 9.5	6.5 21.3
1830 72	3.31 10.9	7.16 23.5

CCCF NOTE

- Friction loss data is in accordance with GB5135.16 tested at a flow rate of 114 liters per minute (30 gallons per minute).

6.0 NOTIFICATIONS

⚠ WARNING



- **Read and understand all instructions before attempting to install any Victaulic products.**
- **Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.**
- **Wear safety glasses, hardhat, and foot protection.**

- **These products shall be used only in fire protection systems that are designed and installed in accordance with current, applicable National Fire Protection Association (NFPA 13, 13D, 13R, etc.) standards, or equivalent standards, and in accordance with applicable building and fire codes. These standards and codes contain important information regarding protection of systems from freezing temperatures, corrosion, mechanical damage, etc.**
- **The installer shall understand the use of this product and why it was specified for the particular application.**
- **The installer shall understand common industry safety standards and potential consequences of improper product installation.**

⚠ WARNING

- **It is the responsibility of the system designer to verify suitability of 300-series stainless steel flexible hose for use with the intended fluid media within the piping system and external environments.**
- **The effect of chemical composition, pH level, operating temperature, chloride level, oxygen level, and flow rate on 300-series stainless steel flexible hose must be evaluated by the material specifier to confirm system life will be acceptable for the intended service.**
- **It is the responsibility of the owner of a building or their authorized agent to provide the sprinkler system installer with any knowledge that the water supply might be contaminated with or conducive to the development of microbiologically influenced corrosion (MIC), including as required by NFPA 13. Failure to identify adverse water quality issues may affect the VicFlex product and void the manufacturer's warranty.**

Failure to follow these instructions could cause product failure, resulting in serious personal injury and/or property damage.

Victaulic VicFlex Series AH2 and AH2-CC Flexible Sprinkler Fittings may be painted provided the paint is compatible with stainless steel and zinc-plated carbon steel or ductile iron. Care should be taken to ensure the sprinkler and associated escutcheon or coverplate are not painted.

Victaulic VicFlex Series AH2 and AH2-CC penetrating through non-fire rated gypsum wall (drywall) will function as designed, provided the components are installed in accordance with the respective installation instructions referenced in this document.

7.0 REFERENCE MATERIALS – CHARACTERISTICS

VicFlex Maximum Load Values

Series AH2 Hose with 24" Bracket

Model Size	Actual Length ft m	Total Load lb	Total Load N	Max. Uniform Load lb/linear ft	Max. Uniform Load N/linear m
31/790	2.6 0.8	5.2	23	2.6	38
36/915	3 0.9	5.5	25	2.8	40
48/1220	4 1.2	6.3	28	3.1	46
60/1525	5 1.5	7.0	31	3.5	51
72/1830	6 1.8	7.7	34	3.9	57

Series AH2 Hose with 48" Bracket

Model Size	Actual Length ft m	Total Load lb	Total Load N	Max. Uniform Load lb/linear ft	Max. Uniform Load N/linear m
31/790	2.6 0.8	6.1	27	1.5	22
36/915	3 0.9	6.4	29	1.6	23
48/1220	4 1.2	7.2	32	1.8	26
60/1525	5 1.5	7.9	35	2.0	29
72/1830	6 1.8	8.7	39	2.2	32

Total Load is defined as the sum of the weights of the following:

- water-filled flexible sprinkler hose with threaded end fittings, including a typical fire sprinkler
- bracket assembly (any applicable Victaulic bracket model of the relevant associated size)

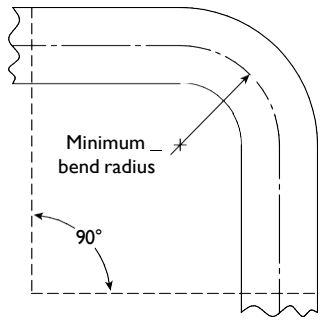
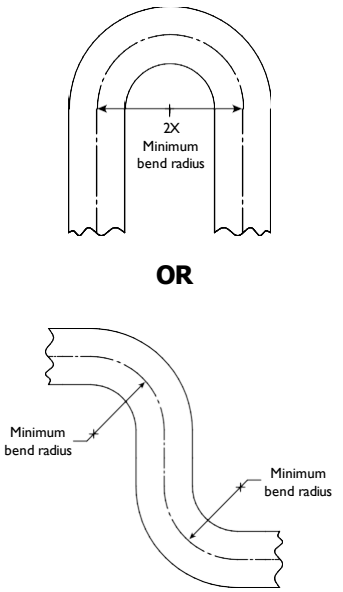
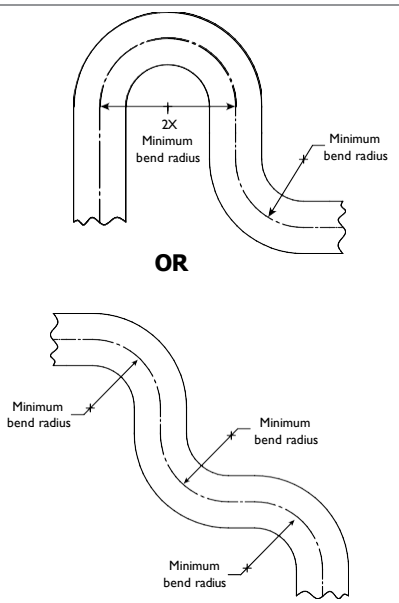
ASTM C 635: Suspension System Load-Carrying Capabilities (excerpted)

Suspension System	Actual Length ft/m	Min. Allowable Uniform Load lb/linear ft	Min. Allowable Uniform Load N/linear m
Direct Hung	Light	5.0	75.7
	Intermediate	12.0	181.0
	Heavy	16.0	241.7

SUMMARY: All direct-hung suspension system duty classifications per ASTM C 635 are able to withstand the maximum water-filled weight of the *VicFlex* sprinkler hose and bracket.

7.0 REFERENCE MATERIALS – CHARACTERISTICS (CONTINUED)

Flexible Hose In-Plane Bend Characteristics

One Bend	Two Bends	Three Bends
		

NOTE

For out-of-plane (three-dimensional) bends, care must be taken to avoid imparting torque on the hose.

I-VicFlex-AB1-AB2
I-VicFlex-AB3
I-VicFlex-AB4
I-VicFlex-AB5
I-VicFlex-AB7
I-VicFlex-AB12
I-VicFlex-ABBA
I-VicFlex-ABMM
I-RES

Reliable®

Sprinkler Cover Plates

Product Description

Cover plates are used to conceal fire sprinklers for decorative purposes. Sprinklers are specifically tested and listed with the compatible cover plate. Reliable fire sprinklers are only approved for use with the specific Reliable cover plate identified in the sprinkler Technical Bulletin. Sprinkler Identification Numbers (SINs) of compatible sprinklers are listed on the side of each cover plate.

Model G5

The Model G5 cover plate is a flat cover plate used with compatible pendent sprinklers. It provides a push-on or thread on connection into the sprinkler's cup.

- Plate Diameter: 3-5/16" (84 mm)
- Recommended hole diameter: 2-5/8" (67 mm)
- Protrusion from ceiling: 3/16" (4 mm)

Materials:

Plate: Finished brass
Skirt: Copper plated steel
Spring: Brass

Model G5

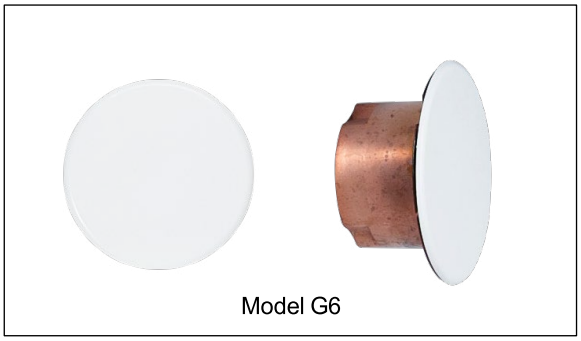
Model G6

The Model G6 cover plate is a flat cover plate used with compatible horizontal sidewall sprinklers. It provides a push-on connection to the sprinkler.

- Plate Diameter: 3-5/16" (84 mm)
- Recommended hole diameter: 2-5/8" (67 mm)
- Protrusion from ceiling: 3/16" (4 mm)

Materials:

Plate: Finished brass
Skirt: Copper plated steel
Spring: Brass



Model G6

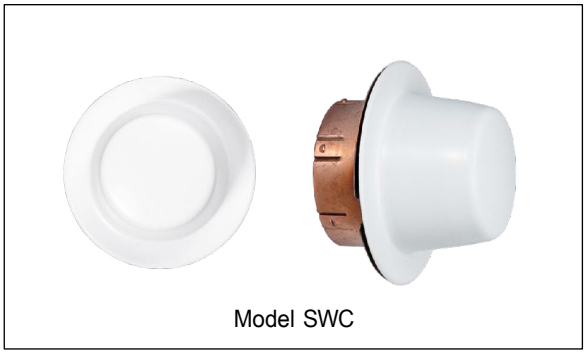
Model SWC and SWC-2

The Model SWC and SWC-2 cover plates are conical concealed cover plates used with compatible horizontal sidewall sprinklers. They provide a push-on or thread on connection into the sprinkler's cup. Model SWC cover plates use a solid plate and Model SWC-2 cover plates include slots in the plate required for proper operation of compatible fire sprinklers.

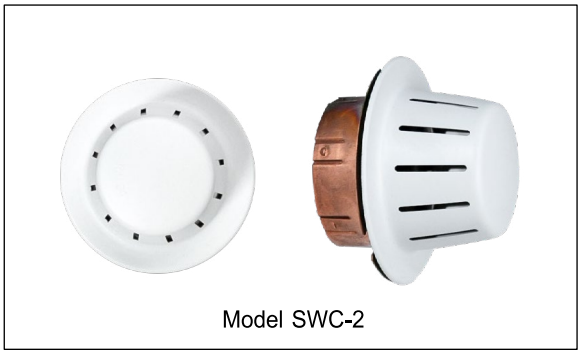
- Plate Diameter: 3-5/16" (84 mm)
- Recommended hole diameter: 2-5/8" (67 mm)
- Protrusion from ceiling: 1-5/8" (42 mm)

Materials:

Plate: Finished brass
Skirt: Copper plated steel
Springs: Steel



Model SWC



Model SWC-2

Model CCP

The Model CCP cover plate is a conical concealed cover plate used with compatible pendent sprinklers. It provides push-on or thread on connection into the sprinkler's cup.

- Plate Diameter: 3-5/16" (84 mm)
- Recommended hole diameter: 2-5/8" (67 mm)
- Protrusion from ceiling: 15/16" (23 mm)

Materials:

Plate: Finished brass
Skirt: Copper plated steel
Spring: Brass

Model CCP

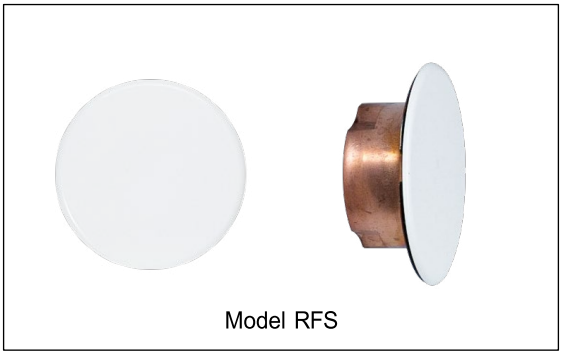
Model RFS

The Model RFS cover plate is a flat cover plate used with compatible horizontal sidewall sprinkler. It provides a push-on connection to the sprinkler.

- Plate Diameter: 3-5/16" (84 mm)
- Recommended hole diameter: 2-5/8" (67 mm)
- Protrusion from ceiling: 3/16" (4 mm)

Materials:

Plate: Finished brass
Skirt: Copper plated steel



Model RFS

Finishes

Reliable cover plates are available in the factory-applied finishes identified in Table A. Verify that the cover plate finish is listed with the applicable sprinkler prior to ordering. Finishes, other than those that are factory-applied by Reliable, are not permitted. Cover plates that are field painted, damaged, or missing must be replaced for proper operation of the fire sprinkler.

Custom Painted

Any Reliable cover plate can be supplied factory painted to match a submitted sample or color code. Custom color paint is semi- gloss sheen unless otherwise specified. Lighting can impact the appearance of colors; cover plates with custom color paint are intended to reasonably match the submitted sample in typical indoor lighting when viewed from below. Contact your local Reliable sales office for further information.

Available Cover Plate Finishes — **Table A**

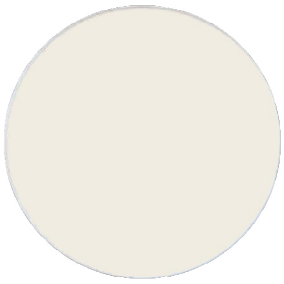
G5	G6 and RFS	CCP, SWC, and SWC-2
White Painted	White Painted	White Painted
Euro White Painted	Euro White Painted	Euro White Painted
Off White Painted	Off White Painted	Off White Painted
Black Painted	Black Painted	Black Painted
Custom Color Painted	Custom Color Painted	Custom Color Painted
Chrome	Chrome	Chrome
Satin Chrome	Satin Chrome	Satin Chrome
Bright Brass	Bright Brass	Bright Brass
Finished Bronze	Finished Bronze	
Printed Wood Grain (Table B)	Printed Wood Grain (Table C)	
Custom Printed	Custom Printed	
Stainless Steel Clad		

Cover Plate Temperature Ratings — **Table B**

Cover Plate Temperature	For Use with Sprinklers Rated As
135°F (57°C)	155°F (68°C), 165°F (74°C), and 175°F (79°C)
165°F (74°C)	212°F (100°C)

Note: Refer to approriate sprinkler technical bulletin to confirm selection of cover plate temperature rating.

Cover Plate Finish Samples **Table C**

 White	 Euro White	 Off White
 Black	 Chrome	 Satin Chrome
 Bright Brass	 Finished Bronze	 Stainless Steel Clad

Notes:

1. Images are for reference only; actual appearance may vary by lighting conditions.
2. Paint or any other coating applied over the factory finish will void all approvals and warranties.
3. Paint is semi-gloss, unless specified otherwise.
4. Stainless steel clad cover plates are Type 316 Stainless Steel on the finished side and C102 Copper Alloy on the back side.
5. Cover plates are not listed or approved as corrosion resistant.

Printed Wood Grain Finish Samples **Table D**

 White Wash	 Silver Birch	 Beige Birch
 Golden Pine	 Red Oak	 Warm Maple
 Red Cherry	 Dark Walnut	 Espresso
 Rustic Beige	 Weathered Grey	 Slate Grey

Custom Printed

Reliable G5, G6, and RFS cover plates can be custom printed to match a submitted sample. A 4-inch by 4-inch (100 mm by 100 mm) sample of the material to be matched must be submitted with the order. To help ensure quality, photographs and digital files will not be accepted. Lighting can impact the appearance of colors; custom printed cover plates are intended to reasonably match the submitted sample in typical indoor lighting when viewed from below. Contact your local Reliable sales office for further information.

Note: Reliable respects the rights of intellectual property owners and will not print cover plates with images protected by trademark or copyright.

P/N 9999970634