Montezuma Water Company

PO Box 817 28024 Road T
Dolores, CO 81323

To Whom it may concern:
Regarding Montezuma Water Company's Water Treatment Plant Expansion:

Please Include the Following items in our current AIS waiver:

No.	Product Description	Quantity
1	Pressure Reducing Valve, 6-inch, 165PSI	1
2	Butterfly Valve, 4-inch	1
3	Butterfly Valve, 6-inch	1
4	Pressure Relief Valve (Adjustable Relief Valve), ½-inch	1
5	Backflow Prevention (BFP), 6-inch w/BFG	1

Thank You

Steve Bowman
General Manager
Montezuma Water Company
steve@montezumawater.org
970-882-2226

PLUMMER

6/24/2025

Sent via email

Mr. [redacted]
[redacted]
State Engineer | State Environmental Coordination
U.S. Department of Agriculture
[redacted]
Missoula, MT 59808

Re: Montezuma Water Company Water Treatment Plant Expansion
AIS Exemption – Fire Protection Valves

Dear Mr. [redacted],

Plummer is requesting an AIS exemption on the following fire protection items listed in Section 21 05 00 of the Contract Documents:

- Pressure reducing valves
- Pressure relief valves
- Butterfly valves
- Backflow assembly

Plummer is aware of the proposed items shown in the table below the Market Research/ERG investigated/researched, and Plummer concurs that the items the Contractor stated they cannot use, truly cannot be used. There were items identified in the market research that the Contractor stated were 'unusable' for this project application, and Plummer concurs with the Contractor that the alternatives are unfit for the proposed use and/or are non-AIS compliant.

No.	Product Description	Quantity
1	Pressure Reducing Valve, 6-inch, 165PSI	1
2	Butterfly Valve, 4-inch	1
3	Butterfly Valve, 6-inch	1
4	Pressure Relief Valve (Adjustable Relief Valve), ½-inch	1
5	Backflow Prevention (BFP), 6-inch w/BFG	1

Please let us know if there is any additional information we can provide or questions we can answer. The Contractor has stated schedule implications and we request an expedited review of the exemption request.

1485 Florida Road, Suite C206
Durango, CO 81301
Phone 970.247.0724
Plummer.com

Respectfully,

PLUMMER

Kelly Fearney, PE
Project Manager

1485 Florida Rd., Suite C206
Durango, CO 81301
Phone 970.247.0724
Plummer.com

RESEARCH RESULTS FOR RURAL DEVELOPMENT WAIVER REQUEST FOR AMERICAN IRON AND STEEL REQUIREMENTS

1. Research Request Summary

Project Name	Water Treatment Plant Expansion
Utility Name	Montezuma Water Company
Project Location	Montezuma County, CO
Research Tracking Number	05_FY25
Project Type	Water
Research Type and Basis	Availability
Date Assigned	03/07/2025
Submittal Date	03/14/2025 (**Revision 3** submission 06/16/2025)

2. Product Information Summary

No.	Product Description	Quantity
1	Pressure Reducing Valve, 6-inch, 165PSI	1
2	Butterfly Valve, 4-inch	1
3	Butterfly Valve, 6-inch	1
4	Pressure Relief Valve (Adjustable Relief Valve), ½-inch	1
5	Backflow Prevention (BFP), 6-inch w/BFG	1

3. Project Description and Reason for Request

The Montezuma Water Company's Water Treatment Plant Expansion Project (the "Project") involves upgrades and improvements to the facility, as well as expansions to the existing water treatment plant. These include enhancements to the Raw Water Pump Station, Pre-treatment and Filtration Systems, Disinfection System, Corrosion Control System, and Finished Water Pumping System.

This project requires the installation of a pressure reducing valve, pressure relief valve, butterfly valves, and backflow preventer assembly (valves and backflow assembly) that meet AIS requirements, as specified in Section 2.

The applicant requested their subcontractor, Cooper Fire Protection Services, Inc., to research and locate the requested products. In response, the subcontractor reached out to three suppliers—Viking Supply, Albuquerque Industrial, and Reliable Automatic Sprinkler Co.—regarding the valves and backflow assembly. All three suppliers informed the subcontractor that they were unable to provide AIS compliant products that met the project's requirements.

ERG observed that the technical specifications for the requested product, provided by the state engineer, were specific to the Victaulic and Ames valve models, which are not AIS compliant. However, USDA Rural Development (RD) has stated that any vendor valves meeting these project specifications and are AIS compliant will be deemed acceptable.

4. Research and Results

Eastern Research Group (ERG) staff reached out to thirteen (13) companies, including the three (3) contacted by the applicant. Initial responses were received from all thirteen companies.

Eight (8) manufacturers and suppliers (Flomatic, Zurn, DeZURIK, Powell Valves, R.M. Headlee, Apollo Valves, Reliable Automatic Sprinkler Co., and Viking Supply) indicated they could not provide AIS compliant valves that meet project specifications.

Three (3) suppliers (Rocky Mountain Valves, Pipestone Equipment, and Southwest Valve) have confirmed that they can provide AIS compliant butterfly and pressure reducing valves that closely align with the project specifications (see Section 6 Table below for further details). To evaluate whether the vendors' proposed models meet the project requirements, ERG reached out to the RD state engineer for additional product-specific specifications, including information on valve end connections and pressure ratings for each requested product. **Revision 1:** On 04/07/2025, ERG received response from the state engineer on the end connections, and pressure ratings of all requested products. According to the new information, the contractor will accept 6-inch pressure reducing valve in flanged or grooved end connection, while the project specification requires the requested butterfly valves to be grooved as an end connection. After further review of the information, and vendor's initial communication, it appears that Rocky Mountain Valves will be the only supplier who can provide 6-inch pressure reducing valve that meets project specification. ERG reached out to Rocky Mountain Valves, confirmed that they will be able to provide AIS compliant 6-inch pressure during valve in flanged end connection that matches all project specifications. For the remaining two suppliers (Pipestone Equipment, and Southwest Valve), ERG reviewed the new information provided by the state engineer and did not further communicate either of them. Because both of the supplier's initial communication indicated that their offered butterfly valves are either flanged or MJ end connection, while the project requires the butterfly valves to have a grooved end connection. Therefore, ERG decided not to further communicate with these suppliers based on previous communications.

One (1) supplier (Grainger) indicated that they could offer some of the requested products (butterfly and pressure reducing valves) that closely align with the project specifications, but they could not verify the AIS compliance of these products.

None of these twelve (12) companies could offer ½-inch pressure relief valve and 6-inch backflow preventer assembly that meet project specifications.

The remaining supplier (Albuquerque Windustrial) requested product specifications to confirm the availability and AIS compliance with the products. ERG provided the requested documents and is awaiting feedback at the time of this report writeup.

Revision 2: On June 9, 2025, ERG participated in a meeting with the project proponents, including the primary contractor (Aslan) and subcontractors (Plummer, Cooper Fire pro), to further evaluate and define the specifications for a 6-inch pressure reducing valve that meets project requirements. Following the discussion, ERG identified two potential valve models that may satisfy the technical criteria: Watts Model LFM115 and Watts Model 910GF. During the meeting, project proponents expressed a preference for 6-inch pressure reducing valves with grooved end connections and an operating pressure rating not exceeding 175 psi, as per the NFPA requirements of the sprinkler system.

To assess product compliance, ERG initiated further research to confirm whether the identified Watts models are AIS-compliant and meets project specifications. ERG contacted both the manufacturer, Watts, and the regional supplier, Repmasters (Watts' representative in Colorado).

Watts representatives confirmed that neither the LFM115 nor the 910GF models are AIS-compliant. Additional technical details are as follows:

- Watts Model LFM115: Features flanged end connections and supports a higher operating pressure range than required.
- Watts Model 910GF: Offers grooved end connections and an operating pressure rating aligned with project specifications.

Based on the above information, ERG concludes that Watts model 910GF, although not AIS compliant, matches the technical specification required by the project including end connections and operating pressure of maximum 175 PSI. Repmasters verified the information provided by Watts and noted that the lead time for both non-AIS compliant products is approximately 6 to 8 weeks.

A summary of product specifications provided by the manufacturer and supplier is included below:

Model number	**Is this model AIS compliant?**	**Size 6"?**	**Operating Pressure rating (Operating pressure range needs to be no more than 175 PSI)**	**End connection – flanged or grooved?**	**Lead time?**
Watts LFM115	No	Yes	30-300 PSI	Flanged	6-8 Weeks
Watts 910GF	No	Yes	50-165 PSI	Grooved	6-8 Weeks

When contacting the manufacturers, ERG described the AIS certification process to ensure that domestic products, if available, would include a manufacturer's AIS certification. Additional details and information obtained are included in Section 6, Table below.

Previous Waivers for Similar Products

Over the past three years, EPA has approved the following waivers for 4-inch and 6-inch butterfly valves:

- October 01, 2024, EPA approved a waiver for 6-inch butterfly valves for Bloomington & Normal Water Reclamation District in Bloomington, Illinois. The waiver was approved because no known domestic manufacturers produced a product that could meet the project's specifications. See more at https://www.epa.gov/system/files/documents/2024-10/waiver-decision-memo-bloomington-valves.pdf
- December 15, 2022, EPA approved a waiver for 4-inch butterfly valves for City of Delphos, Ohio. The waiver was approved because no known domestic manufacturers produced a product that could meet the project's specifications. See more at https://www.epa.gov/system/files/documents/2022-12/Delphos%20Butterfly%20Decision%20Memo.pdf

Over the past three years, EPA has approved the following waivers for pressure relief valves:

- April 19, 2023, EPA approved a waiver for ¼-inch, 2-inch, and 3-inch pressure regulating valves and 1 ¼-inch and 1 ½-inch pressure relief/safety valves for City of Roseville, California. The waiver was approved because no known domestic manufacturers produced a product that could meet the project's specifications. See more at https://www.epa.gov/system/files/documents/2023-04/Waiver_Decision_Memo-RosevilleCA.pdf

- November 18, 2022, EPA approved a waiver for 6-inch pressure relief valves for City of Greenfield, Indiana. The waiver was approved because no known domestic manufacturers produced a product that could meet the project's specifications. See more at www.epa.gov/system/files/documents/2022-11/Waiver_Decision_Memo_GreenfieldIN-PRVs.pdf

Although multiple waivers have been approved for different sizes of pressure relief valves over the past three years, no waiver has been approved for ½-inch pressure relief valve.

Over the past two years, EPA has approved the following waivers for backflow preventor product items.

- December 17, 2024, EPA approved a waiver for 4-Inch, 6-Inch, and 8-Inch reduced pressure zone backflow preventers for Hampton Roads Sanitary District, Virginia. The waiver was approved because no known domestic manufacturers produced a product that could meet the project's specifications. See more at www.epa.gov/system/files/documents/2024-12/waiver-memo-hampton-roads-va.pdf

- November 13, 2024, EPA approved a waiver for 4-Inch double check valve assembly backflow preventers for Charlotte County, Florida. The waiver was approved because no known domestic manufacturers produced a product that could meet the project's specifications. See more at https://www.epa.gov/system/files/documents/2024-11/ais-waiver-memo-charlotte-county-fl.pdf

- November 07, 2024, EPA approved a waiver for 10-inch RPZ backflow preventers for the Hampton Roads Sanitation District, Virginia. The waiver was approved because no known domestic manufacturers produced a product that could meet the project's specifications. See more at https://www.epa.gov/system/files/documents/2024-11/ais-decision-memo_hrsd.pdf

- August 09, 2024, EPA approved a waiver for 4, 8, and 12-inch RPZ backflow preventers for the City of Hillsboro and Tualatin Valley Water District in Oregon. The waiver was approved because no known domestic manufacturers produced a product that could meet the project's specifications. See more at https://www.epa.gov/system/files/documents/2024-08/waiver-decision-memo_tvwd_backflow-preventers.pdf

- May 21, 2024, EPA approved a waiver for flanged backflow preventers for the City of Memphis in Memphis, Tennessee. The waiver was approved because no known domestic manufacturers produced a product that could meet the project's specifications. See more at https://www.epa.gov/system/files/documents/2024-05/waiver-decision-memo-memphis-flanged-backflow-preventers.pdf

- February 26, 2024, EPA approved a waiver for 4-inch to 6-inch double check valve backflow preventers for Johnston County, North Carolina. The waiver was approved because no known domestic manufacturers produced a product that could meet the project's specifications. See more at https://www.epa.gov/system/files/documents/2024-03/ais-waiver-approval-johnston-county-decision-memo.pdf

- January 11, 2024, EPA approved a waiver for backflow preventers for the East County Advanced Water Purification Joint Power Authority, California. The waiver was approved because no known domestic manufacturers produced a product that could meet the project's specifications. See more at https://www.epa.gov/system/files/documents/2024-01/waiver-decision-memo_east-county-joint-power-authority_2.pdf

- October 27, 2023, EPA approved a waiver for 6-inch RPZ backflow preventers for the City of Hillsboro and Tualatin Valley Water District, Oregon. The waiver was approved because no known domestic manufacturers produced a product that could meet the project's specifications. See more at https://www.epa.gov/system/files/documents/2023-10/decision-memo_tvwd_backflow-preventers.pdf

- September 26, 2023, EPA approved a waiver for 2-inch backflow preventers for the City of Fairbury, Nebraska. The waiver was approved because no known domestic manufacturers produced a product that could meet the project's specifications. See more at https://www.epa.gov/system/files/documents/2023-09/fairbury_ne_backflow_waiver.pdf

- June 21, 2023, EPA approved a waiver for backflow preventers for the City of Covington, Virginia. The waiver was approved because no known domestic manufacturers produced a

product that could meet the project's specifications. See more at https://www.epa.gov/system/files/documents/2023-06/Waiver%20Availability%20Decision%20Memo%20CovingtonVA.pdf

- March 28, 2023, EPA approved a waiver for 1 ½-inch to 8-inch backflow preventers for the Salt Lake City Department of Public Utilities in Salt Lake City, Utah. The waiver was approved because no known domestic manufacturers produced a product that could meet the project's specifications. See more at https://www.epa.gov/system/files/documents/2023-04/SLC%20UT-WIFIA-AISWaiverDecisionMemo.pdf

5. Conclusions

Based on the research conducted by ERG, eleven (11) of the thirteen (13) companies (Flomatic, Zurn, DeZURIK, Powell Valves, R.M. Headlee, Apollo Valves, Reliable Automatic Sprinkler Co., Viking Supply, Grainger, Southwest Valve, and Pipestone Equipment) contacted indicated that they could not provide an AIS compliant valves and backflow assembly that meet project specifications. **Revision 1:** One (1) supplier, Rocky Mountain Valves, indicated that they will be able to provide AIS compliant 6-inch pressure reducing valve with flanged end connection that meets project specifications (refer to the Section 6 Table below for additional details). ERG is also awaiting feedback from the one remaining company (Albuquerque Windustrial) at the time of this revised report writeup. **Revision 2:** None of the two (2) additionally contacted companies (Watts, and Repmasters) will be able to provide AIS compliant 6-inch pressure reducing valve that meets project specifications. However, Repmasters will be able to offer a non AIS compliant 6-inch pressure reducing valve (Watts model 910GF), that matches the project's technical specifications including end connection and pressure rating.

6. Research Notes

The manufacturers and suppliers ERG contacted and the information we obtained are provided in the following table.

Manufacturer/ Supplier	Communications	Response	Lead Time	Can Provide AIS Certification
Watts	Call: Richard (last name not provided) Technical Product Support 978-688-1811 (Ext. 2)	**Revision 2**: ERG participated in a follow-up meeting with the project proponents to gather additional product-specific requirements for the 6-inch pressure reducing valve, focusing on end connections and acceptable operating pressure ranges. During the meeting, the	N/A	No

Manufacturer/ Supplier	Communications	Response	Lead Time	Can Provide AIS Certification
		proponents indicated a preference for a 6-inch valve with grooved end connections and an operating pressure not exceeding 175 PSI. Based on this input, along with ERG's prior research, two Watts models—LFM115 and 910GF—were identified as potential options. To confirm their suitability, ERG contacted the manufacturer, Watts, for additional technical information. Watts representatives confirmed that both models are available in 6-inch sizes but noted that neither is AIS-compliant. The LFM115 model features flanged ends and a higher operating pressure range, making it incompatible with the project specifications. In contrast, the 910GF model includes grooved end connections and an operating pressure range of 50–165 PSI, which falls within the required limits. However, Watts was unable to provide lead time information and advised ERG to contact the local supplier for availability and delivery details.		
Repmasters (local supplier of Watts)	Email: Andrew Cook Inside Sales acook@repmasters.com	**Revision 2:** ERG contacted the local supplier to verify product information provided by Watts, and to obtain lead time information. The supplier confirmed that they do not offer AIS compliant 6-inch	6-8 weeks (for the non AIS-compliant Watts model)	No

Manufacturer/ Supplier	Communications	Response	Lead Time	Can Provide AIS Certification
		pressure reducing valve in Watts model that meets project specifications. The supplier verified the information provided by the manufacturer (refer to the section above), Watts, and provided lead time information.		
Rocky Mountain Valves (supplier of M&H valve)	Email: Hunter Bennion Sales 801-438-1038 hunter@rockymtvalves.com	The supplier offers AIS compliant 6-inch pressure reducing valve that meets project specifications. The sales representative stated that he carefully reviewed the specifications and plans provided. However, based on his review he stated that these valves are intended for connection to Victaulic groove-ended pipe. However, the supplier's typical products are either flanged or use mechanical joint fitting connections. Regarding the pressure relief valve, they do not typically offer valves of this small size. However, they are capable of providing an AIS compliant 6-inch pressure relief valve in a flanged configuration, their offered model is Watts Series LFM115. **Revision 1:** ERG contacted the RD state engineer to request additional product-specific	2-4 Weeks	No

Manufacturer/ Supplier	Communications	Response	Lead Time	Can Provide AIS Certification
		specifications, including details such as end connections and pressure ratings for each of the requested products. State Engineer provided a new information on the valves indicating that the contractor will accept 6-inch pressure reducing valve in flanged or grooved end connection, while the butterfly valve has to be in grooved end connection to meet project specification. ERG further reached out to Rocky Mountain Valves ensuring the remaining product specification details provided by state engineer matches the product offered by the supplier. Rocky Mountain Valves confirmed that their AIS-compliant 6-inch pressure reducing valve (Watts Series LFM115) is in flanged end connection and would meet all required project specifications. **Revision 2:** The project proponents indicated that, upon further communication with the sales representative, it was confirmed that Watts does not offer AIS compliant 6-inch pressure reducing valve.		
Pipestone Equipment	Call and email: Darren Tessier Sales	The supplier does not offer AIS compliant valves and backflow	N/A	No

Manufacturer/ Supplier	Communications	Response	Lead Time	Can Provide AIS Certification
(supplier, CLA-VAL)	dtessier@pipestoneeq.com	assembly that meet project specifications. The supplier stated that their butterfly valves are AIS compliant valves with flanged or mechanical joint ends. Additionally, their pressure control valves are flanged ends or threaded in smaller sizes (3-inch and below). Their backflow assembly is not AIS compliant. **Revision 1:** ERG has contacted the RD state engineer to request product-specific specifications, including details such as end connections and pressure ratings for each of the requested products. Later, ERG received and reviewed the new information from the state engineer and did not further communicate with Pipestone Equipment because their initial communication indicated that their butterfly valves are flanged or MJ end. New information from the SE indicated that the contractor will accept the butterfly valves in only grooved end connection. Therefore, ERG did not further communicate with this vendor. Additionally, their pressure control valves are in smaller sizes (3-inch and below), which does not meet the project specification.		

Manufacturer/ Supplier	Communications	Response	Lead Time	Can Provide AIS Certification
Southwest Valve (supplier, Mueller and Pratt)	Call and email: Gary Boehler Sales 303-916-0064 g.boehler@southwestvalve.com Wayne Ward US Western District Supervisor and Territory Manager WWard@muellerwp.com	The supplier does not offer AIS compliant valves and backflow assembly that meet project specifications. The supplier proposed an alternative butterfly valve, which is their AIS compliant Pratt Model A (https://www.henrypratt.com/products/butterfly-valves/fire-protection/indicating/) with flanged and mechanical joint ends with a 250 psi pressure rating. **Revision 1:** ERG has contacted the RD state engineer to request product-specific specifications, including details such as end connections and pressure ratings for each of the requested products. Later, ERG received and reviewed the new information from the state engineer and did not further communicate with Southwest Valve because their initial communication indicated that their butterfly valves are flanged or MJ end. New information from the SE indicated that the contractor will accept the butterfly valves in only grooved end connection. Therefore, ERG did not further communicate with this vendor.	N/A	No

Manufacturer/ Supplier	Communications	Response	Lead Time	Can Provide AIS Certification
Zurn	Call and email: James Cruz Product Compliance Engineer 805-536-3054 James.Cruz@zurn.com wilkinscs@zurn.com	The manufacturer does not offer AIS compliant valves and backflow assembly that meet project specifications. The manufacturer indicated that although they manufacture these types of valves, they are typically not AIS compliant. Upon request, he provided a list of alternative non-domestic products and their model numbers, as specified in Table 1, Attachment.	Lead time for alternative 6-inch pressure reducing valve is 4 weeks; ½-inch pressure relief valve is 3-4 business days, and 6-inch backflow assembly is 3-4 business days, ERG is waiting feedback on the lead time of alternative 4-inch and 6-inch BFV models at the time of this report writeup.	No
Grainger (supplier)	Email: Bryan Boeckel Sales bryan.boeckel@grainger.com	The manufacturer does not offer AIS compliant valves and backflow assembly that meet project specifications. The manufacturer indicated that he could offer some of the requested products (6-inch pressure reducing valve and 6-inch butterfly valve) that closely align with the project specifications, but he could not verify the AIS compliance of these products. The list of alternative products provided, is as follows: • 6-inch Watts pressure reducing valve, flanged (WATTS-M115-6FL)	The representative indicated an account number with Grainger was necessary to obtain lead time information.	No

Manufacturer/ Supplier	Communications	Response	Lead Time	Can Provide AIS Certification
		• 6-inch Electric Actuated Butterfly Valve, Wafer, EPDM, 24 VDC (Valworx-5670)		
Flomatic	Email: Nick Farrara President 518-832-6767 Nick@Flomatic.com	The manufacturer does not offer AIS compliant valves and backflow assembly that meet project specifications. The president indicated that Flomatic's butterfly valves are not AIS compliant. He also mentioned that the pressure reducing valves that are specified appear to be designed specifically for Victaulic connection units so that would only be strictly available from Victaulic.	N/A	No
DeZURIK	Email: Steve Symanietz Municipal Sales Support Manager 320-259-2355 Steve.Symanietz@DeZURIK.com	The manufacturer does not offer AIS compliant valves and backflow assembly that meet project specifications. Upon reviewing the specifications and plan for the products, the manufacturer indicated that DeZURIK does not make this style of butterfly valves.	N/A	No
Powell Valves	Call and email: Emery Cowart Nerl Inside Sales 513-852-2010 ecowart@powellvalves.com	The manufacturer does not offer AIS compliant valves and backflow assembly that meet project specifications.	N/A	No

Manufacturer/ Supplier	Communications	Response	Lead Time	Can Provide AIS Certification
R.M. Headlee (supplier)	Call and email: Mike Weronski Inside Sales 716-662-9813 mweronski@rmheadlee.com	The supplier does not offer AIS compliant valves and backflow assembly that meet project specifications.	N/A	No
Apollo Valves	Call and email: Tony Byrnes Inside Sales Lead 704-841-6080 anthony.byrnes@aalberts-ips.com	The manufacturer does not offer AIS compliant valves and backflow assembly that meet project specifications.	N/A	No
Reliable Automatic Sprinkler Co. (supplier)	Call and email: Josh 877-440-2598 mcastellano@reliablesprinkler.com Michael Woodie Regional Sales Representative miwoodie@reliablesprinkler.com	The supplier does not offer AIS compliant valves and backflow assembly that meet project specifications. They indicated their products are not AIS or Buy America compliant.	N/A	No
Viking Supply (supplier)	Call and email: Lori Sales 303-576-0665 denver@supplynet.com Amber M Customer Service Representative Viking Supply – Denver	The supplier does not offer AIS compliant valves and backflow assembly that meet project specifications. They indicated their products are not AIS compliant. They also indicated that their ½" adjustable pressure relief valve is rated for 75-175 psi, while the project's Victaulic ½-inch pressure relief valve has	N/A	No

Manufacturer/ Supplier	Communications	Response	Lead Time	Can Provide AIS Certification
	303-576-0665 Ext: 2724 amartinez@supplynet.com	set pressure range of 175-310 psi.		
Albuquerque Windustrial (supplier)	Call and email: Chris Sales 505-821-2400 ccmattson@winsupply.com	The supplier requested project specifications via email to confirm the availability and AIS compliance with the products. ERG provided the requested documents and is awaiting feedback at the time of this report writeup.	N/A	No

Notes and Disclaimer

Review prepared under USDA contract GS-00F-079CA. For additional information on American Iron and Steel requirements, see: https://www.rd.usda.gov/water-and-waste-disposal-programs-american-iron-and-steel-requirement.

This review does not specify whether any waiver request should be approved or denied but provides an assessment of the claims, facts, and issues that may be used by RD when deciding whether to issue a waiver.

Attachment

Table 1: Alternatives valve models offered by Zurn

Description	Model	Notes	Lead time
Pressure Reducing Valve 6” (165PSI)	ZW209	Not AIS compliant	4 weeks
Butterfly Valve 4” - with Weatherproof Actuator	Model 49	Not AIS compliant	Waiting to hear back from Zurn
Butterfly Valve 6” - with Weatherproof Actuator	Model 49	Not AIS compliant	Waiting to hear back from Zurn
Pressure Relief Valve - Adjustable Relief Valve (ARV) ½” (175PSI-310PSI)	P4000A	AIS exempt (it is not predominantly constructed of iron or steel)	3-4 business days
Backflow Prevention 6" C400 w/BFG (Reduced Pressure Zone Assemblies)	375AST	Not AIS compliant	3-4 business days

INFORMATIONAL CHECKLIST FOR PROJECT SPECIFIC WAIVER REQUEST

Please reference the specifications of the product.

Information	☑	Note
General • Waiver request includes the following information: See attached AIS Exemption Data Table as Per Example on Page 2 of the Waiver Request — ✓Description of the foreign and domestic construction materials — ✓Unit of measure — ✓Quantity — ✓Price — ✓Date that product is needed (e.g. time of delivery or availability) — ✓Location of the construction project — ✓Name and address of the proposed supplier — ✓A detailed justification for the use of foreign construction materials • Waiver request was submitted according to the instructions in the memorandum • ✓Assistance recipient made a good faith effort to solicit bids for domestic iron and steel products, as demonstrated by language in requests for proposals, contracts, and communications with the prime		Included info on spreadsheet SEE RFI 03
Cost Waiver Requests • Waiver request includes the following information: — Comparison of overall cost of project with domestic iron and steel products to overall cost of project with foreign iron and steel products (Exhibit J) — Relevant excerpts from the bid documents used by the contractors to complete the comparison — Supporting documentation indicating that the contractor made a reasonable survey of the market, such as a description of the process for identifying suppliers and a list of contacted suppliers		N/A
Availability Waiver Requests • Waiver request includes the following supporting documentation necessary to demonstrate the availability, quantity, and/or quality of the materials for which the waiver is requested: — ✓Supplier information or pricing information from a reasonable number of domestic suppliers indicating availability/delivery date for construction materials — ✓Documentation of the assistance recipient's efforts to find available domestic sources, such as a description of the process for identifying suppliers and a list of contacted suppliers. — ✓Date that product is needed (e.g. time of delivery or availability) to provide justification Product is required to arrive by 4/1/25 in order to meet project schedule — Relevant excerpts from project plans, specifications, and permits indicating the required quantity and quality of construction materials Quantity & Quality of Construction were determined by Fire Protection System Design and Governing NFPA Standards • Waiver request includes a statement from the prime contractor and/or supplier confirming the non-availability of the domestic construction materials for which the waiver is sought • Has the State received other waiver requests for the materials described in this waiver request, for comparable projects?	✓	Included info in attached emails. See attached AIS Exemption Data Table which includes product specifics and quantity required per design. SEE RFI 03

Description	Qty.	Unit	Price	Date Needed	Project Location	Supplier Name	Supplier Address
Victaulic Pressure Reducing Valve 6 867-42T-20 Set at 165PSI	1	Ea.	$6,888.02	4/1/2025	Dolores, CO	Victaulic	4901 KESSLERSVILLE ROAD EASTON, PA 18040
Victaulic Butterfly Valve 4 707C	1	Ea.	$469.23	4/1/2025	Dolores, CO	Victaulic	4901 KESSLERSVILLE ROAD EASTON, PA 18040
Victaulic Butterfly Valve 6 705	1	Ea.	$413.84	4/1/2025	Dolores, CO	Victaulic	4901 KESSLERSVILLE ROAD EASTON, PA 18040
Victaulic Pressure Relief Valve 1/2 ARV	1	Ea.	$95.22	4/1/2025	Dolores, CO	Victaulic	4901 KESSLERSVILLE ROAD EASTON, PA 18040
Ames BFP 6" C400 w/ BFG	1	Ea.	$4,257.59	4/1/2025	Dolores, CO	American Backflow Products Company	7580 West Tennessee Street Tallahassee FL 32304

COOPER
Fire Protection Services

Excellence in
Fire Protection

604 W. Pinon Street
Farmington, NM 87401

Phone: (505) 327-0474
Fax: (505) 325-4187

To whom it may concern,

In trying to meet the AIS requirements for this project we have exhausted every manufacturer including Grinnell, Mueller, Milwaukee, Reliable Automatic Sprinkler Co, Viking Corporation, Globe, Tyco Fire Products and Victaulic Company of America, for the butterfly valves, pressure reducing valve, pressure relief valve, and backflow. We have requested these items be AIS compliant from Victaulic, Reliable Automatic Sprinkler, Viking, Albuquerque Windustrial, and none of the listed can provide any of the valves requested.

The listed Victaulic valves: Valve Pressure Reducing 6 Victaulic 867-42T-20 Set at 165 PSI, Victaulic Valve Butter Fly Valve 4 707C, Victaulic Valve Butter Fly Valve 6 705 & Victaulic Pressure Relief Valve 1/2 Victaulic ARV are not AIS compliant according to Victaulic. We have exhausted all avenues for these valves to be substituted with another brand and are asking for approval to install the Victaulic. They have been an established fire protection/life safety material supplier since 1919 and are based out of Easton, Pennsylvania. Victaulic provides the highest quality products in the fire protection industry. The other valve we are having issues obtaining an AIS certificate for is the backflow Ames/Watts is declaring that no manufacturer makes a large diameter backflow compliant to AIS.

Please see attached data sheets for the valves we would like to install. Please also consider the link below showing the availability issue with the same material from other contractors.

https://www.epa.gov/cwsrf/american-iron-and-steel-requirement-approved-project-waivers

Thank you,

Tanner Cooper | *Project Manager*

NICET #16306

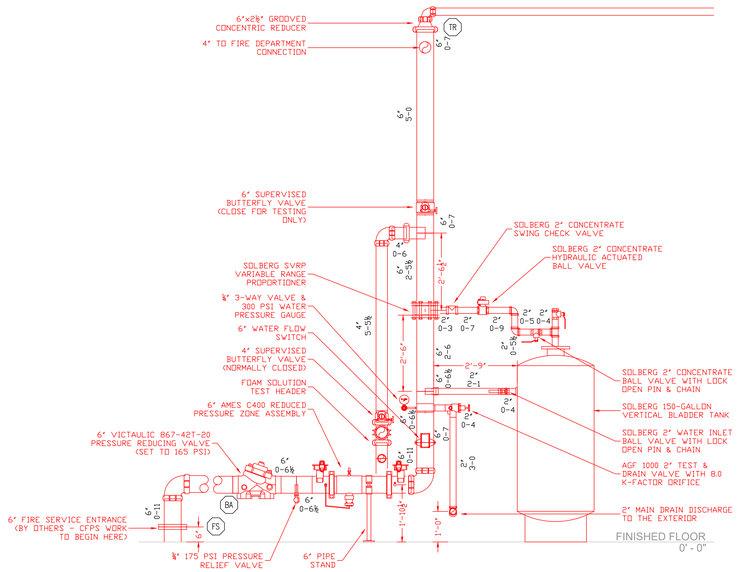
Water-Based Systems I, Fire Alarm Systems I

Cooper Fire Protection Services, Inc.

Office: (505) 327-0474 Fax: (505) 325-4187 Cell: (832) 710-0153
tanner.cooper@cooperfirepro.com | www.cooperfirepro.com

Connect with us

Seek to add Value and Solve Problems



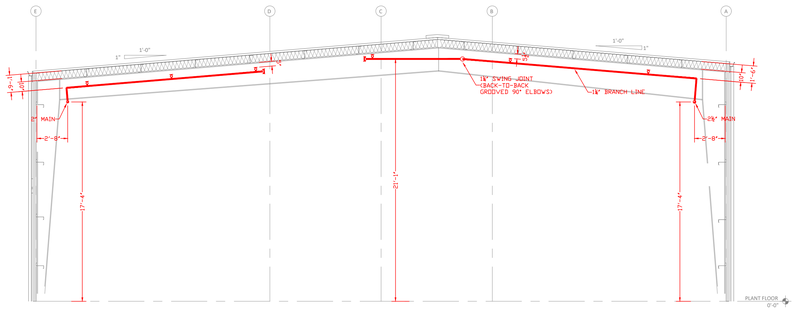
WATER-BASED FIRE PROTECTION RISER DETAIL

SCALE 1/2" = 1'-0"

Hydraulic Calculation Data
Design Area Number: 1 Design Area Location: Liquid Chemical Storage 02 Hazard/Occupancy: Ordinary Hazard Group 2 Design Density: 0.20 gpm/ft² Design Area: 1,447 Number of Sprinklers in Design Area: 13
System Flow: 639.50 gpm System Pressure: 94.96 psi Hose Allowance (Included): 250 gpm

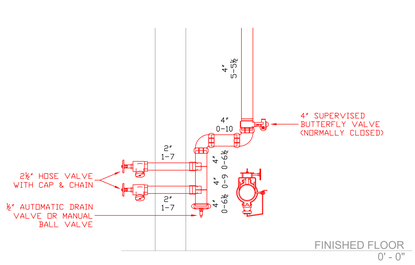
Hydraulic Calculation Data
Design Area Number: 2 Design Area Location: Chlorine Storage 03 & Feed 04 Hazard/Occupancy: Ordinary Hazard Group 2 Design Density: 0.20 gpm/ft² Design Area: 636 Number of Sprinklers in Design Area: 7
System Flow: 422.27 gpm System Pressure: 75.80 psi Hose Allowance (Included): 250 gpm

FOAM CAPACITY CALCULATION
GREATEST SYSTEM FLOW DEMAND IS 389.5 GPM FOR A DURATION OF 10 MINUTES PROPORTIONING AT 3% RESULTS IN A TOTAL REQUIRED FOAM CAPACITY OF 117 GALLONS.



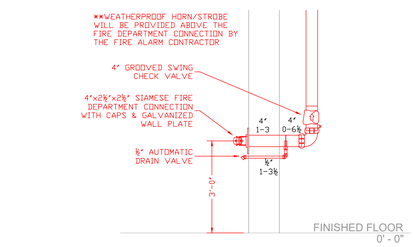
WATER-BASED FIRE PROTECTION SECTION

SCALE 3/16" = 1'-0"



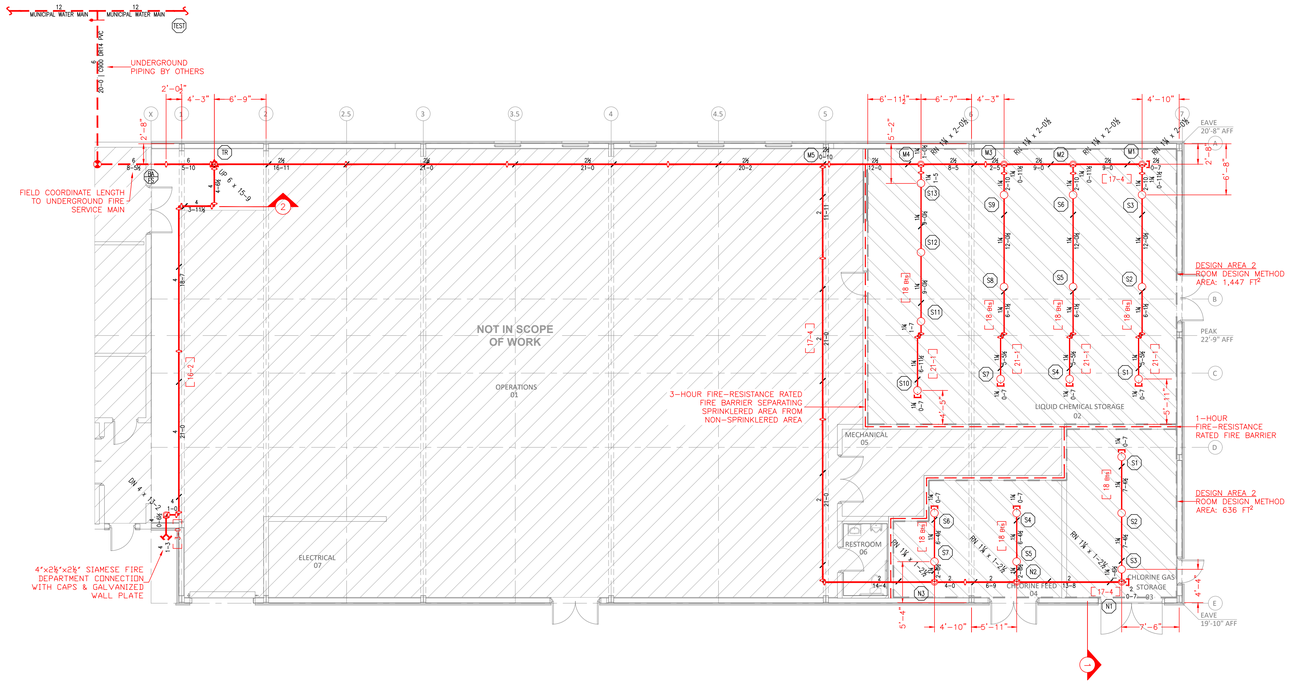
FOAM TEST HEADER DETAIL

SCALE 1/2" = 1'-0"



FIRE DEPARTMENT CONNECTION DETAIL

SCALE 1/2" = 1'-0"



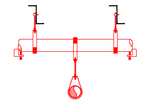
WATER-BASED FIRE PROTECTION PLAN

SCALE 1/8" = 1'-0"

SPRINKLER LEGEND					
SYMBOL	COUNT	THREAD	K-FACTOR	SIN	DESCRIPTION
○	20	3/4"	8.0	V3401	200°F STANDARD SPRAY UPRIGHT WITH VC-250 CORROSION RESISTANT COATING

HANGER – MAINS

1 -- 3/8" All Thread Rod
1 -- Hanger Ring
1 -- Top Beam Clamp



HANGER – TRAPEZE

1 -- 2" x 5'-3" Schedule 10 Pipe
2 -- Sammy SWDR 1-½
2 -- Top Beam Clamp
2 -- 3/8" x 0'-6" All Thread Rod
3 -- 2" Hanger Ring
1 -- 3/8" All Thread Rod
1 -- 2½" Hanger Ring

HANGER – BRANCH LINES

1 -- 3/8" All Thread Rod
1 -- Hanger Ring
1 -- Sammy SWDR 1-½

HANGER NOTES

1. EVERY LENGTH OF PIPE SHALL HAVE A MINIMUM OF ONE (1) HANGER, EXCEPT BRANCH LINE PIPE CONNECTED TO MAIN & LESS THAN 12'-0" TO MAIN CONNECTION.
2. HANGER MUST BE LOCATED WITHIN 4'-0" OF REMOTE END OF MAIN.
2. HANGER MUST BE LOCATED WITHIN 3'-0" OF REMOTE END OF BRANCH LINE.
3. SPACING BETWEEN HANGERS SHALL NOT EXCEED 12'-0" FOR BRANCH LINES.
4. SPACING BETWEEN HANGERS SHALL NOT EXCEED 15'-0" FOR MAINS.
5. SUPPORT THE RISER WITH A RISER CLAMP EVERY 12'-0" VERTICALLY.

SCOPE OF WORK

INSTALLATION OF WET PIPE FOAM-WATER AUTOMATIC SPRINKLER SYSTEM (FIRE PROTECTION SYSTEM) THROUGHOUT A WATER TREATMENT PLANT CHEMICALS STORAGE AND GENERATION AREAS IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS PREPARED BY BCER (ENGINEER OF RECORD). THE FIRE PROTECTION SYSTEM IS PROVIDED TO PROTECT CORROSIVES AND OXIDIZERS IN SEPARATED GROUP H-3 AND GROUP H-4 OCCUPANCIES.

ALL WORK BEGINS 6 INCHES ABOVE FINISHED FLOOR. ANY REFERENCE TO PIPING UPSTREAM OF THIS LOCATION IS FOR REFERENCE ONLY.

APPLICABLE CODES & STANDARDS

THE FOLLOWING CODES AND STANDARDS ARE IDENTIFIED AS THE APPLICABLE CODES AND STANDARDS IN THE CONSTRUCTION DOCUMENTS:

- INTERNATIONAL BUILDING CODE, 2018 EDITION (IBC)
- INTERNATIONAL FIRE CODE, 2018 EDITION (IFC)
- NFPA 13, *STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS*, 2019 EDITION
- NFPA 16, *STANDARD FOR THE INSTALLATION OF FOAM-WATER SPRINKLER SYSTEMS*, 2019 EDITION
- NFPA 72, *NATIONAL FIRE ALARM AND SIGNALING CODE*, 2016 EDITION

IN ADDITION TO THE APPLICABLE CODES AND STANDARDS, THE FIREFIGHTING FOAM CONCENTRATE LISTING/APPROVAL SHALL BE FOLLOWED FOR THE APPROPRIATE SYSTEM COMPONENTS AND DESIGN CRITERIA.

PROJECT DATA

OCCUPANCY: GROUP H-3 (HIGH-HAZARD - OXIDIZERS) & GROUP H-4 (HIGH-HAZARD - CORROSIVES)
CONSTRUCTION TYPE: IIB (NON--COMBUSTIBLE)
NO. OF STORIES: 1
CEILING TYPE: OPEN-TO-DECK
CEILING HEIGHT: AS IDENTIFIED ON DRAWINGS
SEISMIC DESIGN CATEGORY: A (NO SEISMIC BRACING REQUIRED)

WATER SUPPLY

1. HYDRANT FLOW TEST
   a. DATE: 10/3/2024
   b. TIME: 12:20 PM
   c. PERFORMED BY: D. ROADY, WITH COOPER FIRE PROTECTION SYSTEMS
   d. EQUIPMENT CALIBRATION: 01/29/2024
   e. LOCATION: 27706 COUNTY ROAD T
   f. STATIC PRESSURE: 182 PSI
   g. RESIDUAL PRESSURE: 154 PSI
   h. RESIDUAL FLOW RATE: 2,318 GPM

DESIGN CRITERIA

THE FOLLOWING DESIGN CRITERIA WAS PROVIDED BY THE ENGINEER OF RECORD ON SHEET FP-001 OF THE CONSTRUCTION DOCUMENTS. FIREFIGHTING FOAM IS LISTED/APPROVED FOR PROTECTION OF FLAMMABLE AND COMBUSTIBLE LIQUIDS (E.G., ALCOHOLS & HYDROCARBONS). THEREFORE, THERE IS NO LISTED DESIGN CRITERIA FOR CORROSIVES AND OXIDIZERS.

1. ORDINARY HAZARD GROUP 2
   a. DESIGN DENSITY: 0.20 GPM/SQUARE FEET
   b. DESIGN AREA: 1,500 SQUARE FEET
   c. OUTSIDE HOSE ALLOWANCE: 250 GPM
   d. WATER SUPPLY DURATION: 60 MINUTES
   f. SPRINKLER MINIMUM OPERATING PRESSURE: 7 PSI
   g. SPRINKLER MAXIMUM AREA OF COVERAGE: 130 SQUARE FEET
   h. SPRINKLER MAXIMUM SPACING: 15'-0"
   g. SPRINKLER MAXIMUM SPACING: 6'-0"
   h. SPRINKLER MAXIMUM DISTANCE FROM WALLS: 7'-6"
   i. SPRINKLER MINIMUM OPERATING PRESSURE: 7 PSI
   j. WATER-FILLED BLACK STEEL PIPE C-FACTOR: 120
   k. FOAM CONCENTRATE STAINLESS STEEL PIPE C-FACTOR: 140
   l. MAXIMUM VELOCITY IN ABOVEGROUND PIPES: 32 FEET PER SECOND
   m. MAXIMUM VELOCITY IN UNDERGROUND PIPES: 16 FEET PER SECOND

THE FOAM-WATER AUTOMATIC SPRINKLER SYSTEM IS CALCULATED USING THE HAZEN-WILLIAMS FRICTION LOSS FORMULA. THE FOAM CONCENTRATE PIPING IS BALANCED USING DATA PROVIDED BY THE FOAM CONCENTRATE MANUFACTURER.

TWO (2) HYDRAULIC CALCULATIONS WILL BE PERFORMED ON EITHER SIDE OF THE 1-HOUR FIRE-RESISTANCE RATED FIRE BARRIER USING THE ROOM DESIGN METHOD IN ACCORDANCE WITH NFPA 13 §19.3.3.3. THE TWO (2) CALCULATIONS WILL BE BALANCED IN ACCORDANCE WITH NFPA 16 §7.10.2 TO ASSURE THE SYSTEM DISCHARGE WILL NOT EXCEED THE FOAM CONCENTRATE SUPPLY.

GENERAL NOTES

1. ALL FOAM WATER AUTOMATIC SPRINKLER SYSTEM COMPONENTS SHALL BE INSTALLED, MAINTAINED, AND SERVICED IN ACCORDANCE WITH NFPA 13, NFPA 16, AND THE MANUFACTURER'S LISTED/APPROVED INSTRUCTIONS.
2. ALL WATER-FILLED (INCLUDING FOAM SOLUTION) PIPE SHALL BE ASTM A53, A795, OR A135 DOMESTIC BLACK STEEL WITH A CORROSION RESISTANCE RATIO OF 1.00 OR GREATER IN ACCORDANCE WITH SPECIFICATION 21 05 00 §2.6.
3. ALL WATER-FILLED (INCLUDING FOAM SOLUTION) THREADED PIPING SHALL BE SCHEDULE 40 STEEL WITH THREADED ENDS AND CAST IRON THREADED FITTINGS.
3. ALL WATER-FILLED (INCLUDING FOAM SOLUTION) WELDED AND GROOVED PIPING 2-INCH AND LESS SHALL BE SCHEDULE 40 STEEL WITH GROOVED ENDS, DUCTILE IRON GROOVED FITTINGS, AND WELDED OUTLETS.
4. ALL WATER-FILLED (INCLUDING FOAM SOLUTION) WELDED AND GROOVED PIPING 2½-INCH AND LARGER SHALL BE SCHEDULE 10 STEEL WITH GROOVED ENDS, DUCTILE IRON GROOVED FITTINGS, AND WELDED OUTLETS.
5. ALL FOAM CONCENTRATE PIPING SHALL BE OF A MATERIAL PERMITTED BY THE FOAM MANUFACTURER AND JOINED WITH THREADED FITTINGS, GROOVED ENDS WITH GROOVED FITTINGS, WELDING, OR BRAZING. ALL GASKETS SHALL BE COMPATIBLE WITH THE FOAM CONCENTRATION.
6. ALL UNDERGROUND PIPING SHALL BE PROVIDED BY OTHERS. NFPA 24 TEST CERTIFICATES SHALL BE PROVIDED TO COOPER FIRE PROTECTION SYSTEMS (CFPS) PRIOR TO CFPS CONNECTING TO THE UNDERGROUND PIPING. NFPA 24 TESTS SHALL BE COMPLETED BY OTHERS, INCLUDING HYDROSTATICALLY TESTING AND FLUSHING PIPING.
7. PAINTING OF PIPING AND PIPE INSULATION, IF NEEDED, SHALL BE PROVIDED BY OTHERS.
8. ALL PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH NFPA 13 CHAPTER 9. SEISMIC BRACING IS NOT APPLICABLE. STRUCTURAL CALCULATIONS TO ASSURE THE BUILDING STRUCTURE IS CAPABLE OF SUPPORTING THE PIPING SHALL NOT BE FURNISHED BY CFPS.
9. THE FOAM WATER AUTOMATIC SPRINKLER SYSTEM SHALL BE ELECTRONICALLY SUPERVISED. ALL ELECTRONIC AND ELECTRICAL CONNECTIONS SHALL BE PROVIDED BY OTHERS.
10. ALL AREAS HOUSING THE FOAM WATER AUTOMATIC SPRINKLER SYSTEM COMPONENTS SHALL BE MAINTAINED, BY THE OWNER, AT OR ABOVE 40°F.
11. ALL FOAM WATER AUTOMATIC SPRINKLER SYSTEM COMPONENTS SHALL BE COORDINATED WITH OTHER TRADES PRIOR TO FABRICATION AND INSTALLATION.
12. WATER MIST FIRE PROTECTION SYSTEMS SHALL BE TESTED IN ACCORDANCE WITH NFPA 750 CHAPTER 14, INCLUDING HYDROSTATICALLY TESTING SYSTEMS FOR MINIMUM OF 10 MINUTES AT 1.5 TIMES THE WORKING PRESSURE (I.E., 368 PSI) FOLLOWED BY 110 MINUTES AT THE WORKING PRESSURE (I.E., 245 PSI) WITHOUT PRESSURE LOSS.
9. UNDERGROUND PRIVATE FIRE WATER MAINS SHALL BE TESTED IN ACCORDANCE WITH NFPA 24, INCLUDING HYDROSTATICALLY TESTING AND FLUSHING PIPING.
10. FIRE PUMP SHALL BE TESTED IN ACCORDANCE WITH NFPA 20 CHAPTER 14.
11. UPON COMPLETION OF THE INSTALLATION, A COMPLETE SET OF MARKED-UP FIELD DRAWINGS SHALL BE GIVEN TO THE CFPS DESIGN DEPARTMENT FOR AS-BUILT DRAWING PREPARATION. ALL CHANGES SHALL BE SHOWN ON THESE DRAWINGS TO ASSURE ACCURACY FOR FUTURE REFERENCE.

NEW MEXICO LIC. #15592
NMSFMO CERTIFICATE OF FITNESS # 25-0036
CO DIV of FIRE PREV & CTRL REG # 25-S-08966
25-U-08967
25-B-04145
25-P-00101
UTAH LIC. #10513383-5501

CONTRACTOR: COOPER FIRE PROTECTION SERVICES, INC.
ADDRESS: FARMINGTON, NEW MEXICO

REVISION

DATE	DESCRIPTION	BY
	SUBMITTAL 1A - FOR APPROVAL	

IMPORTANT
TO PREVENT FREEZING OF WATER IN WET PIPE SPRINKLER PIPING, OWNERS TO PROVIDE SUFFICIENT HEAT THROUGHOUT AREAS WHERE SPRINKLER PIPES ARE INSTALLED, UNLESS AN ANTI-FREEZE SYSTEM.

SPRINKLER SCHEDULE & LEGEND

SYMBOL	SPRINKLER DESCRIPTION	K-FACTOR	S.I.N.	THRD	TEMP.	FINISH	QUANTITY

HEAD CAB'T & WRENCH(ES) PROVIDED — TOTAL COUNT THIS SHEET =

COLORADO LICENSED TITUS D. MOSELEY PROFESSIONAL ENGINEER PE.0063195
12/03/2024

MWC WATER TREATMENT PLANT EXPANSION

28024 COUNTY ROAD T | DOLORES, COLORADO 81301

FIRE PROTECTION WORKING DRAWINGS

COOPER Fire Protection Services
615 W. MAPLE FARMINGTON, NM 87401
PHONE (505) 327-0474 FAX (505) 325-4187

NORTH

DESIGNER	TDM
SCALE	1/8" =1'-0"
CHECK BY	K.C.
FILE NUMBER	
APPROVAL	
DATE	11/18/2024

DRAWING NO. FP-1 of 1

Tanner Cooper

From: Mia Kenyon <MKENYON@supplynet.com>
Sent: Tuesday, January 21, 2025 1:03 PM
To: Debbie Chacon
Subject: RE: AIS Compliant Valves.
Attachments: TechDataSheet-7000L-7200L_v3.pdf

Debbie,
I wanted to get you some updates as I've been receiving them from our vendors.
Regarding the 4" and 6" butterfly valves- Kennedy has responded that they do not offer an AIS compliant options, I have an inquiry out to another vendor that I'm waiting on.
I am waiting to hear back regarding the pressure reducing valve—pending response from the vendor regarding AIS compliance
Regarding the ARV- please see below explanation from vendor and attached tech data sheet.
"Dear Mia,
AIS typically requires a product to be made Iron and steel that is produced within the USA. The ½" Vic Arv is imported, and it appears to be made of bronze and brass. Your customer may be required to meet the current Build America, Buy America Act which applies to all construction components. Our Model 7000L is made domestically so it does meet AIS and BABAA requirements. It is NOT however an adjustable relief valve; it is factory set. Since FM does not allowing the "adjusting" of a relief valve in the field we do not offer an adjustable relief valve. The Model 7000L does allow a contractor to temporarily close off the relief valve to do system integrity testing with the relief valve installed and then releasing the temporary lock out to return the relief valve to its original factory settings. This is typically the function a contractor is seeking when they are requesting an adjustable relief valve. I have attached a product information sheet for the Model 7000L, it is available with Ratings of 175, 200, 225 and 300 psi. Please refer them to the NOTE at the bottom of the front page as it explains how a UL and FM relief valve is required to work as this will help them decide which valve to choose. As an example, if your desired static pressure is below 150psi, I would use the 175 rated Model 7000L, between 150 and 165 I would use the 200psi rated 7000L, between 165 and 180 I would use the 225 rated 7000L, above 185 I would pick the 300psi rated 7000L. Please call or email me with any questions my direct contact information is below. "
Mia Kenyon
Customer Service Representative
Viking SupplyNet
602-252-0400 ext 1117

From: Debbie Chacon
Sent: Tuesday, January 21, 2025 9:51 AM
To: Mia Kenyon
Subject: RE: AIS Compliant Valves.

Thank you Mia !! Greatly appreciated !!
Debbie Chacon | *Warehouse Manager*
Cooper Fire Protection Services, Inc.
Office: (505) 327-0474 Fax: (505) 325-4187 Cell: (505)215-2644
deborah.chacon@cooperfirepro.com | www.cooperfirepro.com
Connect with us

From: Mia Kenyon <MKENYON@supplynet.com>
Sent: Tuesday, January 21, 2025 7:40 AM
To: Debbie Chacon <deborah.chacon@cooperfirepro.com>
Subject: RE: AIS Compliant Valves.

Debbie,
Good morning. Just checking in with you- I am working on thisnow and will have information back to you asap. Thanks

Mia Kenyon
Customer Service Representative
Viking SupplyNet
602-252-0400 ext 1117

From: Debbie Chacon <deborah.chacon@cooperfirepro.com>
Sent: Monday, January 20, 2025 9:45 AM
To: Phoenix <PHOENIX@supplynet.com>
Subject: AIS Compliant Valves.

Good morning,
Does Viking have any of these equivalent valves that are AIS compliant??

1. Valve Pressure Reducing 6 Victaulic 867-42T-20 Set at 165 PSI
2. Valve BFV 4 707C
3. Valve BFV 6 705
4. Pressure Relief Valve 1/2 Victaulic ARV

Thank you !!

Debbie Chacon | *Warehouse Manager*
Cooper Fire Protection Services, Inc.
Office: (505) 327-0474 Fax: (505) 325-4187 Cell: (505)215-2644
deborah.chacon@cooperfirepro.com | www.cooperfirepro.com
Connect with us

Tanner Cooper

From: Joseph Montoya <jmmontoya@winsupply.com>
Sent: Tuesday, January 21, 2025 8:14 AM
To: Debbie Chacon
Subject: Re: [External Sender] AIS Compliant Valves.

Good morning buddy

Here is what I got back from Tyco. Looks like they can not help

All of our valves are manufactured in China with no American product used in manufacturing process. Therefore we would not meet the AIS requirements.

On Mon, Jan 20, 2025 at 9:47 AM Debbie Chacon <deborah.chacon@cooperfirepro.com> wrote:

> Good morning Happy Monday !! Hope your week is fantastic!!
>
> Does Tyco have any of the valves that are equivalent to the ones listed below and that are AIS compliant??
>
> 1. Valve Pressure Reducing 6 Victaulic 867-42T-20 Set at 165 PSI
> 2. Valve BFV 4 707C
> 3. Valve BFV 6 705
> 4. Pressure Relief Valve 1/2 Victaulic ARV
>
> Thank you !!
>
> **Debbie Chacon** | *Warehouse Manager*
>
> Cooper Fire Protection Services, Inc.
>
> Office: (505) 327-0474 Fax: (505) 325-4187 Cell: (505)215-2644
> deborah.chacon@cooperfirepro.com | www.cooperfirepro.com
>
> *Connect with us*

--

Joseph Montoya

Albuquerque Windustrial
6815 Washington NE

Albuquerque, NM 87109
505-821-2400 Phone
505-821-2440 Fax

Tanner Cooper

From: Bob Coruzzi <bcoruzzi@reliablesprinkler.com>
Sent: Wednesday, January 22, 2025 7:32 AM
To: Debbie Chacon
Subject: RE: AIS Compliant Valves.

Hey, Debbie,

I'm still waiting to hear back from my team on lines 1 and 4 here, but this is what I got back from Kennedy for the BFVs:

Per KENNEDY: ***They may not meet AIS because of the imported gear as of now.***

1760400G300IG : 300#ULFM GRUVD.BFV W/INTEGRAL GEAR ACT.;WHL.&SWI
GROOVED BFV; SBR DISC; BODY W/
FUSION BOND EPOXY-GEAR OPERATED-
UL-FM APPROVED-300 PSI- DPDT
SWITCH
INTEGRAL GEAR
"ASSEMBLED IN USA" ONLY

$515.63 each plus shipping.
115 in stock as of now.

1760600G300IG : 300#ULFM GRUVD.BFV W/INTEGRAL GEAR;WHL.&SWITCH
GROOVED BFV; SBR DISC; BODY W/
FUSION BOND EPOXY-GEAR OPERATED-
UL-FM APPROVED-300 PSI- DPDT
SWITCH
INTEGRAL GEAR
"ASSEMBLED IN USA" ONLY

$786.46 each plus shipping.
3-6 weeks estimated lead time.

1760400G300CIG : 300#ULFM GRUVD.BFV W/INTEGRAL GEAR ACT.;WHL.& SWI./NORM CLOS
UL-FM APPROVED-300 PSI- DPDT
SWITCH
INTEGRAL GEAR
NORMALLY CLOSED

$572.92 each plus shipping.
3 in stock as of now or 3-6 weeks estimated lead time.

1760600G300CIG : 300#ULFM GRUVD.BFV W/INTEGRAL GEAR;WHL.&SWITCH/NORM CLOSED

0600 GROOVED BFV; SBR DISC; BODY W/
FUSION BOND EPOXY-GEAR OPERATED-
UL-FM APPROVED-300 PSI- DPDT
SWITCH
INTEGRAL GEAR
NORMALLY CLOSED

$859.38 each plus shipping.
3-6 weeks estimated lead time

Please let me know if you have any questions!

Thanks,

Bob Coruzzi, *Customer Service Representative*
Reliable Automatic Sprinkler Co., Inc.
2256 N Pagosa St, #100, Aurora, CO, 80011
Tel: 877.440.2598 Office: 303.341.2400

From: Debbie Chacon
Sent: Monday, January 20, 2025 9:44 AM
To: Bob Coruzzi
Subject: AIS Compliant Valves.

Hi Bob !!

Does Reliable have any of the equivalent valves that are AIS compliant??

1. Valve Pressure Reducing 6 Victaulic 867-42T-20 Set at 165 PSI
2. Valve BFV 4 707C
3. Valve BFV 6 705
4. Pressure Relief Valve 1/2 Victaulic ARV

Thank you !!

Debbie Chacon | *Warehouse Manager*
Cooper Fire Protection Services, Inc.
Office: (505) 327-0474 Fax: (505) 325-4187 Cell: (505)215-2644
deborah.chacon@cooperfirepro.com | www.cooperfirepro.com
Connect with us

Victaulic® Series ARV
Adjustable Relief Valve

30.74

1.0 PRODUCT DESCRIPTION

Available Sizes

- ½"/DN15

Maximum System Working Pressure

- Up to 300 psi/2068 kPa/21 Bar

Relief Valve Set Pressure Range

- 175 psi/1206 kPa/12 Bar – 310 psi/2140 kPa/21.4 Bar

Function

- Allows for the required NFPA field hydrostatic testing to be accomplished without removing and/or plugging the outlet for the relief valve.

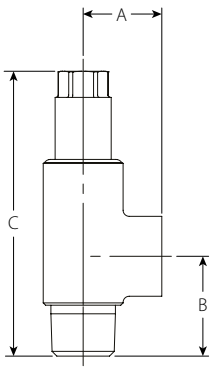
2.0 CERTIFICATION/LISTINGS

3.0 SPECIFICATIONS – MATERIAL

Valve Body: Brass
Valve Seat: Brass
Sealing Rubber: EPDM
Spring: Stainless steel
O-Ring: EPDM
Washer: Brass
Valve Piston: Brass
Pressure Adjustment Screw: Stainless steel
Adjustment Cap: Brass
Piston O-Ring: EPDM
Sealing Rubber Retaining Screw: Stainless steel

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

4.0 DIMENSIONS



Size		Dimensions			Weight
Nominal inches DN	**Actual Outside Diameter** inches mm	**A** inches mm	**B** inches mm	**C** inches mm	**Approximate (Each)** lb kg
½ DN15	0.840 21.3	1.00 25	1.25 32	3.75 95	0.5 0.2

5.0 PERFORMANCE

Size		Maximum Working Pressure	Maximum Allowable Flow Rates
Nominal inches DN	**Actual Outside Diameter** inches mm	psi kPa	Full Open gpm/lpm
½ DN15	0.840 21.3	300 2068	10.0 37.9

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.**

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

- **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.**
- **It is the system designer's responsibility to verify suitability of materials for use with the intended fluid media within the piping system and external environment.**
- **The material specifier shall evaluate the effect of chemical composition, pH level, operating temperature, chloride level, oxygen level, and flow rate on materials to confirm system life will be acceptable for the intended service.**

Failure to follow installation requirements and local and national codes and standards could compromise system integrity or cause system failure, resulting in death or serious personal injury and property damage.

7.0 REFERENCE MATERIALS

30.71: Series UM Universal Manifold Assembly
30.72: Series UMC Universal Manifold Control Assembly
30.73: Series UTD Universal Test and Drain

FireLock™ Butterfly Valve
Series 705 with Weatherproof Actuator

10.81

1.0 PRODUCT DESCRIPTION

- Available Sizes: 2 – 12"/50 – 300 mm
- cULus Listed, LPCB Listed, FM and VdS Approved for service up to 300 psi/2068 kPa /20 bar.
- Designed for fire protection services only.
- Features a weatherproof actuator housing approved for indoor and outdoor use.
- Actuation options: Hand wheel (2 – 12”/50 – 300 mm)
- Exclusively for use with pipe and Victaulic products which feature ends formed with the Victaulic Original Groove System (OGS) groove profile (see section 7.0 for Reference Materials).

2.0 CERTIFICATION/LISTINGS

G410001

LPS 1185: Issue 3.1
Cert/LPCB Ref. 104j/01
846a/01

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

2.1 CERTIFICATION/LISTINGS

Size		Series 705 Butterfly Valve			
Nominal inches DN	**Actual Outside Diameter** inches mm	**cULus** psi kPa	**FM** psi kPa	**VdS** psi kPa	**LPCB** psi kPa
2 DN50	2.375 60.3	300 2068	300 2068	300 2068	300 2068
2½	2.875 73.0	300 2068	300 2068	–	300 2068
DN65	3.000 76.1	300 2068	300 2068	300 2068	300 2068
3 DN80	3.500 88.9	300 2068	300 2068	300 2068	300 2068
4 DN100	4.500 114.3	300 2068	300 2068	300 2068	300 2068
DN125	5.500 139.7	300 2068	300 2068	–	300 2068
5	5.563 141.3	300 2068	300 2068	–	300 2068
	6.500 165.1	300 2068	300 2068	–	300 2068
6 DN150	6.625 168.3	300 2068	300 2068	300 2068	300 2068
8 DN200	8.625 219.1	300 2068	300 2068	300 2068	300 2068
10 DN250	10.750 273.0	300 2068	300 2068	–	300 2068
12 DN300	12.750 323.9	300 2068	300 2068	–	300 2068

3.0 SPECIFICATIONS – MATERIAL

Body: Ductile Iron conforming to ASTM A-536, Grade 65-45-12

End Face, 2 – 6"/50 – 150 mm: Ductile Iron conforming to ASTM A-536, Grade 65-45-12

Seal Retainer, 8 – 12"/200 – 300 mm: Ductile Iron conforming to ASTM A-536, Grade 65-45-12

Body Coating: Black alkyd enamel

Disc: Ductile Iron conforming to ASTM A-536, Grade 65-45-12, with electroless nickel coating conforming to ASTM B-733

Seat: Grade "E" EPDM

Stems: 416 stainless steel conforming to ASTM A-582

Stem Seal Cartridge: C36000 brass

Bearings: Stainless steel with TFE lining

Stem Seals: EPDM

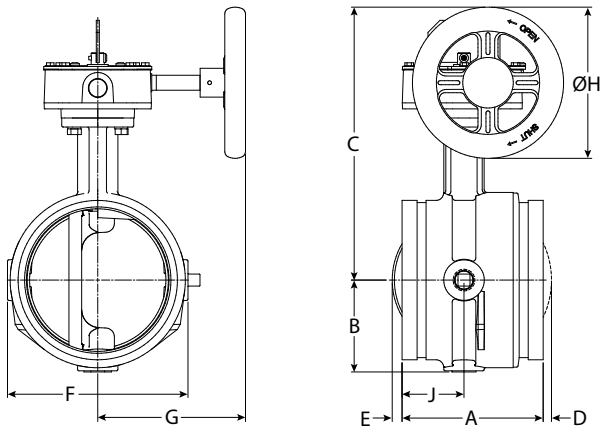
Stem Retaining Ring: Carbon steel

Actuator:

- ☐ 2 – 8"/50 – 200 mm: Brass or bronze traveling nut on a steel lead screw, in a ductile iron housing
- ☐ 10 – 12"/250 – 300 mm: Steel worm and cast iron quadrant gear, in a cast iron housing

4.0 DIMENSIONS

Series 705



Size		Dimensions									Weight
Nominal inches DN	**Actual Outside Diameter** inches mm	**A** inches mm	**B** inches mm	**C** inches mm	**D** inches mm	**E** inches mm	**F** inches mm	**G** inches mm	**H** inches mm	**J** inches mm	**Approx. Each** lb kg
2 DN50	2.375 60.3	4.25 108	2.28 58	6.41 163	–	–	4.00 102	4.22 107	4.50 114	2.12 54	8.2 3.7
2½	2.875 73.0	3.77 96	2.28 58	7.54 192	–	–	4.00 102	4.22 107	4.50 114	1.77 45	9.7 4.4
DN65	3.000 76.1	3.77 96	2.28 58	7.54 192	–	–	4.00 102	4.22 107	4.50 114	1.77 45	9.7 4.4
3 DN80	3.500 88.9	3.77 96	2.53 64	7.79 198	–	–	4.50 114	4.22 107	4.50 114	1.77 45	10.7 4.9
	4.250 108.0	4.63 118	2.88 73	8.81 224	–	–	5.50 140	4.22 107	4.50 114	2.20 56	14.0 6.4
4 DN100	4.500 114.3	4.63 118	2.88 73	8.81 224	–	–	5.50 140	4.22 107	4.50 114	2.20 56	14.0 6.4
	5.250 133.0	5.88 149	3.35 85	10.88 276	–	–	6.56 167	6.19 157	6.30 160	2.58 66	25.4 11.5
DN125	5.500 139.7	5.88 149	3.35 85	10.88 276	–	–	6.56 167	6.19 157	6.30 160	2.58 66	25.4 11.5
5	5.563 141.3	5.88 149	3.35 85	10.88 276	–	–	6.56 167	6.19 157	6.30 160	2.58 66	25.4 11.5
	6.250 159.0	5.88 149	3.84 98	11.38 289	–	0.41 10	7.52 191	6.19 157	6.30 160	2.58 66	28.7 13.0
	6.500 165.1	5.88 149	3.84 98	11.38 289	–	0.41 10	7.52 191	6.19 157	6.30 160	2.58 66	28.7 13.0
6 DN150	6.625 168.3	5.88 149	3.84 98	11.38 289	–	0.41 10	7.52 191	6.19 157	6.30 160	2.58 66	28.7 13.0
8 DN200	8.625 219.1	5.33 135	5.07 129	12.63 321	0.80 20	1.47 37	10.00 254	6.19 157	6.30 160	2.33 59	43.0 19.5
10 DN250	10.750 273.0	6.40 163	6.37 162	15.64 397	1.41 36	1.81 46	12.25 311	8.10 206	11.81 300	–	80.7 36.6
12 DN300	12.750 323.9	6.50 165	7.36 187	16.64 423	2.30 58	2.80 71	14.25 362	8.10 206	11.81 300	–	96.7 43.9

NOTE

- Optional ½"/15 mm tap available. Contact Victaulic for details.

5.0 PERFORMANCE

Series 705

The chart expresses the frictional resistance of Victaulic Series 705 Butterfly Valve in equivalent feet/meters of straight pipe.

Nominal Size inches DN	**Actual Outside Diameter** inches mm	**Equivalent** Feet/m of pipe
2 DN50	2.375 60.3	6.00 1.8
2½	2.875 73.0	6.00 1.8
DN65	3.000 76.1	6.00 1.8
3 DN80	3.500 88.9	7.00 2.1
	4.250 108.0	8.00 2.4
4 DN100	4.500 114.3	8.00 2.4
	5.250 133.0	12.00 3.7
DN125	5.500 139.7	12.00 3.7
5	5.563 141.3	12.00 3.7
	6.250 159.0	14.00 4.3
	6.500 165.1	14.00 4.3
6 DN150	6.625 168.3	14.00 4.3
8 DN200	8.625 219.1	16.00 4.9
10 DN250	10.750 273.0	18.00 5.5
12 DN300	12.750 323.9	19.00 5.8

5.1 PERFORMANCE

Series 705

C_V values for flow of water at +60°F/+16°C through a fully open valve are shown in the table below. For additional details, contact Victaulic.

Formulas for C_v values

$$\Delta P = \frac{Q^2}{C_v^2}$$

$$Q = C_v \times \sqrt{\Delta P}$$

Where:
Q = Flow (GPM)
ΔP = Pressure Drop (psi)
C_v = Flow Coefficient

Formulas for K_v values

$$\Delta P = \frac{Q^2}{K_v^2}$$

$$Q = K_v \times \sqrt{\Delta P}$$

Where:
Q = Flow (m^3/hr)
ΔP = Pressure Drop (Bar)
K_v = Flow Coefficient

Valve Size		Full Open
Nominal Size inches DN	**Actual Outside Diameter** inches mm	**Flow Coefficient** C_v K_v
2 DN50	2.375 60.3	170 150
2½	2.875 73.0	260 220
	3.000 76.1	260 220
DN65		
3 DN80	3.500 88.9	440 380
	4.250 108.0	820 710
4 DN100	4.500 114.3	820 710
	5.250 133.0	1200 1040
	5.500 139.7	1200 1040
DN125		
5	5.563 141.3	1200 1040
	6.250 159.0	1800 1560
	6.500 165.1	1800 1560
6 DN150	6.625 168.3	1800 1560
8 DN200	8.625 219.1	3400 2940
10 DN250	10.750 273.0	5800 5020
12 DN300	12.750 323.9	9000 7790

6.0 NOTIFICATIONS

⚠ WARNING

- **Read and understand all instructions before attempting to install, remove, adjust, or maintain any Victaulic piping products.**
- **Depressurize and drain the piping system before attempting to install, remove, adjust, or maintain any Victaulic piping products.**
- **Wear safety glasses, hardhat, and foot protection.**

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

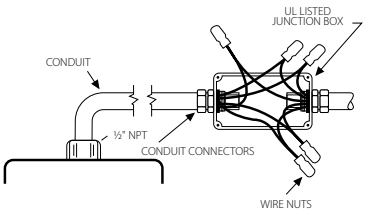
7.0 REFERENCE MATERIALS

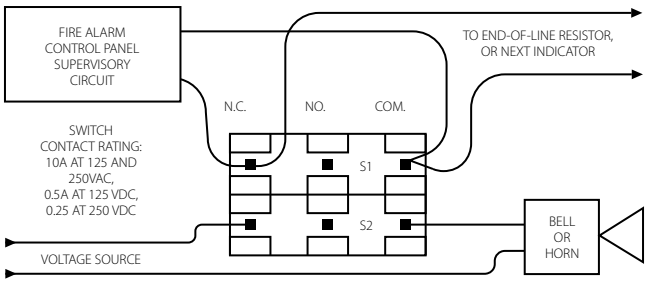
Switch and Wiring

1. The supervisory switch contains two single pole, double throw, pre-wired switches.
2. Switches are rated:
   10 amps @ 125 or 250 VAC/60 Hz
   0.50 amps @ 125 VDC
   0.25 amps @ 250 VDC
3. Switches supervise the valve in the “OPEN” position.
5. One switch has two #18 insulated wires per terminal, which permit complete supervision of leads (refer to diagrams and notes below). The second switch has one #18 insulated wire per terminal. This double circuit provides flexibility to operate two electrical devices at separate locations, such as an indicating light and an audible alarm, in the area that the valve is installed.
6. A #14 insulated ground lead (green) is provided.
   Switch #1 = S1
   For connection to the supervisory circuit of a UL Listed alarm control panel
   Switch #2 = S2
   Auxiliary switch that may be connected to auxiliary devices, per the authority having jurisdiction

S1
- Normally Closed: (2) Blue
- Common: (2) Yellow

S2
- Normally Closed: Blue with Orange Stripe
- Normally Open: Brown with Orange Stripe
- Common: Yellow with Orange Stripe





Switch 1: 2 leads per terminal
Switch 2: 1 lead per terminal

NOTES

- The above diagram shows a connection between the common terminal (yellow – S1 and yellow-with-orange stripe – S2) and the normally closed terminal (blue – S1 and blue-with-orange stripe – S2). In this example, the indicator light and alarm will stay on until the valve is fully open. When the valve is fully open, the indicator light and alarm will go out. Cap off any unused wires (e.g. brown with orange stripe).
- Only S1 (two leads per terminal) may be connected to the fire alarm control panel.
- The connection of the alarm switch wiring shall be in accordance with NFPA 72 and the auxiliary switch per NFPA 70 (NEC).

7.1 REFERENCE MATERIALS

10.01: Regulatory Approval Reference Guide

29.01: Terms and Conditions/Warranty

I-100: Field Installation Handbook

FireLock™ Butterfly Valve
Series 707C with Weatherproof Actuator – Supervised Closed

1.0 PRODUCT DESCRIPTION

Available Sizes

- 2 – 8"/DN50 – DN200.

Pipe Material

- Carbon Steel, Schedule 10, Schedule 40. For use with alternative material please contact Victaulic.

Maximum Working Pressure

- cULus Listed, LPCB Listed, FM and VdS Approved for service up to 300 psi/2068 kPa/20 bar.

Application

- Butterfly valve with an approved weatherproof actuator housing for indoor or outdoor use.
- Designed for fire protection services only.
- Designed to be supervised closed. Valve is designed to be closed under normal system conditions.
- Exclusively for use with pipe and Victaulic products which feature ends formed with the Victaulic Original Groove System (OGS) groove profile (see section 7.0 for Reference Materials).

Available End Connections

- Victaulic Original Groove System (OGS) standard groove.

2.0 CERTIFICATION/LISTINGS

G410013

LPS 1185: Issue 3.1
Cert/LPCB Ref. 104j/01
846a/01

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

2.1 CERTIFICATION/LISTINGS

Series 707C

Size	Approval/Listing Service Pressures			
Nominal inches DN	**cULus** psi kPa	**FM** psi kPa	**Vds** psi kPa	**LPCB** psi kPa
2 DN50	up to 300 2068	n/a	up to 300 2068	up to 300 2068
2½	up to 300 2068	up to 300 2068	n/a	up to 300 2068
DN65	up to 300 2068	up to 300 2068	up to 300 2068	up to 300 2068
3 DN80	up to 300 2068	up to 300 2068	up to 300 2068	up to 300 2068
108 mm	up to 300 2068	up to 300 2068	up to 300 2068	up to 300 2068
4 DN100	up to 300 2068	up to 300 2068	up to 300 2068	up to 300 2068
5.25 133mm	up to 300 2068	up to 300 2068	up to 300 2068	up to 300 2068
DN125	up to 300 2068	up to 300 2068	up to 300 2068	up to 300 2068
5	up to 300 2068	up to 300 2068	n/a	up to 300 2068
6.25 159mm	up to 300 2068	up to 300 2068	up to 300 2068	up to 300 2068
165 mm	up to 300 2068	up to 300 2068	n/a	up to 300 2068
6 DN150	up to 300 2068	up to 300 2068	up to 300 2068	up to 300 2068
8 DN200	up to 300 2068	up to 300 2068	up to 300 2068	up to 300 2068

3.0 SPECIFICATIONS – MATERIAL

Body: Ductile Iron conforming to ASTM A-536, Grade 65-45-12

End Face, 2 – 6"/DN50 – DN150: Ductile Iron conforming to ASTM A-536, Grade 65-45-12

Seal Retainer, 8"/DN200: Ductile Iron conforming to ASTM A-536, Grade 65-45-12

Body Coating: Black alkyd enamel

Disc: Ductile Iron conforming to ASTM A-536, Grade 65-45-12, with electroless nickel coating conforming to ASTM B-733

Seat: EPDM

Stems: 416 stainless steel conforming to ASTM A-582

Stem Seal Cartridge: C36000 brass

Bearings: Stainless steel with TFE lining

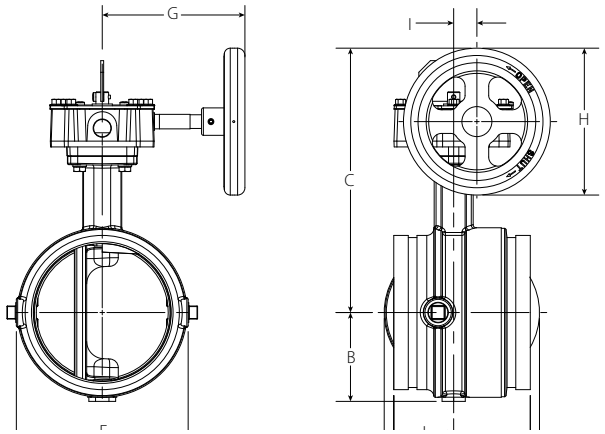
Stem Seals: EPDM

Stem Retaining Ring: Carbon steel

Actuator: 2 – 8"/DN50 – DN150: Brass or bronze traveling nut on a steel lead screw, in a ductile iron housing

4.0 DIMENSIONS

Series 707C



Size		Dimensions								
Nominal inches DN	**Actual Outside Diameter** inches mm	**E to E A** inches mm	**B** inches mm	**C** inches mm	**D** inches mm	**E** inches mm	**F** inches mm	**G** inches mm	**DIA H** inches mm	**J** inches mm
2 DN50	2.375 60.3	4.25 108.0	2.28 57.9	6.41 162.8	–	–	4.00 101.6	4.22 107.2	4.50 114.3	2.12 53.8
2½	2.875 73.0	3.77 95.8	2.28 57.9	7.54 191.5	–	–	4.00 101.6	4.22 107.2	4.50 114.3	1.77 45.0
DN65	3.000 76.1	3.77 95.8	2.28 57.9	7.54 191.5	–	–	4.00 101.6	4.22 107.2	4.50 114.3	1.77 45.0
3 DN80	3.500 88.9	3.77 95.8	2.53 64.3	7.79 197.9	–	–	4.50 114.3	4.22 107.2	4.50 114.3	1.77 45.0
	4.250 108.0	4.63 117.6	2.88 73.2	8.81 223.8	–	–	5.50 139.7	4.22 107.2	4.50 114.3	2.20 55.9
4 DN100	4.500 114.3	4.63 117.6	2.88 73.2	8.81 223.8	–	–	5.50 139.7	4.22 107.2	4.50 114.3	2.20 55.9
	5.250 133.0	5.88 149.4	3.35 85.1	10.88 276.4	–	–	6.56 166.6	6.19 157.2	6.30 160.0	2.58 65.5
DN125	5.500 139.7	5.88 149.4	3.35 85.1	10.88 276.4	–	–	6.56 166.6	6.19 157.2	6.30 160.0	2.58 65.6
5	5.563 141.3	5.88 149.4	3.35 85.1	10.88 276.4	–	–	6.56 166.6	6.19 157.2	6.30 160.0	2.58 65.5
	6.250 159.0	5.88 149.4	3.84 97.5	11.38 289.1	–	0.41 10.4	7.52 191.0	6.19 157.2	6.30 160.0	2.58 65.5
	6.500 165.1	5.88 149.4	3.84 97.5	11.38 289.1	–	0.41 10.4	7.52 191.0	6.19 157.2	6.30 160.0	2.58 65.5
6 DN150	6.625 168.3	5.88 149.4	3.84 97.5	11.38 289.1	–	0.41 10.4	7.52 191.0	6.19 157.2	6.30 160.0	1.90 48.3
8 DN200	8.625 219.1	5.33 135.4	5.07 128.8	13.53 343.6	0.80 20.3	1.47 37.3	10.00 254.0	6.19 157.2	8.10 205.7	2.33 59.2

NOTE

- Optional ½"/15 mm tap available. Contact Victaulic for details.

5.0 PERFORMANCE

Series 707C

The chart expresses the frictional resistance of Victaulic Series 707C Butterfly Valve in equivalent feet/meters of straight pipe.

Size		Equivalent
Nominal inches DN	**Outside Diameter** inches mm	Feet/m of pipe
2 DN50	2.375 60.3	6 1.8
2½	2.875 73.0	6 1.8
DN65	3.000 76.1	6 1.8
3 DN80	3.500 88.9	7 2.1
	4.250 108	8 2.4
4 DN100	4.500 114.3	8 2.4
	5.250 133.0	12 3.7
DN125	5.500 139.7	12 3.7
5	5.563 141.3	12 3.7
	6.250 159.0	14 4.2
	6.500 165.1	14 4.3
6 DN150	6.625 168.3	14 4.2
8 DN200	8.625 219.1	16 4.9

5.1 PERFORMANCE

Series 707C

C_V values for flow of water at +60°F/+16°C through a fully open valve are shown in the table below.
For additional details, contact Victaulic.

Formulas for C_v values

$$\Delta P = \frac{Q^2}{C_v^2}$$

$$Q = C_v \times \sqrt{\Delta P}$$

Where:
Q = Flow (GPM)
ΔP = Pressure Drop (psi)
C_v = Flow Coefficient

Formulas for K_v values

$$\Delta P = \frac{Q^2}{K_v^2}$$

$$Q = K_v \times \sqrt{\Delta P}$$

Where:
Q = Flow (m^3/hr)
ΔP = Pressure Drop (Bar)
K_v = Flow Coefficient

Size		Flow Coefficient
Nominal inches DN	**Actual Outside Diameter** inches mm	**Full Open** C_v K_v
2 DN50	2.375 60.3	170 147
2½	2.875 73.0	260 225
 DN65	3.000 76.1	260 225
3 DN80	3.500 88.9	440 380
	4.250 108.0	820 710
4 DN100	4.500 114.3	820 710
	5.250 133.0	1200 1040
 DN125	5.500 139.7	1200 1040
5	5.563 141.3	1200 1040
	6.250 159.0	1800 1560
	6.500 165.1	1800 1560
6 DN150	6.625 168.3	1800 1560
8 DN200	8.625 219.1	3400 2940

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.**

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

- **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.**
- **It is the system designer's responsibility to verify suitability of materials for use with the intended fluid media within the piping system and external environment.**
- **The material specifier shall evaluate the effect of chemical composition, pH level, operating temperature, chloride level, oxygen level, and flow rate on materials to confirm system life will be acceptable for the intended service.**

Failure to follow installation requirements and local and national codes and standards could compromise system integrity or cause system failure, resulting in death or serious personal injury and property damage.

7.0 REFERENCE MATERIALS

Switch and Wiring

1. The supervisory switch contains two single pole, double throw, pre-wired switches.
2. Switches are rated:

   10 amps @ 125 or 250 VAC/60 Hz

   0.50 amps @ 125 VDC

   0.25 amps @ 250 VDC
3. Switches supervise the valve in the “Closed” position.
5. One switch has two #18 insulated wires per terminal, which permit complete supervision of leads (refer to diagrams and notes below). The second switch has one #18 insulated wire per terminal. This double circuit provides flexibility to operate two electrical devices at separate locations, such as an indicating light and an audible alarm, in the area that the valve is installed.
6. A #14 insulated ground lead (green) is provided.

   Switch #1 = S1

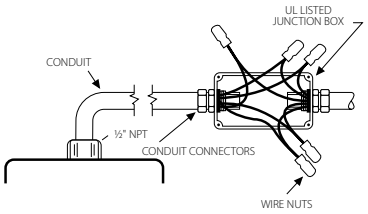
   For connection to the supervisory circuit of a UL Listed alarm control panel

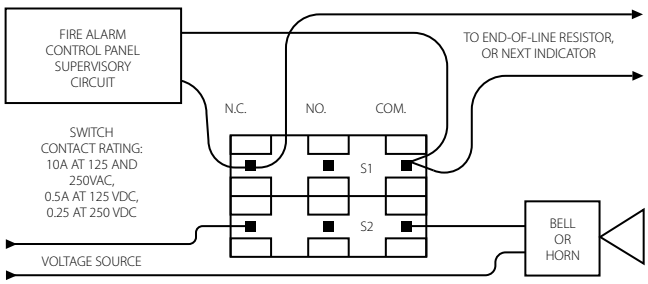
   Switch #2 = S2

   Auxiliary switch that may be connected to auxiliary devices, per the authority having jurisdiction

S1
- Normally Closed: (2) Blue
- Common: (2) Yellow

S2
- Normally Closed: Blue with Orange Stripe
- Normally Open: Brown with Orange Stripe
- Common: Yellow with Orange Stripe





Switch 1: 2 leads per terminal
Switch 2: 1 lead per terminal

NOTES

- The above diagram shows a connection between the common terminal (yellow – S1 and yellow-with-orange stripe – S2) and the normally closed terminal (blue – S1 and blue-with-orange stripe – S2). In this example, the indicator light and alarm will stay on until the valve is fully CLOSED. When the valve is fully CLOSED, the indicator light and alarm will go out. Cap off any unused wires (e.g. brown with orange stripe).
- Only S1 (two leads per terminal) may be connected to the fire alarm control panel.
- The connection of the alarm switch wiring shall be in accordance with NFPA 72 and the auxiliary switch per NFPA 70 (NEC).

7.1 REFERENCE MATERIALS

10.01: Regulatory Approval Reference Guide

10.80: FireLock™ High Pressure Butterfly Valve Series 765 with Weatherproof Actuator (Supervised Open)

10.81: FireLock™ Butterfly Valve Series 705 with Weatherproof Actuator

10.83: FireLock™ High Pressure Butterfly Valve Series 766 FireLock® High Pressure Butterfly Valve Series 766 (Supervised Closed)

29.01: Terms and Conditions/Warranty

I-100: Field Installation Handbook

Pressure Valves
Series 867-42T-20 and 867-43T

30.93

867-42T-20

867-43T

1.0 PRODUCT DESCRIPTION

Available Sizes

- 1 ½ – 16"/DN40 – DN400

Function

- **867-42T-20:** Pilot Operated, Pressure Reducing Check Valve
- **867-43T:** Pilot Operated, Safety Pressure Relief Valve

Maximum Operating Temperature by Material

- **Standard:** NR - Fabric Reinforced Polyisoprene 122°F/50°C
- **Optional:** Fabric Reinforced Nitrile (Buna-N) 176°F/80°C

End Connections

- Grooved (OGS)
- Flanged[1,2]
- Threaded[2]

Application

- For hydraulic control applications in fire protection systems designed to NFPA 13 and NFPA 14
- Series 867-43T Safety Pressure Relief Valves are not designed to be used as circulation relief valves. For circulation relief valves, use the Series 867-3HC publication 30.98 and the Series 867-7UF publication 30.95

[1] Valves 10"/DN250 – 16"/DN400 are only available with flanged end connections.
[2] By special order only.

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

2.0 CERTIFICATION/LISTINGS

Available Sizes, Pressure Ratings and Agency Approvals[3]

Product Config.	Nominal Size Range inches DN	FM Approval							UL Listed						
		Grooved			Class 300		Class 150		Grooved			Class 300 Flange		Class 150 Flange	
		Rating psi bar	Standard Pressure Pilot Range psi bar	High Pressure Pilot Range psi bar	Rating psi bar	Pilot Range psi bar	Rating psi bar	Pilot Range psi bar	Rating psi bar	Standard Pressure Pilot Range psi bar	High Pressure Pilot Range psi bar	Rating psi bar	Pilot Range psi bar	Rating psi bar	Pilot Range psi bar
867-42T-20	1½ – 2 DN40 – DN50	365 25	30 – 235 2 – 16	–	365 25	30 – 235 2 – 16	250 17	30 – 235 2– 16	400 27.6	60 – 220 4 – 15	–	400 27.6	60 – 220 4 – 15	250 17	60 – 220 4 – 15
	2½	365 25	30 – 235 2 – 16	–	365 25	30 – 235 2 – 16	250 17	30 – 235 2– 16	400 27.6	60 – 220 4 – 15	–	400 27.6	60 – 220 4 – 15	250 17	60 – 220 4 – 15
	3 – 8 DN80 – DN200	365 25	30 – 235 2 – 16	–	365 25	30 – 235 2 – 16	250 17	30 – 235 2– 16	365 25	60 – 175 4 – 12	–	365 25	60 – 175 4 – 12	250 17	60 – 175 4 – 12
	10[4] DN250	–	–	–	365 25	30 – 235 2 – 16	250 17	30 – 235 2– 16	–	–	–	365 25	60 – 175 4 – 12	250 17	60 – 175 4 – 12
	12 – 16[4] DN300 – DN400	–	–	–	300 20	30 – 235 2 – 16	250 17	30 – 235 2– 16	–	–	–	300 20	60 – 175 4 – 12	250 17	60 – 175 4 – 12
867-43T	1½ – 2 DN40 – DN50	365 25	60 – 235 4 – 16	125 – 365 9 – 25	365 25	125 – 365 9 – 25	235 16	60 – 235 4 – 16	365 25	60 – 235 4 – 16	125 – 365 9 – 25	–	–	–	–
	2½	365 25	60 – 235 4 – 16	125 – 365 9 – 25	365 25	125 – 365 9 – 25	235 16	60 – 235 4 – 16	365 25	60 – 235 4 – 16	125 – 365 9 – 25	–	–	–	–
	3 – 8 DN80 – DN200	365 25	60 – 235 4 – 16	125 – 365 9 – 25	365 25	125 – 300 9 – 20	235 16	60 – 235 4 – 16	365 25	60 – 235 4 – 16	125 – 365 9 – 25	365 25	125 – 365 9 – 25	235 16	60 – 235 4 – 16
	10[4] DN250	–	–	–	300 20	125 – 300 9 – 20	235 16	60 – 235 4 – 16	–	–	–	365 25	125 – 365 9 – 25	235 16	60 – 235 4 – 16

[3] Selecting optional valve body materials may change listing or approval. Contact Victaulic for details.

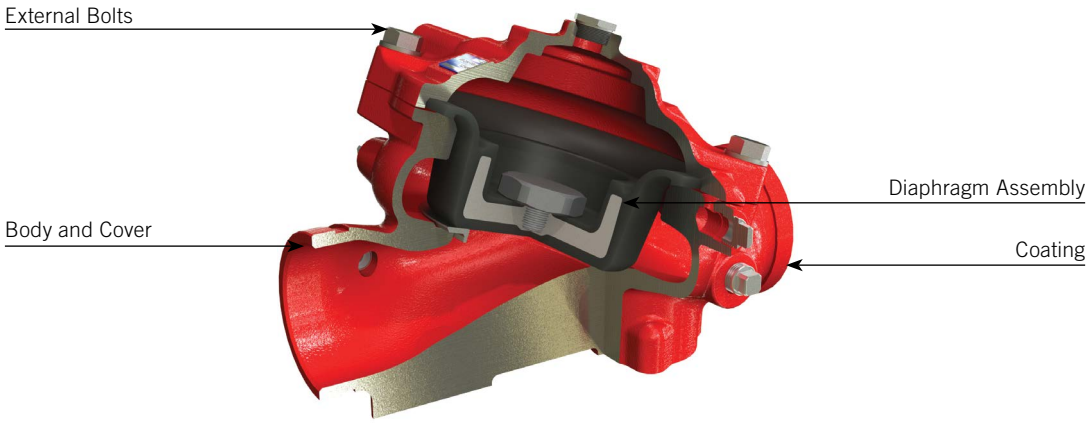
[4] Valves 10"/DN250 are only available with flanged end connections.

NOTES

- Max recommended pressure differential: 175 psi/12 Bar when normal inlet operation pressure is below 330 psi/23 Bar
- Max recommended pressure differential: 200 psi/14 Bar when normal inlet operation pressure is above 330 psi/23 Bar

3.0 SPECIFICATIONS - MATERIAL

Series 867-42T-20 and 867-43T Body Style



Body and Cover: (specify choice)[5,6]

- ☐ Standard: Ductile Iron ASTM A536 Grade 65-45-12
- ☐ Optional: Cast Steel ASTM A216 Grade WCB
- ☐ Optional: Stainless Steel 316 ASTM A351 Grade CF8M
- ☐ Optional: Nickel Aluminum Bronze ASTM B148, Grade C95800
- ☐ Optional: Super Duplex ASTM A890 Grade 5A
- ☐ Optional: Hastelloy[7] ASTM B336 Grade C276
- ☐ Optional: Titanium ASTM B367 Grade C2/C3

Diaphragm Assembly: (specify choice)

- ☐ Standard: NR - Fabric Reinforced Polyisoprene
- ☐ Optional: Fabric Reinforced Nitrile (Buna-N)

Coating: (specify choice)

- ☐ Standard: Electrostatic Powder Coating Polyester
- ☐ Optional: High Build Epoxy Fusion-Bonded with UV Protection, Anti-Corrosion

External Bolts: (specify choice)

- ☐ Standard: Stainless steel 316 ASTM A276

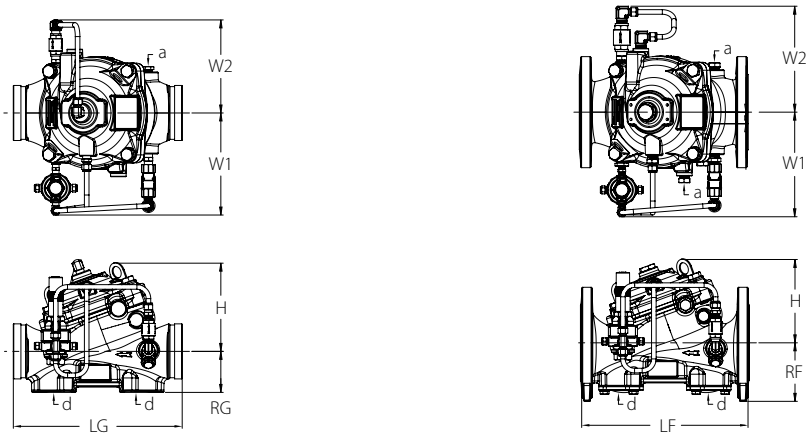
5 Selecting optional valve body materials may change listing or approval. Contact Victaulic for details.

6 Flanged end connection available in all materials, grooved and threaded available in ductile iron only.

7 Hastelloy is a registered trademark of Haynes International.

4.0 DIMENSIONS

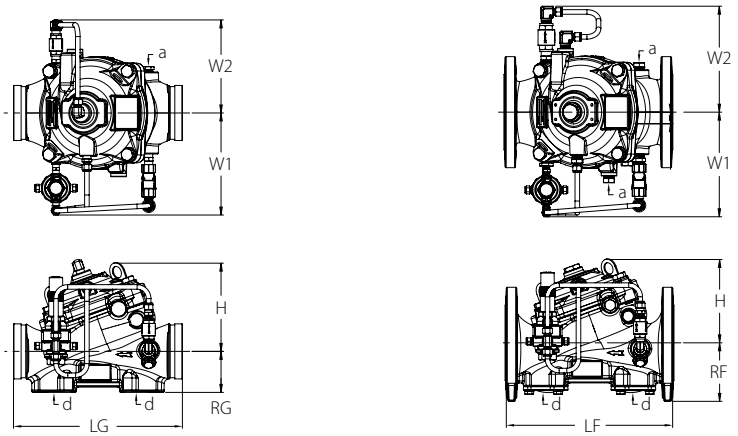
Series 867-42T-20 and 867-43T



Size		Flanged Class 150						Flange Class 300					
Nominal inches DN	**Actual Outside Diameter** inches mm	**LF** inches mm	**RF** inches mm	**H** inches mm	**W1** inches mm	**W2** inches mm	**Weight** inches mm	**LF** inches mm	**RF** inches mm	**H** inches mm	**W1** inches mm	**W2** inches mm	**Weight** lb kg
1 ½ DN40	1.900 48.3	9.06 230	2.56 65	4.93 125	6.10 155	3.05 77	25.3 11.5	9.06 230	2.56 65	4.93 125	6.10 155	3.05 77	30.5 13.8
2 DN50	2.375 60.3	9.06 230	3.03 77	4.93 125	6.10 155	3.05 77	28.2 12.8	9.25 235	3.03 77	4.93 125	6.10 155	3.05 77	32.9 14.9
2½	2.875 73.0	–	–	–	–	–	–	–	–	–	–	–	–
3 DN80	3.500 88.9	12.21 310	4.18 106	6.03 153	9.88 251	3.94 100	60.5 27.4	12.84 326	4.18 106	6.03 153	9.88 251	3.94 100	71.0 32.2
4 DN100	4.500 114.3	13.79 350	4.77 121	6.42 163	10.47 266	4.53 115	82.5 37.4	14.50 368	4.77 121	6.42 163	10.47 266	4.53 115	104.0 47.2
6 DN150	6.625 168.3	18.91 480	5.79 147	9.14 232	14.65 372	5.51 140	178.2 80.8	19.94 506	5.79 147	9.14 232	14.65 372	5.51 140	222.8 101.1
8 DN200	8.625 219.1	23.64 600	7.09 180	11.82 300	19.29 490	6.77 172	321.2 145.7	24.66 626	7.09 180	11.82 300	19.29 490	6.77 172	382.0 173.3
10 DN250	10.750 273.0	28.76 731	8.04 204	11.82 300	19.29 490	8.03 204	379.0 171.9	28.76 731	8.04 204	11.82 300	19.29 490	8.03 204	459.0 208.2
12 DN300	12.750 323.9	33.46 850	9.72 247	17.36 441	25.83 656	9.53 242	712.0 323.0	28.76 731	9.72 247	17.36 441	25.83 656	9.53 242	712.0 323.0
14 DN350	14.000 355.6	38.58 980	10.71 272	17.36 441	25.83 656	9.53 242	784.0 355.6	38.58 980	10.71 272	17.36 441	25.83 656	9.53 242	784.0 355.6
16 DN400	16.000 406.4	43.31 1100	12.44 316	17.76 451	25.83 656	9.53 242	886.0 401.9	43.31 1100	12.44 316	17.76 451	25.83 656	9.53 242	886.0 401.9

4.0 DIMENSIONS (CONTINUED)

Series 867-42T-20 and 867-43T



Size		Grooved						Threaded						All	
Nominal inches DN	**Actual Outside Diameter** inches mm	**LG** inches mm	**RG** inches mm	**H** inches mm	**W1** inches mm	**W2** inches mm	**Weight** lb kg	**LT** inches mm	**RT** inches mm	**H** inches mm	**W1** inches mm	**W2** inches mm	**Weight** lb kg	**a** inches DN	**d** inches DN
1 ½ DN40	1.900 48.3	9.06 230	0.95 24	4.93 125	6.10 155	3.05 77	20.2 9.2	9.06 230	0.95 24	4.93 125	6.10 155	3.05 77	20.2 9.2	½ DN15	¾ DN20
2 DN50	2.375 60.3	9.06 230	1.19 30	4.93 125	6.10 155	3.05 77	18.7 8.5	9.06 230	1.19 30	4.93 125	6.10 155	3.05 77	20.3 9.2	½ DN15	¾ DN20
2 ½	2.875 73.0	9.25 235	1.44 37	4.93 125	6.10 155	3.05 77	28.2 12.8	–	–	–	–	–	–	½ DN15	¾ DN20
3 DN80	3.500 88.9	12.21 310	1.75 44	6.03 153	9.88 251	3.94 100	36.8 16.7	–	–	–	–	–	–	½ DN15	1 ½ DN40
4 DN100	4.500 114.3	13.79 350	2.25 57	6.42 163	10.47 266	4.53 115	50.3 22.8	–	–	–	–	–	–	½ DN15	2 DN50
6 DN150	6.625 168.3	18.91 480	3.31 84	9.14 232	14.65 372	5.51 140	99.0 44.9	–	–	–	–	–	–	½ DN15	2 DN50
8 DN200	8.625 219.1	23.64 600	4.33 110	11.82 300	19.29 490	6.77 172	262.0 118.8	–	–	–	–	–	–	½ DN15	2 DN50
10 DN250	10.750 273.0	–	–	–	–	–	–	–	–	–	–	–	–	½ DN15	2 DN50
12 DN300	12.750 323.9	–	–	–	–	–	–	–	–	–	–	–	–	½ DN15	2 DN50
14 DN350	14.000 355.6	–	–	–	–	–	–	–	–	–	–	–	–	½ DN15	2 DN50
16 DN400	16.000 406.4	–	–	–	–	–	–	–	–	–	–	–	–	½ DN15	2 DN50

5.0 PERFORMANCE

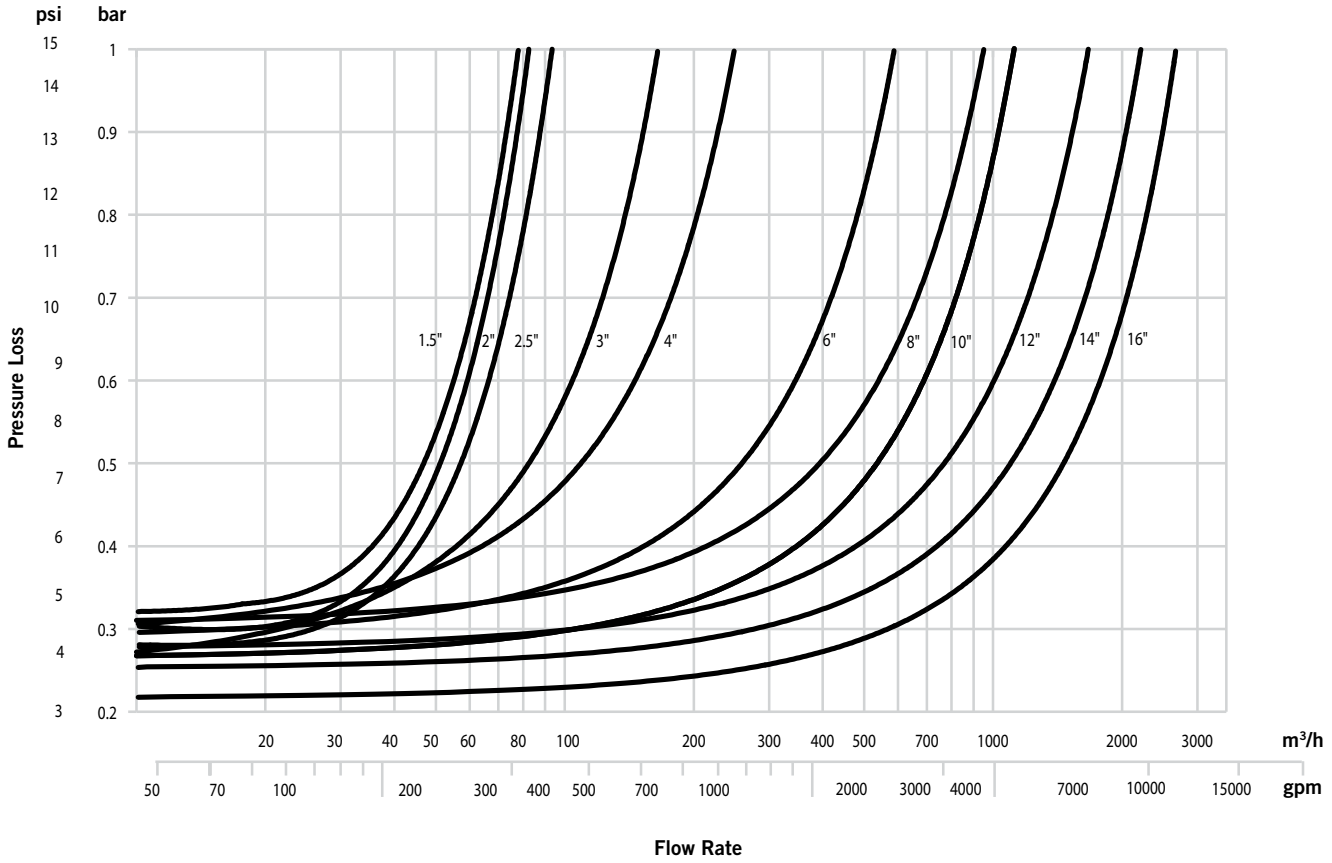
Relief Valve Sizing for Series 867-43T

Systems must be designed with adequate downstream pressure relief valves to protect components from over-pressurization during normal system operation.

To maintain FM Approvals and/or meet NFPA 13 and 14 design requirements, a listed pressure relief valve shall be installed on the downstream side of all pressure reducing valves. The size of the pressure relief valve shall be adequately sized as to not exceed the rated working pressures of the downstream system components. Refer to Victaulic I-867-42T-20 manual for sizing requirements.

5.1 PERFORMANCE

Series 867-42T-20 Pressure Reducing Valve Pressure Drop

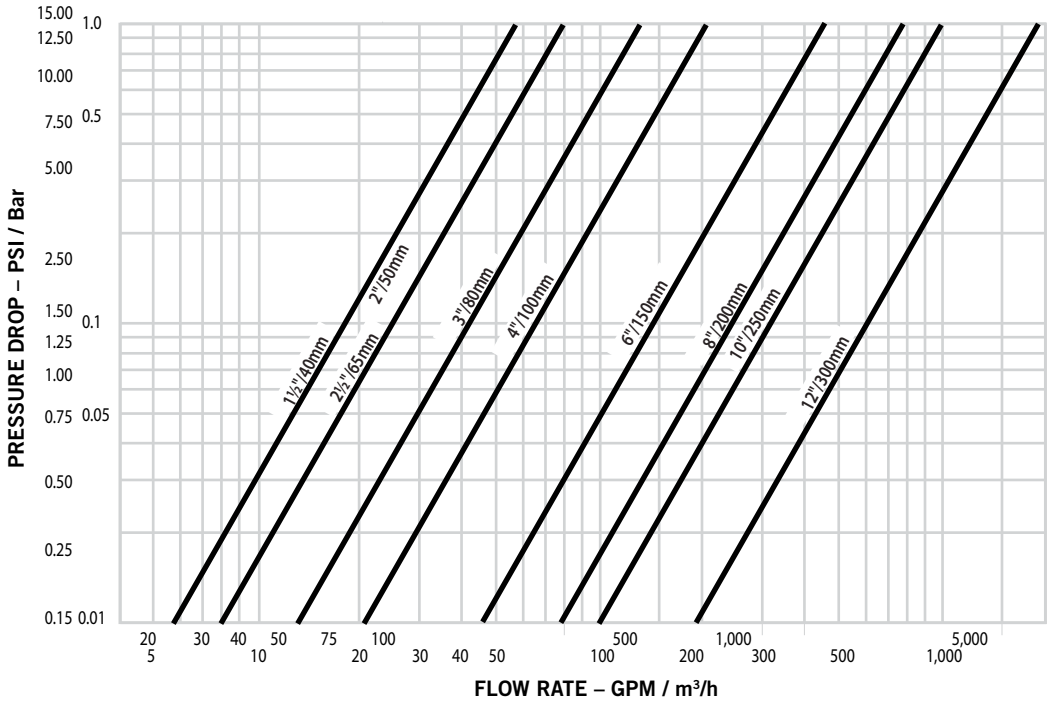


NOTE

- Use this graph to determine the pressure loss when the water supply pressure is equal to or less than the downstream valve set pressure.
- Use this chart to determine friction loss through the second valve in a redundant pressure reducing setup. The first valve is intended to reduce pressure while the second valve is setup for bypass requiring a higher pressure setting than the first valve.

5.1 PERFORMANCE (CONTINUED)

Flow Chart: Series 867-42T-20 and 867-43T-PS



NOTE

- Use this chart to determine the sizing of the valve. The chart represents the minimum and maximum GPM range for the correctly sized valve. If your GPM exceeds the chart, please contact Victaulic.

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.**

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

- **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.**
- **It is the system designer's responsibility to verify suitability of materials for use with the intended fluid media within the piping system and external environment.**
- **The material specifier shall evaluate the effect of chemical composition, pH level, operating temperature, chloride level, oxygen level, and flow rate on materials to confirm system life will be acceptable for the intended service.**

Failure to follow installation requirements and local and national codes and standards could compromise system integrity or cause system failure, resulting in death or serious personal injury and property damage.

7.0 REFERENCE MATERIALS

29.01: Victaulic Terms and Conditions

30.98: Victaulic® Direct Acting Pressure Relief Valve/Fire Pump Casing Relief Valve Series 867-3HC

I-100: Field Installation Handbook

I-867-42T IOM: Installation, Operation and Maintenance Manual Series 867-42T-20 IOM

I-867-43T: Installation, Operation and Maintenance Manual Series 867-43T

User Responsibility for Product Selection and Suitability
Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, and the applicable building codes and related regulations as well as Victaulic performance, maintenance, safety, and warning instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, installation guide, or this disclaimer.

Intellectual Property Rights
No statement contained herein concerning a possible or suggested use of any material, product, service, or design is intended, or should be constructed, to grant any license under any patent or other intellectual property right of Victaulic or any of its subsidiaries or affiliates covering such use or design, or as a recommendation for the use of such material, product, service, or design in the infringement of any patent or other intellectual property right. The terms "Patented" or "Patent Pending" refer to design or utility patents or patent applications for articles and/or methods of use in the United States and/or other countries.

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

Installation
Reference should always be made to the Victaulic installation handbook or installation instructions of the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at www.victaulic.com.

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

Trademarks
Victaulic and all other Victaulic marks are the trademarks or registered trademarks of Victaulic Company, and/or its affiliated entities, in the U.S. and/or other countries.

30.93 8614 Rev G Updated 01/2024

Engineering Specification

Job Name _____ Contractor _____

Job Location _____ Approval _____

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

Approval _____ Representative _____

LEAD FREE*

Series C400

Reduced Pressure Zone Assembly

2½" – 10"

Series C400 Reduced Pressure Zone assembly provides protection to the potable water system from contamination in accordance with national plumbing codes. The series is normally used in health hazard applications for protection against backsiphonage, backpressure and the fouling of either check valve. Series C400 features Lead Free* construction to comply with Lead Free* installation requirements.

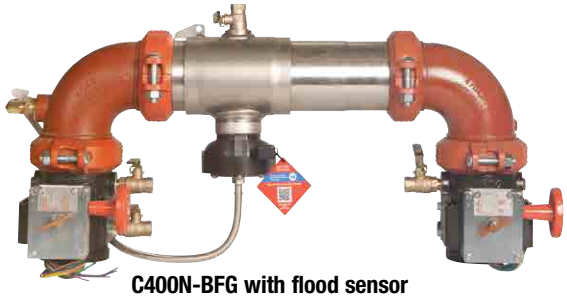
The series include a flood sensor to detect excessive water discharges from the relief valve. The flood sensor relays a signal that triggers a multichannel alert (call, email, text) to notify personnel about potential flooding.

NOTICE

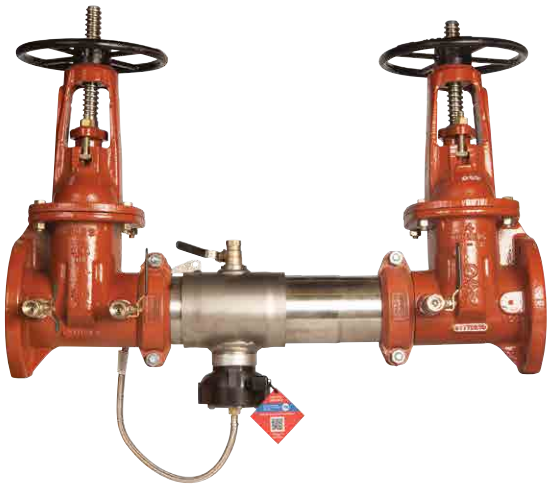
An add-on connection kit is required to activate the flood sensor. Without the connection kit, the flood sensor is a passive component and will not communicate with any other device. (A retrofit sensor connection kit is also available for existing installations. For more information, download RP/IS-A-C400/C500.)

Features

- Extremely compact design
- 70% lighter than traditional designs
- Type 304 (Schedule 40) stainless steel housing and sleeve
- Groove fittings for integral pipeline adjustment
- Patented link check for lowest pressure loss
- Unmatched ease of serviceability
- Available with grooved butterfly valve shutoffs
- Configurable for horizontal or N-pattern installation
- Replaceable check disc rubber
- Sensor on relief valve for flood detection
- Flood alert feature activated with add-on sensor connection kit



C400N-BFG with flood sensor



C400-OSY with flood sensor

NOTICE

Use of the flood sensor does not replace the need to comply with all required instructions, codes, and regulations related to installation, operation, and maintenance of this product, including the need to provide proper drainage in the event of a discharge.

Watts® is not responsible for the failure of alerts due to connectivity or power issues.

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.

Inquire with governing authorities for local installation requirements.

*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

Specification

The Colt C400 Reduced Pressure Zone assembly shall consist of two independent Link Check modules, a differential pressure relief valve located between and below the two modules, two drip tight shutoff valves, and required test cocks. Link Check modules and relief valve shall be contained within a sleeve accessible single housing constructed from Type 304 (Schedule 40) stainless steel pipe with groove end connections. Link Checks shall have reversible elastomer discs and in operation produce drip tight closure against the reverse flow of liquid caused by backpressure or backsiphonage. Lead Free* Reduced Pressure Zone 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 Colt C400 as manufactured by the Ames Fire & Waterworks, and shall include a sensor on the relief valve for flood detection.

Materials

Housing & Sleeve	Type 304 (Schedule 40) stainless steel
Elastomers	EPDM, silicone, and Buna 'N'
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

Configurations

- Horizontal
- "Z" pattern horizontal
- "N" pattern horizontal

Approvals

- Approved by the Foundation for Cross-Connection Control and Hydraulic Research at The Unversity of Southern California (FCCCHR-USC)
  (Excluding 6" Z-pattern configuration)
- AWWA C511-97

1013 B64.4 (**BFG & OSY Only)

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

Model/Option

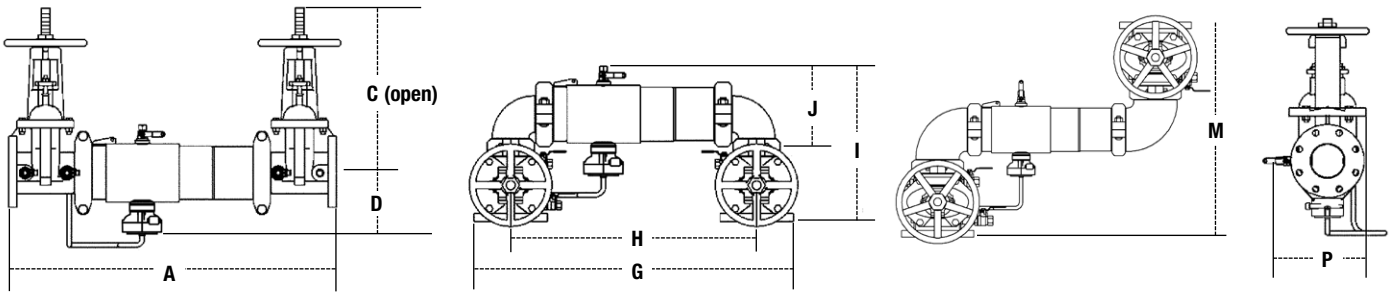
FS	— Sensor on relief valve for flood detection
NRS	— Non-rising stem resilient seated gate valves
OSY	— UL Classified and FM Approved outside stem and yoke resilient seated gate valves
BFG	— UL Classified and FM Approved grooved gear operated butterfly valves with tamper switch
OSY FxG**	— Flanged inlet 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

Pressure – Temperature

Temperature Range: 33°F – 140°F (0.5°C – 60°C)
Maximum Working Pressure: 175 psi (12.1 bar)

NOTE: When installing a drain line on the Series C400 backflow preventer, use 400/500 air gap. Download ES-A-AG/EL/TC for additional information.

Dimensions – Weights



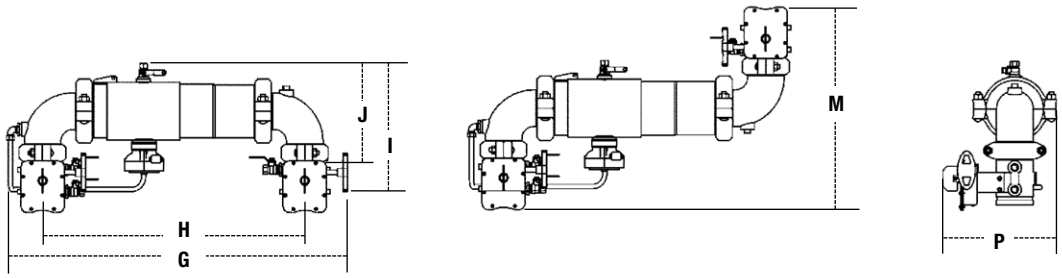
C400, C400N, C400Z

SIZE	DIMENSIONS																		WEIGHT							
	A		C (OSY)		C (NRS)		D		G		H		I		J		M		P		C400				C400N			
																					NRS		OSY		NRS		OSY	
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lb*	*kg*	*lb*	*kg*	*lb*	*kg*	*lb*	*kg*
2½	30¾	781	16⅜	416	9⅜	238	6½	165	29 1/16	738	21½	546	15½	393	8 13/16	223	21¼	540	9 3/16	234	118	54	128	58	126	57	136	62
3	31¾	806	18⅞	479	10¼	260	6 1/16	170	30¼	768	22¼	565	17⅛	435	9 3/16	233	23	584	10½	267	134	61	148	67	147	67	161	73
4	33¾	857	22¾	578	12 3/16	310	7	178	35⅝	905	23½	597	18½	470	9 15/16	252	26¼	667	11 3/16	284	164	74	164	74	187	85	187	85
6	43½	1105	30⅛	765	16	406	8½	216	44¾	1137	35¼	895	23 3/16	589	13 1/16	332	34¼	870	15	381	276	125	298	135	317	144	339	154
8	49¾	1264	37¾	959	19 15/16	506	9 1/16	246	54⅛	1375	40⅛	1019	27 7/16	697	15 1/16	399	36⅞	937	17 3/16	437	441	200	483	219	516	234	558	253
10	57¾	1467	45¾	1162	23 13/16	605	11 3/16	285	66	1676	49½	1257	32½	826	17 5/16	440	44½	1124	20	508	723	328	783	355	893	405	950	431

Noryl is a registered trademark of SHPP Global Technologies B.V.

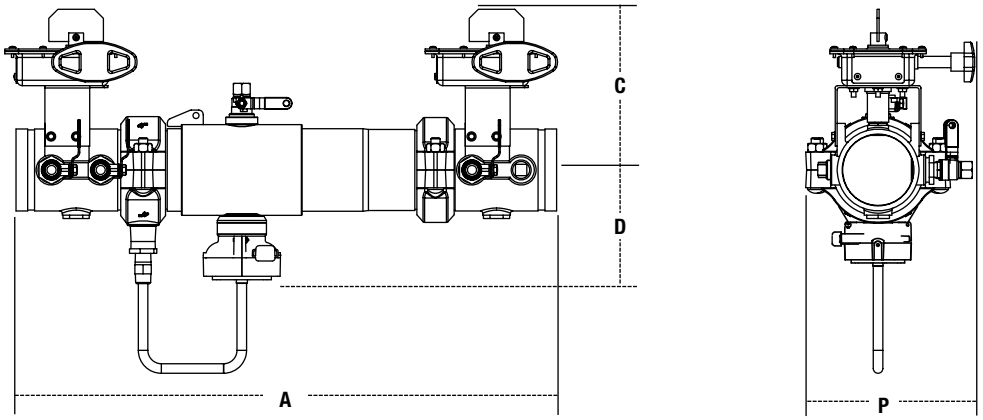
* The wetted surface of this product contacted by consumable water contains less than 0.25% of lead by weight.

**Options for the gate valve:
– Consult factory for dimensions.
– Available with grooved NRS gate valves; consult factory.
– Post indicator plate and operating nut available; consult factory.



C400NBFG, C400ZBFG

SIZE	DIMENSIONS												WEIGHT	
	G		H		I		J		M		P		C400N, C400Z	
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lb*	*kg*
2½	23	584	23	584	15½	394	9½	241	19¾	502	11 13/16	300	67	30
3	24	610	24	610	16 5/16	414	10 1/16	256	21¼	540	12⅛	308	70	32
4	35⅝	905	35⅝	905	17 3/16	437	10 15/16	279	23½	597	12⅝	321	87	39
6	35¼	895	35¼	895	20½	521	13½	343	27¼	692	15	382	160	73

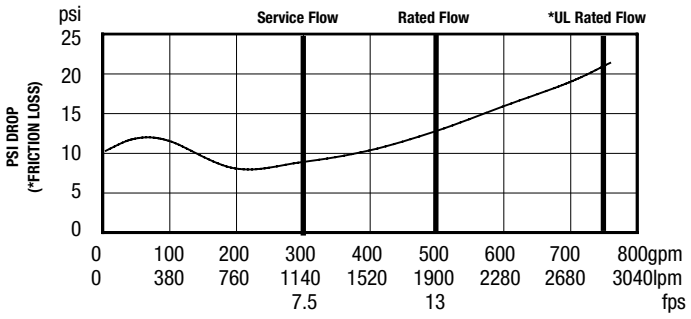


C400 BFG

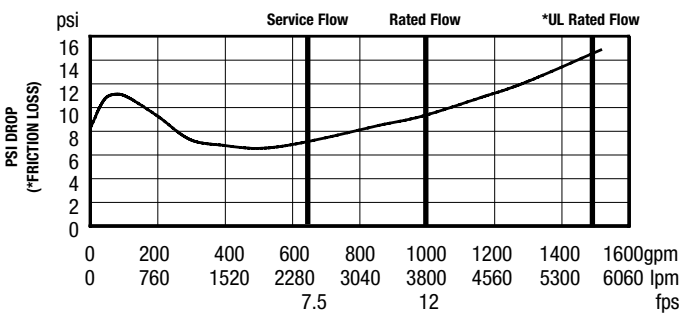
SIZE	DIMENSIONS								WEIGHT	
	A		C		D		P			
in.	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lb*	*kg*
4	29	737	7¾	197	6⅜	162	9½	241	66	30
6	36½	927	9 11/16	246	7 7/16	189	14¼	362	122	55

NOTE: Capacity for C400 BFG only.

4"



6"



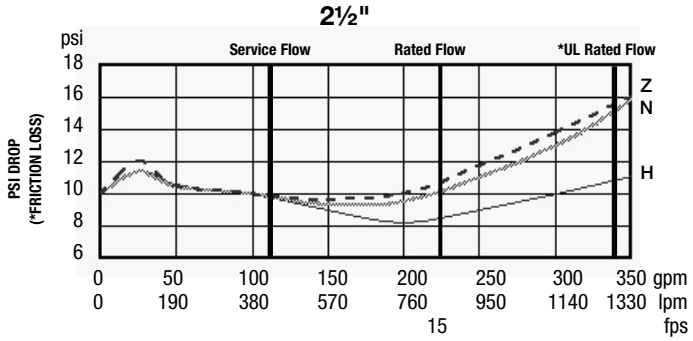
Capacity

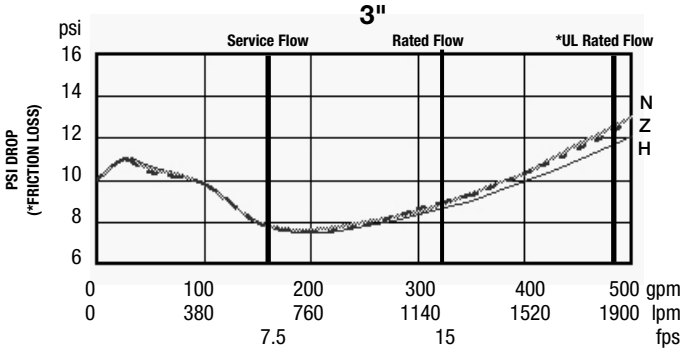
UL Classified and FM Approved certified flow characteristics.
N and Z flow characteristics collected using butterfly shutoff valves.

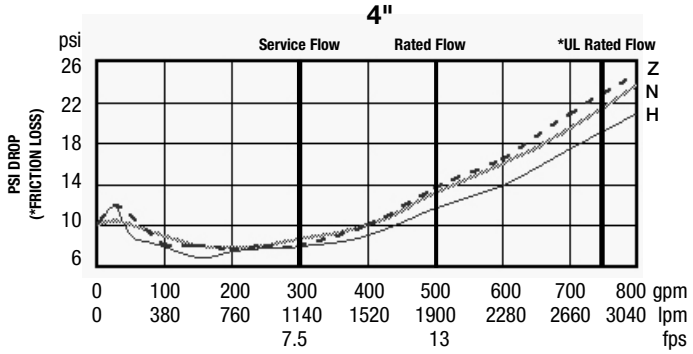
—— Horizontal —— N - Pattern - - - - - Z - Pattern

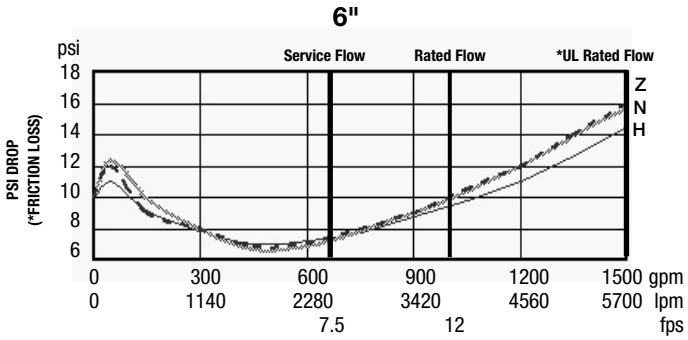
Flow capacity chart identifies valve performance based upon rated water velocity up to 25 fps.

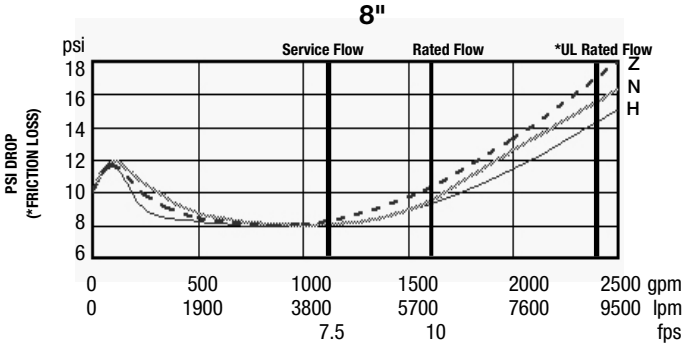
- Service Flow is typically determined by a rated velocity of 7.5 fps based upon Schedule 40 pipe.
- Rated Flow identifies maximum continuous duty performance determined by AWWA.
- UL Flow Rate is 150% of Rated Flow and is not recommended for continuous duty.
- AWWA Manual M22 (Appendix C) recommends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

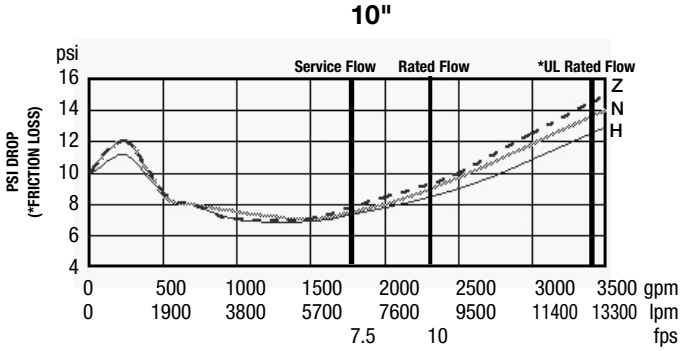












AMES
FIRE & WATERWORKS

A **WATTS** *Brand*

USA: Backflow T: (978) 689-6066 • AmesFireWater.com
USA: Control Valves T: (713) 943-0688 • AmesFireWater.com
Canada: T: (888) 208-8927 • AmesFireWater.ca
Latin America: T: (52) 55-4122-0138 • AmesFireWater.com