

Cyrus Shank

2018 CATALOGUE VOLUME VII



XTREME PERFORMANCE LINE
MADE IN THE USA

What's New With The Gold Standard:

- **NEW XTREME PERFORMANCE LINE! 2-Piece Xtreme Relief Valves for broad temperature ranges (-400°F to 400°F) and broad chemical compatibility.**
- **NEW LOW CAPACITY VALVE! 800 Oil Pot Relief Valve Series for Low Capacity Applications.**
- **NEW! Gold Standard 2-PIECE Cartridge Style valves available: *SAME CAPACITY RATINGS AS THE SINGLE PIECE CONFIGURATIONS***
- **NEW! Stainless Steel manifolds tested to over 11,000 PSI!**
- **Custom Set Pressures at no extra charge**
- **Vapor *AND* Liquid Safety Relief Valves**
- **Relief valves that comply with the ASHRAE Addendum 15c-2000 code**
- **Relief valves available from 50 psi to 400 psi**
- **Manifolds with threaded or Welded Connections**
- **100% American made**
- **We appreciate your business and look forward to working with you.**



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WARRANTY

Cyrus Shank products are warranted against defects in material and workmanship for a period of (4) four years from date of manufacture at our plant. This warranty is limited to replacing or repairing, (F.O.B. Factory) any product which upon our inspection conducted at our premises is found to be defective. Said warranty is voided upon resale of product by original purchaser, modification of original product and or use or installation of product in a manner not intended by Cyrus Shank. Any material returned to Cyrus Shank for evaluation under warranty terms will be subject to a \$100.00 administrative fee should the warranty claim be found to be erroneous. The customer will be responsible for shipping products to CS at its own expense. Shipping charges on material returned must be prepaid. No consequential damage or field labor is included within this warranty. Due to the infinite variables in the design of refrigeration systems and the exposure of these products to chemicals, lubricants etc. in the field that are unknown to Cyrus Shank, we disclaim liability for and do not warrant against failure caused by use of materials and or chemicals incompatible with our valve components.

Except as expressly stated above, Seller makes no warranty, expressed or implied, whether of merchantability or fitness for any particular purpose of use or otherwise on any product, or on any parts or labor furnished during the sale, delivery or servicing of any product. Further, no warranty is made upon Cyrus Shank products that have been modified by customer or end user and no warranty is made for any custom systems that Cyrus Shank products are installed in due to the infinite variables in system designs.

LIMITATION OF LIABILITY

Seller shall not be liable to the Buyer or to any other person, firm, or corporation for any incidental or consequential loss, damage or injury arising out of any breach of warranty disclaimed herein or any other act or default relating to Buyer's order or to product or services provided to Buyer, even if any such loss, damage, or injury is caused by Seller's negligence. The correction of defects as provided in the warranty statement above shall constitute seller's full obligation with respect to all claims and Seller's liability shall in no event exceed the unit purchase price of the product in question. Any lawsuit or other action based upon breach of this contract or upon any other claim arising out of this sale (other than an action by the Seller for any amount due to Seller by Buyer) must be commenced within one year from the date of the tender of delivery by Seller or, in this case of a cause of action based upon an alleged breach of warranty, within one year from the date within the warranty period on which the defect is or should have been discovered by the Buyer. The terms and conditions set forth above are part of every sale of Cyrus Shank's product(s). They may not be added to, modified, superseded, or otherwise altered, except by a written instrument signed by an Authorized representative of Cyrus Shank. Please understand that by sending your purchase order or any other document for any product(s) offered for sale by Cyrus Shank or by accepting delivery for such product(s), you agree to the terms and condition above. Any different or additional terms and conditions in your acceptance of this offer are hereby objected to. These terms and conditions supersede all previous terms.

ORDERING INFORMATION...

Placing Your Order:

- EMAIL your purchase order to Info@cyrusshank.com.
- Confirmation of your order will be sent via email with an Order Acknowledgement

Payment Terms:

- First three orders must be purchased by credit card for new customers.
- VISA, MasterCard, Discover, and American Express cards are accepted.
- Due upon receipt of invoice after the first three orders is available upon credit approval.
- Payment by check is also accepted

Shipping:

Standard Shipping is via UPS Ground. All orders are subject to applicable shipping, freight, taxes, and processing charges. Shipping charges for ground service on all stocking orders are determined by using UPS standard rates. Additional options are available upon request.

Return Policy:

Valves needing to be returned MUST have an RMA# attached to the outside of the box. Valves returned within 30 days of their initial shipment will have a 15% restocking fee; valves returned between 30-60 days of their initial shipment will have a 30% restocking fee. After 60 days valves are non-returnable.

Contact Customer Service for additional questions: (331) 212-5488 or Info@CyrusShank.com

304 Stainless Exchange Program

Cyrus Shank is the leader in 2-Piece relief valve technology. With our continuous effort to innovate and improve, we have now implemented the 304 SX Program.

Not only will our 2-Piece valves save you time and money during your replacement period, but this program will save you even more!

Since Cyrus Shank only uses 304 Stainless Steel parts for our 2-Piece Valves, the body is to remain in the system indefinitely. However, the inserts still need to be replaced at the appropriate interval.

Rather than throwing those used inserts away, the durable stainless steel makes it possible to recycle the inserts with new internals—So we want them back!

Here is how the program works:

1. You send us your used stainless steel inserts
2. You receive a credit off your next insert purchase

It's not even a three step process!

Contact us today for more information on how you can continue to save money by choosing The Gold Standard.



SAFETY RELIEF VALVES—Vapor Service

Cyrus Shank Safety Relief Valves—Vapor Service ONLY

Application: Cyrus Shank Safety Relief Valves are designed to meet the requirements of ANSI/ASHRAE 15 Safety Standard for Refrigeration System and IAR 2 Standard of Safe Design of Closed Circuit Ammonia Refrigeration Systems as well as other world-wide codes. These standards require that pressure vessels of all refrigeration systems are to be protected by a pressure relief device or other approved means to safely relieve pressure in the event of abnormal conditions such as a fire. Cyrus Shank Safety Relief Valves are designed to provide emergency relief from excessive pressure in refrigerant containing vessels that can be isolated by valves. They are set and sealed at time of manufacturing. The pressure setting is limited by the design working pressure of the vessel, the required discharge capacity, and type of fluid. Refer to ASME Boiler and Pressure Vessel Code Section VIII and ANSI/ASHRAE 15 Safety Standard for Refrigeration Systems or latest edition of applicable code for more information about the determination of pressure relieving requirements.

Compatibility: Suitable for ammonia, halocarbons, refrigerants, and other industrial fluids that are not corrosive or deleterious to ductile iron, carbon steel, stainless steel, Polytetrafluoroethylene (Teflon), Hydrogenated Nitrile Butadiene Rubber (HNBR), and Polychloroprene Rubber (Neoprene).

Storage: Care should be taken during the handling of the valve to avoid excessive shock which can result in internal damage or misalignment. Each valve should be kept in its original packaging until time of installation. It should be maintained in a clean, stable environment at room temperature with minimal humidity. Maintaining the relief valve in this condition will enhance the storage life of this product. Cyrus Shank recommend a maximum storage life of 1 year from date of manufacture assuming ideal storage conditions.

Installation: Installation should be performed by trained and qualified personnel only. When installing a Cyrus Shank Safety Relief Valve, it is extremely important to ensure that the internals of the valve remain clean. Contaminants inside the valve will hinder proper operation, potentially creating an unsafe operating range. A sealant should be used on the inlet and outlet for leak protection. It is recommended to use proper materials and good industry practice when applying sealants to the inlet and outlet threads. Pipe dope or PTFE tape are acceptable products for thread-sealing and leak protection, but caution should be used to ensure that the sealant material does not contaminate the internals of the valve. Cyrus Shank Safety Relief Valves should NOT be released prior to installation, other than at time of factory setting. If the system is to be pressure tested to pressures at or higher than the relief valve set pressure then the relief valve shall be removed while the system is being tested. Releasing the valve during the system pre-test could cause foreign material and contaminants to lodge in the valve seat disc. This could cause leaks or affect the initial leak pressure. In either event, the relief valve would have to be replaced.

Maintenance: Cyrus Shank Safety Relief Valves are manufactured for an extended service life. However, since they are not a functional device, they can remain inoperative for extended periods of time while being subjected to contamination from within the system. They should be visually inspected every 6 months to 1 year for corrosion, accumulation of scale, and leaks. Vent lines shall also be inspected to ensure that they are clear, discharged to a safe place, and protected against the ingress of moisture. **At least every 5 years, Cyrus Shank Safety Relief Valves (or cartridges) shall be removed and replaced with new safety relief valves or cartridges. Safety relief valves that have discharged in service due to an overpressure situation shall be replaced as soon as possible.**

Identification: Cyrus Shank Relief Valves built in conformance with the ASME Boiler and Pressure Vessel Code have been tested by a laboratory authorized by the ASME, and their capacity has been rated by the National Board of Boiler and Pressure Vessel Inspectors. They are stamped with the pressure setting, corresponding capacity, and the code symbol consisting of 'UV' in a cloverleaf design with the letters 'NB' stamped directly next to it.

What makes Cyrus Shank The Gold Standard

Cyrus Shank reaches for great lengths to assure you are receiving the highest quality products possible. We see safety as a goal, not a feature. Below are a few examples of what Cyrus Shank has done to earn the Gold Standard title:

- Family Owned and Operated for over a Century
- 100% Stainless Steel Two-Piece Valves: Maximum Durability and *No-Hassle* Replacement
- Eliminated *ALL* risks of leaks using a unique concentric ring design on the lower seats
- Every Valve undergoes 3 Separate Tests that Certifies Quality and Performance
- Active Aerospace Manufacturer since WWII
- Stainless Steel Manifolds with Threaded or Welded Connections (*we fit to Your needs!*)
- 100% Made in the USA
- Broadest Relief Valve Product line in the Industry (call us your *Valve Specialists*)
- Manifolds with the Highest CV Value in the Industry (*and tested over 11,500 psi!*)
- Custom Manufacturing Capabilities—Watch your Complex Prints become Functional Prototypes
- Replacement in Kind valves that satisfy design requirements
- Advanced R+D Engineering—Leading the Industry in Cutting Edge Technology
- Rapid Overpressure Relief through a Distinct Opening Action (*Pop!*) design
- Wing-Guided upper seats Guarantee a Secure Re-Seating after overpressure
- Xtreme Performance Line for Intense Weather Conditions and Harsh Chemicals

How to Select a Cyrus Shank Safety Relief Valve for Vapor Service

1. Determine the required pressure setting. This shall never exceed the Maximum Allowable Working Pressure (MAWP) of the equipment being protected.
2. Use the formula on Page 9, per ANSI/ASHRAE 15 Safety Standard to calculate the minimum required discharge capacity in Standard Cubic Feet of Air Per Minute (SCFM).
3. Find the capacity chart that pertains to a given set pressure rating in increments of 25 psi on Pages 10-23. Cyrus Shank is also able to do custom set pressures which usually takes 1-2 extra days. Please contact the office (331-212-5488) for more information about custom set pressures.
4. Find where the minimum required discharge capacity (SCFM) fits into the capacity chart at the required set pressure. Any valve series listed below that location will satisfy the capacity requirements. Typically, valves with capacities closest to the minimum requirement are selected to prevent excess refrigerant loss during a release.
5. Verify that the selected valve series fits the system's connections. The inlet and outlet connection sizes are listed below the valve series in the capacity charts for a given set pressure. If the initial selection does NOT fit the desired system's connections, then select a different valve series below the minimum capacity requirement.
6. Once a valve series has been selected, a configuration within that valve series is to be selected. Find the selected valve series in Pages 24-63 for more information on each available configuration.
7. After a specific valve configuration has been specified, a part # needs to be developed for ordering. Valves are designated by the Part #'s listed on the individual cut sheets and the set pressure. (Example: 800QR Xtreme set to 250 psi = 800QR-X-250). When ordering, specify inlet and outlet sizes and flow rates at desired set pressure for verification.
8. If a 3-way manifold will be used in conjunction with the selected safety relief valve(s), refer to the "Compatible 3-Way Manifold" column on each cut sheet. These manifolds have the same outlet sizes as the inlets of the relief valves and are sized appropriately for assembly. Turn to Page 66 for more information about selecting a 3-way Manifold.

Capacity Calculations—Safety Relief Valves—Vapor Service

REQUIRED VALVE CAPACITY FOR PRESSURE VESSELS

The ANSI/ASHRAE 15 Safety Code and the ANSI/IIAR-2 American National Standard gives the following formula for determining the necessary relief valve capacity for a given pressure vessel. The minimum required discharge capacity of the safety relief valve shall be: $C = 13.1(f)(D)(L)$ where:

Relief Valve Capacity Formula	
C	= Minimum required discharge capacity of the relief valve in SCFM of AIR
13.1	= Constant to convert AIR, LB/MIN to SCFM
f*	= Factor dependent upon kind of refrigerant*
	Ammonia (R-717) f = 0.5
	R-744 & R-290 f = 1.0
	R-12 & R-22 f = 1.6
	R-404A, R-502, & R-507A f = 2.5
D	= Outside Diameter of vessel in ft.
L	= Length of vessel in ft.

*When combustible materials are used within 20 feet of a pressure vessel, multiply the refrigerant factor (f) by 2.5.

Refer to ANSI/ASHRAE 15 Safety Code or the ANSI/IIAR-2 American National Standard for how to calculate required capacities for equipment other than pressure vessels.

Refrigerant Conversion Factors

In order to calculate capacities for specific refrigerants, a conversion factor is sometimes needed. The air to refrigerant conversion factor is calculated using Graham's Law which takes into account molecular weights. This conversion factor can be used for any capacity value for any unit of measurement. Common conversion factors can be seen below:

Conversion Factors for Common Refrigerants	
Air To:	Factor
Ammonia (NH ₃)	0.7667
R-12	2.0429
R-22	1.7277
R-134A	1.8767
R-290	1.2338
R-404A	1.8355
R-502	0.6336
R-507	1.8477
R-744 (CO ₂)	1.2325

Example: Air to Ammonia

Air → Ammonia

*Air Capacity * Conversion Factor = Ammonia Capacity*

(100 SCFM Air)(0.7667) = 76.67 SCFM Ammonia

(7.634 lb/min Air)(0.7667) = 5.85 lb/min Ammonia

(458.02 lb/min Air)(0.7667) = 351.16 lb/hr Ammonia

50 PSI Capacity Chart

[60 °F, 1 Atm]

Valve Series Inlet x Outlet	Air SCFM	Air lb/min	Air lb/hr	NH3 lb/min	NH3 lb/hr	R-22 lb/min	R-22 lb/hr	R-290 lb/min	R-290 lb/hr	R-404A lb/min	R-404A lb/hr
800 Series 1/2" x 3/4"	29.3	2.2	134.0	1.7	102.8	3.9	231.5	2.8	165.3	4.1	246.0
803 Series 1/2" x 3/4"	137.9	10.5	631.2	8.1	483.9	18.2	1090.4	13.0	778.7	19.3	1158.5

75 PSI Capacity Chart

[60 °F, 1 Atm]

Valve Series Inlet x Outlet	Air SCFM	Air lb/min	Air lb/hr	NH3 lb/min	NH3 lb/hr	R-22 lb/min	R-22 lb/hr	R-290 lb/min	R-290 lb/hr	R-404A lb/min	R-404A lb/hr
800 OP Series 1/2" x 3/4"	21.0	1.6	96.1	1.2	73.7	2.8	166.1	2.0	118.6	2.9	176.4
800 Series 1/2" x 3/4"	40.8	3.1	186.9	2.4	143.3	5.4	322.9	3.8	230.6	5.7	343.0
801 Series 1/2" x 3/4"	71.0	5.4	324.8	4.2	249.1	9.4	561.2	6.7	400.8	9.9	596.2
801DHC Series 1/2" x 3/4"	75.9	5.8	347.5	4.4	266.5	10.0	600.4	7.1	428.8	10.6	637.9
CS5602R Series 3/4" x 1"	75.9	5.8	347.5	4.4	266.5	10.0	600.4	7.1	428.8	10.6	637.9
812 Series 1/2" x 1"	130.2	9.9	595.8	7.6	456.8	17.2	1029.4	12.3	735.1	18.2	1093.6
804R Series 3/4" x 1"	158.4	12.1	725.3	9.3	556.1	20.9	1253.1	14.9	894.9	22.2	1331.3
803 Series 1/2" x 3/4"	192.3	14.7	880.2	11.2	674.8	25.3	1520.6	18.1	1086.0	26.9	1615.5
813 Series 1/2" x 1"	193.4	14.8	885.5	11.3	678.9	25.5	1529.9	18.2	1092.5	27.1	1625.3
805R Series 1 x 1-1/4"	204.1	15.6	934.5	11.9	716.5	26.9	1614.4	19.2	1152.9	28.6	1715.2
CS5602A Series 1/2" x 3/4"	225.5	17.2	1032.4	13.2	791.5	29.7	1783.6	21.2	1273.7	31.6	1894.9
CS5602B Series 1/2" x 1"	257.6	19.7	1179.2	15.1	904.1	34.0	2037.3	24.2	1454.9	36.1	2164.4
CS5602C Series 3/4" x 1"	257.6	19.7	1179.2	15.1	904.1	34.0	2037.3	24.2	1454.9	36.1	2164.4
804 Series 3/4" x 1"	295.5	22.5	1352.7	17.3	1037.2	39.0	2337.1	27.8	1669.0	41.4	2482.9
814 Series 3/4" x 1-1/4"	319.8	24.4	1464.0	18.7	1122.5	42.2	2529.3	30.1	1806.3	44.8	2687.1
805 Series 1" x 1-1/4"	397.5	30.3	1820.0	23.3	1395.4	52.4	3144.3	37.4	2245.5	55.7	3340.5
815 Series 1" x 1-1/2"	397.5	30.3	1820.0	23.3	1395.4	52.4	3144.3	37.4	2245.5	55.7	3340.5

100 PSI Capacity Chart

[60 °F, 1 Atm]

Valve Series Inlet x Outlet	Air SCFM	Air lb/min	Air lb/hr	NH3 lb/min	NH3 lb/hr	R-22 lb/min	R-22 lb/hr	R-290 lb/min	R-290 lb/hr	R-404A lb/min	R-404A lb/hr
800 OP Series 1/2" x 3/4"	26.9	2.1	123.3	1.6	94.5	3.6	213.0	2.5	152.1	3.8	226.3
800 Series 1/2" x 3/4"	52.4	4.0	239.8	3.1	183.8	6.9	414.2	4.9	295.8	7.3	440.1
801 Series 1/2" x 3/4"	91.0	6.9	416.7	5.3	319.5	12.0	720.0	8.6	514.2	12.7	764.9
801DHC Series 1/2" x 3/4"	97.4	7.4	445.9	5.7	341.8	12.8	770.3	9.2	550.1	13.6	818.4
CS5602R Series 3/4" x 1"	97.4	7.4	445.9	5.7	341.8	12.8	770.3	9.2	550.1	13.6	818.4
812 Series 1/2" x 1"	167.0	12.7	764.4	9.8	586.1	22.0	1320.6	15.7	943.1	23.4	1403.1
804R Series 3/4" x 1"	203.3	15.5	930.5	11.9	713.4	26.8	1607.6	19.1	1148.1	28.5	1708.0
803 Series 1/2" x 3/4"	246.7	18.8	1129.2	14.4	865.8	32.5	1950.9	23.2	1393.2	34.5	2072.6
813 Series 1/2" x 1"	248.2	18.9	1136.0	14.5	871.0	32.7	1962.7	23.4	1401.7	34.8	2085.2
805R Series 1 x 1-1/4"	261.9	20.0	1198.8	15.3	919.2	34.5	2071.2	24.7	1479.1	36.7	2200.5
CS5602A Series 1/2" x 3/4"	289.3	22.1	1324.4	16.9	1015.5	38.1	2288.2	27.2	1634.1	40.5	2431.0
CS5602B Series 1/2" x 1"	330.5	25.2	1512.8	19.3	1159.9	43.6	2613.6	31.1	1866.5	46.3	2776.8
CS5602C Series 3/4" x 1"	330.5	25.2	1512.8	19.3	1159.9	43.6	2613.6	31.1	1866.5	46.3	2776.8
804 Series 3/4" x 1"	379.1	28.9	1735.5	22.2	1330.6	50.0	2998.3	35.7	2141.2	53.1	3185.4
814 Series 3/4" x 1-1/4"	410.3	31.3	1878.2	24.0	1440.0	54.1	3244.9	38.6	2317.3	57.5	3447.4
805 Series 1" x 1-1/4"	510.0	38.9	2334.9	29.8	1790.2	67.2	4033.9	48.0	2880.8	71.4	4285.6
815 Series 1" x 1-1/2"	510.0	38.9	2334.9	29.8	1790.2	67.2	4033.9	48.0	2880.8	71.4	4285.6

125 PSI Capacity Chart

[60 °F, 1 Atm]

Valve Series Inlet x Outlet	Air SCFM	Air lb/min	Air lb/hr	NH3 lb/min	NH3 lb/hr	R-22 lb/min	R-22 lb/hr	R-290 lb/min	R-290 lb/hr	R-404A lb/min	R-404A lb/hr
800 OP Series 1/2" x 3/4"	32.9	2.5	150.5	1.9	115.4	4.3	260.0	3.1	185.7	4.6	276.2
800 Series 1/2" x 3/4"	63.9	4.9	292.6	3.7	224.4	8.4	505.6	6.0	361.1	9.0	537.1
801 Series 1/2" x 3/4"	111.1	8.5	508.6	6.5	390.0	14.6	878.8	10.5	627.6	15.6	933.6
801DHC Series 1/2" x 3/4"	118.9	9.1	544.2	7.0	417.2	15.7	940.2	11.2	671.4	16.6	998.8
CS5602R Series 3/4" x 1"	118.9	9.1	544.2	7.0	417.2	15.7	940.2	11.2	671.4	16.6	998.8
812 Series 1/2" x 1"	203.8	15.5	933.0	11.9	715.3	26.9	1611.9	19.2	1151.1	28.5	1712.5
804R Series 3/4" x 1"	248.1	18.9	1135.7	14.5	870.8	32.7	1962.2	23.4	1401.3	34.7	2084.6
803 Series 1/2" x 3/4"	301.1	23.0	1378.2	17.6	1056.7	39.7	2381.1	28.3	1700.4	42.2	2529.7
813 Series 1/2" x 1"	302.9	23.1	1386.6	17.7	1063.1	39.9	2395.5	28.5	1710.8	42.4	2545.0
805R Series 1 x 1-1/4"	319.6	24.4	1463.2	18.7	1121.9	42.1	2527.9	30.1	1805.3	44.8	2685.7
CS5602A Series 1/2" x 3/4"	353.1	26.9	1616.5	20.7	1239.4	46.5	2792.8	33.2	1994.5	49.5	2967.1
CS5602B Series 1/2" x 1"	403.3	30.8	1846.4	23.6	1415.7	53.2	3190.0	38.0	2278.1	56.5	3389.1
CS5602C Series 3/4" x 1"	403.3	30.8	1846.4	23.6	1415.7	53.2	3190.0	38.0	2278.1	56.5	3389.1
804 Series 3/4" x 1"	462.7	35.3	2118.2	27.1	1624.0	61.0	3659.5	43.6	2613.4	64.8	3887.9
814 Series 3/4" x 1-1/4"	500.7	38.2	2292.4	29.3	1757.6	66.0	3960.5	47.1	2828.3	70.1	4207.6
805 Series 1" x 1-1/4"	622.5	47.5	2849.8	36.4	2185.0	82.1	4923.5	58.6	3516.1	87.2	5230.8
815 Series 1" x 1-1/2"	622.5	47.5	2849.8	36.4	2185.0	82.1	4923.5	58.6	3516.1	87.2	5230.8

150 PSI Capacity Chart

[60 °F, 1 Atm]

Valve Series Inlet x Outlet	Air SCFM	Air lb/min	Air lb/hr	NH3 lb/min	NH3 lb/hr	R-22 lb/min	R-22 lb/hr	R-290 lb/min	R-290 lb/hr	R-404A lb/min	R-404A lb/hr
800 OP Series 1/2" x 3/4"	38.8	3.0	177.7	2.3	136.2	5.1	307.0	3.7	219.2	5.4	326.2
800 Series 1/2" x 3/4"	75.5	5.8	345.5	4.4	264.9	9.9	596.9	7.1	426.3	10.6	634.2
801 Series 1/2" x 3/4"	131.2	10.0	600.5	7.7	460.4	17.3	1037.5	12.3	741.0	18.4	1102.3
801DHC Series 1/2" x 3/4"	140.3	10.7	642.5	8.2	492.6	18.5	1110.0	13.2	792.7	19.7	1179.3
CS5602R Series 3/4" x 1"	140.3	10.7	642.5	8.2	492.6	18.5	1110.0	13.2	792.7	19.7	1179.3
812 Series 1/2" x 1"	240.6	18.4	1101.6	14.1	844.6	31.7	1903.1	22.7	1359.1	33.7	2021.9
804R Series 3/4" x 1"	292.9	22.3	1340.9	17.1	1028.1	38.6	2316.7	27.6	1654.5	41.0	2461.3
803 Series 1/2" x 3/4"	355.4	27.1	1627.2	20.8	1247.6	46.9	2811.3	33.5	2007.7	49.8	2986.8
813 Series 1/2" x 1"	357.6	27.3	1637.1	20.9	1255.2	47.1	2828.4	33.7	2019.9	50.1	3004.9
805R Series 1 x 1-1/4"	377.4	28.8	1727.6	22.1	1324.6	49.7	2984.7	35.5	2131.5	52.8	3171.0
CS5602A Series 1/2" x 3/4"	416.9	31.8	1908.6	24.4	1463.3	55.0	3297.4	39.2	2354.8	58.4	3503.2
850R Series 3/4", 1", or 1-1/4" x 1-1/2"	449.3	34.3	2056.7	26.3	1576.9	59.2	3553.2	42.3	2537.5	62.9	3775.0
851R Series 3/4", 1", or 1-1/4" x 2"	449.3	34.3	2056.7	26.3	1576.9	59.2	3553.2	42.3	2537.5	62.9	3775.0
CS5602B Series 1/2" x 1"	476.2	36.3	2180.1	27.9	1671.5	62.8	3766.4	44.8	2689.8	66.7	4001.5
CS5602C Series 3/4" x 1"	476.2	36.3	2180.1	27.9	1671.5	62.8	3766.4	44.8	2689.8	66.7	4001.5
804 Series 3/4" x 1"	546.3	41.7	2500.9	32.0	1917.5	72.0	4320.7	51.4	3085.6	76.5	4590.4
814 Series 3/4" x 1-1/4"	591.2	45.1	2706.6	34.6	2075.2	77.9	4676.0	55.7	3339.4	82.8	4967.9
805 Series 1" x 1-1/4"	735.0	56.1	3364.7	43.0	2579.8	96.9	5813.1	69.2	4151.4	102.9	6175.9
815 Series 1" x 1-1/2"	735.0	56.1	3364.7	43.0	2579.8	96.9	5813.1	69.2	4151.4	102.9	6175.9
850 Series 3/4", 1", or 1-1/4" x 1-1/2"	1108.7	84.6	5075.9	64.9	3891.7	146.2	8769.4	104.4	6262.6	155.3	9316.6
851 Series 3/4", 1", or 1-1/4" x 2"	1108.7	84.6	5075.9	64.9	3891.7	146.2	8769.4	104.4	6262.6	155.3	9316.6
901 Series 1-1/4" x 2" & 3"	2727.8	208.1	12488	159.6	9574.8	359.6	21575	256.8	15408	382.0	22922
903 Series 1-1/2" x 2" & 3"	2727.8	208.1	12488	159.6	9574.8	359.6	21575	256.8	15408	382.0	22922

175 PSI Capacity Chart

[60 °F, 1 Atm]

Valve Series Inlet x Outlet	Air SCFM	Air lb/min	Air lb/hr	NH3 lb/min	NH3 lb/hr	R-22 lb/min	R-22 lb/hr	R-290 lb/min	R-290 lb/hr	R-404A lb/min	R-404A lb/hr
800 OP Series 1/2" x 3/4"	44.8	3.4	204.9	2.6	157.1	5.9	354.0	4.2	252.8	6.3	376.1
800 Series 1/2" x 3/4"	87.0	6.6	398.4	5.1	305.5	11.5	688.3	8.2	491.5	12.2	731.2
801 Series 1/2" x 3/4"	151.3	11.5	692.4	8.8	530.9	19.9	1196.3	14.2	854.3	21.2	1271.0
801DHC Series 1/2" x 3/4"	161.8	12.3	740.8	9.5	568.0	21.3	1279.9	15.2	914.0	22.7	1359.8
CS5602R Series 3/4" x 1"	161.8	12.3	740.8	9.5	568.0	21.3	1279.9	15.2	914.0	22.7	1359.8
812 Series 1/2" x 1"	277.4	21.2	1270.1	16.2	973.8	36.6	2194.3	26.1	1567.1	38.9	2331.3
804R Series 3/4" x 1"	337.7	25.8	1546.2	19.8	1185.5	44.5	2671.2	31.8	1907.6	47.3	2837.9
803 Series 1/2" x 3/4"	409.8	31.3	1876.3	24.0	1438.5	54.0	3241.5	38.6	2314.9	57.4	3443.8
813 Series 1/2" x 1"	412.3	31.5	1887.6	24.1	1447.3	54.4	3261.2	38.8	2329.0	57.7	3464.7
805R Series 1 x 1-1/4"	435.1	33.2	1992.0	25.5	1527.3	57.4	3441.5	41.0	2457.7	60.9	3656.2
CS5602A Series 1/2" x 3/4"	480.7	36.7	2200.7	28.1	1687.3	63.4	3802.0	45.3	2715.2	67.3	4039.3
850R Series 3/4", 1", or 1-1/4" x 1-1/2"	518.0	39.5	2371.4	30.3	1818.2	68.3	4097.0	48.8	2925.8	72.5	4352.7
851R Series 3/4", 1", or 1-1/4" x 2"	518.0	39.5	2371.4	30.3	1818.2	68.3	4097.0	48.8	2925.8	72.5	4352.7
CS5602B Series 1/2" x 1"	549.1	41.9	2513.7	32.1	1927.3	72.4	4342.8	51.7	3101.4	76.9	4613.8
CS5602C Series 3/4" x 1"	549.1	41.9	2513.7	32.1	1927.3	72.4	4342.8	51.7	3101.4	76.9	4613.8
804 Series 3/4" x 1"	629.9	48.1	2883.6	36.8	2210.9	83.0	4981.9	59.3	3557.8	88.2	5292.9
814 Series 3/4" x 1-1/4"	681.7	52.0	3120.8	39.9	2392.7	89.9	5391.6	64.2	3850.4	95.5	5728.1
805 Series 1" x 1-1/4"	847.4	64.7	3879.6	49.6	2974.6	111.7	6702.7	79.8	4786.7	118.7	7121.0
815 Series 1" x 1-1/2"	847.4	64.7	3879.6	49.6	2974.6	111.7	6702.7	79.8	4786.7	118.7	7121.0
850 Series 3/4", 1", or 1-1/4" x 1-1/2"	1278.4	97.5	5852.6	74.8	4487.3	168.5	10111	120.3	7221.0	179.0	10742
851 Series 3/4", 1", or 1-1/4" x 2"	1278.4	97.5	5852.6	74.8	4487.3	168.5	10111	120.3	7221.0	179.0	10742
901 Series 1-1/4" x 2" & 3"	3145.3	240.0	14399	184.0	11040	414.6	24877	296.1	17766	440.5	26429
903 Series 1-1/2" x 2" & 3"	3145.3	240.0	14399	184.0	11040	414.6	24877	296.1	17766	440.5	26429

200 PSI Capacity Chart

[60 °F, 1 Atm]

Valve Series Inlet x Outlet	Air SCFM	Air lb/min	Air lb/hr	NH3 lb/min	NH3 lb/hr	R-22 lb/min	R-22 lb/hr	R-290 lb/min	R-290 lb/hr	R-404A lb/min	R-404A lb/hr
800 OP Series 1/2" x 3/4"	50.7	3.9	232.1	3.0	177.9	6.7	401.0	4.8	286.3	7.1	426.0
800 Series 1/2" x 3/4"	98.6	7.5	451.3	5.8	346.0	13.0	779.6	9.3	556.8	13.8	828.3
801 Series 1/2" x 3/4"	171.3	13.1	784.4	10.0	601.4	22.6	1355.1	16.1	967.7	24.0	1439.7
801DHC Series 1/2" x 3/4"	183.3	14.0	839.2	10.7	643.4	24.2	1449.8	17.3	1035.3	25.7	1540.2
CS5602R Series 3/4" x 1"	183.3	14.0	839.2	10.7	643.4	24.2	1449.8	17.3	1035.3	25.7	1540.2
812 Series 1/2" x 1"	314.3	24.0	1438.7	18.4	1103.1	41.4	2485.6	29.6	1775.1	44.0	2640.7
804R Series 3/4" x 1"	382.6	29.2	1751.4	22.4	1342.8	50.4	3025.8	36.0	2160.8	53.6	3214.6
803 Series 1/2" x 3/4"	464.2	35.4	2125.3	27.2	1629.5	61.2	3671.8	43.7	2622.2	65.0	3900.9
813 Series 1/2" x 1"	467.1	35.6	2138.2	27.3	1639.4	61.6	3694.0	44.0	2638.1	65.4	3924.6
805R Series 1 x 1-1/4"	492.9	37.6	2256.4	28.8	1730.0	65.0	3898.2	46.4	2783.9	69.0	4141.5
CS5602A Series 1/2" x 3/4"	544.5	41.5	2492.7	31.9	1911.2	71.8	4306.6	51.3	3075.5	76.3	4575.4
850R Series 3/4", 1", or 1-1/4" x 1-1/2"	586.8	44.8	2686.1	34.3	2059.5	77.3	4640.7	55.2	3314.2	82.2	4930.4
851R Series 3/4", 1", or 1-1/4" x 2"	586.8	44.8	2686.1	34.3	2059.5	77.3	4640.7	55.2	3314.2	82.2	4930.4
CS5602B Series 1/2" x 1"	622.0	47.5	2847.3	36.4	2183.1	82.0	4919.2	58.6	3513.0	87.1	5226.2
CS5602C Series 3/4" x 1"	622.0	47.5	2847.3	36.4	2183.1	82.0	4919.2	58.6	3513.0	87.1	5226.2
804 Series 3/4" x 1"	713.5	54.4	3266.3	41.7	2504.4	94.1	5643.1	67.2	4030.0	99.9	5995.3
814 Series 3/4" x 1-1/4"	772.2	58.9	3535.0	45.2	2710.3	101.8	6107.2	72.7	4361.4	108.1	6488.4
805 Series 1" x 1-1/4"	959.9	73.2	4394.5	56.2	3369.3	126.5	7592.3	90.4	5422.0	134.4	8066.1
815 Series 1" x 1-1/2"	959.9	73.2	4394.5	56.2	3369.3	126.5	7592.3	90.4	5422.0	134.4	8066.1
850 Series 3/4", 1", or 1-1/4" x 1-1/2"	1448.1	110.5	6629.4	84.7	5082.8	190.9	11453	136.3	8179.4	202.8	12168
851 Series 3/4", 1", or 1-1/4" x 2"	1448.1	110.5	6629.4	84.7	5082.8	190.9	11453	136.3	8179.4	202.8	12168
901 Series 1-1/4" x 2" & 3"	3562.7	271.8	16310	208.4	12505	469.6	28179	335.4	20124	499.0	29937
903 Series 1-1/2" x 2" & 3"	3562.7	271.8	16310	208.4	12505	469.6	28179	335.4	20124	499.0	29937

225 PSI Capacity Chart

[60 °F, 1 Atm]

Valve Series Inlet x Outlet	Air SCFM	Air lb/min	Air lb/hr	NH3 lb/min	NH3 lb/hr	R-22 lb/min	R-22 lb/hr	R-290 lb/min	R-290 lb/hr	R-404A lb/min	R-404A lb/hr
800 OP Series 1/2" x 3/4"	56.6	4.3	259.3	3.3	198.8	7.5	447.9	5.3	319.9	7.9	475.9
800 Series 1/2" x 3/4"	110.1	8.4	504.1	6.4	386.5	14.5	871.0	10.4	622.0	15.4	925.4
801 Series 1/2" x 3/4"	191.4	14.6	876.3	11.2	671.8	25.2	1513.9	18.0	1081.1	26.8	1608.4
801DHC Series 1/2" x 3/4"	204.8	15.6	937.5	12.0	718.8	27.0	1619.6	19.3	1156.7	28.7	1720.7
CS5602R Series 3/4" x 1"	204.8	15.6	937.5	12.0	718.8	27.0	1619.6	19.3	1156.7	28.7	1720.7
812 Series 1/2" x 1"	351.1	26.8	1607.3	20.5	1232.3	46.3	2776.8	33.1	1983.1	49.2	2950.1
804R Series 3/4" x 1"	427.4	32.6	1956.6	25.0	1500.1	56.3	3390.3	40.2	2414.0	59.9	3591.3
803 Series 1/2" x 3/4"	518.6	39.6	2374.3	30.3	1820.4	68.4	4102.0	48.8	2929.4	72.6	4358.0
813 Series 1/2" x 1"	521.8	39.8	2388.7	30.5	1831.4	68.8	4126.9	49.1	2947.2	73.1	4384.4
805R Series 1 x 1-1/4"	550.6	42.0	2520.7	32.2	1932.7	72.6	4355.0	51.8	3110.1	77.1	4626.8
CS5602A Series 1/2" x 3/4"	608.3	46.4	2784.8	35.6	2135.2	80.2	4811.2	57.3	3435.9	85.2	5111.5
850R Series 3/4", 1", or 1-1/4" x 1-1/2"	655.5	50.0	3000.9	38.3	2300.8	86.4	5184.5	61.7	3702.5	91.8	5508.1
851R Series 3/4", 1", or 1-1/4" x 2"	655.5	50.0	3000.9	38.3	2300.8	86.4	5184.5	61.7	3702.5	91.8	5508.1
CS5602B Series 1/2" x 1"	694.8	53.0	3180.9	40.6	2438.9	91.6	5495.6	65.4	3924.6	97.3	5838.6
CS5602C Series 3/4" x 1"	694.8	53.0	3180.9	40.6	2438.9	91.6	5495.6	65.4	3924.6	97.3	5838.6
804 Series 3/4" x 1"	797.1	60.8	3649.1	46.6	2797.8	105.1	6304.4	75.0	4502.2	111.6	6697.8
814 Series 3/4" x 1-1/4"	862.6	65.8	3949.2	50.5	3027.9	113.7	6822.8	81.2	4872.5	120.8	7248.6
805 Series 1" x 1-1/4"	1072.4	81.8	4909.4	62.7	3764.1	141.4	8481.8	101.0	6057.3	150.2	9011.2
815 Series 1" x 1-1/2"	1072.4	81.8	4909.4	62.7	3764.1	141.4	8481.8	101.0	6057.3	150.2	9011.2
850 Series 3/4", 1", or 1-1/4" x 1-1/2"	1617.8	123.4	7406.2	94.6	5678.4	213.3	12795	152.3	9137.7	226.6	13594
851 Series 3/4", 1", or 1-1/4" x 2"	1617.8	123.4	7406.2	94.6	5678.4	213.3	12795	152.3	9137.7	226.6	13594
901 Series 1-1/4" x 2" & 3"	3980.2	303.7	18221	232.8	13971	524.7	31480	374.7	22482	557.4	33445
903 Series 1-1/2" x 2" & 3"	3980.2	303.7	18221	232.8	13971	524.7	31480	374.7	22482	557.4	33445

250 PSI Capacity Chart

[60 °F, 1 Atm]

Valve Series Inlet x Outlet	Air SCFM	Air lb/min	Air lb/hr	NH3 lb/min	NH3 lb/hr	R-22 lb/min	R-22 lb/hr	R-290 lb/min	R-290 lb/hr	R-404A lb/min	R-404A lb/hr
800 OP Series 1/2" x 3/4"	62.6	4.8	286.5	3.7	219.6	8.2	494.9	5.9	353.4	8.8	525.8
800 Series 1/2" x 3/4"	121.7	9.3	557.0	7.1	427.1	16.0	962.3	11.5	687.3	17.0	1022.4
801 Series 1/2" x 3/4"	211.5	16.1	968.2	12.4	742.3	27.9	1672.7	19.9	1194.5	29.6	1777.0
801DHC Series 1/2" x 3/4"	226.3	17.3	1035.8	13.2	794.2	29.8	1789.5	21.3	1278.0	31.7	1901.2
CS5602R Series 3/4" x 1"	226.3	17.3	1035.8	13.2	794.2	29.8	1789.5	21.3	1278.0	31.7	1901.2
812 Series 1/2" x 1"	387.9	29.6	1775.8	22.7	1361.6	51.1	3068.1	36.5	2191.0	54.3	3259.5
804R Series 3/4" x 1"	472.2	36.0	2161.8	27.6	1657.5	62.2	3734.8	44.5	2667.2	66.1	3967.9
803 Series 1/2" x 3/4"	573.0	43.7	2623.3	33.5	2011.3	75.5	4532.2	53.9	3236.6	80.3	4815.1
813 Series 1/2" x 1"	576.5	44.0	2639.2	33.7	2023.5	76.0	4559.7	54.3	3256.3	80.7	4844.3
805R Series 1 x 1-1/4"	608.4	46.4	2785.1	35.6	2135.4	80.2	4811.7	57.3	3436.3	85.2	5112.0
CS5602A Series 1/2" x 3/4"	672.1	51.3	3076.9	39.3	2359.1	88.6	5315.8	63.3	3796.3	94.1	5647.6
850R Series 3/4", 1", or 1-1/4" x 1-1/2"	724.3	55.3	3315.6	42.4	2542.1	95.5	5728.3	68.2	4090.8	101.4	6085.8
851R Series 3/4", 1", or 1-1/4" x 2"	724.3	55.3	3315.6	42.4	2542.1	95.5	5728.3	68.2	4090.8	101.4	6085.8
CS5602B Series 1/2" x 1"	767.7	58.6	3514.6	44.9	2694.7	101.2	6072.0	72.3	4336.3	107.5	6450.9
CS5602C Series 3/4" x 1"	767.7	58.6	3514.6	44.9	2694.7	101.2	6072.0	72.3	4336.3	107.5	6450.9
804 Series 3/4" x 1"	880.7	67.2	4031.8	51.5	3091.2	116.1	6965.6	82.9	4974.4	123.3	7400.3
814 Series 3/4" x 1-1/4"	953.1	72.7	4363.4	55.8	3345.4	125.6	7538.4	89.7	5383.5	133.5	8008.9
805 Series 1" x 1-1/4"	1184.9	90.4	5424.3	69.3	4158.9	156.2	9371.4	111.5	6692.6	165.9	9956.3
815 Series 1" x 1-1/2"	1184.9	90.4	5424.3	69.3	4158.9	156.2	9371.4	111.5	6692.6	165.9	9956.3
850 Series 3/4", 1", or 1-1/4" x 1-1/2"	1787.4	136.4	8182.9	104.6	6274.0	235.6	14137	168.3	10096	250.3	15020
851 Series 3/4", 1", or 1-1/4" x 2"	1787.4	136.4	8182.9	104.6	6274.0	235.6	14137	168.3	10096	250.3	15020
901 Series 1-1/4" x 2" & 3"	4397.6	335.5	20132	257.3	15436	579.7	34782	414.0	24839	615.9	36953
903 Series 1-1/2" x 2" & 3"	4397.6	335.5	20132	257.3	15436	579.7	34782	414.0	24839	615.9	36953

275 PSI Capacity Chart

[60 °F, 1 Atm]

Valve Series Inlet x Outlet	Air SCFM	Air lb/min	Air lb/hr	NH3 lb/min	NH3 lb/hr	R-22 lb/min	R-22 lb/hr	R-290 lb/min	R-290 lb/hr	R-404A lb/min	R-404A lb/hr
800 OP Series 1/2" x 3/4"	68.5	5.2	313.7	4.0	240.5	9.0	541.9	6.4	387.0	9.6	575.7
800 Series 1/2" x 3/4"	133.2	10.2	609.9	7.8	467.6	17.6	1053.7	12.5	752.5	18.7	1119.5
801 Series 1/2" x 3/4"	231.6	17.7	1060.1	13.5	812.8	30.5	1831.4	21.8	1307.9	32.4	1945.7
801DHC Series 1/2" x 3/4"	247.7	18.9	1134.1	14.5	869.5	32.7	1959.4	23.3	1399.3	34.7	2081.7
CS5602R Series 3/4" x 1"	247.7	18.9	1134.1	14.5	869.5	32.7	1959.4	23.3	1399.3	34.7	2081.7
812 Series 1/2" x 1"	424.7	32.4	1944.4	24.8	1490.8	56.0	3359.3	40.0	2399.0	59.5	3568.9
804R Series 3/4" x 1"	517.0	39.4	2367.0	30.2	1814.8	68.2	4089.4	48.7	2920.4	72.4	4344.6
803 Series 1/2" x 3/4"	627.4	47.9	2872.3	36.7	2202.3	82.7	4962.4	59.1	3543.9	87.9	5272.1
813 Series 1/2" x 1"	631.2	48.2	2889.8	36.9	2215.6	83.2	4992.5	59.4	3565.4	88.4	5304.1
805R Series 1 x 1-1/4"	666.1	50.8	3049.5	39.0	2338.1	87.8	5268.5	62.7	3762.5	93.3	5597.3
CS5602A Series 1/2" x 3/4"	735.9	56.1	3369.0	43.1	2583.0	97.0	5820.4	69.3	4156.6	103.1	6183.7
850R Series 3/4", 1", or 1-1/4" x 1-1/2"	793.0	60.5	3630.4	46.4	2783.4	104.5	6272.0	74.7	4479.1	111.1	6663.5
851R Series 3/4", 1", or 1-1/4" x 2"	793.0	60.5	3630.4	46.4	2783.4	104.5	6272.0	74.7	4479.1	111.1	6663.5
CS5602B Series 1/2" x 1"	840.6	64.1	3848.2	49.2	2950.4	110.8	6648.3	79.1	4747.9	117.7	7063.3
CS5602C Series 3/4" x 1"	840.6	64.1	3848.2	49.2	2950.4	110.8	6648.3	79.1	4747.9	117.7	7063.3
804 Series 3/4" x 1"	964.3	73.6	4414.5	56.4	3384.7	127.1	7626.8	90.8	5446.6	135.0	8102.8
814 Series 3/4" x 1-1/4"	1043.6	79.6	4777.5	61.1	3663.0	137.6	8254.0	98.2	5894.5	146.2	8769.1
805 Series 1" x 1-1/4"	1297.3	99.0	5939.3	75.9	4553.7	171.0	10261	122.1	7327.9	181.7	10901
815 Series 1" x 1-1/2"	1297.3	99.0	5939.3	75.9	4553.7	171.0	10261	122.1	7327.9	181.7	10901
850 Series 3/4", 1", or 1-1/4" x 1-1/2"	1957.1	149.3	8959.7	114.5	6869.5	258.0	15479	184.2	11055	274.1	16445
851 Series 3/4", 1", or 1-1/4" x 2"	1957.1	149.3	8959.7	114.5	6869.5	258.0	15479	184.2	11055	274.1	16445
901 Series 1-1/4" x 2" & 3"	4815.1	367.4	22044	281.7	16901	634.7	38084	453.3	27197	674.3	40461
903 Series 1-1/2" x 2" & 3"	4815.1	367.4	22044	281.7	16901	634.7	38084	453.3	27197	674.3	40461

300 PSI Capacity Chart

[60 °F, 1 Atm]

Valve Series Inlet x Outlet	Air SCFM	Air lb/min	Air lb/hr	NH3 lb/min	NH3 lb/hr	R-22 lb/min	R-22 lb/hr	R-290 lb/min	R-290 lb/hr	R-404A lb/min	R-404A lb/hr
800 OP Series 1/2" x 3/4"	74.5	5.7	340.9	4.4	261.3	9.8	588.9	7.0	420.5	10.4	625.6
800 Series 1/2" x 3/4"	144.8	11.0	662.8	8.5	508.2	19.1	1145.1	13.6	817.7	20.3	1216.5
801 Series 1/2" x 3/4"	251.6	19.2	1152.0	14.7	883.2	33.2	1990.2	23.7	1421.3	35.2	2114.4
801DHC Series 1/2" x 3/4"	269.2	20.5	1232.4	15.7	944.9	35.5	2129.2	25.3	1520.6	37.7	2262.1
CS5602R Series 3/4" x 1"	269.2	20.5	1232.4	15.7	944.9	35.5	2129.2	25.3	1520.6	37.7	2262.1
812 Series 1/2" x 1"	461.6	35.2	2113.0	27.0	1620.1	60.8	3650.5	43.5	2607.0	64.6	3878.4
804R Series 3/4" x 1"	561.9	42.9	2572.2	32.9	1972.1	74.1	4443.9	52.9	3173.6	78.7	4721.2
803 Series 1/2" x 3/4"	681.8	52.0	3121.4	39.9	2393.2	89.9	5392.6	64.2	3851.1	95.5	5729.2
813 Series 1/2" x 1"	686.0	52.3	3140.3	40.1	2407.7	90.4	5425.4	64.6	3874.5	96.1	5764.0
805R Series 1 x 1-1/4"	723.9	55.2	3313.9	42.3	2540.8	95.4	5725.3	68.1	4088.7	101.4	6082.6
CS5602A Series 1/2" x 3/4"	799.7	61.0	3661.0	46.8	2807.0	105.4	6325.0	75.3	4517.0	112.0	6719.8
850R Series 3/4", 1", or 1-1/4" x 1-1/2"	861.8	65.8	3945.1	50.4	3024.8	113.6	6815.8	81.1	4867.5	120.7	7241.2
851R Series 3/4", 1", or 1-1/4" x 2"	861.8	65.8	3945.1	50.4	3024.8	113.6	6815.8	81.1	4867.5	120.7	7241.2
CS5602B Series 1/2" x 1"	913.5	69.7	4181.8	53.4	3206.2	120.4	7224.7	86.0	5159.5	127.9	7675.6
CS5602C Series 3/4" x 1"	913.5	69.7	4181.8	53.4	3206.2	120.4	7224.7	86.0	5159.5	127.9	7675.6
804 Series 3/4" x 1"	1047.9	80.0	4797.2	61.3	3678.1	138.1	8288.0	98.6	5918.8	146.8	8805.2
814 Series 3/4" x 1-1/4"	1134.1	86.5	5191.7	66.3	3980.6	149.5	8969.6	106.8	6405.6	158.8	9529.4
805 Series 1" x 1-1/4"	1409.8	107.6	6454.2	82.5	4948.5	185.8	11151	132.7	7963.2	197.4	11847
815 Series 1" x 1-1/2"	1409.8	107.6	6454.2	82.5	4948.5	185.8	11151	132.7	7963.2	197.4	11847
850 Series 3/4", 1", or 1-1/4" x 1-1/2"	2126.8	162.3	9736.5	124.4	7465.1	280.4	16821	200.2	12013	297.9	17871
851 Series 3/4", 1", or 1-1/4" x 2"	2126.8	162.3	9736.5	124.4	7465.1	280.4	16821	200.2	12013	297.9	17871
901 Series 1-1/4" x 2" & 3"	5232.5	399.2	23955	306.1	18366	689.8	41385	492.6	29555	732.8	43968
903 Series 1-1/2" x 2" & 3"	5232.5	399.2	23955	306.1	18366	689.8	41385	492.6	29555	732.8	43968

325 PSI Capacity Chart

[60 °F, 1 Atm]

Valve Series Inlet x Outlet	Air SCFM	Air lb/min	Air lb/hr	NH3 lb/min	NH3 lb/hr	R-22 lb/min	R-22 lb/hr	R-290 lb/min	R-290 lb/hr	R-404A lb/min	R-404A lb/hr
800 OP Series 1/2" x 3/4"	80.4	6.1	368.0	4.7	282.2	10.6	635.9	7.6	454.1	11.3	675.5
800 Series 1/2" x 3/4"	156.3	11.9	715.7	9.1	548.7	20.6	1236.4	14.7	883.0	21.9	1313.6
801 Series 1/2" x 3/4"	271.7	20.7	1243.9	15.9	953.7	35.8	2149.0	25.6	1534.7	38.1	2283.1
801DHC Series 1/2" x 3/4"	290.7	22.2	1330.8	17.0	1020.3	38.3	2299.1	27.4	1641.9	40.7	2442.6
CS5602R Series 3/4" x 1"	290.7	22.2	1330.8	17.0	1020.3	38.3	2299.1	27.4	1641.9	40.7	2442.6
812 Series 1/2" x 1"	498.4	38.0	2281.6	29.2	1749.3	65.7	3941.8	46.9	2815.0	69.8	4187.8
804R Series 3/4" x 1"	606.7	46.3	2777.4	35.5	2129.5	80.0	4798.4	57.1	3426.8	85.0	5097.9
803 Series 1/2" x 3/4"	736.2	56.2	3370.4	43.1	2584.1	97.0	5822.9	69.3	4158.4	103.1	6186.3
813 Series 1/2" x 1"	740.7	56.5	3390.8	43.3	2599.8	97.6	5858.2	69.7	4183.6	103.7	6223.8
805R Series 1 x 1-1/4"	781.6	59.6	3578.3	45.7	2743.5	103.0	6182.0	73.6	4414.9	109.5	6567.8
CS5602A Series 1/2" x 3/4"	863.5	65.9	3953.1	50.5	3030.9	113.8	6829.7	81.3	4877.4	120.9	7255.9
850R Series 3/4", 1", or 1-1/4" x 1-1/2"	930.5	71.0	4259.8	54.4	3266.1	122.7	7359.5	87.6	5255.8	130.3	7818.8
851R Series 3/4", 1", or 1-1/4" x 2"	930.5	71.0	4259.8	54.4	3266.1	122.7	7359.5	87.6	5255.8	130.3	7818.8
CS5602B Series 1/2" x 1"	986.3	75.3	4515.4	57.7	3462.0	130.0	7801.1	92.9	5571.1	138.1	8288.0
CS5602C Series 3/4" x 1"	986.3	75.3	4515.4	57.7	3462.0	130.0	7801.1	92.9	5571.1	138.1	8288.0
804 Series 3/4" x 1"	1131.5	86.3	5180.0	66.2	3971.5	149.2	8949.2	106.5	6391.0	158.5	9507.7
814 Series 3/4" x 1-1/4"	1224.5	93.4	5605.9	71.6	4298.1	161.4	9685.2	115.3	6916.6	171.5	10290
805 Series 1" x 1-1/4"	1522.3	116.2	6969.1	89.1	5343.3	200.7	12040	143.3	8598.5	213.2	12792
815 Series 1" x 1-1/2"	1522.3	116.2	6969.1	89.1	5343.3	200.7	12040	143.3	8598.5	213.2	12792
850 Series 3/4", 1", or 1-1/4" x 1-1/2"	2296.5	175.2	10513	134.3	8060.7	302.7	18163	216.2	12971	321.6	19297
851 Series 3/4", 1", or 1-1/4" x 2"	2296.5	175.2	10513	134.3	8060.7	302.7	18163	216.2	12971	321.6	19297
901 Series 1-1/4" x 2" & 3"	5650.0	431.1	25866	330.5	19832	744.8	44687	531.9	31913	791.3	47476
903 Series 1-1/2" x 2" & 3"	5650.0	431.1	25866	330.5	19832	744.8	44687	531.9	31913	791.3	47476

350 PSI Capacity Chart

[60 °F, 1 Atm]

Valve Series Inlet x Outlet	Air SCFM	Air lb/min	Air lb/hr	NH3 lb/min	NH3 lb/hr	R-22 lb/min	R-22 lb/hr	R-290 lb/min	R-290 lb/hr	R-404A lb/min	R-404A lb/hr
800 OP Series 1/2" x 3/4"	86.3	6.6	395.2	5.1	303.0	11.4	682.8	8.1	487.7	12.1	725.5
800 Series 1/2" x 3/4"	167.9	12.8	768.5	9.8	589.2	22.1	1327.8	15.8	948.2	23.5	1410.6
801 Series 1/2" x 3/4"	291.8	22.3	1335.8	17.1	1024.2	38.5	2307.8	27.5	1648.1	40.9	2451.8
801DHC Series 1/2" x 3/4"	312.2	23.8	1429.1	18.3	1095.7	41.1	2469.0	29.4	1763.2	43.7	2623.1
CS5602R Series 3/4" x 1"	312.2	23.8	1429.1	18.3	1095.7	41.1	2469.0	29.4	1763.2	43.7	2623.1
812 Series 1/2" x 1"	535.2	40.8	2450.1	31.3	1878.6	70.6	4233.0	50.4	3023.0	75.0	4497.2
804R Series 3/4" x 1"	651.5	49.7	2982.6	38.1	2286.8	85.9	5153.0	61.3	3680.0	91.2	5474.5
803 Series 1/2" x 3/4"	790.6	60.3	3619.4	46.3	2775.0	104.2	6253.1	74.4	4465.6	110.7	6643.3
813 Series 1/2" x 1"	795.4	60.7	3641.4	46.5	2791.9	104.9	6291.0	74.9	4492.7	111.4	6683.6
805R Series 1 x 1-1/4"	839.4	64.0	3842.6	49.1	2946.2	110.6	6638.8	79.0	4741.0	117.6	7053.1
CS5602A Series 1/2" x 3/4"	927.3	70.8	4245.2	54.2	3254.9	122.2	7334.3	87.3	5237.7	129.9	7792.0
850R Series 3/4", 1", or 1-1/4" x 1-1/2"	999.3	76.2	4574.6	58.5	3507.4	131.7	7903.3	94.1	5644.1	139.9	8396.5
851R Series 3/4", 1", or 1-1/4" x 2"	999.3	76.2	4574.6	58.5	3507.4	131.7	7903.3	94.1	5644.1	139.9	8396.5
CS5602B Series 1/2" x 1"	1059.2	80.8	4849.0	62.0	3717.8	139.6	8377.5	99.7	5982.8	148.3	8900.3
CS5602C Series 3/4" x 1"	1059.2	80.8	4849.0	62.0	3717.8	139.6	8377.5	99.7	5982.8	148.3	8900.3
804 Series 3/4" x 1"	1215.1	92.7	5562.7	71.1	4265.0	160.2	9610.4	114.4	6863.2	170.2	10210
814 Series 3/4" x 1-1/4"	1315.0	100.3	6020.1	76.9	4615.7	173.3	10401	123.8	7427.6	184.2	11050
805 Series 1" x 1-1/4"	1634.8	124.7	7484.0	95.6	5738.1	215.5	12930	153.9	9233.8	228.9	13737
815 Series 1" x 1-1/2"	1634.8	124.7	7484.0	95.6	5738.1	215.5	12930	153.9	9233.8	228.9	13737
850 Series 3/4", 1", or 1-1/4" x 1-1/2"	2466.1	188.2	11290	144.3	8656.2	325.1	19505	232.2	13930	345.4	20723
851 Series 3/4", 1", or 1-1/4" x 2"	2466.1	188.2	11290	144.3	8656.2	325.1	19505	232.2	13930	345.4	20723
901 Series 1-1/4" x 2" & 3"	6067.4	462.9	27777	354.9	21297	799.8	47989	571.2	34271	849.7	50984
903 Series 1-1/2" x 2" & 3"	6067.4	462.9	27777	354.9	21297	799.8	47989	571.2	34271	849.7	50984

375 PSI Capacity Chart

[60 °F, 1 Atm]

Valve Series Inlet x Outlet	Air SCFM	Air lb/min	Air lb/hr	NH3 lb/min	NH3 lb/hr	R-22 lb/min	R-22 lb/hr	R-290 lb/min	R-290 lb/hr	R-404A lb/min	R-404A lb/hr
800 OP Series 1/2" x 3/4"	92.3	7.0	422.4	5.4	323.9	12.2	729.8	8.7	521.2	12.9	775.4
800 Series 1/2" x 3/4"	179.4	13.7	821.4	10.5	629.8	23.7	1419.1	16.9	1013.4	25.1	1507.7
801 Series 1/2" x 3/4"	311.9	23.8	1427.7	18.2	1094.6	41.1	2466.5	29.4	1761.5	43.7	2620.5
801DHC Series 1/2" x 3/4"	333.6	25.5	1527.4	19.5	1171.1	44.0	2638.9	31.4	1884.5	46.7	2803.6
CS5602R Series 3/4" x 1"	333.6	25.5	1527.4	19.5	1171.1	44.0	2638.9	31.4	1884.5	46.7	2803.6
812 Series 1/2" x 1"	572.0	43.6	2618.7	33.5	2007.8	75.4	4524.2	53.8	3231.0	80.1	4806.6
804R Series 3/4" x 1"	696.3	53.1	3187.8	40.7	2444.1	91.8	5507.5	65.6	3933.1	97.5	5851.2
803 Series 1/2" x 3/4"	845.0	64.5	3868.4	49.4	2966.0	111.4	6683.3	79.5	4772.9	118.3	7100.4
813 Series 1/2" x 1"	850.1	64.9	3891.9	49.7	2984.0	112.1	6723.9	80.0	4801.8	119.1	7143.5
805R Series 1 x 1-1/4"	897.1	68.5	4107.0	52.5	3148.9	118.3	7095.5	84.5	5067.2	125.6	7538.4
CS5602A Series 1/2" x 3/4"	991.1	75.6	4537.3	58.0	3478.8	130.6	7838.9	93.3	5598.1	138.8	8328.1
850R Series 3/4", 1", or 1-1/4" x 1-1/2"	1068.0	81.5	4889.3	62.5	3748.7	140.8	8447.1	100.5	6032.4	149.6	8974.2
851R Series 3/4", 1", or 1-1/4" x 2"	1068.0	81.5	4889.3	62.5	3748.7	140.8	8447.1	100.5	6032.4	149.6	8974.2
CS5602B Series 1/2" x 1"	1132.1	86.4	5182.7	66.2	3973.6	149.2	8953.9	106.6	6394.4	158.5	9512.7
CS5602C Series 3/4" x 1"	1132.1	86.4	5182.7	66.2	3973.6	149.2	8953.9	106.6	6394.4	158.5	9512.7
804 Series 3/4" x 1"	1298.7	99.1	5945.4	76.0	4558.4	171.2	10272	122.3	7335.4	181.9	10913
814 Series 3/4" x 1-1/4"	1405.5	107.2	6434.3	82.2	4933.3	185.3	11116	132.3	7938.7	196.8	11810
805 Series 1" x 1-1/4"	1747.2	133.3	7998.9	102.2	6132.9	230.3	13819	164.5	9869.1	244.7	14682
815 Series 1" x 1-1/2"	1747.2	133.3	7998.9	102.2	6132.9	230.3	13819	164.5	9667.1	244.7	14682
850 Series 3/4", 1", or 1-1/4" x 1-1/2"	2635.8	201.1	12067	154.2	9251.8	347.5	20847	248.1	14888	369.1	22148
851 Series 3/4", 1", or 1-1/4" x 2"	2635.8	201.1	12067	154.2	9251.8	347.5	20847	248.1	14888	369.1	22148
901 Series 1-1/4" x 2" & 3"	6484.9	494.8	29688	379.4	22762	854.8	51291	610.5	36629	908.2	54492
903 Series 1-1/2" x 2" & 3"	6484.9	494.8	29688	379.4	22762	854.8	51291	610.5	36629	908.2	54492

400 PSI Capacity Chart

[60 °F, 1 Atm]

Valve Series Inlet x Outlet	Air SCFM	Air lb/min	Air lb/hr	NH3 lb/min	NH3 lb/hr	R-22 lb/min	R-22 lb/hr	R-290 lb/min	R-290 lb/hr	R-404A lb/min	R-404A lb/hr
800 OP Series 1/2" x 3/4"	98.2	7.5	449.6	5.7	344.7	12.9	776.8	9.2	554.8	13.8	825.3
800 Series 1/2" x 3/4"	191.0	14.6	874.3	11.2	670.3	25.2	1510.5	18.0	1078.7	26.7	1604.7
801 Series 1/2" x 3/4"	331.9	25.3	1519.6	19.4	1165.1	43.8	2625.3	31.2	1874.9	46.5	2789.2
801DHC Series 1/2" x 3/4"	355.1	27.1	1625.7	20.8	1246.5	46.8	2808.7	33.4	2005.8	49.7	2984.0
CS5602R Series 3/4" x 1"	355.1	27.1	1625.7	20.8	1246.5	46.8	2808.7	33.4	2005.8	49.7	2984.0
812 Series 1/2" x 1"	608.8	46.5	2787.3	35.6	2137.0	80.3	4815.5	57.3	3439.0	85.3	5116.0
804R Series 3/4" x 1"	741.2	56.6	3393.0	43.4	2601.5	97.7	5862.0	69.8	4186.3	103.8	6227.9
803 Series 1/2" x 3/4"	899.4	68.6	4117.4	52.6	3156.9	118.6	7113.5	84.7	5080.1	126.0	7557.5
813 Series 1/2" x 1"	904.9	69.0	4142.4	52.9	3176.0	119.3	7156.7	85.2	5110.9	126.7	7603.3
805R Series 1 x 1-1/4"	954.9	72.9	4371.4	55.9	3351.6	125.9	7552.3	89.9	5393.4	133.7	8023.6
CS5602A Series 1/2" x 3/4"	1054.9	80.5	4829.4	61.7	3702.7	139.1	8343.5	99.3	5958.5	147.7	8864.2
850R Series 3/4", 1", or 1-1/4" x 1-1/2"	1136.8	86.7	5204.0	66.5	3990.0	149.8	8990.8	107.0	6420.8	159.2	9551.9
851R Series 3/4", 1", or 1-1/4" x 2"	1136.8	86.7	5204.0	66.5	3990.0	149.8	8990.8	107.0	6420.8	159.2	9551.9
CS5602B Series 1/2" x 1"	1205.0	91.9	5516.3	70.5	4229.4	158.8	9530.3	113.4	6806.0	168.8	10125
CS5602C Series 3/4" x 1"	1205.0	91.9	5516.3	70.5	4229.4	158.8	9530.3	113.4	6806.0	168.8	10125
804 Series 3/4" x 1"	1382.3	105.5	6328.1	80.9	4851.9	182.2	10933	130.1	7807.6	193.6	11615
814 Series 3/4" x 1-1/4"	1496.0	114.1	6848.5	87.5	5250.9	197.2	11832	140.8	8449.7	209.5	12570
805 Series 1" x 1-1/4"	1859.7	141.9	8513.8	108.8	6527.7	245.1	14709	175.1	10504	260.4	15627
815 Series 1" x 1-1/2"	1859.7	141.9	8513.8	108.8	6527.7	245.1	14709	175.1	10504	260.4	15627
850 Series 3/4", 1", or 1-1/4" x 1-1/2"	2805.5	214.1	12844	164.1	9847.3	369.8	22189	264.1	15846	392.9	23574
851 Series 3/4", 1", or 1-1/4" x 2"	2805.5	214.1	12844	164.1	9847.3	369.8	22189	264.1	15846	392.9	26574
901 Series 1-1/4" x 2" & 3"	6902.3	526.6	31599	403.8	24227	909.9	54592	649.8	38987	966.7	57999
903 Series 1-1/2" x 2" & 3"	6902.3	526.6	31599	403.8	24227	909.9	54592	649.8	38987	966.7	57999



800QR OP Xtreme

Two Piece, Cartridge Style Relief valve designed to withstand extreme temperature ranges as well as harsh chemical environments. The Cyrus Shank 800QR OP Xtreme is made of all Stainless Steel parts (internal and external) and is available in both threaded and welded connections.

Temperature Range: -400°F to 400°F

MAWP: 500 psig



800QR OP

For optimal performance, the 800QR OP is the only Two-Piece valve that is made of all stainless steel parts (internal and external). The body is designed to remain in one system well beyond the standard replacement intervals, with a simple replacement of the insert when it comes time to change. Available in both threaded and welded connections.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



800SS OP

Machined out of stainless steel, the 800SS OP is the most durable one-piece valve of its kind. All stainless steel internals for maximum durability and extended performance.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



800 OP

A reliable relief valve made of A36 carbon steel with black oxide coating to increase its corrosion resistance. All stainless steel internals for maximum durability.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



800D OP

For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

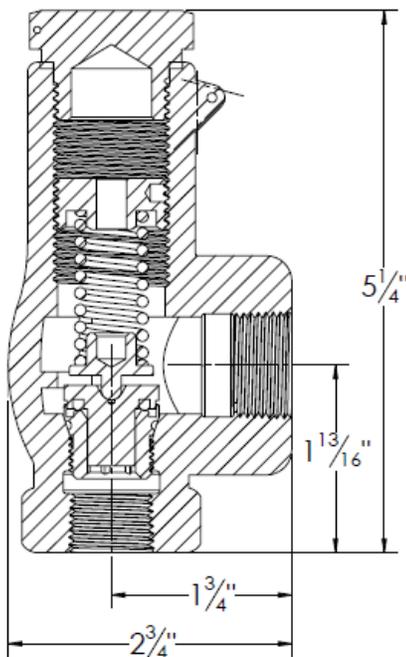
All Safety Relief Valves on this page are certified under the same National Board certification and are interchangeable.

800 OP Series

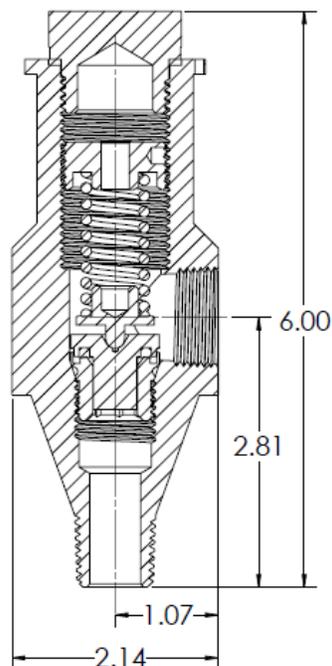
800D OP, 800 OP, 800SS OP, 800QR OP, 800QR OPX, 800QRW OP

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
800D OP	Ductile Iron	3.3	1/2" FNPT	3/4" FNPT	843 (Page 68) 843F (Page 68) 846M (Page 74) 848M (Page 74)
800 OP	Black Oxide Coated Carbon Steel	3.2	1/2" MNPT	3/4" FNPT	
800SS OP	Stainless Steel	3.5	1/2" MNPT	3/4" FNPT	
800QR OP 800QR OPX	Stainless Steel	3.9	1/2" MNPT	3/4" FNPT	
800QRW OP 800QRW OPX	Stainless Steel	3.9	1/2" Butt Weld	3/4" Socket Weld	Custom Orders Only
800QR OP-1 800QR OP-1X	Stainless Steel Replacement Insert	1.4	--	—	—

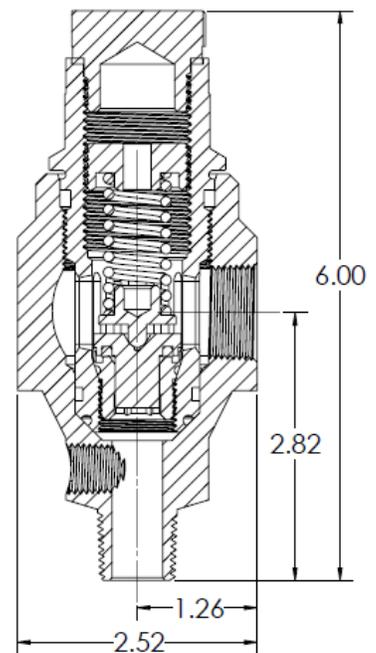
800D OP



800(SS) OP



800QR(W) OP





800QR Xtreme

Two Piece, Cartridge Style Relief valve designed to withstand extreme temperature ranges as well as harsh chemical environments. The Cyrus Shank 800QR Xtreme is made of all Stainless Steel parts (internal and external) and is available in both threaded and welded connections.

Temperature Range: -400°F to 400°F

MAWP: 500 psig



800QR

For optimal performance, the 800QR is the only Two-Piece valve that is made of all stainless steel parts (internal and external). The body is designed to remain in one system well beyond the standard replacement intervals, with a simple replacement of the insert when it comes time to change. Available in both threaded and welded connections.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



800SS

Machined out of stainless steel, the 800SS is the most durable one-piece valve of its kind. All stainless steel internals for maximum durability and extended performance.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



800

A reliable relief valve made of A36 carbon steel with black oxide coating to increase its corrosion resistance. All stainless steel internals for maximum durability.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



800D

For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

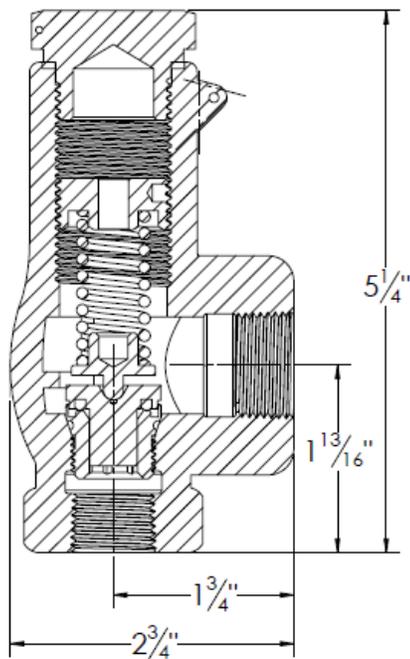
All Safety Relief Valves on this page are certified under the same National Board certification and are interchangeable.

800 Series

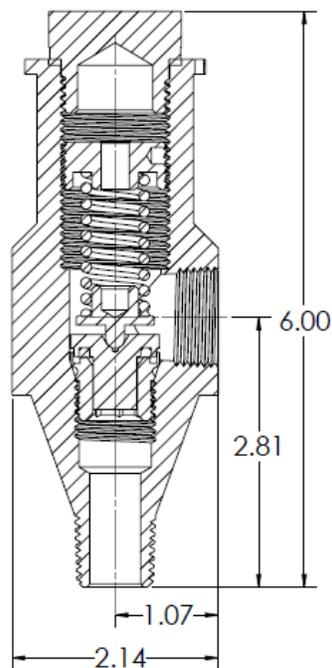
800D, 800, 800SS, 800QR, 800QRX, 800QRW

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
800D	Ductile Iron	3.3	1/2" FNPT	3/4" FNPT	843 (Page 68) 843F (Page 68) 846M (Page 74) 848M (Page 74)
800	Black Oxide Coated Carbon Steel	3.2	1/2" MNPT	3/4" FNPT	
800SS	Stainless Steel	3.5	1/2" MNPT	3/4" FNPT	
800QR	Stainless Steel	3.9	1/2" MNPT	3/4" FNPT	
800QRX					
800QRW	Stainless Steel	3.9	1/2" Butt Weld	3/4" Socket Weld	Custom Orders Only
800QRWX					
800QR-1	Stainless Steel Replacement Insert	1.4	--	—	—
800QR-1X					

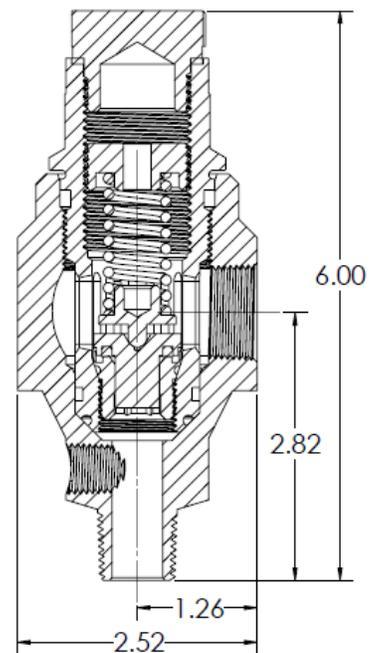
800D



800(SS)



800QR(W)





801QR Xtreme

Two Piece, Cartridge Style Relief valve designed to withstand extreme temperature ranges as well as harsh chemical environments. The Cyrus Shank 801QR Xtreme is made of all Stainless Steel parts (internal and external) and is available in both threaded and welded connections.

Temperature Range: -400°F to 400°F

MAWP: 500 psig



801QR

For optimal performance, the 801QR is the only Two-Piece valve that is made of all stainless steel parts (internal and external). The body is designed to remain in one system well beyond the standard replacement intervals, with a simple replacement of the insert when it comes time to change. Available in both threaded and welded connections.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



8001SS

Machined out of stainless steel, the 801SS is the most durable one-piece valve of its kind. All stainless steel internals for maximum durability and extended performance.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



801

A reliable relief valve made of A36 carbon steel with black oxide coating to increase its corrosion resistance. All stainless steel internals for maximum durability.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



801D

For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

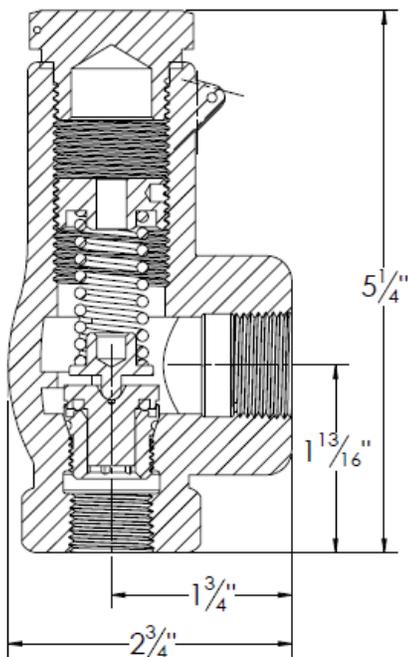
All Safety Relief Valves on this page are certified under the same National Board certification and are interchangeable.

801 Series

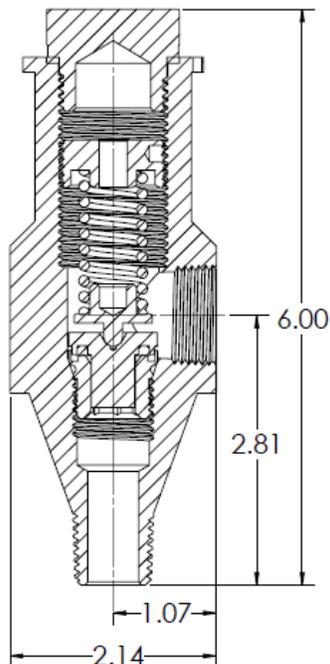
801D, 801, 801SS, 801QR, 801QRX, 801QRW

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
801D	Ductile Iron	3.3	1/2" FNPT	3/4" FNPT	843 (Page 68) 843F (Page 68) 846M (Page 74) 848M (Page 74)
801	Black Oxide Coated Carbon Steel	3.2	1/2" MNPT	3/4" FNPT	
801SS	Stainless Steel	3.5	1/2" MNPT	3/4" FNPT	
801QR	Stainless Steel	3.9	1/2" MNPT	3/4" FNPT	
801QRX					
801QRW	Stainless Steel	3.9	1/2" Butt Weld	3/4" Socket Weld	Custom Orders Only
801QRWX					
801QR-1	Stainless Steel Replacement Insert	1.4	--	—	—
801QR-1X					

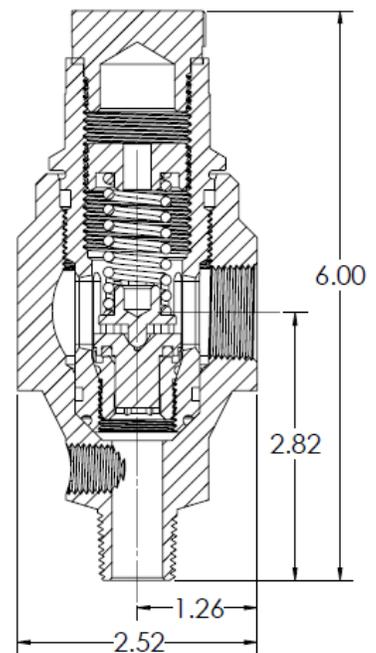
801D



801(SS)



801QR(W)



801DHC Series (H5600R RIK)

All valves on this page are certified under the same National Board number.



801DHC QR Xtreme

Two Piece, Cartridge Style Relief valve designed to withstand extreme temperature ranges as well as harsh chemical environments. The Cyrus Shank 801DHC QR Xtreme is made of all Stainless Steel parts (internal and external) and is available in both threaded and welded connections.

Temperature Range: -400°F to 400°F

MAWP: 500 psig



801DHC QR

For optimal performance, the 801DHC QR is the only Two-Piece valve that is made of all stainless steel parts (internal and external). The body is designed to remain in one system well beyond the standard replacement intervals, with a simple replacement of the insert when it comes time to change. Available in both threaded and welded connections.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



801DHC

For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

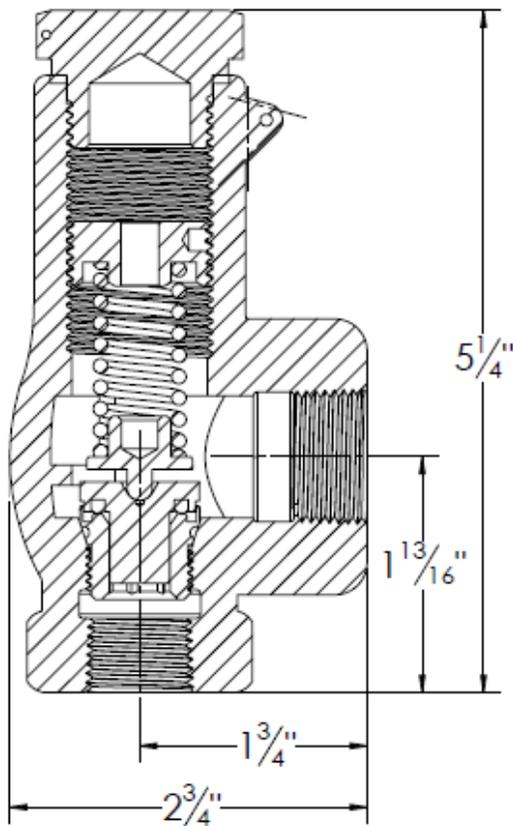
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801DHC Series

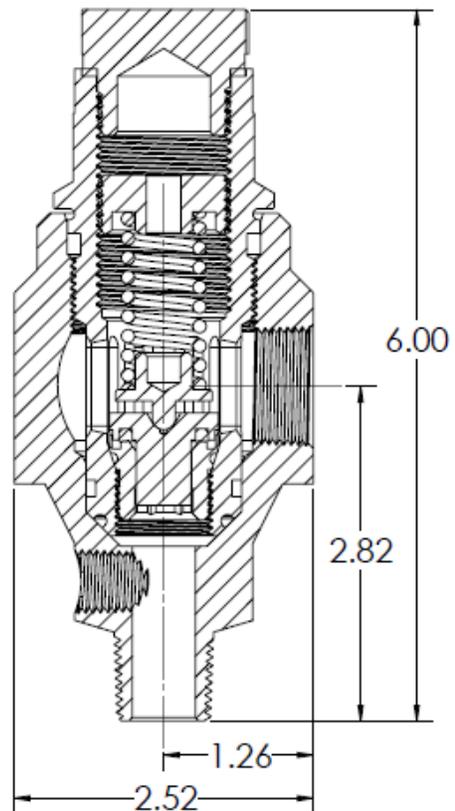
801DHC, 801DHC QR, 801DHC QRX, 801DHC QRW

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
801DHC	Ductile Iron	3.3	1/2" FNPT	3/4" FNPT	843 (Page 68) 843F (Page 68) 846M (Page 74) 848M (Page 74)
801DHC QR	Stainless Steel	3.9	1/2" MNPT	3/4" FNPT	
801DHC QRX					
801DHC QRW	Stainless Steel	3.9	1/2" Butt Weld	3/4" Socket Weld	Custom Orders Only
801DHC QRWX					
801DHC QR-1	Stainless Steel Replacement Insert	1.4	--	—	—
801DHC QR-1X					

801DHC



801DHC QR



CS5602R Series (H5602R RIK)

All valves on this page are certified under the same National Board number.



CS5602R QR Xtreme (COMING SOON)

Two Piece, Cartridge Style Relief valve designed to withstand extreme temperature ranges as well as harsh chemical environments. The Cyrus Shank 5602R QR Xtreme is made of all Stainless Steel parts (internal and external) and is available in both threaded and welded connections.

Temperature Range: -400°F to 400°F

MAWP: 500 psig



CS5602R QR (COMING SOON)

For optimal performance, the CS5602R QR is the only Two-Piece valve that is made of all stainless steel parts (internal and external). The body is designed to remain in one system well beyond the standard replacement intervals, with a simple replacement of the insert when it comes time to change. Available in both threaded and welded connections.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



CS5602R

For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

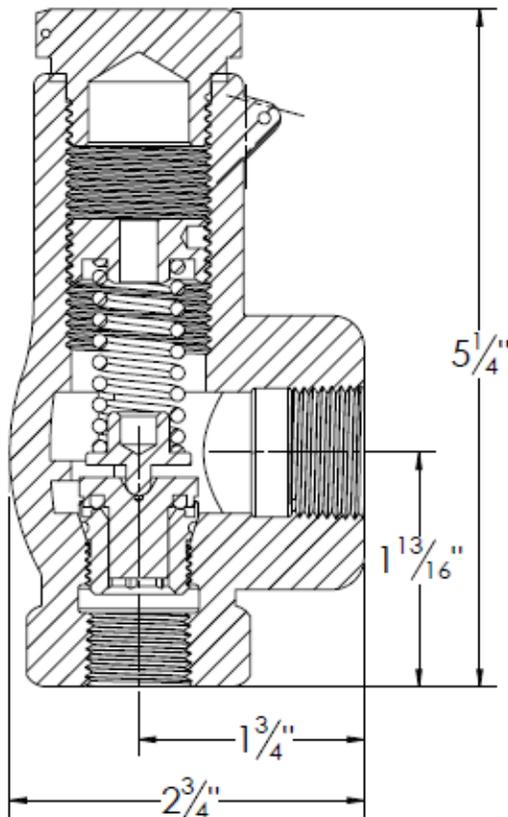
All Safety Relief Valves on this page are certified under the same National Board certification and are interchangeable.

CS5602R Series

CS5602R, CS5602R QR, CS5602R QRX, CS5602R QRW

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
CS5602R	Ductile Iron	3.3	3/4" FNPT	1" FNPT	843 (Page 68) 843F (Page 68)
CS5602R QR	Stainless Steel	N/A	3/4" FNPT	1" FNPT	846M (Page 74) 848M (Page 74) 850ME-3/4" (Page 76)
CS5602R QRX					
CS5602R QRW	Stainless Steel	N/A	3/4" Socket Weld	1" Socket Weld	Custom Orders Only
CS5602R QRWX					
CS5602R QR -1	Stainless Steel Replacement Insert	N/A	--	—	—
CS5602R QR-1X					

CS5602R



CS5602R QR(W)

CS5602R QR COMING SOON!
Visit our website for updates!

812 Series

All valves on this page are certified under the same National Board number.



812QR Xtreme (COMING SOON)

Two Piece, Cartridge Style Relief valve designed to withstand extreme temperature ranges as well as harsh chemical environments. The Cyrus Shank 812QR Xtreme is made of all Stainless Steel parts (internal and external) and is available in both threaded and welded connections.

Temperature Range: -400°F to 400°F

MAWP: 500 psig



812QR (COMING SOON)

For optimal performance, the 812QR is the only Two-Piece valve that is made of all stainless steel parts (internal and external). The body is designed to remain in one system well beyond the standard replacement intervals, with a simple replacement of the insert when it comes time to change. Available in both threaded and welded connections.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



812

For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

All Safety Relief Valves on this page are certified under the same National Board certification and are interchangeable.

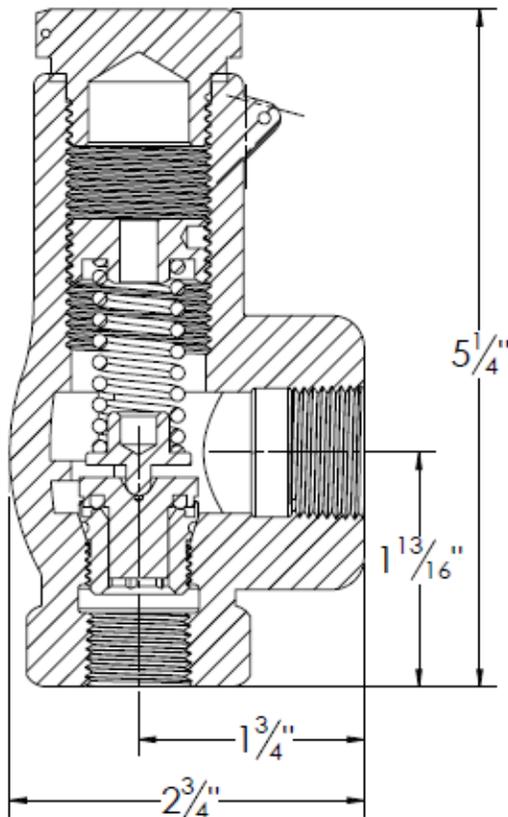
812 Series

812, 812QR, 812QRX, 812QRW

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
812	Ductile Iron	3.3	1/2" FNPT	1" FNPT	843 (Page 68) 843F (Page 68) 846M (Page 74) 848M (Page 74)
812 QR	Stainless Steel	N/A	1/2" FNPT	1" FNPT	
812 QRX					
812 QRW	Stainless Steel	N/A	1/2" Socket Weld	1" Socket Weld	Custom Orders Only
812 QRWX					
812QR -1	Stainless Steel Replacement Insert	N/A	--	—	—
812QR-1X					

812

812QR(W)



812QR COMING SOON!
Visit our website for updates!

804R Series (H5632R RIK)

All valves on this page are certified under the same National Board number.



804R QR Xtreme

Two Piece, Cartridge Style Relief valve designed to withstand extreme temperature ranges as well as harsh chemical environments. The Cyrus Shank 804R QR Xtreme is made of all Stainless Steel parts (internal and external) and is available in both threaded and welded connections.

Temperature Range: -400°F to 400°F

MAWP: 500 psig



804R QR

For optimal performance, the 804R QR is the only Two-Piece valve that is made of all stainless steel parts (internal and external). The body is designed to remain in one system well beyond the standard replacement intervals, with a simple replacement of the insert when it comes time to change. Available in both threaded and welded connections.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



804R

For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

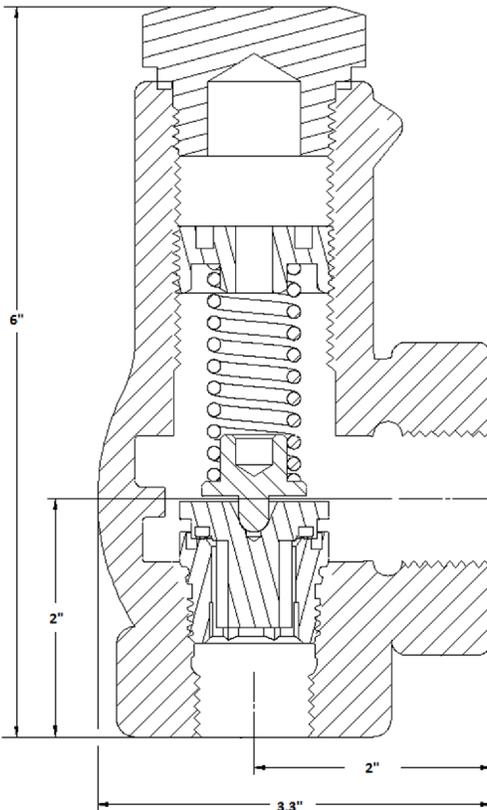
All Safety Relief Valves on this page are certified under the same National Board certification and are interchangeable.

804R Series

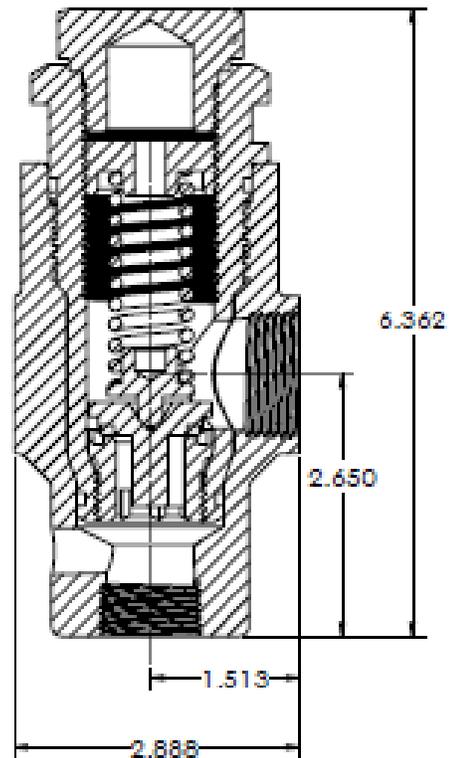
804R, 804R QR, 804R QRX, 804R QRW

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
804R	Ductile Iron	5.0	3/4" FNPT	1" FNPT	844 (Page 68) 844F (Page 68) 847M (Page 74) 849M (Page 74) 850M-3/4" (Page 76)
804R QR	Stainless Steel	6.3	3/4" FNPT	1" FNPT	
804R QRX					
804R QRW	Stainless Steel	6.3	3/4" Socket Weld	1" Socket Weld	Custom Orders Only
804R QRWX					
804R QR-1	Stainless Steel Replacement Insert	2.6	--	—	—
804R QR-1X					

804R



804R QR(W)





803QC Xtreme

Two Piece, Cartridge Style Relief valve designed to withstand extreme temperature ranges as well as harsh chemical environments. The Cyrus Shank 803QC Xtreme is made of all Stainless Steel parts (internal and external) and is available in both threaded and welded connections.

Temperature Range: -400°F to 400°F

MAWP: 500 psig



803QC

For optimal performance, the 803QC is the only Two-Piece valve that is made of all stainless steel parts (internal and external). The body is designed to remain in one system well beyond the standard replacement intervals, with a simple replacement of the insert when it comes time to change. Available in both threaded and welded connections.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



803

For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

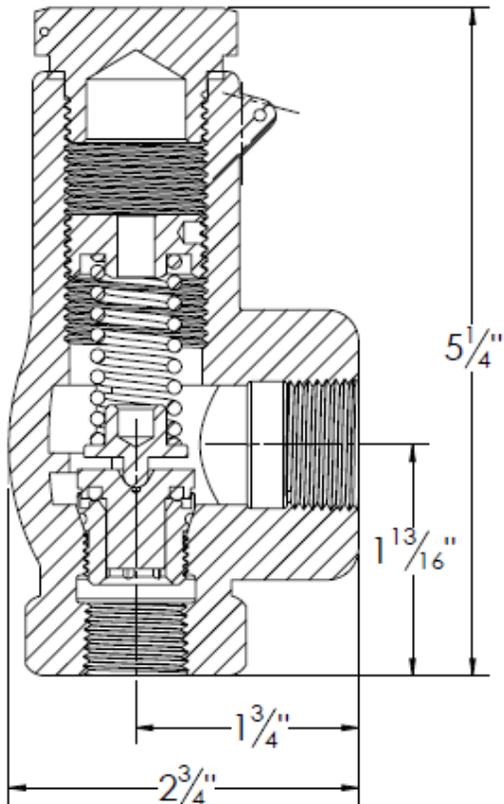
All Safety Relief Valves on this page are certified under the same National Board certification and are interchangeable.

803 Series

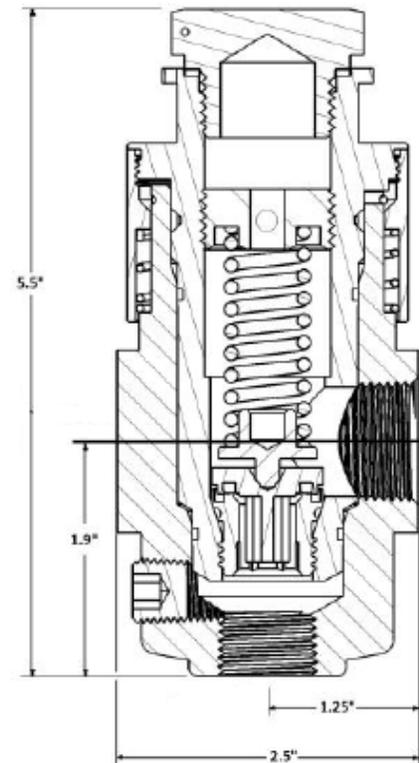
803, 803QC, 803QCX, 803QCW

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
803	Ductile Iron	3.3	1/2" FNPT	3/4" FNPT	843 (Page 68) 843F (Page 68) 846M (Page 74) 848M (Page 74)
803QC	Stainless Steel	4.9	1/2" FNPT	3/4" FNPT	
803QCX					
803QCW	Stainless Steel	4.9	1/2" Socket Weld	3/4" Socket Weld	Custom Orders Only
803QCWX					
803QC-1	Stainless Steel Replacement Insert	1.5	--	—	—
803QC-1X					

803



803QC(W)



813 Series

All valves on this page are certified under the same National Board number.



813QR Xtreme (COMING SOON)

Two Piece, Cartridge Style Relief valve designed to withstand extreme temperature ranges as well as harsh chemical environments. The Cyrus Shank 813QR Xtreme is made of all Stainless Steel parts (internal and external) and is available in both threaded and welded connections.

Temperature Range: -400°F to 400°F

MAWP: 500 psig



813QR (COMING SOON)

For optimal performance, the 813QR is the only Two-Piece valve that is made of all stainless steel parts (internal and external). The body is designed to remain in one system well beyond the standard replacement intervals, with a simple replacement of the insert when it comes time to change. Available in both threaded and welded connections.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



813

For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

All Safety Relief Valves on this page are certified under the same National Board certification and are interchangeable.

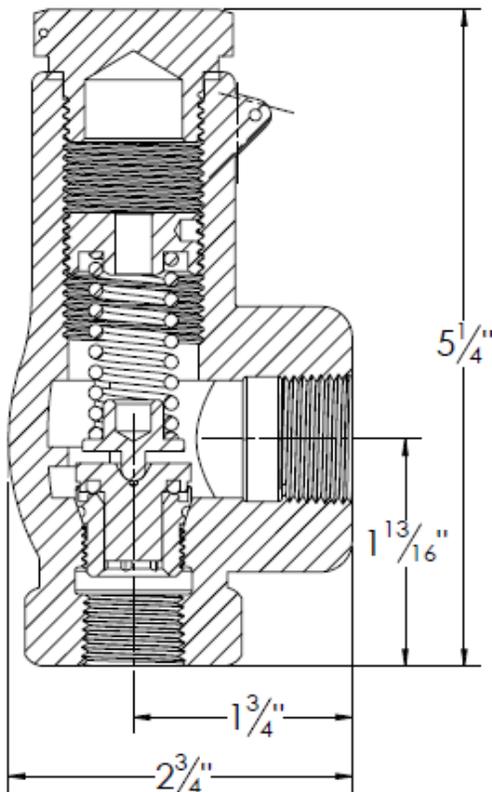
813 Series

813, 813QR, 813QRX, 813QRW

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
813	Ductile Iron	3.3	1/2" FNPT	1" FNPT	843 (Page 68) 843F (Page 68) 846M (Page 74) 848M (Page 74)
813QR	Stainless Steel	N/A	1/2" FNPT	1" FNPT	
813QRX					
813QRW	Stainless Steel	N/A	1/2" Socket Weld	1" Socket Weld	Custom Orders Only
813QRWX					
813QR-1	Stainless Steel Replacement Insert	N/A	--	—	—
813QR-1X					

813

813QR(W)



813QR COMING SOON!
Visit our website for updates!

805R Series (H5633R RIK)

All valves on this page are certified under the same National Board number.



805R QR Xtreme

Two Piece, Cartridge Style Relief valve designed to withstand extreme temperature ranges as well as harsh chemical environments. The Cyrus Shank 805R QR Xtreme is made of all Stainless Steel parts (internal and external) and is available in both threaded and welded connections.

Temperature Range: -400°F to 400°F

MAWP: 500 psig



805R QR

For optimal performance, the 805R QR is the only Two-Piece valve that is made of all stainless steel parts (internal and external). The body is designed to remain in one system well beyond the standard replacement intervals, with a simple replacement of the insert when it comes time to change. Available in both threaded and welded connections.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



805R

For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

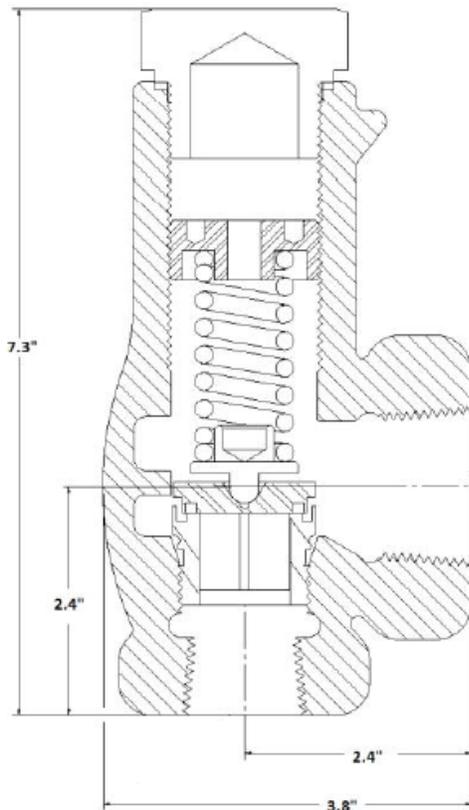
All Safety Relief Valves on this page are certified under the same National Board certification and are interchangeable.

805R Series

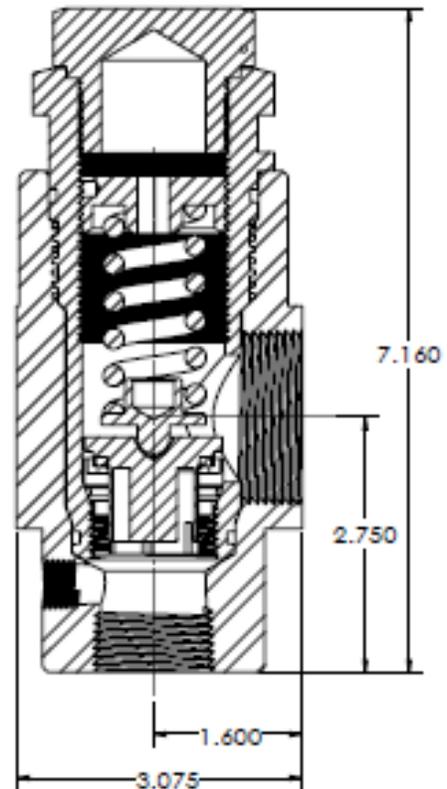
805R, 805R QR, 805R QRX, 805R QRW

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
805R	Ductile Iron	8.0	1" FNPT	1-1/4" FNPT	845 (Page 68) 845F (Page 68) 850M-1" (Page 76) 875M (Page 77) 876M (Page 77)
805R QR	Stainless Steel	9.7	1" MNPT	1-1/4" FNPT	
805R QRX					
805R QRW	Stainless Steel	9.7	1" Socket Weld	1-1/4" Socket Weld	Custom Orders Only
805R QRWX					
805R QR-1	Stainless Steel Replacement Insert	4.0	--	—	—
805R QR-1X					

805R



805R QR(W)



CS5602A Series (H5600A RIK)

All valves on this page are certified under the same National Board number.



CS5602A QR Xtreme

Two Piece, Cartridge Style Relief valve designed to withstand extreme temperature ranges as well as harsh chemical environments. The Cyrus Shank 5602AQR Xtreme is made of all Stainless Steel parts (internal and external) and is available in both threaded and welded connections.

Temperature Range: -400°F to 400°F

MAWP: 500 psig



CS5602A QR

For optimal performance, the CS5602A QR is the only Two-Piece valve that is made of all stainless steel parts (internal and external). The body is designed to remain in one system well beyond the standard replacement intervals, with a simple replacement of the insert when it comes time to change. Available in both threaded and welded connections.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



CS5602A

For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

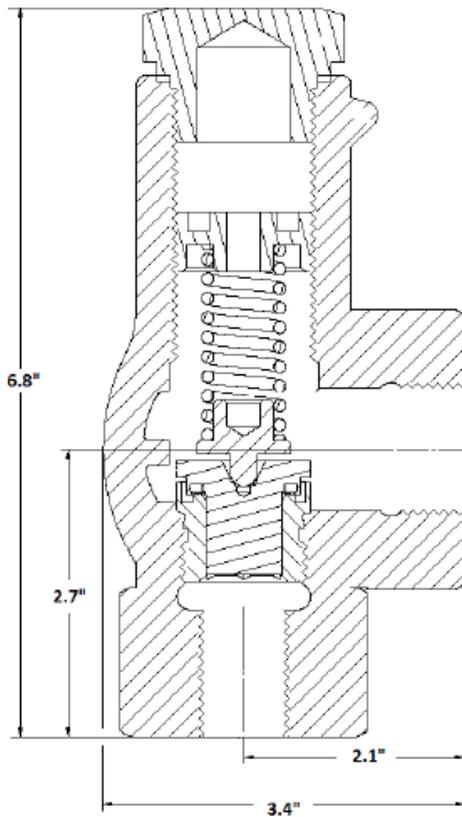
All Safety Relief Valves on this page are certified under the same National Board certification and are interchangeable.

CS5602A Series

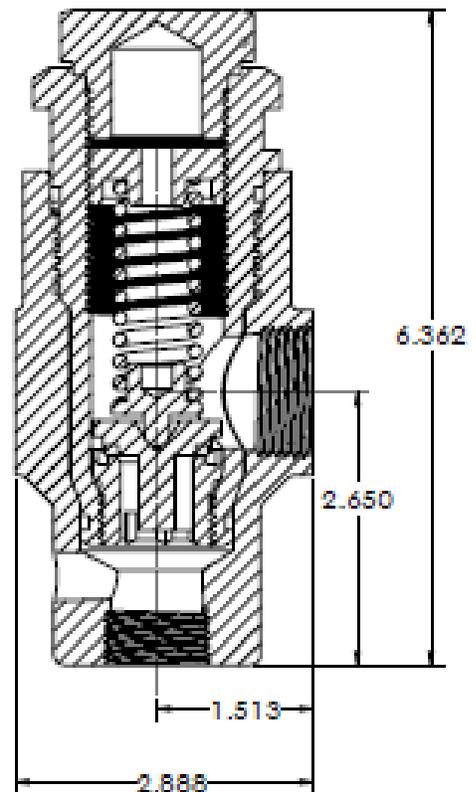
CS5602A, CS5602A QR, CS5602A QRX, CS5602A QRW

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
CS5602A	Ductile Iron	6.3	1/2" FNPT	3/4" FNPT	843 (Page 68) 843F (Page 68)
CS5602A QR	Stainless Steel	6.3	1/2" MNPT	3/4" FNPT	
CS5602A QRX					
CS5602A QRW	Stainless Steel	6.3	1/2" Socket Weld	3/4" Socket Weld	Custom Orders Only
CS5602A QRWX					
CS5602A QR-1	Stainless Steel Replacement Insert	2.6	--	—	—
CS5602A QR-1X					

CS5602A QR



CS5602A QR(W)



850R/851R Series (H5634R RIK)

All valves on this page are certified under the same National Board number.

850RA/851RA



Anodized aluminum housing for a light weight alternative to the heavy ductile iron. For larger systems needing a high performance relief valve.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

850RD/851RD



For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

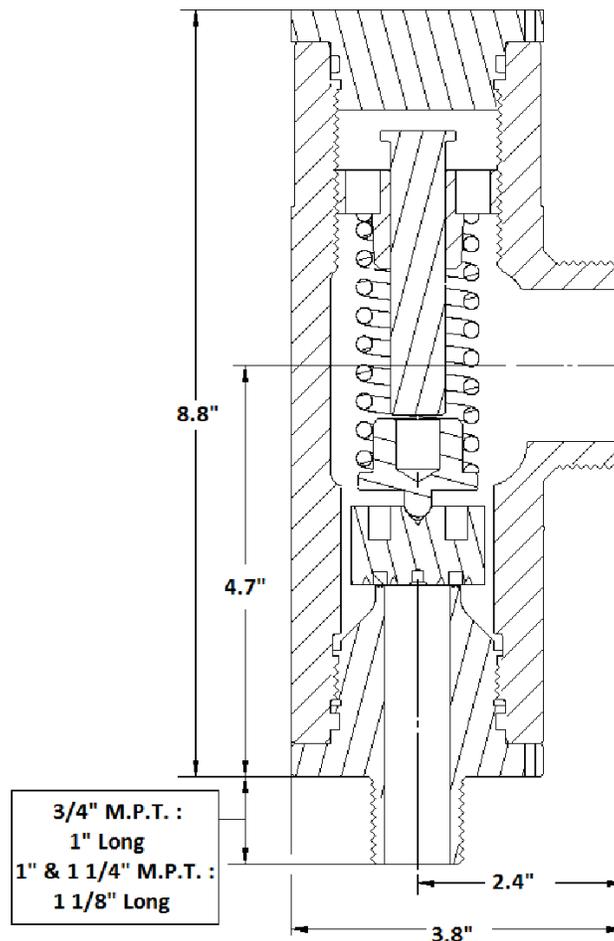
All Safety Relief Valves on this page are certified under the same National Board certification and are interchangeable.

850R/851R Series

850RD, 851RD, 850RA, 851RA

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
850RD	Ductile Iron	12.2	3/4" MNPT, 1" MNPT, OR 1-1/4" MNPT	1-1/2" FNPT	850M-3/4" (Page 76) 850M-1" (Page 76) 875M (Page 77) 876M (Page 77) 900M-1-1/4" (Page 78) 901M (Page 79)
851RD				2" MNPT	
850RA	Anodized Aluminum	7.2		1-1/2" FNPT	
851RA				2" MNPT	

850R/851R



CS5602B Series (H5601 RIK)

All valves on this page are certified under the same National Board number.



CS5602B QR Xtreme

Two Piece, Cartridge Style Relief valve designed to withstand extreme temperature ranges as well as harsh chemical environments. The Cyrus Shank 5602B QR Xtreme is made of all Stainless Steel parts (internal and external) and is available in both threaded and welded connections.

Temperature Range: -400°F to 400°F

MAWP: 500 psig



CS5602B QR

For optimal performance, the CS5602B QR is the only Two-Piece valve that is made of all stainless steel parts (internal and external). The body is designed to remain in one system well beyond the standard replacement intervals, with a simple replacement of the insert when it comes time to change. Available in both threaded and welded connections.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



CS5602B

For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

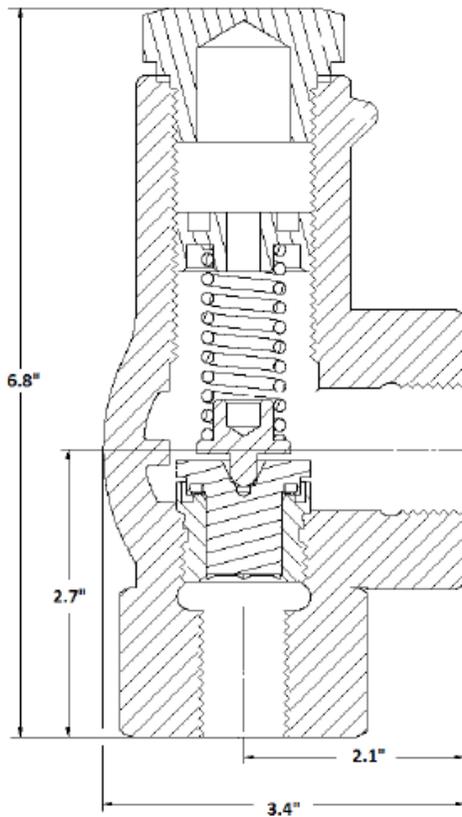
All Safety Relief Valves on this page are certified under the same National Board certification and are interchangeable.

CS5602B Series

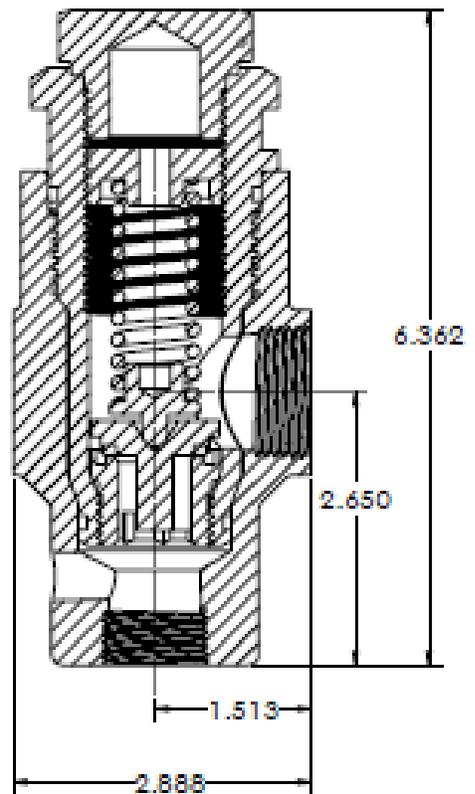
CS5602B, CS5602B QR, CS5602B QRX, CS5602B QRW

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
CS5602B	Ductile Iron	6.3	1/2" FNPT	1" FNPT	843 (Page 68) 843F (Page 68)
CS5602B QR	Stainless Steel	6.3	1/2" FNPT	1" FNPT	
CS5602B QRX					
CS5602B QRW	Stainless Steel	6.3	1/2" Socket Weld	1" Socket Weld	Custom Orders Only
CS5602B QRWX					
CS5602B QR-1	Stainless Steel Replacement Insert	2.6	--	—	—
CS5602B QR-1X					

CS5602B



CS5602B QR(W)



CS5602C Series (H5602 RIK)

All valves on this page are certified under the same National Board number.



CS5602C QR Xtreme

Two Piece, Cartridge Style Relief valve designed to withstand extreme temperature ranges as well as harsh chemical environments. The Cyrus Shank 5602C QR Xtreme is made of all Stainless Steel parts (internal and external) and is available in both threaded and welded connections.

Temperature Range: -400°F to 400°F

MAWP: 500 psig



CS5602C QR

For optimal performance, the CS5602C QR is the only Two-Piece valve that is made of all stainless steel parts (internal and external). The body is designed to remain in one system well beyond the standard replacement intervals, with a simple replacement of the insert when it comes time to change. Available in both threaded and welded connections.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



CS5602C

For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

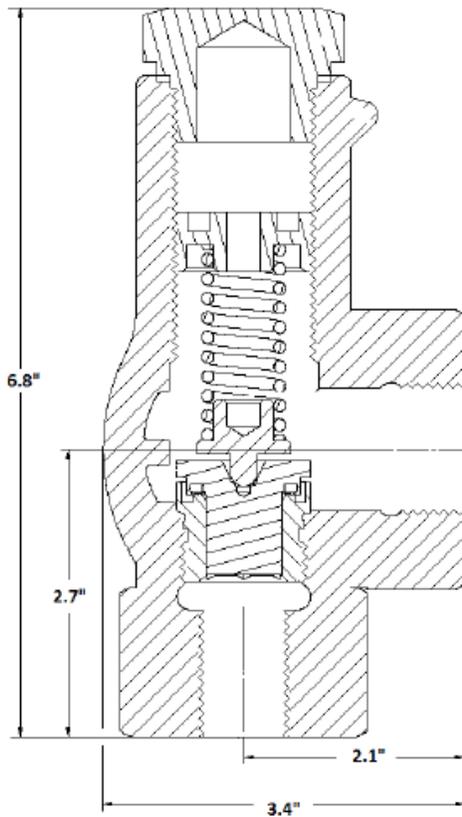
All Safety Relief Valves on this page are certified under the same National Board certification and are interchangeable.

CS5602C Series

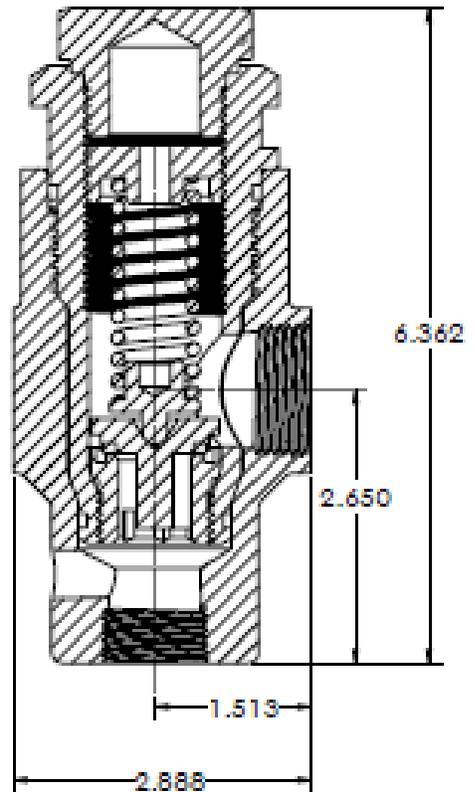
CS5602C, CS5602C QR, CS5602C QRX, CS5602C QRW

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
CS5602C	Ductile Iron	6.3	3/4" FNPT	1" FNPT	844 (Page 68) 844F (Page 68) 850M-3/4" (Page 76)
CS5602C QR	Stainless Steel	6.3	3/4" FNPT	1" FNPT	
CS5602C QRX					
CS5602C QRW	Stainless Steel	6.3	3/4" Socket Weld	1" Socket Weld	Custom Orders Only
CS5602C QRWX					
CS5602C QR-1	Stainless Steel Replacement Insert	2.6	--	—	—
CS5602C QR-1X					

CS5602C



CS5602C QR(W)





804QR Xtreme

Two Piece, Cartridge Style Relief valve designed to withstand extreme temperature ranges as well as harsh chemical environments. The Cyrus Shank 804QR Xtreme is made of all Stainless Steel parts (internal and external) and is available in both threaded and welded connections.

Temperature Range: -400°F to 400°F

MAWP: 500 psig



804QR

For optimal performance, the 804QR is the only Two-Piece valve that is made of all stainless steel parts (internal and external). The body is designed to remain in one system well beyond the standard replacement intervals, with a simple replacement of the insert when it comes time to change. Available in both threaded and welded connections.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



804

For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

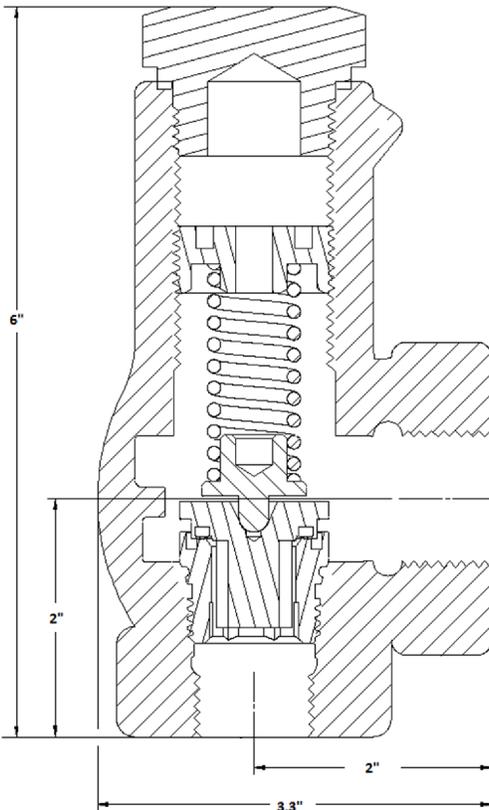
All Safety Relief Valves on this page are certified under the same National Board certification and are interchangeable.

804 Series

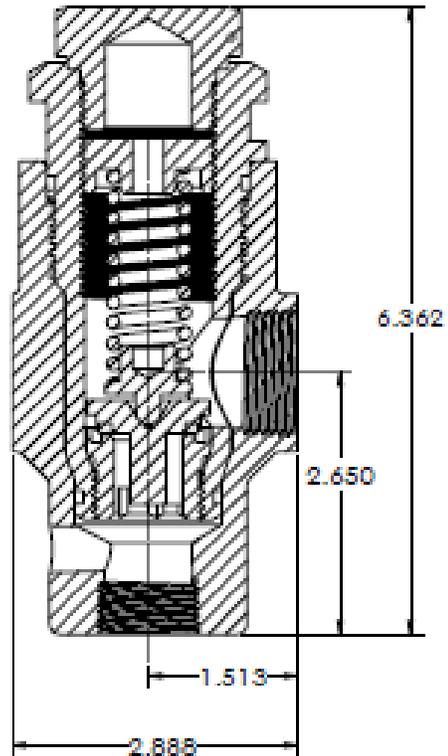
804, 804QR, 804QRX, 804QRW

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
804	Ductile Iron	5.0	3/4" FNPT	1" FNPT	844 (Page 68) 844F (Page 68) 847M (Page 74) 849M (Page 74) 850M-3/4" (Page 76)
804QR	Stainless Steel	6.3	3/4" FNPT	1" FNPT	
804QRX					
804QRW	Stainless Steel	6.3	3/4" Socket Weld	1" Socket Weld	Custom Orders Only
804QRW-X					
804QR-1	Stainless Steel Replacement Insert	2.6	--	—	—
804QR-1X					

804



804QR(W)



814 Series

All valves on this page are certified under the same National Board number.



814QR Xtreme (COMING SOON)

Two Piece, Cartridge Style Relief valve designed to withstand extreme temperature ranges as well as harsh chemical environments. The Cyrus Shank 814QR Xtreme is made of all Stainless Steel parts (internal and external) and is available in both threaded and welded connections.

Temperature Range: -400°F to 400°F

MAWP: 500 psig



814QR (COMING SOON)

For optimal performance, the 814QR is the only Two-Piece valve that is made of all stainless steel parts (internal and external). The body is designed to remain in one system well beyond the standard replacement intervals, with a simple replacement of the insert when it comes time to change. Available in both threaded and welded connections.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



814

For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

All Safety Relief Valves on this page are certified under the same National Board certification and are interchangeable.

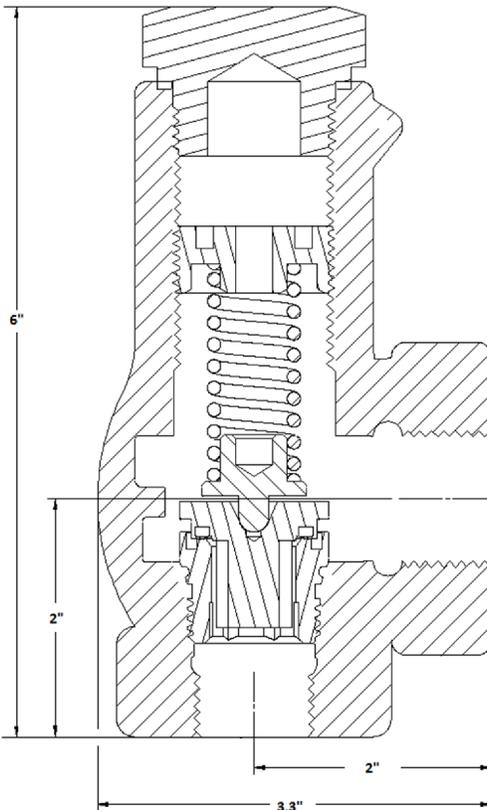
814 Series

814, 814QR, 814QRW

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
814	Ductile Iron	5.0	3/4" FNPT	1-1/4" FNPT	844 (Page 68) 844F (Page 68) 847M (Page 74) 849M (Page 74) 850M-3/4" (Page 76)
814QR	Stainless Steel	N/A	3/4" FNPT	1-1/4" FNPT	
814QRX					
814QRW	Stainless Steel	N/A	3/4" Socket Weld	1-1/4" Socket Weld	Custom Orders Only
814QRWX					
814QR-1	Stainless Steel Replacement Insert	N/A	--	—	—
814QR-1X					

814

814QR(W)



814QR COMING SOON!
Visit our website for updates!

805 Series

All valves on this page are certified under the same National Board number.



805QR Xtreme

Two Piece, Cartridge Style Relief valve designed to withstand extreme temperature ranges as well as harsh chemical environments. The Cyrus Shank 805QR Xtreme is made of all Stainless Steel parts (internal and external) and is available in both threaded and welded connections.

Temperature Range: -400°F to 400°F

MAWP: 500 psig



805 QR

For optimal performance, the 805QR is the only Two-Piece valve that is made of all stainless steel parts (internal and external). The body is designed to remain in one system well beyond the standard replacement intervals, with a simple replacement of the insert when it comes time to change. Available in both threaded and welded connections.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



805

For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

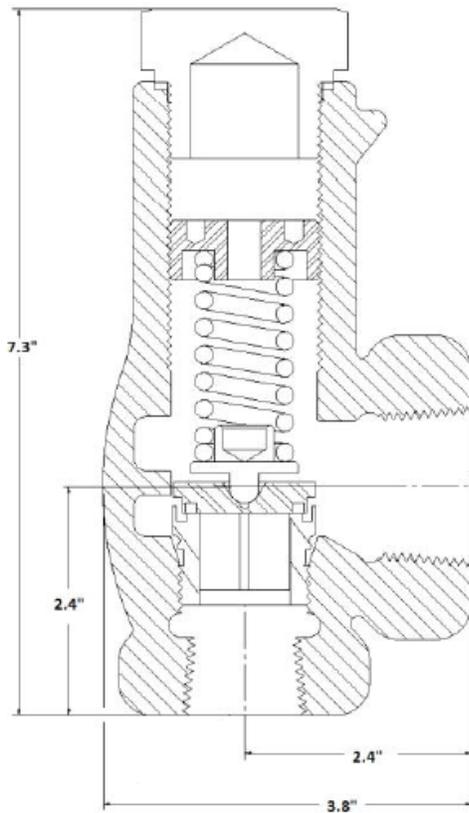
All Safety Relief Valves on this page are certified under the same National Board certification and are interchangeable.

805 Series

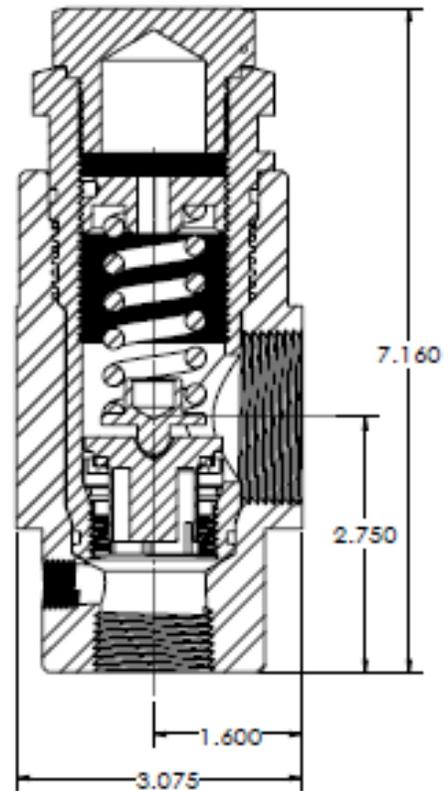
805, 805QR, 805QRX, 805QRW

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
805	Ductile Iron	8.0	1" FNPT	1-1/4" FNPT	845 (Page 68) 845F (Page 68) 850M-1" (Page 76) 875M (Page 77) 876M (Page 77)
805QR	Stainless Steel	9.7	1" FNPT	1-1/4" FNPT	
805QRX					
805QRW	Stainless Steel	9.7	1" Socket Weld	1-1/4" Socket Weld	Custom Orders Only
805QRWX					
805QR-1	Stainless Steel Replacement Insert	4.0	--	—	—
805QR-1X					

805



805QR(W)



815 Series

All valves on this page are certified under the same National Board number.



815QR Xtreme

Two Piece, Cartridge Style Relief valve designed to withstand extreme temperature ranges as well as harsh chemical environments. The Cyrus Shank 815QR Xtreme is made of all Stainless Steel parts (internal and external) and is available in both threaded and welded connections.

Temperature Range: -400°F to 400°F

MAWP: 500 psig



815QR

For optimal performance, the 815QR is the only Two-Piece valve that is made of all stainless steel parts (internal and external). The body is designed to remain in one system well beyond the standard replacement intervals, with a simple replacement of the insert when it comes time to change. Available in both threaded and welded connections.

Temperature Range: -20°F to 275°F

MAWP: 500 psig



815

For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

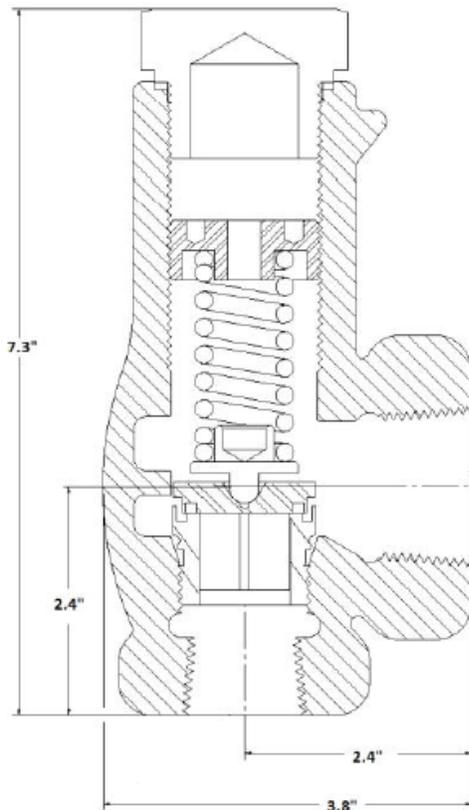
All Safety Relief Valves on this page are certified under the same National Board certification and are interchangeable.

815 Series

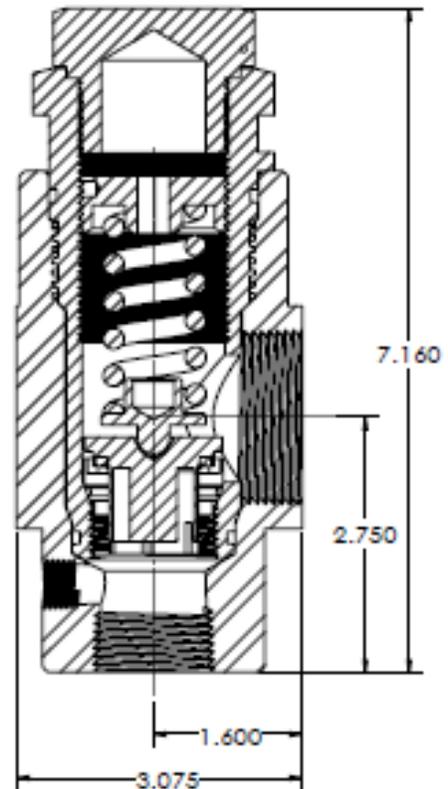
815, 815QR, 815QRX, 815QRW

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
815	Ductile Iron	8.0	1" FNPT	1-1/2" FNPT	845 (Page 68) 845F (Page 68) 850M-1" (Page 76) 875M (Page 77) 876M (Page 77)
815QR	Stainless Steel	9.7	1" FNPT	1-1/2" FNPT	
815QRX					
815QRW	Stainless Steel	9.7	1" Socket Weld	1-1/2" Socket Weld	Custom Orders Only
815QRWX					
815QR-1	Stainless Steel Replacement Insert	4.0	--	—	—
815QR-1X					

815



815QR(W)



850/851 Series

All valves on this page are certified under the same National Board number.

850A/851A



Anodized aluminum housing for a light weight alternative to the heavy ductile iron. For larger systems needing a high performance relief valve.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

850D/851D



For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

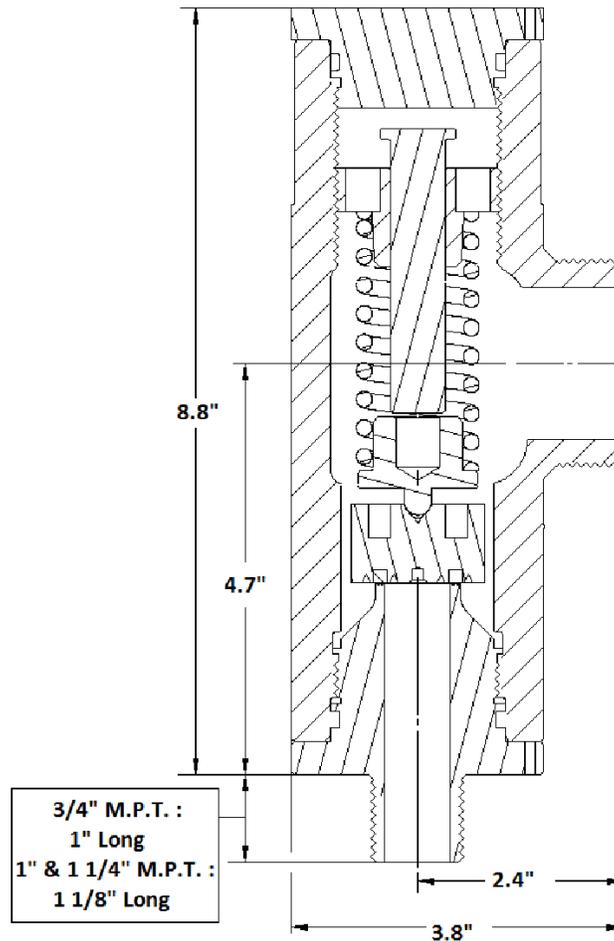
All Safety Relief Valves on this page are certified under the same National Board certification and are interchangeable.

850/851 Series

850D, 851D, 850A, 851A

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
850D	Ductile Iron	12.2	3/4" MNPT, 1" MNPT, OR 1-1/4" MNPT	1-1/2" FNPT	850M-3/4" (Page 76) 850M-1" (Page 76) 875M (Page 77) 876M (Page 77) 900M-1-1/4" (Page 78) 901M (Page 78)
851D				2" MNPT	
850A	Anodized Aluminum	7.2		1-1/2" FNPT	
851A				2" MNPT	

850/851



901/903 Series

All valves on this page are certified under the same National Board number.

901A/903A



Anodized aluminum housing for a light weight alternative to the heavy ductile iron. For larger systems requiring a high performance relief valve.

Temperature Range: -20°F to 275°F

MAWP: 500 psig

901D/903D



For general purpose use, this safety valve is cast out of ductile iron, coated with a traditional grey primer to reduce corrosion risk

Temperature Range: -20°F to 275°F

MAWP: 500 psig

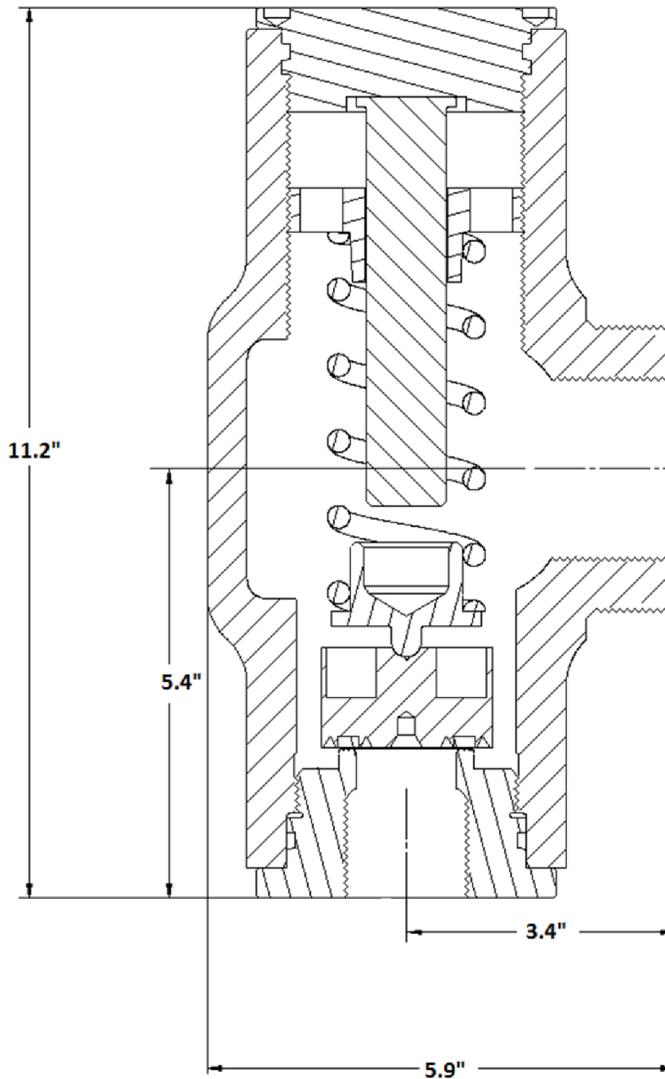
All Safety Relief Valves on this page are certified under the same National Board certification and are interchangeable.

901/903 Series

901D, 901A, 903D, 903A

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
901D	Ductile Iron	26.5	1-1/4" FNPT	2" FNPT & 3" MNPT	900M-1-1/4" (Page 78) 901M (Page 79)
901A	Anodized Aluminum	15.5			
903D	Ductile Iron	26.5	1-1/2" FNPT	3" MNPT	900M-1-1/2" (Page 78) 903M (Page 79)
903A	Anodized Aluminum	15.5			

901/903



SAFETY RELIEF VALVES—Liquid Service



803 LQ QC

For optimal performance, the 803 LQ QC is the only Two-Piece liquid valve that is made of all stainless steel parts (internal and external). The body is designed to remain in one system well beyond the standard replacement intervals, with a simple replacement of the insert when it comes time to change. Available in both threaded and welded connections.



803 LQ

For general purpose use, this liquid safety valve is cast out of ductile iron, coated with a blue primer for added corrosion resistance. For liquid use only.



805 LQ

For general purpose use, this liquid safety valve is cast out of ductile iron, coated with a blue primer for added corrosion resistance. For liquid use only.

Liquid Relief Valve Capacity Chart

VALVE ASSEMBLY NUMBER	SET OR RELEASE PRESSURE (PSIG)	VALVE CAPACITY GPM
803LQ-75	75	20.7
803LQ-100	100	25.9
803LQQC-100	100	25.9
805LQ-100	100	36.5

SAFETY RELIEF VALVES—Liquid Service

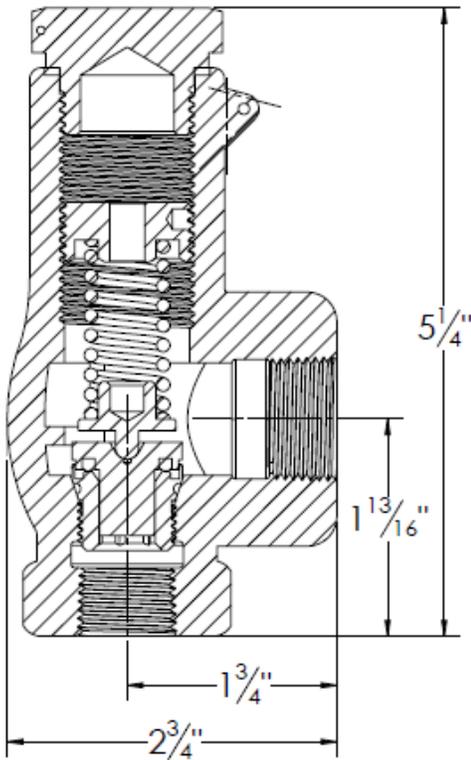
803LQ , 803LQ QC

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
803LQ	Ductile Iron	3.3	1/2" FNPT	3/4" FNPT	843 (Page 68) 843F (Page 68)
803LQ QC	Stainless Steel	4.9	1/2" FNPT	3/4" FNPT	846M (Page 74) 848M (Page 74)
803LQ QC-1	Stainless Steel Replacement Insert	1.5	--	—	—

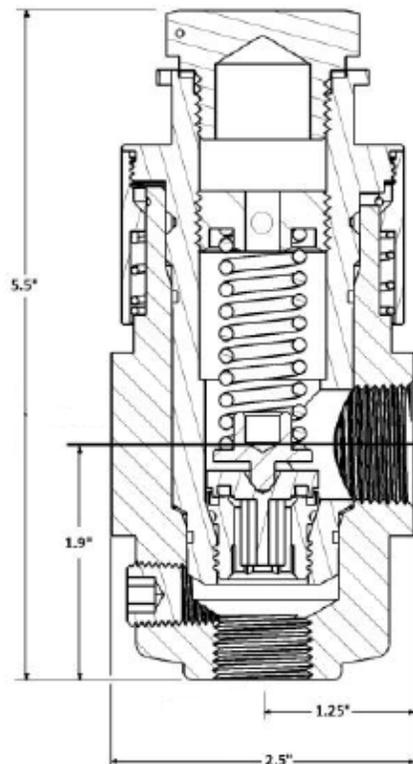
805LQ

Part #	Body Material	Wt. (lbs.)	Inlet	Outlet	Compatible 3-Way Manifolds
805LQ	Ductile Iron	7.9	1" FNPT	1-1/4" FNPT	850M-1" (Page 76) 875M (Page 77) 876M (Page 77)

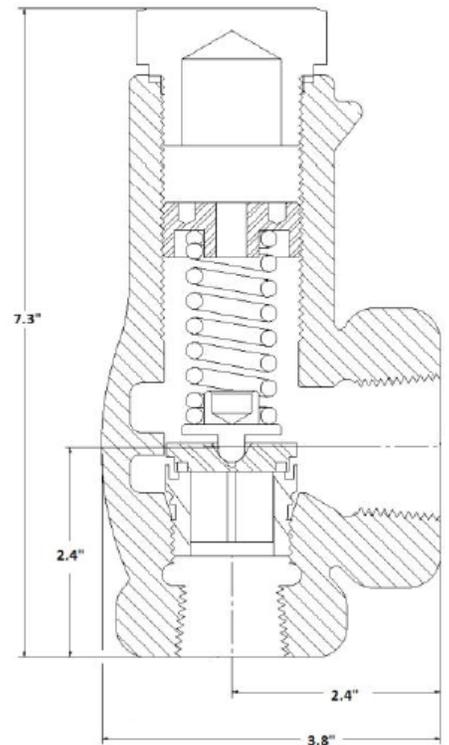
803LQ



803LQ QC



805LQ



3-Way Manifolds

How To Select a Cyrus Shank 3-Way Manifold (Dual Shut-Off Valve)

1. When selecting a Cyrus Shank 3-Way Manifold, it's important that the outlets on the manifold must be at least the same size as the inlet on the Safety Relief Valve.
2. Refer to the "Compatible 3-Way Manifold" column on the selected Safety Relief Valve's cut sheet. These manifolds have the same outlet sizes as the inlets of the relief valves. Turn to the Page #'s listed next to the recommended manifolds for more information about available configurations.
3. Once a manifold has been selected, provide the Part # listed in the charts. Specify inlet and outlet sizes for verification when ordering.

Design Features of Cyrus Shank Manifolds

Application: Cyrus Shank 3-Way Manifolds are designed to meet the requirements of ANSI/ASHRAE 15 Safety Standard for Refrigeration Systems as well as other worldwide codes. Pressure vessels that contain 10 cubic feet or more of internal gross volume shall be fitted with dual pressure relief valves which are installed in parallel with a 3-way manifold. This allows one valve to be operational while the other is being replaced or serviced.

Compatibility: Suitable for ammonia, refrigerants, and other industrial fluids that are not corrosive or deleterious to ductile iron, carbon steel, stainless steel, or Teflon. The "F" and "M" series with seal caps are suitable for Halocarbons.

Storage: Care should be taken during the handling of the manifold to avoid excessive shock which can result in internal damage or misalignment. Each manifold should be kept in its original packaging until time of installation. It should be maintained in a clean, stable environment at room temperature with minimal humidity. Maintaining the manifold in this condition will enhance the storage life of this product.

Installation: Installation should be performed by trained and qualified personnel only. When installing a Cyrus Shank 3-way Manifold, it is extremely important to ensure that the internals of the manifold remain clean. Contaminants inside the manifold will hinder the Teflon seals. A sealant should be used on the inlet and outlet for leak protection. It is recommended to use proper materials and good industry practice when applying sealants to the inlet and outlet threads. Pipe dope or PTFE tape are acceptable products for thread-sealing and leak protection, but caution should be used to ensure that the sealant material does not contaminate the internals of the manifold.

Maintenance: Cyrus Shank Safety 3-way Manifolds are manufactured for an extended service life. They are constantly subjected to contamination from within the system. They should be visually inspected every 6 months to 1 year for corrosion, accumulation of scale, and leaks.

3-Way Manifolds

Manifold Cv Values (both ports)

CAST Iron & Brass Manifolds—Cv Values (Both Ports) All female ports tested with schedule 80 nipples		
Part #	Size	Cv Value
843 Series	½" x ½" x ½"	3.6
844 Series	¾" x ¾" x ¾"	6.8
845 Series	1" x 1" x 1"	11.5

INLINE Steel Manifolds—Cv Values (Both Ports) All female ports tested with Schedule 80 nipples.		
Part # - All Steel	Size	Cv Value
846M (Page 74)	½" x ½" x ½"	7.2
847M (Page 74)	¾" x ¾" x ¾"	13.7
848M (Page 74)	¾" x ½" x ½"	9.5
849M (Page 74)	1" x ¾" x ¾"	16.0
*850M – ¾" (Page 76)	1 ¼" x ¾" x ¾"	18.2
*850M-1" (Page 76)	1 ¼" x 1" x 1"	25.6
875M (Page 77)	1" x 1" x 1"	25.0
876M (Page 77)	1 ¼" x 1" x 1"	26.6
**900M- 1 ¼" (Page 78)	2" x 1 ¼" x 1 ¼"	47.5
**900M-1 ½" (Page 78)	2" x 1 ½" x 1 ½"	66.0
901M	2" 1 ¼" x 1 ¼"	47.5
903M	2" x 1 ½" x 1 ½"	66.0
950M (seal cap)	2 ½" x 2" x 2"	104.6

* Inlet port is schedule 160 seamless pipe welded to manifold body for mounting on insulated vessels.

** Inlet port is schedule 160 seamless pipe with MNPT threading welded to manifold body, may be for mounting on insulated vessels.

843, 844, & 845 Series



843, 844, 845

3-Way shut off valve with hand wheel. A compact body design for easy installation and use. A ductile iron body for general purpose use, painted with a grey primer to increase corrosion resistance. Increased durability with stainless steel stems and Teflon seals. Suitable for use with Ammonia, refrigerants, and other industrial fluids that are not corrosive or deleterious to ductile iron.

Temperature Range: -20°F to 300°F

Max. Working Pressure (MAWP): 400 psig



843F, 844F, 845F

3-Way shut off valve with seal cap. A compact body design for easy installation and use. A ductile iron body for general purpose use, painted with a grey primer to increase corrosion resistance. Increased durability with stainless steel stems and Teflon seals. Suitable for use with Ammonia, refrigerants, and other industrial fluids that are not corrosive or deleterious to ductile iron.

Temperature Range: -20°F to 300°F

Max. Working Pressure (MAWP): 400 psig



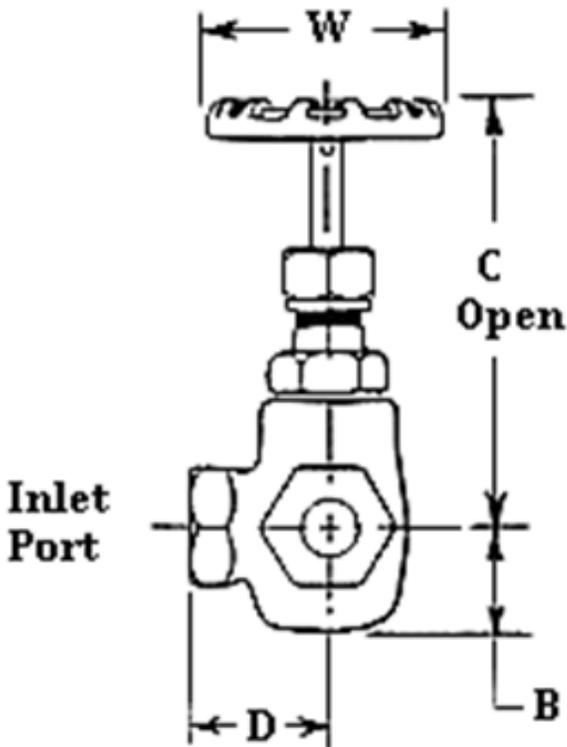
843B, 844B, 845B

3-Way bronze shut off valve with hand wheel. A compact body design for easy installation and use. A bronze body for specialized service. Increased durability with stainless steel stems and Teflon seals. Suitable for use with Liquid Oxygen, halocarbons and other industrial fluids that are not corrosive or deleterious to bronze.

Max. Working Pressure (MAWP): 400 psig

843, 844, & 845 Series

Part #	Body Material	Trim	Wt. (lbs.)	Port Sizes	A [in]	B [in]	C [in]	D [in]	W [in]
843	Ductile Iron	Handwheel	3.75	1/2" x 1/2" x 1/2"	3.5	1.5	5.5	1.75	3.0
843F		Seal Cap	3.75				6		N/A
843B	Brass	Handwheel	3.75				5.5		3.0
844	Ductile Iron	Handwheel	6.5	3/4" x 3/4" x 3/4"	4.0	1.75	7.125	2.0	4.0
844F		Seal Cap	7				7.75		N/A
844B	Brass	Handwheel	6.5				7.125		4.0
845	Ductile Iron	Handwheel	11.5	1" x 1" x 1"	5.0	1.875	7.5	2.25	4.5
845F		Seal Cap	11.5				8		N/A
845B	Brass	Brass	8.5				7.5		4.5

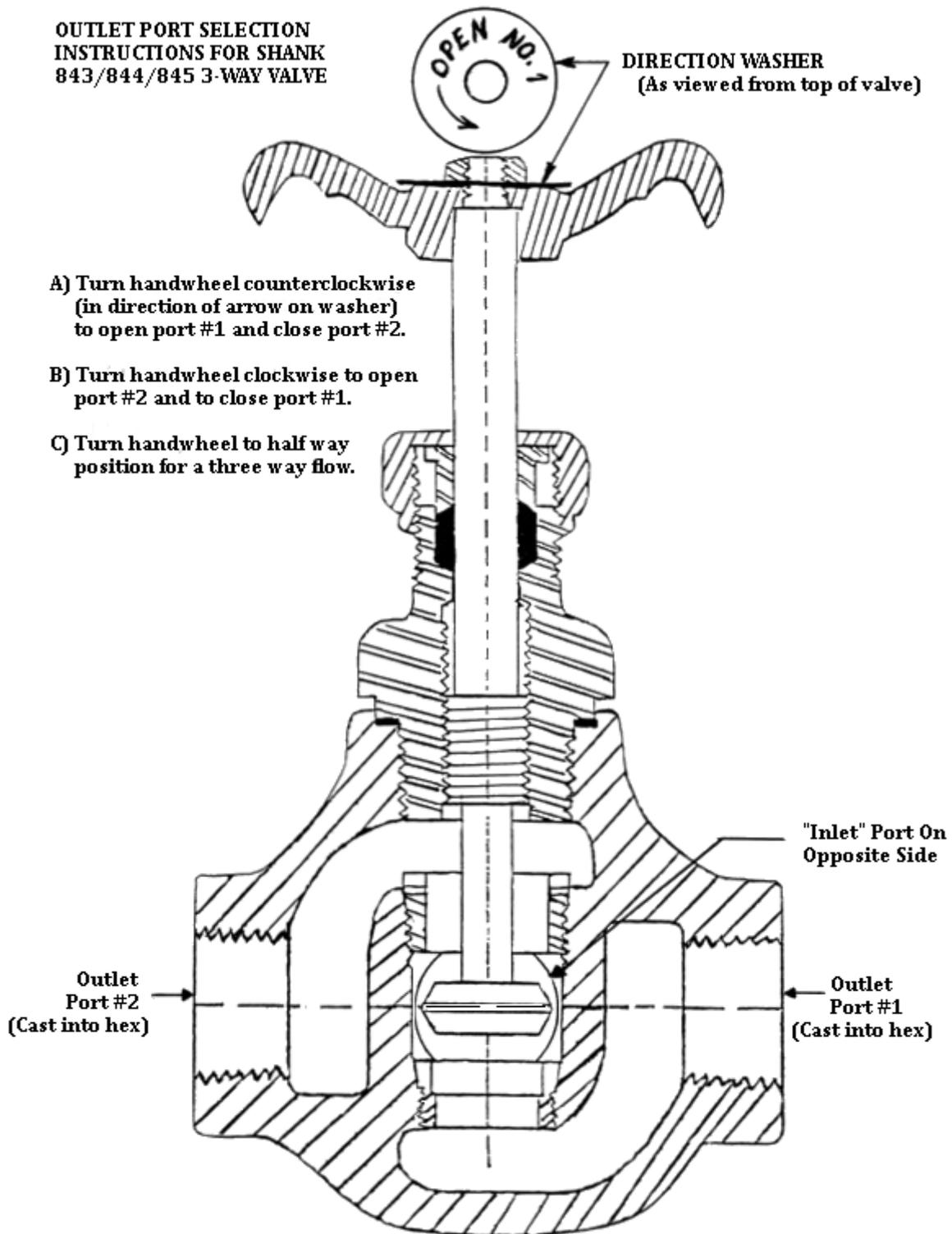


Dimensions:

- A = Face to Face on Outlet Ports
- B = Inlet Centerline to Bottom
- C = Inlet Centerline to Top of Wheel (or Seal Cap) when Open
- D = Stem Centerline to Inlet Face
- W = Diameter of Handwheel

843, 844, 845—Handwheel Instructions

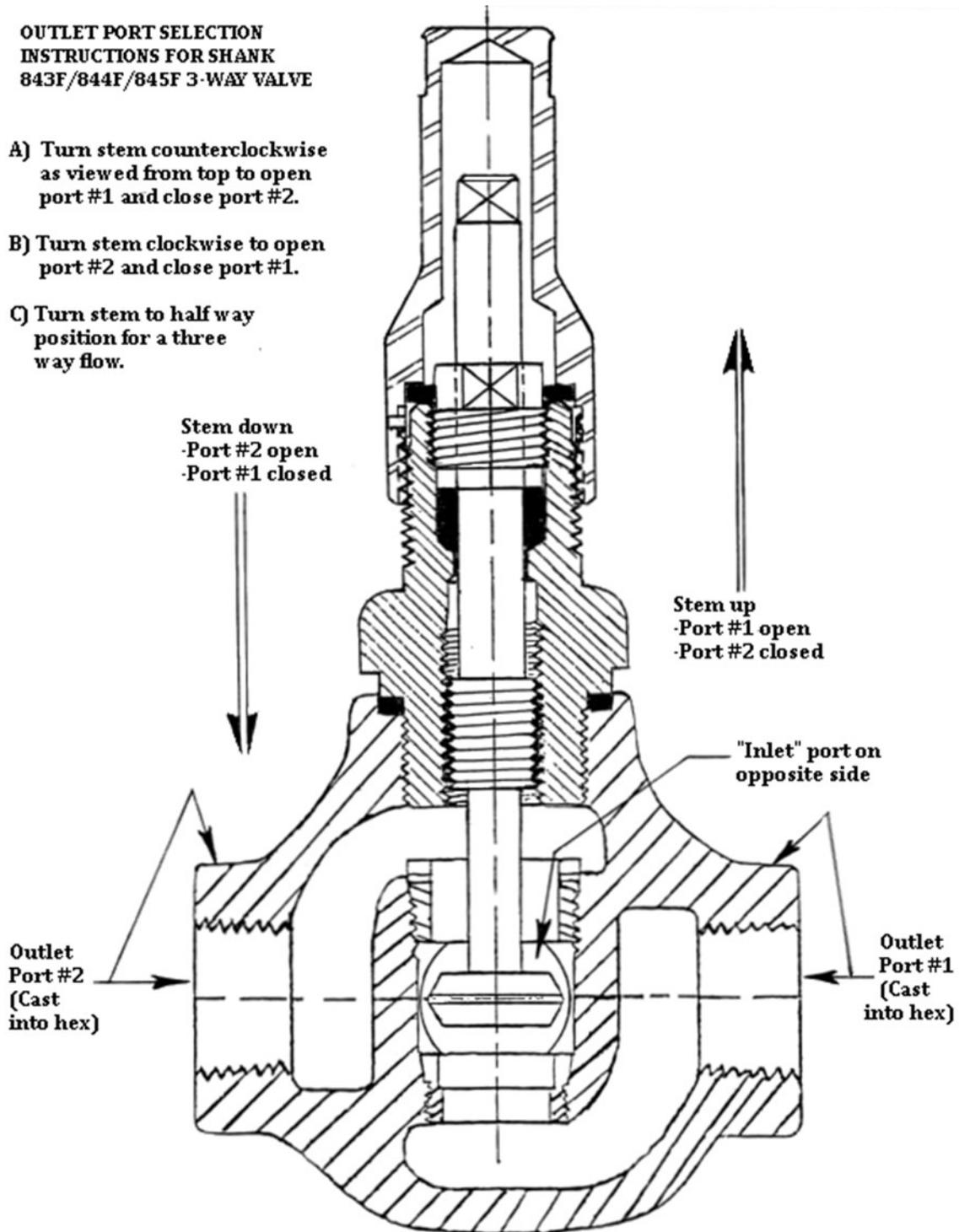
OUTLET PORT SELECTION INSTRUCTIONS FOR SHANK 843/844/845 3-WAY VALVE



843, 844, 845—Seal Cap Instructions

OUTLET PORT SELECTION INSTRUCTIONS FOR SHANK 843F/844F/845F 3-WAY VALVE

- A) Turn stem counterclockwise as viewed from top to open port #1 and close port #2.
- B) Turn stem clockwise to open port #2 and close port #1.
- C) Turn stem to half way position for a three way flow.



Dual Relief Valve Assembly Requirements for:

800, 800SS, 800QR, 801, 801SS, 801DHC, 803, 803QC, 812, 813, 804, 804R, 814, 805, 805R, 815, CS5602A, and CS5602B Relief Valves

The Safety Code for Mechanical Refrigeration ANSI/ASHRAE 15 requires a refrigeration system that incorporates pressure vessels that are 10 cubic feet internal volume or over to have a pressure relieving device, and must have a relief device system consisting of two (2) pressure relief valves in parallel on a three-way manifold. For pressure vessels that are 10 cubic feet internal volume must have at least one (1) pressure relief valve.

The Cyrus Shank dual assembly meets the requirements of this code which requires that one (1) relief valve must remain in an operable mode at all times while the other is serviced.

All Cyrus Shank dual assemblies are assembled using high strength fittings, nipples, elbows, and unions. These fittings are rated for 300 psi at 550°F (287°C) or 2000 psi at 60°F (15.5°C).

DUAL ASSEMBLY WITHOUT UNIONS (DS): Includes two (2) relief valves, one (1) three-way manifold shut-off valve, two (2) 90° elbows, and four (4) nipples. (Assemblies using 800, 800SS, 801, 801SS, 800QR, or 803QC valves have only two (2) nipples.) Only one side of the three-way valve can be closed at any time.



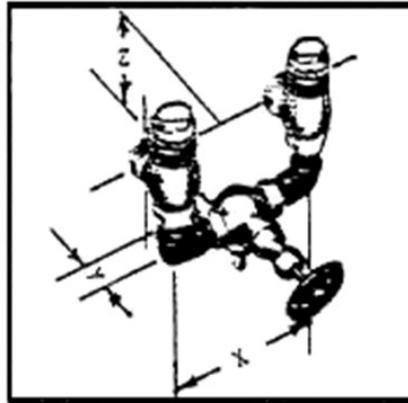
DUAL ASSEMBLY WITH UNIONS (DU): Includes two (2) relief valves, one (1) three-way manifold shut-off valve, four (4) 90° elbows, four (4) unions, one “tee” and twelve (12) nipples. (Assemblies using relief valves with male NPT inlets have only ten (10) nipples.) Only one side of the three-way valve can be closed at any time. This assembly will allow either valve to be changed without disturbing the piping.



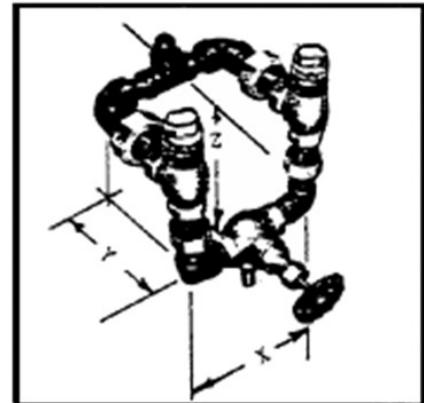
843, 844, & 845 Series—Dual Assembly Dimensions

Size Specifications for Dual Assemblies																		
	800, 801, 800SS, 801SS		800QR		800D, 801D, 801DHC, 803		803QC		812, 813		804, 804R		814		805, 805R		815	
	DS	DU	DS	DU	DS	DU	DS	DU	DS	DU	DS	DU	DS	DU	DS	DU	DS	DU
Inlet port	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	¾"	¾"	¾"	¾"	1"	1"	1"	1"
Outlet port	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	1"	1"	1"	1"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ½"	1 ½"
X – width between valves at pipe C/L	6.8"	6.8"	6.8"	6.8"	6.8"	6.8"	6.8"	6.8"	6.8"	7.4"	8.0"	8.0"	8.0"	8.8"	9.5"	9.5"	9.5"	10.0"
Y – depth from inlet to outlet at pipe C/L	1.1"	5.5"	1.3"	5.3"	1.8"	5.8"	1.35"	5.35"	1.8"	7.0"	2.0"	6.8"	2.0"	8.0"	2.1"	8.0"	2.1"	8.5"
Z – inlet to outlet height at fitting face	5.5"	6.8"	5.5"	6.8"	5.0"	6.3"	5.1"	6.4"	5.0"	6.3"	5.8"	7.4"	5.8"	7.4"	7.0"	10.0"	7.0"	10.0"

Size Specs for Dual Assemblies, cont.				
	CS5602A		CS5602B	
	DS	DU	DS	DU
Inlet port	½"	½"	½"	½"
Outlet port	¾"	¾"	1"	1"
X – width between valves at pipe C/L	6.8"	6.8"	6.8"	7.4"
Y – depth from inlet to outlet at pipe C/L	2.1"	6.1"	2.1"	6.9"
Z – inlet to outlet height at fitting face	6.5"	8.1"	6.5"	8.1"



DS (less unions)



DU (with unions)



Stainless Steel

A complete stainless steel inline assembly for supreme performance and optimal corrosion resistance. Teflon O-ring seats create a tight, non-leak seal. Available in weldable or NPT connections. Works great with Cyrus Shank Stainless Steel 2-Piece valves.

Max. Working Temperature (MAWT): 500°F

Max. Working Pressure (MAWP): 500 psig



Carbon Steel

A general purpose carbon steel inline manifold coated with Black Oxide for increased corrosion resistance. Teflon O-ring seats create a tight, non-leak seal. Available in weldable or NPT connections.

Max. Working Temperature (MAWT): 500°F

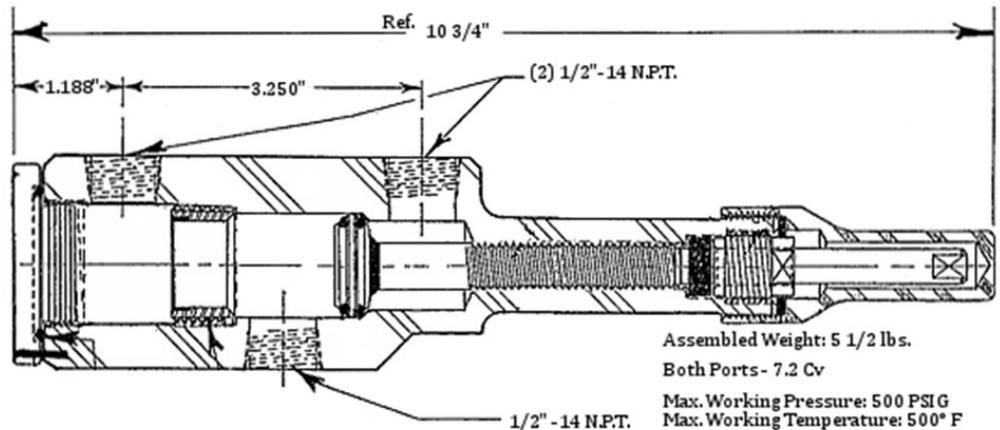
Max. Working Pressure (MAWP): 500 psig

846M, 847M, 848M, & 849M Series

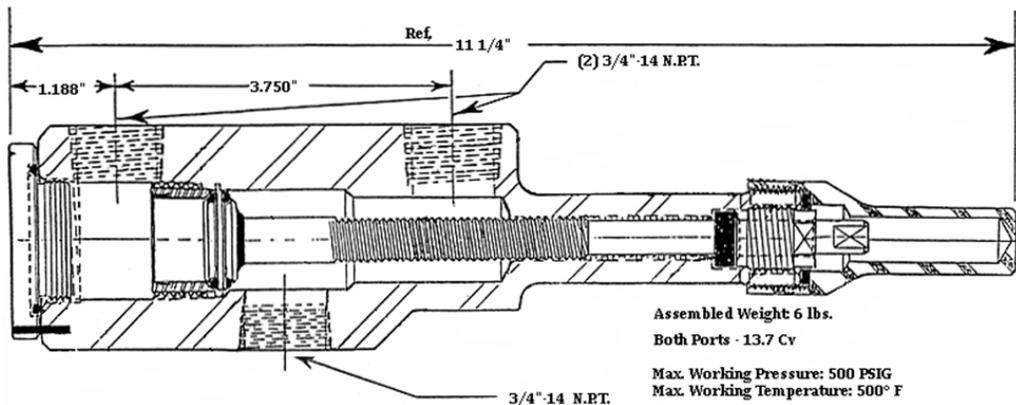
846M, 847M, 848M, 849M

Part #	Description	Cv	Body Options	Weight (lbs.)	Inlet	Outlets
846M(SS)	Compact Alternative to 843	7.2	Carbon Steel—Black Oxide Coating OR Stainless Steel (SS)	5.5	1/2" FNPT	1/2" FNPT
846MW(SS)					1/2" Socket Weld	1/2" Socket Weld
847M(SS)	Compact Alternative to 844	13.7	Carbon Steel—Black Oxide Coating OR Stainless Steel (SS)	6	3/4" FNPT	3/4" NPT
847MW(SS)					3/4" Socket Weld	3/4" Socket Weld
848M(SS)	Compact Alternative to 843	9.5	Carbon Steel—Black Oxide Coating OR Stainless Steel (SS)	5.5	3/4" FNPT	1/2" FNPT
848MW(SS)					3/4" Socket Weld	1/2" Socket Weld
849M(SS)	Compact Alternative to 844	16.0	Carbon Steel—Black Oxide Coating OR Stainless Steel (SS)	6	1" FNPT	3/4" FNPT
849MW(SS)					1" Socket	3/4" Socket

846M & 848M



847M & 849M



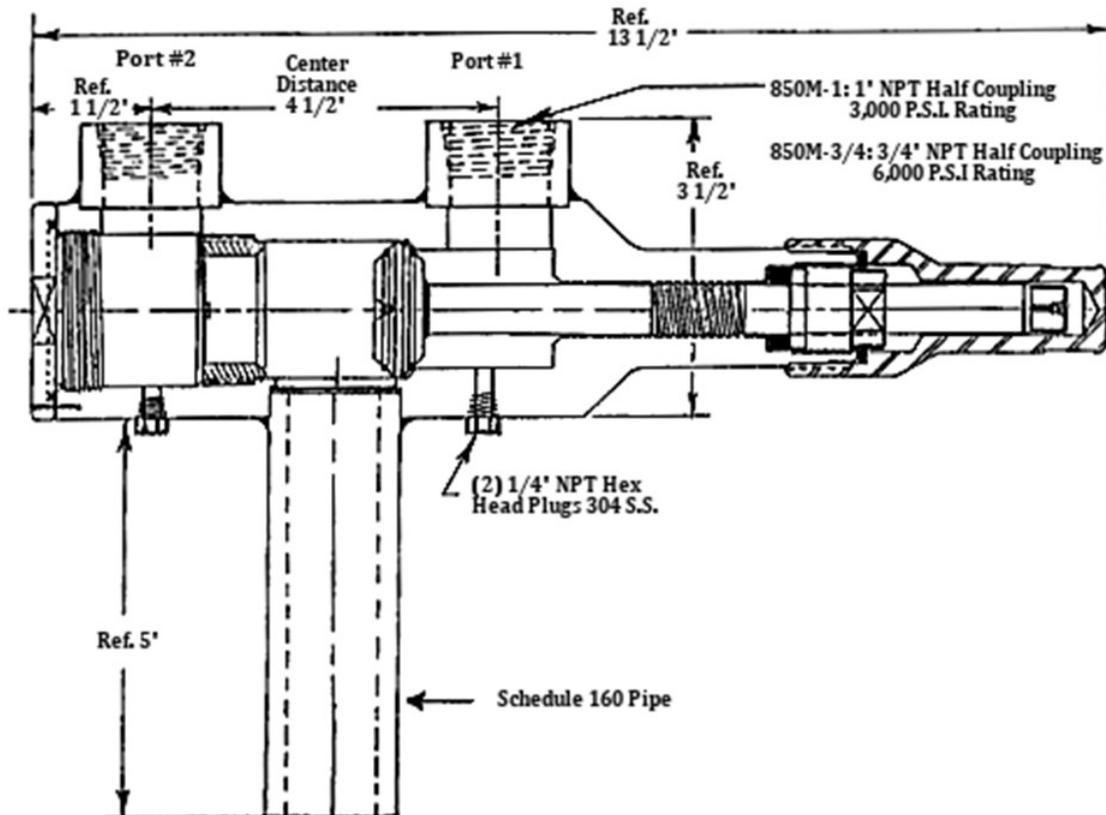
850M Series

850M-3/4 and 850M-1



Part #	Cv	Body Material	Inlet	Outlets
850ME-3/4	18.2	Carbon Steel—Black Oxide Coating	1-1/4" FNPT Sch. 160	3/4" FNPT 6000 psig
850MW-3/4			1-1/4" Pipe Sch. 160	
850ME-1	25.6	Carbon Steel—Black Oxide Coating	1-1/4" FNPT Sch. 160	1" FNPT 3000 psig
850MW-1			1-1/4" Pipe Sch. 160	

High Capacity manifolds, all steel and stainless steel construction with Teflon O-rings on the stem. Due to Teflon sealing surfaces, these manifolds are rated for 500°F and 500 psi. Cv rating for both ports is 18.2 for the 850M-3/4, and 25.6 for the 850M-1. Inlet port is Schedule 160 seamless pipe welded to manifold body for mounting on insulated vessels. Manifold weight is 12.5 lbs.



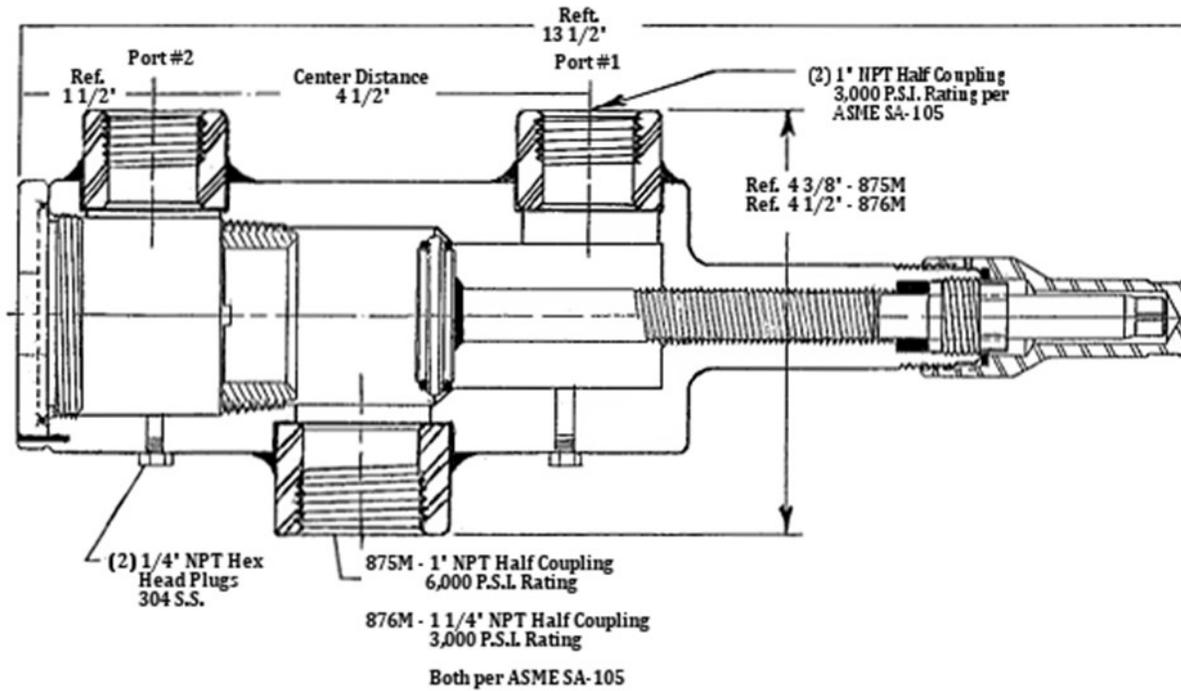
875M & 876M Series

875M and 876M



Part #	Cv	Body Material	Inlet	Outlets
875M	25.0	Carbon Steel—Black Oxide Coating	1" FNPT 6000 psig	1" FNPT 3000 psig
875MW			1" H.C. 6000 psig	
876M	26.6	Carbon Steel—Black Oxide Coating	1-1/4" FNPT 3000 psig	
876MW			1-1/4" H.C. 3000 psig	

High Capacity manifolds, all steel and stainless steel construction with Teflon O-rings on the stem. Due to Teflon sealing surfaces, these manifolds are rated for 500°F and 500 psi. These manifolds have couplings welded on the inlet instead of Schedule 160 pipe. Cv rating for both ports is 25.0 for the 875M, and 26.6 for the 876M. Manifold weight is 12 lbs.



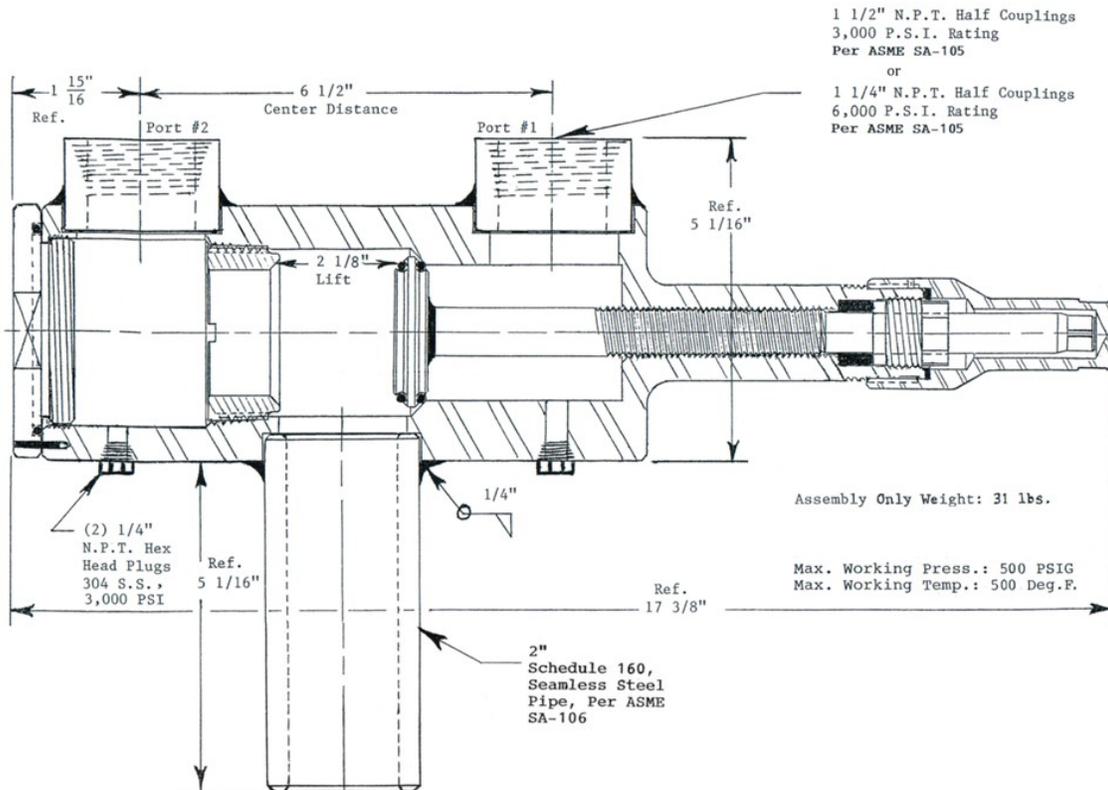
900M Series

900MW-1 1/4" and 900MW-1 1/2"; 900ME-1 1/4" & 900ME-1/2"



Part #	Cv	Body Material	Inlet	Outlets	
900ME-1-1/4	47.5	Carbon Steel—Black Oxide Coating	2" FNPT Sch. 160	1-1/4" FNPT 6000 psig	
900MW-1-1/4					
900ME-1-1/2	66	Carbon Steel—Black Oxide Coating		2" FNPT Sch. 160	1-1/2" FNPT 3000 psig
900MW-1-1/2					

High capacity manifolds intended for use with Cyrus Shank 901 and 903 relief valves. All steel and stainless steel construction with Teflon O-rings on the stem. Due to Teflon sealing surfaces, these manifolds are rated for 500°F and 500 psi. Inlet port is Schedule 160 seamless pipe welded to manifold body for mounting on insulated vessels. Cv rating for both ports is 47.5 for the 900M-1-1/4, and 66 for the 900M-1-1/2. Manifold weight is 31 lbs.



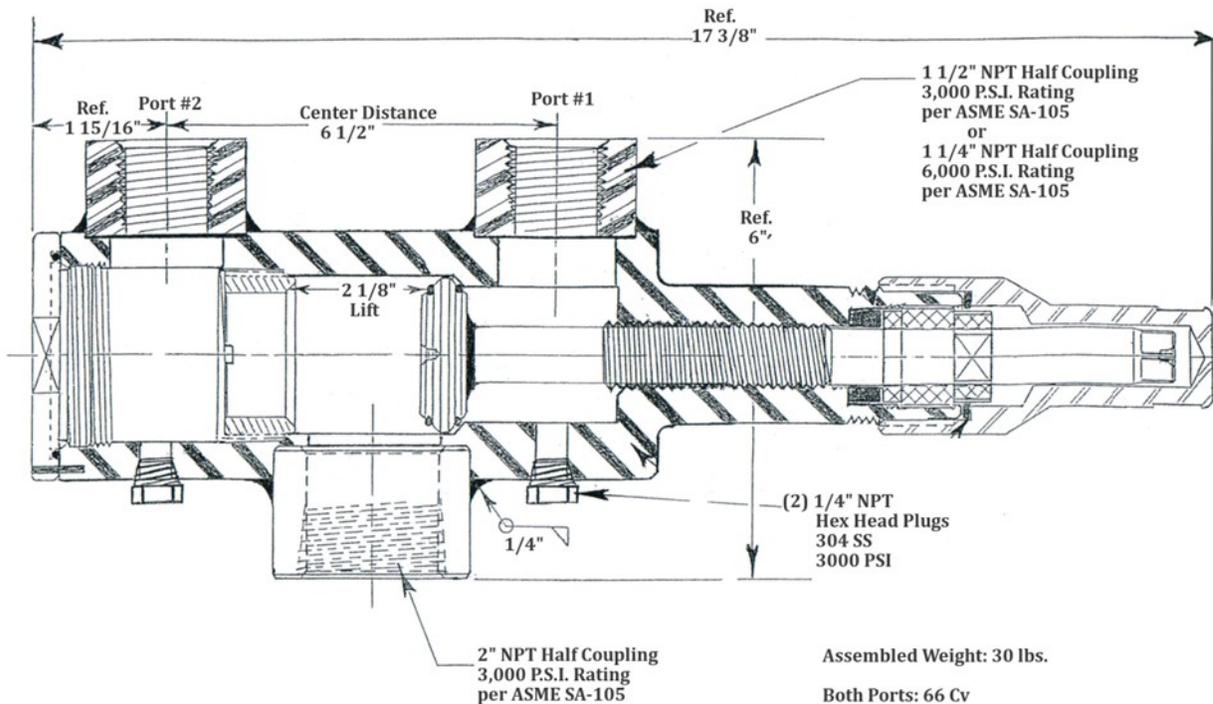
901M & 903M Series

901M and 903M



Part #	Cv	Body Material	Inlet	Outlets
901M	47.5	Carbon Steel—Black Oxide Coating	2" FNPT 3000 psig	2-1/4" FNPT 6000 psig
901MW				
903M	66	Carbon Steel—Black Oxide Coating		2-1/2" FNPT 3000 psig
903MW				

High capacity manifolds intended for use with Cyrus Shank 901 and 903 relief valves. All steel and stainless steel construction with Teflon O-rings on the stem. Due to Teflon sealing surfaces, these manifolds are rated for 500°F and 500# pressure. Construction is the same as the 900MW manifold except the 2" Schedule 160 pipe is replaced by a 2" FNPT half coupling. Cv rating for both ports is 47.5 (for the 901M), and 66 (for the 903M). Manifold weight is 30 lbs.



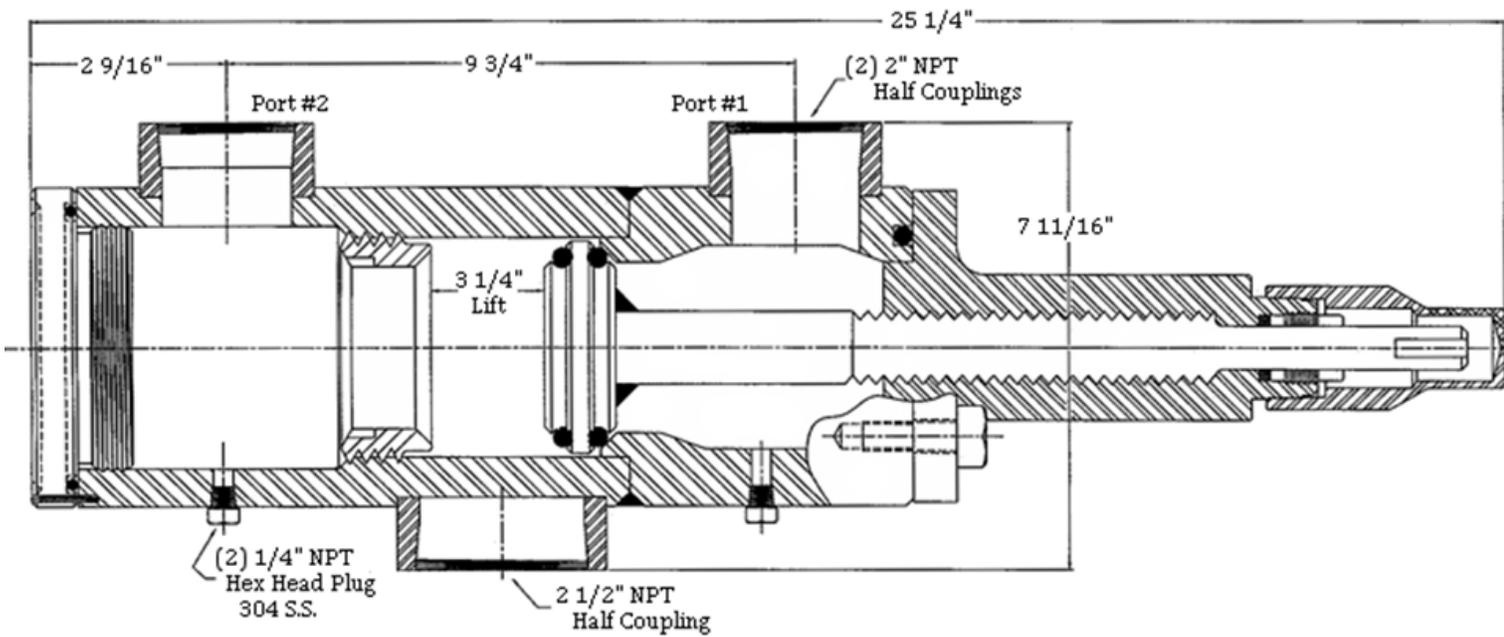
950M Series

950M



Part #	Cv	Body Material	Inlet	Outlets
950M	104.6	Carbon Steel—Black Oxide Coating	2-1/2" FNPT 3000 psig	2" FNPT
950MW			2-1/2" Pipe Sch. 160	6000 psig

High capacity manifold, all steel and stainless steel construction with Teflon O-rings on the stem. Due to Teflon sealing surfaces, these manifolds are rated for 500°F and 500# pressure. Cv rating for both ports is 104.6. Manifold weight is 71 lbs.



HAND VALVES

Design Features of Cyrus Shank Hand Valves

BOLTED BONNET SHUT-OFF VALVES: We offer our bolted bonnet shut-off valves in a globe or angled design from 1/4" to 2". This sturdy valve body is made from cast iron and valves are pressure tested for leakage after assembly. The shut-off disc is held in place on the stem by a spring ring, allowing free swivel action. Valve ports are full size, ensuring maximum flow. These valves are back seating.

SHUT-OFF VALVES: Our shut-off valves are available in a globe design to work with pipe sizes from 1/4" to 1 1/4" and in an angle design to work with pipe sizes from 1/4"

to 1". They come with zinc-plated carbon steel (-CS) or stainless steel (-SS) stems. The valve body materials are ductile iron or C.I. 40 and are pressure-tested for leakage after assembly. Valve ports are full size, ensuring maximum flow. This is a two-piece design: the convex base fits into the shut-off disc and permits swivel action which maintains perfect alignment at all times. The shut-off disc is held in place on the stem by a spring ring, allowing free swivel action. The packing ring chamber has a special design: It is machined so that sealing is necessary only around the stem proper. The composition packing ring is impregnated with graphite for ease of operation and will not deteriorate in service. These valves are back seating.

HAND EXPANSION VALVES: Our hand expansion valves are available in a globe design from 1/4" to 1 1/4" pipe size and in an angle design from 1/4" to 1" pipe size. They come with zinc-plated carbon steel (-CS) or stainless steel (-SS) stems. The valve body materials are ductile iron or C.I. 40, and valves are pressure-tested for leakage after assembly. The valve body has a tapered orifice through a raised seat. Needle point and fine pitch stem threads allow close regulation of flow. All expansion valves are equipped with T-handles to distinguish them from shut-off valves. The packing ring chamber has a special design: It is machined so that sealing is necessary only around the stem proper. The composition packing ring is impregnated with graphite for ease of operation and will not deteriorate in service.

PURGE VALVES: Our purge valves are of all steel construction and all parts are zinc plated. They are used for purging purposes and are supplied with male and female thread combinations. Thread combinations range in size from 1/4" to 1/2" MNPT and 1/4" to 3/8" FNPT. Purge valves are equipped with round malleable handles. This valve can be used for gauge mounting, as an oil drain, or any place where a small shut-off valve can be used.

NEEDLE POINT VALVES: Our needle point valves are made of all steel construction and all parts are zinc plated. They are available in angle or tee style from 1/4" to 3/4". The valves are equipped with a tapered orifice through the seat and a corresponding taper on the stem, thus assuring a measured flow through the valve. The stems are machined with a fine pitch thread which permits close regulation. The handles are Tee-shaped so that the valves can be easily recognized from regular shut-off valves.

LINE VALVES: Our line valves are made of all steel construction and all parts are zinc plated. They are available in angle or tee valves from 1/4" to 3/4" and have a compact design. The packing seal ring is made of the highest graded material, providing smooth, easy operation and a leak-proof, seal.

GAUGE SETS: Our gauge set assembly is made of all steel construction and all parts are zinc plated. Gauge valves have safety ball seats which automatically shut off liquid in case of glass breakage. Valve stems are packed with composition packing rings, providing a leak-proof seal.



HAND VALVES... SHUT-OFF (GLOBE AND ANGLE)

GLOBE SHUT-OFF: 201, 202, 203, 204, 205, 211

ANGLE SHUT-OFF: 206, 207, 208, 209, 210

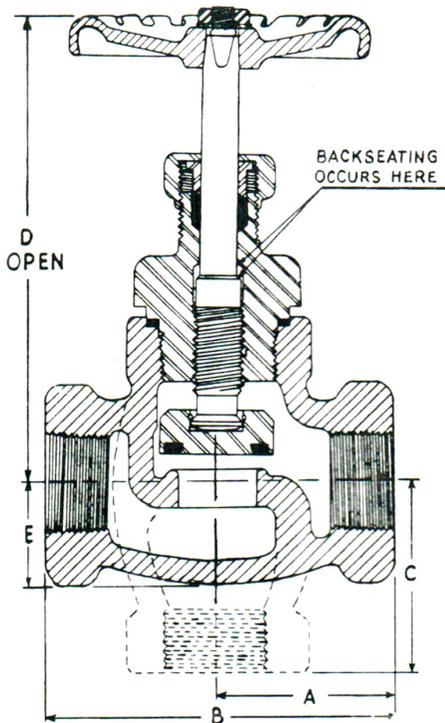


Shut-off valves are available in a globe design to work with pipe sizes from 1/4" up to 1 1/4" and in an angle design to work with pipe sizes from 1/4" up to 1". They come with zinc-plated carbon steel (-CS) or stainless steel (-SS) stems. The valve body materials are ductile iron or C.I. 40 and are pressure-tested for leakage after assembly.

Globe Shut-off Valve Specifications						
Catalog Number	201	202	203	204	205	211
Pipe Size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"
Weight, lbs	1	2	3	5	7.25	11.25
B – Face to Face	2 1/2"	3"	3 1/2"	4"	4 3/8"	5 1/2"
D – Center to Top of Wheel (open)	4 1/4"	5 1/8"	5 1/2"	6 5/8"	7 1/2"	8 1/8"
E – Center to Bottom Face	13/16"	13/16"	1"	1 1/4"	1 3/8"	1 5/8"



Angle Shut-off Valve Specifications					
Catalog Number	206	207	208	209	210
Pipe Size	1/4"	3/8"	1/2"	3/4"	1"
Weight, lbs	1	2	3	5	7.25
A – Center to Side Face	1 1/4"	1 1/2"	1 3/4"	2"	2 3/8"
C – Center to Bottom Face	1 1/4"	1 1/2"	1 3/4"	2"	2 3/8"
D – Center to Top of Wheel (open)	4 1/4"	5 1/8"	5 1/2"	6 5/8"	7 1/2"



- Valve ports are full size, insuring maximum flow.
- This is a two-piece design: the convex base fits into the shut-off disc and permits swivel action which maintains perfect alignment at all times.
- The shut-off disc is held in place on the stem by a spring ring, allowing free swivel action.
- The packing ring chamber is of special design: It is machined so that sealing is necessary only around the stem proper.
- The composition packing ring is impregnated with graphite for ease of operation and will not deteriorate in service.
- These valves are back seating.

HAND VALVES... HAND EXPANSION (GLOBE AND ANGLE)

GLOBE EXPANSION: 201-E, 202-E, 203-E, 204E-, 205-E

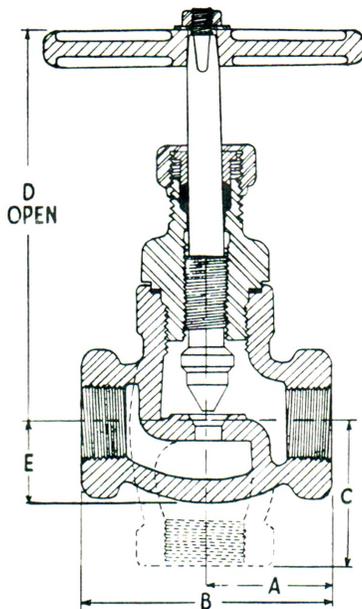
ANGLE EXPANSION: 206-E, 207-E, 208-E, 209-E, 210-E, 211-E



Our hand expansion valves are available in a globe design to work with pipe sizes from 1/4" to 1 1/4" and in an angle design to work with pipe sizes from 1/4" to 1". They come with zinc-plated carbon steel (-CS) or stainless steel (-SS) stems. The valve body materials are ductile iron or C.I. 40 and are pressure tested for leakage after assembly.

Globe Hand Expansion Valve Specifications						
Catalog Number	201-E	202-E	203-E	204-E	205-E	211-E
Pipe Size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"
Orifice	9/64"	3/16"	1/4"	5/16"	3/8"	1/2"
Weight, lbs	1	2	3	5	7.5	11 1/2
B – Face to Face,	3"	3"	3 1/2"	3 7/8"	4 3/8"	5 3/8"
D – Center to Top of Wheel (open)	5"	5"	5 1/2"	6 3/8"	7 3/8"	9 1/4"
E – Center to Bottom Face	13/16"	13/16"	1"	1 1/4"	1 3/8"	1 5/8"

Angle Hand Expansion Valve Specifications					
Catalog Number	206-E	207-E	208-E	209-E	210-E
Pipe Size	1/4"	3/8"	1/2"	3/4"	1"
Orifice	9/64"	3/16"	1/4"	5/16"	3/8"
Weight, lbs	2	2	3	5	7.25
A – Center to Side Face	1 3/8"	1 3/8"	1 1/2"	1 15/16"	2 3/8"
D – Center to Top of Wheel (open)	1 1/2"	1 1/2"	1 7/8"	2 1/8"	2 3/8"
E – Center to Bottom Face	5"	5"	5 5/8"	6 3/8"	7 3/8"



- The valve body has a tapered orifice through a raised seat. Needle point and fine pitch stem threads allow close regulation of flow.
- All expansion valves are equipped with T-handles to distinguish them from shut-off valves.
- The packing ring chamber is of special design: It is machined so that sealing is necessary only around the stem proper.
- The composition packing ring is impregnated with graphite for ease of operation and will not deteriorate in service.

HAND VALVES... BOLTED BONNET SHUT-OFF (GLOBE AND ANGLE)

GLOBE BOLTED BONNET SHUT-OFF: 101, 102, 103

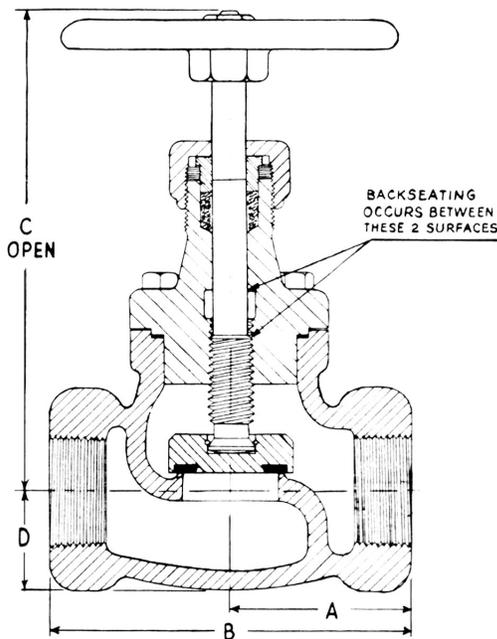
ANGLE BOLTED BONNET SHUT-OFF: 111, 112, 113

Bolted bonnet shut-off valves in a globe or angle design to work with pipe sizes from 1 ¼" to 2". This sturdy valve body is made from cast iron and is pressure tested for leakage after assembly.



Bolted Bonnet Globe Shut-off Valve Specifications			
Catalog Number	101	102	103
Pipe Size	1 ¼"	1 ½"	2"
Weight, lbs	15.5	21	27
A – Center to Side Outlet	3 1/8"	3 ½"	4 ¼"
B – Face to Face, Rim	6 ¼"	7"	8 ½"
C – Center to Top (open)	10"	10 ¾"	11 ½"
D – Center to Bottom	1 ¾"	2"	2 ¼"

Bolted Bonnet Angle Shut-off Valve Specifications			
Catalog Number	111	112	113
Pipe Size	1 ¼"	1 ½"	2"
Weight, lbs	15.5	21	27
A – Center to Side Outlet	3 1/8"	3 ½"	4 ¼"
C – Center to Top (open)	10"	10 ¾"	11 ½"
Center to Bottom Port	3 1/8"	3 ½"	4 ¼"



- Back seating is provided for re-packing while valve is under pressure.
- Uses a swivel and self-aligning seat.
- Hand wheels are proportioned for easy operation.

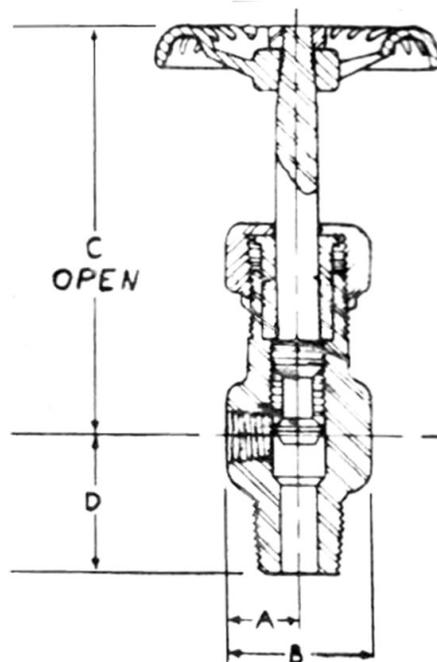
HAND VALVES... PURGE

PURGE VALVES: 451, 452, 453, 462, 463



Purge valves are made of all steel and all parts are zinc plated. They are used for purging purposes and are supplied with male and female thread combinations. They are equipped with round malleable handles. This valve can be used for gauge mounting, as an oil drain, or any place where a small shut-off valve can be used.

Purge Valve Specifications					
Catalog Number	451	452	453	462	463
Bottom Thread	1/4" male	3/8" male	1/2" male	3/8" male	1/2" male
Side Opening	1/4" female	1/4" female	1/4" female	3/8" female	3/8" female
Weight, lbs.	3/4	3/4	3/4	1	1
A – Center to Side Outlet	5/8"	5/8"	5/8"	23/32"	23/32"
B – Body Diameter	1 1/4"	1 1/4"	1 1/4"	1 7/16"	1 7/16"
C – Side Outlet to Top (open)	3 3/4"	3 3/4"	3 3/4"	3 7/8"	3 7/8"
D – Side Outlet to Bottom Face	1 1/8"	1 3/16"	1 1/4"	1 1/4"	1 3/8"



HAND VALVES... NEEDLEPOINT (ANGLE OR TEE)

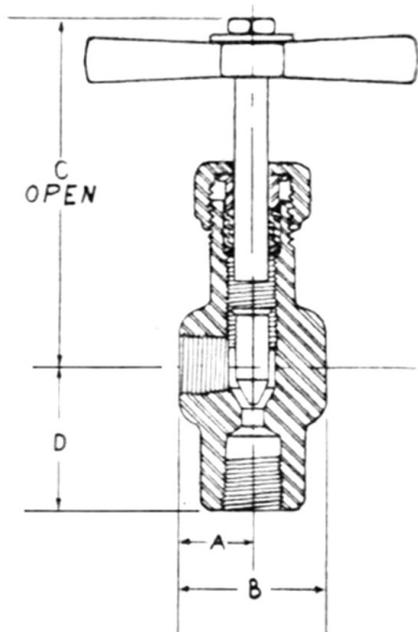
ANGLE NEEDLE POINT VALVES: 421, 422, 423, 424

TEE NEEDLE POINT VALVES: 425, 426, 427, 428



Needle point valves are of all steel construction and all parts are zinc plated. They are available in angle or tee design to work with pipe sizes from $\frac{1}{4}$ " to $\frac{3}{4}$ ". The valves are equipped with a tapered orifice through the seat and a corresponding taper on the stem, thus assuring a measured flow through the valve. The stems are machined with a fine pitch thread which permits close regulation. The handles used are Tee-shaped so that the valves can be easily distinguished from regular shut-off valves.

Needle Point Valve Specifications								
	Angle	Tee	Angle	Tee	Angle	Tee	Angle	Tee
Catalog Number	421	425	422	426	423	427	424	428
Pipe Size	$\frac{1}{4}$ "		$\frac{3}{8}$ "		$\frac{1}{2}$ "		$\frac{3}{4}$ "	
Weight, lbs	1		1		$1 \frac{3}{4}$		$2 \frac{3}{4}$	
A – Center to Side Outlet	$\frac{5}{8}$ "		$\frac{23}{32}$ "		$\frac{13}{16}$ "		1"	
B – Face to Face	$1 \frac{1}{4}$ "		$1 \frac{7}{16}$ "		$1 \frac{5}{8}$ "		2"	
C – Center Side Outlet to Top (open)	$3 \frac{3}{4}$ "		$3 \frac{7}{8}$ "		$4 \frac{3}{8}$ "		$5 \frac{3}{8}$ "	
D – Center Outlet to Bottom Face	$1 \frac{1}{4}$ "		$1 \frac{3}{8}$ "		$1 \frac{3}{4}$ "		$1 \frac{13}{16}$ "	



HAND VALVES... LINE (ANGLE OR TEE)

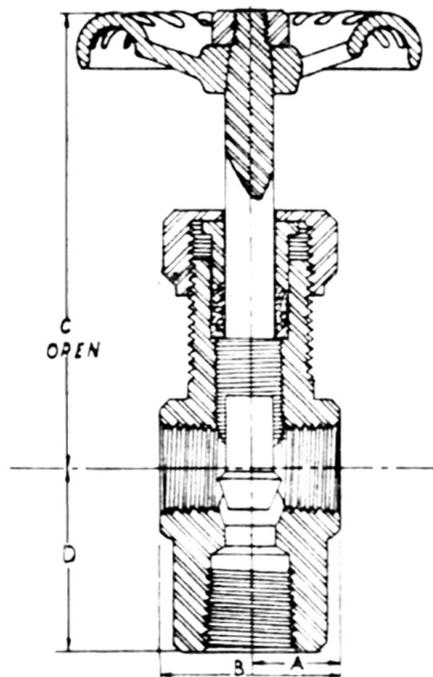
ANGLE LINE VALVES: 401, 402, 403, 404

TEE LINE VALVES: 405, 406, 407, 408



Line valves are made of all steel construction and all parts are zinc plated. They are available in angle or tee style to work with pipe sizes from ¼" to ¾" and have a compact design. The packing seal ring is of highest grade material, providing smooth, easy operation and a leak-proof, long life seal.

Line Valve Specifications								
	Angle	Tee	Angle	Tee	Angle	Tee	Angle	Tee
Catalog Number	401	405	402	406	403	407	404	408
Pipe Size	¼"		3/8"		½"		¾"	
Weight, lbs	1		1		1 ¾		2 ¾	
A – Center to Side Outlet	5/8"		23/32"		13/16"		1"	
B – Face to Face	1 ¼"		1 3/8"		1 5/8"		2"	
C – Center Side Outlet to Top (open)	3 3/8"		3 3/4"		4 1/4"		5 1/4"	
D – Center to Bottom Face	1 3/8"		1 7/16"		1 5/8"		1 15/16"	



HAND VALVES... GAUGE SETS (AMMONIA OR HALOCARBONS)

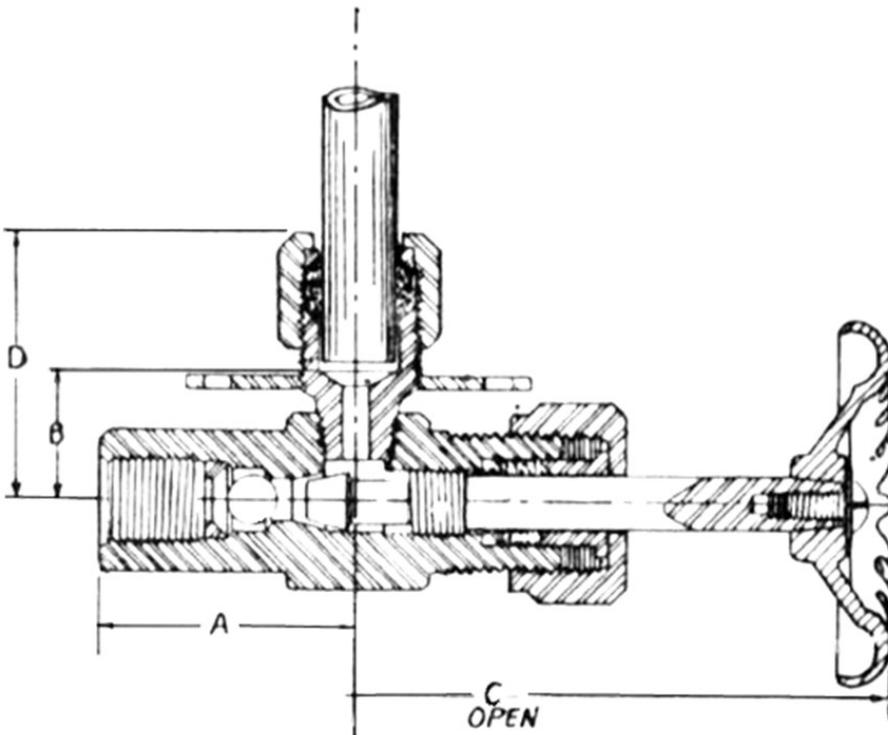
GAUGE SETS



Gauge set assembly is of all steel construction and all parts are zinc plated. Gauge valves have safety ball seats which automatically shut off liquid in case of glass breakage. Valve stems are packed with composition packing rings, providing a leak-proof, long life seal.

Available Gauge Sets			
	301	302	303
Pipe Size	3/8"	1/2"	3/4"
Glass Diameter	1/2"	5/8"	3/4"
Weight Per Set in lbs	3	4	6

Gauge Sets Specifications			
Pipe Size	3/8"	1/2"	3/4"
A – Center to Face at Inlet End	1 3/4"	1 15/16"	2 1/16"
B – Center to Inside Bottom of Upper Glass Well	3/4"	7/8"	1 1/8"
B – Center to Inside Bottom of Lower Glass Well	1"	1 1/4"	1 3/8"
C – Center to Top of Wheel (open)	3"	3 7/8"	4"
D – Center to Top of Glass Packing Nut	1 3/4"	2 1/16"	2 1/16"



Assembly and Ordering Instructions for Gauge Sets on Reverse Side

GAUGE SETS ASSEMBLY INSTRUCTIONS

STEP 1: Locate flange with “T” for TOP (this side has a deeper well).

STEP 2: Assemble glass into “T” side with nut and neoprene seal in place on glass for both ends.

STEP 3: Push glass up into deep well, swing glass over insert in flange marked “B”, then slide into flange “B” well.

STEP 4: Slide nut and seal along the glass and screw into position on flanges.

STEP 5: Check for leaks.

GAUGE SETS ORDERING INFORMATION

When you order a gauge set, you will receive 2 gauge valves, 1 piece of glass, and 4 rods. For example, a 301 gauge set would include the 2 gauges, 1 piece of 12” glass, and 4 rods. The set can be purchase without the glass and rods (-WO), or with any length of glass you require.

To custom order a glass length other than the standard 12” length, order the gauge set you need without glass (e.g., 301 (-WO)) and then specify the glass length and rods you want (**SEE NOTE BELOW**).

Custom glass and rod prices vary: contact us for a quote. Red line glass is also available.

NOTE: To figure length of glass required, subtract 2 3/8” from the distance of the centers. Order rods lengths 3” longer than the glass required.

SAFETY INFORMATION...

Warning: Ammonia gas or liquid produces potentially hazardous mist that can irritate skin, eyes, nose, and throat, and can cause temporary or permanent respiratory injury. Permanent respiratory injury can lead to disability or death.

- Use local ventilation and respiratory protection when installing. See ASHRAE 15 Safety Code and OSHA Standard 1910.133A.
- Avoid breathing in ammonia.
- Avoid prolonged skin contact with ammonia.
- Use goggles and a gas mask when dealing with gas.
- Maintain ammonia levels below OSHA and ACGIH levels.
- Wash hands immediately after handling any type of ammonia.
- Dispose of materials according to local, state, and/or federal regulations.

The purpose of a spring loaded relief valve is to relieve excess vapor or liquid pressure. Back pressure or pressure on the upper relief valve seat can change the valve's popping or opening pressure setting. In applications of excess pressure or back pressure on the upper relief valve seat, add the back pressure to relief valve setting to arrive at the actual setting where the valve will open.

Ammonia relief valves or any ammonia valve installation should only be done by trained personnel and in accordance with the ASME Boiler & Pressure Vessel Code, Section VIII.

When Ammonia Relief Valves Discharge into Water:

CORROSION: There is a concern about corrosion in relief valves when the discharge is piped into a tank of water. This corrosion is due to exposing water vapor or air to the piping. Cyrus Shank uses ductile iron, steel, and aluminum for their safety relief valve bodies; stainless steel and Teflon are used for safety relief valve internal parts. Since these materials resist corrosion, the accepted industry practice of replacing safety relief valves every five (5) years should provide adequate protection from corrosion in the valves.

BACK PRESSURE: Another concern is the reduction of relief valve capacity caused by the head of water over the discharge pipe outlet when it is submerged. The various codes do not provide methods to address this subject except to require "due allowance for pressure drop in the downstream section."

VACUUM SERVICE 1: When safety relief valves are connected to systems that operate below atmospheric pressure, a reasonable precaution is to install a check valve in the discharge line before it enters the water tank. This will prevent a vacuum from sucking water into the system should a relief valve leak or not reseat after a release. The check valve may also prevent the migration of water vapor in order to reduce the potential for corrosion in the relief valve. The pressure drop in the check valve must be considered within the allowable back pressure (at the outlet of the relief valve) that is developed by the flow in the event of a release.

VACUUM SERVICE 2: An alternative is to use a check valve mounted in a "tee" in the run of the discharge piping. This will not affect the pressure drop in the discharge, but will act as a "vacuum breaker." Either of these two suggested methods will protect against diluting the ammonia with water, should the relief valve leak after operating.

WHERE WATER TANKS ARE REQUIRED: The requirement for discharging into a tank of water appears in the Uniform Mechanical Code, published by ICBO, Section 1119 for ammonia systems. The International Mechanical Code, now used by BOCA and SBCCI, does not have this provision, but does require that refrigerating systems in an industrial occupancy conform to IAR-2 Equipment, Design and Installation of Ammonia Mechanical Refrigerating Systems. ASHRAE-15 offers three methods for ammonia discharge (i.e., into the atmosphere, into a tank of water, or into other approved treatment systems). Appendix B therein provides guidelines for emergency discharge of refrigerants when required by local codes. In IAR-2, the preferred discharge of safety and emergency relief valves is to the atmosphere. The optional method is to discharge into a tank of water. When local mechanical codes require the use of a water tank for absorbing the discharge from ammonia relief valves, refer to ASHRAE 15-1994 paragraph 9.7.8.2(b) for details. NOTE: IAR-2 is in the process of revision to conform to the specifications now in ASHRAE-15.

The Gold Standard

CYRUS SHANK COMPANY

575 EXCHANGE COURT

AURORA, IL 60504

PHONE: (331) 212-5488

FAX: (331) 212-5260

EMAIL: INFO@CYRUSSHANK.COM

WEB ADDRESS: WWW.CYRUSSHANK.COM