

CG-500 Catalog

Cryogenic & Industrial Gas Equipment

Cryogenic Cylinder Equipment



Relief Valves



Globe Valves



Gate Valves



Check Valves



Regulators



Master High Pressure Valves



Adapters, Nipples, Pipe & Miscellaneous



Repair Kits



Foreword

This catalog briefly describes the Rego® Industrial Gas and Cryogenic Equipment. As a result of condensing information in this catalog, some highly technical and special application material has been omitted. Proper application, installation and maintenance of the product is essential. Buyers should obtain further information if there are any doubts or questions. All information contained in this catalog is subject to change by RegO without notice. Additional product information is available from RegO or authorized product distributors. Illustrations and drawings of individual products are representative of “product groups” and all products within a product group are similar in construction.

Warning

Never use any product on oxygen service if another gas has been previously used on the product. All RegO® Products are mechanical devices that will eventually become inoperative due to wear, corrosion and aging of components made of materials such as rubber. The environment and conditions of use will determine the safe service life of these products. Periodic inspection and maintenance are essential to avoid serious injury and property damage.

Many RegO® products are manufactured for storage, transport, transfer and use of toxic flammable and dangerous liquids and gases. Such substances should be handled by experienced and trained personnel only, using accepted governmental and industrial safety procedures.

Materials

RegO may make suggestions for a material to use with a specific media. These suggestions will be based on technical compatibility resources through associations and manufacturers. RegO does not guarantee the material to be compatible with the specific media – this is the responsibility of the user. Users must test under their own operating conditions to determine the suitability of any material in a particular application.

Oxygen Service

RegO provides specified product cleaned in accordance with the intermediate level of ASTM G93 and CGA G-4.1 which assures removal of visible particles and combustible residues. System designers must verify the compatibility of the materials used in this product before installation and operation. Specifications of materials for oxygen service is the USER'S RESPONSIBILITY. If there is any doubt consult an expert.

Notice

Installation, usage and maintenance of all RegO® products must be in compliance with all RegO® instructions as well as requirements and provisions of NFPA 51, CGA, ASME, DOT, ANSI and all applicable federal, state, provincial and local standards, codes, regulations and laws.

Inspection and maintenance on a periodic basis is essential and should be performed only by qualified personnel.

Be sure all instructions are read and understood before installation, operation and service.

For Sales in California:



WARNING: This product can expose you to chemicals including lead which is known to the state of California to cause cancer, birth defects or reproductive harm. For more information go to www.P65Warnings.ca.gov

Limited Warranty and Limitation of Liability



LIMITED 10 YEAR WARRANTY AND LIMITATION OF LIABILITY

LIMITED 10 YEAR WARRANTY

RegO® warrants to the original purchasers the products and repair kits manufactured by it to be free from defects in materials and workmanship under normal use and service for a period of 10 years from the date of manufacture. If within thirty days after buyer's discovery of what buyer believes is a defect, buyer notifies in writing and ships the product to RegO® at 3181 Lear Drive Burlington, NC 27215, RegO®, at its option, and within forty-five days of receipt, will repair, replace F.O.B. point of manufacture, or refund the purchase price of that part or product found by RegO® to be defective. Failure of buyer to give such written notice and ship the product within thirty days shall be deemed an absolute and unconditional waiver of any and all claims of buyer arising out of such defect.

This warranty does not extend to any product or part that is not installed and used continuously after installation in accordance with REGO®'s printed instructions, all applicable state and local regulations, and all applicable national standards, such as those promulgated by NFPA, DOT and ANSI. This warranty does not extend to any product or part that has been damaged by accident, misuse, abuse, failure to maintain, or neglect, nor does it extend to any product or part which has been modified, altered, disassembled, or repaired in the field. This warranty does not cover any cosmetic issues, such as scratches, dents, marring, fading of colors or discoloration.

Except as expressly set forth above, and subject to the limitation of liability below, REGO® MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, with respect to its products and parts, whether used alone or in combination with others. REGO® disclaims all warranties not stated herein.

LIMITATION OF LIABILITY

REGO®'s total liability for any and all losses and damages arising out of any cause whatsoever shall in no event exceed the purchase price of the products or parts in respect of which such cause arises, whether such cause be based on theories of contract, negligence, strict liability, tort or otherwise.

REGO® shall not be liable for incidental, consequential or punitive damages or other losses. REGO® shall not be liable for, and buyer assumes any liability for, all personal injury and property damage connected with the handling, transportation, possession, further manufacture, other use or resale of products, whether used alone or in combination with any other products or materials.

From time to time buyers might call to ask REGO® for technical advice based upon limited facts disclosed to REGO®. If REGO® furnishes technical advice to buyer, whether or not at buyer's request, with respect to application, further manufacture or other use of the products and parts, REGO® shall not be liable for such technical advice or any such advice provided to buyer by any third party and buyer assumes all risks of such advice and the results thereof.

NOTE: Some states do not allow the exclusion or limitation of incidental, consequential or punitive damages, so the above limitation or exclusion may not apply to you. The warranty gives you specific legal rights, and you may have other rights that vary from State to State. The portions of this limited warranty and limitation of liability shall be considered severable and all portions which are not disallowed by applicable law shall remain in full force and effect.

WARNING

All RegO products are mechanical devices that will eventually become inoperative due to wear, corrosion and aging of components made of material such as rubber, etc. The environment and conditions of use will determine the safe service life of these products. Periodic inspection and maintenance are essential to avoid serious injury and property damage.

Many RegO products are manufactured components which are incorporated by others on or in other products or systems used for storage, transport, transfer and otherwise for use of toxic, flammable and dangerous liquids and gases. Such substances must be handled by experienced and trained personnel only, using accepted governmental and industrial safety procedures.

NOTICE TO USERS OF PRODUCTS

The Limited Warranty stated above is a factory warranty to the first purchasers of REGO® products. Since most users have purchased these products from REGO® distributors, the user must within thirty (30) days after the user's discovery of what user believes is a defect, notify in writing and return the product to the distributor from whom he purchased the product/part. The distributor may or may not at the distributor's option choose to submit the product/parts to REGO®, pursuant to this Limited Warranty. Failure by buyer to give such written notice within thirty (30) days shall be deemed an absolute and unconditional waiver of buyer's claim for such defects. Acceptance of any alleged defective product/parts by REGO®'s distributor for replacement or repairs under the terms of REGO®'s Limited Warranty in no way determines REGO®'s obligations under this Limited Warranty.

Because of a policy of continuous product improvement, REGO® reserves the right to change designs, materials or specifications without notice.

RegO® is a registered trademark of Engineered Controls International, LLC

EUROPEAN PED/TPED CERTIFICATION

The following product categories have received PED/TPED certification by the notified body Tüv, #0036

Valve number	Maximum Connection Size	DN	PED Category
9560 series	1"	25	SEP
9500 series	1"	25	SEP
BK8400 series	2"	50	II
BK9400 series	2"	50	II
T9450 series	½"	15	TPED
T9460 series	½"	15	TPED
1682 series	¼"	8	SEP
BR-&1780 series	1"	25	SEP
RG series	¼"	8	SEP
ECL series	¼"	8	SEP
PRV9430 & PRV19430 series	½"	15	IV & TPED
SS9430 & PRV29430 series	½"	15	IV & TPED
BK008400 Series	2"	50	II
BK009400 Series	2"	50	II
BB9400 Series	2"	50	II
SK9400 Series	2"	50	II & TPED
SKA9400 Series	2"	50	II & TPED
SKS9400 Series	2"	50	II & TPED
SKM9400 Series	2"	50	II & TPED
SKL9400 Series	2"	50	II & TPED
Goddard 110/210 Series	4"	100	Cat II (6" Class 300 is Cat III)
Goddard 886 / 886M Series	1 ½"	40	II
Goddard 840 / 846M Series	2"	50	II
Goddard 302 / 306 / 312 / 322 / 326 Series	3"	80	II
Goddard 202X / 206 / 222 / 222X / 226 / 226X / 231 / 232 Series	3"	80	II
AR4100/5100 Series	1½"	40	IV & TPED
DR6108	1"	25	SEP
DR6112	1 ½"	40	II
DR6113	1 ½"	40	II

Why RegO

You don't thrive for more than 100 years because you're lucky.

It takes quality products, constant innovation, and above all a dedication to the customer.

From a pioneer in the development of oxygen regulators to a global leader delivering a comprehensive line of flow control products, RegO has always kept our customers' interests first.

Quality matters. Industrial gas applications have no room for leaks. That's why we design and manufacture in the U.S., test 100% of our products, and can offer a 10-year warranty. RegO products work better and last longer.

Innovative products, processes and people. We invest in technology and training to deliver flow control products designed to reduce maintenance and replacement costs, and ensure an efficient, safe work flow.

When our customers thrive, we do too. Our experienced team can provide technical support and design assistance. We're here to help in any way, every day.



Quality materials, innovative, long-lasting design are built into every product we manufacture. That's how we can offer a 10-year product warranty—double that of other companies.



Designed, manufactured and tested in the USA. Our four state-of-the-art facilities build the products that are most critical to your application.



Short Stem Cryogenic Valves

T9450 Series & T9460 Series

Application

The T9450 and T9460 series valves are designed for use on portable cryogenic cylinders and other in-line shut-off valve applications. T9460 Series Approved for TPED in accordance with EN1626.

Features

- Spring loaded stem seal automatically adjusts for any gasket wear, eliminating the need to constantly retighten the packing nut.
- Non-rising stem and low profile allow the valve to fit into tight areas and still provide easy access.
- Unique pressure-sealed moisture barrier helps prevent freeze up at cryogenic temperatures.
- Conical swivel seal design helps prevent seat galling from over torquing.
- Cleaned for oxygen service per CGA G-4.1.
- Maximum working pressure is 600 psig. (42 barg)
- Working temperature range is -320°F to +165°F. (-196°C to +74°C)
- 100% Factory Tested

Materials

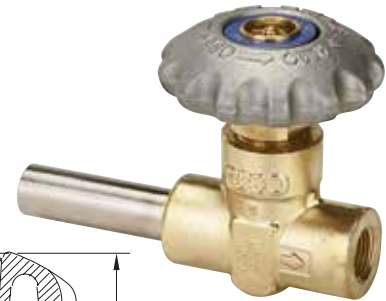
Body	Brass
Bonnet	Brass
Seat Disc	PCTFE
Stem Seal Gasket.....	PTFE
Handwheel.....	Aluminum
Spring	Stainless Steel
Stem	Brass
Poppet	Brass

Ordering Information

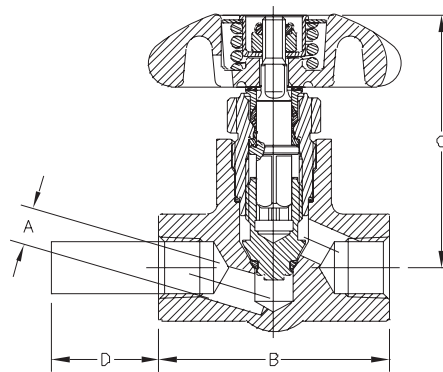
Part Number	Inlet	Outlet	Orifice A	Length B	Height (Approx.) C	Tube D	C _v Factor
T9452	¼" F.NPT	¼" F.NPT	.250	2½"	2¾"	None	.99
T9453	⅜" F.NPT	⅜" F.NPT	.406				1.76
T9454	½" F.NPT	½" F.NPT	.406				1.79
T9464CA	.675" O.D. Tube	⅜" F.NPT	.406	2½"	2¾"	1⅛"	1.76
T9464DA						2⅛"	
T9464ADA						3⅞"	



T9450 Series



T9460 Series



Extended Stem Retrofit Kits

Application

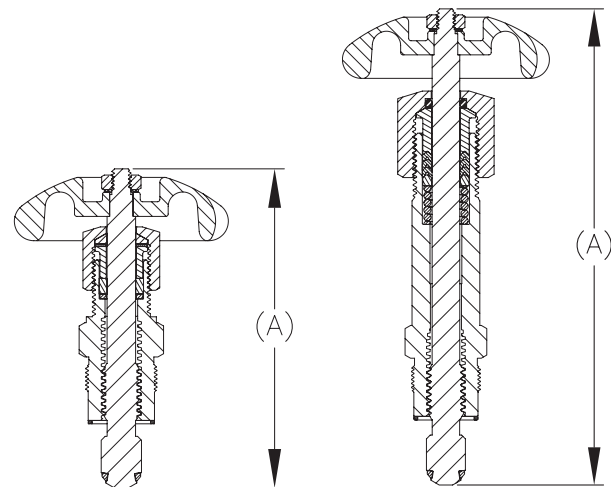
Retrofit kits are used to convert the 9450 and 9460 series short stem shut off valves into extended stem style. The conversion can be done without removing the valve from your system. Available in two stem lengths. All kits are oxygen cleaned and packaged per CGA G-4.1.

Materials

Body	Brass
Seat Disc	PCTFE
Handwheel.....	Aluminum
Packing.....	PTFE
Stem	Stainless Steel
Stem Seal Gasket.....	PTFE

Ordering Information

Part Number	Stem Length A	Style
ES8450R	4"	Extended Stem, Std. Bonnet, Manual Packing
BK9450R	6.5"	Extended Bonnet and Stem, Spring Loaded Packing



ES8450 & TES8450 Series Extended Stem Valves BK9450 & BK9470 Series Extended Bonnet Valves



Application

For use as a trycock valve or hose drain valve on cryogenic tanks, or as a use, liquid fill, or vent valve on mini-bulk cryogenic tanks. These valves can be used also for other cold gas applications requiring extended stem valves as LNG fueling.

Features

- Union bonnet.
- One piece stainless steel stem
- Conical seat design.
- Maximum working pressure is 600 psig (42 barg).
- Working temperature is -320°F to +165°F. (-196°C to 74°C)
- Cleaned for oxygen service per CGA G-4.1.
- 100% Factory Tested

TES8450 Series specific feature:

- Grafoil® packing
- Approved by PED and TPED

ES8450 Series specific feature:

- Manual torque compression packing.

BK9450 and BK9470 Series specific feature:

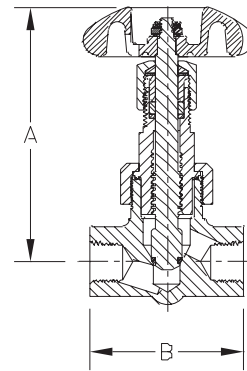
- Extended bonnet and spring loaded packing.

BK9470 Series specific feature:

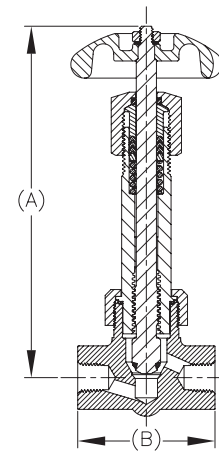
- 304 St. Stl Tube brazed into both ends.



ES 8450 Series



BK 9450 Series



Materials

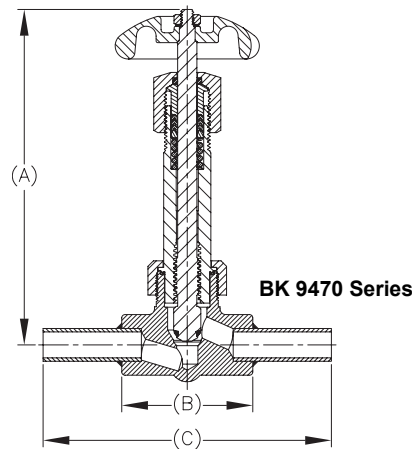
Body and Bonnet.....	Brass
Stem	Stainless Steel
Seat Disc	PCTFE
Handwheel.....	Aluminum
Bonnet Gasket.....	PTFE
Packing.....	PTFE
Packing (TES.....)	Grafoil

Conversion Kit

BK 9450-KIT is a bonnet and stem assembly kit to convert ES 8450 series and previous ES 9450 Series to the BK 9450 style.

Ordering Information

Part Number	Inlet/Outlet Connections	Height "A"	Body Width "B"	Width with Tube "C"	Cv	
ES8452	1/4" FNPT	4.2"	2.5"		0.70	
TES8452						
ES8453	3/8" FNPT				1.10	
TES8453						
ES8454	1/2" FNPT				0.70	
TES8454						
BK9452	1/4" FNPT	6.5"	2.5"		1.10	
BK9453	3/8" FNPT					
BK9454	1/2" FNPT					
BK9453FA	5/8" OD tubing x 3/8" FNPT					4.0"
BK9475A	5/8" OD tubing both ends					5.5"



BK 9470 Series

REGO-LOK™

for Securing CGA Fittings on Liquid Cylinders

Application

The REGO-LOK™ is designed for installation on the Rego T9450 and T9460 Series liquid cylinder valves to deter and prevent the removal of the CGA fitting from the valve. The REGO-LOK™ retains standard CGA outlet connection so unauthorized persons do not remove the fitting. By use of a special one-way bolt, the REGO-LOK™ is secured to the valve. The REGO-LOK™ installs in a few minutes with the use of screwdrivers, without valve disassembly, brazing, welding, or drilling. The REGO-LOK™ deters and prevents fitting removal by gas customers, however allows the replacement of fittings by authorized gas supplier plant personnel.

Use The REGO-LOK™ for compliance with CGA SB-26 for medical and industrial liquid cylinders.

Features

- Stainless Steel REGO-LOK™ with one-way bolt.
- Retrofit all common liquid cylinder valves.
- Can be supplied on new Rego liquid cylinder valves.
- REGO-LOK™ indicates "WARNING: DO NOT REMOVE"
- Worn CGA fittings can be simply replaced by authorized personnel. Requires new 9464RL-6 Bolt
- Can fit over existing fittings for CGA 540, CGA 440, CGA 295, CGA 320, and CGA 326. Check fitting hex size.

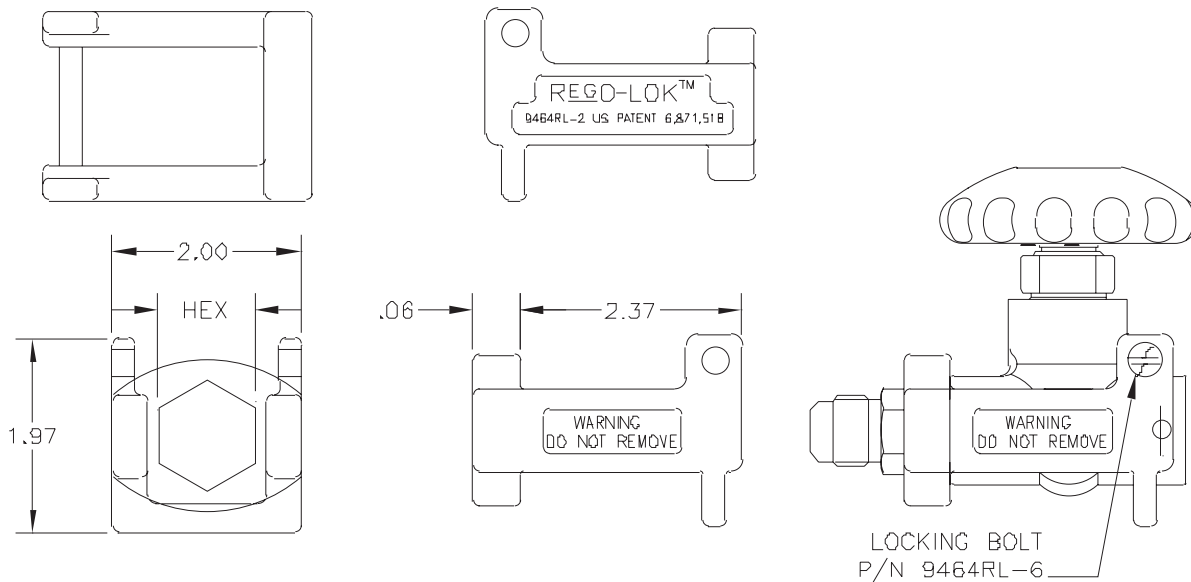
NOTE: Rego supplied fitting P/N CGA580RL is required for REGO-LOK™ use with CGA 580 connection.

- Prevents loosening of CGA fittings on valves.



Rego-Lok™

Satisfies CGA SB-26 and FDA requirements for medical and industrial liquid cylinders.



Ordering Information

Part Number	Item Description	Typical Service Connection
9464RL-0	REGO-LOK™ for 3/4" hex fittings	
9464RL-1	REGO-LOK™ for 7/8" fittings	CGA 320, CGA 326 & CGA 295
9464RL-2	REGO-LOK™ for 1" fittings	CGA 440, CGA 540
9464RL-3	REGO-LOK™ for 1 1/8" hex CGA 580RL fitting by Rego	CGA 580
CGA580RL	3/8" MNPTxCGA for use with 9464RL-3	CGA 580

Cryogenic Pressure Builder RG Series

Application

RG series cryogenic regulators are primarily designed to maintain pressure on cryogenic liquid within cryogenic containers. They may also be used in cryogenic lines, vaporizer and converter applications. They are especially useful in installations where space and cost limitations are important.

Features

- All parts are copper alloy (brass), PTFE and stainless steel—materials selected specifically for compatibility with cryogenic temperatures down to -320°F. (-196° C)
- PTFE seat helps assure a positive shut-off at cryogenic temperatures down to -320°F. (-196° C)
- High and low pressure regulators are the same compact size—designed to fit in close quarters.
- Interchangeable with existing cryogenic regulator units.
- Inlet filter helps prevent foreign material from entering the regulator.
- Locknut is provided to maintain adjusting screw setting.
- RG125C and RG175C Series available with flat inlet screen.
- RG000090AG is available with T handle adjustment screw and gauge ports.
- Maximum inlet pressure of 550 psig. (37.9 barg)
- Cleaned for oxygen service per CGA G-4.1
- 100% Factory Tested

Materials

Body	Brass
Bonnet	Brass
Seat	PTFE
Springs	Stainless Steel
Diaphragm Gasket.....	PTFE
Backcap Gasket	Copper
Diaphragm.....	Bronze

Ordering Information

Part Number	Inlet / Outlet Connections (F/NPT) A	Width B	C	D	Operating Range (psig)
RG022A	1/4"	2 1/16"	3"	1"	0-30 psig (0-2.1 barg)
RG125A					25-250 psig (1.7-17.2 barg)
RG125C3	3/8"	2 1/8"	3.33"	0.80"	125-350 psig (17.2-24.2 barg)
RG175C3					25-250 psig (1.7-17.2 barg)
RG300A	1/4"	2 1/16"	3"	1"	125-350 psig (17.2-24.2 barg)
RG000090AG					25-250 psig (1.7-17.2 barg)

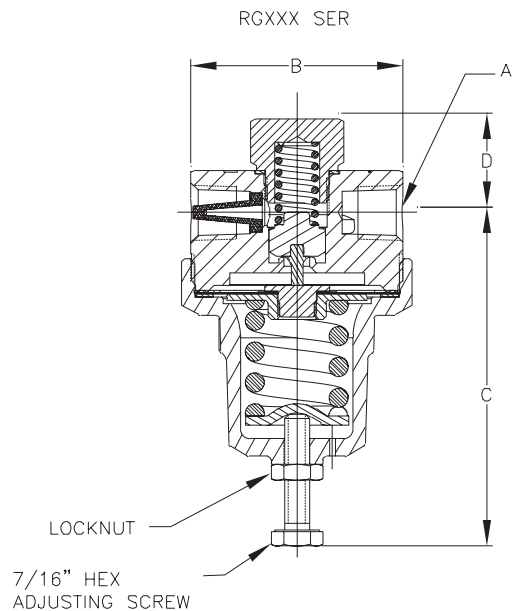
*Contact sales representative for additional settings.



RG Series



RGXXXAG with gauge port & T handle



Cryogenic 1/2" Pressure Builder PB Series

Application

PB series cryogenic regulators are primarily designed to maintain the pressure in cryogenic containers; they may also be used as a line regulator for cryogenic lines and cold gas lines. They are specifically useful in installations where the precision in pressure control and flow capability are important. For use with oxygen, nitrogen, argon, LNG and CO2.

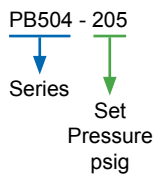
Features

- All parts are copper alloy (brass), PTFE and stainless steel— materials selected specifically for compatibility with cryogenic temperatures down to -320°F. (-196° C)
- PTFE seat helps assure a positive shut-off at cryogenic temperatures down to -320°F. (-196° C)
- High and low pressure regulators are the same compact size— designed to fit in close quarters.
- Customizable pressure settings between 20 - 550 psig (1.4 - 37.9 barg)
- Interchangeable with existing cryogenic regulator units.
- Inlet filter available as option.
- Easier to service, use an allen wrench versus large crescent wrench.
- Less field repair because diaphragm is squeezed versus twisted.
- Locknut is provided to maintain adjusting screw setting.
- Maximum inlet pressure of 600 psig (41.4 barg).
- Cleaned for oxygen service per CGA G-4.1
- 100% Factory Tested

Materials

Body	Brass
Bonnet	Brass
Seat	PTFE
Springs	Stainless Steel
Diaphragm Gasket.....	PTFE
Backcap Seal.....	PTFE
Diaphragm.....	Bronze

PB504 Series part number configuration



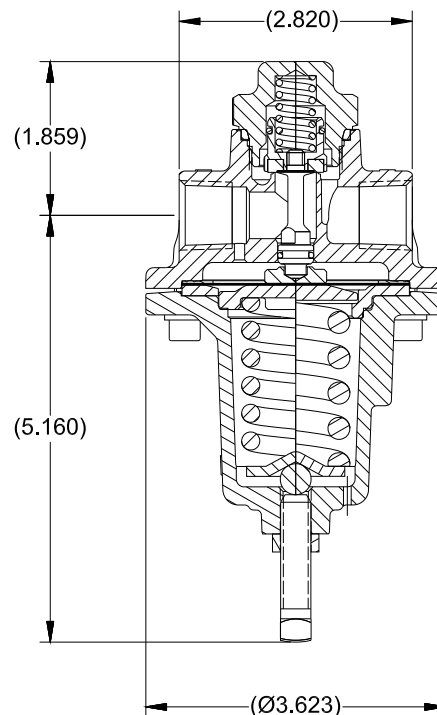
Ordering Information

Part Number	Inlet / Outlet Connections (F.NPT) A	Delivery Pressure Setting Range psig (barg)
PB504-020 to 070	1/2"	20 - 75 psig (1.4 - 5.2 barg)
PB504-071 to 175		50 - 180 psig (3.4 - 12.4 barg)
PB504-176 to 300		150 - 300 psig (10.3 - 20.7 barg)
PB504-301 to 550		250 - 550 psig (17.2 - 37.9 barg)

Delivery pressure setting psig specified by suffix in PB regulator number. Example: An order for PB504-125 has a maximum inlet pressure rating of 600 psig (41.3 barg) and is set at an outlet pressure of 125 psig (8.6 barg).



PB504



Cryogenic Economizers

ECL502 Series



Application

ECL502 series cryogenic economizers are designed to be used as pressure reducing valves to automatically maintain a constant inlet or back pressure, normally closed at pressures below its set point and open at pressures above its set point. The ECL502 is primarily designed to assist in maintaining a desired system pressure ideal for Nitrogen, Oxygen, Argon and other cryogenic cylinder applications with a 100% performance improvement over RegO's ECLXXX series. ECL502 series offers outstanding performance for maintaining LNG fuel line pressure.

Features

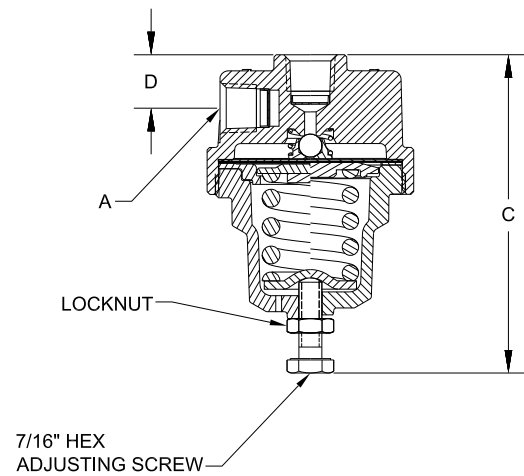
- ECL502 series design provides premium flow characteristics allowing for fast pressure reduction while maintaining sensitive flow control at lower pressure settings.
- All materials of construction- copper alloy, PTFE and stainless steel were selected for compatibility with cryogenic service.
- 150 count mesh Monel screens installed into the inlet and outlet ports prevent debris from entering or damaging any downstream components.
- Interchangeable with existing cryogenic economizer units.
- Bi-directional flow for LNG fuel systems
- Temperature range: -320°F to +165°F (-196°C to +74°C)
- Max inlet pressure:
- Low Pressure Models ≤175: 375 psig (≤ 12,1: 25.3 barg)
- High Pressure Models >175: 550 psig (> 12,1: 37.9 barg)
- Pressure setting range: 10-350 psig (0.7-24.1 barg)
- Clean for oxygen service per CGA G-4.1
- Design in accordance with ECE R110

Materials

Body	Brass
Diaphragm Liner	PTFE
Poppet Seat	Stainless Steel
Adjusting Screw	Stainless Steel
Bonnet	Brass
Screen	Monel
Diaphragm	Bronze
Springs	Stainless Steel



ECL Series



Ordering Information

Part Number	Inlet / Outlet Connections (FNPT) A	Width B	C	D	E	Operating Range (psig)
ECL502-22	1/4" NPT	2.25" 57 mm	3.5" 89 mm	.58" 15 mm	1" 25 mm	10-60 psig 0.7 - 4.1 barg
ECL502-100						50 - 175 psig 3.4 - 12.1 barg
ECL502-123						
ECL502-140						
ECL502-175						
ECL502-325						150 - 350 psig 10.3 - 24.1 barg

*Contact sales representative for additional settings.

Cryogenic 1/2" Combination Pressure Builder/Economizer for Bulk Vessels CB504



Application

CB504 series regulators maintain the pressure of cryogenic liquid within bulk vessels combining the pressure building and economizer function in one unit, with 1/2" npt inlet and outlet.

Features

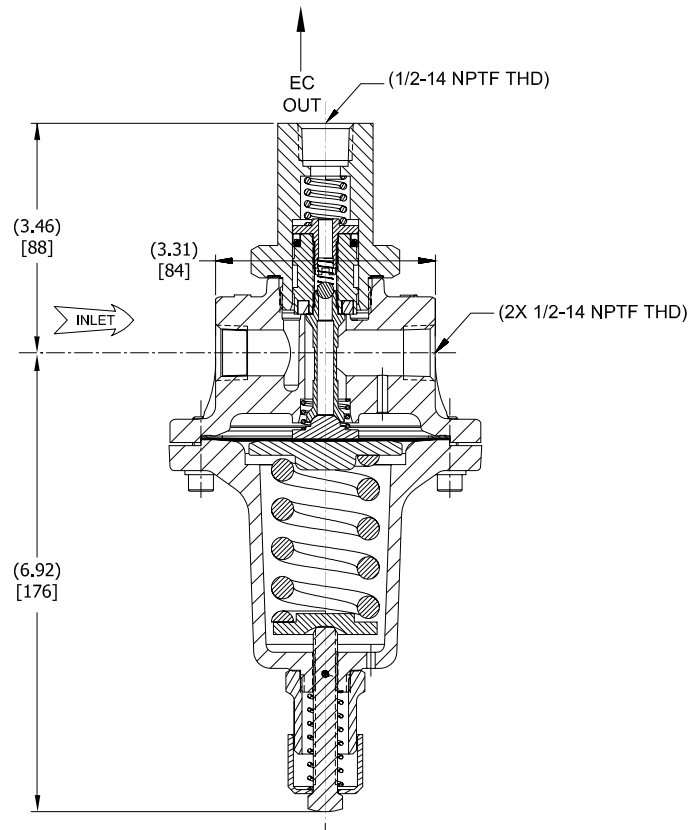
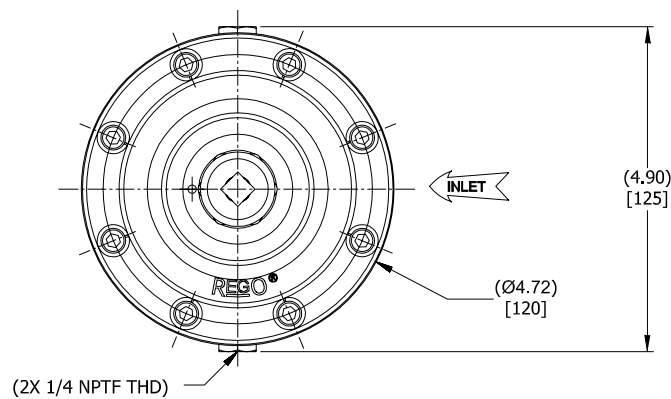
- All parts are copper alloy (brass), PTFE, and stainless steel— materials selected specifically for compatibility with cryogenic temperatures down to -320°F. (-196°C)
- Pressure setting scale on bonnet cap aids in pressure adjustment.
- Maximum inlet pressure of 400 psig (37.92 barg)
- PTFE seat provides positive shut off at cryogenic temperatures
- Compact design fits well in tight plumbing geometries
- 100% factory tested
- Cleaned per CGA G-4.1 for oxygen service
- Suitable for argon, CO₂, nitrogen, oxygen and LNG



CB504

Materials

Body	Brass
Bonnet	Brass
Spring	Stainless Steel
Diaphragm Gasket	PTFE
Diaphragm	Phosphor Bronze
Seat	PTFE
Backcap Gasket	Copper



Ordering Information

Part Number	Inlet/Outlet Connections (FNPT)	Operating Range (psig)
CB000504-B	1/2"	100-200 psig (6.9-13.8 barg)

Cryogenic 1/4" Combination Pressure Builder/Economizer CBH502 & CBC502 Series

Application

The regulator combines the function of Pressure Building and Economizer functions in one compact unit. Available in Chart and Taylor-Wharton piping geometries and a variety of pressure ratings.

Features

- All parts are copper alloy (brass), PTFE and stainless steel materials selected specifically for compatibility with cryogenic temperatures down to -320° F. (-196°C)
- PTFE seat helps assure a positive shut-off at cryogenic temperatures down to -320° F. (-196°C)
- High and low pressure builder/economizers are the same compact size designed to fit in close quarters.
- Interchangeable with existing cryogenic regulator units.
- Inlet screen helps prevent foreign material from entering the regulator.
- Locknut is provided to maintain adjusting screw setting.
- Maximum inlet pressure of 550 psig (37.9 barg)
- Cleaned for oxygen service per CGA G-4.1
- 100% Factory Tested.
- Suitable for argon, CO₂, nitrogen and oxygen.

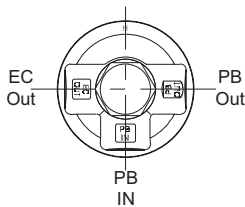


CBH502 Series

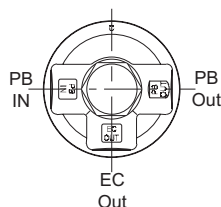


Materials

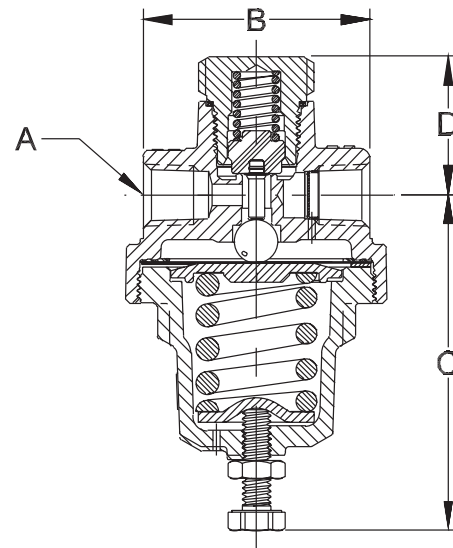
Body	Brass
Bonnet	Brass
Seat Disk	PTFE
Springs	Stainless Steel
Gaskets	PTFE & Copper
Diaphragm	Bronze



CBH Series



CBC Series



Ordering Information

Part Number	Inlet/Outlet Connections (F/NPT)	"A"	"B"	"C"	"D"	Factory Pressure Setting (psig)	Operating Range (psig)
CBH502-015	1/4"	1/4"	1.97"	2.89"	1.19"	15 psig (1.03 barg)	10-60 psig (0.69-4.1 barg)
CBH502-125						125 psig (8.6 barg)	50-175 psig (3.45-12.1 barg)
CBH502-300						300 psig (20.7 barg)	150-350 psig (10.3-22.4 barg)
CBH502-315						315 psig (21.7 barg)	150-350 psig (10.3-22.4 barg)
CBH502-325						325 psig (22.4 barg)	150-350 psig (10.3-22.4 barg)
CBH502-350						350 psig (24.1 barg)	150-350 psig (10.3-24.1 barg)
CBC502-015						15 psig (1.03 barg)	10-60 psig (0.69-4.1 barg)
CBC502-125						125 psig (8.6 barg)	50-175 psig (3.45-12.1 barg)
CBC502-300						300 psig (20.7 barg)	150-350 psig (10.3-22.4 barg)
CBC502-325						325 psig (22.4 barg)	150-350 psig (10.3-22.4 barg)
CBC502-350	350 psig (24.1 barg)	150-350 psig (10.3-22.1 barg)					

Cryogenic Liquid Cylinder Regulator LCR Series

Application

The RegO LCR Series pressure reducing regulator assembly controls the pressure from the gas use line or the discharge of any liquid cylinder with a flow capacity at least double the capacity of the cylinder vaporization coil. For use with oxygen, nitrogen, argon, or carbon dioxide liquid cylinders.

Features

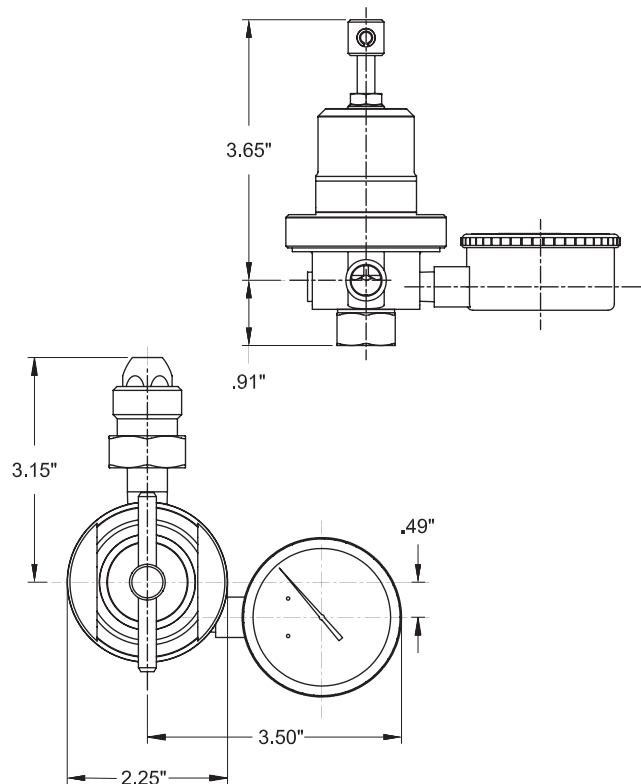
- Easy adjusting screw to maintain pressure setting
- 100% Factory tested
- CGA fitting inlet connection for ready hook-up and 1/4" F. NPT outlet.
- Gauges with applicable pressure ranges.
- Two delivery pressure ranges available.
- Clean for use in Oxygen per CGA G-4.1
- Temperature range -320°F (-196°C) to + 165°F (74°C)
- Maximum inlet pressure 550 psig (37.9 barg)
- Inlet filter helps prevent foreign material from entering the regulator.



LCR Series

Materials

Body & Bonnet.....	Brass
Seat	PTFE
Spring & Nut	Stainless Steel
Diaphragm Gasket.....	PTFE
Diaphragm.....	Bronze
Backcap Gasket.....	Copper



Ordering Information

Part Number	Gas	Liquid Cylinder Connection	Delivery Pressure Range
LCR200A580	Nitrogen/Argon	CGA 580	25 to 200 psig (1.7-13.8 barg)
LCR200A540	Oxygen	CGA 540	
LCR200A320	Carbon Dioxide	CGA 320	25 to 200 psig (1.7-13.8 barg)
LCR350A580	Nitrogen/Argon	CGA 580	100 to 350 psig (6.9-24.1 barg)
LCR350A540	Oxygen	CGA 540	
LCR350A320	Carbon Dioxide	CGA 320	

Cryogenic Gas Relief Valves, Non-ASME 9400 Series

Application

9400 series relief valves are specifically designed for vapor line safety relief applications and cryogenic liquid containers.

Features

- Cleaned and packaged for oxygen service per CGA G-4.1.
- Bubble tight at 95% of set pressure.
- Easy to read color coded barg/mpa labels.
- Tamper resistant
- Adapters provide standard pipe thread connections for venting gas to the outdoors.
- Repeatable performance.
- 100% factory tested.
- Temperatures Range (Teflon Seat) -320° to +165° F. (-196°C to +74°C)
- Temperatures Range (Fluorosilicone Seat) -60° to +165° F. (-51°C to +74°C)
- Rated for gas service only.

Materials SS Style

Body	Stainless Steel
Spring	Stainless Steel
Seat Retainer.....	Stainless Steel
Pipe-Away Adapter	Stainless Steel

Materials PRV and B-Style

Body	Brass
Spring	Stainless Steel
Seat Retainer.....	Brass
Pipe-Away Adapter	Brass

Flow Performance

- For set pressures 90 - 600 capacity is 0.783 SCFM of air per psi of flow pressure. For set pressures 15 - 89 capacity is 0.750 SCFM of air per psi of flow pressure. Flow pressure per ASME is 10% above set pressure or +3 psig, whichever is greater.
- B-9425N flow of 6.7 SCFM Air/psi at 120% of set pressure.
- B-9426N flow of 11.0 SCFM Air/psi at 120% of set pressure

Seat Material Option

F for Fluorosilicone for PRV and SS styles for 15-139 psig.
T for PTFE for PRV and SS styles for 140-600 psig
N for B-9425 and B-9426, Fluorosilicone seat, all set pressures.

Drain Hole Option

Relief valves without pipeaway typically provided with drain holes, leave blank. **P** - for relief valves without drain hole, for example PRV9432TP350

WARNING: Inspection and maintenance of pressure relief valves is very important. Failure to properly inspect and maintain pressure relief valves could result in personal injuries or property damage. The useful safe service life of a pressure relief valve may be significantly affected by the service environment.

Ordering Information

Style	Size	Inlet M.NPT A	Body and Valve Material	Pressure Setting Range psig	Height B	Wrenching Hex C	Orifice Size Sq. Inch	Pipe-Away Adapter P/N	Pipe-Away Outlet F.NPT.
PRV	9432	¼"	Brass	15-600	2.6"	⅞"	.062	B-9412-2	⅜"
SS			Stainless Steel					SS-9412-4	½"
PRV	9433	⅜"	Brass					B-9412-2	⅜"
SS			Stainless Steel					SS-9412-4	½"
PRV	9434	½"	Brass		B-9412-4			½"	
SS			Stainless Steel		SS-9412-4			½"	
B-	9425	¾"	Brass	20-300	3.4"	1¾"	.44	B-3131-10	1"
	9426	1"		60-300	5.3"	2¾"	.62	B-3132-10	1¼"



Ordering Information

Fill in the blanks with options below.

Example: PRV9432T350

PRV	9432	T	Blank or "P"	350	Blank or "P"
Style	Size	Seat Material	Drain Hole	Set Pressure	Pipe Away Option

This example part number indicates a ¼" M.NPT PRV style brass relief valve with PTFE seat, set at 350 psig with drain hole and no pipe away adapter.

Pipe Away Option

P Pipeaway included and attached, No drain hole in relief valve.
For example PRV9432TP350
Leave blank for relief valve without pipe-away attached.
For example PRV9432TP350.

Set Pressure

Specify set pressure within range specified for style and size. The B-9425 & B-9426N are available in select settings only. Special order.

For easy identification, the following standard settings have color coded labels for all PRV and SS Style sizes and settings marked in psig and barg:

Color Identification

22 psig	230 psig
35 psig	350 psig
50 psig	450 psig
100 psig	500 psig
150 psig	

Cryogenic Gas Relief Valves, ASME PRV19430 & PRV29430 Series

Application

The 19430 and 29430 relief valves are designed for oxygen and other industrial gases and for cryogenic service in the vapor space. Apply on piping systems, liquid cylinders or mini-bulk cryogenic containers where an ASME relief valve is required.

Features

- A.S.M.E. rated, National Board Certified.
- Bubble tight at 95% of set pressure.
- Full flow at 110% at set pressure.
- Repeatable performance.
- 100% factory tested.
- Temperatures Range (Teflon Seat) -320° to +165° F. (-196°C to +74°C)
- Temperatures Range (Fluorosilicone Seat) -60° to +165° F. (-51°C to +74°C)
- Cleaned and packaged for oxygen service per CGA G-4.1.
- Rated for gas service only
- Easy to read color coded barg/mpa labels.
- Tamper resistant



19430 Series

Materials SS Style

Body	Stainless Steel
Spring	Stainless Steel
Seat Retainer.....	Stainless Steel
Pipe-Away Adapter	Stainless Steel

Materials PRV and B-Style

Body	Brass
Spring	Stainless Steel
Seat Retainer.....	Brass
Pipe-Away Adapter	Brass

Flow Performance

For set pressures 90 - 600 capacity is 0.783 SCFM of air per PSIA of flow pressure. For set pressures 15 - 89 capacity is 0.750 SCFM of air per PSIA of flow pressure. Flow pressure per ASME is 10% above set pressure or +3 psig, whichever is greater.

Ordering Information

Fill in the blanks with options below.

Example: PRV019432T350					
PRV	1	9432	T	Blank or "P"	350
Style	Body Material	Size	Seat Material	Drain Hole	Set Pressure

Body Material

- 1 ASME approved valve made of brass
- 2 ASME approved valve made of stainless steel

Seat Material

- F for Fluorosilicone for 15 to 139 psig (6.2 - 9.5 barg) set points.
- T for PTFE for 140-600 psig (9.6 - 41.4 barg) set points.

Drain Hole

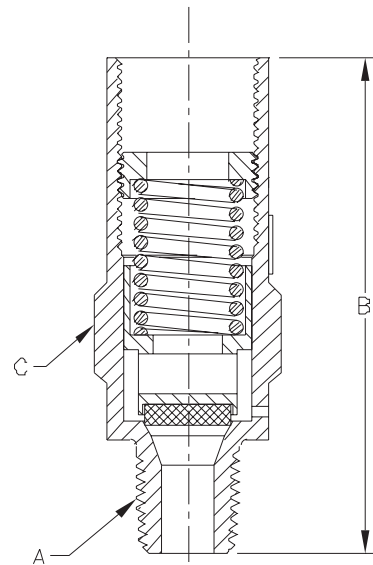
Leave blank for relief with drain hole. Insert P if no drain hole.

Set Pressure

Enter number for set pressure in psig (6.2 - 41.4 barg) from 15 to 600.

Ordering Information

Part Number	Material	Inlet A	Height B	Wrenching Hex C	Orifice Size
PRV19432	Brass	1/4"	2.6	7/8"	.062 sq. inch
PRV29432	Stainless Steel				
PRV19433	Brass	3/8"	2.8	7/8"	.062 sq. inch
PRV29433	Stainless Steel				
PRV19434	Brass	1/2"	2.8	7/8"	.062 sq. inch
PRV29434	Stainless Steel				



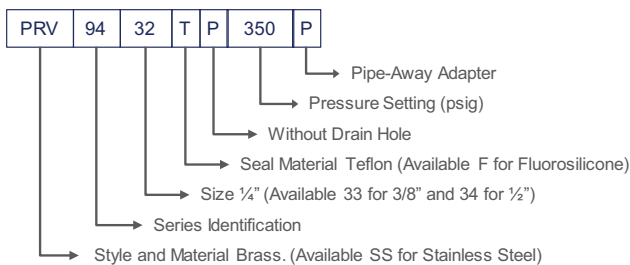
Setpoint tolerance is $\pm 3\%$ of the set pressure or ± 2 psi whichever is greater.

WARNING: Inspection and maintenance of pressure relief valves is very important. Failure to properly inspect and maintain pressure relief valves could result in personal injuries or property damage. The useful safe service life of a pressure relief valve may be significantly affected by the service environment.

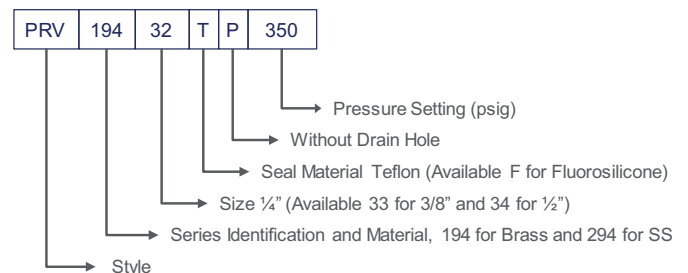
Pressure Setting and Flow Data PRV9400, PRV19430 & PRV29430

Pressure Setting and Flow Data PRV9430 Series								
Pressure Setting psig	barg	Air Flow Capacity SCFM	Pressure Setting psig	barg	Air Flow Capacity SCFM	Pressure Setting psig	barg	Air Flow Capacity SCFM
15	1.0	25	215	14.8	197	450	31.0	399
20	1.4	28	220	15.2	201	460	31.7	408
22	1.5	30	225	15.5	205	470	32.4	416
25	1.7	32	230	15.9	210	480	33.1	425
30	2.1	36	235	16.2	214	490	33.8	434
35	2.4	40	240	16.5	218	500	34.5	442
40	2.8	44	250	17.2	227	510	35.2	451
45	3.1	48	260	17.9	235	520	35.9	459
50	3.4	52	270	18.6	244	530	36.5	468
55	3.8	56	275	19.0	248	540	37.2	477
60	4.1	61	280	19.3	253	550	37.9	485
65	4.5	65	285	19.7	257	560	38.6	494
70	4.8	69	290	20.0	261	570	39.3	502
75	5.2	73	300	20.7	270	580	40.0	511
80	5.5	77	310	21.4	279	590	40.7	520
85	5.9	81	320	22.1	287	600	41.4	528
90	6.2	89	325	22.4	291			
100	6.9	98	330	22.8	296			
110	7.6	106	340	23.4	304			
120	8.3	115	350	24.1	313			
125	8.6	119	360	24.8	322			
130	9.0	123	370	25.5	330			
140	9.7	132	375	25.9	334			
150	10.3	141	380	26.2	339			
160	11.0	149	390	26.9	347			
170	11.7	158	400	27.6	356			
175	12.1	162	410	28.3	365			
180	12.4	167	420	29.0	373			
190	13.1	175	425	29.3	378			
200	13.8	184	430	29.6	382			
210	14.5	192	440	30.3	390			

Non-ASME Ordering Information



ASME Ordering Information



Noise Reduction Relief Valve

NRF9430 Series

Application

For use with cryogenic liquid cylinders to provide substantial reduction of discharge noise in sensitive environments. Our patent pending design allows for an efficient and environmentally friendly flow path.

Features

- Packaged and cleaned for oxygen service per CGA G-4.1
- Bubble tight at 95% of set pressure
- Temperature range -320°F to +165°F (-196° to +74°)
- 100% factory tested
- Tamper Resistant
- Repeatable Performance
- Below 90db @ 350 Set Pressure @ 2 meters away
- For Gas Service Only.

Pipe Away Option

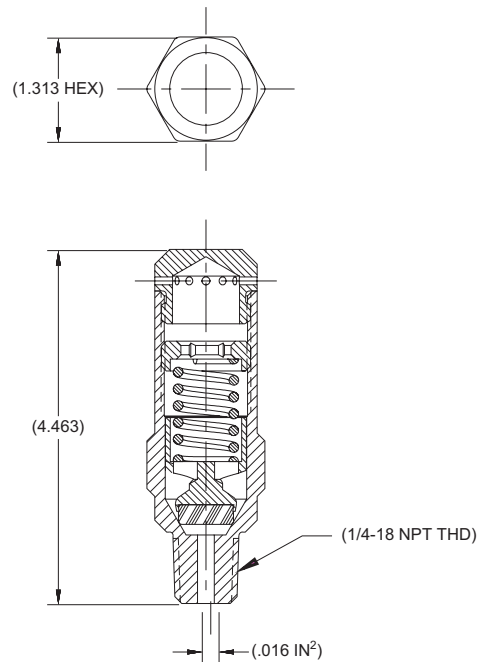
P Pipeaway included and attached, No drain hole in relief valve.
 For example NRF9432T140P
 Leave blank for relief valve without pipe-away attached.
 Pipeaway adapter part number NRF250-4.

Materials

Body Brass
 Spring Stainless Steel
 Seat Retainer Brass



NRF Series



Ordering Information

Part Number	Inlet	Set Pressure	
		psig	barg
NRF9432T230	1/4"	230	15.9
NRF9432T350		350	24.1
NRF9432T500		500	34.5

Cryogenic Gas Relief Valves, ASME B-19434B & C-19434B Series

Application

The B-19434B Series relief valves are suitable for use with oxygen and non corrosive industrial gases.

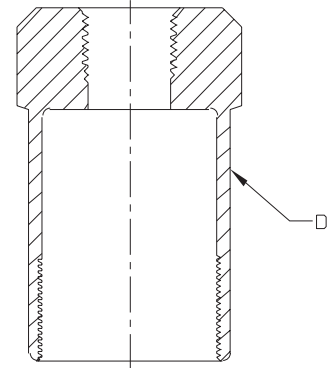
The C-19434B series relief valves are designed for use in carbon dioxide service.

Features

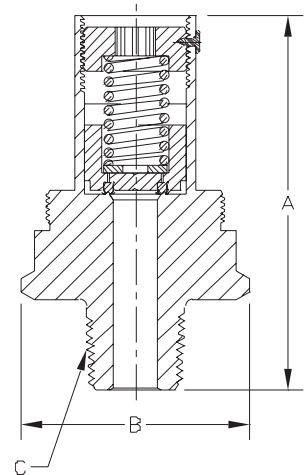
- Both designs permit the valve to open slightly to relieve moderately excessive pressure.
- When the pressure increases beyond a predetermined point, the valve opens to its full discharge capacity in order to quickly reduce excess pressure.
- Pipe-away adapter for venting gas to the outdoors is available.
- ASME Certified.
- B-19434B Series are cleaned for use in oxygen per CGA G-4.1.

Materials

Body Brass
 Spring Stainless Steel
 Seat Retainer Brass
 Seat Disc (B-19434B Series) Fluorosilicone
 Seat Disc (C-19434B Series) EPDM Synthetic Rubber
 Pipe-Away Adapter Brass



B-19434B Series



Ordering Information

Part Number	Pressure Setting (psig)	ASME Relief Capacity (CFM/Air)	Height A	Width B	Inlet Connection (M.NPT) C	Pipe-Away Adapter Part Number D
B-19434B235	235 psig (16.2 barg)	476	2 ¹⁵ / ₁₆ "	1 ¹ / ₄ "	1/2"	*B-19434-5 1/2" F.NPT Outlet
B-19434B250	250 psig (17.2 barg)	505				
B-19434B300	300 psig (20.7 barg)	601				
B-19434B350	350 psig (24.1 barg)	711				
B-19434B375	375 psig (25.9 barg)	760				
C-19434B235	235 psig (16.2 barg)	476				
C-19434B250	250 psig (17.2 barg)	505				
C-19434B280	280 psig (19.3 barg)	555				*B-19484-6 1" F.NPT Outlet
C-19434B300	300 psig (20.7 barg)	601				
C-19434B350	350 psig (24.1 barg)	711				
C-19434B375	375 psig (25.9 barg)	760				

* Pipe Away Adapter is sold separately.

** Contact factory for additional settings.

Angle Relief Valve, ASME AR4100 Series

Application

The ASME approved 90° relief valves AR Series, provide precise relief set points which protect cryogenic vessels and piping systems for over-pressurization.

Features

- High flow rates are approved by rigorous testing to ASME BVPC Code Section VIII.
- The ninety degree configuration provides relief of gases eliminating direct flow through the spring.
- The ninety degree configuration allows easy incorporation to plumbing for output containment.
- Bubble tight seat provides 100% shut off when reseating or static mode.
- A variety of inlets and pressure settings assure adherence to application requirements.
- Temperature Range: -320°F (-196°C) to +165°F (+74°C)
- Cleaned for Oxygen Service per CGA G-4.1
- 100% Factory Tested.
- PED, TPED, ASME & CRN Certified



Materials

Body	.....	Bronze ASTM B61
Upper Body	.....	Stainless Steel ASTM A582
Seat & Stem	.....	Brass ASTM B16
Poppet Guide	.....	Brass ASTM B16
Spring Retainer	.....	Brass ASTM B16
Adjusting Screw	.....	Brass ASTM B16
Cap	.....	Brass ASTM B16
Ball	.....	Stainless Steel
Gasket	.....	Copper ASTM B152-17
Spring	.....	Stainless Steel ASTM A313
Seal	.....	Modified PTFE

Certifications
 A-ASME, TPED, PED
 B-ASME, TPED, PED
 N-TPED, PED
 :- B Version Assembled in Europe

Ordering Information

Fill in the blanks with options below.

Example: AR4106A300

AR	4106	A	300
Angle Relief	Size	Cert Requirements and Pressure Unit	Set Pressure
			Size
			A,N - psig
			B - barg
			04=½"
			06=¾"
			08=1"
			12=1½"

Setpoint tolerance is ± 3% of the set pressure or ± 2 psi whichever is greater.

Note: For psig pressure settings, the part numbers end in A
 For barg pressure settings, the part numbers end in B

Ordering Information

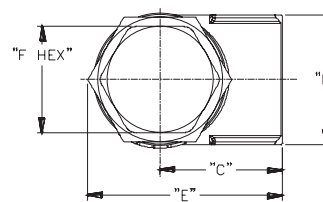
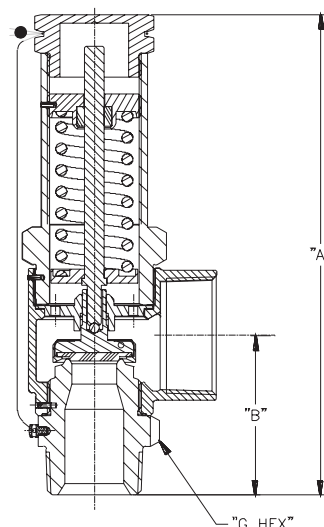
Part Number	Inlet Inches (mm)	Outlet Inches (mm)	Ends	A Inches (mm)	B Inches (mm)	C Inches (mm)	D Inches (mm)	E Inches (mm)	ASME Flow Capacity (Air) at 110% Set Pressure	Weight Lbs (Kg)	
AR4104A	½"	1"	Thread NPT	6.03" (153.16)	1.97" (50.04)	1.63" (41.40)	1.63" (41.40)	2.49" (63.25)	250 psig	406 SCFM *	2.75 (1.25)
AR4104B	(15)								17.23 barg*	690 m³/hr	
AR4106A	¾"	(25)	Thread NPT	6.88" (174.75)	2.37" (60.20)	2.00" (50.80)	1.90" (48.26)	3.01" (76.45)	250 psig*	451 SCFM	3.75 (1.70)
AR4106B	(20)								17.23 barg*	766 m³/hr	
AR4108A	1"	1½"	Thread NPT	9.64" (244.86)	3.20" (81.28)	2.45" (62.23)	2.60" (66.04)	3.89" (98.81)	250 psig*	1,003 SCFM	8.00 (3.63)
AR4108B	(25)								17.23 barg*	1704 m³/hr	
AR4112A	1½"	2"	Thread NPT	9.64" (244.86)	3.20" (81.28)	2.45" (62.23)	2.60" (66.04)	3.89" (98.81)	250 psig*	2,277 SCFM	8.00 (3.63)
AR4112B	(40)								17.23 barg*	3869 m³/hr	

*Custom psig and barg settings are available

Note: For Non-ASME stamp, the part numbers are: AR4104N, AR4106N, AR4108N, AR4112N.



AR4100 Series



Air Capacity = m x P

Where:

m = Slope Value

P = Pressure, Absolute @10% overpressure.

Example: Pressure relief valve, ½" inlet x 1" outlet, at 80 psi. Part number AR4108A080.

m = 1.4

P = 80 psi

Air Capacity = 1.4 x [(80psi x 1.10) + 14.7]

Air Capacity = 143.8 SCFM (air)

Flow Performance

AR4104A set pressures 75 - 500 capacity is 1.4 SCFM of air per psi of flow pressure.

AR4106A set pressures 75 - 400 capacity is 1.56 SCFM of air per psi of flow pressure.

AR4108A set pressures 75 - 425 capacity is 3.463 SCFM of air per psi of flow pressure.

AR4112A set pressures 80 - 425 capacity is 7.86 SCFM of air per psi of flow pressure.

Flow pressure per ASME is 10% above set pressure or +3 psi, whichever is greater.

Angle Relief Valve, ASME AR5100 Series

Application

The ASME approved 90° relief valves AR Series, provide precise relief set points which protect cryogenic vessels and piping systems for over-pressurization.

Features

- High flow rates are approved by rigorous testing to ASME BVPC Code Section VIII.
- The ninety degree configuration provides relief of gases eliminating direct flow through the spring.
- The ninety degree configuration allows easy incorporation to plumbing for output containment.
- Bubble tight seat provides 100% shut off when reseating or static mode.
- A variety of inlets and pressure settings assure adherence to application requirements.
- Temperature Range: -320°F (-196°C) to +165°F (+74°C)
- Cleaned for Oxygen Service per CGA G-4.1
- 100% Factory Tested.
- PED, TPED & ASME Certified



Materials

Body	Bronze ASTM B61
Upper Body.....	Stainless Steel ASTM A582
Seat & Stem	Brass ASTM B16
Poppet Guide.....	Brass ASTM B16
Spring Retainer.....	Brass ASTM B16
Adjusting Screw.....	Brass ASTM B16
Cap.....	Brass ASTM B16
Ball.....	Stainless Steel
Gasket.....	Copper ASTM B152-17
Spring.....	Stainless Steel ASTM A313
Seal.....	Modified PTFE

Ordering Information

Fill in the blanks with options below.

Example: AR5106A300

AR	5106	A	300
Angle Relief	Size	Cert Requirements and Pressure Unit	Set Pressure

Certifications	
A-ASME, TPED, PED	
B-ASME, TPED, PED	
N-TPED, PED	
:- B Version Assembled in Europe	
Set Pressure	Size
A,N - psig	04=½"
B - barg	06=¾"
	08=1"
	12=1½"

Setpoint tolerance is ± 3% of the set pressure or ± 2 psi whichever is greater.

Note: For psig pressure settings, the part numbers end in A
For barg pressure settings, the part numbers end in B

Ordering Information

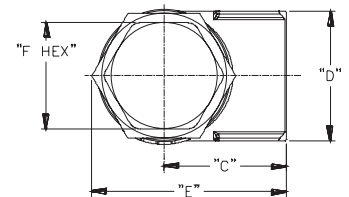
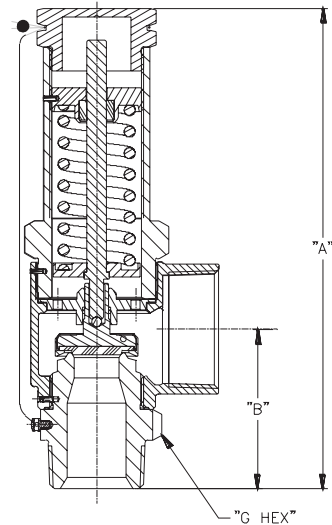
Part Number	Inlet Inches (mm)	Outlet Inches (mm)	Ends	A Inches (mm)	B Inches (mm)	C Inches (mm)	D Inches (mm)	E Inches (mm)	Set Pressure	ASME Flow Capacity (Air) at 110% Set Pressure	Weight Lbs (Kg)
AR5104A	½" (15)	1" (25)	Thread BSP	6.03" (153.16)	1.97" (50.04)	1.63" (41.40)	1.63" (41.40)	2.49" (63.25)	250 psig*	406 SCFM	2.75 (1.25)
AR5104B									17.23 barg*	690 m³/hr	
AR5106A	¾" (20)	1" (25)	Thread BSP	6.03" (153.16)	1.97" (50.04)	1.63" (41.40)	1.63" (41.40)	2.49" (63.25)	250 psig*	451 SCFM	2.75 (1.25)
AR5106B									17.23 barg*	766 m³/hr	
AR5108A	1" (25)	1¼" (32)	Thread BSP	6.88" (174.75)	2.37" (60.20)	2.00" (50.80)	1.90" (48.26)	3.01" (76.45)	250 psig*	1,003 SCFM	3.75 (1.70)
AR5108B									17.23 barg*	1704 m³/hr	
AR5112A	1½" (40)	2" (50)	Thread BSP	9.64" (244.86)	3.20" (81.28)	2.45" (62.23)	2.60" (66.04)	3.89" (98.81)	250 psig*	2,277 SCFM	8.00 (3.63)
AR5112B									17.23 barg*	3869 m³/hr	

*Custom psig and barg settings are available

Note: For Non-ASME stamp, the part numbers are: AR5104N, AR5106N, AR5108N, AR5112N.



AR5100 Series



Air Capacity= m x P

Where:

m = Slope Value

P= Pressure, Absolute @10% overpressure.

Example: Pressure relief valve, ½" inlet x 1" outlet, at 80 psi. Part number AR5108A080.

m = 1.4

P= 80 psi

Air Capacity= 1.4 x [(80psi x 1.10) +14.7]

Air Capacity= 143.8 SCFM (air)

Flow Performance

AR5104A set pressures 75 - 500 capacity is 1.4 SCFM of air per psi of flow pressure.

AR5106A set pressures 75 - 400 capacity is 1.56 SCFM of air per psi of flow pressure.

AR5108A set pressures 75 - 425 capacity is 3.463 SCFM of air per psi of flow pressure.

AR5112A set pressures 80 - 425 capacity is 7.86 SCFM of air per psi of flow pressure.

Flow pressure per ASME is 10% above set pressure or +3 psi, whichever is greater.

Pressure Setting and Flow Data AR Series

Pressure Setting and Flow Data AR Series SCFM (air)						
Pressure Setting psig	barg	MPA	AR4104A AR5104A	AR4106A AR5106A	AR4108A AR5108A	AR4112A AR5112A
22	1.5	.15	54	61	135	306
25	1.7	.17	59	66	146	332
30	2.1	.21	67	74	165	375
35	2.4	.24	74	83	184	418
40	2.8	.28	82	91	203	461
45	3.1	.31	90	100	222	505
50	3.4	.34	98	108	241	548
55	3.8	.38	105	117	260	591
60	4.1	.41	113	126	279	634
65	4.5	.45	121	134	299	678
70	4.8	.48	128	143	318	721
75	5.2	.52	136	151	337	764
80	5.5	.55	144	160	356	807
90	6.2	.62	159	177	394	894
100	6.9	.69	175	194	432	980
110	7.6	.76	190	211	470	1067
120	8.3	.83	205	228	508	1153
130	9.0	.90	221	245	546	1240
140	9.7	.97	236	262	584	1326
145	10.0	1.0	244	271	603	1369
150	10.3	1.03	252	280	622	1413
175	12.1	1.21	290	322	718	1629
200	13.8	1.38	329	365	813	1845
225	15.5	1.55	367	408	908	2061
230	15.9	1.59	375	417	927	2104
235	16.2	1.62	382	425	946	2148
240	16.6	1.66	390	434	965	2191
250	17.2	1.72	406	451	1003	2277
260	17.9	1.79	421	468	1041	2364
265	18.3	1.83	429	476	1060	2407
275	19.0	1.90	444	494	1098	2494
280	19.3	1.93	452	502	1118	2537
285	19.7	1.97	459	511	1137	2580
290	20.0	2.0	467	519	1156	2623
295	20.3	2.03	475	528	1175	2666
300	20.7	2.07	483	536	1194	2710
325	22.4	2.24	521	579	1289	2926
350	24.1	2.41	560	622	1384	3142
375	25.9	2.59	598	665	1479	3358
400	27.6	2.76	637	708	1575	3574
425	29.3	2.93	675	750	1670	3791
450	31.0	3.1	714	793	1765	4007
475	32.8	3.28	752	836	1860	4223
500	34.5	3.45	791	879	1956	4439
525	36.2	3.62	829	921	2051	4655
550	37.9	3.79	868	964	2146	4871

RegO® - Relief Device Diverter (3-Way) Valve DR6100 Series

Application

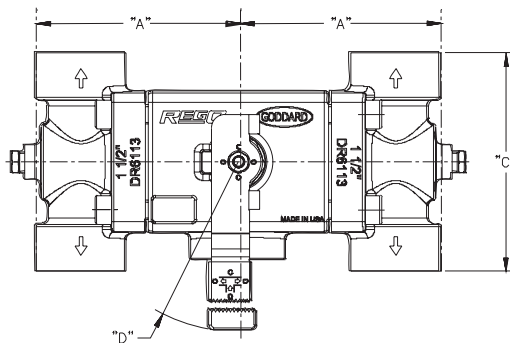
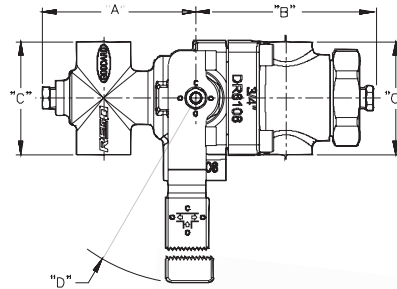
The DR Diverter Valve Series provides a simple solution for the isolation of pressure relief devices during routine change out of a relief valve and burst discs without evacuating the vessel. Excellent for protecting bulk liquid vessels, transport trailers, industrial pipelines, and LNG systems.

Features

- High flow rates complement our AR series pressure relief valves.
- Valve side selection is accomplished with a heavy duty control arm clearly labeled for positive isolation.
- RegO® needle valves accessorize for easy bleed of gas before removing pressure relief devices.
- Fitted with threaded top Relief Valve ports and bottom Burst Disk connections.
- Pressure Rating: 600 psig (41.37 barg) CWP
- Temperature Rating: -320°F (-196°C) to +165°F (+74°C).
- 100% Factory tested
- Oxygen cleaned per CGA G-4.1

Materials

Bodies..... Bronze ASTM B61 UNS C92200
 Bushing, End Cap..... Brass B16 C36000
 Seat Rings..... PCTFE ASTM D1430
 Gasket..... PTFE
 Ball..... 316 Stainless Steel
 Lever..... Cadmium Plated Steel
 Packing..... PTFE
 Stem..... Stainless Steel ASTM A582 UNS S30300



Ordering Information

Part Number	Inlet Inches (mm)	Outlet Inches (mm)	Connection Type	A Inches (mm)	B Inches (mm)	C Inches (mm)	D Inches (mm)	Height Inches (mm)	Weight Lbs (Kg)	Open Port	C _v
DR6108	1" (25.4)	¾" (19.05)	Thread NPT	4" (101.7)	4.65" (118.3)	2.94" (74.90)	R 7.36" (187.1)	5.18" (63.25)	10# (4.50)	Right	13.3
										Left	
										Both	
DR6112	1½" (38.1)	1" (25.4)	Thread NPT	4.12" (104.6)	-	5.70 (145.0)	R 7.36" (187.1)	5.770" (146.6)	28# (12.70)	Right	18.8
										Left	
										Both	
DR6113	1½" (38.1)	1½" (38.1)	Thread NPT	4.12" (104.6)	-	5.70 (145.0)	R 7.36" (187.1)	5.770" (146.6)	30# (13.60)	Right	22.6
										Left	
										Both	

RegO® - Bulk Vessel Safety Assembly - Relief Valve & Diverter DA6200 Series

Application

RegO® provides a complete unitized solution for pressure relief devices assembled in a factory setting ready for attachment to cryogenic bulk tanks. Ideal for OEM applications where pre-fabricated assemblies are favored to streamline construction. Excellent for protecting bulk liquid vessels, transport trailers, industrial pipelines and LNG systems.

Features

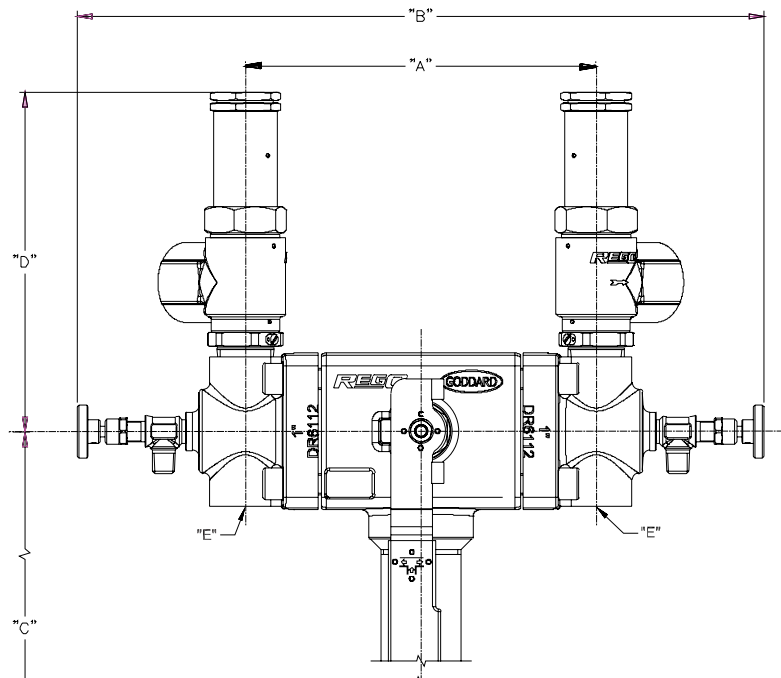
- High flow rates complement our AR series pressure relief valves and burst disks.
- Valve side selection is accomplished with a heavy duty control arm clearly labeled for positive isolation.
- RegO® needle valves accessorize for easy bleed of gas before removing pressure relief devices.
- Pressure Rating: 600 psig (41.37 barg). CWP
- Temperature Rating: -320°F (-196°C) to +165°F (+74°C).
- Oxygen cleaned per CGA G-4.1
- Packaged ready for installation.



DA6208



DA6206



Ordering Information

Part Number	Inlet Inches (mm)	Connection Type	A Inches (mm)	B Inches (mm)	C Inches (mm)	D Inches (mm)	E Inches (mm)
DA6206	3/4"	Thread NPT	4.76" (120.9)	13.25" (336.55)	9.75" (247.7)	7.00" (177.8)	3/4" NPT (19.0)
DA6208	1"		8.33" (211.6)	16.30" (414)	16.47" (418.34)	8.06" (204.7)	1" NPT (25.0)

Carbon Dioxide Relief Valves, ASME UA3149A Series

Application

The UA3149A series “pop-type” relief valves are especially designed for use as a secondary relief valve in carbon dioxide transports and stationary storage tanks. The relief valve is designed to protect the tank from excessive over pressure in the event of fire or other emergencies. A small throttling-type primary relief valve must also be provided to control boil-off and maintain tank pressure. Provisions must be made to prevent the accumulation and build-up of water and foreign material in the valve by use of protective cap included.

Features

- “Pop-type” design permits the relief valve to open slightly to relieve moderately excessive pressures.
- Relief valve “pops” open to full discharge capacity when pressure exceeds a predetermined point.
- 100% Factory Tested.
- Temperature Rating: -40°F (-37°C) to 85°F (29°C)
- Tamper Resistant.
- Repeatable Performance.
- ASME Rated.
- Rated for Gas Service.

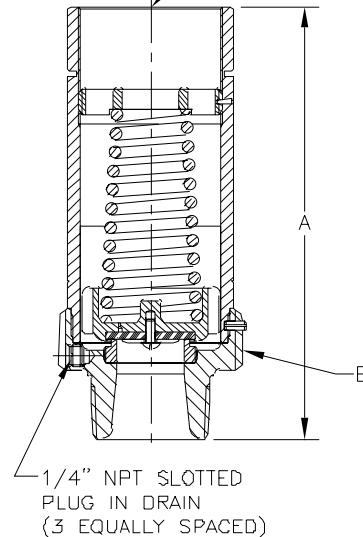
Materials

Body	Steel and Ductile Iron
Liner	Stainless Steel
Seat Insert	Stainless Steel
Spring Guide	Brass
Adjusting Screw	Ductile Iron
Seat Disc	Urethane Compound
Spring	Corrosion Resistant Steel



UA3149A Series

FEMALE THREAD TO FIT
3" STANDARD PIPE



Ordering Information

Part Number	Pressure Setting psig (barg)**	Flow Capacity (SCFM/Air)	Inlet Connection (M.NPT)	Height A	Wrenching Hex B
UA3149A303	303 psig (20.9 barg)	9,883*	2½"	10½"	4 ⅞"
UA3149A330	330 psig (22.7 barg)	10,726*			
UA3149A350	350 psig (24.1 barg)	11,351*			
UA3149A358	358 psig (24.7 barg)	11,601*			

*Capacity certified by National Board of Boiler and Pressure Vessel Inspectors at 10% above set pressure.

**Other Settings not ASME/NB Certified

Multiport® Pressure Relief Valve Manifold Assemblies For Large CO2 Containers, ASME UA8560, UA8570 Series

Application

Designed especially for use as a primary relief device on large stationary pressurized storage containers with flanged openings. These manifolds incorporate an additional relief valve, not included in the flow rating, allowing for servicing or replacement of any one of the relief valves without evacuating the container. The handwheel selectively closes off the entrance port to the relief valve being removed while the remaining relief valves provide protection for the container and its contents. All manifold flow ratings are based on flow through the relief valves after one has been removed for service or replacement.

Features

- Allows for relief valve removal and replacement on a periodic basis without shutting down and evacuating the container.
- "Pop-action" design of relief valves insures maximum protection with only minimal product loss at moderately excessive pressures.
- A rubber plug with chain is provided to protect manifold outlet threads where the relief valve has been removed.
- May be mounted directly to a welding neck flange or manway cover plate. Requires no inlet piping.
- Relief valves designed to automatically reseal firmly after discharge.
- Resilient relief valve seat disc provides "bubble-tight" seal.
- Relief valves are ASME rated, UA3149 Series

Materials

Body Ductile Iron
 Resilient Parts Teflon
 Clapper Disc Stainless Steel
 Bleeder Valve Stainless Steel

Bolt Stud and Nut Assemblies

Part Number	Consists of	For Use With:	For Connection To:	Number Required
7560-55	1-Bolt Stud and Nut	All RegO Multiports™	Modified 3" - 300# and 4"-ASA 300# Welding Neck Flange	8
7560-56			Manway Cover Plate	

Ordering Information

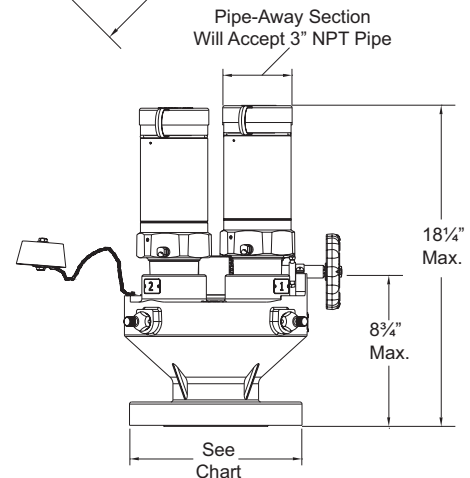
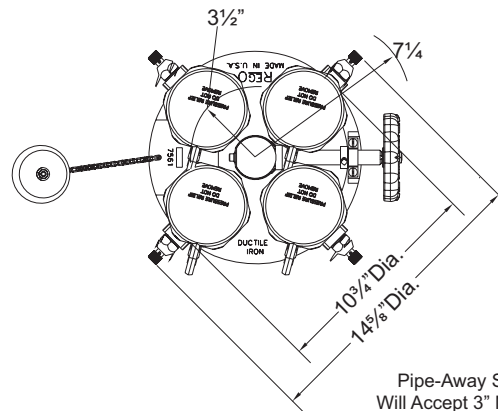
Part Number	Start To Discharge Setting psig	Container Flange Connection	Relief Valve		
			Max Quantity	Part Number	Inlet Connection M. NPT
UA8563M303	303 psig (20.9 barg)	3"-300#*	3	UA3149A303	2½"
UA8564M3303	330 psig (22.7 barg)			UA3149A330	
UA8574A295	295 psig (20.3 barg)	4"-300#	4	UA3149A295	
UA8563A303	303 psig (20.9 barg)	3"-300#**		UA3149A303	

* For use with modified 300# ANSI flange with 4" port.

** Outlet 3½-8N (F) thread, will accept 3" M. NPT pipe thread.



A8560 A8570



Bronze Globe Valve for Cryogenic Service

BB Series

Application

The BB Series globe valves are designed for handling of cryogenic liquids through bulk tanks, trucks, trailers, ISO-containers and piping configurations. Our time tested spring loaded stem packing and superior seat design provide for long life and easy maintenance. Internal components are identical with the SKB Series. The BB Series globe valves are offered with brazed-in schedule 10 and 40 stainless steel pipe stubs. Also available in short stem version.

Features

- Superior Flow: Provides high Cv for rapid and reliable loading and unloading.
- V-Ring spring loaded packing: provides extended service life without constant packing adjustment.
- Conical PCTFE Seat: provides exceptional flow; bubble tight seal; less chance of debris trapped in the seat and longer service life.
- Ideal for loading & unloading cryogenic bulk tanks and trucks. The 1½" & 2" valves are designed to be operator friendly, opening and closing completely with only four 360° rotations.
- Connections: NPT, SBT & Flange.
- Sizes: ¼" to 2".
- Bonnet Type: Bolted.
- Pressure Rating: 720 psi (50 barg)
- Temperature Rating: -325°F (-198°C) to +150°F (+65°C).
- Service: Liquefied & Vaporized Atmospheric Gases and LNG for Trailers, Bulk Tanks, Iso-Containers and Piping Configurations.
- Cleaned for Oxygen Service per CGA G-4.1

Materials

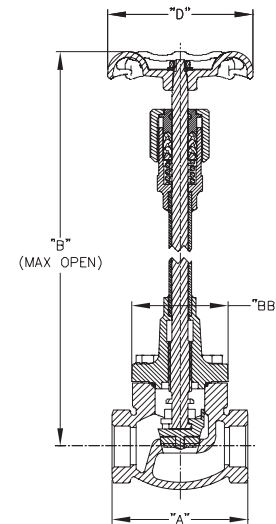
Body	Bronze ASTM B61
Upper Bonnet	Brass ASTM B16
Lower Bonnet	Brass ASTM B283
Stem	Stainless Steel ASTM A582
Spring	Stainless Steel ASTM A313
Packing	PTFE
Gasket	PTFE 25% Glass Fill
Seat Disc	PCTFE ASTM D1430
Seat Retainer	Brass ASTM B16
Bonnet Screws	Stainless Steel ASTM A320
Handwheel	Chromated Coated Ductile Iron ASTM A395

Ordering Information

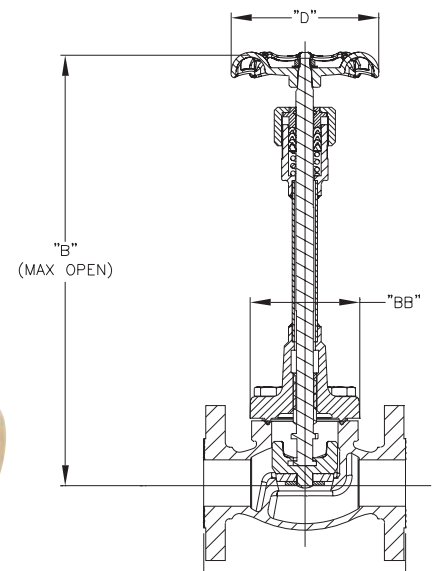
Part Number	Size Inches	Size mm	Connection	A	B	D	BB	C _v	Weight lbs.
BB9402S	¼"	8	Silver Brazed Tube	2.68	14.40	3.00	2.00	1.7	8.30
BB9404S	½"	15		2.88				5.0	
BB9406S	¾"	20		3.55		9.4			
BB9408S	1"	25		3.75	14				
BB9412S	1½"	40		4.78	14.60	4.75	3.44	28.3		12.90
BB9416S	2"	50	5.88	16.21	5.25	4.06	53	21.60	
BB9402T	¼"	8	Threaded NPT	2.68	14.40	3.00	2.00	1.7	8.30
BB9404T	½"	15		2.88				5.0	
BB9406T	¾"	20		3.55		9.4			
BB9408T	1"	25		3.75	14				
BB9412T	1½"	40		4.78	14.60	4.75	3.44	28.3		12.90
BB9416T	2"	50	5.88	16.21	5.25	4.06	53	21.60	
BB9412F	1½"	40	Flanged RF	6.50	14.60	4.75	3.44	28.3	18.56
BB9416F	2"	50		8.00	16.21	5.25	4.06	53	30.00



BB9412T



BB9412F



Bronze Globe Valve for Cryogenic Service with Pipe Ends

BB Series

Application

The BB Series globe valves with pipe ends are designed for handling of cryogenic liquids through bulk tanks, trucks, trailers, ISO containers and piping configurations. Our time tested spring loaded stem packing and superior seat design provide for long life and easy maintenance. Internal components are identical with the SKB Series.

Features

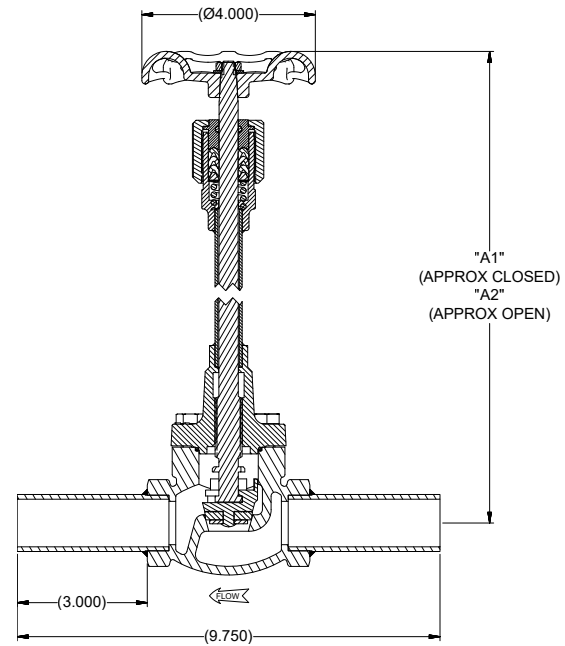
- Superior Flow: Provides high Cv for rapid and reliable loading and unloading.
- V-Ring spring loaded packing: provides extended service life without constant packing adjustment.
- Conical PCTFE Seat: provides exceptional flow; bubble tight seal; less chance of debris trapped in the seat and longer service life.
- Connections: SS pipe extension SCH 10 and SCH 40.
- Sizes: ½" to 2".
- Bonnet Type: Bolted.
- Pressure Rating: 720 psi (50 barg)
- Temperature Rating: -320°F (-196°C) to +150°F (+65°C).
- Service: Liquefied & Vaporized Atmospheric Gases and LNG for Trailers, Bulk Tanks, Iso-Containers and Piping Configurations.
- Cleaned for Oxygen Service per CGA G-4.1

Materials

Body	Bronze ASTM B61
Upper Bonnet	Brass ASTM B16
Lower Bonnet	Brass ASTM B283
Stem	Stainless Steel ASTM A582
Spring	Stainless Steel ASTM A313
Packing	PTFE
Gasket	PTFE 25% Glass Fill
Seat Disc	PCTFE ASTM D1430
Seat Retainer	Brass ASTM B16
Bonnet Screws	Stainless Steel ASTM A320
Handwheel	Chromated Coated Ductile Iron ASTM A395



BBS9404AA



Ordering Information

Part Number	Size Inches	Size mm	Connection	A1	A2	B	C	D	Cv	Weight lbs.
BBS9404AA	½"	15	SCH 10 Pipe	13.9	14.4	3.00	8.88	8.88	5	9.13
BBS9406AA	¾"	20		13.9	14.4	4.00	9.55	2.65	9.4	
BBS9408AA	1"	25		13.9	14.4	4.00	9.75	2.65	14	
BBS9412AA	½"	40		13.9	14.4	4.75	10.79	3.55	28.3	
BBS9416AA	2"	50		15.27	16.21	5.25	11.88	4.05	53	23.76
BBS9404BB	½"	15	SCH 40 Pipe	13.9	14.4	3.00	8.88	8.88	5	9.22
BBS9406BB	¾"	20		13.9	14.4	4.00	9.55	2.65	9.4	
BBS9408BB	1"	25		13.9	14.4	4.00	9.75	2.65	14	
BBS9412BB	½"	40		13.9	14.4	4.75	10.79	3.55	28.3	
BBS9416BB	2"	50		15.27	16.21	5.25	11.88	4.05	53	24.19

Bronze Globe Valve Short Stem for Cryogenic Service

BBS Series

Application

The BB Series globe valves are designed for handling of cryogenic liquids through bulk tanks, trucks, trailers, ISO-containers and piping configurations. Our time tested spring loaded stem packing and superior seat design provide for long life and easy maintenance. Internal components are identical with the SKB Series.

Features

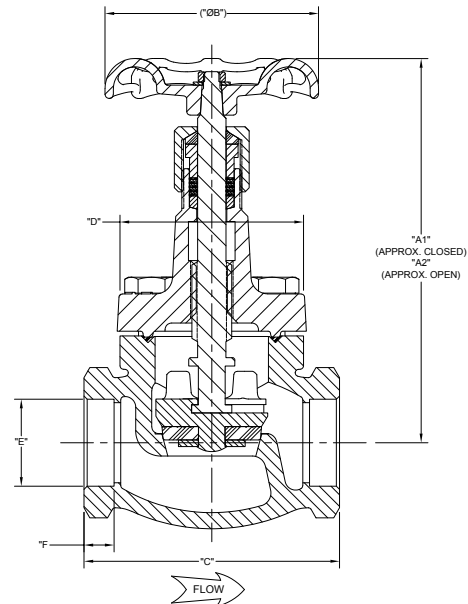
- Superior Flow: Provides high Cv for rapid and reliable loading and unloading.
- Designed with the unique Kold-Seal.
- Conical PCTFE Seat: provides exceptional flow; bubble tight seal; less chance of debris trapped in the seat and longer service life.
- Ideal for loading & unloading cryogenic bulk tanks and trucks. The 1½" & 2" valves are designed to be operator friendly, opening and closing completely with only four 360° rotations.
- Connections: NPT & SBT.
- Sizes: ¼" to 2".
- Bonnet Type: Bolted.
- Pressure Rating: 720 psig (50 barg)
- Temperature Rating: -320°F (-196°C) to +150°F (+65°C).
- Service: Liquefied & Vaporized Atmospheric Gases and LNG for Trailers, Bulk Tanks, Iso-Containers and Piping Configurations.
- Cleaned for Oxygen Service per CGA G-4.1

Materials

Body	Bronze ASTM B61
Upper Bonnet	Brass ASTM B16
Lower Bonnet	Brass ASTM B283
Stem	Stainless Steel ASTM A582
Spring	Stainless Steel ASTM A313
Packing	PTFE
Gasket	PTFE 25% Glass Fill
Seat Disc	PCTFE ASTM D1430
Seat Retainer	Brass ASTM B16
Bonnet Screws	Stainless Steel ASTM A320
Handwheel	Chromated Coated Ductile Iron ASTM A395



BBS9404S



Ordering Information

Part Number	Size Inches	Size mm	Connection	A1	A2	B	C	D	E	F	C	Weight lbs.	
BBS9402S	¼"	15	Silver Brazed Tube	5.75	6.24	3.00	8	2.00	0.380	0.300	1.7	5.2	
BBS9404S	½"			5.75	6.24	3.00	2.88	2.00	0.629	0.400	5.0		
BBS9406S	¾"			6.07	6.6	4.00	3.55	2.60	0.880	0.400	9.4		
BBS9408S	1"			6.07	6.6	4.00	3.75	2.60	1.130	0.500	14		
BBS9412S	1½"			7.2	7.93	4.75	4.79	3.47	1.631	0.563	28.3		7.25
BBS9416S	2"			8.85	9.84	4.75	5.87	3.96	0.380	0.300	53		11.96
BBS9402T	¼"	8	Threaded NPT	5.75	6.24	3.00	8	2.00	0.380	0.300	1.7	5.2	
BBS9404T	½"	15		5.75	6.24	3.00	2.88	2.00	0.629	0.400	5.0		
BBS9406T	¾"	20		6.07	6.6	4.00	3.55	2.60	0.880	0.400	9.4		
BBS9408T	1"	25		6.07	6.6	4.00	3.75	2.60	1.130	0.500	14		
BBS9412T	1½"	40		7.2	7.93	4.75	4.79	3.47	1.631	0.563	28.3		7.25
BBS9416T	2"	50		8.85	9.84	4.75	5.87	3.96	2.130	0.630	53		11.96



Extended Bonnet Cryogenic Globe Valves

BK and BKA Series Valves

Application

The BK and BKA Series valves are designed exclusively for the handling of cryogenic liquids on bulk storage tanks, transports, and pipelines. These globe valves provide positive shutoff and offer a long, low-maintenance service life. The valves are available with a variety of inlet and outlet connections and stem lengths. Certain BK valves are offered with brazed-in schedule 5 and schedule 10 Stainless Steel Pipe Stubs.

Features

- PTFE seat disc and swivel seat design offer positive shutoff, minimal seat wear, and a long service life.
- Unique spring-loaded upper packing provides extended service life without constant packing adjustment
- One piece slip-on seat assembly for easy replacement.
- Each valve is cleaned and packaged for oxygen service per CGA G-4.1.
- Maximum working pressure is 600 psig CWP. (-196°C)
- Working temperature range is -320°F to +165°F. (196°C to +79°C)
- 100% Factory Tested

Materials

Body	ASTM B61
Upper Bonnet	ASTM B16
Lower Bonnet	Brass ASTM B16 for up to 1" Valve Size
.....	BRASS ASTM B283 For Larger Sizes
Seat Disc	PTFE
Seat Retainer Assembly	Brass ASTM B16
Stem and Bonnet Extension Tube	Stainless Steel ASTM A582
Spring	Stainless Steel ASTM AB13
Jam Ring and Pressure Seal Rings.....	PTFE
Handwheel.....	Aluminum for up to 1" valve size,
.....	Coated Malleable Iron for larger size

Bonnet Design

Union Bonnet for ½", ¾", 1" valve sizes and on both the 1" model BKA8408S and 1½" model BKA8412S angle valves. Bolted Bonnet design is used on the BK9410 (1¼"), BK9412 (1½"), and BK9416 (2") models.



BK8408T



BK9412S



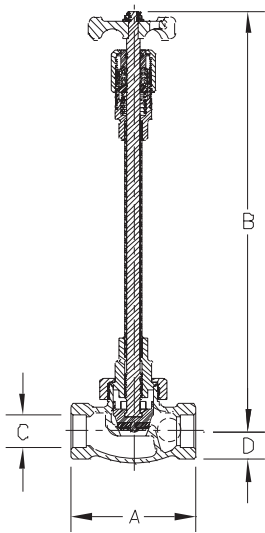
BK9408AA



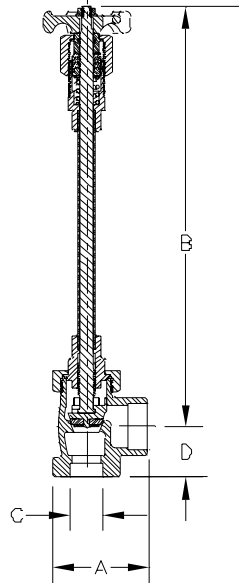
BKA8412S

Extended Bonnet Cryogenic Globe Valves

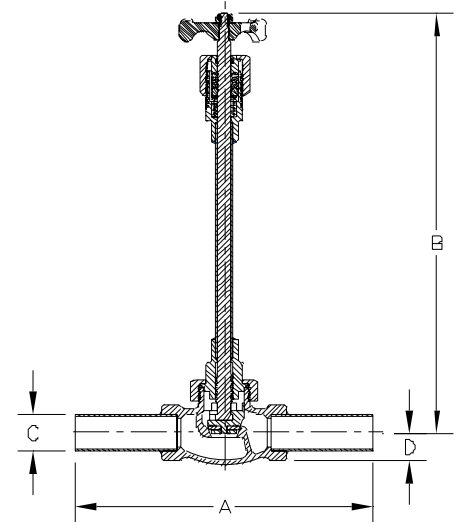
BK and BKA Series Valves



Straight Globe Valve



Angle Globe Valve



Straight Globe Valve with Pipe Stubs

Ordering Information

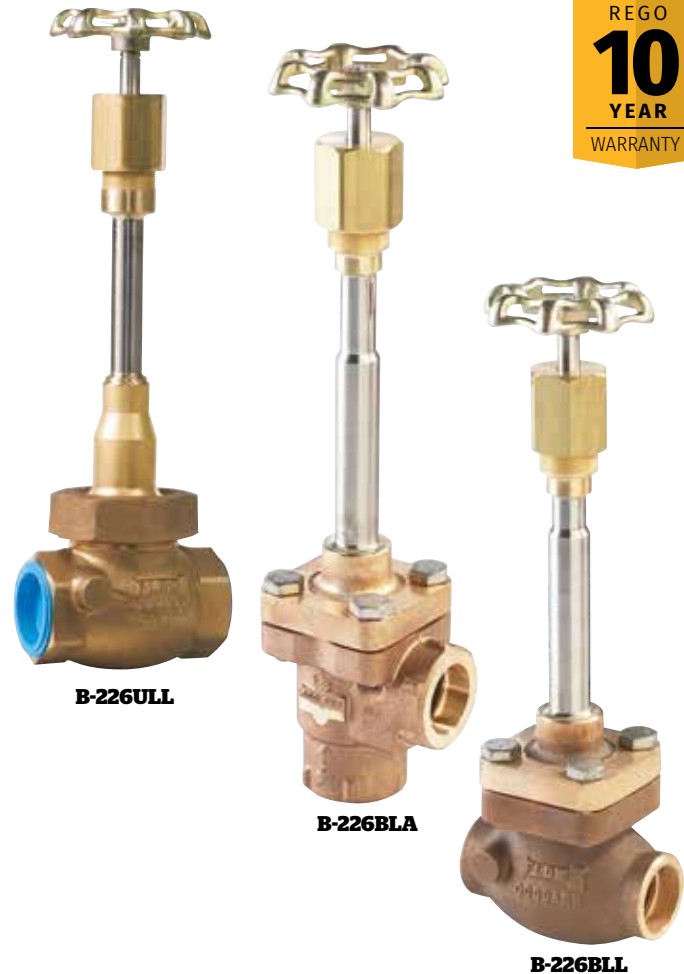
Part Number	Body Style	A Length	B Max Open (Approx)	C Inlet / Outlet Connections	D	C _v Factor			
BK8404S	Straight	3 11/16"	9 5/32"	.631"-.634"	1"	4.7			
BK8404T				1/2" F.NPT					
BK8404ST				.631"-.634" x 1/2" F.NPT					
BK9404S		9 11/16"	15"	.631"-.634"	1"	4.7			
BK9404T				1/2" F.NPT					
BK9404AA				1/2" Sch5 Pipe					
BK9404PT-F30		6 11/16"	3 11/16"	9 5/32"	1/2" Sch5 Pipe x 1/2" F.NPT	1"	6.7		
BK9404ST		.631"-.634" x 1/2" F.NPT							
BK8406S		3 11/16"			15"			.881"-.884"	1"	6.7
BK8406T		3/4" F.NPT							
BK9406S		.881"-.884"							
BK9406T		9 11/16"	14.9	3/4" SCH10 Pipe	1"	11.2			
BK8408S							4 5/16"	9 1/8"	1.131"-1.134"
BK8408T							1" F.NPT		
BK9408S		10 5/16"	7 5/16"	15"	1.131"-1.134"	1 1/8"	11.2		
BK9408T					1" F.NPT				
BK9408AA	1" Sch10 Pipe								
BK9408PT-F30	1" Sch5 Pipe x 1" F.NPT	5 13/16"	16 7/16"	1.378"-1.380"	1 1/2"	25.1			
BK9410S*	1.631"-1.634"								
BK9412S*	1 1/2" F.NPT								
BK9412AA	11 3/16"	8 3/16"	16 9/16"	1 1/2" Sch10 Pipe	1 5/8"	41			
BK9412PT-F30	1 1/2" Sch5 Pipe x 1 1/2" F.NPT								
BK9416S*	6"			16"			2.131" - 2.134"		
BK9416AA	11.88"	2" Sch5 Pipe							
BK9416T*	6"	2" F.NPT							
BK9416PT-F30	9"	3 1/4"	16"	2" Sch5 Pipe x 2" F.NPT	1 3/4"	41			
BKA8408S	9 5/11"			1.131" - 1.134" x 1.631" - 1.634"					
BKA9408S	14 5/8"								
BKA8412S	4 1/4"	13"	1.631"-1.634"		30.0				

* Valves with bolted bonnet design.

Bronze Globe Valve for Cryogenic Service 222 Series Including 226LL, 226GF, 226ULL, 226BLL, 222X, 226LL, 226BLL

Features

- **Top Entry:** This union bonnet valve can be permanently installed in the line and serviced from the top. The stainless steel tube prevents stem distortion. Also available in bolted bonnet configuration.
- **Construction:** Bronze cast body and bonnet
Rugged construction for long life
- **Designed with the unique Kold-Seal™** and high CV. standard PTFE seat design assures bubble tight seating and high cycle life.
- Oxygen cleaned per CGA G-4.1
- **Sizes:** ¼" through 3" (8mm through 80mm)
- **Ends:** Threaded (FNPT), Sil Braze Tube (SBT), Silver Braze Pipe and back brazed threaded pipe nipples
- **Service:** Liquefied and vaporized atmospheric gases, LNG
- **Temperature Rating:** -320°F to 150°F (-196°C to +65°C)
- **Pressure Rating:** (Cold, Non-shock)
400 and 600 psig
Sizes 1½" to 3" PED approved
- **Kold-Seal™ Technology assures tight seal preventing cryogen gas loss.**
- **Extended stem suitable for cold box, transport vehicles, pipelines, and customer service applications.**
- **Live (LL) loaded option improves life of asset and minimizes service costs.**
- **Replaceable top works equates to low maintenance costs.**



Ordering Information

222X

Bronze Globe Valves, Extended Stem - Conical Seat, 400 psig Cold Working Pressure
Threaded End

Part Number	NPT size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-00222X-2T4	¼"	8 mm	Threaded	1.50 Lbs.	0.70 Kgs.	1.30
B-00222X-4T4	½"	15 mm		1.50 Lbs.	0.70 Kgs.	3.25
B-00222X-6T4	¾"	20 mm		3.00 Lbs.	1.40 Kgs.	6.25
B-00222X-8T4	1"	25 mm		4.00 Lbs.	1.80 Kgs.	10.00
B-00222X-12T4	1½"	40 mm		7.75 Lbs.	3.50 Kgs.	26.00
B-00222X-16T4	2"	50 mm		12.50 Lbs.	5.70 Kgs.	45.00
B-00222X-20T4	2½"	63.5 mm		61.00 Lbs.	27.70 Kgs.	50.00
B-00222X-24T4	3"	80 mm		61.00 Lbs.	27.70 Kgs.	100.00

Sil Brazed End

Part Number	SBT size Inches	SBT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-00222X-4S4	½"	15 mm	Silver Braze	2.00 Lbs.	0.90 Kgs.	3.25
B-00222X-6S4	¾"	20 mm		2.75 Lbs.	1.30 Kgs.	6.25
B-00222X-8S4	1"	25 mm		3.75 Lbs.	1.70 Kgs.	10.00
B-00222X-12S4	1½"	40 mm		7.25 Lbs.	3.30 Kgs.	26.00
B-00222X-16S4	2"	50 mm		11.50 Lbs.	5.20 Kgs.	45.00
B-00222X-24S4	3"	80 mm		58.00 Lbs.	26.40 Kgs.	100.00

Bronze Globe Valve for Cryogenic Service 222 Series Including 226LL, 226GF, 226ULL, 226BLL, 222X, 226LL, 226BLL

Ordering Information

SB-222X

Stainless Steel Body, Bronze Topworks, Conical Seat, 450 psig Cold Working Pressure

Part Number	NPT size Inches	NPT Size mm	Ends
SB00222X-12SW	1½"	40 mm	Socket Weld

226LL

Bronze Globe Valves, Live Load Packing, Extended Stem, 600 psig Cold Working Pressure

Threaded End

Part Number	NPT size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-0226LL-2T6	¼"	8 mm	Threaded	1.50 Lbs.	0.70 Kgs.	1.30
B-0226LL-3T6	¾"	10 mm		1.50 Lbs.	0.70 Kgs.	2.40
B-0226LL-4T6	½"	15 mm		1.50 Lbs.	0.70 Kgs.	3.25
B-0226LL-6T6	¾"	20 mm		3.00 Lbs.	1.40 Kgs.	6.25
B-0226LL-8T6	1"	25 mm		4.00 Lbs.	1.80 Kgs.	10.00

Sil Brazed Ends

Part Number	SBT size Inches	SBT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-0226LL-4S6	½"	15 mm	Silver Braze	2.00 Lbs.	0.90 Kgs.	3.25
B-0226LL-6S6	¾"	20 mm		2.75 Lbs.	1.30 Kgs.	6.25
B-0226LL-8S6	1"	25 mm		5.8 Lbs.	1.70 Kgs.	10.00

226ULL

Bronze Globe Valves, Live Loaded Packing - Union Bonnet, Extended Stem, 600 psig Cold Working Pressure

Threaded End

Part Number	NPT size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-226ULL-12T6	1½"	40 mm	Threaded	7.75 Lbs.	3.50 Kgs.	26.00
B-226ULL-16T6	2"	50 mm		12.50 Lbs.	5.70 Kgs.	45.00

Sil Brazed Ends

Part Number	SBT size Inches*	SBT Size mm*	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-226ULL-12S6	1½"	40 mm	Silver Braze	7.25 Lbs.	3.30 Kgs.	26.00
B-226ULL-16S6	2"	50 mm		11.50 Lbs.	5.20 Kgs.	45.00

*Nominal Size

226XGF

Bronze Globe Valves, Extended Stem - Conical Seat Grafoil® Packing, Gasket and PFA Seat
600 psig Cold Working Pressure Temperature Range -325°F to +300°F

Threaded End

Part Number	NPT size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
VB-226XGF-4T6	½"	15 mm	Threaded	1.50 Lbs.	0.70 Kgs.	3.25
VB-226XGF-6T6	¾"	20 mm		3.00 Lbs.	1.40 Kgs.	6.25
VB-226XGF-8T6	1"	25 mm		4.00 Lbs.	1.80 Kgs.	10.00
VB-226XGF-12T6	1½"	40 mm		7.75 lbs.	3.5 Kgs.	26.00

226BLL

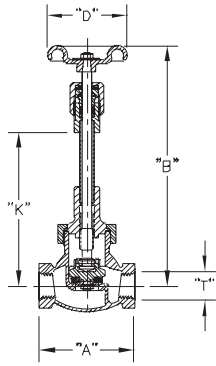
Bronze Globe Valves, Live Loaded Packing - Bolted Bonnet, Extended Stem, 600 psig Cold Working Pressure

Threaded End

Part Number	NPT size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-226BLL-12T6	1½"	40 mm	Threaded	7.75 Lbs.	3.50 Kgs.	26.00
B-226BLL-16T6	2"	50 mm		12.50 Lbs.	5.70 Kgs.	45.00

Bronze valves standard connection are for tube, not pipe.

Bronze Globe Valve for Cryogenic Service 222 Series Including 226LL, 226GF, 226ULL, 226BL, 222X, 226LL

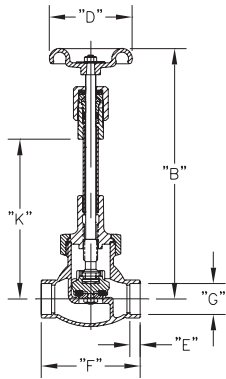


226ULL
 Pressure Rating 600 psig
 Temperature Rating -325°F to +150°F

Dimensional data
 All Dimensional Data are in inches.

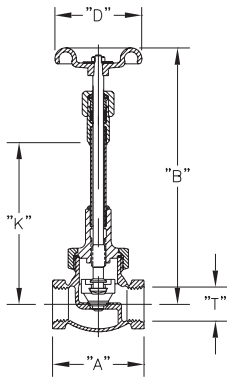
Threaded Ends

Size	"A"	"B"	"D"	"T" NPT	"K"
1½"	4¾"	14⅝"	4"	1½"	9 ¹¹ / ₁₆ "
2"	5¾"	15⅝"	4¾"	2"	



Sil Brazed End

Size	"B"	"D"	"E"	"F"	"G"	"K"
1½"	14⅝"	4"	⅝"	5¼"	1.63"	9 ¹¹ / ₁₆ "
2"	15⅝"	4¾"	2 ¹ / ₂₃ "	6½"	2.13"	

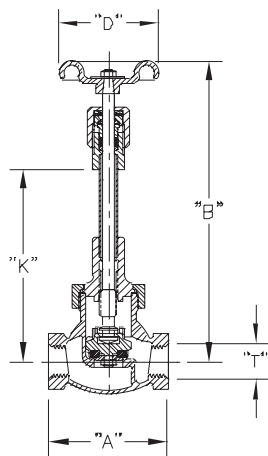


226XGF
 Pressure Rating 600 psig
 Temperature Rating -325°F to +300°F

Dimensional data
 All Dimensional Data are in inches.

Threaded Ends

Size	"A"	"B"	"D"	"T" NPT	"K"
½"	2⅝"	8¼"	2⅝"	½"	4⅞"
¾"	3 ³ / ₁₆ "	8⅝"	2¾"	¾"	4 ¹³ / ₁₆ "
1"	3¾"	10½"	3"	1"	6½"



226LL
 Pressure Rating 600 psig
 Temperature Rating +150° F to -325° F

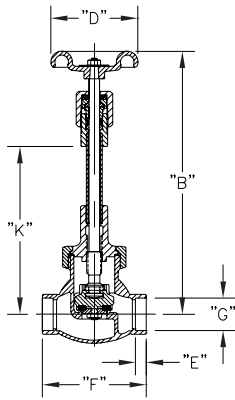
Dimensional Data
 All Dimensions are in Inches

Threaded Ends

Size	"A"	"B"	"D"	"T" NPT	"K"
¼"	2 ⁵ / ₁₆ "	7 ⁹ / ₁₆ "	2"	¼"	4 ¹⁹ / ₃₂ "
⅜"				⅜"	
½"	2⅝"	8¼"	2⅝"	½"	4⅞"
¾"	3 ³ / ₁₆ "	8⅝"	2¾"	¾"	4 ¹³ / ₁₆ "
1"	3¾"	10½"	3"	1"	6½"

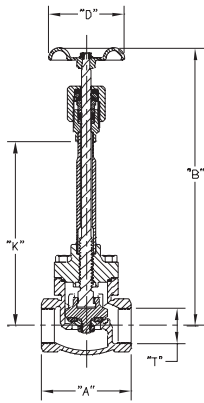
*Bolted Bonnet

Bronze Globe Valve for Cryogenic Service 222 Series Including 226LL, 226GF, 226ULL, 222X, 226LL



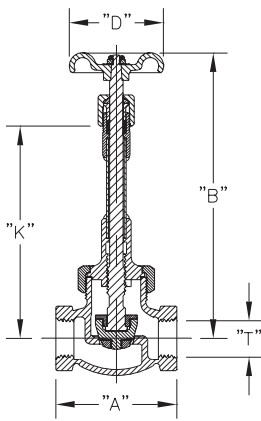
Sil Brazed Ends

Size	"B"	"D"	"E"	"F"	"G"	"K"
1/2"	8 1/4"	2 5/8"	3/8"	3 1/4"	.63	4 7/8"
3/4"	8 5/8"	2 3/4"	13/32"	3 3/4"	.88	4 13/16"
1"	10 1/2"	3"	7/16"	4 1/4"	1.13	6 1/2"



226BLL Threaded Ends - Bolted Bonnet

Size	"A"	"B"	"D"	"T" NPT	"K"
1 1/2"	4 3/4"	14 5/8"	4"	1 1/2"	9 11/16"
2"	5 3/4"	14 15/16"	4 3/4"	2"	

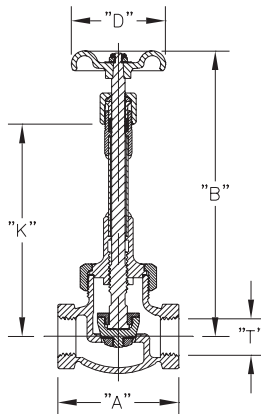


222X

Pressure Rating 400 psig

Temperature Rating -325°F to +150°F

Part #	Size	"A"	"B"	"D"	"T" NPT	"K"
B-222X-2T4	1/4"	2.63"	8.38"	2.38"	1/4"	4.8"
B-222X-4T4	1/2"		15.54"		12.2"	
B-222X-4T4A	3/4"	3.19"	8.63"	2.75"	3/4"	4.9"
B-222X-6T4			15.79"			12"
B-222X-6T4A	1"	3.75"	10.50"	3"	1"	6.5"
B-222X-8T4			16.01"			12"
B-222X-12T4	1 1/2"	4.75"	14.63"	4"	1 1/2"	9.7"
B-222X-12T4A			18.44"			13.5"
B-222X-16T4	2"	5.75"	15.13"	4.75"	2"	9.7"
B-222X-16T4A			22.43"			14.2"
B-222X-20T4	2 1/2"	8.5"	22.75"	8"	2 1/2"	16"
B-222X-24T4	3"				3"	



SB-222X

Pressure Rating 400 psig

Temperature Rating -325°F to +150°F

Size	"A"	"B"	"D"	"BB"	"K"
1 1/2"	4 3/4"	14 5/8"	4"	3"	9.7"

Bronze Globe Valve for Cryogenic Service

202X Series Including 206LL, 206GF, 206ULL, 206BLL

Features

- Top Entry: This union bonnet valve can be permanently installed in the line and serviced from the top
- Construction: Rugged construction for long life, bronze cast body and bonnet
- Designed with the unique Kold-Seal™ and high CV. Standard PCTFE seat design assures bubble tight seating and high cycle life
- Sizes: ¼" through 2" (8mm through 50mm)
- Ends: Threaded (FNPT), Sil Braze Tube (SBT), or with stainless steel pipe nipples brazed in.
- Service: Liquefied and vaporized atmospheric gases, LNG
- Temperature Rating: -320°F to 150°F (-196°C to +65°C)
- Pressure Rating: (Cold, Non-shock)
202 Series Rated for 400 psig
206 Series Rated for 600 psig
Sizes 1.5" to 2.0" PED approved per EN10204, 3.1
- Kold-Seal™ Technology assures tight seal preventing cryogen gas loss. Non-extended stem for selective cold gas service.
- Cleaned for Oxygen Service per CGA G-4.1.



206ULL



206BLL

Ordering Information

202X
Bronze Globe Valves
Non-Extended Stem - Conical Seat
400 psig Cold Working Pressure
For selective Cold Gas Applications

Threaded End

Part Number	NPT Valve size Inches	NPT Valve Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-00202X-12T4	1½"	40 mm	Threaded	6.50 Lbs.	3.00 Kgs.	29.00
B-00202X-16T4	2"	50 mm		10.50 Lbs.	4.80 Kgs.	50.00

Sil Braze Ends

Part Number	SBT Valve size Inches *	SBT Valve Size mm *	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-00202X-4S4	½"	15 mm	Silver Braze	1.50 Lbs.	0.7 Kgs.	3.90
B-00202X-8S4	1"	25 mm		3.25 Lbs.	1.50 Kgs.	11.50
B-00202X-12S4	1½"	40 mm		6.50 Lbs.	3.00 Kgs.	29.00
B-00202X-16S4	2"	50 mm		10.50 Lbs.	4.80 Kgs.	50.00

* Nominal Size

Bronze Globe Valve for Cryogenic Service

202X Series Including 206LL, 206GF, 206ULL, 206BLL

206GF

Bronze Globe Valves

Non-Extended Stem - PFA seat with high temperature, low permeability GRAFOIL® packing and gasket.

600 psig Cold Working Pressure, For Selective Cold Gas Applications, High Temperature Service Rating +350°F

Threaded Ends

Part Number	NPT Valve size Inches	NPT Valve Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
VB-0206GF-2T6	¼"	8 mm	Threaded	1.25 Lbs.	0.6 Kgs.	1.30
VB-0206GF-4T6	½"	15 mm		1.50 Lbs.	0.70 Kgs.	3.90
VB-0206GF-6T6	¾"	20 mm		2.50 Lbs.	1.10 Kgs.	7.10
VB-0206GF-8T6	1"	25 mm		3.50 Lbs.	1.60 Kgs.	11.50
VB-0206GF-12T6	1½"	40 mm		7.00 Lbs.	3.20 Kgs.	29.00
VB-0206GF-16T6	2"	50 mm		11.75 Lbs.	5.30 Kgs.	50.00

206LL

Bronze Globe Valves, Non-Extended Stem, Live Loaded Packing, 600 psig Cold Working Pressure

For Selective Cold Gas Applications

Threaded Ends

Part Number	NPT Valve size Inches	NPT Valve Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-0206LL-2T6	¼"	8 mm	¼" NPT	1.25 Lbs.	0.6 Kgs.	1.30
B-0206LL-3T6	⅜"	10 mm	⅜" NPT			2.40
B-0206LL-4T6	½"	15 mm	½" NPT	1.75 Lbs.	0.8 Kgs.	3.90
B-0206LL-6T6	¾"	20 mm	¾" NPT	2.5 Lbs.	1.1 Kgs.	7.10
B-0206LL-8T6	1"	25 mm	1" NPT	3.5 Lbs.	1.6 Kgs.	11.50

Sil Brazed Ends

Part Number	SBT Valve size Inches *	SBT Valve Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-0206LL-4S6	½"	10 mm	Silver Braze	1.25 Lbs.	0.6 Kgs.	3.90
B-0206LL-6S6	¾"	15 mm		1.75 Lbs.	0.8 Kgs.	7.10
B-0206LL-8S6	1"	20 mm		2.5 Lbs.	1.1 Kgs.	11.50

* Nominal Size

206ULL

Bronze Globe Valves, Non-Extended Stem, Live Loaded Packing - Union Bonnet,

600 psig Cold Working Pressure For Selective Cold Gas Applications

Sil Brazed Ends

Part Number	SBT Valve size Inches	SBT Valve Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-206ULL-12S6	1½"	40 mm	Silver Braze	7 Lbs.	3.2 Kgs.	29.00
B-206ULL-16S6	2"	50 mm		11.75 Lbs.	5.3 Kgs.	50.00

206BLL

Bronze Globe Valves, Non-Extended Stem, Live Loaded Packing - Bolted Bonnet,

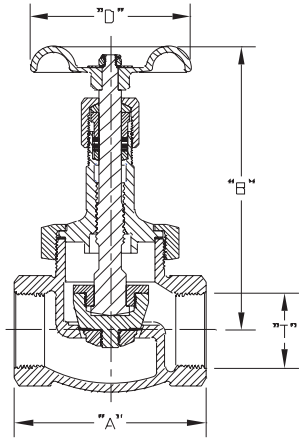
600 psig Cold Working Pressure For Selective Cold Gas Applications

Sil Brazed Ends

Part Number	SBT Valve size Inches	SBT Valve Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-206BLL-12S6	1½"	40 mm	Silver Braze	7 Lbs.	3.2 Kgs.	29.00

Bronze Globe Valve for Cryogenic Service

202X Series Including 206LL, 206GF, 206ULL, 206BLL



202 Series

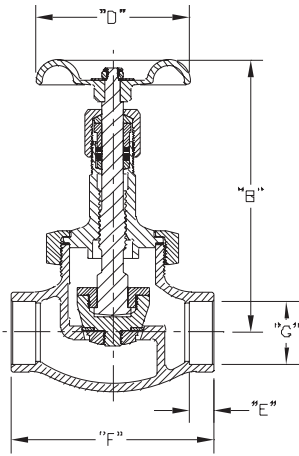
202X

Pressure Rating 400 psig
 Temperature Rating -325°F to +150°F
 Non-Extended Valve for Cold Gas Applications
 Conical Seat

Dimensional data
 All Dimensional Data are in inches.

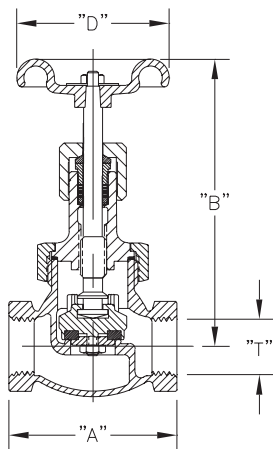
Threaded Ends

Size	"A"	"B"	"D"	"T" NPT
1½"	4¾"	8⅝"	4"	1½"
2"	5¾"	9½"	4¾"	2"



Silver Brazed Ends

Size	"B"	"D"	"E"	"F"	"G"
½"	4⅝"	2"	.38	3¼"	.63/.63
1"	4⅝"	2"	.44	4¼"	1.13/1.13
1½"	5"	2⅜"	.62	5¼"	1.63/1.63
2"	5¾"	2¾"	.66	6½"	2.13/2.13



206GF

Pressure Rating 600 psig
 Temperature Rating -325°F to +350°F
 Non-Extended Stem - GRAFOIL® Packing, Gasket and PFA Seat

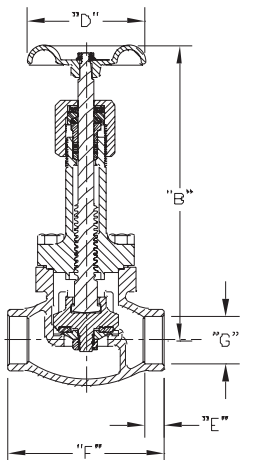
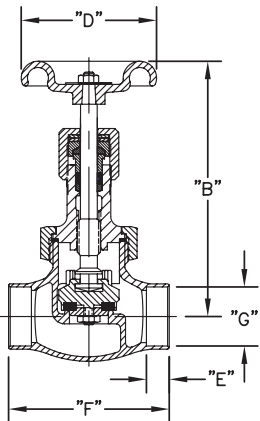
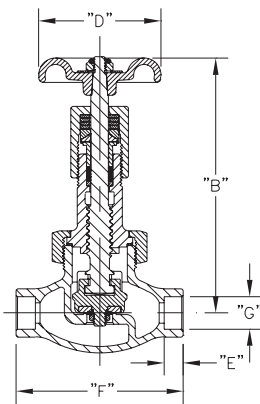
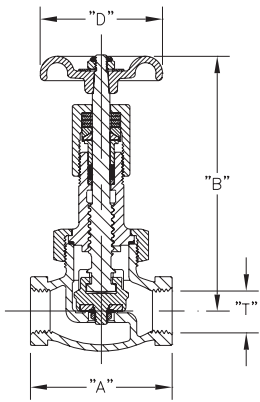
Dimensional data
 All Dimensional Data are in inches.

Threaded Ends

Size	"A"	"B"	"D"	"T" NPT
¼"	2⅝"	4⅝"	2"	¼"
½"	2⅝"	5"	2⅝"	½"
¾"	3⅜"	5¾"	2¾"	¾"
1"	3¾"	6¾"	3"	1"
1½"	4¾"	8⅝"	4"	1½"
2"	5¾"	9½"	4¾"	2"

Bronze Globe Valve for Cryogenic Service

202X Series Including 206LL, 206GF, 206ULL, 206BLL



206LL

Pressure Rating 600 psig
 Temperature Rating +150° F to -325° F
 Live Load Packing
 Union Bonnet

Dimensional Data
 All Dimensions are in Inches

Threaded Ends

Size	"A"	"B"	"D"	"T" NPT
1/4"	2 5/8"	5"	2 3/8"	1/4"
3/8"	2 5/8"	5"	2 3/8"	3/8"
1/2"	2 5/8"	5"	2 3/8"	1/2"
3/4"	3 3/16"	5 3/4"	2 3/4"	3/4"
1"	3 3/4"	5 3/4"	3"	1"

Sil Brazed Ends

Size	"B"	"D"	"G"	"E"	"F"
1/4"	5"	2 3/8"	.38/.38	.26	2 3/8"
1/2"	5"	2 3/8"	.63/.63	.38	3 1/4"
1"	6 3/4"	3"	1.13/1.13	.44	4 1/4"

206ULL

Pressure Rating 600 psig
 Temperature Rating +150° F to -325° F
 Live Load Packing - Union Bonnet

Dimensional Data
 All Dimensions are in Inches

Sil Brazed Ends

Size	"F"	"B"	"D"	"T" NPT
1 1/2"	4 3/4"	8 5/8"	4"	1 1/2"
2"	5 3/4"	11 3/4"	4 3/4"	2"

206BLL

Pressure Rating 600 psig
 Temperature Rating +150° F to -325° F
 Live Load Packing - Bolted Bonnet

Dimensional Data
 All Dimensions are in Inches

Sil Brazed Ends

Size	"B"	"D"	"G"	"E"	"F"
1 1/2"	8 5/8"	4"	1.62/1.64	.63	5 1/4"

Bronze/Stainless Steel Body Globe Valve for Cryogenic Service SKB Series

Application

The SKB Series globe valves are designed for the handling of cryogenic liquids through trailer, bulk tanks and piping configurations. Our time tested spring loaded stem packing and superior seat design provide for long life and easy maintenance. Internal components are the same for BBS and BB Series. Also available in short stem version.

Features

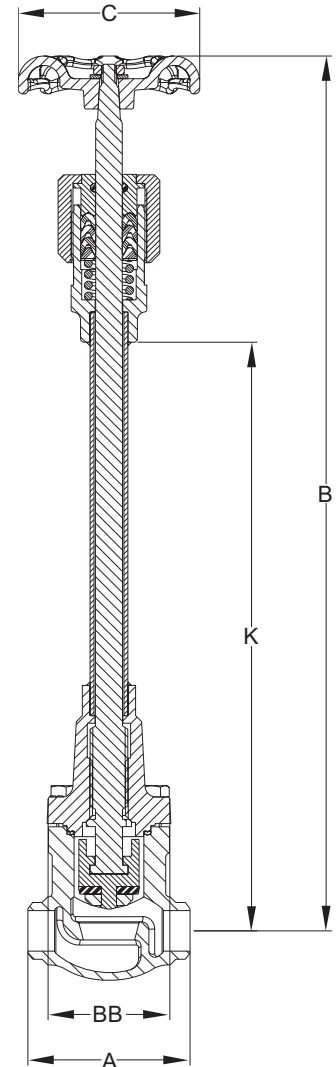
- **Superior Flow:** Provides high Cv for rapid and reliable trailer and tank loading and unloading.
- **Top Entry:** This valve can be permanently installed in the line and serviced from the top. Bolted bonnet style provides secure integrity.
- **Soft Seated:** Conical PCTFE seat provides a bubble tight seal. Less chance of debris trapped in the seat and longer service life.
- **Stem Packing:** V-Ring spring loaded packing provides extended service life without constant packing adjustment.
- **Sizes:** 1/4" through 2" - 20mm through 50mm
- **Ends:** Buttweld and Socket Weld
- **Service:** Liquefied and vaporized atmospheric gases, LNG for trailers, bulk tanks ISO containers and piping configurations.
- **Temperature Rating:** -325°F to +150°F (-198°C to +65°C)
- **Pressure Rating:** (Cold, Non-Shock) 720 psig (50 barg)
- Cleaned for oxygen service per CGA G-4.1

Materials

Body	Stainless Steel ASTM A351
Upper Bonnet	Brass ASTM B16
Lower Bonnet	Bronze ASTM B283
Seat Disk	PCTFE ASTM D1430
Seat Retainer.....	Brass ASTM B16
Stem	Stainless Steel ASTM A582
Spring	Stainless Steel ASTM A313
Packing.....	PTFE
Handwheel.....	Chromate Coated Ductile Iron ASTM A395
Bonnet Gasket.....	PTFE, 25% Glass Filled
Fasteners.....	Stainless Steel ASTM A320



SKB Series



Ordering Information

Part Number	Size Inches	Size mm	Connection	A	B	C	BB	K	Est. Cv
SKB009402BW	1/4"	DN 6	Butt Weld	2.68	14.4	3	2	9.7	1.7
SKB009402SW			Socket Weld						
SKB009404BW	1/2"	DN 15	Butt Weld	3.62	14.6	4	2.66	9.5	5.0
SKB009404SW			Socket Weld						
SKB009406BW	3/4"	DN 20	Butt Weld	4.75	16.21	4.75	3.44	9.3	9.4
SKB009406SW			Socket Weld						
SKB009408BW	1"	DN 25	Butt Weld	5.75	16.21	5.25	4.06	9.9	14
SKB009408SW			Socket Weld						
SKB009412BW	1 1/2"	DN 40	Butt Weld	5.75	16.21	5.25	4.06	9.9	28.3
SKB009412SW			Socket Weld						
SKB009416BW	2"	DN 50	Butt Weld	5.75	16.21	5.25	4.06	9.9	53
SKB009416SW			Socket Weld						

RegO - Goddard Bronze/Stainless Steel Body Globe Valve for Cryogenic Service. Short Stem SKB Series

Application

The SKB Series globe valves short stem are designed for handling of cryogenic liquids through bulk tanks, trucks, trailers, ISO-containers and piping configurations. Our time tested spring loaded stem packing and superior seat design provide for long life and easy maintenance. Internal components are the identical with the BB Series and SKB Series.

Features

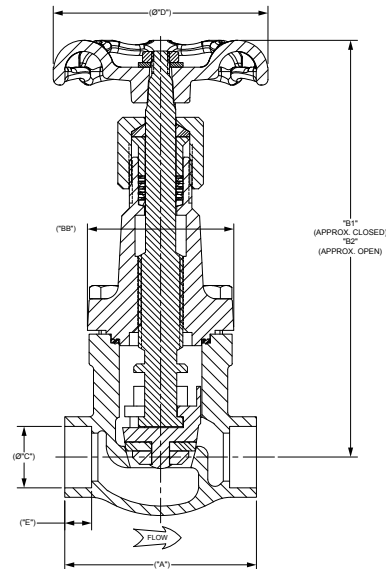
- Superior Flow: Provides high Cv for rapid and reliable loading and unloading.
- Designed with the unique Kold-Seal™.
- Conical PCTFE Seat: provides exceptional flow; bubble tight seal; less chance of debris trapped in the seat and longer service life.
- Connections: NPT & SBT.
- Sizes: ¼" to 2".
- Bonnet Type: Bolted.
- Pressure Rating: 720 psig (50 barg)
- Temperature Rating: -325°F (-198°C) to +150°F (+65°C).
- Service: Liquefied & Vaporized Atmospheric Gases and LNG for Trailers, Bulk Tanks, Iso-Containers and Piping Configurations.
- Cleaned for Oxygen Service per CGA G-4.1

Materials

Body Stainless Steel ASTM A351
 Upper Bonnet Brass ASTM B16
 Lower Bonnet Brass ASTM B283
 Stem Stainless Steel ASTM A582
 Spring Stainless Steel ASTM A313
 Packing PTFE
 Gasket PTFE 25% Glass Fill
 Seat Disc PCTFE ASTM D1430
 Seat Retainer Brass ASTM B16
 Bonnet Screws Stainless Steel ASTM A320
 Handwheel Chromated Coated Ductile Iron ASTM A395



SKB9406BWS



Ordering Information

Part Number	Size Inches	Size mm	Connection	A	B1	B2	C	D	E	BB	Cv	Weight lbs.
SKB9402BWS	¼"	8	Butt Weld	2.68	5.79	6.24	0.56	3.00	0.375	2.05	1.7	5.72
SKB9404BWS	½"	15		2.68	5.79	6.24	0.86	3.00	0.375	2.05	5	
SKB9406BWS	¾"	20		3.62	6.15	6.68	1.07	4.00	0.500	2.65	9.4	
SKB9408BWS	1"	25		3.62	6.15	6.68	1.335	4.00	0.500	2.65	14	
SKB9412BWS	1½"	40		4.75	7.2	7.93	1.92	4.75	0.500	3.54	28.3	7.97
SKB9416BWS	2"	50		5.75	8.85	9.84	2.411	5.25	0.625	4.04	53	13.15
SKB9402SWS	¼"	8	Socket Weld	2.68	5.79	6.24	0.56	3.00	0.375	2.05	1.7	5.72
SKB9404SWS	½"	15		2.68	5.79	6.24	0.86	3.00	0.375	2.05	5	
SKB9406SWS	¾"	20		3.62	6.15	6.68	1.07	4.00	0.500	2.65	9.4	
SKB9408SWS	1"	25		3.62	6.15	6.68	1.335	4.00	0.500	2.65	14	
SKB9412SWS	1½"	40		4.75	7.2	7.93	1.92	4.75	0.500	3.54	28.3	7.97
SKB9416SWS	2"	50		5.75	8.85	9.84	2.411	5.25	0.625	4.04	53	13.15



Stainless Steel Globe Valves for Cryogenic Service

SK Advantage Series Long Stem

Application

The SK Advantage Series of Stainless Steel Globe Valves are designed for handling cryogenic liquids through trailer, bulk vessels and piping configurations. Ideal service medium includes oxygen, nitrogen, krypton, carbon dioxide, dinitrogen monoxide, carbon dioxide, methane, ethane, ethylene, argon and LNG. Our Kold-Seal stem seal technology assures a tight seal preventing cryogen gas loss. The conical seat design allows exceptional flow, positive shutoff and less chance of debris accumulation in the flow path, all resulting in an overall longer service life. Maintenance on the packing and seat is quick and easy.

Features

- **Soft Seat:** PCTFE material which is the most widely specified cryogenic seat material in the industry.
- **Construction:** Bolted bonnet allows easy access to the valve internals for servicing.
- **Stem Packing:** Proven Kold-Seal technology, Live Loaded PTFE.
- **Sizes:** 1/4" through 2"
- **Connection:** Socket weld and butt weld.
- **Service:** Liquefied and vaporized atmospheric gases, LNG.
- **Temperature Rating:** -320°F to +150°F (-198°C to +65°C).
- **Pressure Rating:** Cold, Non-Shock, 725 psig (50 barg) Class 300 (PN 50).
- Cleaned and packaged for oxygen service per CGA G-4.1.
- **Application:** Multiple stem lengths available for selected service.
- **Packaging:** Each valve is individually bagged and boxed to arrive in factory new condition until installation.

Materials

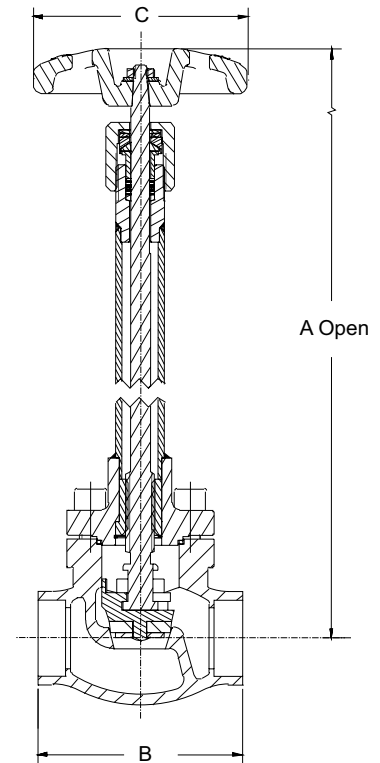
Body Stainless Steel ASTM A351 CF8
 Bonnet and Tube .. Stainless Steel ASTM A351 CF8/ASTM A479 type 304
 StemStainless Steel ASTM A582 S30300
 Spring.....Stainless Steel ASTM A313 S30200
 Packing..... Live Loaded PTFE Packing
 Gasket.....PTFE 25% Glass Fill
 Seat Disc.....PCTFE ASTM D1430
 Seat Retainer.....Brass ASTM B16
 Bonnet Screws.....ASTM B16 C36000
 Handwheel..... Painted Aluminum

Quality / Facility Features

- Material traceability in accordance with BS EN 10204 3.1
- CE Marking per European Pressure Equipment Directive



SK Advantage



TPED & PED Certified



Ordering Information

Part Number	Size (Inches)	Size dn	Connection	A (Inches)	A (mm)	B (Inches)	B (mm)	C (Inches)	C (mm)	Cv	Kv	Weight lbs	Weight kg		
SKL9402SW	1/4"	8	Socket Weld	14.6	370	2.7	68	4	102	1.7	1.47	3.76	1.70		
SKL9404SW	1/2"	15								5	4.30	3.47	1.68		
SKL9406SW	3/4"	20								9.4	8.10	5.17	2.34		
SKL9408SW	1"	25				14	12.10			5.34	2.42				
SKL9412SW	1 1/2"	40				4.7	121			5	127	28.3	21.6	9.48	4.30
SKL9416SW	2"	50				5.7	146					53	45.8	16.3	7.39
SKL9402BW	1/4"	8	Butt Weld	14.6	370	2.7	68	4	102			1.7	1.47	3.76	1.70
SKL9404BW	1/2"	15								5	4.30	3.47	1.68		
SKL9406BW	3/4"	20								9.4	8.10	5.17	2.34		
SKL9408BW	1"	25				14	12.10			5.34	2.42				
SKL9412BW	1 1/2"	40				4.7	121			5	127	28.3	21.60	9.48	4.30
SKL9416BW	2"	50				5.7	146					53	45.80	16.3	7.39

SW = Socket Weld; BW = Butt Weld

Stainless Steel Globe Valves for Cryogenic Service

SK Advantage Series Medium Stem



Application

The SK Advantage Series of Stainless Steel Globe Valves are designed for handling cryogenic liquids through trailer, bulk vessels and piping configurations. Ideal service medium includes oxygen, nitrogen, krypton, carbon dioxide, dinitrogen monoxide, carbon oxide, methane, ethane, ethylene, argon and LNG . Our Kold-Seal stem seal technology assures a tight seal preventing cryogen gas loss. The conical seat design allows exceptional flow, positive shutoff and less chance of debris accumulation in the flow path, all resulting in an overall longer service life. Maintenance on the packing and seat is quick and easy.

Features

- **Soft Seat:** PCTFE material which is the most widely specified cryogenic seat material in the industry.
 - **Construction:** Bolted bonnet allows easy access to the valve internals for servicing.
 - **Stem Packing:** Proven Kold-Seal technology, Live Loaded PTFE.
 - **Sizes:** ¼" through 2"
 - **Connection:** Socket weld and butt weld.
 - **Service:** Liquefied and vaporized atmospheric gases, LNG.
 - **Temperature Rating:** -325°F to +150°F (-198°C to +65°C).
 - **Pressure Rating:** Cold, Non-Shock, 725 psig (50 barg) Class 300 (PN 50).
- Cleaned and packaged for oxygen service per CGA G-4.1.
 - **Application:** Multiple stem lengths available for selected service.
 - **Packaging:** Each valve is individually bagged and boxed to arrive in factory new condition until installation.

Materials

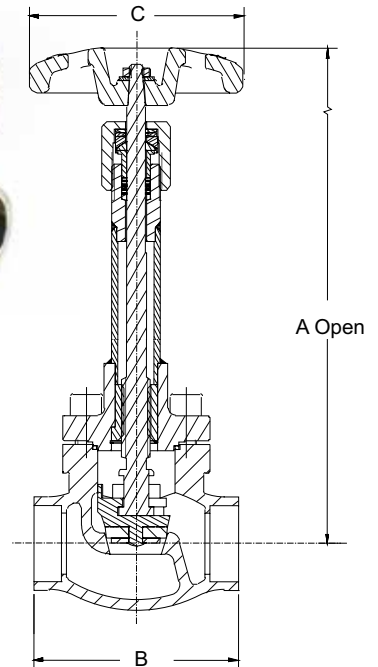
Body Stainless Steel ASTM A351 CF8
 Bonnet and Tube .. Stainless Steel ASTM A351 CF8/ASTM A479 type 304
 Stem Stainless Steel ASTM A582 S30300
 Spring Stainless Steel ASTM A313 S30200
 Packing..... Live Loaded PTFE Packing
 Gasket PTFE 25% Glass Fill
 Seat Disc PCTFE ASTM D1430
 Seat Retainer..... Brass ASTM B16
 Bonnet Screws ASTM B16 C36000
 Handwheel..... Painted Aluminum

Quality / Facility Features

- Material traceability in accordance with BS EN 10204 3.1
- CE Marking per European Pressure Equipment Directive



SKM9406BW



TPED & PED Certified  

Ordering Information

Part Number	Size (Inches)	Size dn	Connection	A (Inches)	A (mm)	B Inches	B (mm)	C (Inches)	C (mm)	Cv	Kv	Weight lbs	Weight kg
SKM9402SW	¼"	8	Socket Weld	10.6	270	2.7	68	4	102	1.7	1.47	3.31	1.50
SKM9404SW	½"	15								5	4.30	3.29	1.48
SKM9406SW	¾"	20				9.4	8.10			4.86	2.20		
SKM9408SW	1"	25				14	12.10			5.02	2.27		
SKM9412SW	1½"	40				28.3	21.60			8.92	4.04		
SKM9416SW	2"	50	53	45.80	15.30	6.94							
SKM9402BW	¼"	8	Butt Weld	10.6	270	2.7	68	4	102	1.7	1.47	3.31	1.50
SKM9404BW	½"	15								5	4.30	3.29	1.48
SKM9406BW	¾"	20				9.4	8.10			4.86	2.20		
SKM9408BW	1"	25				14	12.10			5.02	2.27		
SKM9412BW	1½"	40				28.3	21.60			8.92	4.04		
SKM9416BW	2"	50	53	45.80	15.30	6.94							

SW = Socket Weld; BW = Butt Weld

Stainless Steel Globe Valves for Cryogenic Service

SK Advantage Series Short Stem

Application

The SKS Series globe valves short stem are designed for handling of cryogenic liquids through bulk tanks, trucks, trailers, ISO-containers and piping configurations. Our time tested spring loaded stem packing and superior seat design provide for long life and easy maintenance.

Features

- Superior Flow: Provides high Cv for rapid and reliable loading and unloading.
- Designed with the unique Kold-Seal™.
- Conical PCTFE Seat: provides exceptional flow; bubble tight seal; less chance of debris trapped in the seat and longer service life.
- Connections: Socket Weld & Butt Weld.
- Sizes: ¼" to 1-1/2".
- Bonnet Type: Bolted.
- Pressure Rating: 720 psig (50 barg)
- Temperature Rating: -320°F (-196°C) to +150°F (+65°C).
- Service: Liquefied & Vaporized Atmospheric Gases and LNG for Trailers, Bulk Tanks, Iso-Containers and Piping Configurations.
- Cleaned for Oxygen Service per CGA G-4.1

Materials

Body Stainless Steel ASTM A351 CF8
 Bonnet and Tube ... Stainless Steel ASTM A351 CF8/ASTM A479 type 304
 Stem Stainless Steel ASTM A582 S30300
 Spring Stainless Steel ASTM A313 S30200
 Packing Live Loaded PTFE Packing
 Gasket PTFE 25% Glass Fill
 Seat Disc PCTFE ASTM D1430
 Seat Retainer Brass ASTM B16
 Bonnet Screws ASTM B16 C36000
 Handwheel Painted Aluminum

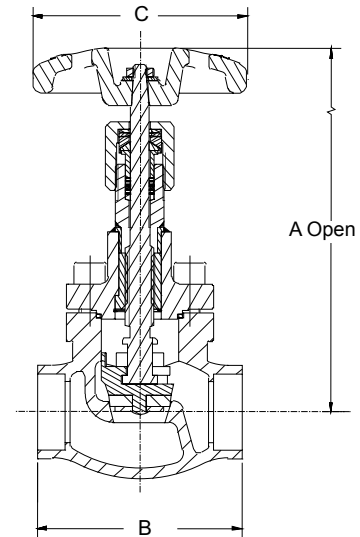
Quality / Facility Features

- Material traceability in accordance with BS EN 10204 3.1
- CE Marking per European Pressure Equipment Directive

PED Certified



SKS9406BW



Ordering Information

Part Number	Size Inches	Size mm	Connection	A (Inches)	A (mm)	B (Inches)	B (mm)	C (Inches)	C (mm)	Cv	Kv	Weight lbs	Weight kg
SKS9402SW	¼"	8	Socket Weld	6.7	170	2.7	68	4	102	1.7	1.47	2.64	1.20
SKS9404SW	½"	15								5	4.30	2.62	1.19
SKS9406SW	¾"	20								9.4	8.10	4.21	1.91
SKS9408SW	1"	25								14	12.10	4.10	1.86
SKS9412SW	1½"	40	7.0	178	4.7	120	5	127	28.3	21.60	7.16	3.25	
SKS9402BW	¼"	8	Butt Weld	6.7	170	2.7	68	4	102	1.7	1.47	2.64	1.20
SKS9404BW	½"	15								5	4.30	2.62	1.19
SKS9406BW	¾"	20								9.4	8.10	4.21	1.91
SKS9408BW	1"	25								14	12.10	4.10	1.86
SKS9412BW	1½"	40	7.0	178	4.7	120	5	127	28.3	21.60	7.16	3.25	

Stainless Steel Angle Globe Valves for Cryogenic Service

SKA Advantage Series

REGO
10
YEAR
WARRANTY

Application

RegO/Goddard stainless steel angle globe valves are designed for handling cryogenic liquids. Designed for fill manifolds applications of bulk tanks. RegO Kold-Seal™ stem seal technology assures a tight seal preventing gas loss. The conical seat design allows exceptional flow, positive shut off and less chance of debris accumulation in the flow path—resulting in an overall longer service life. Maintenance on the packing and seat is quick and easy. Ideal service medium includes oxygen, nitrogen, argon, carbon dioxide, nitrous oxide, methane, ethane, ethylene, krypton, and LNG.

Features

- Sizes: 1" through 1½"
- Connection: Socket Weld.
- Service: Liquefied and vaporized atmospheric gases, LNG.
- Temperature rating: -320°F to +150°F (-196°C to +65°C).
- Pressure rating: Cold, Non-Shock, 720 psig (50 barg) Class 300 (PN 50).
- Cleaned and packaged for oxygen service per CGA G-4.1.
- Soft Seat: PCTFE material which is the most widely specified cryogenic seat material in the industry.
- Stem Packing: Proven Kold-Seal technology, live loaded PTFE.
- Conical seat, provides more Cv.
- Seat assembly without nut and washer. No loose materials from vibration. Less chance of failure.
- Pressure relief system of the bonnet increases life of packing system.
- Ergonomics handwheels for ease of use.
- 100% factory tested. Each valve is individually bagged and boxed to arrive in factory new condition until installation.

Materials

Body Stainless Steel ASTM A351 CF8
 Bonnet and Tube Stainless Steel ASTM A351 CF8/ASTM A479 type 304
 Stem Stainless Steel ASTM A582 S30300
 Spring Stainless Steel ASTM A313 S30200
 Packing..... Live Loaded PTFE Packing
 Gasket PTFE 25% Glass Fill
 Seat Disc PCTFE ASTM D1430
 Seat Retainer..... Brass ASTM B16
 Bonnet Screws ASTM B16 C36000
 Handwheel..... Painted Aluminum

PED Certified



Ordering Information

Part Number	Size Inches	Size dn	Connection	A (Inches)	A (mm)	B (Inches)	B (mm)	C (Inches)	C (mm)	Weight lbs	Weight kg
SKA9408LSW	1"	25	Socket Weld	14.6	370	1.33	33.78	4	102	5.41	2.45
SKA9412LSW	1½"	40				1.92	48.77	5	127	8.85	4.01

Stainless Steel Globe Valves for Cryogenic Service

SK Advantage Series Repair Kits

Kit Number	Part Number	Kit Contents
SKM009404-80AJ	SKL9402,SKM9402, SKL9404 and SKM9404	(1) Gasket and (1) Seat Disc Assembly.
SK009404-85	SK9402 and SK9404	(1) Washer, (1) Nut, Lock, (1) Handwheel, (4) Screw, (1) Nut, Packing, (1) Retaining Ring, (1) Nut, Stem, (1) O-ring, (1)Gland, Packing, (3) Ring "V" Packing, Female, (1) Ring "V" Packing, Male, (1) Washer, (1) Spring, Cylindrical, (1) Bonnet & Tube Assy, (1)Stem, (1) Seat Disc Assy, (2) Gasket
SKM009408-80AJ	SKL9406, SKM9406, SKL9408 and SKM9408	(1) Gasket and (1) Seat Disc Assembly.
SK009408-85	SK9406 and SK9408	(1) Washer, (1) Nut, Lock, (1) Handwheel, (4) Screw, (1) Nut, Packing, (1) Retaining Ring, (1) Nut, Stem, (1) O-ring, (1)Gland, Packing, (3) Ring "V" Packing, Female, (1) Ring "V" Packing, Male, (1) Washer, (1) Spring, Cylindrical, (1) Bonnet & Tube Assy, (1)Stem, (1) Seat Disc Assy, (2) Gasket
SKM009412-80AJ	SKL9412 and SKM9412	(1) Gasket and (1) Seat Disc Assembly.
SK009412-85	SK9412	(1) Washer, (1) Nut, Lock, (1) Handwheel, (4) Screw, (1) Nut, Packing, (1) Retaining Ring, (1) Nut, Stem, (1) O-ring, (1)Gland, Packing, (3) Ring "V" Packing, Female, (1) Ring "V" Packing, Male, (1) Washer, (1) Spring, Cylindrical, (1) Bonnet & Tube Assy, (1)Stem, (1) Seat Disc Assy, (2) Gasket
SKM009416-80AJ	SKL9416 and SKM9416	(1) Gasket and (1) Seat Disc Assembly.
SK009416-85	SK9416	(1) Washer, (1) Nut, Lock, (1) Handwheel, (4) Screw, (1) Nut, Packing, (1) Retaining Ring, (1) Nut, Stem, (1) O-ring, (1)Gland, Packing, (3) Ring "V" Packing, Female, (1) Ring "V" Packing, Male, (1) Washer, (1) Spring, Cylindrical, (1) Bonnet & Tube Assy, (1)Stem, (1) Seat Disc Assy, (2) Gasket
SKM009408-80J	SKL9402, SKM9402, SKL9404, SKM9404,SKL9406, SKM9406, SKL9408 and SKM9408	(2) Spring, Belleville, (1) Washer, Live-loading, (5) Packing, Bonnet, (4)Packing, separator, (1) Bearing, Bonnet, (1)Follower, Gland, (1) Packing, Adapter.
SKM009412-80J	SKL9412 and SKM9412	
SKM009416-80J	SKL9416 and SKM9416	
SKM009404-KIT	SKM9402 and SKM9404	
SKM009408-KIT	SKM9406 and SKM9408	(1) Gasket, (1) Stem, (1) Bonnet & tube Assy, (2) Spring, Belleville, (1) Washer, Live-loading, (5) Packing, Bonnet, (4)Packing, Separator, (1) Bearing, Bonnet, (1) Follower, Gland, (1) Nut, Stem, (1) Ring, Retaining, (1) Packing, Adapter, (1) Nut, Bonnet, (4) Screw, (1) Handwheel, (1) Nut, Hex, and (1) Washer.
SKM009412-KIT	SKM9412	
SKM009416-KIT	SKM9416	
SKL009404-KIT	SKL9402 and SKL9404	
SKL009408-KIT	SKL9406 and SKL9408	(1) Gasket, (1) Stem, (1) Bonnet & tube Assy, (2) Spring, Belleville, (1) Washer, Live-loading, (5) Packing, Bonnet, (4)Packing, Separator, (1) Bearing, Bonnet, (1) Follower, Gland, (1) Nut, Stem, (1) Ring, Retaining, (1) Packing, Adapter, (1) Nut, Bonnet, (4) Screw, (1) Handwheel, (1) Nut HEX, and (1) Washer.
SKL009412-KIT	SKL9412	
SKL009416-KIT	SKL9416	
SK94004-81	BB9402, SKB9402, BB9404 and SKB9404		(1) Gasket, (1) Spring, (1) Washer, (1) Ring V Male. (3) Ring V female,(1) O'ring.
SK94008-81	BB9406, SKB9406, BB9408 and SKB9408	
SK9412-81	BB9412 and SKB9412	
SK9416-81	BB9416 and SKB9416	
SK94004-82	BB9402, SKB9402, BB9404 and SKB9404	(1) Gasket and (1) Seat Disc Assembly.
SK94008-82	BB9406, SKB9406, BB9408 and SKB9408	
SK9412-82	BB9412 and SKB9412	
SK9416-82	BB9416 and SKB9416	
BB009404-85	BB9402, SKB9402, BB9404 and SKB9404	(1) Gasket, (1)Stem,(1) Bonnet & tube Assy, (1) Spring, (1) Washer, (1)Ring V Male. (3) Ring V female,(1) O-ring, (1) Nut, Bonnet, (4) Screw, (1) Handwheel, (1) Nut, Hex, and (1) Washer.
BB009408-85	BB9406, SKB9406, BB9408 and SKB9408	
BB009412-85	BB9412 and SKB9412	
BB009416-85	BB9416 and SKB9416	

Stainless Steel Globe Valve for Cryogenic Service

210 Series



Features

- **Top Entry:** This valve can be permanently installed in the line and serviced from the top
- **Soft Seated:** PCTFE Seat provides a bubble tight seal and is replaceable
- **Construction:** Body and Bonnet ASTM A351 J92600 Stainless steel
- **Sizes:** ½" - 4" (15mm - 100mm)
- **Ends:** RF Flange, Butt weld, Socket weld, Threaded (FNPT)
- **Service:** Liquefied and vaporized atmospheric gases, LNG
- **100% Factory Tested**
- **Clean for use in oxygen** per CGA G-4.1
- **Temperature Rating:** -320°F - 150°F (-196°C +65°C)
- **Pressure Rating:** (Cold, Non-shock)
Class 150 valve - 275 psig (19 barg)
Class 300 valve - 720 psig (50 barg)

½" - 4" Class 150
PED Approved
½" - 4" Class 300
PED Approved



210 Series

Our investment cast stainless steel is specified by leading industrial gas companies for storage tank and yard operations. Special order bonnet extensions are available for cold box applications. Valves for hydrogen use can be supplied

Ordering Information

Stainless Body • RF Flange Ends

150# Part Number	300# Part Number	Valve Size		Ends	150# Weight		300# Weight		Estimated Cv
		Inches	MM		Lbs.	Kg.	Lbs.	Kg.	
GS-00210W-8F	GS-00210W-8F3	1"	25 mm	Flange	15	6.80	20	9.07	11.50
GS-00210W-16F	GS-00210W-16F3	2"	50 mm		35	15.88	40	18.14	40.00
GS-00210W-24F	GS-00210W-24F3	3"	80 mm		65	29.48	70	31.75	60.00
GS-00210W-32F	GS-00210W-32F3	4"	100 mm		95	43.09	100	45.35	175

150# ANSI Class (275 psig Cold Working Pressure)

300# ANSI Class (720 psig Cold Working Pressure)

Stainless Body • Butt Weld, Socket Weld, Threaded Ends

150# Part Number	300# Part Number	Valve Size		Ends	Weight		Estimated Cv
		Inches	MM		Lbs.	Kg	
GS-00210W-4S3	GS-00210W-4S3	½"	15 mm	Socket Weld	15	6.80	3.90
GS-00210W-4T3	GS-00210W-4T3	½"	15 mm	Threaded	15	6.80	3.90
GS-00210W-6S3	GS-00210W-6S3	¾"	20 mm	Socket Weld	15	6.80	7.10
GS-00210W-6T3	GS-00210W-6T3	¾"	20 mm	Threaded	15	6.80	7.10
GS-00210W-8S3	GS-00210W-8S3	1"	25 mm	Socket Weld	15	6.80	11.50
GS-00210W-8T3	GS-00210W-8T3	1"	25 mm	Threaded	15	6.80	11.50
GS-00210W-12S3	GS-00210W-12S3	1½"	40 mm	Socket Weld	25	11.34	29.00
GS-00210W-16W3A	GS-00210W-16W3A	2"	50 mm	Butt Weld SCH10	35	15.88	40.00
GS-00210W-16W3J	GS-00210W-16W3J	2"	50 mm	Butt Weld SCH40	35	15.88	40.00
GS-00210W-24W3A	GS-00210W-24W3A	3"	80 mm	Butt Weld SCH10	55	24.95	60.00
GS-00210W-24W3J	GS-00210W-24W3J	3"	80 mm	Butt Weld SCH40	55	24.95	60.00
GS-00210W-32W3A	GS-00210W-32W3A	4"	100 mm	Butt Weld SCH10	80	36.29	175.00
GS-00210W-32W3J	GS-00210W-32W3J	4"	100 mm	Butt Weld SCH40	80	36.29	175.00
LOX00210W-24W3A**	LOX00210W-24W3A**	3"	80 mm	Butt Weld SCH10	55	24.95	60.00
LOX00210W-32W3A**	LOX00210W-32W3A**	4"	100 mm	Butt Weld SCH10	80	36.29	175.00

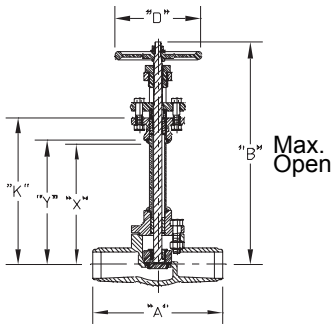
* Second number indicates valve for 300# part number.

** LOX valves specifically for Liquid Oxygen Service, for more information on LOX valves see page 62

150# ANSI Class (275 psig Cold Working Pressure)

300# ANSI Class (720 psig Cold Working Pressure)

Stainless Steel Globe Valve for Cryogenic Service 210 Series



Butt Weld Ends

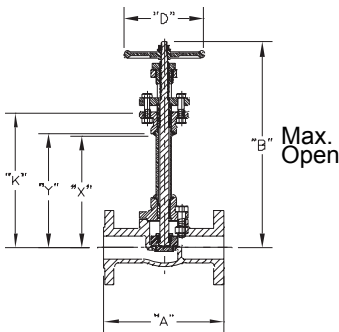
Size	"A"	"B"	"D"	"K"	"X"	"Y"
2"	10½"	22¼"	7"	15"	12¾"	13 ¹ / ₁₆ "
3"	12"	30½"	10"	21½"	19 ¹ / ₁₆ "	19¾"
4"	13½"	36¾"	12"	24¼"	21 ¹¹ / ₁₆ "	22"

△ For SCH. 40 A=12½"

Θ For SCH. 40 A=14"

* Unless otherwise specified, SCH 10 weld ends are supplied

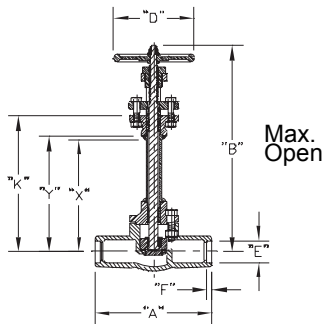
● Special B,K,X & Y dimensions available.



Raised Face Flange Ends*

Size	"A" 150#	"A" 300#	"B"	"D"	"K"	"X"	"Y"
1"	6½"	8"	18 ¹ / ₈ "	5"	12¾"	11 ¹ / ₁₆ "	11¾"
2"	8"	10½"	22¼"	7"	15"	12¾"	13 ¹ / ₁₆ "
3"	9½"	12½"	30½"	10"	21½"	19 ¹ / ₁₆ "	19¾"
4"	11½"	14"	36¾"	12"	24¼"	21 ¹¹ / ₁₆ "	22"

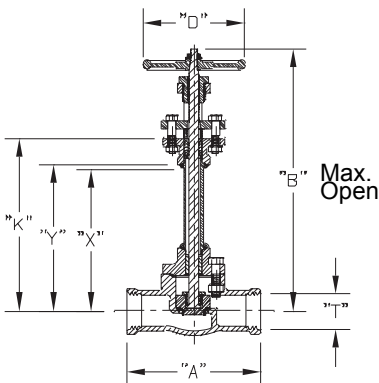
● Special B,K,X & Y dimensions available.



Socket Weld Ends

Size	"A"	"B"	"D"	"E"	"F"	"K"	"X"	"Y"
½"	5"	18 ¹ / ₈ "	5"	.855	¾"	12¾"	11 ¹ / ₁₆ "	11¾"
¾"				1.065	½"			
1"				1.330	½"			
1½"	10¼"	22¼"	7"	1.915	½"	15"	12¾"	13 ¹ / ₁₆ "

● Special B,K,X & Y dimensions available.



Threaded Ends

Size	"T" - NPT	"A"	"B"	"D"	"K"	"X"	"Y"
½"	½"-14	5"	18 ¹ / ₈ "	5"	12¾"	11 ¹ / ₁₆ "	11¾"
¾"	¾"-14						
1"	1"-11½"	5¾"					

● Special B,K,X & Y dimensions available.

Stainless Steel Globe Valve for Hydrogen Cryogenic Service

231 Series

Application

The RegO Goddard 231 Series Stainless Steel globe valves are designed for handling of cryogenic liquids through bulk tanks, trailers, ASU plants and piping configurations. Compatible with oxygen, nitrogen, CO₂, hydrogen, helium and argon.

Features

- **Top Entry:** Rugged stainless steel ASTM A351-CF3M (316L) soft seated cryogenic globe valve. This valve can be permanently installed in the line and serviced from the top
- **Soft Seated:** PCTFE Seat provides a bubble tight seal and is replaceable
- **Construction:** One piece investment cast bonnet eliminates welded joint in topworks
- **Stem Packing:** Proprietary Goddard system utilizing GRAFOIL® flexible graphite
- **Sizes:** ¼" through 1½" (6mm through 40mm)
- **Ends:** Socket weld, Butt weld
- **Service:** Liquefied and Gaseous hydrogen service only (see series 232 for non-hydrogen service)
- **Temperature Rating:** -425°F to 150°F (-254°C to +65°C)
- **Pressure Rating:** (Cold, Non-shock)
300 psig (20 barg)
400 psig (27 barg)

PED Approved
Designed to ASME B16.34

A rugged construction and easy access are design features which provide minimum installation and maintenance cost while maintaining superior performance and operator safety. This valve replaces higher cost bellows-seated valves in many applications. The proprietary Goddard GRAFOIL® stem packing system provides excellent performance when the valve operates in liquid hydrogen service.

Ordering Information

Stainless Body • 400 psig Socket Weld Ends

Part Number	Valve size Inches	Valve Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
S-000231-2S4	¼"	6 mm	Socket Weld	6 lbs.	2.72 Kgs.	1.30
S-000231-4S4	½"	15 mm				3.90
S-000231-6S4	¾"	20 mm		10 lbs.	4.54 Kgs.	7.10
S-000231-8S4	1"	25 mm				10.50
S-000231-12S4	1½"	40 mm		15 lbs.	6.80 Kgs.	25.00

Stainless Body • 300 psig Butt Weld Ends

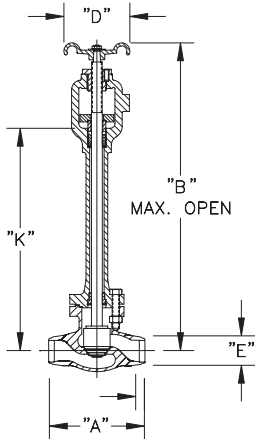
Part Number	Valve size Inches	Valve Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
S-000231-4WA	½"	15 mm	Butt Weld	6 lbs.	2.72 Kgs.	3.90
S-000231-8WA	1"	25 mm		10 lbs.	4.54 Kgs.	10.50
S-000231-12WA	1½"	40 mm		15 lbs.	6.80 Kgs.	25.00



231 Series



Stainless Steel Globe Valve for Cryogenic Service 231 Series

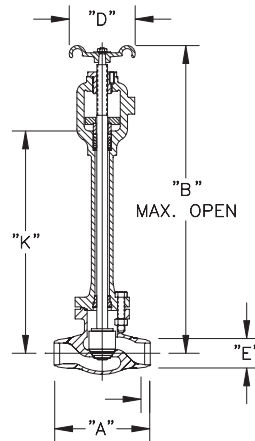


Pressure Rating 400 psig
 Temperature Rating - 425° to F+150° F
 This valve is not approved for gaseous and/or liquid oxygen service
 For oxygen service use Goddard series 232H cryogenic globe valve

Dimensional data
 All Dimensional Data are in inches.

Socket Weld Ends

Size	"A"	"B"	"D"	"E"	"F"	"K"
1/4"	4 1/4"	14 ⁹ / ₁₆ "	2 3/8"	0.560	0.375	10 ³ / ₁₆ "
1/2"	4 1/4"	14 ⁹ / ₁₆ "	2 3/8"	0.860	0.375	10 ³ / ₁₆ "
3/4"	5 3/8"	17"	3"	1.070	0.500	11 1/2"
1"	5 3/8"	17"	3"	1.335	0.500	11 1/2"
1 1/2"	6 1/2"	18 ¹⁴ / ₁₆ "	4"	1.920	0.500	12 ¹⁵ / ₁₆ "



Pressure Rating 300 psig
 Temperature Rating - 425° F to +150° F
 This valve is not approved for gaseous and/or liquid oxygen service
 For oxygen service use Goddard series 232H cryogenic globe valve

Dimensional data
 All Dimensional Data are in inches.

Butt Weld Ends

Size	"A"	"B"	"D"	"K"	"E"
1/2"	4 1/4"	14 ⁹ / ₁₆ "	2 3/8"	10 ³ / ₁₆ "	1/2"
1"	5"	17"	3"	11 1/2"	1"
1 1/2"	6 1/2"	18 ⁵ / ₁₆ "	4"	12 ⁵ / ₁₆ "	1 1/2"

Stainless Steel Globe Valve for Cryogenic Service

232 Series

Application

The RegO Goddard 232 Series Stainless Steel globe valves are designed for handling of cryogenic liquids through bulk tanks, trailers, ASU plants and piping configurations. Compatible with oxygen, nitrogen, CO₂, helium and argon.

Features

- **Top Entry:** Rugged stainless steel ASTM A351-CF3M (316L) soft seated cryogenic globe valve. This valve can be permanently installed in the line and serviced from the top
- **Soft Seated:** PCTFE Seat provides a bubble tight seal and is replaceable
- **Construction:** One piece investment cast bonnet eliminates welded joint in topworks.
- **Sizes:** ½" through 1½" (15mm through 40mm)
- **Ends:** Socket weld and Butt weld
- **Service:** Liquefied and vaporized atmospheric gases, LNG
- **Temperature Rating:** -325°F to 150°F (-198°C to +65°C)
- **Pressure Rating:** (Cold, Non-shock)
300 psig (20 barg)
400 psig (27 barg)

PED Approved,

A rugged construction and easy access are design features which provide minimum installation and maintenance cost while maintaining superior performance and operator safety.



232 Series



Ordering Information

Stainless Body Socket Weld Ends 400 psig

Part Number	Valve size Inches	Valve Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated C _v
S-000232-4S4	½"	15 mm	Socket Weld	6 lbs.	2.72 Kgs.	3.90
S-000232-8S4	1"	25 mm		10 lbs.	4.54 Kgs.	10.50

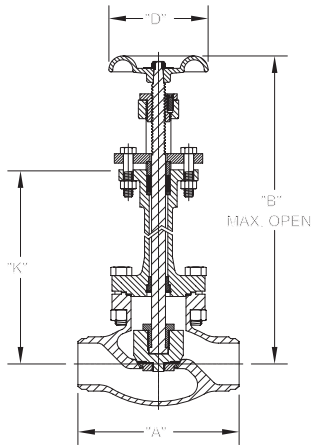
High Purity Cryogenic Bonnet Nickel Plated Naval Brass Yoke Bushing Stainless Steel Body Butt Weld Ends 300 psig

Part Number	Valve size Inches	Valve Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated C _v
S-232HCB-4WA	½"	15 mm	Butt Weld	6 Lbs.	2.72 Kgs.	3.90
S-232HCB-8WA	1"	25 mm		10 Lbs.	4.54 Kgs.	10.50
S-232HCB-12WA	1½"	40 mm		15 Lbs.	6.80 Kgs.	25.00

High Purity Cryogenic Bonnet Nickel Plated Naval Brass Yoke Bushing, Stainless Steel Body Socket Weld Ends 400 psig

Part Number	Valve size Inches	Valve Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated C _v
S-232HCB-4S4	½"	15 mm	Socket Weld	6 lbs.	2.72 Kgs.	3.90
S-232HCB-8S4	1"	25 mm		10 Lbs.	4.54 Kgs.	10.50
S-232HCB-12S4	1½"	40 mm		15 Lbs.	6.80 Kgs.	25.00

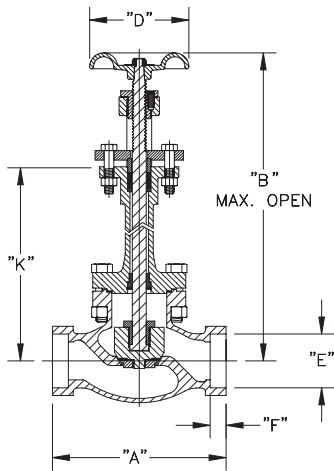
Stainless Steel Globe Valve for Cryogenic Service 232 Series



Pressure rating 300 psig non-shock cold
 Temperature rating +150° F to -325° F
 Dimensional Data
 All dimensions are in inches

Butt Weld Ends

Size	"A"	"B"	"D"	"K"
½"	4¼"	14 ⁹ / ₁₆ "	2 ³ / ₈ "	10 ³ / ₁₆ "
1"	5"	17"	3"	11 ½"
1½"	6"	18 ⁷ / ₈ "	4"	12 ⁵ / ₁₆ "



Pressure rating 400 psig non-shock cold
 Temperature rating +150° F to -325° F
 Dimensional Data
 All dimensions are in inches

Socket Weld Ends

Size	"A"	"B"	"D"	"E"	"F"	"K"
½"	4¼"	14 ⁹ / ₁₆ "	2 ³ / ₈ "	0.860	0.375	10 ³ / ₁₆ "
1"	5 ⁵ / ₈ "	17"	3"	1.335	0.500	11 ½"
1½"	6½"	18 ⁷ / ₈ "	4"	1.920	0.500	12 ⁵ / ₁₆ "

Cryogenic Fill Manifold

CFM, AFM, PFM & SFM Series

Application

RegO® Goddard high quality brazed and welded assemblies are ideally suited for the original equipment manufacturer of bulk cryogenic vessels. A wide variety of valve types including union or bolted bonnet, bronze or stainless steel bodies & top works and piping of stainless steel or copper construction are available as production unit.

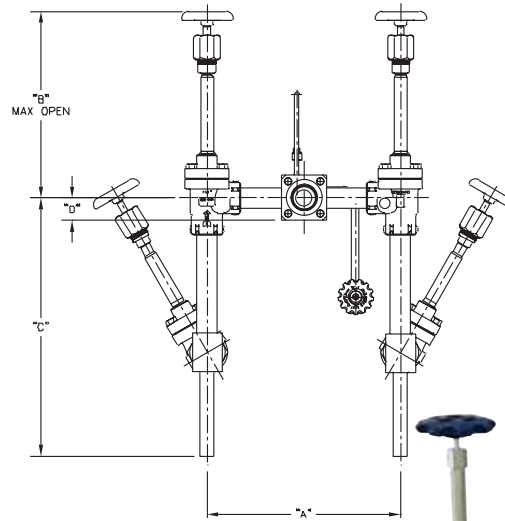
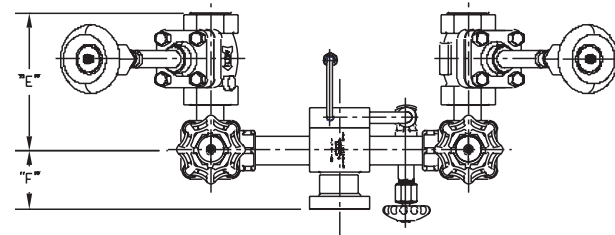
Ideal for all cryogenic liquids including Liquefied Nitrogen, Oxygen and Argon. Safe and reliably used in LNG Systems. In addition RegO® can custom design configurations that are welded and brazed in a factory setting.

Features

- Unitized construction eliminates leaks and provides easy fit-up to tank piping.
- Modules commonly include top and bottom fill valves, fill check with strainer and hose bleed and relief valve.
- Many options are available which can include specific end user dimensions and specifications.
- Our valve products stand up to high cycle environments, without the need for field adjustment of valve packing.
- Available alone or as a unitized welded assembly for bulk tank filling.
- Repeatable performance and geometry.
- Precision silver brazed and welded assembly.
- Cleaned for Oxygen Service per CGA G-4.1.
- Pressure Rating: SFM Series 600 psig (41 barg) – CFM Series 600 psig (41 barg).
- Temperature Rating: -320°F (-196°C) to +165°F (+74°C).
- 100% Factory tested.

Materials

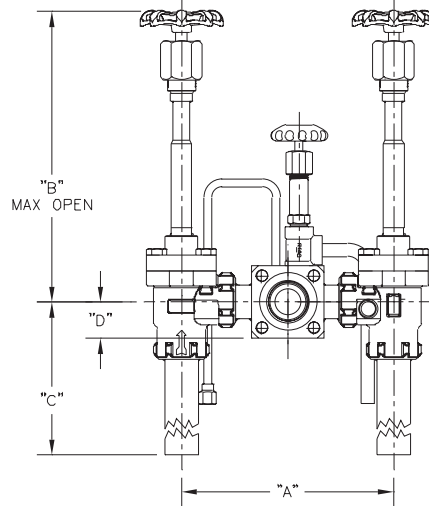
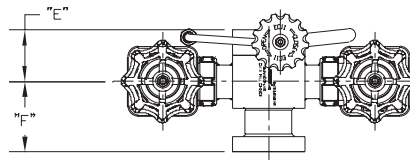
Globe Valve Bronze or Stainless Steel
 Check Valve Brass
 Bleed Valve Brass
 Tube 304L Stainless Steel or Copper



REGO
10
 YEAR
 WARRANTY



SFM-4D



CFM-4E

Ordering Information

Part Number	Size Inches	Size mm	Bonnet Type	Pipe Material	Valve Material	A Inches	B Inches	C Inches	D Inches	E Inches	F Inches
CFM00002D	1"	25	Union	Stainless Steel	Brass	10.25	14.64	7.5	1.75	2.5	3.4
CFM00004D	1 1/2"	40					Bolted	Copper				15.00	9.5
CFM00004E			13	9.5							
AFM00004D			15.00	14.63		20						8
PFM00004D	Stainless Steel	Stainless Steel							2.54		
SFM00004D									2.5		
SFM00004E							9.5			2.5	

Diaphragm Type Globe Valves 2500 Series

Application

The 2500 series valves are designed for use in hospital and industrial piping systems where gases are supplied from a central source to branch outlets throughout the system.

Features

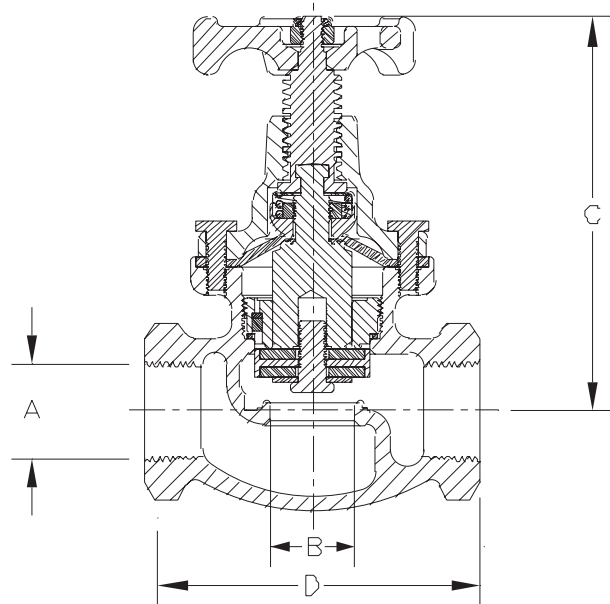
- UL listed for use with air, argon, acetylene, helium, hydrogen, LP-Gas, nitrogen, inert gases and oxygen service.
- Leakage is prevented by a dependable diaphragm stem seal.
- A resilient seat disc provides positive shut-off.
- Heavy duty ACME stem threads assure easy operation and long working life.
- Unique back seat design enabling the diaphragm assembly to be repaired while the valve remains in service.
- Maximum working pressure is 400 psig (27.5 barg).
- Working temperature range is -40°F to +165°F (-40°C to +74°C).
- 100% Factory Tested
- All valves clean for use in oxygen per CGA G-4.1

Materials

Body 2507AC, 2511AC & 2513AC Cast Bronze, Tin Plated
 Body 2505AC Cast Red Brass, Tin Plated
 Bonnet Brass
 Stem Manganese Bronze
 Seat Disc Neoprene
 Diaphragm Neoprene



2505AC



Ordering Information

Part Number	Inlet/Outlet Thread (Female NPT) A	Port Diameter B	Height C	Length D	C _v Factor
2505AC	3/4"	15/16"	5 1/4"	4"	9.0
2507AC	1"	1 1/8"	5 3/8"	4 3/8"	15.0
2511AC	1 1/2"	1 11/16"	6 3/4"	5 3/8"	33.4
2513AC	2"	2 5/16"	7 7/8"	6 1/4"	51.7

Diaphragm Type Globe Valves 2550 Series

Application

The 2550 series valves are designed for use in hospital and industrial piping systems where gases are supplied from a central source to branch outlets throughout the system.

Features

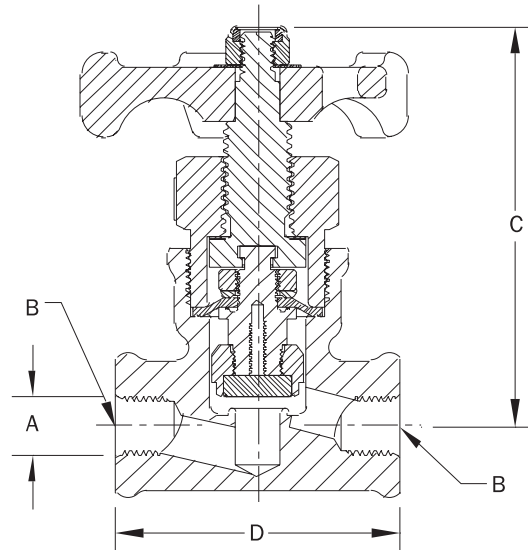
- UL listed for use with acetylene, hydrogen, nitrogen, oxygen service and compressed air.
- Leakage is prevented by a dependable diaphragm stem seal.
- A resilient seat disc provides positive shut-off.
- Heavy duty ACME stem threads assure easy operation and long working life.
- Maximum working pressure is 250 psig (17.2 barg).
- Working temperature range is -40°F to +165°F (-40°C to +74°C).
- 100% Factory Tested
- All valves clean for use in oxygen per CGA G-4.1



2554AC

Materials

Body (2554 series) Cast Red Brass, Tin Plated
 Seat Disc Filled Teflon
 Diaphragm Neoprene
 Bonnet Brass
 Stem Manganese Bronze
 Handwheel Aluminum



Ordering Information

Part Number	Inlet/Outlet Thread (Female NPT) A	Port Diameter B	Height C	Length D	Cv Factor
2554AC	1/2"	2 1/32"	3 3/8"	3 1/8"	4.3
2554AAC	3/4"				

Extended Bonnet Bronze Gate Valve for Cryogenic Service 322 and 326 Series

Application

The RegO Goddard 322 and 326 Series gate valves are designed for handling of cryogenic liquids through bulk tanks, trucks, trailers, ASU plants and piping configurations. Compatible with oxygen, nitrogen, CO₂, and argon.

Features

- **Top Entry:** This union bonnet valve can be permanently installed in the line and serviced from the top
- **Construction:**
 - Bronze cast body and Internals
 - Rugged construction for long life
 - Straight through construction for high CV
 - Designed with unique KOLD-SEAL™ packing
 - Standard split wedge design provides better sealing and cycle life
- **Sizes:** ½" - 3" (15mm - 80mm)
- **Ends:** Threaded (FNPT), Sil Braze Tube (SBT), Silver Brazed Pipe (SBP) or with stainless steel pipe nipples brazed in
- **Service:** Liquefied and vaporized atmospheric gases, LNG
- **Temperature Rating:** -320°F to +150°F (-196°C + 65°C)
- **Pressure Rating:** (Cold, Non-shock)
 - 322 Series 400 psig
 - 326 Series 600 psig
- Cleaned for Oxygen Service per CGA G-4.1.

Designed to MSS SP-80 and ASME B31.3
Series 1.5" to 3" PED Approved per EN 10204, 3.1

**Ideal for cryogenic supply and storage handling applications.
Straight-through flow for highest CV rating in the industry.**

Also available with GRAFOIL® packing



322 Series

Extended Bonnet Bronze Gate Valve for Cryogenic Service 322 and 326 Series

Ordering Information

322 Series

Bronze Gate Valves
400 psig COLD WORKING PRESSURE

Part Number	NPT Size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-000322-20T4	2½"	65 mm	Threaded	19.00	8.64	372.00
B-000322-24T4	3"	80 mm		28.00	121.73	588.00

Part Number	SBT Size Inches*	SBT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-000322-4S4	½"	15 mm	Silver Braze	1.75	0.80	19.80
B-000322-6S4	¾"	20 mm		2.25	1.02	36.00
B-000322-8S4	1"	25 mm		3.50	1.59	60.80
B-000322-12S4	1½"	40 mm		7.50	3.41	152.00
B-000322-16S4	2"	50 mm		11.25	5.11	245.00
B-000322-20S4	2½"	65 mm		17.00	7.73	372.00
B-000322-24S4	3"	80 mm		24.00	10.91	588.00

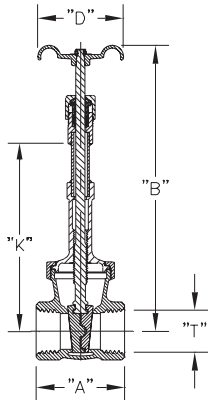
*Nominal Size

326 Series

Bronze Gate Valves
600 psig COLD WORKING PRESSURE

Part Number	NPT Size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-000326-4T6	½"	15 mm	Threaded	1.75	0.80	19.80
B-000326-6T6	¾"	20 mm		2.25	1.02	36.00
B-000326-8T6	1"	25 mm		4.00	1.82	60.80
B-000326-12T6	1½"	40 mm		8.25	3.75	152.00
B-000326-16T6	2"	50 mm		12.50	5.68	245.00

Extended Bonnet Bronze Gate Valve for Cryogenic Service 322 and 326 Series

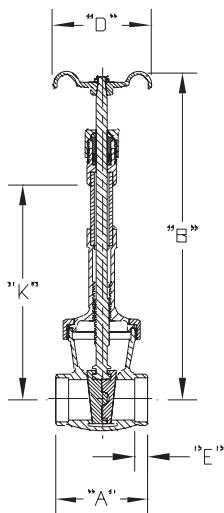


322 Series

MAWP: 400 psig Non-Shock Cold
Temperature Rating +150° F to -325°F
Dimensional Data
All dimensions are in inches

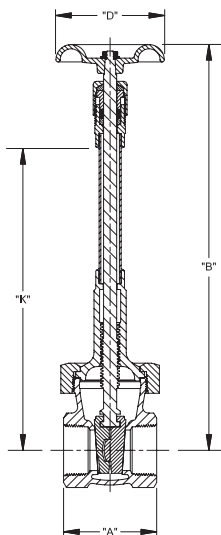
Threaded End (NPT)

Size	"A"	"B"	"D"	"K"	"T"
2½"	4.68"	22.5"	5.25"	14.5"	2½"
3"	5.12"	24.87"	6.12"	16.31"	3"



Sil Braze End

Size	"A"	"B"	"D"	"K"	"E"
½"	2.5"	9.38"	2.37"	5.5"	.38"
¾"	3"	10.56"	2.75"	6.12"	.40"
1"	3.25"	12.38"	3"	7.68"	.43"
1½"	4"	17"	4"	10.87"	.62"
2"	4.5"	19.62"	4.75"	12.38"	.65"
2½"	5.25"	22.5"	5.25"	14.5"	.78"
3"	6"	24.87"	6.12"	16.31"	.82"



326 Series

MAWP: 600 psig Non-Shock Cold
Temperature Rating +150° F to -325°F
Dimensional Data
All dimensions are in inches

Threaded End (NPT)

Size	"A"	"B"	"D"	"K"
½"	2.34"	9.37"	2¼"	5.5"
¾"	2.5"	10.56"	2¾"	6.12"
1"	2.34"	12.37"	3"	7.6"
1½"	3.43"	17"	4"	10.87"
2"	3.81"	19.62"	4¾"	12.37"

Bronze Gate Valves for Cryogenic Service

302, 306, 310 & 310X Series

Application

The RegO Goddard 302, 306, 310, & 310X Series gate valves are designed for handling of cryogenic liquids through bulk tanks, trucks, trailers, ASU plants and piping configurations. Compatible with oxygen, nitrogen, CO₂, and argon.

Features

- **Top Entry:** This union bonnet valve can be permanently installed in the line and serviced from the top
- **Construction:**
 - Bronze cast body and bonnet
 - Rugged construction for long life
 - Straight through design for high Cv
 - Designed with unique KOLD-SEAL™
- **Sizes:** ½" - 3" (15mm - 80mm)
- **Ends:** Threaded (FNPT), Sil Braze Tube (SBT), or with stainless steel pipe nipples brazed in
- **Service:** Liquefied and vaporized atmospheric gases, LNG
- **Temperature Rating:** -320°F - +150°F (-196°C +65°C)
- Cleaned for Oxygen Service per CGA G-4.1.
- **Pressure Rating:** (Cold, Non-shock)
 - 310, 310x Series 300 psig
 - 302 Series 400 psig
 - 306 Series 600 psig
- Designed to MSS SP-80 and ASME B31.3
- Sizes 1.5" - 3.0" PED approved
- **Soft Seated Series 310 & 310X:** Solid wedge with PCTFE (Neoflon®) provides a bubble tight seal and is replaceable.
- **Metal Seated Series 302 & 306:** Split wedge made of Bronze and also replaceable.

Gate design for high flow applications.
Straight-through flow for highest Cv rating in the industry.

302, 306 Non-Extended stem for selective cold gas applications

310, 310X Extended stem ideal for cryogenic supply applications



302 Series

REGO
10
YEAR
WARRANTY

Bronze Gate Valves for Cryogenic Service

302, 306, 310 & 310X Series

Ordering Information

302 Series

Bronze Gate Valves
Bronze Body Non-Extended Bonnet, Split Wedge
For selected cold gas operations
400 psig COLD WORKING PRESSURE
Temperature Rating -325°F to +150° F

Part Number	NPT Size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-000302-4T4	½"	15	Threaded	1.50	0.70	19.80
B-000302-20T4	2½"	65		17.50	8.00	372.00
B-000302-24T4	3"	80		26.00	11.80	588.00
Part Number	SBT Size Inches*	SBT Size mm*	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-000302-4S4	½"	15	Silver Braze	1.25	0.60	19.80
B-000302-6S4	¾"	20		2.25	1.00	36.00
B-000302-8S4	1"	25		3.00	1.40	60.80
B-000302-12S4	1½"	40		6.00	2.70	152.00
B-000302-16S4	2"	50		9.50	4.30	245.00
B-000302-20S4	2½"	65		14.50	6.60	372.00
B-000302-24S4	3"	80		22.00	10.00	588.00

*Nominal Size

306 Series

600 psig Bronze Body, Non-Extended Bonnet, Split Wedge
Temperature Rating -325°F to +150° F

Part Number	NPT Size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-000306-6T6	¾"	20	Threaded	2.25	1.00	36.00
B-000306-8T6	1"	25		3.00	1.40	60.80
B-000306-12T6	1½"	40		6.00	2.70	152.00
B-000306-16T6	2"	50		9.50	4.30	245.00

310 Series

300 psig Bronze Body, Extended Bonnet, Solid Wedge, Soft Seat
Temperature Rating -325°F to +150° F

Part Number	NPT Size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-000310-20T	2½"	65	Threaded	14.50	6.60	372.00
B-000310-24T	3"	80		22.00	10.00	588.00
Part Number	SBT Size Inches *	SBT Size mm *	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-000310-24S	3"	80	Silver Braze	22.00	10.00	588.00

*Nominal Size

310X Series

Short Top Works for Trailer Service
300 psig Bronze Body, Extended Bonnet, Solid Wedge, Soft Seat
Temperature Rating -325°F to +150° F

Part Number	NPT Size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-00310X-20T	2½"	65	Threaded	14.50	6.60	372.00
B-00310X-24T	3"	80		22.00	10.00	588.00
Part Number	SBT Size Inches *	SBT Size mm *	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-000310X-24S	3"	80	Silver Braze	22.00	10.00	588.00

*Nominal Size

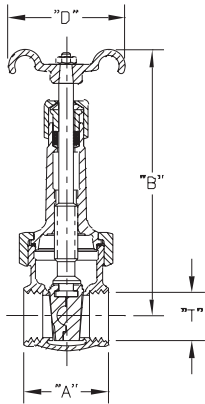
SB-00310X

Stainless Steel Body - Bronze Topworks
Temperature Rating -325°F to +150° F

Part Number	SBT Size Inches *	SBT Size mm *	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
SB-00310X-24SW	3"	80	Socketweld	22.00	10.00	588.00

Bronze Gate Valves for Cryogenic Service

302, 306 Series



302 Series

MAWP: 400 psig Non-Shock Cold Temperature Rating +150° F to -325°F

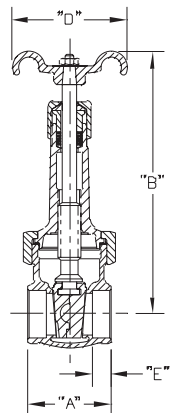
Non-Extended Valve for selective cold gas applications

Dimensional Data

All dimensions are in inches

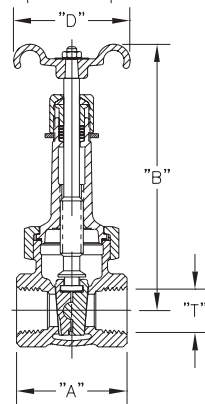
Threaded End (NPT)

Size	"A"	"B"	"D"	"T" NPT
1/2"	2.34"	5.81"	2.37"	1/2"
2 1/2"	4.68"	15.81"	5.25"	2 1/2"
3"	5.12"	18.25"	6.12"	3"



Sil Braze End

Size	"A"	"B"	"D"	"E"
1/2"	2.50"	5.81"	2.37"	.38"
3/4"	3"	6.94"	2.75"	.40"
1"	3.25"	8.43"	3"	.43"
1 1/2"	4"	11.19"	4"	.62"
2"	4.5"	13.19"	4.75"	.65"
2 1/2"	5.25"	15.81"	5.25"	.78"
3"	6"	18.25"	6.12"	.82"



306 Series

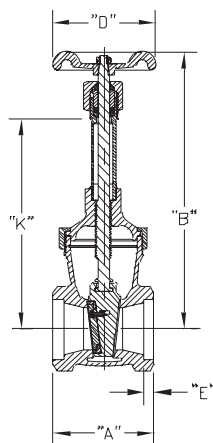
MAWP: 600 psig Non-Shock Cold-Temperature Rating +150° F to -325°F

Non-Extended Valve for selective cold gas applications

Dimensional Data

All dimensions are in inches

Size	"A"	"B"	"D"	"T" NPT
3/4"	2.5"	6.93"	2 3/4"	3/4"
1"	2.84"	8.43"	3"	1"
1 1/2"	3.43"	11.18"	4"	1 1/2"
2"	3.81"	13.81"	4 3/4"	2"

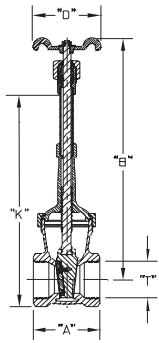


SB-00310X-24SW Sil Braze End (Stainless Steel Body)

Size	"A"	"B"	"D"	"E"	"K"
3"	6"	20.38"	6.12	0.63	12.5

Bronze Gate Valves for Cryogenic Service

310 & 310X Series

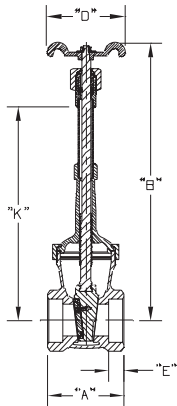


310 Series

MAWP: 300 psig Non-Shock Cold-Temperature Rating +150° F to -325°F
 Extended Valve for selective cold gas applications
 Dimensional Data
 All dimensions are in inches

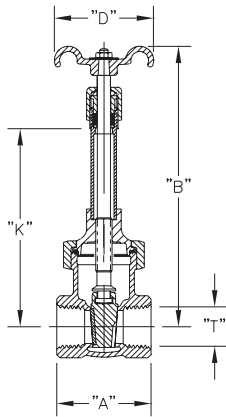
Threaded End (NPT)

Size	"A"	"B"	"D"	"K"
3"	6"	25.38"	6.12"	16.30"



Sil Bronze End

Size	"A"	"B"	"D"	"E"	"K"
2½"	6"	25.38"	6.12"	.03"	16.30"
3"					

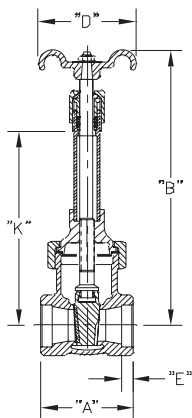


310X Series

MAWP: 300 psig Non-Shock Cold-Temperature Rating +150° F to -325°F
 Extended Valve for selective cold gas applications, Ideal for Trailer Service
 Dimensional Data
 All dimensions are in inches

Threaded End (NPT)

Size	"A"	"B"	"D"	"K"
2½"	6"	20.38"	6.12"	11.5"
3"				



Sil Bronze End

Size	"A"	"B"	"D"	"E"	"K"
3"	6"	20.38"	6.12"	0.83"	16.3"

Stainless Steel Gate Valve for Cryogenic Service

110 Series

Application

RegO Goddard gate valves are designed for handling of cryogenic liquids through bulk tanks, trucks, trailers, ASU plants and piping configurations. Compatible with oxygen, nitrogen, CO₂, argon and LNG.

Features

- **Top Entry:** This valve can be permanently installed in the line and serviced from the top
- **Soft Seated:** PCTFE Seat provides a bubble tight seal and is replaceable
- **Construction:** Body and Bonnet ASTM A351-CF8 J92600 Stainless steel
- **Sizes:** ½" - 6" (15mm - 150mm)
- **Ends:** RF Flange, Butt weld, Socket weld, Threaded (FNPT)
- **Service:** Liquefied and vaporized atmospheric gases, LNG
- WHZ valves with Grafoil® stem packing available.
- **Temperature Rating:** -320°F - 150°F (-196°C +65°C)
- 100% Factory Tested
- Clean for use in oxygen per CGA G-4.1
- PED Approved
- **Pressure Rating:** (Cold, Non-shock)
Class 150 valve - 275 psig (19 barg)
Class 300 valve - 720 psig (50 barg)



110 Series



Ordering Information Stainless Body • RF Flange Ends

150# Part Number	300# Part Number	Valve Size		Ends	Weight 150#		Weight 300#		Estimated Cv
		Inches	MM		Lbs.	Kg	Lbs.	Kg.	
GS-00110W-8F	-	1"	25 mm	Flange	15	6.80	-	-	30.00
GS-00110W-12F	GS-00110W-12F3	1½"	40 mm		35	15.88	45	20.41	85.00
GS-00110W-16F	GS-00110W-16F3	2"	50 mm		35	15.88	50	22.68	100.00
GS-00110W-24F	GS-00110W-24F3	3"	80 mm		65	29.48	85	35.56	310.00
GS-00110W-32F	GS-00110W-32F3	4"	100 mm		90	40.82	120	54.43	700.00
GS-00110W-48F	GS-00110W-48F3	6"	150 mm		150	68.04	200	90.72	850.00

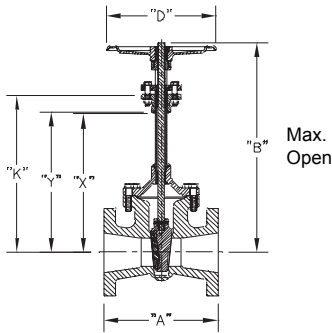
150# ANSI Class (275 psig Cold Working Pressure) 300# ANSI Class (720 psig Cold Working Pressure)

Ordering Information Stainless Body • Butt Weld, Socket Weld, Threaded Ends

150# Part Number	300# Part Number	Valve Size		Ends	Weight		Estimated Cv
		Inches	MM		Lbs.	Kg.	
GS-00110W-4WA	-	½"	15 mm	Butt Weld SCH10	10	4.54	7.00
GS-00110W-4S3	GS-00110W-4S3			Socket Weld	15	6.80	
GS-00110W-4T	-			Threaded	10	4.54	
GS-00110W-6WA	-	¾"	20 mm	Butt Weld SCH10	15	6.80	23.00
GS-00110W-6S3	GS-00110W-6S3			Socket Weld			23.00
GS-00110W-8WA	-	1"	25 mm	Butt Weld SCH10	10	4.54	30.00
GS-00110W-8S3	GS-00110W-8S3			Socket Weld	15	6.80	
GS-110W-8T	-			Threaded	10	4.54	
GS-00110W-12WA	-	1½"	40 mm	Butt Weld SCH10	30	13.61	85.00
GS-00110W-12S3	GS-00110W-12S3			Socket Weld			
GS-00110W-16W3A	GS-00110W-16W3A	2"	50 mm	Butt Weld SCH10	35	15.88	100.00
GS-00110W-16W3J	GS-00110W-16W3J			Butt Weld SCH40			
GS-00110W-16S	-			Socket Weld				30	13.61
GS-00110W-24W3A	GS-00110W-24W3A	3"	80 mm	Butt Weld SCH10	65	29.48	310.00
GS-00110W-24W3J	GS-00110W-24W3J			Butt Weld SCH40			
GS-00110W-32W3A	GS-00110W-32W3A	4"	100 mm	Butt Weld SCH10	80	40.82	700.00
GS-00110W-32W3J	GS-00110W-32W3J			Butt Weld SCH40			
GS-00110W-48WA	GS-00110W-48W3A			6"				150 mm	Butt Weld SCH10	120/150*	54.43/68.04*	850.00
GS-00110W-48W3J	GS-00110W-48W3J	Butt Weld SCH40					

150# ANSI Class (275 psig Cold Working Pressure) 300# ANSI Class (720 psig Cold Working Pressure)* Second number indicates valve for 300# part number.
Service: 300#-720 psig Non-shock Cold • Service: 150#-275 psig Non-shock Cold • Temperature Rating +150°F - 325°F • Mounting plate option available

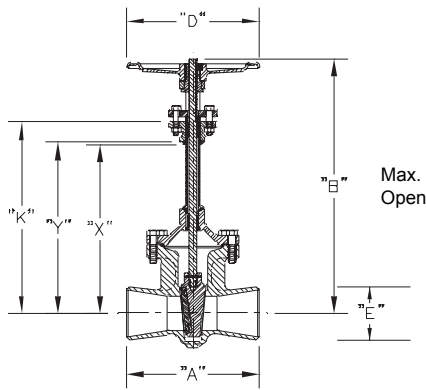
Stainless Steel Gate Valve for Cryogenic Service 110 Series



Raised Face Flange Ends*

Size	"A" 150#	"A" 300#	"B"	"D"	"K"	"X"	"Y"
1"	4 $\frac{1}{8}$ "	N/A	17 $\frac{3}{4}$ "	4 $\frac{1}{2}$ "	12 $\frac{3}{4}$ "	11 $\frac{1}{16}$ "	11 $\frac{1}{8}$ "
1 $\frac{1}{2}$ "	4 $\frac{5}{8}$ "	6 $\frac{1}{8}$ **	21 $\frac{1}{8}$ "	7"	14"	12 $\frac{5}{16}$ "	12 $\frac{5}{8}$ "
2"	7"	7 $\frac{1}{4}$ **	21 $\frac{1}{8}$ "	7"	14"	12 $\frac{5}{16}$ "	12 $\frac{5}{8}$ "
3"	8"	8 $\frac{3}{4}$ **	31 $\frac{1}{2}$ "	12"	20"	17 $\frac{3}{4}$ "	18 $\frac{1}{16}$ "
4"	9"	12"	33 $\frac{3}{4}$ "	12"	21 $\frac{1}{2}$ "	19 $\frac{1}{4}$ "	19 $\frac{9}{16}$ "
6"	10 $\frac{1}{2}$ "	15 $\frac{1}{8}$ "	41 $\frac{1}{2}$ "	16"	26"	23 $\frac{9}{16}$ "	23 $\frac{3}{8}$ "

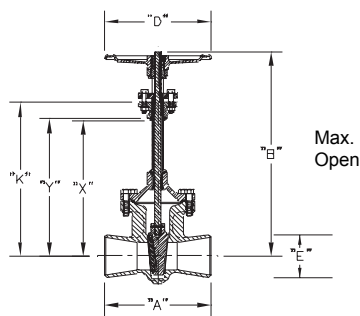
*Face-to-face dimensions (A) are Goddard standard not to ANSI standard.
 • Special B,K,X & Y Dimensions Available



Socket Weld Ends

Size	"A" 150#	"A" 300#	"B"	"D"	"E"	"F"	"K"	"X"	"Y"
1/2"	3 $\frac{3}{4}$ "	3 $\frac{3}{4}$ "	17 $\frac{3}{4}$ "	4 $\frac{1}{2}$ "	.855	3/8"	12 $\frac{3}{4}$ "	11 $\frac{1}{16}$ "	11 $\frac{1}{8}$ "
3/4"					1.065	1/2"			
1"	3 $\frac{1}{2}$ "	4"	21 $\frac{1}{8}$ "	7"	1.330		14"	12 $\frac{5}{16}$ "	12 $\frac{5}{8}$ "
1 $\frac{1}{2}$ "	4 $\frac{5}{8}$ "	5"			1.915				
2"	8 $\frac{1}{2}$ "	N/A	41 $\frac{1}{2}$ "	16"	2.406	5/8"	23 $\frac{9}{16}$ "	23 $\frac{3}{8}$ "	

• Special B,K,X & Y Dimensions Available



Butt Weld Ends

Size	"A" 150#	"A" 300#	"B"	"D"	"K"	"X"	"Y"
1/2"	4 $\frac{1}{4}$ "	N/A	17 $\frac{3}{4}$ "	4 $\frac{1}{2}$ "	12 $\frac{3}{4}$ "	11 $\frac{1}{16}$ "	11 $\frac{1}{8}$ "
3/4"	4 $\frac{5}{8}$ "	N/A	17 $\frac{3}{4}$ "	4 $\frac{1}{2}$ "	12 $\frac{3}{4}$ "	11 $\frac{1}{16}$ "	11 $\frac{1}{8}$ "
1"	5"	N/A	17 $\frac{3}{4}$ "	4 $\frac{1}{2}$ "	12 $\frac{3}{4}$ "	11 $\frac{1}{16}$ "	11 $\frac{1}{8}$ "
1 $\frac{1}{2}$ "	6"	6"	21 $\frac{1}{8}$ "	7"	14"	12 $\frac{5}{16}$ "	12 $\frac{5}{8}$ "
2"	8 $\frac{1}{2}$ "	8 $\frac{1}{2}$ "	21 $\frac{1}{8}$ "	7"	14"	12 $\frac{5}{16}$ "	12 $\frac{5}{8}$ "
3"	11 $\frac{1}{8}$ "	11 $\frac{1}{8}$ "	31 $\frac{1}{2}$ "	12"	20"	17 $\frac{3}{4}$ "	18 $\frac{1}{16}$ "
4"	12"	12"	33 $\frac{3}{4}$ "	12"	21 $\frac{1}{2}$ "	19 $\frac{1}{4}$ "	19 $\frac{9}{16}$ "
6"	15 $\frac{1}{8}$ "	15 $\frac{1}{8}$ "	41 $\frac{1}{2}$ "	16"	26"	23 $\frac{9}{16}$ "	23 $\frac{3}{8}$ "

• Special B,K,X & Y Dimensions Available
 • Unless otherwise specified, Schedule 10 weld ends are supplied

Stainless Steel Gate Valve for Cryogenic Service 110WHZ Series

Application

RegO Goddard gate valves are designed for handling of cryogenic liquids through bulk tanks, trucks, trailers, ASU plants and piping configurations. Compatible with oxygen, nitrogen, CO₂, argon and LNG.

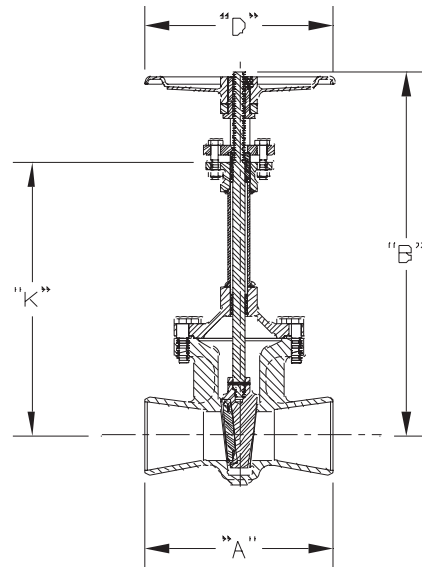
Features

- **Top Entry:** This valve can be permanently installed in the line and serviced from the top
- **Soft Seated:** PCTFE Seat provides a bubble tight seal and is replaceable
- **Construction:** Stainless steel body and bonnet
- **Sizes:** ½" - 6" (15mm - 150mm)
- **Ends:** RF Flange, Butt weld, Socket weld, Threaded (FNPT)
- **Service:** Liquefied and vaporized atmospheric gases, LNG
- Grafoil® stem packing.
- **Temperature Rating:** -320°F - 150°F (-196°C +65°C)
- 100% Factory Tested
- Clean for use in oxygen per CGA G-4.1
- Grafoil® Stem Packing
- **Pressure Rating:** (Cold, Non-shock)
Class 150 valve - 275 psig (19 barg)
Class 300 valve - 720 psig (50 barg)

½" - 6" Class 150
PED Approved
½" - 6" Class 300
PED Approved

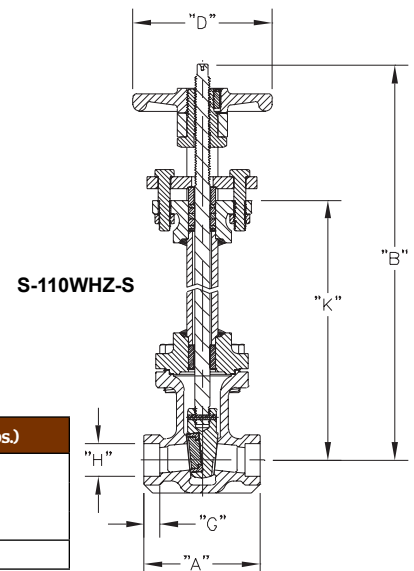


S-110WHZ-W



Ordering Information

Part Number	Ends	Size	"A"	"B"	"D"	"K"	Estimated Cv	Weight (Lbs.)
GS-110WHZ-16W3A	S10	2"	8.50	21.88	7	14	100	35
GS-110WHZ-16W3J	S40							
GS-110WHZ-24W3A	S10	3"	11.12	31.5	12	20	310	65
GS-110WHZ-24W3J	S40							
GS-110WHZ-32W3A	S10	4"	12	33.75	12	21.5	700	80
GS-110WHZ-32W3J	S40							
GS-110WHZ-48W3A	S10	6"	15.88	41.5	16	26	850	150
GS-110WHZ-48W3J	S40							



Ordering Information

Part Number	Size	"A"	"B"	"D"	"G"	"H"	"K"	Estimated Cv	Weight (Lbs.)
GS-110WHZ-4S3	½"	3.75	17.75	4.5	.38	.86	12.8	7	15
GS-110WHZ-6S3	¾"				1.07	30			
GS-110WHZ-8S3	1"				1.33				
GS-110WHZ-12S3	1½"	5	21.88	7	1.92	14	85	35	

Stainless Steel Gate Valve for Cryogenic Service

LOX Series

Application

RegO LOX Series gate valves are designed for handling of cryogenic liquids through bulk tanks, trucks, trailers, ASU plants and piping configurations. Compatible with oxygen, nitrogen, CO2, argon and LNG. Specifically designed for liquid oxygen (LOX) service.

Features

- **Top Entry:** This valve can be permanently installed in the line and serviced from the top
- **Soft Seated:** PCTFE Seat provides a bubble tight seal and is replaceable
- **Construction:** Body and Bonnet ASTM A351-CF8 J92600 Stainless steel
- **Sizes:** ½" - 6" (15mm - 150mm)
- **Ends:** RF Flange, Butt weld, Socket weld, Threaded (FNPT)
- **Service:** Liquefied and vaporized atmospheric gases, LNG
- WHZ valves with Grafoil® stem packing available.
- **Temperature Rating:** -320°F - 150°F (-196°C +65°C)
- 100% Factory Tested
- Clean for use in oxygen per CGA G-4.1
- **Pressure Rating:** (Cold, Non-shock)
Class 150 valve - 275 psig (19 barg)
Class 300 valve - 720 psig (50 barg)



LOX Series

Ordering Information

Stainless Body • Butt Weld, Socket Weld, Threaded Ends

150# Part Number	300# Part Number	Valve Size		Ends	Weight		Estimated Cv
		Inches	MM		Lbs.	Kg.	
LOX00110W-4S3	LOX00110W-4S3	½"	15 mm	Socket Weld	15	6.80	7.00
LOX00110W-6S3	LOX00110W-6S3	¾"	20 mm	Socket Weld	15	6.80	23.00
LOX00110W-8S3	LOX00110W-8S3	1"	25 mm	Socket Weld	15	6.80	30.00
LOX00110W-12S3	LOX00110W-12S3	1½"	40 mm	Socket Weld	35	15.88	85.00
LOX00110W-16W3A	LOX00110W-16W3A	2"	50 mm	Butt Weld SCH10			100.00
LOX00110W-24W3A	LOX00110W-24W3A	3"	80 mm	Butt Weld SCH10	65	29.48	310.00
LOX00110W-24W3J	LOX00110W-24W3J			Butt Weld SCH40			
LOX00110W-32W3A	LOX00110W-32W3A	4"	100 mm	Butt Weld SCH10	80	40.82	700.00
LOX00110W-32W3J	LOX00110W-32W3J			Butt Weld SCH40			
LOX00110W-48W3A	LOX00110W-48W3A	6"	150 mm	Butt Weld SCH10	120/150*	54.43/68.04*	850.00
LOX00110W-48W3J	LOX00110W-48W3J			Butt Weld SCH40			

150# ANSI Class (275 psig Cold Working Pressure) 300# ANSI Class (720 psig Cold Working Pressure)* Second number indicates valve for 300# part number.
Service: 300#-720 psig Non-shock Cold • Service: 150#-275 psig Non-shock Cold • Temperature Rating +150°F - 325°F • Mounting plate option available
Custom sizes and connections available.

Horizontal Lift Check Valves 8500 Series

Application

8500 series valves are designed for use as a check valve on cryogenic bulk stations and pipelines.

Features

- Replaceable Kel-F seat discs.
- Self-centering cap holds plunger in position.
- Each valve is cleaned and packaged for liquid oxygen service per CGA G-4.1.
- 100% Factory Tested
- Working temperature range is -320°F to +165°F (-196°C to +74°C).
- Maximum working pressure is 600 psig CWP (41.3 barg).
- 2 psig opening pressure.

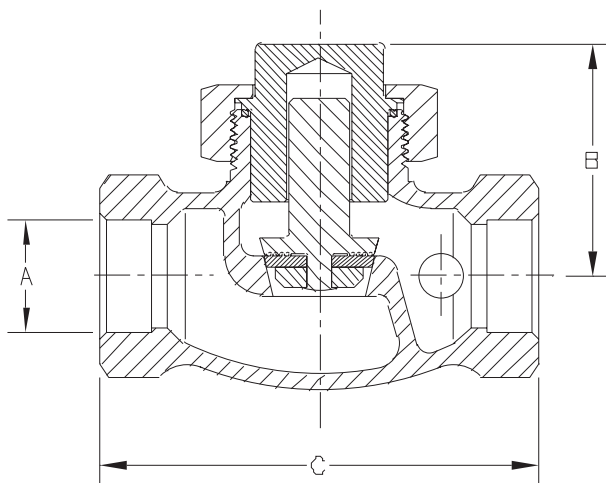
Materials

Body	Bronze
Cap	Brass
Plunger	Brass
Seat	PCTFE

REGO
10
YEAR
WARRANTY



BK8508S



BK8512S

Ordering Information

Part Number	Inlet / Outlet Connection A	B	Length C	Cv Factor
BK8508S	1.128"-1.130"	2¼"	4 ¹⁵ / ₁₆ "	10
BK8508T	1" F.NPT			
BK8512S	1.629"-1.631"	3¼"	5 ³ / ₁₆ "	27
BK8512T	1½" F.NPT			

Bronze Swing Check Valve for Cryogenic Service Including 846M Goddard 840 Series

Application

The RegO Goddard 846M and 840 series check valve is designed for handling of cryogenic liquids through bulk tanks, trucks, trailers, ISO-containers and piping configurations. Compatible with oxygen, nitrogen, CO₂, argon and LNG.



Features

- **Top Entry:** This swing check valve can be permanently installed in the line and serviced from the top
- **Construction:** Designed to prevent back flow in cryogenic systems. Higher fluid capacity (CV) than poppet or lift check valves. Bronze body and internals. Rugged construction for long life and minimal down time
- **Sizes:** ½" through 2" (15mm through 50mm)
- **Ends:** Threaded (FNPT), or with Sil Brazed Tube (SBT)
SCH-10, Threaded back brazed pipe nipples in 1" increments up to 6"
SCH-40, Threaded back brazed pipe nipples in 1" increments up to 6"
SCH-80, Threaded back brazed pipe nipples in 1" increments up to 6"
- **Temperature Rating:** -320°F to +150°F (-196°C to +65°C)
- Cleaned for Oxygen Service per CGA G-4.1.
- **Pressure Rating:** (Cold, Non-shock)
840 Series 400 psig (27.6 barg)
846M Series 600 psig (41.4 barg)
Sizes 1½" to 2" PED Approved

Note: Do not use for reciprocating gas service.

- **Cracking Pressure:** 0.5 psig (.03 barg)



840 Series

Ordering Information

840

Bronze Swing Check Valves - Soft Seated, Threaded, Sil Brazed Ends, Threaded and Back Brazed Pipe Nipples
400 psig Cold Working Pressure

Threaded Ends

Part Number	NPT Size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-000840-4T	½"	15 mm	Threaded	2.00 Lbs.	0.91 Kgs.	4.50
B-000840-6T	¾"	20 mm		4.00 Lbs.	1.81 Kgs.	7.00
B-000840-8T	1"	25 mm		4.50 Lbs.	2.04 Kgs.	10.00
B-000840-12T	1½"	40 mm		8.50 Lbs.	3.86 Kgs.	40.00
B-000840-16T	2"	50 mm		14.50 Lbs.	6.58 Kgs	100.00

Silver Brazed - Pipe Nipple

Part Number	SBT Size Inches*	SBT Size mm*	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-000840-4S	½"	15 mm	Silver Braze	2.50 Lbs.	1.13 Kgs.	4.50
B-000840-6S	¾"	20 mm		4.5 Lbs.	2.05 Kgs.	7.00
B-000840-8S	1"	25 mm		5.25 Lbs.	2.38 Kgs.	10.00
B-000840-12S	1½"	40 mm		10.75 Lbs.	4.88 Kgs.	40.00
B-000840-16S	2"	50 mm		17.50 Lbs.	7.94 Kgs.	100.00

* Nominal Size

846M

Bronze Swing Check Valves - Metal Seated, Threaded, Sil Brazed Ends, Threaded and Back Brazed Pipe Nipples
600 psig Cold Working Pressure

Threaded Ends

Part Number	NPT Size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv
B-00846M-4T6	½"	15 mm	Threaded	2.00 Lbs.	0.91 Kgs.	4.50
B-00846M-8T6	1"	25 mm		4.50 Lbs.	2.04 Kgs.	10.00
B-00846M-12T6	1½"	40 mm		8.50 Lbs.	3.86 Kgs.	40.00
B-00846M-16T6	2"	50 mm		14.50 Lbs.	6.58 Kgs	100.00

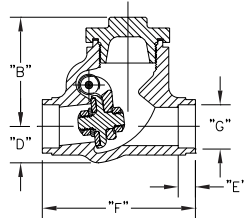
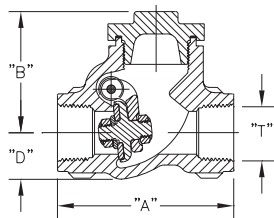
Bronze Swing Check Valve for Cryogenic Service Including 846M 840 Series

Silver Brazed - Pipe Nipple

Part Number	SBT Size Inches*	SBT Size mm*	Ends	Weight Lbs.	Weight Kgs.	Estimated CV
B-000846M-4S6	1/2"	15 mm	Silver Braze	2.50 Lbs.	1.13 Kgs.	4.50
B-000846M-6S6	3/4"	20 mm		4.50 Lbs.	2.04 Kgs.	7.00
B-000846M-8S6	1"	25 mm		5.25 Lbs.	2.38 Kgs.	10.00
B-000846M-12S6	1 1/2"	40 mm		10.75 Lbs.	4.88 Kgs.	40.00
B-000846M-16S6	2"	50 mm		17.50 Lbs.	7.94 Kgs.	100.00

* Nominal Size

- Contact company for threaded, back brazed pipe nipple information



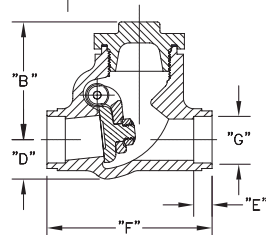
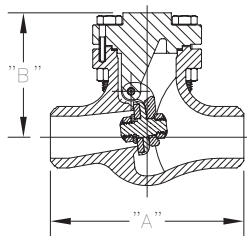
840 Series

Pressure Rating MSS SP-80 Class 200
MAWP 400 psig Non-Shock Cold
Temperature Rating +150°F to -325°F

Dimensional data

All Dimensional Data are in inches.

Size	"A"	"B"	"D"	"T" NPT	"E"	"F"	"G"
1/2"	3.00"	2.13"	3/4"	1/2"	.38"	2.94"	.63"
3/4"	3.69"	2.81"	1.12"	3/4"	.41"	3.60"	.88"
1"	4.00"	2.81"	1.13"	1"	.45"	4.00"	1.13"
1 1/2"	5.03"	3.63"	1.44"	1 1/2"	.63"	5.03"	1.63"
2"	6.35"	4.34"	1.84"	2"	.66"	6.35"	2.13"



846M Series

Pressure Rating MSS SP-80 Class 300
MAWP 600 psig Non-Shock Cold
Temperature Rating +150°F to -325°F

Dimensional data

All Dimensional Data are in inches.

Size	"A"	"B"	"D"	"T" NPT	"E"	"F"	"G"
1/2"	3.00"	2.13"	3/4"	1/2"	.38"	2.94"	.63"
3/4"	3.69"	2.81"	1 1/8"	3/4"	.41"	3.60"	.88"
1"	4.00"	2.81"	1 1/8"	1"	.45"	4.00"	1.13"
1 1/2"	5.03"	3.63"	1 7/16"	1 1/2"	.63"	5.03"	1.63"
2"	6.35"	4.34"	1 27/32"	2"	.66"	6.35"	2.13"

Stainless Steel Swing Check Valve for Cryogenic Service

886 Series

Application

The RegO Goddard 886 Series check valve is designed for handling of cryogenic liquids through bulk tanks, trucks, trailers, ISO-containers and piping configurations. Compatible with oxygen, nitrogen, CO2 argon and LNG.



Features

- **Top Entry:** This bolted bonnet valve can be permanently installed in the line and services from the top
- **Construction:** Designed to prevent back flow in cryogenic systems. Higher fluid capacity (C_v) than poppet or lift check valves. 316L stainless steel investment cast body, cap and arm
- **Sizes:** ½" through 4" (15mm through 100mm)
- **Ends:** Socket weld and butt weld schedule 10 and 40
- **Temperature Rating:** -320°F to 150°F (-196°C to +66°C)
- Cleaned for Oxygen Service per CGA G-4.1.
- **Pressure Rating:** (Cold, Non-shock)
400 psig (27 barg) ½" - 2"
275 psig (19 barg) 150# ANSI Class 3" and 4"
720 psig (50 barg) 300# ANSI Class 3" and 4"
PED Approved
- **Note: Do not use for reciprocating gas service.**
- **Our investment cast stainless steel is specified by leading industrial gas companies for storage tank and yard operations.**
- **Ideal for liquid atmospheric gases and LNG storage and handling.**
- **High cycle life and superior sealing.**
- **Valves for hydrogen service can be supplied. (-425°F to +350°F)**
- **Cracking Pressure:** 0.5 psig (0.03) barg



886 Series

Ordering Information

886

Stainless Steel Swing Check Valves
Soft Seat

GRAFOIL® Gasket - Hydrogen Service - Socket Weld

Part Number	Valve Size		End Connection	Seat	Pressure Rating	Estimated C _v	Weight Lbs.
	Inches	mm					
S-0886GF-4S	½"	15 mm	Socket Weld	Soft	400 (27.5 barg)	4.50	3 Lbs.
S-0886GF-8S	1"	25 mm				61.00	11 Lbs.
S-0886GF-12S	1½"	40 mm				99.00	17 Lbs.

PTFE Gasket - Socket Weld

Part Number	Valve Size		End Connection	Seat	Pressure Rating	Estimated C _v	Weight Lbs.
	Inches	mm					
S-000886-4S	½"	15 mm	Socket Weld	Soft	400 (27.5 barg)	4.50	3 Lbs.
S-000886-8S	1"	25 mm				61.00	11 Lbs.
S-000886-12S	1½"	40 mm				99.00	17 Lbs.

Stainless Steel Swing Check Valve for Cryogenic Service

886 Series

PTFE Gasket - Butt Weld

Part Number	Valve Size		End Connection	Seat	Butt Weld Schedule	Pressure Rating	Estimated Cv	Weight Lbs.		
	Inches	mm								
S-000886-4WA	½"	15 mm	Butt Weld	Soft	10	400 (27.5 barg)	4.50	3 Lbs.		
S-000886-8WA	1"	25 mm					18.00	11 Lbs.		
S-000886-12WA	1½"	40 mm					61.00	17 Lbs.		
S-000886-16W3A	2"	50 mm					99.00	17 Lbs.		
S-000886-24WA	3"	80 mm			40	275 (19 barg)	255.00	47 Lbs.		
S-000886-24WJ	3"	80 mm					225.00	46 Lbs.		
S-000886-32W3J	4"	100 mm					10	720 (50 barg)	475.00	95 Lbs.
S-000886-32WA	4"	100 mm							275 (19 barg)	475.00	95 Lbs.

886M

Stainless Steel Swing Check Valves - Metal Seat

PTFE Gasket - Socket Weld

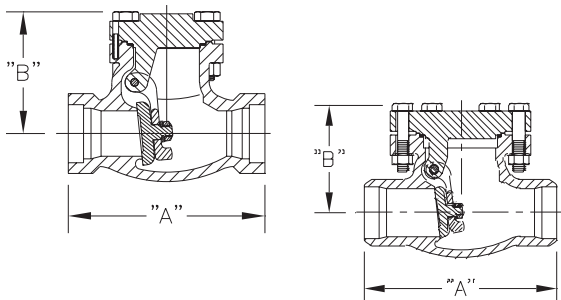
Part Number	Valve Size		End Connection	Seat	Pressure Rating	Estimated Cv	Weight Lbs.
	Inches	mm					
S-00886M-4S3	½"	15 mm	Socket Weld	Metal	720 (50 barg)	4.50	3 Lbs.
S-00886M-8S3	1"	25 mm				18.00	11 Lbs.
S-00886M-12S3	1½"	40 mm				61.00	17 Lbs.

Butt Weld Ends

Part Number	Valve Size		End Connection	Seat	Butt Weld Schedule	Pressure Rating	Estimated Cv	Weight Lbs.
	Inches	mm						
S-00886M-16W3A	2"	50 mm	Butt Weld	Metal	10	720 (50 barg)	99.00	17 Lbs.
S-00886M-24W3J	3"	80 mm			40		225.00	46 Lbs.
S-00886M-24W3A	3"				225.00			
S-00886M-32WA	4"	100 mm			10	275 (19 barg)	475.00	95 Lbs.
S-00886M-32W3J	4"				40	720 (50 barg)	475.00	

Butt Weld Ends with GRAFOIL® Gasket for Hydrogen Service

Part Number	Valve Size		End Connection	Seat	Butt Weld Schedule	Pressure Rating	Estimated Cv	Weight Lbs.
	Inches	mm						
S-886MGF-16W3A	2"	50 mm	Butt Weld	Metal	10	720 (50 barg)	99.00	17 Lbs.
S-886MGF-24W3A	3"	80 mm					225.00	46 Lbs.



886

Pressure Rating 300 psig Non-Shock Cold, Temperature Rating +150° F to - 325° F
All Dimensional Data are in inches.

Size	"A"	"B"
½"	4¼"	2½"
¾"	5"	3¼"
1"		
1½"	6½"	4"
2"	8"	4½"

886M

Service 300 Class 720 psig Non-Shock Cold, Temperature Rating +150° F to - 325° F
All Dimensional Data are in inches.

Size	"A"	"B"	Butt Weld End Schedule
1½"	6½"	4"	10
2"	8"	4½"	
3"	9½"	5¾"	10 & 40
4"	11½"	8⅝"	10
4"	14"	8⅝"	40

Size	"A"	"B"	End	End Dimension
½"	27/16"	4¼"	Socket Weld	SCH 10
				½" Pipe Socket

Inline Check Valves

CG Series Gas and Cryogenic Check Valves

Application

Inline check valves with metal seat option for cryogenic service or with soft seat option for leak free operation in gas service.

Features

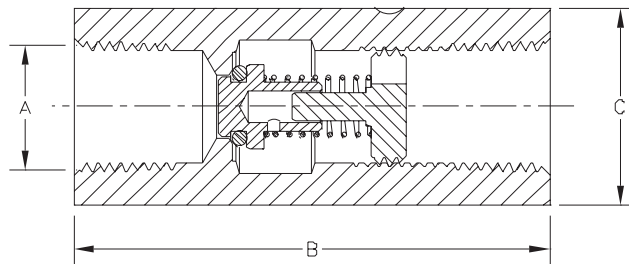
- One directional flow indicated by arrow on body.
- Large Cv for high flow capability and low pressure drop.
- Working temperature range:
-320° F to +165° F for metal seats.
-20° F to +165° F for soft seats.
- 1 psig opening pressure.
- Cleaned for use in oxygen service per CGA G-4.1

Materials

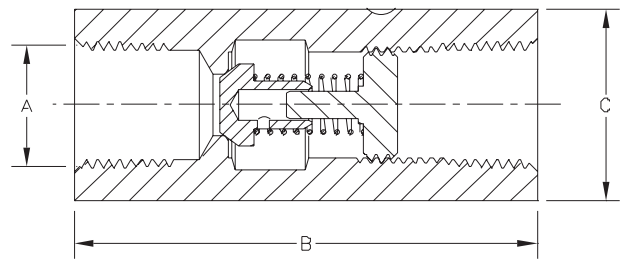
Body (B and BL suffix)	ASTM B16 Brass
Body (SS and SSL suffix)	203 Stainless Steel
Spring	Stainless Steel
Piston	Stainless Steel
O-Ring (soft seat option units only)	Viton
Metal Seat	303 Stainless Steel



CG Series



Soft Seat Option



Metal Seat Option

Ordering Information

Part Number	Seating Option	Inlet/Outlet Connections FNPT A	Length B	Wrenching Hex Size C	Cv	Maximum Operating Pressure
Stainless Steel Check Valves						
CG250SS	Metal	1/4"	2 3/8"	13/16"	.87	5000 psig (345 barg)
CG375SS		3/8"	2 1/2"	1"	2.3	
CG500SS		1/2"	3"	1 1/8"	3.5	
CG750SS		3/4"	3 5/8"	1 1/2"	5.2	
CG250SSL	Soft	1/4"	2 3/8"	13/16"	.87	250 psig (17.2 barg)
CG375SSL		3/8"	2 1/2"	1"	2.3	
CG500SSL		1/2"	3"	1 1/8"	3.5	2000 psig (138 barg)
CG750SSL		3/4"	3 5/8"	1 1/2"	5.2	
Brass Body Check Valves						
CG250B	Metal	1/4"	2 3/8"	13/16"	.87	3000 psig (207 barg)
CG375B		3/8"	2 1/2"	1"	2.3	
CG500B		1/2"	3"	1 1/8"	3.5	
CG750B		3/4"	3 5/8"	1 1/2"	5.2	
CG250BL	Soft	1/4"	2 3/8"	13/16"	.87	250 psig (17.2 barg)
CG375BL		3/8"	2 1/2"	1"	2.3	
CG500BL		1/2"	3"	1 1/8"	3.5	2000 psig (138 barg)
CG750BL		3/4"	3 5/8"	1 1/2"	5.2	

3" Flanged Internal Valves for CO₂, Transport and Large Stationary Storage Containers TA3217AR & TA3217DAR

Application

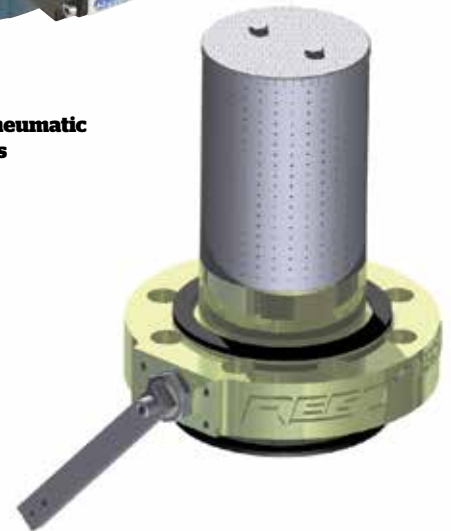
Designed primarily for CO₂ filling and/or withdrawal on delivery trucks, transports and stationary storage tanks with flanged pumps or piping. Installation is quick and easy, and the valve may be operated manually by cable or pneumatically.

Lever available on right or left side to allow for installation without the use of an extra pulley.

REGO
10
YEAR
WARRANTY



TA3217RA and Pneumatic Actuators



Ordering Information

Part Number	Operating Lever Position	Inlet Connection	Outlet Connection	Accessories	
				Pneumatic Actuator	
				Right Operation	Left Operation
Single Flange					
TA3217AD160	Left or Right	3" 300# ANSI RF Modified Flange*	3" 300# ANSI RF Flange	A3217RA	A3217LA
TA3217AD210					
TA3217AD260					
TA3217AD410					
TA3217AD510					
Double Flange					
TA3217DAD160	Left or Right	3" 300# ANSI RF Modified Flange*	3" 300# ANSI RF Flange	A3217RA	A3217LA
TA3217DAD210					
TA3217DAD260					
TA3217DAD410					
TA3217DAD510					

Heavy Duty Gas Line Regulator

1780 Series

Application

The 1780 Series Regulators are designed for final line pressure regulation on gas distribution systems. They are suitable for a variety of gases in medical or industrial applications. The 1780 Series Regulators have a balanced seat, are constructed with oxygen compatible materials, and have the same valve design, brass body, and internal parts as the premium BR-1780 Series. Flow performance is equal to the BR-1780 Series.

Features

- Maintains a steady downstream pressure across a range of inlet pressures commonly provided by a cryogenic bulk tank.
- Large seat and diaphragm areas provide high capacity with sensitive control of delivery pressure with low falloff.
- Two 1/4" FNPT delivery pressure gauge ports are located (plugged) on each side of the valve.
- Two bonnet drain/vent holes to allow for different mounting orientation.
- T-handle adjusting screw.
- Maximum inlet pressure is 500 psig (34.5 barg).
- Available in four delivery pressure ranges (A-D).
- Temperature range: -40° F to +165° F. (-40°C to +74°C)
- Cleaned per CGA G-4.1 for oxygen service.
- 100% Factory Tested

Materials

Body Forged Brass
 Bonnet Nickel Plated Aluminum
 Diaphragm Nitrile with PTFE liner
 Springs and Fasteners Stainless Steel
 Other valve parts Brass
 Seat Disc & O-Rings Viton is standard

For Carbon Dioxide or Nitrous Oxide service: Specify EPDM material for seat disc and O-rings, add "E" to end of part number.

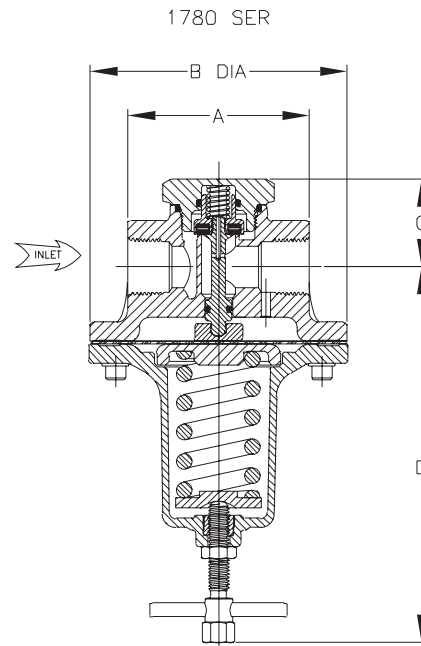
Ordering Information

Part Number	Delivery Pressure Range	Pressure Gauge*		Inlet & Outlet (F.N.P.T.)	Dimensions				Cv
		Range (psig)	P/N		"A"	"B"	"C"	"D"	
1784A	5-55 psig (0.3-3.8 barg)	1-100	1286	1/2"	2.82"	3.62"	1.38"	5.47"	3.1
1784B	40-110 psig (2.8-7.6 barg)	1-200	S1679						
1784C	100-200 psig (6.9-13.8 barg)	1-400	15578						
1784D	175-300 psig (12.1-20.7 barg)								
1786A	5-55 psig (0.3-3.8 barg)	1-100	1286	3/4"	3.31"	4.69"	1.60"	6.84"	4.8
1786B	40-110 psig (2.8-7.6 barg)	1-200	S1679						
1786C	100-200 psig (6.9-13.8 barg)	1-400	15578						
1786D	175-275 psig (12.1-19.0 barg)								
1788A	5-55 psig (0.3-3.8 barg)	1-100	1286	1"	3.31"	4.69"	1.60"	6.84"	5.5
1788B	40-110 psig (2.8-7.6 barg)	1-200	S1679						
1788C	100-200 psig (6.9-13.8 barg)	1-400	15578						
1788D	175-275 psig (12.1-19.0 barg)								

*Regulator sold without gauge. Order gauge separately.



1780 Series



Heavy Duty Brass Final Line Pressure Regulator BR-1780 Series

Application

BR-1780 Series Regulators are designed for final line pressure regulation on medical oxygen systems. They are equally suitable for a variety of gases in medical or industrial applications. The BR-1780 Series Regulators have a balanced seat, are constructed with oxygen compatible materials, and offer a tamper resistant adjustment screw cap. Flow performance is impressive as well offering up to 30,000 SCFH for the ¾" and 1" model and up to 20,000 SCFH for the ½" model.

Features

- Maintains a steady downstream pressure across a range of inlet pressures commonly provided by a cryogenic bulk tank.
- Large seat and diaphragm areas provide high capacity with sensitive control of delivery pressure with low falloff.
- Two ¼" FNPT plugged delivery pressure gauge ports are located on each side of the valve.
- Two bonnet drain/vent holes to allow for various mounting orientations.
- Bonnet cap covering adjusting screw for tamper protection.
- Maximum inlet pressure is 500 psig (34.5 barg).
- Available in four delivery pressure ranges. (A-D)
- Temperature range: -40° F to +165° F. (-40°C to +74°C)
- Cleaned per CGA G-4.1 for oxygen service.
- 100% Factory Tested

Materials

Body Forged Brass
 Bonnet Forged brass
 Diaphragm Nitrile with PTFE liner
 Springs, fasteners, and adjusting screw Stainless Steel
 Other valve parts Brass
 Seat Disc & O-Rings Viton is standard

For Carbon Dioxide and Nitrous Oxide Service: Specify EPDM material for seat disc and O-Rings, add "E" to end of part number.

Ordering Information

Part Number	Delivery Pressure Range	Pressure Gauge*		Inlet & Outlet (F.N.P.T.)	Dimensions				Cv
		Range (psig)	P/N		"A"	"B"	"C"	"D"	
BR-1784A	5-55 psig (0.3-3.8 barg)	1-100	1286	½"	2.82"	3.62"	1.38"	5.21"	3.1
BR-1784B	40-110 psig (2.8-7.6 barg)	1-200	S1679						
BR-1784C	100-200 psig (6.9-13.8 barg)	1-400	15578						
BR-1784D	175-300 psig (12.1-20.7 barg)			¾"	3.31"	4.69"	1.60"	6.46"	4.8
BR-1786A	5-55 psig (0.3-3.8 barg)	1-100	1286						
BR-1786B	40-110 psig (2.8-7.6 barg)	1-200	S1679						
BR-1786C	100-200 psig (6.9-13.8 barg)	1-400	15578						
BR-1786D	175-275 psig (12.1-19.0 barg)			1"	3.31"	4.69"	1.60"	6.46"	5.5
BR-1788A	5-55 psig (0.3-3.8 barg)	1-100	1286						
BR-1788B	40-110 psig (2.8-7.6 barg)	1-200	S1679						
BR-1788C	100-200 psig (6.9-13.8 barg)	1-400	15578						
BR-1788D	175-275 psig (12.1-19.0 barg)								

*Regulator sold without gauge. Order gauge separately.



BR-1784



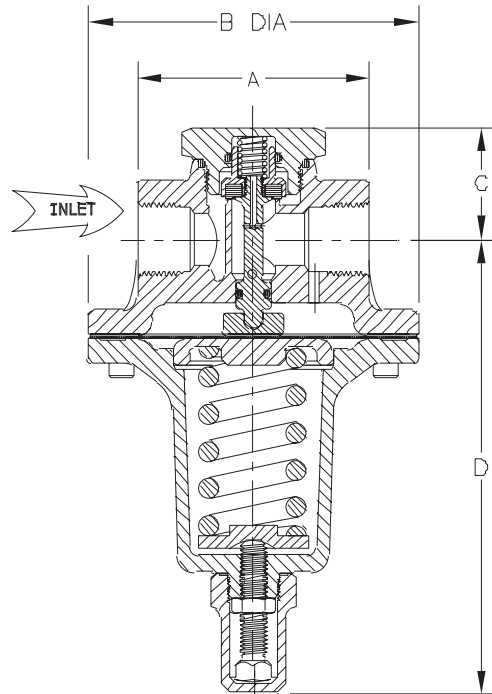
BR1786 and BR1788

Heavy Duty Brass Final Line Pressure Regulator BR-1780 Series

Flow Performance

See the Rego Flow Performance Curves section of the catalog for more detailed flow curves.

For Carbon Dioxide or Nitrous Oxide Service, add "E" to end of part number.



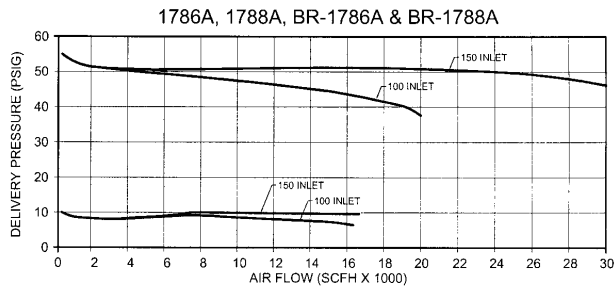
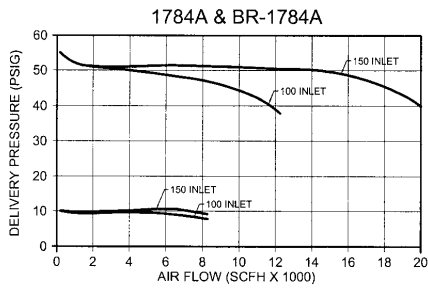
Maintenance and Options Kits

Regulator Models	BR1784	BR1786	BR1788
Repair Kit Part Number	BR-1784-80	BR-1786-80	BR-1786-80
Spring Kit Part Numbers:			
"A" spring 5 -55 psig	BR-1784-7SKA	BR-1786-7SKA	BR-1788-7SKA
"B" spring 40-110 psig	BR-1784-7SKB	BR-1786-7SKB	BR-1788-7SKB
"C" spring 100-200 psig	BR-1784-7SKC	BR-1786-7SKC	BR-1788-7SKC
"D" spring 175-275 psig (300 psig for 1784)	BR1784-7SKD	BR-1786-7SKD	BR-1788-7SKD
T-Handle Screw Option Kit	BR-1784ST	BR-1786ST	BR-1786ST

Heavy Duty Line Regulators Performance Curves

1780 Series & BR-1780 Series

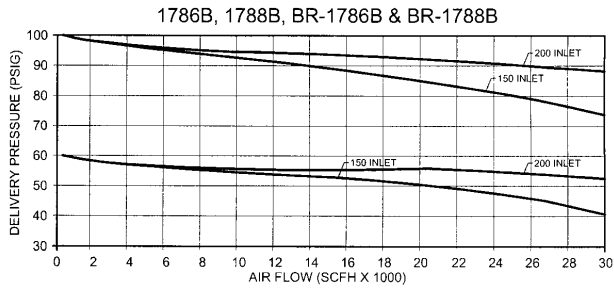
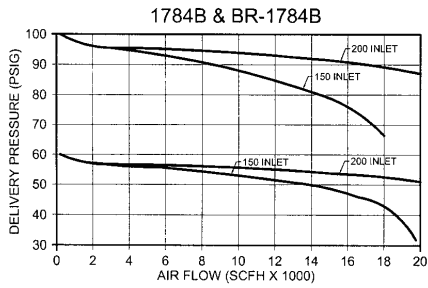
"A" spring range 5 - 55 psig



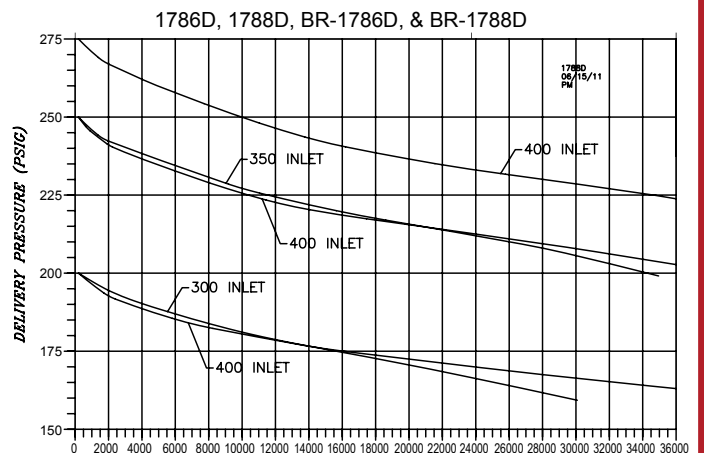
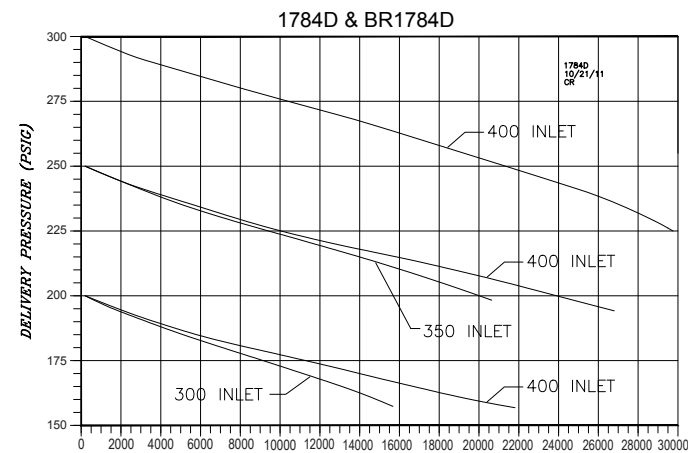
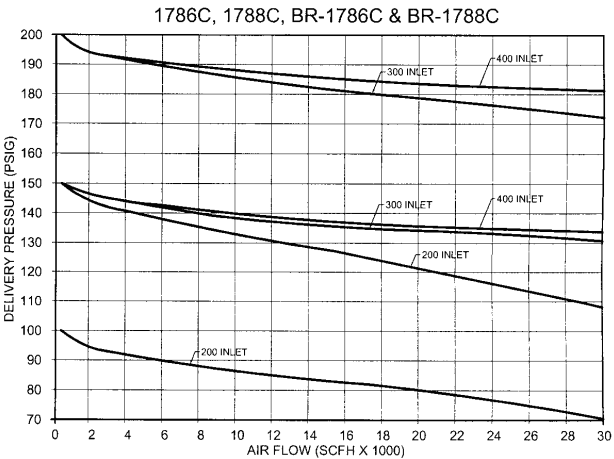
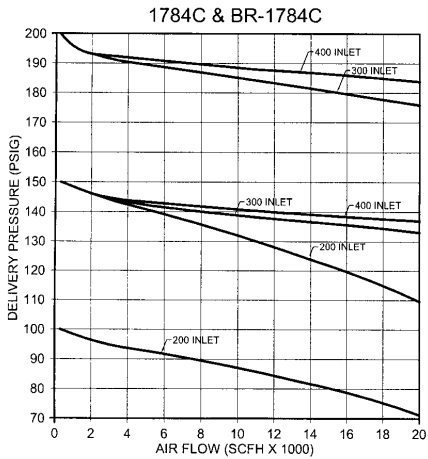
Gas Conversion Table

Service	Multiply Air Capacity By:
Fuel Gases	0.86
Helium	2.69
Hydrogen	3.79
Nitrogen	1.02
Natural Gas	1.25
Acetylene (15 psi max.)	1.06
Argon	0.85
Carbon Dioxide	0.81
Nitrous Oxide	0.81
Oxygen	0.95

"B" spring range 40 - 110 psig



"C" spring range 100 - 200 psig



Aluminum Pressure Regulators

1682M Series & C-1682M Series

Application

The 1682M Series Regulators are designed primarily for second stage regulation of a variety of gases in industrial and hospital piping systems and manifolds. The C-1682M Series is specifically designed for use with Carbon Dioxide.

Features

- Maximum inlet pressure is 400 psig.
- Two 1/4" F.NPT gauge ports are located 180° apart to allow for gauge mounting in convenient positions.
- Each 1680M Series regulator is cleaned and packaged for oxygen per CGA G-4.1.
- 100% Factory Tested
- T-handle adjusting screw.
- Available in three delivery pressure ranges.
- Temperature Range: -40° F to +165°F (-40°C to +74°C)

Materials

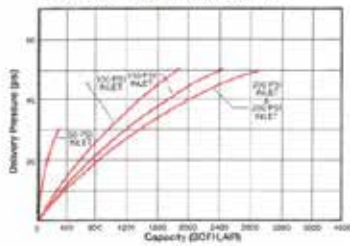
Body Forged Aluminum
 Bonnet Aluminum
 Seat Disc (1682M) Neoprene
 Seat Disc (C-1682M) EPDM
 Diaphragm (1682M) Neoprene
 Diaphragm (C-1682M) EPDM



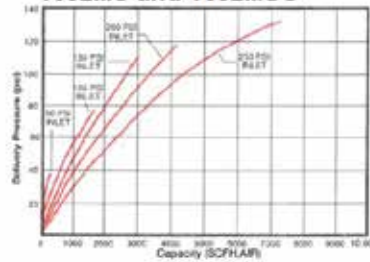
C-1682M



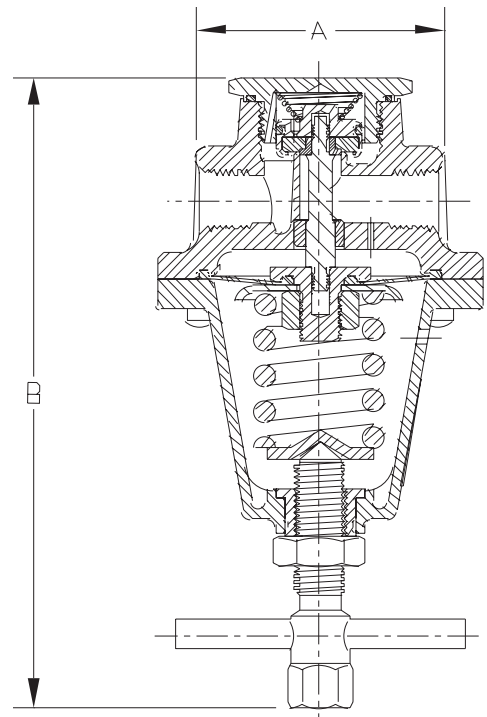
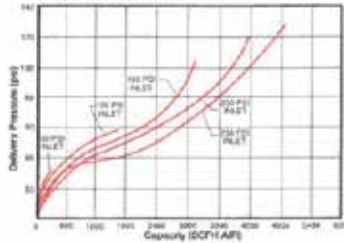
1682ML and 1682MLG



1682MS and 1682MSG



1682M and 1682MG



Ordering Information

Part Number		Delivery Pressure Range (psig)	Pressure Gauge		Inlet & Outlet Connection (F.NPT)	Width A	Maximum Height B
			Range (psig)	Part Number			
1682ML	C-1682ML	5-50 psig (0.3-3.4 barg)	*	*	1/4"	2 ³ / ₁₆ "	4 1/8"
1682MLG	C-1682MLG		1-100	1286			
1682M	C-1682M	50-125 psig (3.4-8.6 barg)	*	*			
1682MG	C-1682MG		1-200	S1679			
1682MS	C-1682MS	100-250 psig (6.9-17.2 barg)	*	*			
1682MSG	C-1682MSG		1-400	15578			

* Pressure gauge not included.

Automatic Changeover Regulators M2523HP Series

Application

M2523HP series automatic changeover regulators are designed especially for use in systems where a reserve cylinder is used to provide a continuous, uninterrupted supply of gas. These regulators are suitable for use with carbon dioxide, hydrogen, oxygen, industrial air, nitrous oxide, nitrogen, helium and argon.

Features

- Automatically withdraws from the reserve cylinder after exhausting the "service" cylinder.
- Cylinder pressure gauges let you know at a glance the contents of each cylinder is in use. There is no need to shutdown the system to replace empty cylinders.
- Nickel plated.
- 100% Factory Tested
- Cleaned per CGA G-4.1 for oxygen service.
- Porous bronze filters are installed in each inlet to minimize the entry of foreign particles.
- Back pressure check valves are installed in each inlet to help assure positive shut-off in case of reverse flow.
- Each unit comes complete with mounting bracket and a special delivery pressure adjustment wrench.
- Factory set at 50 psig on service side. CO₂ and N₂O regulators are factory set at 100 psig on service side.

Conversion Table

Source	Multiply
Carbon Dioxide	.81
Nitrogen	1.02
Nitrous Oxide	.81
Argon	.85
Oxygen	.95
Helium	2.69
Hydrogen	3.79

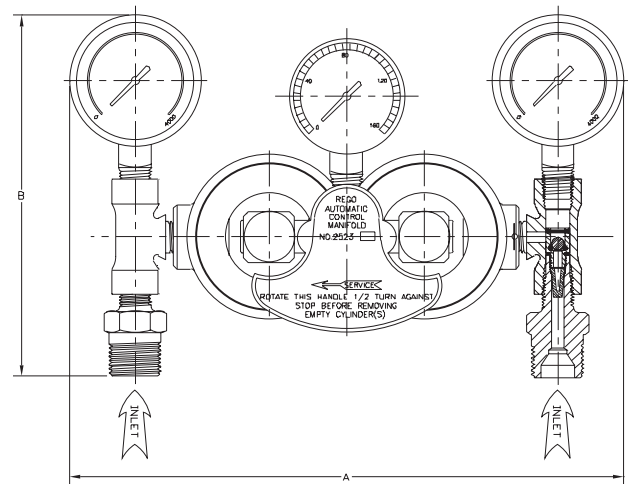
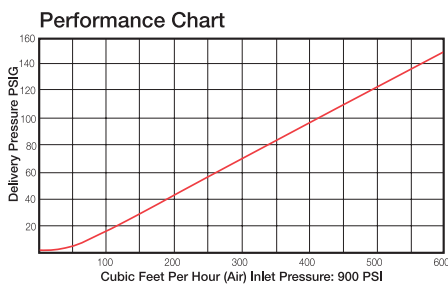
REGO
10
YEAR
WARRANTY



M2523HP Series

Materials

Body	Brass
Bonnet	Brass
Seat Disc (all gases except CO ₂)	Viton
Seat Disc (CO ₂ Only)	Butyl Rubber
Diaphragm (all gases except CO ₂)	Neoprene
Diaphragm (CO ₂ Only)	Buna N
Handle	Aluminum
Bonnet Spring	Steel
Backcap Spring	Stainless Steel



Ordering Information

Part Number	Gas Service	CGA Inlet Connection	Outlet Connection	Width A	Height B	Maximum Inlet Pressure	Delivery Pressure Range	Accessory Regulators*
M2523HP320	Carbon Dioxide	320	1/4" F.NPT	7 3/4"	5 1/8"	1800 psig (124.2 barg)	30-130 psig (2.1-8.9 barg)	BR-1784E, 1784E C-1682 M Series
M2523HP326	Nitrous Oxide	326				3000 psig (202 barg)		1784 Series 1682 M Series BR 1784 Series
M2523HP350	Hydrogen	350						
M2523HP540	Oxygen	540						
M2523HP580	Nitrogen, Argon, Helium	580						
M2523HP590	Industrial Air	590						

* Can be used downside of the M2523HP as a final line pressure regulator. See pages 27 through 30 and page 33.

Low Pressure Line Regulators 4403 Series

Application

The 4403 series regulators provide very sensitive control of a variety of gases at low pressures. The large molded diaphragm assures responsive regulation with inlet pressures up to 250 psig.

Features

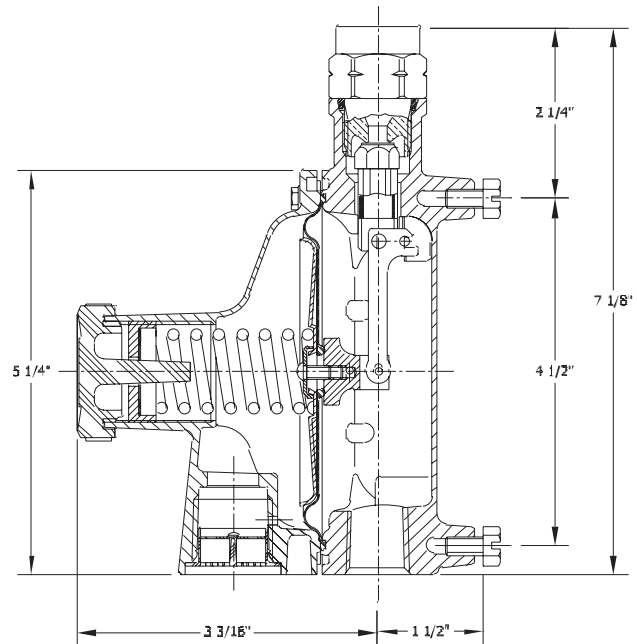
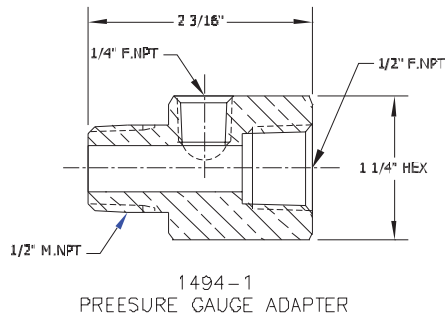
- Large molded diaphragm provides highly sensitive and accurate low pressure control.
- Zinc body and bonnet resist corrosion and provide longer life.
- Teflon seat disc, teflon faced diaphragms, and stainless steel nozzles make the T4403J regulators compatible with a variety of gases.
- LV4403C2H42 features integral relief valve set at 3 psig.
- Adjusting screw is concealed by a plastic cap which helps prevent pressure adjustments by unauthorized personnel.
- Pressure gauge adapter available part # 1494-1
- Working temperature range is -40°F to +165°F. (-40°C to +74°C)
- Not suitable for oxygen applications



LV4403C2H42

Materials

Body	Zinc
Bonnet	Zinc
Diaphragm.....	T4403J, 4403W, S4, T4, U4 Teflon Faced Buna N
4403WP4, R4.....	Buna N
(LV4403C).....	Integrated Fabric and Synthetic Rubber
Spring	Steel
Seat (T4403J).....	PTFE
(4403W) (LV4403C).....	Buna N
Nozzle (T4403J).....	Stainless Steel
(4403W, LV4403C).....	Brass



Ordering Information

Part Number	Inlet Connection	Outlet Connection	Factory Delivery Pressure*	Delivery Adjustment Range	Relief Setting
4403W-P4	1/2" F.NPT	1/2" F.NPT	5" w.c.	3.5 - 6" w.c.	None
4403W-R4			25" w.c.	15 - 28" w.c.	
4403W-S4			5 psig (0.34 barg)	1-5 psig (0.07-0.34 barg)	
4403W-T4			10 psig (0.69 barg)	5-10 psig (0.34-0.69 barg)	
4403W-U4			15 psig (1.03 barg)	10-15 psig (0.69-1.03 barg)	
LV4403C2H42	1/4" F.NPT	1/2" F.NPT	1.5 psig (0.1 barg)	1.5 psig (0.1 barg)	3 psig (0.21 barg) ± 20%
T4403JS2			5 psig (0.34 barg)	1-5 psig (0.07-0.34 barg)	None
T4403JT2			10 psig (0.69 barg)	5-10 psig (0.34-0.69 barg)	

* Based on 50 psig inlet pressure. LV4403C2H42 based on 100 psig inlet pressure.

Inertrol Outfits

4286 Series, 4289 Series & 4291 Series

Application

The 4286, 4289, and 4291 series Inertrol outfits are three stage nitrogen regulators especially designed to maintain oil filled transformer atmospheres at 0.5 psig. Each Inertrol outfit consists of a two-stage regulator connected in series to a highly sensitive single-stage regulator which maintains the 0.5 psig pressure. A built-in pressure relief valve in the third stage regulator helps protect against over-pressurization of the system.

Inertrol units are designed for oil-filled transformers manufactured by ABB, Inc., General Electric, and Cooper Power. Some outfits are equipped with an alarm switch that activates a customer equipped warning device should the cylinder pressure drop below 300 psig.

Features

- Heavy duty brass and aluminum construction resists corrosion and provides for longer life.
- The 4289 series incorporates a special by-pass valve to allow for quick filling of the transformer.
- Hidden pressure adjusting screw helps protect against tampering by unauthorized personnel.
- Large diameter diaphragm in the third-stage regulator provides for sensitive and precise control of the gas flow.
- Maximum inlet pressure - 3000 psig.

Materials

Two-Stage Regulator:

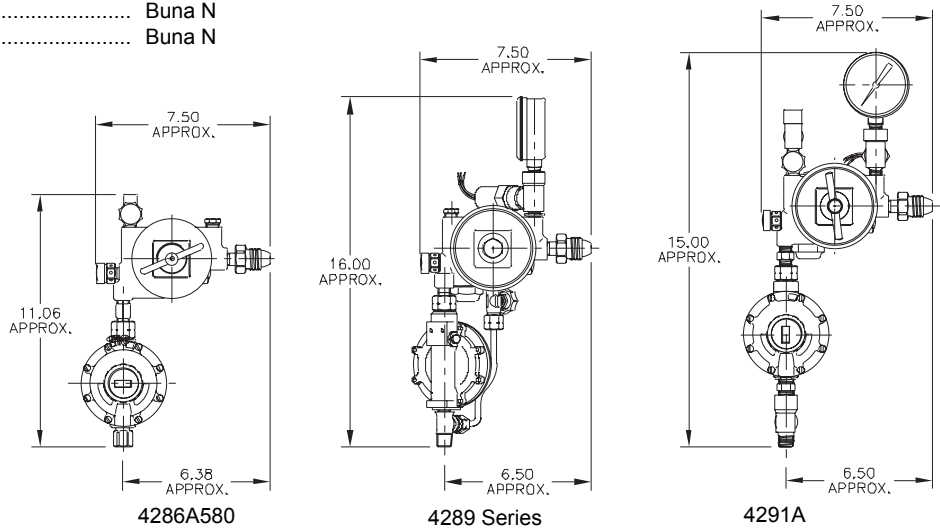
Body Brass
 Bonnet Brass
 Diaphragms Synthetic Rubber
 1st Stage Seat Disc Nylon
 2nd Stage Seat Disc Neoprene

Third-Stage Regulator:

Body Zinc
 Bonnet Zinc
 Diaphragm Buna N
 Seat Disc Buna N



Inertrol Outfit



Ordering Information

Part Number	Gas Service	Inlet	Outlet	Two Stage Regulator Part number	Third Stage Regulator Part Number	Alarm Gauge	Transformer Manufacturer
4286A580	Nitrogen	CGA580	1/8" NPT	4286A-2NW	LV4286-10-8	None	ABB, Inc.
4289AG			9/16" -18 L.H.	4289A-2G	LV4289-10	4285-9B	General Electric
4289G						None	
4291A			3/8" NPT	4291B-2	LV4286-10-8	4285-9B	Cooper Power

Low Pressure Regulators LV4286-10 Series & LV4289-10 Series

Application

The LV4286 and LV4289 series Inertrol third-stage low pressure regulators are designed especially for secondary regulation of gaseous nitrogen on electrical transformer systems.

Factory preset at 14" to 15" water column delivery pressure with an inlet pressure of 5 to 10 psig.

Features

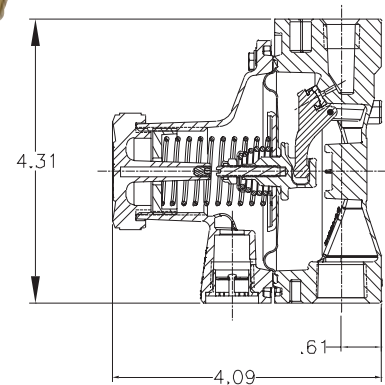
- Large diaphragm allows for highly sensitive and accurate low pressure control.
- Incorporates integral relief valves (except on LV4289-10).
- Zinc body and bonnet resist corrosion and provide longer life.
- Adjusting screw is concealed by a cap to help prevent against tampering by unauthorized personnel.
- Operating temperature range is -40°F to +160°F.

Materials

Body	Zinc
Bonnet	Zinc
Diaphragm	Buna N
Seat Disc	Buna N
Spring	Steel



LV4286-10



Ordering Information

Part Number	Inlet (NPT)	Outlet (NPT)	Delivery Pressure Setting	Relief Valve Setting
LV4286-10-5	1/4"	1/2"	14"-15" w. c.	5 psig
LV4286-10-8				8 psig
LV4289-10				None

Alarm Gauges 4285-9B

Application

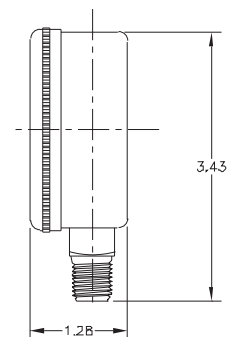
The 4285-9B inertrol alarm gauges are designed to alert the user when pressure has fluctuated ±90 psig from the 300 psig factory setting. Under these conditions, electrical contacts in the switch will close and set off a user-furnished alarm system.

Features

- Solid brass gauge casing resists corrosion and provides for longer life.
- Equipped with a heavy-duty, 36" long, 3-wire electrical cable.
- Each gauge is factory pre-set at 300 psig, then sealed to help prevent against tampering once in service.
- Electrical circuit is rated for a maximum of 3 AMPS at 460 volts AC.



4285-9B



Materials

Gauge Case	Brass
------------------	-------

Ordering Information

Part Number	Inlet M.NPT	Diameter	Pressure Range (psig)	Adjustable	Alarm Furnished
4285-9B	1/4"	2 1/2"	0 - 4000	No	None

High Pressure Gas Master Valves

HP9560 Series

Application

The HP9560 Series high pressure brass valves are used on cylinder filling panels, tube trailers, and high pressure manifolds and piping systems. The HP9560 Series exhibits a very low operating torque under pressure for ease of manual operation.

Features

- 5600 psig (386 barg) maximum working pressure
- Non-rising stem design with O-Ring Seal for durable service.
- Large brass handwheel for easy low torque operation under pressure.
- All valves cleaned for use in oxygen per CGA G-4.1.
- Temperature range -40°F to +165°F.
- 100% Factory Tested

Materials

Body, bonnet, stem, and seat retainer, stem seal retaining rings and washer Brass
 Stem O-ring Viton
 Thrust bearing PCTFE

Soft Seat Option

The soft seat valves use a PCTFE seat disc in the seat retainer to create a “bubble-tight” seal against a machined seat surface on the brass body. Valve Cv is 2.6. The soft seat option is especially useful for small molecule gases like hydrogen and helium, but can be used for a variety of non-corrosive industrial gases including argon, nitrogen, carbon dioxide, nitrous oxide, and acetylene.

Metal Seat Option:

A copper seat disc is used in the seat retainer to create a seal against a Monel body seat, which is installed into the body and can be replaced. Valve Cv is 2.3. The metal seat option minimizes the possibility of seat decomposition or ignition in oxygen service under adiabatic compression. The metal seat option is recommended for oxygen, and can also be used for other non-corrosive industrial gases. The metal seat option is not to be used for acetylene due to the copper seat. Not to be applied in hydrogen or helium service or where a “bubble-tight” seal is essential. (Note: C in part number)

Nylon seat option: available also (ex. HP9560NB).

Bonnet Versions

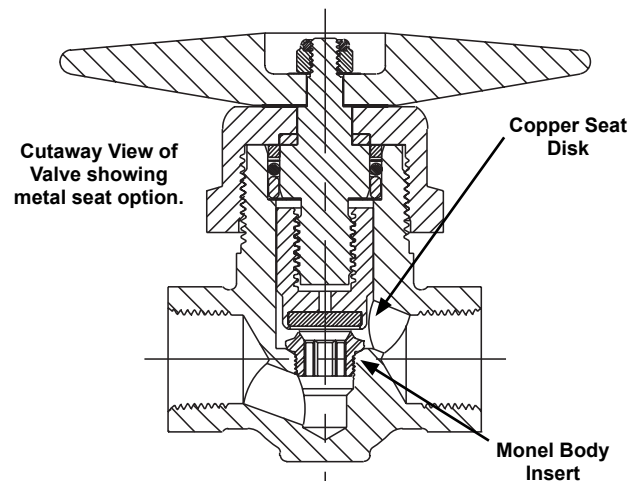
- Standard Bonnet for low profile.
- Panel Mount Bonnet for ease of panel installation. Includes threaded bonnet and nickel plated brass mounting nut. Metal Seat Option 1.625” diameter panel hole required for mounting. (Note: P in part number)



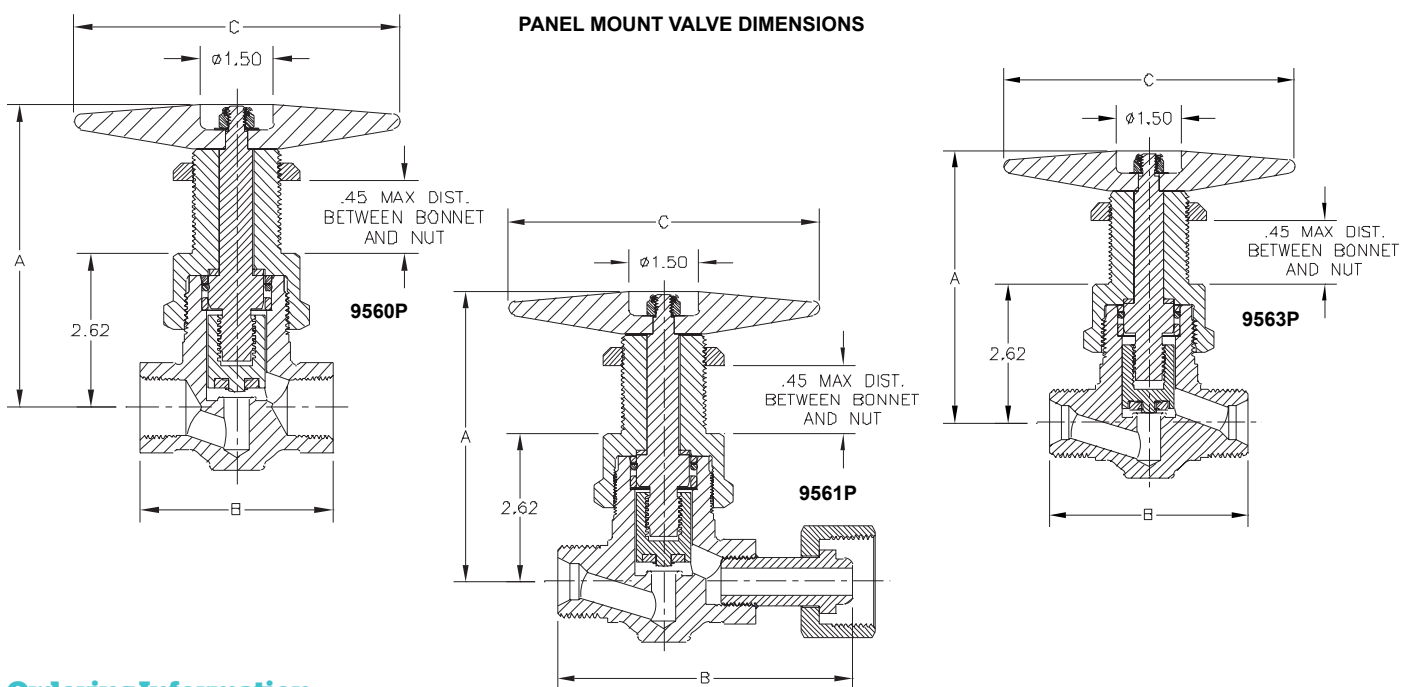
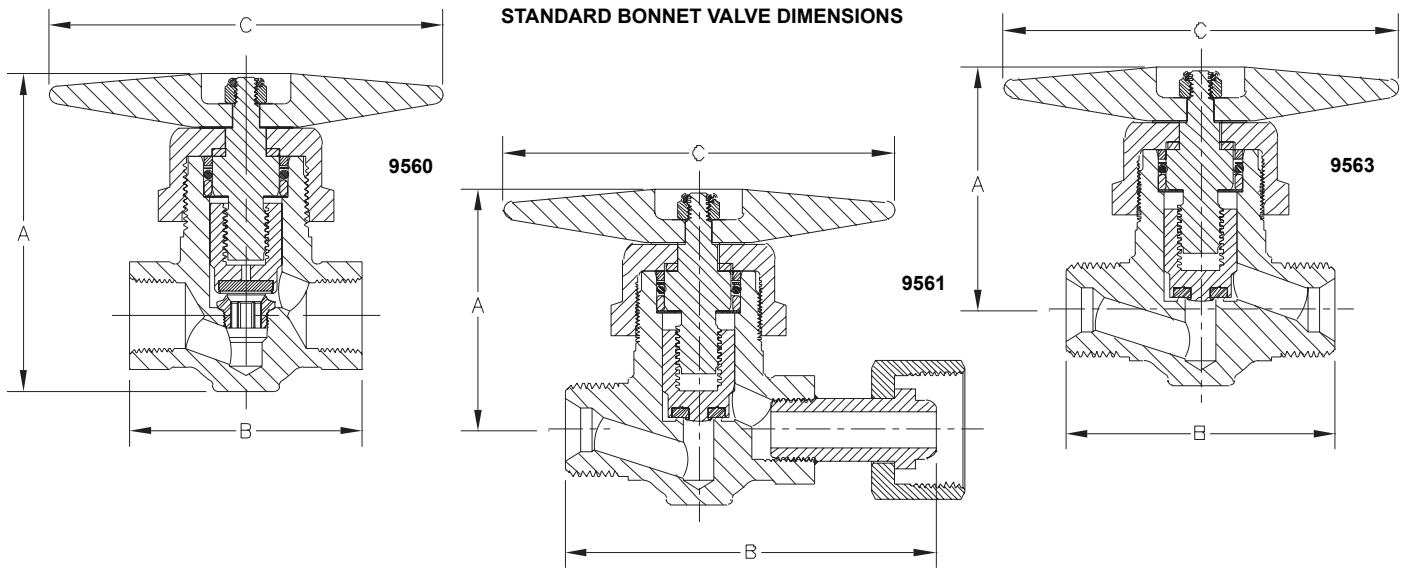
STANDARD BONNET VALVE



PANEL MOUNT VALVE



High Pressure Gas Master Valves HP9560 Series



Ordering Information

Part Number		Inlet Connection	Outlet Connection	Height A	Length B	Handwheel Length C
Soft Seat	Metal Seat					
HP9560A	HP9560CA	1/2" F. NPT	1/2" F. NPT	4.36" *[6.19" for panel mount version]	3.25"	5.5"
HP9560B	HP9560CB	3/4" F. NPT	3/4" F. NPT			
HP9561R	HP9561CR	1"-11 1/2" NPSM R.H.	1"-11 1/2" R.H. Female Swivel		5.27"	
HP9561RL	HP9561CRL	1"-11 1/2" NPSM R.H.	1"-11 1/2" NPS L.H. Female Swivel			
HP9561L	HP9561CL	1"-11 1/2" NPSM L.H.	1"-11 1/2" L.H. Female Swivel		3.79"	
HP9563R	HP9563CR	1"-11 1/2" NPSM R.H.	1"-11 1/2" NPSM R.H.			
HP9563L	HP9563CL	1"-11 1/2" NPSM L.H.	1"-11 1/2" NPSM L.H.			
HP9560ASE	HP9560CASE	.843 - .847	.843 - .847		3.25"	
HP9560BSE	HP9560CBSE	1.053 - 1.057	1.053 - 1.057			
HP9560BSE-B	HP9560CBSE-B	1.053 - 1.057	3/4" F.NPT			

Note: Place "P" at end of part number for panel mount version.

Nylon seat option is also available (ex: HP9560NBP)

For different handwheel size consult factory.

Line Station Valves 7160 Series

Application

7160 series valves are designed for use with oxygen and all fuel gases at station outlets of line distribution systems such as welder's benches, cutting stations, hospital rooms, etc.



Features

- UL Listed Approved for oxygen and all fuel gas services at 400 psig maximum working pressure.
- All valves cleaned for use in oxygen per CGA G-4.1
- O-ring stem seal works with the pressure causing a tighter seal as pressure increases.
- A reverse flow check valve installed in the valve outlet connection helps prevent reverse flow.
- Available with brass cap and chain protection.
- Meets the requirements of National Fire Protection Association (NFPA) Pamphlet No. 51.

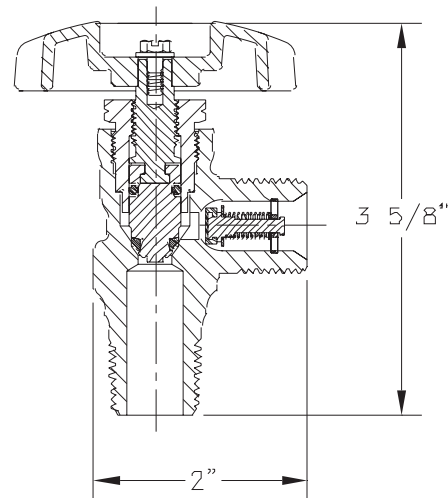
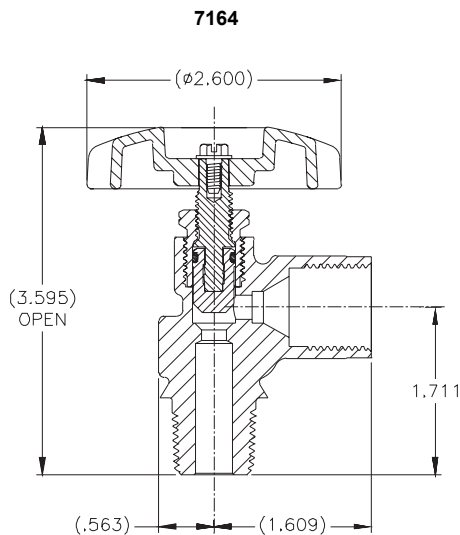


7160 Series

Materials

Body	Brass
Stem and Seat Retainer	Brass
O-ring.....	Neoprene
Seat Disc	Nylon
Reverse Flow Check Seat.....	Neoprene

7160 and 7161 Series



Ordering Information

Part Number	Gas Service	Inlet Thread	Outlet Thread	CGA Connection	C _v Factor	Outlet Protection*
7160V	Oxygen and Inert Gases	½" NGT	7/8" - 14 M. R.H.	024	.76	10663 Brass Cap & Chain
7160VL						None
7161V	Fuel Gases		7/8" - 14 M. L.H.	025		10664 Brass Cap & Chain
7161VL						None
7164	Inert Gases	½" NPT	7/8" - 14 F. R.H.	034	None	

*Outlet Protection is recommended.

Pressure Gauges

Application

Gauges are available in a variety of popular pressure ranges for gas plant applications.

Gauges should be selected so that the maximum working pressure of the particular system represents 66% to 75% of the maximum gauge reading. Greater safety and accuracy may be realized by following these guidelines.



15578

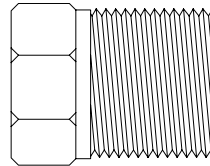


Ordering Information

Part Number	Maximum Calibration (psig)	Size	M. NPT	Increment Division (psig)	Case Material
1286	100 psig (6.89 barg)	2"	¼"	2 psig (0.14 barg)	Steel
2523HP-7	160 psig (11.03 barg)		½"	5 psig (0.34 barg)	
S1679	200 psig (13.79 barg)		¼"	10 psig (0.69 barg)	Brass
15578	400 psig (27.58 barg)			50 psig (3.45 barg)	Steel
5562C	4000 psig (275.8 barg)				

Brass Plugs

(for pressures to 3000 psig)
Safety factor = 5:1



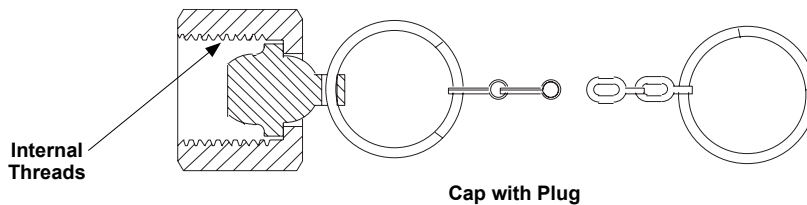
Typical Plug



Ordering Information

Part Number	Thread Connection	Hex Flats
985B	¼" NPT	9/16"
985D	½" NPT	7/8"
985E	¾" NPT	1 1/8"
985F	1" NPT	1 3/8"

Brass Outlet Cap and Chain Assemblies



Cap with Plug



Ordering Information

Part Number	Thread Connection	End Ring Fits Pipe
10663	7/8"-14NF-RH	½"
10664	7/8"-14NF-LH	½"

Needle Valves CMM250 Series and CFF250 Series

Application

Ideal for use as a gauge isolation valve or applications requiring accurate throttling of pressure or in bulk vessel gauging lines .

Features

- Compact design provides easy installation.
- Fine stem threading and long taper allow precise metering and leak-free shut-off.
- Internal stop prevents the stem from being accidentally unscrewed from the body.
- Rugged forged brass bodies withstand higher pressures.
- Unbreakable brass handwheel.
- Valves come equipped for panel mounting.
- Working temperature range is -40°F to +165°F (-40°C to +74°C).
- Maximum operating pressure: 2000 psig air (137.9 barg).
- Cleaned for oxygen service per CGA G-4.1.
- Female ports available - consult factory.

Materials

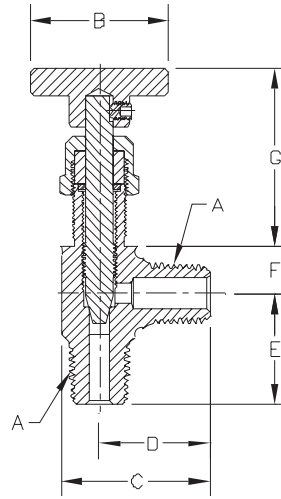
Body	ASTM B283 Brass
Stem	Brass
Knob	Brass
Bonnet Nut.....	Brass
Panel Mount Nut (Optional).....	Brass
Set Screw	Steel
Stem Packing	PTFE with Brass Gland



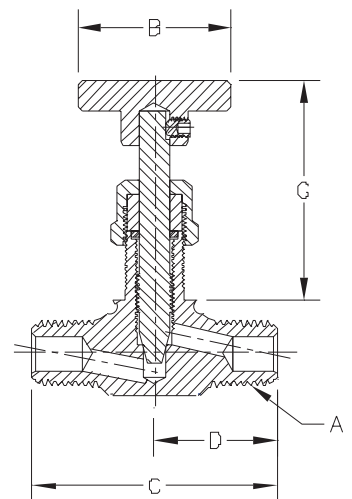
CMM250A



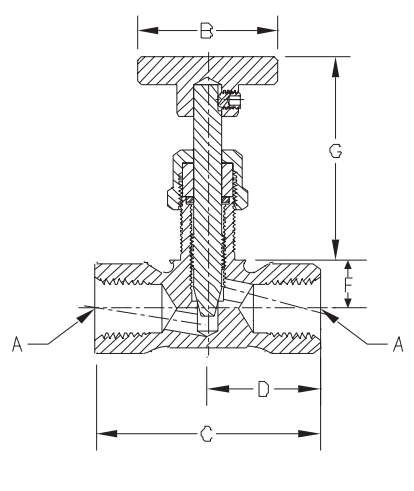
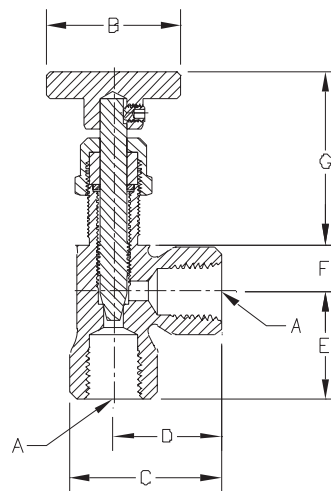
CMM250G



CFF250A



CFF250G



Ordering Information

Part Number	A (NPT)	B (In.)	C (In.)	D (In.)	E (In.)	F (In.)	G (In.) Open	G (In.) Closed	C _v
CMM250A	1/4	1/4	1 ¹¹ / ₃₂	1	1	7/16	2 ⁵ / ₃₂	1 ¹⁹ / ₃₂	.7
CMM250G			2		-		2 ³ / ₈	1 ¹³ / ₁₆	.5
CFF250A			1 ¹³ / ₃₂		1		2 ⁵ / ₃₂	1 ¹⁹ / ₃₂	.7
CFF250G			2		-		2 ³ / ₈	1 ¹³ / ₁₆	.5

Strainer STR000002

Application

The STR000002 strainers have been designed to retain debris and any other pollution that could be in the lines, and could affect the performance of regulators and other devices. The STR000002 use a Monel filter material. Designed for the handling of cryogenic liquids through bulk tanks, trucks, trailers, ISO-containers and piping configurations.



Features

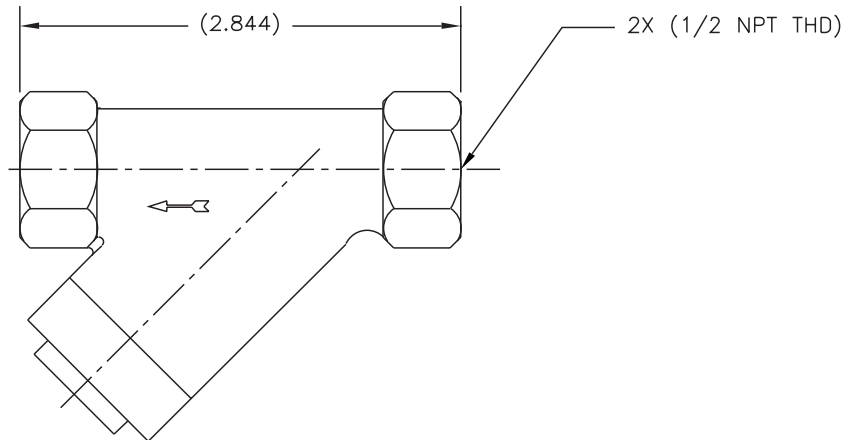
- Temperature range: -320°F to 165°F. (-196°C to 74°C)
- Maximum working pressure: 600 psig (41,37 barg)
- Connections: FNPT
- Sizes: ½"
- Service: Liquefied & Vaporized Atmospheric Gases and LNG for Trailers, Bulk Tanks, Iso-Containers and Piping Configurations.
- Cleaned for Liquid Oxygen Service per CGA G-4.1
- 100% Factory tested.



Materials

BodyBrass
 CapBrass
 Filter Material..... 100 Mesh Monel

STR000002



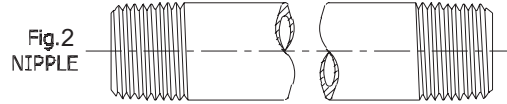
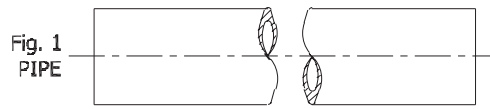
Ordering Information

Part Number	Inlet Inches	Outlet Inches	A Inches
STR000002	½"	½"	2 ¹ / ₈ "

Brass Pipe & Pipe Nipples

Heavy-duty, yellow brass pipe and pipe nipples are designed with a high quality, seamless thick wall construction. They are suitable for use in most industrial piping applications.

ASTM B135 Alloy 330
 ½" I.D. pipe, O.D. is 0.840".
 ¾" I.D. pipe, O.D. is 1.050".



Ordering Information

Part Number	Figure	Inside Diameter	Inlet / Outlet Connections (M.NPT)	Length	Maximum Operating Pressure (psig)*
TNE1050-14400	1	½"	Not Available	12 Feet	3600 psig (248.2 barg)
TNE1075-14400		¾"			
1050-15	2	½"	½"	1½"	
1050-20				2"	
1050-40				4"	
1050-60				6"	
1050-80				8"	
1075-20				2"	
1075-30				3"	
1075-40				4"	
1075-50	¾"	¾"	¾"	5"	
1075-60				6"	

Brass Elbows

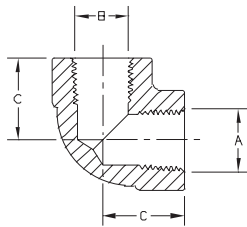


Fig. 1

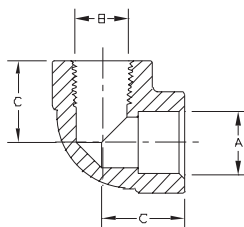


Fig. 2

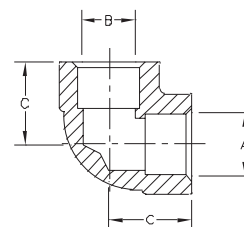


Fig. 3



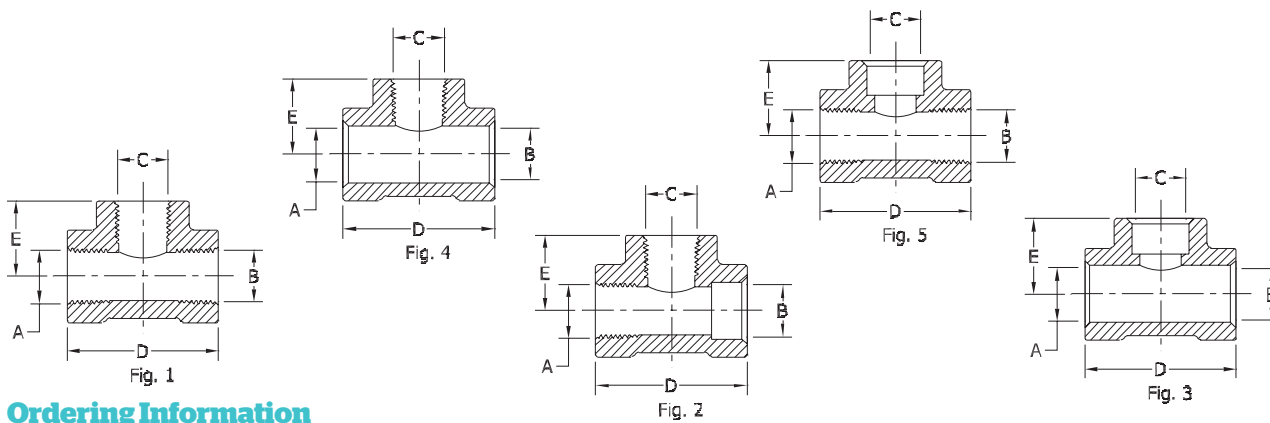
Ordering Information

Part Number	Figure	A (Female)	B (Female)	C (Ref.)	Working Pressure
1228-1	1	½" NPT	½" NPT	1⅝"	3750 psig (258.7 barg)
HP1228-1		¾" NPT	¾" NPT	1½"	4500 psig (310.5 barg)
1043					
1228-2	2	½" NPT	.843-.847	1⅝"	3750 psig (258.7 barg)
HP1228-2		¾" NPT	1.053-1.057	1½"	4500 psig (310.5 barg)
2223-2	3	.843-.847	.843-.847	1⅝"	3750 psig (258.7 barg)
1228-4				1½"	6000 psig (414 barg)
HP1228-4					4500 psig (310.5 barg)
2233-6		1.053-1.057	1.053-1.057		

*Safety factor = 4:1

Brass Tees

REGO
10
YEAR
WARRANTY



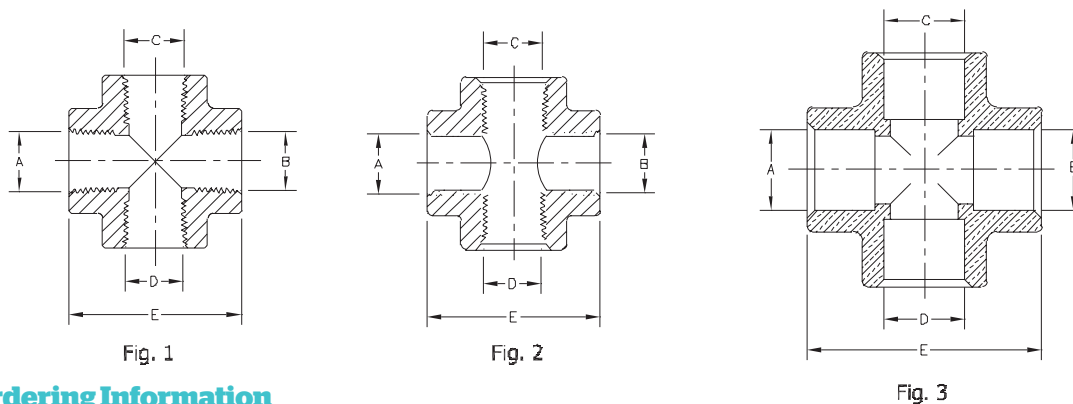
Ordering Information

Part Number	Figure	A (Female)	B (Female)	C (FEMALE)	D (Ref.)	e (Ref.)	Working Pressure psig*
1227-1	1	½" NPT	½" NPT	½" NPT	2¼"	1⅞"	3750 psig (258.7 barg)
HP1227-1		¾" NPT	¾" NPT		3"	1½"	
1042-20				¾" NPT	¾" NPT		
1042				¾" NPT			4500 psig (310.5 barg)
1227-3	2	½" NPT	.843-.847	½" NPT	2¼"	1⅞"	3750 psig (258.7 barg)
HP1227-3		¾" NPT	1.053-1.057	¾" NPT	3"	1½"	4500 psig (310.5 barg)
4608-5							
1227-28	3	.843-.847	.843-.847	.843-.847	2¼"	1⅞"	3750 psig (258.7 barg)
HP1227-28		1.053-1.057	1.053-1.057	1.053-1.057	3"	1½"	4500 psig (310.5 barg)
2118-2							
1227-9	4	.843-.847	.843-.847	½" NPT	2¼"	1⅞"	3750 psig (258.7 barg)
HP1227-9		1.053-1.057	1.053-1.057	¾" NPT	3"	1½"	4500 psig (310.5 barg)
2223-3							
HP1227-5	5	½" NPT	½" NPT	.843-.847			

*Safety factor = 4:1

Brass Crosses

REGO
10
YEAR
WARRANTY



Ordering Information

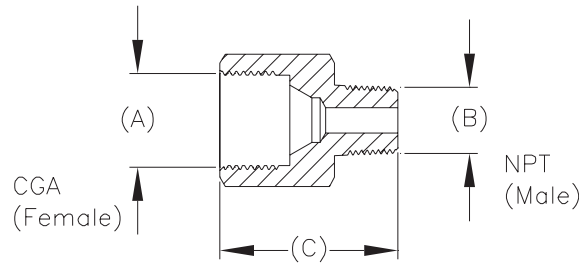
Part Number	Figure	A (Female)	B (Female)	C (Female)	D (Female)	E (Ref.)	Working Pressure psig*
1225-1	1	½" NPT	½" NPT	½" NPT	½" NPT	2¼"	3750 psig (258.7 barg)
HP1225-1		¾" NPT	¾" NPT	¾" NPT	¾" NPT	3"	
1045						¾" NPT	¾" NPT
1225-3	2	.843-.847	.843-.847	½" NPT	½" NPT	2¼"	3750 psig (258.7 barg)
HP1225-3		1.053-1.057	1.053-1.057	¾" NPT	¾" NPT	3"	
2222-2	3	.843-.847	.843-.847	.843-.847	.843-.847	3"	4500 psig (310.5 barg)
HP1225-4		1.053-1.057	1.053-1.057	1.053-1.057	1.053-1.057	3"	
2222-4							

*Safety factor = 4:1

Brass Adapters CGA x Misc.

Ordering Information

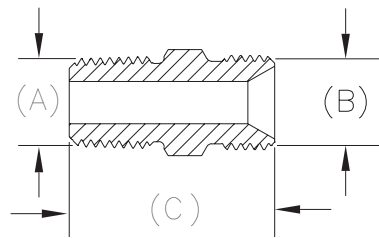
Part Number	A	B	C (Ref.)	Maximum Operating Pressure
1877C	580	1/2"	1 1/4"	600 psig
1877D		3/4"		



Brass Adapters Male x Male

Ordering Information

Part Number	A (Male)	B (Male)	C (Ref.)	Maximum Operating Pressure
1300	1/4 NPT	9/16" - 18NF-LH	1 1/4"	600 psig
1200		9/16" - 18NF-RH		
2233-4HAL	1/2 NPT	1" - 11 1/2 NPS-LH	2 3/8"	
2233-4HA		1" - 11 1/2 NPS-RH		
2233-4HL	3/4 NPT	1" - 11 1/2 NPS-LH	2 9/16"	
2233-4H		1" - 11 1/2 NPS-RH		

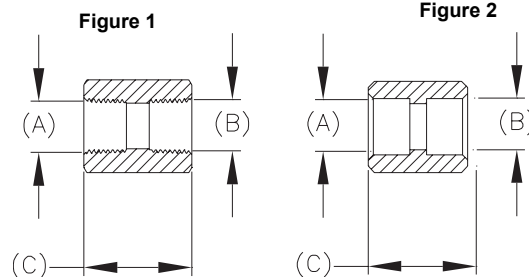


Brass Adapters Female x Female

Ordering Information

Part Number	Figure	A (Female)	B (Female)	C (Ref.)	Maximum Operating Pressure
1125-15	1	1/2" NPT	1/2" NPT	15/8"	600 psig
1044		3/4" NPT	3/4" NPT	2"	

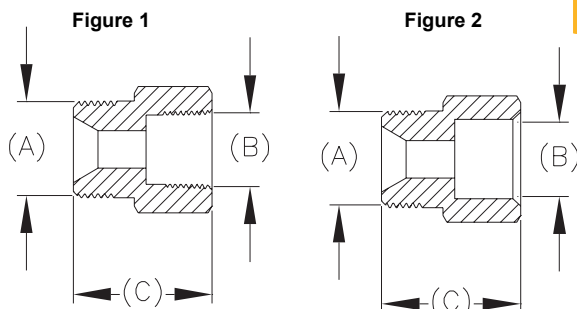
Part Number	Figure	A (Female)	B (Female)	C (Ref.)	Maximum Operating Pressure
1125-16	2	.843-.847	.843-.847	15/8"	600 psig
1044-1		1.053-1.057	1.053-1.057	2"	



Brass Adapters Male x Female

Ordering Information

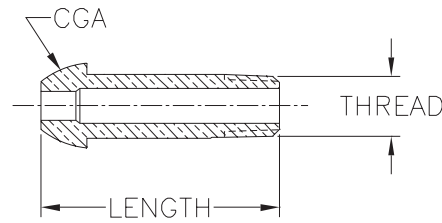
Part Number	Figure	A (Male)	B (Female)	C (Ref.)	Maximum Operating Pressure
489-10	1	1/2" NPT	1/4" NPT	1 1/4"	600 psig
1252		3/4" NPT	1/4" NPT	119/64"	
1252A			1/2" NPT		
2165-3	2	1"-11 1/2 NPS-RH	3/4" NPT	127/32"	
2165-3B			.843-.847	13/16"	
2165-3A			1.053-1.057	127/32"	



CGA Brass Tailpieces

Ordering Information

Part Number	CGA Connection	Thread of Bore for Tubing	Length (Approx.)	Maximum Operating Pressure
2603-2U	510, 580, 590	1/4" NPT	1 3/32"	600 psig



Miscellaneous Brass Tailpiece

Ordering Information

Part Number	For Use with Nut (RH or LH)	Figure	Thread of Bore for Tubing	Length (Approx.)	Maximum Operating Pressure
2233-3A	1" - 11 1/2"	1	1/2" NPT	37/16"	600 psig
2670-35	NPS	2	.312 I.D.	27/16"	

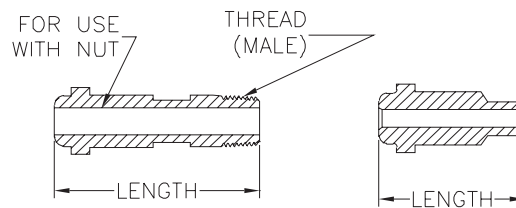


Fig 1 THREADED

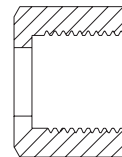
Fig 2 SWEAT END

Brass Union Connection Nuts

Ordering Information

Part Number	Figure	Thread Connection	Wrench Flats	Maximum Operating Pressure
1302-1	2	9/16" - 18-LH	11/16"	600 psig
1271-1		7/8" - 14-RH	1 1/8"	
1371-1		7/8" - 14-LH		
2223-6		1" - 11 1/2 NPS-RH	1 3/4"	
2223-6A		1" - 11 1/2 NPS-LH		

Internal Threads



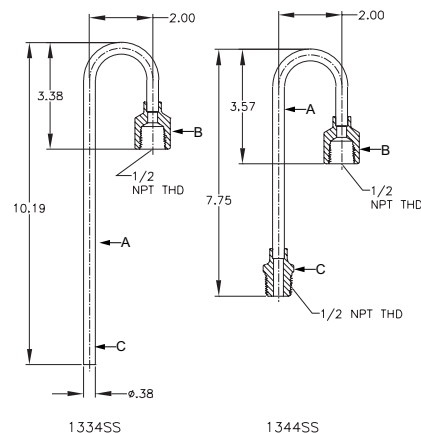
Candy Cane Riser Tubes and Assemblies For Piping-Away PRV9400, SS9400, PRV19400 & PRV29400 Series Relief Valves from Cryogenic Piping.

Materials

Tubing..... Stainless Steel
 Fitting: 1332SS..... Brass
 Fitting: 1334SS, 1344SS, 1344SSA..... Brass

Ordering Information

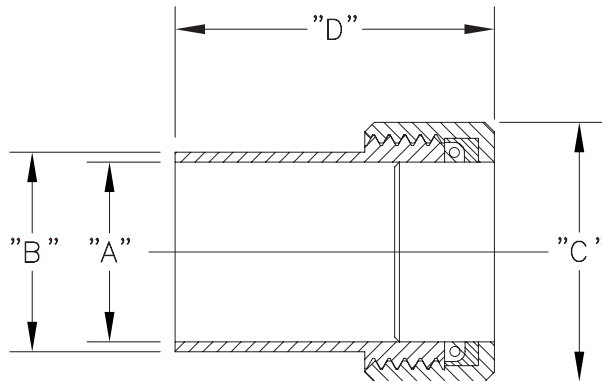
Part Number	Tubing Material	Fitting Material	"A" PRV Connection	"B" Tubing OD	"C" Inlet Connection	Maximum Operating Pressure
1332SS	Stainless Steel	Brass	1/4" FNPT	.375"	Tubing 0.375"	600 psig
1334SS			1/2" FNPT		1/2" MNPT	
1344SS				.625"		
1344SSA						



Quikconnect Vacuum Couplings

Features

- An extensive range of tube sizes available. Most sizes nest, and can be used as reducers in combination with one another.
- May be used for vacuum down to 1×10^{-8} Microns
- Viton O-rings are standard
- "Quikconnect" vacuum couplings have four basic components:
 - * Knurled Nut
 - * Retainer Ring
 - * O-ring
 - * Sleeve



Ordering Information

Quikconnect Vacuum Couplings

Brass Machine Finish	"A"	"B"	"C"	"D"	Tube OD Size
B-000006-M	0.072"	0.375"	5/8"	1 1/32"	1/16"
B-000012-M	0.135"	0.375"	5/8"	1 1/32"	1/8"
B-000018-M	0.197"	0.375"	5/8"	1 1/32"	3/16"
B-000025-M	0.260"	0.375"	5/8"	1 1/32"	1/4"
B-000031-M	0.322"	0.500"	13/16"	1 1/4"	5/16"
B-000038-M	0.385"	0.500"	13/16"	1 1/4"	3/8"
B-000050-M	0.510"	0.625"	7/8"	1 1/4"	1/2"
B-000062-M	0.635"	0.750"	1 1/8"	1 3/8"	5/8"
B-000075-M	0.760"	0.875"	1 1/4"	1 1/2"	3/4"
B-000087-M	0.885"	1.000"	1 7/16"	1 23/32"	7/8"
B-000100-M	1.010"	1.125"	1 1/2"	1 13/16"	1"
B-000112-M	1.135"	1.250"	1 5/8"	1 15/16"	1 1/8"
B-000125-M	1.260"	1.500"	2"	1 3/16"	1 1/4"
B-000138-M	1.385"	1.625"	2"	1 3/16"	1 3/8"
B-000150-M	1.150"	1.750"	2 1/4"	1 3/16"	1 1/2"
B-000162-M	1.635"	1.875"	2 5/8"	2 1/4"	1 5/8"
B-000200-M	2.010"	2.250"	2 3/4"	2.70"	2"

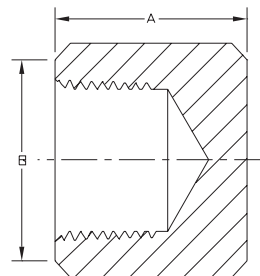
Brass Pipe Caps

Application

For capping cryogenic tank piping or gas pipelines.

Features

- Machined from brass.
- For 600 psig maximum working pressure service.
- Part number stamped on cap.
- Cleaned for oxygen per CGA G-4.1.



Ordering Information

Part Number	Thread Connections	Dim. A	Dim. B	Dim. C
CAP750	3/4" Female NPT	1.250"	1.313"	1.313"
CAP1000	1" Female NPT	1.500"	1.750"	1.750"
CAP1500	1 1/2" Female NPT	1.750"	2.375"	2.375"
CAP2000	2" Female NPT	2.000"	3.250"	3.250"

Repair Kits

Ordering Information - Valves

Kit Number	Part Number	Kit Contents
CFM-2D-82	CFM3D - CFM4D - AFM4D-PFM-4D & SFM-4D	Piston Assy, Spring, Strainer, Gasket
CFM-2D-86	CFM-2D & CFM-4D	Rear Flange Assy, Flange Screw, Gasket
2505AC-80	2505AC	Seat disc, diaphragm, washers, gaskets.
2507AC-80	2507AC	
2511AC-80	2511AC	
2513AC-80	2513AC	
2553AC-80	2553AC 2553AAC		Diaphragm and seat disc assembly stem washer.
2554AC-80	2554AC 2554AAC	
7160-80B	7160V 7161V	Complete valve trim assembly.
9500-80K	UL9500 series NUL9500 Series**	Seat disc and retainer assembly, seal washer, packing ring set, washer.
9550-80	9550 Series	Seat disc, retainer assembly, seal washer, packing nut set, washer.
9550-3-80	9550 Series	Sleeve.
9550-4-80	9550 Series	Stem, back-up ring, o-ring, washer.
9560-81 Maintenance Kit	9560 Series	CTFE Seat Disc & Retainer Assembly, Seal
9560C-80 Repair Kit	HP9560C, 9560C Series	Seat Assembly, Retainer Assembly
9560-80 Repair Kit	HP9560, 9560 Series	
BK8400-80J	BK8404 Series BK8406 Series BK8408 Series BKY8408 Series BK9404 Series BK9406 Series BK9408 Series	Jam ring, o-ring, pressure seal rings (3), spring, tape, washer.
BK8400-80AJ	BK8404 Series BK8406 Series BK9404 Series BK9406 Series	Seat disc assembly, teflon o-ring.
BK8400-80BJ	BK8408 Series BK9408 Series BKA8408 BKA9408	Seat disc assembly, teflon o-ring.
BKA8412-80J	BKA8412S	Jam ring, o-ring, pressure seal rings (3), spring, tape, washer.
BKA8412-80JA*	BKA8412S BKA8408 BKA9408	o-ring seal, seat disc retainer assembly.
BK9416-80JS	BK9416 Series	Jam ring, o-ring, pressure seatings (3), spring, tape, washer
BK9416-80AJ3	BK9416 Series	Seat disc assembly and gasket
BK9400-80J*	BK9410 Series	Jam ring, o-ring, pressure seal rings (3), spring, tape, washer.
BK9400-80AJ	BK9412 Series	Seat disc assembly, and gasket
BKY8408-80AJ	BKY8408 Series	Seat disc assembly and gasket.
BK8404-Kit	BK8404S, BK8404T, BK8404ST	Complete Valve Top Works

*Only for valves produced after 1991.

Ordering Information - Retrofit Kits

Kit Number	Part Number	Kit Contents
ES8450R	T9450 Series T9460 Series	Stem assembly (4"), packing, bonnet, handwheel
BK9450R **	T9460 Series T9450 Series	Extended Bonnet Assembly Kit, Spring load packing for conversion of extended stem valves and topworks replacement
BKA8400R	BKA8412SE	Stem assembly, handwheel, seat assembly Converts SE Series to New Style S Series
T9464-80	T9450 Series 9450 Series T9460 Series 9460 Series	Complete valve trim assembly including handwheel
BK-9450-KIT***	ES8450 Series ES9450 Series BK9450 Series	Extended Bonnet Assembly Kit, Spring load packing for conversion of extended stem valves and topworks replacement

** Changes to a 6.5" stem.

***Retrofits ES8450 and ES9450 to a 6.5" stem and a repair kit for the BK9450 Series

Ordering Information - Regulators

Kit Number	Part Number	Kit Contents (Qty)
BR-1684M-80N	BR-1684M Series	Diaphragm assembly, stem and seat assembly, seal.
BR-1686M-80N	BR-1686M Series	
1682Y-80	1682Y Series	Diaphragm assembly, stem and seat assembly seal.
1682M-80	1682M Series	Molded diaphragm assembly, stem and seat assembly seal.
C-1682M-80	C-1682M Series	
1684Y-80	1684Y Series	Diaphragm assembly, stem and seat assembly seal, guide.
1684M-80	1684M Series	Molded diaphragm assembly, stem and seat assembly seal, guide.
1686Y-80	1686Y, 1688Y Series	Diaphragm assembly, stem and seat assembly seal.
1686M-80	1686M, 1688M Series	Molded diaphragm assembly, stem and seat assembly seal.
1684MHP-80	1684MHP	Diaphragm assembly, stem and seat assembly, seal
1684M-80	BR-1684M Series	
1686M-80	BR-1686M Series	
BR-1784-80	BR-1784 Series, 1784 Series	Diaphragm assembly, stem and seat assembly, seal, Viton seat
BR-1784-80E	BR-1784 E Series, 1784 E Series	Diaphragm assembly, stem and seat assembly, seal, EPDM seat for C02 Service
BR-1784ST	BR-1784 Series	T-Handle adjusting screw kit
BR-1784-7SKA BR-1784-7SKB BR-1784-7SKC	BR-1784 Series 1784 Series	Spring kit for BR-1784, "A" spring range, 5 to 55 psig delivery pressure BR-1784 "B" spring range, 40 to 110 psig delivery pressure Spring kit for BR-1784, "C" spring range, 100 to 200 psig delivery pressure
BR-1784-7SKD	BR-1784 Series 1784 Series	Spring kit for BR-1784, "D" spring range 175 to 300 psig delivery pressure
BR-1786-80	BR-1786 Series, BR-1788 Series, 1786 Series, 1788 Series	Diaphragm assembly, stem and seat assembly, seal, viton seat for oxygen service
BR-1786-80E	BR-1786 E Series, BR-1788 E Series, 1786 E Series, 1788 E Series	Diaphragm assembly, stem and seat assembly, seal, EPDM seat for C02 service
BR-1786ST	BR-1786 Series, BR-1788 Series	T-handle adjusting screw kit
BR-1786-7SKA BR-1786-7SKB BR-1786-7SKC	BR-1786 Series, 1786 Series	Spring kit for BR-1786, "A" spring range, 5 to 55 psig delivery pressure Spring kit for BR-1786, "B" spring range, 40 to 110 psig delivery pressure Spring kit for BR-1786, "C" spring range, 100 to 200 psig delivery pressure
BR-1786-7SKD	BR-1786 Series, 1786 Series	Spring Kit for BR-1786, "D" spring range 175 to 275 psig delivery pressure
BR-1788-7SKA BR-1788-7SKB BR-1788-7SKC	BR-1788 Series, 1788 Series	Spring kit for BR-1788, "A" spring range, 5 to 55 psig delivery pressure Spring kit for BR-1788, "B" spring range, 40 to 110 psig delivery pressure Spring kit for BR-1788, "C" spring range, 100 to 200 psig delivery pressure
BR-1788-7SKD	BR-1788 Series, 1788 Series	Spring kit for BR-1788, "D" spring range, 175 to 275 psig delivery pressure
BR-1780SC	BR-1780 Series	Brass Bonnet Cap
2523HP-80A	M2523HP350, M2523HP540, M2523HP580, M2523HP590, M2523HP1320	Seat and centerpiece assembly, diaphragm assembly, nozzle, spring, washer, gaskets.
2523HP-80B	M2523HP320	
ECL-80	ECL22, ECL70, ECL100, ECL140	Diaphragm assembly, diaphragm gasket, poppet, retaining ring, spring, washer.
ECL-80A	ECL325	
RG-80*	RG22, RG75, RG125, BC125, CBH125	Backcap gasket, diaphragm assembly, diaphragm gasket, seat assembly.
RG-80A	RG300	
RG-81	RG75A, RG125A, CBC125A & CBH125A	
RG-81A	RG300A, CBC300A & CBH300A	
B-9472-80	B-9472	Diaphragm assembly, gasket, stem, and seat assembly.
B-9473-80	B-9473, B-9474	
B-9473M-80	B-9473M, B-9474M, BR-9473	Diaphragm assembly, gasket, stem, and seat assembly.

*Good for valves manufactured before Fall 2010

**Good for valves manufactured after Fall 2010

Repair Kits

Stainless Steel Gate 110 Series

Kit Number	Description
S-000110-8-81	Upper Packing 1/2", 3/4" & 1"
S-000110-8-82	Seat/Stem Assy 1/2", 3/4" & 1"
S-000110-8-83	Bonnet Gasket 1/2", 3/4" & 1"
S-000110-8-84	Seat Replacement 1/2", 3/4" & 1"
S-000110-16-81	Upper Packing 1 1/2" & 2"
S-000110-16-82	Seat/Stem Assy 1 1/2" & 2"
S-000110-16-83	Bonnet Gasket 1 1/2" & 2"
S-000110-16-84	Seat Replacement 1 1/2" & 2"
S-000110-24-81	Upper Packing 3"
S-000110-24-82	Seat/Stem Assy 3"
S-000110-24-83	Bonnet Gasket 3"
S-000110-24-84	Seat Replacement 3"
S-000110-32-81	Upper Packing 4"
S-000110-32-82	Seat/Stem Assy 4"
S-000110-32-83	Bonnet Gasket 4"
S-000110-32-84	Seat Replacement 4"
S-000110-48-81	Upper Packing 6"
S-000110-48-82	Seat/Stem Assy 6"
S-000110-48-83	Bonnet Gasket 6"
S-000110-48-84	Seat Replacement 6"

Gate 110WHZ Series (Grafoil®)

Kit Number	Description
S-110WHZ-8-81	Upper Packing 1/2", 3/4" & 1"
S-110WHZ-8-82	Seat/Stem Assy 1/2", 3/4" & 1"
S-110WHZ-8-83	Bonnet Gasket 1/2", 3/4" & 1"
S-110WHZ-9-84	Seat Replacement 1/2", 3/4" & 1"
S-110WHZ08-853	Upper Assembly Repair Kit 1/2", 3/4" & 1"
S-110WHZ-16-81	Upper Packing 1 1/2" & 2"
S-110WHZ-16-82	Seat/Stem Assy 1 1/2" & 2"
S-110WHZ-16-83	Bonnet Gasket 1 1/2" & 2"
S-110WHZ-16-84	Seat Replacement 1 1/2" & 2"
S-110WHZ16-853	Upper Assembly Repair Kit 1 1/2" & 2"
S-110WHZ-24-81	Upper Packing 3"
S-110WHZ-24-82	Seat/Stem Assy 3"
S-110WHZ-24-83	Bonnet Gasket 3"
S-110WHZ-24-84	Seat Replacement 3"
S-110WHZ24-853	Upper Assembly Repair Kit 3"
S-110WHZ-32-81	Upper Packing 4"
S-110WHZ-32-82	Seat/Stem Assy 4"
S-110WHZ-32-83	Bonnet Gasket 4"
S-110WHZ-32-84	Seat Replacement 4"
S-110WHZ32-853	Upper Assembly Repair Kit 4"
S-110WHZ-48-81	Upper Packing 6"
S-110WHZ-48-82	Seat/Stem Assy 6"
S-110WHZ-48-83	Bonnet Gasket 6"
S-110WHZ-48-84	Seat Replacement 6"
S-110WHZ48-853	Upper Assembly Repair Kit 6"

Globe 210 Series

Kit Number	Description
S-000210-8-81	Upper Packing 1/2", 3/4" & 1"
S-000210-8-82	Seat/Stem Assy 1/2", 3/4" & 1"
S-000210-8-83	Bonnet Gasket 1/2", 3/4" & 1"
S-000210-16-81	Upper Packing 1 1/2" & 2"
S-000210-16-82	Seat/Stem Assy 1 1/2" & 2"
S-000210-16-83	Bonnet Gasket 1 1/2" & 2"
S-000210-24-81	Upper Packing 3"
S-000210-24-82	Seat/Stem Assy 3"
S-000210-24-83	Bonnet Gasket 3"
S-000210-32-81	Upper Packing 4"
S-000210-32-82	Seat/Stem Assy 4"
S-000210-32-83	Bonnet Gasket 4"

Gate 210WHZ Series (Grafoil®)

Kit Number	Description
S-210WHZ-8-81	Upper Packing 1/2", 3/4" & 1"
S-210WHZ-8-82	Seat/Stem Assy 1/2", 3/4" & 1"
S-210WHZ-8-83	Bonnet Gasket 1/2", 3/4" & 1"
S-210WHZ-9-84	Seat Replacement 1/2", 3/4" & 1"
S-210WHZ08-853	Upper Assembly Repair Kit 1/2", 3/4" & 1"
S-210WHZ-16-81	Upper Packing 1 1/2" & 2"
S-210WHZ-16-82	Seat/Stem Assy 1 1/2" & 2"
S-210WHZ-16-83	Bonnet Gasket 1 1/2" & 2"
S-210WHZ-16-84	Seat Replacement 1 1/2" & 2"
S-210WHZ16-853	Upper Assembly Repair Kit 1 1/2" & 2"

Globe 231 Series

Kit Number	Description
S-000231-4-81	Upper Packing 1/2"
S-000231-4-82	Seat/Stem Assy 1/2"
S-000231-4-83	Bonnet Gasket 1/2"
S-000231-4-85	Kit Upper Assembly 1/2"
S-000231-8-81	Upper Packing
S-000231-8-82	Seat/Stem Assy
S-000231-8-83	Bonnet Gasket
S-000231-8-85	Kit Upper Assembly
S-000231-12-81	Upper Packing
S-000231-12-82	Seat/Stem Assy
S-000231-12-83	Bonnet Gasket
S-000231-12-85	Kit Upper Assembly

Globe 232 Series

Kit Number	Description
S-000232-4-81	Upper Packing 1/2"
S-000232-4-82	Seat/Stem Assy 1/2"
S-000232-4-83	Bonnet Gasket 1/2"
S-000232-4-85	Kit Upper Assembly 1/2"
S-000232-8-81	Upper Packing 1"
S-000232-8-82	Seat/Stem Assy
S-000232-8-83	Bonnet Gasket
S-000232-8-85	Kit Upper Assembly
S-000232-12-81	Upper Packing
S-000232-12-82	Seat/Stem Assy
S-000232-12-83	Bonnet Gasket
S-000232-12-85	Kit Upper Assembly

Repair Kits

Check 886 Series

Kit Number	Description
S-000886-4-82	Seat Assembly 1/2"
S-000886-4-83	Bonnet Gasket 1/2"
S-000886-8-82	Seat Assembly 1"
S-000886-12-82	Seat Assembly 1 1/2"
S-000886-16-82	Seat Assembly 2"
S-000886-24-82	Seat Assembly 3"
S-000886-32-82	Seat Assembly 4"
S-0886GF-4-82	Seat Assembly 1/2"
S-0886GF-4-83	Bonnet Gasket 1/2"
S-0886GF-8-82	Seat Assembly 1"
S-0886GF-8-83	Bonnet Gasket 1"
S-0886GF-12-82	Seat Assembly 1 1/2"
S-0886GF-12-83	Bonnet Gasket 1 1/2"
S-0886M-04-82	Seat Assembly 1/2"
S-0886M-8-82	Seat Assembly 1"
S-0886M-8-83	Bonnet Gasket 1"
S-0886M-12-82	Seat Assembly 1 1/2"
S-0886M-12-83	Bonnet Gasket 1 1/2"
S-0886M-16-82	Seat Assembly 2"
S-0886M-16-83	Bonnet Gasket 2"
S-0886M-24-82	Seat Assembly 3"
S-0886M-24-83	Bonnet Gasket 3"
S-0886M-32-82	Seat Assembly 4"
S-0886M-32-83	Bonnet Gasket 4"

Bronze Gate 302 Series

Kit Number	Description
B-000302-4KIT	Kit Upper Assembly 1/2"
B-000302-8KIT	Kit Upper Assembly 1"
B-000302-12KIT	Kit Upper Assembly 1 1/2"
B-000302-16KIT	Kit Upper Assembly 2"
B-000302-20KIT	Kit Upper Assembly 2 1/2"
B-000302-24KIT	Kit Upper Assembly 3"

Gate 306 Series

Kit Number	Description
B-000306-6KIT	Kit Upper Assembly 3/4"
B-000306-8KIT	Kit Upper Assembly 1"
B-000306-12KIT	Kit Upper Assembly 1 1/2"
B-000306-16KIT	Kit Upper Assembly 2"

Gate 310 Series

Kit Number	Description
B-000310-24KIT	Kit Upper Assembly 3"

Gate 310X Series

Kit Number	Description
B-00310X-24-81	Upper Packing 3"
B-00310X-24-82	Seat Assembly 3"
B-00310X-24-83	Bonnet Gasket 3"
B-00310X-24KIT	Kit Upper Assembly 3"

Gate 322 Series

Kit Number	Description
B-000322-4KIT	Kit Upper Assembly 1/2"
B-000322-8-81	Upper Packing 1"
B-000322-8-82	Seat Assembly 1"
B-000322-8-83	Bonnet Gasket 1"
B-000322-8KIT	Kit Upper Assembly 1"
B-000322-12-81	Upper Packing 1 1/2"
B-000322-12-82	Seat Assembly 1 1/2"
B-000322-12-83	Bonnet Gasket 1 1/2"
B-000322-12KIT	Kit Upper Assembly 1 1/2"
B-000322-16-81	Upper Packing 2"
B-000322-16-82	Seat Assembly 2"
B-000322-16-83	Bonnet Gasket 2"
B-000322-16KIT	Kit Upper Assembly 2"
B-000322-20-81	Upper Packing 2 1/2"
B-000322-20-82	Seat Assembly 2 1/2"
B-000322-20-83	Bonnet Gasket 2 1/2"
B-000322-20KIT	Kit Upper Assembly 2 1/2"
B-000322-24-81	Upper Packing 3"
B-000322-24-82	Seat Assembly 3"
B-000322-24-83	Bonnet Gasket 3"
B-000322-24KIT	Kit Upper Assembly 3"

Repair Kits

Gate 326 Series

Kit Number	Description
B-000326-4-81	Upper Packing 1/2"
B-000326-4-82	Seat Assembly 1/2"
B-000326-4-83	Bonnet Gasket 1/2"
B-000326-4KIT	Kit Upper Assembly 1/2"
B-000326-6-81	Upper Packing 3/4"
B-000326-6-82	Seat Assembly 3/4"
B-000326-6-83	Bonnet Gasket 3/4"
B-000326-6KIT	Kit Upper Assembly 3/4"
B-000326-8-81	Upper Packing 1"
B-000326-8-82	Seat Assembly 1"
B-000326-8-83	Bonnet Gasket 1"
B-000326-8KIT	Kit Upper Assembly 1"
B-000326-12-81	Upper Packing 1 1/2"
B-000326-12-82	Seat Assembly 1 1/2"
B-000326-12-83	Bonnet Gasket 1 1/2"
B-000326-12KIT	Kit Upper Assembly 1 1/2"
B-000326-16-81	Upper Packing 2"
B-000326-16-82	Seat Assembly 2"
B-000326-16-83	Bonnet Gasket 2"
B-000326-16KIT	Kit Upper Assembly 2"

Globe202XSeries-ConicalSeat-ShortStem

Kit Number	Description
B-00202X-4KIT	Kit Upper Assembly 1/2"
B-00202X-8-81	Upper Packing 1"
B-00202X-8-82	Seat Assembly 1"
B-00202X-8-83	Bonnet Gasket 1"
B-00202X-8KIT	Kit Upper Assembly 1"
B-00202X-12-81	Upper Packing 1 1/2"
B-00202X-12-82	Seat Assembly 1 1/2"
B-00202X-12-83	Bonnet Gasket 1 1/2"
B-00202X-12KIT	Kit Upper Assembly 1 1/2"
B-00202X-16-81	Upper Packing 2"
B-00202X-16-82	Seat Assembly 2"
B-00202X-16-83	Bonnet Gasket 2"
B-00202X-16KIT	Kit Upper Assembly 2"

Globe206GFSeries-Grafoil®-ShortStem

Kit Number	Description
VB-0206GF-2-81	Upper Packing 1/4"
VB-0206GF-2-82	Seat Assembly 1/4"
VB-0206GF-2-83	Bonnet Gasket 1/4"
B-0206GF-2-85	Kit Upper Assembly 1/4"
VB-0206GF-4-81	Upper Packing 1/2"
VB-0206GF-4-82	Seat Assembly 1/2"
VB-0206GF-4-83	Bonnet Gasket 1/2"
B-0206GF-4-85	Kit Upper Assembly 1/2"
VB-0206GF-6-81	Upper Packing 3/4"
VB-0206GF-6-82	Seat Assembly 3/4"
VB-0206GF-6-83	Bonnet Gasket 3/4"
B-0206GF-6-85	Kit Upper Assembly 3/4"
VB-0206GF-8-81	Upper Packing 1"
VB-0206GF-8-82	Seat Assembly 1"
VB-0206GF-8-83	Bonnet Gasket 1"
B-0206GF-8-85	Kit Upper Assembly 1"
VB-0206GF-12-81	Upper Packing 1 1/2"
VB-0206GF-12-82	Seat Assembly 1 1/2"
VB-0206GF-12-83	Bonnet Gasket 1 1/2"
B-0206GF-12-85	Kit Upper Assembly 1 1/2"
VB-0206GF-16-81	Upper Packing 2"
VB-0206GF-16-82	Seat Assembly 2"
VB-0206GF-16-83	Bonnet Gasket 2"
B-0206GF-16-85	Kit Upper Assembly 2"

Globe 206LL Series - Live Loaded - Union Bonnet - Short Stem

Kit Number	Description
B-0206LL-4KIT	Kit Upper Assembly 1/2"
B-0206LL-8KIT	Kit Upper Assembly 1"

Globe 206ULL Series - Live Loaded - Union Bonnet - Short Stem

Kit Number	Description
B-206ULL-12KIT	Kit Upper Assembly 1 1/2"
B-206ULL-16KIT	Kit Upper Assembly 2"

Globe 206LL Series - Live Loaded - Bolted Bonnet - Short Stem

Kit Number	Description
B-206BLL-12KIT	Kit Upper Assembly 1 1/2"

Repair Kits

Globe 222X Series - Conical Seat - Extended Stem

Kit Number	Description
B-00222X-4-81	Upper Packing 1/2"
B-00222X-4-82	Seat Assembly 1/2"
B-00222X-4-83	Bonnet Gasket 1/2"
B-00222X-4KIT	Kit Upper Assembly 1/2"
B-00222X-6-81	Upper Packing 3/4"
B-00222X-6-82	Seat Assembly 3/4"
B-00222X-6-83	Bonnet Gasket 3/4"
B-00222X-6KIT	Kit Upper Assembly 3/4"
B-00222X-8-81	Upper Packing 1"
B-00222X-8-82	Seat Assembly 1"
B-00222X-8-83	Bonnet Gasket 1"
B-00222X-8KIT	Kit Upper Assembly 1"
B-00222X-12-81	Upper Packing 1 1/2"
B-00222X-12-82	Seat Assembly 1 1/2"
B-00222X-12-83	Bonnet Gasket 1 1/2"
B-00222X-12KIT	Kit Upper Assembly 1 1/2"
B-00222X-16-81	Upper Packing 2"
B-00222X-16-82	Seat Assembly 2"
B-00222X-16-83	Bonnet Gasket 2"
B-00222X-16KIT	Kit Upper Assembly 2"
B-00222X-24-81	Upper Packing 2 1/2" & 3"
B-00222X-24-82	Seat Assembly 2 1/2" & 3"
B-00222X-24-83	Bonnet Gasket 2 1/2" & 3"
B-00222X-24KIT	Kit Upper Assembly 2 1/2" & 3"

Globe 226LL Series - Live Loaded - Union Bonnet - Extended Stem

Kit Number	Description
B-0226LL-4-81	Upper Packing 1/2"
B-0226LL-4-82	Seat Assembly 1/2"
B-0226LL-4-83	Bonnet Gasket 1/2"
B-0226LL-4KIT	Kit Upper Assembly 1/2"
B-0226LL-8-81	Upper Packing 1"
B-0226LL-8-82	Seat Assembly 1"
B-0226LL-8-83	Bonnet Gasket 1"
B-0226LL-8KIT	Kit Upper Assembly 1"

Globe 226ULL Series - Live Loaded - Union Bonnet - Extended Stem

Kit Number	Description
B-226ULL-12-81	Upper Packing 1 1/2"
B-226ULL-12-82	Seat Assembly 1 1/2"
B-226ULL-12-83	Bonnet Gasket 1 1/2"
B-226ULL-12KIT	Kit Upper Assembly 1 1/2"
B-226ULL-16-81	Upper Packing 2"
B-226ULL-16-82	Seat Assembly 2"
B-226ULL-16-83	Bonnet Gasket 2"
B-226ULL-16KIT	Kit Upper Assembly 2"

Globe 226BLL Series - Live Loaded - Bolted Bonnet - Extended Stem

Kit Number	Description
B-226BLL-12-81	Upper Packing 1 1/2"
B-226BLL-12-82	Seat Assembly 1 1/2"
B-226BLL-12-83	Bonnet Gasket 1 1/2"
B-226BLL-12KIT	Kit Upper Assembly 1 1/2"
B-226BLL-16-81	Upper Packing 2"
B-226BLL-16-82	Seat Assembly 2"
B-226BLL-16-83	Bonnet Gasket 2"
B-226BLL-16KIT	Kit Upper Assembly 2"

Globe 226XGF Series - Grafoil® - Extended Stem

Kit Number	Description
VB-226XGF-4-81	Upper Packing 1/2"
VB-226XGF-4-82	Seat Assembly 1/2"
VB-226XGF-4-83	Bonnet Gasket 1/2"
VB-226XGF-4KIT	Kit Upper Assembly 1/2"
VB-226XGF-6-81	Upper Packing 3/4"
VB-226XGF-6-82	Seat Assembly 3/4"
VB-226XGF-6-83	Bonnet Gasket 3/4"
VB-226XGF-6KIT	Kit Upper Assembly 3/4"
VB-226XGF-8-81	Upper Packing 1"
VB-226XGF-8-82	Seat Assembly 1"
VB-226XGF-8-83	Bonnet Gasket 1"
VB-226XGF-8KIT	Kit Upper Assembly 1"
VB-226XGF-12-81	Upper Packing 1 1/2"
VB-226XGF-12-82	Seat Assembly 1 1/2"
VB-226XGF-12-83	Bonnet Gasket 1 1/2"
VB-226XGF-12KIT	Kit Upper Assembly 1 1/2"

Check 840 & 846M Series

Kit Number	Description
B-000840-4-82	Seat Assembly 1/2"
B-000840-8-82	Seat Assembly 1"
B-000840-12-82	Seat Assembly 1 1/2"
B-000840-16-82	Seat Assembly 2"
B-000846M-4-82	Metal Seat Assembly 1/2"
B-000846M-4-83	Bonnet Gasket 1/2"
B-000846M-6-82	Metal Seat Assembly 3/4"
B-000846M-6-83	Bonnet Gasket 3/4"
B-000846M-8-82	Metal Seat Assembly 1"
B-000846M-8-83	Bonnet Gasket 1"
B-000846M-12-82	Metal Seat Assembly 1 1/2"
B-000846M-12-83	Bonnet Gasket 1 1/2"
B-000846M-16-82	Metal Seat Assembly 2"
B-000846M-16-83	Bonnet Gasket 2"

SK Advantage Repair Kits

Kit Number	Part Number	Kit Contents
SKM009404-80AJ	SKL9402,SKM9402, SKL9404 and SKM9404	(1) Gasket and (1) Seat Disc Assembly.
SKM009408-80AJ	SKL9406, SKM9406, SKL9408 and SKM9408	
SKM009412-80AJ	SKL9412 and SKM9412	
SKM009416-80AJ	SKL9416 and SKM9416	
SKM009408-80J	SKL9402, SKM9402, SKL9404, SKM9404,SKL9406, SKM9406, SKL9408 and SKM9408	(2) Spring, Belleville, (1) Washer, Live-loading, (5) Packing, Bonnet, (4)Packing, separator, (1) Bearing, Bonnet, (1)Follower, Gland, (1) Packing, Adapter.
SKM009412-80J	SKL9412 and SKM9412	
SKM009416-80J	SKL9416 and SKM9416	
SKM009404-KIT	SKM9402 and SKM9404	(1) Gasket, (1) Stem, (1) Bonnet & tube Assy, (2) Spring, Belleville, (1) Washer, Live-loading, (5) Packing, Bonnet, (4)Packing, Separator, (1) Bearing, Bonnet, (1) Follower, Gland, (1) Nut, Stem, (1) Ring, Retaining, (1) Packing, Adapter, (1) Nut, Bonnet, (4) Screw, (1) Handwheel, (1) Nut, Hex, and (1) Washer.
SKM009408-KIT	SKM9406 and SKM9408	
SKM009412-KIT	SKM9412	
SKM009416-KIT	SKM9416	
SKL009404-KIT	SKL9402 and SKL9404	(1) Gasket, (1) Stem, (1) Bonnet & tube Assy, (2) Spring, Belleville, (1) Washer, Live-loading, (5) Packing, Bonnet, (4)Packing, Separator, (1) Bearing, Bonnet, (1) Follower, Gland, (1) Nut, Stem, (1) Ring, Retaining, (1) Packing, Adapter, (1) Nut, Bonnet, (4) Screw, (1) Handwheel, (1) Nut HEX, and (1) Washer.
SKL009408-KIT	SKL9406 and SKL9408	
SKL009412-KIT	SKL9412	
SKL009416-KIT	SKL9416	
SK94004-81	BB9402, SKB9402, BB9404 and SKB9404	(1) Gasket, (1) Spring, (1) Washer, (1) Ring V Male. (3) Ring V female,(1) O'ring.
SK94008-81	BB9406, SKB9406, BB9408 and SKB9408	
SK9412-81	BB9412 and SKB9412	
SK9416-81	BB9416 and SKB9416	
SK94004-82	BB9402, SKB9402, BB9404 and SKB9404	(1) Gasket and (1) Seat Disc Assembly.
SK94008-82	BB9406, SKB9406, BB9408 and SKB9408	
SK9412-82	BB9412 and SKB9412	
SK9416-82	BB9416 and SKB9416	
BB009404-85	BB9402, SKB9402, BB9404 and SKB9404	
BB009408-85	BB9406, SKB9406, BB9408 and SKB9408	(1) Gasket, (1)Stem,(1) Bonnet & tube Assy, (1) Spring, (1) Washer, (1)Ring V Male. (3) Ring V female,(1) O-ring, (1) Nut, Bonnet, (4) Screw, (1) Handwheel, (1) Nut, Hex, and (1) Washer.
BB009412-85	BB9412 and SKB9412	
BB009416-85	BB9416 and SKB9416	

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