

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

NOTICE

Failure to install parts exactly as described in the instructions could result in a product that will not perform satisfactorily. Even if parts are correctly installed, the product might fail to perform satisfactorily if other parts are worn, corroded or dirty. Improper repair can cause leaks and malfunction, which could result in bodily injury and property damage. Any such use or installation of parts must ONLY be done by experienced and trained personnel using accepted governmental and industrial safety procedures. RegO® assumes no responsibility or liability for performance of products repaired in the field. It must be clearly understood that the person or organization repairing the product assumes total responsibility for the performance of the product.

WARNING

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, plastic, 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.

LIMITED 10 YEAR WARRANTY

RegO® warrants 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 30 days after buyer's discovery of what buyer believes is a defect, buyer must notify RegO® thereof in writing and ship (at buyer's expense) the product to RegO® at 100 RegO Drive, Elon, NC 27244. RegO®, at its option, and within 45 days, will repair, replace F.O.B. point of manufacture, or refund the purchase price of that part or product found by it to be defective. Failure of buyer to give such written notice and return the product within 30 days shall be deemed an absolute and unconditional waiver of any and all claims of buyer arising out of such defect.

This limited 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 limited 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 limited 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, AND EXPRESSLY DISCLAIMS, ANY EXPRESS OR IMPLIED WARRANTIES, 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 A COMBINATION WITH OTHERS. REGO® DISCLAIMS ALL WARRANTIES NOT STATED HEREIN.

This Limited Warranty is given by Engineered Controls International LLC, of 100 RegO Drive Elon, NC 27244 USA, (336) 449-7707.

LIMITATION OF LIABILITY

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



RegO® 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 a 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 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 material. 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 provided to buyer by any third party and buyer assumes all risk 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. This 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.

The benefits given by the Limited Warranty above are in addition to any other rights and remedies to which you may be entitled by law.

NOTE TO AUSTRALIAN PURCHASERS: The following applies if you purchased this product as a "consumer" as defined in the Australian Consumer Law. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. Information regarding how to return a product and make a claim under this Limited Warranty is set forth below.

Nothing in this document purports to modify or exclude your rights if any under the Australian Consumer Law, or other laws which cannot be lawfully be modified or excluded.

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, to make a claim under this Limited Warranty the user must, within 30 days after the user's discovery of what the user believes is a defect, notify in writing and return the product (at the user's expense) to the distributor from whom he purchased the product or parts. The distributor may or may not at the distributor's option, choose to submit the product or parts to RegO®, pursuant to its Limited Warranty. Failure by buyer to give such written notice and return the product within 30 days shall be deemed an absolute and unconditional waiver of buyer's claim for such defects. Acceptance of any alleged defective product or parts by RegO® distributor for replacement or repairs under terms of RegO® Limited Warranty in no way obligates RegO® to the terms of the above warranty. Because of a policy of continuous product improvement, RegO® reserves the right to change designs, materials or specifications without notice.

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
	Inches	mm		
9560 series	1"	25	25	SEP
9500 series	1"	25	25	SEP
BK8400 series	2"	51	50	II
BK9400 series	2"	51	50	II
T9450 series	½"	13	15	TPED
T9460 series	½"	13	15	TPED
1682 series	¼"	6	8	SEP
BR-&1780 series	1"	25	25	SEP
RG series	¼"	6	8	SEP
ECL series	¼"	6	8	SEP
PRV9430 & PRV19430 series	½"	13	15	IV & TPED
SS9430 & PRV29430 series	½"	13	15	IV & TPED
BK008400 Series	2"	51	50	II
BK009400 Series	2"	51	50	II
BB9400 Series	2"	51	50	II
SKA9400 Series	2"	51	50	II & TPED
SKS9400 Series	2"	51	50	II & TPED
SKM9400 Series	2"	51	50	II & TPED
SKL9400 Series	2"	51	50	II & TPED
Goddard 110/210 Series	4"	102	100	Cat II (6" Class 300 is Cat III)
Goddard 886 / 886M Series	1 ½"	38	40	II
Goddard 840 / 846M Series	2"	51	50	II
Goddard 302 / 306 / 312 / 322 / 326 Series	3"	76	80	II
Goddard 202X / 206 / 222 / 222X / 226 / 226X / 231 / 232 Series	3"	76	80	II
AR4100/5100 Series	1½"	38	40	IV & TPED
DR6108	1"	25	25	SEP
DR6112	1 ½"	38	40	II
DR6113	1 ½"	38	40	II

PED	Pressure Equipment Directive
SEP	Sound Engineering Practice
II	Module A1 Internal Production Control with Monitoring of Final Assessment
	Module D1 QA for Production, Final Inspection and Testing
	Module E1 QA for Final Inspection and Testing
TPED	Transportable Pressure Equipment Directive
IV	Module B EC Type-Examination
	Module D Quality Assurance (QA) for Production, Final Inspection and Testing
	Module F Product Verification
	Module G Unit Verification
	Module H1 Full QA with Design Examination and Monitoring of Final Assessment

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 to rigid industry standards and, 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.

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)
- Approved for TPED in accordance with EN1626
- 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

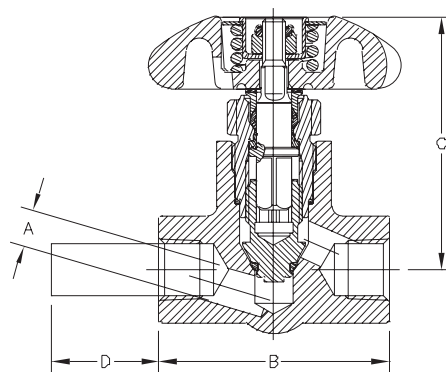
Part Number	Inlet	Outlet	Orifice A	Length B		Height (Approx.) C		Tube D	C _v (K _v)
				inches	mm	inches	mm		
T9452	¼" F.NPT	¼" F.NPT	.250	2½"	63.50	2¾"	69.85	None	.99 (0.85)
T9453	⅜" F.NPT	⅜" F.NPT	.406						1.76 (1.52)
T9454	½" F.NPT	½" F.NPT	.406						1.79 (1.54)
T9464CA	.675" O.D. Tube	⅜" F.NPT	.406	2½"	63.50	2¾"	69.85	1⅛"	1.76 (1.52)
T9464DA								2⅛"	
T9464ADA								3⅞"	



T9450 Series



T9460 Series



Extended Stem Retrofit Kits

Application

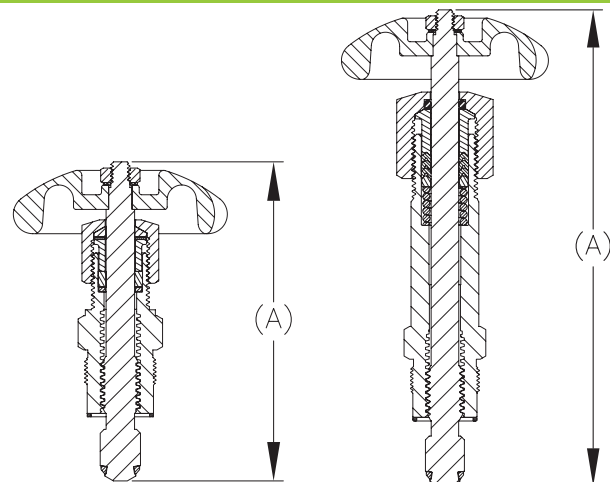
Retrofit kits may be used to convert the 9450 and 9460 series short stem shut off valves into extended stem style. The conversion can be done without removing the valve from your system. Available in two stem lengths. All kits are oxygen cleaned and packaged per CGA G-4.1.

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
BK9450R	6.5" (165.1mm)	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

Materials

Body and Bonnet Brass
Stem Stainless Steel
Seat Disc PCTFE
Handwheel Aluminum
Bonnet Gasket PTFE

Conversion Kit

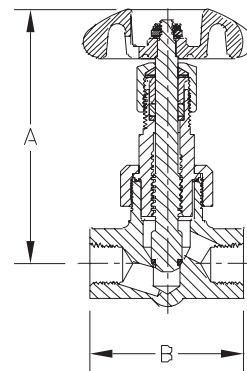
BK 9450-KIT is a bonnet and stem assembly kit to convert ES 8450 series and previous ES 9450 Series to the BK 9450 style.

Ordering Information

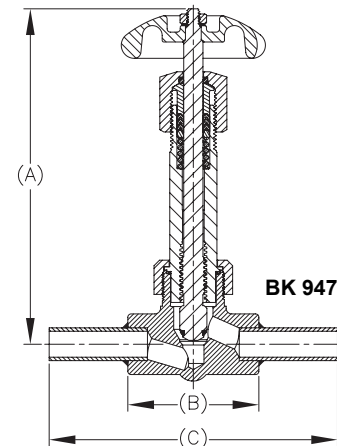
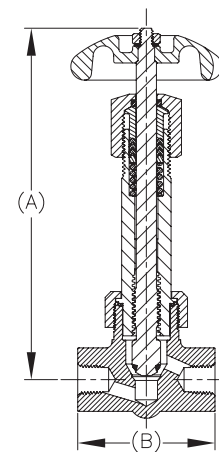
Part Number	Inlet/Outlet Connections	Packing	Height "A"		Body Width "B"		Width with Tube "C"		Cv (Kv)
			Inches	mm	Inches	mm	Inches	mm	
ES8452	1/4" FNPT	PTFE	4.2"	107	2.5"	63	N/A		0.70 (0.60)
TES8452		Grafoil							
ES8453	3/8" FNPT	PTFE							
TES8453		Grafoil							
ES8454	1/2" FNPT	PTFE							
TES8454		Grafoil							
BK9452	1/4" FNPT	PTFE	6.5"	165	2.5"	63	N/A		0.70 (0.60)
BK9453	3/8" FNPT								
BK9454	1/2" FNPT								
BK9453FA	5/8" OD tubing x 3/8" FNPT		4.0"	102					1.10 (0.95)
BK9475A	5/8" OD tubing both ends		5.5"	140					1.10 (0.95)



ES 8450 Series



BK 9450 Series



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.

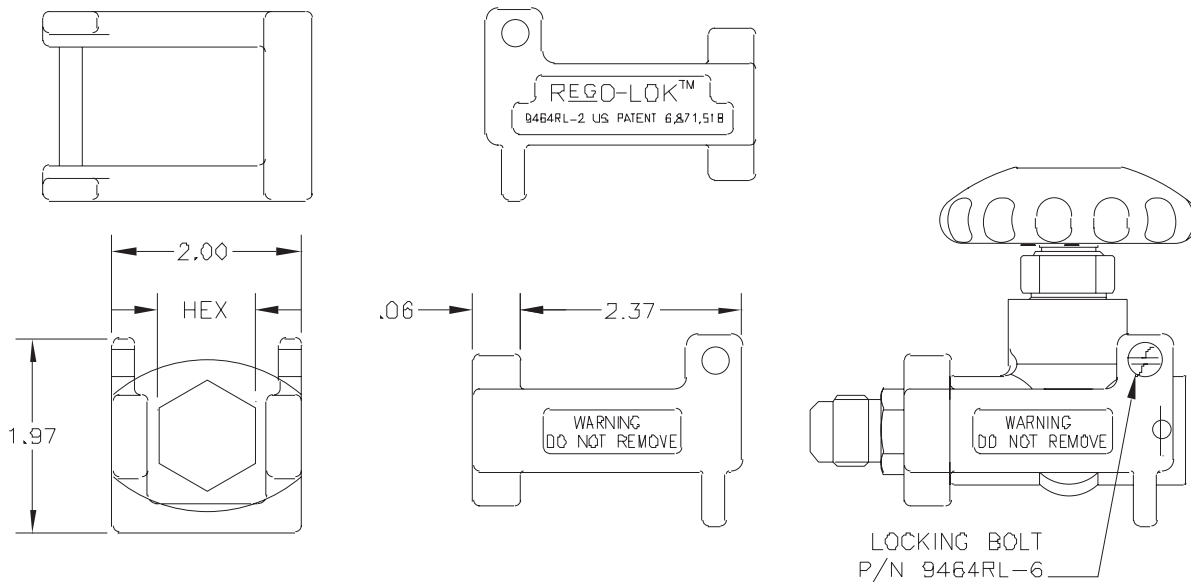
Features

- 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	N/A
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
- RG090AG 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 Inches (mm)	Width B Inches (mm)	C Inches (mm)	D Inches (mm)	Operating Range (psig)
RG022A	¼" (6.35)	2 1/16" (52.32)	3" (76.20)	1" (25.40)	0-30 psig (0-2.1 barg)
RG125A					25-250 psig (1.7-17.2 barg)
RG125C3	¾" (9.52)	2 1/8" (53.97)	3.33" (84.58)	0.80" (20.32)	125-350 psig (17.2-24.2 barg)
RG175C3					25-250 psig (1.7-17.2 barg)
RG300A	¼" (6.35)	2 1/16" (52.32)	3" (76.20)	1" (25.40)	125-350 psig (17.2-24.2 barg)
RG90AG					25-250 psig (1.7-17.2 barg)

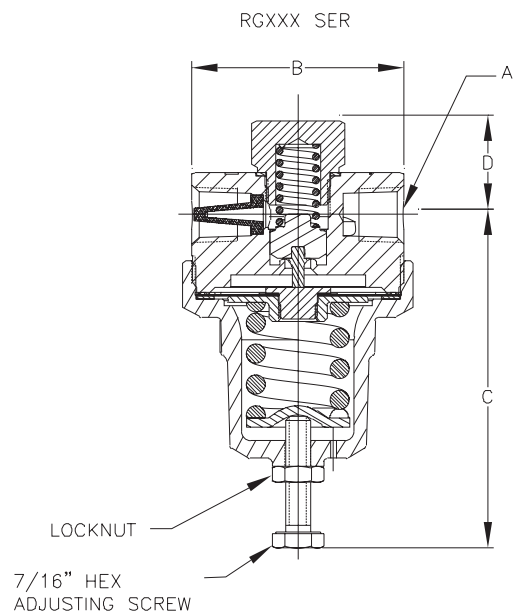
*Contact sales representative for additional settings.



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.

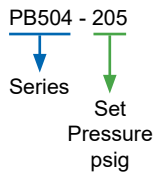
Features

- 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 (150 Mesh) helps prevent foreign material from entering the regulator
- 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



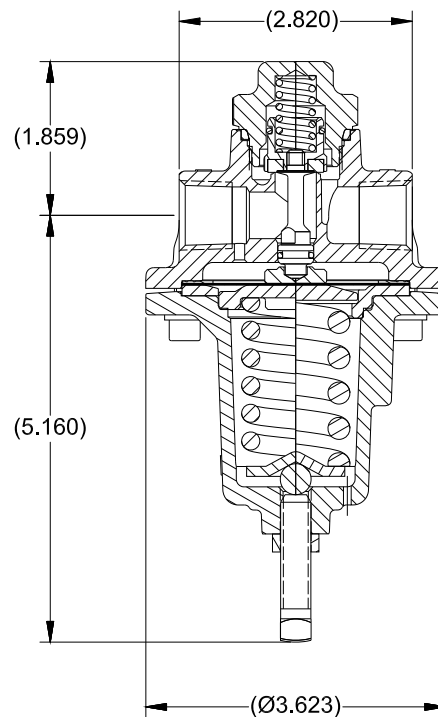
Ordering Information

Part Number	Inlet / Outlet Connections (F.NPT) A Inches (mm)	Delivery Pressure Setting Range psig (barg)
PB504-020 to 070	1/2" (12.70)	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

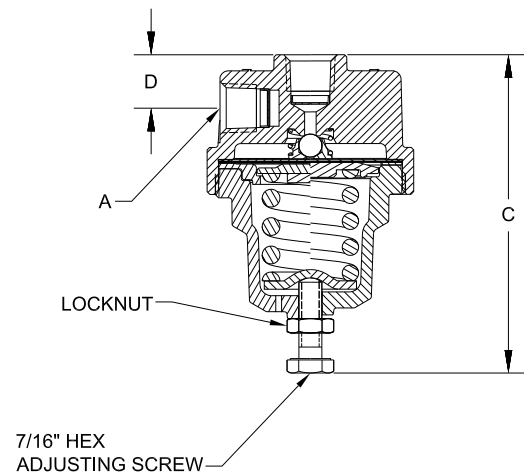
- ECL502 series design provides premium flow characteristics allowing for fast pressure reduction while maintaining sensitive flow control at lower pressure settings
- All materials of construction- copper alloy, PTFE and stainless steel were selected for compatibility with cryogenic service
- 150 count 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)
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
- Designed in accordance with UNECE.R110 19 - 340 psig (1.3 -23.4 barg)

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 (F.NPT) A	Max inlet pressure	Width B	C	D	Operating Range
ECL502-22	¼" NPT	235 psig (16 barg)	2.25" 57 mm	3.5" 89 mm	.58" 15 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		550 psig (38 barg)				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

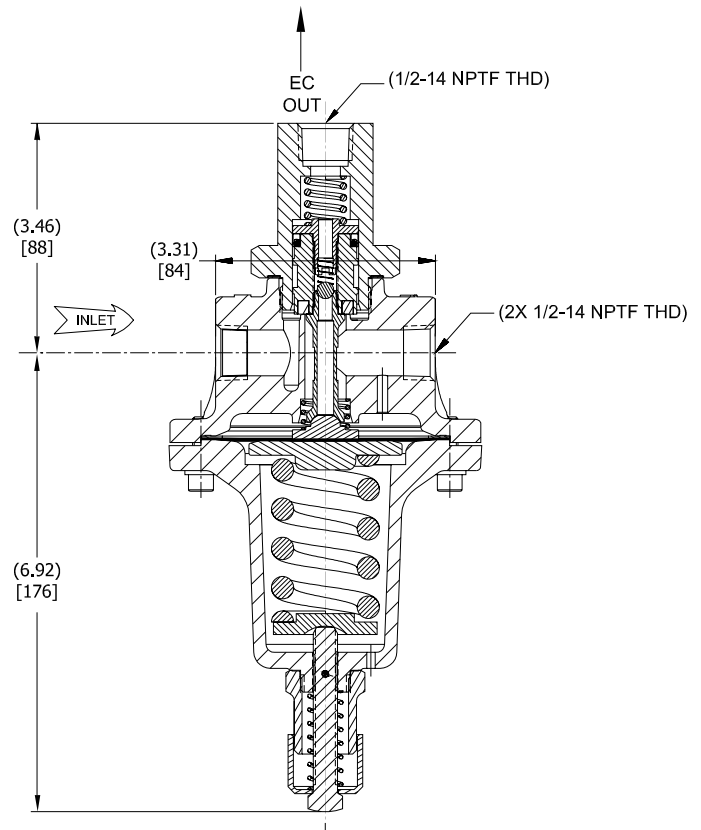
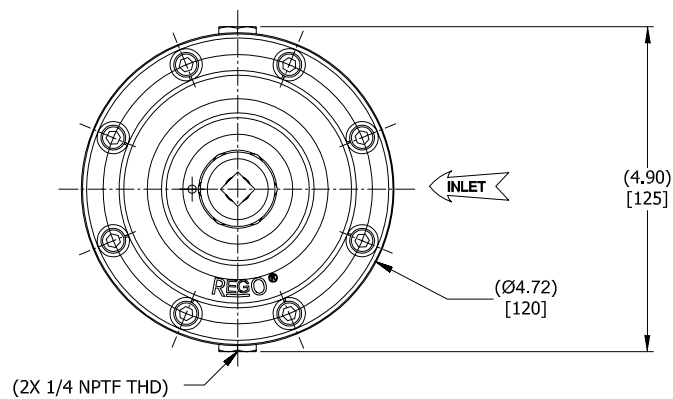
- All parts are copper alloy (brass), PTFE, and stainless steel— materials selected specifically for compatibility with cryogenic temperatures down to -320°F. (-196°C)
- Pressure setting scale on bonnet cap aids in pressure adjustment
- Maximum inlet pressure of 400 psig (27.6 barg)
- PTFE seat provides 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 (F.NPT) Inches (mm)	Operating Range (psig)
CB504B	1/2" (12.70)	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

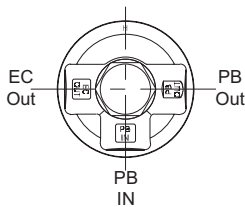
- All parts are copper alloy (brass), PTFE and stainless steel materials selected specifically for compatibility with cryogenic temperatures down to -320° F. (-196°C)
- PTFE seat helps assure a positive shut-off at cryogenic temperatures down to -320° F. (-196°C)
- High and low pressure builder/economizers 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, oxygen and LNG.



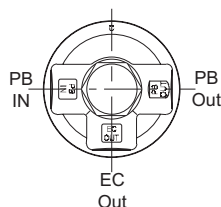
CBH502 Series

Materials

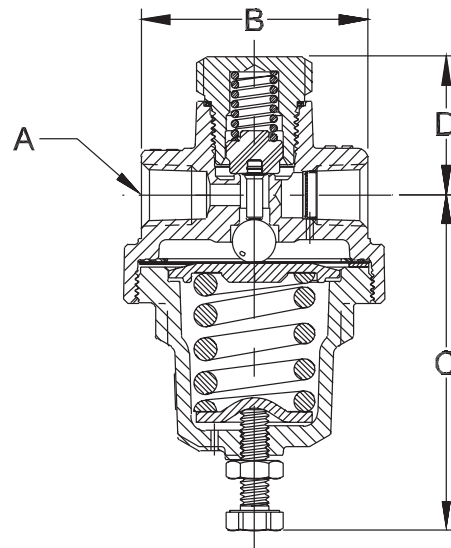
Body	Brass
Bonnet	Brass
Seat Disk	PTFE
Springs	Stainless Steel
Gaskets	PTFE & Copper
Diaphragm	Bronze



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 (10.3-24.1 barg)
CBH502-315						315 psig (21.7 barg)	
CBH502-325						325 psig (22.4 barg)	
CBH502-350						350 psig (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 (10.3-24.1 barg)
CBC502-325						325 psig (22.4 barg)	
CBC502-350	350 psig (24.1 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

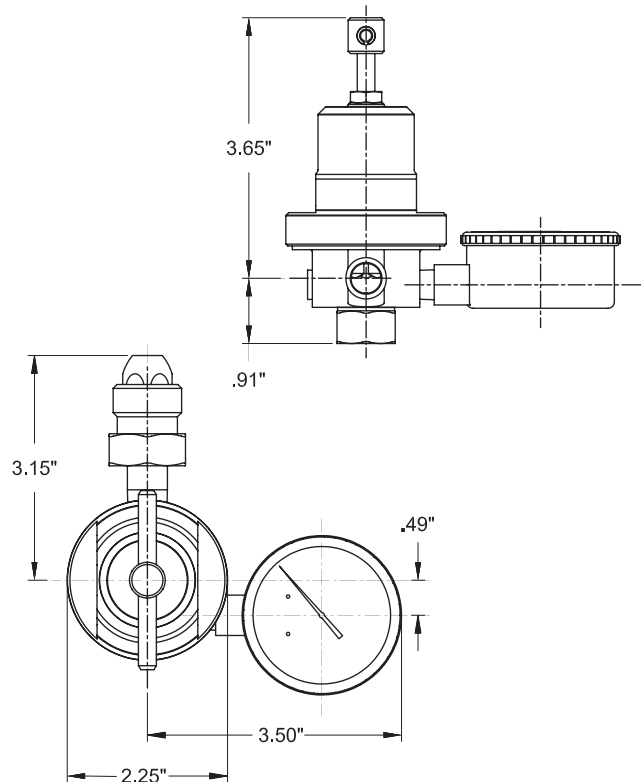
- Easy adjusting screw to maintain pressure setting
- 100% Factory tested
- CGA fitting inlet connection for ready hook-up and 1/4" F. NPT outlet.
- Gauges with applicable pressure ranges.
- Two delivery pressure ranges available.
- Clean for use in Oxygen per CGA G-4.1
- Temperature range -320°F (-196°C) 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
- Color coded labels clearly identify pressure setting range
- Tamper resistant
- Adapters provide standard pipe thread connections for venting gas to the outdoors
- Repeatable performance
- 100% factory tested
- Temperature Range (Teflon Seat) -320° to +165° F (-196°C to +74°C)
(Fluorosilicone Seat) -60° to +165° F (-51°C to +74°C)
- Rated for gas service only
- In liquid service be sure to use with a candy cane riser (Sold Separately)
- Setpoint tolerance ± 3%

Materials SS Style

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

Materials PRV and B-Style

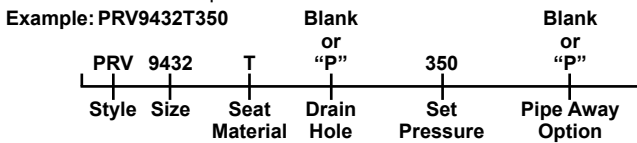
Body Brass
Spring Stainless Steel
Seat Retainer Brass
Pipe-Away Adapter Brass

Flow Performance

- For set pressures 90 - 600 psig capacity is 0.783 SCFM of air per psig of flow pressure. For set pressures 15 - 89 psig capacity is 0.750 SCFM of air per psig of flow pressure.
- B-9425N flow of 6.7 SCFM Air/psig at 120% of set pressure.
- B-9426N flow of 11.0 SCFM Air/psig at 120% of set pressure

Ordering Information

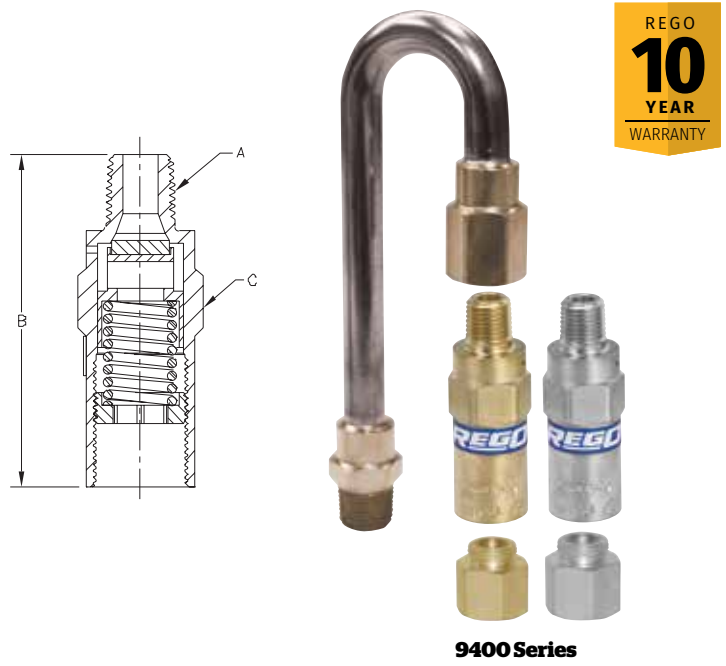
Fill in the blanks with options below.



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.

Ordering Information

Style	Size	Inlet M.NPT A Inches (mm)	Body and Valve Material	Pressure Setting Range psig (barg)	Height B Inches (mm)	Wrenching Hex C (mm)	Orifice Size Sq. Inch (mm)	Pipe-Away Adapter P/N	Pipe-Away Outlet FN.PT. Inches (mm)			
PRV	9432	¼" (6.35)	Brass	10-600 (0.68-41.36)	2.6" (66.04)	⅞" (22.35)	.062 (1.57)	B-9412-2	⅜" (9.65)			
SS			Stainless Steel					SS9412-4	½" (6.35)			
PRV	9433	⅜" (9.65)	Brass					2.8" (71.12)	B-9412-2	⅜" (9.65)		
SS			Stainless Steel						SS9412-4	½" (6.35)		
PRV	9434	½" (12.70)	Brass		20-300 (1.37-20.68)			3.4" (86.36)	1¼" (44.45)	.44 (11.17)	B-3131-10	1" (25.4)
SS			Stainless Steel		60-300 (4.13-20.68)			5.3" (134.62)	2⅝" (60.45)	.62 (15.74)	B-3132-10	1¼" (31.75)



Seat Material Option

F for Fluorosilicone for PRV and SS styles for 16-139 psig (1.10 - 9.58 barg)
T for PTFE for PRV and SS styles for 140-600 psig (9.65 - 41.36 barg)
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
Drain hole can not be used with pipeaway.

Pipe Away Option

P Pipeaway included and attached, No drain hole in relief valve.
For example PRV9432TP350P
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:

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.

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)
(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
- Color coded labels clearly identify pressure setting range
- Tamper resistant
- In liquid service be sure to use with a candy cane riser (Sold Separately)

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 psig 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 (0.2 barg), whichever is greater.

Ordering Information

Fill in the blanks with options below.

Example: PRV019432T350 **Blank or "P"**

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

Body Material Option

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

Seat Material Option

- 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 Option

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

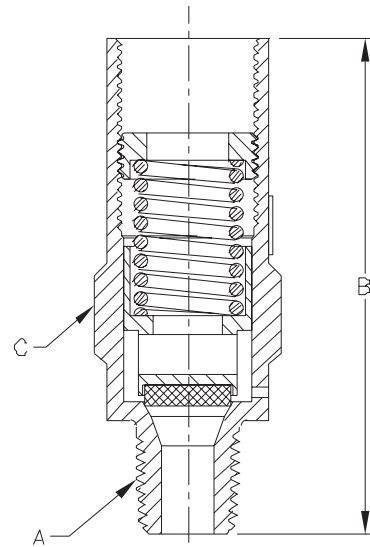
Part Number	Material	Inlet A Inches (mm)	Height B Inches (mm)	Wrenching Hex C Inches (mm)	Orifice Size
PRV19432	Brass	¼" (6.35)	2.6" (66.04)	⅜" (22.35)	.062 sq. inch 1.57 sq. mm
PRV29432	Stainless Steel				
PRV19433	Brass	⅜" (9.65)	2.8" (71.12)	⅜" (22.35)	.062 sq. inch 1.57 sq. mm
PRV29433	Stainless Steel				
PRV19434	Brass	½" (12.70)	2.8" (71.12)	⅜" (22.35)	.062 sq. inch 1.57 sq. mm
PRV29434	Stainless Steel				

Pipe-away adapter options available (sold separately)

Drain hole can not be used with pipe-away



19430 Series



Setpoint tolerance is ± 3% of the set pressure or ± 2 psig 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 PRV9400 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			

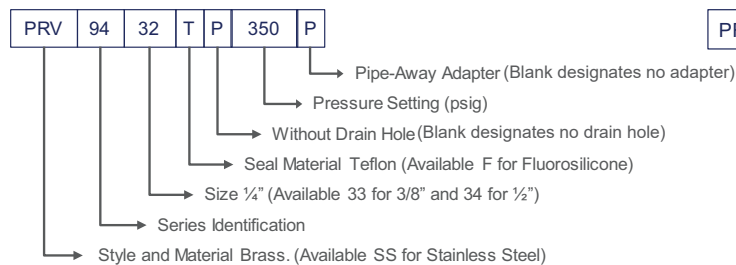
Color Identification

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

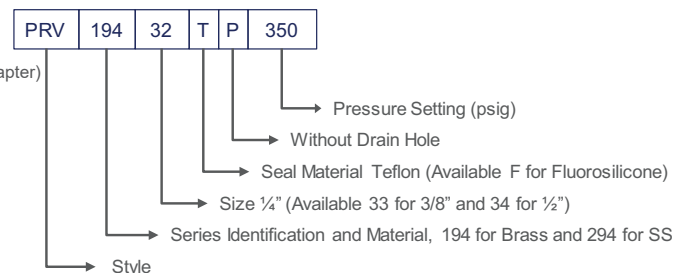
Color Identification

1.51 barg	15.85 barg
2.41 barg	24.13 barg
3.44 barg	31.02 barg
6.89 barg	34.47 barg
10.34 barg	

Non-ASME Ordering Information



ASME Ordering Information



Brass High Pressure ASME Relief Valves PRV19534K Series

Application

The RegO PRV19534 Series relief valves are designed for CO2 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. Compatible with all oxygen, nitrogen, argon, helium, LNG and CO2.



Features

- All valves are cleaned and packaged for oxygen service per CGA G-4.1
- Bubble tight at 95% of set pressure
- Full flow at 110% of set pressure
- Temperature range -320°F to +165°F (-196°C to +74°C)
- Rated for gas service only, not liquid
- Setpoint tolerance +/- 3%
- Available in brass with settings from 800 to 1,000 psig
- Builds off proven experience of and further extends PRV9400 series offerings
- ASME rated National Board Certified
- Easy to read color coded psig / bar labels
- Tamper resistant
- Adapters provide standard pipe thread connections for venting gas to the outdoors (B-9412-4, sold separately)
- Repeatable performance
- 100% factory tested
- In liquid service be sure to use with a candy cane riser (sold separately)
- In liquid service be sure to use with a candy cane riser (Sold Separately)

Flow Performance

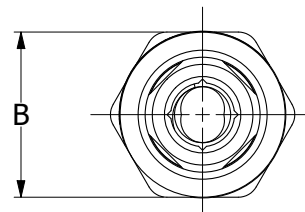
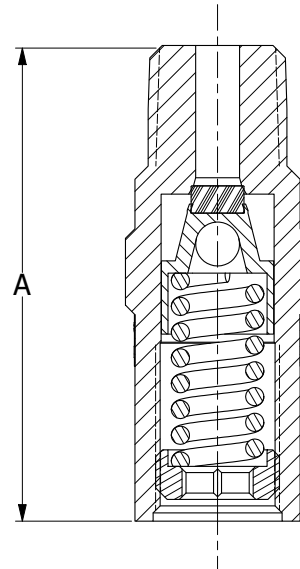
For set pressures 800-1000 psig, capacity is 0.805 SCFM of air per PSIA of flow pressure. Flow pressure per ASME is 10% above set pressure or +3 PSIG, whichever is greater.

Materials

Body	Brass ASTM B16 UNS C36000
Spring	Stainless Steel ASTM A313
Seat Retainer.....	Brass ASTM B16 UNS C36000
Seat	PCTFE (Kel -F)
Pipe-Away Adapter	Brass ASTM B16 UNS C36000



PRV19534K Series



Ordering Information

Part Number	Material	Pressure Setting Range psig (barg)	Inlet M.NPT	"A" Inches (mm)	"B" Inches (mm)	Orifice Size Inch ² (mm ²)	Kd Value	Pipe-Away Adapter P/N
PRV19534K	Brass	800- 1000 (55.1 - 68.9)	½"	2.9 (73.1)	1.0 (25.4)	0.266 (171.6)	0.79	B-9412-4

Pressure Setting and Flow Data

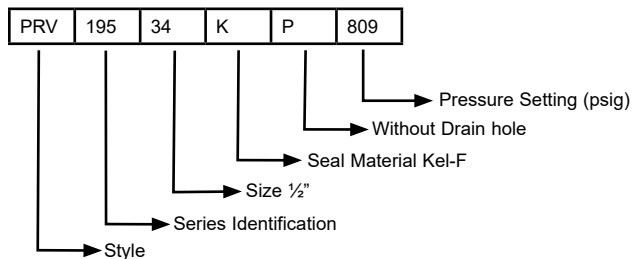
PRV19534K Series

Pressure Setting PSIG	Pressure Setting BARG	Air Flow Capacity SCFM	Pressure Setting PSIG	Pressure Setting BARG	Air Flow Capacity SCFM
800	551.6	720	900	620.5	809
805	555	725	905	624	813
810	558.5	729	910	627.4	818
815	561.9	734	915	630.9	822
820	565.4	738	920	634.3	826
825	568.8	742	925	637.8	831
830	572.3	747	930	641.2	835
835	575.7	751	935	644.7	840
840	579.2	756	940	648.1	844
845	582.6	760	945	651.6	849
850	586.1	765	950	655	853
855	589.5	769	955	658.5	857
860	593	773	960	661.9	862
865	596.4	778	965	665.3	866
870	599.8	782	970	668.8	871
875	603.3	787	975	672.2	875
880	606.7	791	980	675.7	880
885	610.2	796	985	679.1	884
890	613.6	800	990	682.6	888
895	617.1	804	995	686	893
			1000	689.5	897

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

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 C°)
- 100% factory tested
- Tamper Resistant
- Repeatable Performance
- Below 90db@ 350 Set Pressure @ 2 meters away
- In liquid service be sure to use with a candy cane riser (Sold Separately)

Pipe Away Option

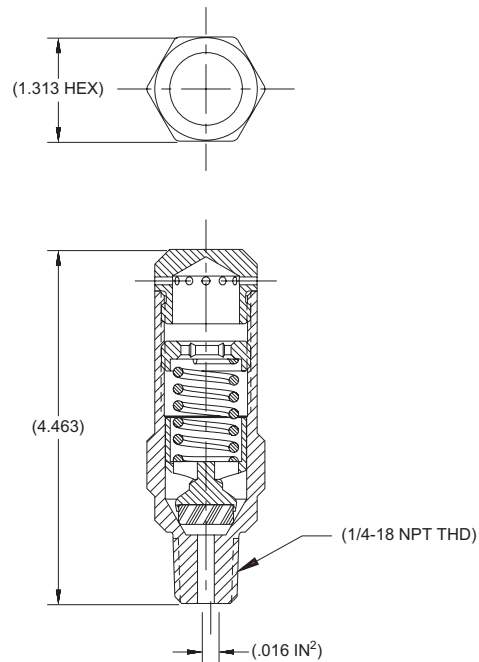
P Pipeaway included and attached, No drain hole in relief valve.
 For example NRF9432T140P
 Leave blank for relief valve without pipe-away attached.
 Pipeaway adapter part number NRF250-4.

Materials

BodyBrass
 Spring Stainless Steel
 Seat Retainer.....Brass



NRF Series



Ordering Information

Part Number	Inlet Inches (mm)	Set Pressure	
		psig	barg
NRF9432T230	¼" (6.35)	230	15.9
NRF9432T350		350	24.1
NRF9432T500		500	34.5

Noise Reduction Relief Valve NR Series

Application

Designed especially for indoor applications such as laboratories where relief valve discharge noise is an issue. RegO's NR series PRV provides excellent flow characteristics with a 50% reduction in outlet noise related to relief valve.

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 C°)
- 100% factory tested
- Repeatable Performance
- Below 90db@ 350 Set Pressure @ 2 meters away
- In liquid service be sure to use with a candy cane riser (Sold Separately)

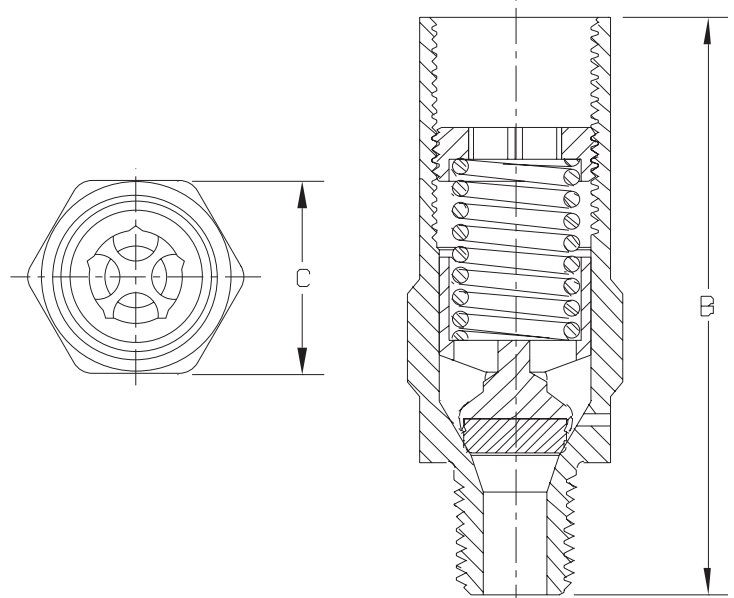
Materials

Body Brass
 Spring Stainless Steel
 Gasket PTFE



NR Series

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

Part Number	Seat Material	Inlet Connections (M.NPT) Inches (mm)	"B" Inches (mm)	"C" Inches (mm)	Orifice Size Inches (mm)	Factory Pressure Setting		Pipe-Away Adapter
						psig	barg	
NR9432F022	Fluorosilicone					22	1.51	B-9412-2
NR9432F050						50	3.44	
NR9432F100						100	6.89	
NR9432T230	PTFE	¼" (6.35)	2.60" (66.04)	⅞" (22.35)	.062 (1.57)	230	15.85	
NR9432T250						250	17.23	
NR9432T300						300	20.68	
NR9432T350						350	24.13	
NR9432T360						360	24.82	

Right Angle Relief Valves NG900 Series

Application

The NG900 series is designed specifically to avoid over-pressurization in LNG fuel tank applications and LNG installations. The NG900 Series is also compatible with oxygen, nitrogen, argon, helium, and hydrogen.

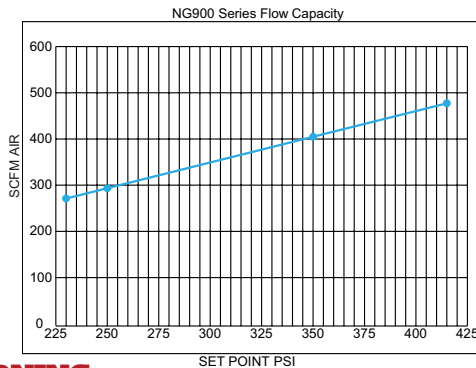
These valves open and close at preset pressures to ensure reliable performance at cryogenic temperatures.

Features

- Optional pull lever for manual override
- 100% Factory tested
- Temperature range -320°F to +196°F (-196°C to +74°C)
- Designed in accordance with & approved by ECE R110
- Approved by PED and TPED

Materials

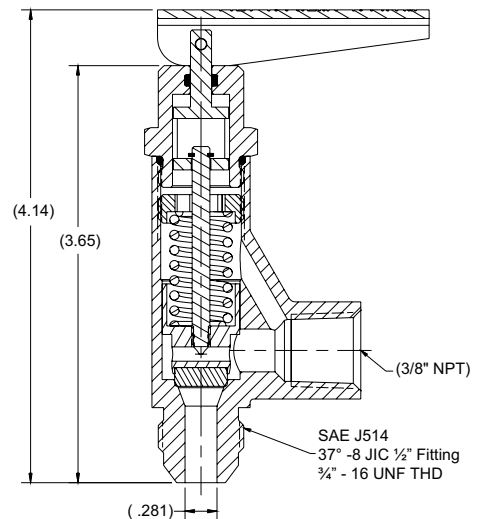
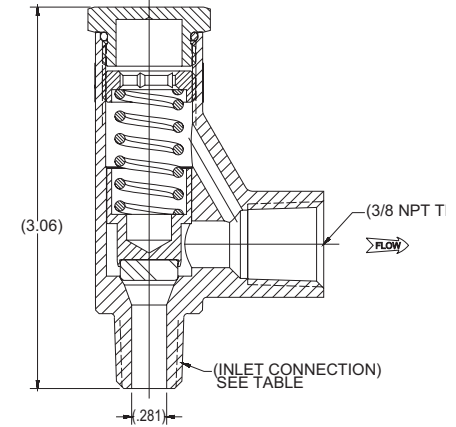
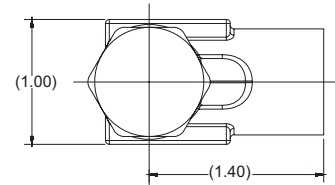
Spring Pin.....	Stainless Steel
Handle.....	Stainless Steel
O-rings.....	Fluorosilicone
Connector.....	Brass
Stem.....	Stainless Steel
Bonnet.....	Brass
Seat Disc.....	PTFE
Spring.....	Stainless Steel
Adjusting Screw.....	Stainless Steel
Body.....	Brass
Poppet.....	Brass



NG9002T



NG9008M



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

Part Number	Inlet Connection	Outlet Connection	Manual Override	Pressure setting	
				psig	barg
NG9002T022	1/2" MNPT (6.35 mm)	3/8" FNPT (9.65 mm)	No	22	1.52
NG9002T058				58	4.0
NG9002T230				230	15.85
NG9002T250				250	17.23
NG9002T275				275	18.96
NG9002T350				350	24.13
NG9002T415	3/8" MNPT (9.65 mm)		415	28.61	
NG9003T230			230	15.85	
NG9003T250			250	17.23	
NG9003T350			350	24.13	
NG9003T415			415	28.61	
NG9008M230			SAE J514 (37°-8JIC 1/2" fitting) (3/4"-16 UNF thread male)	Yes	230
NG9008M250	250	17.23			
NG9008M280	280	19.30			
NG9008M350	350	24.13			
NG9008M415	415	28.61			

*Contact your sales representative for additional settings.

Cryogenic Gas Relief Valves, ASME B-19434B Series



Application

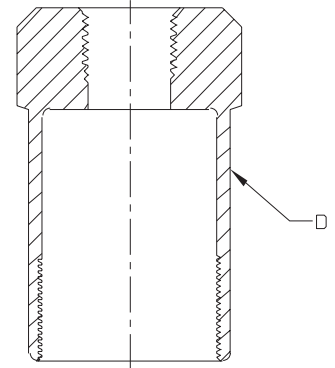
The B-19434B Series relief valves are suitable for use with oxygen and non corrosive industrial gases, such as nitrogen, argon and helium.

Features

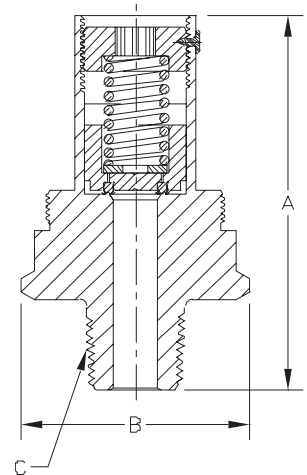
- The B-19434B design permits the valve to open slightly to relieve moderately excessive pressure
- When the pressure increases beyond a predetermined point, the valve opens to its full discharge capacity in order to quickly reduce excess pressure
- Pipe-away adapter for venting gas to the outdoors is available (Sold Separately)
- ASME rated, certified
- Cleaned for use in oxygen service per CGA G-4.1
- Bubble tight at 95% of set pressure
- Full flow at 110% of set pressure
- Setpoint tolerance is $\pm 3\%$ of the set pressure or ± 2 psig whichever is greater
- Rated for gas service only
- 100% factory tested
- Temperature range: -60° to 165° F (-51° - 74° C)

Materials

Body	Brass
Spring	Stainless Steel
Seat Retainer.....	Brass
Seat Disc (B-19434B Series).....	Silicone
Pipe-Away Adapter	Brass



B-19434B Series



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

Part Number	Pressure Setting	ASME Relief Capacity (CFM/Air)	Height A Inches (mm)	Width B Inches (mm)	Inlet Connection (M.NPT) C Inches (mm)	Pipe-Away Adapter Part Number D
B-19434B235	235 psig (16.2 barg)	476	2 ¹⁵ / ₁₆ " (74.67)	1 ³ / ₄ " (44.45)	1/2" (12.7)	*B-19434-5 1/2" F.NPT Outlet (12.70 mm)
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				

* Pipe Away Adapter is sold separately.

** Contact factory for additional settings.

Cryogenic Gas Relief Valves, ASME C-19434B Series

Application

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

Features

- The C-19434B design permits 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 rated, certified
- Cleaned for use in oxygen service per CGA G-4.1
- Bubble tight at 95% of set pressure
- Full flow at 110% of set pressure
- Setpoint tolerance is $\pm 3\%$ of the set pressure or ± 2 psig whichever is greater
- Repeatable performance guaranteed by well-proven seat design used in many other RegO relief valves for many years.
- Rated for gas service only
- 100% factory tested
- Temperature range: -40° to 165° F (-40° - 74° C)

Materials

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

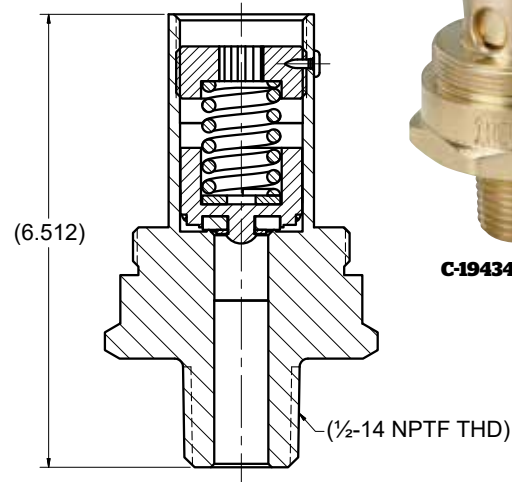
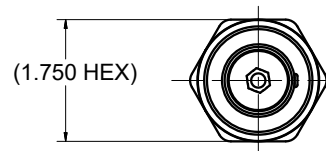
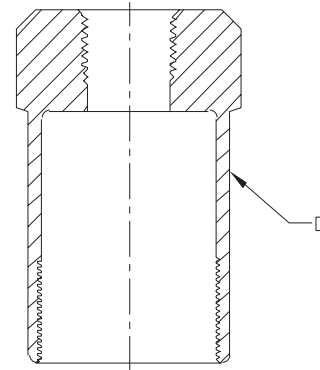
WARNING: Inspection and maintenance of pressure relief valves is very important. Failure to properly inspect and maintain pressure relief valves could result in personal injuries or property damage. The useful safe service life of a pressure relief valve may be significantly affected by the service environment.

Ordering Information

Part Number	Pressure Setting (psig)	ASME Relief Capacity (CFM/Air)	Height A Inches (mm)	Width B Inches (mm)	Inlet Connection (M.NPT) C Inches (mm)	Pipe-Away Adapter Part Number D
C-19434B235	235 psig (16.2 barg)	476	2 ¹⁵ / ₁₆ " (74.67)	1 ³ / ₄ " (44.45)	1/2" (12.7)	*B-19484-6 1" F.NPT Outlet (25.40 mm)
C-19434B250	250 psig (17.2 barg)	505				
C-19434B280	280 psig (19.3 barg)	555				
C-19434B285	285 psig (19.6 barg)	579				
C-19434B300	300 psig (20.7 barg)	601				
C-19434B325	325 psig (22.4 barg)	649				
C-19434B335	335 psig (23.1 barg)	668				
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.



C-19434B Series

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	PCTFE for < 75 psig, Fluorosilicone for ≥ 75 psig

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 psig 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

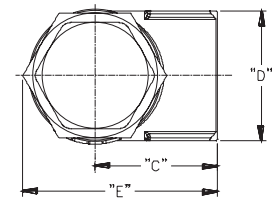
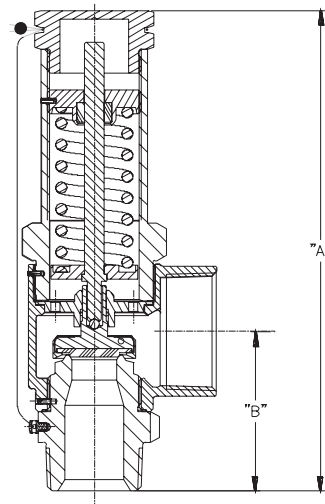
Part Number	Inlet Inches (mm)	Outlet Inches (mm)	Ends	A Inches (mm)	B Inches (mm)	C Inches (mm)	D Inches (mm)	E Inches (mm)	Set Pressure	ASME Flow Capacity (Air) at 110% Set Pressure	Weight Lbs (Kg)
AR4104A	½" (15)	1" (25)	Thread NPT	6.03" (153.16)	1.97" (50.04)	1.63" (41.40)	1.63" (41.40)	2.49" (63.25)	250 psig	406 SCFM *	2.75 (1.25)
AR4104B									17.23 barg*	690 m³/hr	
AR4106A	¾" (20)	1" (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									17.23 barg*	766 m³/hr	
AR4108A	1" (25)	1½" (32)	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									17.23 barg*	1704 m³/hr	
AR4112A	1½" (40)	2" (50)	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									17.23 barg*	3869 m³/hr	

*Various pressure settings are available within listed ranges

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 psig. Part number AR4104A080.

m = 1.4

P = 80 psig

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 psig of flow pressure.

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

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

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

Flow pressure per ASME is 10% above set pressure or +3 psig (0.2 barg), 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	PCTFE for < 75 psig, Fluorosilicone for ≥ 75 psig

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 psig 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

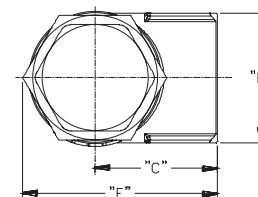
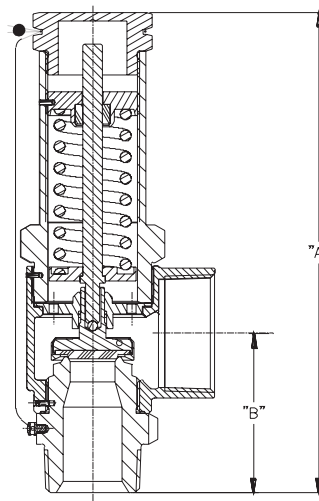
Part Number	Inlet Inches (mm)	Outlet Inches (mm)	Ends	A Inches (mm)	B Inches (mm)	C Inches (mm)	D Inches (mm)	E Inches (mm)	Set Pressure	ASME Flow Capacity (Air) at 110% Set Pressure	Weight Lbs (Kg)
AR5104A	½"	1"	Thread BSP	6.03"	1.97"	1.63"	1.63"	2.49"	250 psig*	406 SCFM	2.75 (1.25)
AR5104B	(15)			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

*Various pressure settings are available within listed ranges

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 psig. Part number AR5104A080.

m = 1.4

P = 80 psig

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 psig of flow pressure.

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

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

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

Flow pressure per ASME is 10% above set pressure or +3 psig (0.2 barg), whichever is greater.

Pressure Setting and Flow Data AR Series

Pressure Setting and Flow Data AR Series SCFM (air)						
Pressure Setting psig	barg	MPAG	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

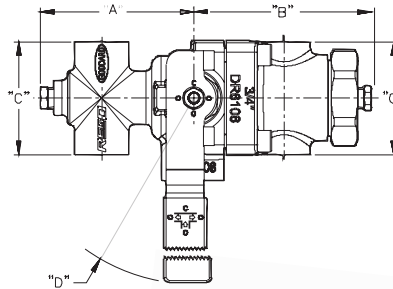
The DR Diverter Valve Series provides a simple solution for the isolation of pressure relief devices during routine change out of a relief valve and burst discs without evacuating the vessel. Excellent for protecting bulk liquid vessels, transport trailers, industrial pipelines, and LNG systems.

Features

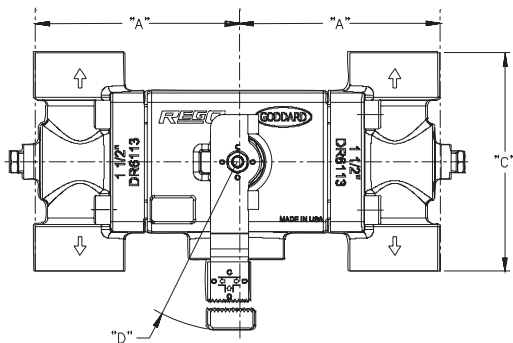
- High flow rates complement our AR series pressure relief valves.
- Valve side selection is accomplished with a heavy duty control arm clearly labeled for positive isolation
- RegO® needle valves accessorize for easy bleed of gas before removing pressure relief devices
- Fitted with threaded top Relief Valve ports and bottom Burst Disk connections
- Pressure Rating: 600 psig (41.37 barg) MAWP
- Temperature Rating: -320°F (-196°C) to +165°F (+74°C).
- 100% Factory tested
- Oxygen cleaned per CGA G-4.1
- PED Certified
- **Stainless Steel inlet stub available, add the letter P in the end of the part number to request this option.**

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



DR6108



DR6112 & DR6113

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 (K _v)
DR6108	1" (25.4)	3/4" (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 (11.50)
										Left	
										Both	
DR6112	1 1/2" (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 (16.26)
										Left	
										Both	
DR6113	1 1/2" (38.1)	1 1/2" (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 (19.54)
										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
- Inlet pipe factory installed for easy assembly
- Pressure Rating: 600 psig (41.37 barg) MAWP
- Temperature Rating: -320°F (-196°C) to +165°F (+74°C)
- Oxygen cleaned per CGA G-4.1
- Packaged ready for installation
- PED Certified CE
- **Copper inlet stubs available for DA6206CA.**

Diverter 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

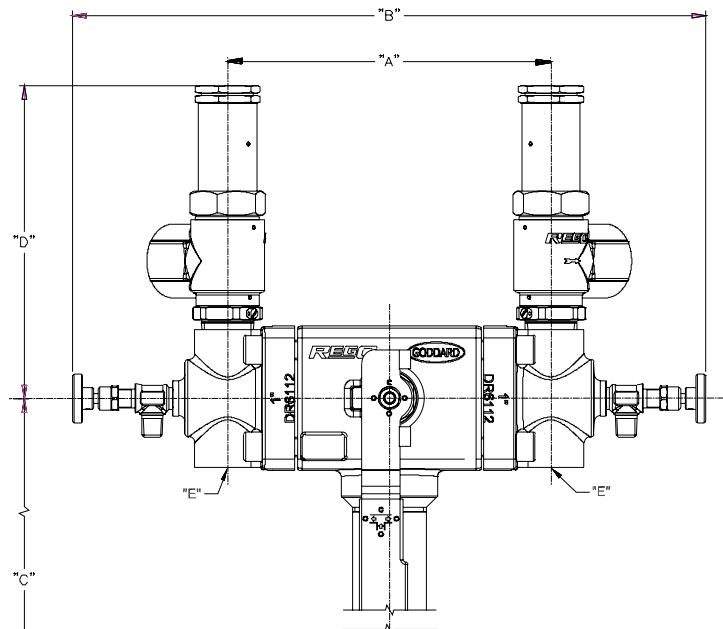
Relief Valve Materials

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.....	PCTFE for < 75 psig, Fluorosilicone for ≥ 75 psig

Ordering Information

Part Number*	Inlet Inches (mm)	Outlet Inches (mm)	Connection Type	A Inches (mm)	B Inches (mm)	C Inches (mm)	D Inches (mm)	E Inches (mm)
DA6206AXXX	1" (25.4)	¾" (19.05)	Thread NPT	4.76" (120.9)	13.25" (336.55)	9.75" (247.7)	7.00" (177.8)	¾" NPT (19.0)
DA6208AXXX	1½" (38.1)	1" (25.4)		8.33" (211.6)	16.30" (414)	16.47" (418.34)	8.06" (204.7)	1" NPT (25.0)

* Include pressure setting in part number.



RegO® Stainless Steel Relief Device Diverter (3-Way) Valve DV4108 Series

Application

The DV4108 Diverter Valve Series provides a lightweight, simplified solution for the isolation of pressure relief valves during testing and change out of relief valves and burst discs without requiring evacuation of the vessel and guaranteeing that one port will be available to work during the operation. This all stainless steel diverter valve is ideal for use with oxygen, nitrogen, krypton, carbon dioxide, nitrous oxide, dinitrogen monoxide, carbon oxide, methane, ethane, ethylene, argon, and LNG.

Features

- High flow rates complement the RegO AR and PRV series pressure relief valves
- Outlet ports sufficiently spaced to allow AR and PRV series relief valves as well as burst discs to be easily installed and removed
- Compact, lightweight design
- Unique resilient seat design with Dyneon™ TFM 1600 material provides smooth operation and bubble tight seal in cryogenic conditions
- Special seal design using proven Kold-Seal technology, live loaded PTFE in conjunction with wave springs and added sealing protection prevent internal and external leakage (EN 1626:2008 compliant)
- Clearly labeled, heavy duty lever arm and locking pin provide positive isolation verification
- Various connection and configuration options available
- Bracket included for easy installation
- 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 BAR) Class 300 (PN 50)
- 100% factory tested; each valve is individually bagged and boxed to arrive in factory new condition until installation
- Cleaned and packaged for oxygen service per CGA G-4.1

PED Certified



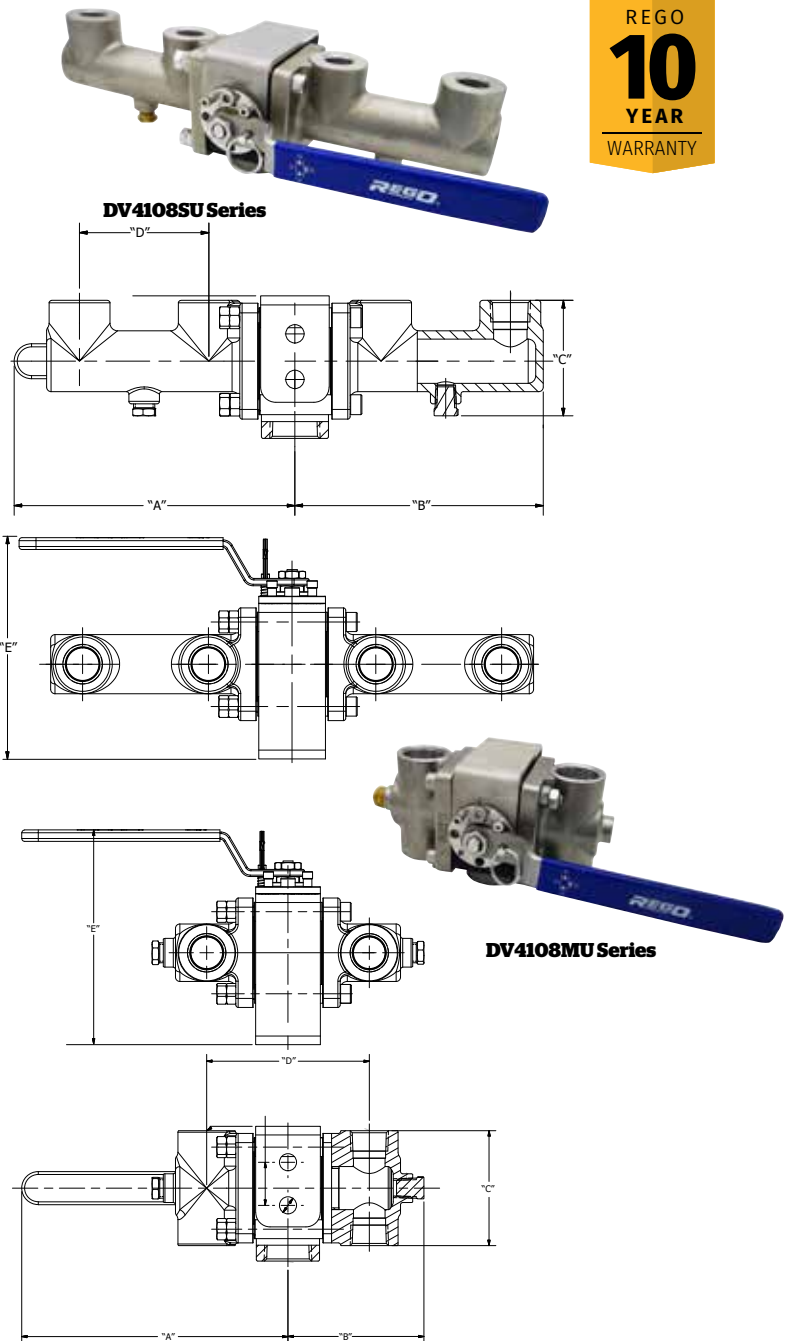
Materials

Body 316 Stainless Steel ASTM A351-CF-8M (DIN 1.4408)
 Ball.....316L Stainless Steel ASTM A276 (DIN 1.4006)
 SeatDyneon TFM 1600
 End caps.....304 Stainless Steel ASTM A743 (DIN 1.4027)
 Wave springs.....Stainless Steel ASTM A313 (DIN 1.4544)
 Wave spring washers 304 Stainless Steel ASTM A182 (DIN 1.5415)
 Packing.....Live Loaded PTFE
 Stem316L Stainless Steel ASTM A276 (DIN 1.4006)
 Lever.....304 Stainless Steel ASTM A182 (DIN 1.5415)
 Bracket304 Stainless Steel ASTM A182 (DIN 1.5415)

Ordering Information

Part Number	Inlet Inches (mm)	Outlet Inches (mm)	Outlet Connection Type	Outlet Port Orientation	Bleeder Connection	A Inches (mm)	B Inches (mm)	C Inches (mm)	D Inches (mm)	E Inches (mm)	Open Port	Cv (Kv)
DV4108SU04	1 (DN25)	1/2 (DN15)	Thread NPTF	4 ports, all opposite of Inlet	1/4" NPTF, same side as inlet	7.29 (185)	6.42 (163)	2.98 (76)	3.34 (85)	5.90 (150)	One Side	12.0 (10.4)
DV4108SU06		3/4 (DN20)									Both Sides	21.7 (18.8)
DV4108SU08		1 (DN25)									One Side	13.3 (11.5)
DV4108SM04		1/2 (DN15)									Both Sides	22.5 (19.5)
DV4108SM06		3/4 (DN20)		One Side	16.0 (13.8)							
DV4108SM08		1 (DN25)		Both Sides	25.3 (21.9)							
DV4108SM04		1/2 (DN15)		One Side	11.0 (9.5)							
DV4108SM06		3/4 (DN20)		Both Sides	20.0 (17.3)							
DV4108SM08	1 (DN25)	One Side	12.7 (11.0)									
				1 port up, 1 port down on each side	1/4" NPTF, 90° from inlet		3.72 (95)	3.2 (80)	4.45 (113)		Both Sides	21.6 (18.7)
											One Side	14.1 (12.2)
											Both Sides	23.2 (20.1)

Other outlet port orientation options available; please contact your Sales representative with inquiries.



RegO® Stainless Steel Relief Device Diverter (3-Way) Valve DV4108SD Series for PRVs

Application

The DV4108SD04 Diverter Valve Series provides a lightweight, simplified solution for the isolation of pressure relief valves during testing and change out of pressure relief valves and burst discs without requiring evacuation of the vessel and guaranteeing that one port will be available to work during the operation. This all stainless steel diverter valve is ideal for use with oxygen, nitrogen, krypton, carbon dioxide, nitrous oxide, dinitrogen monoxide, carbon oxide, methane, ethane, ethylene, argon, and LNG.

The DV4108SD04 has the inlet port in the upper position for the easy installation of the Micro-Bulk's relief pressure line, and the four-outlet port oriented at down position to avoid the humidity going into the PRVs and guarantee proper operation.

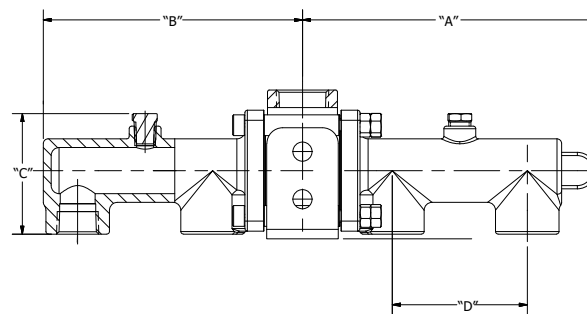
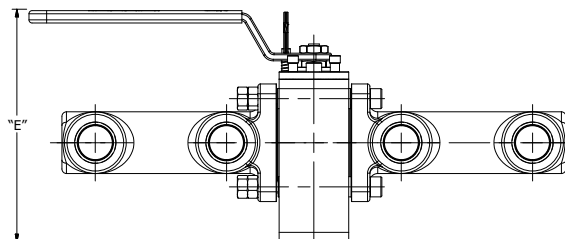
PED Certified 

Materials

Body 316 Stainless Steel ASTM A351-CF-8M (DIN 1.4408)
 Ball.....316L Stainless Steel ASTM A276 (DIN 1.4006)
 SeatDyneon TFM 1600
 End caps.....304 Stainless Steel ASTM A743 (DIN 1.4027)
 Wave springs.....Stainless Steel ASTM A313 (DIN 1.4544)
 Wave spring washers 304 Stainless Steel ASTM A182 (DIN 1.5415)
 Packing..... Live Loaded PTFE
 Stem316L Stainless Steel ASTM A276 (DIN 1.4006)
 Lever.....304 Stainless Steel ASTM A182 (DIN 1.5415)
 Bracket304 Stainless Steel ASTM A182 (DIN 1.5415)



DV4108SD04



Ordering Information

Part Number	Inlet Inches (mm)	Outlet Inches (mm)	End Connection Type	Outlet Port Orientation	Bleeder Port Orientation	A Inches (mm)	B Inches (mm)	C Inches (mm)	D Inches (mm)	E Inches (mm)	Open Port	Cv (Kv)
DV4108SD04	1" (DN25)	½ (DN15)	Thread NPTF	4 ports, all opposite of inlet	¼" NFPT, same side as inlet	7.29 (185)	6.42 (163)	2.98 (76)	3.34 (85)	5.90 (150)	One Side	12.0 (10.4)
		Both Side									21.7 (18.8)	
DV4108SD06		¾" (DN20)									One Side	13.3 (11.5)
		Both Side	22.5 (19.5)									
DV4108SD08		1" (DN25)									One Side	16.0 (13.8)
											Both Side	25.3 (21.9)

Other outlet port orientation options available; please contact your Sales representative with inquiries.

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
- UA3149A relief valves incorporate integral pipeaway adapter with break off groove that protects the valve from piping stress damage.
- Optional pipeaway adapters have grooves that will break off to protect the relief valve from damage should excess stress be applied to the piping.
- UA3149A relief valves include weep hole deflectors, installed to guard against flame impingement on adjacent containers.
- 100% Factory Tested
- Temperature Rating: -40°F (-37°C) to 85°F (29°C)
- Tamper Resistant
- Repeatable Performance
- ASME Rated
- Rated for Gas Service
- Resilient seat disc provides "bubble-tight" seal.

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

Ordering Information

Part Number	Pressure Setting psig (barg)**	Flow Capacity (SCFM/Air)	Inlet Connection (M.NPT) Inches (mm)	Height A Inches (mm)	Wrenching Hex B Inches (mm)
UA3149A303	303 psig (20.9 barg)	9,883*	2½" (63.50)	10½" (266.70)	4½" (104.90)
UA3149A330	330 psig (22.7 barg)	10,726*			
UA3149A350	350 psig (24.1 barg)	11,351*			
UA3149A358	358 psig (24.7 barg)	11,601*			

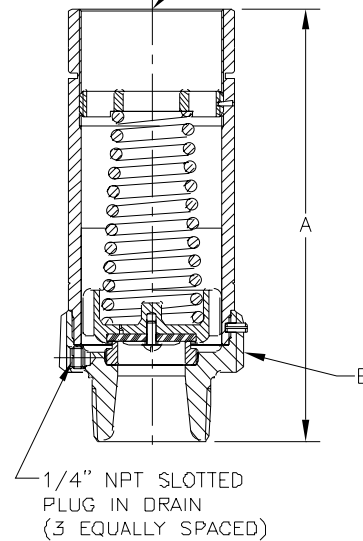
*Capacity certified by National Board of Boiler and Pressure Vessel Inspectors at 10% above set pressure.

**Other Settings not ASME/NB Certified



UA3149A Series

FEMALE THREAD TO FIT
3" STANDARD PIPE



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 on the manifold 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

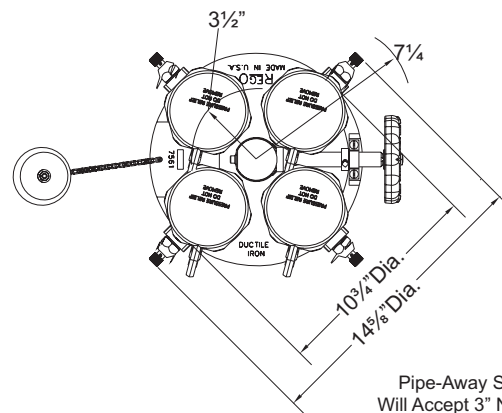
- Allows for relief valve removal and replacement on a periodic basis without shutting down and evacuating the container
- “Pop-action” design of relief valves insures maximum protection with only minimal product loss at moderately excessive pressures
- A rubber plug with chain is provided to protect 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 reset firmly after discharge
- Resilient relief valve seat disc provides “bubble-tight” seal
- Relief valves are ASME rated, UA3149 Series
- Certified CE

Materials

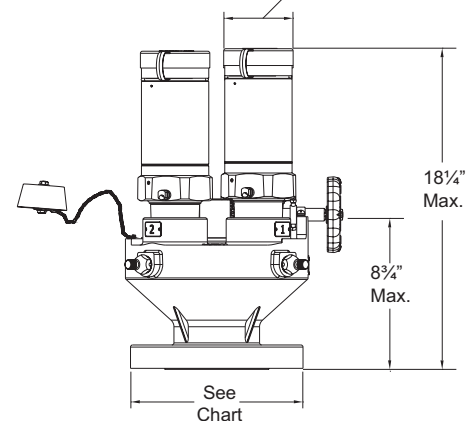
Body	Ductile Iron
Resilient Parts	Teflon
Clapper Disc	Stainless Steel
Bleeder Valve	Stainless Steel



A8560 A8570



Pipe-Away Section Will Accept 3" NPT Pipe



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	Container Flange Connection	Relief Valve		
			Max Quantity	Part Number	Inlet Connection M. NPT Inches (mm)
UA8564A330	330 psig (22.7 barg)	3"-300#*	4	UA3149A330	2 1/2" (63.5)
UA8574A290	290 psig (20.0 barg)	4"-300#		UA3149A290	

* For use with modified 300# ANSI flange with 4" port.
 ** Outlet 3 1/2-8N (F) thread, will accept 3" M. NPT pipe thread.

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 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

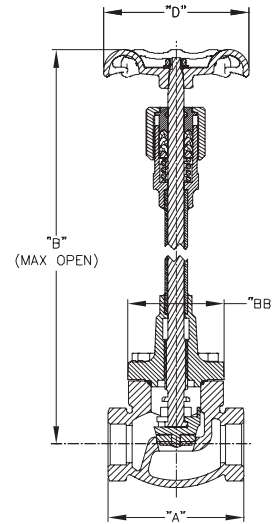
Body	Bronze ASTM B61
Upper Bonnet	Brass ASTM B16
Lower Bonnet	Brass ASTM B283
Stem	Stainless Steel ASTM A582
Spring	Stainless Steel ASTM A313
Packing	PTFE
Gasket	PTFE 25% Glass Fill
Seat Disc	PCTFE ASTM D1430
Seat Retainer	Brass ASTM B16
Bonnet Screws	Stainless Steel ASTM A320
Handwheel	Chromated Coated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

Ordering Information

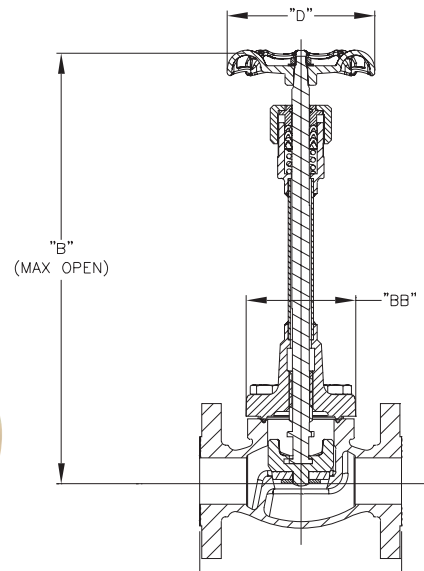
Part Number	Size Inches	Size mm	Connection	A		B		D		BB		Cv	Kv	Weight lbs.	Weight kg.
				Inches	mm	Inches	mm	Inches	mm	Inches	mm				
BB9402S	¼"	8	Silver Brazed Tube	2.68	68	14.40	366	3.00	76	2.00	51	1.7	1.47	8.30	3.7
BB9404S	½"	15		5.0	4.30										
BB9406S	¾"	20		9.4	8.1										
BB9408S	1"	25		14.0	12.10										
BB9412S	1½"	40		28.3	21.60										
BB9416S	2"	50	53.0	47.41	21.60	9.8									
BB9402T	¼"	8	Threaded NPT	2.68	68	14.40	366	3.00	76	2.00	51	1.7	1.47	8.30	3.7
BB9404T	½"	15		5.0	4.30										
BB9406T	¾"	20		9.4	8.1										
BB9408T	1"	25		14.0	12.10										
BB9412T	1½"	40		28.3	21.60										
BB9416T	2"	50	53.0	47.41	21.60	9.8									
BB9412F	1½"	40	Flanged RF	6.50	165	14.60	371	4.75	121	3.44	87	28.3	21.60	18.56	8.4
BB9416F	2"	50		8.00	203	16.21	412	5.25	133	4.06	103	53.0	47.41	30.00	13.6



BB9412T



BB9412F



Bronze Globe Valve for Cryogenic Service with Pipe Ends

BB Series



Application

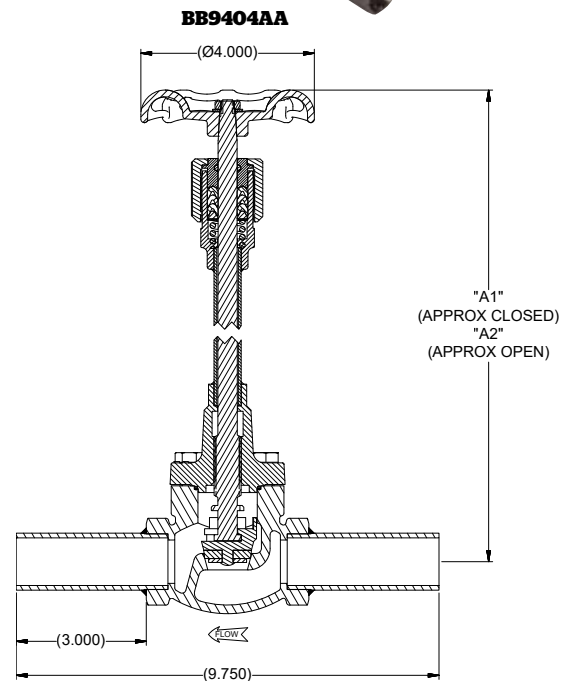
The BB Series globe valves with pipe ends are designed for handling of cryogenic liquids through bulk tanks, trucks, trailers, ISO containers and piping configurations. Our time tested spring loaded stem packing and superior seat design provide for long life and easy maintenance. Internal components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



Ordering Information

Part Number	Size Inches	Size mm	Connection	A1		A2		B		C		D		Cv (Kv)	Weight lbs.	Weight Kg.
				Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm			
BB9404AA	½"	15	SCH 10 Pipe	13.9	353.06	14.4	365.76	3.00	76.2	8.88	225.55	2.00	50.8	5.0 (4.30)	9.13	4.14
BB9406AA	¾"	20						4.00	101.6	9.55	242.57	2.60	66.04	9.4 (8.10)		
BB9408AA	1"	25						9.75	247.65	2.68	68.07	14.0 (12.10)				
BB9412AA	½"	40						4.75	120.65	10.79	274.06	3.47	88.13	28.3 (21.60)		
BB9416AA	2"	50	15.27	387.85	16.21	411.73	5.25	133.35	11.88	301.75	3.26	82.80	53.0 (45.80)	23.76	10.77	
BB9404BB	1½"	15	SCH 40 Pipe	13.9	353.06	14.4	365.76	3.00	76.2	8.88	225.55	2.00	50.8	5.0 (4.30)	9.22	4.18
BB9406BB	¾"	20						4.00	101.6	9.55	242.57	2.60	66.04	9.4 (8.10)		
BB9408BB	1"	25						9.75	247.65	2.68	68.07	14.0 (12.10)				
BB9412BB	½"	40						4.75	120.65	10.79	274.06	3.47	88.13	28.3 (21.60)		
BB9416BB	2"	50	15.27	387.85	16.21	411.73	5.25	133.35	11.88	301.75	3.26	82.80	53.0 (45.80)	24.19	10.97	

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

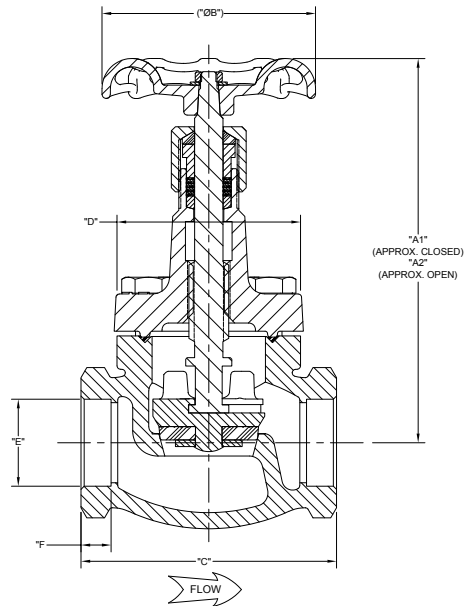
- Superior Flow: Provides high Cv for rapid and reliable loading and unloading
- Designed with the unique Kold-Seal
- Conical PCTFE Seat: provides exceptional flow; bubble tight seal; less chance of debris trapped in the seat and longer service life
- Ideal for loading & unloading cryogenic bulk tanks 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
- Recommended for vapor phase and non-permanent cryogenic liquid use

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		Cv (Kv)	Weight lbs.	Weight Kg		
				Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm					
BBS9402S	¼"	15	Silver Brazed Tube	5.75	146	6.24	158	3.00	76	8	203	2.00	51	0.38	9	0.30	8	1.7 (1.47)	5.2	2.3		
BBS9404S	½"			2.88	73	0.63	16	0.40	10	5.0 (4.30)												
BBS9406S	¾"	20		6.07	154	6.6	168	4.00	101	3.55	90	2.60	66	0.88	22	0.40	10	9.4 (8.10)				
BBS9408S	1"	25		3.75	95	1.13	29	0.50	13	14 (12.10)												
BBS9412S	1½"	40		7.20	183	7.93	201	4.75	121	4.79	121	3.47	88	1.63	41	0.56	14	28.3 (21.60)			7.25	3.2
BBS9416S	2"	50		8.85	225	9.84	250	4.75	121	5.87	149	3.96	100	2.13	54	0.63	16	53 (45.80)			11.96	5.4
BBS9402T	¼"	8	Threaded NPT	5.75	146	6.24	158	3.00	76	8	203	2.00	51	0.38	9	0.30	8	1.7 (1.47)	5.2	2.3		
BBS9404T	½"	15		2.88	73	0.63	16	0.40	10	5.0 (4.30)												
BBS9406T	¾"	20		6.07	154	6.6	167	4.00	101	3.55	90	2.60	66	0.88	22	0.40	10	9.4 (8.10)				
BBS9408T	1"	25		3.75	95	1.13	29	0.50	13	14 (12.10)												
BBS9412T	1½"	40		7.20	183	7.93	201	4.75	121	4.79	121	3.47	88	1.63	41	0.56	14	28.3 (21.60)			7.25	3.2
BBS9416T	2"	50		8.85	225	9.84	250	4.75	121	5.87	149	3.96	100	2.13	54	0.63	16	53 (45.80)			11.96	5.4

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

- PCTFE 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 (41.37 barg) MAWP (-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	PCTFE
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 1/2", 3/4", 1" valve sizes and on both the 1" model BKA8408S and 1 1/2" model BKA8412S angle valves. Bolted Bonnet design is used on the BK9416 (2") models.



BK8408T



BK9412S



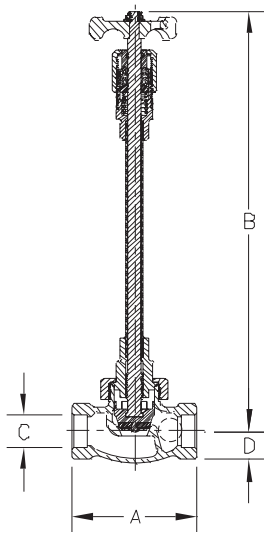
BK9408AA



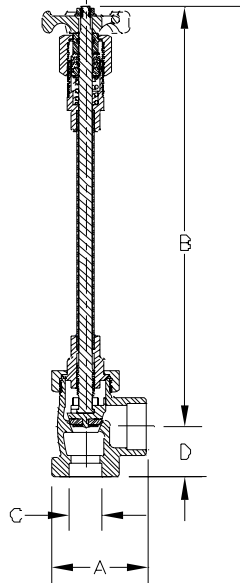
BKA8412S

Extended Bonnet Cryogenic Globe Valves

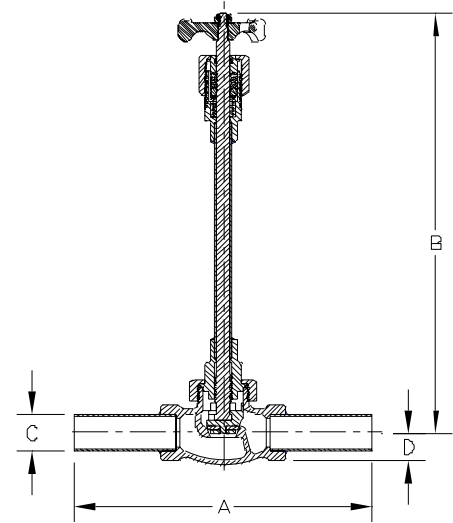
BK and BKA Series Valves



Straight Globe Valve



Angle Globe Valve



Straight Globe Valve with Pipe Stubs

Ordering Information

Part Number	Body Style	A Length Inches (mm)	B Max Open (Approx) Inches (mm)	C Inlet / Outlet Connections INCHES (MM)	D Inches (mm)	C _v (Kv)			
BK8404S	Straight	3 11/16" (94)	9 5/32" (233)	.631"-.634" (16.02-16.10)	1" (25)	4.7 (4.06)			
BK8404T				1/2" F.NPT (12.7)					
BK8404ST				.631"-.634"x 1/2" F.NPT (16.02-16.10x12.7)					
BK9404S				.631"-.634" (16.02-16.10)					
BK9404T				1/2" F.NPT (12.7)					
BK9404AA				1/2" SCH10 Pipe (12.7)					
BK9404PT-F30		9 11/16" (246)	15" (381)	1/2" Sch5 Pipe x 1/2" F.NPT (12.7)					
BK9404ST		6 11/16" (170)		.631"-.634"x 1/2" F.NPT (16.02-16.10x12.7)					
BK8406S		3 11/16" (94)		9 5/32" (233)			.881"-.884" (22.37-22.45)		
BK8406T							3/4" F.NPT (19)		
BK9406S							9 11/16" (246)	14.9 (378)	.881"-.884" (22.37-22.45)
BK9406T									3/4" F.NPT (19)
BK9406AA			3/4" SCH10 Pipe (19)						
BK8408S			4 5/16" (109)						9 1/8" (232)
BK8408T		1" F.NPT (25)							
BK9408S		10 5/16" (262)		15" (381)					
BK9408T							1" F.NPT (25)		
BK9408AA							1" Sch10 Pipe (25)		
BK9408PT-F30							7 5/16" (185)	1" Sch5 Pipe x 1" F.NPT (25)	
BK9412AA			11 3/16" (284)				16 9/16" (420)	1 1/2" Sch10 Pipe (38)	
BK9412PT-F30			8 3/16" (208)					1 1/2" Sch5 Pipe x 1 1/2" F.NPT (38)	
BK9416S*		6" (152)	16" (406)	2.131" - 2.134" (54.12-54.20)					
BK9416AA		11.88" (302)		2" SCH10 Pipe (51)					
BK9416T*		6" (152)		2" F.NPT (51)					
BK9416PT-F30	9" (229)	2" Sch5 Pipe x 2" F.NPT (51)							
BKA8408S	Angle	3 1/4" (82)		9 5/11" (240) 14 5/8" (371)	1.131"-1.134" x 1.631"-1.634" (28.72-28.80 x 41.42-41.50)	1 3/4" (44)	14.5 (12.54)		
BKA9408S									
BKA8412S			4 1/4" (108)					13" (330)	1.631"-1.634" (41.42-41.50)

* Valves with bolted bonnet design.
BB Available for 1 1/2".

Brass Angle Globe Valves

B-226BLA

Application

RegO/Goddard brass 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. 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 carbon oxide.

Features

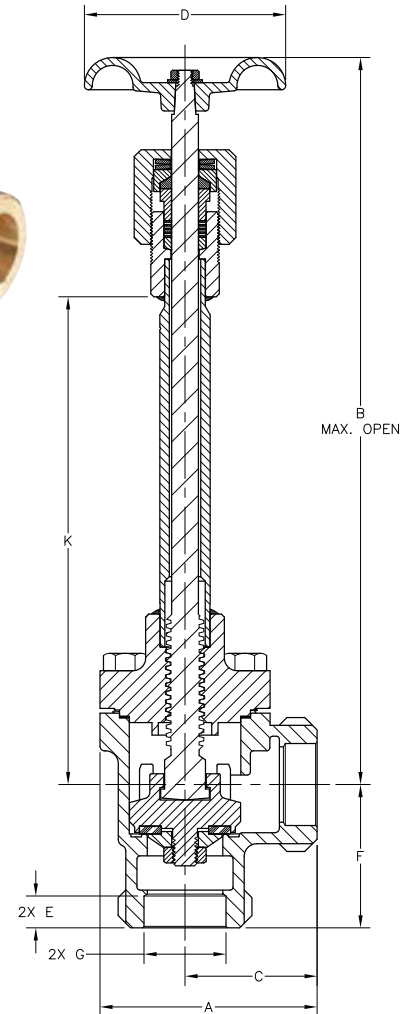
- Sizes: 1½"
- Connection: Silver Brazed Tube
- Service: Liquefied and vaporized atmospheric gases
- Temperature rating: -325°F to +150°F (-198°C to +65°C)
- Pressure rating: Cold, Non-Shock, 600 psig (41.4 barg)
- Cleaned and packaged for oxygen service per CGA G-4.1
- Soft Seat: PCTFE material which is the most widely specified cryogenic seat material in the industry
- Stem Packing: Proven Kold-Seal technology, live loaded PTFE
- Flat seat
- 100% factory tested. Each valve is individually bagged and boxed to arrive in factory new condition until installation

Materials

Body Brass ASTM B61
 Bonnet and Tube Stainless Steel ASTM A269
 Seat Disk PCTFE
 Seat Retainer..... Brass ASTM B61
 Packing..... Live Loaded PTFE Packing
 Handwheel.....ASTM A395
 Bonnet Gasket.....PTFE 25% Glass Fill Virgin Grade



B-226BLA-12S6



Part Number	Size Inches	Nominal Size DN	Connection	A inches (mm)	B inches (mm)	C inches (mm)	D inches (mm)	E inches (mm)	F inches (mm)	G inches (mm)	K inches (mm)	Cv (Kv)	Weight lbs (kg)
B-226BLA-12S6	1- ½"	40	Silver Brazed Tube	14.63 (371)	1.63 (41.4)	2.63 (67)	4.00 (102)	63 (67)	2.85 (72)	1.63 (41)	9.7 (246)	30 (25.95)	10.50 (4.76)

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

Application

The 222 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.

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 (28 and 42 barg)
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



B-226ULL



B-226BLL



Ordering Information

222X

Bronze Globe Valves, Extended Stem - Conical Seat, 400 psig (28 barg) Cold Working Pressure Threaded End

Part Number	NPT size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kg	Estimated Cv (Kv)
B-222X-2T4	¼"	8 mm	Threaded	1.50	0.70	1.30 (1.12)
B-222X-4T4	½"	15 mm		1.50	0.70	3.25 (2.81)
B-222X-6T4	¾"	20 mm		3.00	1.40	6.25 (5.40)
B-222X-8T4	1"	25 mm		4.00	1.80	10.00 (8.65)
B-222X-12T4	1½"	40 mm		7.75	3.50	26.00 (22.49)
B-222X-16T4	2"	50 mm		12.50	5.70	45.00 (38.92)
B-222X-20T4	2½"	63.5 mm		61.00	27.70	50.00 (43.25)
B-222X-24T4	3"	80 mm		61.00	27.70	100.00 (86.5)

Sil Brazed End

Part Number	SBT size Inches	SBT Size mm	Ends	Weight Lbs.	Weight Kg	Estimated Cv (Kv)
B-222X-4S4	½"	15 mm	Silver Braze	2.00	0.90	3.25 (2.81)
B-222X-6S4	¾"	20 mm		2.75	1.30	6.25 (5.40)
B-222X-8S4	1"	25 mm		3.75	1.70	10.00 (8.65)
B-222X-12S4	1½"	40 mm		7.25	3.30	26.00 (22.49)
B-222X-16S4	2"	50 mm		11.50	5.20	45.00 (38.92)
B-222X-24S4	3"	80 mm		58.00	26.40	100.00 (86.5)

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 (42 barg) Cold Working Pressure

Threaded End

Part Number	NPT size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv (Kv)
B-0226LL-2T6	¼"	8 mm	Threaded	1.50	0.70	1.30 (1.12)
B-0226LL-3T6	⅜"	10 mm		1.50	0.70	2.40 (2.07)
B-0226LL-4T6	½"	15 mm		1.50	0.70	3.25 (2.81)
B-0226LL-6T6	¾"	20 mm		3.00	1.40	6.25 (5.40)
B-0226LL-8T6	1"	25 mm		4.00	1.80	10.00 (8.65)

Sil Brazed Ends

Part Number	SBT size Inches	SBT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv (Kv)
B-0226LL-4S6	½"	15 mm	Silver Braze	2.00	0.90	3.25 (2.81)
B-0226LL-6S6	¾"	20 mm		2.75	1.30	6.25 (5.40)
B-0226LL-8S6	1"	25 mm		5.8	1.70	10.00 (8.65)

226ULL

Bronze Globe Valves, Live Loaded Packing - Union Bonnet, Extended Stem, 600 psig (42 barg) Cold Working Pressure

Threaded End

Part Number	NPT size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv (Kv)
B-226ULL-12T6	1½"	40 mm	Threaded	7.75	3.50	26.00 (22.49)
B-226ULL-16T6	2"	50 mm		12.50	5.70	45.00 (38.92)

Sil Brazed Ends

Part Number	SBT size Inches*	SBT Size mm*	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv (Kv)
B-226ULL-12S6	1½"	40 mm	Silver Braze	7.25	3.30	26.00 (22.49)
B-226ULL-16S6	2"	50 mm		11.50	5.20	45.00 (38.92)

*Nominal Size

226XGF

Bronze Globe Valves, Extended Stem - Conical Seat Grafoil® Packing, Gasket and PFA Seat
600 psig (42 barg) Cold Working Pressure Temperature Range -325°F to +300°F (-198°C to +149°C)

Threaded End

Part Number	NPT size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv (Kv)
VB-226XGF-4T6	½"	15 mm	Threaded	1.50	0.70	3.25 (2.81)
VB-226XGF-6T6	¾"	20 mm		3.00	1.40	6.25 (5.40)
VB-226XGF-8T6	1"	25 mm		4.00	1.80	10.00 (8.65)
VB-226XGF-12T6	1½"	40 mm		7.75	3.5	26.00 (22.49)

226BLL

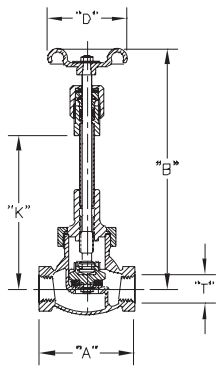
Bronze Globe Valves, Live Loaded Packing - Bolted Bonnet, Extended Stem, 600 psig (42 barg) Cold Working Pressure

Threaded End

Part Number	NPT size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv (Kv)
B-226BLL-12T6	1½"	40 mm	Threaded	7.75	3.50	26.00 (22.49)
B-226BLL-16T6	2"	50 mm		12.50	5.70	45.00 (38.92)

Bronze valves standard connection are for tube, not pipe.

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



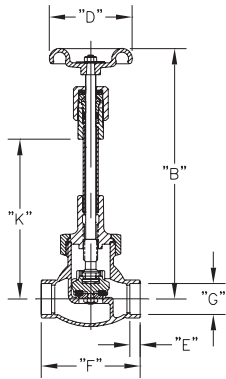
226ULL

Pressure Rating 600 psig (42 barg)
Temperature Rating -325°F to +150°F (-198°C to +56°C)

Dimensional data

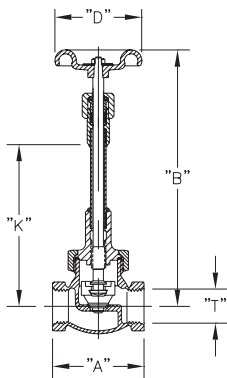
Threaded Ends

Size		"A"		"B"		"D"		"T" NPT		"K"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
1½"	38	4¾"	121	14⅝"	372	4"	102	1½"	38	9 ¹¹ / ₁₆ "	246
2"	51	5¾"	146	15⅞"	384	4¾"	121	2"	51		



Sil Brazed End

Size		"B"		"D"		"E"		"F"		"G"		"K"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
1½"	38	14⅝"	372	4"	102	⅝"	16	5¼"	133	1.63"	41	9 ¹¹ / ₁₆ "	246
2"	51	15⅞"	384	4¾"	121	2 ¹ / ₂₃ "	16	6½"	165	2.13"	54		



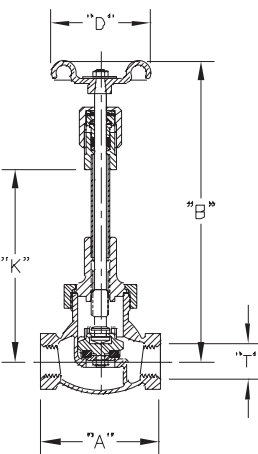
226XGF

Pressure Rating 600 psig (42 barg)
Temperature Rating -325°F to +300°F (-198°C to +149°C)

Dimensional data

Threaded Ends

Size		"A"		"B"		"D"		"T" NPT		"K"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
½"	13	2⅝"	67	8¼"	209	2⅝"	60	½"	13	4⅞"	124
¾"	19	3 ³ / ₁₆ "	81	8⅝"	219	2¾"	70	¾"	19	4 ¹³ / ₁₆ "	122
1"	25	3¾"	95	10½"	267	3"	76	1"	25	6½"	165



226LL

Pressure Rating 600 psig (42 barg)
Temperature Rating +150°F to -325°F (+65°C to -198°C)

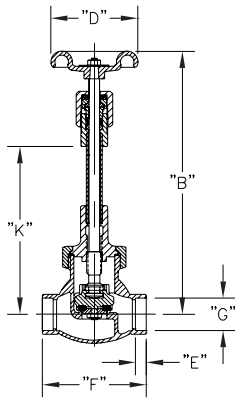
Dimensional Data

Threaded Ends

Size		"A"		"B"		"D"		"T" NPT		"K"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
¼"	6	2 ⁵ / ₁₆ "	59	7 ⁹ / ₁₆ "	192	2"	51	¼"	6	4 ¹⁹ / ₃₂ "	117
⅜"	10							⅜"	10		
½"	13	2⅝"	67	8¼"	209	2⅝"	61	½"	13	4⅞"	124
¾"	19	3 ³ / ₁₆ "	81	8⅝"	219	2¾"	70	¾"	19	4 ¹³ / ₁₆ "	122
1"	25	3¾"	95	10½"	267	3"	76	1"	25	6½"	165

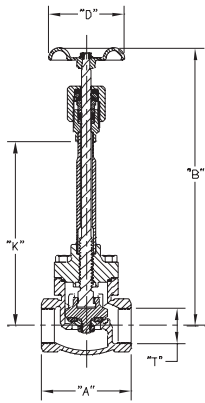
*Bolted Bonnet

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



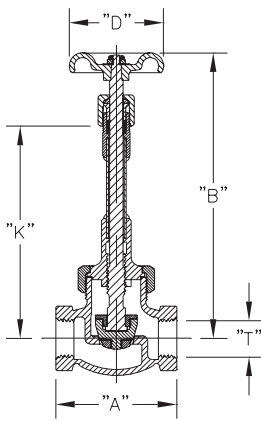
Sil Brazed Ends

Size		"B"		"D"		"E"		"F"		"G"		"K"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
1/2"	13	8 1/4"	209	2 3/8"	60	3/8"	9	3 1/4"	82	.63	16	4 7/8"	124
3/4"	19	8 3/8"	219	2 3/4"	70	13/32"	10	3 3/4"	83	.88	22	4 13/16"	122
1"	25	10 1/2"	267	3"	76	7/16"	11	4 1/4"	108	1.13	29	6 1/2"	165



226BLL Threaded Ends - Bolted Bonnet

Size		"A"		"B"		"D"		"T" NPT		"K"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
1 1/2"	38	4 3/4"	121	14 5/8"	371	4"	101	1 1/2"	38	9 11/16"	246
2"	51	5 3/4"	146	14 15/16"	379	4 3/4"	121	2"	51		

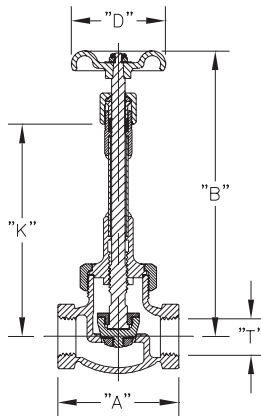


222X

Pressure Rating 400 psig (28 barg)

Temperature Rating -325°F to +150°F (-198°C to +65°C)

Part Number	Size		"A"		"B"		"D"		"T" NPT		"K"	
	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
B-222X-2T4	1/4"	6	2.63"	67	8.38"	213	2.38"	60	1/4"	6	4.8"	122
B-222X-4T4	1/2"	13			15.54"	395			1/2"	13		
B-222X-6T4	3/4"	19	3.19"	81	8.63"	219	2.75"	70	3/4"	19	4.9"	124
B-222X-8T4					15.79"	401					12"	305
B-222X-8T4	1"	25	3.75"	95	10.50"	267	3"	76	1"	25	6.5"	165
B-222X-8T4A					16.01"	407					12"	05
B-222X-12T4	1 1/2"	38	4.75"	121	14.63"	372	4"	102	1 1/2"	38	9.7"	246
B-222X-12T4A					18.44"	468					13.5"	343
B-222X-16T4	2"	51	5.75"	146	15.13"	384	4.75"	121	2"	51	9.7"	246
B-222X-16T4A					22.43"	570					14.2"	361
B-222X-20T4	2 1/2"	64	8.5"	216	22.75"	578	8"	203	2 1/2"	64	16"	406
B-222X-24T4	3"	76							3"	76		



SB-222X

Pressure Rating 400 psig (28 barg)

Temperature Rating -325°F to +150°F (-198°C to +65°C)

Size		"A"		"B"		"D"		"BB"		"K"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
1 1/2"	38	4 3/4"	121	14 5/8"	372	4"	102	3"	76	9.7"	246

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 (28 barg)
206 Series Rated for 600 psig (42 barg)
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 (28 barg) Cold Working Pressure
For selective Cold Gas Applications

Threaded End

Part Number	NPT Valve size Inches	NPT Valve Size mm	Ends	Weight Lbs.	Weight Kg	Estimated Cv (Kv)
B-202X-12T4	1½"	40 mm	Threaded	6.50	3.00	29.00 (25.08)
B-202X-16T4	2"	50 mm		10.50	4.80	50.00 (43.25)

Sil Braze Ends

Part Number	SBT Valve size Inches *	SBT Valve Size mm *	Ends	Weight Lbs.	Weight Kg	Estimated Cv (Kv)
B-202X-4S4	½"	15 mm	Silver Braze	1.50	0.7	3.90 (3.37)
B-202X-8S4	1"	25 mm		3.25	1.50	11.50 (9.94)
B-202X-12S4	1½"	40 mm		6.50	3.00	29.00 (25.08)
B-202X-16S4	2"	50 mm		10.50	4.80	50.00 (43.25)

* 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 (42 barg) Cold Working Pressure, For Selective Cold Gas Applications, High Temperature Service Rating +350°F (+176°C)

Threaded Ends

Part Number	NPT Valve size Inches	NPT Valve Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv (KV)
VB-206GF-2T6	¼"	8 mm	Threaded	1.25	0.6	1.30 (1.12)
VB-206GF-4T6	½"	15 mm		1.50	0.7	3.90 (3.37)
VB-206GF-6T6	¾"	20 mm		2.50	1.1	7.10 (6.14)
VB-206GF-8T6	1"	25 mm		3.50	1.6	11.50 (9.94)
VB-206GF-12T6	1½"	40 mm		7.00	3.2	29.00 (25.08)
VB-206GF-16T6	2"	50 mm		11.75	5.3	50.00 (43.25)

206LL

Bronze Globe Valves, Non-Extended Stem, Live Loaded Packing, 600 psig (42 barg) 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 (Kv)
B-206LL-2T6	¼"	8 mm	¼" NPT	1.25	0.6	1.30 (1.12)
B-206LL-3T6	⅜"	10 mm	⅜" NPT			2.40 (2.07)
B-206LL-4T6	½"	15 mm	½" NPT	1.75	0.8	3.90 (3.37)
B-206LL-6T6	¾"	20 mm	¾" NPT	2.5	1.1	7.10 (6.14)
B-206LL-8T6	1"	25 mm	1" NPT	3.5	1.6	11.50 (9.94)

Sil Brazed Ends

Part Number	SBT Valve size Inches *	SBT Valve Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv (Kv)
B-206LL-4S6	½"	10 mm	Silver Braze	1.25	0.6	3.90 (3.37)
B-206LL-6S6	¾"	15 mm		1.75	0.8	7.10 (6.14)
B-206LL-8S6	1"	20 mm		2.5	1.1	11.50 (9.94)

* Nominal Size

206ULL

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

600 psig (42 barg) 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 (Kv)
B-206ULL-12S6	1½"	40 mm	Silver Braze	7	3.2	29.00 (25.08)
B-206ULL-16S6	2"	50 mm		11.75	5.3	50.00 (43.25)
B-206ULL-12T6	1½"	40 mm	1½" NPT	7	3.2	29.00 (25.08)
B-206ULL-16T6	2"	50 mm	2" NPT	11.75	5.3	50.00 (43.25)

206BLL

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

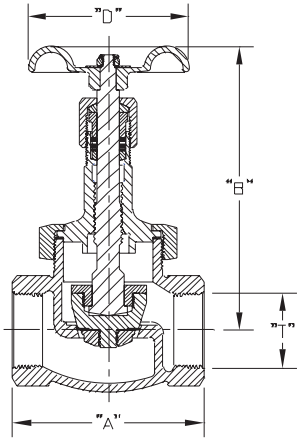
600 psig (42 barg) Cold Working Pressure For Selective Cold Gas Applications

Sil Brazed Ends

Part Number	SBT Valve size Inches	SBT Valve Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated Cv (Kv)
B-206BLL-12S6	1½"	40 mm	Silver Braze	7	3.2	29.00 (25.08)
B-206BLL-12T6			1½" NPT			

Bronze Globe Valve for Cryogenic Service

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



202 Series

202X

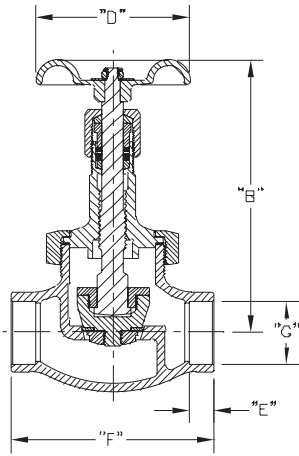
Pressure Rating 400 psig (28 barg)
 Temperature Rating -325°F to +150°F (-198°C to +65°C)
 Non-Extended Valve for Cold Gas Applications
 Conical Seat

Dimensional data

All Dimensional Data are in inches.

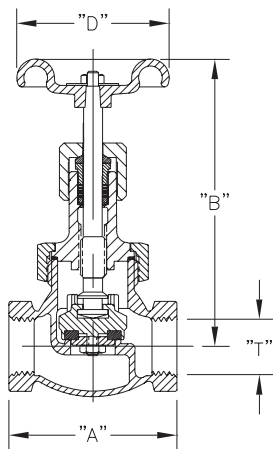
Threaded Ends

Size		"A"		"B"		"D"		"T" NPT	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
1½"	38	4¾"	121	8⅝"	219	4"	102	1½"	38
2"	51	5¾"	146	9½"	241	4¾"	121	2"	51



Silver Brazed Ends

Size		"B"		"D"		"E"		"F"		"G"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
½"	13	4⅝"	117	2"	51	.38	10	3¼"	82	.63/.63	16/16
1"	25					.44	11	4¼"	108	1.13/1.13	29/29
1½"	38	5"	127	2⅝"	60	.62	16	5¼"	133	1.63/1.63	41/41
2"	51	5¾"	146	2¾"	70	.66	17	6½"	159	2.13/2.13	54/54



206GF

Pressure Rating 600 psig (42 barg)
 Temperature Rating -325°F to +350°F (-198°C to +22°C)
 Non-Extended Stem - GRAFOIL® Packing, Gasket and PFA Seat

Dimensional data

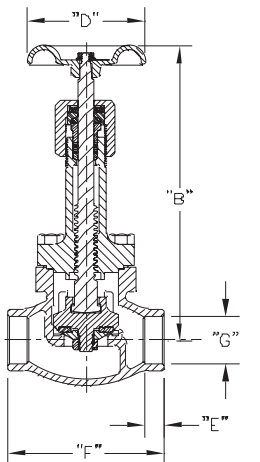
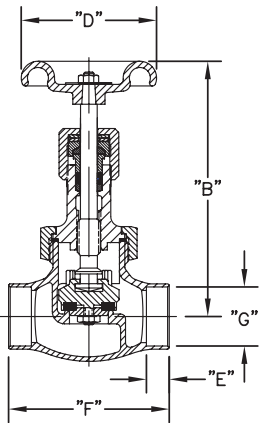
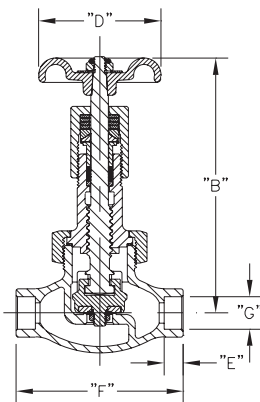
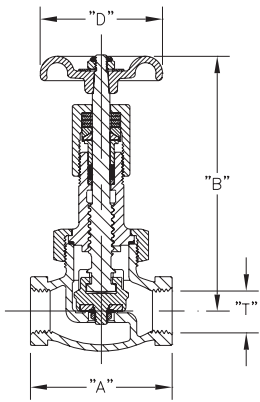
All Dimensional Data are in inches.

Threaded Ends

Size		"A"		"B"		"D"		"T" NPT	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
¼"	6	2⅝"	67	4⅝"	117	2"	51	¼"	6
½"	13			5"	127	2⅝"	60	½"	13
¾"	19	3⅜"	81	5¾"	146	2¾"	70	¾"	19
1"	25	3¾"	95	6¾"	171	3"	76	1"	25
1½"	38	4¾"	121	8⅝"	219	4"	102	1½"	38
2"	51	5¾"	146	9½"	241	4¾"	121	2"	51

Bronze Globe Valve for Cryogenic Service

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



206LL

Pressure Rating 600 psig (42 barg)
 Temperature Rating +150° F to -325° F (+65°C to -198°C)
 Live Load Packing
 Union Bonnet

Dimensional Data

Threaded Ends

Size		"A"		"B"		"D"		"T" NPT	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
1/4"	6	2 5/8"	67	5"	127	2 3/8"	60	1/4"	6
3/8"	9							3/8"	9
1/2"	13							1/2"	13
3/4"	19	3 3/16"	81	5 3/4"	146	2 3/4"	70	3/4"	19
1"	25	3 3/4"	95			3"	76	1"	25

Sil Brazed Ends

Size		"B"		"D"		"G"		"E"		"F"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
1/4"	6	5"	127	2 3/8"	60	.38/.38	10/10	.26	7	2 3/8"	60
1/2"	13					.63/.63	16/16	.38	10	3 1/4"	82
1"	25	6 3/4"	171	3"	76	1.13/1.13	29/29	.44	11	4 1/4"	108

206ULL

Pressure Rating 600 psig (42 barg)
 Temperature Rating +150° F to -325° F (+65°C to -198°C)
 Live Load Packing - Union Bonnet

Dimensional Data

Sil Brazed Ends

Size		"F"		"B"		"D"		"T" NPT	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
1 1/2"	38	4 3/4"	121	8 5/8"	219	4"	102	1 1/2"	38
2"	51	5 3/4"	146	11 1/4"	298	4 3/4"	121	2"	51

206BLL

Pressure Rating 600 psig (42 barg)
 Temperature Rating +150°F to -325°F (+65°C to -198°C)
 Live Load Packing - Bolted Bonnet

Dimensional Data

Sil Brazed Ends

Size		"B"		"D"		"G"		"E"		"F"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
1 1/2"	38	8 5/8"	219	4"	102	1.62/1.64	41/42	.63	16	5 1/4"	133

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 BB Series. Also available in short stem version.

Features

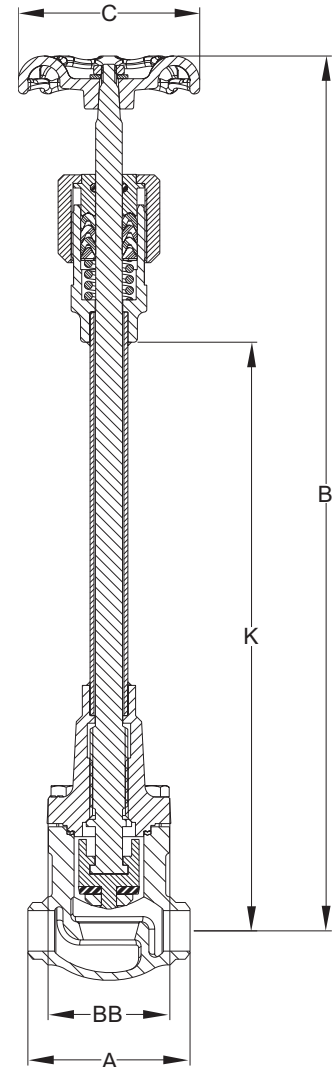
- **Superior Flow:** Provides high Cv for rapid and reliable trailer and tank loading and unloading
- **Top Entry:** This valve can be permanently installed in the line and serviced from the top. Bolted bonnet style provides secure integrity
- **Soft Seated:** Conical PCTFE seat provides a bubble tight 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		Cv (Kv)
				Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	
SKB9402BW	1/4"	DN 6	Butt Weld	2.68	68	14.4	366	3	76	2	51	9.7	246	1.7 (1.47)
SKB9402SW			Socket Weld											
SKB9404BW	1/2"	DN 15	Butt Weld	3.62	92	14.6	371	4.75	121	3.44	87	9.3	236	28.3 (21.60)
SKB9404SW			Socket Weld											
SKB9406BW	3/4"	DN 20	Butt Weld	5.75	146	16.21	412	5.25	133	4.06	103	9.9	251	53 (45.80)
SKB9406SW			Socket Weld											
SKB9408BW	1"	DN 25	Butt Weld	4.75	121	14.6	371	4.75	121	3.44	87	9.3	236	28.3 (21.60)
SKB9408SW			Socket Weld											
SKB9412BW	1 1/2"	DN 40	Butt Weld	4.75	121	14.6	371	4.75	121	3.44	87	9.3	236	28.3 (21.60)
SKB9412SW			Socket Weld											
SKB9416BW	2"	DN 50	Butt Weld	5.75	146	16.21	412	5.25	133	4.06	103	9.9	251	53 (45.80)
SKB9416SW			Socket Weld											

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



Application

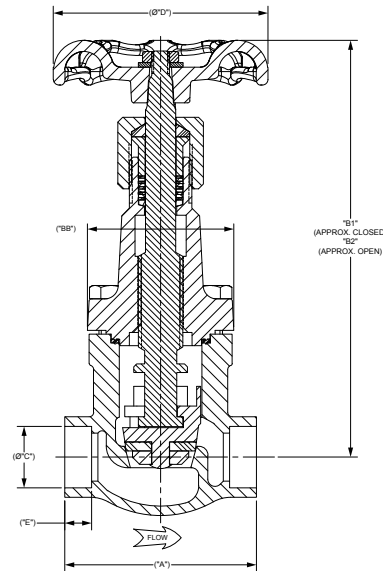
The SKB Series globe valves short stem are designed for handling of cryogenic liquids through bulk tanks, trucks, trailers, ISO-containers and piping configurations. Our time tested spring loaded stem packing and superior seat design provide for long life and easy maintenance. Internal components are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



SKB9406BWS



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

Ordering Information

Part Number	Size		Connection	A		B1		B2		C		D		E		BB		Cv (Kv)	Weight lbs. (Kg)
	Inches	mm		Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm				
SKB9402BWS	¼"	8	Butt Weld	2.68	68	5.79	147	6.24	158	0.56	14	3.00	76	0.37	9	2.05	52	1.7 (1.47)	5.72 (2.59)
SKB9404BWS	½"	15		3.62	92	6.15	156	6.68	170	0.86	22	4.00	102	0.50	13	2.65	67	5 (4.30)	
SKB9406BWS	¾"	20		3.62	92	6.15	156	6.68	170	1.07	27	4.00	102	0.50	13	2.65	67	9.4 (8.10)	
SKB9408BWS	1"	25		3.62	92	6.15	156	6.68	170	1.33	34	4.00	102	0.50	13	2.65	67	14 (12.10)	
SKB9412BWS	1½"	40		4.75	121	7.2	183	7.93	201	1.92	49	4.75	121	0.62	16	3.54	90	28.3 (21.60)	
SKB9416BWS	2"	50		5.75	146	8.85	225	9.84	250	2.41	61	5.25	133	0.62	16	4.04	103	53 (45.80)	
SKB9402SWS	¼"	8	Socket Weld	2.68	68	5.79	147	6.24	158	0.56	14	3.00	76	0.37	9	2.05	52	1.7 (1.47)	5.72 (2.59)
SKB9404SWS	½"	15		3.62	92	6.15	156	6.68	170	0.86	22	4.00	102	0.50	13	2.65	67	5 (4.30)	
SKB9406SWS	¾"	20		3.62	92	6.15	156	6.68	170	1.07	27	4.00	102	0.50	13	2.65	67	9.4 (8.10)	
SKB9408SWS	1"	25		3.62	92	6.15	156	6.68	170	1.33	34	4.00	102	0.50	13	2.65	67	14 (12.10)	
SKB9412SWS	1½"	40		4.75	121	7.2	183	7.93	201	1.92	49	4.75	121	0.62	16	3.54	90	28.3 (21.60)	
SKB9416SWS	2"	50		5.75	146	8.85	225	9.84	250	2.41	61	5.25	133	0.62	16	4.04	103	53 (45.80)	

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

TPED & PED Certified



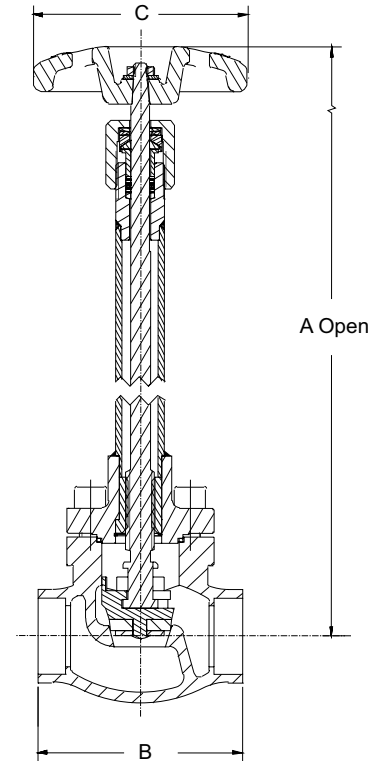
Ordering Information

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	1.16			5.34	2.42		
SKL9412SW	1 1/2"	40				4.7	121	5	127	28.3	21.9	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



SK Advantage



Stainless Steel Globe Valves for Cryogenic Service

SK Advantage Series Medium Stem

REGO
10
YEAR
WARRANTY

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:** 1/4" 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

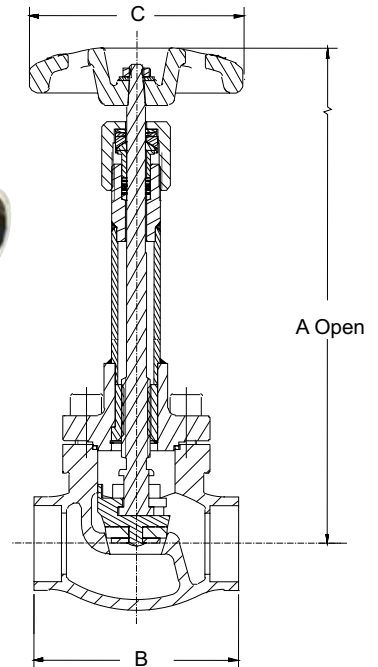
Body Stainless Steel ASTM A351 CF8
 Bonnet and Tube .. Stainless Steel ASTM A351 CF8/ASTM A479 type 304
 Stem Stainless Steel ASTM A582 S30300
 Spring Stainless Steel ASTM A313 S30200
 Packing..... Live Loaded PTFE Packing
 Gasket PTFE 25% Glass Fill
 Seat Disc PCTFE ASTM D1430
 Seat Retainer..... Brass 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	1/4"	8	Socket Weld	10.6	270	2.7	68	4	102	1.7	1.47	3.31	1.50
SKM9404SW	1/2"	15								5	4.30	3.29	1.48
SKM9406SW	3/4"	20				3.6	92	5	127	9.4	8.10	4.86	2.20
SKM9408SW	1"	25								14	12.10	5.02	2.27
SKM9412SW	1 1/2"	40				4.7	121	5	127	28.3	21.60	8.92	4.04
SKM9416SW	2"	50								53	45.80	15.30	6.94
SKM9402BW	1/4"	8	Butt Weld	10.6	270	2.7	68	4	102	1.7	1.47	3.31	1.50
SKM9404BW	1/2"	15								5	4.30	3.29	1.48
SKM9406BW	3/4"	20				3.6	92	5	127	9.4	8.10	4.86	2.20
SKM9408BW	1"	25								14	12.10	5.02	2.27
SKM9412BW	1 1/2"	40				4.7	121	5	127	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 vapor phase and 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. Recommended for vapor phase and intermittent cryogenic liquid use.

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 1½"
- 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

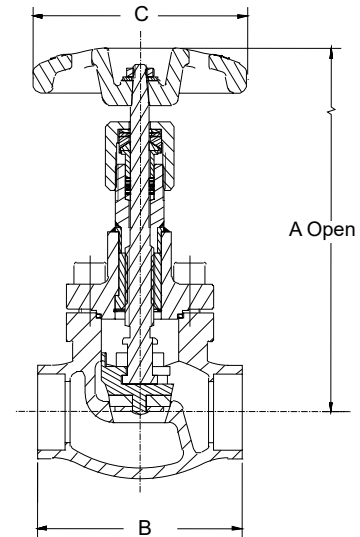
Quality / Facility Features

- 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								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								28.3	21.60	7.16	3.25

Stainless Steel Angle Globe Valves for Cryogenic Service

SKA Advantage Series

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.

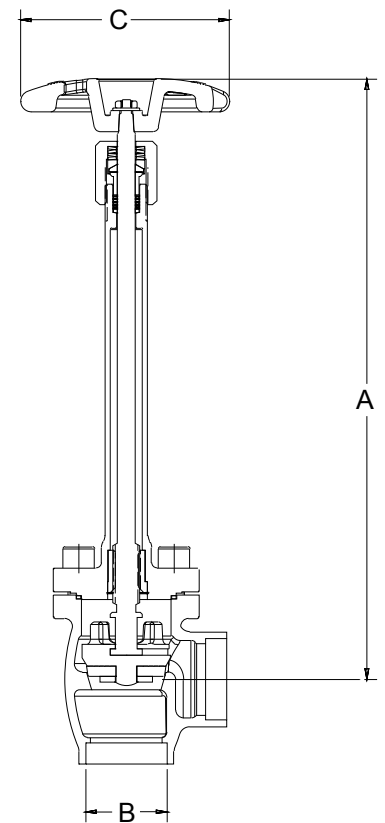
Features

- 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
SKA9408MSW	1"	25			270	1.33	33.78	4	102	5.0	2.2
SKA9412MSW	1½"	40				1.92	48.77	5	127	8.0	3.6

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

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 (Kv)
		Inches	MM		Lbs.	Kg.	Lbs.	Kg.	
GS-00210W-8F	GS-00210W-8F3	1"	25 mm	Flange	15	6.80	20	9.07	11.50 (9.94)
GS-00210W-16F	GS-00210W-16F3	2"	50 mm		35	15.88	40	18.14	40.00 (34.60)
GS-00210W-24F	GS-00210W-24F3	3"	80 mm		65	29.48	70	31.75	60.00 (51.90)
GS-00210W-32F	GS-00210W-32F3	4"	100 mm		95	43.09	100	45.35	175 (151.37)

150# ANSI Class (275 psig (19 barg) Cold Working Pressure)

300# ANSI Class (720 psig (50 barg) Cold Working Pressure)

Stainless Body • Butt Weld, Socket Weld, Threaded Ends

300# Part Number	Valve Size		Ends	Weight		Estimated Cv (Kv)
	Inches	MM		Lbs.	Kg	
GS-00210W-4S3	½"	15 mm	Socket Weld	15	6.80	3.90 (3.37)
GS-00210W-4T3	½"	15 mm	Threaded			
GS-00210W-6S3	¾"	20 mm	Socket Weld			
GS-00210W-6T3	¾"	20 mm	Threaded			
GS-00210W-8S3	1"	25 mm	Socket Weld	25	11.34	11.50 (9.94)
GS-00210W-8T3	1"	25 mm	Threaded			
GS-00210W-12S3	1½"	40 mm	Socket Weld	35	15.88	29.00 (25.08)
GS-00210W-16W3A	2"	50 mm	Butt Weld SCH10			
GS-00210W-16W3J	2"	50 mm	Butt Weld SCH40	55	24.95	40.00 (34.60)
GS-00210W-24W3A	3"	80 mm	Butt Weld SCH10			
GS-00210W-24W3J	3"	80 mm	Butt Weld SCH40	80	36.29	60.00 (51.90)
GS-00210W-32W3A	4"	100 mm	Butt Weld SCH10			
GS-00210W-32W3J	4"	100 mm	Butt Weld SCH40	80	36.29	175.00 (151.37)
LOX00210W-24W3A**	3"	80 mm	Butt Weld SCH10			
LOX00210W-32W3A**	4"	100 mm	Butt Weld SCH10	80	36.29	175.00 (151.37)

* Second number indicates part number for 300# valve.

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

150# ANSI Class (275 psig (19 barg) Cold Working Pressure)

300# ANSI Class (720 psig (50 barg) Cold Working Pressure)

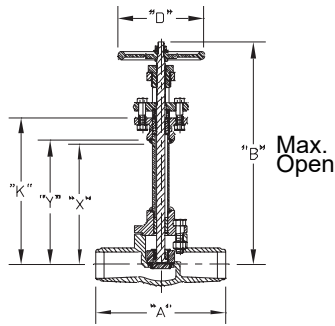


210 Series



Stainless Steel Globe Valve for Cryogenic Service

210 Series

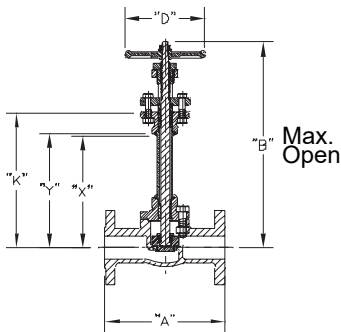


Butt Weld Ends

Size		"A"		"B"		"D"		"K"		"X"		"Y"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
2"	51	10½"	267	22¼"	565	7"	178	15"	381	12¾"	324	13⅛"	332
3"	76	12"	305	30½"	768	10"	254	21½"	546	19⅛"	484	19⅝"	492
4"	102	13½"	343	36¾"	933	12"	305	24¼"	616	21⅛"	551	22"	559

Δ For SCH. 40 A=12½"
 Θ For SCH. 40 A=14"

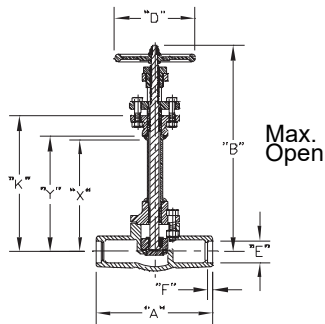
- * Unless otherwise specified, SCH 10 weld ends are supplied
- Special B,K,X & Y dimensions available.



Raised Face Flange Ends*

Size		"A" 150#		"A" 300#		"B"		"D"		"K"		"X"		"Y"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
1"	25	6½"	165	8"	203	18⅞"	460	5"	127	12¾"	324	11⅛"	484	11⅝"	289
2"	51	8"	203	10½"	267	22¼"	565	7"	178	15"	381	12¾"	324	13⅛"	332
3"	76	9½"	241	12½"	317	30½"	775	10"	254	21½"	546	19⅛"	484	19⅝"	492
4"	102	11½"	292	14"	356	36¾"	933	12"	305	24¼"	616	21⅛"	551	22"	559

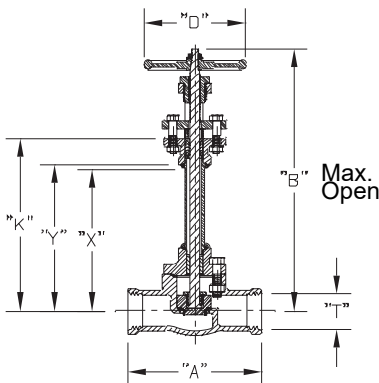
- Special B,K,X & Y dimensions available.



Socket Weld Ends

Size		"A"		"B"		"D"		"E"		"F"		"K"		"X"		"Y"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
½"	13							.855	22	⅝"	9						
¾"	19	5"	127	18⅞"	460	5"	127	1.06	27	½"	13	12¾"	324	11⅛"	281	11⅝"	289
1"	25							1.33	34			15"	381	12¾"	324	13⅛"	332
1½"	38	10¼"	260	22¼"	565	7"	178	1.91	48								

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



Threaded Ends

Size		"T" - NPT		"A"		"B"		"D"		"K"		"X"		"Y"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
½"	13	½"-14	13-356	5"	127	18⅞"	460	5"	127	12¾"	324	11⅛"	281	11⅝"	289
¾"	19	¾"-14	19-356												
1"	25	1"-11½"	25-292	5¾"	146										

- 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.



231 Series



Ordering Information

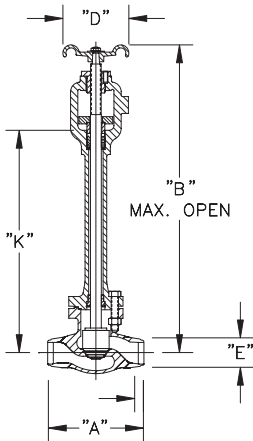
Stainless Body • 400 psig (28 barg) Socket Weld Ends

Part Number	Valve size Inches	Valve Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated C _v (Kv)
S-231-2S4	¼"	6	Socket Weld	6	2.72	1.30 (1.12)
S-231-4S4	½"	15				3.90 (3.37)
S-231-6S4	¾"	20		10	4.54	7.10 (6.14)
S-231-8S4	1"	25				10.50 (9.08)
S-231-12S4	1½"	40				15

Stainless Body • 300 psig (20 barg) Butt Weld Ends

Part Number	Valve size Inches	Valve Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated C _v (Kv)
S-231-4WA	½"	15	Butt Weld	6	2.72	3.90 (3.37)
S-231-8WA	1"	25		10	4.54	10.50 (9.08)
S-231-12WA	1½"	40		15	6.80	25.00 (21.62)

Stainless Steel Globe Valve for Cryogenic Service 231 Series

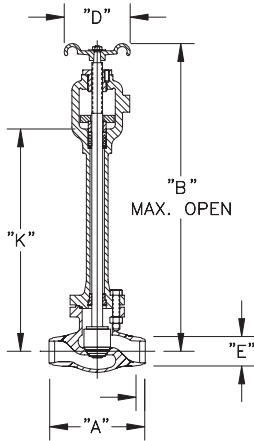


Pressure Rating 400 psig (28 barg)
 Temperature Rating - 425° F to +150° F (-25°C to 65°C)
 This valve is not approved for gaseous and/or liquid oxygen service
 For oxygen service use Goddard series 232H cryogenic globe valve

Dimensional data

Socket Weld Ends

Size		"A"		"B"		"D"		"E"		"F"		"K"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
¼"	6	4¼"	108	14 ⁹ / ₁₆ "	370	2¾"	60	0.560	14	0.375	9	10 ³ / ₁₆ "	259
½"	13							0.860	22				
¾"	19	5¾"	137	17"	432	3"	76	1.070	27	0.500	13	11½"	292
1"	25							1.335	34				
1½"	38	6½"	165	18 ¹⁴ / ₁₆ "	479	4"	102	1.920	49			12 ¹⁵ / ₁₆ "	329



Pressure Rating 300 psig (20 barg)
 Temperature Rating - 425° F to +150° F (-253°C to 65°C)
 This valve is not approved for gaseous and/or liquid oxygen service
 For oxygen service use Goddard series 232H cryogenic globe valve

Dimensional data

Butt Weld Ends

Size		"A"		"B"		"D"		"K"		"E"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
½"	13	4¼"	108	14 ⁹ / ₁₆ "	370	2¾"	60	10 ³ / ₁₆ "	259	½"	13
1"	25	5"	127	17"	432	3"	76	11½"	292	1"	25
1½"	38	6½"	165	18 ⁷ / ₈ "	479	4"	102	12 ⁵ / ₁₆ "	313	1½"	38

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 (28 barg)

Part Number	Valve size Inches	Valve Size mm	Ends	Weight Lbs.	Weight Kg	Estimated C _v (Kv)
S-232-4S4	½"	15	Socket Weld	6	2.72	3.90 (3.37)
S-232-8S4	1"	25		10	4.54	10.50 (9.08)

High Purity Cryogenic Bonnet Nickel Plated Naval Brass Yoke Bushing Stainless Steel Body Butt Weld Ends 300 psig (20 barg)

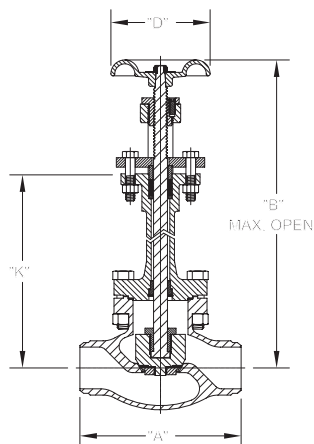
Part Number	Valve size Inches	Valve Size mm	Ends	Weight Lbs.	Weight Kg	Estimated C _v (Kv)
S-232HCB-4WA	½"	15	Butt Weld	6	2.72	3.90 (3.37)
S-232HCB-8WA	1"	25		10	4.54	10.50 (9.08)
S-232HCB-12WA	1½"	40		15	6.80	25.00 (21.62)

High Purity Cryogenic Bonnet Nickel Plated Naval Brass Yoke Bushing, Stainless Steel Body Socket Weld Ends 400 psig (28 barg)

Part Number	Valve size Inches	Valve Size mm	Ends	Weight Lbs.	Weight Kg	Estimated C _v (Kv)
S-232HCB-4S4	½"	15	Socket Weld	6	2.72	3.90 (3.37)
S-232HCB-8S4	1"	25		10	4.54	10.50 (9.08)
S-232HCB-12S4	1½"	40		15	6.80	25.00 (21.62)

Stainless Steel Globe Valve for Cryogenic Service

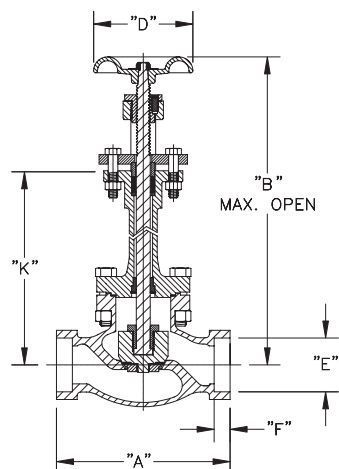
232 Series



Pressure rating 300 psig (20 barg) non-shock cold
 Temperature rating +150° F to -325° F (+65°C to -198°C)
 Dimensional Data

Butt Weld Ends

Size		"A"		"B"		"D"		"K"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
½"	13	4¼"	108	14 ⁹ / ₁₆ "	370	2⅝"	60	10 ³ / ₁₆ "	259
1"	25	5"	127	17"	432	3"	76	11½"	292
1½"	38	6"	152	18⅞"	479	4"	102	12 ⁵ / ₁₆ "	313



Pressure rating 400 psig (28 barg) non-shock cold
 Temperature rating +150° F to -325° F (+65°C to -198°C)
 Dimensional Data

Socket Weld Ends

Size		"A"		"B"		"D"		"E"		"F"		"K"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
½"	13	4¼"	108	14 ⁹ / ₁₆ "	370	2⅝"	60	0.86	22	0.37	9	10 ³ / ₁₆ "	259
1"	25	5⅝"	136	17"	432	3"	76	1.33	34	0.50	13	11 ½"	292
1½"	38	6½"	165	18⅞"	479	4"	102	1.92	49			12 ⁵ / ₁₆ "	313

Cryogenic Fill Manifold CSB & CSM Series

Application

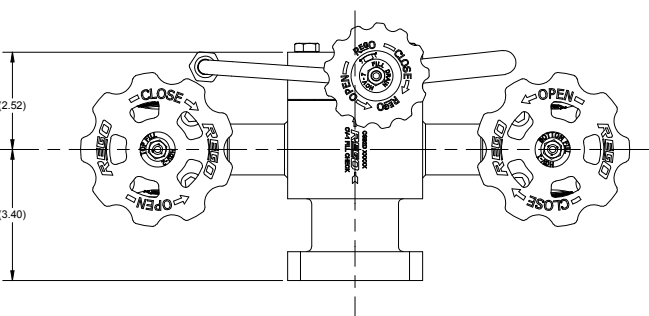
RegO® Goddard high quality welded and welded assemblies are ideal for the manufacturer of original equipment for bulk cryogenic vessels. Using the same technology of our globe valves with SK Series bolt cap, stainless steel bodies and superior works and stainless steel construction pipes are available as a production unit with stainless steel control block and control block brass. Ideal for all cryogenic liquids including Liquefied Nitrogen, Oxygen Argon, and CO2. 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 assembly
- Cleaned for Oxygen Service per CGA G-4.1
- Pressure Rating: 600 psig (41 barg)
- Temperature Rating: -320°F (-196°C) to +165°F (+74°C)
- 100% Factory tested

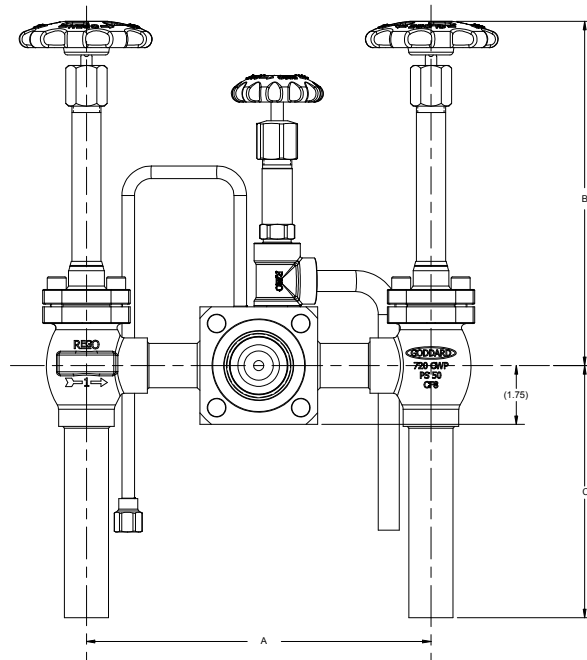
Materials

Globe Valve	Stainless Steel ASTM A351
Check Valve.....	Stainless Steel ASTM A351
Bleed Valve	Brass ASTM B16
Check Valve	Brass ASTM B16
Bleed Valve	Stainless Steel ASTM A351
Tube	304L Stainless Steel ASTM A312



REGO
10
YEAR
WARRANTY

CSM2D



Ordering Information

Part Number	Size Inches	Size mm	Check Valve And Bleed Valve Material	Dimensions					
				A Inches	A mm	B Inches	B mm	C Inches	C mm
CSB2D	1"	25	Brass	10.3	260	10.6	269	7.5	190.5
CSB4D	1½"	40						15	381
CSM2D	1"	25	Stainless Steel					7.5	190.5
CSM4D	1½"	40						15	381

Cryogenic Fill Manifold CFM, AFM & PFM 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 bodies & top works and piping of stainless steel or copper construction are available as production unit.

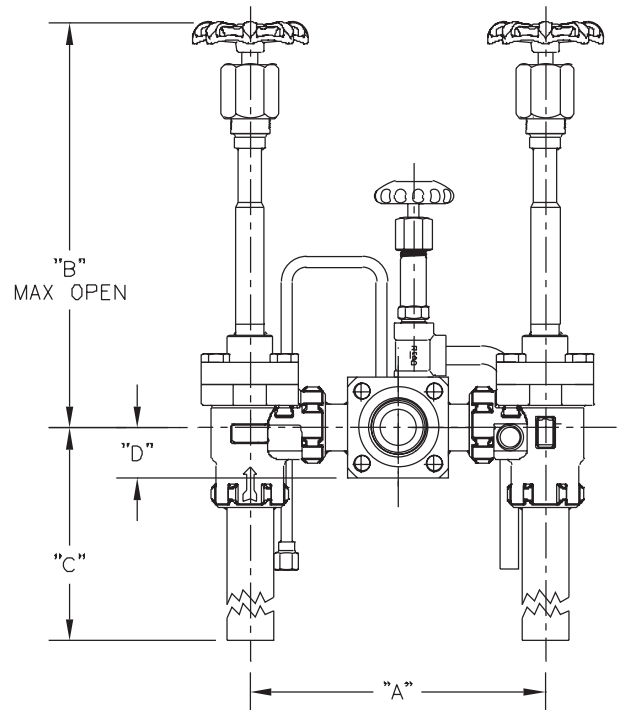
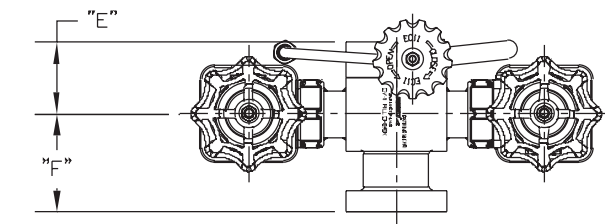
Ideal for all cryogenic liquids including Liquefied Nitrogen, Oxygen, Argon, and CO2. In addition RegO® can custom design configurations that are welded and brazed in a factory setting.

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: CFM, AFM & PFM Series 600 psig (41 barg)
- Temperature Rating: -320°F (-196°C) to +165°F (+74°C)
- 100% Factory tested

Materials

Globe ValveBrass ASTM B16
 Check ValveBrass ASTM B16 "F Bleed Valve
 ValveBrass ASTM B16
 Tube304L Stainless Steel or Copper



Ordering Information

Part Number	Size Inches	Size mm	Pipe Material	Bonnet Type	Dimensions						Cv (Kv)	
					A Inches	A mm	B Inches	B mm	C Inches	C mm	One side open	Both sides open
CFM2D	1"	25	Stainless Steel	Union	10.25	260.35	14.64	371.85	7.5	190.5	10.8 (9.34)	20.8 (17.99)
CFM4D	1½"	40					Bolted	15				
CFM4E				13	330.2							
AFM4D				15	381	14.64		371.85	20	508		
PFM4D			Copper									

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

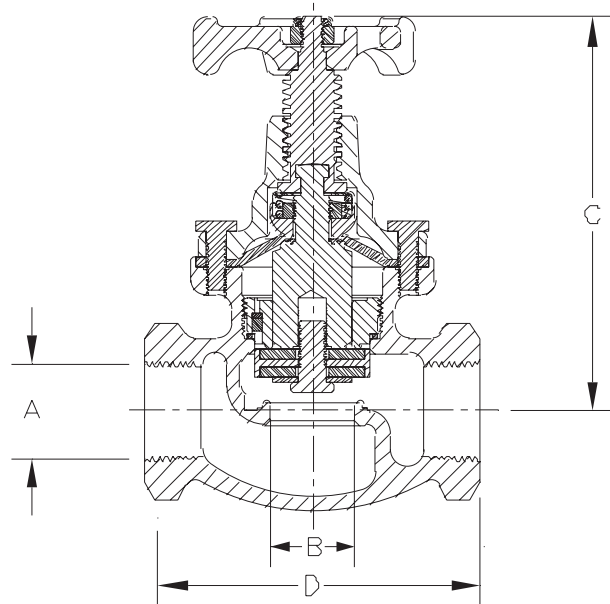
- UL listed for use with air, argon, acetylene, helium, hydrogen, LP-Gas, nitrogen, inert gases and oxygen service
- Leakage is prevented by a dependable diaphragm stem seal
- A resilient seat disc provides positive shut-off
- Heavy duty ACME stem threads assure easy operation and long working life
- 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
- 2505AC and 2507AC are UL Listed.

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 (K _v)
	inches	mm	inch	mm	inch	mm	inch	mm	
2505AC	¾"	19.05	1 ⁵ / ₁₆ "	23.87	5¼"	133.35	4"	101.60	9.0 (7.78)
2507AC	1"	25.40	1 ¹ / ₈ "	28.57	5 ³ / ₈ "	136.65	4 ³ / ₈ "	111.25	15.0 (12.97)
2511AC	1½"	38.10	1 ¹¹ / ₁₆ "	42.92	6¾"	171.45	5 ³ / ₈ "	136.65	33.4 (28.89)
2513AC	2"	50.80	2 ⁵ / ₁₆ "	58.67	7 ¹ / ₈ "	180.97	6¼"	158.75	51.7 (44.72)

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

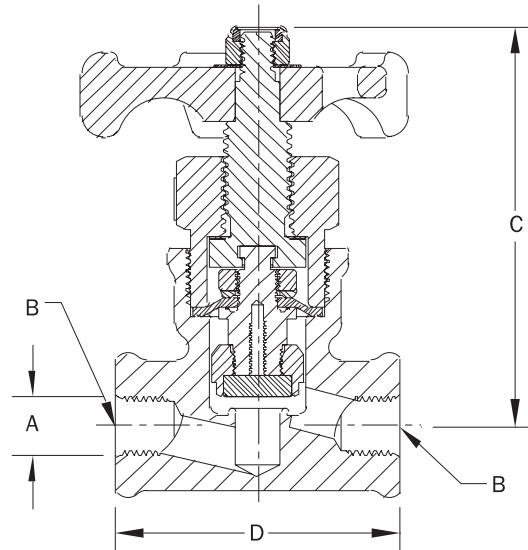
- UL listed for use with acetylene, hydrogen, nitrogen, oxygen service and compressed air
- Leakage is prevented by a dependable diaphragm stem seal
- A resilient seat disc provides positive shut-off
- Heavy duty ACME stem threads assure easy operation and long working life
- Maximum working pressure 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 (Kv)
	Inches	mm	Inches	mm	Inches	mm	Inches	mm	
2554AC	1/2"	13	2 1/32"	17	3 3/8"	86	3 1/8"	79	4.3 (3.71)
2554AAC	3/4"	19							

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 (28 barg)
 - 326 Series 600 psig (42 barg)
- 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 (28 barg) COLD WORKING PRESSURE

Part Number	NPT Size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kg	Estimated Cv (Kv)
B-322-20T4	2½"	65 mm	Threaded	19.00	8.64	372.00 (321.78)
B-322-24T4	3"	80 mm		28.00	121.73	588.00 (508.62)

Part Number	SBT Size Inches*	SBT Size mm	Ends	Weight Lbs.	Weight Kg	Estimated Cv (Kv)
B-322-4S4	½"	15 mm	Silver Braze	1.75	0.80	19.80 (17.12)
B-322-6S4	¾"	20 mm		2.25	1.02	36.00 (31.14)
B-322-8S4	1"	25 mm		3.50	1.59	60.80 (52.59)
B-322-12S4	1½"	40 mm		7.50	3.41	152.00 (131.48)
B-322-16S4	2"	50 mm		11.25	5.11	245.00 (211.92)
B-322-20S4	2½"	65 mm		17.00	7.73	372.00 (321.78)
B-322-24S4	3"	80 mm		24.00	10.91	588.00 (508.62)

*Nominal Size

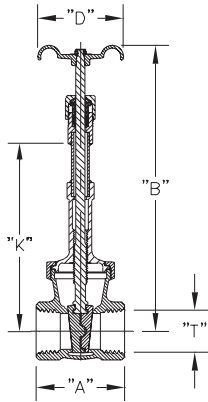
326 Series

Bronze Gate Valves
600 psig (42 barg) COLD WORKING PRESSURE

Part Number	NPT Size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kg	Estimated Cv (Kv)
B-326-4T6	½"	15 mm	Threaded	1.75	0.80	19.80 (17.12)
B-326-6T6	¾"	20 mm		2.25	1.02	36.00 (31.14)
B-326-8T6	1"	25 mm		4.00	1.82	60.80 (52.59)
B-326-12T6	1½"	40 mm		8.25	3.75	152.00 (131.48)
B-326-16T6	2"	50 mm		12.50	5.68	245.00 (211.92)

Extended Bonnet Bronze Gate Valve for Cryogenic Service

322 and 326 Series

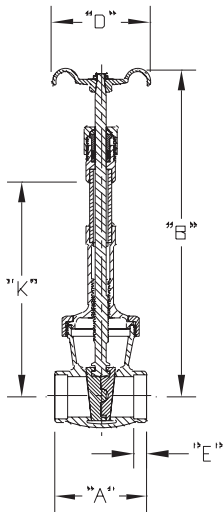


322 Series

MAWP: 400 psig (28 barg) Non-Shock Cold
 Temperature Rating +150° F to -325° F (+65°C to -198°C)
 Dimensional Data

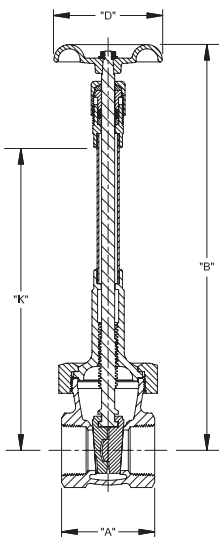
Threaded End (NPT)

Size		"A"		"B"		"D"		"K"		"T"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
2½"	63	4.68"	119	22.5"	571	5.25"	133	14.5"	368	2½"	63
3"	76	5.12"	130	24.87"	632	6.12"	155	16.31"	414	3"	76



Sil Bronze End

Size		"A"		"B"		"D"		"K"		"E"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
½"	13	2.5"	63	9.38"	238	2.37"	60	5.5"	140	.38"	10
¾"	19	3"	76	10.56"	268	2.75"	70	6.12"	155	.40"	10
1"	25	3.25"	83	12.38"	314	3"	76	7.68"	195	.43"	11
1½"	38	4"	102	17"	432	4"	102	10.87"	276	.62"	16
2"	51	4.5"	114	19.62"	498	4.75"	121	12.38"	314	.65"	16
2½"	63	5.25"	133	22.5"	571	5.25"	133	14.5"	368	.78"	20
3"	76	6"	152	24.87"	632	6.12"	155	16.31"	414	.82"	21



326 Series

MAWP: 600 psig (42 barg) Non-Shock Cold
 Temperature Rating +150° F to -325° F (+65°C to -198°C)
 Dimensional Data

Threaded End (NPT)

Size		"A"		"B"		"D"		"K"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
½"	13	2.34"	59	9.37"	238	2¼"	57	5.5"	140
¾"	19	2.5"	63	10.56"	268	2¾"	70	6.12"	155
1"	25	2.34"	59	12.37"	314	3"	76	7.6"	193
1½"	38	3.43"	87	17"	432	4"	102	10.87"	276
2"	51	3.81"	97	19.62"	498	4¾"	121	12.37"	314

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 (28 barg)
 - 306 Series 600 psig (42 barg)
- 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



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 (28 barg) COLD WORKING PRESSURE
Temperature Rating -325°F to +150° F (-198°C TO +65°C)

Part Number	NPT Size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kg	Estimated C _v (Kv)
B-302-4T4	½"	15	Threaded	1.50	0.70	19.80 (17.12)
B-302-20T4	2½"	65		17.50	8.00	372.00 (321.78)
B-302-24T4	3"	80		26.00	11.80	588.00 (508.62)
Part Number	SBT Size Inches*	SBT Size mm*	Ends	Weight Lbs.	Weight Kg	Estimated C _v (Kv)
B-302-4S4	½"	15	Silver Braze	1.25	0.60	19.80 (17.12)
B-302-6S4	¾"	20		2.25	1.00	36.00 (31.14)
B-302-8S4	1"	25		3.00	1.40	60.80 (52.59)
B-302-12S4	1½"	40		6.00	2.70	152.00 (131.48)
B-302-16S4	2"	50		9.50	4.30	245.00 (211.92)
B-302-20S4	2½"	65		14.50	6.60	372.00 (321.78)
B-302-24S4	3"	80		22.00	10.00	588.00 (508.62)

*Nominal Size

306 Series

600 psig (42 barg) Bronze Body, Non-Extended Bonnet, Split Wedge
Temperature Rating -325°F to +150° F (-198°C TO +65°C)

Part Number	NPT Size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated C _v (Kv)
B-306-6T6	¾"	20	Threaded	2.25	1.00	36.00 (31.14)
B-306-8T6	1"	25		3.00	1.40	60.80 (52.59)
B-306-12T6	1½"	40		6.00	2.70	152.00 (131.48)
B-306-16T6	2"	50		9.50	4.30	245.00 (211.92)

310 Series

300 psig (20 barg) Bronze Body, Extended Bonnet, Solid Wedge, Soft Seat
Temperature Rating -325°F to +150° F (-198°C TO +65°C)

Part Number	NPT Size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated C _v (Kv)
B-310-20T	2½"	65	Threaded	14.50	6.60	372.00 (321.78)
B-310-24T	3"	80		22.00	10.00	588.00 (508.62)
Part Number	SBT Size Inches *	SBT Size mm *	Ends	Weight Lbs.	Weight Kgs.	Estimated C _v (Kv)
B-310-24S	3"	80	Silver Braze	22.00	10.00	588.00 (508.62)

*Nominal Size

310X Series

Short Top Works for Trailer Service
300 psig (20 barg) Bronze Body, Extended Bonnet, Solid Wedge, Soft Seat
Temperature Rating -325°F to +150° F (-198°C TO +65°C)

Part Number	NPT Size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kgs.	Estimated C _v (Kv)
B-310X-20T	2½"	65	Threaded	14.50	6.60	372.00 (321.78)
B-310X-24T	3"	80		22.00	10.00	588.00 (508.62)
Part Number	SBT Size Inches *	SBT Size mm *	Ends	Weight Lbs.	Weight Kgs.	Estimated C _v (Kv)
B-310X-24S	3"	80	Silver Braze	22.00	10.00	588.00 (508.62)

*Nominal Size

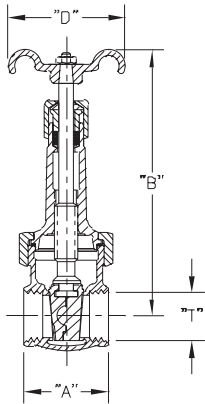
SB-00310X

Stainless Steel Body - Bronze Topworks
Temperature Rating -325°F to +150° F (-198°C TO +65°C)

Part Number	SBT Size Inches *	SBT Size mm *	Ends	Weight Lbs.	Weight Kgs.	Estimated C _v (Kv)
SB-310X-24SW	3"	80	Socketweld	22.00	10.00	588.00 (508.62)

Bronze Gate Valves for Cryogenic Service

302, 306 Series

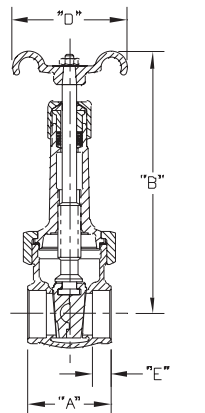


302 Series

MAWP: 400 psig (28 barg) Non-Shock Cold
 Temperature Rating +150° F to -325°F (+65°C to -198°C)
 Non-Extended Valve for selective cold gas applications
 Dimensional Data

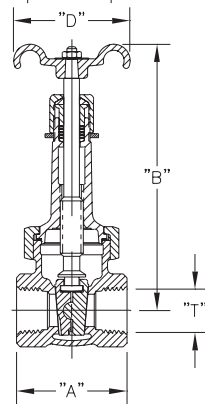
Threaded End (NPT)

Size		"A"		"B"		"D"		"T" NPT	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
½"	13	2.34"	59	5.81"	147	2.37"	60	½"	13
2½"	63	4.68"	119	15.81"	401	5.25"	133	2½"	63
3"	76	5.12"	130	18.25"	463	6.12"	155	3"	76



Sil Braze End

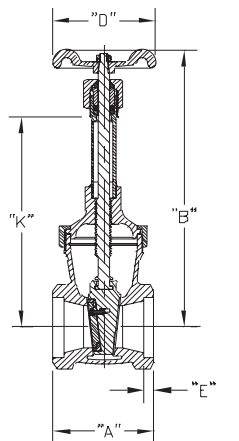
Size		"A"		"B"		"D"		"E"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
½"	13	2.50"	63	5.81"	147	2.37"	60	.38"	10
¾"	19	3"	76	6.94"	176	2.75"	70	.40"	10
1"	25	3.25"	82	8.43"	214	3"	76	.43"	11
1½"	38	4"	102	11.19"	284	4"	102	.62"	16
2"	51	4.5"	114	13.19"	335	4.75"	121	.65"	17
2½"	63	5.25"	133	15.81"	401	5.25"	133	.78"	20
3"	76	6"	152	18.25"	463	6.12"	155	.82"	21



306 Series

MAWP: 600 psig (42 barg) Non-Shock Cold
 Temperature Rating +150° F to -325°F (+65°C to -198°C)
 Non-Extended Valve for selective cold gas applications
 Dimensional Data

Size		"A"		"B"		"D"		"T" NPT	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
¾"	19	2.5"	63	6.93"	176	2¾"	70	¾"	19
1"	25	2.84"	72	8.43"	214	3"	76	1"	25
1½"	38	3.43"	87	11.18"	284	4"	102	1½"	38
2"	51	3.81"	97	13.81"	351	4¾"	121	2"	51

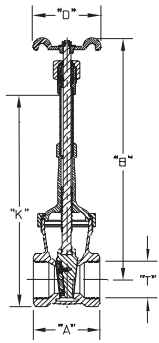


SB-00310X-24SW Sil Braze End (Stainless Steel Body)

Size		"A"		"B"		"D"		"E"		"K"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
3"	76	6"	152	20.38"	518	6.12"	155	0.63"	16	12.5"	317

Bronze Gate Valves for Cryogenic Service

310 & 310X Series

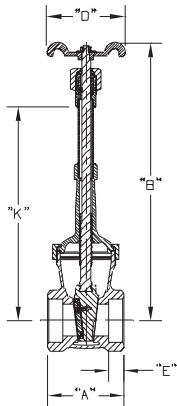


310 Series

MAWP: 300 psig (20 barg) Non-Shock Cold-
 Temperature Rating +150° F to -325° F (+65°C to -198°C)
 Extended Valve for selective cold gas applications
 Dimensional Data

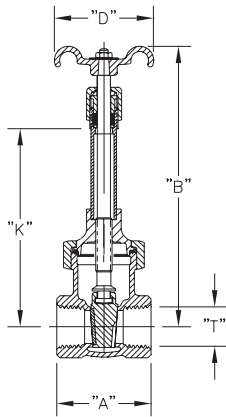
Threaded End (NPT)

Size		"A"		"B"		"D"		"K"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
3"	76	6"	152	25.38"	645	6.12"	155	16.30"	414



Sil Braze End

Size		"A"		"B"		"D"		"E"		"K"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
2½"	64	6"	152	25.38"	645	6.12"	155	.03"	1	16.30"	414
3"	76										

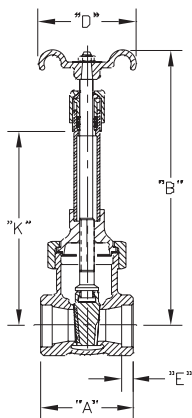


310X Series

MAWP: 300 psig (20 barg) Non-Shock Cold-
 Temperature Rating +150° F to -325° F (+65°C to -198°C)
 Extended Valve for selective cold gas applications, Ideal for Trailer Service
 Dimensional Data

Threaded End (NPT)

Size		"A"		"B"		"D"		"K"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
2½"	64	6"	152	20.38"	518	6.12"	155	11.5"	292
3"	76								



Sil Braze End

Size		"A"		"B"		"D"		"E"		"K"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
3"	76	6"	152	20.38"	518	6.12"	155	0.83"	21	16.3"	414

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 (Kv)
		Inches	mm		Lbs.	Kg	Lbs.	Kg.	
GS-110W-8F	-	1"	25 mm	Flange	15	6.80	-	-	30.00 (25.95)
GS-110W-12F	GS-110W-12F3	1½"	40 mm		35	15.88	45	20.41	85.00 (73.52)
GS-110W-16F	GS-110W-16F3	2"	50 mm		35	15.88	50	22.68	100.00 (86.50)
GS-110W-24F	GS-110W-24F3	3"	80 mm		65	29.48	85	35.56	310.00 (268.15)
GS-110W-32F	GS-110W-32F3	4"	100 mm		90	40.82	120	54.43	700.00 (605.50)
GS-110W-48F	GS-110W-48F3	6"	150 mm		150	68.04	200	90.72	850.00 (735.25)

150# ANSI Class (275 psig (19 barg) Cold Working Pressure) 300# ANSI Class (720 psig (50 barg) Cold Working Pressure)

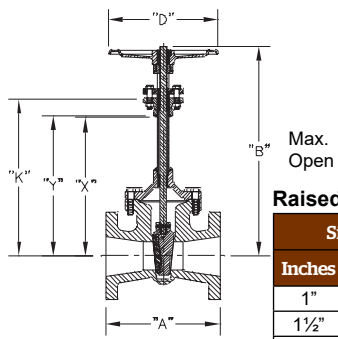
Ordering Information Stainless Body • Butt Weld, Socket Weld, Threaded Ends

150# Part Number	300# Part Number	Valve Size		Ends	Weight		Estimated Cv (Kv)
		Inches	mm		Lbs.	Kg.	
GS-110W-4WA	-	½"	15 mm	Butt Weld SCH10	10	4.54	7.00 (6.05)
-	GS-110W-4S3			Socket Weld	15	6.80	
GS-110W-4T	-			Threaded	10	4.54	
GS-110W-6WA	-	¾"	20 mm	Butt Weld SCH10	15	6.80	23.00 (19.89)
-	GS-110W-6S3			Socket Weld			
GS-110W-8WA	-	1"	25 mm	Butt Weld SCH10	10	4.54	30.00 (25.95)
-	GS-110W-8S3			Socket Weld	15	6.80	
GS-110W-8T	-			Threaded	10	4.54	
GS-110W-12WA	-	1½"	40 mm	Butt Weld SCH10	30	13.61	85.00 (73.52)
-	GS-110W-12S3			Socket Weld	35	15.88	
-	GS-110W-16W3A	2"	50 mm	Butt Weld SCH10			30
-	GS-110W-16W3J			Butt Weld SCH40			
GS-110W-16S	-			Socket Weld			
-	GS-110W-24W3A	3"	80 mm	Butt Weld SCH10	65	29.48	310.00 (268.15)
-	GS-110W-24W3J			Butt Weld SCH40			
-	GS-110W-32W3A	4"	100 mm	Butt Weld SCH10	80	40.82	700.00 (605.50)
-	GS-110W-32W3J			Butt Weld SCH40			
-	GS-110W-48W3A			6"			
-	GS-110W-48W3J	Butt Weld SCH40					

150# ANSI Class (275 psig (19 barg) Cold Working Pressure) 300# ANSI Class (720 psig (50 barg) Cold Working Pressure)* Second number indicates valve for 300# part number. Service: 300#-720 psig (50 barg) Non-shock Cold • Service: 150#-275 psig (19 barg) Non-shock Cold
 • Temperature Rating +150°F - 325°F (+65°C to -198°C) • Mounting plate option available

Stainless Steel Gate Valve for Cryogenic Service

110 Series

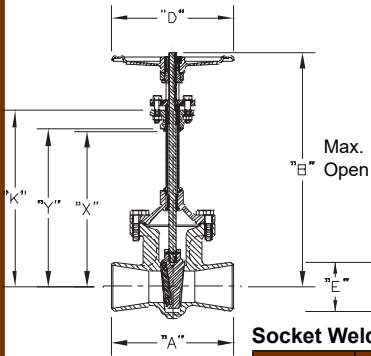


Raised Face Flange Ends*

Size		"A" 150#		"A" 300#		"B"		"D"		"K"		"X"		"Y"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
1"	25	4 ¹ / ₈ "	105	N/A	-	17 ³ / ₄ "	451	4 ¹ / ₂ "	114	12 ³ / ₄ "	324	11 ¹ / ₁₆ "	281	11 ³ / ₈ "	289
1 ¹ / ₂ "	38	4 ⁵ / ₈ "	118	6 ¹ / ₈ **	156	21 ¹ / ₈ "	556	7"	178	14"	356	12 ⁵ / ₁₆ "	313	12 ⁵ / ₈ "	321
2"	51	7"	178	7 ¹ / ₄ **	184										
3"	76	8"	203	8 ³ / ₄ **	222	31 ¹ / ₂ "	800	12"	305	20"	508	17 ³ / ₄ "	451	18 ¹ / ₁₆ "	459
4"	102	9"	229	12"	305	33 ³ / ₄ "	857			21 ¹ / ₂ "	546	19 ¹ / ₄ "	489	19 ⁹ / ₁₆ "	497
6"	152	10 ¹ / ₂ "	267	15 ⁵ / ₈ "	403	41 ¹ / ₂ "	1054	16"	406	26"	660	23 ⁹ / ₁₆ "	598	23 ³ / ₈ "	606

*Face-to-face dimensions (A) are Goddard standard not to ANSI standard.

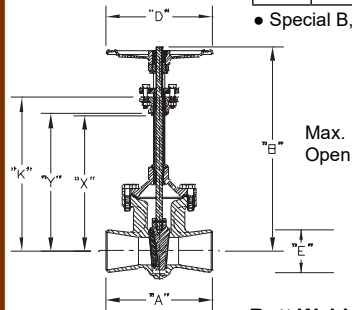
- Special B,K,X & Y Dimensions Available



Socket Weld Ends

Size		"A" 150#		"A" 300#		"B"		"D"		"E"		"F"		"K"		"X"		"Y"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
1/2"	13	3/4"	95	3 3/4"	95	17 3/4"	451	4 1/2"	114	.855	21	3/8"	10	12 3/4"	324	11 1/16"	281	11 3/8"	284
3/4"	19									1.065	27								
1"	25	3 1/2"	89	4"	102	21 1/8"	556	7"	178	1.330	34	1/2"	13	14"	356	12 5/16"	313	12 5/8"	321
1 1/2"	38	4 5/8"	118	5"	127					1.915	49								
2"	51	8 1/2"	216	N/A	-					2.406	61	5/8"	16						

- Special B,K,X & Y Dimensions Available



Butt Weld Ends

Size		"A" 150#		"A" 300#		"B"		"D"		"K"		"X"		"Y"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
1/2"	13	4 1/4"	108	N/A	-	17 3/4"	451	4 1/2"	114	12 3/4"	324	11 1/16"	281	11 3/8"	289
3/4"	19	4 5/8"	117												
1"	25	5"	127												
1 1/2"	38	6"	152	6"	152	21 1/8"	556	7"	178	14"	356	12 5/16"	313	12 5/8"	321
2"	51	8 1/2"	216	8 1/2"	216										
3"	76	11 1/8"	282	11 1/8"	282	31 1/2"	800	12"	305	20"	508	17 3/4"	451	18 1/16"	459
4"	102	12"	305	12"	305	33 3/4"	857			21 1/2"	546	19 1/4"	489	19 9/16"	497
6"	152	15 5/8"	403	15 5/8"	403	41 1/2"	1054	16"	406	26"	660	23 9/16"	598	23 3/8"	606

- 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

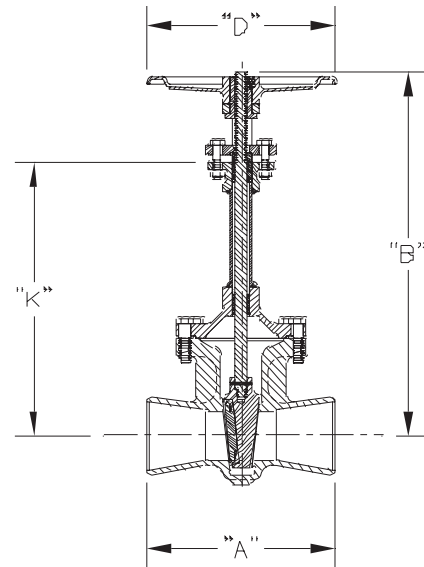
- **Top Entry:** This valve can be permanently installed in the line and serviced from the top
- **Soft Seated:** PCTFE Seat provides a bubble tight seal and is replaceable
- **Construction:** Stainless steel body and bonnet
- **Sizes:** ½" - 6" (15mm - 150mm)
- **Ends:** RF Flange, Butt weld, Socket 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 300 valve - 720 psig (50 barg)

½" - 6" Class 300
PED Approved

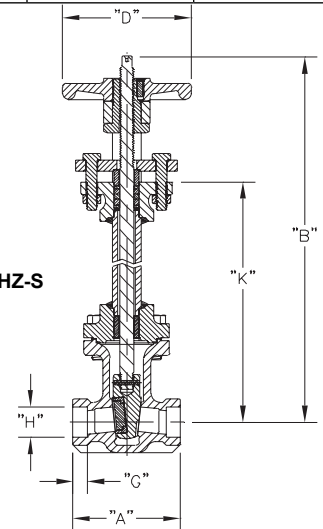
Ordering Information

Part Number	Ends	Size		"A"		"B"		"D"		"K"		Estimated Cv (Kv)	Weight Lbs. (Kg)
		Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm		
GS-110WHZ-16W3A	S10	2"	51	8.50	216	21.88	556	7	178	14	356	100 (86.5)	35 (16)
GS-110WHZ-16W3J	S40									20	508		
GS-110WHZ-24W3A	S10	3"	76	11.12	282	31.5	800	12	305	21.5	546	310 (268.15)	65 (29)
GS-110WHZ-32W3A	S10	4"	102	12	305	33.75	857			26	660		
GS-110WHZ-48W3A	S10	6"	152	15.88	403	41.5	1054	16	406	26	660	850 (735.25)	150 (68)
GS-110WHZ-48W3J	S40												

S-110WHZ-W



S-110WHZ-S



Ordering Information

Part Number	Size		"A"		"B"		"D"		"G"		"H"		"K"		Estimated Cv (Kv)	Lbs. (Kg.)
	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm		
GS-110WHZ-4S3	½"	13	3.75	95	17.75	451	4.5	114	.38	10	.86	22	12.8	325	7 (6.05)	15 (6.80)
GS-110WHZ-6S3	¾"	19							1.07	27	23 (19.89)					
GS-110WHZ-8S3	1"	25	4	102	.5	13	1.33	34	30 (25.95)							
GS-110WHZ-12S3	1½"	38	5	127	21.88	556	7	178	1.92	49	14	356	85 (73.52)	35 (15.87)		

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 300 valve - 720 psig (50 barg)



LOX Series

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

300# Part Number	Valve Size		Ends	Weight		Estimated Cv (Kv)
	Inches	MM		Lbs.	Kg.	
LOX110W-4S3	½"	15 mm	Socket Weld	15	6.80	7.00 (6.05)
LOX110W-6S3	¾"	20 mm	Socket Weld	15	6.80	23.00 (19.89)
LOX110W-8S3	1"	25 mm	Socket Weld	15	6.80	30.00 (25.95)
LOX110W-12S3	1½"	40 mm	Socket Weld	35	15.88	85.00 (73.52)
LOX110W-16W3A	2"	50 mm	Butt Weld SCH10			100.00 (86.50)
LOX110W-24W3A	3"	80 mm	Butt Weld SCH10	65	29.48	310.00 (268.15)
LOX110W-24W3J			Butt Weld SCH40			
LOX110W-32W3A	4"	100 mm	Butt Weld SCH10	80	40.82	700.00 (605.50)
LOX110W-32W3J			Butt Weld SCH40			
LOX110W-48W3A	6"	150 mm	Butt Weld SCH10	120/150*	54.43/68.04*	850.00 (735.25)
LOX110W-48W3J			Butt Weld SCH40			

300# ANSI Class (720 psig (50 barg) Cold Working Pressure)* Second number indicates valve for 300# part number.

Service: 300#-720 psig (50 barg) Non-shock Cold • Service: 150#-275 psig (19 barg) Non-shock Cold

- Temperature Rating +150°F - 325°F (+65°C -198°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 MAWP (41.3 barg)
- 2 psig opening pressure

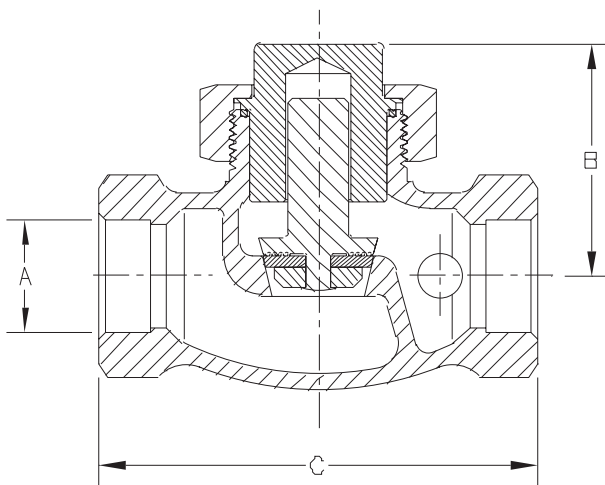
Materials

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		C _v (K _v)
		inches	mm	inches	mm	
BK8508S	1.128"-1.130"	2¼"	57.15	4 ¹⁵ / ₁₆ "	125.47	10 (8.65)
BK8508T	1" F.NPT					
BK8512S	1.629"-1.631"	3¼"	82.55	5 ³ / ₁₆ "	131.82	
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 (28 barg) Cold Working Pressure

Threaded Ends

Part Number	NPT Size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kg	Estimated Cv (Kv)
B-840-4T	½"	15	Threaded	2.00	0.91	4.50 (3.89)
B-840-6T	¾"	20		4.00	1.81	7.00 (6.05)
B-840-8T	1"	25		4.50	2.04	10.00 (8.65)
B-840-12T	1½"	40		8.50	3.86	40.00 (34.6)
B-840-16T	2"	50		14.50	6.58	100.00 (86.5)

Silver Brazed - Pipe Nipple

Part Number	SBT Size Inches*	SBT Size mm*	Ends	Weight Lbs.	Weight Kg	Estimated Cv (Kv)
B-840-4S	½"	15	Silver Braze	2.50	1.13	4.50 (3.89)
B-840-6S	¾"	20		4.5	2.05	7.00 (6.05)
B-840-8S	1"	25		5.25	2.38	10.00 (8.65)
B-840-12S	1½"	40		10.75	4.88	40.00 (34.6)
B-840-16S	2"	50		17.50	7.94	100.00 (86.5)

* Nominal Size

846M

Bronze Swing Check Valves - Metal Seated, Threaded, Sil Brazed Ends, Threaded and Back Brazed Pipe Nipples
600 psig (42 barg) Cold Working Pressure

Threaded Ends

Part Number	NPT Size Inches	NPT Size mm	Ends	Weight Lbs.	Weight Kg	Estimated Cv (Kv)
B-846M-4T6	½"	15	Threaded	2.00	0.91	4.50 (3.89)
B-846M-8T6	1"	25		4.50	2.04	10.00 (8.65)
B-846M-12T6	1½"	40		8.50	3.86	40.00 (34.6)
B-846M-16T6	2"	50		14.50	6.58	100.00 (86.5)

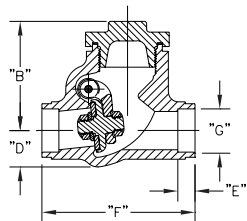
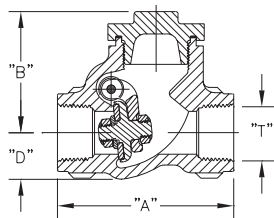
Bronze Swing Check Valve for Cryogenic Service Including 846M 840 Series

Silver Brazed - Pipe Nipple

Part Number	SBT Size Inches*	SBT Size mm*	Ends	Weight Lbs.	Weight Kg	Estimated CV
B-846M-4S6	1/2"	15	Silver Braze	2.50	1.13	4.50
B-846M-6S6	3/4"	20		4.50	2.04	7.00
B-846M-8S6	1"	25		5.25	2.38	10.00
B-846M-12S6	1 1/2"	40		10.75	4.88	40.00
B-846M-16S6	2"	50		17.50	7.94	100.00

* Nominal Size

- Contact company for threaded, back brazed pipe nipple information

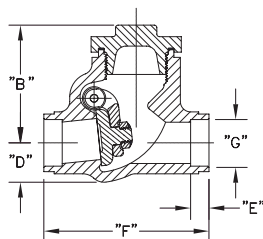
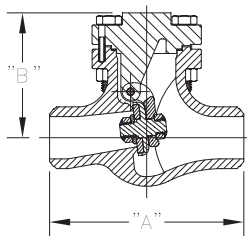


840 Series

Pressure Rating MSS SP-80 Class 200
MAWP 400 psig (28 barg) Non-Shock Cold
Temperature Rating +150°F to -325°F (+65°C to -198°C)

Dimensional data

Size		"A"		"B"		"D"		"T" NPT		"E"		"F"		"G"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
1/2"	13	3.00"	76	2.13"	54	3/4"	19	1/2"	13	.38"	10	2.94"	75	.63"	16
3/4"	19	3.69"	94	2.81"	71	1.12"	28	3/4"	19	.41"	11	3.60"	91	.88"	22
1"	25	4.00"	102			1.13"	29	1"	25	.45"	11	4.00"	102	1.13"	29
1 1/2"	38	5.03"	128	3.63"	92	1.44"	36	1 1/2"	38	.63"	16	5.03"	128	1.63"	41
2"	51	6.35"	161	4.34"	110	1.84"	47	2"	51	.66"	17	6.35"	161	2.13"	54



846M Series

Pressure Rating MSS SP-80 Class 300
MAWP 600 psig (42 barg) Non-Shock Cold
Temperature Rating +150°F to -325°F (+65°C to -198°C)

Dimensional data

Size		"A"		"B"		"D"		"T" NPT		"E"		"F"		"G"	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
1/2"	13	3.00"	76	2.13"	54	3/4"	19	1/2"	13	.38"	10	2.94"	75	.63"	16
3/4"	19	3.69"	94	2.81"	71	1 1/8"	28	3/4"	19	.41"	11	3.60"	91	.88"	22
1"	25	4.00"	102					1"	25	.45"	11	4.00"	102	1.13"	29
1 1/2"	38	5.03"	128	3.63"	92	1 7/16"	36	1 1/2"	38	.63"	16	5.03"	128	1.63"	41
2"	51	6.35"	161	4.34"	110	1 27/32"	47	2"	51	.66"	17	6.35"	161	2.13"	54

Stainless Steel Spring-Loaded Piston Lift Check Valves

CV9400 Series

Application

The CV9400 Series of Stainless Steel Lift Check Valves are designed with a spring-loaded piston for installation in various piping configurations in liquid cryogenic applications, including bulk tanks, trailers and ISO tanks. Ideal service medium includes oxygen, nitrogen, krypton, carbon dioxide, nitrous oxide, dinitrogen monoxide, carbon oxide, methane, ethane, ethylene, argon, and LNG.



Features

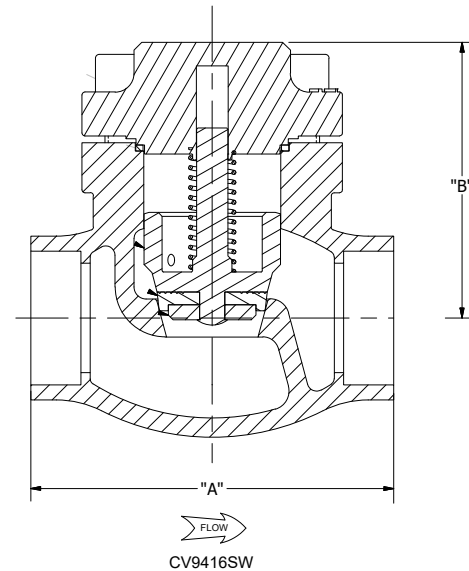
- Soft Seat: Dyneon™ TFM1600 material enables bubble tight sealing performance under cryogenic conditions
- Seat Disc: Conical seat design provides higher Cv and a bubble tight seal
- Seat Assembly: One-piece assembly with no small pieces prevent possible dislodge of material during vibration that could damage downstream equipment or potentially cause an explosion
- Seat Holder: Lower position guiding ensures repeatability of tight reseal
- Spring: 316Ti material provides repeatable, lasting performance when exposed to cryogenic liquid
- Opening Pressure: 1.5 PSIG (0.1 BARG)
- Sizes: ½" through 2"
- Connection: SCH 10 Socket Weld & Butt Weld per ASTM A312 & ASME B16.25 standards
- Temperature rating: -320°F to +185°F (-196°C to +85°C)
- Pressure rating: Cold, non-shock, 720 PSIG (50 BARG) Class 300 (PN 50)
- 100% Factory Tested
- Each valve is individually bagged and boxed to arrive in factory new condition until ready for installation
- Cleaned and packaged for oxygen service per CGA G-4.1



CV9416SW

Materials

Body 316 Stainless Steel ASTM A351-CF-8M (DIN 1.4408)
 Bonnet 304 Stainless Steel ASTM A182 (DIN 1.5415)
 Spring 316Ti Stainless Steel ASTM A313 (DIN 1.4544)
 Gasket PTFE 25% Glass Fill
 Seat Disc Dyneon TFM 1600
 Seat Retainer Brass ASTM B16 (DIN 2.0375)
 Bonnet Screws Stainless Steel ASTM 240 (DIN 1.4006)



PED Certified

Ordering Information

Part Number	Size Inches	Size DN	Connection Type	A Inches	A mm	B Inches	B mm	Cv	Kv	Weight lbs	Weight kg
CV9404SW	½"	15	Socket Weld	2.7	67	2.7	68	5.0	4.3	1.9	0.9
CV9406SW	¾"	20		2.8	70	3.6	92	9.4	8.1	3.4	1.5
CV9408SW	1"	25		2.8	70	3.6	92	14.0	12.1	3.6	1.6
CV9412SW	1½"	40		3.1	79	4.8	121	28.3	21.6	7.0	3.2
CV9416SW	2"	50		4.2	106	5.8	146	53.0	45.8	12.2	5.6
CV9404BW	½"	15	Butt Weld	2.7	67	2.7	68	5.0	4.3	1.9	0.9
CV9406BW	¾"	20		2.8	70	3.6	92	9.4	8.1	3.4	1.5
CV9408BW	1"	25		2.8	70	3.6	92	14.0	12.1	3.6	1.6
CV9412BW	1½"	40		3.1	79	4.8	121	28.3	21.6	7.0	3.2
CV9416BW	2"	50		4.2	106	5.8	146	53.0	45.8	12.2	5.6

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 serviced 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, according to ASME B16.34
- **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) (-254° C to 176° C.)**
- **Cracking Pressure:** 0.5 psig (0.03) barg

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 (Kv)	Weight	
	Inches	mm					Lbs.	Kg
S-886GF-4S	½"	15 mm	Socket Weld	Soft	400 (27.5 barg)	18.00 (15.57)	3	1.36
S-886GF-8S	1"	25 mm					11	4.98
S-886GF-12S	1½"	40 mm				61.00 (52.76)	17	7.71

PTFE Gasket - Socket Weld

Part Number	Valve Size		End Connection	Seat	Pressure Rating	Estimated C_V (Kv)	Weight	
	Inches	mm					Lbs.	Kg
S-886-4S	½"	15 mm	Socket Weld	Soft	400 (27.5 barg)	18.00 (15.57)	3	1.36
S-886-8S	1"	25 mm					11	4.98
S-886-12S	1½"	40 mm				61.00 (52.76)	17	7.71



886 Series



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 (Kv)	Weight		
	Inches	mm						Lbs.	Kg	
S-886-4WA	½"	15 mm	Butt Weld	Soft	10	400 (27.5 barg)	4.50 (3.89)	3	1.36	
S-886-8WA	1"	25 mm					18.00 (15.57)	11	4.98	
S-886-12WA	1½"	40 mm					61.00 (52.76)	17	7.71	
S-886-16W3A	2"	50 mm					99.00 (85.63)			
S-886-24WA	3"	80 mm					275 (19 barg)	225.00 (194.62)	47	21.31
S-886-24WJ	3"	80 mm							46	20.86
S-886-32W3J	4"	100 mm			40	720 (50 barg)	475.00 (410.87)	95	43.09	
S-886-32WA	4"	100 mm								10

886M

Stainless Steel Swing Check Valves - Metal Seat

PTFE Gasket - Socket Weld

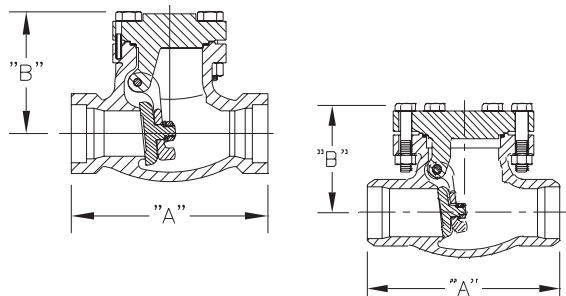
Part Number	Valve Size		End Connection	Seat	Pressure Rating	Estimated Cv (Kv)	Weight	
	Inches	mm					Lbs.	Kg
S-886M-4S3	½"	15 mm	Socket Weld	Metal	720 (50 barg)	4.50 (3.89)	3	1.36
S-886M-8S3	1"	25 mm				18.00 (15.57)	11	4.98
S-886M-12S3	1½"	40 mm				61.00 (52.76)	17	7.71

Butt Weld Ends

Part Number	Valve Size		End Connection	Seat	Butt Weld Schedule	Pressure Rating	Estimated Cv (Kv)	Weight	
	Inches	mm						Lbs.	Kg
S-886M-16W3A	2"	50 mm	Butt Weld	Metal	10	720 (50 barg)	99.00 (85.63)	17	7.71
S-886M-24W3J	3"	80 mm			40		225.00 (194.62)	46	20.86
S-886M-24W3A	3"				10	275 (19 barg)	475.00 (410.87)	95	43.09
S-886M-32WA	4"	100 mm			40				
S-886M-32W3J	4"								

Butt Weld Ends with GRAFOIL® Gasket for Hydrogen Service

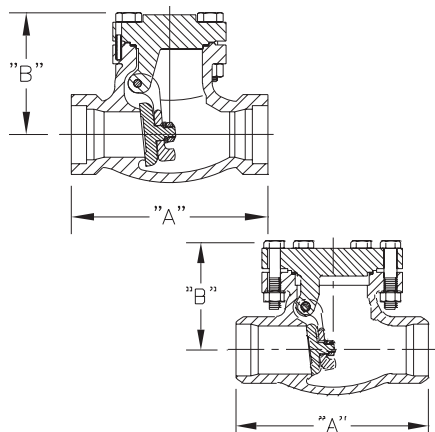
Part Number	Valve Size		End Connection	Seat	Butt Weld Schedule	Pressure Rating	Estimated Cv (Kv)	Weight Lbs.	
	Inches	mm						Lbs.	Kg
S-886MGF-16W3A	2"	50 mm	Butt Weld	Metal	10	720 (50 barg)	99.00 (85.63)	17	7.71
S-886MGF-24W3A	3"	80 mm					225.00 (194.62)	46	20.86



886

Pressure Rating 300 psig (20 barg) Non-Shock Cold,
Temperature Rating +150° F to - 325° F (+65°C to -198°C)

Size		"A"		"B"	
inches	mm	inches	mm	inches	mm
½"	12.7	4¼"	107.95	2½"	63.5
¾"	19.05	5"	127	3¼"	82.55
1"	25.4				
1½"	38.1	6½"	165.1	4"	101.6
2"	50.8	8"	203.2	4½"	107.95



886M

Service 300 Class 720 psig (50 barg) Non-Shock Cold,
Temperature Rating +150° F to - 325° F (+65°C to -198°C)

Size		"A"		"B"		Butt Weld End Schedule
inches	mm	inches	mm	inches	mm	
1½"	38.1	6½"	165.1	4"	101.6	10
2"	50.8	8"	203.2	4½"	107.95	
3"	76.2	9½"	241.3	5¾"	146.05	10 & 40
4"	101.6	11½"	292.1	8⅝"	212.85	10
		14"	355.6			40

Size		"A"		"B"		End	End Dimension
inches	mm	inches	mm	inches	mm		
½"	12.7	27/16"	61.97	4¼"	107.69	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

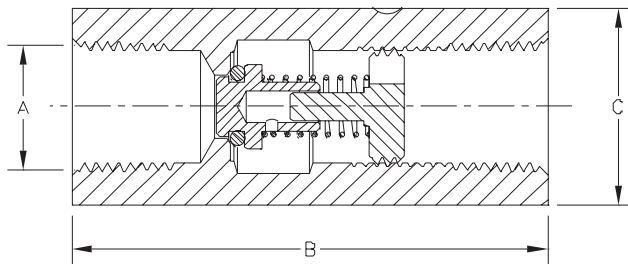
- One directional flow indicated by arrow on body
- Large Cv for high flow capability and low pressure drop
- Working temperature range:
-320° F to +165° F (-195°C to +74°C) for metal seats
-20° F to +165° F (-20°C to +74°C) for soft seats
- 1 psig opening pressure
- Cleaned for use in oxygen service per CGA G-4.1

Materials

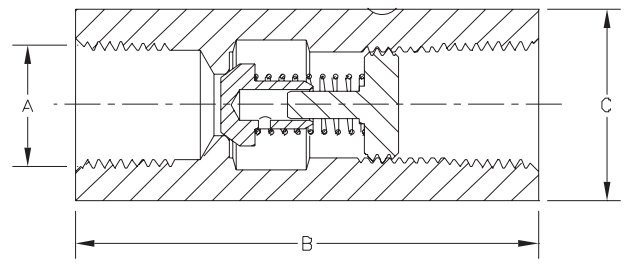
Body (B and BL suffix) ASTM B16 Brass
 Body (SS and SSL suffix) 203 Stainless Steel
 Spring Stainless Steel
 Piston Stainless Steel
 O-Ring (soft seat option units only) Viton
 Metal Seat 303 Stainless Steel



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 (Kv)	Maximum Operating Pressure
			inches	mm	inches	mm		
Stainless Steel Check Valves								
CG250SS	Metal	1/4"	2 3/8"	60.45	13/16"	20.57	.87 (0.75)	5000 psig (345 barg)
CG375SS		3/8"	2 1/2"	63.50	1"	25.4	2.3 (1.98)	
CG500SS		1/2"	3"	76.20	1 1/8"	28.575	3.5 (3.02)	
CG750SS		3/4"	3 5/8"	92.20	1 1/2"	38.1	5.2 (4.49)	
CG250SSL	Soft	1/4"	2 3/8"	60.45	13/16"	20.57	.87 (0.75)	250 psig (17.2 barg)
CG375SSL		3/8"	2 1/2"	63.50	1"	25.4	2.3 (1.98)	
CG500SSL		1/2"	3"	76.20	1 1/8"	28.575	3.5 (3.02)	2000 psig (138 barg)
CG750SSL		3/4"	3 5/8"	92.20	1 1/2"	38.1	5.2 (4.49)	
Brass Body Check Valves								
CG250B	Metal	1/4"	2 3/8"	60.45	13/16"	20.57	.87 (0.75)	3000 psig (207 barg)
CG375B		3/8"	2 1/2"	63.50	1"	25.4	2.3 (1.98)	
CG500B		1/2"	3"	76.20	1 1/8"	28.575	3.5 (3.02)	
CG750B		3/4"	3 5/8"	92.20	1 1/2"	38.1	5.2 (4.49)	
CG250BL	Soft	1/4"	2 3/8"	60.45	13/16"	20.57	.87 (0.75)	250 psig (17.2 barg)
CG375BL		3/8"	2 1/2"	63.50	1"	25.4	2.3 (1.98)	
CG500BL		1/2"	3"	76.20	1 1/8"	28.575	3.5 (3.02)	2000 psig (138 barg)
CG750BL		3/4"	3 5/8"	92.20	1 1/2"	38.1	5.2 (4.49)	

RegO® Check Valves NG304 Series

Application

The NG304 series is specifically designed to prevent backflow (reverse flow) in applications of LNG fuel tanks and LNG facilities. These valves permit the safe refill operation of the LNG tanks and the maintenance process of the fill receptacle, ensure reliable performance at cryogenic temperatures.

Features

NG304

- Maximum inlet pressure 1000 psig (69 barg)
- 100% factory tested
- Temperature Range: -320° F to 165°F (-196°C to 74°C)
- Designed in accordance with & approved by ECE R110

Materials for NG304

Body Brass ASTM B16 C36000
 Spring Stainless Steel 302 ASTM A313
 Gasket Copper ASTM B152 UNS C11000
 Poppet Brass ASTM B16 UNS C36000
 Seat Disc PTFE Virgin Teflon

Materials NG304SS

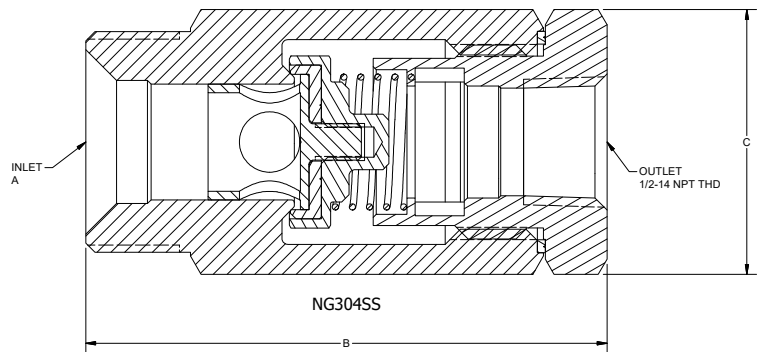
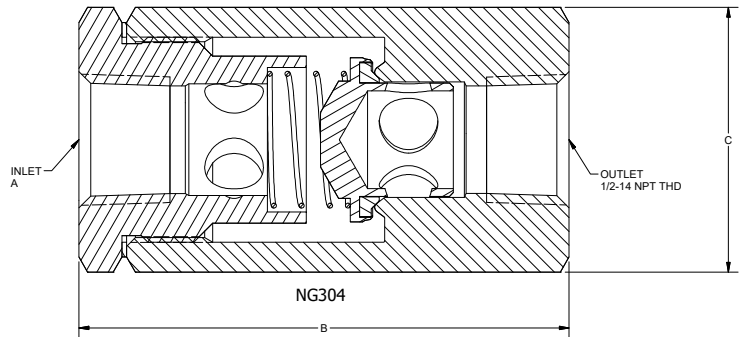
Body Stainless Steel 304 ASTM276
 Spring Stainless Steel 302 ASTM A313
 Gasket Copper ASTM B152 UNS C11000
 Poppet Brass 360 FC (UNS C36000 PER ASTM B16)
 Seat Disc UHMWPE (ASTM D4020)



NG304



NG304SSA



Ordering Information

Part Number	Body Material	Connection (A)	B		C		Weight Lbs		Silver Plated End Piece	
			Inches	mm	Inches	mm	Lbs	Kg		
NG304	Brass	Threaded FNPT F 1/2	3.135	80	1.5 (Hex)	38	1.25	0.6	N/A	
NG304SSA	Stainless Steel	M36x2 Male	3.346	85			1.10	0.5		Yes
NG304SSB		M30x1.5 Male	2.953	75						
NG304SSC		1/2"-14 NPT Female	3.346	85						
NG304SSAP		M36x2 Male	2.953	75						
NG304SSBP		M30x1.5 Male								
NG304SSCP		1/2"-14 NPT Female								

3" Flanged Internal Valves for Bobtail Delivery Trucks, Transports and Large Stationary Storage Containers TA3217

Application

Designed primarily for CO₂ filling and/or withdrawal on bobtail 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.

Features

Provides More Efficient Operation

- Flow passages designed to allow substantially higher flow without cavitation or loss of efficiency--saving time and money
- Simple operating lever facilitates easy adaptation of all cable controls
- Lever available on right or left side to allow for installation without the use of an extra pulley
- Nylon bearing supported operating shaft provides smooth, easy operation

Less Frequent-Easier Maintenance

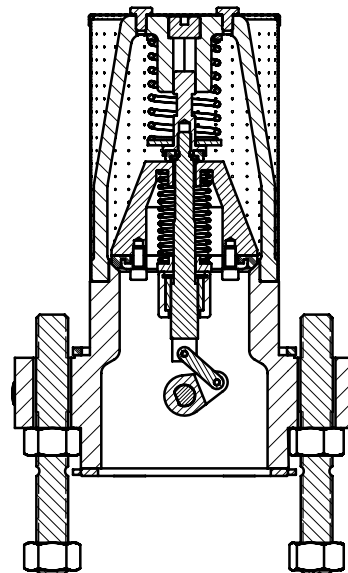
- Stainless steel screws resist rusting and are easily removed during valve disassembly
- Heavy duty rod wiper helps minimize dirt and foreign material from entering operating shaft and hampering operation

Durable Construction

- Cadmium plating helps resist corrosion during storage and use
- All ferrous materials with a temperature range of -40° F. to +165° F. (-40°C to +74°C) and a pressure rating of 400 psig (28 barg)
- Sturdy retaining ring secures operating cam to provide for more durable, slack-free operation
- Built-in excess flow valve
- Specify RegO Internal Valves on your next new tank or when your truck is rebuilt



TA3217



Ordering Information

Part Number		Operating Lever Position	Inlet Connection	Outlet Connection	Closing Flow GPM	Accessories	
						Pneumatic Actuator	
					CO ₂	Right Operation	Left Operation
TA3217AR410	TA3217AL410	Right or Left	3" 300# ANSI RF Modified Flange*	3" 300# ANSI RF Flange	410	A3217RA	A3217LA

* Valve supplied with 16 nuts and 8 studs for mounting.



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. Compatible with oxygen, nitrogen, argon, hydrogen, helium, CO₂, and LNG.

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 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.

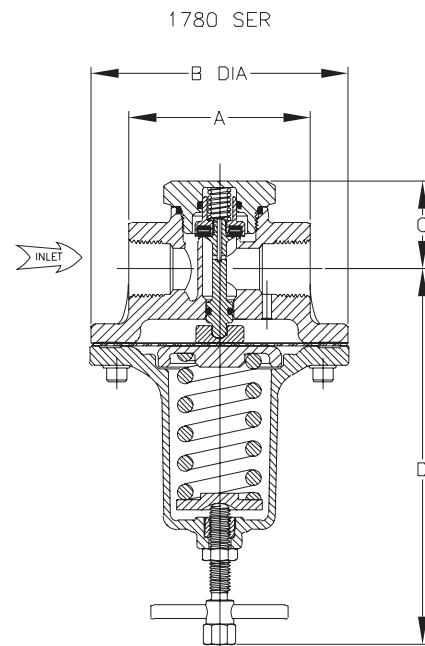
Ordering Information

Part Number	Delivery Pressure Range	Pressure Gauge*		Inlet & Outlet (F.N.P.T.)		Dimensions								Cv (Kv)
		Range (psig)	P/N			"A"		"B"		"C"		"D"		
				Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	
1784A	5-55 psig (0.3-3.8 barg)	1-100	1286	½"	22	2.82"	1.28	3.62"	1.64	1.38"	.62	5.47"	2.5	3.1 (2.68)
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	¾"	34	3.31"	1.50	4.69"	2.12	1.60"	.72	6.84"	3.1	4.8 (4.15)
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"	45	3.31"	1.50	4.69"	2.12	1.60"	.72	6.84"	3.1	5.5 (4.75)
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. Compatible with oxygen, nitrogen, argon, hydrogen, helium, CO₂, and LNG.

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 (Kv)
		Range (psig)	P/N	Inlet & Outlet		"A"		"B"		"C"		"D"		
				inches	mm	inches	mm	inches	mm	inches	mm			
BR-1784A	5-55 psig (0.3-3.8 barg)	1-100	1286	½"	12.7	2.82"	71.62	3.62"	91.94	1.38"	35.05	5.21"	132.33	3.1 (2.68)
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)													
BR-1786A	5-55 psig (0.3-3.8 barg)	1-100	1286	¾"	19.05	3.31"	84.07	4.69"	119.12	1.60"	40.64	6.46"	164.08	4.8 (4.15)
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)													
BR-1788A	5-55 psig (0.3-3.8 barg)	1-100	1286	1"	25.4	3.31"	84.07	4.69"	119.12	1.60"	40.64	6.46"	164.08	5.5 (4.75)
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



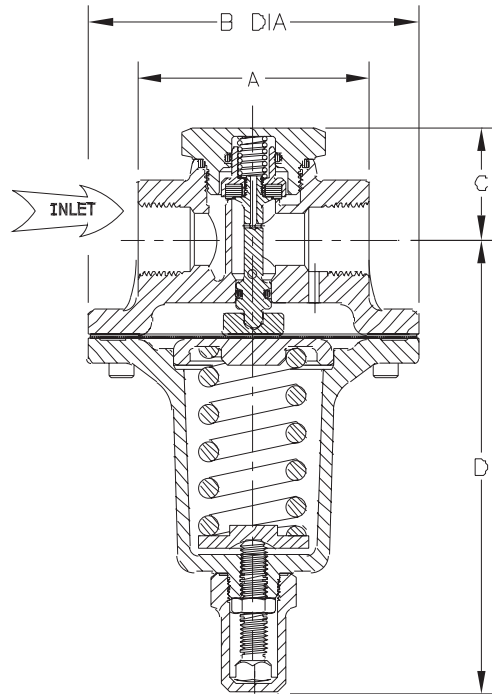
BR1786 and BR1788

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.



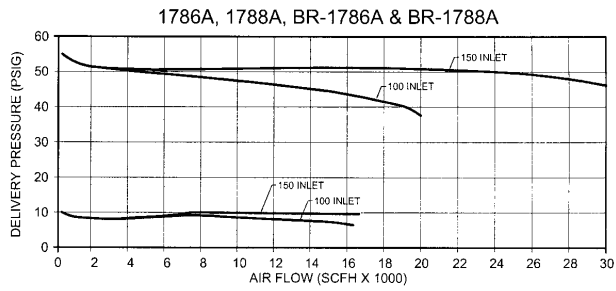
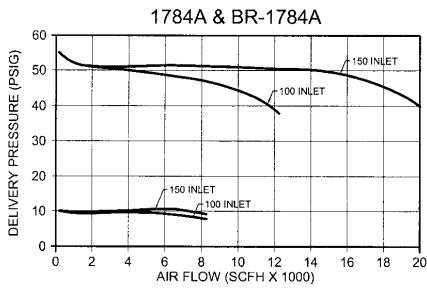
Maintenance and Options Kits

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 (.34-3.79 barg)	BR-1784-7SKA	BR-1786-7SKA	BR-1788-7SKA
"B" spring 40-110 psig (2.75-7.58 barg)	BR-1784-7SKB	BR-1786-7SKB	BR-1788-7SKB
"C" spring 100-200 psig (6.89-13.78 barg)	BR-1784-7SKC	BR-1786-7SKC	BR-1788-7SKC
"D" spring 175-275 psig (12-19 barg) 300 psig (20 barg) 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

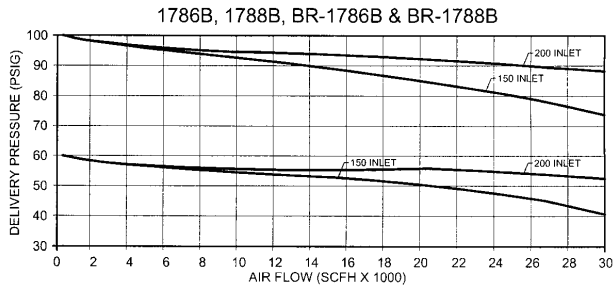
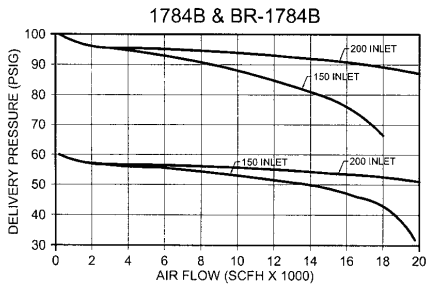
"A" spring range 5 - 55 psig



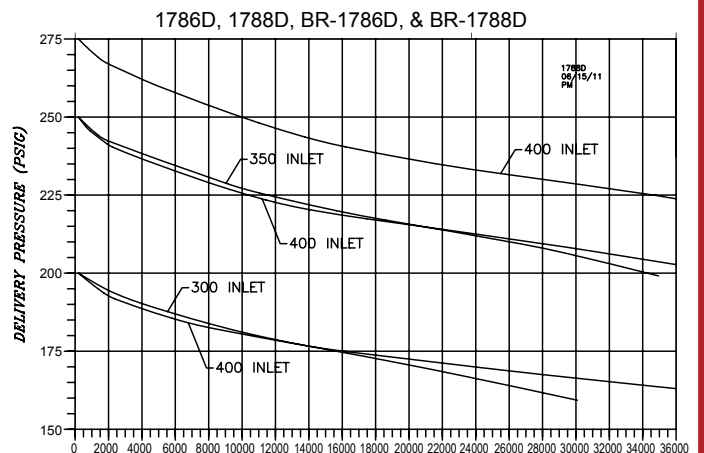
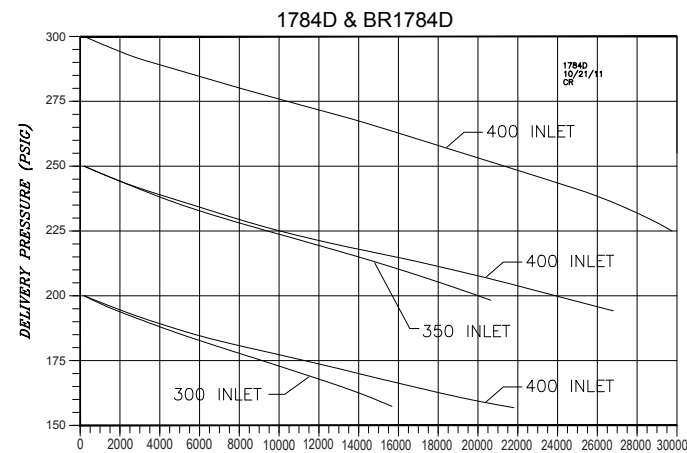
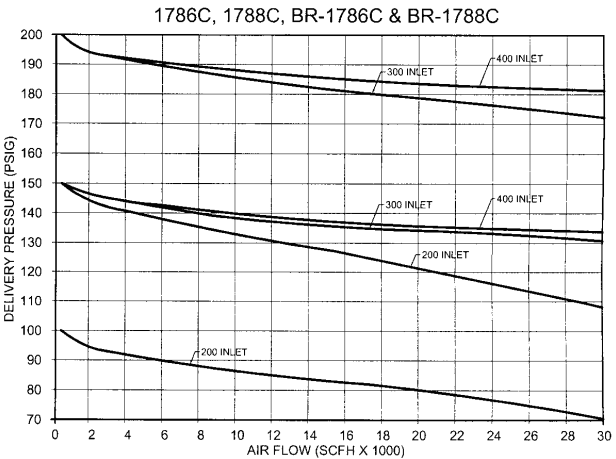
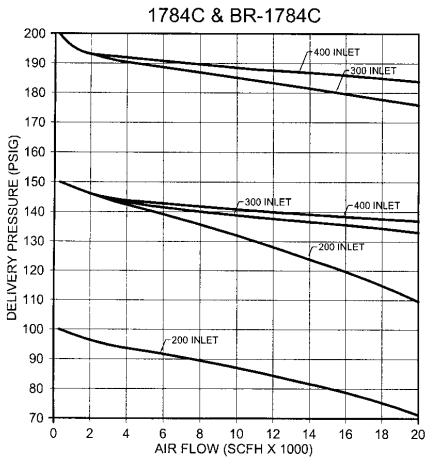
Gas Conversion Table

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

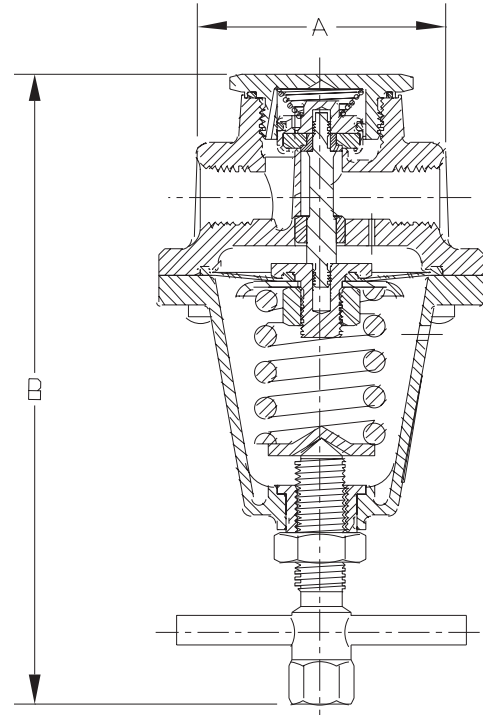
- Maximum inlet pressure is 400 psig (28 barg)
- Two 1/4" F.NPT gauge ports are located 180° apart to allow for gauge mounting in convenient positions
- Each 1680M Series regulator is cleaned and packaged for oxygen per CGA G-4.1
- 100% Factory Tested
- T-handle adjusting screw
- Available in three delivery pressure ranges
- Temperature Range: -40° F to +165°F (-40°C to +74°C)

Materials

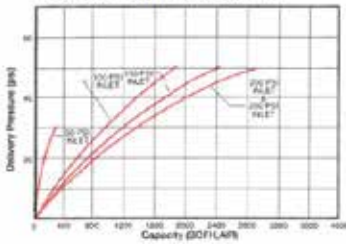
Body Forged Aluminum
 Bonnet Aluminum
 Seat Disc (1682M) Neoprene
 Seat Disc (C-1682M) EPDM
 Diaphragm (1682M) Neoprene
 Diaphragm (C-1682M) EPDM



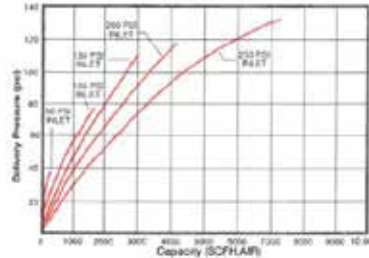
C-1682M



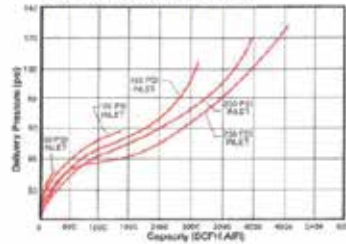
1682ML and 1682MLG



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 (barg)	Part Number	Inches	mm	Inches	mm	Inches	mm
1682ML	C-1682ML	5-50 psig (0.3-3.4 barg)	*	*	1/4"	6	2 ³ / ₁₆ "	56	4 1/8"	105
1682MLG	C-1682MLG		1-100 (6.89)	1286						
1682M	C-1682M		*	*						
1682MG	C-1682MG	50-125 psig (3.4-8.6 barg)	1-200 (13.78)	S1679	1/4"	6	2 ³ / ₁₆ "	56	4 1/8"	105
1682MS	C-1682MS		*	*						
1682MSG	C-1682MSG	100-250 psig (6.9-17.2 barg)	1-400 (27.57)	15578	1/4"	6	2 ³ / ₁₆ "	56	4 1/8"	105

* Pressure gauge not included.

Automatic Changeover Regulators M2523HP Series

Application

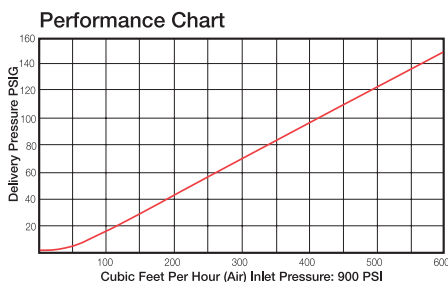
M2523HP series automatic changeover regulators are designed especially for use in systems where a reserve cylinder is used to provide a continuous, uninterrupted supply of gas. These regulators are suitable for use with carbon dioxide, hydrogen, oxygen, industrial air, nitrous oxide, nitrogen, helium 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 (3.44 barg) on service side. CO₂ and N₂O regulators are factory set at 100 psig (6.89 barg) on service side

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



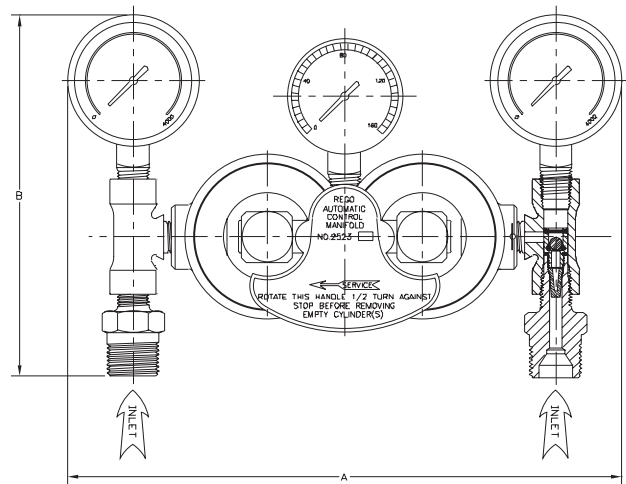
Conversion Table

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



Ordering Information

Part Number	Gas Service	CGA Inlet Connection	Outlet Connection		Width A		Height B		Maximum Inlet Pressure	Delivery Pressure Range	Accessory Regulators
			Inches	mm	Inches	mm	Inches	mm			
M2523HP320	Carbon Dioxide	320	1/4" F.NPT	6	7 3/4"	196	5 1/8"	130	1800 psig (124.2 barg) 3000 psig (202 barg)	30-130 psig (2.1-8.9 barg)	BR-1784E, 1784E C-1682 M Series 1784 Series 1682 M Series BR 1784 Series
M2523HP326	Nitrous Oxide	326									
M2523HP350	Hydrogen	350									
M2523HP540	Oxygen	540									
M2523HP580	Nitrogen, Argon, Helium	580									
M2523HP590	Industrial Air	590									

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

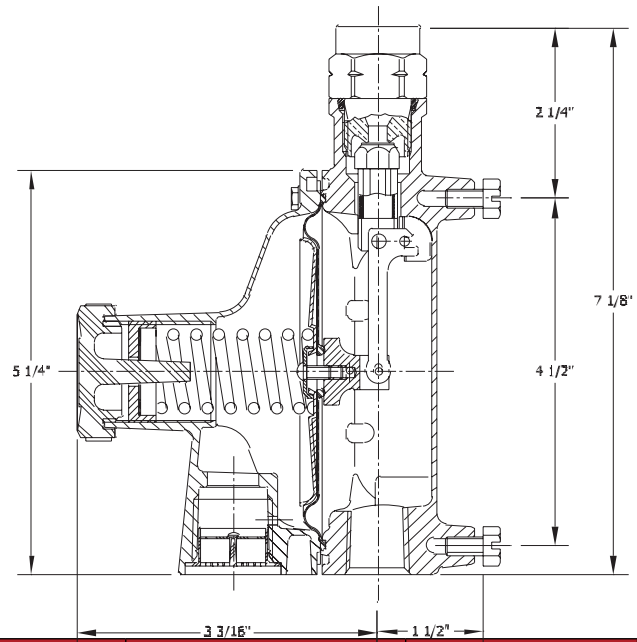
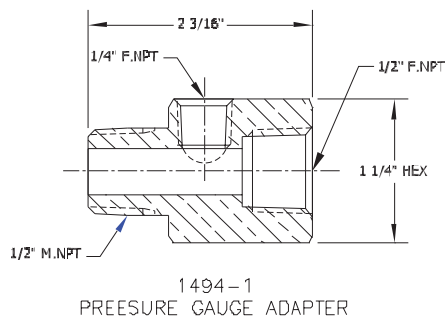
- Large molded diaphragm provides highly sensitive and accurate low pressure control
- Zinc body and bonnet resist corrosion and provide longer life
- Teflon seat disc, teflon faced diaphragms, and stainless steel nozzles make the T4403J regulators compatible with a variety of gases
- LV4403C2H42 features integral relief valve set at 3 psig (0.2 barg)
- 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
	Inches	mm	Inches	mm			
4403W-P4	1/2" F.NPT	13	1/2" F.NPT	13	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	6	1/2" F.NPT	13	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 (.03 barg). 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 (.03 barg) 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 (20 barg).

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 (206 barg)

Materials

Two-Stage Regulator:

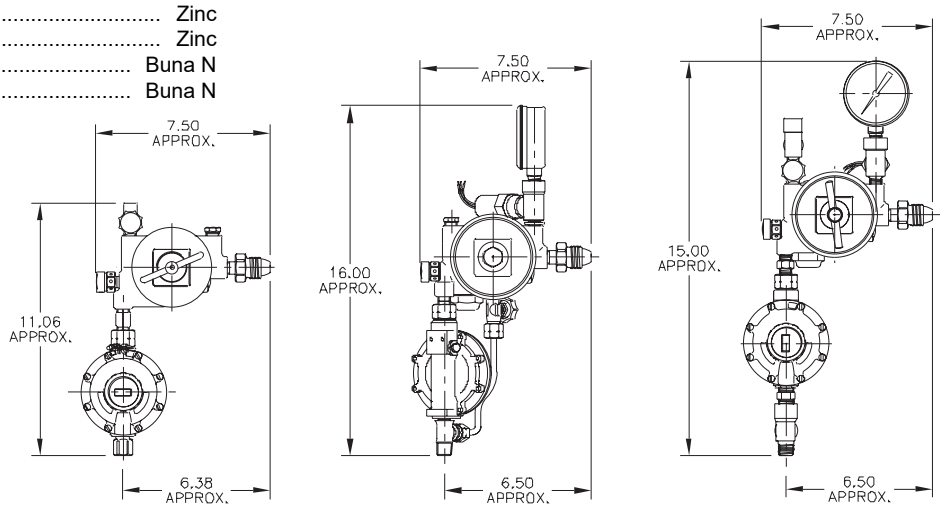
Body Brass
 Bonnet Brass
 Diaphragms Synthetic Rubber
 1st Stage Seat Disc Nylon
 2nd Stage Seat Disc Neoprene

Third-Stage Regulator:

Body Zinc
 Bonnet Zinc
 Diaphragm Buna N
 Seat Disc Buna N



Inertrol Outfit



Ordering Information

4286A580

4289 Series

4291A

Part Number	Gas Service	Inlet	Outlet		Two Stage Regulator Part number	Third Stage Regulator Part Number	Alarm Gauge	Transformer Manufacturer
			Inches	mm				
4286A580	Nitrogen	CGA580	1/8" NPT	3	4286A-2NW	LV4286-10-8	None	ABB, Inc.
4289AG			9/16" -18 L.H.	14	4289A-2G	LV4289-10	4285-9B	General Electric
4289G			3/8" NPT	.9	4291B-2P	LV4286-10-8	None	
4291A							4285-9B	Cooper Power

High Pressure Gas Regulator 4200 Series

Application

4200 Series high-pressure regulators are designed especially for use in high-pressure cylinders and are used to provide the supply of gas. These regulators are suitable for use with industrial air, nitrogen, helium, and argon.

Features

- Cylinder pressure gauges let you know at a glance whether the contents of the cylinder is in use and the supply pressure
- Temperature rating: -40° F to +165°F (-40°C to +74°C)
- MAWP: 3000 psig (206 barg)
- Cleaned and packaged for oxygen service per CGA G-4.1
- Pressure relief valve incorporate or protection of the low pressure system
- 100% factory tested. Each valve is individually bagged and boxed to arrive in factory new condition until installation

Materials

Body	Brass
Bonnet	Brass
Seat Disc	Neoprene
Diaphragm	Nitrile
Bonnet Spring.....	Stainless Steel
Blackcap Spring.....	Stainless Steel

REGO
10
YEAR
WARRANTY



4291B-2P with 5563 & 15578

Ordering Information

New Part Numbers	Adjustment Screw Cap	Inlet Pressure	Inlet Connection	Outlet Connection	Inlet Pressure Gauge	Outlet Pressure Gauge	Gas Use
4291B-2P	No	3000 psig (206 barg)	CGA 580	¼" FNPT	5563	15578	Nitrogen, Argon, Helium, CO2/Argon mixture.
4289A-2GP	Yes						

* Pressure gauges sold separately.

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

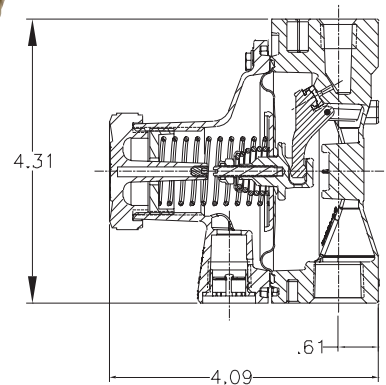
- Large diaphragm allows for highly sensitive and accurate low pressure control
- Incorporates integral relief valves (except on LV4289-10)
- Zinc body and bonnet resist corrosion and provide longer life
- Adjusting screw is concealed by a cap to help prevent against tampering by unauthorized personnel
- Operating temperature range is -40°F to +160°F (-40°C to +71°C)

Materials

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



LV4286-10-8



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 (.34 barg)
LV4286-10-8				8 psig (.55 barg)
LV4289-10				None

Alarm Gauges 4285-9B

Application

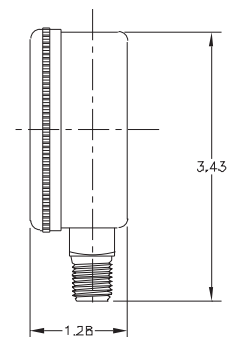
The 4285-9B inertrol alarm gauges are designed to alert the user when pressure has fluctuated ± 90 psig (6.2 barg) from the 300 psig (20 barg) factory setting. Under these conditions, electrical contacts in the switch will close and set off a user-furnished alarm system.

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 (20 barg), 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
		Inches	mm			
4285-9B	1/4"	2 1/2"	63.5	0 - 4000 (0 - 275 barg)	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 (-40°C to +74°C)
- 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

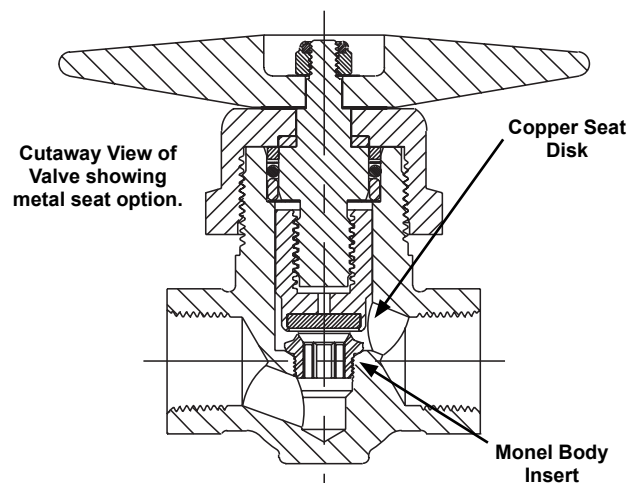
- Standard Bonnet for low profile.
- Panel Mount Bonnet for ease of panel installation. Includes threaded bonnet and nickel plated brass mounting nut. Metal Seat Option 1.625" diameter panel hole required for mounting. (Note: P in part number)



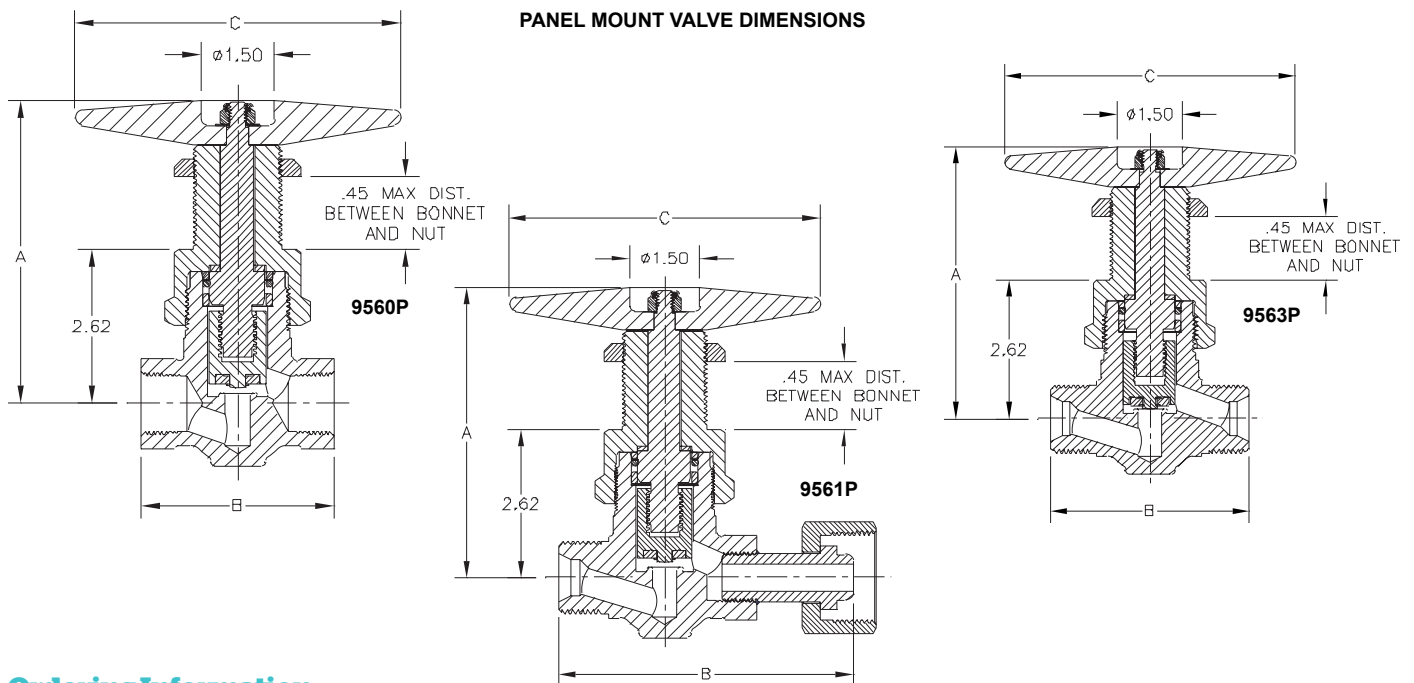
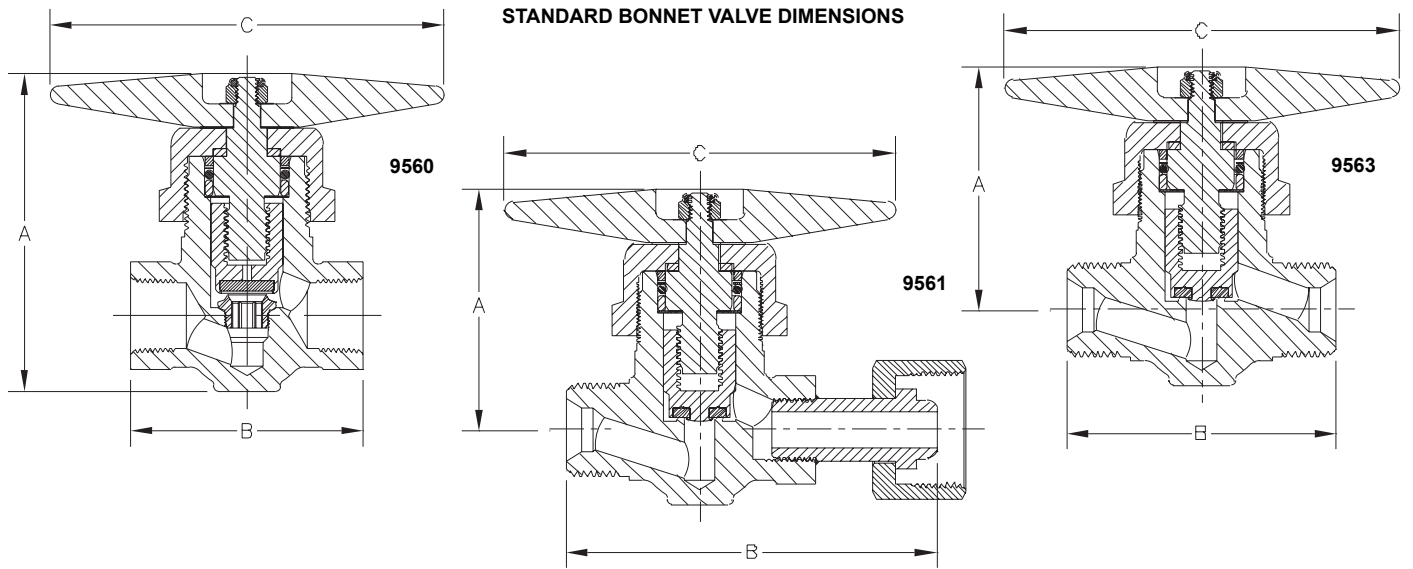
STANDARD BONNET VALVE



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			Inches	mm	Inches	mm	Inches	mm
HP9560A	HP9560CA	½" F. NPT	½" F. NPT	4.36"	111	3.25"	82	5.5"	140
HP9560B	HP9560CB	¾" F. NPT	¾" F. NPT						
HP9561R	HP9561CR	1"-11½" NPSM R.H.	1"-11½" R.H. Female Swivel						
HP9561RL	HP9561CRL	1"-11½" NPSM R.H.	1"-11½" NPS L.H. Female Swivel						
HP9561L	HP9561CL	1"-11½" NPSM L.H.	1"-11½" L.H. Female Swivel						
HP9563R	HP9563CR	1"-11½" NPSM R.H.	1"-11½" NPSM R.H.						
HP9563L	HP9563CL	1"-11½" NPSM L.H.	1"-11½" NPSM L.H.						
HP9560ASE	HP9560CASE	.843 - .847	.843 - .847						
HP9560BSE	HP9560CBSE	1.053 - 1.057	1.053 - 1.057						
HP9560BSE-B	HP9560CBSE-B	1.053 - 1.057	¾" 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 gas services at 400 psig (28 barg) 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
- Temperature range -40° F to +165° F (-40°C to +74°C)

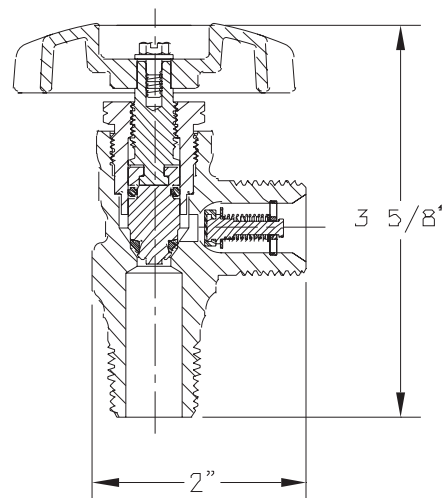
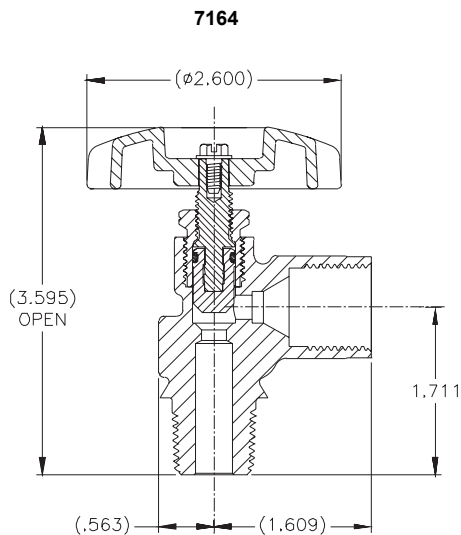
Materials

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



7160 Series

7160 and 7161 Series



Ordering Information

Part Number	Gas Service	Inlet Thread	Outlet Thread	CGA Connection	C _v (K _v)	Outlet Protection*
7160V	Oxygen and Inert Gases	½" NGT	7/8" - 14 M. R.H.	024	.76 (0.65)	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

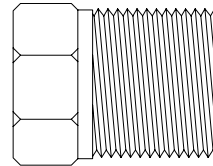


Ordering Information

Part Number	Maximum Calibration (psig)	Size	M. NPT	Increment Division (psig)	Case Material
1286	100 psig (6.89 barg)	2"	1/4"	2 psig (0.14 barg)	Steel
2523HP-7	160 psig (11.03 barg)		1/8"	5 psig (0.34 barg)	
S1679	200 psig (13.79 barg)		1/4"	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



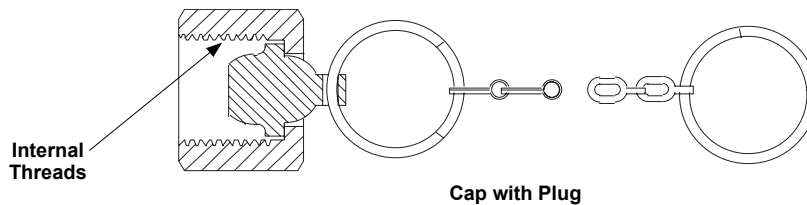
Typical Plug



Ordering Information

Part Number	Thread Connection	Hex Flats
985B	1/4" NPT	9/16"
985D	1/2" NPT	7/8"
985E	3/4" 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	1/2"
10664	7/8"-14NF-LH	1/2"

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

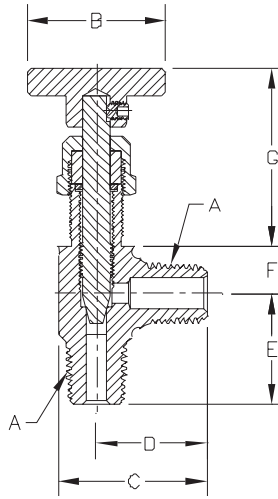
Body	ASTM B283 Brass
Stem	Brass
Knob	Brass
Bonnet Nut.....	Brass
Panel Mount Nut (Optional).....	Brass
Set Screw	Steel
Stem Packing	PTFE with Brass Gland



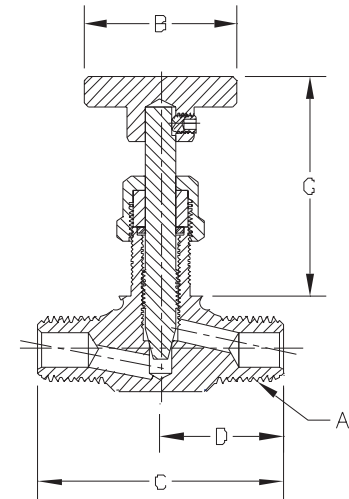
CMM250A



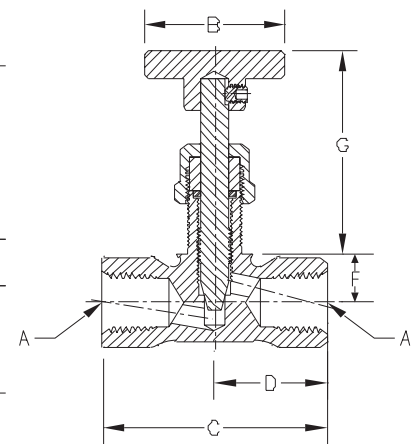
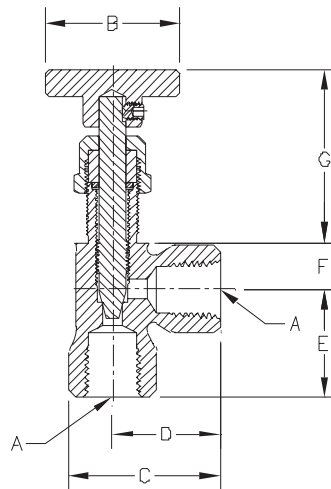
CMM250G



CFF250A



CFF250G



Ordering Information

Part Number	A (NPT)		B		C		D		E		F		G Open		G Closed		C _v (Kv)
	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	
CMM250A	1/4	6	1 1/4	32	1 11/32	35	1	25	1	25	7/16	11	2 5/32	29	1 19/32	40	.7 (0.60)
CMM250G					2	51			-	-			2 3/8	60	1 13/16	46	.5 (0.43)
CFF250A					1 13/32	36			1	25			2 5/32	55	1 19/32	40	.7 (0.60)
CFF250G					2	51			-	-			2 3/8	60	1 13/16	46	.5 (0.43)

Strainer STRO02P

Application

The STRO02P 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 STRO02P use a Monel filter material. Designed for the handling of cryogenic liquids through bulk tanks, trucks, trailers, ISO-containers and piping configurations.

Features

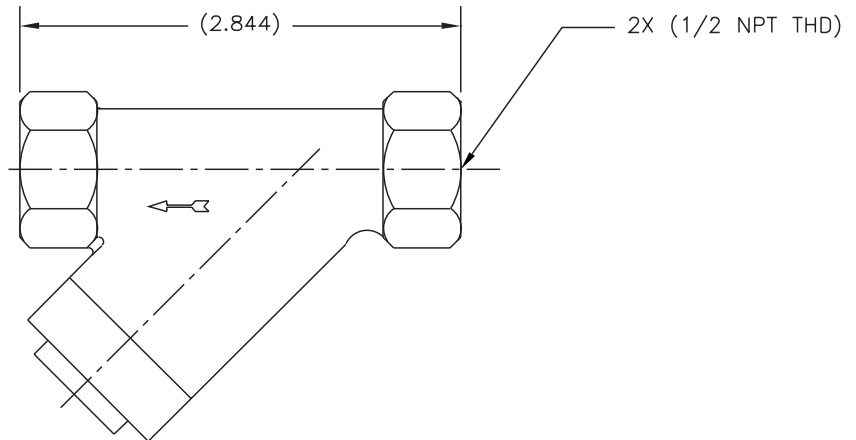
- Temperature range: -320°F to 165°F. (-196°C to 74°C)
- Maximum working pressure: 600 psig (41,37 barg)
- Connections: FNPT
- Sizes: ½" (13 mm)
- Service: Liquefied & Vaporized Atmospheric Gases and LNG for Trailers, Bulk Tanks, Iso-Containers and Piping Configurations
- Cleaned for Liquid Oxygen Service per CGA G-4.1
- 100% Factory tested



STRO00002P

Materials

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



Ordering Information

Part Number	Inlet		Outlet		A	
	Inches	mm	Inches	mm	Inches	mm
STR2P	½"	13	½	13	2 ¼"	71

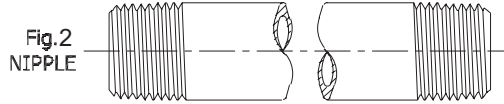
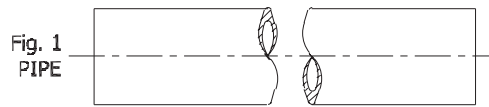
Brass Pipe & Pipe Nipples

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*				
		Inches	mm	Inches	mm	Inches	mm					
TNE1050-14400	1	½"	13	Not Available	-	12 Feet	3657	3600 psig (248.2 barg)				
TNE1075-14400		¾"	19									
1025-15	2	½"	13	½"	13	¼"	6		1.44"	37		
1050-10						1.13"	29					
1050-15						1.5"	38					
1050-20						2"	51					
1050-25						2.5"	63					
1050-40						4"	102					
1050-60						6"	152					
1050-80						8"	203					
1075-20						¾"	19		¾"	19	2"	51
1075-30											3"	76
1075-40	4"	102										
1075-50	5"	127										
1075-60	6"	152										

Brass Elbows

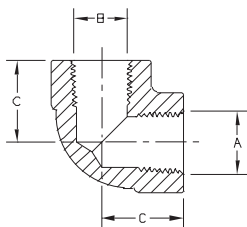


Fig. 1

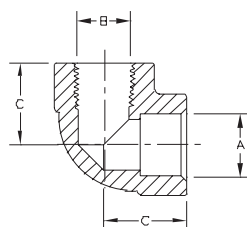


Fig. 2

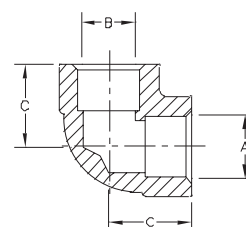


Fig. 3



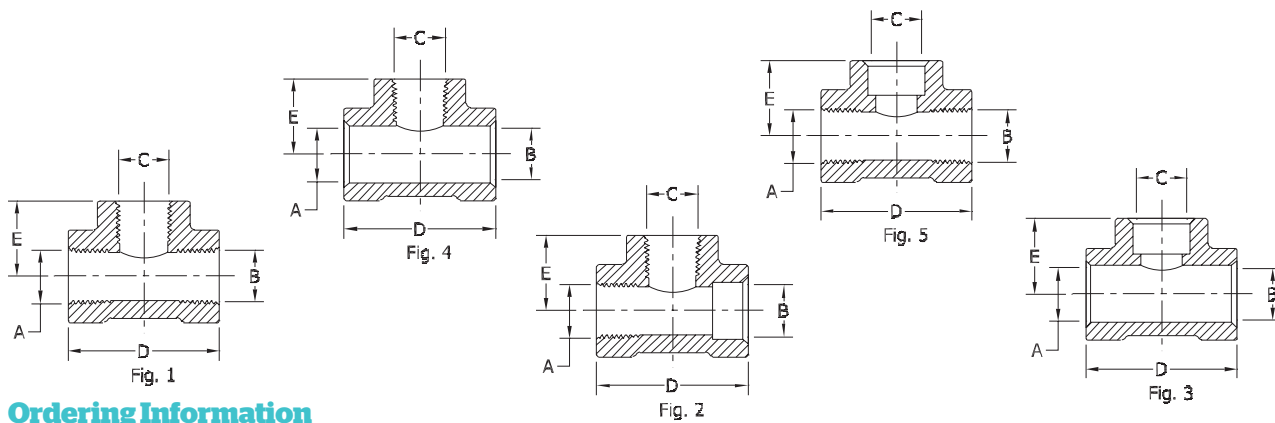
Ordering Information

Part Number	Figure	A (Female)		B (Female)		C (Ref.)		Working Pressure
		Inches	mm	Inches	mm	Inches	mm	
1228-1	1	½" NPT	13	½" NPT	13	1 ⅛"	28	3750 psig (258.7 barg)
HP1228-1		¾" NPT	19	¾" NPT	19	1 ½"	38	4500 psig (310.5 barg)
1043								
1228-2	2	½" NPT	13	.843-.847	21-22	1 ⅛"	28	3750 psig (258.7 barg)
HP1228-2		¾" NPT	19	1.053-1.057	27	1 ½"	38	4500 psig (310.5 barg)
2223-2	3	.843-.847	21-22	.843-.847	21-22	1 ⅛"	28	3750 psig (258.7 barg)
1228-4						1 ½"	38	6000 psig (414 barg)
HP1228-4								4500 psig (310.5 barg)
2233-6	1.053-1.057	27	1.053-1.057	27				

*Safety factor = 4:1

Brass Tees

REGO
10
YEAR
WARRANTY



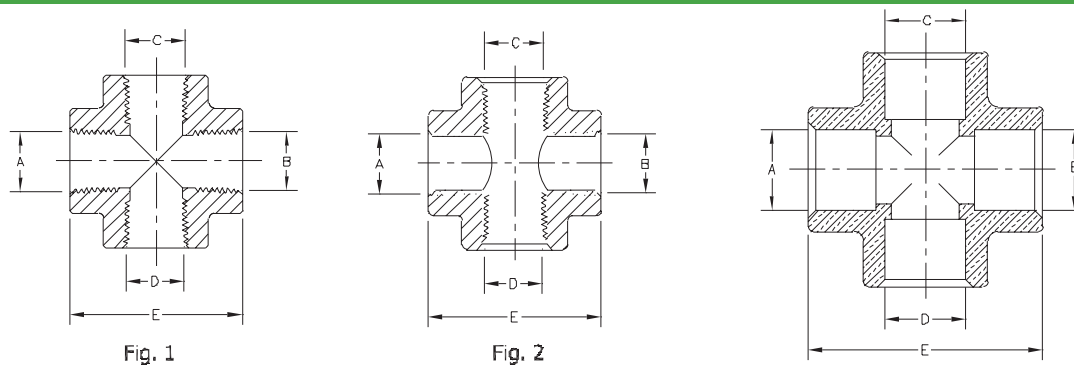
Ordering Information

Part Number	Figure	A (Female)		B (Female)		C (Female)		D (Ref.)		E (Ref.)		Working Pressure psig*
		Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	
1227-1	1	½" NPT	13	½" NPT	13	½" NPT	13	2¼"	57	1⅝"	29	3750 psig (258.7 barg)
HP1227-1		¾" NPT	19	¾" NPT	19	¾" NPT	19	3"	76	1½"	38	4500 psig (310.5 barg)
1042-20								1042				
1227-3	2	½" NPT	13	.843-.847	21-22	½" NPT	13	2¼"	57	1⅝"	29	3750 psig (258.7 barg)
HP1227-3		¾" NPT	19	1.053-1.057	27	¾" NPT	19	3"	76	1½"	38	4500 psig (310.5 barg)
4608-5												
1227-28	3	.843-.847	21-22	.843-.847	21-22	.843-.847	21-22	2¼"	57	1⅝"	29	3750 psig (258.7 barg)
HP1227-28		1.053-1.057	27	1.053-1.057	27	1.053-1.057	27	3"	76	1½"	38	4500 psig (310.5 barg)
2118-2												
1227-9	4	.843-.847	21-22	.843-.847	21-22	½" NPT	13	2¼"	57	1⅝"	29	3750 psig (258.7 barg)
HP1227-9		1.053-1.057	27	1.053-1.057	27	¾" NPT	19	3"	76	1½"	38	4500 psig (310.5 barg)
2223-3												
HP1227-5	5	½" NPT	13	½" NPT	13	.843-.847						

*Safety factor = 4:1

Brass Crosses

REGO
10
YEAR
WARRANTY



Ordering Information

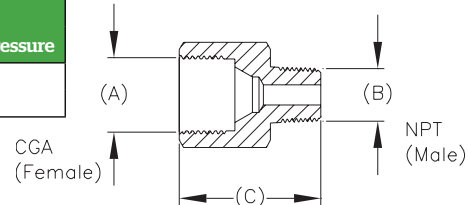
Part Number	Figure	A (Female)		B (Female)		C (Female)		D (Female)		E (Ref.)		Working Pressure*
		Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	
1225-1	1	½" NPT	13	½" NPT	13	½" NPT	13	½" NPT	13	2¼"	57	3750 psig (258.7 barg)
HP1225-1		¾" NPT	19	¾" NPT	19	¾" NPT	19	¾" NPT	19	3"	76	4500 psig (310.5 barg)
1045												
1225-3	2	.843-.847	21-22	.843-.847	21-22	½" NPT	13	½" NPT	13	2¼"	57	3750 psig (258.7 barg)
HP1225-3		1.053-1.057	27	1.053-1.057	27	¾" NPT	19	¾" NPT	19	3"	76	4500 psig (310.5 barg)
2222-2												
HP1225-4	3	.843-.847	21-22	.843-.847	21-22	.843-.847	21-22	.843-.847	21-22	3"	76	4500 psig (310.5 barg)
2222-4		1.053-1.057	27	1.053-1.057	27	1.053-1.057	27	1.053-1.057	27			

*Safety factor = 4:1

Brass Adapters CGA x Misc.

Ordering Information

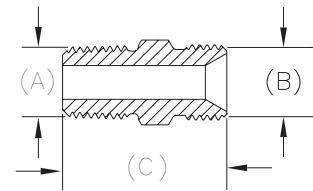
Part Number	A		B		C (Ref.)		Maximum Operating Pressure
	Inches	mm	Inches	mm	Inches	mm	
1877C	.580	15	½"	13	1¼"	44	3000 psig (206 barg)
1877D			¾"	19			



Brass Adapters Male x Male

Ordering Information

Part Number	A (Male)		B (Male)		C (Ref.)		Maximum Operating Pressure
	Inches	mm	Inches	mm	Inches	mm	
1300	¼ NPT	6	9/16" - 18NF-LH	14-457	1¼"	32	3000 psig (206 barg)
1200					2¾"	60	
2233-4HAL	½ NPT	13	1" - 11½NPS-LH	25-292	2¾"	60	
2233-4HA					2¾"	60	
2233-4HL	¾ NPT	19	1" - 11½NPS-LH	25-292	2¾"	65	
2233-4H					2¾"	65	

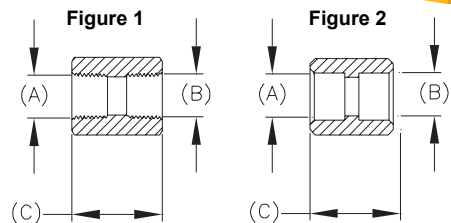


Brass Adapters Female x Female

Ordering Information

Part Number	Figure	A (Female)		B (Female)		C (Ref.)		Maximum Operating Pressure
		Inches	mm	Inches	mm	Inches	mm	
1125-15	1	½" NPT	13	½" NPT	13	15/8"	46	3000 psig (206 barg)
1044		¾" NPT	19	¾" NPT	19	2"	51	

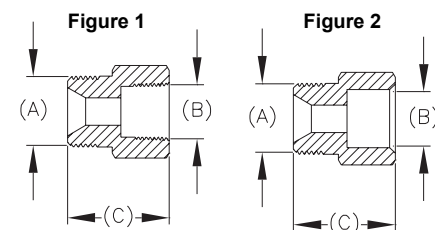
Part Number	Figure	A (Female)		B (Female)		C (Ref.)		Maximum Operating Pressure
		Inches	mm	Inches	mm	Inches	mm	
1125-16	2	.843-.847	21-22	.843-.847	21-22	15/8"	46	3000 psig (206 barg)
1044-1		1.053-1.057	27	1.053-1.057	27	2"	51	



Brass Adapters Male x Female

Ordering Information

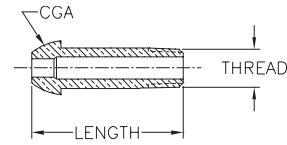
Part Number	Figure	A (Male)		B (Female)		C (Ref.)		Maximum Operating Pressure
		Inches	mm	Inches	mm	Inches	mm	
489-10	1	½" NPT	13	¼" NPT	6	1¼"	38	3000 psig (206 barg)
1252				½" NPT	13	119/64"	33	
1252A		¾" NPT	19	¾" NPT	19	127/32"	47	
2165-3	2	1"-11½NPS-RH	25-292	.843-.847	21-22	13/16"	30	
2165-3B				1.053-1.057	27	127/32"	47	
2165-3A				1.053-1.057	27	127/32"	47	



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"	3000 psig (206 barg)



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
	Inches	mm		Inches	mm	Inches	mm	
2233-3A	1" - 11 1/2 NPS	25-292	1	1/2" NPT	13	37/16"	87	3000 psig (206 barg)
2670-35			2	.312 I.D.	8	27/16"	62	

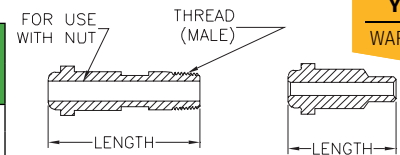


Fig 1 THREADED

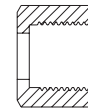
Fig 2 SWEAT END

Brass Union Connection Nuts

Ordering Information

Part Number	Figure	Thread Connection		Wrench Flats		Maximum Operating Pressure
		Inches	mm	Inches	mm	
1302-1	2	9/16" - 18-LH	17-457	1 1/16"	17	3000 psig (206 barg)
1271-1		7/8" - 14-RH	22-356	1 1/8"	29	
1371-1		7/8" - 14-LH	22-356			
2223-6		1" - 11 1/2 NPS-RH	25-292	1 3/4"	44	
2223-6A		1" - 11 1/2 NPS-LH	25-292			

Internal Threads



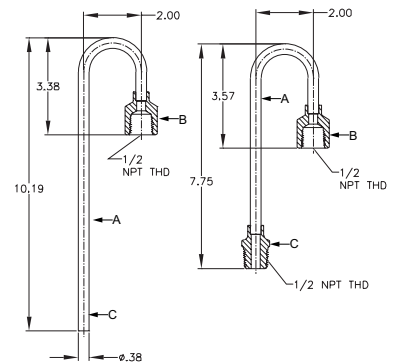
Candy Cane Riser Tubes and Assemblies For Piping-Away PRV9400, SS9400, PRV19400 & PRV29400 Series Relief Valves from Cryogenic Piping.

Materials

Tubing: Stainless Steel
 Fitting: Brass

Ordering Information

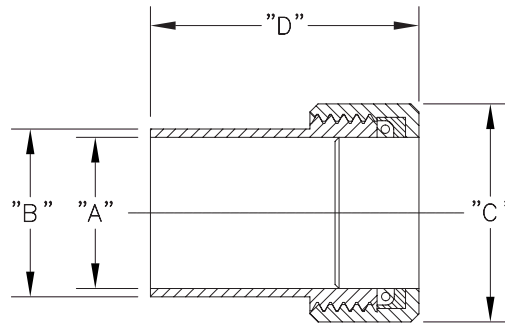
Part Number	Tubing Material	Fitting Material	"A" PRV Connection		"B" Tubing OD		"C" Inlet Connection		Maximum Operating Pressure
			Inches	mm	Inches	mm	Inches	mm	
1332SS	Stainless Steel	Brass	1/4" FNPT	6	.375"	9	Tubing 0.375"	9	600 psig (41.37 barg)
1334SS			1/2" FNPT	13			.625"		
1344SS									
1344SSA									



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	
	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
B-006-M	0.072"	2	0.375"	10	5/8"	16	1 1/32"	26	1/16"	2
B-012-M	0.135"	3							1/8"	3
B-018-M	0.197"	5							3/16"	5
B-025-M	0.260"	7							1/4"	6
B-031-M	0.322"	8	0.500"	13	1 3/16"	16	1 1/4"	32	5/16"	8
B-038-M	0.385"	10							3/8"	9
B-050-M	0.510"	13							1/2"	13
B-062-M	0.635"	16	0.750"	19	1 1/8"	28	1 3/8"	35	5/8"	16
B-075-M	0.760"	19	0.875"	22	1 1/4"	32	1 1/2"	38	3/4"	19
B-087-M	0.885"	22	1.000"	25	1 7/16"	36	1 23/32"	44	7/8"	22
B-100-M	1.010"	26	1.125"	28	1 1/2"	38	1 13/16"	46	1"	25
B-112-M	1.135"	29	1.250"	32	1 5/8"	41	1 15/16"	49	1 1/8"	28
B-125-M	1.260"	32	1.500"	38	2"	51	1 3/16"	30	1 1/4"	32
B-138-M	1.385"	35	1.625"	41					1 3/8"	35
B-150-M	1.150"	29	1.750"	44					1 1/2"	38
B-162-M	1.635"	41	1.875"	48	2 3/8"	60	2 1/4"	57	1 5/8"	41
B-200-M	2.010"	51	2.250"	57	2 3/4"	70	2.70"	69	2"	51

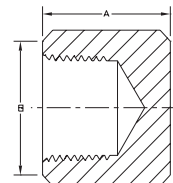
Brass Pipe Caps

Application

For capping cryogenic tank piping or gas pipelines.

Features

- Machined from brass
- For 600 psig (41.37 barg) 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	
	Inches	mm	Inches	mm	Inches	mm	Inches	mm
CAP750	3/4" Female NPT	19	1.250"	32	1.313"	33	1.313"	33
CAP1000	1" Female NPT	25	1.500"	38	1.750"	44	1.750"	44
CAP1500	1 1/2" Female NPT	38	1.750"	44	2.375"	60	2.375"	60
CAP2000	2" Female NPT	51	2.000"	51	3.250"	82	3.250"	82

Repair Kits

T9450 Series, T9460 Series, ES8450 Series, TES8450 Series, BK9450 Series and BK9470 Series

Kit Number	Part Number	Kit Contents
ES8450R	T9450 Series and T9460 Series	(1) Stem assembly (4"), (1) packing, (1) bonnet, (1) handwheel.
BK9450-80	9450 Series, 9460 Series	(1) Stem assembly ,(1) Spring, (1) Jam Ring,(1)Packing V-ring,(1) Packing Gland,(1) O-ring, Washer,(1) Locknut, (1) Gasket.
BK9450R *	9450 Series, 9460 Series	(1) Extended Bonnet Assembly Kit, (1) Spring load packing for conversion of extended stem valves and topworks replacement
BKA8400R	BKA8412SE	(1) Stem assembly,(1) handwheel, (1) seat assembly Converts SE Series to New Style S Series
T9464-80	T9450 Series, T9460 Series,9450 Series, 9460 Series	(1) Complete valve trim assembly including Silver handwheel
T9464-80B		(1) Complete valve trim assembly including Blue handwheel
T9464-80G		(1) Complete valve trim assembly including Green handwheel
T9464-80R		(1) Complete valve trim assembly including Red handwheel
BK-9450-KIT**	ES8450 Series,ES9450 Series,BK9450 Series	(1) Extended Bonnet Assembly Kit,(1) Spring load packing for conversion of extended stem valves and topworks replacement

* Changes to a 6.5" (165mm) stem.

**Retrofits ES8450 and ES9450 to a 6.5" (165mm) stem and a repair kit for the BK9450 Series.

RG Series, CBH & CBC Series and LCR Series

Kit Number	Part Number	Kit Contents
RG-80*	RG22, RG75, RG125,CBC125, CBH125,LCR.	(1) Backcap gasket, (1) diaphragm assembly, (1) diaphragm gasket,(1) seat assembly.
RG-80A*	RG300	
RG-81**	RG75A, RG125A, CBC125A & CBH125A,LCR.	
RG-81A**	RG300A, CBC300A & CBH300A,LCR.	
RG-82	RG Series,LCR Series	(1) Diaphragm assembly,(1) gasket.
1784NG-80	1784NG Series	(1) Diaphragm assembly,(1) seat assembly,(1) gasket.

*Good for valves manufactured before Fall 2010

**Good for valves manufactured after Fall 2010

PB Series

Kit Number	Part Number	Kit Contents
PB504-80R	PB504 Series	(1) Poppet O-ring, (1) Seat Retainer, (1) Seat Disc,(1) Stem Seat,(1) Back O-ring, (1) Backcap Seal.
PB504-81R	PB504 Series	(1) Diaphragm, (1) gasket

ECL502 Series

Kit Number	Part Number	Kit Contents
ECL502-80	ECL502-22 to ECL502-175.	Diaphragms, Diaphragm liner, Spring guide, ball seat.
ECL502-80A	ECL502-180 to ECL502-350.	
ECL-80	ECL22, ECL70, ECL100, ECL140	Diaphragm assembly, diaphragm gasket, poppet, retaining ring, spring, washer.
ECL-80A	ECL325	

CB504 Series

Kit Number	Part Number	Kit Contents
CB504	CB504-B	Seat Retainer,Seat Disc, Stem, Ball, Cylindrical Spring, Check Retainer, Spring Seal, Thrus Button, Diaphragm gasket, Diaphragm, Gasket.

CBH502 & CBC502 Series

Kit Number	Part Number	Kit Contents
CB502-80	CBC502-22 to CBC502-175, CBH502-22 to CBH502-175	Diaphragm assembly, diaphragm gasket, Backcap gasket,poppet seat, seat pin.
CB502-80A	CBC502-180 to CBC502-350, CBH502-180 to CBH502-350	

Repair Kits

BB Series, BBS Series, SKB Series and Old SK Series

Kit Number	Part Number	Kit Contents
SK9404-81*	BB9402, BB9404,SKB9402, SKB9404,SK9402,SK9404	(1) Gasket, (1) Spring, (1) Washer, (1) Ring V Male. (3) Ring V female,(1) O'ring.
SK9408-81*	BB9406, BB9408,SKB9406, SKB9408,SK9406,SK9408	
SK9412-81*	BB9412,SKB9412,SK9412	
SK9416-81*	BB9416,SKB9416,SK9416	
SK9404-82*	BB9402, BB9404,SKB9402, SKB9404,SK9402,SK9404,BBS9402, BBS9404.	(1) Gasket and (1) Seat Disc Assembly.
SK9408-82*	BB9406, BB9408,SKB9406, SKB9408,SK9406,SK9408, BBS9406, BBS9408.	
SK9412-82*	BB9412,SKB9412,SK9412,BBS9412.	
BB9412-82A***	BB9412,SKB9412,BBS9412.	
SK9416-82*	BB9416,SKB9416,SK9416,BBS9416.	(1) Gasket.
SK9404-83*	BB9402, BB9404,SKB9402, SKB9404,SK9402,SK9404,BBS9402, BBS9404.	
SK9408-83*	BB9406, BB9408,SKB9406, SKB9408,SK9406,SK9408, BBS9406, BBS9408.	
SK9412-83*	BB9412,SKB9412,SK9412,BBS9412.	
BB9412-83A***	BB9412,SKB9412,BBS9412.	
SK9416-83*	BB9416,SKB9416,SK9416,BBS9416.	
BB9404-85	BB9402, BB9404,SKB9402, 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.
BB9408-85	BB9406, BB9408,SKB9406, SKB9408.	
BB9412-85**	BB9412,SKB9412.	
BB9412-85A***	BB9412,SKB9412.	
BB9416-85	BB9416,SKB9416.	
BB9412-81A***	BB9412,SKB9412.	
BBS9404-81	BBS9402,BBS9404, SKB9402BWS, SKB9402SWS, SKB9404BWS, SKB9404SWS.	(1)Gland Follower, (1)Bonnet Bearing, (1)Packing Adapter,(1) Bonnet Packing, (1)Packing Separator, (1) Gasket.
BBS9408-81	BBS9406,BBS9408, SKB9406BWS, SKB9406SWS, SKB9408BWS, SKB9408SWS.	
BBS9412-81**	BBS9412, SKB9412BWS, SKB9412SWS.	
BBS9412-81A***	BBS9412, SKB9412BWS, SKB9412SWS.	
BBS9404-81	BBS9416,SKB9416BWS, SKB9416SWS	(4) Screw, (1) Kit Upper Assembly, (10) Handwheel, (1) Nut lock, (1) Washer, (1)Gland Follower, (1)Bonnet Bearing, (1)Packing Adapter,(1) Bonnet Packing, (1) Packing Separator, (1) Gasket.
BBS9404-85	BBS9402,BBS9404, SKB9402BWS, SKB9402SWS, SKB9404BWS, SKB9404SWS.	
BBS9408-85	BBS9406,BBS9408, SKB9406BWS, SKB9406SWS, SKB9408BWS, SKB9408SWS.	
BBS9412-85**	BBS9412, SKB9412BWS, SKB9412SWS.	
BBS9412-85A***	BBS9412, SKB9412BWS, SKB9412SWS.	
BBS9404-85	BBS9416,SKB9416BWS, SKB9416SWS	

*Good for SK Series valves manufactured before 2017.

** Good for Valves produced on or before 05C19.

*** Good for Valves produced on or after 05D19.

BK Series

Kit Number	Part Number	Kit Contents
BK8400-80J	BK8404,BK8406,BK8408,BKY8408,BK9404,BK9406,BK9408	(1)Jam ring,(1) O-ring, (3)Pressure seal rings , (1)Spring, (1) Tape, (1) Washer, (1) Gasket.
BKA8412-80J	BK8408,BK9408,BKA8408,BKA9408.	
BK9400-80J*	BK9410, BK9412.	
BK9416-80JS	BK9416.	
BK8400-80AJ	BK8404,BK8406,BK9404,BK9406.	(1) Seat Disc Assembly,(1) Gasket.
BK9400-80AJ	BK9410, BK9412.	
BKY8408-80AJ	BKY8408.	
BK8400-80BJ	BK8408,BK9408,BKA8408,BKA9408.	
BKA8412-80JA*	BKA8412, BKA8408, BKA9408.	
BK9416-80AJ	BK9416.	
BK8404-Kit	BK8404.	(1)Stem, (1) Bonnet & tube Assembly, (1) Seal housing, (1) Spring, (1) Packing Gland, (1) Washer, (1) Jam Ring, (3)Pressure seal rings, (1) O-ring, (1) Seat Assembly, (1) Locknut, (1) Washer, (1) Handwheel, (1) Gasket.

*Only for valves produced after 1991.

Repair Kits

222 Series and 202 Series

Kit Number	Part Number	Kit Contents
B-222X-4-81	B-222X-2, B-222X-4, B-00202X-4.	(1) Handwheel nut, Bonnet bearing, (1) Gland Follower, (5) Bonnet Packing, (4) Packing Separator, (1) Bonnet packing adapter.
B-222X-6-81	B-222X-6	
B-222X-8-81	B-222X-8	
B-222X-12-81	B-222X-12, B-222XBS-12, SB-222X-12SW	
B-222X-16-81	B-222X-16	
B-222X-24-81	B-222X-24, GB-0222WE-24PC.	
B-222X-4-82	B-222X-2, B-222X-4, B-00202X-4.	(1) Seat Disc Assembly,(1) Gasket.
B-222X-6-82	B-222X-6	
B-222X-8-82	B-222X-8	
B-222X-12-82	B-222X-12, B-222XBS-12, SB-222X-12SW	
B-222X-16-82	B-222X-16	
B-222X-24-82	B-222X-24, GB-0222WE-24PC.	
B-222X-4-83	B-222X-2, B-222X-4, B-00202X-4.	(1) Gasket.
B-222X-6-83	B-222X-6	
B-222X-8-83	B-222X-8	
B-222X-12-83	B-222X-12, B-222XBS-12, SB-222X-12SW	
B-222X-16-83	B-222X-16	
B-222X-24-83	B-222X-24, GB-0222WE-24PC.	
B-222X-4KIT	B-222X-2, B-222X-4.	(1)Stem, (1) Bonnet & tube Assembly, (1) Handwheel nut, Bonnet bearing, (1) Gland Follower, (5) Bonnet Packing, (4) Packing Separator, (1) Bonnet packing adapter, (1) Seat Assembly, (1) Locknut, (1) Washer, (1) Handwheel, (1) Gasket.
B-222X-6KIT	B-222X-6	
B-222X-8KIT	B-222X-8	
B-222X-12KIT	B-222X-12, B-222XBS-12, SB-222X-12SW	
B-222X-16KIT	B-222X-16	
B-222X-24KIT	B-222X-24, GB-0222WE-24PC.	

226LL Series

Kit Number	Part Number	Kit Contents
B-226LL-4-81	B-226LL-2, B-226LL-3, B-226LL-4.	(1) Handwheel nut, (1) Live-Load Spring, (1) Spring Washer, (1) Bonnet Bearing, (1) Gland Follower, (1) Bonnet Packing, (1) Bonnet Packing Adapter.
B-226LL-8-81	B-226LL-6, B-226LL-8, PB-226LL-8T6Y1.	
B-226LL-4-82	B-226LL-2, B-226LL-3, B-226LL-4.	(1) Seat Disc Assembly,(1) Gasket.
B-226LL-8-82	B-226LL-6, B-226LL-8, PB-226LL-8T6Y1.	
B-226LL-4-83	B-226LL-2, B-226LL-3, B-226LL-4.	(1) Gasket.
B-226LL-8-83	B-226LL-6, B-226LL-8, PB-226LL-8T6Y1.	
B-226LL-4KIT	B-226LL-2, B-226LL-3, B-226LL-4.	(1) Handwheel nut, (1) Handwheel, (1)Stem, (1) Bonnet nut, (1)Bonnet & tube ASM, (1) Bonnet ring, (1)Seat Assembly, (1) Live-Load Spring, (1) Spring Washer, (1) Bonnet Bearing, (1) Gland Follower, (1) Bonnet Packing, (1) Bonnet Packing Adapter, (1) Bonnet gasket.
B-226LL-8KIT	B-226LL-6, B-226LL-8, PB-226LL-8T6Y1.	

226ULL Series

Kit Number	Part Number	Kit Contents
B-226ULL-12-81	B-206ULL-12, B-226ULL-12.	(1) Handwheel nut, (1) Live-Load Spring, (1) Spring Washer, (1) Bonnet Bearing, (1) Gland Follower, (1) Bonnet Packing, (1) Bonnet Packing Adapter.
B-226ULL-16-81	B-206ULL-16, B-226ULL-16.	
B-226ULL-12-82	B-206ULL-12, B-226ULL-12.	(1) Seat Disc Assembly,(1) Gasket.
B-226ULL-16-82	B-206ULL-16, B-226ULL-16.	
B-226ULL-12-83	B-206ULL-12, B-226ULL-12.	(1) Gasket.
B-226ULL-16-83	B-206ULL-16, B-226ULL-16.	
B-226ULL-12KIT	B-226ULL-12.	(1) Handwheel nut, (1) Handwheel, (1)Stem, (1) Bonnet nut, (1)Bonnet & tube ASM, (1) Bonnet ring, (1)Seat Assembly, (1) Live-Load Spring, (1) Spring Washer, (1) Bonnet Bearing, (1) Gland Follower, (1) Bonnet Packing, (1) Bonnet Packing Adapter, (1) Bonnet gasket.
B-226ULL-16KIT	B-226ULL-16.	

Repair Kits

226XGF Series

Kit Number	Part Number	Kit Contents
VB-226XGF-4-81	VB-226XGF-4	(1) Handwheel nut, (1) Bonnet bearing, (1) Packing Follower, (1) Grafoil Packing, (1) Packing adapter.
VB-226XGF-6-81	VB-226XGF-6	
VB-226XGF-8-81	VB-226XGF-8	
VB-226XGF-12-81	VB-226XGF-12	
VB-226XGF-4-82	VB-226XGF-4	(1) Seat Disc Assembly, (1) Grafoil Gasket.
VB-226XGF-6-82	VB-226XGF-6	
VB-226XGF-8-82	VB-226XGF-8	
VB-226XGF-12-82	VB-226XGF-12	
VB-226XGF-4-83	VB-226XGF-4	(1) Grafoil Gasket.
VB-226XGF-6-83	VB-226XGF-6	
VB-226XGF-8-83	VB-226XGF-8	
VB-226XGF-12-83	VB-226XGF-12	
VB-226XGF-4KIT	VB-226XGF-4	(1) Handwheel nut, (1) Handwheel, (1) Stem, (1) Bonnet nut, (1) Bonnet & tube ASM, (1) Bonnet ring, (1) Seat Assembly, Bonnet Packing, (1) Bonnet Packing Adapter, (1) Bonnet gasket, (1) Bonnet bearing, (1) Packing Follower, (1) Grafoil Packing, (1) Packing adapter.
VB-226XGF-6KIT	VB-226XGF-6	
VB-226XGF-8KIT	VB-226XGF-8	
VB-226XGF-12KIT	VB-226XGF-12	

226BLL Series

Kit Number	Part Number	Kit Contents
B-226BLL-12-81	B-206BLL-12, B-226BLA-12, B-226BLL-12.	(1) Handwheel nut, (1) Live-Load Spring, (1) Spring Washer, (1) Bonnet Bearing, (1) Gland Follower, (1) Bonnet Packing, (1) Bonnet Packing Adapter, (1) Packing separator.
B-226BLL-16-81	B-226BLL-16.	
B-226BLL-12-82	B-206BLL-12, B-226BLA-12, B-226BLL-12.	(1) Seat Disc Assembly, (1) Gasket.
B-226BLL-16-82	B-226BLL-16.	
B-226BLL-12-83	B-206BLL-12, B-226BLA-12, B-226BLL-12.	(1) Gasket.
B-226BLL-16-83	B-226BLL-16.	
B-226BLL-12KIT	B-206BLL-12, B-226BLA-12, B-226BLL-12.	(1) Handwheel nut, (1) Handwheel, (1) Stem, (1) Bonnet nut, (1) Bonnet & tube ASM, (1) Bonnet ring, (1) Seat Assembly, (1) Live-Load Spring, (1) Spring Washer, (1) Bonnet Bearing, (1) Gland Follower, (1) Bonnet Packing, (1) Bonnet Packing Adapter, (1) Bonnet gasket.
B-226BLL-16KIT	B-226BLL-16.	

202 Series

Kit Number	Part Number	Kit Contents
B-202X-8-81	B-202X-8	(1) Handwheel nut, (1) Bonnet Bearing, (1) Gland Follower, (5) Bonnet Packing, (1) Bonnet Packing Adapter, (1) Packing separator.
B-202X-12-81	B-202X-12	
B-202X-16-81	B-202X-16	
B-202X-8-82	B-202X-8	(1) Seat Disc Assembly, (1) Gasket.
B-202X-12-82	B-202X-12	
B-202X-16-82	B-202X-16	
B-202X-8-83	B-202X-8	(1) Gasket.
B-202X-12-83	B-202X-12	
B-202X-16-83	B-202X-16	
B-202X-4KIT	B-202X-4	(1) Handwheel nut, (1) Handwheel, (1) Stem & Seat ASM, (1) Bonnet nut, (1) Bonnet, (1) Bonnet ring, (1) Seat Assembly, (1) Live-Load Spring, (1) Spring Washer, (1) Bonnet Bearing, (1) Gland Follower, (5) Bonnet Packing, (1) Bonnet Packing Adapter, (1) Bonnet gasket, (1) Packing separator.
B-202X-8KIT	B-202X-8	
B-202X-12KIT	B-202X-12	
B-202X-16KIT	B-202X-16	

Repair Kits

206GF Series

Kit Number	Part Number	Kit Contents
VB-206GF-2-81	VB-206GF-2	(1) Handwheel nut, (1)Bonnet bearing, (1) Gland Follower, (1) Grafoil Packing, (1) Bonnet packing adapter.
VB-206GF-4-81	VB-206GF-4	
VB-206GF-6-81	VB-206GF-6	
VB-206GF-8-81	VB-206GF-8	
VB-206GF-12-81	VB-206GF-12	
VB-206GF-16-81	VB-206GF-16	
VB-206GF-2-82	VB-206GF-2	(1) Seat Disc Assembly,(1) Grafoil Gasket.
VB-206GF-4-82	VB-206GF-4	
VB-206GF-6-82	VB-206GF-6	
VB-206GF-8-82	VB-206GF-8	
VB-206GF-12-82	VB-206GF-12	
VB-206GF-16-82	VB-206GF-16	
VB-206GF-2-83	VB-206GF-2	(1) Grafoil Gasket.
VB-206GF-4-83	VB-202GF-3, VB-206GF-4	
VB-206GF-6-83	VB-206GF-6	
VB-206GF-8-83	VB-206GF-8	
VB-206GF-12-83	VB-206GF-12	
VB-206GF-16-83	VB-206GF-16	
B-206GF-02-85	VB-206GF-2	(1) Handwheel nut, (1) Handwheel, (1)Stem, (1) Bonnet nut, (1)Bonnet & tube ASM, (1) Bonnet ring, (1)Seat Assembly, Bonnet Packing, (1) Bonnet Packing Adapter, (1) Bonnet gasket,(1)Bonnet bearing, (1) Packing Follower, (1) Grafoil Packing, (1) Packing adapter.
B-206GF-04-85	VB-206GF-4	
B-206GF-06-85	VB-206GF-6	
B-206GF-08-85	VB-206GF-8	
B-206GF-12-85	VB-206GF-12	
B-206GF-16-85	VB-206GF-16	

206LL Series

Kit Number	Part Number	Kit Contents
B-206LL-4KIT	B-206LL-3, B-206LL-4.	(1) Handwheel nut, (1) Handwheel, (1)Stem , (1) Bonnet nut, (1)Bonnet , (1) Bonnet ring, (1)Seat Assembly, (1) Live-Load Spring, (1) Live-Load Washer, (1) Spring Washer, (1) Bonnet Bearing, (1) Gland Follower, (5) Bonnet Packing, (1) Bonnet Packing Adapter, (1) Bonnet gasket, (4) Packing separator.
B-206LL-8KIT	B-206LL-6, B-206LL-8.	

206ULL Series

Kit Number	Part Number	Kit Contents
B-206ULL-12KIT	B-206ULL-12	(1) Handwheel nut, (1) Handwheel, (1)Stem , (1) Bonnet nut, (1)Bonnet , (1) Bonnet ring, (1)Seat Assembly, (1) Live-Load Spring, (1) Live-Load Washer, (1) Spring Washer, (1) Bonnet Bearing, (1) Gland Follower, (5) Bonnet Packing, (1) Bonnet Packing Adapter, (1) Bonnet gasket, (4) Packing separator.
B-206ULL-16KIT	B-206ULL-16	

206BLL Series

Kit Number	Part Number	Kit Contents
B-206BLL-12KIT	B-206BLL-12	(1) Handwheel nut, (1) Handwheel, (1)Stem , (1) Bonnet nut, (1)Bonnet , (1) Bonnet ring, (1)Seat Assembly, (1) Live-Load Spring, (1) Live-Load Washer, (1) Spring Washer, (1) Bonnet Bearing, (1) Gland Follower, (5) Bonnet Packing, (1) Bonnet Packing Adapter, (1) Bonnet gasket, (4) Packing separator.

Repair Kits

SK Advantage Series

Kit Number	Part Number	Kit Contents
SKM9404-83	SKL9402,SKM9402,SKS9402,SKL9404,SKM9404 and SKS9404	(1) Gasket.
SKM9408-83	SKL9406,SKM9406,SKS9406,SKL9408,SKM9408,SKS9408 and SKA9408	
SKM9412-83	SKL9412, SKM9412, SKS9412 and SKA9412	
SKM9416-83	SKL9416 and SKM9416	
SKM9404-80AJ	SKL9402,SKM9402,SKS9402,SKL9404,SKM9404 and SKS9404	(1) Gasket and (1) Seat Disc Assembly.
SKM9408-80AJ	SKL9406,SKM9406,SKS9406,SKL9408,SKM9408,SKS9408 and SKA9408	
SKM9412-80AJ	SKL9412, SKM9412, SKS9412 and SKA9412	
SKM9416-80AJ	SKL9416 and SKM9416	
SKM9408-80J	SKL9402, SKM9402,SKS9402,SKL9404, SKM9404, SKS9404,SKL9406,SKM9406,SKS9406SKL9408,SKM9408,SKS9408 and SKA9408	(2) Spring, Belleville, (1) Washer, Live-loading, (5) Packing, Bonnet, (4) Packing,separator, (1) Bearing, Bonnet, (1)Follower, Gland, (1) Packing, Adapter.
SKM9412-80J	SKL9412, SKM9412, SKS9412 and SKA9412	
SKM9416-80J	SKL9416 and SKM9416	
SKS9404-KIT	SKS9402 and SKS9404	(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.
SKS9408-KIT	SKS9406 and SKS9408	
SKS9412-KIT	SKS9412	
SKM9404-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.
SKM9408-KIT	SKM9406 and SKM9408	
SKM9412-KIT	SKM9412	
SKM9416-KIT	SKM9416	
SKL9404-KIT	SKL9402 and SKL9404	
SKL9408-KIT	SKL9406, SKL9408 and SKA9408	(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.
SKL9412-KIT	SKL9412 and SKA9412	
SKL9416-KIT	SKL9416	

210 Series

Kit Number	Part Number	Kit Contents
S-210-8-81	GS-210W-4, GS-210W-6 and GS-210W-8	(1) Packing adapter, (1) Chevron adapter, (1) Chevron set, (1) Gasket.
S-210-16-81	GS-210W-12 and GS-210W-16	
S-210-24-81	GS-210W-24	
S-210-32-81	GS-210W-32	
S-210WHZ-8-81	GS-210WHZ-4, GS-210WHZ-6 and GS-210WHZ-8	(1) Packing adapter, (1) Chevron adapter, (1) Grafoil Packing, (1) Gasket.
S-210WHZ-16-81	GS-210WHZ-12 and GS-210WHZ-16	
S-210-8-82	GS-210W-4, GS-210W-6 and GS-210W-8	(1) Seat/Seat Assembly, (1) Gasket.
S-210-16-82	GS-210W-12 and GS-210W-16	
S-210-24-82	GS-210W-24	
S-210-32-82	GS-210W-32	
S-210WHZ-8-82	GS-210WHZ-4, GS-210WHZ-6 and GS-210WHZ-8	(1) Seat/Seat Assembly, (1) Grafoil Gasket.
S-210WHZ-16-82	GS-210WHZ-12 and GS-210WHZ-16	
S-210-8-83	GS-210W-4, GS-210W-6 and GS-210W-8	(1) Bonnet Gasket.
S-210-16-83	GS-210W-12 and GS-210W-16	
S-210-24-83	GS-210W-24	
S-210-32-83	GS-210W-32	
S-210WHZ-8-83	GS-210WHZ-4, GS-210WHZ-6 and GS-210WHZ-8	(1) Bonnet Grafoil Gasket.
S-210WHZ-9-84	GS-210WHZ-4, GS-210WHZ-6 and GS-210WHZ-8	
S-210WHZ08-853	GS-210WHZ-4, GS-210WHZ-6 and GS-210WHZ-8	(1) Handwheel, (2) Packing Bolt, (2) Nut, (1) Stem & Seat Assembly, (4) Bonnet Bolt, (1)Bonnet & Yoke ASM, (1) Retaining ring, (1) Stem bearing, (1) Gland Flange, (1) Grafoil Packing Set, (1) Chevron adapter, (1) Packing adapter, (1) Gasket, (1) Jam nut, (1) Washer, (1) Grafoil Gasket.
S-210WHZ16-853	GS-210WHZ-12 and GS-210WHZ-16	

Repair Kits

231 Series

Kit Number	Part Number	Kit Contents
S-231-4-81	S-231-4	(1) Packing adapter, (1) Chevron adapter, (1) Grafoil packing, (1) Grafoil Gasket.
S-231-8-81	S-231-8	
S-231-12-81	S-231-12	
S-231-4-82	S-231-4	
S-231-8-82	S-231-8	(1) Seat/Seat Assembly, (1) Grafoil Gasket.
S-231-12-82	S-231-12	
S-231-4-83	S-231-4	(1) Grafoil Gasket.
S-231-8-83	S-231-8	
S-231-12-83	S-231-12	
S-231-4-85	S-231-4	(1) Handwheel, (2) Packing Bolt, (2) Nut, (1) Stem & Seat Assembly, (4) Bonnet Bolt, (4) Bonnet nut, (1) Bonnet & Yoke ASM, (1) Retaining ring, (1) Stem bearing, (1) Gland Flange, (1) Grafoil Packing Set, (1) Chevron adapter, (1) Packing adapter, (1) Gasket, (1) Jam nut, (1) Washer, (1) Grafoil Gasket.
S-231-8-85	S-231-8	
S-231-12-85	S-231-12	

232 Series

Kit Number	Part Number	Kit Contents
S-232-4-81	S-232-4	(1) Packing adapter, (1) Chevron adapter, (1) Chevron set, (1) Gasket.
S-232-8-81	S-232-8	
S-232-12-81	S-232-12	
S-232-4-82	S-232-4	(1) Seat/Seat Assembly, (1) Gasket.
S-232-8-82	S-232-8	
S-232-12-82	S-232-12	
S-232-4-83	S-232-4	(1) Gasket.
S-232-8-83	S-232-8	
S-232-12-83	S-232-12	
S-232-4-85	S-232-4	
S-232-8-85	S-232-8	(1) Handwheel, (2) Packing Bolt, (2) Nut, (1) Stem & Seat Assembly, (4) Bonnet Bolt, (4) Bonnet nut, (1) Bonnet & Yoke ASM, (1) Retaining ring, (1) Stem bearing, (1) Gland Flange, (1) Chevron Set, (1) Chevron adapter, (1) Packing adapter, (1) Gasket, (1) Jam nut, (1) Washer, (1) Gasket.
S-232-12-85	S-232-12	

CFM, AFM, PFM, SFM, CSB, & CSM Series

Kit Number	Part Number	Kit Contents
CFM2D-82	SFM, CFM, AFM, PFM, CSB, CSM Fill Manifolds Series	(1) Piston Assy, (1) Spring, (1) Strainer, (1) Gasket.
CFM2D-86	CFM-2D & CFM-4D, CSB2D, CSB4D	(1) Copper gasket, (1) Retrofit Kit, (01) Gasket, (04) Cap screw, (01) Rear Flange Assy.
CSM2D-86	CSM2D, CSM4D	
SKM9408-83	CSB2D, CSM2D	(1) Gasket.
SKM9412-83	CSB4D, CSM4D	
SKM9408-80AJ	CSB2D, CSM2D	(1) Gasket and (1) Seat Disc Assembly.
SKM9412-80AJ	CSB4D, CSM4D	
SKM9408-80J	CSB2D, CSM2D	(2) Spring, Belleville, (1) Washer, Live-loading, (5) Packing, Bonnet, (4) Packing, separator, (1) Bearing, Bonnet, (1) Follower, Gland, (1) Packing, Adapter.
SKM9412-80J	CSB4D, CSM4D	
SKM9408-KIT	CSB2D, CSM2D	
SKM9412-KIT	CSB4D, CSM4D	(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.

2500 and 2550 Series

Kit Number	Part Number	Kit Contents
2505AC-80	2505AC	(2) Seat disc, (1) Diaphragm, (1) Washer, (1) Gaskets.
2507AC-80	2507AC	
2511AC-80	2511AC	
2513AC-80	2513AC	
2553AC-80	2553AC, 2553AAC.	(1) Diaphragm Assembly, (1) Washer.
2554AC-80	2554AC, 2554AAC.	

Repair Kits

302 and 322 Series

Kit Number	Part Number	Kit Contents
B-322-8-81	B-302-8, B-312-8, B-322-8, WCB-8, WCBN-8, GB-322WE-8.	(1) Handwheel nut, (1) Bonnet Bearing, (1) Grand follower, (5) Bonnet packing, (4) packing separator, (1) Bonnet packing adapter.
B-322-12-81	B-302-12, B-312-12, B-322-12, WCB-12, WCBN-12.	
B-322-16-81	B-322-16	
B-322-20-81	B-302-20, B-312-20, B-322-20, WCB-20, WCBN-20.	
B-322-24-81	B-302-24, B-312-24, B-322-24, WCB-24, WCBN-24.	(1) Split Wedge Assembly, (1) Bonnet Gasket.
B-322-8-82	B-302-8, B-312-8, B-322-8, WCB-8, WCBN-8, GB-322WE-8.	
B-322-12-82	B-302-12, B-312-12, B-322-12, WCB-12, WCBN-12.	
B-322-16-82	B-322-16	
B-322-20-82	B-302-20, B-312-20, B-322-20, WCB-20, WCBN-20.	(1) Bonnet Gasket.
B-322-24-82	B-302-24, B-312-24, B-322-24, WCB-24, WCBN-24.	
B-322-8-83	B-302-8, B-312-8, B-322-8, WCB-8, WCBN-8, GB-322WE-8.	
B-322-12-83	B-302-12, B-312-12, B-322-12, WCB-12, WCBN-12.	
B-322-16-83	B-322-16	(1) Handwheel, (1) Handwheel nut, (1) Stem, (1) Bonnet Nut, (1) Bonnet & Tube ASM, (1) Bonnet ring, (1) Split wedge ASM, (1) Bonnet bearing, (1) Gland follower, (5) Bonnet packing, (4) Packing separator, (1) Bonnet packing adapter, (1) Bonnet gasket.
B-322-20-83	B-302-20, B-312-20, B-322-20, WCB-20, WCBN-20.	
B-322-24-83	B-302-24, B-312-24, B-322-24, WCB-24, WCBN-24.	
B-322-4KIT	B-322-4	
B-322-8KIT	B-322-8	(1) Handwheel, (1) Handwheel nut, (1) Stem, (1) Bonnet Nut, (1) Bonnet & Tube ASM, (1) Bonnet ring, (1) Split wedge ASM, (1) Bonnet bearing, (1) Gland follower, (5) Bonnet packing, (4) Packing separator, (1) Bonnet packing adapter, (1) Bonnet gasket.
B-322-12KIT	B-322-12	
B-322-16KIT	B-322-16	
B-322-20KIT	B-322-20	
B-322-24KIT	B-322-24	

302, 306, 322, and 326 Series

Kit Number	Part Number	Kit Contents
B-326-4-81	B-312-4, B-322-4, B-326-4, GB-326WE-4, WCB-4, WCBN-4.	(1) Handwheel nut, (1) Bonnet bearing, (1) Gland follower, (5) Packing, (4) Packing Separator, (1) Packing adapter.
B-326-6-81	B-302-6, B-306-6, B-312-6, B-326-6, WCB-6, WCBN-6.	
B-326-8-81	B-306-8, B-326-8, GB-0326EP-8, GB-0326WE-8.	
B-326-12-81	B-306-12, B-326-12, GB-0326EP-12, GB-0326WE-12.	
B-326-16-81	B-302-16, B-306-16, B-312-16, B-322-16, B-326-16, GB-322WE-16, GB-326EP-16, WCB-16, WCBN-16.	(1) Split Wedge Assembly, (1) Bonnet gasket.
B-326-4-82	B-312-4, B-322-4, B-326-4, GB-326WE-4, WCB-4, WCBN-4	
B-326-6-82	B-302-6, B-306-6, B-312-6, B-326-6, WCB-6, WCBN-6.	
B-326-8-82	B-306-8, B-326-8, GB-0326EP-8, GB-0326WE-8.	
B-326-12-82	B-306-12, B-326-12, GB-0326EP-12, GB-0326WE-12.	(1) Bonnet gasket.
B-326-16-82	B-302-16, B-306-16, B-312-16, B-322-16, B-326-16, GB-322WE-16, GB-326EP-16, WCB-16, WCBN-16.	
B-326-4-83	B-312-4, B-322-4, B-326-4, GB-326WE-4, WCB-4, WCBN-4	
B-326-6-83	B-302-6, B-306-6, B-312-6, B-326-6, WCB-6, WCBN-6.	
B-326-8-83	B-306-8, B-326-8, GB-0326EP-8, GB-0326WE-8.	(1) Handwheel, (1) Handwheel nut, (1) Stem, (1) Bonnet Nut, (1) Bonnet & Tube ASM, (1) Bonnet ring, (1) Split wedge ASM, (1) Bonnet bearing, (1) Gland follower, (5) Bonnet packing, (4) Packing separator, (1) Bonnet packing adapter, (1) Bonnet gasket.
B-326-12-83	B-306-12, B-326-12, GB-0326EP-12, GB-0326WE-12.	
B-326-16-83	B-302-16, B-306-16, B-312-16, B-322-16, B-326-16, GB-322WE-16, GB-326EP-16, WCB-16, WCBN-16.	
B-326-4KIT	B-326-4	
B-326-6KIT	B-326-6	(1) Handwheel, (1) Handwheel nut, (1) Stem, (1) Bonnet Nut, (1) Bonnet & Tube ASM, (1) Bonnet ring, (1) Split wedge ASM, (1) Bonnet bearing, (1) Gland follower, (5) Bonnet packing, (4) Packing separator, (1) Bonnet packing adapter, (1) Bonnet gasket.
B-326-8KIT	B-326-8	
B-326-12KIT	B-326-12	
B-326-16KIT	B-326-16	

302 Series

Kit Number	Part Number	Kit Contents
B-302-4KIT	B-302-4	(1) Handwheel, (1) Handwheel nut, (1) Stem, (1) Bonnet Nut, (1) Bonnet & Tube ASM, (1) Bonnet ring, (1) Split wedge ASM, (1) Bonnet bearing, (1) Gland follower, (5) Bonnet packing, (4) Packing separator, (1) Bonnet packing adapter, (1) Bonnet gasket.
B-302-8KIT	B-302-8	
B-302-12KIT	B-302-12	
B-302-16KIT	B-302-16	
B-302-20KIT	B-302-20	
B-302-24KIT	B-302-24	

Repair Kits

306 Series

Kit Number	Part Number	Kit Contents
B-000306-6KIT	B-000306-6	(1) Handwheel, (1) Handwheel nut, (1) Stem, (1) Bonnet Nut, (1) Bonnet & Tube ASM, (1) Bonnet ring, (1) Split wedge ASM, (1) Bonnet bearing, (1) Gland follower, (5) Bonnet packing, (4) Packing separator, (1) Bonnet packing adapter, (1) Bonnet gasket.
B-000306-8KIT	B-000306-8	
B-000306-12KIT	B-000306-12	
B-000306-16KIT	B-000306-16	

310 Series

Kit Number	Part Number	Kit Contents
B-310X-24-81	B-310-20, B-310-24, B-310C-24, B-310X-20, B-310X-24, SB-310S-24SW.	(1) Handwheel nut, (1) Bonnet bearing, (1) Gland follower, (5) Packing, (4) Packing separator, (1) Packing adapter.
B-310X-24-82		(1) Wedge, (1) Seat, (1) Seat clamp, (3) Cap screw, (1) Gasket.
B-310X-24-83		(1) Gasket.
B-310X-24-84		(1) Seat, (1) Seat clamp, (3) Cap screw, (1) Gasket.
B-310X-24KIT	B-310X-20, B-310X-24.	(1) Handwheel, (1) Handwheel nut, (1) Stem, (1) Bonnet Nut, (1) Bonnet & Tube ASM, (1) Bonnet ring, (1) Split wedge ASM, (1) Bonnet bearing, (1) Gland follower, (5) Bonnet packing, (4) Packing separator, (1) Bonnet packing adapter, (1) Bonnet gasket.
B-310-24KIT	B-310-20, B-310-24.	

110 Series

Kit Number	Part Number	Kit Contents	
S-110-08-81	GS-110W-4, GS-110W-6 and GS-110W-8.	(1) Packing Adapter, (1) Chevron adapter, (01) Chevron set, (1) Gasket.	
S-110-16-81	GS-110W-12 and GS-110W-16.		
S-110-24-81	GS-110W-24.		
S-110-32-81	GS-110W-32.		
S-110-48-81	GS-110W-48.		
S-110WHZ-08-81	GS-110WHZ-4, GS-110WHZ-6 and GS-110WHZ-8.	(1) Packing Adapter, (1) Chevron adapter, (01) Grafoil set, (1) Gasket.	
S-110WHZ-16-81	GS-110WHZ-12 and GS-110WHZ-16.		
S-110WHZ-24-81	GS-110WHZ-24.		
S-110WHZ-32-81	GS-110WHZ-32.		
S-110WHZ-48-81	GS-110WHZ-48.		
S-110-08-82	GS-110W-4, GS-110W-6 and GS-110W-8.	(1) Wedge/Stem Assembly, (1) Seat, (1) Seat Clamp, (1) Cap Screw, (1) Gasket.	
S-110-16-82	GS-110W-12 and GS-110W-16.		
S-110-24-82	GS-110W-24.		
S-110-32-82	GS-110W-32.		
S-110-48-82	GS-110W-48.		
S-110WHZ-8-82	GS-110WHZ-4, GS-110WHZ-6 and GS-110WHZ-8.		
S-110WHZ-16-82	GS-110WHZ-12 and GS-110WHZ-16.		
S-110WHZ-24-82	GS-110WHZ-24.		
S-110WHZ-32-82	GS-110WHZ-32.		
S-110WHZ-48-82	GS-110WHZ-48.		
S-110-08-83	GS-110W-4, GS-110W-6 and GS-110W-8.		(1) Gasket.
S-110-16-83	GS-110W-12 and GS-110W-16.		
S-110-24-83	GS-110W-24.		
S-110-32-83	GS-110W-32.		
S-110-48-83	GS-110W-48.		
S-110WHZ-08-83	GS-110WHZ-4, GS-110WHZ-6 and GS-110WHZ-8.		
S-110WHZ-16-83	GS-110WHZ-12 and GS-110WHZ-16.		
S-110WHZ-24-83	GS-110WHZ-24.		
S-110WHZ-32-83	GS-110WHZ-32.		
S-110WHZ-48-83	GS-110WHZ-48.		
S-110-08-84	GS-110W-4, GS-110W-6 and GS-110W-8.	(1) Gasket, (1) Seat, (1) Seat Clamp, (1) Cap Screw.	
S-110-16-84	GS-110W-12 and GS-110W-16.		
S-110-24-84	GS-110W-24.		
S-110-32-84	GS-110W-32.		
S-110-48-84	GS-110W-48.		
S-110WHZ-08-84	GS-110WHZ-4, GS-110WHZ-6 and GS-110WHZ-8.		
S-110WHZ-16-84	GS-110WHZ-12 and GS-110WHZ-16.		
S-110WHZ-24-84	GS-110WHZ-24.		
S-110WHZ-32-84	GS-110WHZ-32.		
S-110WHZ-48-84	GS-110WHZ-48.		
S-110WHZ08-853	GS-110WHZ-4, GS-110WHZ-6 and GS-110WHZ-8.		(1) Handwheel Assembly, (2) Bolt, (2) Nut, (1) Stem & Wedge Assembly, (4) Bolt, (1) Bonnet & Yoke Assembly, (1) Retaining Ring, (1) Stem Bearing, (1) Gland Flange, (1) Packing Set, (1) Chevron Adapter, (1) Packing Adapter, (2) Gasket- Grafoil, (1) Seat, (1) Seat Clamp, (2) Socket Head Cap Screw, (1) Set Screw.
S-110WHZ16-853	GS-110WHZ-12 and GS-110WHZ-16.		
S-110WHZ24-853	GS-110WHZ-24.		
S-110WHZ32-853	GS-110WHZ-32.		
S-110WHZ48-853	GS-110WHZ-48.		

Repair Kits

LOX110 Series

Kit Number	Part Number	Kit Contents
LOX110W-08-85	LOX110W-04, LOX110W-06, and LOX110W-08.	(1) Handwheel Assembly, (2) Bolt, (2) Nut, (1) Stem & Wedge Assembly, (4) Bolt, (1) Bonnet & Yoke Assembly, (1) Retaining Ring, (1) Stem Bearing, (1) Gland Flange, (1) Packing Set, (1) Chevron Set, (1) Chevron Adapter, (1) Packing Adapter, (2) Gasket, (1) Seat, (1) Seat Clamp, (2) Socket Head Cap Screw, (1) Set Screw.
LOX110W-16-85	LOX110W-12, and LOX110W-16.	
LOX110W-24-85	LOX110W-24.	
LOX110W-32-85	LOX110W-32.	
LOX110W-48-85	LOX110W-48.	
LOX110WEP-16-85	LOX110WEP-12, and LOX110WEP-16.	
LOX110WEP-32-85	LOX110WEP-32.	
LOX110WEP-48-85	LOX110WEP-48.	

840 and 846M Series

Kit Number	Part Number	Kit Contents
B-840-4-82	B-840-4.	(1) Disc/Arm Assembly, (1) Gasket, (1) Pivot Pin, (2) Side Plug, (2) Plug Gasket.
B-840-6-82	B-840-6.	
B-840-8-82	B-840-8.	
B-840-12-82	B-840-12.	
B-840-16-82	B-840-16.	
B-846M-4-82	B-846M-4.	
B-846M-6-82	B-846M-6.	
B-846M-8-82	B-846M-8.	
B-846M-12-82	B-846M-12.	
B-846M-16-82	B-846M-16.	

886 Series

Kit Number	Part Number	Kit Contents
S-886-04-82	S-886-4	(1) Disc/Arm Assembly, (1) Pin, (1) Gasket.
S-886-08-82	S-886-8	
S-886-12-82	S-886-12	
S-886-16-82	S-886-16	
S-886-24-82	S-886-24	
S-886-32-82	S-886-32	
S-886M-04-82	S-886M-4	
S-886M-08-82	S-886M-8	
S-886M-12-82	S-886M-12	
S-886M-16-82	S-886M-16	
S-886M-24-82	S-886M-24	
S-886M-32-82	S-886M-32	
S-886GF-04-82	S-886GF-4	(1) Disc/Arm Assembly, (1) Pin, (1) Grafoil Gasket.
S-886GF-08-82	S-886GF-8	
S-886GF-12-82	S-886GF-12	
S-886-04-83	S-886-4	(01) Gasket.
S-886M-8-83	S-886M-8	
S-886M-12-83	S-886M-12	
S-886M-16-83	S-886M-16	
S-886M-24-83	S-886M-24	
S-886M-32-83	S-886M-32	
S-886GF-04-83	S-886GF-4	(1) Grafoil Gasket.
S-886GF-08-83	S-886GF-8	
S-886GF-12-83	S-886GF-12	

TA3217AR410 Series

Kit Number	Part Number	Kit Contents
TA3217AR-80	TA3217AR410	(1) Gasket, (1) Gasket, (1) Seat, (1) Stem Bearing, (1) Seat Retainer, (1) Bearing Seal Grand, (1) Retainer Ring, (1) "V" Packing Male Ring, (3) "V" Packing Female Ring, (1) Body Bearing, (1) O-ring, (1) Dust Seal, (1) Coiling Spring Ring, (1) Seal Housing, (1) Seal Spring, (1) Groove Pin, (1) Upper Stem Bearing, (1) Retaining Ring.

Repair Kits

1780 and BR-1780 Series.

Kit Number	Part Number	Kit Contents
BR-1784-80	1784 Series	Diaphragm assembly, stem and seat assembly, seal, Viton seat
BR-1786-80	1786 Series and 1788 Series	Diaphragm assembly, stem and seat assembly, seal, viton seat for oxygen service
BR-1784-7SKA	1784 Series	Spring kit for 1784, "A" spring range, 5 to 55 psig (.34 o 3.79 barg) delivery pressure 1784 "B" spring range, 40 to 110 psig (2.75 to 7.58 barg) delivery pressure Spring kit for 1784, "C" spring range, 100 to 200 psig (6.89 to 13.78 barg) delivery pressure, Spring kit for 1784, "D" spring range 175 to 300 psig (12 o 20.7 barg) delivery pressure
BR-1784-7SKB		
BR-1784-7SKC		
BR-1784-7SKD		
BR-1786-7SKA	1786 Series	Spring kit for 1786, "A" spring range, 5 to 55 psig (.34 o 3.79 barg) delivery pressure 1786 "B" spring range, 40 to 110 psig (2.75 to 7.58 barg) delivery pressure Spring kit for 1786, "C" spring range, 100 to 200 psig (6.89 to 13.78 barg) delivery pressure, Spring kit for 1786, "D" spring range 175 to 300 psig (12 o 20.7 barg) delivery pressure
BR-1786-7SKB		
BR-1786-7SKC		
BR-1786-7SKD		
BR-1788-7SKA	1788 Series	Spring kit for 1788, "A" spring range, 5 to 55 psig (.34 o 3.79 barg) delivery pressure 1788 "B" spring range, 40 to 110 psig (2.75 to 7.58 barg) delivery pressure Spring kit for 1788, "C" spring range, 100 to 200 psig (6.89 to 13.78 barg) delivery pressure, Spring kit for 1788, "D" spring range 175 to 300 psig (12 o 20.7 barg) delivery pressure
BR-1788-7SKB		
BR-1788-7SKC		
BR-1788-7SKD		

1682M and C-1682M Series.

Kit Number	Part Number	Kit Contents
1682Y-80	1682Y Series	Diaphragm assembly, stem and seat assembly seal.
C-1682M-80	C-1682M Series	
1686Y-80	1686Y, 1688Y Series	
1684MHP-80	1684MHP	
1684M-80	BR-1684M Series	
1686M-80	1686M, 1688M Series	
1682M-80	1682M Series	Molded diaphragm assembly, stem and seat assembly seal.
1684M-80	1684M Series	
1684Y-80	1684Y Series	Diaphragm assembly, stem and seat assembly seal, guide.

M2523HP Series.

Kit Number	Part Number	Kit Contents
2523HP-80A	M2523HP350, M2523HP540, M2523HP580, M2523HP590, M2523HP1320	Seat and centerpiece assembly, diaphragm assembly, nozzle, spring, washer, gaskets.
2523HP-80B	M2523HP320	

HP9560 Series.

Kit Number	Part Number	Kit Contents
9500-80K*	UL9500 Series, NUL9500 Series	(1) Packing ring set, (1) Washer, (1) Seal washer, (1) Seat Disc & Retainer Assembly.
9550-80	9550 Series	(1) Seat Assembly, (1) O-ring, (2) Back up Ring, (3) Washer, (1) O-ring.
9550-3-80	9550 Series	(1) Sleeve.
9560-81	9560 Series	(1) O-ring, (1) Back up ring, (1) Thrust Bearing, (1) Friction washer.
9560C-80	HP9560C Series, 9560C Series	(1) Seat Assembly, (1) O-ring, (1) Back up Ring, (2) Washer, (1) Thrust bearing, (1) Retainer lower, (1) Nut, (1) friction washer, (1) Retainer, (1) Seat insert.
9560-80	HP9560 Series, 9560 Series	(1) Seat Assembly, (1) O-ring, (1) Back up Ring, (2) Washer, (1) Thrust bearing, (1) Retainer lower, (1) Nut, (1) friction washer, (1) Retainer.
9560N-80 Repair Kit	HP9560N Series, 9560N Series	(1) Seat Assembly Nylon, (1) O-ring, (1) Back up Ring, (2) Washer, (1) Thrust bearing, (1) Retainer lower, (1) Nut, (1) friction washer, (1) Retainer.
9560-4-80	HP9560 Series, HP9560N Series	(1) Stem.
9560-7-80	HP9560P Series, 9560P Series	(1) Stem, (1) Nut, (1) Bonnet cap.
9560-8-80	HP9560P Series, 9560P Series	(1) Stem.

* Post 1978

7160 Series.

Kit Number	Part Number	Kit Contents
7160-80B	7160 Series	(1) Bonnet, (1) Stem, (1) Lower Stem Assembly, (1) Screw, (1) Handwheel.

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