



# LNG-500 Catalog

## LNG and Natural Gas Equipment

Cylinder Equipment



LNG Dispenser Equipment



Globe Valves



Gate Valves



Regulators



Pressure Relief Valves



Miscellaneous Equipment



Repair Kits





## Foreword

This catalog briefly describes the Rego® LNG 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.

### 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 57, NFPA 30A, NFPA 59A, CGA, ASME, DOT, ANSI, R110 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](http://www.P65Warnings.ca.gov)

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# 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-points 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 performance improvement over Rego's ECLXXX series. ECL502 series offers outstanding performance for maintaining LNG fuel line pressure.

### Features

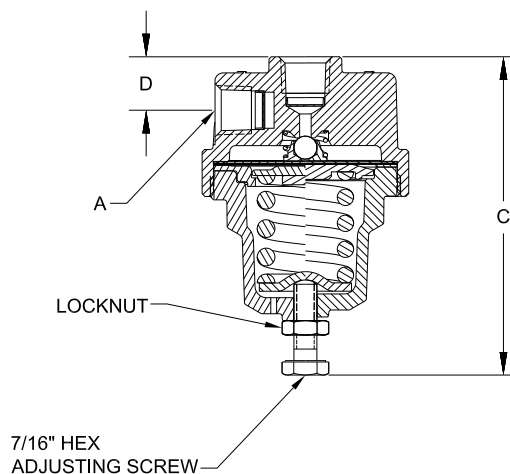
- ECL502 series design provides premium flow characteristics allowing for fast pressure reduction while maintaining sensitive flow control at lower pressure settings
- All materials of construction- copper alloy, PTFE and stainless steel were selected for compatibility with cryogenic service
- 150 count mesh Monel screens installed into the inlet and outlet ports prevent debris from entering or damaging any downstream components
- Interchangeable with existing cryogenic economizer units.
- Bi-directional flow for LNG fuel systems
- Temperature range: -320°F to +165°F (-196°C to +74°C)
- Max inlet pressure:
- Low Pressure Models  $\leq 175$ : 375 psig ( $\leq 12,1$ : 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 & approved by ECE R110

### Materials

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



**ECL Series**



### Ordering Information

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

\*Contact sales representative for additional settings.

# Cryogenic Pressure Builder RG Series

## Application

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

## Features

- All parts are copper alloy (brass), PTFE and stainless steel—materials selected specifically for compatibility with cryogenic temperatures down to -320°F (-196° C )
- PTFE seat helps assure a positive shut-off at cryogenic temperatures down to -320°F (-196° C )
- High and low pressure regulators are the same compact size—designed to fit in close quarters
- Interchangeable with existing cryogenic regulator units
- Inlet filter helps prevent foreign material from entering the regulator
- Locknut is provided to maintain adjusting screw setting
- RG125C and RG175C Series available with flat inlet screen
- RG90AG 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 (FNPT) A | Width B | C     | D     | Operating Range (psig)        |
|----------------------------|-------------------------------------|---------|-------|-------|-------------------------------|
| <a href="#">RG022A</a>     | ¼"                                  | 2 1⁄16" | 3"    | 1"    | 0-30 psig (0-2.1 barg)        |
| <a href="#">RG125A</a>     |                                     |         |       |       | 25-250 psig (1.7-17.2 barg)   |
| <a href="#">RG125C3</a>    | ¾"                                  | 2 ⅛"    | 3.33" | 0.80" |                               |
| <a href="#">RG175C3</a>    |                                     |         |       |       |                               |
| <a href="#">RG300A</a>     | ¼"                                  | 2 1⁄16" | 3"    | 1"    | 125-350 psig (17.2-24.2 barg) |
| <a href="#">RG000090AG</a> |                                     |         |       |       | 25-250 psig (1.7-17.2 barg)   |

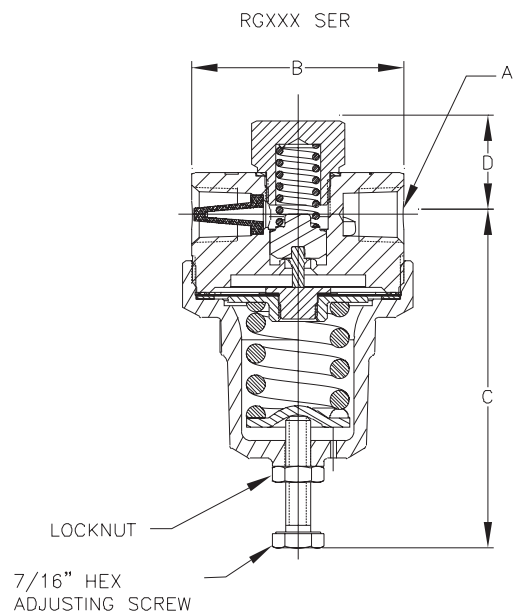
\*Contact sales representative for additional settings.



**RG Series**



**RGXXXAG with gauge port and T-handle**



# Gas Phase Regulator

## 1784NG

### Application

The 1784NG Series Regulators are designed for the Natural Gas vehicle market. The 1784NG Series Regulators are engineered with unique design features ideal for optimal natural gas engine performance.

### Features

- Highly responsive to changes in flow, pressure remains steady if flow increases
- New bonnet construction features hose barb and choice of ports for dome loading
- Adjusting screw is pre-set and protected against tampering by a pressure tight sealed plug
- Pre-set adjusting screw allows for internal adjustment
- Design utilizes abrasion resistant bushing for smooth performance
- Tied diaphragm minimizes risk of damage to downstream components in case outlet pressure increases above set-point
- Design optimized to provide stable performance with natural gas
- Maintains a steady downstream pressure across a range of inlet pressure commonly provided by a LNG bulk tank or cylinder
- 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
- Maximum inlet pressure is 435 psig (30 barg)
- Temperature range: -40° F to +165 F (-40°C to +74°C)
- Designed in accordance with & approved by ECE R110
- 100% Factory Tested

### Materials

Body ..... Forged Brass  
 Bonnet ..... Nickel Plated Aluminum  
 Diaphragm ..... Viton  
 Springs and Fasteners ..... Stainless Steel  
 Other valve parts ..... S/S and Brass  
 Seat Disc and O-Rings ..... Viton

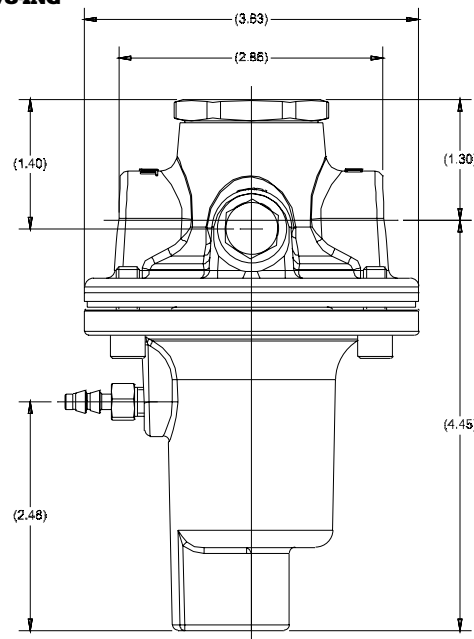
### Ordering Information

| Part Number | Inlet Pressure psig (barg) | Delivery Pressure psig (barg) | Hose Barb, Drain and Plug Option        | Inlet and Outlet | Cv  |
|-------------|----------------------------|-------------------------------|-----------------------------------------|------------------|-----|
| 1784NG45    | 137.5 (9.5)                | 63.5 (4.5)                    | No hose barb, plug in the side.         | ½" FNPT          | 3.1 |
| 1784NG86    | 188.5 (13.0)               | 124.7 (8.6)                   |                                         |                  |     |
| 1784NG145   | 188.5 (13.0)               | 144.0-145.5 (10.0)            |                                         |                  |     |
| 1784NGB     | 137.5 (9.5)                | 36.0 - 101.0 (2.5 - 7.0)      | Hose barb over outlet, plug in the top. |                  |     |
| 1784NGC     | 220.0 (15.2)               | 87.0 - 189.0 (6.0 - 13.0)     |                                         |                  |     |
| 1784NGB93   | 137.5 (9.5)                | 93.0 (6.4)                    |                                         |                  |     |

\*Contact sales representative for additional settings and/or configuration options.



1784NG



# Short Stem Cryogenic Valves

## T9450 Series and T9460 Series

### Application

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

### Features

- Spring-loaded stem seal automatically adjusts for any gasket wear, eliminating the need to constantly retighten the packing nut
- Non-rising stem and low profile allow the valve to fit into tight areas and still provide easy access
- Unique pressure-sealed moisture barrier helps prevent freeze-up at cryogenic temperatures
- Conical swivel seal design helps prevent seat galling from over-torquing
- Cleaned for Oxygen service per CGA G-4.1.
- Maximum working pressure is 600 psig (42 barg)
- Working temperature range is -320°F to +165°F. (-196°C to +74°C)
- Designed in accordance with & approved by ECE R110
- 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

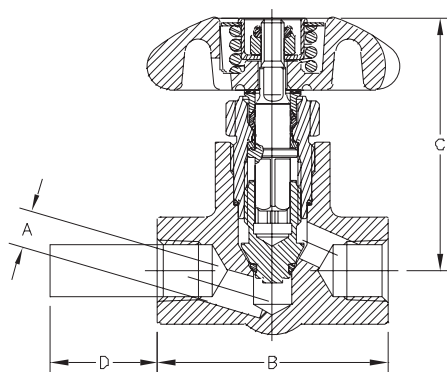
| Part Number              | Inlet           | Outlet  | Orifice A | Length B | Height (Approx.) C | Tube D | C <sub>v</sub> Factor |
|--------------------------|-----------------|---------|-----------|----------|--------------------|--------|-----------------------|
| <a href="#">T9452</a>    | ¼" FNPT         | ¼" FNPT | .250      | 2½"      | 2¾"                | None   | .99                   |
| <a href="#">T9453</a>    | ⅜"FNPT          | ⅜"FNPT  | .406      |          |                    |        | 1.76                  |
| <a href="#">T9454</a>    | ½" FNPT         | ½" FNPT |           |          |                    |        | 1.79                  |
| <a href="#">T9464CA</a>  | .675" O.D. Tube | ⅜"FNPT  | .406      | 2½"      | 2¾"                | 1⅝"    | 1.76                  |
| <a href="#">T9464DA</a>  |                 |         |           |          |                    | 2⅞"    |                       |
| <a href="#">T9464ADA</a> |                 |         |           |          |                    | 3⅝"    |                       |



**T9450 Series**



**T9460 Series**



## Extended Stem Retrofit Kits

### Application

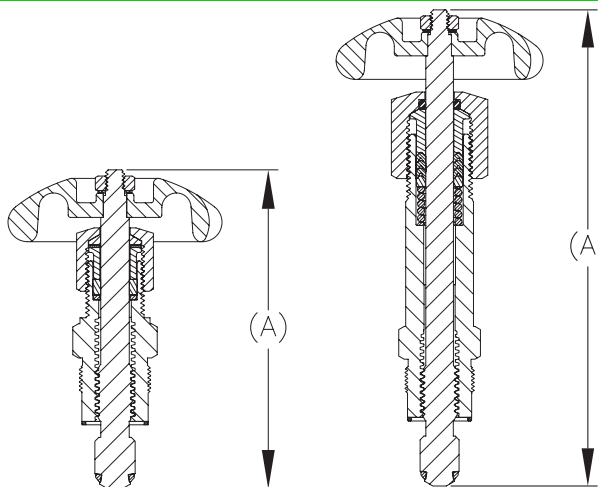
Retrofit kits are used to convert the 9450 and 9460 series short stem shut-off valves into extended stem style. The conversion can be done without removing the valve from your system. Available in two stem lengths. All kits are Oxygen cleaned and packaged per CGA G-4.1.

### Materials

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

### Ordering Information

| Part Number    | Stem Length A | Style                                           |
|----------------|---------------|-------------------------------------------------|
| <b>ES8450R</b> | 4"            | Extended Stem, Std. Bonnet, Manual Packing      |
| <b>BK9450R</b> | 6.5"          | Extended Bonnet and Stem, Spring-loaded Packing |



# Shut-off Valve with Tubing Connections

## T9464CCAG

### Application

Short stem valves are designed for use on LNG fueling systems to provide reliable performance at cryogenic temperatures.

### 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 of LNG fueling systems 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
- Maximum working pressure is 600 psig (41.4 barg)
- Working temperature range is -320°F to +165°F (-196°C to +74°C)
- Designed in accordance with & approved by ECE R110
- 100% factory tested

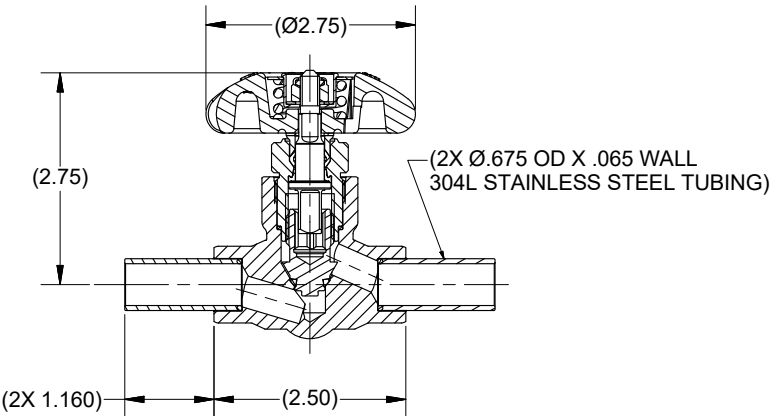


**T9464CCAG**



### Materials

|                |                 |
|----------------|-----------------|
| Tube .....     | Stainless Steel |
| Body .....     | Brass           |
| Bonnet .....   | Brass           |
| Seat .....     | CTFE            |
| Gasket .....   | PTFE            |
| Handwheel..... | Aluminum        |
| Spring .....   | Stainless Steel |
| Stem .....     | Brass           |



### Ordering Information

| Part Number | Inlet/Outlet Connections | Handwheel | C <sub>v</sub> Factor for Gaseous Flow | C <sub>v</sub> Factor for Liquid Flow |
|-------------|--------------------------|-----------|----------------------------------------|---------------------------------------|
| T9464CCAG   | 0.675" Tubing            | Green     | 1.08                                   | 1.79                                  |

# Shut-off valve w/90°bent tubes T9464LAS and T9464LCB

## Application

Designed to conform to space constraints in LNG fueling systems. Maintains the same flow and outstanding service life of all RegO cryogenic in-line shut-off valves.

## 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 of LNG fueling systems 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
- Maximum working pressure is 600 psig (41.4 barg)
- Working temperature range is -320°F to +165°F. (-196°C to +74°C)
- Designed in accordance with & approved by ECE R110
- 100% factory tested

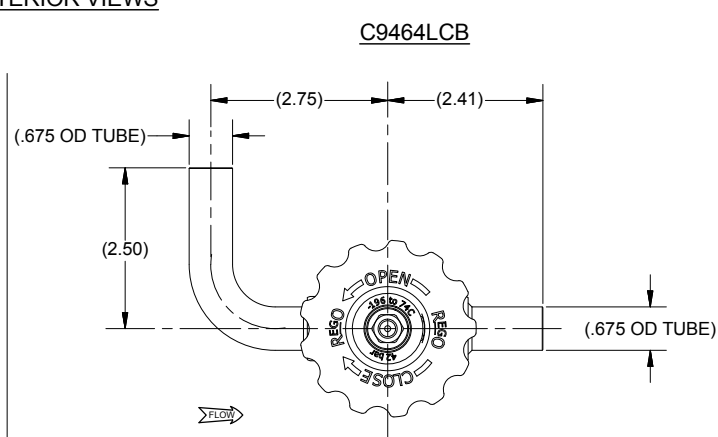
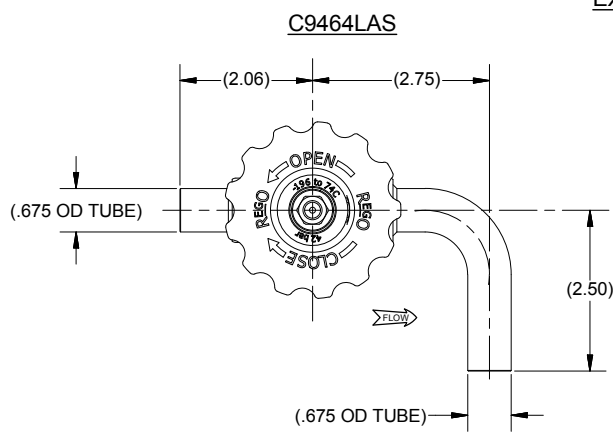
## Materials

|                |                 |
|----------------|-----------------|
| Tube .....     | Stainless Steel |
| Body .....     | Brass           |
| Bonnet .....   | Brass           |
| Seat .....     | CTFE            |
| Gasket .....   | PTFE            |
| Handwheel..... | Aluminum        |
| Spring .....   | Stainless Steel |
| Stem .....     | Brass           |



**T9464LAS**

## EXTERIOR VIEWS



## Ordering Information

| Part Number     | Tube Diameter | Bent Tube Location | Handwheel | C <sub>v</sub> Factor for Gaseous Flow | C <sub>v</sub> Factor for Liquid Flow |
|-----------------|---------------|--------------------|-----------|----------------------------------------|---------------------------------------|
| <b>T9464LAS</b> | .675          | Outlet             | Silver    | 1.08                                   | 1.79                                  |
| <b>T9464LCB</b> |               | Inlet              | Blue      |                                        |                                       |

# Shut-off valves

## T9464LDR and T9464LES

### Application

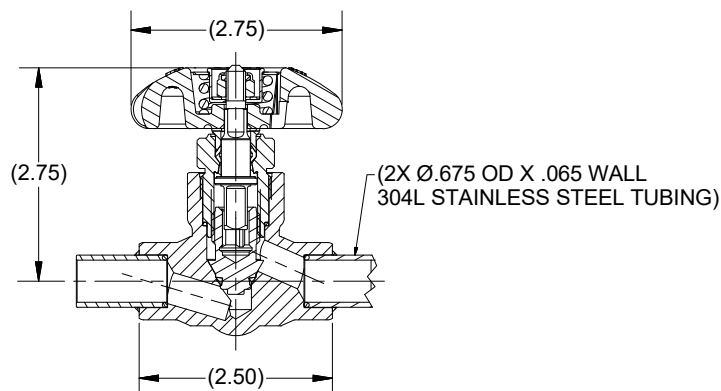
Designed to conform to space constraints in LNG fueling systems. Maintains the same flow and outstanding service life of all RegO cryogenic in-line shut-off valves.

### 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 of LNG fueling systems 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
- Maximum working pressure is 600 psig (41.3 barg)
- Working temperature range is -320°F to +165°F (-196°C to +74°C)
- Designed in accordance with & approved by ECE R110
- 100% factory tested

### Materials

|                  |                  |
|------------------|------------------|
| Tube .....       | Stainless Steel  |
| Body .....       | Brass            |
| Bonnet .....     | Brass            |
| Seat .....       | CTFE             |
| Gasket .....     | PTFE             |
| Handwheel.....   | Aluminum         |
| Spring .....     | Stainless Steel  |
| Upper Stem ..... | Brass            |
| Lower Stem ..... | Magnesium Bronze |
| Fitting.....     | Brass            |



### Ordering Information

| Part Number | Outlet                            | Inlet     | C <sub>v</sub> Factor for Gaseous Flow | C <sub>v</sub> Factor for Liquid Flow |
|-------------|-----------------------------------|-----------|----------------------------------------|---------------------------------------|
| T9464LDR    | ½" Flared tube fitting 45° elbow. | .675 Tube | 1.08"                                  | 1.79"                                 |
| T9464LES    | ¾" NTPF                           | .813 Tube |                                        |                                       |
| T9464LJS    |                                   |           |                                        |                                       |



**T9464LDR**



**T9464LES**



**T9464LJS**

# ES8450 and TES8450 Series Extended Stem Valves BK9450 and BK9470 Series Extended Bonnet Valves

## Application

For use as a trycock valve or hose drain valve on cryogenic tanks, or use as a 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            |
| Packing.....         | PTFE            |
| Packing (TES.....    | Grafoil         |

## Conversion Kit

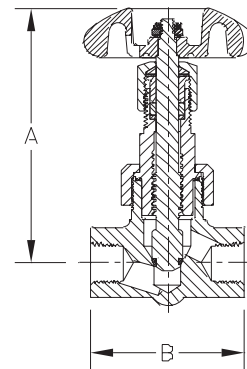
BK 9450-KIT is a bonnet and stem assembly kit to convert ES 8450 series and previous ES 9450 Series to the BK 9450 style.

## Ordering Information

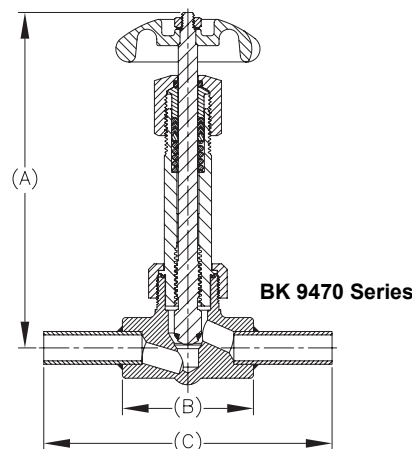
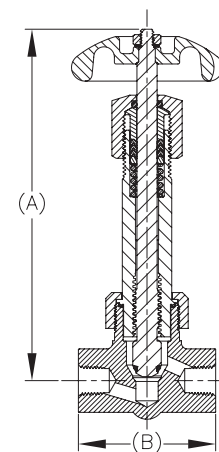
| Part Number | Inlet/Outlet Connections | Height "A" | Body Width "B" | Width with Tube "C" | Cv   |
|-------------|--------------------------|------------|----------------|---------------------|------|
| ES8452      | ¼" FNPT                  | 4.2"       | 2.5"           | NA                  | 0.70 |
| TES8452     |                          |            |                |                     |      |
| ES8453      | ⅜" FNPT                  |            |                |                     |      |
| TES8453     |                          |            |                |                     |      |
| ES8454      | ½"FNPT                   |            |                |                     |      |
| TES8454     |                          |            |                |                     |      |
| BK9452      | ¼" FNPT                  | 6.5"       |                | 0.70                |      |
| BK9453      | ⅜" FNPT                  |            |                | 1.10                |      |
| BK9454      | ½"FNPT                   |            |                |                     |      |
| BK9453FA    | ⅝" OD tubing x ⅜"FNPT    |            |                |                     | 4.0" |
| BK9475A     | ⅝" OD tubing both ends   |            |                |                     | 5.5" |



**ES 8450 Series**



**BK 9450 Series**



**BK 9470 Series**

# 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 for Oxygen service per CGA G-4.1
- Bubble-tight at 95% of set pressure
- Easy to read color coded barg/mpa labels
- Tamper resistant
- Adapters provide standard pipe thread connections for venting gas to the outdoors
- Repeatable performance
- 100% factory tested
- Temperatures Range (Teflon Seat) -320° to +165° F. (-196°C to +74°C)
- Temperatures Range (Fluorosilicone Seat) -60° to +165° F. (-51°C to +74°C)
- Rated for gas service only
- Designed in accordance with & approved by ECE R110

## 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 psig of flow pressure. Flow pressure per ASME is 10% above set pressure or +3 psig, whichever is greater.
- B-9425N flow of 6.7 SCFM Air/psig at 120% of set pressure
- B-9426N flow of 11.0 SCFM Air/psig at 120% of set pressure

## Seat Material Option

**F** for Fluorosilicone for PRV and SS styles for 15-139 psig

**T** for PTFE for PRV and SS styles for 140-600 psig

**N** for B-9425 and B-9426, Fluorosilicone seat, all set pressures

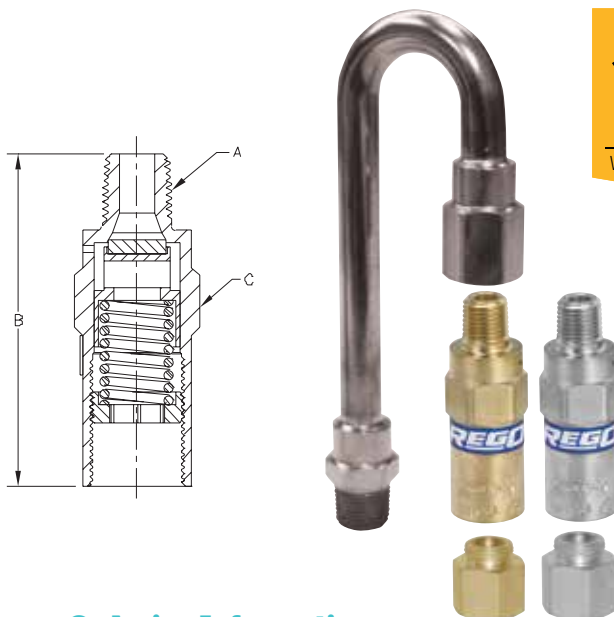
## Drain Hole Option

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

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

## Ordering Information

| Style | Size | Inlet MNPT<br>A | Body and Valve<br>Material | Pressure<br>Setting Range<br>psig | Height<br>B | Wrenching<br>Hex<br>C | Orifice Size Sq.<br>Inch | Pipe-Away<br>Adapter P/N | Pipe-Away<br>Outlet FNPT |    |
|-------|------|-----------------|----------------------------|-----------------------------------|-------------|-----------------------|--------------------------|--------------------------|--------------------------|----|
| PRV   | 9432 | ¼"              | Brass                      | 15-600                            | 2.6"        | ⅞"                    | .062                     | B-9412-2                 | ⅜"                       |    |
| SS    |      |                 | Stainless Steel            |                                   |             |                       |                          | SS-9412-4                | ½"                       |    |
| PRV   | 9433 | ⅜"              | Brass                      |                                   |             |                       |                          | 2.8"                     | B-9412-2                 | ⅜" |
| SS    |      |                 | Stainless Steel            |                                   |             |                       |                          |                          | SS-9412-4                | ½" |
| PRV   | 9434 | ½"              | Brass                      |                                   | B-9412-4    |                       |                          |                          |                          |    |
| SS    |      |                 | Stainless Steel            |                                   | SS-9412-4   |                       |                          |                          |                          |    |
| B-    | 9425 | ¾"              | Brass                      | 20-300                            | 3.4"        | 1¾"                   | .44                      | B-3131-10                | 1"                       |    |
|       | 9426 | 1"              |                            | 60-300                            | 5.3"        | 2⅝"                   | .62                      | B-3132-10                | 1¼"                      |    |



## Ordering Information

Fill in the blanks with options below.

Example: PRV9432T350

|       |      |                  |                 |                 |                     |
|-------|------|------------------|-----------------|-----------------|---------------------|
| PRV   | 9432 | T                | Blank<br>or "P" | 350             | Blank<br>or "P"     |
| Style | Size | Seat<br>Material | Drain<br>Hole   | Set<br>Pressure | Pipe-away<br>Option |

## 9400 Series

This example part number indicates a 1/4" MNPT PRV style brass relief valve with PTFE seat, set at 350 psig with drain hole and no pipe-away adapter.

## Pipe-away Option

**P** Pipeaway included and attached, No drain hole in relief valve

For example 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 and B-9426N are available in select settings only. Special order.

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

## Color Identification

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

# Cryogenic Gas Relief Valves, ASME PRV19430 and PRV29430 Series

## Application

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

## Features

- A.S.M.E. rated, National Board Certified
- Bubble-tight at 95% of set pressure
- Full flow at 110% at set pressure
- Repeatable performance
- 100% factory tested
- Temperatures Range (Teflon Seat) -320° to +165° F. (-196°C to +74°C)
- Temperatures Range (Fluorosilicone Seat) -60° to +165° F. (-51°C to +74°C)
- Cleaned for Oxygen service per CGA G-4.1
- Rated for gas service only
- Easy to read color coded barg/mpa labels
- Tamper resistant
- Designed in accordance with & approved by ECE R110

## Materials SS Style

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

## Materials PRV and B-Style

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

## Flow Performance

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

## Ordering Information

Fill in the blanks with options below.

Example: PRV019432T350

|       |                  |      |                  |                    |                 |
|-------|------------------|------|------------------|--------------------|-----------------|
| PRV   | 1                | 9432 | T                | Blank<br>or<br>"P" | 350             |
| Style | Body<br>Material | Size | Seat<br>Material | Drain<br>Hole      | Set<br>Pressure |

### Body Material

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

### Seat Material

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

### Drain Hole

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

### Set Pressure

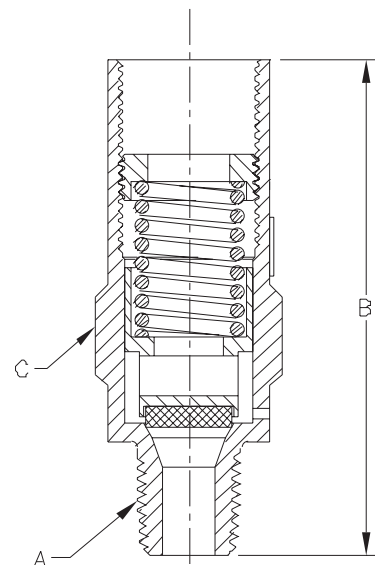
Enter number for set pressure in psig (6.2 - 41.4 barg) from 15 to 600.

## Ordering Information

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



19430 Series



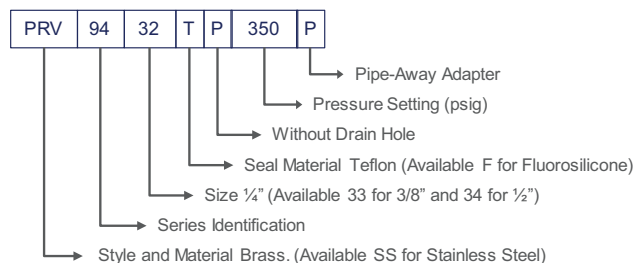
Set-point tolerance is  $\pm 3\%$  of the set pressure or  $\pm 2$  psig whichever is greater.

**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.

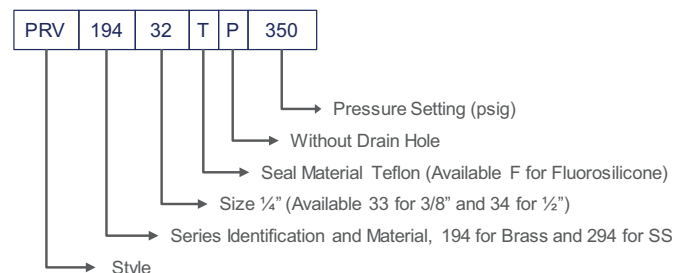
## Pressure Setting and Flow Data PRV9400, PRV19430 and PRV29430

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

### Non-ASME Ordering Information



### ASME Ordering Information



# Right Angle Relief Valves NG-900 Series

## Application

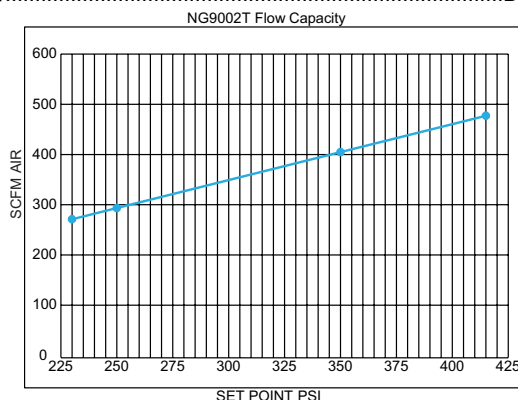
The NG-900 series is designed specifically to avoid over pressurization in LNG fuel tank applications and LNG installations. These valves open and close at preset pressures to ensure reliable performance at cryogenic temperatures.

## Features

- Optional pull lever for manual override
- Materials selected specifically for compatibility with Natural Gas
- 100% Factory tested
- Temperature range -320°F to +196°F (-196°C to +74°C)
- Designed in accordance with & approved by ECE R110

## Materials

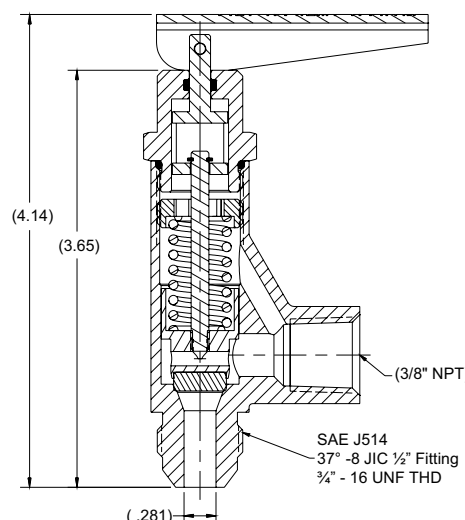
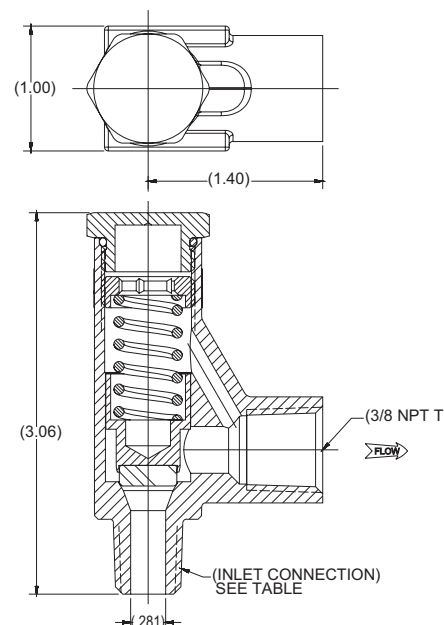
|                       |                 |
|-----------------------|-----------------|
| Spring Pin .....      | Stainless Steel |
| Handle .....          | Stainless Steel |
| O-rings .....         | Fluorosilicone  |
| Connector .....       | Brass           |
| Stem .....            | Stainless Steel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



NG-9002T



NG-9008M



## 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  | ¼" MNPT                                                      | ⅜" FNPT           | 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  |                                                              |                   |                 | 415              | 28.61 |
| NG9003T230  | ⅜" MNPT                                                      |                   | 230             | 15.85            |       |
| NG9003T250  |                                                              |                   | 250             | 17.23            |       |
| NG9003T350  |                                                              |                   | 350             | 24.13            |       |
| NG9003T415  |                                                              |                   | 415             | 28.61            |       |
| NG9008M230  | SAE J514<br>(37°-8JIC ½" fitting)<br>(¾"-16 UNF thread male) |                   | Yes             | 230              | 15.85 |
| NG9008M250  |                                                              |                   |                 | 250              | 17.23 |
| NG9008M280  |                                                              |                   |                 | 280              | 19.30 |
| NG9008M350  |                                                              |                   |                 | 350              | 24.13 |
| NG9008M415  |                                                              |                   |                 | 415              | 28.61 |

\*Contact your sales representative for additional settings.

100 RegO Dr. Elon, NC 27244 USA www.regoproducts.com +1.336.449.7707



# LNG Male Fueling Receptacle

## MFR50 Series

### Application

When mounted on the tank of a Liquid Natural Gas fueled vehicle, the LNG Tank Receptacle offers a safe and secure connection with the CryoMac3 50M LNG Nozzle. In addition to providing a perfect fit with the CryoMac3 50M LNG Nozzle, the LNG Tank Receptacle is engineered to offer the same safe and secure connection with many other LNG Nozzles.

### Features

- Max internal pressure 300 psig /20.7 barg (while fueling)
- Max system pressure 550 psig /38 barg (static)
- Flow capacity 50 GPM
- Available in the more standard inlet connections
- Temperature range -350°F to 150°F ( -212°C to 65°C)
- 100% pressure tested
- Global certifications
- 66% lower LNG emissions during disconnect
- Easy service
- Different outlet available upon request
- Robust poppet design and protection of seat for longer life
- Patent pending



**MFR5008**

### Materials

|                                 |                         |
|---------------------------------|-------------------------|
| Body .....                      | 316L Cres Per ASTM A312 |
| Poppet .....                    | 303 ASTM A 582          |
| Spring .....                    | 302 Cres ASTM A313      |
| Seal ASSY (C version) .....     | UHMWL Brass             |
| Seal ASSY (Non-C Version) ..... | DuronI Stainless Steel  |
| Retainer .....                  | Brass                   |
| Retainer ring .....             | Stainless Steel         |

### Ordering Information

| Part Number | Certification  | Outlet Connection                  | GPM |
|-------------|----------------|------------------------------------|-----|
| MFR5008     | ECE Mark, R110 | ¾" FNPT                            | 50  |
| MFR5010     |                | 37° SAE flare fitting              |     |
| MFR5011     |                | M30x1.5 thread metric tube fitting |     |
| MFR5013     |                | M36x2.0 thread metric tube fitting |     |

# MQD100 Series

## Application

For venting excess pressure in LNG vehicle tanks.

Engineered for easy connection / disconnection with quick disconnect vent couplers.

## Features

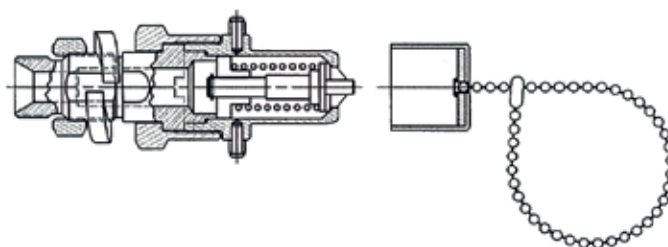
- Designed for durability and long lasting performance
- Materials selected specifically for compatibility with LNG
- PTFE seat provides positive shut off at cryogenic temperatures
- Temperature range: -325°F(-198°C) to +150°F(+65°C)
- 100% factory tested
- Max fueling pressure: 300 psig (20.7 barg)
- Max system pressure: 550 psig (38 barg)
- Designed in accordance with & approved by ECE R110



**MQD100**

## Materials

Inlet body ..... Stainless Steel  
 Body ..... Stainless Steel  
 Seat ..... PTFE  
 Spring ..... Stainless Steel  
 Cap (optional) ..... Vinyl



## Ordering Information

| Old Part Number | New Part Number            | Inlet Connection      | Subjection to Base    |
|-----------------|----------------------------|-----------------------|-----------------------|
| 11170           | <a href="#">MQD100401N</a> | 3/8" SW               | n                     |
| 14075           | <a href="#">MQD100701P</a> | 3/8" MNPT             | Panel mount with nut  |
| 14000           | <a href="#">MQD100101P</a> | M20 X 1.5             | Bulkhead. Panel Mount |
| 12895           | <a href="#">MQD100201P</a> | 3/8" -18 MNPT         |                       |
| 12680           | <a href="#">MQD100201N</a> | 3/8" -18 MNPT         | Without               |
| 14190           | <a href="#">MQD100201F</a> |                       | Bulkhead, Flanged     |
|                 | <a href="#">MQD100701P</a> |                       | Bulkhead              |
| 14080           | <a href="#">MQD100701N</a> |                       | Without, Extended     |
| 14410-1         | <a href="#">MQD100501F</a> | 37° SAE Flare Fitting | Bulkhead, Flanged     |

# RegO® Excess Flow Valve NG303

## Application

For use with LNG liquid lines as an effective shut-off when an excess flow condition occurs downstream to prevent uncontrolled release of system media.

## Features

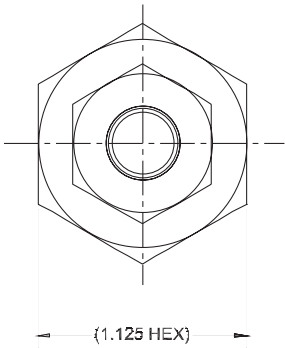
- Materials selected specifically for compatibility with LNG
- Poppet design provides high-flow capacity
- Design allows spring to reset poppet automatically when system pressure equalizes
- Maximum inlet pressure: 4MPa
- Temperature range: -320° F to 165° F
- Designed in accordance with & approved by ECE R110
- 100% factory tested

## Materials

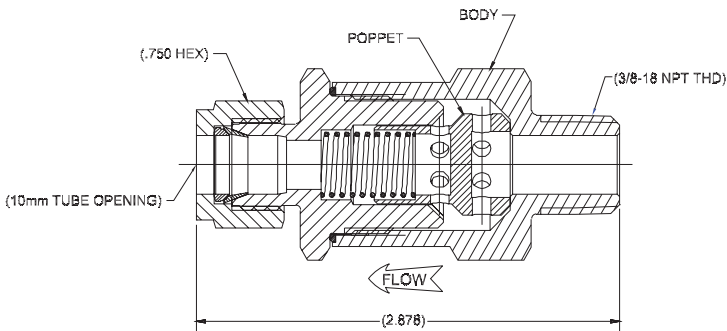
|              |                 |
|--------------|-----------------|
| Body .....   | Brass           |
| Spring ..... | Stainless Steel |
| Poppet ..... | Brass           |
| Bonnet ..... | Stainless Steel |

## Configuration Options

- NG303XYZ
- X is a Material option
- Y is a Connection option
- Z is a Poppet orifice size option
- Currently have 24 configuration options:
  - 2 materials
  - 4 connections
  - 3 poppet sizes



NG303



## Ordering Information

| Part Number | Inlet | Outlet    | Poppet Orifice<br>mm (inch) | Ferrule Nut Hex<br>inches | Closing Flow  |
|-------------|-------|-----------|-----------------------------|---------------------------|---------------|
| NG303B      | 3/8"  | 10mm Tube | 2.0 (.079)                  | .750                      | 3.5 - 5.5 GPM |
| NG303B3     |       | 3/8" Tube |                             | .688                      |               |
| NG303S      |       | 10mm Tube |                             | .750                      |               |
| NG303S3     |       | 3/8" Tube |                             | .688                      |               |

# RegO® LNG Check Valves

## NG Series

### Application

#### NG301

For use with LNG liquid lines as an effective shut-off utilizing ball and spring mechanism. 1/2" design fits compact piping systems. Heavy-duty spring and precision ball provide dependable service in LNG fuel applications.

#### NG304

For use with LNG fuel lines as an effective one-way shut-off utilizing soft seated design for quick acting response to flow. Poppet design is ideal for LNG and resistant to particulates.

### Features

#### NG301

- Materials selected specifically for compatibility with LNG
- Quick acting ball and spring mechanism.
- Metal to metal seating provides durable service life.
- 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.

### Features

#### NG304

- Materials selected specifically for compatibility with LNG.
- 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 NG301

Body ..... Brass ASTM B16 C36000  
 Spring ..... Stainless Steel 302 ASTM A313  
 Plug ..... Brass ASTM B16 C36000  
 Ball ..... Stainless Steel 316

### 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

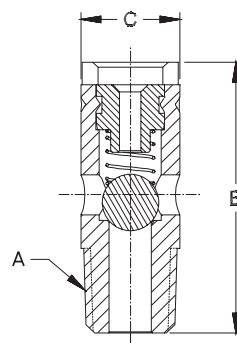
Body ..... Stainless Steel 304 ASTM276  
 Spring ..... Stainless Steel 302 ASTM A313  
 Gasket ..... Copper ASTM B152 UNS C11000  
 Poppet ..... Brass 360 FC (UNS C36000 PER ASTM B16)  
 Seat Disc ..... UHMWPE (ASTM D4020)



NG304



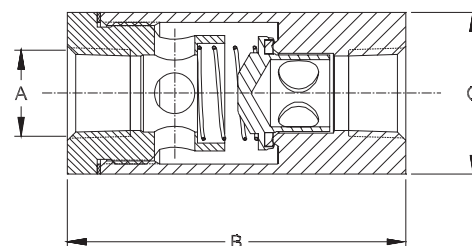
NG304SSA



NG301



NG301



NG304

### Ordering Information

| Part Number | Body Material   | Connection (A)       | B     | C         | Weight Lbs | Silver Plated End Piece |
|-------------|-----------------|----------------------|-------|-----------|------------|-------------------------|
| NG301       | Brass           | Threaded MNPT F 1/2" | 1.200 | .438      | 0.01       | N/A                     |
| NG304       |                 | Threaded FNPT F 1/2" | 3.135 |           | 1.25       |                         |
| NG304SSA    | Stainless Steel | M36x2 Male           | 3.346 | 1.5 (Hex) | 1.10       | Yes                     |
| NG304SSB    |                 | M30x1.5 Male         | 3.346 |           |            |                         |
| NG304SSC    |                 | 1/2"-14 NPT Female   | 2.953 |           |            |                         |
| NG304SSAP   |                 | M36x2 Male           | 3.346 |           |            |                         |
| NG304SSBP   |                 | M30x1.5 Male         | 3.346 |           |            |                         |
| NG304SSCP   |                 | 1/2"-14 NPT Female   | 2.953 |           |            |                         |

# 50 GPM LNG Fueling Nozzle

## CryoMac® 3

### Application

The CryoMac 3 is a high technology LNG fueling nozzle, unique with safety stop to guarantee a safe operation and prevents safety stop from resetting prematurely during nozzle removal.

### Features

- Fluid Compatibility: LNG, Methane and LN2
- Maximum Pressure: 500 psig/34.5 barg
- Burst Pressure: greater than 1,500 psig/103.5 barg
- Rated Flow: 50 GPM @ 250 psig (LNG)
- Nozzle Weight: 10 lbs
- Port Size: 1" Male SAE 37 degree flare (SAE J514) (1 5/16 -12 thd.)
- Operating Temperature: -320°F to +140°F / -195°C to 60°C
- 3rd Party KIWA Testing in accordance with ISO 12617
- 100% pressure tested
- Improved positive "safety stop" does not release until triggered after venting trapped gas and before disconnecting the nozzle for added safety and operator protection
- Improved longer service life of the receptacle end seal
- Reconfigured to be more compatible with Macro and other receptacle designs
- Ball bearing design "guides and locks" the nozzle in place during fueling for easier connections
- Designed to prevent freezing onto the receptacle utilizing non-metallic bearings, air gaps and insulation
- Easy access for maintenance on the receptacle end seal, poppet assembly and seat



CryoMac3

## CERTIFIED

according to ISO 12617 approved product as specified by ISO 16924  
Natural gas fueling stations – LNG stations for fueling vehicles

### Materials

|                   |                                |
|-------------------|--------------------------------|
| Seat .....        | UHMW                           |
| Poppet Body ..... | Brass                          |
| Spring .....      | Stainless Steel or Spring Wire |
| Probe .....       | Stainless Steel                |
| Tube .....        | Stainless Steel                |
| Fitting .....     | Stainless Steel                |
| Housing .....     | Aluminum                       |



ATEX

**CE Ex II 2G c IIA T3 X**

Designed, tested and marks in accordance  
with ATEX directive 2014/34/EU

### Ordering Information

| Old Part Number | New Part Number | Inlet Connection          | Handle   |
|-----------------|-----------------|---------------------------|----------|
| CryoMac3-50M    | CryoMac3-50M    | SAE J514 ( 37° Flare JIC) | Standard |
| CryoMac3-50M-S  | CryoMac3-50M-S  | SAE J514 ( 37° Flare JIC) | Short    |

# LNG Female Vent Coupler

## FQD10 Series

### Application

The most popular Female Vent Coupler for dispensers of LNG. Safe and easy operation.

### Features

- Over 100,000 in service worldwide
- LNG vent/fill connection (male). Handles both LNG Vent Gas and LNG Liquid
- Max internal pressure 300 psig /20.7 barg (while fueling)
- Max system pressure 550 psig /38 barg (static)
- Temperature range -350°F to 150°F ( -212°C to 65°C).
- 100% pressure tested

### Materials

Female Housing ..... Stainless Steel 316L  
Seal Retainer..... Stainless Steel 303  
Seal ASSY..... TFE/Viton  
Seal ..... TFE  
Poppet..... Stainless Steel 303  
Seal Poppet..... PCTFE  
Spring ..... Stainless Steel 301/302



**FQD100602N**

### Ordering Information

| Old Part Number | New Part Number | Inlet Connection                                     |
|-----------------|-----------------|------------------------------------------------------|
| 11175           | FQD100604N      | 90° Tubing, 5/8" 45° SAE Fitting (CGA 440)           |
| 13775           | FQD100602N      | 5/8" 45° SAE Fitting (CGA 440) Short Straight Handle |
| 13785           | FQD100603N      | 5/8" 45° SAE Fitting (CGA 440) Long Straight Handle  |

# LNG Hoses Brass Connections

## CHB Series

### Application

The CHB Series are cryogenic transfer hoses with brass nuts used in the venting line of the LNG dispensers. The flexibility and resistance of this cryogenic hoses guarantee a safe operation and easy handling during the refilling of liquid cylinders.

### Features

- Stainless steel corrugated inner core, a 304 stainless steel single braid.
- Armor cover protection.
- Max Working Pressure: 1100 psi (76 bar) for ½" hoses.
- Minimum Operating Temperature -454°F (-270°C)
- Serial number included
- 100% pressure tested

### Materials

Core tube..... 321/316 Stainless Steel  
 Exterior Braid..... 304 Stainless Steel  
 Armor..... 304 Stainless Steel  
 Ferrule, Flare, Tube..... 304L/316 Stainless Steel  
 Nut..... Brass ISO 10806



### Ordering Information

| Old Part Number | New Part Number                   | Size | Length Inches (mts) | Double Armor Cover | Spiral Supporting Spring | End Connections      |
|-----------------|-----------------------------------|------|---------------------|--------------------|--------------------------|----------------------|
| CHB-440-440-48  | <a href="#">CHB-4-440-440-048</a> | ½"   | 48 (120)            | Yes                | No                       | CGA 440 (5% 45° SAE) |
| CHB-440-440-60  | <a href="#">CHB-4-440-440-060</a> |      | 60 (150)            |                    |                          |                      |
| CHB-440-440-72  | <a href="#">CHB-4-440-440-072</a> |      | 72 (180)            |                    |                          |                      |
| CHB-440-440-96  | <a href="#">CHB-4-440-440-096</a> |      | 96 (2.40)           |                    |                          |                      |
| CHB-440-440-120 | <a href="#">CHB-4-440-440-120</a> |      | 120 (3.0)           |                    |                          |                      |
| CHB-440-440-144 | <a href="#">CHB-4-440-440-144</a> |      | 144 (3.60)          |                    |                          |                      |
| CHB-440-440-156 | <a href="#">CHB-4-440-440-156</a> |      | 156 (3.90)          |                    |                          |                      |
| CHB-440-440-180 | <a href="#">CHB-4-440-440-180</a> |      | 180 (4.50)          |                    |                          |                      |
| CHB-440-440-196 | <a href="#">CHB-4-440-440-196</a> |      | 196 (5.0)           |                    |                          |                      |

# LNG Hoses Stainless Steel Connections CHS Series

## Application

The CHS Series are cryogenic transfer hoses with stainless steel nuts used in the LNG dispensers. The flexibility and resistance of this cryogenic hoses guarantee a safe operation and easy handling during the refilling of liquid cylinders. The spiral support spring protects the hoses giving a longer term life.

## Features

- Stainless steel corrugated inner core, a 304 stainless steel single braid.
- Armor cover protection.
- Max Working Pressure: 1100 psi (76 bar) for ½" hoses.
- Max Working Pressure: 450 psi (31.0 bar) for 1" hoses.
- Minimum Operating Temperature -454°F (-270°C)
- Serial number included
- 100% pressure tested

## Materials

Core tube.....321/316 Stainless Steel  
Exterior Braid.....304 Stainless Steel  
Armor.....304 Stainless Steel  
Ferrule, Flare, Tube.....304L/316 Stainless Steel  
Nut.....304/316 Stainless Steel



**CHS-440-440-072**



## Ordering Information

| Old Part Number   | New Part Number                     | Size | Length Inches<br>(mts) | Double Armor Cover | Spiral Supporting Spring | End Connections           |
|-------------------|-------------------------------------|------|------------------------|--------------------|--------------------------|---------------------------|
| CHS-440-440-24    | <a href="#">CHS-4-440-440-024</a>   | ½"   | 24 (0.60)              | Yes                |                          | CGA 440 (5⁄8 45° SAE)     |
| CHS-440-440-36    | <a href="#">CHS-4-440-440-036</a>   |      | 36 (0.90)              |                    |                          |                           |
| CHS-440-440-48    | <a href="#">CHS-4-440-440-048</a>   |      | 48 (120)               |                    |                          |                           |
| CHS-440-440-60    | <a href="#">CHS-4-440-440-060</a>   |      | 60 (150)               |                    |                          |                           |
| CHS-440-440-72    | <a href="#">CHS-4-440-440-072</a>   |      | 72 (180)               |                    |                          |                           |
| CHS-440-440-96    | <a href="#">CHS-4-440-440-096</a>   |      | 96 (2.40)              |                    |                          |                           |
| CHS-440-440-120   | <a href="#">CHS-4-440-440-120</a>   |      | 120 (3.0)              |                    |                          |                           |
| CHS-440-440-144   | <a href="#">CHS-4-440-440-144</a>   |      | 144 (3.60)             |                    |                          |                           |
| CHS-440-440-197   | <a href="#">CHS-4-440-440-197</a>   |      | 197 (5.0)              |                    |                          |                           |
| CHS-440-440-240   | <a href="#">CHS-4-440-440-240</a>   |      | 240 (6.0)              |                    |                          |                           |
| 11910-072         | <a href="#">CHS-8-514-514-072</a>   | 1"   | 72 (180)               |                    | No                       | SAE J514 ( 37° Flare JIC) |
| 11910-120         | <a href="#">CHS-8-514-514-120</a>   |      | 120 (3.0)              |                    |                          |                           |
| 11910-144         | <a href="#">CHS-8-514-514-144</a>   |      | 144 (3.60)             |                    |                          |                           |
| 11910-156         | <a href="#">CHS-8-514-514-156</a>   |      | 156 (3.90)             |                    |                          |                           |
| 11910-180         | <a href="#">CHS-8-514-514-180</a>   |      | 180 (4.50)             |                    |                          |                           |
| 11910-197         | <a href="#">CHS-8-514-514-197</a>   |      | 197 (5.0)              |                    |                          |                           |
| 11910-240         | <a href="#">CHS-8-514-514-240X</a>  |      | 240 (6.0)              |                    |                          |                           |
| 14340-120         | <a href="#">CHS-8-514-514-072X</a>  |      | 120 (3.0)              |                    |                          |                           |
| 14340-144         | <a href="#">CHS-8-514-514-120X</a>  |      | 144 (3.60)             |                    |                          |                           |
| 14340-156         | <a href="#">CHS-8-514-514-144X</a>  |      | 156 (3.90)             |                    |                          |                           |
| 14340-180         | <a href="#">CHS-8-514-514-180X</a>  |      | 180 (4.50)             |                    |                          |                           |
| 14340-197         | <a href="#">CHS-8-514-514-197X</a>  |      | 197 (5.0)              |                    |                          |                           |
| 14340-240         | <a href="#">CHS-8-514-514-240X</a>  |      | 240 (6.0)              |                    |                          |                           |
| 14340-120 Special | <a href="#">CHS-8-514-514-072XS</a> |      | 120 (3.0)              |                    | Yes                      |                           |
| 14340-144 Special | <a href="#">CHS-8-514-514-120XS</a> |      | 144 (3.60)             |                    |                          |                           |

# LNG Vent/Fill Breakaway

## VFL Series

### Application

The VFL Series are LNG vent/fill breakaway are designed to prevent pull away accidents, protect fill station/dispenser and eliminate unwanted product release.

### Features

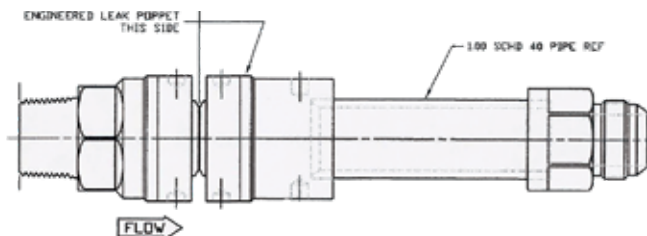
- Max internal pressure 300 psig/20.7 barg (while fueling)
- Max system pressure 550 psig/38 barg (static)
- Temperature range -340°F to 140°F ( -206°C to 60°C).
- Fill Breakaway Flow Capacity 50 GPM
- Vent Breakaway Flow Capacity 10 GPM
- 100% pressure tested



**VFL-500202NA-10**

### Materials

|                    |                                |
|--------------------|--------------------------------|
| Housing .....      | 304 Stainless Steel ASME SA479 |
| Housing .....      | Brass ASTM B16                 |
| Poppet .....       | Brass ASTM B16                 |
| Spring .....       | 302 Stainless Steel            |
| Guide .....        | Brass ASTM B16                 |
| Hose Adapter ..... | 304 Stainless Steel ASME SA479 |



### Ordering Information

| Old Part Number | New Part Number  | Inlet Connection     | Outlet Connection         | Sensor Plug | Length | Angled |
|-----------------|------------------|----------------------|---------------------------|-------------|--------|--------|
| 14370           | VFL-500101NA-6   | CGA 440 (¾" 45° SAE) | ¾" -14 NPTF               | Yes         | 6"     | No     |
| 14390-4         | VFL-500202AN-7   | 1.00-11.5 MNTP       | SAE J514 ( 37° Flare JIC) | No          | 7.25"  | Yes    |
| 14390-8         | VFL-500203AN-7   |                      | M36x2.0                   | No          |        |        |
| 13740-4         | VFL-500202AA-7   |                      | SAE J514 ( 37° Flare JIC) | Yes         |        |        |
|                 | VFL-500203AA-7   |                      | M36x2.0                   | Yes         |        |        |
| 14390-2         | VFL-500202AN-10  |                      | SAE J514 ( 37° Flare JIC) | No          | 10.50" |        |
|                 | VFL-500203AN-10  |                      | M36x2.0                   | No          |        |        |
| 13740-2         | VFL-500202AA-10  |                      | SAE J514 ( 37° Flare JIC) | Yes         |        |        |
| 13740-6         | VFL-500203AA-10S |                      | M36x2.0                   | Yes         |        |        |
| 14585           | VFL-500202AN-10  |                      | SAE J514 ( 37° Flare JIC) | No          |        |        |
| 14390-5         | VFL-500202NN-10  |                      |                           | No          |        |        |
| 13740-5         | VFL-500202NA-10  |                      |                           | Yes         | No     |        |

# Stainless Steel Globe Valves for Cryogenic Service

## SKL 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 shut-off 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 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

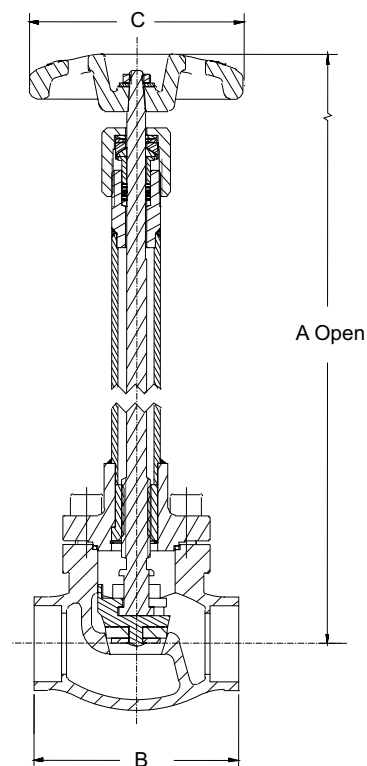
Body ..... Stainless Steel ASTM A351 CF8  
 Bonnet and Tube Stainless Steel ASTM A351 CF8/ASTM A479 type 304  
 Stem .....Stainless Steel ASTM A582 S30300  
 Spring.....Stainless Steel ASTM A313 S30200  
 Packing..... Live-loaded PTFE Packing  
 Gasket.....PTFE 25% Glass Fill  
 Seat Disc.....PCTFE ASTM 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



SK Advantage



TPED and 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   | ¼"            | 8       | Socket Weld | 14.6       | 370    | 2.7        | 68     | 4          | 102    | 1.7  | 1.47 | 3.76       | 1.70      |
| SKL9404SW   | ½"            | 15      |             |            |        | 3.6        | 92     |            |        | 5    | 4.30 | 3.47       | 1.68      |
| SKL9406SW   | ¾"            | 20      |             |            |        |            |        |            |        | 9.4  | 8.10 | 5.17       | 2.34      |
| SKL9408SW   | 1"            | 25      |             |            |        | 14         | 12.10  |            |        | 5.34 | 2.42 |            |           |
| SKL9412SW   | 1½"           | 40      |             | 4.7        | 121    | 5          | 127    | 28.3       | 24.5   | 9.48 | 4.30 |            |           |
| SKL9416SW   | 2"            | 50      |             | 5.7        | 146    |            |        | 53         | 45.8   | 16.3 | 7.39 |            |           |
| SKL9402BW   | ¼"            | 8       | Butt Weld   | 14.6       | 370    | 2.7        | 68     | 4          | 102    | 1.7  | 1.47 | 3.76       | 1.70      |
| SKL9404BW   | ½"            | 15      |             |            |        | 3.6        | 92     |            |        | 5    | 4.30 | 3.47       | 1.68      |
| SKL9406BW   | ¾"            | 20      |             |            |        |            |        |            |        | 9.4  | 8.10 | 5.17       | 2.34      |
| SKL9408BW   | 1"            | 25      |             |            |        | 14         | 12.10  |            |        | 5.34 | 2.42 |            |           |
| SKL9412BW   | 1½"           | 40      |             | 4.7        | 121    | 5          | 127    | 28.3       | 24.5   | 9.48 | 4.30 |            |           |
| SKL9416BW   | 2"            | 50      |             | 5.7        | 146    |            |        | 53         | 45.80  | 16.3 | 7.39 |            |           |

SW = Socket Weld; BW = Butt Weld



# Stainless Steel Globe Valves for Cryogenic Service

## SKM Advantage Series Medium Stem

### Application

The SK Advantage Series of Stainless Steel Globe Valves are designed for handling cryogenic liquids through trailer, bulk vessels and piping configurations. Ideal service medium includes Oxygen, Nitrogen, Krypton, Carbon Dioxide, Dinitrogen Monoxide, Carbon Oxide, Methane, Ethane, Ethylene, Argon and LNG. Our Kold-Seal stem seal technology assures a tight seal preventing cryogen gas loss. The conical seat design allows exceptional flow, positive shut-off 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 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

TPED and PED Certified



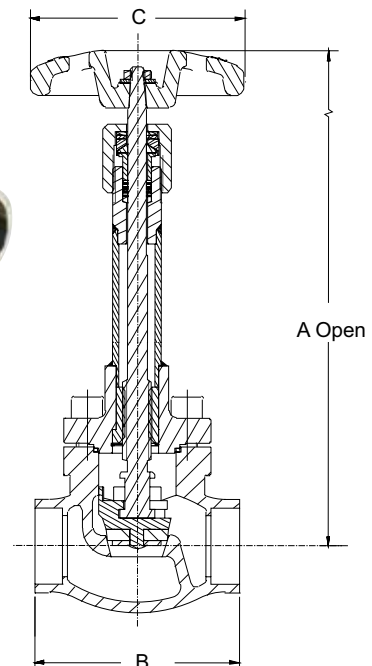
### Ordering Information

| Part Number | Size (Inches) | Size dn | Connection  | A (Inches) | A (mm) | B (Inches) | B (mm) | C (Inches) | C (mm) | Cv   | Kv    | Weight lbs | Weight kg |       |      |      |      |
|-------------|---------------|---------|-------------|------------|--------|------------|--------|------------|--------|------|-------|------------|-----------|-------|------|------|------|
| SKM9402SW   | ¼"            | 8       | Socket Weld | 10.6       | 270    | 2.7        | 68     | 4          | 102    | 1.7  | 1.47  | 3.31       | 1.50      |       |      |      |      |
| SKM9404SW   | ½"            | 15      |             |            |        |            |        |            |        | 5.0  | 4.30  | 3.29       | 1.48      |       |      |      |      |
| SKM9406SW   | ¾"            | 20      |             |            |        |            |        |            |        | 9.4  | 8.10  | 4.86       | 2.20      |       |      |      |      |
| SKM9408SW   | 1"            | 25      |             |            |        | 14.0       | 12.10  |            |        |      |       |            |           | 5.02  | 2.27 |      |      |
| SKM9412SW   | 1½"           | 40      |             |            |        | 4.7        | 121    | 5          | 127    | 28.3 | 24.50 | 8.92       | 4.04      |       |      |      |      |
| SKM9416SW   | 2"            | 50      |             |            |        |            |        |            |        | 53.0 | 45.80 | 15.30      | 6.94      |       |      |      |      |
| SKM9402BW   | ¼"            | 8       | Butt Weld   |            |        | 10.6       | 270    |            |        | 2.7  | 68    | 4          | 102       | 1.7   | 1.47 | 3.31 | 1.50 |
| SKM9404BW   | ½"            | 15      |             |            |        |            |        |            |        |      |       |            |           | 5.0   | 4.30 | 3.29 | 1.48 |
| SKM9406BW   | ¾"            | 20      |             |            |        |            |        | 9.4        | 8.10   |      |       |            |           | 4.86  | 2.20 |      |      |
| SKM9408BW   | 1"            | 25      |             |            |        |            |        |            |        | 14.0 | 12.10 |            |           |       |      | 5.02 | 2.27 |
| SKM9412BW   | 1½"           | 40      |             |            |        |            |        | 4.7        | 121    | 5    | 127   | 28.3       | 24.50     | 8.92  | 4.04 |      |      |
| SKM9416BW   | 2"            | 50      |             |            |        |            |        |            |        |      |       | 53.0       | 45.80     | 15.30 | 6.94 |      |      |

SW = Socket Weld; BW = Butt Weld



SKM9406BW



# Stainless Steel Globe Valves for Cryogenic Service

## SKS Advantage Series Short Stem

### Application

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

### Features

- Superior Flow: Provides high Cv for rapid and reliable loading and unloading.
- Designed with the unique Kold-Seal™.
- Conical PCTFE Seat: provides exceptional flow; bubble-tight seal; less chance of debris trapped in the seat and longer service life.
- Connections: Socket Weld and 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 and 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

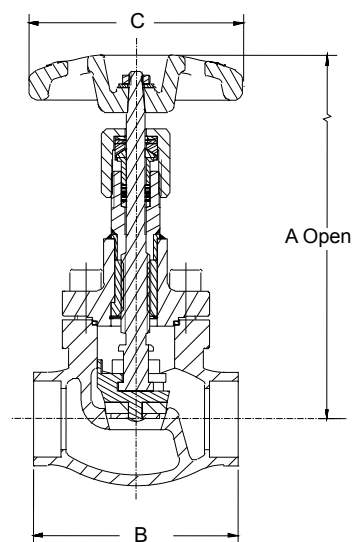
### Quality / Facility Features

- 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 dn | 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      |             |            |        | 3.6        | 92     |            |        | 5    | 4.30  | 2.62       | 1.19      |
| SKS9406SW   | ¾"          | 20      |             |            |        |            |        |            |        | 9.4  | 8.10  | 4.21       | 1.91      |
| SKS9408SW   | 1"          | 25      |             |            |        |            |        |            |        | 14   | 12.10 | 4.10       | 1.86      |
| SKS9412SW   | 1½"         | 40      |             | 7.0        | 178    | 4.7        | 120    | 5          | 127    | 28.3 | 24.50 | 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      |             |            |        | 3.6        | 92     |            |        | 5    | 4.30  | 2.62       | 1.19      |
| SKS9406BW   | ¾"          | 20      |             |            |        |            |        |            |        | 9.4  | 8.10  | 4.21       | 1.91      |
| SKS9408BW   | 1"          | 25      |             |            |        |            |        |            |        | 14   | 12.10 | 4.10       | 1.86      |
| SKS9412BW   | 1½"         | 40      |             | 7.0        | 178    | 4.7        | 120    | 5          | 127    | 28.3 | 24.50 | 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.

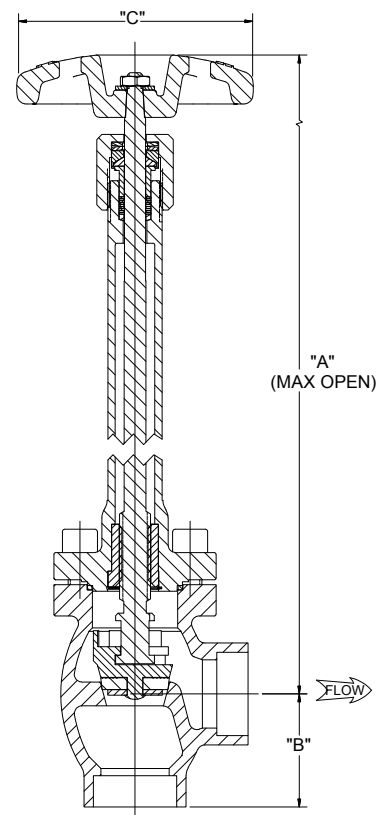
### Features

- 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 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
- Ergonomic 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    | 1.81       | 46     | 4          | 102    | 5.41       | 2.45      |
| SKA9412LSW  | 1½"         | 40      |             |            |        | 2          | 51     | 5          | 127    | 8.85       | 4.01      |
| SKA9408MSW  | 1"          | 25      |             | 10.6       | 270    | 1.81       | 46     | 4          | 102    | 4.8        | 2.17      |
| SKA9412MSW  | 1½"         | 40      |             |            |        | 2          | 51     | 5          | 127    | 8.2        | 3.72      |

# Cryogenic Fill Manifold

## CFM, AFM, PFM and SFM Series

### Application

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

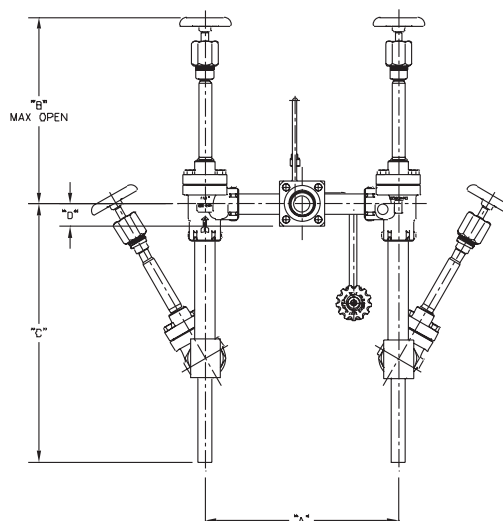
Ideal for all cryogenic liquids including Liquefied Nitrogen, Oxygen and Argon. Safe and reliably used in LNG Systems. In addition RegO® can custom design configurations that are welded and brazed in a factory setting.

### Features

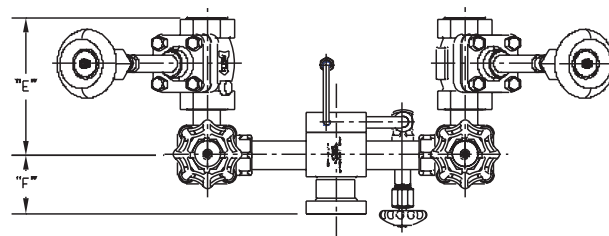
- Unitized construction eliminates leaks and provides easy fit-up to tank piping
- Modules commonly include top and bottom fill valves, fill check with strainer and hose bleed and relief valve
- Many options are available which can include specific end user dimensions and specifications
- Our valve products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

### Materials

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



**SFM-4D**



### Ordering Information

| Part Number | Size Inches | Size mm | Bonnet Type | Pipe Material   | Valve Material  | A Inches | B Inches | C Inches | D Inches | E Inches | F Inches |
|-------------|-------------|---------|-------------|-----------------|-----------------|----------|----------|----------|----------|----------|----------|
| SFM00004D   | 1½"         | 40      | Bolted      | Stainless Steel | Stainless Steel | 15.00    | 14.63    | 20       | 1.75     | 2.54     | 3.4      |
| SFM00004E   |             |         |             |                 |                 |          |          | 9.5      |          | 2.5      |          |

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

150# ANSI Class (275 psig Cold Working Pressure)

300# ANSI Class (720 psig Cold Working Pressure)

#### Stainless Body • Butt Weld, Socket Weld, Threaded Ends

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

\* Second number indicates valve for 300# part number.

150# ANSI Class (275 psig Cold Working Pressure)

300# ANSI Class (720 psig Cold Working Pressure)

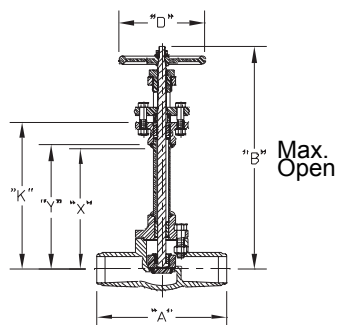


210 Series



# Stainless Steel Globe Valve for Cryogenic Service

## 210 Series



### Butt Weld Ends

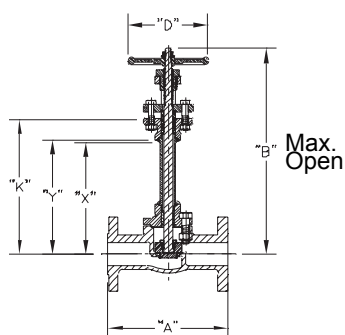
| Size | "A"  | "B"  | "D" | "K"  | "X"  | "Y"  |
|------|------|------|-----|------|------|------|
| 2"   | 10½" | 22¼" | 7"  | 15"  | 12¾" | 13⅛" |
| 3"   | 12"  | 30½" | 10" | 21½" | 19⅛" | 19⅝" |
| 4"   | 13½" | 36¾" | 12" | 24¼" | 21⅛" | 22"  |

Δ For SCH. 40 A=12½"

Θ For SCH. 40 A=14"

\* Unless otherwise specified, SCH 10 weld ends are supplied

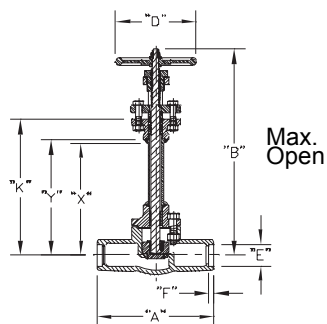
• Special B,K,X and Y dimensions available.



### Raised Face Flange Ends\*

| Size | "A" 150# | "A" 300# | "B"  | "D" | "K"  | "X"  | "Y"  |
|------|----------|----------|------|-----|------|------|------|
| 1"   | 6½"      | 8"       | 18⅝" | 5"  | 12¾" | 11⅛" | 11⅝" |
| 2"   | 8"       | 10½"     | 22¼" | 7"  | 15"  | 12¾" | 13⅛" |
| 3"   | 9½"      | 12½"     | 30½" | 10" | 21½" | 19⅛" | 19⅝" |
| 4"   | 11½"     | 14"      | 36¾" | 12" | 24¼" | 21⅛" | 22"  |

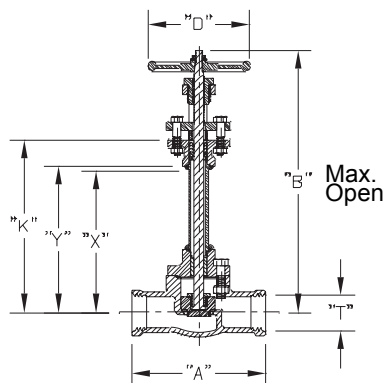
• Special B,K,X and Y dimensions available.



### Socket Weld Ends

| Size | "A"  | "B"  | "D" | "E"   | "F" | "K"  | "X"  | "Y"  |
|------|------|------|-----|-------|-----|------|------|------|
| ½"   | 5"   | 18⅝" | 5"  | .855  | ⅜"  | 12¾" | 11⅛" | 11⅝" |
| ¾"   |      |      |     | 1.065 | ½"  |      |      |      |
| 1"   |      |      |     | 1.330 | ½"  |      |      |      |
| 1½"  | 10¼" | 22¼" | 7"  | 1.915 | ½"  | 15"  | 12¾" | 13⅛" |

• Special B,K,X and Y dimensions available.



### Threaded Ends

| Size | "T" - NPT | "A" | "B"  | "D" | "K"  | "X"  | "Y"  |
|------|-----------|-----|------|-----|------|------|------|
| ½"   | ½"-14     | 5"  | 18⅝" | 5"  | 12¾" | 11⅛" | 11⅝" |
| ¾"   | ¾"-14     |     |      |     |      |      |      |
| 1"   | 1"-11½"   | 5¾" |      |     |      |      |      |

• Special B,K,X and Y dimensions available.

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

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

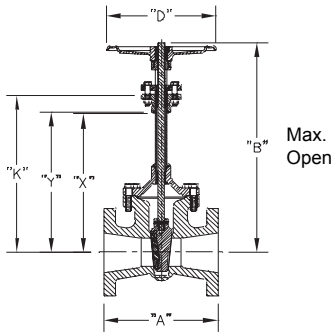
### Ordering Information Stainless Body • Butt Weld, Socket Weld, Threaded Ends

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

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

# Stainless Steel Gate Valve for Cryogenic Service

## 110 Series

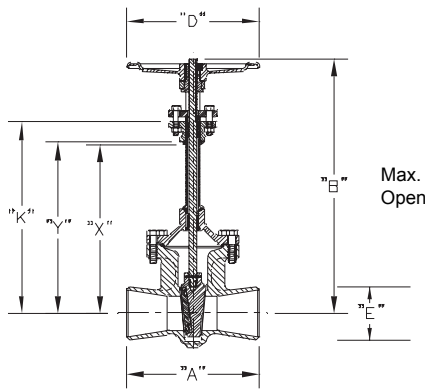


### Raised Face Flange Ends\*

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

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

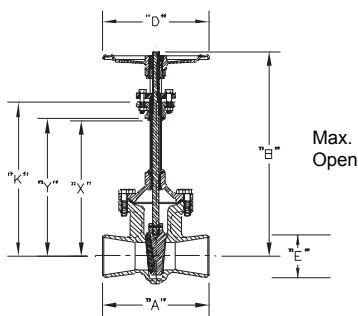
• Special B,K,X and Y Dimensions Available



### Socket Weld Ends

| Size   | "A" 150# | "A" 300# | "B"     | "D"    | "E"   | "F"  | "K"      | "X"      | "Y"     |
|--------|----------|----------|---------|--------|-------|------|----------|----------|---------|
| 1/2"   | 3 3/4"   | 3 3/4"   | 17 3/4" | 4 1/2" | .855  | 3/8" | 12 3/4"  | 11 1/16" | 11 3/8" |
| 3/4"   |          |          |         |        | 1.065 | 1/2" |          |          |         |
| 1"     | 3 1/2"   | 4"       |         |        | 1.330 |      |          |          |         |
| 1 1/2" | 4 5/8"   | 5"       | 21 1/8" | 7"     | 1.915 | 14"  | 12 5/16" | 12 5/8"  |         |
| 2"     | 8 1/2"   | N/A      |         |        | 2.406 |      |          |          | 5/8"    |

• Special B,K,X and Y Dimensions Available



### Butt Weld Ends

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

• Special B,K,X and Y Dimensions Available

• Unless otherwise specified, Schedule 10 weld ends are supplied

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.

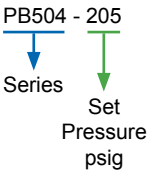
Features

- 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

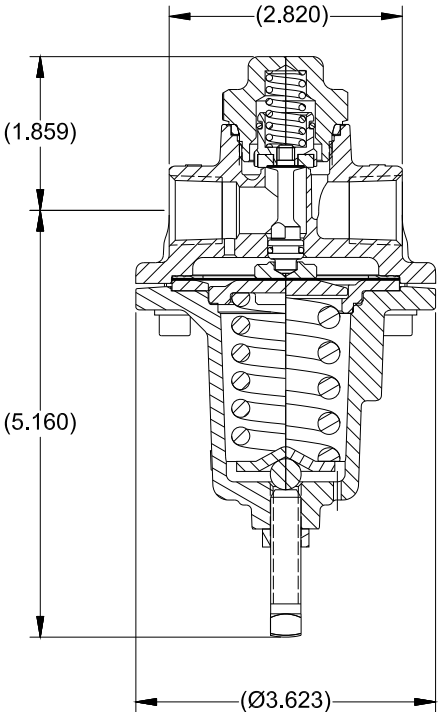
Materials

|                       |                 |
|-----------------------|-----------------|
| Body .....            | Brass           |
| Bonnet .....          | Brass           |
| Seat .....            | PTFE            |
| Springs .....         | Stainless Steel |
| Diaphragm Gasket..... | PTFE            |
| Backcap Seal.....     | PTFE            |
| Diaphragm.....        | Bronze          |
| Inlet Filter.....     | Monel           |

PB504 Series part number configuration



PB504



Ordering Information

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

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

# Heavy-duty Gas Line Regulator

## 1780 Series

### Application

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

### Features

- Maintains a steady downstream pressure across a range of inlet pressures commonly provided by a cryogenic bulk tank
- Large seat and diaphragm areas provide high capacity with sensitive control of delivery pressure with low falloff
- Two 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 for Oxygen service per CGA G-4.1
- 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 and 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.**

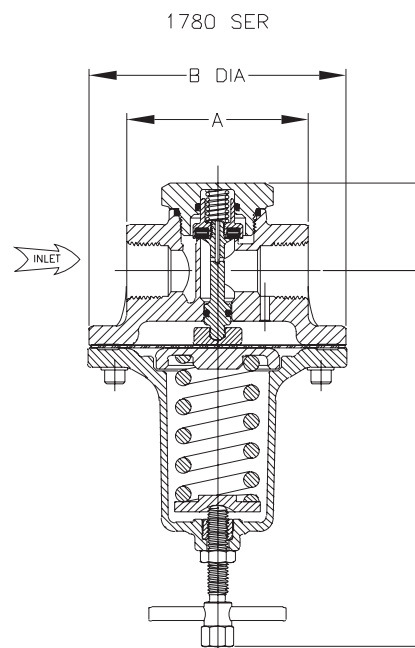
### Ordering Information

| Part Number | Delivery Pressure Range       | Pressure Gauge* |       | Inlet and Outlet (FNPT.) | Dimensions |       |       |       | Cv  |
|-------------|-------------------------------|-----------------|-------|--------------------------|------------|-------|-------|-------|-----|
|             |                               | Range (psig)    | P/N   |                          | "A"        | "B"   | "C"   | "D"   |     |
| 1784A       | 5-55 psig (0.3-3.8 barg)      | 1-100           | 1286  | ½"                       | 2.82"      | 3.62" | 1.38" | 5.47" | 3.1 |
| 1784B       | 40-110 psig (2.8-7.6 barg)    | 1-200           | S1679 |                          |            |       |       |       |     |
| 1784C       | 100-200 psig (6.9-13.8 barg)  | 1-400           | 15578 |                          |            |       |       |       |     |
| 1784D       | 175-300 psig (12.1-20.7 barg) |                 |       |                          |            |       |       |       |     |
| 1786A       | 5-55 psig (0.3-3.8 barg)      | 1-100           | 1286  | ¾"                       | 3.31"      | 4.69" | 1.60" | 6.84" | 4.8 |
| 1786B       | 40-110 psig (2.8-7.6 barg)    | 1-200           | S1679 |                          |            |       |       |       |     |
| 1786C       | 100-200 psig (6.9-13.8 barg)  | 1-400           | 15578 |                          |            |       |       |       |     |
| 1786D       | 175-275 psig (12.1-19.0 barg) |                 |       |                          |            |       |       |       |     |
| 1788A       | 5-55 psig (0.3-3.8 barg)      | 1-100           | 1286  | 1"                       | 3.31"      | 4.69" | 1.60" | 6.84" | 5.5 |
| 1788B       | 40-110 psig (2.8-7.6 barg)    | 1-200           | S1679 |                          |            |       |       |       |     |
| 1788C       | 100-200 psig (6.9-13.8 barg)  | 1-400           | 15578 |                          |            |       |       |       |     |
| 1788D       | 175-275 psig (12.1-19.0 barg) |                 |       |                          |            |       |       |       |     |

\*Regulator sold without gauge. Order gauge separately.



**1780 Series**



# 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 90° configuration provides relief of gases eliminating direct flow through the spring
- The 90° 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 and CRN Certified



## Materials

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

### Certifications

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

## Ordering Information

Fill in the blanks with options below.

Example: AR4106A300

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

Set-point 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

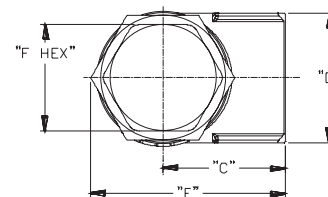
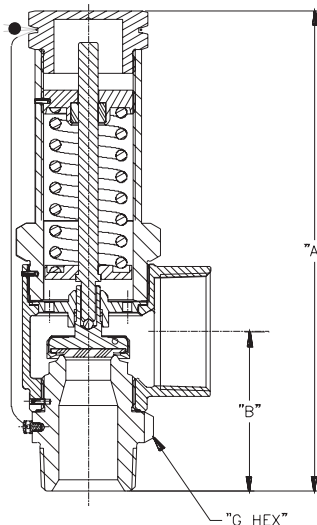
| Part Number | Inlet Inches (mm) | Outlet Inches (mm) | Ends       | A Inches (mm)  | B Inches (mm) | C Inches (mm) | D Inches (mm) | E Inches (mm) | Set Pressure | ASME Flow Capacity (Air) at 110% Set Pressure | Weight Lbs (Kg) |
|-------------|-------------------|--------------------|------------|----------------|---------------|---------------|---------------|---------------|--------------|-----------------------------------------------|-----------------|
| AR4104A     | ½"                | 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     | (15)              |                    |            |                |               |               |               |               | 17.23 barg*  | 690 m³/hr                                     |                 |
| AR4106A     | ¾"                |                    | 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                                      |                 |
| AR4106B     | (20)              |                    |            |                |               |               |               |               | 17.23 barg*  | 766 m³/hr                                     |                 |
| AR4108A     | 1"                | 1½"                | Thread NPT | 9.64" (244.86) | 3.20" (81.28) | 2.45" (62.23) | 2.60" (66.04) | 3.89" (98.81) | 250 psig*    | 1,003 SCFM                                    | 3.75 (1.70)     |
| AR4108B     | (25)              | (32)               |            |                |               |               |               |               | 17.23 barg*  | 1704 m³/hr                                    |                 |
| AR4112A     | 1½"               | 2"                 | Thread NPT |                |               |               |               |               | 250 psig*    | 2,277 SCFM                                    | 8.00 (3.63)     |
| AR4112B     | (40)              | (50)               |            |                |               |               |               |               | 17.23 barg*  | 3869 m³/hr                                    |                 |

\*Custom psig and barg settings are available

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



AR4100 Series



### Air Capacity= m x P

Where:

m = Slope Value

P = Pressure, Absolute @10% overpressure.

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

m = 1.4

P = 80 psig

Air Capacity= 1.4 x [(80psig 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, 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 BVPV Code Section VIII
- The 90° configuration provides relief of gases eliminating direct flow through the spring
- The 90° 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 and ASME Certified

## Materials

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

## Ordering Information

Fill in the blanks with options below.

**Example: AR5106A300**

AR 5106 A 300  
 Angle Size Cert Set  
 Relief Requirements and Pressure Pressure  
 Unit  
 Set Pressure Size  
 A/N - psig 04=½"  
 B - barg 06=¾"  
 08=1"  
 12=1½"

Set-point tolerance is  $\pm 3\%$  of the set pressure or  $\pm 2$  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

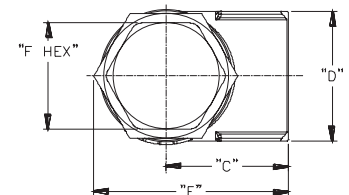
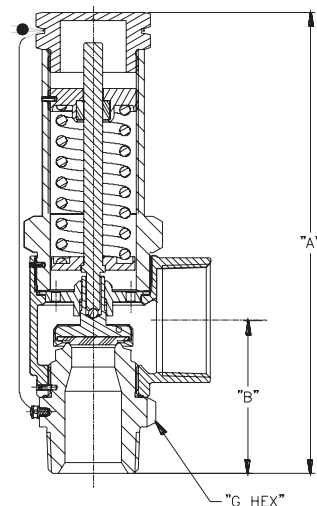
| Part Number | Inlet Inches (mm) | Outlet Inches (mm) | Ends        | A Inches (mm)  | B Inches (mm) | C Inches (mm) | D Inches (mm) | E Inches (mm) | Set Pressure | ASME Flow Capacity (Air) at 110% Set Pressure | Weight Lbs (Kg) |
|-------------|-------------------|--------------------|-------------|----------------|---------------|---------------|------------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

\*Custom psig and barg settings are available

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



## AR5100 Series



**Air Capacity= m x P**

Where:

**m** = Slope Value

**P= Pressure, Absolute @10% overpressure.**

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

 $m = 1.4$ 

**P= 80 psig**

$$\text{Air Capacity} = 1.4 \times [(80\text{psig} \times 1.10) + 14.7]$$

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, whichever is greater.

## Pressure Setting and Flow Data AR Series

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

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

## Application

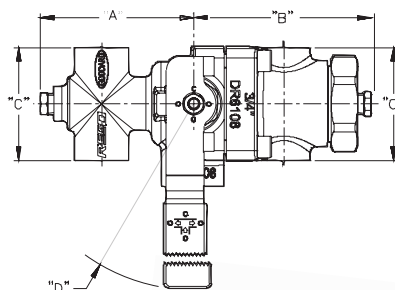
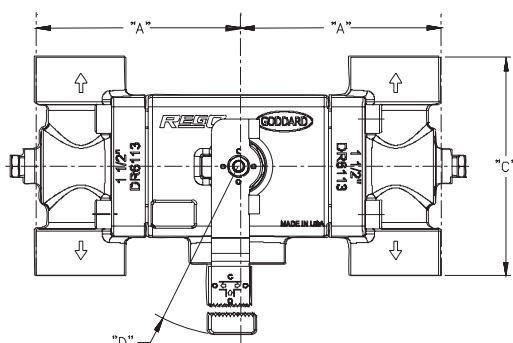
The DR Diverter Valve Series provides a simple solution for the isolation of pressure relief devices during routine change out of a relief valve and burst discs without evacuating the vessel. Excellent for protecting bulk liquid vessels, transport trailers, industrial pipelines, and LNG systems.

## Features

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

## Materials

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



**DR6108**



**DR6112 and 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 <sub>v</sub> |
|-------------|-------------------|--------------------|-----------------|---------------|---------------|---------------|-----------------|--------------------|-----------------|-----------|----------------|
| 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           |
|             |                   |                    |                 |               |               |               |                 |                    |                 | Left      |                |
|             |                   |                    |                 |               |               |               |                 |                    |                 | Both      |                |
| DR6112      | 1 1/2" (38.1)     | 1" (25.4)          |                 | 4.12" (104.6) | -             | 5.70 (145.0)  | R 7.36" (187.1) | 5.770" (146.6)     | 28# (12.70)     | Right     | 18.8           |
|             |                   |                    |                 |               |               |               |                 |                    |                 | Left      |                |
|             |                   |                    |                 |               |               |               |                 |                    |                 | Both      |                |
| DR6113      | 1 1/2" (38.1)     | 1 1/2" (38.1)      |                 |               | -             | 5.70 (145.0)  | R 7.36" (187.1) | 5.770" (146.6)     | 30# (13.60)     | Right     | 22.6           |
|             |                   |                    |                 |               |               |               |                 |                    |                 | Left      |                |
|             |                   |                    |                 |               |               |               |                 |                    |                 | Both      |                |

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

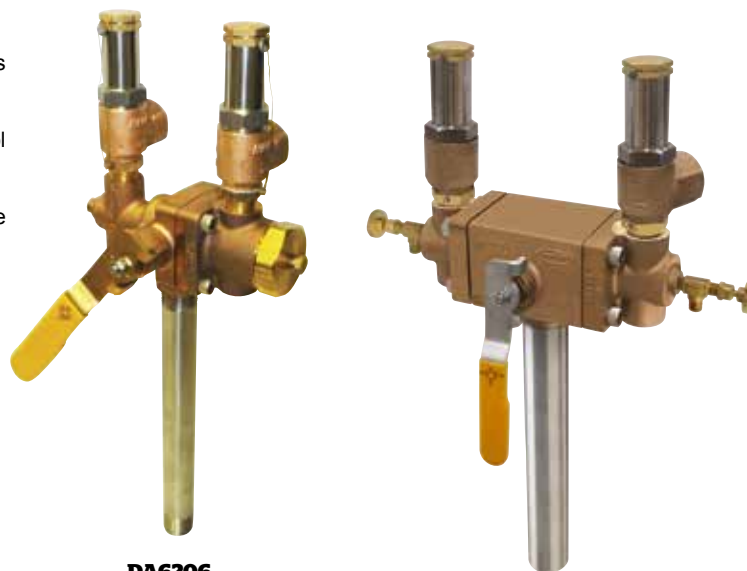
## Application

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



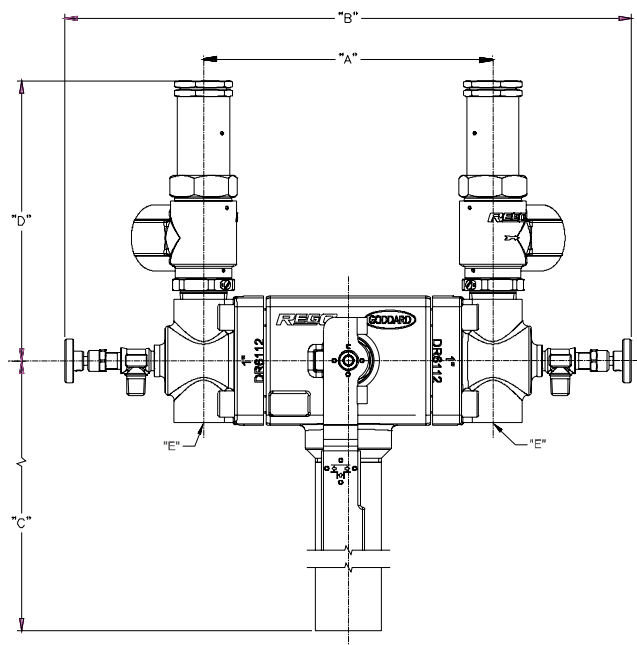
## Features

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



DA6206

DA6208



## Ordering Information

Fill in the blanks with options below.

Example: DA6206A300

| DA                | 6206 | A                 | 300                            |
|-------------------|------|-------------------|--------------------------------|
| Diverter Assembly | Size | Cert Requirements | Set Pressure and Pressure Unit |

### Certifications

A - ASME, TPED, PED

B - ASME, TPED, PED

N - TPED, PED

: - B Version Assembled in Europe

### Set Pressure

A/N - psig

B - barg

### Size

04=1/2"

06=3/4"

08=1"

12=1 1/2"

Set-point tolerance is  $\pm 3\%$  of the set pressure or  $\pm 2$  psig whichever is greater.

## Ordering Information

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

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



**886 Series**

### Ordering Information

#### 886

Stainless Steel Swing Check Valves  
Soft Seat

#### GRAFOIL® Gasket - Hydrogen Service - Socket Weld

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

#### PTFE Gasket - Socket Weld

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

# Stainless Steel Swing Check Valve for Cryogenic Service

## 886 Series

### PTFE Gasket - Buttweld

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

### 886M

Stainless Steel Swing Check Valves - Metal Seat

### PTFE Gasket - Socket Weld

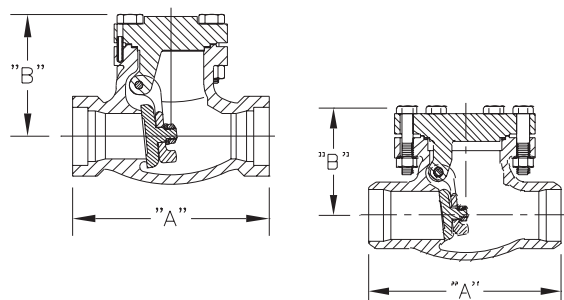
| Part Number   | Valve Size |       | End Connection | Seat  | Pressure Rating | Estimated C <sub>v</sub> | Weight Lbs. |
|---------------|------------|-------|----------------|-------|-----------------|--------------------------|-------------|
|               | Inches     | mm    |                |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

### Butt Weld Ends

| Part Number    | Valve Size |        | End Connection | Seat  | Butt Weld Schedule | Pressure Rating | Estimated Cv | Weight Lbs. |
|----------------|------------|--------|----------------|-------|--------------------|-----------------|--------------|-------------|
|                | Inches     | mm     |                |       |                    |                 |              |             |
| S-0886M-16W3A  | 2"         | 50 mm  | Butt Weld      | Metal | 10                 | 720 (50 barg)   | 99.00        | 17 Lbs.     |
| S-00886M-24W3J | 3"         | 80 mm  |                |       | 40                 |                 | 225.00       | 46 Lbs.     |
| S-00886M-24W3A | 3"         |        |                |       | 10                 |                 | 225.00       |             |
| S-00886M-32WA  | 4"         | 100 mm |                |       | 10                 | 275 (19 barg)   | 475.00       | 95 Lbs.     |
| S-00886M-32W3J | 4"         |        |                |       | 40                 | 720 (50 barg)   | 475.00       |             |

### Butt Weld Ends with GRAFOIL® Gasket for Hydrogen Service

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



### 886

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

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

### 886M

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

| Size | "A"  | "B" | Butt Weld End Schedule |
|------|------|-----|------------------------|
| 1½"  | 6½"  | 4"  | 10                     |
| 2"   | 8"   | 4½" |                        |
| 3"   | 9½"  | 5¾" | 10 and 40              |
| 4"   | 11½" | 8¾" | 10                     |
| 4"   | 14"  | 8¾" | 40                     |

| Size | "A" | "B" | End         | End Dimension  |
|------|-----|-----|-------------|----------------|
| ½"   | 2⅞" | 4¼" | Socket Weld | SCH 10         |
|      |     |     |             | ½" Pipe Socket |

# Strainer

## STR000002

### Application

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



### Features

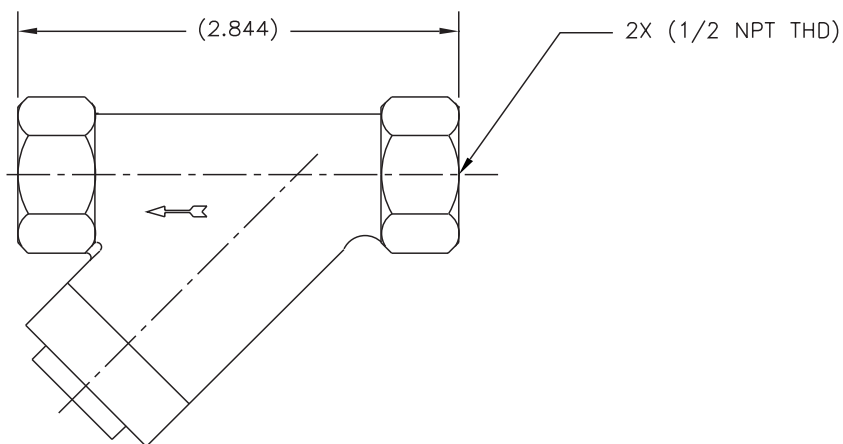
- Temperature range: -320°F to 165°F. ( -196°C to 74°C)
- Maximum working pressure: 600 psig (41,37 barg)
- Connections: FNPT
- Sizes: ½"
- Service: Liquefied and Vaporized Atmospheric Gases and LNG for Trailers, Bulk Tanks, ISO-Containers and Piping Configurations.
- Cleaned for Oxygen service per CGA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



### Materials

Body .....Brass  
 Cap .....Brass  
 Filter Material..... 100 Mesh Monel

**STR000002**



### Ordering Information

| Part Number | Inlet Inches | Outlet Inches | A Inches                        |
|-------------|--------------|---------------|---------------------------------|
| STR000002   | ½"           | ½"            | 2 <sup>1</sup> / <sub>8</sub> " |

# Repair Kits

## Ordering Information

| Kit Number | Part Number                                        | Kit Contents                                                                  |
|------------|----------------------------------------------------|-------------------------------------------------------------------------------|
| ECL502-80R | ECL502-22 to ECL502-175.                           | Diaphragms, Diaphragm liner, Spring guide, ball seat.                         |
| ECL502-80A | ECL502-180 to ECL502-350.                          |                                                                               |
| 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 |                                                                               |
| ECL-80     | ECL22, ECL70, ECL100, ECL140                       | Diaphragm assembly, diaphragm gasket, poppet, retaining ring, spring, washer. |
| ECL-80A    | ECL325                                             |                                                                               |
| RG-80*     | RG22, RG75, RG125, BC125, CBH125                   | Backcap gasket, diaphragm assembly, diaphragm gasket, seat assembly.          |
| RG-80A*    | RG300                                              |                                                                               |
| RG-81**    | RG75A, RG125A, CBC125A & CBH125A                   |                                                                               |
| RG-81A**   | RG300A, CBC300A & CBH300A                          |                                                                               |
| RG-82      | RG Series                                          | Diaphragm assembly, gasket.                                                   |
| 1784NG-80  | 1784NG Series                                      | Diaphragm assembly, seat assembly, gasket.                                    |

\*Good for valves manufactured before Fall 2010

\*\*Good for valves manufactured after Fall 2010

## Ordering Information

| Kit Number     | Part Number                                          | Kit Contents                                                                                                      |
|----------------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| ES8450R        | T9450 Series and T9460 Series                        | Stem assembly (4"), packing, bonnet, handwheel                                                                    |
| BK9450-80      | 9450 Series, 9460 Series                             | Stem assembly, Spring, Jam Ring, Packing V-ring, Packing Gland, O-ring, Washer, Locknut, Gasket.                  |
| BK9450R **     | 9450 Series, 9460 Series                             | Extended Bonnet Assembly Kit, Spring load packing for conversion of extended stem valves and topworks replacement |
| BAK8400R       | BAK8412SE                                            | Stem assembly, handwheel, seat assembly Converts SE Series to New Style S Series                                  |
| T9464-80       | T9450 Series, T9460 Series, 9450 Series, 9460 Series | Complete valve trim assembly including Silver handwheel                                                           |
| T9464-80B      |                                                      | Complete valve trim assembly including Blue handwheel                                                             |
| T9464-80G      |                                                      | Complete valve trim assembly including Green handwheel                                                            |
| T9464-80R      |                                                      | Complete valve trim assembly including Red handwheel                                                              |
| BK-9450-KIT*** | ES8450 Series, ES9450 Series, BK9450 Series          | Extended Bonnet Assembly Kit, Spring load packing for conversion of extended stem valves and topworks replacement |

\*\* Changes to a 6.5" stem.

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

## Ordering Information

| Old kit Part Number | New kit Part Number | Part Number  | Description                                                                     |
|---------------------|---------------------|--------------|---------------------------------------------------------------------------------|
| 13665               | 13665               | MFR50 Series | Aluminum Cap for 50 GPM Male Fueling Receptacle                                 |
| 13685               | 13685               |              | Dock, fueling Nozzle Receptacle                                                 |
| 14237               | 14237               |              | Dock, fueling Nozzle Receptacle closed-end                                      |
| T-3003              | MFR50-Tool          |              | Repair Kit Tool for Male Fueling Receptacle, for 14405, 13990, 14050 and 14005. |
| 14596               | 14596               |              | Seal for Male Fueling Receptacle, for 14405, 13990, 14050 and 14005.            |

## Ordering Information

| Old kit Part Number | New kit Part Number | Part Number   | Description                                                             |
|---------------------|---------------------|---------------|-------------------------------------------------------------------------|
| 11170-1             | MQD10-84            | MDV100 Series | Repair Kit for 11170, 12680, 12895                                      |
| 12524-1             | MQD10-81            |               | Black plastic Cap cover and chain assembly for Male QDV vent            |
| 13675               | MQD10-82            |               | Aluminum anodized blue Cap cover and lanyard assembly for Male QDV vent |
| 13937               | MQD10-83            |               | Male Quick Disconnect Vent Poppets-leakdown                             |

# Repair Kits

## Ordering Information

| Old kit Part Number | New kit Part Number | Part Number | Description                                                                                      |
|---------------------|---------------------|-------------|--------------------------------------------------------------------------------------------------|
| 14103               | CryoMac3-80         | CRYOMAC3    | Sleeve Assembly for CryoMac (sleeve, nose piece, 16 balls, 6 guide pins, and a rubber band)      |
| 14255               | CryoMac3-81         |             | Seat & Seal Assembly for CryoMac                                                                 |
| 14591               | CryoMac3-82         |             | Cryomac Interface Seal replacement (to ensure a correct seal replacement use tool kit p/n 14590) |
| 14576               | CRYOMAC3-90         |             | Macro Retaining Ring for CRYOMAC                                                                 |
| 14566               | CRYOMAC3-91         |             | Macro Hinge Pin for CRYOMAC 3                                                                    |
| 13999               | CRYOMAC3-92         |             | Macro Washer Brass for CRYOMAC 3                                                                 |
| 14574               | CRYOMAC3-93         |             | Spring for CRYOMAC 3                                                                             |
| 14424               | CryoMac3-82B        |             | Cryomac Interface Seal replacement – OBSOLETE VERSION (please use latest release p/n 14591)      |
| 14590               | CryoMac3-TOOL1      |             | Cryomac Seal Repair Tool Kit                                                                     |
| 13960               | CryoMac3-84         |             | Poppet Assembly for CryoMac3                                                                     |
| T-2961              | CryoMac3-TOOL2      |             | Tool for poppet removal for CryoMac                                                              |
| 11157               | CryoMac2-84         | CRYOMAC2    | Poppet Assembly for CryoMac2                                                                     |

## Ordering Information

| Old kit Part Number | New kit Part Number | Part Number  | Description                                                                                                         |
|---------------------|---------------------|--------------|---------------------------------------------------------------------------------------------------------------------|
| 11175-2             | FQD10-80            | FDQ10 Series | Repair Kit for Quick Disconnect Vent Female containing #14535 Poppet Assembly, #11173 Seal and 11093 Seal Assembly. |
| 11093               | FQD10-81            |              | Seal Kit for Quick Disconnect Vent Female                                                                           |
| 14535               | FQD10-82            |              | Poppet Assembly for Quick Disconnect Vent Female                                                                    |
| 11173               | FQD10-81-A          |              | Body Seal for Quick Disconnect Vent Male/Female                                                                     |
| T-1948              | FQD10-TOOL          |              | Vent Thread Ring Tool for Quick Disconnect Vent Female                                                              |

## Ordering Information

| Kit Number     | Part Number                                                                                                       | Kit Contents                                                                                                                                                                                                                                                                                                            |
|----------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SKM009404-80AJ | SKL9402,SKM9402, SKS9402,SKL9404,SKM9404 and SKS9404                                                              | (1) Gasket and (1) Seat Disc Assembly.                                                                                                                                                                                                                                                                                  |
| SKM009408-80AJ | SKL9406,SKM9406, SKS9406,SKL9408,SKM9408, SKS9408 and SKA9408                                                     |                                                                                                                                                                                                                                                                                                                         |
| SKM009412-80AJ | SKL9412, SKM9412, SKS9412 and SKA9412                                                                             |                                                                                                                                                                                                                                                                                                                         |
| SKM009416-80AJ | SKL9416 and SKM9416                                                                                               |                                                                                                                                                                                                                                                                                                                         |
| SKM009408-80J  | SKL9402, SKM9402,SKS9402, SKL9404, SKM9404, SKS9404, SKL9406,SKM9406,SKS9406 SKL9408,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.                                                                                                                                                            |
| SKM009412-80J  | SKL9412, SKM9412, SKS9412 and SKA9412                                                                             |                                                                                                                                                                                                                                                                                                                         |
| SKM009416-80J  | SKL9416 and SKM9416                                                                                               |                                                                                                                                                                                                                                                                                                                         |
| SKS009404-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. |
| SKS009408-KIT  | SKS9406 and SKS9408                                                                                               |                                                                                                                                                                                                                                                                                                                         |
| SKS009412-KIT  | SKS9412                                                                                                           |                                                                                                                                                                                                                                                                                                                         |
| SKM009404-KIT  | SKM9402 and SKM9404                                                                                               | (1) Gasket, (1) Stem, (1) Bonnet & tube Assy, (2) Spring, Belleville,(1) Washer, Live-loading, (5) Packing, Bonnet, (4)Packing, Separator, (1) Bearing, Bonnet, (1) Follower, Gland, (1) Nut, Stem, (1) Ring, Retaining, (1) Packing, Adapter, (1) Nut, Bonnet, (4) Screw, (1) Handwheel, (1) Nut, Hex, and (1) Washer. |
| SKM009408-KIT  | SKM9406 and SKM9408                                                                                               |                                                                                                                                                                                                                                                                                                                         |
| SKM009412-KIT  | SKM9412                                                                                                           |                                                                                                                                                                                                                                                                                                                         |
| SKM009416-KIT  | SKM9416                                                                                                           |                                                                                                                                                                                                                                                                                                                         |
| SKL009404-KIT  | SKL9402 and SKL9404                                                                                               | (1) Gasket, (1) Stem, (1) Bonnet & tube Assy, (2) Spring, Belleville,(1) Washer, Live-loading, (5) Packing, Bonnet, (4)Packing, Separator, (1) Bearing, Bonnet, (1) Follower, Gland, (1) Nut, Stem, (1) Ring, Retaining, (1) Packing, Adapter, (1) Nut, Bonnet, (4) Screw, (1) Handwheel, (1) Nut, Hex, and (1) Washer. |
| SKL009408-KIT  | SKL9406, SKL9408 and SKA9408                                                                                      |                                                                                                                                                                                                                                                                                                                         |
| SKL009412-KIT  | SKL9412 and SKA9412                                                                                               |                                                                                                                                                                                                                                                                                                                         |
| SKL009416-KIT  | SKL9416                                                                                                           |                                                                                                                                                                                                                                                                                                                         |

## Ordering Information

| Kit Number | Part Number              | Kit Contents                          |
|------------|--------------------------|---------------------------------------|
| CFM-2D-82  | SFM Fill Manifold Series | Piston Assy, Spring, Strainer, Gasket |

## Ordering Information

| Kit Number     | Part Number                              | Kit Contents                          |
|----------------|------------------------------------------|---------------------------------------|
| S-000210-8-81  | GS-210W-4, GS-210W-6 and GS-210W-8       | Upper Packing ½", ¾" & 1"             |
| S-000210-8-82  |                                          | Seat/Stem Assy ½", ¾" & 1"            |
| S-000210-8-83  |                                          | Bonnet Gasket ½", ¾" & 1"             |
| S-000210-16-81 | GS-210W-12 and GS-210W-16                | Upper Packing 1½" & 2"                |
| S-000210-16-82 |                                          | Seat/Stem Assy 1½" & 2"               |
| S-000210-16-83 |                                          | Bonnet Gasket 1½" & 2"                |
| S-000210-24-81 | GS-210W-24                               | Upper Packing 3"                      |
| S-000210-24-82 |                                          | Seat/Stem Assy 3"                     |
| S-000210-24-83 |                                          | Bonnet Gasket 3"                      |
| S-000210-32-81 | GS-210W-32                               | Upper Packing 4"                      |
| S-000210-32-82 |                                          | Seat/Stem Assy 4"                     |
| S-000210-32-83 |                                          | Bonnet Gasket 4"                      |
| S-210WHZ-8-81  | GS-210WHZ-4, GS-210WHZ-6 and GS-210WHZ-8 | Upper Packing ½", ¾" & 1"             |
| S-210WHZ-8-82  |                                          | Seat/Stem Assy ½", ¾" & 1"            |
| S-210WHZ-8-83  |                                          | Bonnet Gasket ½", ¾" & 1"             |
| S-210WHZ08-853 |                                          | Upper Assembly Repair Kit ½", ¾" & 1" |
| S-210WHZ-16-81 | GS-210WHZ-12 and GS-210WHZ-16            | Upper Packing 1½" & 2"                |
| S-210WHZ-16-82 |                                          | Seat/Stem Assy 1½" & 2"               |
| S-210WHZ-16-83 |                                          | Bonnet Gasket 1½" & 2"                |
| S-210WHZ16-853 |                                          | Upper Assembly Repair                 |

## Ordering Information

| Kit Number     | Part Number                              | Kit Contents                          |
|----------------|------------------------------------------|---------------------------------------|
| S-000110-8-81  | GS-110W-4, GS-110W-6 and GS-110W-8       | Upper Packing ½", ¾" & 1"             |
| S-000110-8-82  |                                          | Seat/Stem Assy ½", ¾" & 1"            |
| S-000110-8-83  |                                          | Bonnet Gasket ½", ¾" & 1"             |
| S-000110-8-84  |                                          | Seat Replacement ½", ¾" & 1"          |
| S-000110-16-81 | GS-110W-12 and GS-110W-16                | Upper Packing 1½" & 2"                |
| S-000110-16-82 |                                          | Seat/Stem Assy 1½" & 2"               |
| S-000110-16-83 |                                          | Bonnet Gasket 1½" & 2"                |
| S-000110-16-84 |                                          | Seat Replacement 1½" & 2"             |
| S-000110-24-81 | GS-110W-24                               | Upper Packing 3"                      |
| S-000110-24-82 |                                          | Seat/Stem Assy 3"                     |
| S-000110-24-83 |                                          | Bonnet Gasket 3"                      |
| S-000110-24-84 |                                          | Seat Replacement 3"                   |
| S-000110-32-81 | GS-110W-32                               | Upper Packing 4"                      |
| S-000110-32-82 |                                          | Seat/Stem Assy 4"                     |
| S-000110-32-83 |                                          | Bonnet Gasket 4"                      |
| S-000110-32-84 |                                          | Seat Replacement 4"                   |
| S-000110-48-81 | GS-110W-48                               | Upper Packing 6"                      |
| S-000110-48-82 |                                          | Seat/Stem Assy 6"                     |
| S-000110-48-83 |                                          | Bonnet Gasket 6"                      |
| S-000110-48-84 |                                          | Seat Replacement 6"                   |
| S-110WHZ-8-81  | GS-110WHZ-4, GS-110WHZ-6 and GS-110WHZ-8 | Upper Packing ½", ¾" & 1"             |
| S-110WHZ-8-82  |                                          | Seat/Stem Assy ½", ¾" & 1"            |
| S-110WHZ-8-83  |                                          | Bonnet Gasket ½", ¾" & 1"             |
| S-110WHZ-8-84  |                                          | Seat Replacement ½", ¾" & 1"          |
| S-110WHZ08-853 | GS-110WHZ-12 and GS-110WHZ-16            | Upper Assembly Repair Kit ½", ¾" & 1" |
| S-110WHZ-16-81 |                                          | Upper Packing 1½" & 2"                |
| S-110WHZ-16-82 |                                          | Seat/Stem Assy 1½" & 2"               |
| S-110WHZ-16-83 |                                          | Bonnet Gasket 1½" & 2"                |
| S-110WHZ-16-84 | GS-110WHZ-24                             | Seat Replacement 1½" & 2"             |
| S-110WHZ16-853 |                                          | Upper Assembly Repair Kit 1½" & 2"    |
| S-110WHZ-24-81 |                                          | Upper Packing 3"                      |
| S-110WHZ-24-82 |                                          | Seat/Stem Assy 3"                     |
| S-110WHZ-24-83 | GS-110WHZ-32                             | Bonnet Gasket 3"                      |
| S-110WHZ-24-84 |                                          | Seat Replacement 3"                   |
| S-110WHZ24-853 |                                          | Upper Assembly Repair Kit 3"          |
| S-110WHZ-32-81 |                                          | Upper Packing 4"                      |
| S-110WHZ-32-82 | GS-110WHZ-48                             | Seat/Stem Assy 4"                     |
| S-110WHZ-32-83 |                                          | Bonnet Gasket 4"                      |
| S-110WHZ-32-84 |                                          | Seat Replacement 4"                   |
| S-110WHZ32-853 |                                          | Upper Assembly Repair Kit 4"          |
| S-110WHZ-48-81 | GS-110WHZ-48                             | Upper Packing 6"                      |
| S-110WHZ-48-82 |                                          | Seat/Stem Assy 6"                     |
| S-110WHZ-48-83 |                                          | Bonnet Gasket 6"                      |
| S-110WHZ-48-84 |                                          | Seat Replacement 6"                   |
| S-110WHZ48-853 |                                          | Upper Assembly Repair Kit 6"          |

## Ordering Information

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

## Ordering Information

| 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 delivery pressure 1784 "B" spring range, 40 to 110 psig delivery pressure Spring kit for 1784, "C" spring range, 100 to 200 psig delivery pressure, Spring kit for 1784, "D" spring range 175 to 300 psig 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 delivery pressure 1786 "B" spring range, 40 to 110 psig delivery pressure Spring kit for 1786, "C" spring range, 100 to 200 psig delivery pressure, Spring kit for 1786, "D" spring range 175 to 300 psig 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 delivery pressure 1788 "B" spring range, 40 to 110 psig delivery pressure Spring kit for 1788, "C" spring range, 100 to 200 psig delivery pressure, Spring kit for 1788, "D" spring range 175 to 300 psig delivery pressure |
| BR-1788-7SKB |                             |                                                                                                                                                                                                                                                                                 |
| BR-1788-7SKC |                             |                                                                                                                                                                                                                                                                                 |
| BR-1788-7SKD |                             |                                                                                                                                                                                                                                                                                 |

## Ordering Information

| Kit Number     | Part Number | Kit Contents      |
|----------------|-------------|-------------------|
| S-000886-4-82  | S-886-4     | Seat Assembly ½"  |
| S-000886-4-83  | S-886-4     | Bonnet Gasket ½"  |
| S-000886-8-82  | S-886-8     | Seat Assembly 1"  |
| S-000886-12-82 | S-886-12    | Seat Assembly 1½" |
| S-000886-16-82 | S-886-16    | Seat Assembly 2"  |
| S-000886-24-82 | S-886-24    | Seat Assembly 3"  |
| S-000886-32-82 | S-886-32    | Seat Assembly 4"  |
| S-0886GF-4-82  | S-886GF-4   | Seat Assembly ½"  |
| S-0886GF-4-83  | S-886GF-4   | Bonnet Gasket ½"  |
| S-0886GF-8-82  | S-886GF-8   | Seat Assembly 1"  |
| S-0886GF-8-83  | S-886GF-8   | Bonnet Gasket 1"  |
| S-0886GF-12-82 | S-886GF-12  | Seat Assembly 1½" |
| S-0886GF-12-83 | S-886GF-12  | Bonnet Gasket 1½" |
| S-0886M-4-82   | S-886M-4    | Seat Assembly ½"  |
| S-0886M-8-82   | S-886M-8    | Seat Assembly 1"  |
| S-0886M-8-83   | S-886M-8    | Bonnet Gasket 1"  |
| S-0886M-12-82  | S-886M-12   | Seat Assembly 1½" |
| S-0886M-12-83  | S-886M-12   | Bonnet Gasket 1½" |
| S-0886M-16-82  | S-886M-16   | Seat Assembly 2"  |
| S-0886M-16-83  | S-886M-16   | Bonnet Gasket 2"  |
| S-0886M-24-82  | S-886M-24   | Seat Assembly 3"  |
| S-0886M-24-83  | S-886M-24   | Bonnet Gasket 3"  |
| S-0886M-32-82  | S-886M-32   | Seat Assembly 4"  |
| S-0886M-32-83  | S-886M-32   | Bonnet Gasket 4"  |

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