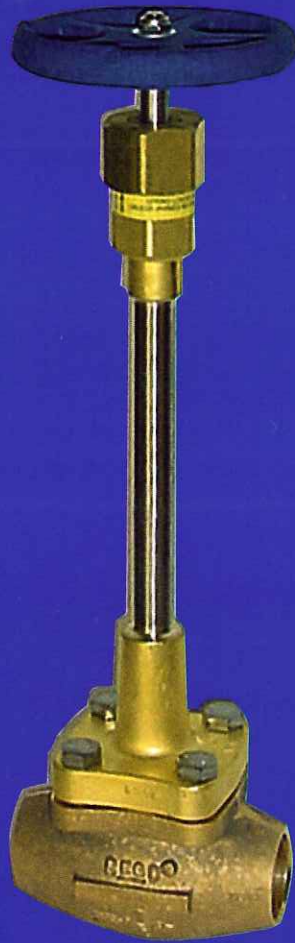


INDUSTRIAL GAS & CRYOGENIC EQUIPMENT



REGO® CRYO-FLOW PRODUCTS

Extended Bonnet Cryogenic Globe Valves

BK and BKA Series Valves

Application

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

Features

- CTFE seat disc and swivel seat design offer positive shut-off, minimal seat wear, and a long service life.
- Unique spring-loaded upper packing provides extended service life without constant packing adjustment
- One piece slip-on seat assembly for easy replacement.
- Each valve is pressure tested to be leak free.
- Each valve is cleaned and packaged for oxygen service per CGA G-4.1.
- Maximum working pressure is 600 psig CWP.
- Working temperature range is -320 F to +165 F.

Materials

Body	Bronze
Body and Bonnet	Brass
Seat Disc.....	CTFE
Seat Retainer Assembly	Brass
Stem and Bonnet Extension Tube.....	Stainless Steel
Packing Spring, Washer	Stainless Steel
Jam Ring and Pressure Seal Rings	PTFE
Upper Bonnet, Packing Gland.....	Brass
Handwheel	Aluminum for up to 1" valve size, Coated Malleable Iron for larger sizes

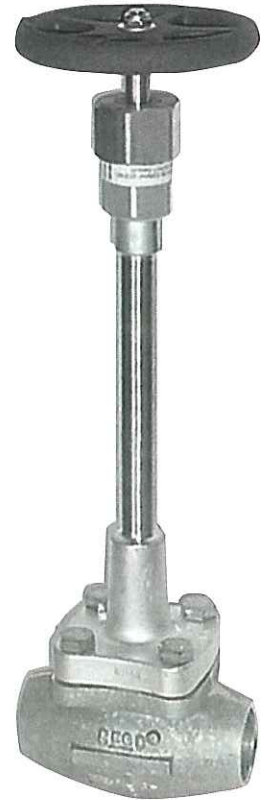
Bonnet Design

Union Bonnet for 1/2", 3/4", 1" valve sizes and on both the 1" model BKA8408S and 1 1/2" model BKA8412S angle valves.

Bolted Bonnet design is used on the BK9410, BK9412, and BK9416 models.



BK 8408T



BK 9412S



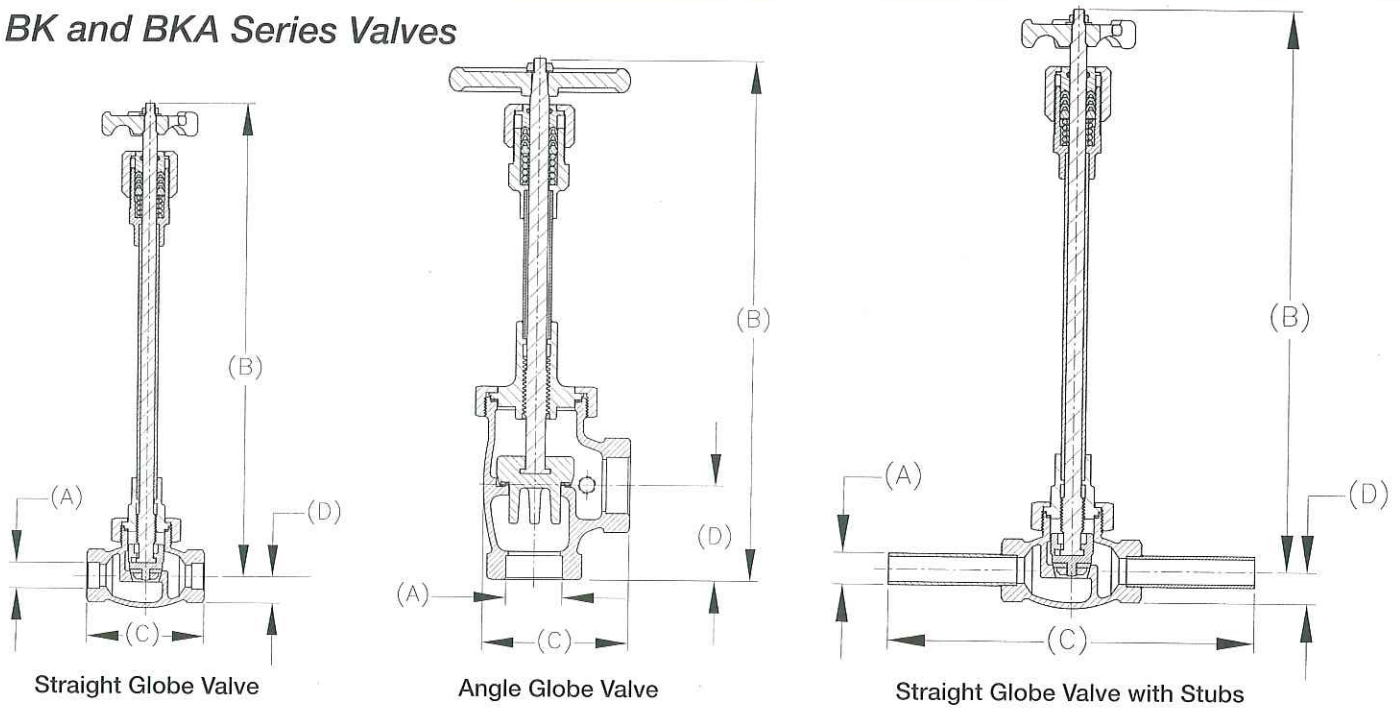
BK 9408AA



BKA 8412S

Extended Bonnet Cryogenic Globe Valves

BK and BKA Series Valves



Ordering Information and Dimensions

Part Number	Body Style	Inlet / Outlet Connections A	Height Open B (Approx.)	Length C	D	Cv Factor
BK8404S	Straight	.631"-.634"	9 ⁵ / ₃₂ "	3 ¹ / ₁₆ "	1"	4.7
BK8404T		1/2" F.NPT				
BK8404ST		.631"-.634" x 1/2" F.NPT	14 ¹ / ₂ "	3 ¹ / ₁₆ "	1"	4.7
BK9404S		.631"-.634"				
BK9404T		1/2" F.NPT				
BK9404AA		1/2" Sch5 Pipe	14 ¹ / ₂ "	9 ¹ / ₁₆ "	1"	4.7
BK9404PT-F30		1/2" Sch5 Pipe x 1/2" F.NPT				
BK9404ST		.631"-.634" x 1/2" F.NPT				
BK8406S		.881"-.884"	9 ⁵ / ₃₂ "	3 ¹ / ₁₆ "	1"	6.7
BK8406T		3/4" F.NPT	14 ¹ / ₂ "	3 ¹ / ₁₆ "	1"	6.7
BK9406S		.881"-.884"				
BK9406T		3/4" F.NPT				
BK8408S		1.131"-1.134"	9 ¹ / ₈ "	4 ⁵ / ₁₆ "	1 ¹ / ₈ "	11.2
BK8408T		1" F.NPT				
BK9408S		1.131"-1.134"	14 ¹ / ₂ "	4 ⁵ / ₁₆ "	1 ¹ / ₈ "	11.2
BK9408T		1" F.NPT				
BK9408AA		1" Sch5 Pipe				
BK9408PT-F30		1" Sch5 Pipe x 1" F.NPT	16 ¹ / ₁₆ "	5 ³ / ₁₆ "	1 ¹ / ₈ "	17.5
BK9410S*		1.378"-1.380"				
BK9412S*		1.631"-1.634"	16 ⁹ / ₁₆ "	11 ³ / ₁₆ "	1 ¹ / ₂ "	25.1
BK9412T*	1 1/2" F.NPT					
BK9412AA	1 1/2" Sch5 Pipe	16"	8 ³ / ₁₆ "	1 ⁵ / ₈ "	41	
BK9412PT-F30	1 1/2" Sch5 Pipe x 1 1/2" F.NPT					
BK9416S*	2.131" - 2.134"	13"	4"	1 ³ / ₄ "	30.0	
BK9416T*	2" F.NPT					
BK9416PT-F30	2" Sch5 Pipe x 2" F.NPT	11 ¹ / ₄ "	3 ¹ / ₄ "	1 ³ / ₄ "	14.5	
BKA8408S	1.131" - 1.134" x 1.631" - 1.634"					
BKA9408S	1.631"-1.634"	14 ⁵ / ₁₆ "	3 ¹ / ₄ "	1 ³ / ₄ "	14.5	
BKA8412S	1.631"-1.634"	13"	4"	1 ³ / ₄ "	30.0	

* Valves with bolted bonnet design.

REGO CRYO-FLOW
PRODUCTS

Division of Engineered Controls International, Inc.

Extended Stem Cryogenic Valves

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

Application

These valves are designed for use as a trycock valve or hose drain valve on cryogenic tanks. Another application is as a use, liquid fill, or vent valve on mini-bulk cryogenic tanks. These valves can be used likewise for other cold gas applications requiring extended stem valves.

Features

- Union bonnet.
- One piece stainless steel stem
- Conical seat design.
- Maximum working pressure is 600 psig.
- Working temperature is -320F to +165F.
- Cleaned for oxygen service per CGA G-4.1.

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 one or both ends.

Materials

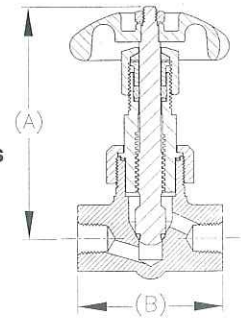
Body and Bonnet.....Brass
Stem.....Stainless Steel
Seat disc.....CTFE
Handwheel.....Aluminum
Packing and Bonnet Gasket.....PTFE

Conversion Kit

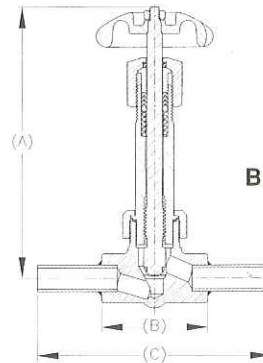
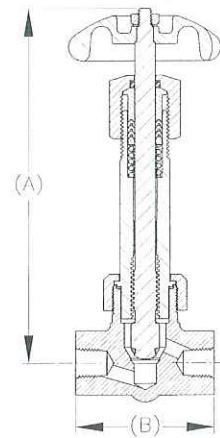
BK 9450-KIT is a bonnet and stem assembly kit to convert ES 8450 Series and previous ES 9450 Series to the BK 9450 style.



ES 8450 Series



BK 9450 Series



BK 9470 Series

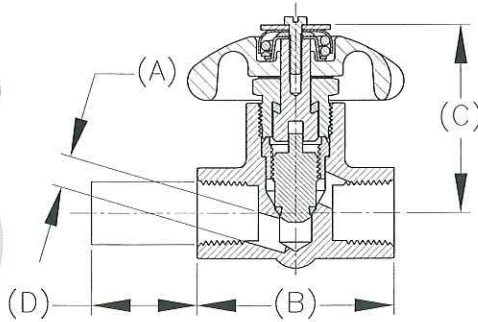
Ordering Information

Part Number	Inlet/Outlet Connections	Height "A"	Body Width "B"	Width with Tube "C"	C _v
ES 8452	1/4" FNPT	4"	2.5"		0.70
ES 8453	3/8" FNPT	4"			1.10
ES 8454	1/2" FNPT	4"			1.10
BK 9452	1/4" FNPT	6.5"			0.70
BK 9453	3/8" FNPT	6.5"			1.10
BK 9454	1/2" FNPT	6.5"			1.10
BK 9453FA	5/8" OD tubing x 3/8" FNPT	6.5"		4.0"	1.10
BK 9475A	5/8" OD tubing both ends	6.5"		5.5"	1.10

Short Stem Cryogenic Valves

9450 Series
9460 Series

MVE



Application

The 9450 and 9460 series valves are designed for use on portable cryogenic cylinders and other in-line shut-off valve applications.

Features

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

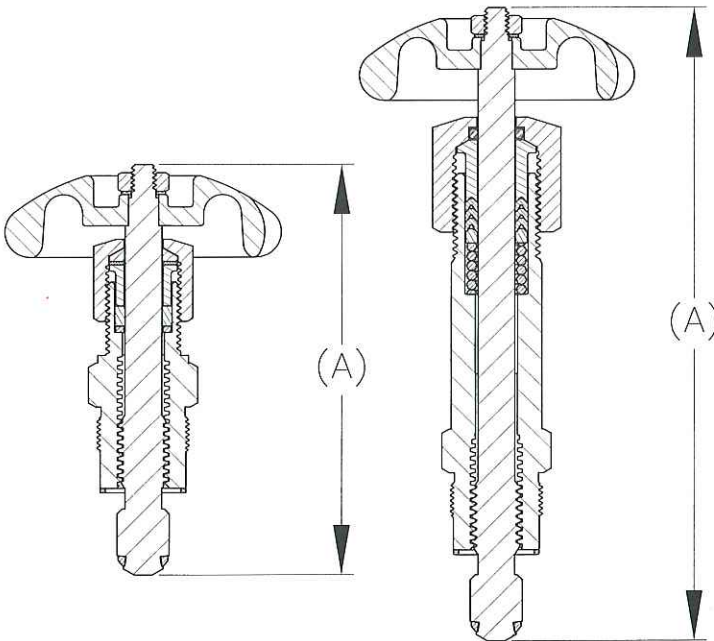
Materials

Body.....	Brass
Bonnet.....	Brass
Seat Disc.....	CTFE
Stem Seal Gasket.....	PTFE
Handwheel.....	Aluminum
Spring.....	Stainless Steel
Upper Stem.....	Brass
Lower Stem.....	Manganese Bronze

Ordering Information

Part Number	Inlet	Outlet	Orifice A	Length B	Height (Approx.) C	Tube D	Cv Factor
9452DA	1/4" F.NPT	1/4" F.NPT	.250	2 1/2"	2 3/4"	None	.72
9453DA	3/8" F.NPT	3/8" F.NPT	.406				1.08
9454DA	1/2" F.NPT	1/2" F.NPT	.406				1.10
9464CA	.675 Tube	3/8" F.NPT	.406	2 1/2"	2 3/4"	1 1/8"	1.08
9464DA						2 1/8"	
9464ADA						3 3/8"	

Extended Stem Retrofit Kits



Application

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

Materials

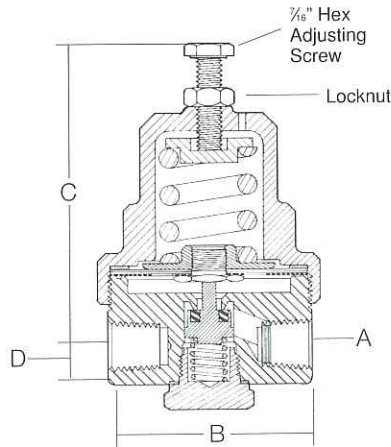
Bonnet.....	Brass
Seat Disc.....	CTFE
Handwheel.....	Aluminum
Packing.....	PTFE
Stem.....	Stainless Steel
Stem Seal Gasket.....	PTFE

Ordering Information

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

Cryogenic Regulators

RG Series



Ordering Information

Part Number	Inlet / Outlet Connections (F.NPT) A	Width B	C	D	Pressure Setting (PSIG)	Operating Range (PSIG)
RG125	1/4"	2 1/4"	3"	5/8"	125	25-250
RG300					300	125-350

*Contact factory for additional settings.

Application

The 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

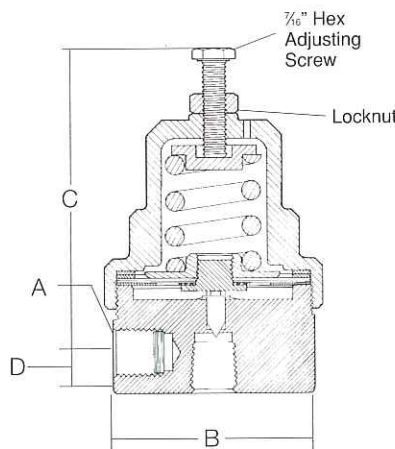
- All parts are copper alloy (brass), PTFE and stainless steel—materials selected specifically for compatibility with cryogenic temperatures down to -320°F.
- Body and bonnet machined from solid brass bar stock.
- PTFE seat helps assure a positive shut-off at cryogenic temperatures down to -320°F.
- High and low pressure regulators are the same compact size—designed to fit in close quarters. The compact high pressure design has no loss of flow capacity.
- Interchangeable with existing cryogenic regulator units.
- Inlet filter helps prevent foreign material from entering the regulator.
- Locknut is provided to maintain adjusting screw setting.
- Maximum inlet pressure of 550 PSIG.
- Cleaned for liquid oxygen service per CGA G-4.1

Materials

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

Cryogenic Economizers

ECL Series



Ordering Information

Part Number	Inlet/Outlet Connections (F.NPT) A	Width B	C	D	Factory Pressure Setting (PSIG)	Operating Range (PSIG)
ECL22	1/4"	2 1/4"	3"	3/8"	22	10-150
ECL70					70	
ECL140					140	
ECL325					325	

*Contact factory for additional settings.

Application

The ECL series cryogenic economizers are primarily designed to utilize the gas pressure in a liquid cryogenic cylinder that would otherwise be lost to the atmosphere through the pressure relief valve. 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

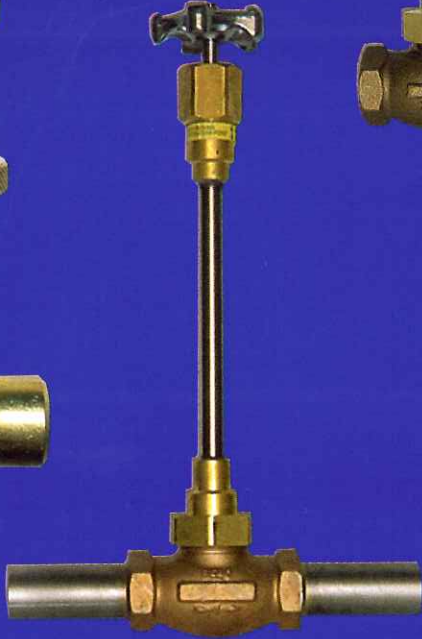
- All parts are copper alloy (brass), PTFE and stainless steel—materials selected specifically for compatibility with cryogenic temperatures down to -320°F.
- Body and bonnet machined from solid brass bar stock.
- The ECL Series utilizes a stainless steel needle seat design that provides a very sensitive flow control at lower pressure settings.
- High and low pressure economizers are the same compact size—designed to fit in close quarters. The compact high pressure design has no loss of capacity.
- Interchangeable with existing cryogenic economizer units.
- Inlet filter helps prevent foreign materials from entering the economizer.
- Locknut is provided to maintain adjusting screw settings.
- Maximum inlet pressure of 550 PSIG.
- Cleaned for liquid oxygen service per CGA G-4.1

Materials

Body.....	Brass
Bonnet.....	Brass
Seat.....	Stainless Steel
Springs.....	Stainless Steel
Gasket.....	PTFE

REGO CRYO-FLOW PRODUCTS

Division of Engineered Controls International, Inc.



REGO CRYO-FLOW PRODUCTS

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