

High Pressure Gas Master Valves

9560 Series

Application

The 9560 Series high pressure brass valves are used on cylinder filling panels, tube trailers, and other high pressure manifolds and piping systems. The 9560 Series exhibits a very low operating torque under pressure for ease of manual operation.

Features

- 4200 psig maximum working pressure with a 5 to 1 safety factor.
- Non-rising stem design with O-Ring Seal for durable service.
- Large brass handwheel for easy low torque operation under pressure.
- All valves cleaned for use in oxygen per CGA G-4.1.

Materials

- Body, bonnet, stem, and seat retainer, stem seal retaining rings and washerBrass
- Stem O-RingViton
- Handwheel washerPTFE

Soft Seat Option

The soft seat valves use a CTFE seat disc in the seat retainer to create a "bubble-tight" seal against a machined seat surface on the brass body. Valve Cv is 2.6.

The soft seat option is especially useful for small molecule gases like hydrogen and helium, but can be used for a variety of non-corrosive industrial gases including oxygen, argon, nitrogen, carbon dioxide, nitrous oxide, and acetylene.

Metal Seat Option:

A copper seat disc is used in the seat retainer to create a seal against a Monel body seat, which is installed into the body and can be replaced. Valve Cv is 2.3.

The metal seat option minimizes the possibility of seat decomposition or ignition in oxygen service under adiabatic compression. The metal seat option is recommended for oxygen, and can also be used for other non-corrosive industrial gases. The metal seat option is not to be used for acetylene due to the copper seat. Not to be applied in hydrogen or helium service or where a "bubble-tight" seal is essential. (Note: C in part number)

Bonnet Versions

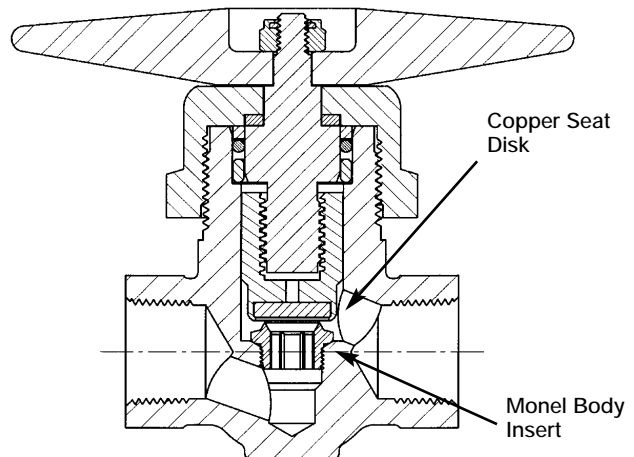
- Standard Bonnet for low profile.
- Panel Mount Bonnet for ease of panel installation. Includes threaded bonnet and nickel plated brass mounting nut. Metal Seat Option 1.625" diameter panel hole required for mounting. (Note: P in part number)



STANDARD BONNET VALVE



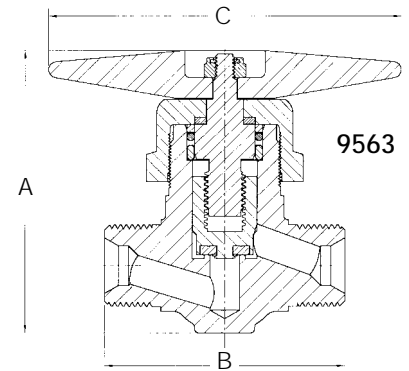
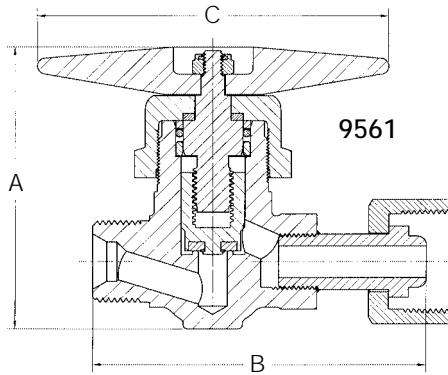
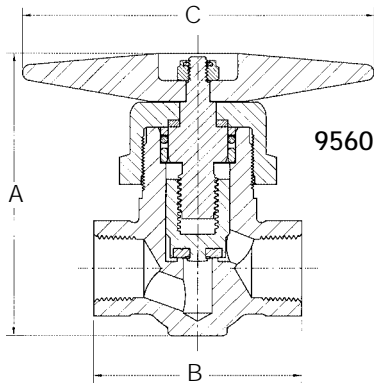
PANEL MOUNT VALVE



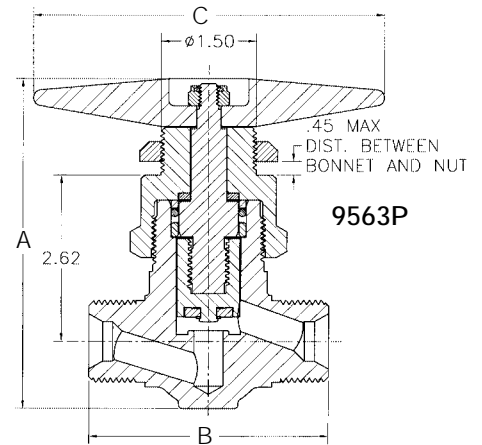
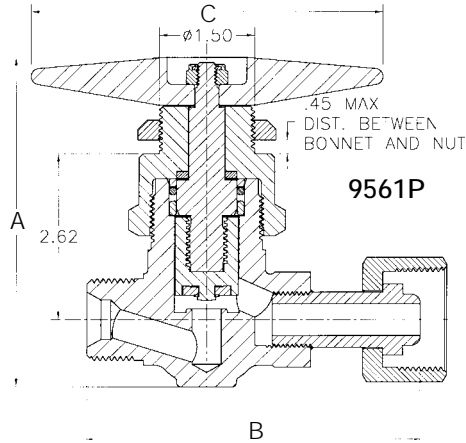
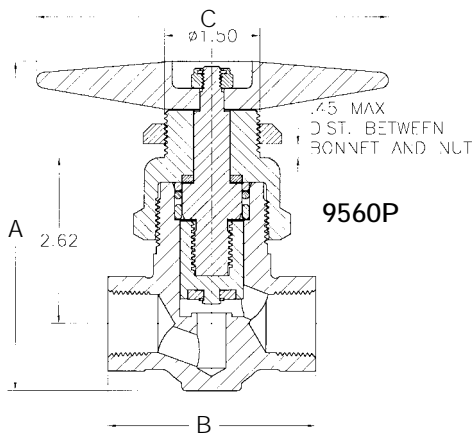
Cutaway View of Valve showing metal seat option.

High Pressure Gas Master Valves

9560 Series



STANDARD BONNET VALVE DIMENSIONS



PANEL MOUNT VALVE DIMENSIONS

Ordering Information

Part Number		Inlet Connection	Outlet Connection	Height A	Width B	Handwheel Width C
Soft Seat	Metal Seat					
9560A	9560CA	1/2" F. NPT	1/2" F. NPT	4.36" *[6.19" for panel mount version]	3.25"	5.5"
9560B	9560CB	3/4" F. NPT	3/4" F. NPT			
9561R	9561CR	1"-11 1/2" NPSM R.H.	1"-11 1/2" R.H. Female Swivel		5.27"	
9561RL	9561CRL	1"-11 1/2" NPSM R.H.	1"-11 1/2" NPS L.H. Female Swivel			
9561L	9561CL	1"-11 1/2" NPSM L.H.	1"-11 1/2" L.H. Female Swivel			
9563R	9563CR	1"-11 1/2" NPSM R.H.	1"-11 1/2" NPSM R.H.		3.79"	
9563L	9563CL	1"-11 1/2" NPSM L.H.	1"-11 1/2" NPSM L.H.			
9560ASE	9560CASE	.843 - .847	.843 - .847		3.25"	
9560BSE	9560CBSE	1.053 - 1.057	1.053 - 1.057		3.25"	
9560BSE-B	9560CBSE-B	1.053 - 1.057	3/4" F.NPT		3.25"	

*Place "P" at end of part number for panel mount version.
1.625" diameter panel hole required for mounting.

Diaphragm Type Globe Valves

2550 Series

Application

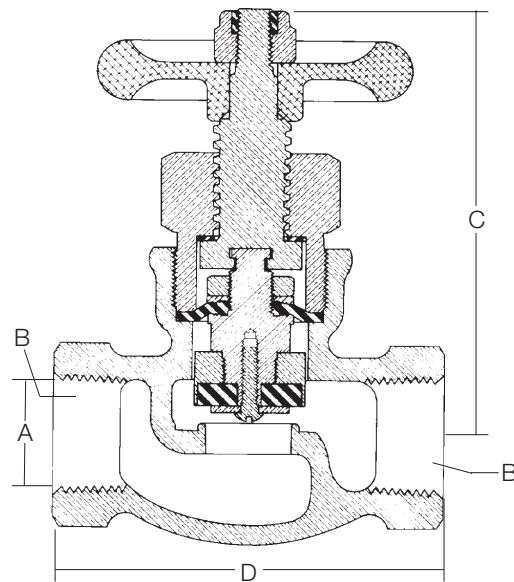
The 2550 series valves are designed for use in hospital and industrial piping systems where gases are supplied from a central source to branch outlets throughout the system.

Features

- UL listed for use with air, acetylene, hydrogen, LP-Gas, nitrogen, and oxygen service.
- Leakage is prevented by a dependable diaphragm stem seal.
- A resilient seat disc provides positive shut-off.
- Heavy duty ACME stem threads assure easy operation and long working life.
- Maximum working pressure is 250 PSIG.
- Working temperature range is -40°F to +165°F.

Materials

Body (2553 series)Forged Brass
 (2554 series).....Cast Bronze, Tin Plated
 HandwheelAluminum
 Seat DiscFilled Teflon
 Diaphragm.....Neoprene
 Bonnet.....Brass
 Stem.....Manganese Bronze



Ordering Information

Part Number	Inlet / Outlet Thread (Female NPT) A	Port Diameter B	Height C	Length D	Cv Factor
2553AC	1/4"	13/32"	3 5/8"	2 1/2"	1.4
2553AAC	3/8"				1.5
2554AC	1/2"	1 1/16"		3 1/8"	4.3
2554AAC	3/4"				4.3

Diaphragm Type Globe Valves

2500 Series

Application

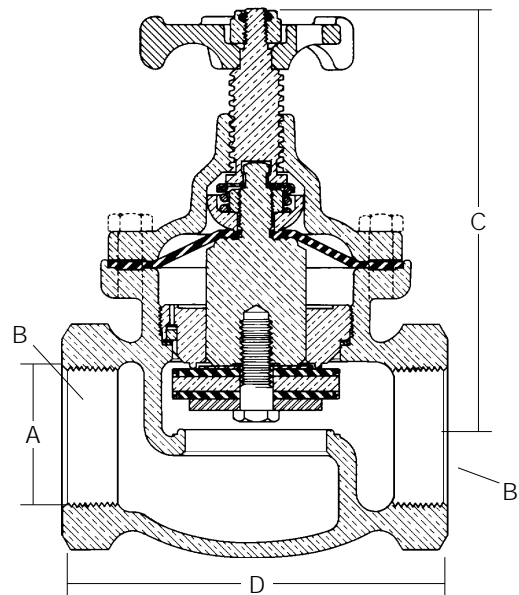
The 2500 series valves are designed for use in hospital and industrial piping systems where gases are supplied from a central source to branch outlets throughout the system.

Features

- UL listed for use with air, argon, acetylene, helium, hydrogen, LP-Gas, nitrogen, inert gases and oxygen service.
- Leakage is prevented by a dependable diaphragm stem seal.
- A resilient seat disc provides positive shut-off.
- Heavy duty ACME stem threads assure easy operation and long working life.
- Unique back seat design allows the diaphragm assembly to be repaired while the valve remains in service.
- Maximum working pressure is 400 PSIG.
- Working temperature range is -40°F to +165°F.

Materials

BodyCast Bronze, Tin Plated
 BonnetBrass
 StemManganese Bronze
 Seat DiscNeoprene
 DiaphragmNeoprene

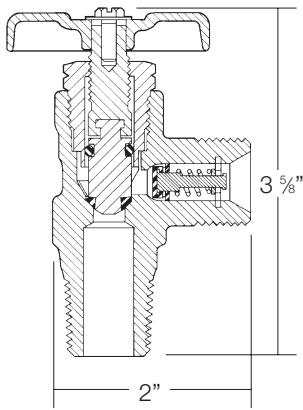


Ordering Information

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

Line Station Valves

7160 Series



Application

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

Features

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

Materials

BodyBrass
 Stem and Seat RetainerBrass
 O-ringNeoprene
 Seat DiscNylon
 Reverse Flow Check SeatNeoprene

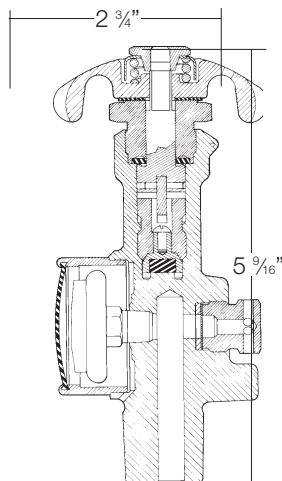
Ordering Information

Part Number	Gas Service	Inlet Thread	Outlet Thread	CGA Connection	Cv Factor	Outlet Protection*
7160V	Oxygen and Inert Gases	1/2" NGT	7/8"-14 M. R.H.	024	.76	10663 Brass Cap & Chain
7160VL						None
7161V	Fuel Gases		7/8"-14 M. L.H.	025		10664 Brass Cap & Chain
7161VL						None

*Outlet protection is recommended.

Nitrogen Cylinder Valves

CW6900 Series



Application

The CW6900 series valves incorporate a built-in gauge that tells the user at a glance how much pressure is in the cylinder. This is especially important in the fire protection industry.

Features

- 0 to 3000 PSIG gauge built into the valve.
- Chrome whitened finish.
- Non-rising stem design provides easy operation and positive shut-off.
- UL listed.

Materials

BodyBrass, Chrome Whitened
 BonnetBrass, Chrome Whitened
 Seat DiscNylon
 StemBrass, Chrome Plated
 Stem PackingPTFE

Ordering Information

Part Number	Gas Service	Inlet Thread (NGT)	Outlet Thread	CGA Connection	Relief Pressure (PSI)
CW6900G580	Nitrogen	3/4"	.965-14 R.H.	580	3360

Pressure Gauges



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

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

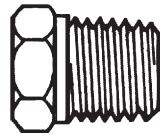
All pressure gauges have a 1/4" NPT male bottom inlet connection.

Ordering Information

Part Number	Maximum Calibration (PSIG)	Size	Increment Division (PSIG)	Case Material
1286	100	2"	2	Steel
2523HP-7	160		5	
S1679	200		10	Brass
15578	400		50	Steel
5562C	4000			

Brass Plugs

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

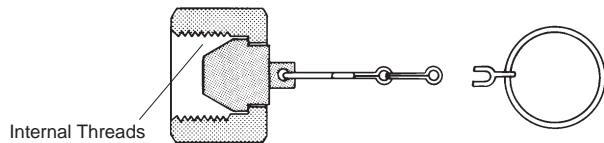


Typical Plug

Ordering Information

Part Number	Thread Connection	Hex Flats
985B	1/4" NPT	9/16"
985D	1/2" NPT	7/8"
985E	3/4" NPT	1 1/8"
985F	1" NPT	1 3/8"

Brass Outlet Cap and Chain Assemblies



Cap with Plug

Ordering Information

Part Number	Thread Connection	End Ring Fits Pipe
10663	7/8" -14NF-RH	1/2"
10664	7/8" -14NF-LH	1/2"

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.

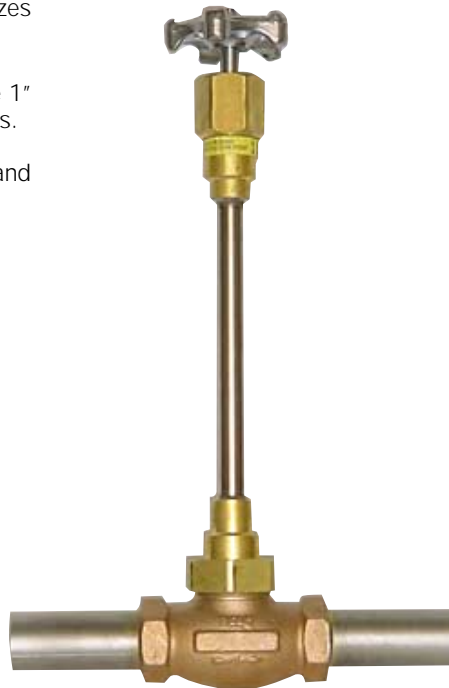
Bolted Bonnet design is used on the BK9410, BK9412, and BK9416 models.



BK 8408T



BK 9412S



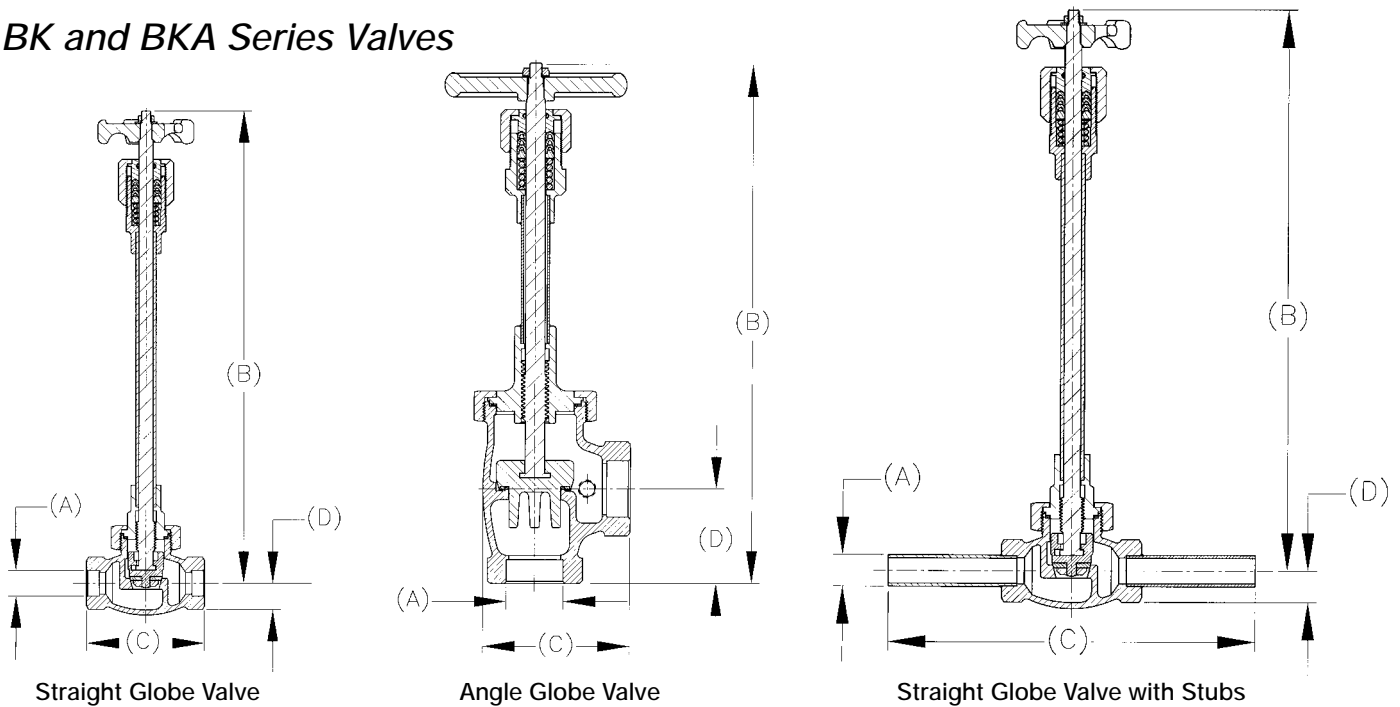
BK 9408AA



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												
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												
BK9406S		.881"-.884"					14 1/2"	3 ¹ / ₁₆ "	1"	6.7				
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"									
BK9408T		1" F.NPT												
BK9408AA		1" Sch5 Pipe												
BK9408PT-F30		1" Sch5 Pipe x 1" F.NPT												
BK9410S*		1.378"-1.380"									16 7/16"	5 ³ / ₁₆ "	1 1/2"	17.5
BK9412S*		1.631"-1.634"												
BK9412T*	1 1/2" F.NPT	16 7/16"					11 ³ / ₁₆ "	1 1/2"	25.1					
BK9412AA	1 1/2" Sch5 Pipe													
BK9412PT-F30	1 1/2" Sch5 Pipe x 1 1/2" F.NPT													
BK9416S*	2.131" - 2.134"													
BK9416T*	2" F.NPT	16"	6"	1 5/8"	41									
BK9416PT-F30	2" Sch5 Pipe x 2" F.NPT													
BKA8408S	Angle	1.131" - 1.134" x 1.631" - 1.634"	11 1/4"	3 3/4"	1 3/4"	14.5								
BKA9408S			14 5/8"											
BKA8412S		1.631"-1.634"	13"	4 1/4"		30.0								

* Valves with bolted bonnet design.

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:

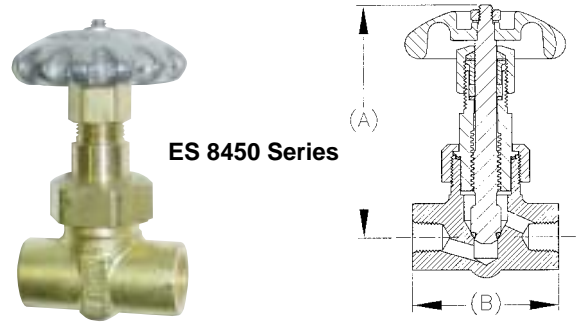
- 304 St. Stl Tube brazed into one or both ends.

Materials

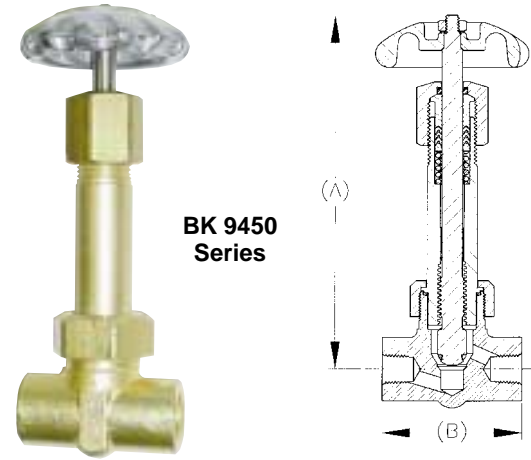
Body and Bonnet Brass
 Stem Stainless Steel
 Seat disc CTFE
 Handwheel Aluminum
 Packing and Bonnet Gasket PTFE

Conversion Kit

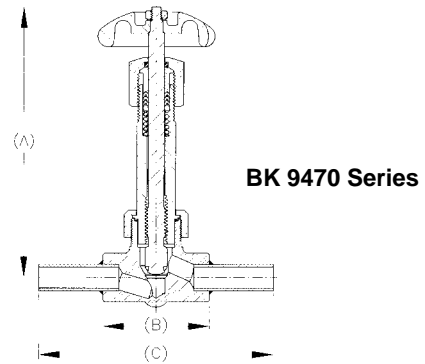
BK 9450-KIT is a bonnet and stem assembly kit to convert ES 8450 Series and previous ES 9450 Series to the BK 9450 style.



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

Needle Valves

CMM250 Series and CFF250 Series

Application

Ideal for use as a gauge isolation valve or applications requiring accurate throttling of pressure.

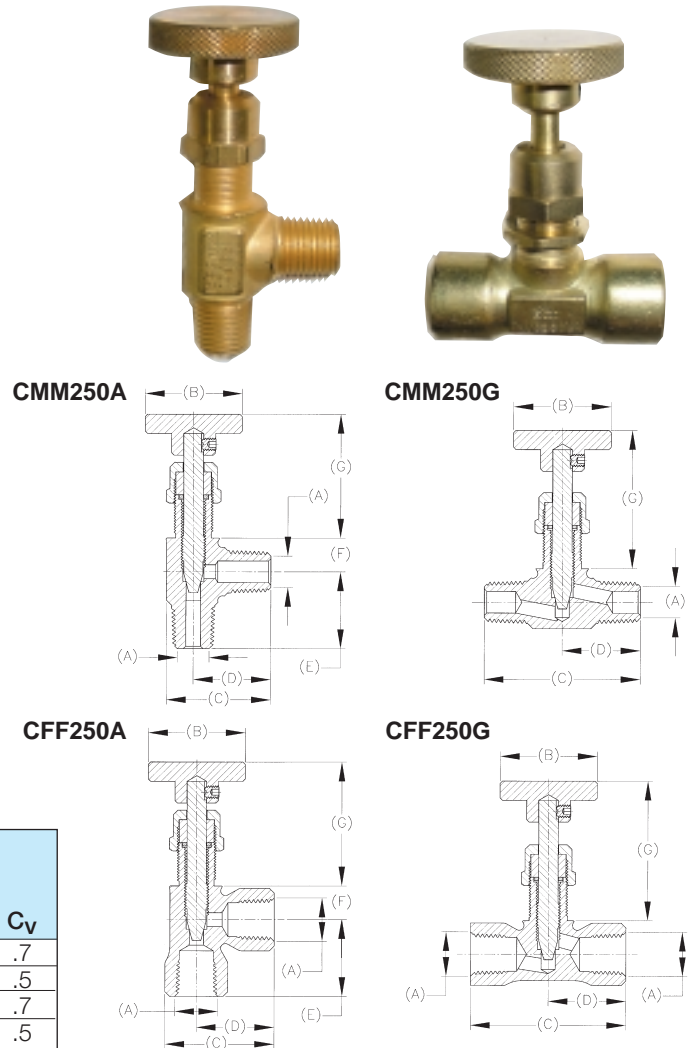
Features

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

Materials

BodyASTM B283 Brass
 StemBrass
 KnobBrass
 Bonnet NutBrass
 Panel Mount Nut (Optional)Brass
 Set ScrewSteel
 Stem Packing.....PTFE with Brass Gland

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



Angled Extended Bonnet Cryogenic Globe Valve

BKY8408 Series

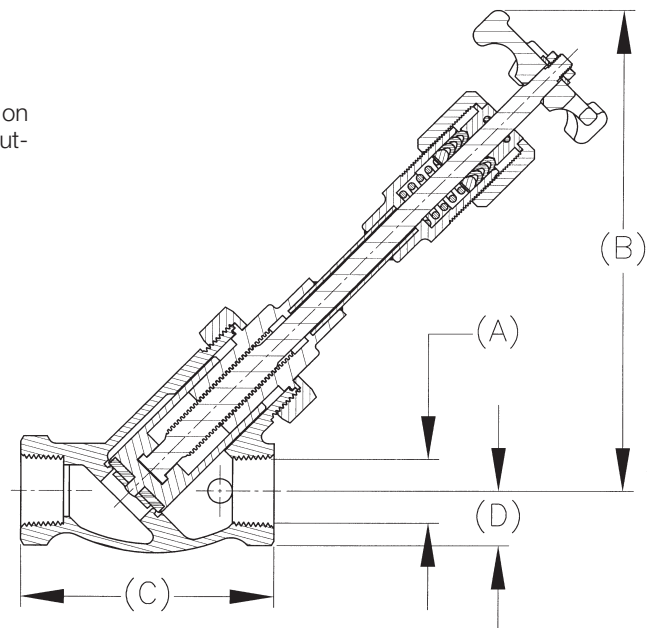
Application

The BKY8408 valve is designed for the handling of cryogenic liquids on bulk storage tanks, transports, and pipelines. It provides positive shut-off, offers a long, low maintenance service life, and gets up to 40% more flow over a standard 1" globe style valve.

Features

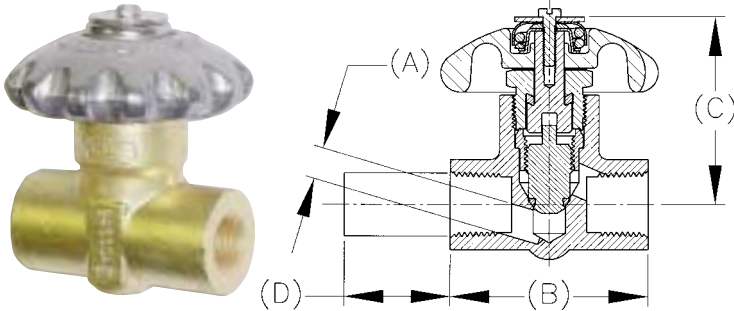
- KEL-F seat disc and swivel design offer positive shut-off and a long service life.
- Unique spring loaded upper packing extends service life.
- One piece slip-on seat assembly for easy replacement.
- Each valve is cleaned and packaged for liquid oxygen Service per CGA G-4.1
- Maximum working pressure is 600PSIG CWP
- Working temperature is -320 F to + 165 F.

Part Number	Inlet / Outlet Connections A	Height Open B	Length C	D	Cv Factor
BKY8408S	1.130" - 1.132"	8.4	4.56"	1"	16.2
BKY8408T	1" F.NPT				



Short Stem Cryogenic Valves

9450 Series
9460 Series



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.

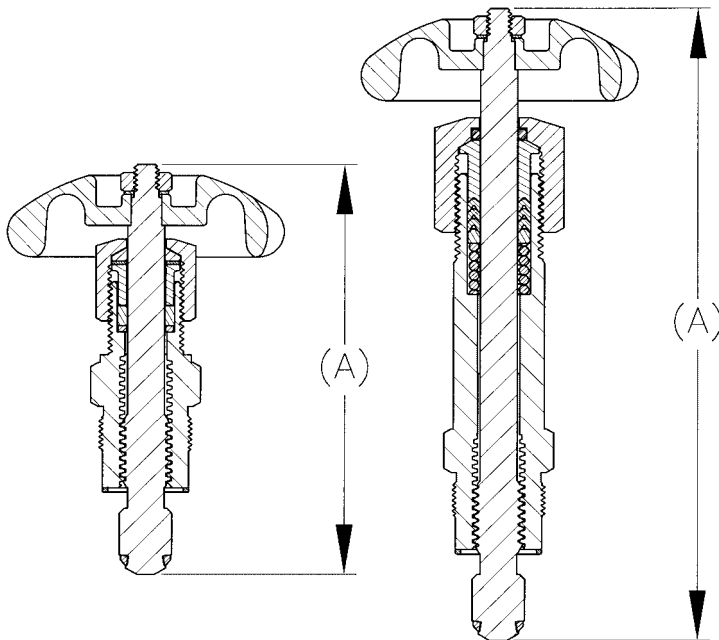
Materials

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