Cryogenic Globe Valves

CryoWorks Vacuum Insulated (Jacketed) Cryogenic Globe Valves will significantly improve your liquid quality, improve delivery performance, reduce product losses, and eliminate the need for mechanical insulation around the valve. Our Cryogenic Globe Valves keep the handle free of ice and moisture that could hinder valve operation or life cycle and improve safety conditions by eliminating ice, frost, moisture, and FOD that could harm personnel or equipment.

CryoWorks Cryogenic Valves have a 300 series stainless steel body with an internal stem assembly that is interchangeable between manual, actuated and flow control valve styles. This allows for easy upgrades in the field and minimizes the number of spare parts required to keep on hand. Popular sizes and configurations are stocked for immediate shipment or system integration.

Features:

- Low handle torque for bubble tight shut-off.
- Stainless steel body, stem, and threads.
- Redundant Stem Seal.
- Cryogenic Stem Packing.
- Brass Bonnet.
- Redundant Cryogenic Bonnet Seal.
- Bonnet Purge Port (Thermal Relief Location).
- Tight Fit Stem.
- MLI on Jacketed Valves.
- Brass Plug.
- Plug to Stem Stabilizer.
- KEL-F Seat Seal w/Locked Thread Insert.
- Available with or without Vacuum Jacket.

Fluid Services:

- Liquid Nitrogen, Argon, and Oxygen Serivce (with Proper Cleaning) for C2000 series.
- Liquid Helium for C3000 & C5000.

Applications:

- Vacuum Jacketed Piping.
- Cold Boxes.
- Manifold and Tank Systems.

Body Configurations:

Y-Pattern

T-Pattern

Angle

C5000 Series - Tube Size

Manual

Actuated

Tube Size ½" OD

Configurations T-Pattern or Angle.

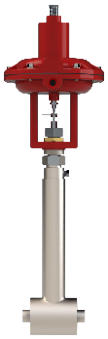
C2000 & C3000 Series - Pipe Size:

Manual:

½" & 1" NPS

1½" & 2"NPS

Actuated:



½" NPS

1" NPS

1½" & 2"NPS

Pipe Sizes ½", 1", 1½", and 2" NPS.

Configurations T-Pattern, Y-Pattern, or Angle.

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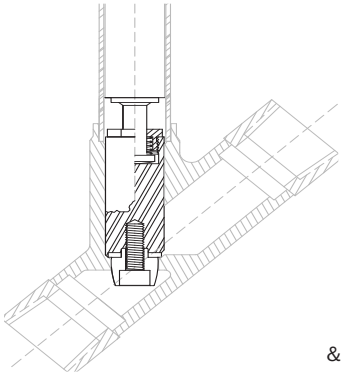
Cryogenic Globe Valves

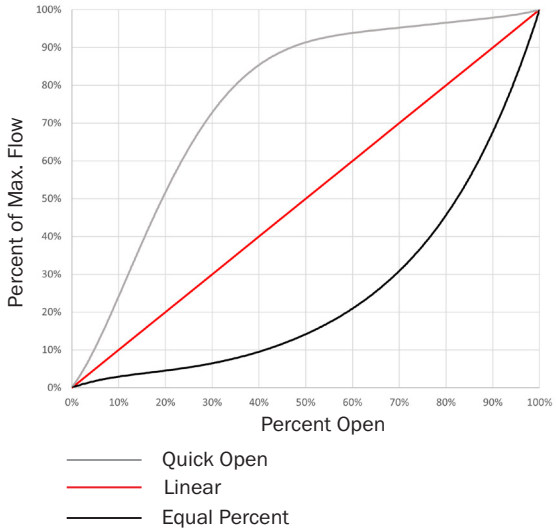
Flow Plugs:



Characterized
Flow Plugs

Equal Percent
& Linear Available

Typical Lift Flow Curves:



Precision Flow:

CryoWorks provides ½" valves greater flexibility to attain a control range among Cv Values from 0.500 through 0.003. Utilizing a variation of "needle and seat" combinations, customers are able to select appropriate flow characteristics through the selection of unique "trim" sizes. The combinations enable a system to function and many times exceed the client's design specifications.

Valve Sizing: Flow Calculations

$$C_V = Q_L \sqrt{\frac{SG}{\Delta P}}$$

C_V = Flow Coefficient

Q_L = Flow (GPM)

SG = Specific Gravity

ΔP = Pressure Drop (PSIA)

Table of Flow Coefficients			
Valve Size	Body Style		
	Globe	Angle	Y-Pattern
½" OD	1.1	2.3	N/A
½" NPS	2.6	5.7	5.6
1" NPS	16.3	28.6	25
1½" NPS	31	37	42
2" NPS	42.3	54	59.4

Specific Gravity Table for Common Fluids (SG)	
H2O	1.000
LN2	0.808
LH2	0.071
LHe	0.125
LAr	0.400
LO2	1.140

Please contact CryoWorks for additional information on this option.

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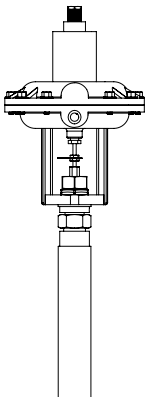
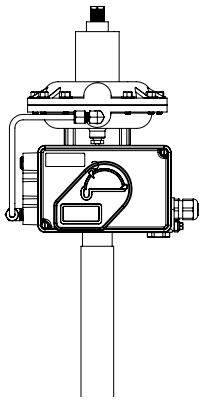
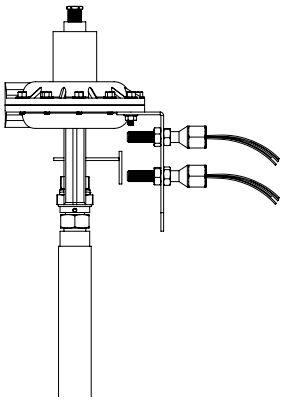
Actuator Accessories:



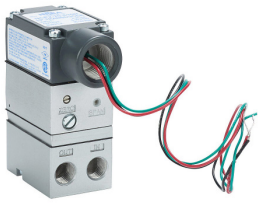
Actuator Only



4-20 mA Positioner with optional feedback



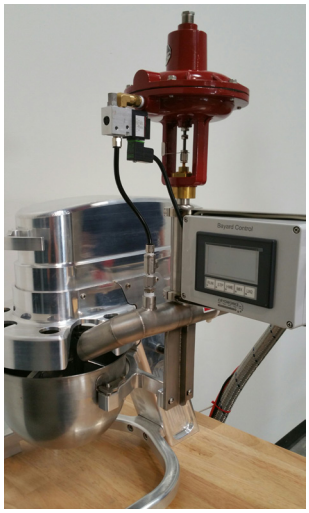
Open/Closed Limit Switches



I-P Transducer

3-Way Control Solenoid Valve
120 VAC or 24VDC
Conduit or DIN Connector

Custom Manifold Examples:



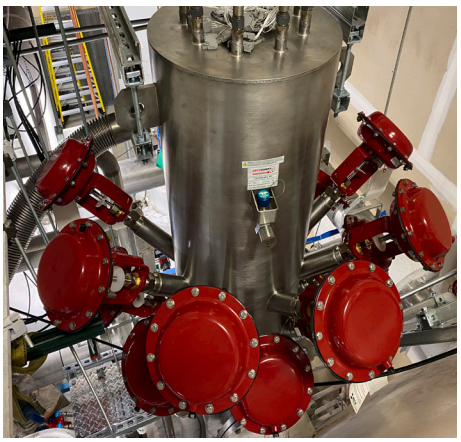
Ice Cream Dosing Manifold

Thermal Test Chamber Manifold

Automatic Dewar Switching Manifold

Custom Valve Box Examples:

Vacuum Chamber Inlet Manifold



Vacuum Chamber Vent Manifold

Vacuum Chamber Valve Box Manifold

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Cryogenic Globe Valves

Part Number System:

C	2	04	3	M	–	A	2	1	A
Vacuum Jacketed Cryogenic Valves	**Design**	**Size (1/8)**	**Body**	**Special Ends**		**Operation**	**Purge Port**	**Vacuum Jacket**	**Other Features**
	2 = Pipe Size Industrial Jacketed Series 3 = Pipe Size Industrial Helium Series 5 = Tube Small Helium Valves	02 = ¼" (2/8) 03 = ⅜" (3/8) 04 = ½" (4/8) 08 = 1" (8/8) 12 = 1 ½" (12/8) 16 = 2" (16/8)	1 = T-Pattern 2 = Angle 3 = Y-Pattern	P = MPT F = FPT T = Tube A = AN Male M = Butt Weld Tube S = Socket Weld Pipe B = Socket Weld Tube C = Socket Solder Copper N = Flare Tube and Nut		M = Manual A = Actuated/ Pneumatic/ Not Closed B = Actuated/ Pneumatic/ Normally Open C = Actuated/ Pneumatic/ Special D = Actuated Valve Assembly without Actuator E = Actuator with Solenoid* F = Actuator with Solenoid* and Filter/Regulator K = Check Valve *Specify indoor or outdoor service for solenoid operating condition and desired voltage (24 VDC or 120VAC).	1 = No Port 2 = Port with Pipe Plug 3 = Port with Relief Valve (150 PSIG) 4 = Port with Relief Valve (XXX PSIG)	1 = Full Jacket 2 = No Jacket 3 = Cold Box Jacket 4 = Special	A = Flow Plug (EQ%) B = Flow Plug (Linear) X = Specify with Order

Part Number Examples:

1. C2043M-A21A
Cryogenic Valve, Pipe Size Industrial Jacketed Series, 1/2" NPS, Y-Pattern Body, Butt Weld Tub Ends, Actuated/Pneumatic Operation/Normally Closed, Purge Port with Pipe Plug, Full Jacket, Equal Percentage Flow Plug.

2. C2081-M21
Cryogenic Valve, Pipe Size Industrial Jacketed Series, 1" NPS, T-Pattern Body, Standard Pipe Size Ends, Manual Operation, Purge Port with Pipe Plug, Full Jacket.

3. C2041F-E32B
Cryogenic Valve, Pipe Size Industrial Jacketed Series, 1/2" NPS, T-Pattern Body, Female Pipe Thread Ends, Actuated/Pneumatic Operation/Normally Closed with Solenoid (Indoor Operation/24 VDC), Purge Port with 150 PSIG Relief Valve, No Jacket, Linear Flow Plug.

4. C5042-M21
Cryogenic Valve, Tube Size Helium Jacketed Series, 1/2" OD Tube, Angle Pattern Body, Standard Tube Size Ends, Manual Operation, Purge Port with Pipe Plug, Full Jacket.

Please contact CryoWorks for additional valve options and availability.

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