

## B-Cryo Series

- ▶ MOPD: 900 PSI
- ▶  $C_v$  Range: 0.045 to 0.440
- ▶ 9 Watts

The B-Cryo Series is a 2-way miniature Cryogenic valve designed and built for service down to  $-320^{\circ}\text{F}$  ( $-196^{\circ}\text{C}$ ) in applications needing a  $C_v$  between 0.045 and 0.440. Depending on your temperature requirements, the B-Cryo Series can be configured for liquid nitrogen (LN2), liquid carbon dioxide (LCO2), and other extreme temperature media. PTFE coated plungers, 316 Stainless Steel guide tubes and plunger springs, encapsulated coils, and PTFE or Rulon® seat seals produce a truly robust Cryogenic valve for applications requiring high cycle life and media temperature control.

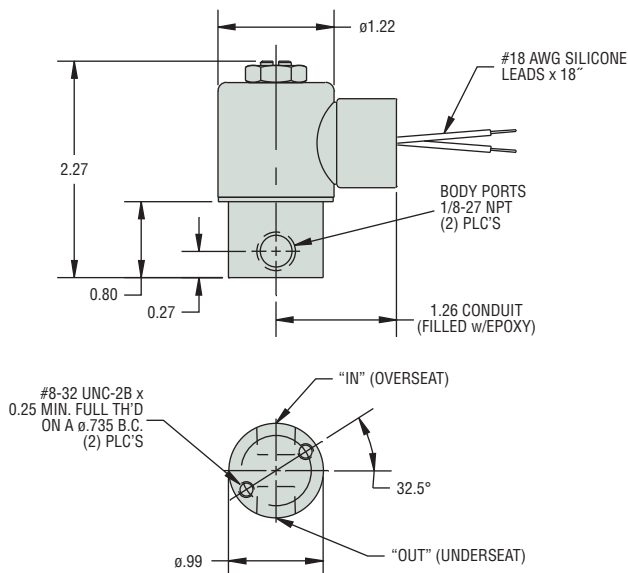


### Typical Applications

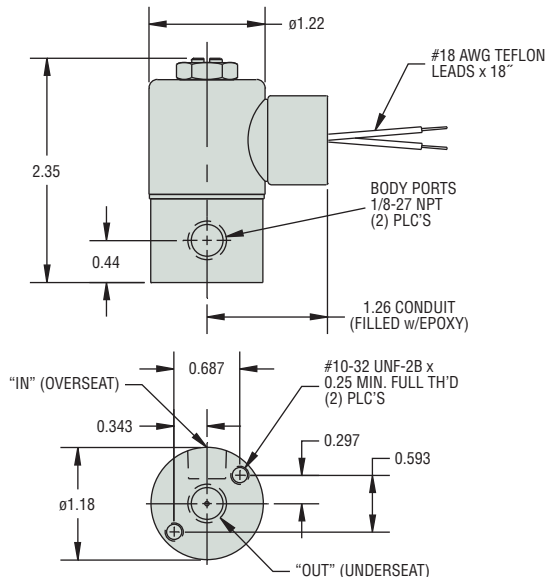
- Environmental Chambers
- Food Processing
- Laser Surgical Equipment
- Semiconductor Manufacturing

### Dimensions

#### LN2-Liquid Nitrogen



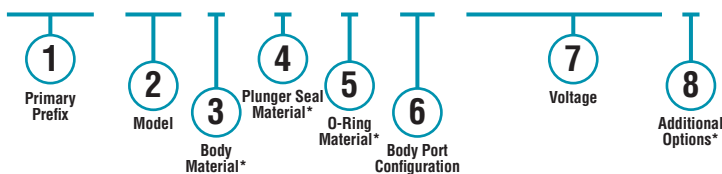
#### LCO2-Liquid Carbon Dioxide



### How To Order

Use the **Bold** characters from the choices listed on the following page to construct a product code.

#### **B2062** - LN2 - **LB** - 120/50/60VAC



\* Blank entry indicates a "Standard" selection (430F Stainless Steel, Rulon® and Variseal®, in this case).

#### Example:

B2062-LN2-LB-120/50/60VAC

2-Way N.C. Liquid Nitrogen Class-H Encapsulated Coil with lead-wires, conduit filled housing solenoid valve, with 430F stainless steel body, Rulon® plunger seal, Variseal® o-ring, 1/4-18 NPT female thread, operating at 120/50/60 Volt AC.

Part Prefix Table ①

		① Primary Prefix			
Orifice Body	MOPD (psig)	C <sub>v</sub> Body	Class H, Encapsulated Coils		
			Lead Wires—Filled Conduit Housing	Lead Wires—Unfilled Conduit Housing	Lead Wires— Grommet Housing
3/64	900	0.045	B2060	B2020	B2010
1/16	405	0.075	B2061	B2021	B2011
5/64	270	0.105	B2062	B2022	B2012
3/32	160	0.160	B2063	B2023	B2013
7/64	110	0.190	B2064	B2024	B2014
1/8	80	0.255	B2065	B2025	B2015
5/32	65	0.365	B2066	B2026	B2016
3/16	30	0.440	B2067	B2027	B2017

② Model

- LN2 = Liquid Nitrogen model
- LCO2 = Liquid Carbon Dioxide model

③ Body Material

LN2 Only

(blank) = 430F Stainless Steel\*

LCO2 Only

(blank) = 303 Stainless Steel\*

BB = Brass

SB = 304 Stainless Steel

SB5 = 316 Stainless Steel

④ Plunger Seal Material

LN2 Only

(blank) = Rulon®\*

LCO2 Only

(blank) = PTFE\*

MQ = Silicone (consult factory)

⑤ O-Ring Material

LN2 Only

(blank) = Variseal® (PTFE material with internal spring)\*

TO = PTFE (consult factory)

LCO2 Only

(blank) = Variseal® (PTFE material with internal spring)\*

TO = PTFE (consult factory)

⑥ Body Port Configuration

LN2 Only

(blank) = 1/8-27 NPT female thread\*

LB = 1/4-18 NPT female thread

LT = 1/8-28 BSPT female thread

LU = 1/4-19 BSPT female thread

BI = Bottom over-seat port, female thread (max. orifice = 1/8")

BO = Bottom under-seat port, female thread

RL = 90° porting - left hand

RR = 90° porting - right hand

LCO2 Only

(blank) = 1/8-27 NPT, bottom under-seat port, female thread\*

LB = 1/4-18 NPT female thread (in-line porting only)

LT = 1/8-28 BSPT female thread

LU = 1/4-19 BSPT female thread (in-line porting only)

BOM = Bottom under-seat port, male thread

(max. orifice = 1/8", brass body only)

IL = Inline porting, 180° apart

⑦ Voltage

LN2 Only

\_\_\_ VDC = DC (specify voltage)

\_\_\_ VAC = AC Rectified (specify voltage)

LCO2 Only

\_\_\_ VDC = DC (specify voltage)

\_\_\_ VAC = AC Rectified (specify voltage)

⑧ Additional Options

LN2 Only

(blank) = Chamfered and PTFE coated plunger\*

(blank) = 316 Stainless Steel 1-piece guide assembly\*

(blank) = 316 Stainless Steel spring\*

LCO2 Only

(blank) = Chamfered and PTFE coated plunger\*

(blank) = 316 Stainless Steel 1-piece guide assembly\*

(blank) = 316 Stainless Steel spring\*

\* Standard selection; will be used unless otherwise specified. Standard selections are not referenced in final part number.

## D-Cryo Series

- ▶ MOPD: 1000 PSI
- ▶  $C_v$  Range: 0.040 to 0.770
- ▶ 15 Watts

The D-Cryo Series is a 2-way, high flow, miniature Cryogenic valve designed and built for service down to  $-320^{\circ}\text{F}$  ( $-196^{\circ}\text{C}$ ). Depending on your temperature requirements, the D-Cryo Series can be configured for liquid nitrogen (LN2), liquid carbon dioxide (LCO2), and other extreme temperature media. PTFE coated plungers, 316 Stainless Steel guide tubes and plunger springs, encapsulated coils, and PTFE or Rulon® seat seals produce a truly robust Cryogenic valve for applications requiring high cycle life and media temperature control.

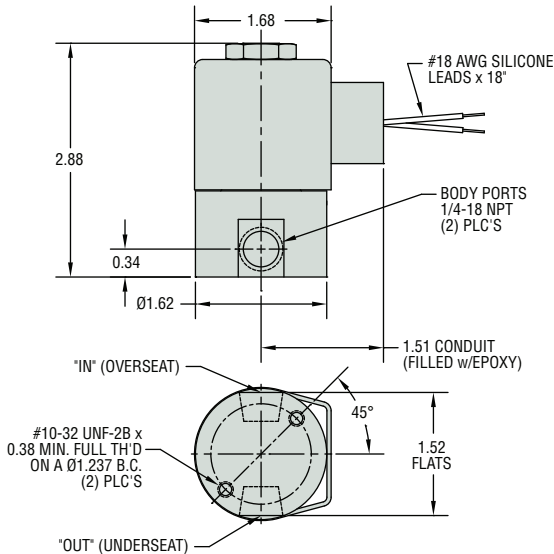


### Typical Applications

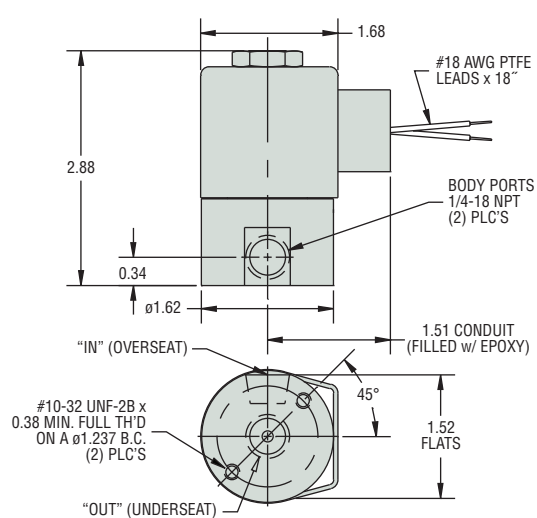
- Environmental Chambers
- Food Processing
- Laser Surgical Equipment
- Semiconductor Manufacturing

### Dimensions

#### LN2-Liquid Nitrogen



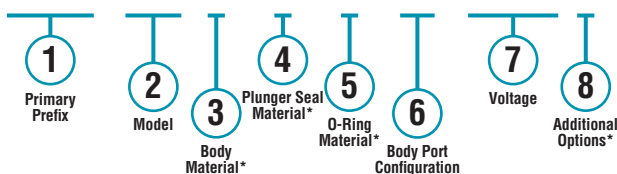
#### LCO2-Liquid Carbon Dioxide



### How To Order

Use the **Bold** characters from the choices listed on the following page to construct a product code.

#### D2062 - LN2 - LT - 12VDC



\* Blank entry indicates a "Standard" selection (430F Stainless Steel, Rulon® and Variseal®, in this case).

#### Example:

D2062-LN2-LT-12VDC

2-Way N.C. Liquid Nitrogen Class-H Encapsulated Coil with lead-wires, conduit filled housing solenoid valve, with 430F stainless steel body, Rulon® plunger seal, Variseal® o-ring, 1/8-28 BSPT female thread, operating at 12 DC with rectified coil.

Part Prefix Table ①

		① Primary Prefix			
Orifice Body	MOPD (psig)	C <sub>v</sub> Body	Class H, Encapsulated Coils		
			Lead Wires—Filled Conduit Housing	Lead Wires—Unfilled Conduit Housing	Lead Wires— Grommet Housing
3/64	1000*	0.040	D2061	D2021	D2011
1/16	1000*	0.070	D2062	D2022	D2012
3/32	640	0.165	D2063	D2023	D2013
1/8	375	0.305	D2064	D2024	D2014
5/32	185	0.365	D2065	D2025	D2015
3/16	130	0.470	D2066	D2026	D2016
1/4	40	0.770	D2067	D2027	D2017

\* For higher pressure, consult factory.

② Model

- LN2 = Liquid Nitrogen model
- LCO2 = Liquid Carbon Dioxide model

③ Body Material

LN2 Only

(blank) = 430F Stainless Steel\*

LCO2 Only

(blank) = 430F Stainless Steel\*  
BB = Brass

④ Plunger Seal Material

LN2 Only

(blank) = Rulon®\*

LCO2 Only

(blank) = PTFE\*  
MQ = Silicone (consult factory)

⑤ O-Ring Material

LN2 Only

(blank) = Variseal® (PTFE material with internal spring)\*

LCO2 Only

(blank) = Fluorosilicone\*  
TO = PTFE

⑥ Body Port Configuration

LN2 Only

(blank) = 1/4-18 NPT female thread\*  
LC = 1/8-27 NPT female thread  
LD = 3/8-18 NPT female thread  
LT = 1/8-28 BSPT female thread  
LU = 1/4-19 BSPT female thread  
BI = Bottom over-seat port, female thread  
BO = Bottom under-seat port, female thread

LCO2 Only

(blank) = 1/4-18 NPT, bottom under-seat port, female thread\*  
LC = 1/8-27 NPT female thread  
LD = 3/8-18 NPT female thread (in-line porting only)  
LT = 1/8-28 BSPT female thread  
LU = 1/4-19 BSPT female thread  
IL = Inline porting, 180° apart

⑦ Voltage

LN2 Only

\_\_\_ VDC = DC (specify voltage)  
\_\_\_ VAC = AC Rectified (specify voltage)

LCO2 Only

\_\_\_ VDC = DC (specify voltage)  
\_\_\_ VAC = AC Rectified (specify voltage)

⑧ Additional Options

LN2 Only

(blank) = Chamfered and PTFE coated plunger\*  
(blank) = 316 Stainless Steel 1-piece guide assembly\*  
(blank) = 316 Stainless Steel spring\*

LCO2 Only

(blank) = Chamfered and PTFE coated plunger\*  
(blank) = 316 Stainless Steel 1-piece guide assembly\*  
(blank) = 316 Stainless Steel spring\*

\* Standard selection; will be used unless otherwise specified.  
Standard selections are not referenced in final part number.

## Manifold Assemblies

Gems Valve Engineers specialize in working with OEMs to design and manufacture integrated valve and manifold assemblies to meet most any fluidic system requirements. Our expert team of field and in-house engineers can deliver AutoCAD® or SolidWorks drawings in days for easy integration into OEM equipment. Whether it is a single or multiple position manifold—made from plastic, aluminum, brass or stainless steel—final systems are delivered completely assembled, tested, and ready for installation into your equipment.

Gems Manifold Assemblies offer features you require, in a compact package, at a competitive price. Integrated manifold assemblies provide:

- Simplified fluidic systems
- Decreased number of potential leak paths
- Reduction in the amount of mounting hardware
- Reduced quantity of fittings and tubing via common passages
- Compact package
- Design opportunity for multiple valve configurations to handle complex and precise flow control
- Reduced labor content required by OEMs
- Easy valve maintenance or replacement

All Gems valve families can be integrated into a manifold system. Contact your Gems Valve Engineer for a manifold assembly that will fulfill all of your application requirements. Contact us at 800-378-1600 or [info@gemssensors.com](mailto:info@gemssensors.com).

## Fluidic Systems

Purchasing a complete fluidic system through Gems eliminates the time and effort of multiple purchase orders and reduces receiving, inspection, and coordination of different parts down to a single assembly. Plus, buying from a single source gives OEMs one contact point for design changes, expediting, and warranty questions.

Gems valve engineers and manufacturing have a 50-year history of working with OEMs to develop, design, and manufacture their complex fluidic systems; from simple wiring harnesses and connectors to plug and play sub-assemblies and additional integrated fluidic components.

Designing and purchasing a complete turnkey fluidic system from Gems Sensors & Controls has many advantages.

- Receiving a complete 100% tested system that can be installed directly into your end product
- Reducing the number of suppliers required
- Decreasing the assembly of numerous third-party parts
- Minimizing the number of potential leak-points by eliminating tubing and fittings
- Reducing multiple components into a smaller and simplified final system

Our team of experts can integrate:

- Multiple valve types, including 3rd party manufacturers, into one assembly
- Numerous tube and pipe fittings
- Various electrical terminations
- Sensors/Switches/Gauges:
  - Pressure switch, transducer or gauge
  - Fluid flow sensor
  - Fluid level sensor
  - Temperature switch or transducer
- Inline media filters
- Heaters and thermistors

Contact your Gems Valve Engineer for a fluidic system that will fulfill all of your application requirements. Contact us at 800-378-1600 or [info@gemssensors.com](mailto:info@gemssensors.com).

