



A&N CORPORATION

VACUUM VALVES





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Vacuum VALVES



Comparing Valve Types

	HIGH VACUUM BALL VALVE	HIGH VACUUM POPPET VALVE	HIGH VACUUM GATE VALVE
Maximum conductance	Yes	No	Yes
Minimum line length	No	No	Yes
Low to moderate particulates	Yes	Yes	No
Moderate to high particular	Yes	No	No
Bakeable to 100°C	Yes	Yes	Yes
Bakeable over 100°C	Yes ¹	Yes ¹	No
Large, full bore pass-through capability	Yes ²	No	Yes
Positive pressure holding capability	Yes ³	No	No
Pressure range ATM to 10 ⁻⁷ Torr.	Yes	Yes ⁴	Yes
Corrosion resistance	Yes ⁵	No	No
Pneumatic actuation	Yes	Yes ⁶	Yes
Electric actuation	Yes	Yes	No
Seats wiped clean during cycling	Yes	No	No
In-line rebuild ability	Yes	No	No
Ease of rebuild	Yes	Yes	No
Catastrophic fail safe closed or open	Yes ⁷	Yes	No
Adjustable cycle time with actuation	Yes	No	No

Yes = recommended No = not recommended

1 = Viton® begins to outgas and set at 150°C.
Other seals can be substituted for higher temperature (200°C).

Metal seal poppet valves go up to 400°C

2 = Large bore pass-through capability of up to 5.8 inch available with tube bore high vacuum ball valves.

3 = Up to 6 ATM (100 psi)

4 = Metal seal poppet valves to 10⁻¹⁰ Torr.

5 = High vacuum ball valves manufactured from 316 L.

Poppet and gate 304

6 = Exception – metal-sealed valves

7 = With pneumatic fail safe actuator

Overview:

A&N Corporation offers three main types of vacuum shut-off valves for your application. Each type regulates gas flow through your system with simple open or close commands. These valves are designed to perform fully opened or closed. The standard design is not meant for flow control, but is a simple off/on control mechanism for your vacuum system.

Poppet Valves are made of a body, actuator and internal poppet. The actuator transports the poppet linearly. When the poppet is moved toward the top of the valve the internal body cavity is open to the system and flow is unimpeded. Once the actuator moves the poppet to the bottom of the valve an elastomer sealing ring is compressed onto a sealing surface on the lower body of the valve. This creates a vacuum tight seal and stops flow. Poppet valves are available in three body styles; 90° Angle, Offset In-Line and In-Line.

Gate Valves provide straight through, unimpeded flow with the smallest valve body profile. Gate valves are ideal for space-constrained applications that require maximum conductance. A central carriage or gate is raised and lowered by the actuator within the body. In the open position the gate retracts completely from the tube aperture allowing unrestricted flow. In the closed position an elastomer sealing ring is compressed against a sealing surface on the inside of one of the body ports.

Ball Valves offer straight, unimpeded flow with minimal impact on system space needed to accommodate the valve body. Ball valves are durable valves that are less sensitive to particulate contamination than the other valve types and are especially useful in dirty vacuum applications. Ball valves are made of a body, stem, ball and end caps. The ball is compressed within the body by end caps creating a vacuum tight central cavity. The valve is opened and closed by turning the stem 90° back and forth. The hole in the ball provides unobstructed flow in the open position and the sealing seat for the ball wipes the ball clean as it is opened and closed providing a consistent seal.



* ORDERING NOTE

*1 Other seals (e.g. Chemraz®, Kalraz®) available upon request

Overview

A&N Ball valves offer straight-through, unimpeded flow with a minimal valve body footprint. Because of their unique design, ball valves are less sensitive than other vacuum valves to particulate contamination; therefore, they are especially useful in “dirty” vacuum applications. For example, ball valves are almost always used to isolate scrubbers and traps downstream of the rough pumping system.

A&N Ball valves consist of a body, stem, ball, and two end caps machined from corrosive resistant 316L stainless steel. Fluoroelastomers are used to seal the stem and end caps from atmosphere while the PTFE Teflon® seats are used to isolate the process when closed. The valve is opened and closed manually or pneumatically by ¼ turn, quick actuation. The PTFE Teflon® seats wipe the ball clean as it is opened and closed. This feature provides the “self-cleaning” action that makes this valve robust in particle-rich effluent streams.

Specifications

Vacuum and temperature ratings

- Vacuum rated to 1×10^{-8} Torr
- Helium leak rated less than 1×10^{-9} std. cc/sec
- Standard fluoroelastomer seal (i.e. Viton®): -26°C to 205°C (-15°F to 400°F)

Materials

- Valve body, ball, stem, and end caps: machined from solid 316L stainless steel
- Standard seal: fluoroelastomer (i.e. Viton®) ¹
- Seats: PTFE Teflon®
- Lubricant: Dow Corning® High Vacuum Grease

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Features

General

- Straight-through, unimpeded flow
- Higher conductance than a comparable poppet valve
- Poppetless design has less wetted surface
- 1/4 turn, quick actuation
- “Self-cleaning” action prevents deposition buildup
- Configurable to meet system requirements (see page 2.6 - 2.7)
- Ball port sizes: 0.56 inch up to 3.27 inch
- Valves can be easily serviced with A&N's standard maintenance kits ²

Pneumatic

- Actuator operating pressure: 80 - 120 psig
- Actuator temperature range:
 - Moist air: 0°C to 150°C (32°F to 302°F)
 - Dry air: -20°C to 150°C (-4°F to 302°F)
- Both Air-to-Open, Spring-to-Close (AS) single acting actuators and Air-to-Open, Air-to-Close (AA) double acting actuators are available
- Fail safe open or fail safe closed configuration available for ball valves with AS actuators
- 1/8 NPT air line hook-up
- Visual and mechanical position indicators available
- Solenoids available for 120VAC, 240VAC or 24VDC versions



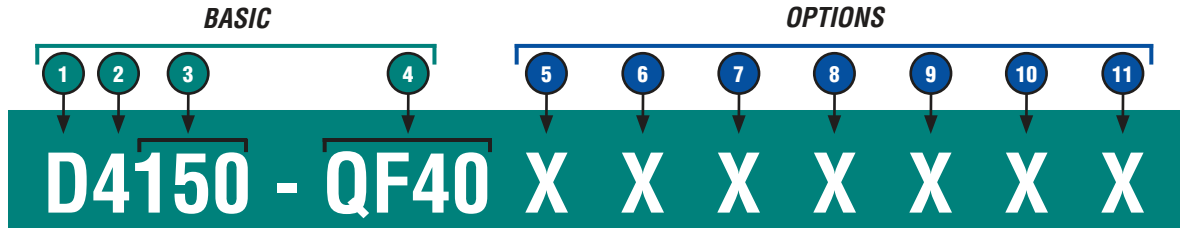
For More Info...

*2 See ball valve maintenance kits listed with their respective ball valve.



Build Your own Ball Valve!

To configure an A&N reference number for a basic high vacuum ball valve, use Steps 1 - 4. To add available options, use Steps 5 - 9.



EXAMPLE 1: B4075-TE is a basic manual ball valve with a 0.57” ball port, stainless steel, 0.75” flange tube size and tube end port terminations.

EXAMPLE 2: F4200-LF63-AS is an actuated ball valve with a 1.87” ball port, stainless steel, 2.0” Flange tube size, LF63 port terminations, air-to-spring actuator.

1 Body Series

The ball is machined from corrosive resistant 316L stainless steel bar. On the pump side of the ball is an evacuation hole preventing trapped gas and a subsequent burst when opening the valve. As the ball turns, it is wiped clean by the Teflon® seats. This “self-cleaning” action makes the ball valve ideal for “dirty” applications. The chart lists the various body series with their corresponding ball port size and flange type port terminations.

Body Series	Ball Port Size	Flange Type Options
B	0.56 in.	QF16, QF25, TE, SE
C	0.81 in.	QF25, QF40, TE, SE
D	1.25 in.	QF40, TE, SE
E	1.50 in.	QF50, TE, SE
F	1.87 in.	QF50, LF63, TE
G	2.50 in.	LF80, TE
H	3.27 in.	LF100, TE

2 Valve Material

Unlike cast or forged ball valves, A&N ball valves are machined from solid corrosive resistant 316L stainless steel bar. Our experience has shown that for vacuum applications cast and forged ball valves are subject to voids, microscopic leak paths, porosity and inclusions in the material. This leads to virtual leaks, outgassing, permeation and longer pump down times. For rough vacuum applications, brass is available.

4	316L Stainless Steel
1	Brass

3 Flange Tube Size

The Flange Tube Size is dependent on the Body Series selected in Step 1 and the Flange Type selected in Step 4.

		Body Series
050	0.5 in.	B
075	0.75 in.	B
100	1.0 in.	B, C
150	1.5 in.	C, D
200	2.0 in.	E, F
300	3.0 in.	G
400	4.0 in.	H

4 Port Termination (Flange Type)

The available port terminations are dependent on the Body Series selected in Step 1. Below is a current list of our standard configurations; however, other configurations are available upon request (i.e. ASA/ANSI, ConFlat®, etc).

		Body Series
-QF16	ISO-Quick Flange	B
-QF25	ISO-Quick Flange	B, C
-QF40	ISO-Quick Flange	C, D
-QF50	ISO-Quick Flange	E, F
-LF63	ISO-Large Flange	F
-LF80	ISO-Large Flange	G
-LF100	ISO-Large Flange	H
-TE	Tube Ends	B - H
-SE	Pipe Ends	B - E

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5 Actuator Type

Any valve can be configured with a pneumatic actuator. Air-to-spring or air-to-air are both available and have a temperature range of 20°C to 150°C (-4°F to 302°F).

(Blank)	Manual
-AS	Air-to-Spring
-AA	Air-to-Air

NOTE: Only for actuated valves.

7 Actuator Configuration

If you chose an air-to-spring actuator in Step 5, it can be configured spring to close (Normally Closed) or spring to open (Normally Open). Normally closed is the standard fail safe configuration.

(Blank)	Normally Closed
-NO	Normally Open

NOTE: Only for spring return actuated valves.

9 Solenoid

If an actuator is chosen in Step 5, it can be configured with a solenoid from the list below.

(Blank)	No Solenoid
-S3A	3-way 120 VAC (AS)
-S3B	3-way 240 VAC (AS)
-S3C	3-way 24 VDC (AS)
-S4A	4-way 120 VAC (AA)
-S4B	4-way 240 VAC (AA)
-S4C	4-way 24 VDC (AA)

NOTE: Only for actuated valves.

11 Overall Length

All A&N ball valves have a standard overall length (OAL) from flange to flange which is represented as Dimension A. The ball valve can be manufactured with a custom OAL. If a custom length is preferred, use three digits to represent the OAL in inches. For example, an OAL of 4.56 inch would be represented as "456".

(Blank)	Standard
-XXX	Custom Length

NOTE: Some custom lengths may not be available due to certain size and cost constraints, check with a technical sales representative before ordering a custom length.

6 Position Indicator

If you chose an actuator in Step 5, you may want to add a position indicator. A position indicator has a visual indicator on the top as well as two mechanical or proximity switches for electrical output. Switches can be wired to provide signals when the valve is opened, closed or both.

(Blank)	Not Present
-PI	Present

NOTE: Only for actuated valves.

8 Heater Ready

The A&N ball valve can be assembled to allow space for a heater jacket. This space is referred to as a standoff. The standard standoff is 3/8" (038); however, the valve can be assembled with other sized standoffs to accommodate other sized heaters. Custom standoffs are represented with an "H" then three digits (XXX). For example, a 3/4" (0.75") standoff is represented as 075.

(Blank)	No Standoffs
-H	3/8 in. standoffs
-HXXX	Custom Standoff (XXX = X.xx in.)

NOTE: Only for D, E, & F valves.

10 Locking Kit

(Blank)	No Locking Kit
-LK	Locking Kit Installed

NOTE: Only for D, E, & F manual valves.



B-Series Ball Valves

Specifications

Vacuum and temperature ratings

- Vacuum rated to 1×10^{-8} Torr
- Helium leak rated less than 1×10^{-9} std. cc/sec
- Standard fluoroelastomer seal (i.e. Viton®):
-26°C to 205°C (-15°F to 400°F)

Materials:

- Valve body, ball, stem, and end caps: machined from solid 316L stainless steel
- Standard seal: fluoroelastomer (i.e. Viton®)?
- Seats: PTFE Teflon®
- Lubricant: Dow Corning® High Vacuum Grease

Ball port size

- 0.56 inch

Features

General

- Straight-through, unimpeded flow
- Higher conductance than a comparable poppet valve
- Poppetless design has less wetted surface
- 1/4 turn, quick actuation
- "Self-cleaning" action prevents deposition buildup
- Valves can be easily serviced with A&N's standard maintenance kits

Pneumatic

- Actuator operating pressure: 80 - 120 psig
- Actuator temperature range:
 - Moist air: 0°C to 150°C (32°F to 302°F)
 - Dry air: -20°C to 150°C (-4°F to 302°F)
- Both Air-to-Open, Spring-to-Close (AS) single acting actuators and Air-to-Open, Air-to-Close (AA) double acting actuators are available
- "Fail-safe open" or "fail-safe closed" configuration available for ball valves with AS actuators
- 1/8 NPT air line hook-up
- Visual and mechanical position indicators available
- Solenoids available for 120VAC, 240VAC or 24VDC versions

Additional options: Call for price and availability

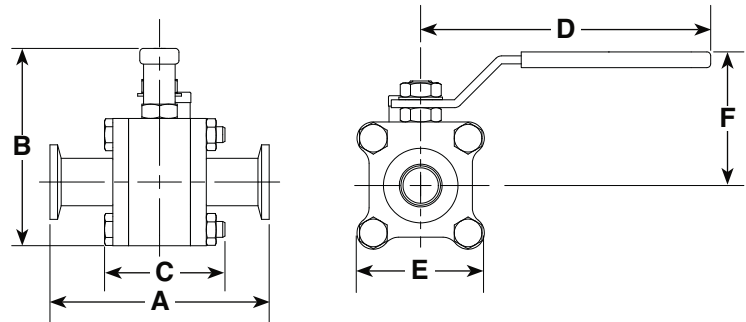
- Configurable to meet system requirements
 - Port terminations
 - Overall length
 - Heater ready
 - Fail-safe position

*ORDERING NOTE

*1 Other seals (e.g. Chemraz®, Kalraz®) available upon request



B-Series Ball Valves Manual



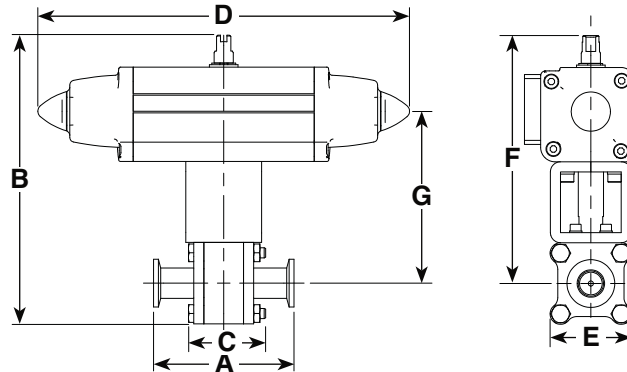
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PART NUMBER	REFERENCE NUMBER	END CAP TYPE	END CAP TUBE SIZE	CONDUCT. (L/SEC)	A	B	C	D	E	F
3000028	B4075-QF16	QF16	3/4 in. O.D.	5	3.47	3.1	1.9	4.7	2.0	2.1



B-Series Ball Valves Pneumatic



PART NUMBER	REFERENCE NUMBER	END CAP TYPE	END CAP TUBE SIZE	CONDUCT. (L/SEC)	DIMENSIONS						
					A	B	C	D	E	F	G
3009120	B4075-QF16-AS	QF16	3/4 in. O.D.	5	3.47	7.1	1.9	9.2	2.0	6.1	4.2
3008120	B4075-QF16-AA	QF16	3/4 in. O.D.	5	3.47	6.9	1.9	6.2	2.0	5.8	4.1



Solenoids

OPTION NUMBER	DESCRIPTION
-S3A	3-way 120VAC (AS)
-S3B	3-way 240VAC (AS)
-S3C	3-way 24VDC (AS)
-S4A	4-way 120VAC (AA)
-S4B	4-way 240VAC (AA)
-S4C	4-way 24VDC (AA)

Position Indicator

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3122065	SB-PI-04	Standard Switchbox - 2-switch mechanical w/4 bare wires

Maintenance Kits for all B-Series Ball Valves

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3010068	B-RK-S	B Series Maintenance Kit

Kit Contains: (1) stem o-ring, (2) body o-rings, (2) Teflon® seats, (1) Teflon® spacer, (1) PEEK® stem bushing, (1) nylon lock nut



C-Series Ball Valves

Specifications

Vacuum and temperature ratings

- Vacuum rated to 1×10^{-8} Torr
- Helium leak rated less than 1×10^{-9} std. cc/sec
- Standard fluoroelastomer seal (i.e. Viton®):
-26°C to 205°C (-15°F to 400°F)

Materials:

- Valve body, ball, stem, and end caps: machined from solid 316L stainless steel
- Standard seal: fluoroelastomer (i.e. Viton®)?
- Seats: PTFE Teflon®
- Lubricant: Dow Corning® High Vacuum Grease

Ball port size

- 0.56 inch

Features

General

- Straight-through, unimpeded flow
- Higher conductance than a comparable poppet valve
- Poppetless design has less wetted surface
- 1/4 turn, quick actuation
- "Self-cleaning" action prevents deposition buildup
- Valves can be easily serviced with A&N's standard maintenance kits

Pneumatic

- Actuator operating pressure: 80 - 120 psig
- Actuator temperature range:
 - Moist air: 0°C to 150°C (32°F to 302°F)
 - Dry air: -20°C to 150°C (-4°F to 302°F)
- Both Air-to-Open, Spring-to-Close (AS) single acting actuators and Air-to-Open, Air-to-Close (AA) double acting actuators are available
- "Fail-safe open" or "fail-safe closed" configuration available for ball valves with AS actuators
- 1/8 NPT air line hook-up
- Visual and mechanical position indicators available
- Solenoids available for 120VAC, 240VAC or 24VDC versions

Additional options: Call for price and availability

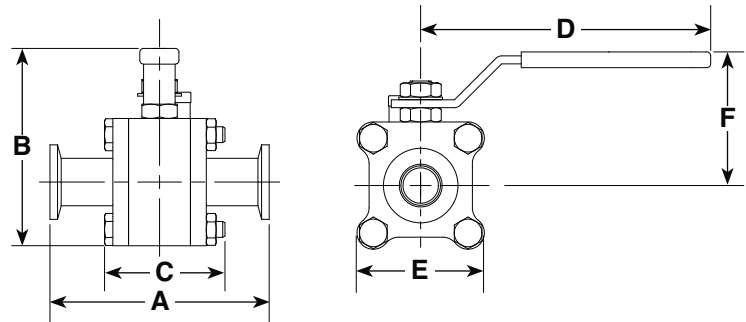
- Configurable to meet system requirements
 - Port terminations
 - Overall length
 - Heater ready
 - Fail-safe position

*ORDERING NOTE

*1 Other seals (e.g. Chemraz®, Kalraz®) available upon request



C-Series Ball Valves Manual



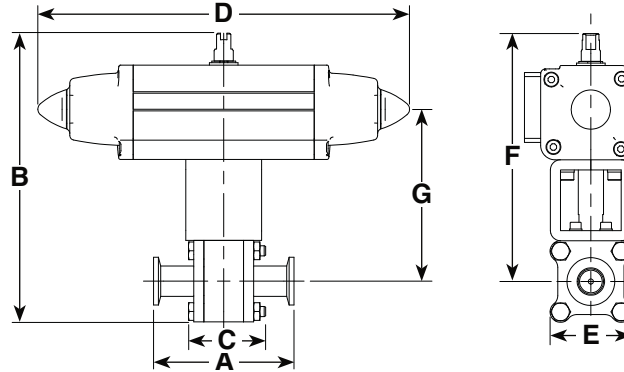
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PART NUMBER	REFERENCE NUMBER	END CAP TYPE	END CAP TUBE SIZE	CONDUCT. (L/SEC)	DIMENSIONS					
					A	B	C	D	E	F
3000030	C4100-QF25	QF25	1 in. O.D.	13	3.92	3.7	2.5	5.8	2.4	2.5



C-Series Ball Valves Pneumatic



PART NUMBER	REFERENCE NUMBER	END CAP TYPE	END CAP TUBE SIZE	CONDUCT. (L/SEC)	DIMENSIONS						
					A	B	C	D	E	F	G
3009128	C4100-QF25-AS	QF25	1 in. O.D.	13	3.92	7.5	2.5	9.2	2.4	6.3	4.4
3008128	C4100-QF25-AA	QF25	1 in. O.D.	13	3.92	7.5	2.5	6.3	2.4	6.0	4.3



Solenoids

OPTION NUMBER	DESCRIPTION
-S3A	3-way 120VAC (AS)
-S3B	3-way 240VAC (AS)
-S3C	3-way 24VDC (AS)
-S4A	4-way 120VAC (AA)
-S4B	4-way 240VAC (AA)
-S4C	4-way 24VDC (AA)

Position Indicator

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3122065	SB-PI-04	Standard Switchbox - 2-switch mechanical w/4 bare wires

Maintenance Kits for all C-Series Ball Valves

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3010109	C-RK-S	C Series Maintenance Kit

Kit Contains: (1) stem o-ring, (2) body o-rings, (2) Teflon® seats, (1) Teflon® spacer, (1) PEEK® stem bushing, (1) nylon lock nut



D-Series Ball Valves

Specifications

Vacuum and temperature ratings

- Vacuum rated to 1×10^{-9} Torr
- Helium leak rated less than 1×10^{-9} std. cc/sec
- Standard fluoroelastomer seal (i.e. Viton®):
-26°C to 205°C (-15°F to 400°F)

Materials:

- Valve body, ball, stem, and end caps: machined from solid 316L stainless steel
- Standard seal: fluoroelastomer (i.e. Viton®)?
- Seats: PTFE Teflon®
- Lubricant: Dow Corning® High Vacuum Grease

Ball port size

- 1.25 inch

Features

General

- Straight-through, unimpeded flow
- Higher conductance than a comparable poppet valve
- Poppetless design has less wetted surface
- 1/4 turn, quick actuation
- "Self-cleaning" action prevents deposition buildup
- Valves can be easily serviced with A&N's standard maintenance kits

Pneumatic

- Actuator operating pressure: 80 - 120 psig
- Actuator temperature range:
- Moist air: 0°C to 150°C (32°F to 302°F)
- Dry air: -20°C to 150°C (-4°F to 302°F)
- Both Air-to-Open, Spring-to-Close (AS) single acting actuators and Air-to-Open, Air-to-Close (AA) double acting actuators are available
- "Fail-safe open" or "fail-safe closed" configuration available for ball valves with AS actuators
- 1/8 NPT air line hook-up
- Visual and mechanical position indicators available
- Solenoids available for 120VAC, 240VAC or 24VDC versions

Additional options: Call for price and availability

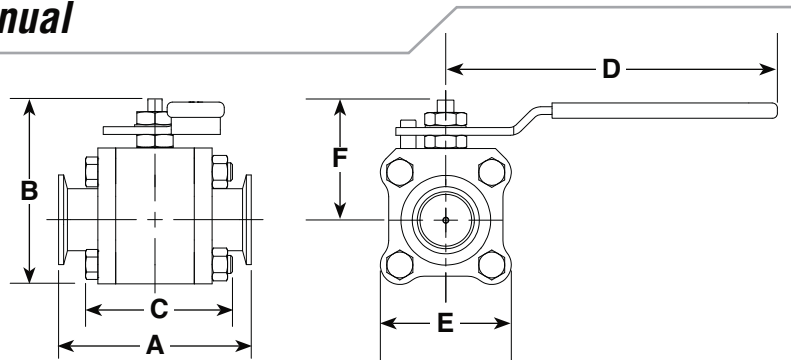
- Configurable to meet system requirements
- Port terminations
- Overall length
- Heater ready
- Fail-safe position

*ORDERING NOTE

*1 Other seals (e.g. Chemraz®, Kalraz®) available upon request



D-Series Ball Valves Manual



PART NUMBER	REFERENCE NUMBER	END CAP TYPE	END CAP TUBE SIZE	CONDUCT. (L/SEC)	A	B	C	D	E	F
3000032	D4150-QF40	QF40	1 1/2 in. O.D.	35	4.65	4.5	3.5	8.0	3.2	2.9

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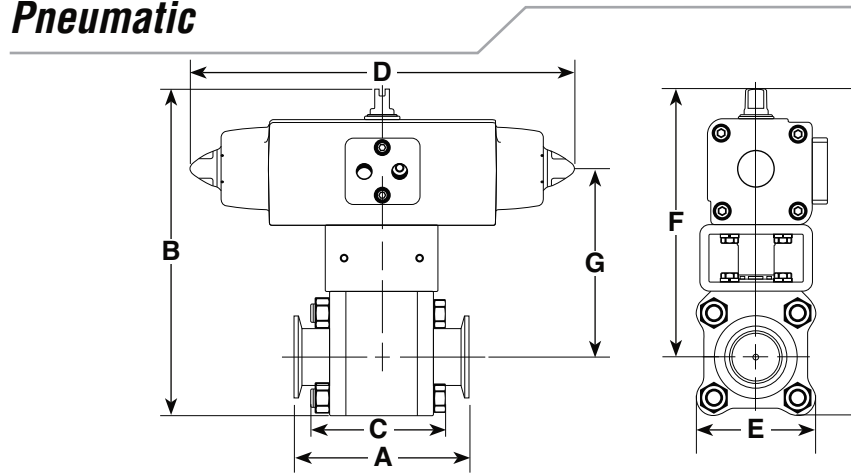
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Lock Kits for Manual Ball Valve

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3023005	D/E/F-LK	Lock Kit for D, E, or F Manual Ball Valve



D-Series Ball Valves Pneumatic



PART NUMBER	REFERENCE NUMBER	END CAP TYPE	END CAP TUBE SIZE	CONDUCT. (L/SEC)	DIMENSIONS						
					A	B	C	D	E	F	G
3009135	D4150-QF40-AS	QF40	1 1/2 in. O.D.	35	4.65	8.6	3.5	10.2	3.2	7.0	5.0
3008135	D4150-QF40-AA	QF40	1 1/2 in. O.D.	35	4.65	8.6	3.5	7.8	3.2	7.0	5.0



Solenoids

OPTION NUMBER	DESCRIPTION
-S3A	3-way 120VAC (AS)
-S3B	3-way 240VAC (AS)
-S3C	3-way 24VDC (AS)
-S4A	4-way 120VAC (AA)
-S4B	4-way 240VAC (AA)
-S4C	4-way 24VDC (AA)

Position Indicator

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3122065	SB-PI-04	Standard Switchbox - 2-switch mechanical w/4 bare wires

Maintenance Kits for all D-Series Ball Valves

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3010141	D-RK-S	D Series Maintenance Kit

Kit Contains:

(1) stem o-ring, (2) body o-rings, (2) Teflon® seats, (1) Teflon® spacer, (1) PEEK® stem bushing, (1) nylon lock nut, (2) brass stem bushings



E-Series Ball Valves

Specifications

Vacuum and temperature ratings

- Vacuum rated to 1×10^{-9} Torr
- Helium leak rated less than 1×10^{-9} std. cc/sec
- Standard fluoroelastomer seal (i.e. Viton®):
-26°C to 205°C (-15°F to 400°F)

Materials:

- Valve body, ball, stem, and end caps: machined from solid 316L stainless steel
- Standard seal: fluoroelastomer (i.e. Viton®)?
- Seats: PTFE Teflon®
- Lubricant: Dow Corning® High Vacuum Grease

Ball port size

- 1.50 inch

Features

General

- Straight-through, unimpeded flow
- Higher conductance than a comparable poppet valve
- Poppetless design has less wetted surface
- 1/4 turn, quick actuation
- "Self-cleaning" action prevents deposition buildup
- Valves can be easily serviced with A&N's standard maintenance kits

Pneumatic

- Actuator operating pressure: 80 - 120 psig
- Actuator temperature range:
- Moist air: 0°C to 150°C (32°F to 302°F)
- Dry air: -20°C to 150°C (-4°F to 302°F)
- Both Air-to-Open, Spring-to-Close (AS) single acting actuators and Air-to-Open, Air-to-Close (AA) double acting actuators are available
- "Fail-safe open" or "fail-safe closed" configuration available for ball valves with AS actuators
- 1/8 NPT air line hook-up
- Visual and mechanical position indicators available
- Solenoids available for 120VAC, 240VAC or 24VDC versions

Additional options: Call for price and availability

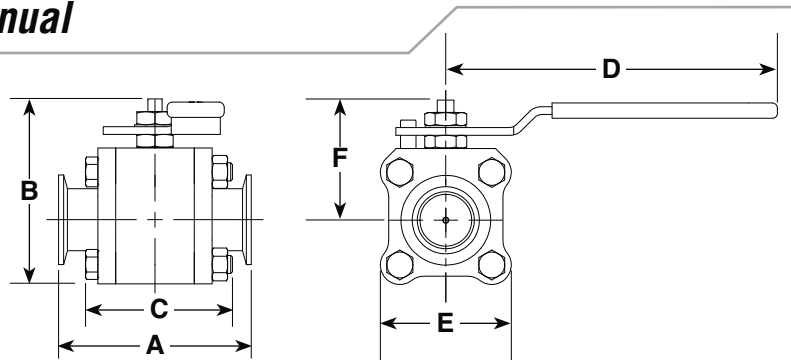
- Configurable to meet system requirements
- Port terminations
- Overall length
- Heater ready
- Fail-safe position

*ORDERING NOTE

*1 Other seals (e.g. Chemraz®, Kalraz®) available upon request



E-Series Ball Valves Manual



PART NUMBER	REFERENCE NUMBER	END CAP TYPE	END CAP TUBE SIZE	CONDUCT. (L/SEC)	A	B	C	D	E	F
3000035	E4200-QF50	QF50	2 in. O.D.	57	4.97	4.9	3.9	8.0	3.5	3.1

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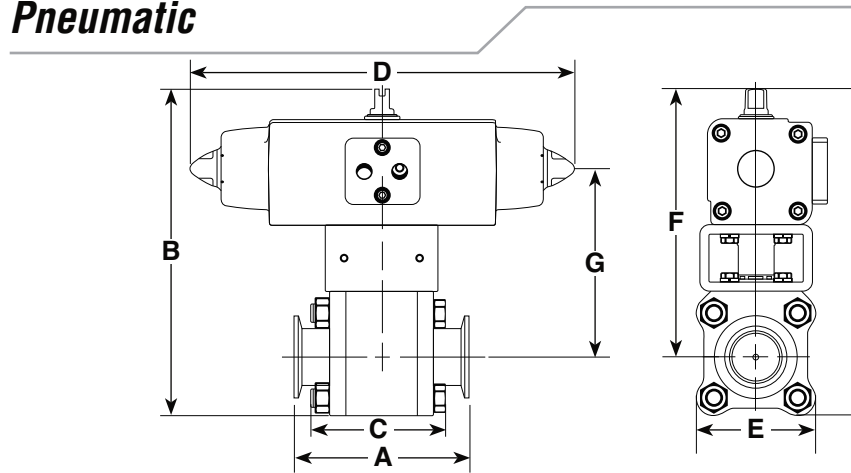
707 SW 19th Ave.
Williston, FL 32696
1(800) FLANGE1
FAX (352) 528-3441
www.ancorp.com

Lock Kits for Manual Ball Valve

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3023005	D/E/F-LK	Lock Kit for D, E, or F Manual Ball Valve



E-Series Ball Valves Pneumatic



PART NUMBER	REFERENCE NUMBER	END CAP TYPE	END CAP TUBE SIZE	CONDUCT. (L/SEC)	DIMENSIONS						
					A	B	C	D	E	F	G
3009150	E4200-QF50-AS	QF50	2 in. O.D.	57	4.97	9.0	3.9	10.2	3.5	7.2	5.2
3008150	E4200-QF50-AA	QF50	2 in. O.D.	57	4.97	9.0	3.9	7.8	3.5	7.2	5.2



Solenoids

OPTION NUMBER	DESCRIPTION
-S3A	3-way 120VAC (AS)
-S3B	3-way 240VAC (AS)
-S3C	3-way 24VDC (AS)
-S4A	4-way 120VAC (AA)
-S4B	4-way 240VAC (AA)
-S4C	4-way 24VDC (AA)

Position Indicator

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3122065	SB-PI-04	Standard Switchbox - 2-switch mechanical w/4 bare wires

Maintenance Kits for all E-Series Ball Valves

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3010181	E-RK-S	E Series Maintenance Kit

Kit Contains:

(1) stem o-ring, (2) body o-rings, (2) Teflon® seats, (1) Teflon® spacer, (1) PEEK® stem bushing, (1) nylon lock nut, (2) brass stem bushings



F-Series Ball Valves

Specifications

Vacuum and temperature ratings

- Vacuum rated to 1×10^{-9} Torr
- Helium leak rated less than 1×10^{-9} std. cc/sec
- Standard fluoroelastomer seal (i.e. Viton®):
-26°C to 205°C (-15°F to 400°F)

Materials:

- Valve body, ball, stem, and end caps: machined from solid 316L stainless steel
- Standard seal: fluoroelastomer (i.e. Viton®)?
- Seats: PTFE Teflon®
- Lubricant: Dow Corning® High Vacuum Grease

Ball port size

- 1.87 inch

Features

General

- Straight-through, unimpeded flow
- Higher conductance than a comparable poppet valve
- Poppetless design has less wetted surface
- 1/4 turn, quick actuation
- "Self-cleaning" action prevents deposition buildup
- Valves can be easily serviced with A&N's standard maintenance kits

Pneumatic

- Actuator operating pressure: 80 - 120 psig
- Actuator temperature range:
- Moist air: 0°C to 150°C (32°F to 302°F)
- Dry air: -20°C to 150°C (-4°F to 302°F)
- Both Air-to-Open, Spring-to-Close (AS) single acting actuators and Air-to-Open, Air-to-Close (AA) double acting actuators are available
- "Fail-safe open" or "fail-safe closed" configuration available for ball valves with AS actuators
- 1/8 NPT air line hook-up
- Visual and mechanical position indicators available
- Solenoids available for 120VAC, 240VAC or 24VDC versions

Additional options: Call for price and availability

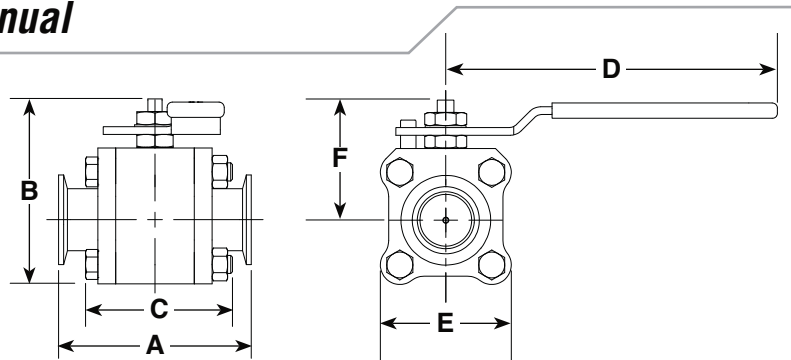
- Configurable to meet system requirements
- Port terminations
- Overall length
- Heater ready
- Fail-safe position

*ORDERING NOTE

*1 Other seals (e.g. Chemraz®, Kalraz®) available upon request



F-Series Ball Valves Manual



PART NUMBER	REFERENCE NUMBER	END CAP TYPE	END CAP TUBE SIZE	CONDUCT. (L/SEC)	A	B	C	D	E	F
3002035	F4200-QF50	QF50	2 in. O.D.	87	6.31	5.4	4.3	8.0	4.1	3.5

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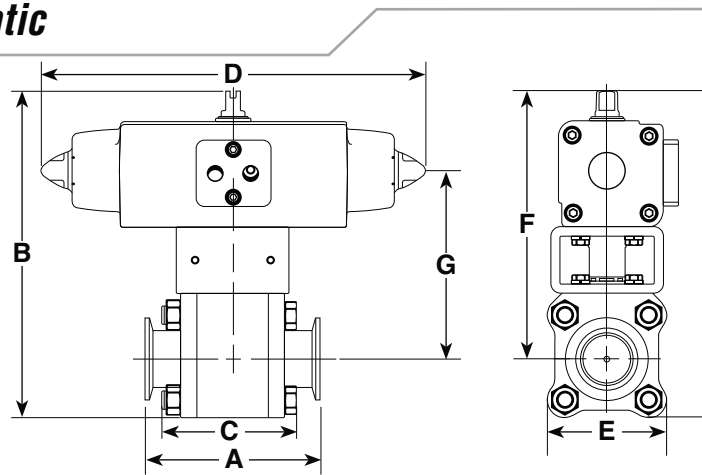
707 SW 19th Ave.
Williston, FL 32696
1(800) FLANGE1
FAX (352) 528-3441
www.ancorp.com

Lock Kits for Manual Ball Valve

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3023005	D/E/F-LK	Lock Kit for D, E, or F Manual Ball Valve



F-Series Ball Valves Pneumatic



PART NUMBER	REFERENCE NUMBER	END CAP TYPE	END CAP TUBE SIZE	CONDUCT. (L/SEC)	DIMENSIONS						
					A	B	C	D	E	F	G
3009165	F4200-QF50-AS	QF50	2 in. O.D.	87	6.31	10.0	4.3	12.0	4.1	8.0	5.7
3008165	F4200-QF50-AA	QF50	2 in. O.D.	87	6.31	10.0	4.3	9.3	4.1	8.0	5.7



Solenoids

OPTION NUMBER	DESCRIPTION
-S3A	3-way 120VAC (AS)
-S3B	3-way 240VAC (AS)
-S3C	3-way 24VDC (AS)
-S4A	4-way 120VAC (AA)
-S4B	4-way 240VAC (AA)
-S4C	4-way 24VDC (AA)

Position Indicator

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3122065	SB-PI-04	Standard Switchbox - 2-switch mechanical w/4 bare wires

Maintenance Kits for all F-Series Ball Valves

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3010084	F-RK-S	F Series Maintenance Kit

Kit Contains:

(1) stem o-ring, (2) body o-rings, (2) Teflon® seats, (1) Teflon® spacer, (1) PEEK® stem bushing, (1) nylon lock nut, (2) brass stem bushings



G-Series Ball Valves

Specifications

Vacuum and temperature ratings

- Vacuum rated to 1×10^{-9} Torr
- Helium leak rated less than 1×10^{-9} std. cc/sec
- Standard fluoroelastomer seal (i.e. Viton®):
-26°C to 205°C (-15°F to 400°F)

Materials:

- Valve body, ball, stem, and end caps: machined from solid 316L stainless steel
- Standard seal: fluoroelastomer (i.e. Viton®)?
- Seats: PTFE Teflon®
- Lubricant: Dow Corning® High Vacuum Grease

Ball port size

- 2.50 inch

Features

General

- Straight-through, unimpeded flow
- Higher conductance than a comparable poppet valve
- Poppetless design has less wetted surface
- 1/4 turn, quick actuation
- "Self-cleaning" action prevents deposition buildup
- Valves can be easily serviced with A&N's standard maintenance kits

Pneumatic

- Actuator operating pressure: 80 - 120 psig
- Actuator temperature range:
 - Moist air: 0°C to 150°C (32°F to 302°F)
 - Dry air: -20°C to 150°C (-4°F to 302°F)
- Both Air-to-Open, Spring-to-Close (AS) single acting actuators and Air-to-Open, Air-to-Close (AA) double acting actuators are available
- "Fail-safe open" or "fail-safe closed" configuration available for ball valves with AS actuators
- 1/8 NPT air line hook-up
- Visual and mechanical position indicators available
- Solenoids available for 120VAC, 240VAC or 24VDC versions

Additional options: Call for price and availability

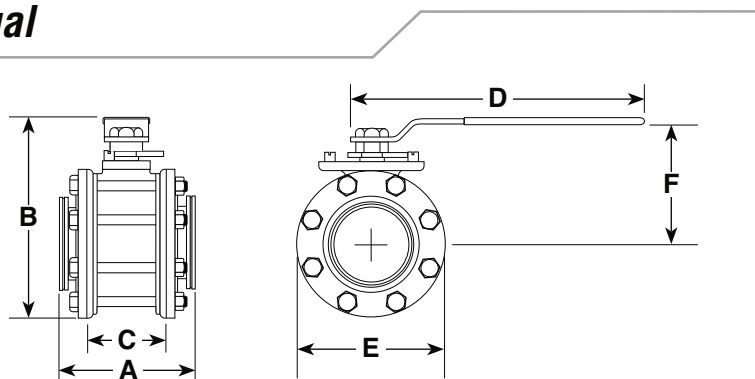
- Configurable to meet system requirements
 - Port terminations
 - Overall length
 - Heater ready
 - Fail-safe position

*ORDERING NOTE

*1 Other seals (e.g. Chemraz®, Kalraz®) available upon request



G-Series Ball Valves Manual



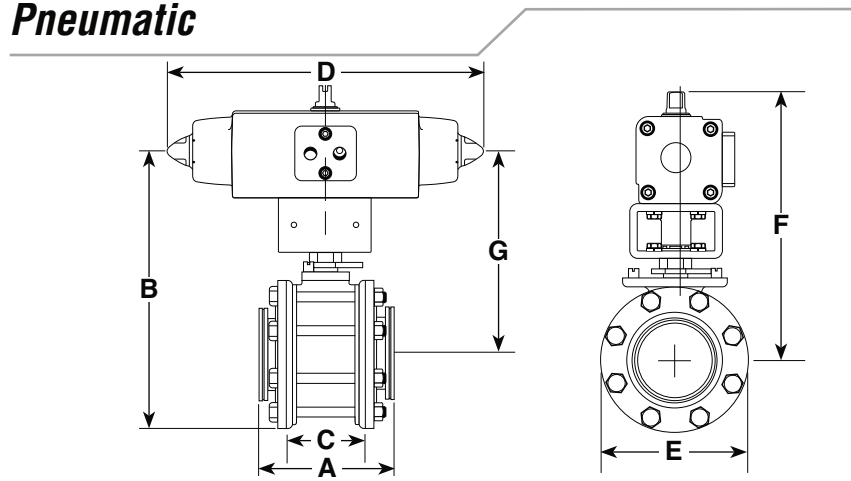
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PART NUMBER	REFERENCE NUMBER	END CAP TYPE	END CAP TUBE SIZE	CONDUCT. (L/SEC)	A	B	C	D	E	F
3000037	G4300-LF80	LF80	3 in. O.D.	260	6.59	9.4	5.3	15.0	6.4	6.2



G-Series Ball Valves Pneumatic



PART NUMBER	REFERENCE NUMBER	END CAP TYPE	END CAP TUBE SIZE	CONDUCT. (L/SEC)	DIMENSIONS						
					A	B	C	D	E	F	G

3009170	G4300-LF80-AS	LF80	3 in. O.D.	260	6.59	16.5	5.3	16.1	6.4	13.3	10.1
3008170	G4300-LF80-AA	LF80	3 in. O.D.	260	6.59	16.4	5.3	11.4	6.4	13.2	10.2



Solenoids

OPTION NUMBER	DESCRIPTION
-S3A	3-way 120VAC (AS)
-S3B	3-way 240VAC (AS)
-S3C	3-way 24VDC (AS)
-S4A	4-way 120VAC (AA)
-S4B	4-way 240VAC (AA)
-S4C	4-way 24VDC (AA)

Position Indicator

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
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3122065	SB-PI-04	Standard Switchbox - 2-switch mechanical w/4 bare wires
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Maintenance Kits for all G-Series Ball Valves

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
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3010197	G-RK-S	G Series Maintenance Kit
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Kit Contains:

(1) stem o-ring, (2) body o-rings, (2) Teflon® seats, (1) Teflon® spacer, (1) PEEK® stem bushing, (1) nylon lock nut, (2) brass stem bushings



H-Series Ball Valves

Specifications

Vacuum and temperature ratings

- Vacuum rated to 1×10^{-8} Torr
- Helium leak rated less than 1×10^{-9} std. cc/sec
- Standard fluoroelastomer seal (i.e. Viton®):
-26°C to 205°C (-15°F to 400°F)

Materials:

- Valve body, ball, stem, and end caps: machined from solid 316L stainless steel
- Standard seal: fluoroelastomer (i.e. Viton®)?
- Seats: PTFE Teflon®
- Lubricant: Dow Corning® High Vacuum Grease

Ball port size

- 3.27 inch

Features

General

- Straight-through, unimpeded flow
- Higher conductance than a comparable poppet valve
- Poppetless design has less wetted surface
- 1/4 turn, quick actuation
- "Self-cleaning" action prevents deposition buildup
- Valves can be easily serviced with A&N's standard maintenance kits

Pneumatic

- Actuator operating pressure: 80 - 120 psig
- Actuator temperature range:
 - Moist air: 0°C to 150°C (32°F to 302°F)
 - Dry air: -20°C to 150°C (-4°F to 302°F)
- Both Air-to-Open, Spring-to-Close (AS) single acting actuators and Air-to-Open, Air-to-Close (AA) double acting actuators are available
- "Fail-safe open" or "fail-safe closed" configuration available for ball valves with AS actuators
- 1/8 NPT air line hook-up
- Visual and mechanical position indicators available
- Solenoids available for 120VAC, 240VAC or 24VDC versions

Additional options: Call for price and availability

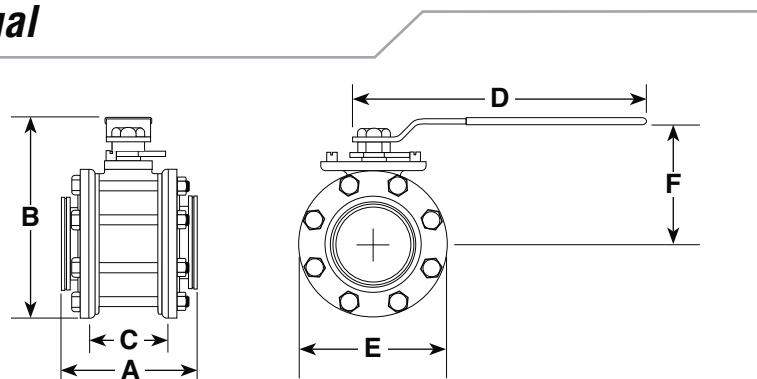
- Configurable to meet system requirements
 - Port terminations
 - Overall length
 - Heater ready
 - Fail-safe position

*ORDERING NOTE

*1 Other seals (e.g. Chemraz®, Kalraz®) available upon request



H-Series Ball Valves Manual



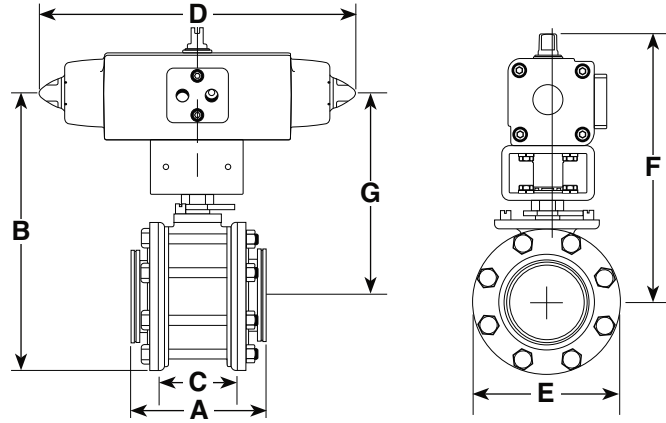
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Williston, FL 32696
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FAX (352) 528-3441
www.ancorp.com

PART NUMBER	REFERENCE NUMBER	END CAP TYPE	END CAP TUBE SIZE	CONDUCT. (L/SEC)	A	B	C	D	E	F
					3000039	H4400-LF100	LF100	4 in. O.D.	490	7.63



H-Series Ball Valves Pneumatic



PART NUMBER	REFERENCE NUMBER	END CAP TYPE	END CAP TUBE SIZE	CONDUCT. (L/SEC)	DIMENSIONS (mm)						
					A	B	C	D	E	F	G
3009180	H4400-LF100-ASLF100		4 in. O.D.	490	7.63	18.1	6.4	16.1	8.1	14.0	10.9
3008180	H4400-LF100-AALF100		4 in. O.D.	490	7.63	18.0	6.4	11.4	8.1	13.9	10.8



Solenoids

OPTION NUMBER	DESCRIPTION
-S3A	3-way 120VAC (AS)
-S3B	3-way 240VAC (AS)
-S3C	3-way 24VDC (AS)
-S4A	4-way 120VAC (AA)
-S4B	4-way 240VAC (AA)
-S4C	4-way 24VDC (AA)

Position Indicator

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3122065	SB-PI-04	Standard Switchbox - 2-switch mechanical w/4 bare wires

Maintenance Kits for all H-Series Ball Valves

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3010211	H-RK-S	H Series Maintenance Kit

Kit Contains:

(1) stem o-ring, (2) body o-rings, (2) Teflon® seats, (1) Teflon® spacer, (1) PEEK® stem bushing, (1) nylon lock nut, (2) brass stem bushings



Features

- Choice of CF, QF or tube end ports.
- High purity, corrosion resistant, 304 stainless steel body.
- Made from a formed 321 stainless steel bellows which prevents outgassing, virtual leaks, and particle entrapment between bellows convolutions and extends the life cycle.
- Bonnet seals are Viton®. Other seals available on request.
- Upon electrical control voltage or pneumatic supply failure, the valve fails closed.
- Function reliably in applications ranging from semiconductor manufacturing to high energy physics research to nuclear accelerators.
- Solenoid coils are available for use with a wide range of voltages and frequencies.
- Available in port sizes 3/4 to 4 inch manual or pneumatic Air-to-Spring (AS). Also available in 4 and 6 inch Air-to-Air (AA).

Options for Poppet Valves

**When ordering options,
please add the option number(s)
to the end of the reference number
for the valve you are ordering.**

Solenoids for 3/4 inch to 4 inch Pneumatic Poppet Valves Air-to-Spring

PART NUMBER	REFERENCE NUMBER	OPTION NUMBER	DESCRIPTION
3106090	PPV-S3A	-S3A	3-Way 120VAC 50/60 HZ 7.5 Watt
3106091	PPV-S3B	-S3B	3-Way 220VAC 50/60 HZ 7.5 Watt
3106092	PPV-S3C	-S3C	3-Way 24VDC 7 Watt
3106093	PPV-S3D	-S3D	3-Way 208VAC 50/60 HZ 7.5 Watt
3106094	PPV-S3E	-S3E	3-Way 24VAC 50/60 HZ 6 Watt
3106095	PPV-S3F	-S3F	3-Way 12 VDC 7 Watt

Solenoids for 4 inch to 6 inches Pneumatic Poppet Valves Air-to-Air

PART NUMBER	REFERENCE NUMBER	OPTION NUMBER	DESCRIPTION
3109090	PPV-S4A	-S4A	4-Way 100-120V/50 HZ 110-130V/60 HZ 8.5 Watt
3109091	PPV-S4B	-S4B	4-Way 210-240V/50 HZ 220-250V/60 HZ 6.1 Watt
3109092	PPV-S4C	-S4C	4-Way 24VDC 6.7 Watt
3109093	PPV-S4E	-S4E	4-Way 24VAC 50/60 HZ 4.5 Watt

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3/4 inch Angle Valves Manual (M) & Pneumatic (AS)

Maximum Bakeout Temperature

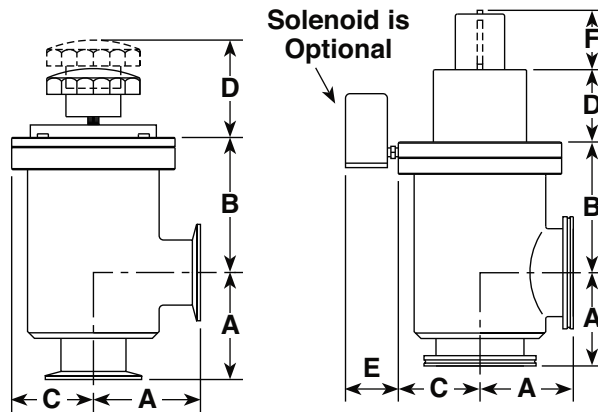
- Body: 150° C
- Cylinder: 70° C

Helium Leak Rate: 1.0 X 10⁻⁹ std cc/sec

Vacuum Range: 1.0 X 10⁻⁹ Torr to 15 psig

General

- Installs in any position
- Visual indication of valve position
- Pneumatic connection - 1/8 inch NPT-F



PART NUMBER	REFERENCE NUMBER	CONDUCTANCE (L/SEC)	ACTUATION SEC*	C/L		D	E	F
				A	B			
3106000	PAV075-CF-E-M	6	-	1.97	3.31	1.62	2.46	-
3106003	PAV075-CF-E-AS	6	.5 (1)	1.97	3.86	1.62	0.87	1.84
3106001	PAV075-QF-E-M	6	-	1.57	3.31	1.62	2.46	-
3106004	PAV075-QF-E-AS	6	.5 (1)	1.57	3.86	1.62	0.87	1.84
3106002	PAV075-TE-E-M	6	-	1.50	3.31	1.62	2.46	-
3106005	PAV075-TE-E-AS	6	.5 (1)	1.50	3.86	1.62	0.87	1.84

* opening (closing)

Accessories for .75 inch Manual & Pneumatic Poppet Valves

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3106080	PPV-MI-075	3/4 in. Pneumatic Valve Limit Switch
3106061	PPV-VSS-075-M	3/4 in. Manual Poppet Valve Viton® Seal Set
3106060	PPV-VSS-075-P	3/4 in. Pneumatic Poppet Valve Viton® Seal Set
3106071	PPV-VIK-075-M	3/4 in. Manual Poppet Valve Internal Replacement Kit
3106070	PPV-VIK-075-P	3/4 in. Pneumatic Poppet Valve Internal Replacement Kit



Specifications and Features

Maximum Bakeout Temperature: 150°C

Helium Leak Rate: 1.0 X 10⁻⁹ Torr std cc/sec

Vacuum Range: 1.0 X 10⁻⁹ Torr to Atmosphere

General

- Small footprint allows for an easy fit into existing vacuum systems
- 1,000,000 cycle life and ease of maintenance greatly increase system uptime

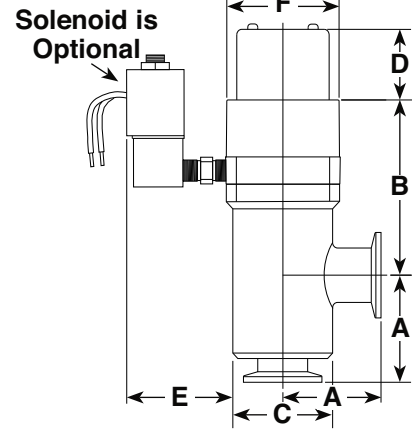
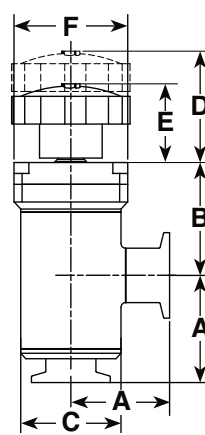
Accessories

Accessories for 1 inch, 1 1/2 inch, & 2 inch Manual & Pneumatic Poppet Valves

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3106580	PPV-MI-100	1 in. Pneumatic Valve Limit Switch
3106560	PPV-VSS-100	1 in. Poppet Valve Viton® Seal Set
3106573	PPV-VIK-100-M	1 in. Manual Poppet Valve Internal Replacement Kit
3106572	PPV-VIK-100-P	1 in. Pneumatic Poppet Valve Internal Replacement Kit
3107080	PPV-MI-150	1 1/2 in. Pneumatic Valve Limit Switch
3107060	PPV-VSS-150	1 1/2 in. Poppet Valve Viton® Seal Set
3107073	PPV-VIK-150-M	1 1/2 in. Manual Poppet Valve Internal Replacement Kit
3107072	PPV-VIK-150-P	1 1/2 in. Pneumatic Poppet Valve Internal Replacement Kit
3107580	PPV-MI-200	2 in. Pneumatic Valve Limit Switch
3107560	PPV-VSS-200	2 in. Poppet Valve Viton® Seal Set
3107571	PPV-VIK-200-M	2 in. Manual Poppet Valve Internal Replacement Kit
3107570	PPV-VIK-200-P	2 in. Pneumatic Poppet Valve Internal Replacement Kit



1 inch Angle Valves Manual (M) & Pneumatic (AS)



PART NUMBER	REFERENCE NUMBER	CONDUCTANCE (L/SEC)	ACTUATION SEC*	A C/L	B	C	D	E	F
3106500	LPAV100-CF-E-M	-	-	2.02	2.07	2.00	2.05	1.45	2.27
3106503	LPAV100-CF-E-AS	-	.04 (.09)	2.02	3.22	2.00	1.30	3.13	2.25
3106501	LPAV100-QF-E-M	-	-	1.97	2.07	2.00	2.05	1.45	2.27
3106504	LPAV100-QF-E-AS	-	.04 (.09)	1.97	3.22	2.00	1.30	3.13	2.25
3106502	LPAV100-TE-E-M	-	-	1.88	2.07	2.00	2.05	1.45	2.27
3106505	LPAV100-TE-E-AS	-	.04 (.09)	1.88	3.22	2.00	1.30	3.13	2.25

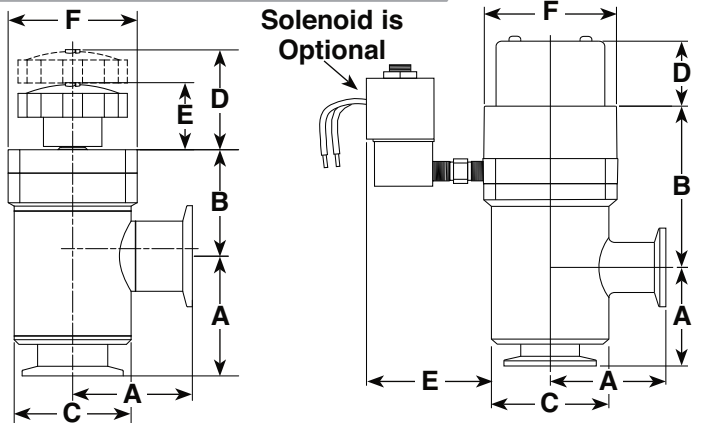
* opening (closing)

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1 1/2 inch Angle Valves Manual (M) & Pneumatic (AS)

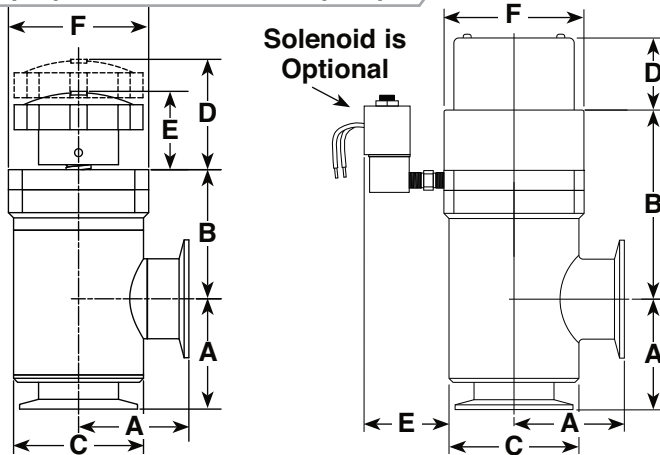


PART NUMBER	REFERENCE NUMBER	CONDUCTANCE (L/SEC)	ACTUATION SEC*	A C/L	B	C	D	E	F
3107000	LPAV150-CF-E-M	-	-	2.43	2.28	2.50	2.14	1.43	2.76
3107003	LPAV150-CF-E-AS	-	.06 (.09)	2.43	3.41	2.50	1.30	3.38	2.75
3107001	LPAV150-QF-E-M	-	-	2.56	2.28	2.50	2.14	1.43	2.76
3107004	LPAV150-QF-E-AS	-	.06 (.09)	2.56	3.41	2.50	1.30	3.38	2.75
3107002	LPAV150-TE-E-M	-	-	2.25	2.28	2.50	2.14	1.43	2.76
3107005	LPAV150-TE-E-AS	-	.06 (.09)	2.25	3.41	2.50	1.30	3.38	2.75

* opening (closing)



2 inch Angle Valves Manual (M) & Pneumatic (AS)



PART NUMBER	REFERENCE NUMBER	CONDUCTANCE (L/SEC)	ACTUATION SEC*	A C/L	B	C	D	E	F
3107500	LPAV200-CF-E-M	-	-	3.19	3.23	3.25	2.76	1.96	3.51
3107503	LPAV200-CF-E-AS	-	.16 (.22)	3.19	4.73	3.25	1.80	3.75	3.50
3107501	LPAV200-QF-E-M	-	-	2.76	3.23	3.25	2.76	1.96	3.51
3107504	LPAV200-QF-E-AS	-	.16 (.22)	2.76	4.73	3.25	1.80	3.75	3.50
3107502	LPAV200-TE-E-M	-	-	3.19	3.23	3.25	2.76	1.96	3.51
3107505	LPAV200-TE-E-AS	-	.16 (.22)	3.19	4.73	3.25	1.80	3.75	3.50

* opening (closing)



Specifications and Features

Maximum Bakeout Temperature

- Body: 150° C
- Cylinder: 70° C

Helium Leak Rate: 1.0 X 10⁻⁹ std cc/sec

Vacuum Range: 1.0 X 10⁻⁹ Torr to 15 psig

General

- Installs in any position
- Visual indication of valve position
- Pneumatic connection - 1/8 inch NPT-F

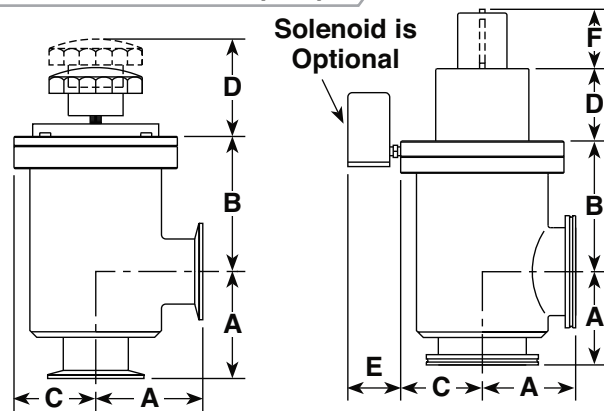
Accessories

Accessories for 2 1/2 inch & 3 inch Manual & Pneumatic Poppet Valves

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3108080	PPV-MI-250	2 1/2 in. Pneumatic Valve Limit Switch
3108061	PPV-VSS-250-M	2 1/2 in. Manual Poppet Valve Viton® Seal Set
3108060	PPV-VSS-250-P	2 1/2 in. Pneumatic Poppet Valve Viton® Seal Set
3108071	PPV-VIK-250-M	2 1/2 in. Manual Poppet Valve Internal Replacement Kit
3108070	PPV-VIK-250-P	2 1/2 in. Pneumatic Poppet Valve Internal Replacement Kit
3108580	PPV-MI-300	3 in. Pneumatic Valve Limit Switch
3108561	PPV-VSS-300-M	3 in. Manual Poppet Valve Viton® Seal Set
3108560	PPV-VSS-300-P	3 in. Pneumatic Poppet Valve Viton® Seal Set
3108571	PPV-VIK-300-M	3 in. Manual Poppet Valve Internal Replacement Kit
3108570	PPV-VIK-300-P	3 in. Pneumatic Poppet Valve Internal Replacement Kit



2 1/2 inch Angle Valves Manual (M) & Pneumatic (AS)



PART NUMBER	REFERENCE NUMBER	CONDUCTANCE (L/SEC)	ACTUATION SEC*	A C/L	B	C	D	E	F
3108000	PAV250-CF-E-M	120	-	3.35	4.25	2.35	3.62	-	-
3108003	PAV250-CF-E-AS	120	2 (2)	3.35	4.80	2.35	1.57	2.44	1.93
3108001	PAV250-LF-E-M	120	-	3.46	4.25	2.35	3.62	-	-
3108004	PAV250-LF-E-AS	120	2 (2)	3.46	4.80	2.35	1.57	2.44	1.93
3108002	PAV250-TE-E-M	120	-	3.00	4.25	2.35	3.62	-	-
3108005	PAV250-TE-E-AS	120	2 (2)	3.00	4.80	2.35	1.57	2.44	1.93

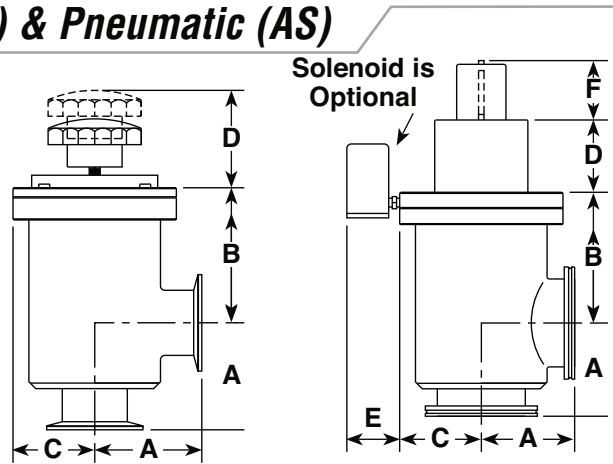
* opening (closing)

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3 inch Angle Valves Manual (M) & Pneumatic (AS)



PART NUMBER	REFERENCE NUMBER	CONDUCTANCE (L/SEC)	ACTUATION SEC*	A C/L	B	C	D	E	F
3108500	PAV300-CF-E-M	190	-	3.50	5.08	2.93	3.87	-	-
3108503	PAV300-CF-E-AS	190	2 (2)	3.50	5.63	2.93	2.03	2.44	2.24
3108501	PAV300-LF-E-M	190	-	3.86	5.08	2.93	3.87	-	-
3108504	PAV300-LF-E-AS	190	2 (2)	3.86	5.63	2.93	2.03	2.44	2.24
3108502	PAV300-TE-E-M	190	-	3.25	5.08	2.93	3.87	-	-
3108505	PAV300-TE-E-AS	190	2 (2)	3.25	5.63	2.93	2.03	2.44	2.24

* opening (closing)



Specifications and Features

Maximum Bakeout Temperature

- Body: 150° C
- Cylinder: 70° C

Helium Leak Rate: 1.0 X 10⁻⁹ std cc/sec

Vacuum Range: 1.0 X 10⁻⁹ Torr to 15 psig

General

- Installs in any position
- Visual indication of valve position
- Pneumatic connection - 1/8 inch NPT-F

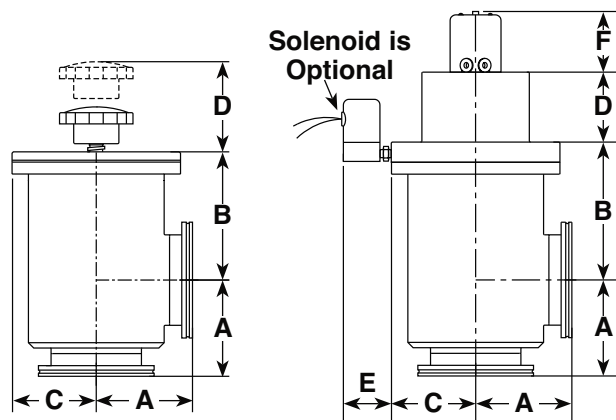
Accessories

Accessories for 4 inch Manual & Pneumatic Poppet Valves

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3109080	PPV-MI-400	4 in. Pneumatic Valve Limit Switch
3109062	PPV-VSS-400-M	4 in. Manual Poppet Valve Viton® Seal Set
3109061	PPV-VSS-400-AS	4 in. Air-to-Spring Poppet Valve Viton® Seal Set
3109072	PPV-VIK-400-M	4 in. Manual Poppet Valve Internal Replacement Kit
3109071	PPV-VIK-400-AS	4 in. Air-to-Spring Poppet Valve Internal Replacement Kit



4 inch Angle Valves Manual (M) & Pneumatic (AS)



PART NUMBER	REFERENCE NUMBER	CONDUCTANCE (L/SEC)	ACTUATION SEC*	A C/L	B	C	D	E	F
3109000	PAV400-CF-E-M	390	-	5.28	5.67	3.71	4.24	-	-
3109003	PAV400-CF-E-AS	390	2 (2)	5.28	6.11	3.73	3.10	2.69	2.13
3109001	PAV400-LF-E-M	390	-	4.25	5.67	3.71	4.24	-	-
3109004	PAV400-LF-E-AS	390	2 (2)	4.25	6.11	3.73	3.10	2.69	2.13
3109002	PAV400-TE-E-M	390	-	4.00	5.67	3.71	4.24	-	-
3109005	PAV400-TE-E-AS	390	2 (2)	4.00	6.11	3.73	3.10	2.69	2.13

* opening (closing)

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Specifications and Features

Maximum Bakeout Temperature

- Body: 150° C
- Cylinder: 70° C

Helium Leak Rate: 1.0 X 10⁻⁹ std cc/sec

Vacuum Range: 1.0 X 10⁻⁹ Torr to 15 psig

General

- Installs in any position
- Visual indication of valve position
- Pneumatic connection - 1/4 inch NPT-F

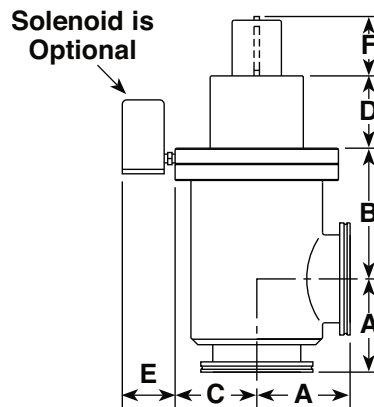
Accessories

Accessories for 4 inch & 6 inch Pneumatic Poppet Valves (AA)

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3109080	PPV-MI-400	4 in. Pneumatic Valve Limit Switch
3109060	PPV-VSS-400-AA	4 in. Air-to-Air Poppet Valve Viton® Seal Set
3109070	PPV-VIK-400-AA	4 in. Air-to-Air Poppet Valve Internal Replacement Kit
3109580	PPV-MI-600	6 in. Pneumatic Valve Limit Switch
3109560	PPV-VSS-600-AA	6 in. Air-to-Air Poppet Valve Viton® Seal Set



4 inch & 6 inch Angle Valves Pneumatic (AA)



PART NUMBER	REFERENCE NUMBER	CONDUCTANCE (L/SEC)	ACTUATION SEC*	A C/L	B	C	D	E	F
3109006	PAV400-CF-E-AA	390	2 (2)	5.28	6.12	3.72	3.10	1.70	2.72
3109007	PAV400-LF-E-AA	390	2 (2)	4.25	6.12	3.72	3.10	1.70	2.72
3109008	PAV400-TE-E-AA	390	2 (2)	4.00	6.12	3.72	3.10	1.70	2.72
3109500	PAV600-CF-E-AA	1040	3 (3)	6.56	9.94	3.72	4.05	2.33	3.51
3109501	PAV600-LF-E-AA	1040	3 (3)	5.43	9.94	3.72	4.05	2.33	3.51
3109502	PAV600-TE-E-AA	1040	3 (3)	5.18	9.94	3.72	4.05	2.33	3.51

* opening (closing)



Specifications and Features

Maximum Bakeout Temperature: 150°C

Helium Leak Rate: 1.0 X 10⁻⁹ Torr std cc/sec

Vacuum Range: 1.0 X 10⁻⁹ Torr to Atmosphere

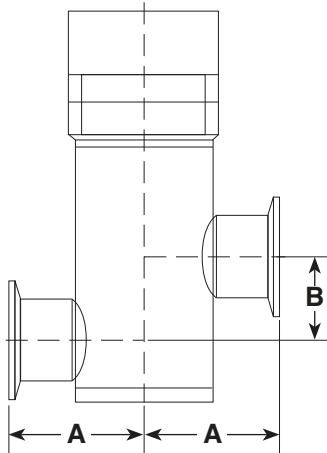
General

- Small footprint allows for an easy fit into existing vacuum systems
- 1,000,000 cycle life and ease of maintenance greatly increase system uptime

Accessories

Accessories for 1 inch, 1 1/2 inch, & 2 inch Manual & Pneumatic Poppet Valves

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3106580	PPV-MI-100	1 in. Pneumatic Valve Limit Switch
3106560	PPV-VSS-100	1 in. Poppet Valve Viton® Seal Set
3106573	PPV-VIK-100-M	1 in. Manual Poppet Valve Internal Replacement Kit
3106572	PPV-VIK-100-P	1 in. Pneumatic Poppet Valve Internal Replacement Kit
3107080	PPV-MI-150	1 1/2 in. Pneumatic Valve Limit Switch
3107060	PPV-VSS-150	1 1/2 in. Poppet Valve Viton® Seal Set
3107073	PPV-VIK-150-M	1 1/2 in. Manual Poppet Valve Internal Replacement Kit
3107072	PPV-VIK-150-P	1 1/2 in. Pneumatic Poppet Valve Internal Replacement Kit
3107580	PPV-MI-200	2 in. Pneumatic Valve Limit Switch
3107560	PPV-VSS-200	2 in. Poppet Valve Viton® Seal Set
3107571	PPV-VIK-200-M	2 in. Manual Poppet Valve Internal Replacement Kit
3107570	PPV-VIK-200-P	2 in. Pneumatic Poppet Valve Internal Replacement Kit

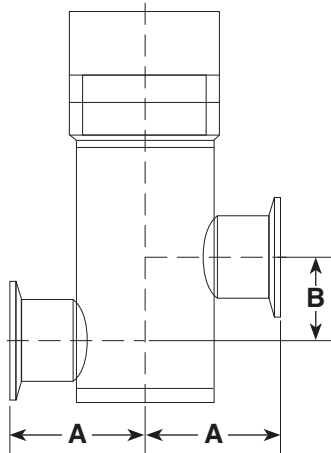


1 inch Offset In-Line Valves Manual (M) & Pneumatic (AS)

PART NUMBER	REFERENCE NUMBER	A C/L	B
3106512	LPIV100-CF-E-M	2.05	1.37
3106515	LPIV100-CF-E-AS	2.05	1.37
3106513	LPIV100-QF-E-M	2.03	1.37
3106516	LPIV100-QF-E-AS	2.03	1.37
3106514	LPIV100-TE-E-M	1.88	1.37
3106517	LPIV100-TE-E-AS	1.88	1.37

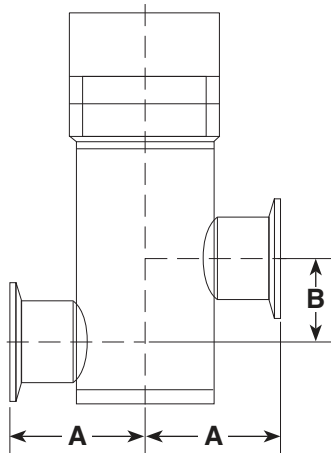
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1 1/2 inch Offset In-Line Valves Manual (M) & Pneumatic (AS)

PART NUMBER	REFERENCE NUMBER	A C/L	B
3107012	LPIV150-CF-E-M	2.45	1.88
3107015	LPIV150-CF-E-AS	2.45	1.88
3107013	LPIV150-QF-E-M	2.40	1.88
3107016	LPIV150-QF-E-AS	2.40	1.88
3107014	LPIV150-TE-E-M	2.25	1.88
3107017	LPIV150-TE-E-AS	2.25	1.88



2 inch Offset In-Line Valves Manual (M) & Pneumatic (AS)

PART NUMBER	REFERENCE NUMBER	A C/L	B
3107512	LPIV200-CF-E-M	3.48	2.62
3107515	LPIV200-CF-E-AS	3.48	2.62
3107513	LPIV200-QF-E-M	3.40	2.62
3107516	LPIV200-QF-E-AS	3.40	2.62
3107514	LPIV200-TE-E-M	3.25	2.62
3107517	LPIV200-TE-E-AS	3.25	2.62



Features

- Choice of CF, QF or tube end ports.
- High purity, corrosion resistant, 304 stainless steel body.
- Made from a formed 321 stainless steel bellows which prevents outgassing, virtual leaks, and particle entrapment between bellows convolutions and extends the life cycle.
- Bonnet seals are Viton®. Other seals available on request.
- Upon electrical control voltage or pneumatic supply failure, the valve fails closed.
- Function reliably in applications ranging from semiconductor manufacturing to high energy physics research to nuclear accelerators.
- Solenoid coils are available for use with a wide range of voltages and frequencies.
- Available in port sizes .75 inch to 4 inch manual or pneumatic "air-to-spring".

Options for Poppet Valves

***When ordering options,
please add the option number(s)
to the end of the reference number
for the valve you are ordering.***

Solenoids for 3/4 inch to 4 inch Pneumatic Poppet Valves Air-to-Spring

PART NUMBER	REFERENCE NUMBER	OPTION NUMBER	DESCRIPTION
3106090	PPV-S3A	-S3A	3-Way 120VAC 50/60 HZ 7.5 Watt
3106091	PPV-S3B	-S3B	3-Way 220VAC 50/60 HZ 7.5 Watt
3106092	PPV-S3C	-S3C	3-Way 24VDC 7 Watt
3106093	PPV-S3D	-S3D	3-Way 208VAC 50/60 HZ 7.5 Watt
3106094	PPV-S3E	-S3E	3-Way 24VAC 50/60 HZ 6 Watt
3106095	PPV-S3F	-S3F	3-Way 12 VDC 7 Watt

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3/4 inch In-Line Valves Manual (M) & Pneumatic (AS)

Maximum Bakeout Temperature

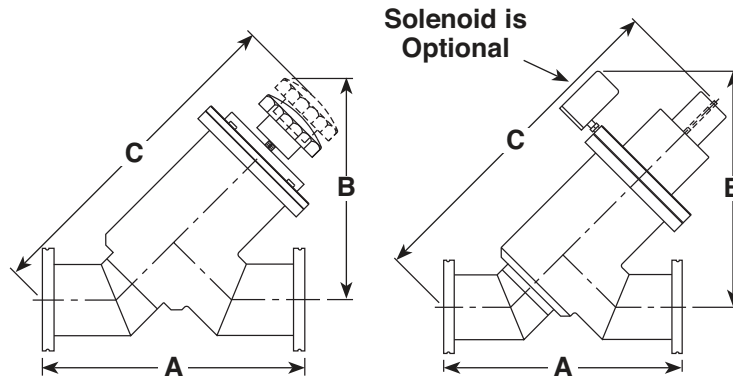
- Body: 150° C
- Cylinder: 70° C

Helium Leak Rate: 1.0 X 10⁻⁹ std cc/sec

Vacuum Range: 1.0 X 10⁻⁹ Torr to 15 psig

General

- Installs in any position
- Visual indication of valve position
- Pneumatic connection - 1/8 inch NPT-F



PART NUMBER	REFERENCE NUMBER	CONDUCTANCE (L/SEC)	ACTUATION SEC*	A C/L	B	C	D
3106006	PAIV075-CF-E-M	6	-	3.94	5.88	7.55	-
3106009	PAIV075-CF-E-AS	6	.5 (1)	3.94	6.59	7.91	-
3106007	PAIV075-QF-E-M	6	-	3.14	5.88	7.59	-
3106010	PAIV075-QF-E-AS	6	.5 (1)	3.14	6.59	7.94	-
3106008	PAIV075-TE-E-M	6	-	3.00	5.88	7.30	-
3106011	PAIV075-TE-E-AS	6	.5 (1)	3.00	6.59	7.66	-

* opening (closing)

Accessories for .75 inch Manual & Pneumatic Poppet Valves

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3106080	PPV-MI-075	3/4 in. Pneumatic Valve Limit Switch
3106061	PPV-VSS-075-M	3/4 in. Manual Poppet Valve Viton® Seal Set
3106060	PPV-VSS-075-P	3/4 in. Pneumatic Poppet Valve Viton® Seal Set
3106071	PPV-VIK-075-M	3/4 in. Manual Poppet Valve Internal Replacement Kit
3106070	PPV-VIK-075-P	3/4 in. Pneumatic Poppet Valve Internal Replacement Kit



Specifications and Features

Maximum Bakeout Temperature: 150° C

Helium Leak Rate: 1.0 X 10⁻⁹ Torr std cc/sec

Vacuum Range: 1.0 X 10⁻⁹ Torr to Atmosphere

General

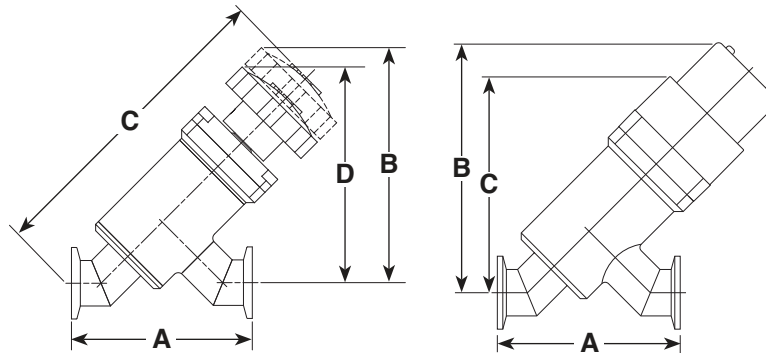
- Small footprint allows for an easy fit into existing vacuum systems
- 1,000,000 cycle life and ease of maintenance greatly increase system uptime

Accessories

Accessories for 1 inch, 1 1/2 inch, & 2 inch Manual & Pneumatic Poppet Valves

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3106580	PPV-MI-100	1 in. Pneumatic Valve Limit Switch
3106560	PPV-VSS-100	1 in. Poppet Valve Viton® Seal Set
3106573	PPV-VIK-100-M	1 in. Manual Poppet Valve Internal Replacement Kit
3106572	PPV-VIK-100-P	1 in. Pneumatic Poppet Valve Internal Replacement Kit
3107080	PPV-MI-150	1 1/2 in. Pneumatic Valve Limit Switch
3107060	PPV-VSS-150	1 1/2 in. Poppet Valve Viton® Seal Set
3107073	PPV-VIK-150-M	1 1/2 in. Manual Poppet Valve Internal Replacement Kit
3107072	PPV-VIK-150-P	1 1/2 in. Pneumatic Poppet Valve Internal Replacement Kit
3107580	PPV-MI-200	2 in. Pneumatic Valve Limit Switch
3107560	PPV-VSS-200	2 in. Poppet Valve Viton® Seal Set
3107571	PPV-VIK-200-M	2 in. Manual Poppet Valve Internal Replacement Kit
3107570	PPV-VIK-200-P	2 in. Pneumatic Poppet Valve Internal Replacement Kit

1 inch In-Line Valves Manual (M) & Pneumatic (AS)



PART NUMBER	REFERENCE NUMBER	ACTUATION SEC*	A C/L	B	C	D
3106506	LPAIV100-CF-E-M	-	4.62	5.17	6.93	4.74
3106509	LPAIV100-CF-E-AS	.04 (.09)	4.62	5.35	4.65	-
3106507	LPAIV100-QF-E-M	-	3.94	5.17	6.93	4.74
3106510	LPAIV100-QF-E-AS	.04 (.09)	3.94	5.35	4.65	-
3106508	LPAIV100-TE-E-M	-	4.35	5.17	6.93	4.74
3106511	LPAIV100-TE-E-AS	.04 (.09)	4.35	5.35	4.65	-

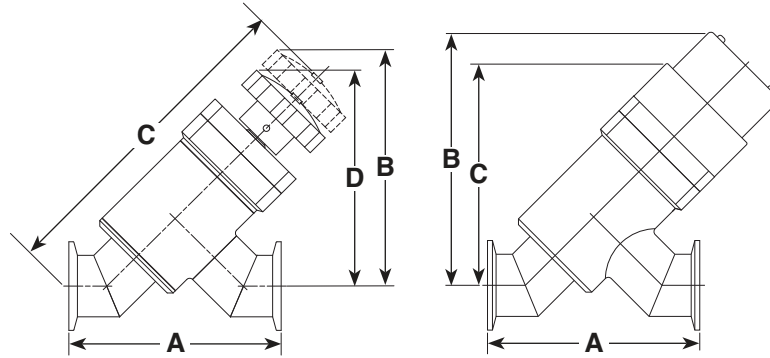
* opening (closing)

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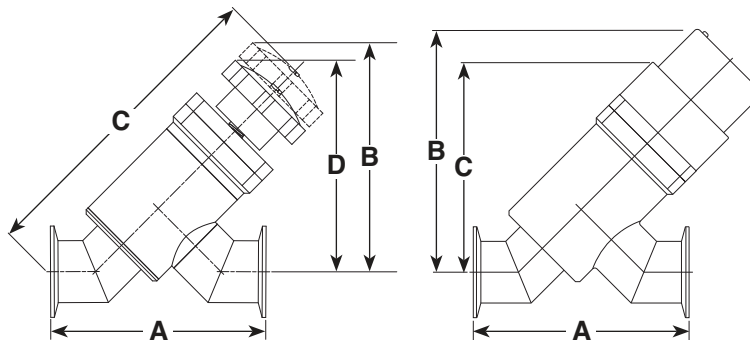
1 1/2 inch In-Line Valves Manual (M) & Pneumatic (AS)



PART NUMBER	REFERENCE NUMBER	ACTUATION SEC*	A C/L	B	C	D
3107006	LPAIV150-CF-E-M	-	5.19	5.76	7.94	5.27
3107009	LPAIV150-CF-E-AS	.06 (.09)	5.19	6.08	5.34	-
3107007	LPAIV150-QF-E-M	-	5.12	5.76	7.94	5.27
3107010	LPAIV150-QF-E-AS	.06 (.09)	5.12	6.08	5.34	-
3107008	LPAIV150-TE-E-M	-	4.83	5.76	7.94	5.27
3107011	LPAIV150-TE-E-AS	.06 (.09)	4.83	6.08	5.34	-

* opening (closing)

2 inch In-Line Valves Manual (M) & Pneumatic (AS)



PART NUMBER	REFERENCE NUMBER	ACTUATION SEC*	A C/L	B	C	D
3107506	LPAIV200-CF-E-M	-	7.88	7.40	10.30	6.84
3107509	LPAIV200-CF-E-AS	.16 (.22)	7.88	7.84	6.80	-
3107507	LPAIV200-QF-E-M	-	7.00	7.40	10.30	6.84
3107510	LPAIV200-QF-E-AS	.16 (.22)	7.00	7.84	6.80	-
3107508	LPAIV200-TE-E-M	-	7.20	7.40	10.30	6.84
3107511	LPAIV200-TE-E-AS	.16 (.22)	7.20	7.84	6.80	-

* opening (closing)



Specifications and Features

Maximum Bakeout Temperature

- Body: 150° C
- Cylinder: 70° C

Helium Leak Rate: 1.0 X 10⁻⁹ std cc/sec

Vacuum Range: 1.0 X 10⁻⁹ Torr to 15 psig

General

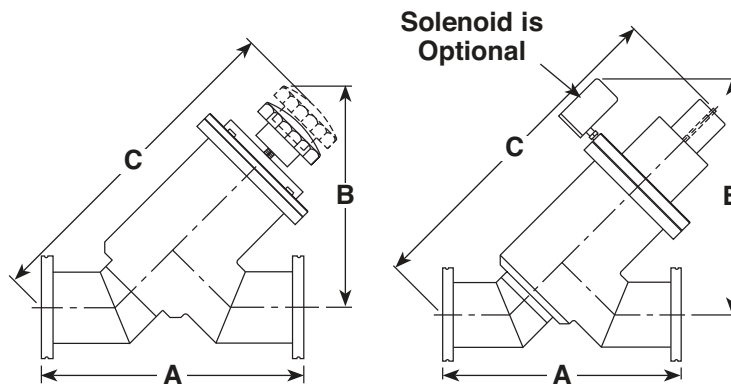
- Installs in any position
- Visual indication of valve position
- Pneumatic connection - 1/8 inch NPT-F

Accessories

Accessories for 2 1/2 inch & 3 inch Manual & Pneumatic Poppet Valves

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3108080	PPV-MI-250	2 1/2 in. Pneumatic Valve Limit Switch
3108061	PPV-VSS-250-M	2 1/2 in. Manual Poppet Valve Viton® Seal Set
3108060	PPV-VSS-250-P	2 1/2 in. Pneumatic Poppet Valve Viton® Seal Set
3108071	PPV-VIK-250-M	2 1/2 in. Manual Poppet Valve Internal Replacement Kit
3108070	PPV-VIK-250-P	2 1/2 in. Pneumatic Poppet Valve Internal Replacement Kit
3108580	PPV-MI-300	3 in. Pneumatic Valve Limit Switch
3108561	PPV-VSS-300-M	3 in. Manual Poppet Valve Viton® Seal Set
3108560	PPV-VSS-300-P	3 in. Pneumatic Poppet Valve Viton® Seal Set
3108571	PPV-VIK-300-M	3 in. Manual Poppet Valve Internal Replacement Kit
3108570	PPV-VIK-300-P	3 in. Pneumatic Poppet Valve Internal Replacement Kit

2 1/2 inch In-Line Valves Manual (M) & Pneumatic (AS)



PART NUMBER	REFERENCE NUMBER	CONDUCTANCE (L/SEC)	ACTUATION SEC*	A C/L	B	C	D
3108006	PAIV250-CF-E-M	120	-	8.44	8.87	12.29	-
3108009	PAIV250-CF-E-AS	120	2 (2)	8.44	9.36	12.22	-
3108007	PAIV250-LF-E-M	120	-	8.25	8.87	12.33	-
3108010	PAIV250-LF-E-AS	120	2 (2)	8.25	9.36	12.26	-
3108008	PAIV250-TE-E-M	120	-	7.75	8.87	12.10	-
3108011	PAIV250-TE-E-AS	120	2 (2)	7.75	9.36	12.03	-

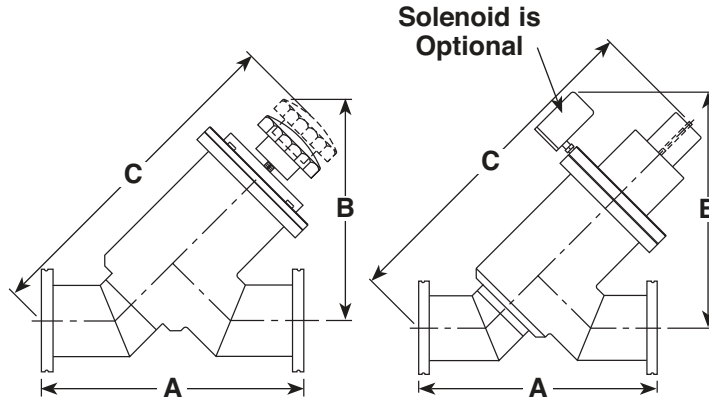
* opening (closing)

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3 inch In-Line Valves Manual (M) & Pneumatic (AS)



PART NUMBER	REFERENCE NUMBER	CONDUCTANCE (L/SEC)	ACTUATION SEC*	A C/L	B	C	D
3108506	PAIV300-CF-E-M	190	-	10.55	9.64	14.31	-
3108509	PAIV300-CF-E-AS	190	2 (2)	10.55	10.79	14.95	-
3108507	PAIV300-LF-E-M	190	-	10.55	9.64	14.35	-
3108510	PAIV300-LF-E-AS	190	2 (2)	10.55	10.79	14.99	-
3108508	PAIV300-TE-E-M	190	-	10.06	9.64	14.12	-
3108511	PAIV300-TE-E-AS	190	2 (2)	10.06	10.79	14.00	-

* opening (closing)



Specifications and Features

Maximum Bakeout Temperature

- Body: 150° C
- Cylinder: 70° C

Helium Leak Rate: 1.0 X 10⁻⁹ std cc/sec

Vacuum Range: 1.0 X 10⁻⁹ Torr to 15 psig

General

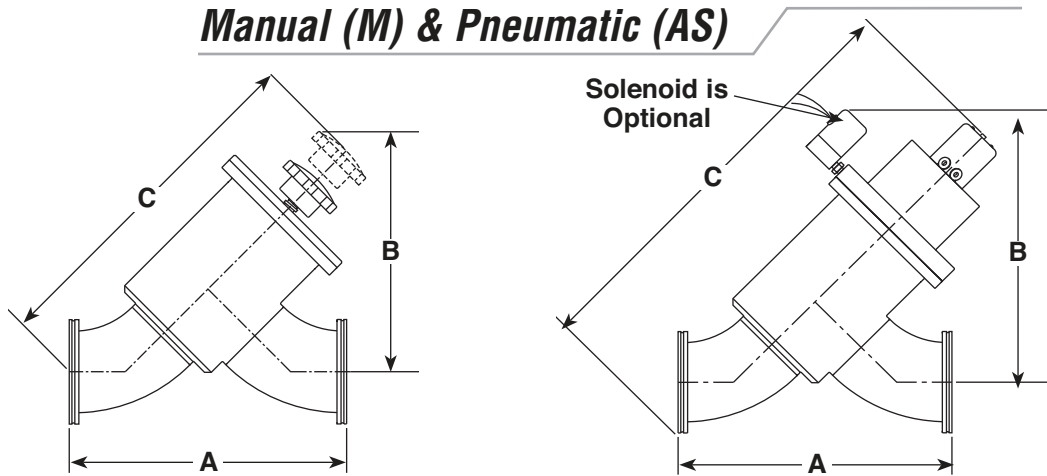
- Installs in any position
- Visual indication of valve position
- Pneumatic connection - 1/8 inch NPT-F

Accessories

Accessories for 4 inch Manual & Pneumatic Poppet Valves

PART NUMBER	REFERENCE NUMBER	DESCRIPTION
3109080	PPV-MI-400	4 in. Pneumatic Valve Limit Switch
3109062	PPV-VSS-400-M	4 in. Manual Poppet Valve Viton® Seal Set
3109061	PPV-VSS-400-AS	4 in. Air-to-Spring Poppet Valve Viton® Seal Set
3109072	PPV-VIK-400-M	4 in. Manual Poppet Valve Internal Replacement Kit
3109071	PPV-VIK-400-AS	4 in. Air-to-Spring Poppet Valve Internal Replacement Kit

4 inch In-Line Valves Manual (M) & Pneumatic (AS)

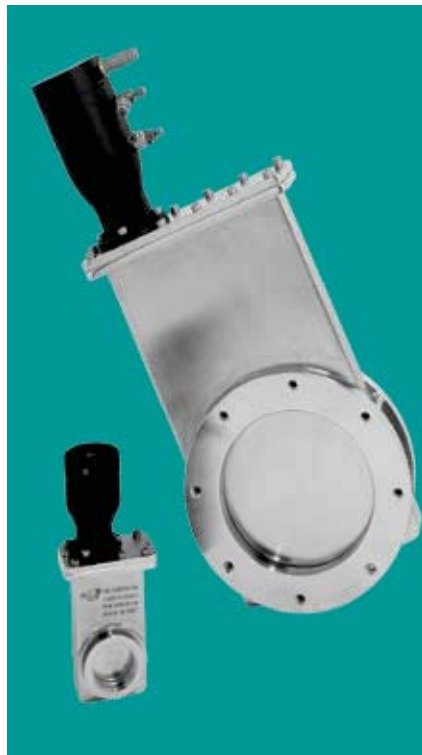


PART NUMBER	REFERENCE NUMBER	CONDUCTANCE (L/SEC)	ACTUATION SEC*	A C/L	B	C	D
3109009	PAIV400-CF-E-M	390	-	13.89	11.93	17.61	-
3109012	PAIV400-CF-E-AS	390	2 (2)	13.89	13.73	21.50	-
3109010	PAIV400-LF-E-M	390	-	13.59	11.93	17.61	-
3109013	PAIV400-LF-E-AS	390	2 (2)	13.59	13.73	21.50	-
3109011	PAIV400-TE-E-M	390	-	13.07	11.93	17.61	-
3109014	PAIV400-TE-E-AS	390	2 (2)	13.07	13.73	21.50	-

* opening (closing)

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Specifications

- 1.5 inch to 12 inch ports
- 100,000 cycles before service*
- Acme threads
- Viton® bonnet seal: 1×10^{-9} Torr vacuum rating
- Copper bonnet seal: 1×10^{-10} Torr vacuum rating
- Helium leak rate 2×10^{-10} std cc/sec
- 304 stainless steel vacuum brazed body
- AM-350 welded bellows
- Electropolished inside and out
- Manual and electro-pneumatic operation
- Valve closes in the event of power failure
- Minimal vibrations during cycling

Bakeability

- Viton® bonnet seal: 150°C
- Copper bonnet seal: 200°C
- Pneumatically actuated valves: actuator 60°C
- Copper bonnet valves with Kalrez® optional gate o-ring: 250°C
- Heater jackets for bakeouts up to 200°C are available for valves - call your A&N sales representative.

**Expected cycle life is application dependent.*

Overview:

The A&N line of gate valves combines innovative design, superior grade materials, generous standard equipment and a large offering of options to give this valve unparalleled flexibility to meet your requirements.

The body of the valve is made of 304 stainless steel and is vacuum brazed to 1100°C at 10^{-6} Torr. This insures joint integrity and eliminates the possibility of “virtual leaks.” It is then electropolished inside and out. The compact design provides a thin profile greatly reducing both the space needed for the valve and the valve’s volume. Reduction of volume decreases outgassing and pump down time.

Design of the valve provides service for 100,000 cycles before maintenance for most applications. During maintenance the carriage is easily removable along with the solenoid without removing the valve from the system.

Pneumatically actuated valves close in the event of a power failure. Linear actuation allows the use of an AM-350 welded bellows to seal the actuator. This eliminates the use of rotary seals and the short stroke increases cycle life. Unique air cylinder design reduces vibrations during cycling. This is particularly important for semiconductor and other sensitive processes.

A&N Gate Valves are available with QF (NW, KF®), LF (ISO) claw clamp style, LF (ISO) bolted style, ASA and CF flanges, manual or pneumatic actuation and Viton® or copper sealed bonnet. Valve sizes range from 1.5 inch to 12 inch nominal I.D. Larger sizes available per quote.



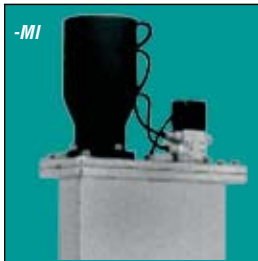
Specifications

- 1.5 inch to 12 inch Nom I.D.
- Acme threads
- Viton® Bonnet Seal
- 10⁻⁹ Torr vacuum rating

Pneumatically Actuated Valves

- 80 psig operating air pressure
- Reed switch position indicator standard
- 120 VAC; 50/60Hz air solenoid standard
- Air-to-open, air-to-close

Options



OPTION NUMBER	DESCRIPTION
GV-S4A	4-way 120 VAC air control solenoid valve
GV-S4B	4-way 240 VAC air control solenoid valve
GV-S4C	4-way 24 VDC air control solenoid valve
GV-S4D	4-way 220 VAC air control solenoid valve
GV-S4E	4-way 24 VAC air control solenoid valve
GMI	Micro-switch position indicator

When ordering options, please add the option number(s) to the end of the reference number for the valve you are ordering.

Accessories



QF/LF Flange Hardware

- Clamps
- Centering rings
- O-rings

For prices and information see QF/LF catalog section: QF clamps and seals or LF fasteners and seals.

Replacement Parts

Gate Valve Seal Replacement Kits

REFERENCE NUMBER	NOMINAL VALVE I.D.
GV-SK150	1.5
GV-SK200	2.0
GV-SK250	2.5
GV-SK300	3.0
GV-SK400	4.0

REFERENCE NUMBER	NOMINAL VALVE I.D.
GV-SK600	6.0
GV-SK800	8.0
GV-SK1000	10.0
GV-SK1200	12.0



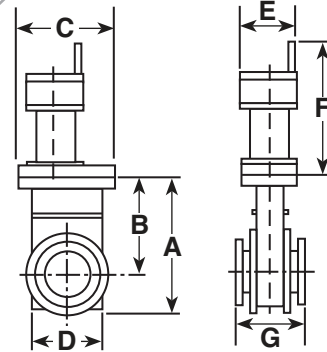
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Manually Operated Gate Valves

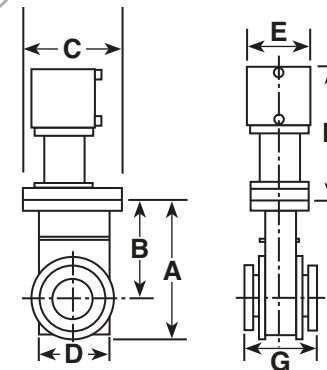
- High Vacuum elastomer sealed bonnets - bakeable to 150°C
- Viton® bonnet seal intermittently - bakeable to 200°C



PART NUMBER	REFERENCE NUMBER	SIZE	PORT FLANGES	CONDUCT. (L/SEC)	A	B	C	D	E	F	G
3200000	GV150-QF-E-M	1.5	QF40	88	4.76	3.39	3.31	2.46	1.99	3.34	2.00
3200001	GV200-QF-E-M	2	QF50	317	5.60	4.12	3.81	2.96	1.99	3.34	2.00
3200002	GV250-LF-E-M	2.5	LF63	363	7.36	4.80	4.37	3.52	1.99	3.34	3.46
3200003	GV300-LF-E-M	3	LF80	546	8.62	5.76	4.94	4.28	1.99	3.34	3.84
3200004	GV400-LF-E-M	4	LF100	1199	11.38	8.12	7.00	5.67	2.99	9.33	4.25
3200005	GV600-LF-E-M	6	LF160	3967	15.07	10.63	8.75	7.55	3.00	9.33	4.25
3200006	GV800-LF-E-M	8	LF200	9449	19.48	13.91	11.25	10.02	3.00	8.59	4.25
3200007	GV1000-LF-E-M	10	LF250	17537	24.81	18.21	13.44	11.99	3.49	11.00	5.51
3200008	GV1200-LF-E-M	12	LF320	24500	30.40	22.03	15.88	14.28	3.49	11.00	5.51

Pneumatically Actuated Gate Valves

- High vacuum elastomer sealed bonnets - bakeable to 150°C
- Viton® bonnet seal intermittently - bakeable to 200°C
- 120 VAC air solenoid standard
- Reed switch position indicator standard



PART NUMBER	REFERENCE NUMBER	SIZE	PORT FLANGES	CONDUCT. (L/SEC)	A	B	C	D	E	F	G
3200009	GV150-QF-E-P	1.5	QF40	88	4.76	3.39	3.31	2.46	1.99	5.12	2.00
3200010	GV200-QF-E-P	2	QF50	317	5.60	4.12	3.81	2.98	1.99	5.12	2.00
3200011	GV250-LF-E-P	2.5	LF63	363	7.36	4.80	4.37	3.52	1.99	5.29	3.46
3200012	GV300-LF-E-P	3	LF80	546	8.62	5.76	4.94	4.28	1.99	5.29	3.84
3200013	GV400-LF-E-P	4	LF100	1199	11.38	8.12	7.00	5.67	2.99	7.33	4.25
3200014	GV600-LF-E-P	6	LF160	3967	15.07	10.63	8.75	7.55	3.00	7.33	4.25
3200015	GV800-LF-E-P	8	LF200	9449	19.48	13.91	11.25	10.02	3.00	6.59	4.25
3200016	GV1000-LF-E-P	10	LF250	17537	24.81	18.21	13.44	11.99	3.49	9.28	5.51
3200017	GV1200-LF-E-P	12	LF320	24500	30.40	22.03	15.87	14.28	3.49	9.28	5.51



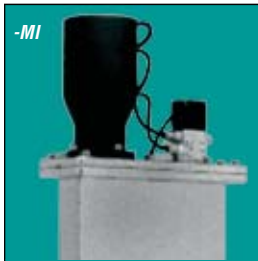
Specifications

- 1.5 inch to 12 inch nom i.D.
- Acme threads
- Viton® bonnet seal
- 10⁻⁹ Torr vacuum rating

Pneumatically Actuated Valves

- 80 psig operating air pressure
- Reed switch position indicator standard
- 120 VAC; 50/60Hz air solenoid standard
- Air-to-open, air-to-close

Options



OPTION NUMBER	DESCRIPTION
GV-S4A	4-way 120 VAC air control solenoid valve
GV-S4B	4-way 240 VAC air control solenoid valve
GV-S4C	4-way 24 VDC air control solenoid valve
GV-S4D	4-way 220 VAC air control solenoid valve
GV-S4E	4-way 24 VAC air control solenoid valve
GMI	Micro-switch position indicator

When ordering options, please add the option number(s) to the end of the reference number for the valve you are ordering.

Accessories



QF/LF Flange Hardware

- Clamps
- Centering rings
- O-rings

For prices and information see QF/LF catalog section: QF clamps and seals or LF fasteners and seals.

Replacement Parts

Gate Valve Seal Replacement Kits

REFERENCE NUMBER	NOMINAL VALVE I.D.
GV-SK150	1.5
GV-SK200	2.0
GV-SK250	2.5
GV-SK300	3.0
GV-SK400	4.0

REFERENCE NUMBER	NOMINAL VALVE I.D.
GV-SK600	6.0
GV-SK800	8.0
GV-SK1000	10.0
GV-SK1200	12.0



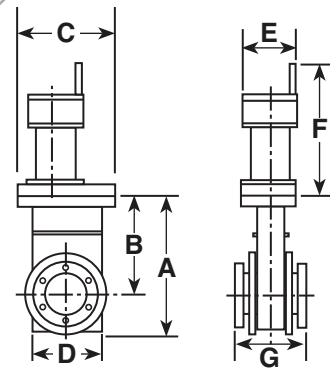
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Manually Operated Gate Valves

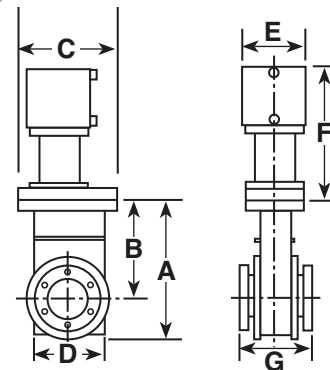
- High vacuum elastomer sealed bonnets - bakeable to 150°C
- Threaded bolt holes are standard
- Viton® bonnet seal intermittently - bakeable to 200°C



PART NUMBER	REFERENCE NUMBER	SIZE	PORT FLANGES	CONDUCT. (L/SEC)	A	B	C	D	E	F	G
3200018	GV250-LFB-E-M	2.5	LFB63	615	7.36	4.80	4.37	3.52	1.99	3.34	2.03
3200019	GV300-LFB-E-M	3	LFB80	1071	8.50	5.76	4.94	4.28	1.99	3.34	1.97
3200020	GV400-LFB-E-M	4	LFB100	2122	11.50	8.12	7.00	5.67	2.99	9.33	2.41
3200021	GV600-LFB-E-M	6	LFB160	7140	15.13	10.63	8.75	7.55	3.00	9.33	2.36
3200022	GV800-LFB-E-M	8	LFB200	11597	19.41	13.91	11.25	10.02	3.00	8.59	2.66
3200023	GV1000-LFB-E-M	10	LFB250	24999	24.71	18.21	13.44	11.99	3.49	11.00	3.15
3200024	GV1200-LFB-E-M	12	LFB320	43268	29.31	22.03	15.88	14.28	3.49	11.00	3.15

Pneumatically Actuated Gate Valves

- High vacuum elastomer sealed bonnets - bakeable to 150°C
- Viton® bonnet seal intermittently - bakeable to 200°C
- 120 VAC air solenoid standard
- Reed switch position indicator standard



PART NUMBER	REFERENCE NUMBER	SIZE	PORT FLANGES	CONDUCT. (L/SEC)	A	B	C	D	E	F	G
3200025	GV250-LFB-E-P	2.5	LFB63	615	7.36	4.80	4.37	3.52	1.99	5.29	2.03
3200026	GV300-LFB-E-P	3	LFB80	1071	8.50	5.76	4.94	4.28	1.99	5.29	1.97
3200027	GV400-LFB-E-P	4	LFB100	2122	11.50	8.12	7.00	5.67	2.99	7.33	2.41
3200028	GV600-LFB-E-P	6	LFB160	7140	15.13	10.63	8.75	7.55	3.00	7.33	2.36
3200029	GV800-LFB-E-P	8	LFB200	11597	19.41	13.91	11.25	10.02	3.00	6.59	2.66
3200030	GV1000-LFB-E-P	10	LFB250	24999	24.71	18.21	13.44	11.99	3.49	9.28	3.15
3200031	GV1200-LFB-E-P	12	LFB320	43268	29.31	22.03	15.87	14.28	3.49	9.28	3.15



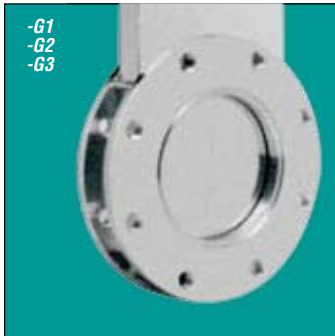
Specifications

- 1.5 inch to 12 inch nom I.D.
- Acme threads
- Viton® bonnet seal
- 10⁻⁹ Torr vacuum rating

Pneumatically Actuated Valves

- 80 psig operating air pressure
- Reed switch position indicator standard
- 120 VAC; 50/60Hz air solenoid standard
- Air-to-open, air-to-close

Options



OPTION NUMBER	DESCRIPTION
GVS4A	4-way 120 VAC air control solenoid valve
GVS4B	4-way 240 VAC air control solenoid valve
GVS4C	4-way 24 VDC air control solenoid valve
GVS4D	4-way 220 VAC air control solenoid valve
GVS4E	4-way 24 VAC air control solenoid valve
GMI	Micro-switch position indicator
G1	O-ring groove on flange; gate side only1
G2	O-ring groove on flange; carriage side only1
G3	O-ring groove on flange; both sides of valve1

¹O-ring groove I.D. on gate valves is .250 in. larger than the valve I.D.

When ordering options, please add the option number(s) to the end of the reference number for the valve you are ordering.

Accessories



ASA Flange Hardware

- Stainless steel nuts, bolts & washers

For prices and information see ASA Catalog section: ASA flange hardware.

Replacement Parts

Gate Valve Seal Replacement Kits

REFERENCE NUMBER	NOMINAL VALVE I.D.
GV-SK150	1.5
GV-SK200	2.0
GV-SK250	2.5
GV-SK300	3.0
GV-SK400	4.0

REFERENCE NUMBER	NOMINAL VALVE I.D.
GV-SK600	6.0
GV-SK800	8.0
GV-SK1000	10.0
GV-SK1200	12.0



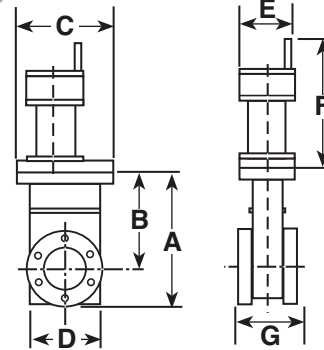
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Manually Operated Gate Valves

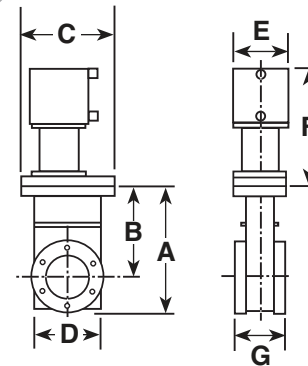
- High vacuum elastomer sealed bonnets - bakeable to 150°C
- Threaded bolt holes are standard
- Viton® bonnet seal intermittently - bakeable to 200°C



PART NUMBER	REFERENCE NUMBER	SIZE	PORT FLANGES	CONDUCT. (L/SEC)	A	B	C	D	E	F	G
3200032	GV250-ASA-E-M	2.5	ASA200	ASA200	7.80	4.80	4.37	3.52	1.99	3.34	2.03
3200033	GV300-ASA-E-M	3	ASA300	ASA300	9.50	5.76	4.94	4.28	1.99	3.34	2.03
3200034	GV400-ASA-E-M	4	ASA400	ASA400	12.58	8.12	7.00	5.67	2.99	7.50	2.41
3200035	GV600-ASA-E-M	6	ASA600	ASA600	16.15	10.63	8.75	7.55	2.99	7.50	2.41
3200036	GV800-ASA-E-M	8	ASA600	ASA600	19.41	13.91	11.25	10.02	2.99	7.50	2.76
3200037	GV1000-ASA-E-M	10	ASA1000	ASA1000	26.13	18.13	13.56	11.99	3.50	11.00	3.15
3200038	GV1200-ASA-E-M	12	ASA1000	ASA1000	30.07	22.03	15.88	14.28	3.50	11.00	3.15

Pneumatically Actuated Gate Valves

- High vacuum elastomer sealed bonnets - bakeable to 150°C
- Viton® bonnet seal intermittently - bakeable to 200°C
- 120 VAC air solenoid standard
- Reed switch position indicator standard



PART NUMBER	REFERENCE NUMBER	SIZE	PORT FLANGES	CONDUCT. (L/SEC)	A	B	C	D	E	F	G
3200039	GV250-ASA-E-P	2.5	ASA200	615	7.80	4.80	4.37	3.52	1.99	5.12	2.03
3200040	GV300-ASA-E-P	3	ASA300	1029	9.50	5.76	4.94	4.28	1.99	5.12	2.03
3200041	GV400-ASA-E-P	4	ASA400	2122	12.58	8.12	7.00	5.67	2.99	6.69	2.41
3200042	GV600-ASA-E-P	6	ASA600	7023	16.15	10.63	8.75	7.55	2.99	6.69	2.41
3200043	GV800-ASA-E-P	8	ASA600	14374	19.41	13.91	11.25	10.02	2.99	6.69	2.76
3200044	GV1000-ASA-E-P	10	ASA1000	24990	26.13	18.13	13.56	11.99	3.50	9.24	3.15
3200045	GV1200-ASA-E-P	12	ASA1000	43268	30.07	22.07	15.88	14.28	3.50	9.24	3.15



Specifications

- 1.5 inch to 12 inch nom I.D.
- Acme threads
- Viton® bonnet seal
- 10⁻⁹ Torr vacuum rating

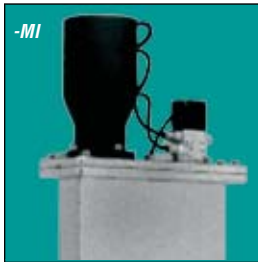
Pneumatically Actuated Valves

- 80 psig operating air pressure
- Reed switch position indicator standard
- 120 VAC; 50/60Hz air solenoid standard
- Air-to-open, air-to-close

Options



OPTION NUMBER	DESCRIPTION
GVKP	Kalrez® high temperature gate seal
GVS4A	4-way 120 VAC air control solenoid valve
GVS4B	4-way 240 VAC air control solenoid valve
GVS4C	4-way 24 VDC air control solenoid valve
GVS4D	4-way 220 VAC air control solenoid valve
GVS4E	4-way 24 VAC air control solenoid valve
GMI	Micro-switch position indicator



When ordering options, please add the option number(s) to the end of the reference number for the valve you are ordering.

Accessories



CF Flange Hardware

- Gaskets
- Bolts, nut, washer kits
- Plate nut kits

For prices and information see CF Catalog section: listed in the index as hardware.

Replacement Parts

Gate Valve Seal Replacement Kits

REFERENCE NUMBER	NOMINAL VALVE I.D.
GV-SK150	1.5
GV-SK200	2.0
GV-SK250	2.5
GV-SK300	3.0
GV-SK400	4.0

REFERENCE NUMBER	NOMINAL VALVE I.D.
GV-SK600	6.0
GV-SK800	8.0
GV-SK1000	10.0
GV-SK1200	12.0



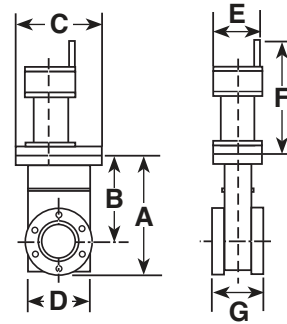
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Manually Operated Gate Valves

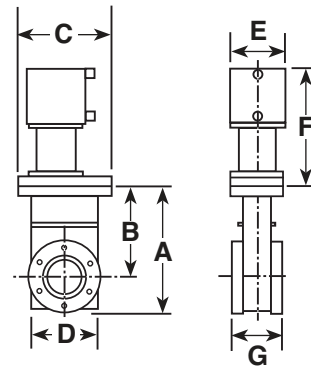
- High vacuum elastomer sealed bonnets - bakeable to 150°C
- Threaded bolt holes are standard
- Viton® bonnet seal intermittently - bakeable to 200°C



PART NUMBER	REFERENCE NUMBER	SIZE	PORT FLANGES	CONDUCT. (L/SEC)	A	B	C	D	E	F	G
3200046	GV150-CF-E-M	1.5	CF275	128	4.76	3.39	3.31	2.46	1.99	3.34	2.03
3200047	GV200-CF-E-M	2	CF338	279	5.81	4.12	3.81	2.98	1.99	3.34	2.28
3200048	GV250-CF-E-M	2.5	CF450	524	7.05	4.80	4.37	3.52	1.99	3.34	2.40
3200049	GV300-CF-E-M	3	CF462	823	8.06	5.76	4.94	4.28	1.99	3.34	2.53
3200050	GV400-CF-E-M	4	CF600	1726	11.12	8.12	7.00	5.67	2.99	7.50	2.97
3200051	GV600-CF-E-M	6	CF800	5289	14.65	10.63	8.75	7.55	2.99	7.50	3.17
3200052	GV800-CF-E-M	8	CF1000	12006	18.91	13.91	11.25	10.02	2.99	7.50	3.35
3200053	GV1000-CF-E-M	10	CF1325	25073	24.28	18.13	13.56	11.99	3.50	11.00	3.65
3200054	GV1200-CF-E-M	12	CF1400	34964	29.07	22.03	15.88	14.28	3.50	11.00	3.89

Pneumatically Actuated Gate Valves

- High vacuum elastomer sealed bonnets - bakeable to 150°C
- Viton® bonnet seal intermittently - bakeable to 200°C
- 120 VAC air solenoid standard
- Reed switch position indicator standard



PART NUMBER	REFERENCE NUMBER	SIZE	PORT FLANGES	CONDUCT. (L/SEC)	A	B	C	D	E	F	G
3200055	GV150-CF-E-P	1.5	CF275	128	4.76	3.39	3.31	2.46	1.99	3.34	2.03
3200056	GV200-CF-E-P	2	CF338	279	5.81	4.12	3.81	2.98	1.99	3.34	2.28
3200057	GV250-CF-E-P	2.5	CF450	524	7.05	4.80	4.37	3.52	1.99	3.34	2.40
3200058	GV300-CF-E-P	3	CF462	823	8.06	5.76	4.94	4.28	1.99	3.34	2.53
3200059	GV400-CF-E-P	4	CF600	1726	11.12	8.12	7.00	5.67	2.99	7.50	2.97
3200060	GV600-CF-E-P	6	CF800	5289	14.65	10.63	8.75	7.55	2.99	7.50	3.17
3200061	GV800-CF-E-P	8	CF1000	12006	18.91	13.91	11.25	10.02	2.99	7.50	3.35
3200062	GV1000-CF-E-P	10	CF1325	25073	24.28	18.13	13.56	11.99	3.50	11.00	3.65
3200063	GV1200-CF-E-P	12	CF1400	34964	29.07	22.03	15.88	14.28	3.50	11.00	3.89



Specifications

- 1.5 inch to 12 inch nom I.D.
- Acme threads
- Viton® bonnet seal
- 10⁻⁹ Torr vacuum rating

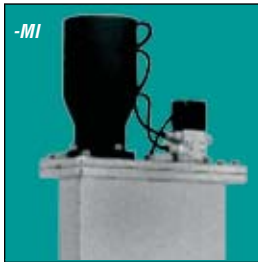
Pneumatically Actuated Valves

- 80 psig operating air pressure
- Reed switch position indicator standard
- 120 VAC; 50/60Hz air solenoid standard
- Air-to-open, air-to-close

Options



OPTION NUMBER	DESCRIPTION
GVKP	Kalrez® high temperature gate seal
GVS4A	4-way 120 VAC air control solenoid valve
GVS4B	4-way 240 VAC air control solenoid valve
GVS4C	4-way 24 VDC air control solenoid valve
GVS4D	4-way 220 VAC air control solenoid valve
GVS4E	4-way 24 VAC air control solenoid valve
GMI	Micro-switch position indicator



When ordering options, please add the option number(s) to the end of the reference number for the valve you are ordering.

Accessories



CF Flange Hardware

- Gaskets
- Bolts, nut, washer kits
- Plate nut kits

For prices and information see CF catalog section: listed in the index as hardware.

Replacement Parts

Gate Valve Seal Replacement Kits

REFERENCE NUMBER	NOMINAL VALVE I.D.
GV-SK150	1.5
GV-SK200	2.0
GV-SK250	2.5
GV-SK300	3.0
GV-SK400	4.0

REFERENCE NUMBER	NOMINAL VALVE I.D.
GV-SK600	6.0
GV-SK800	8.0
GV-SK1000	10.0
GV-SK1200	12.0



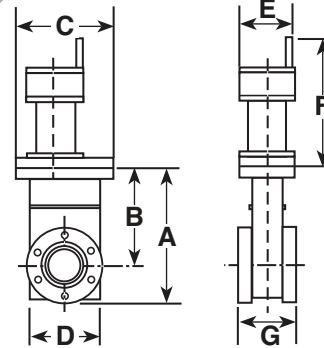
A&N Corporation

707 SW 19th Ave.
Williston, FL 32696
1(800) FLANGE1
FAX (352) 528-3441
www.ancorp.com



Manually Operated Gate Valves

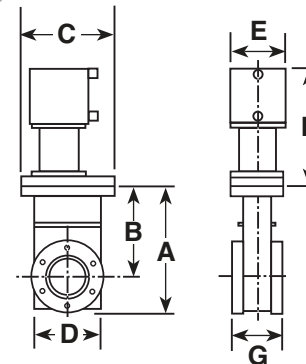
- High vacuum elastomer sealed bonnets - bakeable to 150°C
- Threaded bolt holes are standard
- Viton® bonnet seal intermittently - bakeable to 200°C



PART NUMBER	REFERENCE NUMBER	SIZE	PORT FLANGES	CONDUCT. (L/SEC)	A	B	C	D	E	F	G
3200064	GV150-CF-C-M	1.5	CF275	128	4.76	3.39	3.31	2.46	1.99	3.34	2.03
3200065	GV200-CF-C-M	2	CF338	279	5.81	4.12	3.81	2.98	1.99	3.34	2.28
3200066	GV250-CF-C-M	2.5	CF450	524	7.05	4.80	4.37	3.52	1.99	3.34	2.40
3200067	GV300-CF-C-M	3	CF462	823	8.06	5.76	4.94	4.28	1.99	3.34	2.53
3200068	GV400-CF-C-M	4	CF600	1726	11.12	8.12	7.00	5.67	2.99	7.50	2.97
3200069	GV600-CF-C-M	6	CF800	5289	14.63	10.65	8.75	7.55	2.99	7.50	3.17
3200070	GV800-CF-C-M	8	CF1000	12006	18.91	13.91	11.25	10.02	2.99	7.50	3.35
3200071	GV1000-CF-C-M	10	CF1325	25073	24.28	18.13	13.56	11.99	3.50	11.00	3.65
3200072	GV1200-CF-C-M	12	CF1400	34964	29.07	22.03	15.88	14.28	3.50	11.00	3.89

Pneumatically Actuated Gate Valves

- High vacuum elastomer sealed bonnets - bakeable to 150°C
- Viton® bonnet seal intermittently - bakeable to 200°C
- 120 VAC air solenoid standard
- Reed switch position indicator standard
- Threaded bolt holes are standard



PART NUMBER	REFERENCE NUMBER	SIZE	PORT FLANGES	CONDUCT. (L/SEC)	A	B	C	D	E	F	G
3200073	GV150-CF-C-P	1.5	CF275	128	4.76	3.39	3.31	2.46	1.99	5.12	2.03
3200074	GV200-CF-C-P	2	CF338	279	5.81	4.12	3.81	2.98	1.99	5.12	2.28
3200075	GV250-CF-C-P	2.5	CF450	524	7.05	4.80	4.37	3.52	1.99	5.12	2.40
3200076	GV300-CF-C-P	3	CF462	823	8.06	5.76	4.94	4.28	1.99	5.12	2.53
3200077	GV400-CF-C-P	4	CF600	1726	11.12	8.12	7.00	5.67	2.99	6.69	2.97
3200078	GV600-CF-C-P	6	CF800	5289	14.63	10.65	8.75	7.55	2.99	6.69	3.17
3200079	GV800-CF-C-P	8	CF1000	12006	18.91	13.91	11.25	10.02	2.99	6.69	3.35
3200080	GV1000-CF-C-P	10	CF1325	25073	24.28	18.13	13.56	12.00	3.50	9.24	3.65
3200081	GV1200-CF-C-P	12	CF1400	34964	29.07	22.03	15.88	14.28	3.50	9.24	3.89

