

LoPro™ Valves

Compact Vacuum Valve



The LoPro Valve has a smaller profile, is lighter, lower in cost, and easier to maintain than similar competitive valves. With its small footprint, this valve fits as easily into existing vacuum systems as well as new systems. Manufactured using superior techniques and high quality materials, the LoPro Valve is extremely durable and dependable. The LoPro Valve lifetime can extend to 1,000,000 cycles under clean conditions, greatly increasing system uptime. A formed stainless steel bellows prevents outgassing, virtual leaks, and particle entrapment between bellows convolutions and extends the LoPro Valve's life cycle. The bellows' stroke length is optimized to assure a longer cycle life while maintaining a high conductance.

Another standard feature is a Tungsten Inert Gas (TIG) fusion-welded, bead-blasted body made of high grade, corrosion resistant, 304 stainless steel for significantly fewer entrapment areas, resulting in less contaminant build-up. In the event of power or air loss, the pneumatic LoPro Valve will automatically spring to close. Actuation can be pneumatic or manual.

The LoPro Valve is available in both angle and inline versions. Port sizes include outside diameters of 1, 1½, and 2 inches and standard port interfaces include KF flanges, CF flanges, and weld stubs. For leak-tight operation, elastomer seals are available in Viton® for typical vacuum operating conditions, in Kalrez® or Chemraz® for higher temperature conditions and increased chemical resistance, and in Buna-N or Silicone.

Options for the LoPro Valve include an air solenoid for electropneumatic control of the valve and a limit switch assembly for remote indication of its position. LoPro Valves with faster actuation times than those listed in the specifications are available by special request. The LoPro Valve is designed for high performance in gauge or system isolation. It is ideally suited in applications such as semiconductor manufacturing, process industries, high energy physics research, and thin film deposition.

Product Features

- Bellows-sealed poppet valve
- Formed bellows for less particle trapping and longer cycle life
- Spring-to-close, air-to-open pneumatic valve
- Manual version available
- Greater sealing force provides better seal integrity in contaminated conditions
- Angle or inline option
- Available in port diameters of 1, 1 1/2, and 2 inches
- Choice of KF flanges, CF flanges, or weld stubs
- Assorted seal options to meet process needs



Key Benefits

- Improved square cap design for ease of maintenance
- Compact, low profile
- High purity, corrosion resistant, 304 stainless steel body
- May easily be accommodated into existing sys-

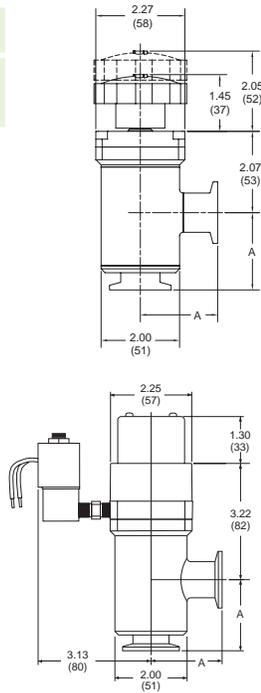
Specifications

Vacuum Range	Atmosphere to 1.0×10^{-9} Torr		
Cylinder Air Pressure	90 psig \pm 30 psig		
Helium Leak Rate	1.0×10^{-9} std cc/sec		
Maximum Bakeout Temperature	150°C		
Limit Switch Rating	5A - 250 VAC		
Single Pole, Single Throw	5A - 30 VDC		
Typical Life	1,000,000 cycles		
	NW25	NW40	NW50
Port Size in. (NW)	1.0 (25)	1.5 (40)	2.0 (50)
Weight ISO-KF, Pneumatic lb. (kg)			
Angle	• 1.6 (0.7)	• 3.0 (1.4)	• 5.4 (2.5)
Inline	• 1.9 (0.9)	• 3.1 (1.4)	• 6.4 (2.9)
Cylinder Volume in³ (cm³)	1.2 (20)	2.2 (36)	6.4 (105)
Actuation Time at 100 psi: opening (closing)	0.12 sec (0.18 sec)	0.27 sec (0.53 sec)	0.45 sec (1.13 sec)
Blow-By Pressure psia	80	50	45
Maximum Internal Spring Closing Pressure psia	43	60	38

Dimensional Drawings: Angle and Inline

Dimension A

KF	CF	Tube
1.97	2.02	1.88
(50)	(51)	(48)

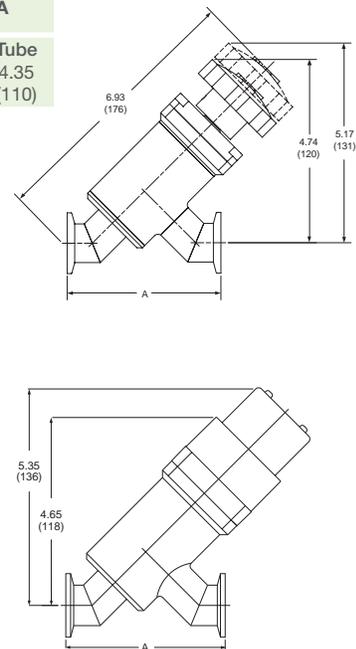


NW25 Angle Dimensional Drawing

Note: Unless otherwise specified, dimensions are nominal values in inches (mm referenced).

Dimension A

KF	CF	Tube
3.94	4.62	4.35
(100)	(117)	(110)

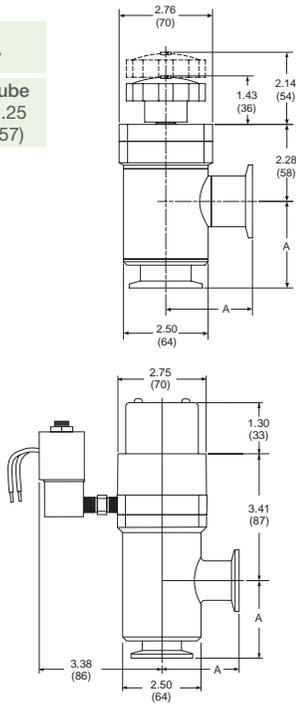


NW25 Inline Dimensional Drawing

Note: Unless otherwise specified, dimensions are nominal values in inches (mm referenced).

Dimension A

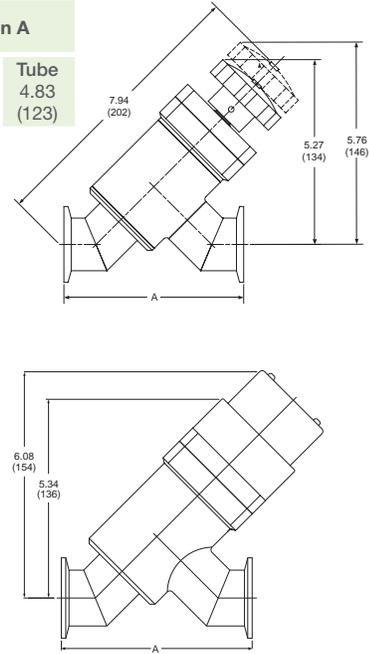
KF	CF	Tube
2.56 (65)	2.43 (62)	2.25 (57)



NW40 Angle Dimensional Drawing
 Note: Unless otherwise specified, dimensions are nominal values in inches (mm referenced).

Dimension A

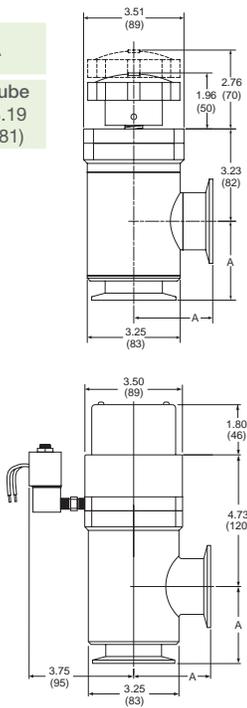
KF	CF	Tube
5.12 (130)	5.19 (132)	4.83 (123)



NW40 Inline Dimensional Drawing
 Note: Unless otherwise specified, dimensions are nominal values in inches (mm referenced).

Dimension A

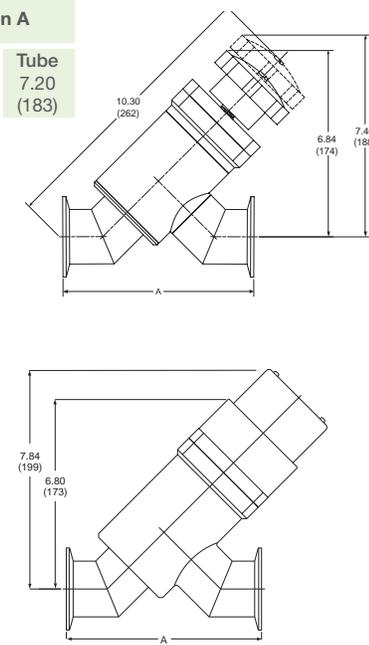
KF	CF	Tube
2.76 (70)	3.19 (81)	3.19 (81)



NW50 Angle Dimensional Drawing
 Note: Unless otherwise specified, dimensions are nominal values in inches (mm referenced).

Dimension A

KF	CF	Tube
7.00 (178)	7.59 (193)	7.20 (183)



NW50 Inline Dimensional Drawing
 Note: Unless otherwise specified, dimensions are nominal values in inches (mm referenced).

LoPro Valve Ordering Information	NW25	NW40	NW50
Body Configuration (LPV1-XX-XX)	<ul style="list-style-type: none"> • LPV1-25-AK KF 25 Angle • LPV1-25-IK KF 25 Inline • LPV1-25-AC CF 2 1/8" Angle • LPV1-25-IC CF 2 1/8" Inline • LPV1-25-AT 1" Tube Angle • LPV1-25-IT 1" Tube Inline 	<ul style="list-style-type: none"> • LPV1-40-AK KF 40 Angle • LPV1-40-IK KF 40 Inline • LPV1-40-AC CF 2 3/4" Angle • LPV1-40-IC CF 2 3/4" Inline • LPV1-40-AT 1 1/2" Tube Angle • LPV1-40-IT 1 1/2" Tube Inline 	<ul style="list-style-type: none"> • LPV1-50-AK KF 50 Angle • LPV1-50-IK KF 50 Inline • LPV1-50-AC CF 3 3/8" Angle • LPV1-50-IC CF 3 3/8" Inline • LPV1-50-AT 2" Tube Angle • LPV1-50-IT 2" Tube Inline
Actuator Type (-X)	<ul style="list-style-type: none"> • C Normally Closed 	<ul style="list-style-type: none"> • M Manual 	
Limit Switch (X)	<ul style="list-style-type: none"> • L With Limit Switch 	<ul style="list-style-type: none"> • N No Limit Switch 	
Seal Type (X)	<ul style="list-style-type: none"> • V Viton • B Buna-N 	<ul style="list-style-type: none"> • S Silicone • K Kalrez 	<ul style="list-style-type: none"> • Z Chemraz
O-Ring Configuration (X)	<ul style="list-style-type: none"> • S Standard 	<ul style="list-style-type: none"> • N Manual 	
Pneumatic Solenoid Voltage (-XXX)	<ul style="list-style-type: none"> • 12D 12VDC • 24D 24VDC • 24A 24VAC 50/60 Hz 	<ul style="list-style-type: none"> • 100 100VAC 50 Hz • 120 120VAC 50/60 Hz • 208 208VAC 50/60 Hz 	<ul style="list-style-type: none"> • 240 220VAC 50/60 Hz • None 1/8" NPT-F

Spare Parts

Port Size in.	Pneumatic Valve Internals Viton Seals	Manual Valve Internals Viton Seals	Limit Switch
<ul style="list-style-type: none"> • 1.0 (25) • 1.5 (40) • 2.0 (50) 	<ul style="list-style-type: none"> • 100010104 • 100010103 • 100010102 	<ul style="list-style-type: none"> • 100010128 • 100010129 • 100010130 	<ul style="list-style-type: none"> • 100002227 • 100002228 • 100002229

Replacement Solenoid Valves

	Voltage and Frequency	Watts	Part Number
	<ul style="list-style-type: none"> • 24VAC 50/60 Hz • 24VDC • 12 VDC • 120VAC 50/60 Hz • 208VAC 50/60 Hz • 220VAC 50/60 Hz 	<ul style="list-style-type: none"> • 6.0 • 7.0 • 7.0 • 7.5 • 7.5 • 7.5 	<ul style="list-style-type: none"> • 100008164 • 100008163 • 100008539 • 100008165 • 100008166 • 100008167

Seal Set

Port Size in.	Viton	Buna-N	Silicone	Kalrez	Chemraz
<ul style="list-style-type: none"> • 1.0 (25) • 1.5 (40) • 2.0 (50) 	<ul style="list-style-type: none"> • 100002224 • 100002225 • 100002226 	<ul style="list-style-type: none"> • 100002215 • 100002216 • 100002217 	<ul style="list-style-type: none"> • 100002221 • 100002222 • 100002223 	<ul style="list-style-type: none"> • 100002218 • 100002219 • 100002220 	<ul style="list-style-type: none"> • 100009145 • 100009146 • 100009147