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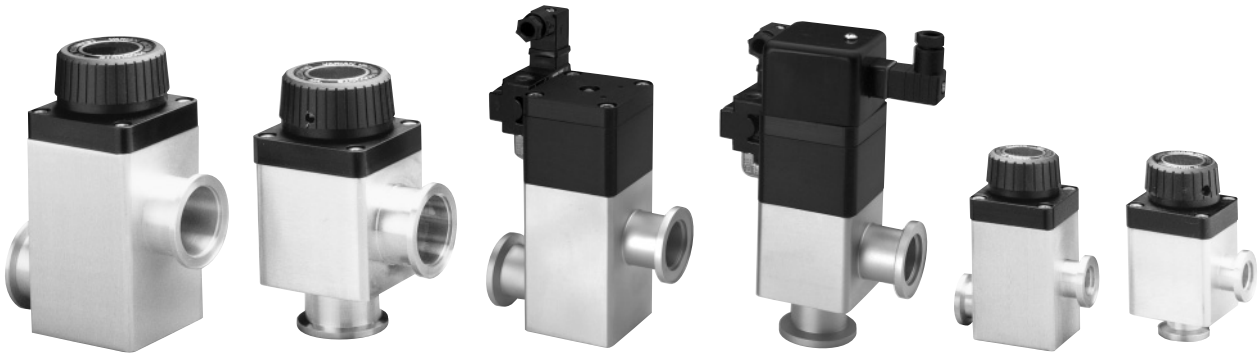
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Aluminum Block Valves

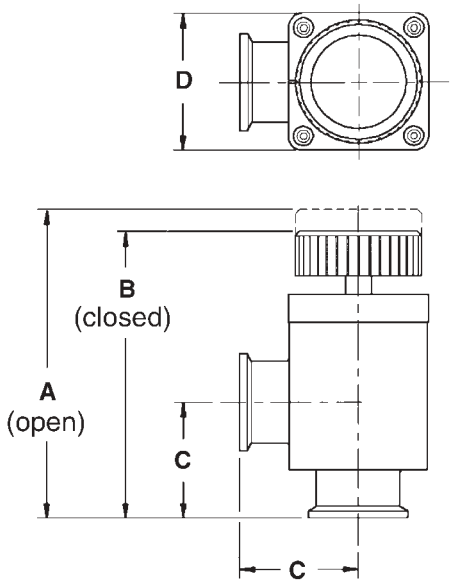


Varian's aluminum block valves are the valves of choice for medium- and high-vacuum requirements. These low-cost, compact, and reliable valves are used for applications in semiconductor manufacturing, R&D, and industrial vacuum systems. Varian's block valves will reliably achieve 1 million cycles (NW16/25) in most applications.

Now available in right-angle (NW16-80) or offset in-line (NW16 – 40), these valves may be ordered in either hand- or air-operated versions. Our nickel-plated version offers lower outgassing and higher resistance to corrosive gases. Air-operated valves may be ordered with a solenoid valve and/or a remote position indicator.

Features	Benefits
• Convenient NW/ISO flange dimensions	• Easy installation and service
• Low-profile, lightweight construction	
• Reliable design	• Service-free performance
• 1 million cycles (NW16/25); 250,000 cycles (NW40-NW80)	• Cost effective
• Auto-close on loss of air or power	• Fail-safe operation
• Low cost	• Economical to use
• Visual position indicator	• Minimizes operator error
• Optional remote position indicator	
• High conductance	• Maximizes pumping efficiency
• Nickel-plated option	• Low outgassing • Higher resistance to corrosive gasses

Right-Angle H/O Block Valve

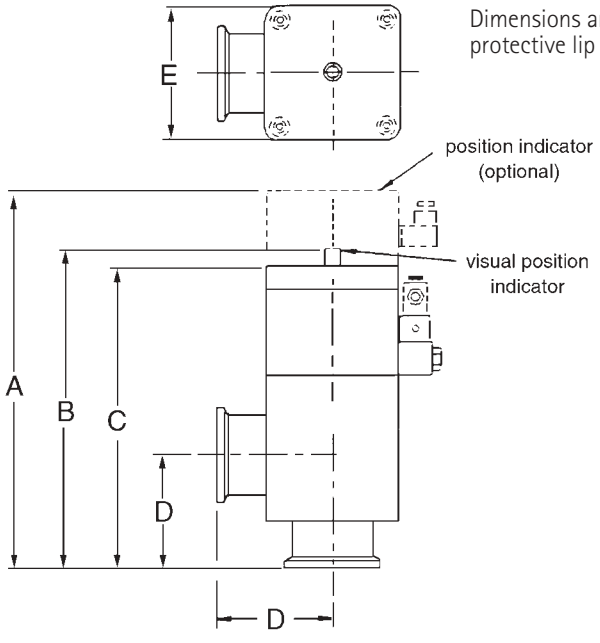


Dimensions are seal face-to-face, protective lip not included.

Models	A	B	C	D	
NW16	4.45	4.09	1.58	2.05	
	(113)	(104)	(40)	(52)	
NW25	4.85	4.49	1.98	2.05	NW/KF
	(123)	(114)	(50)	(52)	
NW40	6.45	6.00	2.57	3.05	
	(164)	(152)	(65)	(77)	
NW50	7.19	6.79	2.80	3.89	
	(183)	(172)	(71)	(99)	
NW63	7.71	7.31	3.32	3.89	ISO-K
	(196)	(186)	(84)	(99)	
NW80	8.25	7.69	3.72	4.40	
	(210)	(195)	(94)	(112)	

Dimensions: inches (millimeters)

Right-Angle A/O Block Valve

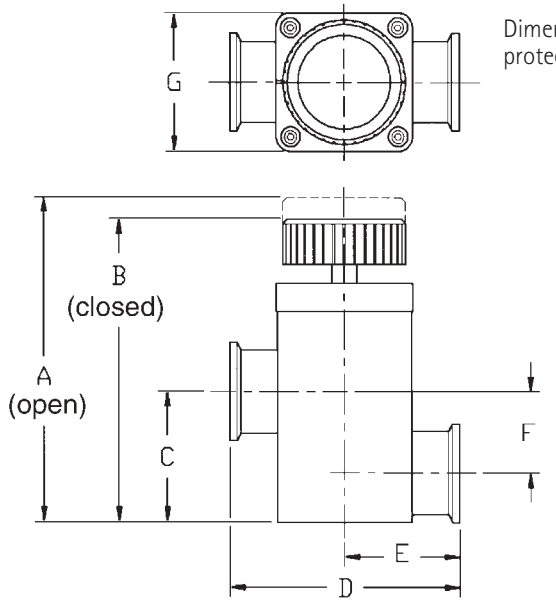


Dimensions are seal face-to-face, protective lip not included.

Models	A	B	C	D	E	
NW16	6.01	4.83	4.49	1.58	2.05	
	(153)	(123)	(114)	(40)	(52)	
NW25	6.41	5.23	4.89	1.98	2.05	NW/KF
	(163)	(133)	(124)	(50)	(52)	
NW40	7.56	6.38	6.04	2.57	3.05	
	(192)	(162)	(153)	(65)	(77)	
NW50	7.59	7.47	7.07	2.80	3.89	
	(193)	(190)	(180)	(71)	(99)	
NW63	8.11	7.99	7.59	3.32	3.89	ISO-K
	(206)	(203)	(193)	(84)	(99)	
NW80	8.51	8.39	7.99	3.72	4.40	
	(216)	(213)	(203)	(94)	(112)	

Dimensions: inches (millimeters)

In-Line H/O Block Valve

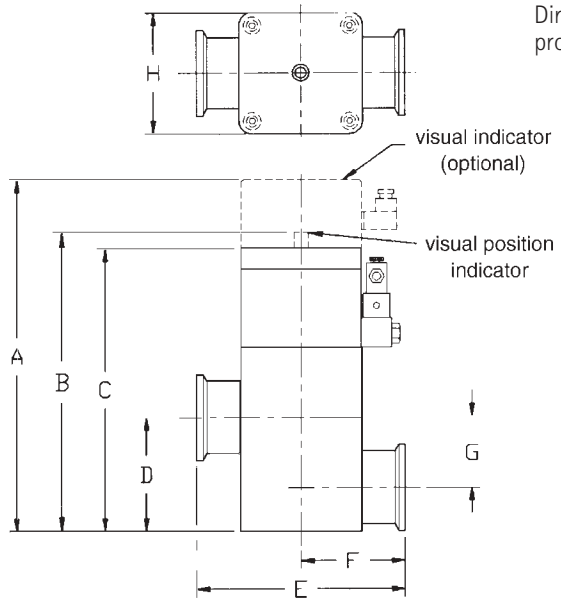


Dimensions are seal face-to-face, protective lip not included.

Models	A	B	C	D	E	F	G
NW16	4.71	4.35	1.47	3.16	1.58	0.88	2.05
	(120)	(111)	(37)	(80)	(40)	(22)	(52)
NW25	5.11	4.75	2.04	3.96	1.98	1.25	2.05
	(130)	(121)	(52)	(100)	(50)	(32)	(52)
NW40	7.06	6.61	2.85	5.14	2.57	1.77	3.05
	(179)	(168)	(72)	(130)	(65)	(45)	(77)

Dimensions: inches (millimeters)

In-Line A/O Block Valve



Dimensions are seal face-to-face, protective lip not included.

Models	A	B	C	D	E	F	G	H
NW16	6.27	5.09	4.75	1.47	3.16	1.58	0.88	2.05
	(160)	(129)	(121)	(37)	(80)	(40)	(22)	(52)
NW25	6.67	5.49	5.15	2.04	3.96	1.98	1.25	2.05
	(170)	(139)	(131)	(52)	(100)	(50)	(32)	(52)
NW40	8.17	6.99	6.65	2.85	5.14	2.57	1.77	3.05
	(208)	(178)	(169)	(72)	(130)	(65)	(45)	(77)

Dimensions: inches (millimeters)

Technical Specifications

Pressure Range
Atmosphere to 10^{-9} torr (mbar)

Main Seal Leak Rate
< 1 x 10^{-9} std cc/sec He

Body Leak Rate
< 1 x 10^{-10} std cc/sec He

Rated Cycle Life
1 million (NW16/25)
250,000 (NW40-NW80)

Conductance (molecular flow)

	NW16	NW25	NW40	NW50	NW63	NW80
Right Angle	4 l/s	12 l/s	35 l/s	60 l/s	95 l/s	155 l/s
Offset In-Line	4 l/s	12 l/s	35 l/s	–	–	–

Materials
- Valve Body – Aluminum 6061 T6
- Bellows – Stainless Steel T321
- O-rings, vacuum – Viton V747-75

Bakeable To –

Hand-operated Valve	150° C
Air-operated Valve	150° C without solenoid, 60° C with solenoid
Position Indicator	60° C

Air Connection
1/8 in. NPT

Actuation
Spring closed, air open
Air Pressure, 80 psig (min) 100 psig (maximum)

Time to Close/Open
< 300 mseconds

Power Loss
Valve closes

Optional Remote Position Indicator
Actuator – Microswitch
Electrical Rating – 125/250 VAC, 5 amp maximum
Signal Hookup – NO or NC

Ordering Information – NW16, NW25, NW40

Size	Voltage Option	Part Number		Shipping Weight lbs. (kg)
Right-Angle Block Valves		**Aluminum**	**Nickel-Plated Aluminum**	
Hand-operated				
NW16		L6280301	L6280601	0.8 (0.4)
NW25		L6280302	L6280602	0.8 (0.4)
NW40		L6280303	L6280603	1.7 (0.8)
Air-operated				
NW16	without solenoid	L6281301	L6281601	1.5 (0.7)
	110/115 VAC, 50/60 Hz	L6281311	L6281611	1.7 (0.8)
	220/240 VAC; 50/60 Hz	L6281321	L6281621	1.7 (0.8)
	24 VDC	L6281331	L6281631	1.7 (0.8)
NW25	without solenoid	L6281302	L6281602	1.6 (0.7)
	110/115 VAC; 50/60 Hz	L6281312	L6281612	1.8 (0.8)
	220/240 VAC; 50/60 Hz	L6281322	L6281622	1.8 (0.8)
	24 VDC	L6281332	L6281632	1.8 (0.8)
NW40	without solenoid	L6281303	L6281603	3.3 (1.5)
	110/115 VAC; 50/60 Hz	L6281313	L6281613	3.7 (1.7)
	220/240 VAC; 50/60 Hz	L6281323	L6281623	3.7 (1.7)
	24 VDC	L6281333	L6281633	3.7 (1.7)
Right-Angle Block Valves (with remote position indicator)		**Aluminum**	**Nickel-Plated Aluminum**	
Air-operated				
NW16	without solenoid	L6282301	L6282601	1.8 (0.8)
	110/115 VAC; 50/60 Hz	L6282311	L6282611	2.0 (0.9)
	220/240 VAC; 50/60 Hz	L6282321	L6282621	2.0 (0.9)
	24 VDC	L6282331	L6282631	2.0 (0.9)
NW25	without solenoid	L6282302	L6282602	1.9 (0.8)
	110/115 VAC; 50/60 Hz	L6282312	L6282612	2.1 (0.9)
	220/240 VAC; 50/60 Hz	L6282322	L6282622	2.1 (0.9)
	24 VDC	L6282332	L6282632	2.1 (0.9)
NW40	without solenoid	L6282303	L6282603	3.6 (1.6)
	110/115 VAC; 50/60 Hz	L6282313	L6282613	3.8 (1.7)
	220/240 VAC; 50/60 Hz	L6282323	L6282623	3.8 (1.7)
	24 VDC	L6282333	L6282633	3.8 (1.7)

Ordering Information – NW16, NW25, NW40

Size	Voltage Option	Part Number		Shipping Weight lbs. (kg)
Offset In-line Block Valves		**Aluminum**	**Nickel-Plated Aluminum**	
Hand-operated				
NW16		L9180301	L9180601	1.2 (0.5)
NW25		L9180302	L9180602	1.3 (0.6)
NW40		L9180303	L9180603	3.6 (1.6)
Air-operated				
NW16	without solenoid	L9181301	L9181601	1.6 (0.7)
	110/115 VAC; 50/60 Hz	L9181311	L9181611	1.8 (0.8)
	220/240 VAC; 50/60 Hz	L9181321	L9181621	1.8 (0.8)
	24 VDC	L9181331	L9181631	1.8 (0.8)
NW25	without solenoid	L9181302	L9181602	1.8 (0.8)
	110/115 VAC; 50/60 Hz	L9181312	L9181612	2.0 (0.9)
	220/240 VAC; 50/60 Hz	L9181322	L9181622	2.0 (0.9)
	24 VDC	L9181332	L9181632	2.0 (0.9)
NW40	without solenoid	L9181303	L9181603	4.6 (2.0)
	110/115 VAC; 50/60 Hz	L9181313	L9181613	4.8 (2.1)
	220/240 VAC; 50/60 Hz	L9181323	L9181623	4.8 (2.1)
	24 VDC	L9181333	L9181633	4.8 (2.1)
Offset In-Line Block Valves (with remote position indicator)		**Aluminum**	**Nickel-Plated Aluminum**	
Air-operated				
NW16	without solenoid	L9182301	L9182601	1.7 (0.8)
	110/115 VAC; 50/60 Hz	L9182311	L9182611	1.9 (0.8)
	220/240 VAC; 50/60 Hz	L9182321	L9182621	1.9 (0.8)
	24 VDC	L9182331	L9182631	1.9 (0.8)
NW25	without solenoid	L9182302	L9182602	2.1 (0.9)
	110/115 VAC; 50/60 Hz	L9182312	L9182612	2.3 (1.0)
	220/240 VAC; 50/60 Hz	L9182322	L9182622	2.3 (1.0)
	24 VDC	L9182332	L9182632	2.3 (1.0)
NW40	without solenoid	L9182303	L9182603	4.9 (2.2)
	110/115 VAC; 50/60 Hz	L9182313	L9182613	5.1 (2.3)
	220/240 VAC; 50/60 Hz	L9182323	L9182623	5.1 (2.3)
	24 VDC	L9182333	L9182633	5.1 (2.3)

Ordering Information – NW16, NW25, NW40

Description	Part Number	Shipping Weight lbs. (kg)
Spare Parts		
Replacement solenoids (fit all air-operated valves)		
110/115 VAC; 50/60 Hz	626771150	0.5 (0.2)
220/240 VAC; 50/60 Hz	626771151	0.5 (0.2)
24 VDC	626771152	0.5 (0.2)
Hand-operated spare parts kits (includes bellows and o-rings)		
NW16 or 25	L6125301	0.5 (0.2)
NW40	L6126301	0.5 (0.2)
Air-operated spare parts kits (includes bellows, quad ring, and o-rings)		
NW16 or 25	L6127301	0.5 (0.2)
NW40	L6128301	0.5 (0.2)
Optional remote position indicator (fits all Aluminum Block Valves)		
Single microswitch	L6597302	0.5 (0.2)
Dual microswitch	L6597301	0.5 (0.2)
Manual	699912040	0.5 (0.2)

Ordering Information – NW50, NW63, NW80

Size	Voltage Option	Part Number		Shipping Weight lbs. (kg)
Right Angle Block Valves		**Aluminum**	**Nickel-Plated Aluminum**	
Hand-operated				
NW50		L7280301	L7280601	2.0 (0.9)
NW63		L7280302	L7280602	3.0 (1.4)
NW80		L7280303	L7280603	5.0 (2.3)
Air-operated				
NW50	without solenoid	L7281301	L7281601	3.0 (1.4)
	110/115 VAC; 50/60 Hz	L7281311	L7281611	3.0 (1.4)
	220/240 VAC; 50/60 Hz	L7281321	L7281621	3.0 (1.4)
	24 VDC	L7281331	L7281631	3.0 (1.4)
NW63	without solenoid	L7281302	L7281602	4.0 (1.8)
	110/115 VAC; 50/60 Hz	L7281312	L7281612	4.0 (1.8)
	220/240 VAC; 50/60 Hz	L7281322	L7281622	4.0 (1.8)
	24 VDC	L7281332	L7281632	4.0 (1.8)
NW80	without solenoid	L7281303	L7281603	6.5 (3.0)
	110/115 VAC; 50/60 Hz	L7281313	L7281613	6.5 (3.0)
	220/240 VAC; 50/60 Hz	L7281323	L7281623	6.5 (3.0)
	24 VDC	L7281333	L7281633	6.5 (3.0)
Right-Angle Block Valves (with remote position indicator)		**Aluminum**	**Nickel-Plated Aluminum**	
Air-operated				
NW50	without solenoid	L7282301	L7282601	4.0 (1.8)
	110/115 VAC; 50/60 Hz	L7282311	L7282611	4.0 (1.8)
	220/240 VAC; 50/60 Hz	L7282321	L7282621	4.0 (1.8)
	24 VDC	L7282331	L7282631	4.0 (1.8)
NW63	without solenoid	L7282302	L7282602	5.0 (2.3)
	110/115 VAC; 50/60 Hz	L7282312	L7282612	5.0 (2.3)
	220/240 VAC; 50/60 Hz	L7282322	L7282622	5.0 (2.3)
	24 VDC	L7282332	L7282632	5.0 (2.3)
NW80	without solenoid	L7282303	L7282603	7.5 (3.5)
	110/115 VAC; 50/60 Hz	L7282313	L7282613	7.5 (3.5)
	220/240 VAC; 50/60 Hz	L7282323	L7282623	7.5 (3.5)
	24 VDC	L7282333	L7282633	7.5 (3.5)

Ordering Information – NW50, NW63, NW80

Description	Part Number	Shipping Weight lbs. (kg)
Spare Parts		
Replacement solenoids (fit all air-operated valves)		
110/115 VAC; 50/60 Hz	626771150	0.5 (0.2)
220/240 VAC; 50/60 Hz	626771151	0.5 (0.2)
24 VDC	626771152	0.5 (0.2)
Hand-operated spare parts kits (includes bellows and o-rings)		
NW50	L6625301	0.5 (0.2)
NW63	L7276301	0.5 (0.2)
NW80	L7278301	0.5 (0.2)
Air-operated spare parts kits (includes bellows, quad ring, and o-rings)		
NW50	L6613301	0.5 (0.2)
NW63	L7277301	0.5 (0.2)
NW80	L7279301	0.5 (0.2)
Optional remote position indicator (fits all Aluminum Block Valves)		
Single microswitch	L6597302	0.5 (0.2)
Dual microswitch	L6597301	0.5 (0.2)
Manual	699912043	0.5 (0.2)

Stainless Steel Block Valves



Varian's stainless steel block valves are the valves of choice for medium- and high-vacuum requirements. These low-cost, compact, and reliable valves are used for applications in semiconductor manufacturing, R&D, and industrial vacuum systems. Now available in right-angle or offset in-line, with CF, KF or tube ends, these valves may be ordered in either hand- or air-operated versions. Varian's stainless block valves will reliably achieve 1 million (NW16/25) cycles in most applications.

Features	Benefits
• Low-profile, choice of flanges (CF, KF, tube ends)	• Easy installation and service
• Reliable design	• Service-free performance
• 1 million cycles (NW16/25); 250,000 cycles (NW40)	• Cost effective
• Auto-close on loss of air or power	• Fail-safe operation
• Low cost	• Economical to use
• Visual position indicator	• Minimizes operator error
• Optional remote position indicator	
• High conductance	• Maximizes pumping efficiency
• Stainless steel body	• High-vacuum and ultra-high vacuum compatible

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