



High Flow Valves

HIGH CONDUCTANCE VACUUM VALVES

Description

High Flow Valves (HFVs) are high conductance vacuum valves designed for high performance where reliable isolation is needed. The HFVs have a smaller profile, and are lighter, lower in cost, and easier to maintain than similar valves on the market. Produced using the latest manufacturing techniques and highest quality materials, the HFVs are extremely durable and dependable. Lifetime can extend to 1,000,000 cycles for all sizes, greatly increasing system uptime. An edge welded stainless steel bellows prevents outgassing and virtual leaks. The bellows stroke length is optimized to assure maximum cycle life while maintaining a high conductance. The HFVs are designed to be easily and completely disassembled in the field, lowering the cost of replacing parts.

HFVs can be mounted vertically or horizontally without affecting the isolating seal performance. Their 304 SS vacuum grade, fusion welded, bead blasted body resists corrosion and is designed to have fewer entrapment areas.

HFVs are available with MKS heater solutions which ensure uniform internal temperature profiles to minimize condensation of process gases. An Ultem insulating barrier between the Festo™ actuator and valve body keeps heat inside the valve and away from the actuator. To accommodate process needs for high temperature or chemical resistance, a variety of elastomer seals are offered, including, Viton®, Chemraz®, and Kalrez®. Like all MKS isolation valves the HFV is offered with air solenoids for pneumatic actuation and limit switches for remote indication of the valve's position.

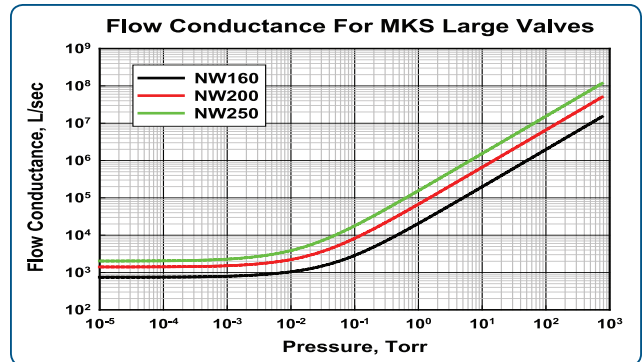
For more information, please contact MKS at 1-800-227-8766 or visit our website at www.mksinst.com.

Features & Benefits

- Available in sizes NW 160 (6"), NW 200 (8") and NW 250 (10")
- High conductance design, to meet the high flow requirements of large forelines
- Edge welded bellows, for maximum stroke length with high conductance
- Bellows-sealed poppet, assuring a minimum of 1,000,000 cycles for long life
- Complete disassembly design, results in lower cost replacement parts and easier maintenance
- Air to open, air to close, typical of all large valves
- Orientation independent, can be mounted vertically or horizontally to accommodate footprint requirements
- Can be heated to 185°C, to prevent process byproducts from condensing in the valve
- 304 stainless steel body, for high purity and corrosion resistance
- Choice of MF flanges or weld stubs, with other flange styles available
- Multiple seals available, to meet different process temperature and composition requirements

Applications

HFV valves are ideally suited for semiconductor manufacturing, flat panel tools, solar tools, coaters and general high flow (large pump line diameter) manufacturing applications.



Conductance Curve Chart

Specifications

Vacuum Range	Atmosphere to 1.0 x 10 ⁻⁹ Torr		
Cylinder Air Pressure	90 psig ±30 psig		
Helium Leak Rate	1.0 x 10 ⁻⁹ std cc/sec		
Limit Switch Rating	5A - 250 VAC		
Single Pole, Single Throw	5A - 30 VDC		
Typical Life	1,000,000 cycles		
	NW 160	NW 200	NW 250
Port Size in. (mm)	6.0 (152.4)	8.0 (203.2)	10.0 (254)
Weight lb. (kg)			
Angle	28 (12.7)	45 (20.4)	55 (24.9)
Inline	47 (21.3)	—	—
Closing Speed (seconds)	0.630	0.750	0.750

NW 160 Angle Dimensions in. (mm)	NW 160 High Flow Valve Ordering Information					
	Valve Size	Body Configuration	Limit Switch	Seal Type	Heater*	Solenoid
	V-XXX-	XX-	X	X	XXX-	XXX
	Select 1	Select 1	Select 1	Select 1	Select 1	Select 1
V-160 NW 160 6" Valve	AM Angle Body, MF Flanges	L Limit Switch N No Limit Switch	V Viton® K Kalrez® Z Chemraz®	XXX No Heater	12D 12 VDC 24D 24 VDC 24A 24 VAC 120 120 VAC 240 240 VAC T25 1/4" Tube Fittings T38 3/8" Tube Fittings None 1/4" NPT Ports	
Add the price of the options to the price of the body. Sample part number: V-160-AM-NVXXX. *Heated options are available. Please consult factory for ordering information.						

Dimensional Drawings & Ordering Information

NW 160 Inline Dimensions in. (mm)	NW 160 High Flow Valve Ordering Information					
	Valve Size V-XXX-	Body Configuration XX-	Limit Switch X	Seal Type X	Heater* XXX-	Solenoid XXX
	Select 1	Select 1	Select 1	Select 1	Select 1	Select 1
	V-160 NW 160 6" Valve	IM Inline Body, MF Flanges	L Limit Switch N No Limit Switch	V Viton® K Kalrez® Z Chemraz®	XXX No Heater	12D 12 VDC 24D 24 VDC 24A 24 VAC 120 120 VAC 240 240 VAC T25 1/4" Tube Fittings T38 3/8" Tube Fittings None 1/4" NPT Ports
Add the price of the options to the price of the body. Sample part number: V-160-IM-NVXXX. *Heated options are available. Please consult factory for ordering information.						

NW 200 Angle Dimensions in. (mm)	NW 200 High Flow Valve Ordering Information					
	Valve Size V-XXX-	Body Configuration XX-	Limit Switch X	Seal Type X	Heater* XXX-	Solenoid XXX
	Select 1	Select 1	Select 1	Select 1	Select 1	Select 1
	V-200 NW 200 8" Valve	AM Angle Body, MF Flanges	L Limit Switch N No Limit Switch	V Viton® K Kalrez® Z Chemraz®	XXX No Heater	12D 12 VDC 24D 24 VDC 24A 24 VAC 120 120 VAC 240 240 VAC T25 1/4" Tube Fittings T38 3/8" Tube Fittings None 1/4" NPT Ports
Add the price of the options to the price of the body. Sample part number: V-200-AM-NVXXX. *Heated options are available. Please consult factory for ordering information.						

NW 250 Angle Dimensions in. (mm)	NW 250 High Flow Valve Ordering Information					
	Valve Size V-XXX-	Body Configuration XX-	Limit Switch X	Seal Type X	Heater* XXX-	Solenoid XXX
	Select 1	Select 1	Select 1	Select 1	Select 1	Select 1
	V-250 NW 250 10" Valve	AM Angle Body, MF Flanges	L Limit Switch N No Limit Switch	V Viton® K Kalrez® Z Chemraz®	XXX No Heater	12D 12 VDC 24D 24 VDC 24A 24 VAC 120 120 VAC 240 240 VAC T25 1/4" Tube Fittings T38 3/8" Tube Fittings None 1/4" NPT Ports
Add the price of the options to the price of the body. Sample part number: V-250-AM-NVXXX. *Heated options are available. Please consult factory for ordering information.						

Spare and Replacement Parts

Spare Parts and Replacements

Valve Size	Complete Replacement Set*	Bellows
	Part Number	Part Number
NW 160	100016279	100016258
NW 200	100016280	100016362
NW 250	100016281	100016362

*Includes: Actuator, Bellows, Nosepiece, Nut

Valve Size	Actuator	Nosepiece	Limit Switch Kit	Service Tool
	Part Number	Part Number	Part Number	Part Number
NW 160	100016253	100016261	100016225	Angle: 100016382
				Inline: 100018905
NW 200	100016358	100016278	100016225	100016383
NW 250	100016358	100016365	100016225	100016384

Replacement Seal Kits

Valve Size	Viton Seal Set	Kalrez 9100 Seal Set	Chemraz XTR Seal Set
	Part Number	Part Number	Part Number
NW 160 Angle	100016282	100016283	100016284
NW 160 Inline	100018906	100018907	100018908
NW 200	100016286	100016287	100016288
NW 250	100016290	100016379	100016380

Replacement Solenoids

Voltage	Part Number
12 VDC	100016252
24 VDC	100016253
24 VAC	100016254
120 VAC	100016255
240 VAC	100016256

***Solenoids equipped with fittings for 3/8" pneumatic lines



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