

Vacuum Valve Selection Guide



Vacuum valves play a very important role in determining the efficiency of vacuum equipment and vacuum pumps. Valves used in a vacuum atmosphere work at very small pressure differentials and absolute pressures compared to general industrial pumps. ULVAC provides various vacuum valves based on abundant technological experience in order to meet and surpass customer needs. Be sure to use an applicable ULVAC vacuum valve for work in environments from atmospheric pressure to ultra-high vacuums.

We have stopped manufacture any valves that are made by cast iron. Please ask to our staff when you place the order since we only sell stock we have. Due to number of stock, we may decline your order. Thank you for your understanding our circumstances.

Features

- These valves have a large conductance when the disk is open in order to realize the maximum pumping capabilities of the vacuum pump.
- SS (soft steel), stainless steel, aluminum, and cast iron are used as valve body materials depending on the pressure and application involved.
- Vacuum flanges, quick couplings, UFC flanges, and other connection methods are possible.
- High vacuum valves
 - * Main products: L (angle) model, gate model, and S (straight) model vacuum valves
 - Note: The S (straight) model valve is made of cast material.
 - * Applicable pressure ranges
Cast iron valves: VSHC, VLH (P) C series: Atmospheric pressure- 10^{-2} Pa
Other valves: VLH (P), VAH (P) series: Atmospheric pressure- 10^{-5} Pa
- O-ring seals are used in the axis seal sections.
- * Seal materials that emit little gas (nitride rubber and fluoro-rubber) are used in the bonnet and disk seals.
- Ultra-high vacuum pump
 - * Main products: L (angle) model and gate model vacuum valves
 - * Applicable pressure range: Atmospheric pressure- 10^{-9} Pa
 - * Seal materials that emit little gas (fluoride rubber and metal gaskets) are selected based on the applicable pressure and used in the bonnet and disk seals.
 - * A bellows seal is used in the axis seal section.
- Other valves
 - * Variable leak valve
This is a flow rate adjustment valve applicable from atmospheric pressure to the high and ultra-high vacuum range.

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Specifications

Item		Series																											
		VLH-U	VLH-US	VLH-US-KF	VLP-U	VLP-US	VLP-US-KF	VAH-U	VAP-U	VSHC	VLHC	VLPC	VULH-CM	VULH-F	VULH-KF	VULP-CM	VULP-F	VULP-KF	VUGH-CS	VUGH-F	VUGP-CS	VUGP-F	VUH	VUH-MVF	10AIV	VLV-3D			
Valve type	S (straight) model valve								●																				
	L (angle) model valve	●	●	●	●	●	●			●	●		●	●	●	●	●						●						
	Gate model valve							●	●										●	●	●	●							
	Variable leak valve																									●			
	Leak valve																									●			
	Other																							●	●				
Drive method	Manual	●	●	●				●		●	●		●	●	●				●	●			●	●	●	●			
	Compressed air drive				●	●	●		●			●				●	●	●			●	●			●	●			
Main unit material	Cast iron + nickel plating								●	●																			
	SS + nickel plating	●			●						●																		
	Stainless steel (SUS304)		●	●		●	●					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
	Aluminum alloy							●	●																				
Applicable pressure range (Pa)	Atmospheric pressure-10 ⁻²								●	●	●																		
	Atmospheric pressure-10 ⁻⁵	●	●	●	●	●	●	●																					
	Atmospheric pressure-10 ⁻⁷												●	●						●					●				
	Atmospheric pressure-10 ⁻⁸												●							●					●				
	Atmospheric pressure-10 ⁻⁹													●						●				●		●			
Axis seal method	O-ring	●	●	●	●	●	●	●	●	●	●														●	●			
	Bellows											●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Bonnet seal material	Nitrile rubber	●			●			●	●	●	●																		
	Flourine rubber		●	●		●	●						●	● ¹		●	● ¹		●		●				●				
	Metal (gold, silver wire)											●			●				●		●				●				
	Welded structure																							●		●			
Disk seal material	Nitrile rubber	●			●			●	●	●	●																		
	Flouride rubber		●	●		●	●					●	●	●	●	●	●	●	●	●	●	●			●				
	Polyimide resin																							●		●			
	Metal																							●		●			
Maximum bakeout temperature (°C) ²	60	○						○	○																				
	120		○	○	○	○	○																						
	150											○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
	200											●				●			●		●			○	○				
	250																							●					
Reverse pressure (pressure differential: 0.1 MPa) compatibility ³		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
Connection method ⁴																													
Type	Model	A	B																										
Vacuum flange	VF	20	3/4	◇ ⁵	◇		◇	◇																					
		25	1	◇	◇		◇	◇																					
		40	1 · 1/2	◇	◇		◇	◇						◇															
		50	2	◇	◇		◇	◇																					
		65	2 · 1/2												◇														
		80	3	◇	◇		◇	◇																					
		100	4	◇	◇		◇	◇																					
		150	6	◇ ⁶	◇		◇	◇																					
		200	8	◆	◆		◆	◆																					
		250	10	◆	◆		◆	◆																					
		300	12				◆	◆																					
		350	14	◆	◆		◆	◆																					
		400	16																										
		450	18																										
		500	20					◆	◆																				
		550	22					◆	◆																				
900	36					◆	◆																						
1300	52					◆	◆																						
Flange coupling	NW(KF)	15	3/4																										
		25	1																										
		40	1 · 1/2				◇																						
		50	2																										
UFC flange	UFC 034	10	3/8										◇												◇	◇	◇		
		070	25	1										◇											◇	◇	◇		
		070	40	1 · 1/2											◇										◇	◇	◇		
		114	65	2 · 1/2												◇									◇	◇	◇		
		152	100	4													◇								◇	◇	◇		
		203	150	6														◇							◇	◇	◇		
		253	200	8														◆							◆	◆	◆		
		306	250	10														◆							◆	◆	◆		
Other																													

¹ Bonnet seal material of VULH (P)-16KF: Silver wire
⁴ A: Millimeters, B: Inches

² Dark circle: Valve open, White circle: Valve closed
⁵ White diamond: Standard product in inventory

³ VUGP-200, 250: Incompatible with reverse pressure (Vacuum/high vacuum valve is 100 A or less)
⁶ Dark diamond: Made to order