

WAFER-SPHERE® BUTTERFLY VALVES FOR VACUUM SERVICE

For vacuum applications, *WAFER-SPHERE* high-performance butterfly valves offer not only the conventional butterfly valve advantages of compactness, minimum amount of surface area exposed to the vacuum, and simplicity of design, but also the tight shut-off and long cycle life resulting from the *WAFER-SPHERE* valves unique construction.

Standard *WAFER-SPHERE* valves are rated for vacuum services down to 2×10^{-2} Torr, with a specially prepared high vacuum valve available for lower applications, as indicated in Table 1.

FEATURES

Positive Shut-off

- Jamesbury flexible lip seat design provides positive shut-off throughout the full pressure/vacuum rating range of the valve while minimizing out-gassing problems characteristic of resilient materials. High vacuum valves are guaranteed to have a leakage rate not to exceed 1×10^{-5} std. cc/sec. of helium.

High Cycle Life

- An offset shaft and disc arrangement causes the disc to lift away from the seat to provide for extremely long cycle life while enhancing sealing ability.

Two versions available

- Standard *WAFER-SPHERE* valves are offered for vacuums to 2×10^{-2} Torr for services below that, a high vacuum valve is available, specially cleaned, tagged and sealed in polyethylene bags.

Special testing and certification available

- High vacuum valves can be tested on a helium mass spectrometer with a maximum sensitivity of 2×10^{-10} std. cc/sec., and certified to have a leakage rate not to exceed 1×10^{-5} std. cc/sec. of helium.

VACUUM AND RECOMMENDED TEMPERATURE RATINGS

Type of Valve	XTREME™ Seat & Carbon Filled Enhanced PTFE Seal	Vacuum Rating
Standard valves* All sizes and styles	-50°F to +500°F (-45°C to +260°C)	2×10^{-2} Torr
High Vacuum valves All sizes and styles	+20°F to +300°F (-6.67°C to +126.67°C)	Below 2×10^{-2} Torr

*NOTE: Standard valves with PTFE seat & seal are rated to -50°F to +400°F (-45°C to +204°C)

PRESSURE CONVERSION TABLE

	POUNDS PER SQUARE INCH (psi)		KILOGRAMS PER SQUARE CENTIMETER (kg/cm ²)		INCHES OF WATER COLUMN (in. wc.)		INCHES OF MERCURY (in. hg.)		MILLIMETER OF MERCURY (mm. hg.)		MICRONS (Torr x 1000)	VALVE APPLICATIONS
	GAGE	ABSOLUTE	GAGE	ABSOLUTE	GAGE	ABSOLUTE	GAGE	ABSOLUTE	GAGE	ABSOLUTE (Torr)		
PRESSURE ↑	3	18		1.266	100	500	6	36	100	900		↑ USE STANDARD VALVES
	2	16	0.141	1.125	50	450	3	33		800		
ATMOSPHERE	0	14.7	0	1.033	0	406.8	0	29.92	0	760	760,000	
↑ VACUUM	0	14		0.984	50		3	27		700		↓ USE HV or HVC VALVES
	2	12	0.141	0.844	100	350	6	24	100	600		
	3	10	0.281	0.703		300	9	21	200	500		
	4											
	14.6996	.0004 or 4×10^{-4}	1.03297	.00003 or 3×10^{-5}	406.79	.01 or 1×10^{-2}	29.91	.0008 or 8×10^{-4}	759.98	.02 or 2×10^{-2}	20	
		2×10^{-7}		1.36×10^{-2}		5×10^{-6}		4×10^{-7}		1×10^{-5}	.01 or 1×10^{-2}	
	14.7	0	1.033	0	406.8	0	29.92	0	760	0	0	

HOW TO ORDER *WAFER-SPHERE* BUTTERFLY VALVES FOR VACUUM SERVICE

High vacuum type 815 and 830 *WAFER-SPHERE* valves have the letters "HV" succeeding the body designation, i.e., Figure 815LHV-11-2236X2. Certified high vacuum valves use the letters "HVC."

For complete ordering information on *WAFER-SPHERE* high-performance butterfly valves refer to Bulletin W101-6.

Installation Instructions, Maintenance and Operation

IMO's (Installation, Maintenance, and Operating instructions) or AMI's (Assembly, Mounting, and Installation instructions) are shipped with the products. Additional copies of these instructions are available. Call your local Metso Automation Distributor, or visit our web site.

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