

UXG/LG

Vacuum Gate Valve

The UXG and LG series are gate valves developed for separating a semiconductor vacuum system's reactor from the transfer chamber. The valve bodies are made of aluminum, and the valves operate via double action pneumatic actuator. The heated gate valves not only heats the exterior using a conventional external heater but the built-in internal heater in the moving parts heats from the inside simultaneously, providing highly uniform heating performance. The body and valve body can be set to an arbitrary temperature up to a maximum 180°C.

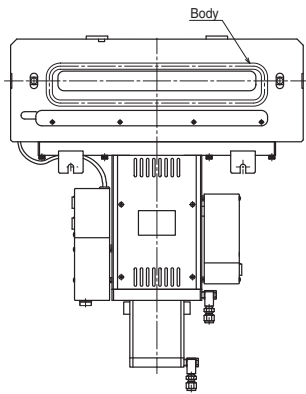
Features

- Because the valve can be heated to high temperatures, it reduces contamination accumulation and adhesion to the seat so to greatly extend the maintenance period.
- The body heater and valve heater are in separate channels, so the internal and external temperatures can be set individually.
- Has a non-sliding structure that keeps particles from being generated during opening and closing operations.
- Equipped with a latch lock mechanism that keeps the valve closed during an emergency such as when the operating air pressure is lost.
- Fluorine rubber, KALREZ® *1, Chemraz® *2, or other materials for the gate O-ring is available depending on the fluid temperature and chemical characteristics of the fluid.

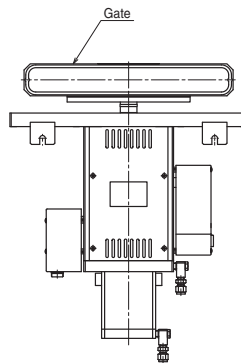
Specifications

Size	12"(300mm type)
Usage Pressure	1.4x10 ⁻¹⁰ ~29psia (1x10 ⁻⁶ Pa~0.101 MPa (abs))
Valve Seat Differential Pressure Resistance	14.6 psi (0.101 MPa) (Positive/Back pressure)
Bellows Pressure Resistance	0.02 MPa (G)
Permissible Differential Pressure for Valve Operation	1.3 KPa
Leak Rates	Across the Seat He Leak Rates
	Inboard He Leak Rates
$\leq 1 \times 10^{-9}$ sccs (for 30 seconds at room temperature) $\leq 1 \times 10^{-4}$ sccs ($\leq 1 \times 10^{-6}$ Pa·m ³ /sec)(for 30 sec at raised temperature)	
Allowable external leakage: $\leq 1 \times 10^{-9}$ sccs ($\leq 1 \times 10^{-10}$ Pa·m ³ /sec)	
Operation	Double action pneumatic cylinder
Actuation Pressure	75~101 psig (0.5~0.7MPa (G))
Actuation Reaction Time	0.8~2 seconds (orifice controlled)
(Actuation Pressure 0.5 MPa)	1.5~2 seconds (speed control included)
Maximum Heater Temperature	180°C
Time To Reach Set Temperature	* 160°C (when the gate O-ring material is fluorine rubber) Reaches highest temperature setting within 1.5 hrs
Maximum Operating Temperature	210°C (heated type) 60°C (non-heated type)
Insulation Resistance	10 MΩ or more at DC 500V
Bellows Cycle Life	1 million cycles
Particle Performance (Target Value For Reference)	The number of particle sized larger than 0.1 μm to be no more than 0.3 on average*

* Reference by own test: N2 supply 1cf/min, sampling 0.2 cf/min, open/close time 6 sec/cycle



UXG: with body



LG: without body



*1 KALREZ_® is a trademark of DuPont Performance Elastomers Co.

*2 Chemraz_® is a trademark of Greene, Tweed & Co.

Precautions

- The valves are designed to be used under atmospheric pressure. Usage such as under vacuum vessels are not guaranteed.
- For high temperature applications, please select appropriate material for air-fittings and tubes to assure proper performance.

Product Code Table

Model UXG	Gate Length (Opening Part) 12	Gate Width (Opening Part) 32	With/Without Heater H	Gate Steel Material KL	Model Number Technical Number
UXG: With Body LG: Without Body	12: 12" (for Use with 300mm Wafer)	32:32mm 46:46mm 50:50mm	Not Shown: Without Heater H: With Heater	F: Fluorine Rubber KL: KALREZ _® CM: CHEMRAZ _®	Production Drawing Number

* We handle materials and shapes other than those noted.