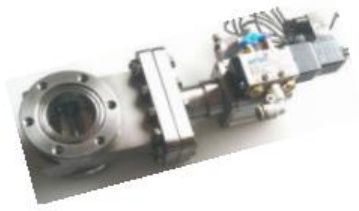




# High vacuum pneumatic gate valve Instructions



## High/Ultra-High Vacuum Pneumatic Gate Valve

### 1. Overview:

The plug valve can be used to cut off or connect airflow in high vacuum and ultra-high vacuum, and is used to separate pumps and systems or vacuum chambers. It is one of the important components in vacuum systems. It is widely used in various fields of electronics, metallurgy, coating, scientific research and vacuum technology.

### 2. Structural features:

The valve has a compact structure, and the thickness and overall length are minimized to make installation more convenient and space requirements smaller. Because the internal surface area is small, vacuuming is faster. The valve is suitable for clean air and non-corrosive gases. The valve can be installed in any direction, and it is more reliable to avoid the cylinder from being installed downward as much as possible.

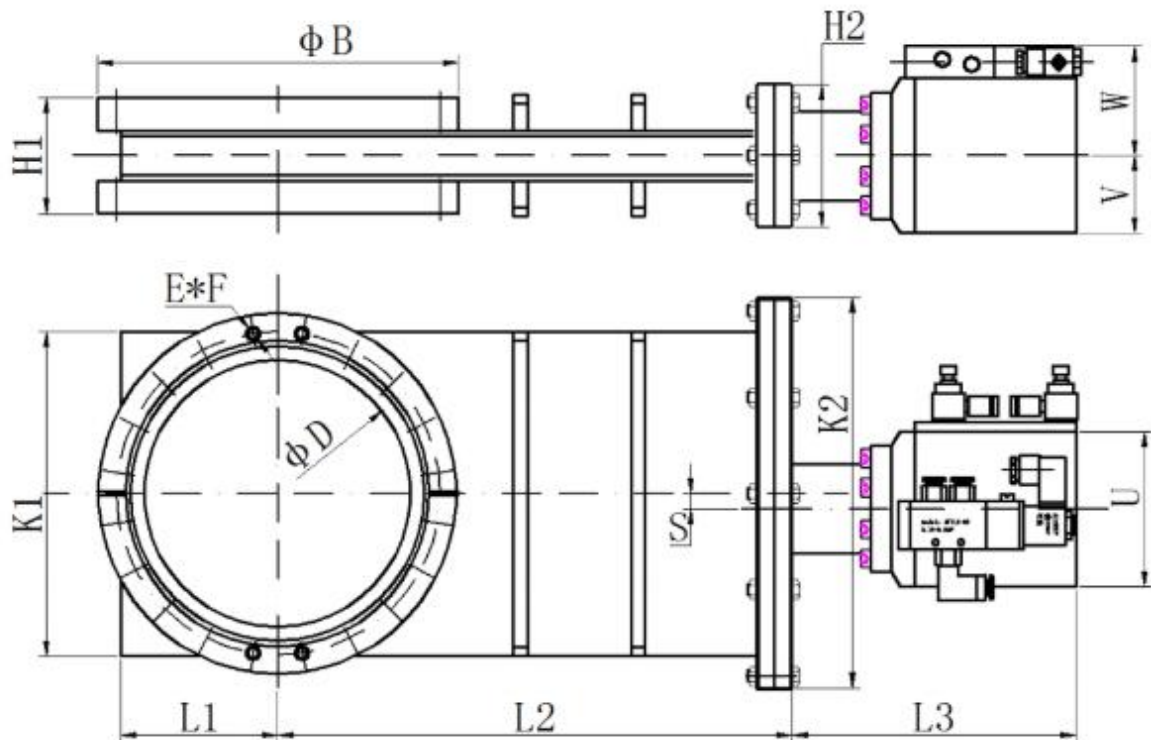
The valve is a stainless steel shell as a whole, and most of the internal moving structures are assembled with stainless steel parts, which are more corrosion-resistant than aluminum. The spring strips and bearings are also made of stainless steel. The flange seal method is fluororubber or wire seal, and the valve plate seal is fluororubber. The moving structure uses welded stainless steel bellows to achieve the displacement of the valve plate. The multi-point double ball structure valve plate is more evenly stressed and can be reversely sealed to the atmosphere.

The valve has the characteristics of stable operation, reliable sealing, and small vibration when opening and closing. The valve has two sets of opening and closing magnetic switch position signals, which is convenient for remote control and automatic control, making the equipment automated. AC220V and DC24V are optional.

### 3. Performance indicators

- Valve body leakage rate: metal square flange  $<1 \times 10^{-8}$  pa.l/s (rubber ring square flange valve body leakage rate:  $<1 \times 10^{-7}$  pa.l/s)
- Scope of use:  $6 \times 10^E-8$  Pa- $1 \times 10^E5$  Pa (rubber ring seal  $6 \times 10^E-7$  Pa- $1 \times 10^E5$  Pa)
- Air source pressure: 0.4-0.7MPa (4-7kgf/cm<sup>2</sup>)
- Fluid used: air (filtered by 40 micron filter)
- Inlet pipe: nylon or plastic pipe with outer diameter  $\phi$  6mm
- Valve control: DC-24V or AC220V 3W
- Magnetic switch: 5-220V 100 mA
- Baking temperature: valve body  $<180^\circ\text{C}$  (in valve open state), cylinder and valve body connection  $<80^\circ\text{C}$
- Time required to open or close the valve: DN35-DN63  $> 5$  seconds, DN100-DN250  $> 8$  seconds
- Installation direction: It is recommended that the valve plate seal faces the pump or high vacuum side
- Pressure difference on both sides of the valve plate opening:  $<2000$  Pa

#### 4. Installation size:



CCQ-(DN35-50)		
Dimensions of ultra-high vacuum pneumatic plunger valve		
DN	35	50
H1	50	55
H2	50	50
L1	32	35
L2	97.5	135
L3	117	117
K1	63.5	80
K2	89	110
S	0	0
U	50	50
V	53	53
W	25	25
B	70	86
C	58.7	72.4
D	35	50
E * F	6 * M8	8 * M8
Thread depth	13	14.5

## 5. Installation

Before installation, please check whether the gate valve is damaged during transportation.

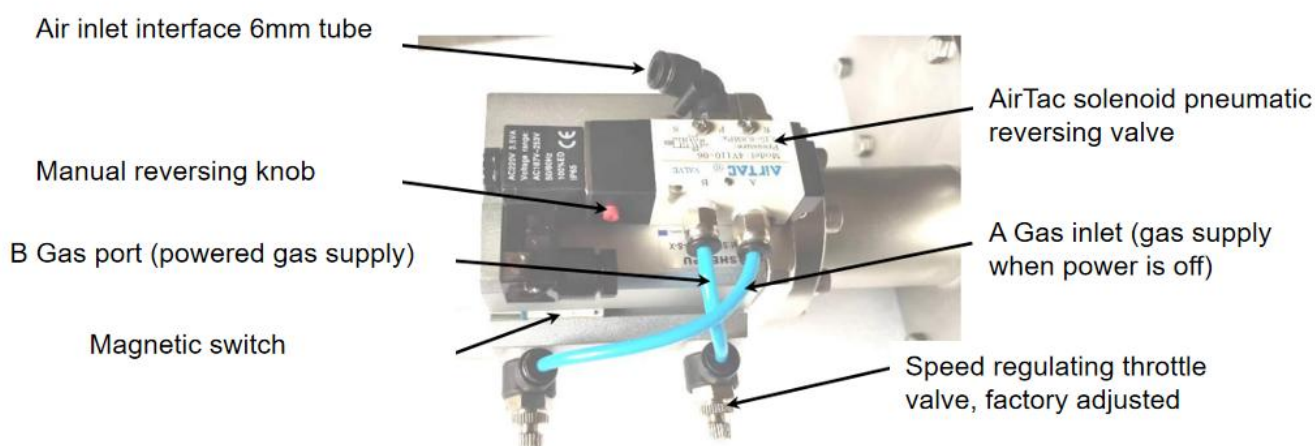
Test whether the valve opens and closes normally in the atmosphere as follows:

1. Insert the nylon or plastic air pipe with an outer diameter of  $\Phi$  6mm into the air inlet interface of the electromagnetic pneumatic reversing valve (when pulling out the pipe, cut off the compressed air first, press the outer ring with one hand and gently pull out the pipe with the other hand), connect the compressed air, the valve plate of the valve should move slowly and

close in place or be in the closed state. If the magnetic switch is powered, the indicator light should be on and the two wires should be connected, and the valve should close normally.

2. Connect the control power of the reversing valve or manually press the manual reversing knob and rotate it clockwise. The valve plate of the valve should move slowly and open completely, indicating that the valve opens normally. Turn back the manual knob (the manual knob is in the pop-up state when it is electrically controlled).

3. After several opening and closing experiments, it can be judged whether the valve opens and closes normally. After cleaning according to vacuum requirements, it can be installed in the equipment.



4. See the right picture for the wiring diagram of the valve magnetic switch signal. It can be connected to PLC or intermediate relay to realize automatic control.

## 6. Precautions

- Do not open the gate valve when there is vacuum on one side and atmosphere on the other side!
- The gate valve has adjusted the flow of the throttle at the factory. Do not adjust the flow of the valve throttle at will without special requirements. Improper adjustment will cause the valve to have excessive impact or fail to move.
- Do not swap the two 4mm air pipes on the cylinder at will (they are normally closed at the factory, unless the air supply direction of the two air pipes can be swapped when there is a special need. At this time, the valve changes from normally closed to normally open).

## 7. Inventory

During the storage of the high vacuum gate valve, wrap the connecting flange well, and keep the interior of the ultra-high vacuum gate valve clean and dry. Do not park it in a humid or dusty environment.

If the valve is stored in a closed state for too long, the rubber ring and the valve plate sealing surface will stick together due to long-term bonding. Please recheck whether the valve is

opened and closed normally before the next use. The method is the same as the initial test.