

INSTRUCTION

PENUMATIC KNIFE GATE VALVE



● **The valve use guidelines**

◆ **The characteristic of knife gate valve**

- 1 , Risable disc sealing could shave adhesive of sealing surface , automatic removal of impurities .
- 2 , It could be prevent the leakage as corrosion with stainless steel disc .
- 3,The short structure could not save the material , installation space , but effectively support the strength of pipe
- 4 ,The scientific back sealing box ensure the sealing safety and effective , and more durable .
- 5 , The guide block of the body ensure the disc normal movement .Extrusion block ensure effective seal of disc
- 6, The stem of stainless steel is durable , it is quick to open /close with the stud bolt
- 8 , There are many types of actuator to choose .

◆ **The standard**

- | | |
|-------------------------------------|-------------|
| 1 , Design & Manufacture : JB/T8691 | MSS SP-81 |
| 2 , Face to face : GB/T12221 | MSS SP-81 |
| 3, The dimension of Flange : JB/T79 | ANSI B 16.5 |
| 4 , Test & Inspection :JB/T8691 | MSS SP -81 |

◆ **The guidelines of choose**

- 1, It must note the normal diameter , pressure and connection standard while buying the valve . if there is no notice , it will be produce according to the dimension of instruction .
- 2, It must be noted the size and material and other items if there is some special request , if not we will produce according to the company standard .
- 3 , It will be compare with the according to company standard if there is no special request for the actuator .
- 4 , We will choose the type if the user offered the medium , Temperature , pressure .

◆ **Instruction of using**

- 1 , The users must check the type of valve , connection size and the flow guide of medium to ensure consistency with the valve requirements.
- 2 , It must reserve the necessary space for valve working when the users installation .
- 3 , The connection of actuator must be according to the line .
- 4 , The valve must be regularly maintenance, can't be cashed and extruded inder to protect the sealing .

● **Instruction of Pneumatic actuator**

◆1, Actuator is compresses air as medium and concert the energy to mechanical energy , to achieve the linear movement device , it is not only executive element which is widely used in all kinds of pneumatic system but also it is the foundation element to realize industrial automation component .

◆2 , **Specification :**

Actuator DN (mm)		φ40	φ50	φ63	φ80	φ100	φ125	φ160	φ200	φ250
Theory of piston force (N) (working pre is 0.4 Mpa)	Push	490	750	1215	1960	3077	4800	7869	12308	19227
	Pull	410	680	1030	1770	2675	4400	7379	10035	18463
Working Medium	air									
Working Pressure (Mpa)	0.4-0.8									
Environment Tem (°C)	-10— +80									
RH (%)	≤95									
Speed of Piston (mm/s)	100-400									
durability (KM)	600									

◆3. Actuator stroke selection scope

Actuator DN	φ40	φ50	φ63	φ80	φ100	φ125	φ160	φ200	φ250
Stroke	400	500	800	800	1500	1500	2000	2000	2500

◆4 , **Notice of using Actuator**

- (1) the load direction should be consistent with the movement direction of the piston rod , lest produce distortions in the piston rod.
- (2) using a combination of filter, pressure regulator, lubricator combination (F - R - L) to adjust the air quality, increase service life.
- (3) select the output load is bigger than the actual Actuator, in order to avoid dangerous what air pressure is insufficient.
- (4) pay attention to using the environment temperature, the piston ring and check sealing part of the materials used in the Actuator temperature limit within 5 to 60 °C.
- (5) the environment of corrosive gas, the piston in the Actuator and the sealing part of the materials commonly used PTFE.

◆5 ,**Air consumption per 1 mm**

Stroke	Pressure of air Kg(cm×cm)								
	1	2	3	4	5	6	7	8	9
12	0.445	0.665	0.885	1.104	1.324	1.543	1.763		
16	0.792	1.182	1.573	1.963	2.352	2.746	3.133		
20	1.24	1.86	2.45	3.07	3.68	4.29	4.90	5.51	6.13
25	1.94	2.89	3.83	4.79	5.75	6.71	7.67	8.61	9.57
30	2.78	4.15	5.53	6.90	8.27	9.64	11.02	12.39	13.76
32	3.18	4.73.	6.28	7.85	9.41	10.98	12.55	14.10	15.66

40	4.95	7.40	9.83	12.26	14.69	17.16	19.60	22.04	24.47
50	7.73	11.55	15.35	19.15	22.95	26.80	30.63	34.42	38.24
63	12.27	18.34	24.37	30.41	36.44	42.55	48.62	54.55	60.71
80	19.78	29.57	29.30	49.03	58.76	68.61	78.40	88.13	97.85
100	30.9	46.2	61.4	76.6	91.8	107.2	122.5	137.7	152.9
125	48.3	72.2	96.0	119.7	143.5	167.5	191.4	215.2	238.9
150	69.5	108.9	138.2	172.5	206.9	241.2	275.5	309.8	344.1
160	79.1	118.3	157.2	196.1	235.0	274.4	313.6	352.6	391.5
180	100.1	149.7	199.0	248.2	297.5	374.4	369.9	446.2	495.4
200	123.6	184.8	245.6	306.4	367.2	428.8	490.0	550.8	611.6
250	148.26	223.7	289.1	363.02	405.24	464.0	532.4	686.26	768.72

● Instruction of Actuator

◆ 1, Application

◆ 2 , Condition of using

1. Use the system pressure Actuator, medium temperature should accord with the fundamental Actuator type parameter list specified value
2. The drive Actuator compressed air must be clean, less water, water filter must be used in gas circuit.

To inside the Actuator lubrication oil mist detector must be used in the pneumatic system loop (oil-free lubrication Actuator can need not)

◆ 3 , Installation

- 1, It must check the Actuator if it is damaged during transportation before installation , there is loose of both ends nut and screw . And it could install after remove rust-proof oil and shield if it is ok.
- 2 , The Actuator piston rod could not be under eccentric load or horizontal load when install the Actuator , should make the same between the movement of load and the axis of the piston rod .It is better to use the activities V type joint or head joint for the long stroke Actuator . No matter what kind of installation must ensure that the Actuator base have enough stiffness .
- 3 , It could use “three point method “to test when the Actuator is in horizontal . At First connect the piston rod and load ,and there will be put level instrument in the middle of the pole to observe the level when the piston rod extended fully , second , it should put the level instrument near the front of cover to observe the level when the piston rod is middle , at last there should be not the trouble phenomenon when the piston rod is in the back position. It must be set the support to prevent the piston rod drooping and the Actuator changed when the long stroke Actuator installed horizontal .
- 4 , It should use the double flange , foot rock to install the Actuator

5 ,It should be the same direction connecting pin location and fittings axis position with single and double Actuator top or middle oscillating .

6 , Actuator installation work should be used under no-load condition pressure run 2-5 times, check whether there is any abnormal phenomenon on Actuator buckle department.

7, Actuator speed control . Pneumatic system must be installed a one-way throttle valve If there are requirements of Actuator speed . Generally horizontal Actuator exhaust throttle speed smoothly . If the Actuator vertical installation with inlet throttle speed ,at first connect Actuator with load and adjust speed regulator is transferred to the scope of the middle , then adjust the output pressure . It could be identified as setting pressure then available speed regulator (one-way throttle valve)for fine -turning ,when the speed of Actuator is near the specified speed .

8 , Using adjustable buffer Actuator, open all the buffer before running the regulator, then gradually increase the damping until satisfied. Adjust the buffer damping increases when the needle valve knob clockwise, counterclockwise knob damping decreases.

◆4 , Actuator maintenance

1 , It must be often check the working condition of water filter and lubricator after Actuator normally using , draw off the water and increase the oil . It must be add grease for sliding parts inside the Actuator for the Actuator with 6 months .

2 , It must add grease for the end or pendulum shaft for the Actuator with single or double Actuator or intermediate swinging Actuator .

3 , The Actuator should be regularly check each part of the Actuator during the process of normal use, pay attention to the connection parts with and without loose. Actuator seal is damaged leakage situation, found that the problem should be timely repair, in case of an accident.

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