CSE　Auto control Actuator

Concept：

The actuator and adjustment mechanism of the pneumatic head are a unified whole, and the actuator has a piston type and a rack and pinion type. The piston type has a long stroke and is suitable for occasions that require greater thrust; because the rack and pinion pneumatic actuator has the advantages of simple structure, large output thrust, stable and reliable action, it is widely used in the production process with high safety requirements.

Working principle

The working principle of the cylinder is to use compressed air as the power source. When the compressed air source enters the cylinder cavity, it pushes the cylinder piston. Depending on the inlet and outlet holes, the piston moves toward the cylinder head at both ends or moves toward the center. The piston moves in conjunction The crank arm and the shaft center, the piston action makes the shaft center rotate 90 degrees and the shaft center in the cylinder rotates at the same time to drive the valve connected below, so that the valve can achieve the effect of opening and closing and control.

Standard design

Single-acting cylinder

The inside of a single-acting cylinder uses a spring to make the piston rebound. The piston is pushed to both ends of the cylinder head. At this time, the spring in the cylinder is in a compressed state. When the air supply is interrupted, the spring force pushes the piston. Back to the center of the cylinder, so under normal circumstances, the main function of a single-acting cylinder is to open the valve when the air is input, and the spring will return when the air supply is interrupted, and the valve will be closed automatically.

Double-acting pneumatic actuator:

When compressed air enters the pneumatic actuator from the A nozzle, the gas pushes the double piston to move linearly to both ends (cylinder head end). The rack on the piston drives the gear on the rotating shaft to rotate 90 degrees counterclockwise, and the valve is opened. . At this time, the gas at both ends of the pneumatic actuator valve is discharged with the B nozzle. Conversely, when compressed air enters the two ends of the pneumatic actuator from the B nozzle, the gas pushes the double plug to move linearly in the middle, and the rack on the piston drives the gear on the rotating shaft to rotate 90 degrees clockwise, and the valve is closed. At this time, the gas in the middle of the pneumatic actuator is discharged with the A nozzle. The above is the standard transmission principle. At the same time, according to the demand, the pneumatic actuator can also be installed with the transmission principle opposite to the standard type, that is, the clockwise rotation of the collimator shaft is selected to open the valve, and the counterclockwise rotation is to close the valve.

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Parts List			
Item	Parts name	Q'TY	Material
1	PT 1/8" Air Connection	1	Cupper
2	St.St Cylinder Cap	1	ST.ST 304
3	Piston	1	POM
4	Piston O-Ring	1	NBR70(Block)
5	St.St Cylinder	1	ST.ST 304
6	Compress Spring	4	ST.ST 304
7	Coupling Axle Piece	1	ST.ST 303
8	Teflon gasket	3	Teflon
9	ϕ11 Piston guide part	3	ST.ST 304
10	ϕ13 Piston guide part	1	ST.ST 304
11	ϕ12 Piston guide part	2	ST.ST 304
12	ϕ70 O-Ring	1	NBR70(Block)
13	ϕ21.7 O-Ring	1	NBR70(Block)
14	Lower Cylinder End	1	ST.ST 304
15	Lock Wire Clip	1	ST.ST 304
16	Contact Seal	1	ST.ST 304
17	ϕ15 Cir Clip	1	ST.ST 304
18	Connection piece	1	ST.ST 304
19	Mounting bracket	1	ST.ST 304
20	M8x12 ST.ST Screw	2	ST.ST 304
21	Muffler	1	Cupper
22	Gasket	4	ST.ST 304
23	M6 ST.ST NUT	2	ST.ST 304
24	M6x35 ST.ST Screw	2	ST.ST 304
25	Piston cover	1	ST.ST 303/304

Material :
Other steel : AISI304
Other seal : NBR

Technical data :
Air pressure : 5 to 9 bar
operating air pressure : 6kg/cm2
shut-off time : 1.5 second
air consumption : 0.266 liter at 5 bar

Temperature :
Range : -10°C ~ +100°C

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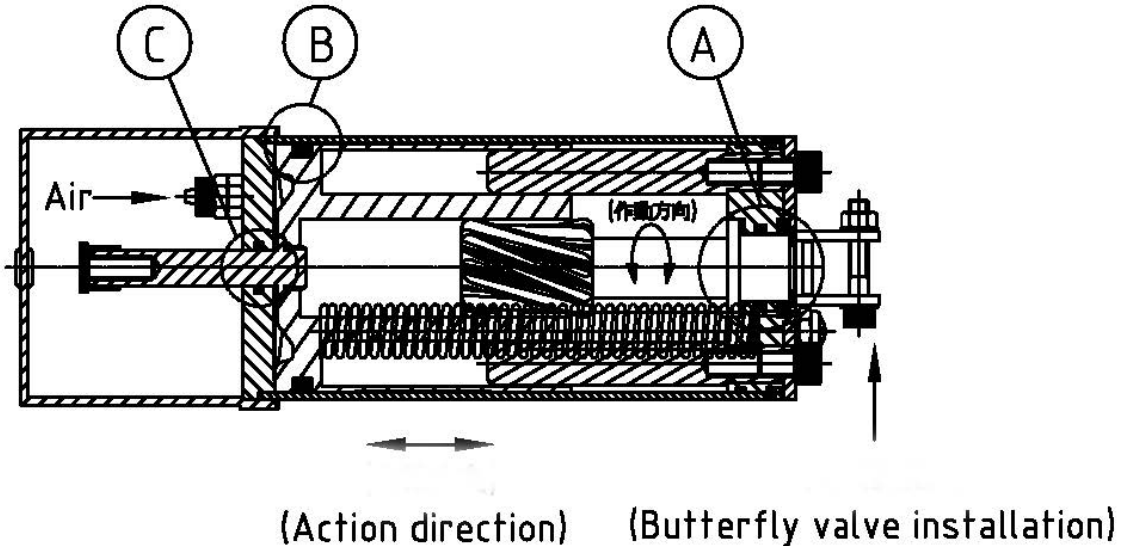

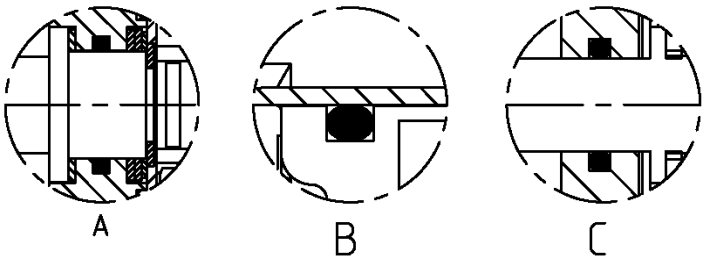

Mechanical principle

The gas flows into the cylinder to drive the central axis and spring of piston moving up and down，and further transmitting the screw to move.

Precautions：

1、Site A is for the friction between the central axis and the cylinder head.
2、Site B is for the friction between the piston and the cylinder wall.
3、Site C is for the friction between the rod and the cylinder bottom cover，and spring compression，will be up and down because of reciprocating action to produce heat.
4、This product can not be applied for minimg.

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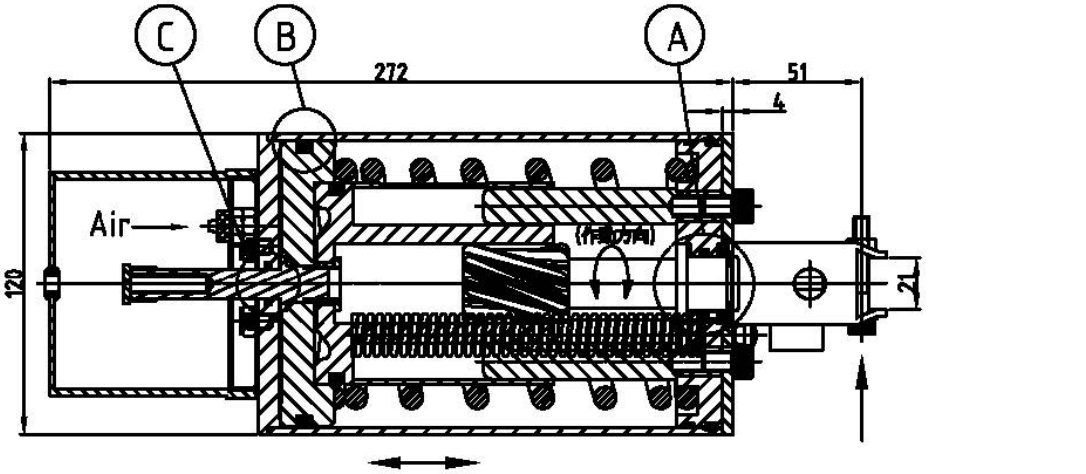

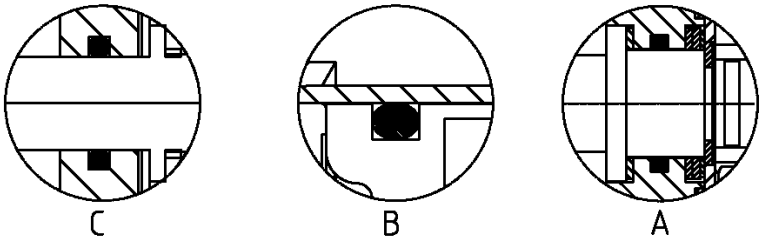

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