

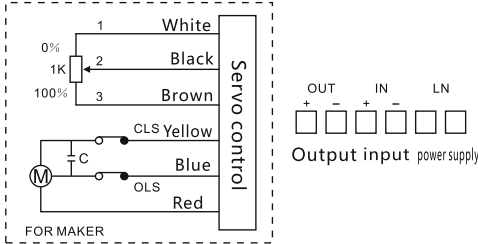
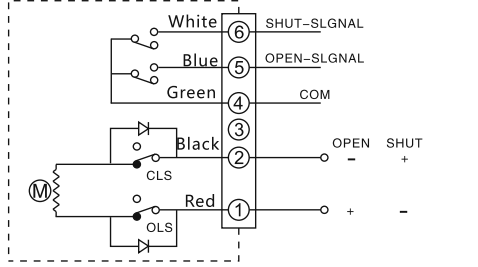
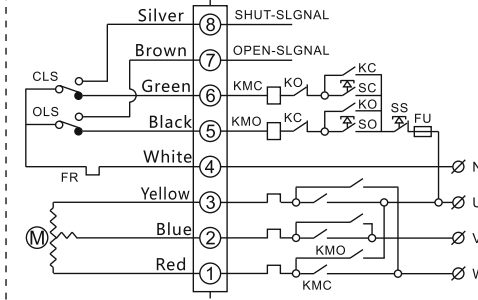
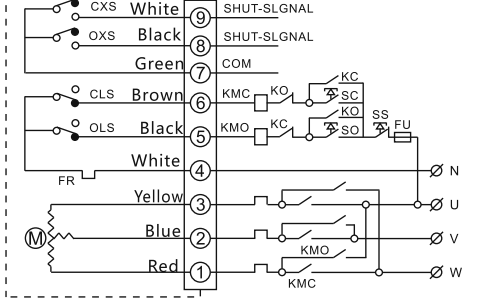
Control Loop

	<p style="text-align: center;">Common switch type (A)</p> <p>Valve open /close operation is realized by switch loop, and a set of powered position signal is output to signify the valve being full-open or full-shut.</p> <p>Wiring method:</p> <ol style="list-style-type: none"> Terminal 1 connects zero line of the power supply ; When power supply phase line connects to terminal 2, it runs "ON", till the travel switch OLS acts; When power supply phase line connects to terminal 3, it runs "OFF", till the travel switch CLS acts; When power supply phase line connects to terminal 2, it runs "ON", and when it runs in place, The "full-open signal" indicator connected to terminal 4 lights up; When power supply phase line connects to terminal 3, it runs "OFF", and when it runs in place, the "full-shut" indicator connected to terminal 5 lights up.
	<p style="text-align: center;">Power-less contact point type (B)</p> <p>Valve open /close operation is realized by switch loop, and a set of powered position signal is output to signify the valve being full-open or full-shut.</p> <p>Wiring method:</p> <ol style="list-style-type: none"> Terminal 1 connects zero line of the power supply ; When power supply phase line connects to terminal 2, it runs "ON", and when it runs till travel switch OLS acts ; When power supply phase line connects to terminal 3, it runs "OFF" till travel switch CLS acts ; Terminal 4 is power-less contact point common terminal ; When " ON " runs in place, the terminal 5 outputs "full-open signal"; When " OFF " runs in place, the terminal 6 outputs "full-shut signal";
	<p style="text-align: center;">Openness degree signal type (C)</p> <p>Valve open /close operation is realized by switch loop, and electric resistance signal is output corresponding to the openness position.</p> <p>Wiring method:</p> <ol style="list-style-type: none"> Terminal 1 connects zero line of the power supply ; When power supply phase line connects to terminal 2, it runs "ON", and when it runs till travel switch OLS acts ; When power supply phase line connects to terminal 3, it runs "OFF" till travel switch CLS acts ; Terminal 4 is the low end of the potentiometer, so when running "ON", the impedance between terminal 4 and terminal 5 increases with the valve opening; Terminal 5 is the movable arm of potentiometer; Terminal 6 is the high end of the potentiometer, so when running "OFF", the impedance between terminal 5 and terminal 6 increases with the valve closing;
	<p style="text-align: center;">With position transmitter (D)</p> <p>Valve open /close operation is realized by switch loop, and electric current signal is output corresponding to the valve openness angle.</p> <p>4-20mA DC valve-location signal is output (to exercise travel feedback to valve location)</p> <p>Wiring method:</p> <ol style="list-style-type: none"> On the power input side "N" is the zero line, and, " L " links to phase conductors ; When " L " on the power input side links to "ON ", it runs to the direction of opening the valve; When " L " on the power input side links to "OFF ", it runs to the direction of closing the valve; The " + " on the "output signal " side links to the positive pole of the output signal, and " - " links to the negative pole of output signal.

Note: In the control loop, the part inside the dotted line is the internal loop of the electric-driven device, and the part outside is for reference by the user while wiring.

Caution!: Never connect the power cords of two or more electric-driven devices in parallel, never control multiple electric-driven devices with one single contact point, or else the system may malfunction or the electromotor may overheat.

Control Loop

	<h3>Intelligent adjustment type (E)</h3> <p>The external computer or industrial instrument inputs a standard signal to control the open/shut degree of the valve and meanwhile feedbacks the corresponding standard signal.</p> <p>Wiring method:</p> <ol style="list-style-type: none"> 1, On the power input side "N" links to the zero line, and, " L" links to phase conductors; 2, The "+" on the "external control" side links to the positive pole of the input signal, and "-" links to the negative pole of input signal. 3, The "+" on the "feedback" side links to the positive pole of the output signal, and "-" links to the negative pole of output signal.
	<h3>DC switch type (F)</h3> <p>By switching over the positive/negative polarity of the external DC power supply, the valve "OPEN" or "SHUT" operation is realized, and meanwhile a set of power-less contact point signal is output to signify the value being full-open or full-shut.</p> <p>Wiring method:</p> <ol style="list-style-type: none"> 1, When terminal 1 links to power supply positive pole, terminal 2 links to the power supply negative pole, and that is "ON" operation; 2, When terminal 1 links to power supply negative pole, terminal 2 links to the power supply positive pole, and that is "OFF" operation; 3, Terminal 4 is power-less contact point common terminal; 4, When "ON" runs in place, the terminal 5 outputs "full-open signal"; 5, When "OFF" runs in place, the terminal 6 outputs "full-shut signal";
	<h3>3-Phase switch type (G)</h3> <p>Valve open /close operation is realized by switch loop, and a set of powered position signal is output to signify the valve being full-open or full-shut.</p> <p>Wiring method:</p> <ol style="list-style-type: none"> 1, Terminal 1, 2, 3 link to three-phase alternating current, and external phase inverting circuit is used to realize positive and negative rotation of electromotor; 2, Terminal 4 is the common point of external control loop; 3, Terminal 5 is "ON" operation control; 4, Terminal 6 is "OFF" operation control; 5, When "ON" runs in place, the terminal 57 outputs "full-open signal"; 6, When "OFF" runs in place, the terminal 8 outputs "full-shut signal";
	<h3>3-Phase power-less contact-point type (H)</h3> <p>Valve open /close operation is realized by switch loop, and a set of power-less position signal is output to signify the value being full-open or full-shut.</p> <ol style="list-style-type: none"> 1, Terminal 1, 2, 3 link to three-phase alternating current, and external phase inverting circuit is used to realize positive and negative rotation of electromotor; 2, Terminal 4 is the common point of external control loop; 3, Terminal 5 is "ON" operation control; 4, Terminal 6 is "OFF" operation control; 5, Terminal 7 is power-less contact point common terminal; 6, When "ON" runs in place, the terminal 8 outputs "full-open signal"; 7, When "OFF" runs in place, the terminal 9 outputs "full-shut signal";

Note: In the control loop, the part inside the dotted line is the internal loop of the electric-driven device, and the part outside is for reference by the user while wiring.

Caution!: Never connect the power cords of two or more electric-driven devices in parallel, never control multiple electric-driven devices with one single contact point, or else the system may malfunction or the electromotor may overheat.

Use requirements

I, Installation environment requirement

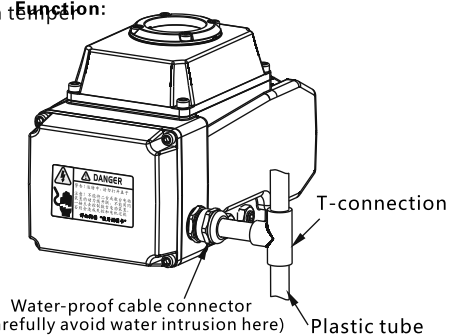
- 1, The product can be installed indoors or outdoors;
 - 2, The product is not explosion protection product so please avoid flammable and explosive environment;
 - 3, In an environment where there is rainwater, raw material splatter, and sunlight direct radiation on long term, you must install a protective hood to shield over the whole electric actuator.
 - 4, Please reserve room for wiring, manual operation and installation and repair work;
 - 5, Periphery environmental temperature should keep in 30 ~ 60 °C range;
- Note: when using it in environment of big temperature difference or below zero point, you should use the model which has heater dehumidifier to prevent moisture condensation.

II, Working medium temperature requirement

- 1, When mating with valve, the working medium temperature is transmitted to actuator, and make its temperature rise;
- 2, When the working medium has high temperature, the bracket linking to valve works to reduce heat conducting;
- 3, When the working medium temperature is below 0°C, please select standard bracket;
- 4, When the working medium temperature is above 80°C, please select high temperature bracket;

III, On-site cable lines, wiring tubes installation requirement

- 1, When using wire tube, please install as per Fig. (1);
 - (1), wiring tube outer diameter Φ 8- 12;
 - (2), It should have adequate waterproof countermeasure;
 - (3), The actuator shall be higher than wiring tube, so the water drops in wiring tube cannot flow into actuator, thus ensuring its safety;
- 2, When using cable, its outer diameter is Φ 8- 12 .See Fig. (2) .Cable that mismatch the waterproof cable connector inner diameter must not be adopted, or else the water can flow from waterproof cable connector into actuator and damage all internal components;
- 3, Signal wire in principle shall adopt shrouding wire, and its wiring should be separate from power line wiring.



Fig, 1

IV, Power supply requirement

- 1, According to power supply type of the model you order, you provide relevant on-site power supply;
- 2, The voltage of on-site power supply shall comply with the following requirements:
 - AC380V \pm 10% 50 / 60Hz AC220V \pm 10% 50 / 60Hz
 - AC110V \pm 10% 50 / 60Hz AC24V \pm 10% 50 / 60Hz
 - DC24V \pm 5%

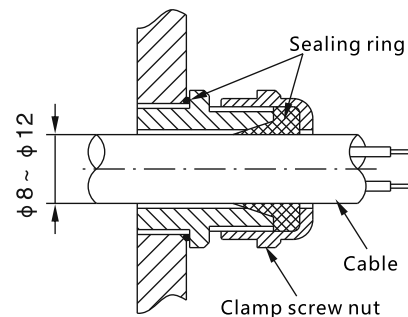


Fig. 2

V, Selection of breaker switch fuse:

Model	Voltage							
	Fuse	AC380V	AC220V	AC110V	AC24V	DC220V	DC24V	DC12V
		2A	2A	3A	5A	2A	5A	10A
		2A	3A	5A	7A	3A	7A	14A
		3A/5A	5A/7A	7A/10A	10A/11A	5A/7A	15A	
		5A	7A	10A	20A	20A		

Actuator and valve installation

I, Actuator and valve installation (Fig. 3)

- 1, Manually operate the valve, make sure there is no abnormal condition, turn the valve to full-shut position;
- 2, Lightly fix the bolt to the valve with a bracket;
- 3, Fit one end of the coupler over the valve stem;
- 4, Drive the electric actuator by manual handle to the full-shut position (Pointer just points to SHUT, 0 mark), insert the output shaft in the square hole of coupler;
- 5, Lightly fix the electric actuator to the bracket with a bolt;
- 6, Drive the electric actuator by manual handle through its full travel range. Make sure the operation is smooth, without deviation from center, and without skew or blockage, and examine whether the valve can realize full-shut and full-open within the openness indication range of the actuator .

Note: Don't use forcibly strong force, or else the actuator may run beyond limit and be damaged.

Special hints:

If you prepare your bracket or coupler by yourself, please notice:

- (1) Bracket and coupling shall be designed and processed by specialized technicians and conform to remark requirements in Fig. 4;
- (2) The axis hole processing on both ends of coupling shall guarantee necessary precision, and remove transmission gap as far as possible, in case the valve has return difference while working;
- (3) You shall strictly guarantee position of axis holes on both ends of coupling. Or else it may go beyond actuator's designed scope of work. And the result is actuator travel range can not adjust and thus the valve cannot work normally.

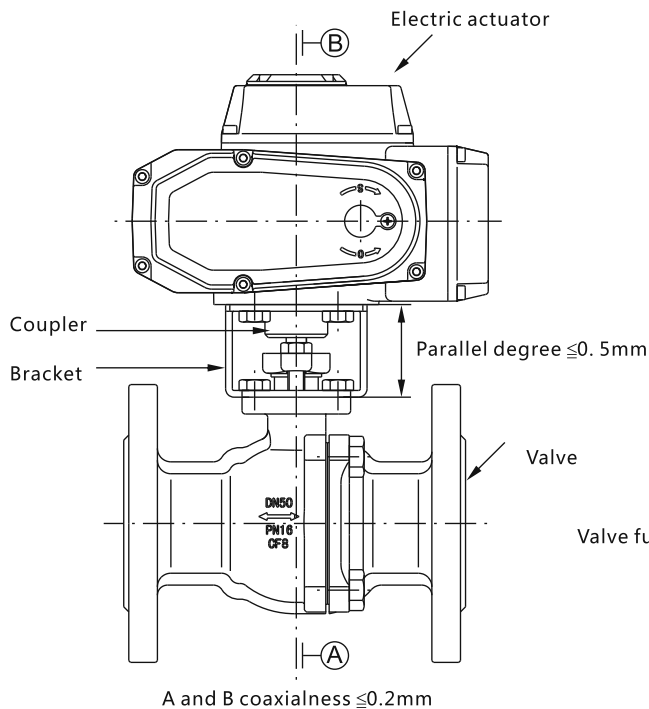


Fig. 4

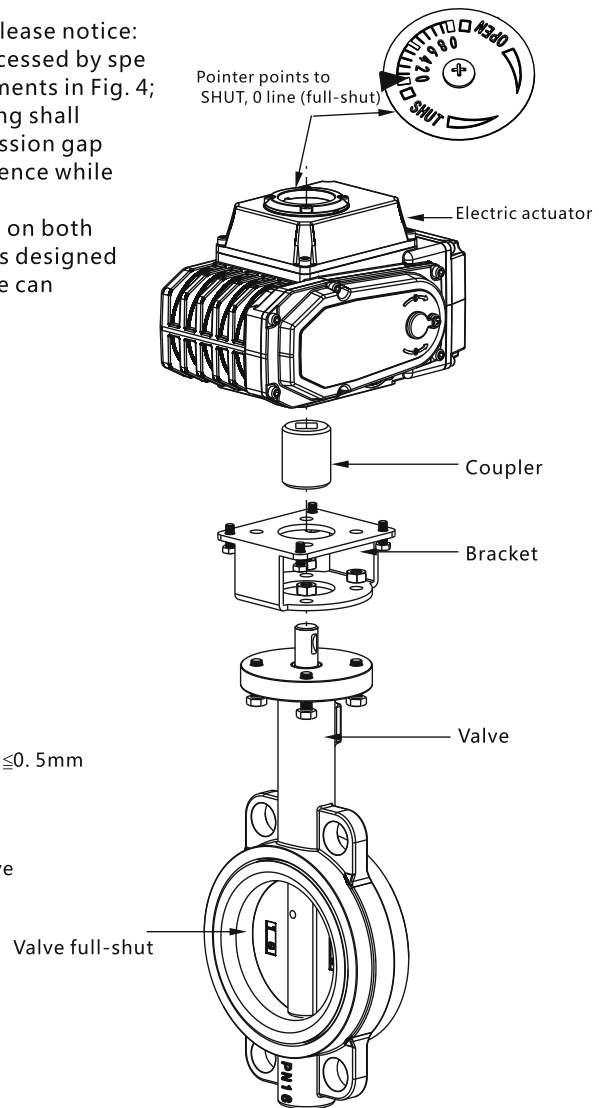


Fig. 3

I, Switch type adjustment

Electric limiter adjustment

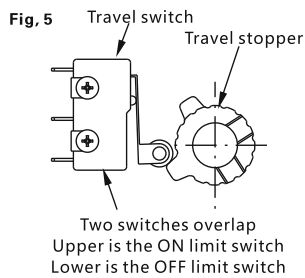
1, Before adjusting the electric limiter, you shall loosen adjusting screw of mechanical limiter, to avoid mechanical blockage;

2, Loosen the screw of stroke dog, and tap the stroke dog with screwdriver, so you can adjust the angle of stroke dog, thereby change the switch angle of electric limiter, and when travel switch acts, it gives the "katsa" noise .In the end, firmly fasten the screw of stroke dog.

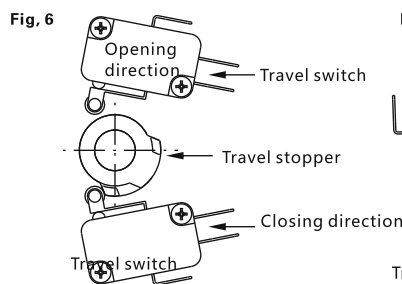
△, When it is energized, it is forbidden to operate it manually.

△When you adjust the actuator whose angle of rotation adjustment range is 0 ~ 90 degrees.you should not adjust beyond range, or randomly enlarge the rotating angle.

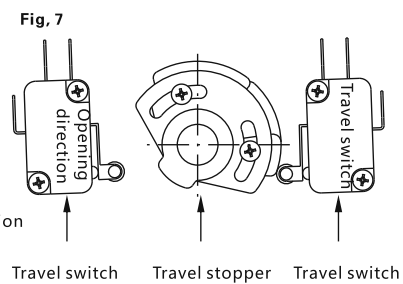
Layout of LP -05 stroke dog and travel switch



Layout of LP -10 stroke dog and travel switch



Layout of stroke dog and travel switch of LP -20 / 40 / 50 /60/100/200



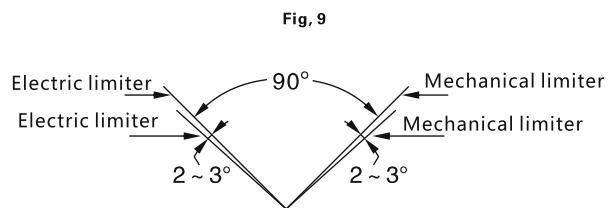
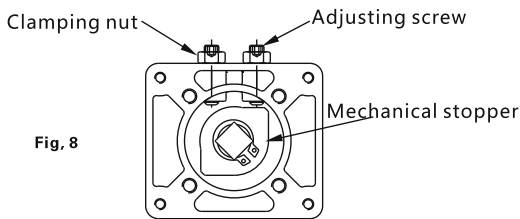
II, Mechanical limiter adjustment (Fig. 8)

1, Drive the actuator by manual handle to the full-shut position (when travel switch acts, it gives " katsa " sound);

2, Loosen locknut, clockwise turn the adjusting screw, to make it contact with mechanical stopper, and then counterclockwise turn the screw for half-lap, to let the mechanical limiter at the full-shut position lag behind the electric limiter by about 2~3° angular distance, and fasten the nut;

3, In the same method, you can adjust the mechanical stopper at the full-open position.

△ The electric limiter position and mechanical limiter position of the actuator must meet the requirement of (Fig. 9).If mechanical limiter is ahead of or coincides with electric limiter, actuator electromotor may be blocked .It can heat up and even burn the electromotor.



III, Adjustment of potentiometer (Fig. 10), suitable for Type C, E (generally, no need to adjust)

1, Resistance value of potentiometer is: 1K Ω(5 KΩ);

2, Drive the actuator by manual handle to its full-shut position; 3, Loosen the screw of openness degree gear, and turn the openness degree gear .Adjust the potentiometer, measure the resistance between connecting terminals 4~5 with universal meter, make the resistance about 100.Fasten the openness degree gear locknut. (if it is the adjustment type seven-line plug-and-socket connection, please measure resistance corresponding to two jack holes RV and RS)△ You can also directly loosen potentiometer to adjust, but when fixing it, please notice the engagement between potentiometer gear and openness degree gear, and the gap shall not be too big or too tight, or else the actuator's complete machine precision will be directly affected.

