

电动阀门驱动装置 回转型
DRIVE EQUIPMENT OF ELECTRIC VALVE
ROTARY TYPE

使用说明书
USE INSTRUCTION

HG — 05	型 TYPE
HG — 10	型 TYPE
HG — 20, 40	型 TYPE
HG — 60, 100, 200	型 TYPE
HG — 400, 600	型 TYPE

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为了保证执行器在自动控制中的定位精度，必须调节灵敏度。灵敏度小，定位精度高，但容易产生振荡；灵敏度大，不容易产生振荡，但定位精度差。调节“灵敏度”电位器可在二者之间取折衷，使其不产生振荡为最佳调节值。

现场控制：将控制开关切换至“现场”位置，然后按“关”、“开”按钮即可实现对执行器的关、开控制。

远程控制：将控制开关切换至“远方”位置，即直行远程控制。

In order to ensure the implementation of automatic control of positioning accuracy, we must adjust the sensitivity. Sensitivity of small, high positioning accuracy, but Prone to oscillation; sensitivity, and can not be late to produce oscillations, but the poor positioning accuracy. Regulation of "sensitivity" can be both potentiometers fold between the sorrow, it does not produce oscillation adjustment value for the best.

Scene control: the control switch to "live" location, and then press "off", "open" button to achieve the implementation of related devices, the control.

Remoto Control: the control switch to "remote" location, that is, remote control straight.

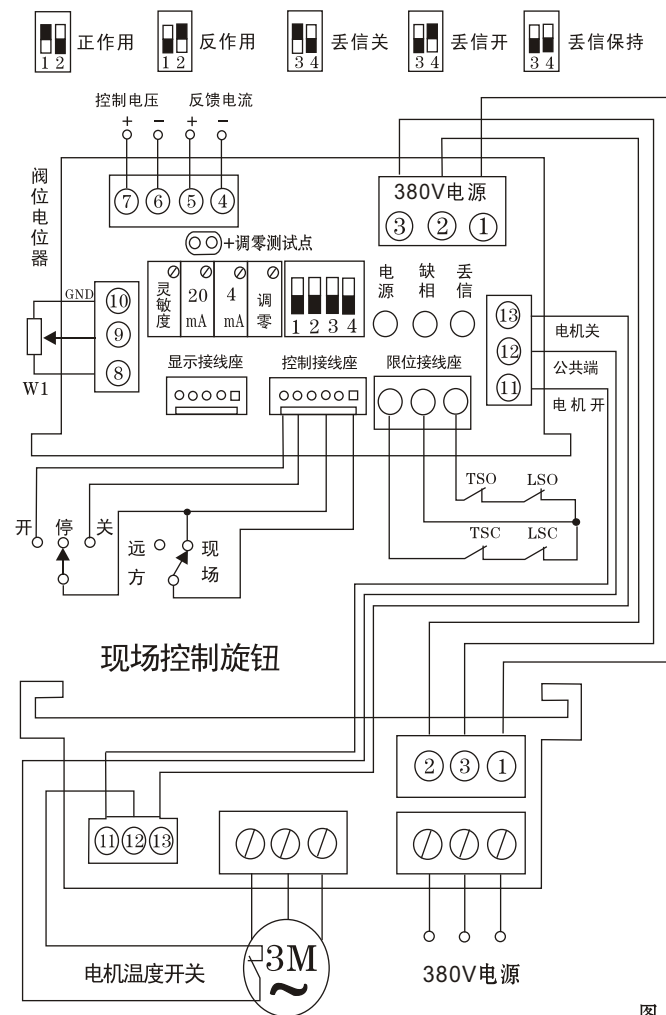


图 1

二、位置电位器 Position potentiometer

位置电位器的阻值应 $\geq 1K\Omega$ Position potentiometer resistance should be $\geq 1K\Omega$

三、使用方法 Use methods

1、接线与拨码选择 Connection with the allocation of codes to choose

严格按图1所示完成模块与小型交流接触器、执行器的接线；若电机无温度开关引出线，则应将模块上的此两接线端短接。

用万用表检查模块与交流接触器、电机连线，确保无短路现象。

将阀位反馈输出、控制信号输入按图1接线。

正作用、反作用“选择，”输入信号，丢失后执行器运动方式的选择，由用户根据现场要求按照图1所示通过拨码开关选定。（“正作用、反作用”不能同时拨为有效）

以上连线检查无误后，按和380V电源线。

In strict accordance with the completion of modules shown in Figure 1 with the small AC contactor, cable actuators; if motor temperature switch pinout, they should be module of these two terminals shorted.

Use multimeter to check module and AC contactor, the electrical connections to ensure that no short-circuit phenomenon.

The valve position feedback output, control signal input terminal according to Figure 1.

Is the role of counter-productive "choice," the input signal, after the loss of actuator movement to make the choice, by the user according to the scene in accordance with the requirements shown in Figure 1 DIP switch selected through. ("Is the role of counter-productive" can not be allocated for the effective)

Check the correct connection and above, press and 380V power cord.

2、调试 Debugging

先通过执行器上的手轮将执行器动到全行程的中间位置。

接通AC380V电源，此时电源指示灯点亮，将控制开关拨至“现场”位置。按下“关”按钮，此时执行器应向关方向动作；按下“开”按钮，此时执行器应向开方向动作；放手后执行器应停止动作；若执行器开关方向相反，应将接电机的任意两根线互换一下接好。

正作用时位置反馈4~20mA信号调节。将执行器动作到关位，调节“调零”电位器，使两测试点的电压差约为零（ $\leq 2mV$ ）然后调节“4mA”电位器使输出信号为4mA；将执行器动作到开位，调节“20 Ma”电位器使输出信号为20Ma。上述调节只需一次即可完成。注意：当阀门由关到开时，阀位电位器中心的头对地GND电压的绝对值应从小到大变化。

反作用时位置反馈20 MA (0%)~4MA (100%)的调节：将执行器动作到开位，调节“调零”电位器，使两测试点的电压差约为零（ $\leq 2mV$ ），然后调节“4Ma”电位器使输出信号4 Ma；将执行器动作到关位，调节“20 MA”电位器使输出信号为20 Ma。上述调节只需一次即可完成。

“调零”、“4 MA”和20 Ma”电位器均是顺时针方向旋转输出信号增大，逆时针方向旋转输出信号减小，如发现顺时针旋转上述电位器时，输出信号减小，请将阀位电位器除中心抽头外的两根线调换一下。

注：本厂所采用之电位器均为精密多圈电位器，可旋转约25圈。

Actuator on the first pass of the hand wheel actuators will move to the middle of the whole trip.

AC380V power connecte at this time the power indicator light, the control switch to "live" location. Press the "off" by Button, this time relate to the direction of actuator movement: Press the "on" button, the actuator should be opened at this time the direction of movement: a free hand after the implementation of Action should be stopped on the devices; switch the actuator if the opposite direction, then the motor should be any two lines you take a good swap.

Position feedback is the role of signal-regulated 4 ~20 MA. Actuator will move to the clearance, and regulation of "zero" potentiometer so that the two Test point voltage difference of about zero ($\leq 2mV$ regulation and then "4 MA" allows the output signal for potential 4 Ma; the actuator moves to Open spaces, regulating "20 Ma" potential output signal allows for 20 Ma. The above regulation only once to complete. Note: When the valve position By the clearance to open when the center valve position potentiometer to the head-to GND voltage should be on the absolute value of changes in small to large.

Counterproductive when the position feedback 20 MA (0%) ~ 4 MA (100%) of the regulation: The actuator moves to the open position to regulate the "transfer Zero" potentiometer so that the two twst point voltage difference of about zero ($\leq 2 mV$), and then adjust "4 Ma" allows the output signal of potential 4 Ma; actuator will move to the clearance, and regulation "20MA" potential output signal allows for 20 Ma, Just adjust the above-mentioned first can be finished.

"Zero", "4 MA" and 20 Ma" potentiometer clockwise rotation is the output signal increases, counter-clock wise rotation Reduce the output signal, such as found in the above-mentioned potentiometer clockwise, the output signal decreases, I would be grateful if in addition to valve position potentiometer center tap Exchange outside the two lines look.

Note: The factory used by the precision potentiometers are multi-turn potentiometer can rotate about 25 laps.

(1) 概要 Summary

本装置是回转型电子阀门驱动装置，可以通过外接电源的切换或外部输入信号、实现开、关和中间位置的控制。

由于本体材质采用了铝合金压铸件，实现了小型、轻量、高性能、高输出、功率的电动驱动装置。
<特性>

- 小型、轻量、紧凑。
- 使用简便，且可以在狭窄的地方使用。
- 与阀门的连接、保养、检查简单、结实坚固、可高枕无忧。
- 手动操作机能 切断电源后可进行手动操作 可使用附带的曲柄式手柄作手动操作。
- 保护功能 万一陷入了超负荷状态，为了防止电机过热烧损，在电机设置了过热保护器。
- 配线作业简单 因为备有内部接线端子台，配线作业很简单。

The fitting is rotatory electronic valve drive equipment via the switch of external power or control of external input signal, it will actualize close open and middle location.

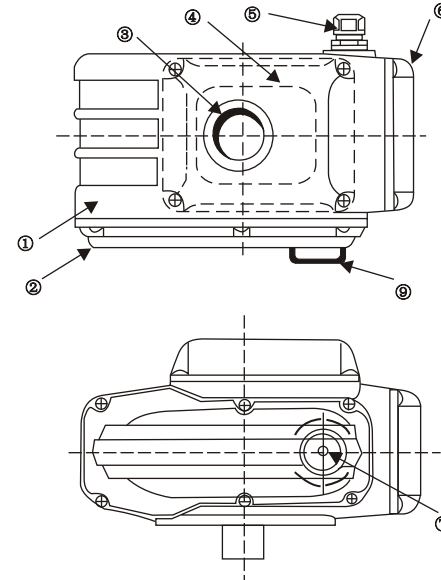
The material is aluminium alloy cast.so it is minitype, light, high-powered, high-output, electric drive equipmeng.

<character>

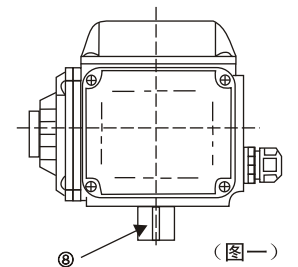
- minitype. Light. Compact
- simply used and also can use in a narrow place
- the connection maintenance with the valve is easy chek and hardness
- manual operation
You cant make the manual operation until cut the power
Use the additional brace handwheel as the manual operation
- protect funtion
in order to prevent the overheat burning, we set up the overheat prevented Machine if in charge state
- simple wring task
Because has the inter connection operation. wiring task is easy

(2) 外观图 External chart

2-1外观及各部名称 External land each parts name

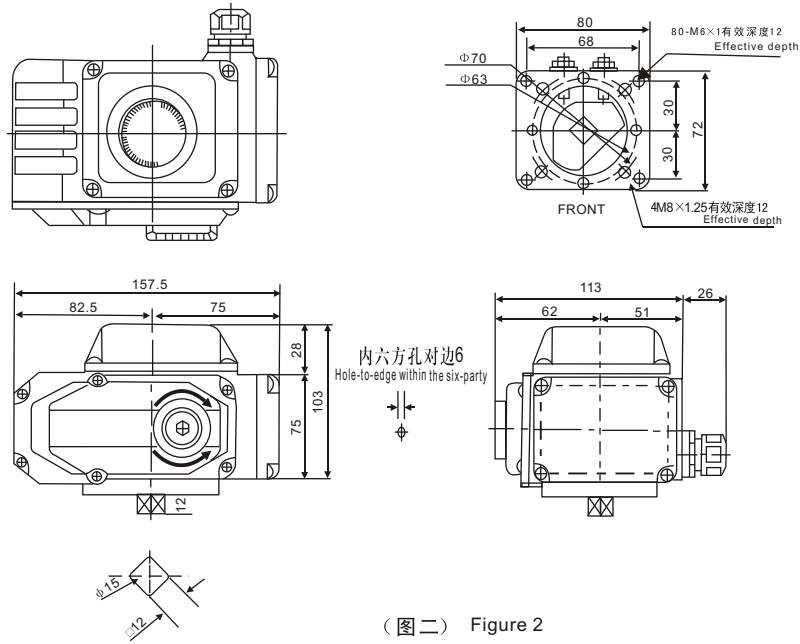


名称 Name	
1	本体 Ontology
2	驱动部盖 Department of cover-driven
3	开度计 Open Meter
4	电装部盖 Department of Electrical Cover
5	装电源、信号线的线锁 Mounted power supply, signal line lock
6	制御盖 Royal cover system
7	手柄轴孔 Handle hole axis
8	出力轴 Output shaft
9	手柄轴橡胶帽 Handle shaft rubber cap



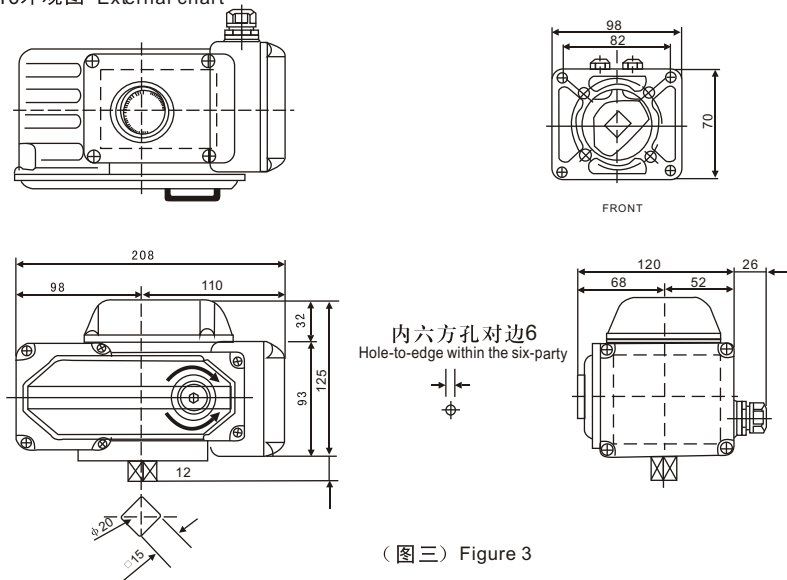
(图一)
Figure 1

2-2 HG05外观图 External chart



(图二) Figure 2

2-3 HG10外观图 External chart



(图三) Figure 3

三、端子序号对照表 Third, The CRT terminal serial number

端子序号 Terminal number	接线端子含义 The meaning of terminal block	端子序号 Terminal number	接线端子含义 The meaning of terminal block
1	220V交流电源输入 AC input power	9	控制电流 Control current (4-20mA) “+”
2	220V交流电源输入 AC input power	10	阀位电位器接地端 Valve position potentiometer grounding terminal
3	电机开 Electric open	11	阀位电位器中心抽头 Valve position potentiometer center tap
4	电机公共端 Electric public client	12	阀位电位器电源端 Valve position potentiometer end power
5	电机关 Electric organ	13	开限位1端 Limit 1 side open
6	反馈电流 Feedback Current (4-20mA) “-”	14	开限位2端 Limit 2 side open
7	反馈电流 Feedback Current (4-20mA) “+”	15	关限位1端 Clearance limit 1 side
8	控制电流 Control current (4-20mA) “-”	16	关限位2端 Clearance limit 2 side

12、PT-3C-R控制模块使用说明 Control module for use

PT-3C-R型控制模块尺寸很小，它以AC380V三相交流电作为电源，接受来自PLC、DCS系统或其它控制器的信号，配接控制电机正、反转的小型三相交流接触器，控制执行器进行阀位调节，适用于不频繁动作的场合。PT-3C-R型控制模块采用先进的混合集成电路，包含完整的保护功能。

PT-3C-R-type control module size is very small, three-phase AC 380V it as a power from the PLC, DCS system or other control signal, with access control motor is, reversal of the small three-phase AC contactor, control valve actuators for Digital regulation, applicable to non-frequent occasions action. PT-3C-R-type control module uses advanced hybrid integrated circuits, including a complete protection function.

一、主要技术特点 Main technical characteristics

- 输入电压范围：AC340V~420V。Input voltage range: AC340V~420V。
- 三相三线制 Three-phase three-wire system
- 可自动校正三相电源的相序而正确执行对阀门的开、关控制、用户可随意接入电动执行器的三相电源。

Automatic correction of the phase sequence of three-phase power supply and the correct implementation of the valve opening and customs control, the user can easily access Electric Three-phase power supply.

- 输入/输出信号通道均经过光电隔离（可承受2000V浪涌电压）。

Input / output signals have to undergo a photoelectric isolation channel (can withstand surge voltage 2000V).

- 位置反馈4~20mA信号负载电阻：50Ω~700Ω，精度：0.5%；三电位器调节技术可一次调好4~20mA反馈信号，大大简化调节过程。

4~20mA position feedback signal load resistance: 50Ω~700Ω, accuracy: 0.5%; three potentiometers Regulation of technology transfer can be a good time 4~20mA feedback signal, greatly simplifying the adjustment process.

- 正作用/反作用选择通过模块上的拨码开关完成。

Is the role / counter-productive to choose the code module allocated to complete clearance.

- 可检测三相电源的缺相。当电源缺相时，LED灯点亮报警，自动禁止执行器的一切电动操作，直到电源三相供电正常为止。

Can detect the lack of three-phase power. When the power supply when the lack of phase, LED lamps light up alarm, automatic ban on all electric actuator Operation, until the three-phase electricity power supply to normal.

- 若输入信号丢失，执行器将根据用户事先在模块上的拨码选择使阀门保持原位不动，或动作到阀门全开的位置，或动作到阀门全关的位置。

If the input signal is lost, the actuator will be based on user pre-allocated in the module code on the choice of the valve to maintain fixed in situ, or Valve moves to full-location, or action related to the location of the entire valve.

- 工作温度范围：-30℃~+65℃。Operating temperature range: -30℃~+65℃。

二、使用方法

1、接线与拨码选择

PT-2B型模块按图1所示完成模块与执行器接线。位置电位器的阻值应为 $\geq 1K\Omega$ 。用万用表检查模块上的电机连线端，确保无短路现象。

以上连线检查无误后，接入220V电源线。

2、调试

先通过执行器上的手轮将执行器动到全行程的中间位置。

将“丢信”选择开关拨到丢信保持位置，接通AC220V电源不加控制电流，此时电源指示灯，丢信灯点亮。将，“丢信”选择开关拨丢信打开位置，此时执行器应向开方向动作；将：“丢信”选择开关拨到“丢信关闭”位置，此时执行器应向关方向动作；将“丢信”选择开关拨到“丢信关闭”位置，此时执行器应停止动作。若执行器动作相反，应将“电机开”和“电机关”接线交换。

当执行器动作到关位，调节“调零”电位器，使TS1、TS2两测试点的电压差为零，然后调节“低端”电位器使输出信号为4mA；将执行器动作到开位，调节“高端”电位器使输出信号为20mA。上述调节只需一次即可完成（“调零”，“低端”和“高端”电位器均是顺时针方向增大，逆时针方向减小）。注意：当阀位由关到开时，阀位电位器中心抽头对地GND电压的绝对值应由小到大变化。

为了保证执行器在自动控制中的定位精度，须调节灵敏度范围。灵敏度范围小，定位精度高，但容易产生振荡；灵敏度范围大，不容易产生振荡，但定位精度差。调节“灵敏度”电位器可在二者之间取折衷，使其不产生振荡为最佳调节值。

注：本产品所采用之电位器，均为精密多圈电位器（可旋转约25圈）。另，模块上10到16号端子不能接入其他任何电源，“丢信”选择开关不能同时拨到“ON”位置，否则会损坏模块！

PT-2B type moduleshown in Figure 1 in accordance with the completion of wiring and actuator modules. Position potentiometer resistance should be $\geq 1K\Omega$. With multimeter Check the electrical connection module on the client to ensure that no short-circuit phenomenon. Connection check more than correct, the access to 220V power cord.

2, debugging

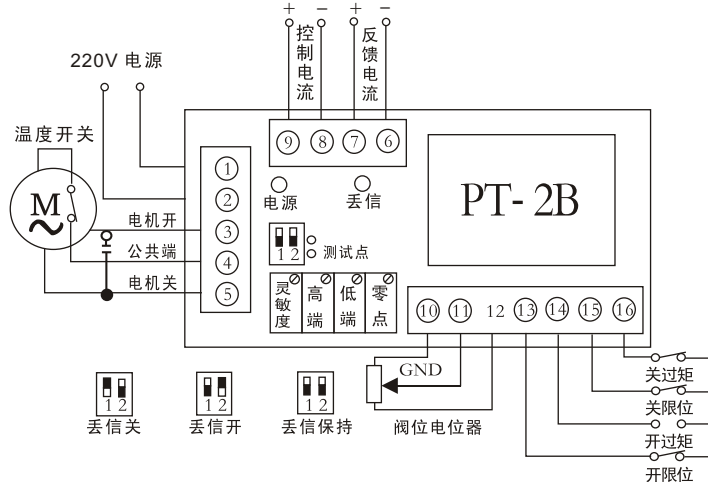
Actuator on the first pass of the hand wheel actuators will move to the middle of the whole trip. The "lost letter" selector switch to keep the letter assigned to the location of lost AC220V plwer supply not connected to the control current, powersupply instructions at this time Lights,light lit lost letter. Will be "lost letter" letterlost choose to open the dial switch positonsshould be opened at this time the direction of actuatomovement;will: Lost letter"selector switch assigned to" throwthe letter off" position, this time related to the direction ofactuatomovement; will be "lostletter" selector switch

Assigned to "throw the letter off" position, when the actuator movement should stop, if the actuator moves the cintrary, the words "motor on" and " Electric organ" exchange connection.

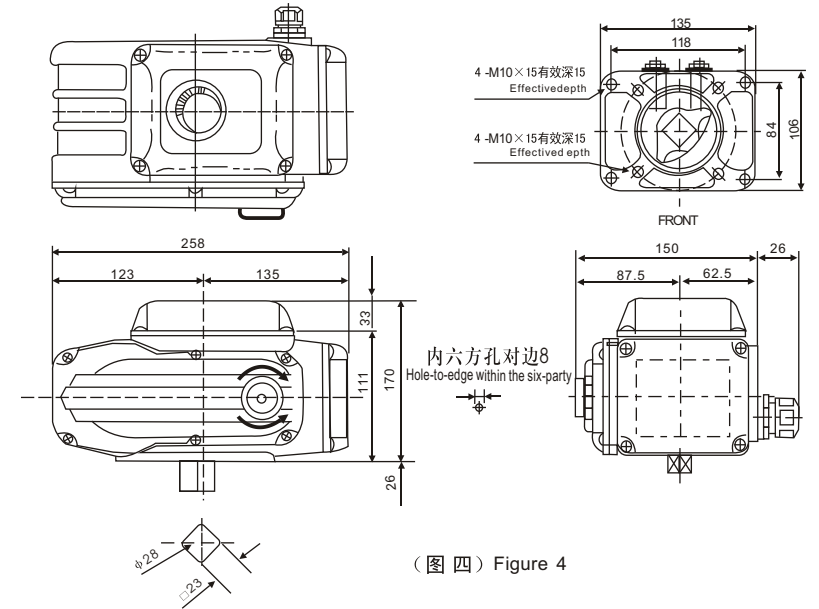
When the actuator moves to the clearance, and regulation of "zero" potentiometer so that TS1 ,TS2two test point voltage difference to zero, and then Regulation of "low-end" allows the outputsignal of potential for the 4mA; actuator will move to the open position to regulate the "high-end" allows potential output Signal to 20mA. The above regulation only oncto complete (" zero," low-end" and " high-end" potentiometers are when Shun The direction of the needle increased, decreased anticlockwise). Note: When the valve to open by the clearance, the valve position potentiometer center tapon to GND The absolute value of voltage change should be from small to big.

In order to ensure the implementation of automatic control of positioning accuracy, sentivity should be the scope of regulation. Sensitivity range of small, precision positioning High, but prone to oscillation; sensitivity range, not prone to oscillation, but the poor positioning accuracy. Regulation of "sensitivity" Potentiometers can be a compromise between the two so that it does not produce oscillation adjustment value for the best.

Note: This product is used by the potentiometer s are precision multi-turn potentiometer (which can rotate about 25 laps). Also, module 10 On the 16th to the terminal can not access any other power, "lost letter" selector switch can not be assigned to "ON" position, otherwise they will be Damaged module!

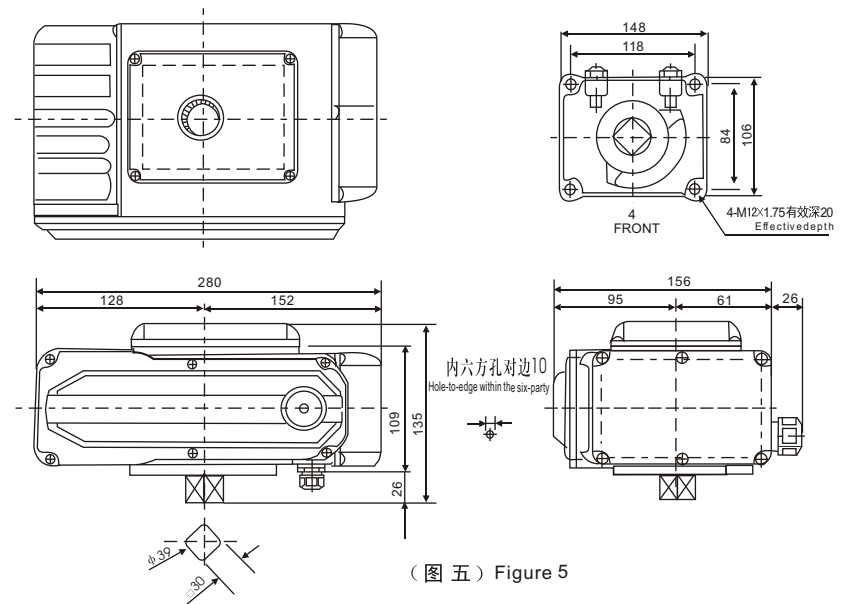


2-4 HG20. 40外观图 External chart



(图四) Figure 4

2-5 HG60. 100、150、200型外观图 External chart



(图五) Figure 5

(3) 规格特性 Specification and characteristic

Models 机型 特征 Features	HG-05	HG-10	HG-20,40	HG-60,100,200
电源 Power	AC110/220/380V50/60Hz	↔	↔	↔
出力轴的力矩 Torque of contribute axle	HG-05 50N.m	HG-10,100N.m	HG-20 200N.m HG-40 400N.m	HG-60,600N.m HG-100,1000N.m HG-200,2000N.m
动作范围 Actuation range	0~90°	↔	↔	↔
动作时间 Action time	HG-13,25秒	25秒	HG-20 30秒 HG-40 30秒	HG-60,100,60秒/50HZ HG-200,100秒/60HZ
保护设置 Protection settings	过热保护装置内藏 Overheat protection	↔	↔	↔
周围温度 Ambient temperature	-25℃~60℃	↔	↔	↔
额定电流 Rated Current	0.25A/220 V	0.25A/220V	HG-20 0.4A/220V HG-40 0.7A/220V	HG-60 0.7A/220V HG-100、200 0.9A/220V
绝缘电阻 Isolated resistance	100MΩ/500VDC	↔	↔	↔
耐压值 Pressure proof value	1500VAC1分钟 Minutes	↔	↔	↔
手动操作 Manual operation	附曲柄式手柄 Crank-type handle attached to	↔	↔	↔
挡块 Limit stop	机械式限位开关式 Mechanical limit switch-style	↔	↔	↔
防水性 Water repellency	相当于IP-66 quite to IP 66	↔	↔	↔
安装方向 Mounting Direction	360°全方向 Omnirange	↔	↔	↔
位置测量 Position measurement	开闭极限开关 Open-close limit switch	↔	↔	↔
驱动电机 Drive motor	10W/E种 Type	20W/E种 Type	HG-20,40W/E种 Type HG-40,90W/E种 Type	HG-60, 90W/E种 Type HG-100 130W/E种 Type HG-200,130W/E种 Type
本体材质 Body material	铸铝合金ADC12 Cast aluminum alloy	↔	↔	↔
喷漆 spray painting	颜色 银白色 Color Silvery white	↔	↔	银白色 Silvery white
重量 Weight	2.5Kg	4.5Kg	HG-20 7Kg HG-40 7.6Kg	HG-60 11Kg HG-100 12Kg HG-200 13Kg
配线接口 Wiring interface	PF1/2 × 1 附塑料线锁 Lock plastic line attached	↔	↔	↔

阀位反馈电流调试，将执行器动作到关位，调节“调零”电位器，使测试点两端的电压差为零，然后调节“低端”电位器使输出信号为4mA；将执行器动作到开位，调节“高端”电位器使输出信号为20mA。上述调节只需一次即可完成（“调零”、“低端”和“高端”电位器均是顺时针方向增大，逆时针方向减小）。注意：当阀位由关到开时，阀位电位器中心轴头对地GND电压的绝对值应由小到大变化。

为了保证执行器在自动控制中的定位精度，须调节灵敏度范围。灵敏度范围小，定位精度高，但容易生产振荡。灵敏度范围大，不容易产生振荡但定位精度差。调节“灵敏度”电位器可以二位之间取折衷，使其不产生振荡为最佳调节值。

注意：1 灵敏度电位器，为单圈270°电位器，到位后不要用力旋转，否则会损坏电位器。
2 调零、低端、高端电位器，均为精密多圈电位器（可旋转约25圈）。

Debugging current valve position feedback, the actuator moves to the clearance, and regulation of "zero" potentiometer so that the test points at both ends of the voltage difference is zero, and then adjust, "low-end" potentiometer allows the output signal of potential for the 4mA; actuator will move to the open position to regulate the "high-end" potentiometer clockwise increases are reverse The direction of reducing the clock). Note: When the valve to open by the clearance, the valve position potentiometer on the central axis of the first voltage to GND should be from small to big changes in the absolute value.

In order to ensure the implementation of automatic control of positioning accuracy, sensitivity should be the scope of regulation. Sensitivity range of small, high positioning accuracy, but Easy to produce oscillation. Sensitivity range, but nee easy to have a positioning accuracy of differential oscillation. Regulation of "sensitivity" potential between the two can get a compromise so that it does not produce oscillation adjustment value for the best.

Note: 1 sensitivity potentiometer, 270° for the single-loop potential, and not to force rotation in place, other wise damage the potentiometer.
2-zero, low-end, high-end potential, and even multi-turn precision potentiometer (which can rotate about 25 laps).

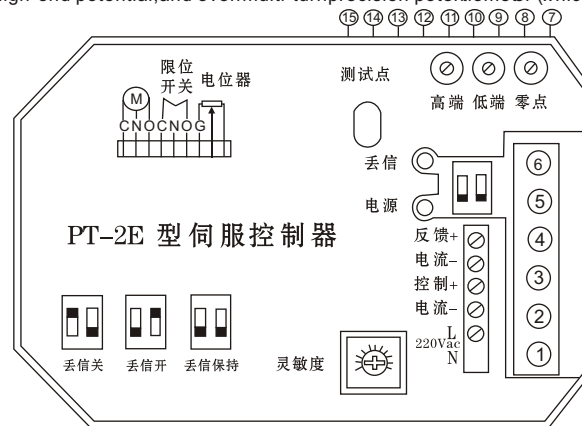


图 1

11、PT-2B型控制模块使用说明 Control module for use

PT-2B型控制模块是以AC220V单相交流电作为电源，接受来自PLC、DCS系统或其它操作器的DC4~20mA信号，控制执行器进行开关动作，构成全电子式电动执行器。

PT-2B-type control module is based on single-phase AC power as a AC220V power from the PLC, DCS systems, or other exercises. For devices DC4 ~ 20mA signal, the control switch actuator for movement, constitute a fully electronic electric actuator.

一、主要技术特点 Main technical characteristics

输入电压范围 Input voltage range: AC180V~245V.

控制模块具有刹车功能，极大地提高了阀门的定位精度。

输入/输出信号均经过光电隔离（可承受2000V浪涌电压）。

位置反馈4~20mA信号负载电阻：50Ω~700Ω，精度：0.5%；三位电位器调节技术使4~20mA反馈可一次调节完成，大大简化调节过程。

若输入信号丢失，执行器将根据用户事先在模块上的拨码选择使阀门或保持原位不动，或动作到阀门全开的位置，或动作到阀门全关的位置。

工作温度范围：-30℃~+65℃。

Reactive power control module has a braking function, which greatly improved the positioning accuracy of the valve. Input/output signals have to undergo a photoelectric isolation (can withstand surge voltage 2000V).

4 ~ 20mA position feedback signal load resistance: 50Ω ~ 700Ω, accuracy: 0.5%; three adjustment potentiometer technology enables anti-4 ~ 20mA Feedforward can be a regulator, significantly simplifying the adjustment process.

If the input signal is lost, the actuator will be based on user pre-allocated in the module code on the choice of the valve or to maintain fixed in situ, or moving Do full-valve position, or actions related to the location of the entire valve.

Operating temperature range: -30℃ ~ +65℃.

10、PT-2E型控制模块使用说明 PT-2E item control module operating instruction

PT-2E型控制模块是以AC220V单相交流电作为电法，接受来自PLC、DCS系统或其它操作器的DC 4~20mA信号，控制执行器进行开关动作，构成全电子式电动执行器。

一、主要技术特点

输入电压范围：AC180V~245V

控制模块具有刹车功能，极大地提高了阀门的定位精度

输入/输出信号均经过光电隔离（可承受2000V浪涌电压）

位置反馈4~20mA信号负载电阻：50Ω~700Ω，精度：0.5%三电位器调节技术使用使4~20mA

反馈可一次调节完成，大大简化调节过程

若输入信号丢失，执行器将根据用户事先在模块上的拨码选择使阀门或保持原位不动，或动作以阀门全开的位置，或动作到阀门全关的位置

工作温度范围：-30℃~+55℃

二、使用方法

1、接线与拨码选择

PT-2E型模块按图1所示完成模块与执行器接线。位置电位器的阻值应为 $\geq 1K\Omega$ 。

用万用表检查模块上的电机边线端，确保无短路现象。

以上连线检查无误后，接入220V电源线。

PT-2E item control module is AC 220V single phase AC as power accept the signal from PLC DCS system ,and other DC4-20MA.

一、Main technical character

Input voltage scope:AC 180V-245V.

Control module have brake function will increase the orientation precision of valve.

Input / output signal must via photo electricity isolation position feedback 4-20MA signal over load resistance 50Ω-700Ω ,precision:0.5% potentionmeter adjustment technology help 4-20MA get feedback by one time ,simply the process of adjustment work temperature scope: -30℃+55℃

二、using method

1,wiring and data chosen

PT-2E-type module shown in Figure 1in accordance with the completion of wiring and actuator modules. Position potentiometer resistances should be $\geq 1K\Omega$.

Module with a multimeter to check the electrical line client, to ensure that no short-circuit phenomenon. Connection check more than correct,the access to 220V power cord.

2、调试 Debugging

先通过执行器上的手轮将执行器动到全行程的中间位置。

在无控制电流（及丢信）情况下，将丢信动作拨码开关拨到“开”位置，接通AC220V电源，此时电源批示灯和丢信指示灯点亮，执行器应向开方向动作；将丢信动作拨码开关拨到“关”位置，此时执行器应向关方向动作；将丢信动作拨码开关拨到“停止”位置，此时执行器应停止动作；若执行器动作相反，应将“电机开”和“电机关”接线交换。

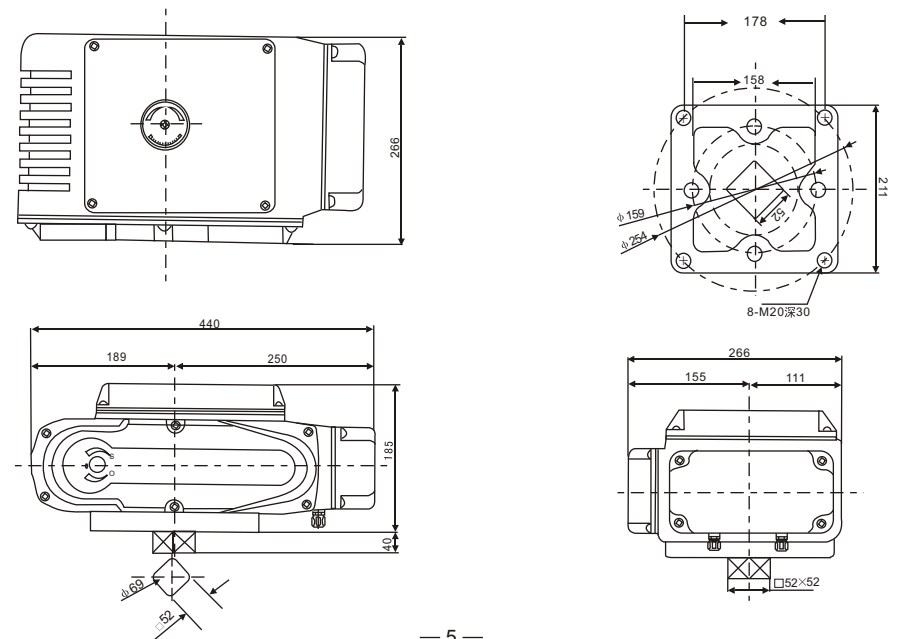
Actuator on the first pass of the hand wheel actuators will move to the middle of the whole trip.

Control in the absence of current (and the lost letter), the action letter will be lost DIP switch assigned to "on" position, connect power supply AC220V, when the electric Lost the source of instructions and a letter indicator lights lit, open to the direction of actuator movement; will belost at the beginning of the letter code assigned to action call "off" position, this time the implementation of Device related to the direction of action; action letter will be lost DIP switch assigned to "shop" position, when the actuator moves should stop; if the actuator moves In contrast, the words "motor on" and "electric organ" exchange connection.

HG 400-600外观图《系列性能参数》

HG400-600 external view 《Series of capability parameter》

性能特征 performance features	HG-400			HG-600		
	AC110V	AC220V	AC380V	AC110V	AC220V	AC380V
电机功率 motor power	300W			450W		
额定电流 rated current	7.8A	2.49A	1.1A	8.1A	3.94A	1.3A
输出力矩 output torque	4000N.m			6000N.m		
运行时间 run time	100S			120S		
电路控制 circuit control	开关型 S型无源触点 R型1K电位器, T型输入输出4~20mADC. CS型. 输出4~20mADC Switch type S type No source contact R type 1K MIDORI T type input/output 4~20mADC.					
转动角度 Rotation angle	0~90					
重量 weight	33 kg					
耐压等级 Bear the pressure rating	1500VAC/1分钟			1500VAC/1H		
绝缘电阻 Insulation resistance	100MΩ /500VDC					
防护等级 Protection grades	IP-65					
环境温度 Environment temperature	-25℃~60℃(其它温度可定做) -25℃~60℃ (Other temperature can be customized)					
安装角度 Install angle	任意角度 Any angle					
箱体材质 Body material	铝合金压铸件 Rail of the castings					
选装功能 Choose a function	过力矩保护、加热除湿器 over torque proof, heating dehumidifier					



(4) 安装 Installation

4-1 安装场所 Install location

(室内安装的注意事项) (Attention for room installation)

- 因为是非防爆产品，所以安装时避开危险气体的环境。
- 安装在长期有水、原料等飞溅物的场合，需要保护整体的盖子。
- 请预留接线，手动操作等维修用空间。
- For it is explosion prevention product, so avoid environment with dangerous air when do installation.
- When install in the place with water or material splasher, it is needed to install covers to protect whole machine.
- Please obligate wiring and manual operation such maintenance space.

(室外安装的注意事项) (Attention for outside installation)

- 为了避开雨水，阳光直射等问题，需要安装保护整体的盖子。
- (阳光直射会导致操作机内部的温度上升以及雨水导致胶垫等发生耐候性的问题)
- 请预留接线、手动操作等维修用空间。
- In order to avoid problems of rain and sunshine, it is needed to install covers to protect whole machine.
- (The direct sunlight will result in inside temperature ascending and the rain will result in glue mat problems)
- Please obligate wiring and manual operation such maintenance space

(驱动装置外部材质以及表面处理事项) (Proceedings of exterior material of drive setting and surface treatment)

型式 名称 Name	Model	HG-0.5	HG-10	HG-20,40	HG-60,100,200	HG-400,600
本体 Reality	铝合金压铸 酸化处理 烤漆	Aluminium alloy die casting Acidification treatment stoving varnish	↔	↔	↔	
驱动部盖 Drive cover	铝合金压铸 酸化处理 烤漆	Aluminium alloy die casting Acidification treatment stoving varnish	↔	↔	↔	
电装盖 Electric assembly cover	铝合金压铸 酸化处理 烤漆	Aluminium alloy die casting Acidification treatment stoving varnish	↔	↔	↔	
制御部盖 Stop cover	铝合金压铸 酸化处理 烤漆	Aluminium alloy die casting Acidification treatment stoving varnish	↔	↔	↔	
出力轴 Contribute axle		SUS303	↔	↔	↔	

4-2 周围温度、流体温度条件 Surrounding temperature, fluid temperature condition

〈周围温度〉 Surrounding temperature

周围温度在-25℃~ 55℃范围内。 Surrounding temperature keep in -25℃~55℃

〈流体温度条件〉 fluid temperature condition

- 与阀门配套使用的场合，流体温度，传到机体上面，机体温度会升高，流体温度是高温的场合，与阀门连接支架起减少热传导作用。

If using together with valve, the temperature will go up, when the fluid temperature transfer to the engine block, fluid temperature is a high temperature. Connect with valve bracket can reduce heat exchange.

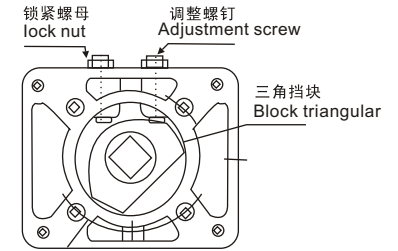
- 标准规格 流体温度+65℃以下标准支架
- 高温规格 流体温度65℃以上高温规格支架※流体温度有时随着周围温度以及对流的状态发生变化，因此，在高温中使用的场合请和本公司技术部联系。
- Standard specification fluid temperature above +65℃ is standard bracket
- high temperature specification fluid temperature above 65℃ high temperature Specification bracket fluid temperature sometimes change according to around temperature and convection state. So pls contact with our company's technology department if using in high temperature condition.

8-3 机械限位的调整

*用手柄转动至全开位置。

*松开锁紧螺母，旋转调整螺钉，使之与机械挡块接触，然后，反方向旋转螺钉半圈，锁紧螺母。

*同样方法，可进行全闭位置的机械挡块的调整。



8-3 The adjustment of mechanical limit

*Turn to the full open condition by manual

*Loosen locknut, adjust bolt so that will get to the mechanical files then

*Turn half circle bolt toward opposite direction fasten locknut

the same way, could make the mechanical adjustment of full closed location

9、故障与对策 Fault and countermeasure

故障状态 Fault status	原因 Reasons	对策 countermeasure
电机不转 Motor does not turn	<p>供给电源电压低或者电源没有 输入信号断或值不够 断线或与端子台分离 温度保护器动作</p> <p>Low voltage power supply or power supply not Off the value of the input signal or not enough Disconnected or separated from Terminal Blocks Temperature protectors action</p> <p>行程板块在中间开度时已经不动作 电机进相用电容损坏 电机断线 控制盒不良</p> <p>Travel section in the middle when opening action Phase motor with capacitor damage Motor disconnected Control box bad</p>	<p>电源电压的检查 输入信号的检查 接好电线、更换端子台 降低环境温度 降低使用频率 负荷过重 调整极限挡块 更换电容 更换马达 更换控制盒</p> <p>Check the power supply voltage Check input signal Then a good wire, the replacement of Terminal Blocks Lower ambient temperature Reduce the frequency of use Overloading Adjustment of the limits of file blocks Capacitor replacement Replacement of motors Replace control box</p>
开度不停地来回变化 Back and forth opening of change continuously	<p>信号源里有干扰信号 从分压器里产生干扰 分压器齿轮或开度齿轮松动</p> <p>Signal source, there are interference signals Interference from the voltage divider to produce Divider gear or loose gear opening</p>	<p>检查输入信号 更换电位器 检查紧固齿轮的螺钉</p> <p>Check input signal Replacement of potentiometers Check the fastening of the screw gear</p>
输入信号与开度不符 Input signal does not match with the opening	<p>输入信号不对 调零、倍率的调整不良 电位器齿轮的位置变化</p> <p>Input signal does not Zero, the adjustment of non-performing ratio Gear position potentiometer changes</p>	<p>检查输入信号 重调倍率零点 电位器齿轮的再调整</p> <p>Check input signal Resetting ratio 0:00 Potentiometer to adjust the re-gear</p>
开度信号没有 Opening signal is not	<p>开度信号线断开或接触不良</p> <p>Opening the signal line disconnected or bad</p>	<p>检查配线</p> <p>Check wiring</p>

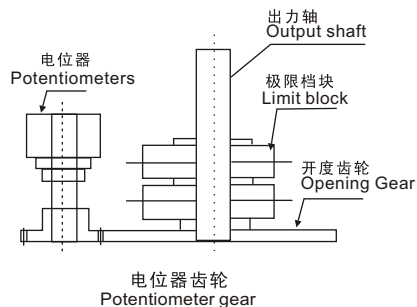
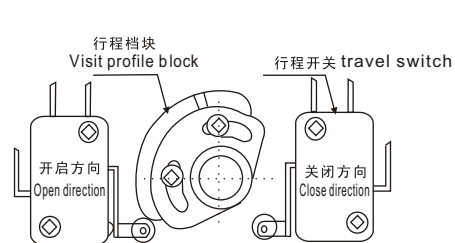
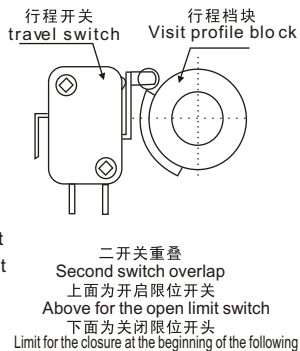
8、开关角度的调整 The adjustment of switch angle

8-1 电气限位的调整 The adjustment of electric limit

松开行程挡块的螺钉，用螺丝刀轻敲行程挡块，即可调整行程挡块的角度，从而改变电气限位的开闭角度。最后，切实坚固好行程挡块的螺钉。HG-5, HG-10的行程挡块和行程开关布局图。

Loosen the bolt of journey files. use screw driver knock it then can adjust the angle of it, so that change the electric limit of open close angle. at last make sure bolt good fasten in journey files

HG-20/40/60/100/200的行程挡块和行程开关布局图 Trip itinerary file switch block and the layout of Figure



8-2 电位器的调整（开度型、智能型）

* 电位器的电阻值为, 1KΩ, 5KΩ。

* 用手柄转动阀门到全闭位置。

* 松开电位器，转动电位器齿轮。

用万能表测量5-6接线端子间的电阻值，使5-6间的电阻值到50Ω以下，紧固电位器固定螺钉。

（如果是智能型的七线接插件连接时请）测量对应RV和RS两插孔的电阻值。

注：手动操作时，不能过分超出全开，全关的极限位置，转角过大，会导致其部件的损坏。

8-2 The adjustment of potentiometer

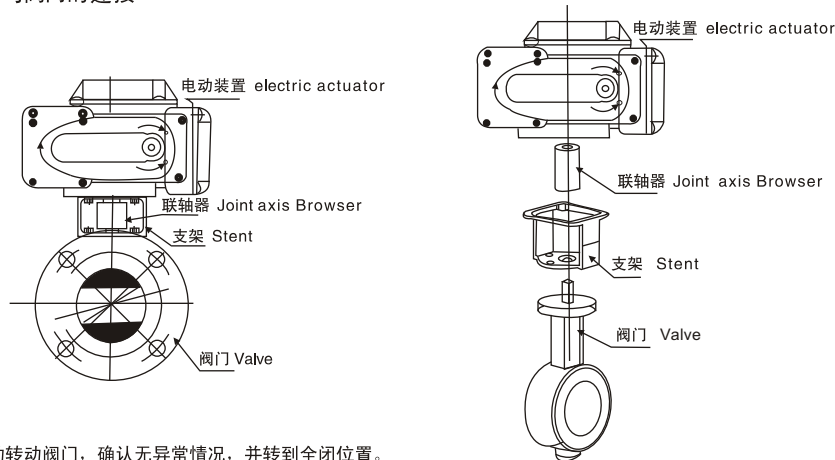
* The resistance of potentiometer is 1kΩ 5kΩ

* Make the valve to full close location manual

* Loosen potentiometer turn the potentiometer gear wheel, measure the electrical resistance of 5-6 terminal block by omnipotence meter. let it between 5-6 below 50Ω then fasten potentiometer and bolt (if it is intelligent, seven lines, socket connector connect) pls measure the corresponding electrical resistance jack of RV and RS

Attention: if manual operation, don't much over the terminal of full open full close, if over it will broken the parts

(5) 与阀门的连接 The connection with valve



① 手动转动阀门，确认无异常情况，并转到全闭位置。

② 将支架固定在阀门上。

③ 将驱动装置放在支架上用螺柱和螺母预紧。

④ 将开度计置于“关闭”位置，用联轴器将阀门芯轴和驱动装置出力轴用内六角螺钉固定。

⑤ 将把固定支架和驱动装置的螺钉拧紧

⑥ 用手转动驱动装置的手柄，确认无偏心、弯斜、运动平稳。

(6) 配线连接

6-1 电源电压，输入信号的配线。使用标准装置的，塑料接线柱时，请使用外径尺寸是φ9-φ11的电线。

（请参阅图7）另外预备使用电线配管用接线柱时，也要选用外径尺寸是和电线外径尺寸一样的物品。

* 如接线柱和电缆外径不合的话，从间隙里进水等造成防水不良问题。因此必须充分确认的基础上开始操作。

(1) turn the valve by manual make sure it is no problem, then turn to full close Condition

(2) pls fix the bracket up to the valve

(3) pls put the drive to the bracket, fasten it with nut and screw

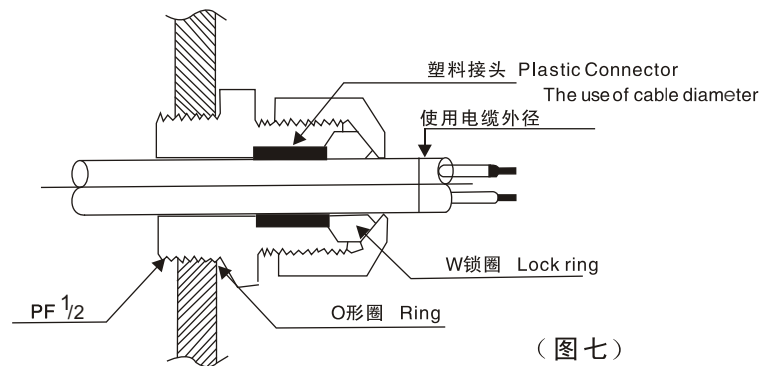
(4) make the opening gauge in close condition. pls use coupling fasten it by valve core and drive

(5) pls fasten the bolt of fixed bracket and drive

(6) turn the hand wheel of drive by manual, make sure non-askew, non-curving Great work

6 wiring connection

6-1 power voltage, the wiring of input signal, use standard fitting and plastic wiring. pls use the wire of external size 9-11 <for your information> in addition if using wire tubing, need the wire external size same as the external size if the connection pole is differ with the cable external size caused water come from the gap. so must best start operate from the elements



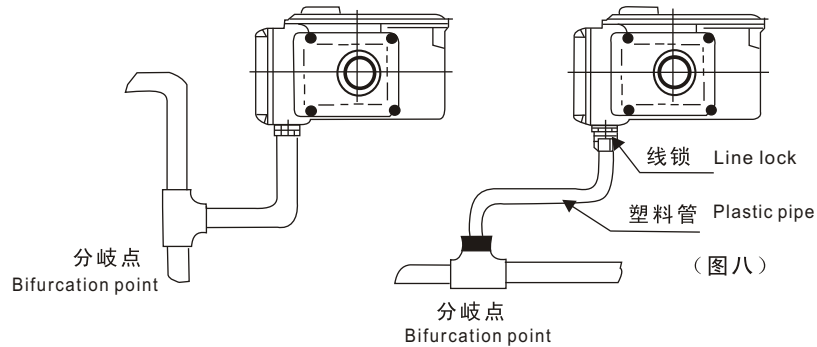
(图七)

Figure 7

6-2 配线工程 Wiring task

使用塑料管及电缆管的场合，要充分采取防水对策。

It is very important for waterproof, using plastic tube and cable tube
(请参照图8) Please refer to Figure 8



(7) 供应电源及接线 provide power and connection

7-1 供应电源 provide power

电源 Power	AC110V ± 10%	50/60HZ
	AC220V ± 10%	50/60HZ
	AC380V ± 10%	50/60HZ

以上三种是标准电源 Above three is standard power

如接和上述不同的电压时，请和本公司业务部联系

If the voltage is differ with ours, pls contact with our business department

7-2 保险丝、断路开关的选用

the selection of fuse and circuit breaker

接电源时，必需设有保险丝和断路开关。

保险丝和断路开关的容量以下为准。

When you plug the power, must need fuse and circuit breaker

This is the standard capacity of fuse and circuit breaker

型 式 Model	保险丝、断路开关容量 The capacity of fuse and circuit breaker	马达容量 Motor capacity
HG-05	2A	10W
HG-10	2A	20W
HG-20	5A	30W
HG-40	7A	90W
HG-60	7A	90W
HG-100,200	10A	100W
HG-400,600		

特别警告： Special warning:

AC380V执行器调试方法：Implementation method debugging

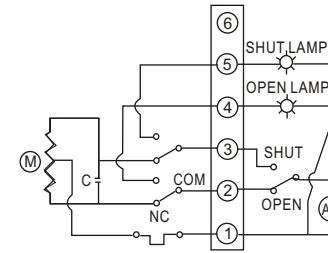
先用手柄将阀门开至中间位置，然后接线通电，执行器运转即压同方向行程开关如停，说明线已接对，否则将1、2接头对调，保证行程开关能正确控制阀门的开和关。

Handle will be first to the middle of the valve opening, and then wiring power, that is, the actuator operating pressure switch with the direction of travel, such as stop, Help Line has access right, or 1,2 swap connector to ensure the trip switch to the correct control valve OFF.

7-3: 接线回路图 Connection circuit diagram

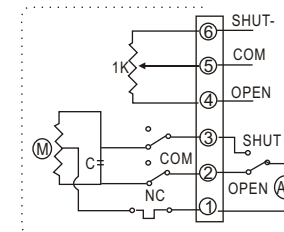
(1) 开关型(标准型)线路图

Switch type (standard type) circuit diagram



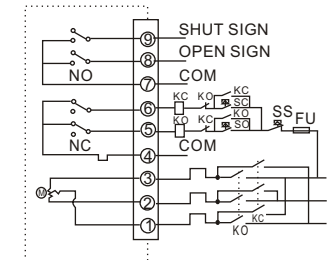
(3) 开度号型 (R) 线路图

Opening-type (R) circuit diagram



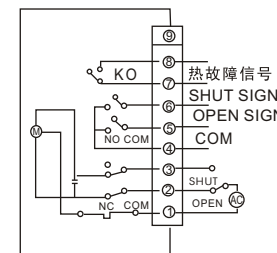
(5) AC380V无源触点型 (S) 线路图

Contact AC380V passive type (S) circuit diagram



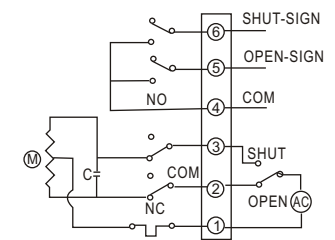
(7) 带热故障信号接线示意图

With thermal fault signal wiring diagram



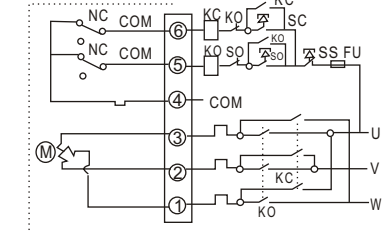
(2) 无源触点型 (S) 线路图

Passive contact-type (S) circuit diagram



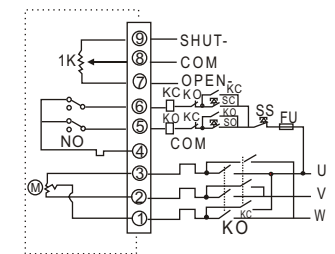
(4) AC380V标准型线路图

AC380V standard route map



(6) AC380V开度信号型 (R) 线路图

AC380V opening signal type (R) circuit diagram



(8) 直流线路图

DC circuit diagram

