QB12.5B～400B

隔爆型阀门电动装置

使 用 说 明 书

OPERATION INSTRUCTION MANUAL
FOR
FLAMEPROOF TYPE ELECTRIC VALVE
ACTUATORS

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THE PEOPLE'S REPUBLIC OF CHINA

1. 概述 General Description

首先感谢您选用我厂生产的 QB12.5B～400B 系列隔爆型阀门电动装置及其它产品。我厂是机械工业部定点制造各种阀门电动装置及其专用电机的厂家，于 1995 年通过 ISO9001 质量认证。QB 系列隔爆型是我厂广泛地吸取国内外阀门控制的先进经验而设计的新一代产品。具有结构紧凑、性能可靠、调整方便等特点。隔爆性能符合 GB3836.1-2000《爆炸性环境用防爆电气设备 通用要求》、GB3836.2-2000《爆炸性环境用防爆电气设备 隔爆型电气设备“d”》及 JB/T8529-1997《隔爆型阀门电动装置技术条件》的规定。

First and foremost, thank you for your choice of our QB12.5B～400B Series flame-proof electric valve actuators and other products. Our works is appointed by the Machine Building Industry Ministry to manufacture various electric valve actuators and their special purpose motors and our quality system was certified to conform to ISO 9001 in 1995. These products are a new generation developed by us. Adopting advanced valve control technology at home and abroad, these products are of compact structure, reliable performance and easy adjustment. Flameproof performance of these products conforms to Std GB3836.1-2000 ELECRICAL APPARATUS FOR EXPLOSIVE ATMOSPHERS-GENRAL REQUIREMENTS and Std GB3836.2-2000 ELECTRICAL APPARATUS FOR EXPLOSIVE ATMOSPHERES-FLAMERPROOF ELECTRICAL APPARATUS“d”and Std JB/T 8529-1997 TECHNICAL SPECIFICATIONS OF FLAMEPROOF ELECTRIC VALVE ACTUATORS.

2. 型号表示方法 Type Representation

2.1 型号 type

QB □ — □ B

- B — 防爆类型：隔爆型 Explosion-proof type: flame-proof
- □ — 输出转速：r/min Output speed: r/min
- □ — 额定转矩 10N・m Nominal torque of output shaft 10N・m
- QB — Q 表示部分回转型阀门电动装置，适用于球阀、蝶阀等。B 表示第二代产品。Q mans part-turn actuator, suitable to ball valve, buttery valve etc. B means products of second generation

例：QB50-1B 表示第二代部分回转电装产品，输出额定转矩 50N •m,输出转速 1r/min,隔爆型。 Example: QB50-1W means part-turn actuators of second generation, output torque 500N · m, output speed 1 r/min, flame-proof type.

2.2 防爆标志说明 instructions of explosive-proof mark

d Ⅰ

- Ⅰ — 煤矿用 For colliery
- d — 隔爆型 Flame-proof

d ⅡB T4

- T4 — 电气设备的允许最高表面温度，T4 为 135℃。 Allowed max temperature on electric apparatus, Limit of T4 is 135℃.
- ⅡB — 适用于工厂，爆炸性混合物最大试验安全间隙 B 级。 Suitable to plants and works. Class B of tested max safety clearance for explosive mixture
- d — 隔爆型 Flame-proof

3. 工作环境和主要技术数据 Service Environment and Main Technical Data

3.1 电源 Power Supply

电机电压：380V，50Hz（特殊订货可 380V～660V, 50Hz, 60Hz）

控制电压：220V, 50Hz（特殊订货可 220V～240V, 50Hz, 60Hz）

Power voltage: 380V, 50Hz (380V～660V, 50Hz, 60Hz for special order)

Control voltage: 220V, 50Hz (220V～240V, 50Hz, 60Hz for special order)

3.2 工作环境 Service Environment

3.2.1 含有爆炸性气体或粉尘，本装置有 dⅠ（煤矿井下用电气设备）和 dⅡBT4 （工厂用）两种，dⅡBT4 所适用环境为ⅡA、ⅡB 级 T1~T4 组的爆炸性气体混合物。

Within explosive gases or dust, these actuators are provided with Class dI (as electric apparatus for colliery mine) and Class dIIBT4 (for plant and works). Class dIIBT4 is suitable to the atmosphere of explosive gases mixture specified by groups T1~T4 of Class IIA and Class IIB.

3.2.2 环境温度：-20 ～ +60℃ Ambient temperature: -20~60℃

3.2.3 环境相对湿度：≤90%（+25℃时） Relative humidity: ≤90% (at 25℃)

3.2.4 防护等级：IP55（特殊订货可达 IP67） Protection: IP55 (IP67 for special order)

3.3 本装置为短时工作制，额定运行时间为 10 分钟。

These actuators are for short time duty. The rated operating time is 10 minutes.

3.4 规格和主要技术数据见表 1。 For specifications and main parameters see able 1

表 1 Table 1

型号 Type	电机 Motor		转速 Output speed		最大控制转矩 Max control torque N·m	最小控制转矩 Min Control torque N·m	阀杆直径 Dia of stem mm	手动速比 Hand Ratio	重量 Weight kg
	功率 Power kW	电流 Current A	1r/min	2r/min					
			额定转矩 Rated torque (N·m)						
$QB^{12.5}_{25}B$	0.03	0.25	125		>125	62.5	22	63	50
	0.05	0.45		125					
	0.05	0.45	250		>250	125	28		
	0.09	0.63		250					
$QB^{50}_{100}B$	0.09	0.63	500		>500	250	42	47	70
	0.18	1.0		500					
	0.18	1.0	1000		>1000	500	50		
	0.25	1.4		1000					
$QB^{200}_{400}B$	0.25	1.4	2000		>2000	1000	60	53	110
	0.55	2.4		2000					
	0.37	1.8	3000		>3000	1500	60		
	0.55	2.4	4000		>4000	2000	80		

4. 结构 Structure

QB 系列隔爆型电动装置主要由隔爆专用电机、减速器、行程控制器、转矩控制器、开度指示器、手电动切换机构和手轮组成。电机为我厂设计制造的隔爆型阀门专用电机。减速器由二对正齿轮和蜗轮副组成。行程控制器采用凸轮机构，凸轮与输出轴同步。转矩控制器利用蜗杆窜动带动曲拐和摇杆压迫微动开关从而发信。开度指示器用于现场指示阀门开启程度和远传阀位开度信号。（在输出轴的侧面装有供控制室开度表用的电位器） 手电动切换机构为半自动形式，即手动操作时须先扳动切换手柄再转动手轮，电动时手柄自动复位，切不可手动扳回。

QB series mainly consists of flame-proof special purpose motor, reducer, travel control mechanism, torque control mechanism, position indicator, hand/electric operation clutch and handwheel. Motor: flame-proof special purpose for valve, produced by us. Reducer: two pairs of spur gears and a pair of worm and wormwheel. Travel mechanism: cam mechanism simultaneous with output shaft. Torque mechanism: expelled worm shaft makes crank and rocker press microswitch to generate signal. Position indicator: indicating valve position locally and transmitting the signal of valve opening degree.(a potentiometer for remote control is mounted at the flank of output shaft) Hand/electric operation clutch: semi-auto exchange mechanism. Before hand operation, it must be declutched and it will turn back automatically while electric operating, do not turn it back by hand.

输出轴中装有花键套，可取出转过一微小角度以调整阀门的全关位置。

A spline housing is inserted in the output shaft. Users can pull it out and rotate a slice angle to set to full closed position.

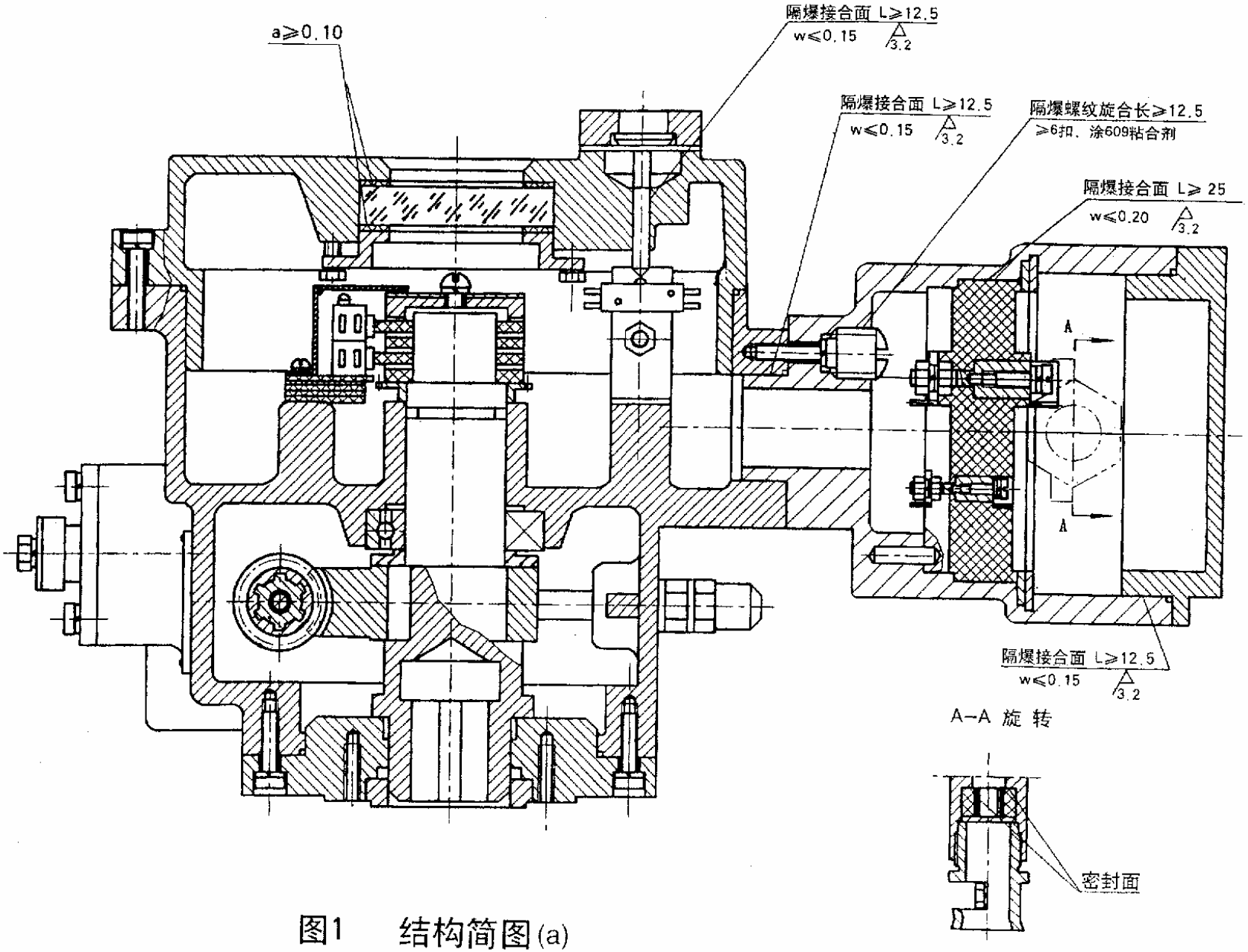

a≥0.10
隔爆接合面 L≥12.5
w≤0.15
3.2
隔爆接合面 L≥12.5
w≤0.15
3.2
隔爆螺纹旋合长≥12.5
≥6扣，涂609粘合剂
隔爆接合面 L≥25
w≤0.20
3.2
A
A
隔爆接合面 L≥12.5
w≤0.15
3.2
A—A 旋 转
密封面

图1　结构简图(a)

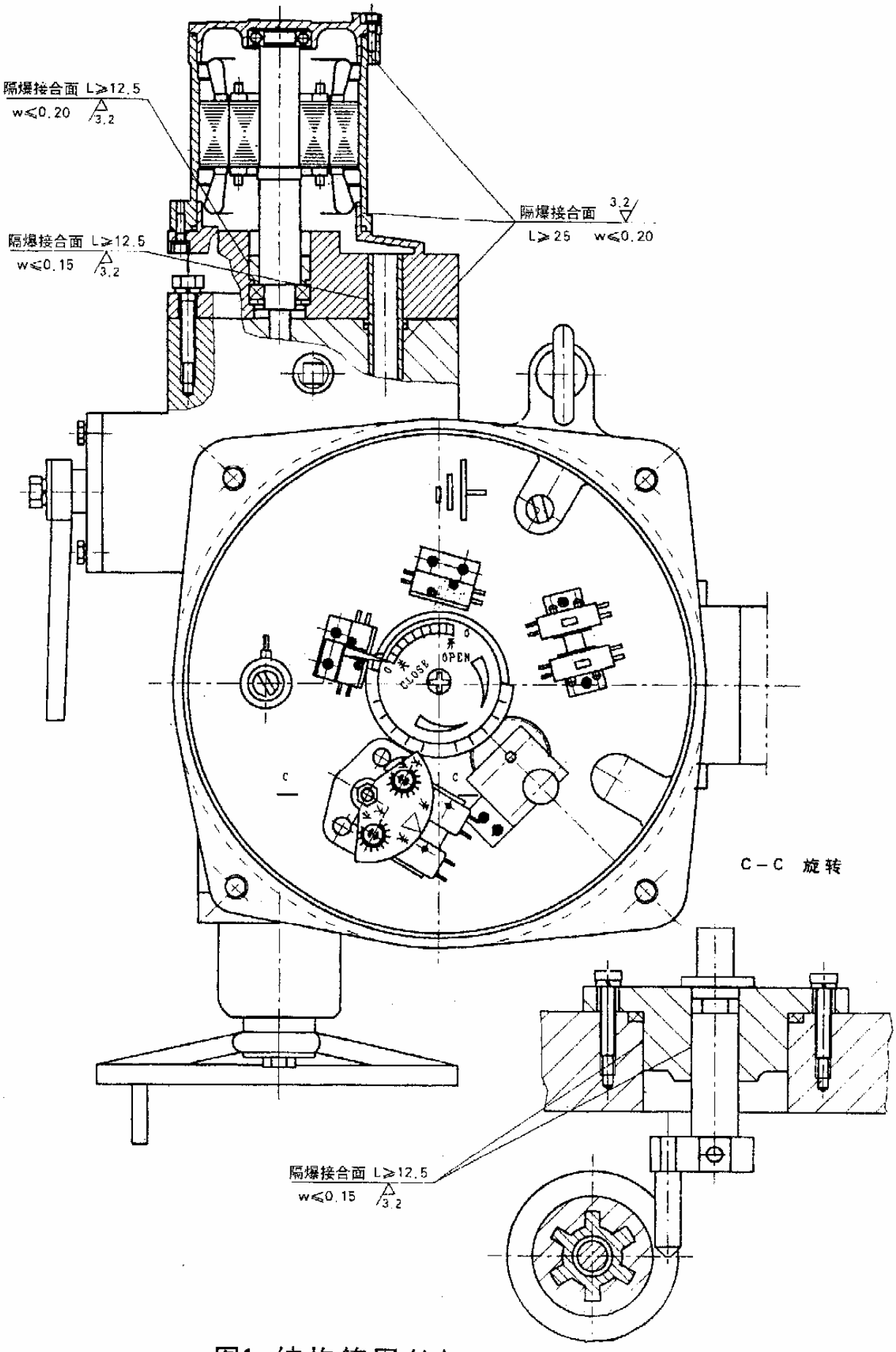

隔爆接合面 L≥12.5
w≤0.20
3.2
隔爆接合面 L≥12.5
w≤0.15
3.2
隔爆接合面
3.2
L≥25 w≤0.20
CLOSE
OPEN
C
C
C－C 旋转
隔爆接合面 L≥12.5
w≤0.15
3.2

图1 结构简图(b)

5. 外形及连接尺寸 Contour and Connection Dimensions

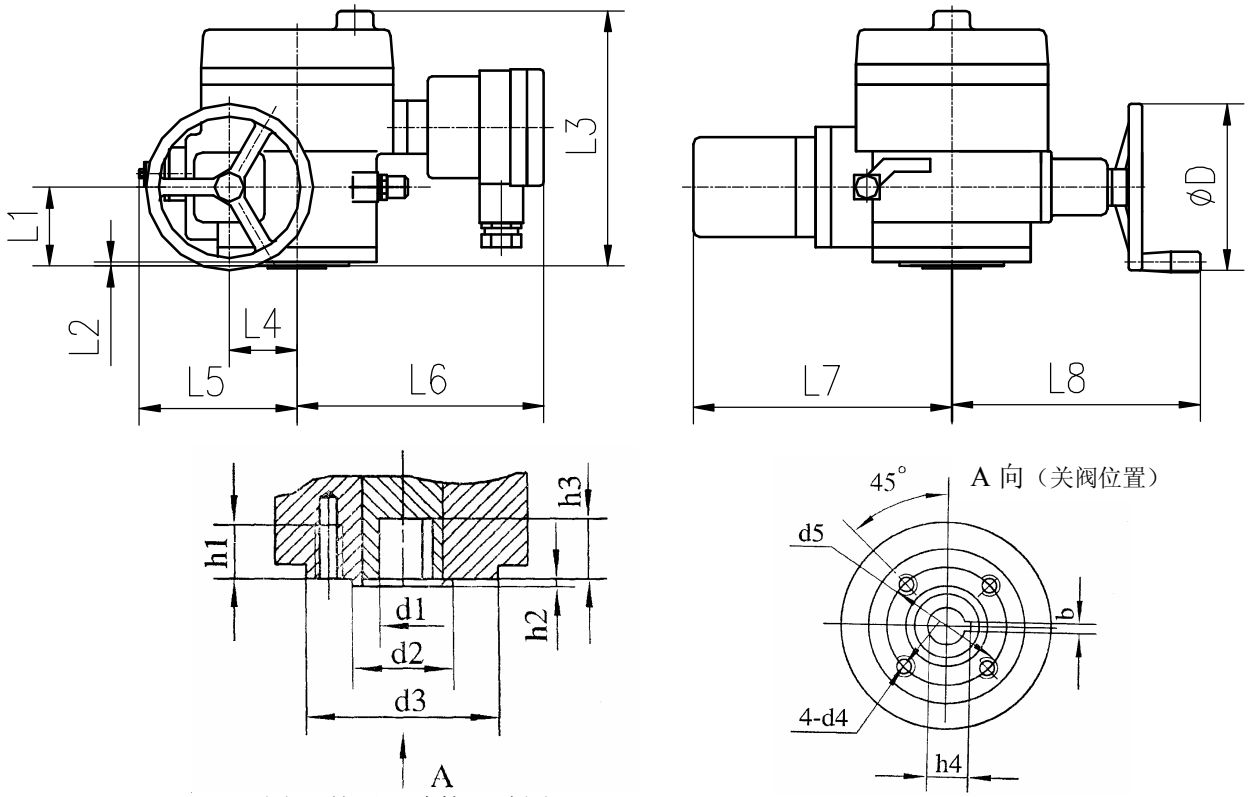


图 2 外形及连接尺寸图 Fig.2 overall size and connection dimensions

. 表 2 连接尺寸表 Connection dimension Table 2

型号 Type	d1(H9)	d2(f8)	d3	d4	d5	h1	h2	h3	h4	b(D10)	Note
QB12.5B	22	35	65	M6	50	14	3	30	24.8	6	
	15.9		92	M10	70	20	2	47	18.3	5	*
QB25B	28	55	90	M8	70	16	3	35	31.3	8	
	19		92	M12	70	24		47	21.4	5	*
	22.2		115		89		2		24.6		
QB50B	42	70	125	M10	102	20	3	50	45.3	12	
	28.6		115	M12	89	24	2	60	32.1	8	*
QB100B	50	85	150	M12	125	24	3	57	53.8	14	
	31.7		140		108		2	60	35.2	8	*
QB200B	60	100	175	M16	140	30	4	65	64.4	18	
	33.34		197	M20	159	35	3	100	36.8	10	*
QB300B	60	100	175	M16	140	30	4	65	64.4	18	
	33.34		197	M20	159	35	3	100	36.8	10	*
QB400B	80	130	210	M20	165	35	5	80	85.4	22	
	50.65		276		216	35	3	100	55.1	16	*

注：打*为塘沽阀门厂连接尺寸。 Note: * is the dimensions of Tanggu Valves Factory

表 3 外形尺寸表 overall size Table 3

型号 type	L1	L2	L3	L4	L5	L6	L7	L8	D
QB12.5B	70	2	252	63	164	295	300	261	145
QB25B	82	14	264	63	164	295	310	261	145
QB50B	95	5	285	81	189	303	332	300	190
QB100B	100	10	290	81	189	303	352	300	190
QB200B	150	22	347	132	198	303	444	325	460
QB300B	150	22	347	132	198	303	444	325	460
QB400B	150	22	347	132	198	303	444	325	460

6. 电气原理及接线 Schematic diagram and Wiring diagram

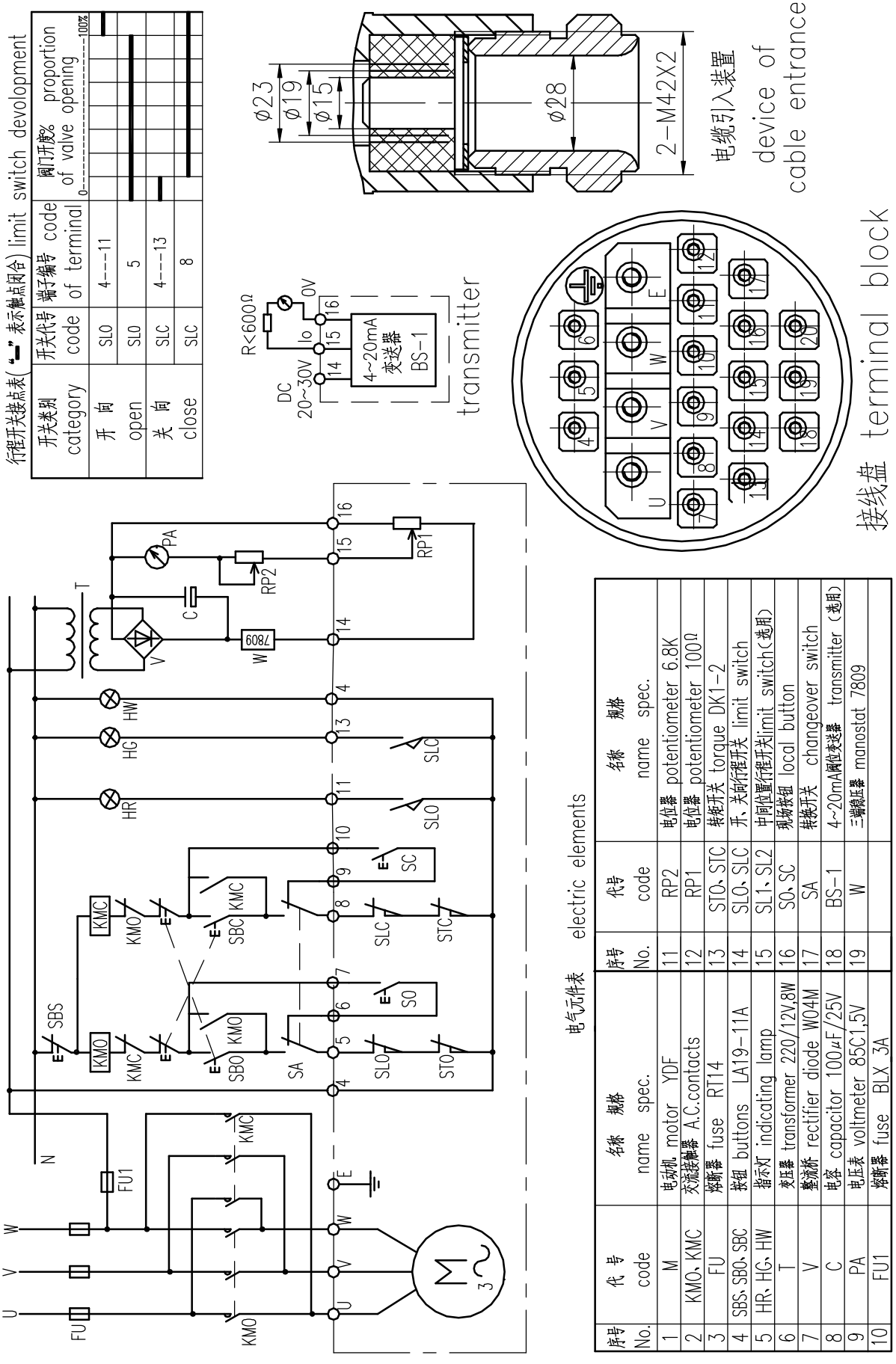


图 3 电气原理图 Fig.3 electric schematic drawing

说明：1. 电气原理仅供参考，点划线框内的元件在电动装置内部。

2. 虚线框内元件作特殊规格提供，若使用变送器，则电位器 RP1 不接，端子板号 14、15、16 改为变送器引出线号。通常变送器的直流 24V 工作电源由电动装置内部提供。

3. 图中的电缆引入装置有两个，引入装置中的橡胶套有三种孔径尺寸，应根据电缆的外径决定，一定要确保橡胶套和电缆之间的可靠密封。

Explain:

1. This drawing is for reference only. Elements in dot dash line frame are built in.
2. Elements in dash line frame are provided as special specifications, if transmitter is adopted, the original terminal code 14, 15, 16 should be changed over to leading-in wire of transmitter. Generally, 24V D.C. of transmitter is provided by actuator.
3. There are two devices for cable entrance and three sizes of diameter of rubber sleeve inside the device. Be sure to select proper rubber sleeve according to outer diameter of cable to ensure reliable sealing between rubber sleeve and cable.

7．调整　Adjustment

(一)行程控制机构调整　adjustment of travel mechanism

行程控制机构见图 4，机构设有“开”、“关”、“中 1”和“中 2”四个控制单元。开向微动开关即图中的 SLo,用于控制开向位置；关向即图中的 SLc,用于控制关向位置；中 1 和中 2 分别为 SLo1 和 SLc1,可以用于中间位置，也可用于开向或关向的极限位置。调整的目的是使阀门达到所需的位置时，凸轮能准确地触动微动开关，从而发出控制信号。调整步骤如下

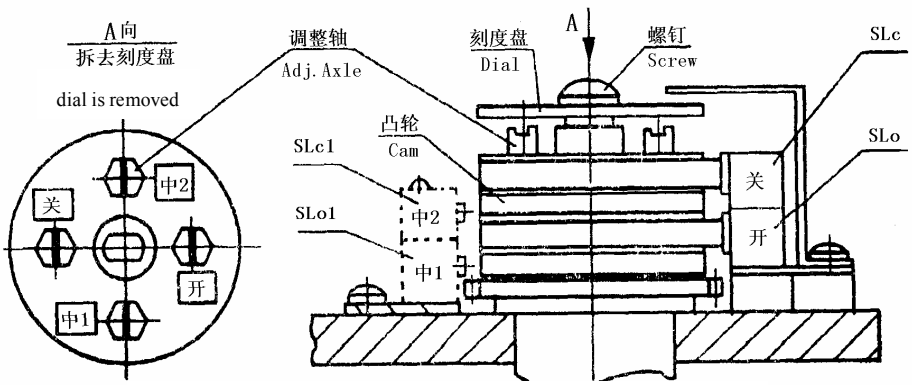


图 4　行程控制机构　Fig.4　travel mechanism

Travel mechanism is as shown in Fig.4. The mechanism is provided with four units of “opening”,“clothing”, “MED1”and “MED2”. Microswitch for opening, i.e. SLo in the figure, is used to control valve position during opening travel. Microswitch for closing, i.e. SLc in the figure, is used to control valve position during closing travel. MED1 and MED2 marked respectively SLo1 and SLc1, are used to control the medium position, limit position of opening or closing. Adjustment of travel mechanism is for the purpose of making cam of travel mechanism press microswitch precisely and transmit control signal when valve reaches the required position.　Adjusting procedure:

1. 转动手轮，使阀门达到全关位置。
2. 拆下螺钉及刻度盘，转动关向调整轴，使关向凸轮刚好触动 SLc（听到“卡达”声）。
3. 打开阀门至约 50%的开启位置，电动关闭阀门，检查阀门关闭时停止的位置是否符合要求，如不符合，按上述方法微量调整凸轮，直至符合为止。
4. 把阀门打开到全开位置，转动开向调整轴，使开向凸轮刚好触动 SLo（听到“卡达”声）。
5. 关闭阀门至约 50%的关闭位置，电动打开阀门，检查阀门是否开到位，如不符合要求，按上述方法微量调整凸轮，直至符合为止。
6. 中间位置的调整：中 1 和中 2 两个中间位置，用户可用于开向或关向的中间位置（也可是全开或全关位置），调整方法与上面相同。

以上调整完成后，装上刻度盘，通电重复检查 1~2 次。

1．Rotate handwheel to make valve seat.

2．Remove screw and dial, rotate setting axle for closing to make the cam of closing just touch SLc microswitch (while click is heard).

3．Open the valve to about 50% of travel. Then close the valve by electric operation to check if the valve stops at required position. If it does not meet the requirement, continue above micro adjusting of cam until it meets the requirement.

4．Open the valve to complete opening, rotate setting axle for opening to make the cam of opening just touch SLo microswitch. (while click is heard.)

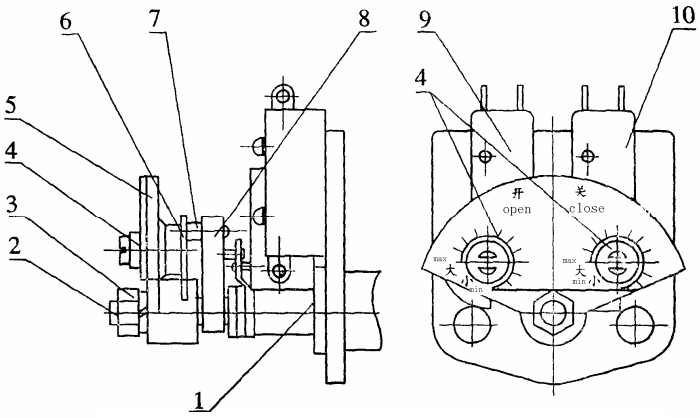
5．Close the valve to about 50% of travel, open the valve by electric operation to check if the valve stops at required position. If it does not meet the requirement, continue adjusting until it meets the requirement.

6. Adjustment of medium position: Users may use MED1 and MED2 for medium position in opening or closing direction.（or complete opening, complete closing） Adjusting procedure is the same of above adjusting in opening or closing direction.

After the adjusting is finished, mount the dial, then repeat electric operation to check for 1～2 times.

（二）转矩控制机构的调整 adjustment of torque mechanism

转矩控制机构见图 5，本装置在出厂前，启闭方向的转矩值均整定在额定控制点上，一般不需要再作调整，若现场需重新调整，方法如下：



1.动作片 Action strip
2 .齿 轴 Gear spindle
3.螺 母 Nut
4.调整钉 Adjustment crew
5.扇形板 Sector plate
6.凸轮 Cam
7.拨钉 Swing pin
8.拨动器 Swing strip
9.关向微动开关 Microswitch for closing
10.开向微动开关 Microswitch for opening

图 5 转矩控制机构 Fig5 torque mechanism

1. 关闭位置采用转矩控制方式时的调整

1.1 转动关阀转矩调整钉 4，使箭头指向“小”字处。

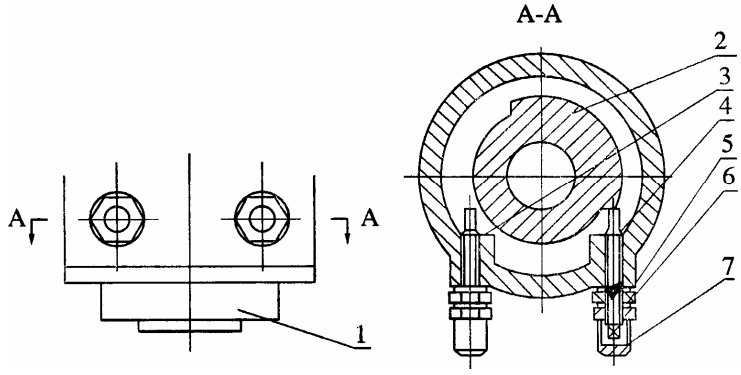
1.2 电动操作电装，作关方向转动，若阀杆尚未转动或阀门未关严关到位，而转矩控制器关向微动开关被压下动作，则说明输出转矩值偏小，可微调调整钉（向“大”方向转动一格），再电动操作，逐步增大输出转矩值，直到阀门关严为止。

2. 关闭位置采用机械限位时，转矩机构的调整，见图 6

2.1 手动操作电装，使阀门处于关闭位置（精确位置）。

2.2 调节关向调节螺钉 4，使螺钉刚好碰到蜗轮上凸台后，拧紧螺母 5 及盖形螺母 7。

2.3 转矩控制器调整方法参见上述第 1 条，逐步增大输出转矩值直到阀门能转到位为止。



1.连接法兰 Connecting flange
2.蜗 轮 Worm wheel
3.开向调节螺钉 Setting screw for opening
4.关向调节螺钉 Setting screw for closing
5.螺 母 Nut
6.密封垫 Sealing pad
7.盖形螺母 Gland nut

图 6 机械限位机构 Fig.6 mechanical stopping

2.4 补充说明：转矩控制器调试好后，若还需对阀门位置作少量调节，可以微调机械限位调节螺钉，这时转矩控制器可不再另作调整。

3. 开向位置采用转矩控制或机械限位时，调整方法参见上述第 1、2 条，不同的是应调整转矩控制器的开向调整钉及机械限位的开向调节螺钉。

Torque limit is shown in Fig.5. Torque limit of this device has been preset according to rated torque value before leaving factory and does not need resetting usually. If field resetting is required, it will be carried out as following:

1. Adjustment for closing stopped by torque limit.

1.1 Rotate adjusting screw 4 for closing torque and make the arrow point to “min”;

1.2 Then operate the valve closing by electric drive. If microswitch of torque limit is pressed to act and the valve stem does not rotate or the valve does not close to seat, it means that the torque value preset is too small. The setting screw may be adjusted (move a scale towards max) , operate the valve by electric drive once again. Increase the output torque value gradually in this way until the valve is seated.

2. Adjustment for closing by mechanical stopping (Fig. 6)

2.1 Operate the valve by handwheel until it is seated (precise position).

2.2 Adjust the setting screw 4 for closing and make it just touch the project part of output shaft. Then tighten nut 5 and gland nut 7.

2.3 Increase the output torque value gradually in the same way as described in 1 until the valve is seated.

2.4Addition: After the torque limit is set up, if the position of valve needs a little resetting, setting screw may be reset and torque limit does not need resetting.

3. Adjustment for opening stopped by torque limit or mechanical stopping is the same of 1 and 2 for closing. Instead of adjusting screw and setting screw for closing, adjusting screw for opening on torque limit and setting screw for opening need adjusting.

（三）开度机构的调整　Adjustment of position indicator

1. 开度刻度盘调整，见图 7。当行程控制机构调整完成后，把阀门关闭到“全关”位目视检查刻度盘上的“0 关”刻度是否与指针对正，如没有对正，松开刻度盘上的螺钉，转动刻度盘，使指针与“0 关”刻度对正，然后旋紧刻度盘上的螺钉。

Adjustment of dial, see Fig.7

After adjusting of travel mechanism is finished, operate valve to seat to check if the pointer aims at “0 CLOSE” on dial by vision. If it does not, loosen the screw on dial, rotate the dial to make pointer aim at “0 CLOSE” scale, then tighten the screw on dial.

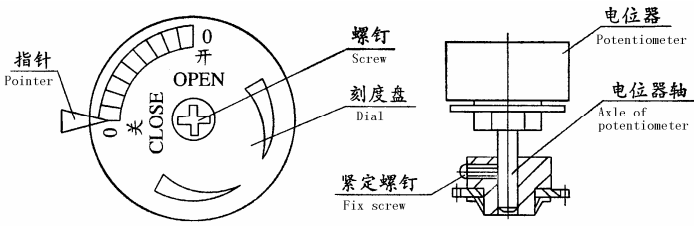


图 7 开度机构　Fig.7　position indicator

2．阀位变送器 BS-1 的调整，见图 8。阀位变送器的取样电位器选用高精度导电塑料电位器 WDD32，其独立线性度＜1%，寿命 10×10^6 次。 图中 4、20、14、15、16 为接线端子号，H 为指示灯，其亮度随输出电流的增大而变亮。调整方法如下：（以输出轴顺时针转动为关阀为例）使阀门处于全关位置，关方向旋转取样电位器轴,使输出电流从大到小接近 4mA（导电塑料电位器无限位）调节 T1，直至输出电流精确为 4mA； 打开阀门至全开位置，调节 T2，直至输出电流精确为 20mA。如果输出轴逆时针转动为关阀，则电位器的调节旋向应相反。

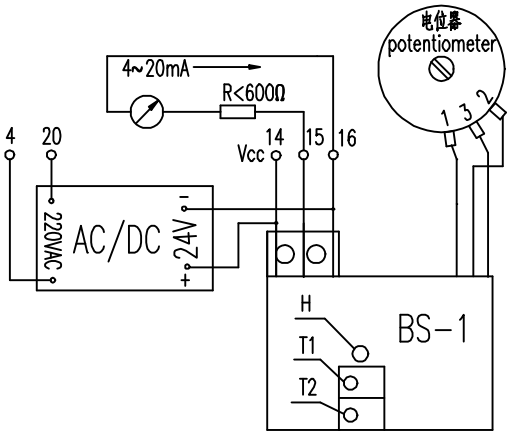


图 8 阀位变送器　Fig.8 transmitter

For the adjustment of position signal transmitter, refer to Fig.8 WDD32 sampling potentiometer of position transmitter is electric conductive plastic potentiometer of high precision.（independent linearity <1%, service life:10×10^6 cycles） 4, 20, 14, 15, 16 in the Fig. is the code of terminal. H is indicating lamp, which gets brighter as output current increases. The adjusting is as following:(Take seating of valve by clockwise rotation of output shaft as example) Make valve seated, turn the axle of sampling potentiometer to make output current vary to approach 4mA (Conductive plastic potentiometer has no rotation limit). Regulate T1 until output current is accurate 4mA. Unseat the valve to complete opening to regulate T2 until output current is accurate 20mA. If counterclockwise rotation of output shaft providing valve seating is required, the rotation of potentiometer regulation should be vice versa.

8．注意事项 Cautions

1. 安装前应将电动执行机构存放在清洁干燥的室内，若放在室外，应离地一定高度，并应有防雨措施。

Before installation, the electric actuator must be deposited indoor in a clean and dry environment. If it is deposited outdoor, it must be lifted off earth with a certain height and be shielded from rainwater.

2. 安装时应把电气箱盖和导线进出口密封好，以防潮气和雨水进入电气箱内，造成电气元件及零件锈蚀。不得在阴雨天气于户外打开电气箱盖、电机等密封部位，打开电气箱盖时，必须先切断电源。

In the process of mounting, electric compartment and conduit shall be well sealed to prevent moisture and rain from penetrating to avoid electric component failure and part rusting. Do not open the cover of electric box, the motor or other sealed parts outdoor in the overcast or rainy weather. Before the electric box is opened, the power supply must be turned off.

3. 手动操作前应先将手电动切换手柄按箭头方向推（或拉），若推不下去时，需边推边转动手轮，切换后即可手动操作，手轮旋向应与输出轴一致，通常面对手轮顺时针为关，逆时针为开。电动时手柄自动复位，切不可手动扳回。

Before manual operation, pull (or push) the lever of motor/manual clutch in the arrow direction. If it could not be pushed down, rotate the handwheel while pushing. After the lever is pushed to manual position, the actuator can be manually operated. The rotation of handwheel shall be the same of output shaft. Facing to handwheel, the clockwise rotation of handwheel is “close” generally, and the counterclockwise is “open”. While electric operating, the lever will turn back to original position automatically, do not turn it back by hand.

4. 箱体内采用专用半流体齿轮脂润滑（无锡炼油厂生产），每年至少检查润滑情况一次，如无异常，继续使用，否则应及时更换或补充。

The housing is filled with semi-fluid gear grease for special purpose.(produced by Wuxi Oil Refinery) Lubrication must be examined once a year at least, if there is not any abnormity, it can be put into operation all the same. Otherwise, it should be replaced or supplemented.

5. 首次电动操作时，先手动操作使阀门处于中间位置，然后电动检查输出轴的旋向与阀门开关是否一致，若相反应即停机切断电源，将电动机的三相电源任意两相对调。

For the first electric operation, turn the valve to medium position, then operate the valve electrically to check whether the output shaft and the valve rotate in the same direction, If the valve rotate in the opposite direction, Stop operating at once, Then cut off power supply and exchange any two phase of 3-phase power supply.

6. 拆卸重装时，应注意检查密封件，发现损伤应及时更换，密封部位必须盖严紧固。

When the actuator is disassembled and reassembled, pay attention to sealing parts. Failed parts should be replaced in time. Sealing parts must be muffled and tightened.

7. 使用电装内部的机械限位机构时，输出轴的标准回转角为 90°，调节机械限位的调节螺钉，可使输出轴的起始或终止点在±5°范围内变动。（当输出轴调整 1°时，$QB_{25}^{12.5}$ 调节螺钉旋 147°，QB_{100}^{50}为 210°，QB_{400}^{200}为 205°），注意，调节螺钉最多旋出 3.5 圈，以防蜗轮蜗杆脱开。

The internal mechanical limit allows a standard rotation of 90° for output shaft. Regulating the adjusting screw of mechanical limit makes starting point or stopping point of $QB_{25}^{12.5}$ output shaft changes between ±5°. (For 1° regulation of output shaft, adjusting screw of should rotate 147°,and such of QB_{100}^{50} should 210°, and such of QB_{400}^{200} should 205°.) Note that the adjusting screw can only be turned outwards 3.5 rev, at the most to prevent worm wheel and worm shaft from coming apart.

8. 表 1 中电机的电流值仅作参考，实际运行中要大得多。因为对阀门和阀门电机的工作特性来讲，是使用电机的过载能力。（最大转矩与额定转矩之比大于 5 倍）在阀门的开、关过程中均使用电机的固有特性（过载能力），电流偏大是属正常工作状态。

Current value in table 1 is for reference only. It may be much more in actual operation. Because the service characteristics of valve and motor make use of the capacity of overload of the motor(the ratio between max. torque and rated torque is more than 5 times), during the closing course or opening course, the inherent performance(capacity of overload) of motor is utilized and the current more over rated value is the normal condition.

9. 通常输出轴顺时针转动为关阀，逆时针为开阀（从上朝下看），若要求相反的话，图 5 中扇形板的“开”、“关”位置；图 6 中“开”、“关”调节螺钉；图 7 中刻度盘的“开”、“关”位置这些地方与本说明书不同，以实物为准，说明书不再更改。

In general, clockwise rotation of output shaft of actuator makes valve close, and counter-clockwise rotation of the shaft makes valve open(with view downward). If reverse rotation id needed, “open” and “close” positions of sector plate in Fig.5; adjust screws for “open”
and “close” in Fig.6; “open” and “close” positions of dial in Fig.7 will not be consistent with this manual. The indicating marks are shown on the specific product and this manual will not be modified further.

9. 故障及其排除方法　Troubleshooting

No	故　障　Troubles	原　因　Reasons	排除方法　Troubleshooting
1	电动机不能启动 Motor does not start	1．电源不通 Disconnected to power supply 2．操作回路不通 Control circuit is dead 3．行程或力矩控制器开关动作 Switches of limit or torque act.	1．接通电源 Check power supply 2．排除回路故障 Circuit troubleshooting 3．解除动作开关 Eliminate the action of switches.
2	输出轴旋向与 规定要求相反 Motor is overheated	电机电源相序不对 Phase of motor power is not in right phase sequence	三相线中任意对调二相 Exchange any two of three phase
3	电机过热 Motor is overheated	1．连续试车时间过长 Too long a time to continue operating 2．电装与阀门选配不当 Motor does not mate with the actuator 3．电机二相运转 One phase is off	1．停止试车，待电机冷却 Stop trial operating to make motor cool 2．复核配套情况 Check the mating state 3．检查供电回路 Check power circuit
4	运行中电机停转 Motor stops running during operation	1．负载过大，力矩控制器失灵 Actuators are over loaded and torque control works 2．阀门故障 Valve is in trouble	1．提高力矩控制器的设定值 Raise the preset value of torque 2．检查阀门 Check valve
5	阀门到位电机不停转，阀位指示灯不亮 Motor doesn't stop or lamp doesn't light when valve reaches preset position	1．行程或力矩控制器失灵 Limit or torque mechanism fails 2．行程控制器调整不当 Travel limit is not proper set	1．检查行程及力矩控制器 Check limit or torque mechanism 2．重新调整行程控制器 Reset travel limit
6	远方开度发信失控 Remote position signal is out of control	远方开度电位器故障 Remote position potentiometer fails	清洗或更新电位器 Clean or replace

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