



汉姆森阀门
HANMUSEN VALVE

HPTM多回转活塞气动马达

HPTM Rotary piston pneumatic motor



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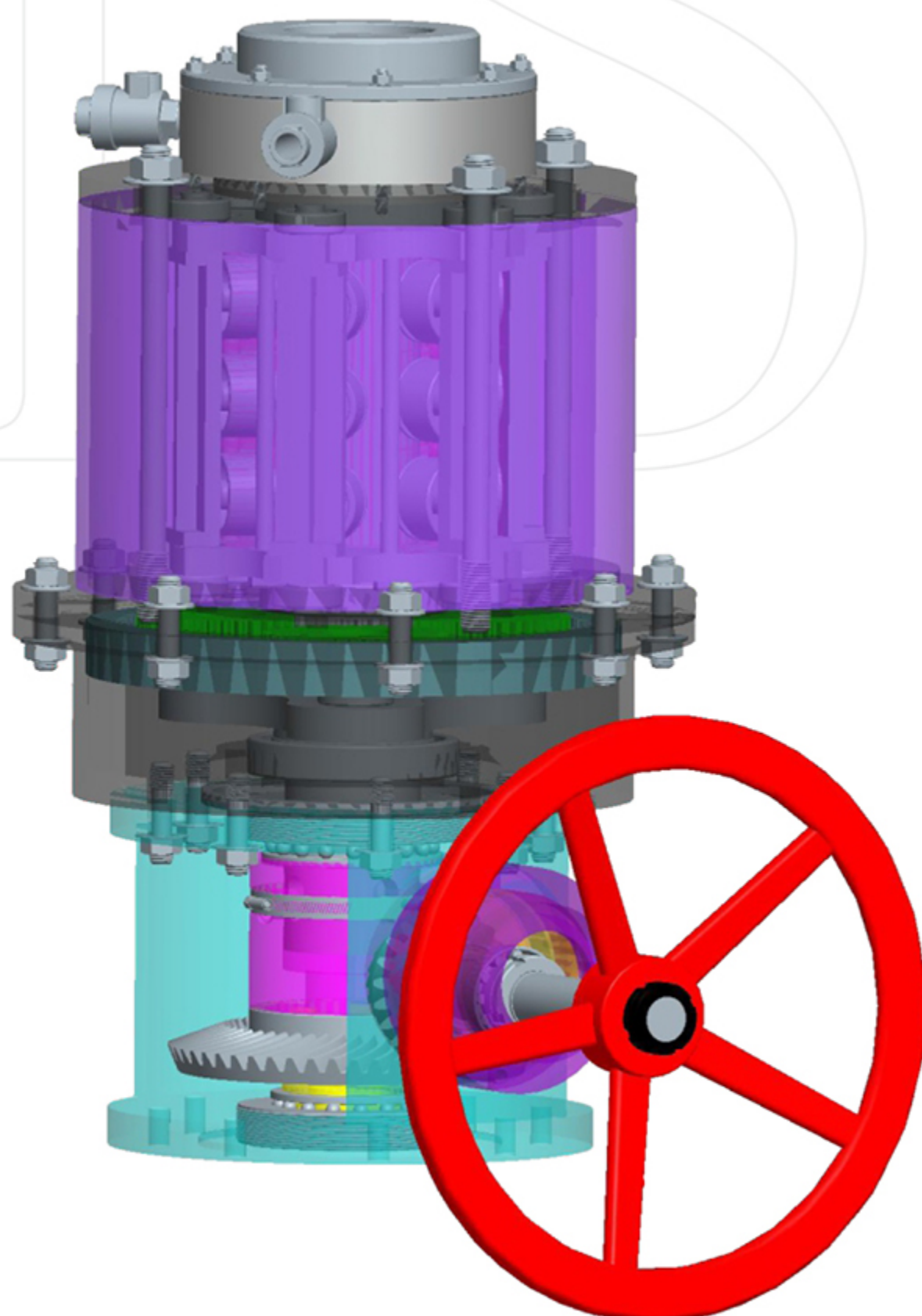
产品概述 Product overview

HPTM系列阀门气动执行器，它是以压缩空气为工作介质，利用压缩气体的膨胀作用，把压力能转换为机械能的多回转动力装置，其马达为横梁传力型，多作用内曲线径向活塞气动马达。它由叠层组合气座、活塞、横梁、滚轮、内曲线导轨、配气盘以及中空通轴组成。当气座中充入空气时，径向活塞所产生的推力，通过横梁及滚轮与内曲线导轨相互作用，产生扭矩输出，经行星齿轮减速机构减速产生强大的扭矩驱动闸阀、截止阀、直行程的阀杆螺母旋转，并使阀杆作升降直线运动，开启或关闭阀门功能的新型多回转驱动气动装置。用于操纵闸阀、截止阀、以及球阀、蝶阀(配置涡轮箱)等角行程阀门的开度调节，亦可用于将手动操作阀门改装成气动操作。它适用于防爆和有形体要求的场合，便于远距离遥控操作与减少劳动强度。同时可用于矿山机械、油田、化工、造纸、炼钢、船舶、航空、工程机械制造等设备传动使用。

HPTM series of valve pneumatic actuators, it is compressed air as the working medium, the use of compressed gas expansion, the pressure can be converted into mechanical energy multi-turn power unit, the motor for the beam transmission type, multi-role curved radial piston Pneumatic motor. It consists of laminated combination seat, piston, beam, roller, inner curve guide, with gas plate and hollow shaft. When the air is filled with air, the thrust generated by the radial piston, through the beam and the roller and the internal curve guide interaction, resulting in torque output, the planetary gear reduction mechanism to produce a strong torque drive gate valve. Of the stem nut rotation, and make the valve stem for vertical movement, open or close the valve function of the new multi-turn drive pneumatic device. For the control valve, globe valve, and ball valve, butterfly valve (configuration turbine box) equidistant valve opening adjustment, can also be used to manually operate the valve converted into pneumatic operation. It is suitable for explosion-proof and physical requirements of the occasion, easy remote control operation and reduce labor intensity. At the same time can be used for mining machinery, oil, chemical, paper, steel, shipbuilding, aviation, engineering machinery manufacturing equipment transmission use.

工作参数 Working parameters

使用温度 Operating temperature	-40~80℃
气源类型 Type of air supply	净化空气或氮气 Purify air or nitrogen
气源工作压力 Air working pressure	0.3~0.7Mpa
耗气流量 Air consumption	0.1~0.7M ³ /min
转速范围 range of rotation	30~180r/min
转矩范围 Torque range	250~6000N·m
适用阀门通径 Applicable valve diameter	DN50~DN3000mm
传感器和电磁阀工作电压 Sensor and solenoid valve operating voltage	DC24V~AC220V
气管接口 Tracheal interface	PT1/2~PT1"





产品主要特点 Product main features

1、与电动、液动执行机构相比，动力源来源广泛，炼油装置的 0.3~0.7 MPa 的压缩空气或氮气都可使用做为驱动力，适于在各种易燃易爆的工况环境中使用，是一种本质安全型产品。

2、与气缸式执行机构相比，只需很少的耗气量(0.1~0.7 m³ / min)便可输出很大扭矩 250~8000 N.m，且转速稳定，从而达到节省能量及减少噪声污染的目的。

3、将所有工作机构封闭于无缝钢管制成的外壳内，可较长时间承受高温和火焰。在火灾的初期阶段，这一特性非常有用，操作人员处于安全地带就可以及时切断阀门，控制事故。

4、起动扭矩大，力距平衡，低速运转平稳，并且行星减速机构，传动效率高。

5、在中断供气的情况下，无需额外锁定，仍能保持阀位不变，气动系统配置简单，操作方便，控制可靠。

6、装置模块化，它由马达做功，变速装置，手操连接三大部份组成且备有一套中部安装手轮机构，可简单使手动-气动进行切换，可立即采用手动操作，操作灵巧轻便。

7、可在 0~100%之间调节阀门的任意开度。

8、结构牢固，无过多的保护装置，从而减低了故障率，有很长的使用寿命。

9、同轴安装，结构紧凑、体积小，适于高压阀门，重质油的旧阀门，背压操作较大的阀门及大口径阀门，具有优越的性价比。

10、活塞式气动马达根据功率、扭矩的要求可配装减速机，为了提升扭矩，我公司配备减速机的气动减速马达型号，减速比从3:1至15:1，扭矩相应增大3~15倍。

11、该机构符合人体工程学，手气切换机构安装在侧方，便于操作，且操作简单，灵活。

12、全部下法兰与阀门连接接口符合GB/T 12222.GB/T12223标准要求，且可以按用户要求，进行驱动连接安装。

13、活塞机械运转，长时间连续使用，故障率低，使用寿命长，节能经济。

1、compared with the electric, hydraulic actuators, a wide range of sources of power, refinery 0.3 ~ 0.7 MPa of compressed air or nitrogen can be used as a driving force, suitable for a variety of flammable and explosive environment In use, is an intrinsically safe product.

2、compared with the cylinder-type actuator, only a small amount of air consumption (0.1 ~ 0.55 m³ / min) can output a large torque of 250 ~ 8000 N.m, and the speed is stable, so as to save energy And the purpose of reducing noise pollution.

3、all the working bodies enclosed in seamless steel pipe made of the shell, can be a long time to withstand high temperatures and flame. In the early stages of the fire, this feature is very useful, the operator in a safe area can be cut off the valve in time to control the accident.

4、starting torque, the distance between the balance, low-speed operation is smooth, and planetary deceleration agencies, transmission efficiency.

5、in the case of interruption of gas supply, no additional locking, can still keep the valve position unchanged, pneumatic system configuration is simple, easy to operate, reliable control.

6、the device modular, it is done by the motor, transmission, hand-operated connection of the three major components and equipped with a central installation of hand wheel mechanism, can be simple to manually - pneumatic switch, can be used immediately manual operation, The

7、can be adjusted between 0 ~ 100% of the valve opening.

8、solid structure, no excessive protection device, thereby reducing the failure rate, a long service life.

9、coaxial installation, compact structure, small size, suitable for high pressure valves, heavy oil, the old valve, back pressure operation of the larger valves and large diameter valves, with superior price.

10、the piston-type air motor according to the power, torque requirements can be equipped with reducer, in order to enhance the torque, our company is equipped with reducer pneumatic motor models, reduction ratio from 3: 1 to 15: 1, the corresponding increase in torque 3 ~ 15 times.

11、the body in line with ergonomic, hand gas switching mechanism installed in the side, easy to operate, and simple, flexible.

12、all under the flange and valve connection interface in line with GB / T 12222.GB/T12223 standard requirements, and can be user requirements, the drive connection installation.

13、the piston machine running, long continuous use, low failure rate, long life, energy saving economy.



工作原理 Working principle

气动马达是把压缩空气的压力能转换成旋转的机械能的装置。它的作用相当于电动机或液压马达，即输出转矩以驱动机构作旋转运动。

活塞式气动马达主要由：连杆、活塞、气缸、机体、进气阀、换向座等组成。压缩空气通过配气阀，依次向各气缸供气，从而膨胀做功，通过连杆推动曲轴旋转。其工作室由缸体和活塞构成。6个气缸围绕曲轴呈放射状分布，气缸进气小管进入气缸底部，推动球状活塞向外运动，通过连杆上下深沟球轴承，与余弦内曲线表面接触时，产生作用力；而余弦内曲线表面对球状活塞产生反作用力，该力的切向分力带动气缸旋转。当球状活塞抵达气缸最上部位时，则进气过程终止，此后球状活塞在余弦内曲线表面反作用力的径向分力作用下迫使球状活塞向中心运动，进行排气。改变进、排气方向，可实现气马达的正反转换向。

可用于操纵闸阀、截止阀、以及球阀、蝶阀(配置涡轮箱)等角行程阀门的开度调节，亦可用于将手动操作阀门改装成气动操作。它适用于防爆和有形体要求的场合，便于远距离遥控操作与减少劳动强度。

Pneumatic motor is a device that converts the pressure of compressed air into rotating mechanical energy. Its function is equivalent to the motor or hydraulic motor, that is, the output torque to drive the machine for rotary motion.

Piston type air motor mainly by: connecting rod, piston, cylinder, body, intake valve, change seat and so on. Compressed air through the valve, in turn to the cylinder gas supply, and thus expand the work done through the connecting rod to promote the crankshaft rotation. The studio consists of a cylinder and a piston. 6 cylinders around the crankshaft was radial distribution, the cylinder into the small tube into the bottom of the cylinder to promote the spherical piston outward movement, through the connecting rod up and down deep groove ball bearings, and the cosine curve surface contact, resulting in force; and cosine curved surface The ball piston to produce a reaction force, the force of the tangential force to drive the cylinder rotation. When the ball piston reaches the uppermost position of the cylinder, the intake process is terminated, after which the ball piston forces the spherical piston to move to the center under the radial component force of the reaction force on the surface of the cosine curve. Change the direction of intake and exhaust, can be achieved positive and negative gas motor to change.

Can be used to control the gate valve, globe valve, and ball valve, butterfly valve (configuration turbine box) equidistant valve opening adjustment, can also be used to manually operate the valve converted into pneumatic operation. It is suitable for explosion-proof and physical requirements of the occasion, easy remote control operation and reduce labor intensity.

气马达输出扭矩 Gas motor output torque

单位 Unit:N.M

型号规格 Model specifications	气源压力 Air pressure (Mpa)						
	0.25	0.3	0.4	0.5	0.6	0.7	0.8
HPTM-200-ST	116	232	465	698	931	1164	1397
HPTM-250-ST	248	496	992	1488	1984	2480	2976
HPTM-300-ST	437	874	1749	2624	3499	4374	5248
HPTM-350-ST	775	1551	3103	4655	6207	7759	9310
HPTM-400-ST	1020	2041	4082	6123	8164	10206	12247
HPTM-450-ST	1587	3175	6350	9525	12700	15876	19051



型号编制 Model establishment

HPTM-250-ST-H-B-M



M:手动(Manual)
A:自动(Automatic)
T:涡轮(Turbine)
B:锥齿轮(Bevel gear)
V:立式(Vertical)
H:卧式(Horizontal)
AT:角行程
AT:Angular travel
ST:直行程
ST:Straight travel
250:缸直径
250:Cylinder diameter
HPTM:公司型号
HPTM:Company model

安装改造 Installation and renovation

闸阀、截止阀属于多回转阀门，这类阀门是由旋转升降螺纹阀杆，所以选用内曲线气动马达阀门执行器时需明确阀门型号、公称通径、公称压力、过程介质及阀杆直径、阀杆连接螺纹和阀门支架上端尺寸等参数，根据这些参数可在我公司提供的数据表中进行选型。如把握不大可要求我公司派人来现场测绘以确定执行机构规格。

HPTM内曲线气动马达阀门执行器适于将各种规格普通手动闸阀、截止阀改造为气动阀，改造方法：原装置上手动闸阀不需拆卸，可就地地进行改装，阀体大盖、闸板、阀杆均不拆卸，仅将阀杆螺母拆除，并于支架上加装一连接法兰，即可执行器安装到支架上，配好气动系统管线，即完成改装工作。

HPTM内曲线气动马达阀门执行器也可用于球阀、蝶阀等角行程的阀门改造为气动阀，其改造方法：原装置上手动阀门不需拆卸，可就地地进行改装，阀体盖、旋转蝶板、旋转球、阀杆均不拆卸，仅将上面手操机构拆除，配以旋转为1/4蜗轮箱，在蜗轮箱上安装该马达，使蜗轮轴孔与阀门连接，安装在支架上，配好气动系统管线，即完成改装工作。

HPTM马达气管与控制箱内控制元件相连的气路选用 DN15 的镀锌水煤气管即可，也可采用螺纹连接，拐弯处采用弯头与快速排气阀的接口对上，不得使接头处的漏气，否则会影响气压的稳定供应，以至于影响马达的正常输出功率，也可加转换接头用 $\Phi 12$ 的退火过的金属管用快速接头直接连接。这种内曲线气动马达阀门执行器安装方便，如果现场不具备停工条件，可直接进行现场施工，且不用更换阀门的阀杆，非常适合于现场改造。

Gate valve, shut-off valve is a multi-turn valve, this type of valve is by the rotation of the screw stem, so the use of internal curve pneumatic motor valve actuators need to clear the valve model, nominal diameter, nominal pressure, process medium and stem diameter, Rod connection thread and the upper end of the valve bracket and other parameters, according to these parameters can be provided in my company to select the data table. If you can not ask me to send people to field mapping to determine the implementation of agency specifications.

HPTM internal air motor valve actuator suitable for a variety of general manual gate valve, globe valve into pneumatic valve, the transformation method: the original device on the manual gate valve without demolition, can be modified in situ, the valve body cover, gate, The stem is not removed, only the stem nut removed, and in the bracket to install a connecting flange, the actuator can be installed on the bracket, with a good pneumatic system pipeline, that is, to complete the conversion work.

HPTM internal air motor valve actuator can also be used for ball valve, butterfly valve isometric operation of the valve into a pneumatic valve, the transformation method: the original device on the manual valve without disassembly, can be modified in situ, body cover, The rotating ball and the stem are not dismantled, only the upper hand operation mechanism is removed, together with the rotation of the 1/4 worm gear box, the motor is installed on the worm gear box so that the worm shaft hole is connected with the valve and installed on the bracket. Good pneumatic system pipeline, that is, to complete the conversion work.

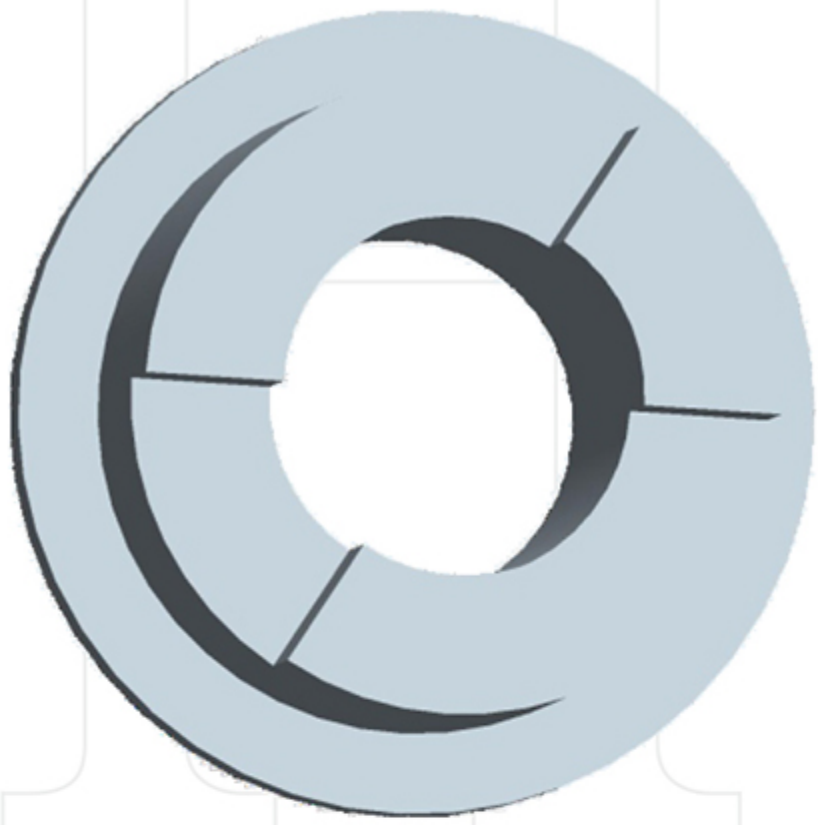
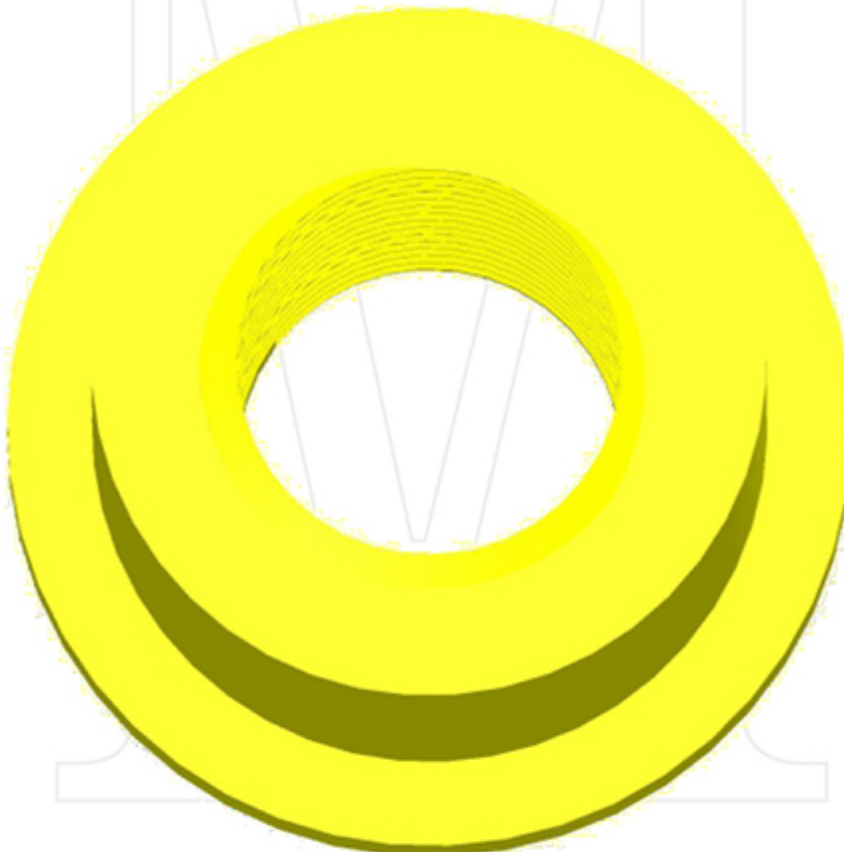
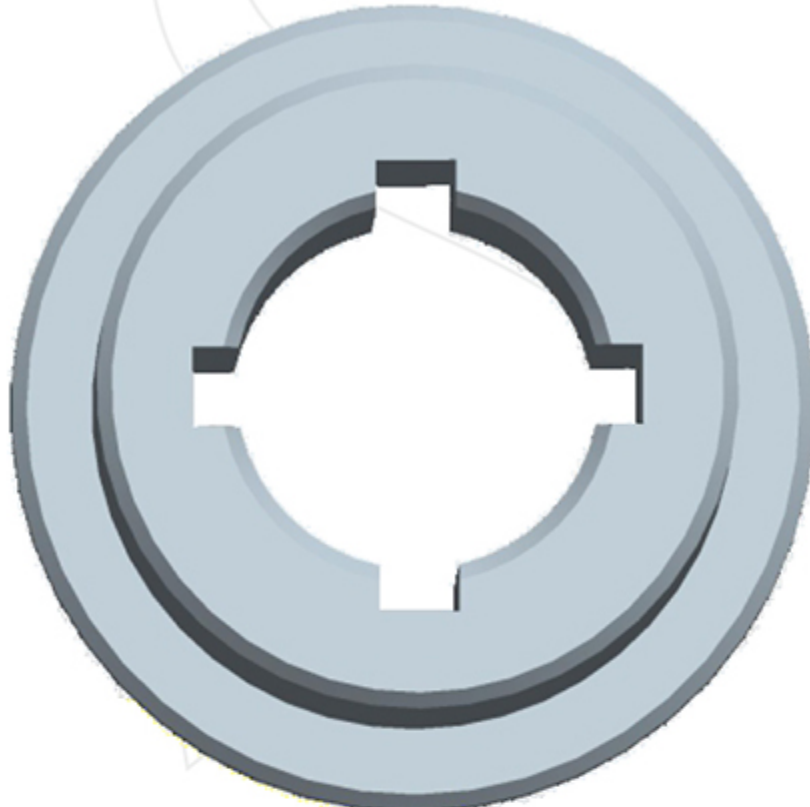
HPTM motor trachea and control box connected to the control element of the gas selection DN15 galvanized water pipe can be. Can also be threaded connection, the elbow with the elbow and the fast exhaust valve on the interface, not to make the joints of the leak, otherwise it will affect the stable supply of air pressure, so that the normal output power of the motor can also be converted Connector with $\Phi 12$ annealed metal pipe with quick connector to connect directly. This kind of internal curve pneumatic motor valve actuator easy to install, if the site does not have the shutdown conditions, can be directly on-site construction, and do not replace the valve stem, very suitable for on-site transformation.



工作参数 Working parameters

型号规格 Model specifications	额定功率 Rated power	额定转速 Rated speed	气源接口 Air interface	耗气量 Air consumption	适用阀杆 Applicable stem	重量 Weight
HPTM-200-ST	120W	120 rev/min	PT1/2"-8	66L	≤Tr28	94.5Kg
HPTM-250-ST	150W	80 rev/min	PT1/2"-8	75L	TR28~TR34	168.4Kg
HPTM-300-ST	200W	65 rev/min	PT1/2"-10	103L	TR35~TR45	242.6Kg
HPTM-350-ST	350W	50 rev/min	PT1"-12	149L	TR46~TR56	375.9Kg
HPTM-400-ST	450W	40 rev/min	PT1"-12	203L	TR57~TR65	556.5Kg
HPTM-450-ST	600W	35 rev/min	PT1"-16	265L	TR65~TR85	746.2Kg

驱动轴连接 Drive shaft connection

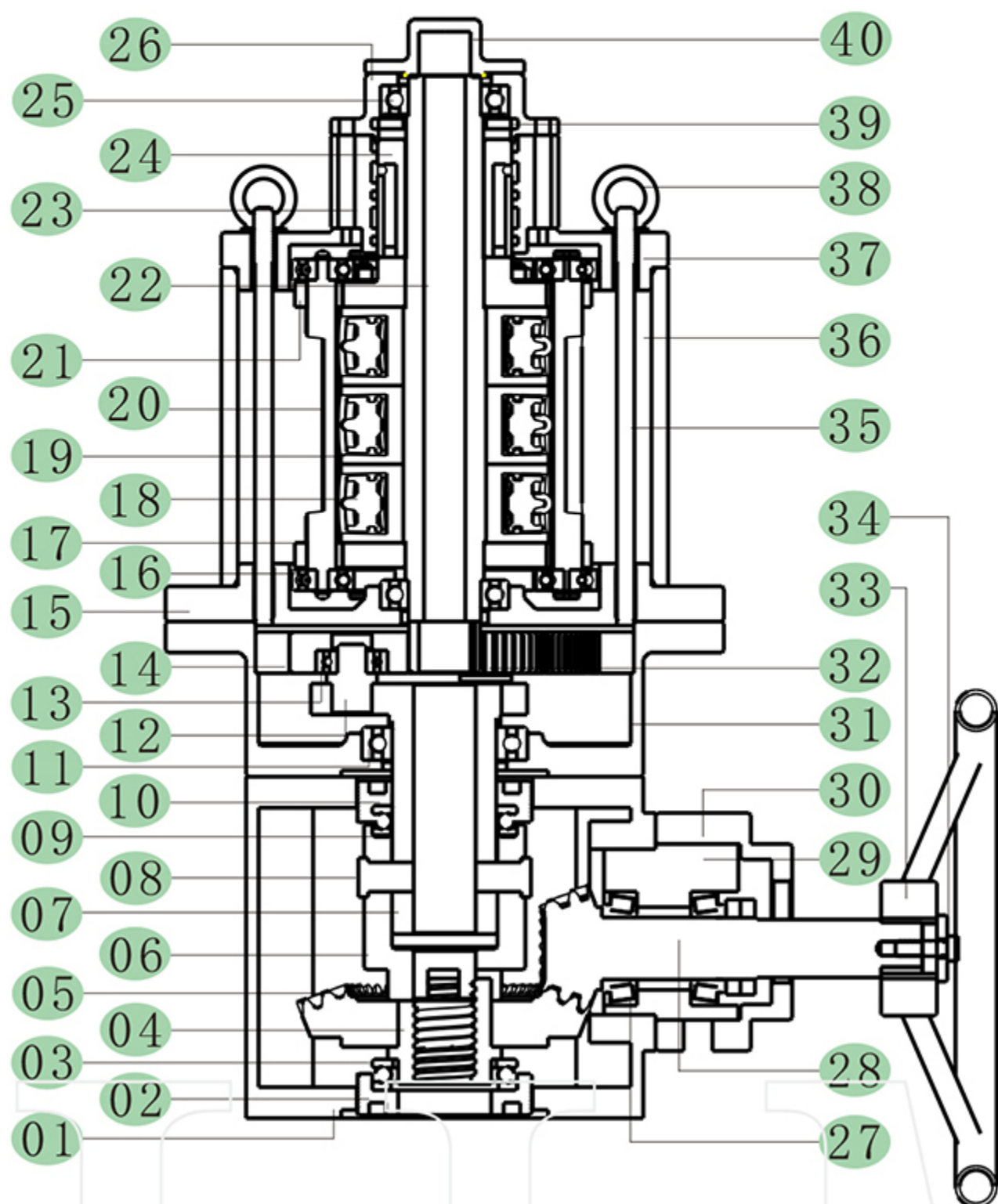
 大园轴孔连接 Large shaft hole connection	 立式螺纹连接 Vertical thread connection	 小园轴孔连接 Small garden shaft hole connection
承插槽符合ISO标准 The socket is conforming to the ISO standard	连接螺纹符合ISO标准 The connecting thread conforms to the ISO standard	销键孔符合ISO标准 The pin is in compliance with the ISO standard

注：阀杆连接尺寸可按用户要求定制。

Note: stem connection size can be customized according to user requirements.



气动马达零件明细 Part of air motor parts



序号 No	名称 Name	材料 Materials
01	手操支架 Manual support	Q235碳钢 Q235 carbon steel
02	下调节螺母 Lower adjustment nut	45#碳钢 45 # carbon steel
03	下推力球轴承 Under the thrust ball bearings	轴承钢 Bearing steel
04	阀门连接螺母 Valve connection nut	耐磨铜 Wearresistant copper
05	园弧锥齿轮 Garden arc bevel gears	45#碳钢 45 # carbon steel
06	连接轴 Connect the shaft	45#碳钢 45 # carbon steel
07	行星齿轮支架 Planetary gear bracket	Q235碳钢 Q235 carbon steel
08	连接销钉 Connecting pin	45#碳钢 45 # carbon steel
09	上推力球轴承 On the thrust ball bearings	轴承钢 Bearing steel
10	上调节螺母 Upper adjustment nuts	45#碳钢 45 # carbon steel
11	深沟球轴承 Deep groove ball bearings	轴承钢 Bearing steel
12	行星齿轮轴 Planetary gear shaft	45#碳钢 45 # carbon steel
13	行星齿轮轴承 Planetary gear bearings	轴承钢 Bearing steel
14	内齿轮圈 Internal gear	Q235碳钢 Q235 carbon steel

序号 No	名称 Name	材料 Materials
15	气马达下盖 Air motor under cover	Q235碳钢 Q235 carbon steel
16	内轨运行轴承 Inner track running bearing	轴承钢 Bearing steel
17	下支承座 Under the bearing seat	Q235碳钢 Q235 carbon steel
18	活塞 piston	球墨铸铁 Ductile iron
19	活塞座 Piston seat	6063铝棒 6063 aluminum rods
20	连杆 Linkage	45#碳钢 45 # carbon steel
21	上支承座 On the bearing seat	Q235碳钢 Q235 carbon steel
22	马达旋转轴 Motor rotation axis	45#碳钢 45 # carbon steel
23	进气座 Air intake	6063铝棒 6063 aluminum rods
24	换向座 Change seat	耐磨铜 Wearresistant copper
25	上旋转轴轴承 Upper rotary shaft bearing	45#碳钢 45 # carbon steel
26	轴承座 Bearing seat	45#碳钢 45 # carbon steel
27	轴园锥滚子轴承 Shaft tapered roller bearings	轴承钢 Bearing steel
28	手动锥齿轮轴 Manual bevel gear shaft	45#碳钢 45 # carbon steel
29	手气切换轮 Fighting wheel	45#碳钢 45 # carbon steel
30	手气换向定位盒 Handle for the positioning box	45#碳钢 45 # carbon steel
31	变速箱 Gearbox	Q235碳钢 Q235 carbon steel
32	行星齿轮 Planetary gear	45#碳钢 45 # carbon steel
33	手轮 Hand wheel	Q235碳钢 Q235 carbon steel
34	手轮紧固螺丝 Handwheel fastening screws	45#碳钢 45 # carbon steel
35	马达连接螺丝 Motor connection screw	45#碳钢 45 # carbon steel
36	气缸 cylinder	Q235碳钢 Q235 carbon steel
37	气马达上盖 Gas motor cover	Q235碳钢 Q235 carbon steel
38	吊环 Rings	45#碳钢 45 # carbon steel
39	弹簧隔板 Spring baffle	45#碳钢 45 # carbon steel
40	上封盖 Upper cover	Q235碳钢 Q235 carbon steel



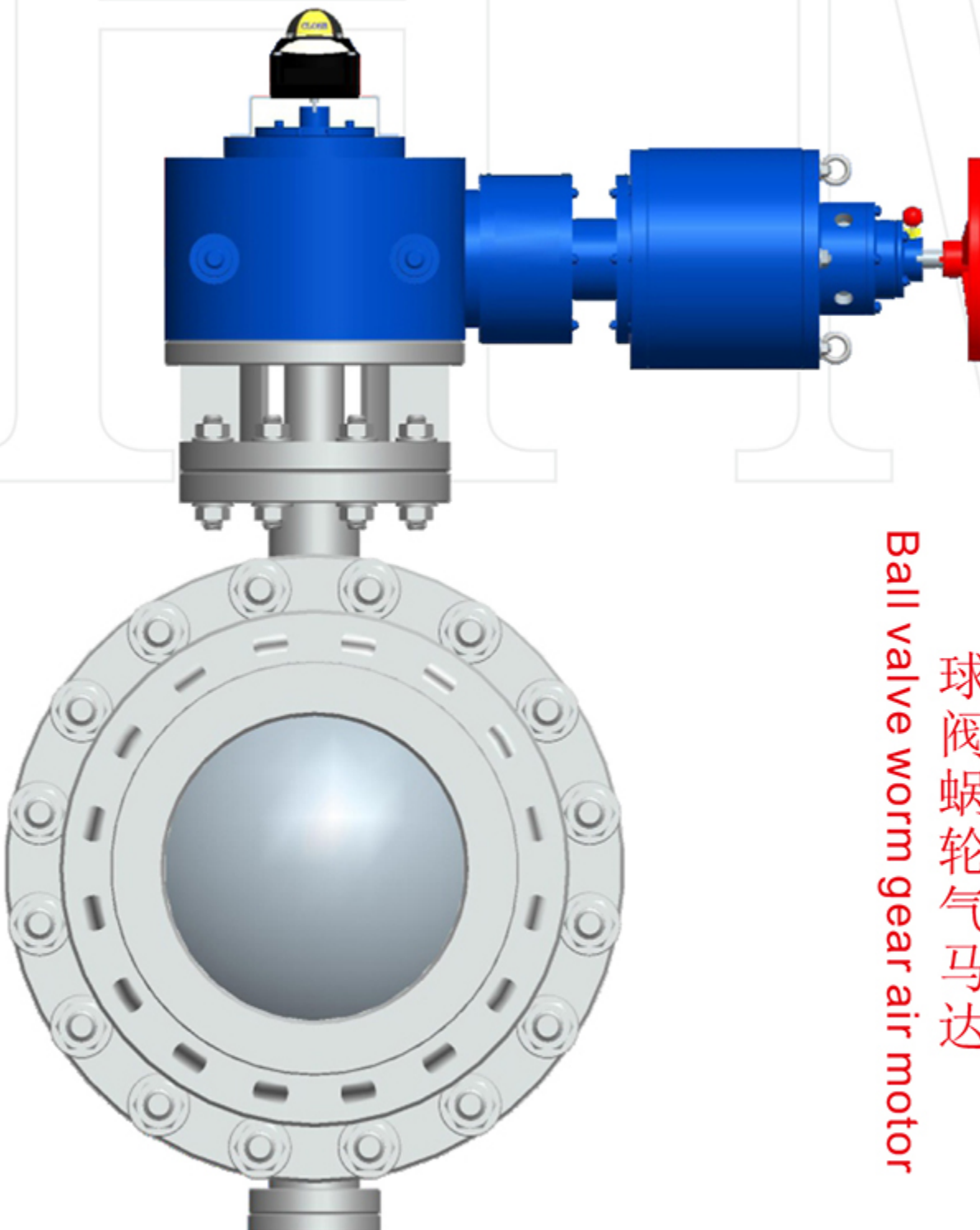
阀门气马达安装图 Valve gas motor installation diagram



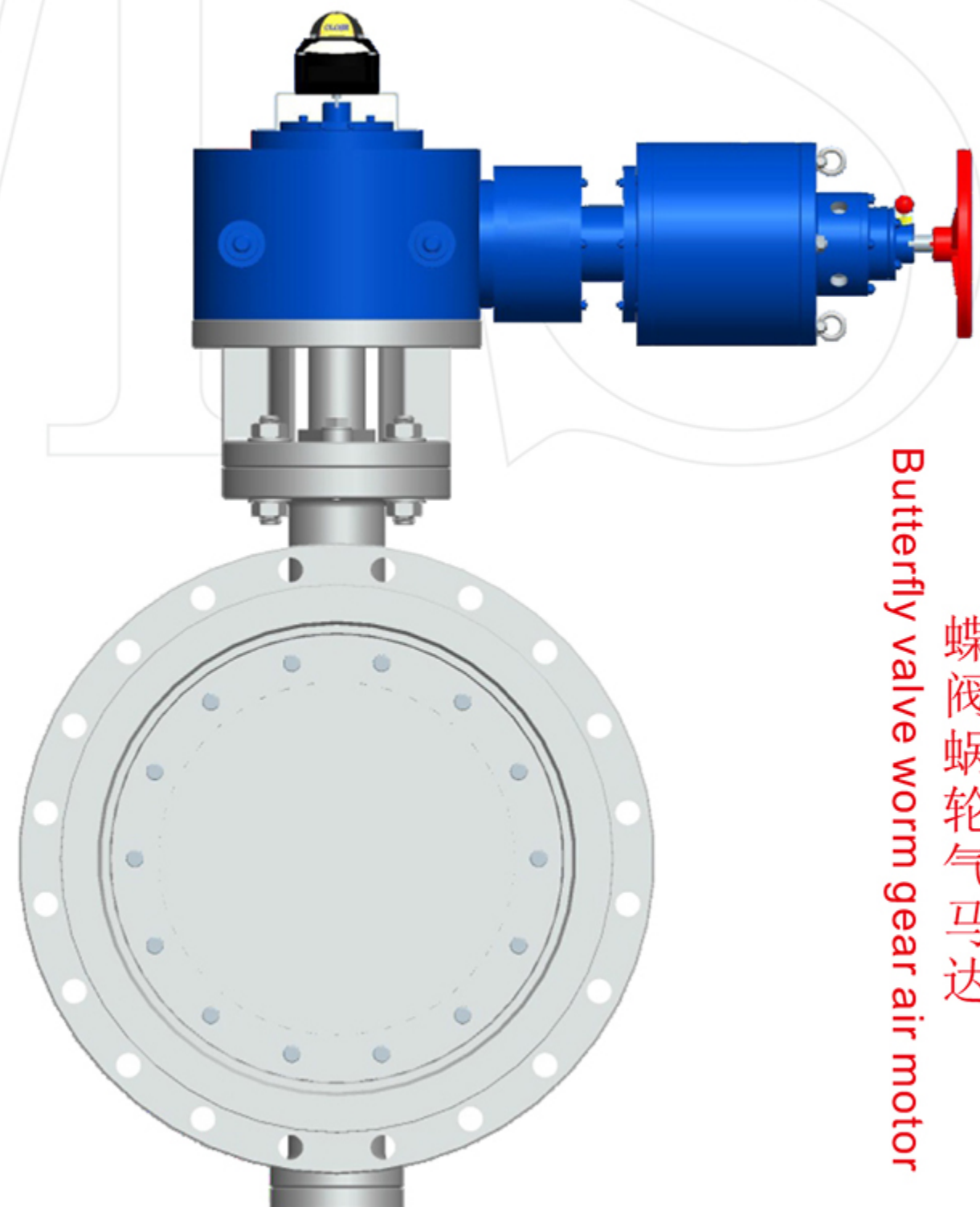
闸阀立式气马达
Gate valve vertical air motor



闸阀卧式气马达
Gate valve Horizontal air motor



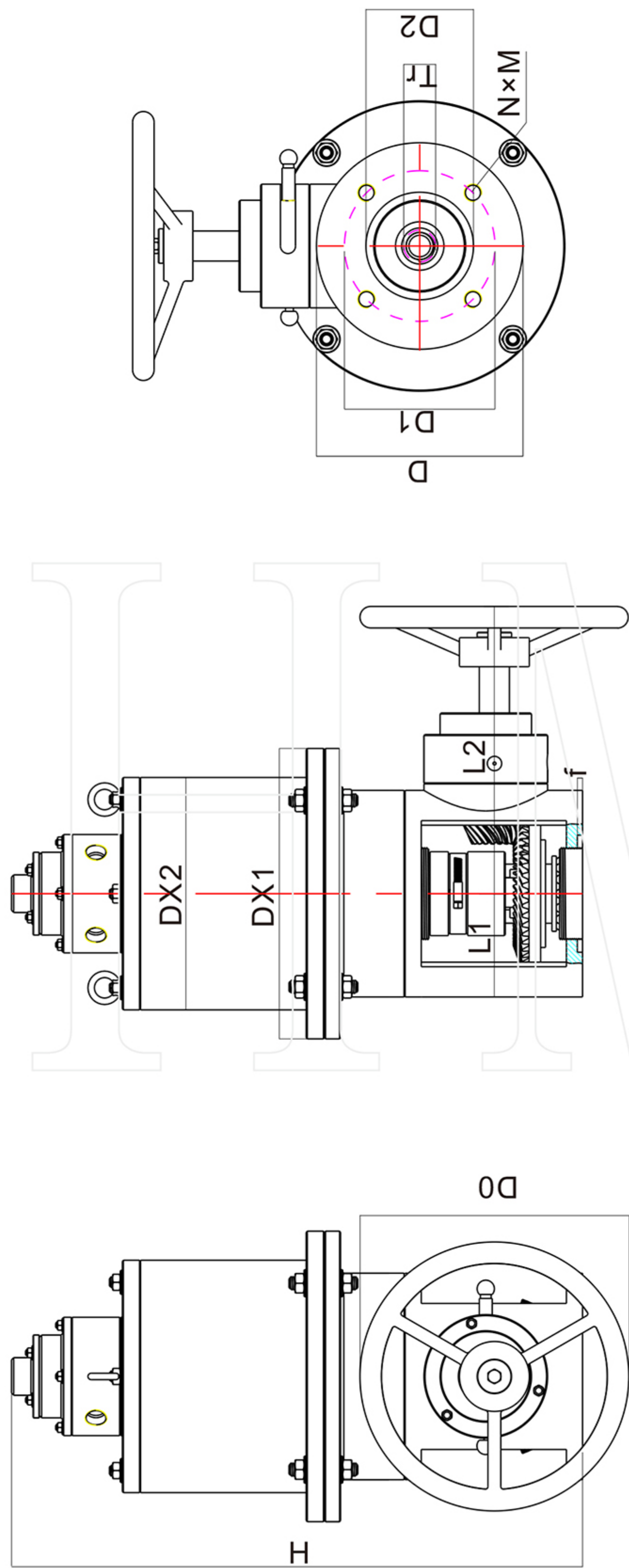
球阀蜗轮气马达
Ball valve worm gear air motor



蝶阀蜗轮气马达
Butterfly valve worm gear air motor



外形连接尺寸 Outline connection size



型号规格 Model specifications	H	DX1	DX2	L1	L2	D0	D	D1	D2	f	N×M	适用阀杆-TR Applicable stem	气源接口 Air interface
HPTM-200-ST	531	280	218	92	265	240	210	165	130	5	4×M20	<=Tr28	PT1/2"-8
HPTM-250-ST	614	350	272	135	350	320	250	200	150	5	4×M20	TR28~TR34	PT1/2"-8
HPTM-300-ST	695	400	324	150	405	400	300	254	200	5	8×M16	TR35~TR45	PT1/2"-10
HPTM-350-ST	755	450	375	172	450	500	350	298	230	5	8×M20	TR46~TR56	PT1"-12
HPTM-400-ST	810	500	425	205	480	640	415	356	260	5	8×M30	TR57~TR65	PT1"-12
HPTM-450-ST	900	550	480	240	500	700	475	406	300	5	8×M36	TR65~TR85	PT1"-16

注：连接尺寸可按用户要求定制。Note: connection size can be customized according to the 。



安装拆卸及注意事项 Installation disassembly and precautions

1. 气马达是一种比较精密的动力机械，在安装时严禁敲打，拆卸。
2. 在接气管前，应先将有压气体打开，利用气体的压力清除管内的灰尘及杂物，确保气管的洁净。气管的内径必须大于或等于气马达的进气口的直径，以保证马达正常运行，必须及时地向油雾器中添加润滑油（20#机械油），以保证气马达的润滑。
3. 要保证气马达输出轴与驱动物（主机）的输入轴的同轴度。主机的设计人员应根据气马达的特性制订安全操作规程，以保证整个机器的安全运行。在方便的位置安装紧急停车装置，以防万一。
4. 在供气管路和气动元件的接口处，不允许有漏气现象，以保证气马达的供气质量。气马达的排气口可安装与其匹配的消音器，但不能完全堵死，否则影响气马达的运转。
5. 双向旋转的气马达，其中一个进气口进气时，另一进气口即成为排气口，绝不能堵死，否则气马达不能正常运转。
6. 使用的压缩空气必须经过过滤，保持清洁、干燥。应经常保持油雾器内有润滑油（L-AN22），并在使用时观察滴油速度是否正常，约5~10 滴/min。
7. 当马达运行一年后，应拆开清洗一次，并更换已损零件。检修时，打开执行器下部减速机构，添加润滑脂，轴端轴承加润滑脂，应定时对气马达进行维护清洗，更换易损件。以保证气马达运转正常。
8. 执行器上部的内曲线马达检修，更换密封件，应由专业人员进行。
9. 长时间没有使用或者初次使用的气马达，可从进气口灌入少许的润滑油（20号机械油）用手转用输出轴，再接通压缩空气，以点动的方式（30秒）使其自动对马达内部进行清洗。加油一点动气马达可重复进行，感觉气马达运转正常后再装机。应在有润滑的条件下以0.1~0.2Mpa的气压进行30秒钟的空转。

10. 安装维修、保养时一定要关闭气阀，切断气源，方可进行工作！！！！

1. Gas motor is a relatively sophisticated power machinery, in the installation of prohibited beating, demolition.
2. Before the air pipe, you should first open the gas pressure, the use of gas pressure to remove dust and debris within the tube to ensure that the trachea clean. The inner diameter of the trachea must be greater than or equal to the diameter of the air intake of the air motor to ensure proper operation of the motor. Lubricant (20 # mechanical oil) must be added to the oil mist in time to ensure the lubrication of the air motor.
3. Ensure that the motor motor output shaft and the drive (host) of the input shaft coaxial. The design of the host should be based on the characteristics of gas motor safety procedures to ensure the safe operation of the entire machine. Install emergency stop in a convenient location just in case.
4. In the air supply pipeline and pneumatic components of the interface, not allowed to leak phenomenon, to ensure the gas supply air quality. The air motor's exhaust port can be fitted with a muffler that matches it, but it can not be completely blocked, otherwise it affects the operation of the gas motor.
5. Two-way rotation of the gas motor, one of the intake air intake, the other air inlet is the exhaust port, must not be blocked, otherwise the gas motor can not function properly.
6. The compressed air used must be filtered, kept clean and dry. Should always keep the oil mist inside the lubricating oil (L-AN22), and in use to observe the drip rate is normal, about 5 to 10 drops / min.
7. When the motor is operated for one year, clean it once and replace the damaged parts. Maintenance, open the lower part of the actuator slowdown, add grease, shaft bearings plus grease, should be regularly on the gas motor maintenance cleaning, replacement of wearing parts. To ensure that the gas motor is operating normally.
8. The internal curve of the actuator inside the motor overhaul, replace the seal, should be carried out by professionals.
9. For a long time without the use or initial use of the gas motor, can be poured from the intake of a little oil (20 mechanical oil) by hand to switch the output shaft, and then connected to the compressed air, the way to move (30 Sec) to automatically clean the inside of the motor. Refueling - qi air motor can be repeated, feel the air motor is running and then installed. Should be carried out under the conditions of lubrication to 0.1 ~ 0.2Mpa air pressure for 30 seconds of idle.
10. Installation and maintenance, maintenance must be closed valve, cut off the gas source before they can work!!!!



故障排除 Troubleshooting

故障现象 Fault phenomenon	检查项目 Check item	解决方法 Solution
输出转速不足 功率不足 Output speed is insufficient power is insufficient	1. 配气阀装反. 2. 气缸、活塞环磨损. 3. 气压低. 4. 进气管路及附件通过过小, 严重截流或堵塞. 5. 排气不畅. 1.With the valve installed anti. 2.Cylinder, piston ring wear. 3.Low air pressure. 4.Intake pipe and accessories diameter is too small, serious closure or blockage. 5.Poor exhaust.	1. 重装. 2. 更换零件. 3. 调整压力. 4. 检查管路及其附件, 保证通路满足表三的要求. 5. 检查主、副排气管路保证排气管路通路大小进气管路通路. 1.Reinstalled. 2.Replace the parts. 3.Adjust the pressure. 4.Check the piping and its accessories to ensure that the path meets the requirements of Table 3. 5.Check the main and auxiliary exhaust pipe to ensure that the diameter of the exhaust pipe diameter intake pipe diameter.
耗气量增大 Increased air consumption	1. 气缸、活塞环、阀套磨损. 2. 管路系统漏气. 1.Cylinder, piston ring, valve sleeve wear. 2.Piping system leaks.	1. 更换零件. 2. 检修气路. 1. Replace the parts. 2. Check the airway.
运行中突然减速或不转 Suddenly slowing or running without running	1. 润滑不良. 2. 配气阀卡死, 烧伤. 3. 曲轴、连杆、轴承损坏. 4. 气缸螺钉松动. 5. 配气阀堵塞脱焊. 1.Poor lubrication. 2.Valve valve stuck, burned. 3.Crankshaft, connecting rod, bearing damage. 4.Cylinder screw loose. 5.With the valve plugging desoldering.	1. 加油. 2. 换件. 3. 换件. 4. 拧紧. 5. 重焊. 1.Refueling. 2.Change parts. 3.Change parts. 4.tighten. 5.Re-welding.

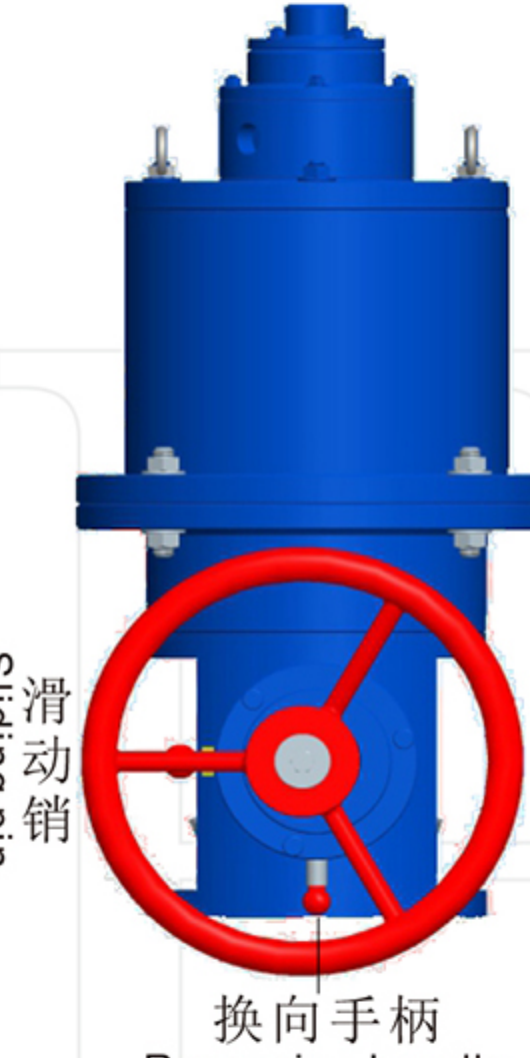
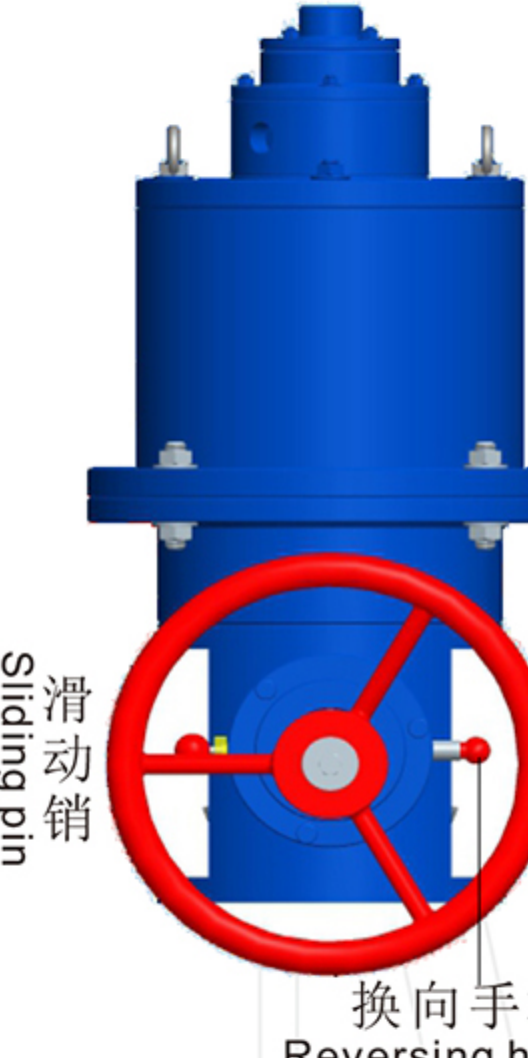
订货须知 Ordering instructions

1. 请按型号表示方法写明型号, 如特殊要求, 订货时必须说明, 如不说明则按本公司规定提供。
2. 请写明连接尺寸标准, 阀杆螺纹直径及伸出长度, 若连接尺寸与本公司说明书不符, 可与本公司协商解决。
3. 手轮顺时针旋转为关闭阀门, 如与此相反必须说明。
4. 阀杆螺母螺纹一般由本公司加工, 请务必提供螺纹的尺寸。
5. 本公司还可按用户要求, 提供其它的气动执行器。
6. 本公司保留对产品外形和尺寸的修改权。

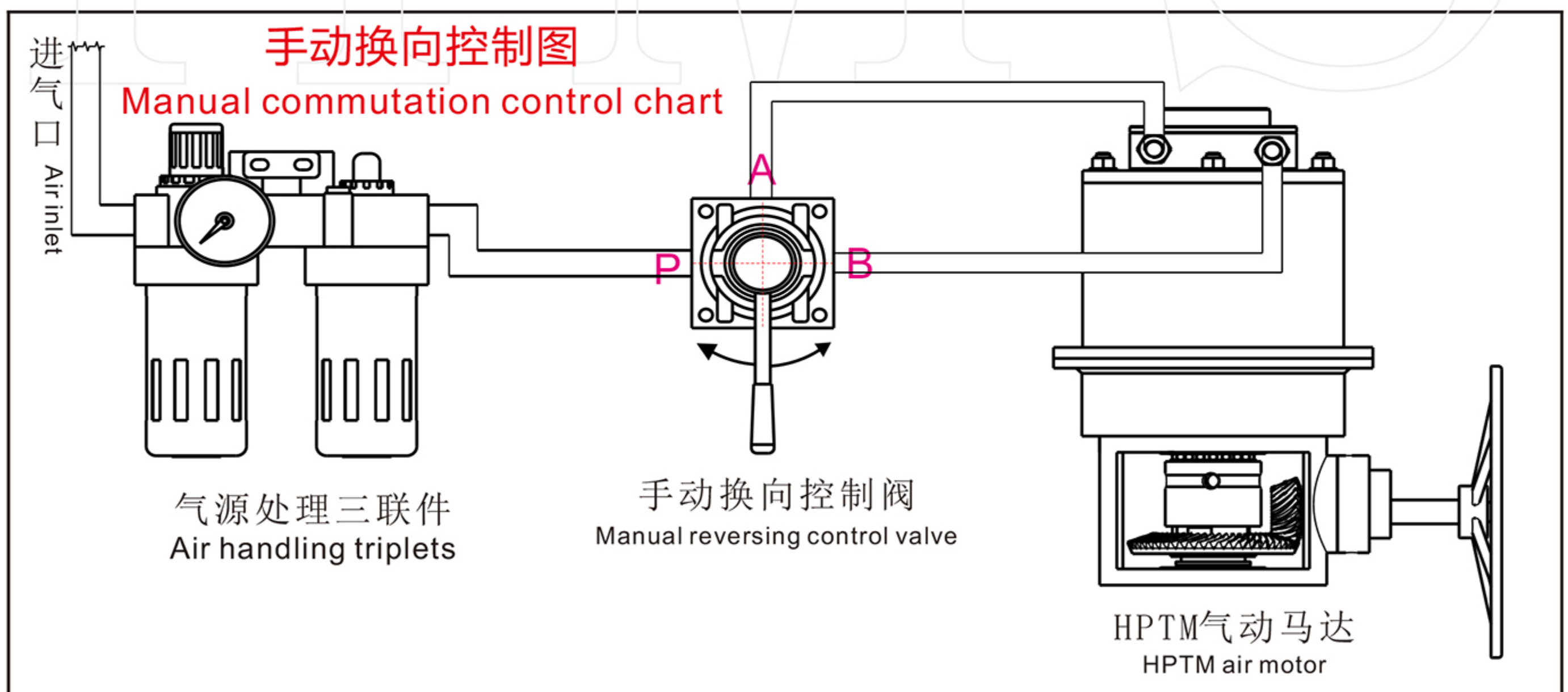
1. Please press the model number to indicate the model, such as special requirements, must be said when ordering If stated otherwise, provided by the Company.
2. Please specify the connection size standard, stem thread diameter and extension length, if connected Size and the company does not match the instructions, can be resolved in consultation with the Company.
3. Handwheel turns clockwise to close the valve, as opposed to this.
4. Stem nut thread is generally processed by the company, be sure to provide the size of the thread.
5. The company also according to user requirements, to provide other pneumatic actuators.
6. The company reserves the right to modify the product shape and size.



手动气动切换 Manual pneumatic switching

上装手气切换 Faced with hands	
手动操作 Manual operation	气动操作 Pneumatic operation
 滑动销 Sliding pin 气动操作 Pneumatic operation	 滑动销 Sliding pin 手动操作 Manual operation
1. 拨出滑动销。 2. 向上提取手轮，手轮轴头下六方和气马达上六方相啮合。 3. 滑动销落入手轮上定位槽，进行手动操作。 1. Dial the slide pin. 2. Pull up the hand wheel, hand wheel shaft under the six square and the gas motor on the hexagonal meshing. 3. Slide the pin on the handwheel to locate the slot and perform manual operation.	1. 拨出滑动销。 2. 手轮由于重力作用，自动落下。 3. 手轮落入上封盖定位槽中，进行气动操作。 1. Dial the slide pin. 2. Handwheel due to gravity, automatically fall. 3. Handwheel falls into the upper cover slot and is pneumatically operated.
侧装手气切换 Side mounted hand gas switch	
手动操作 Manual operation	气动操作 Pneumatic operation
 滑动销 Sliding pin 气动操作 Pneumatic operation 换向手柄 Reversing handle	 滑动销 Sliding pin 手动操作 Manual operation 换向手柄 Reversing handle
1. 拨出滑动销。 2. 向上旋转换向手柄，使小锥园弧齿轮与大锥园弧齿轮相啮合。 3. 滑动销落入换向凸轮上定位槽，进行手动操作。 1. Dial the slide pin. 2. Rotate the handle upwards to engage the small conical arc gear with the large conical arc gear. 3. Slide the pin into the commutation slot on the commutation cam for manual operation.	1. 拨出滑动销。 2. 向下旋转换向手柄，使小锥园弧齿轮与大锥园弧齿轮分离。 3. 滑动销落入换向凸轮上定位槽，进行气动操作。 1. Dial the slide pin. 2. Rotate the handle downwards to separate the small conical arc gear from the large conical arc gear. 3. Slide the pin into the commutation slot on the cam for pneumatic operation.

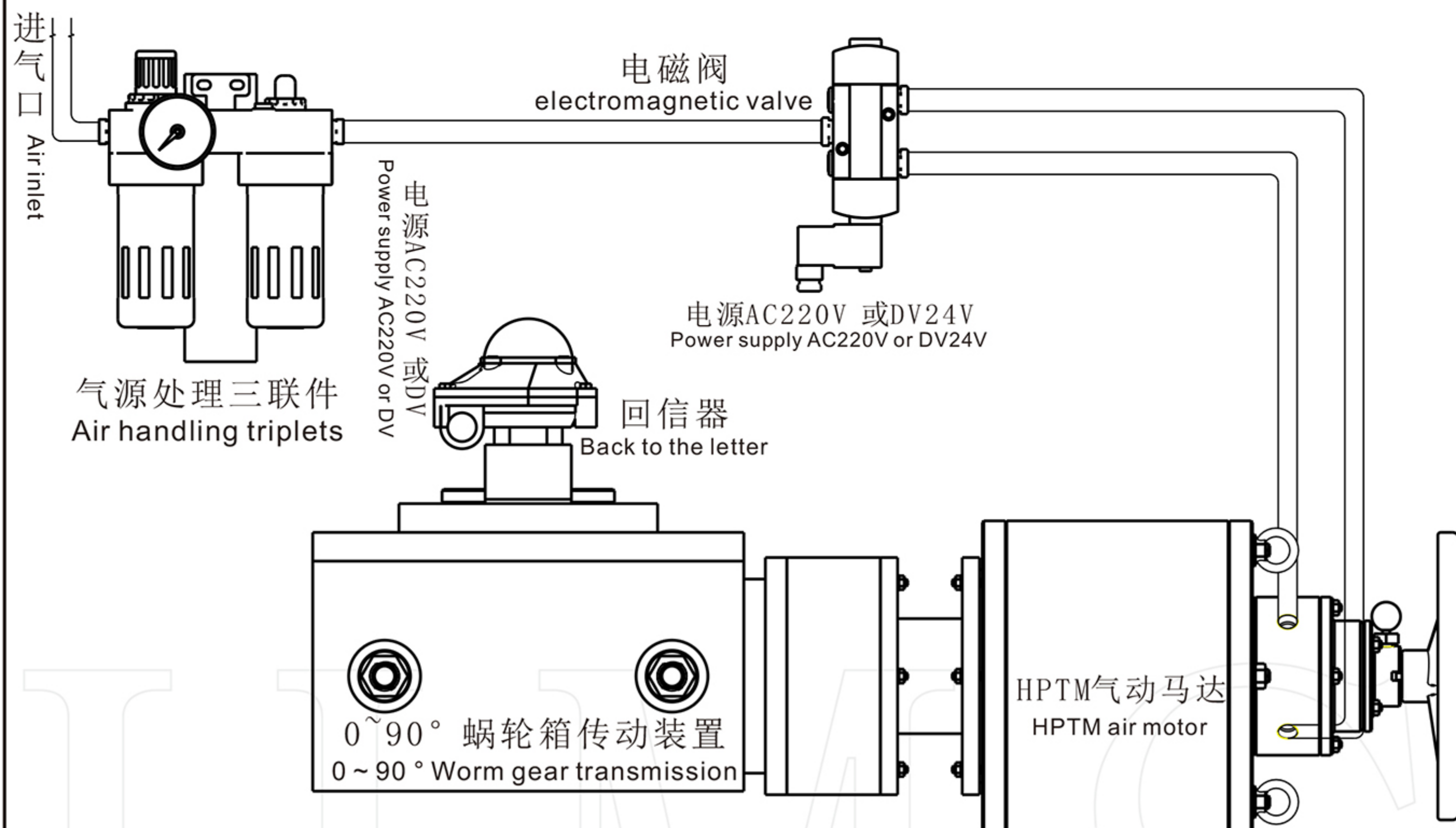
控制系统接线图 Control system wiring diagram



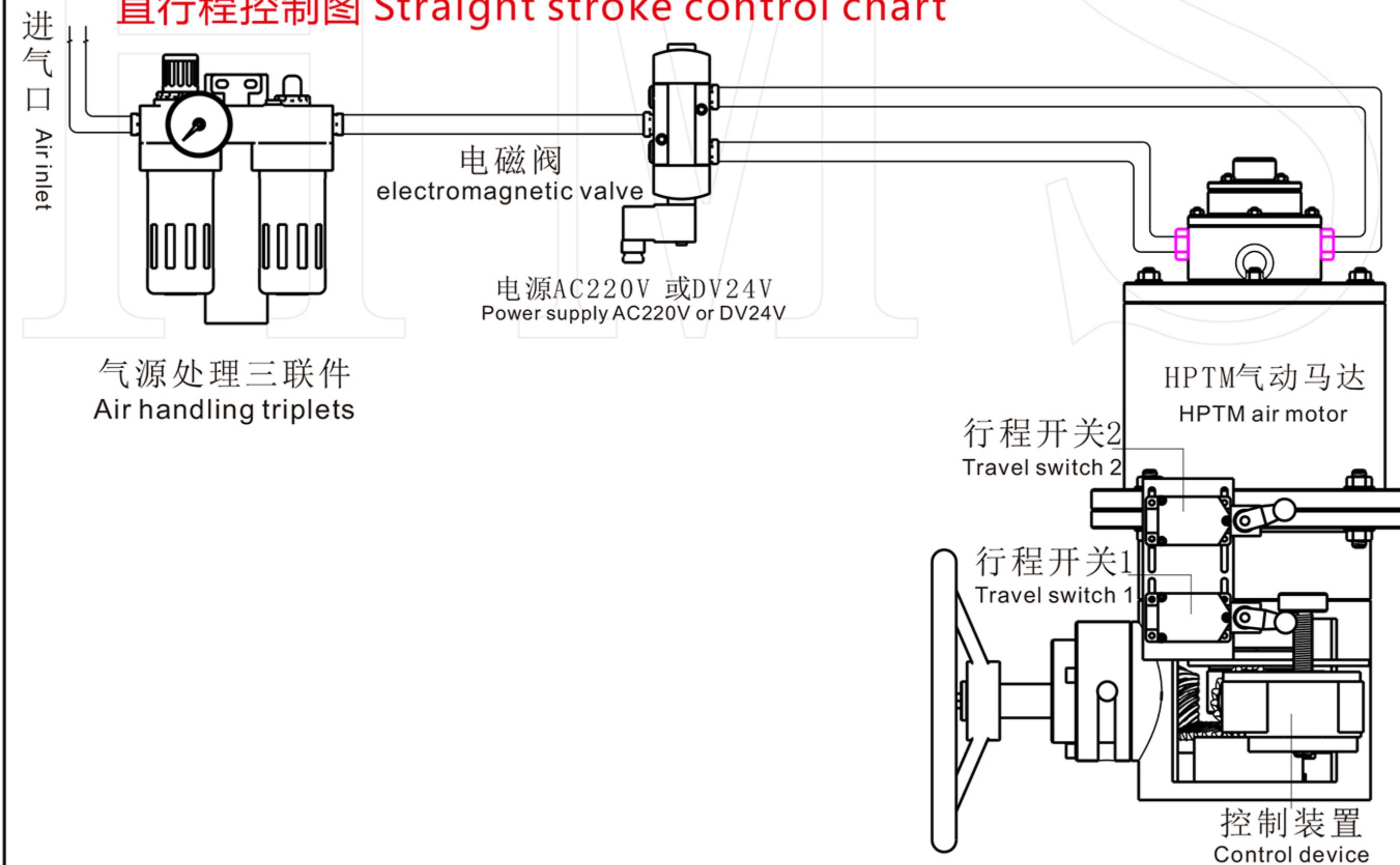


控制系统接线图 Control system wiring diagram

角行程控制图 Corner stroke control chart



直行程控制图 Straight stroke control chart





公司介绍 : Company Profile

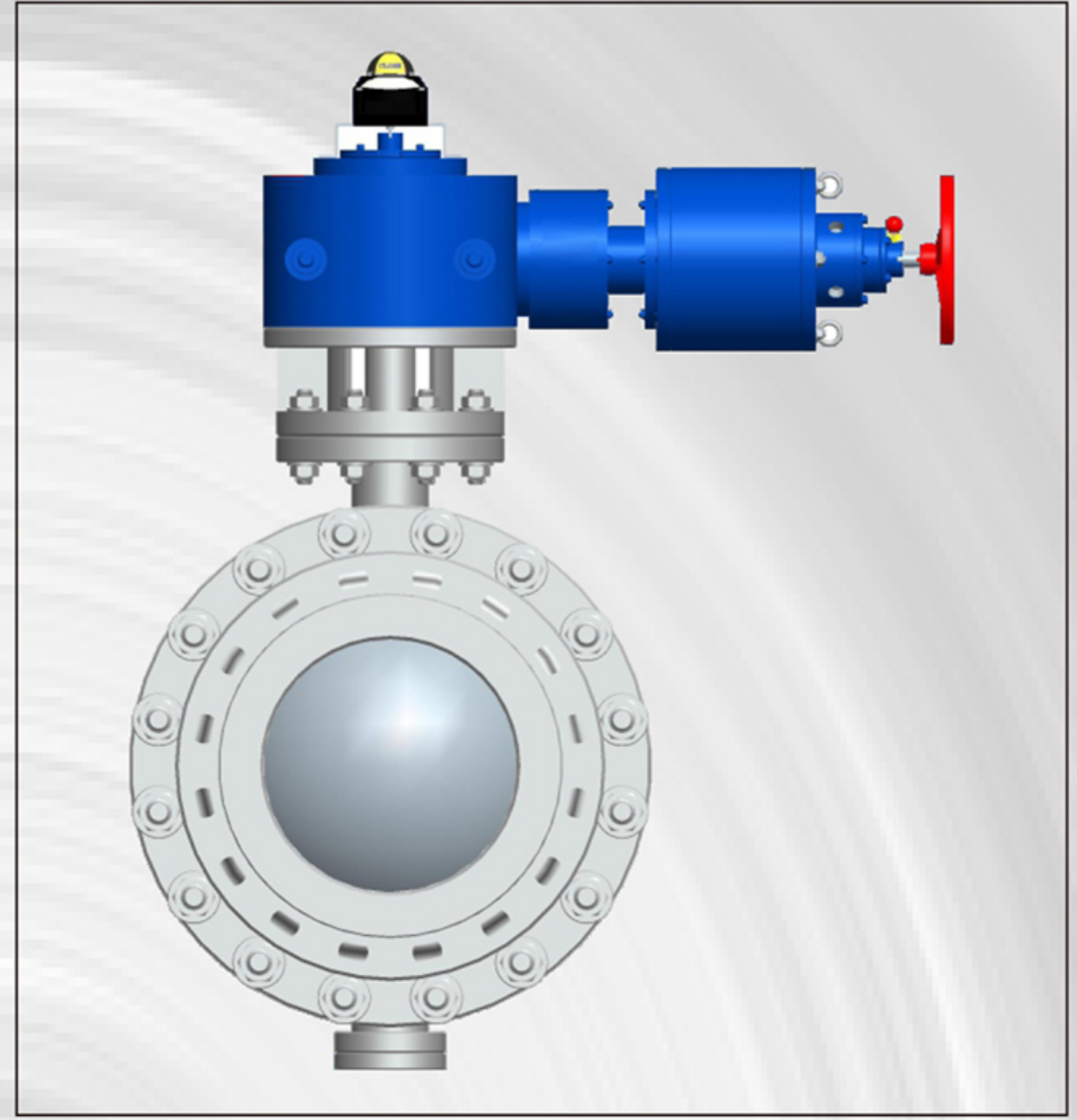
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Zhejiang Han Musen controlled Valve Co., after twenty years of development, it is a professional research pneumatic, hydraulic, electric automatic control valve actuators, and various sets of professional manufacturers. Set research, Development, Manufacturing Sales Service in one of the high-tech company, since its inception has received a number of national patents, and first through the ISO9001 international quality system certification. Products using three-dimensional computer CAD design system optimization design, not only beautiful appearance and reliable quality. Product extensive use of CAM manufacturing precision machining centers to ensure that all parts machining accuracy.

The company has consistently adhered to the "scientific and technological innovation, pioneering" business purpose and dedication to provide customers with quality sales service. Strive to create the world's largest and most powerful professional enterprise automatic control valves.





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