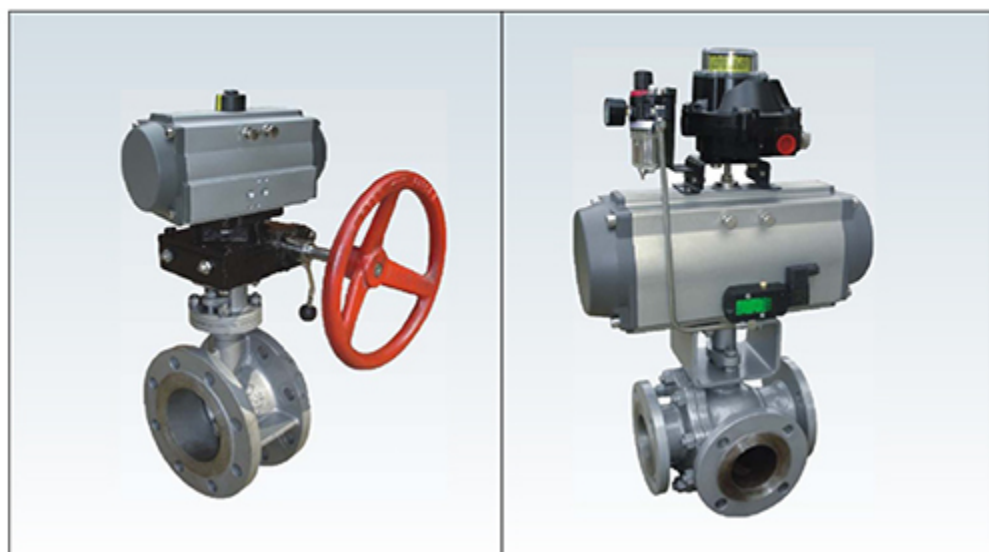


本公司资料 版权所有 仿者必究
公司备有详细资料 欢迎索取

- 本目录刊载的型号和规格会因产品更新而变化, 恕不另行通知。
If the models and specifications in this product catalogue is changed due to the change of products, we will not inform.
- 本目录虽然经多次校对, 以求准确, 但仅供参考之用, 一切以实物及产品说明为准。
This product Catalogue is checked by several times to be correct, but it is only for reference. All is according to products and user Instruction.



汉姆森阀门
HANMUSEN VALVE



>>>

RDSC系列90° 回转阀门气动执行器
RDSC series 90° rotating valve pneumatic actuator
双作用式·单作用式(弹簧复位). 附件
Double-acting. Single acting (spring reset). In the attachment

◆ 使用说明书 Use instruction

科技铸就品质, 创新成就明天!
Technology makes quality, innovation achievement tom



浙江汉姆森自控阀门有限公司
ZHEJIANG HANMUSEN AUTOMATION INSTRUMENT CO.LTD

地址: 永嘉县瓯北镇礁下渡口西路188#
电话: 0086-0577-67317373 67318383
传真: 0086-0577-67319288 邮编: 325105
网址: <http://www.hanmusen.com>
电子信箱: E-mail:sale @ hanmusen.com

Address: 188#, Jiaoxia West Road, Jiaoxia Town Yongjia County
Tel: 0086-0577-67317373 67318383
Fax: 0086-0086-0577-67319288 P.C.:325105
<http://www.hanmusen.com>
E-mail:sale @ hanmusen.com



浙江汉姆森自控阀门有限公司
ZHEJIANG HANMUSEN AUTOMATION CONTROL VALVE CO., LTD.

2018 Edition

附件图形 Attachment graphic



电气定位器
Electrical positioner



电磁阀
electromagnetic valve



气源处理三联件
Gas source treatment triple piece



行程接近开关
Travel proximity switch



电磁阀
Solenoid valve



限位行程开关盒
Limit travel switch box



电气定位器
Electrical positioner



手动操作机构
Manual operation mechanism

目录
Catalogue

说明以及型号编制 Description and model number ----- 01

零件和材料 Parts and material ----- 02

工作原理 Working principle ----- 03

执行器选型以及参数 Actuator selection and parameter ----- 04

输出力矩 Output torque ----- 05

外形及连接尺寸 Shape and connection size ----- 07

三位置气动执行器 Three position pneumatic actuator ----- 08

图形及应用 Graphics and Applications ----- 10

园孔键连接及全行程调节执行器 Yuan Kongjian connection and full stroke adjustment actuator ----- 12

故障排除 Troubleshooting ----- 13

附件 Attachment :

气源三联件 Troubleshooting ----- 14

电磁阀 Solenoid valve ----- 15

限位行程开关盒 Limit travel switch box ----- 16

电气定位器 Electrical positioner ----- 18

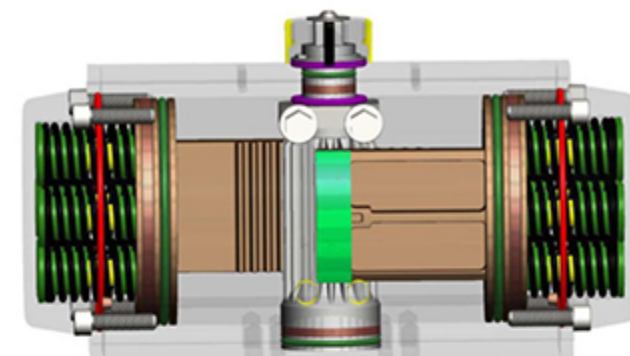
手动操作机构 Manual operation mechanism ----- 20

产品特点 Product Features

RD/SC新型齿轮齿条式气动执行器由我公司综合了国内外最新技术,通过CAD三维模型创新优化设计,外形紧凑美观;并采用新材料,新工艺,使产品的质量,更加可靠;多规格选型更实惠,产品符合最新国际标准技术规范,满足各类用户的需求。

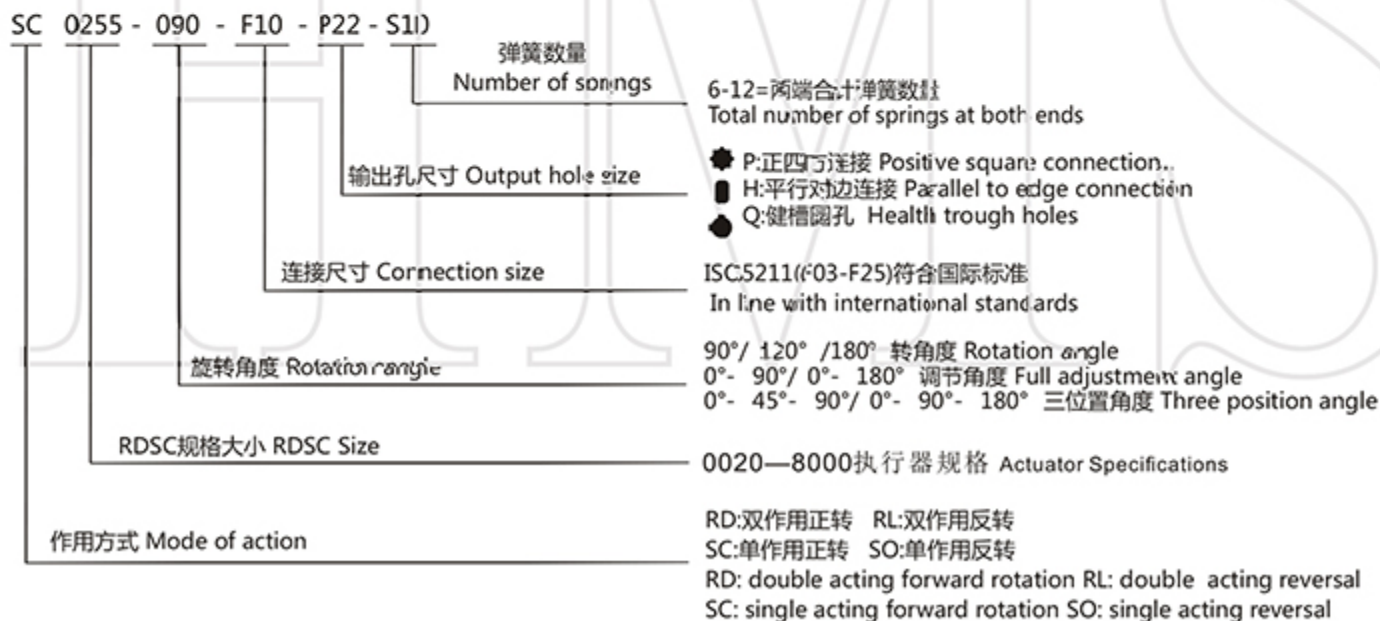
1. 一体式设计,所有的双/单作用同一型号,都具有相同的缸体端盖。
2. 齿轮齿条双活塞对称设计,动作快速平稳,精度高,输出扭矩大,通过简单改变活塞装配位置,可得到反方向旋转。
3. 优质的铝合金缸体,经精密的内加工和外部表面进行硬质化阳极处理,(特殊情况下阳极氧化+特氟海涂层)使摩擦系数低,寿命更长。
4. 组合式安全弹簧,不论在何种工作中,都能方便加装而安全的安装培养弹簧,或拆除弹簧改变作用方式。
5. 外部两调节螺丝,可对阀门开启或关闭进行±4°调节。
6. 齿条背面的轴瓦和活塞以及输出轴轴承都采用复合材料,降低摩擦系数,并且增加润滑,加长寿命。
7. 所有的紧固件均采用不锈钢材料,长期抗腐蚀。
8. 多功能位置指示器,符合VID/VIE3845.NUMUR标准,能安装并输出所有附件。
9. 气源接口符合NUMUR,可直接安装NUMAR标准电磁阀。
10. 连接阀门部分符合国际标准ISO5211和GB/T12222(F03-F25),使产品安装具有互换性,通用性。

RD/SC new rack and pinion pneumatic implementation by our company. The latest technology inside and outside, through CAD 3D model innovation optimization design, shape Compact and beautiful; and using new materials, new processes, the quality of the products, and more Plus reliable; multi-standard selection is more affordable, the product meets the latest international standard technology Specifications to meet the needs of various users.

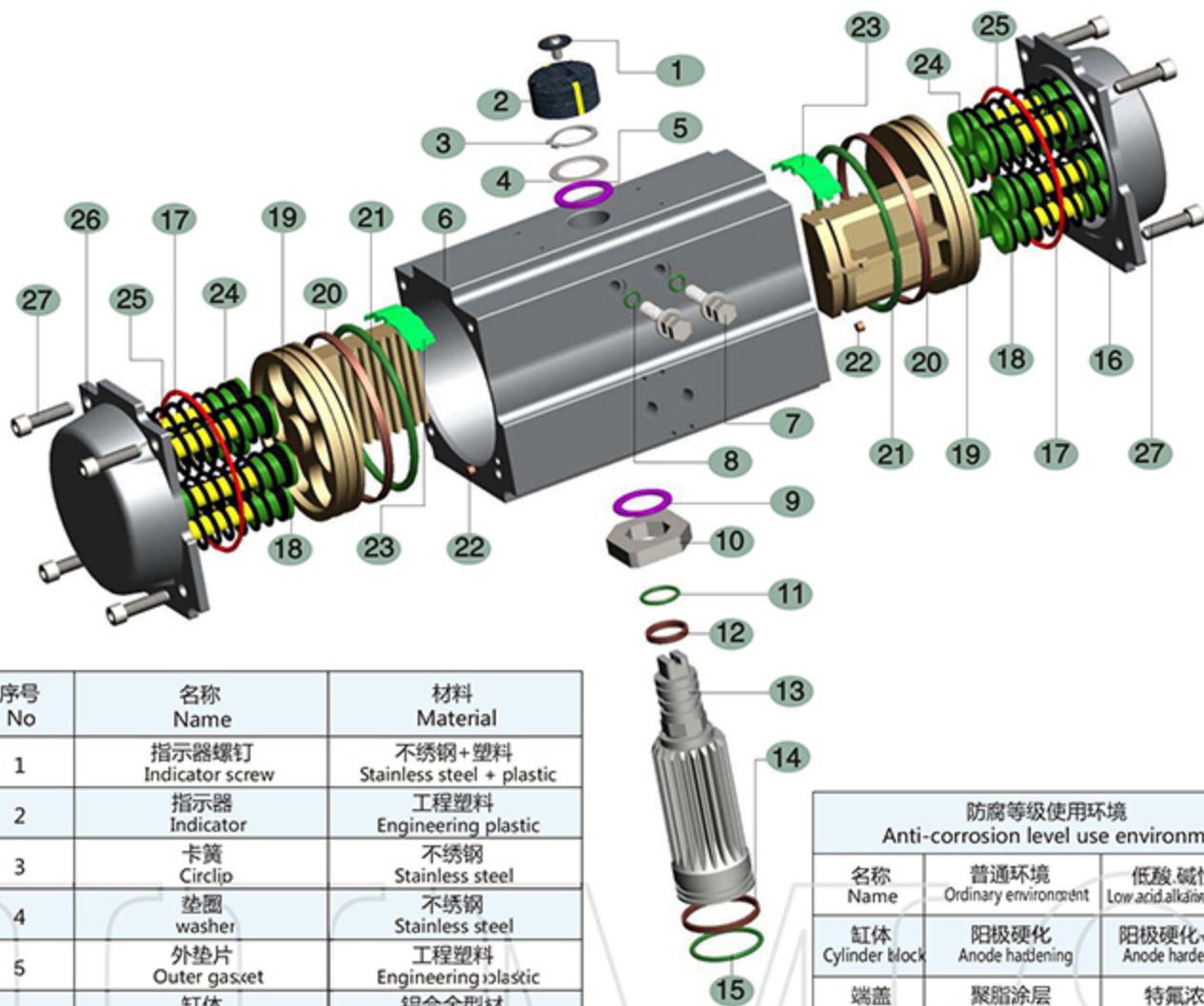


1. One-piece design, all double. Single-acting the same model, all have the same cylinder. End cap.
2. The rack and pinion double piston symmetric design, the action is fast and stable, the precision High, high output torque, can be obtained by simply changing the piston assembly position Rotate in the opposite direction.
3. High-quality aluminum alloy cylinder, precision internal machining and external surface Hardened anode treatment (special case anodization+ Teflon coating Layer) makes the friction coefficient low and the life is longer.
4. Combined safety spring, no matter what kind of work, it is convenient Install and safely install the culture spring, or remove the spring to change the way.
5. External two adjustment screws for opening or closing the valve ±4° adjustment.
6. The bearing and piston on the back of the rack and the output shaft bearing are all complex Composite materials, reduce the coefficient of friction, and increase lubrication, extending life.
7. All fasteners are made of stainless steel and have long-term corrosion resistance.
8. Multi-function position indicator, inline with VID/VIE3845.NUMUR Quasi-slot, can install and output all accessories.
9. The air source interface is NUMUR-compliant and can be directly installed with NUMAR standard electromagnetic valve.
10. The connecting valve part conforms to the international standard ISO5211 and GB/T12222 (F03-F25), making product installation interchangeable and versatile.

型号编制 Model Preparing



零件和材料 Parts and Material



序号 No	名称 Name	材料 Material
1	指示器螺钉 Indicator screw	不锈钢+塑料 Stainless steel + plastic
2	指示器 Indicator	工程塑料 Engineering plastic
3	卡簧 Circlip	不锈钢 Stainless steel
4	垫圈 washer	不锈钢 Stainless steel
5	外垫片 Outer gasket	工程塑料 Engineering plastic
6	缸体 Cylinder block	铝合金型材 Aluminum alloy profile
7	限位螺丝 Limit screw	不锈钢 Stainless steel
8	限位O形圈 Limit O-ring	丁腈橡胶 Ding Qing rubber
9	内垫片 Inner gasket	工程塑料 Engineering plastic
10	限位器 Limiter	45#碳钢 45# carbon steel
11	轴上O形圈 On-axis O-ring	丁腈橡胶 Ding Qing rubber
12	轴上轴承 On-shaft bearing	氟碳复合材料 Fluorocarbon composite
13	齿轮轴 Gear shaft	45#碳钢+镀镍 carbon steel + nickel plating
14	轴下轴承 Down shaft bearing	碳复合材料 Fluorocarbon composite
15	轴下O形圈 Under the shaft O-ring	丁腈橡胶 Ding Qing rubber
16	右端盖 Right end cap	压铸铝合金 Die-cast aluminum alloy
17	端盖O形圈 End cap O-ring	丁腈橡胶 Ding Qing rubber
18	弹簧座 Spring seat	工程塑料 Engineering plastic

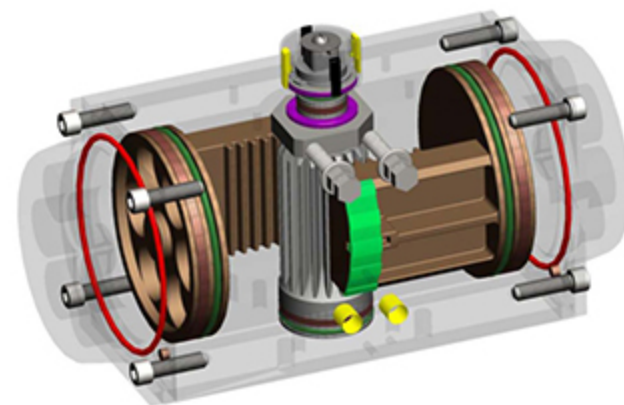
防腐等级使用环境 Anti-corrosion level use environment		
名称 Name	普通环境 Ordinary environment	低酸、碱性环境 Low acid, alkaline environment
缸体 Cylinder block	阳极硬化 Anode hardening	阳极硬化+特氟隆 Anode hardening + Teflon
端盖 End cap	聚酯涂层 Polyester coating	特氟隆涂层 Teflon coating
齿轮轴 Gear shaft	碳钢镀锌 Carbon steel nickel plating	不锈钢 Stainless steel

序号 No	名称 Name	材料 Material
19	活塞 piston	压铸铝合金 Die-cast aluminum alloy
20	活塞轴承 Piston bearing	氟碳复合材料 Fluorocarbon composite
21	活塞O形圈 Piston O-ring	丁腈橡胶 Ding Qing rubber
22	进气堵头 Intake plug	丁腈橡胶 Ding Qing rubber
23	活塞导板 Piston guide	工程塑料 Engineering plastic
24	弹簧 spring	弹簧钢 Spring steel
25	弹簧轴 Spring shaft	铜合金管 Copper alloy tube
26	左端盖 Left end cap	压铸铝合金 Die-cast aluminum alloy
27	端盖螺丝 End cap screw	不锈钢 Stainless steel

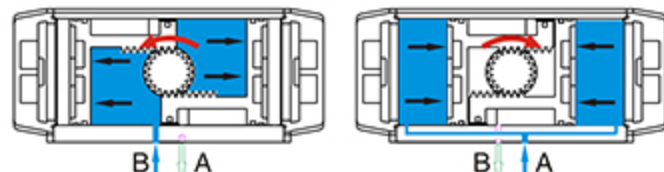
RD(RL)双作用工作原理 Double acting principle

RD型执行器:当气源压力从气口B进入气缸两活塞腔时,迫使两活塞分离向气缸两端外移,气腔的空气通过气口A排出;同时使活塞齿条同步带动齿轮轴逆时针旋转。当气源压力从气口A进入气缸两端时,使两活塞向内移动,气腔中空气通过气口B排出;同时使活塞齿条同步带动齿轮轴顺时针旋转。(如果把活塞相对反向安装,齿轮输出轴转变为反向旋转,此为双作用反转RL型)

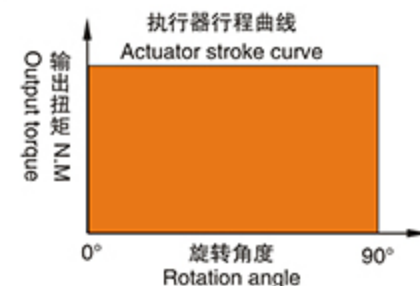
RD type actuator: When the air source pressure enters the two pistons in the cylinder from the port B, the two pistons are forced to move outward the cylinder, and the air in the air chamber is exhausted through port A; at the same time, the piston rack is synchronously driven to reverse the gear shaft. The hour hand rotates. When the air source pressure enters the two ends of the cylinder from the port A, the two pistons move inward, and the air in the cylinder cavity is discharged through the port B; at the same time, the piston rack synchronously drives the gear shaft to rotate clockwise. (If the piston is reversed installation, gear output shaft changes to reverse rotation, this is double-acting reverse RL type)



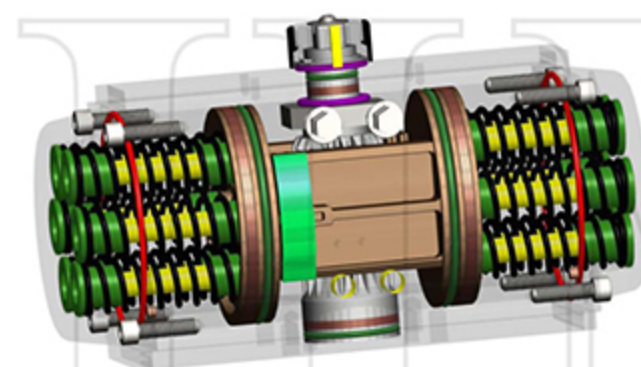
双作用运行图
Double acting diagram



红色曲线箭头: 旋转轴运行方向
Red arrow: direction of rotation of the axis
黑色箭头: 活塞运行方向
Black arrow: piston running direction
蓝色箭头: 进气方向
Blue arrow: intake direction
绿色空心箭头: 出气方向
Green hollow arrow: direction of gas outlet



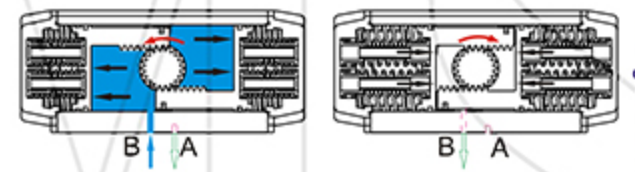
SC(SO)单作用工作原理 Single acting principle



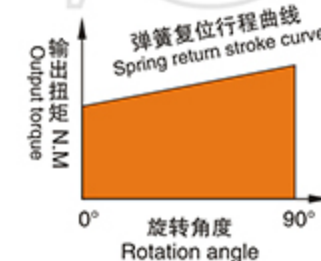
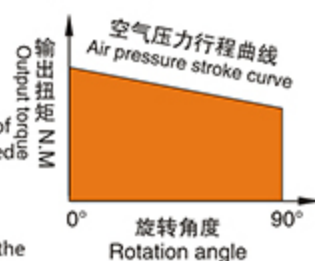
cylinder moves in the middle under the thrust of the compressing spring, and the air in the middle chamber is discharged from the air port B, and the piston rack synchronously drive the gear output shaft to rotate clockwise. (If the piston is installed in the opposite direction, the gear output shaft will change to the reverse rotation when the spring is reset. This is a single-acting reverse SO type)

SC型执行器:当气源压力从气口B进入气缸两活塞腔时,使两活塞分离向气缸两端移动,使弹簧压缩,气腔的空气通过气口A排出;同时使活塞齿条同步带动齿轮轴逆时针旋转。经电磁阀换向后,气缸的活塞在经压缩弹簧的推力下向中间移动,中腔的空气从气口B排出,同时使活塞齿条同步带动齿轮输出轴顺时针旋转。(如果把活塞相对反向安装,弹簧复位时齿轮输出轴转变为反向旋转,此为单作用反转SO型)

SC Type actuator: When the air source pressure enters the inner chamber of the two pistons from the air port B, the two pistons are separated and moved to the two ends of the cylinder to compress the spring, and the air of the air chamber is discharged through the air port A; at the same time, the piston rack is synchronously driven. The gear shaft rotates counterclockwise. After the solenoid valve is reversed, the piston of the



红色曲线箭头: 旋转轴运行方向
Red arrow: direction of rotation of the axis
黑色箭头: 活塞运行方向
Black arrow: piston running direction
蓝色箭头: 进气方向
Blue arrow: intake direction
绿色空心箭头: 出气方向
Green hollow arrow: direction of gas outlet



单作用运行图
Single action diagram

执行器选型 Actuator selection

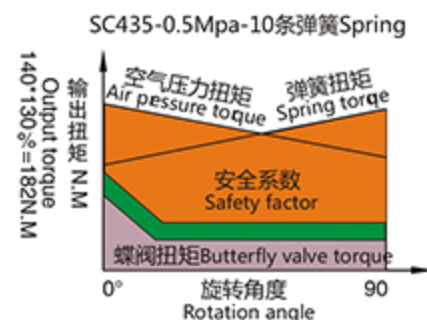
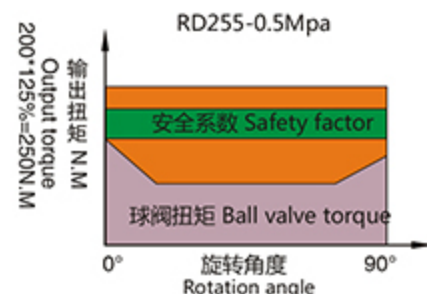
选用气动执行器时，在已经确定阀门的扭矩上，再乘以安全系数，清洁、低摩擦润滑的介质乘以120%安全系数，水蒸气或非润滑的液体介质乘以125%安全系数，非润滑的浆料液体介质乘以130%安全系数，非润滑的干气介质乘以140%安全系数，非润滑的干气颗粒粉料介质乘以160%安全系数。

When using a pneumatic actuator, multiply the torque of the valve by the safety factor, clean, low friction lubrication medium multiplied by 120% safety factor, water vapor or non-lubricated liquid medium multiplied by 125% safety factor, non-lubricated slurry liquid medium multiplied by 130% safety factor, the non-lubricated dry gas medium is multiplied by a 140% safety factor, and the non-lubricated dry gas particulate powder medium is multiplied by a 160% safety factor.

RD双作用型执行器选用示例 Double acting actuator selection example

已知球阀的扭矩为200N.M，气源压力为0.5Mpa，介质为非润滑的水蒸气，考虑到安全因素，执行器应选扭矩为 $200 \times 125\% = 250\text{N.M}$ ，查找双作用输出扭矩表气源压力0.5Mpa，然后沿该行垂直查找相近或相等的扭矩数据，选276N.M，再沿该行向左查找其型号为RD0255型。

It is known that the torque of the ball valve is 200N.M, the pressure of the air source is 0.5Mpa, and the medium is non-lubricated water vapor. Considering the safety factor, the actuator should select the torque of $200 \times 125\% = 250\text{N.M}$ to find the double acting output torque. The surface air source pressure is 0.5Mpa, then find the similar or equal torque data vertically along the line, select 276N.M, and then search the left side of the line for the model number RD0255.



SC单作用型执行器选用示例 Single-acting actuator selection example

已知蝶阀的扭矩为140N.M，气源压力为0.5Mpa，介质为非润滑的浆料液体介质，考虑到安全因素，执行器应选扭矩 $140 \times 130\% = 182\text{N.M}$ ，查找单作用输出扭矩表气源压力0.5Mpa，然后沿垂直查找相近或相等的扭矩数据选185N.M，还应该查找下弹簧终点扭矩不少于180N.M，最终确定其型号为0435型。

The butterfly valve has a torque of 140N.M and a gas source pressure of 0.5Mpa. The medium is a non-lubricating slurry liquid medium. For safety reasons, the actuator should select a torque of $140 \times 130\% = 182\text{N.M}$ to find a single-acting output. Torque gauge air supply pressure 0.5Mpa, then find the similar or equal torque data in the vertical selection 185N.M, should also find the lower spring end torque not less than 180N.M, and finally determine its model is 0435 type.

执行器参数 Actuator parameter

型号 Model	直径 diameter	气缸容积L Cylinder volume		RD开关时间S RD switch time		SC开关时间S SC switching time		重量Kg Weight		注意事项 Precautions
		开No	关Off	开No	关Off	开No	关Off	RD	SC	
RD/SC0020	Φ052	0.08	0.15	0.2	0.3	0.25	0.3	1.45		1.最大气源压力为0.8Mpa. 2.旋转角度为90°。 3.标准温度ST-20°+80°丁腈橡胶 O形圈/高温HT-15°+150°氟橡胶 O形圈/低温LT-40°+80°硅橡胶 O形圈 4.动作时间以下条件测得: 中性干净压缩空气压力0.5Mpa/管子 长度5M/行程角度90°/温度20°C./执行器空载。 1. The maximum source pressure is 0.8Mpa. 2. The angle of rotation is 90°. 3. Standard temperature ST -20° + 80° nitrile rubber O-ring / high temperature HT -15° + 150° Fluororubber O-ring / low temperature LT -40° + 80° silicone rubber O-ring. 4. Action time measured under the following conditions: neutral clean compressed air pressure 0.5Mpa / Pipe length 5M / stroke angle 90° / temperature 20° C / actuator no load.
RD/SC0035	Φ063	0.14	0.20	0.37	0.4	0.41	0.5	2.20	2.46	
RD/SC0050	Φ075	0.17	0.24	0.42	0.5	0.45	0.6	2.75	3.05	
RD/SC0075	Φ083	0.26	0.37	0.73	0.8	0.75	0.9	3.40	3.88	
RD/SC0110	Φ092	0.39	0.55	1.1	1.2	1.2	1.5	4.70	5.42	
RD/SC0160	Φ105	0.54	0.78	1.4	1.7	1.8	1.9	6.15	7.13	
RD/SC0255	Φ125	0.87	1.29	1.9	2.4	2.3	2.6	9.25	10.5	
RD/SC0435	Φ140	1.52	2.13	2.1	2.5	2.6	2.8	13.5	15.7	
RD/SC0665	Φ160	2.35	3.42	2.7	3.3	3.2	3.5	20.5	24.0	
RD/SC1000	Φ190	3.22	4.61	3.3	3.9	4.1	4.2	30.3	38.5	
RD/SC1200	Φ210	3.97	5.63	3.5	4.1	4.2	4.8	36.8	55.8	
RD/SC1800	Φ240	6.56	9.46	3.8	4.6	4.7	5.1	55.1	66.9	
RD/SC2700	Φ270	9.97	14.6	4.2	5.2	5.3	5.8	81.9	104.3	
RD/SC4000	Φ300	13.6	19.8	4.9	5.9	6.1	6.9	107.2	133.5	
RD/SC6000	Φ350	20.2	29.8	6.6	7.5	7.8	8.2	162.5	202.9	
RD/SC8000	Φ400	29.2	40.7	8.8	9.6	9.8	10.5	368.8	434.8	

RD双作用输出扭矩(N.M)Double acting output torque

型号 Model	气缸直径 Cylinder diameter	气源压力(Mpa)Air pressure										N.M
		0.25	0.30	0.35	0.40	0.45	0.50	0.55	0.60	0.70	0.80	
RD0020	Φ052	10.6	12.7	14.8	16.9	19.1	21.2	23.3	25.4	29.7	33.9	
RD0035	Φ063	19.4	23.3	27.2	31.1	35.1	38.9	42.8	46.7	54.5	62.3	
RD0050	Φ075	26.5	31.7	37.1	42.3	47.6	52.9	58.2	63.5	74.1	84.7	
RD0075	Φ083	40.5	48.6	56.7	64.8	72.9	81.1	89.2	97.3	113.5	129.5	
RD0110	Φ092	59.7	71.7	83.7	95.6	107.6	119.5	131.5	143.5	167.4	191.3	
RD0160	Φ105	86.5	103.8	121.1	138.4	155.7	172.9	190.4	207.7	242.3	276.9	
RD0255	Φ125	137.9	165.5	193.1	220.7	248.3	275.9	303.5	331.2	386.3	441.4	
RD0435	Φ140	230.7	276.9	323.6	369.2	415.4	461.5	507.7	553.8	646.2	758.5	
RD0665	Φ160	351.6	421.9	492.3	562.6	632.8	703.3	773.6	843.6	984.7	1125	
RD1000	Φ190	495.9	595.1	694.2	793.4	892.6	991.8	1091	1190	1388	1586	
RD1200	Φ210	605.8	726.9	848.1	969.3	1090	1211	1332	1453	1696	1938	
RD1800	Φ240	1017	1220	1424	1627	1831	2034	2238	2441	2848	3255	
RD2700	Φ270	1545	1854	2163	2472	2781	3090	3399	3708	4326	4944	
RD4000	Φ300	2119	2543	2967	3391	3815	4239	4662	5086	5934	6782	
RD6000	Φ350	3173	3806	4442	5077	5712	6346	6981	7616	8885	10154	
RD8000	Φ400	4144	4973	5802	6631	7460	8289	9118	9947	11605	13263	

SC单作用输出扭矩(N.M)Single acting output torque

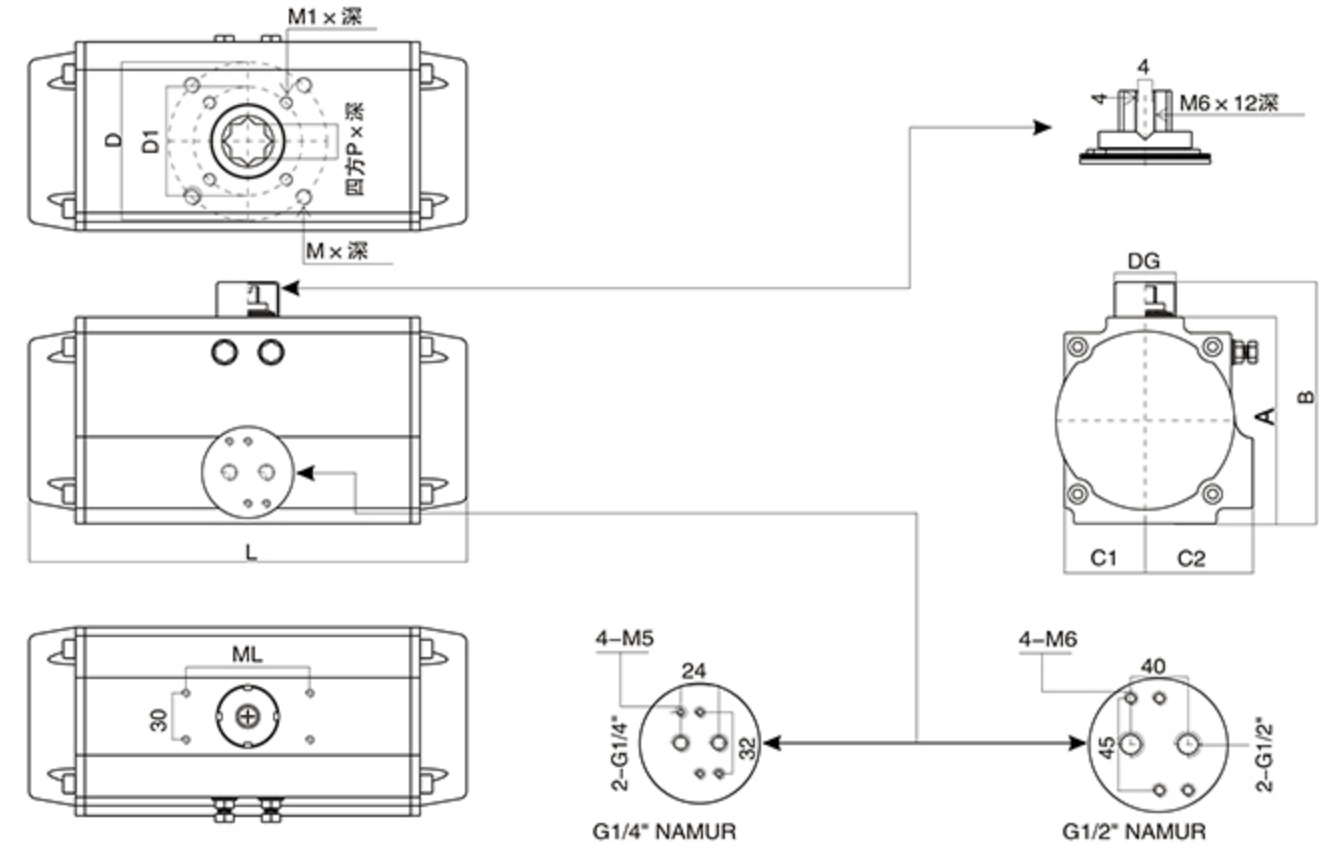
型号 Model	弹簧数量 Number of springs	气源压力(Mpa)Air pressure												N.M		弹簧力矩 Spring torque	
		0.3Mpa		0.4Mpa		0.5Mpa		0.6Mpa		0.7Mpa		0.8Mpa		开始 90°End	结束 0°Start	开始 90°End	结束 0°Start
		开始 0°Start	结束 90°End	开始 0°Start	结束 90°End	开始 0°Start	结束 90°End	开始 0°Start	结束 90°End	开始 0°Start	结束 90°End	开始 0°Start	结束 90°End				
SC0035 Φ063	6	15.8	9.5	23.6	17.3	31.4	25.1	39.2	32.9					13.8	7.5		
	8	13.2	4.8	21	12.6	28.8	20.4	36.6	28.2	44.4	36			18.5	10.1		
	10			18.5	8	26.3	15.8	34.1	23.6	41.9	31.4	49.7	39.2	23.1	12.6		
SC0050 Φ075	6	20.9	14.9	31.5	25.5	42.1	36.1	52.7	46.7					16.8	10.8		
	8	17.3	9.3	27.9	19.9	38.5	30.5	49.1	41.1	59.7	51.7			22.4	14.4		
	10			24.2	14.2	34.8	24.8	45.4	35.4	56	46	66.6	56.6	28.1	18.1		
SC0075 Φ083	6	34	22.9	50.2	39.1	66.5	55.4	82.7	71.6					25.7	14.6		
	8	29	14.3	45.2	30.5	61.5	46.8	77.7	77.7	93.9	79.2			34.3	19.6		
	10			40.4	21.9	56.7	38.2	72.9	54.4	88.1	70.6	105.1	86.6	42.9	24.4		
SC0110 Φ092	6	41	25.6	64.9	49.5	88.8	73.4	112.8	97.4					46.1	30.7		
	8	30.6	10.3	54.5	34.2	78.4	58.1	102.4	82.1	126.3	106			61.4	41.1		
	10			44.3	18.8	68.2	42.7	92.2	66.7	116.1	90.6	140	114.5	76.8	51.3		
SC0160 Φ105	6	66.3	39.4	100.9	74	135.4	108.5	170.2	143.3					64.4	37.5		
	8	53.7	17.9	88.3	52.5	122.8	87	157.6	121.8	192.2	156.4			85.9	50.1		
	10			75.8	31	110.3	65.5	145.1	100.3	179.7	134.9	214.3	169.5	107.4	62.6		
	12					97.8	44.1	132.6	78.9	167.2	113.5	201.8	148.1	128.8	75.1		

SC单作用输出扭矩(N.M)Single acting output torque

型号 Model	弹簧数量 Number of springs	气源压力(Mpa)Air pressure												N.M		弹簧力矩 Spring torque	
		0.3Mpa		0.4Mpa		0.5Mpa		0.6Mpa		0.7Mpa		0.8Mpa		开始 0°Start	结束 90°End	开始 0°Start	结束 90°End
		开始 0°Start	结束 90°End	开始 0°Start	结束 90°End	开始 0°Start	结束 90°End	开始 0°Start	结束 90°End	开始 0°Start	结束 90°End	开始 0°Start	结束 90°End				
SC0255 Φ125	6	91.2	51.8	146.4	107	201.6	162.2	256.9	217.5							113.7	74.3
	8	66.4	13.9	121.6	69.1	176.8	124.3	232.1	179.6	287.2	234.7					151.6	99.1
	10			96.9	31.2	152.1	86.4	207.4	141.7	262.5	196.8	317.6	251.9	189.5	123.8		
	12					127.2	48.5	182.5	103.8	237.6	158.9	292.7	214	227.4	148.7		
SC0435 Φ140	6	167	111.5	259.3	203.8	351.6	296.1	443.9	388.4							165.4	109.9
	8	128.8	56.4	221.1	148.7	313.4	241	405.7	333.3	498.1	425.7					220.5	148.1
	10			184.1	93.5	276.4	185.8	368.7	278.1	461.1	370.5	573.4	482.8	275.7	185.1		
	12					239.4	130.7	331.7	223	424.1	315.4	536.4	427.7	330.8	222.1		
SC0665 Φ160	6	272.8	155.4	413.5	296.1	554.2	436.8	694.5	577.1							266.5	149.1
	8	223.1	66.7	363.8	207.4	504.5	348.1	644.8	488.4	785.9	629.5					355.2	198.8
	10			314.1	118.5	454.8	259.2	595.1	399.5	736.2	540.6	876.5	680.9	444.1	248.5		
	12					405.1	170.4	545.4	310.7	686.5	451.8	826.8	592.1	532.9	298.2		
SC1000 Φ190	6	413.9	208.3	612.2	406.6	810.6	605	1008.8	803.2							386.8	181.2
	8	353.5	79	551.8	277.3	750.2	475.7	948.4	673.9	1146.4	871.9					516.1	241.6
	10			491.5	148.6	689.9	347	888.1	545.2	1086.1	743.2	1284.1	941.2	644.8	301.9		
	12					629.4	217.9	827.6	416.1	1025.6	614.1	1223.6	812.1	773.9	362.4		
SC1200 Φ210	6	455.2	199.6	697.6	442	939.3	683.7	1181.3	925.7							527.3	271.7
	8	364.6	24.1	607	266.5	848.7	508.2	1090.7	750.2	1333.7	993.2					702.8	362.3
	10			516.4	90.5	758.1	332.2	1000.1	574.2	1243.1	817.2	1485.1	1059.2	878.8	452.9		
	12					667.6	157	909.6	399	1152.6	642	1394.6	884	1054	543.4		
SC1800 Φ240	6	780.8	386	1187.8	793	1594.8	1200	2001.8	1607							834	439.2
	8	634.3	108	1041.3	515	1448.3	922	1855.3	1329	2262.3	1736					1112	585.7
	10			894.9	237	1301.9	644	1708.9	1051	2115.9	1458	2522.9	1865	1390	732.1		
	12					1155.5	366	1562.5	773	1969.5	1180	2376.5	1587	1668	878.5		
SC2700 Φ270	6	1157	729	1775	1347	2393	1965	3011	2583							1125	697
	8	925	354	1543	972	2161	1590	2779	2208	3397	2826					1500	929
	10			1310	597	1928	1215	2546	1833	3164	2451	3782	3069	1875	1162		
	12					1696	839	2314	1457	2932	2075	3550	2693	2251	1394		
SC4000 Φ300	6	1583	805	2431	1653	3279	2501	4126	3348							1738	960
	8	1263	226	2111	1074	2959	1922	3806	2769	4654	3617					2317	1280
	10			1791	494	2639	1342	3488	2189	4334	3037	5182	3885	2897	1600		
	12					2319	763	3166	1610	4014	2458	4862	3306	3476	1920		
SC6000 Φ350	6	2356	1125	3627	2396	4896	3665	6163	4935							2681	1450
	8	1872	231	3143	1502	4412	2771	5632	4041	6951	5310					3575	1934
	10			2659	609	3928	1878	5198	3148	6467	4417	7735	5626	4468	2418		
	12					3445	984	4715	2254	5984	3523	7253	4792	5362	2901		
SC8000 Φ400	6	2898	1313	4556	2971	6214	4629	7872	6287							3660	2075
	8	2207	93	3865	1751	5523	3409	7181	5067	8839	6725					4880	2766
	10			3173	530	4831	2188	6489	3846	8147	5504	9805	7162	6101	3458		
	12					4139	968	5797	2626	7455	4284	9113	5942	7321	4150		

单作用(弹簧复位型)说明Single acting (spring return type) description
 1.相同型号, 弹簧数量一样, 常关SC型与常开SO型, 则执行器输出扭矩相等; 2.弹簧数量为单数时, 取相邻两双数之间的中间值。
 1. The same model, the same number of springs, normally off SC type and normally open SO type, the actuator output torque is equal.
 2. When the number of springs is singular, take the intermediate value between two adjacent numbers.

外形连接尺寸图表(mm) Shape connection size chart

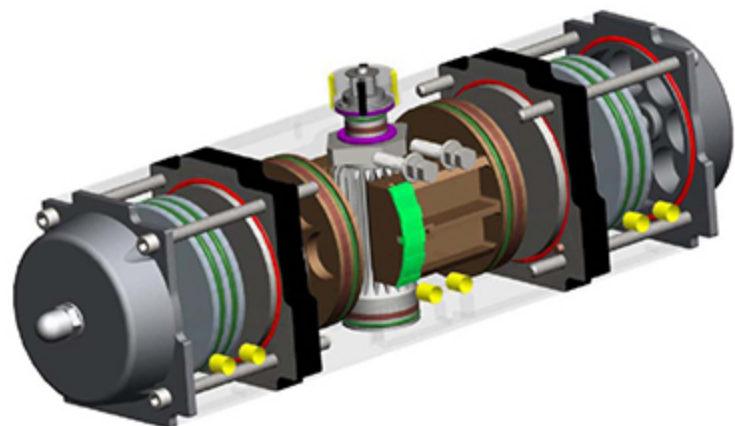


型号 Model	直径 Diameter	L	A	B	C1	C2	ML	DG	D1	M1 x 深	D	M x 深	P x 深	气源接口 Air connection
RD0020	Φ052	155	72	92	30	41.5	80	Φ40	Φ36	M5x8	Φ50	M6x10	11x14	G1/4
RD0035	Φ063	174	87	107	36	47	80	Φ40	Φ50	M6x10	Φ70	M8x13	14x18	G1/4
RD0050	Φ075	194	99.5	119.5	41	53	80	Φ40	Φ50	M6x10	Φ70	M8x13	14x18	G1/4
RD0075	Φ083	218	108	128	46	57	80	Φ40	Φ50	M6x10	Φ70	M8x13	17x21	G1/4
RD0110	Φ092	263	117.5	137.5	50	58.5	80	Φ40	Φ50	M6x10	Φ70	M8x13	17x21	G1/4
RD0160	Φ105	281	133	153	57.5	64	80	Φ40	Φ70	M8x13	Φ102	M10x16	22x26	G1/4
RD0255	Φ125	314	155	175	67.5	74.5	80	Φ40	Φ70	M8x13	Φ102	M10x16	22x26	G1/4
RD0435	Φ140	395	174	194	75	77	80	Φ55	Φ102	M10x16	Φ125	M12x18	27x31	G1/4
RD0665	Φ160	456	198.5	218.5	87.5	87.5	80	Φ55	Φ102	M10x16	Φ125	M12x18	27x31	G1/4
RD1000	Φ190	535	230	260	105	108	130	Φ55			Φ140	M16x20	36x50	G1/4
RD1200	Φ210	564	254	284	115	115	130	Φ80			Φ140	M16x20	36x50	G1/4
RD1800	Φ240	612	292	322	130	130	130	Φ80			Φ165	M20x25	46x60	G1/4-G1/2
RD2700	Φ270	724	332	362	147	147	130	Φ80			Φ165	M20x25	46x60	G1/4-G1/2
RD4000	Φ300	830	354	384	162	172	130	Φ80			Φ165	M20x25	55x70	G1/4-G1/2
RD6000	Φ350	936	410	450	189	194	130	Φ120			Φ254	M20x25	55x70	G1/4-G1/2
RD8000	Φ400	1034	466	506	260	260	130	Φ120			Φ254	M20x25	60x70	G1/4-G1/2

三位置气动执行器 Three position pneumatic actuator

三位置气动执行器分为 0° - 90° 、 0° - 120° 和 0° - 180° 在主气缸气口A进气后,推动活塞向两端运动,在两端加装定位气缸.活塞等机械装置,来限制执行器运行角度,来实现某些特殊场所,需要做二次角度开启中间位置,我公司可按要求生产 15° - 180° 任意二次 角度开启优质产品。

The three-position pneumatic actuator is divided into 0° - 90° , 0° - 120° and 0° - 180° After the intake of the main cylinder port A, push the piston to move to both ends, and install the positioning cylinder at both ends. Piston Such mechanical devices, to limit the operating angle of the actuator, to achieve some special places, need to do the second angle to open the intermediate position, our company can produce 15° - 180° any secondary angle to open quality products as required.



工作原理 Working principle

三位置气动执行器的操作,需要设计一套电磁阀控制回路来完成操作,控制原理见下说明:

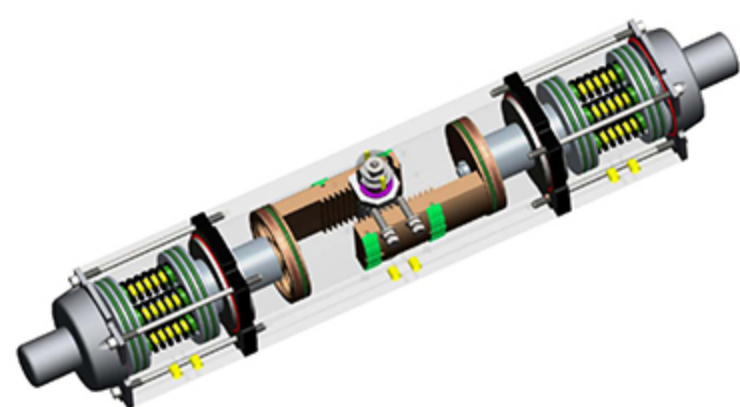
The operation of the three-position pneumatic actuator requires the design of a solenoid valve control circuit to complete the operation. The control principle is as follows.

位置1-中间位置 Position 1 - intermediate position	<p>气源压力同时从B孔和D孔进入,空气从A孔和C孔排出,B孔中压缩空气推动活塞向外运动,而D孔中压缩空气推动活塞向内运动,使执行器达到指定的角度。</p> <p>The air source pressure enters from the B hole and the D hole at the same time, the air is discharged from the A hole and the C hole, the compressed air in the B hole pushes the piston to move outward, and the compressed air in the D hole pushes the piston to move inward, so that the actuator reaches the specified angle.</p>
位置2-全开位置 Position 2 - fully open position	<p>气源压力同时从B孔和C孔进入,空气从A孔和D孔排出,B孔中压缩空气推动活塞向外运动,而C孔中压缩空气也推动活塞向外运动,带动齿轮轴逆时针旋转使执行器达到全开。</p> <p>The air source pressure enters from the B hole and the C hole at the same time, the air is discharged from the A hole and the D hole, and the compressed air in the B hole pushes the piston to move outward, and the compressed air in the C hole also pushes the piston to move outward, and drives the gear shaft to rotate counterclockwise. Rotation causes the actuator to fully open.</p>
位置3-全关位置 Position 3 - fully closed position	<p>两端气缸不工作,气源压力进入A中,空气从B孔排出,A孔中压缩空气推动活塞向内运动,带动齿轮轴顺时针旋转,使执行器达到全关。在主气缸内安装弹簧,在断气,断电或工况故障,通过弹簧弹力迫使主气缸中活塞顺时针旋转,回到全关位置。</p> <p>The cylinders at both ends do not work, the air source pressure enters A, the air is discharged from the B hole, and the compressed air in the A hole pushes the piston to move inward, driving the gear shaft to rotate clockwise, so that the actuator is fully closed. The spring is installed in the main cylinder. When the gas is cut off, the power is off, or the working condition is faulty, the piston in the main cylinder is forced to rotate clockwise by the spring force to return to the fully closed position.</p>

180° 行程单作用执行器(弹簧复位)180° stroke single acting actuator (spring reset)

180° 弹簧复位气动执行器在两端设计有弹簧组件,适用于 0° - 90° 、 90° - 180° 之间往复运动操作,在失去气源压力(或故障)时通过弹簧回位至 90° 位置,在全开位置 180° 和全关位置 0° 以标准方式在外部可以精确调整 $\pm 4^{\circ}$ 。

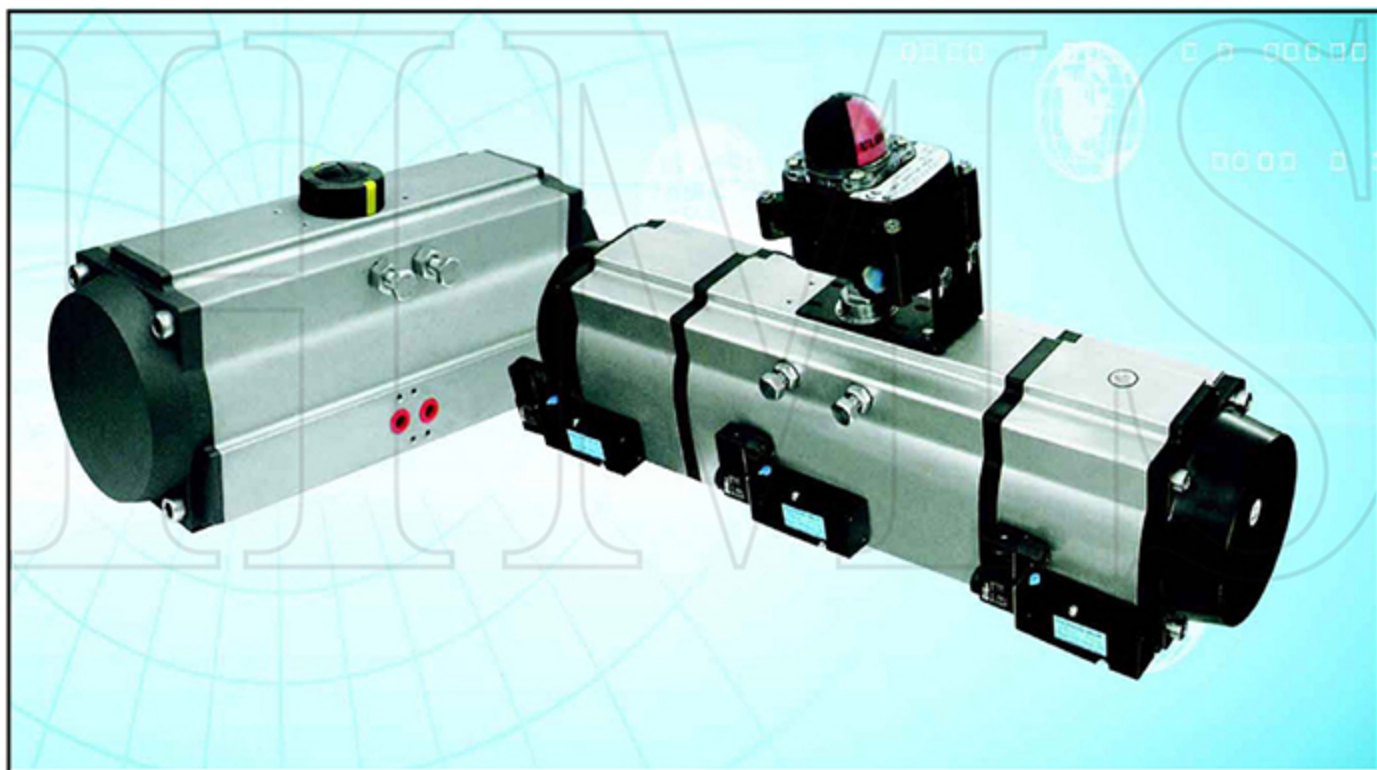
The 180° spring-return pneumatic actuator is designed with spring assemblies at both ends for reciprocating operation between 0° - 90° , 90° - 180° , returning to the 90° position by spring when the source pressure (or fault) is lost. In the fully open position 180° and the fully closed position 0° , the external can be precisely adjusted by $\pm 4^{\circ}$ in a standard manner.



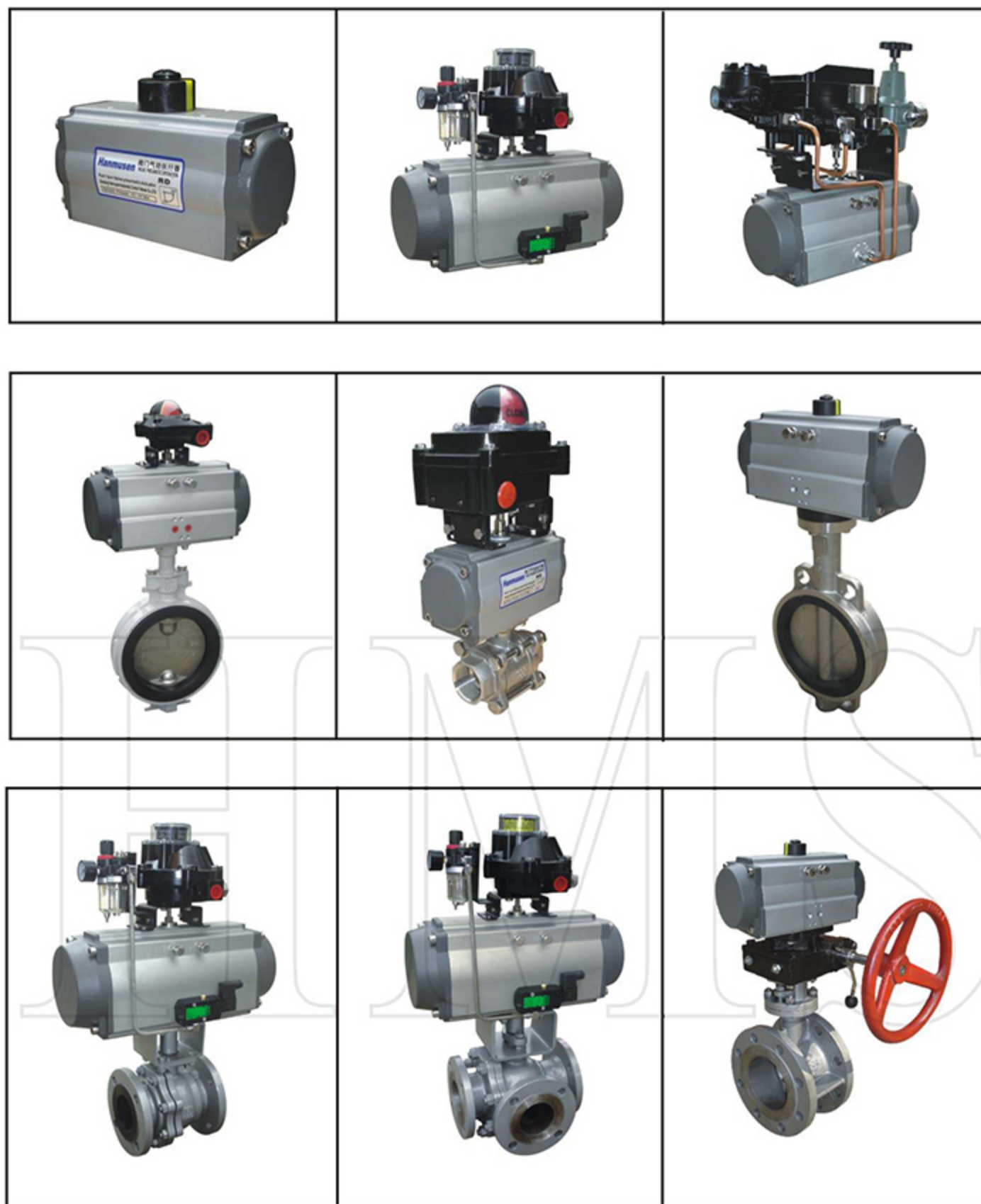
工作原理 Working principle

<p>180°-0° operating principle</p> <p>When the air source pressure enters the two piston intermediate chambers from the port B, the two pistons are separated and moved toward the two ends of the cylinder, forcing the spring assemblies at both ends to compress, and the air at both ends of the air chamber is discharged through the port A, and simultaneously making the two piston racks Synchronously drive the output gear shaft to rotate counterclockwise to 0° .</p>	<p>当气源压力从气口B进入气缸两活塞中间腔时,使两活塞分离向气缸两端方向移动,迫使两端的弹簧组件压缩,两端气腔的空气通过气口A排出,同时使两活塞齿条同步带动输出齿轮轴逆时针方向旋转达到0° 。</p>
<p>0°-180° operating principle</p> <p>When the air source pressure enters the air chamber at both ends of the cylinder from the port A, the two pistons are moved toward the middle of the cylinder, forcing the spring assemblies at both ends to be compressed, and the air in the intermediate air chamber is discharged through the port B, and simultaneously driving the two piston racks to drive the output. The gear shaft rotates clockwise to 180° .</p>	<p>当气源压力从气口A进入气缸两端气腔时,使两活塞向气缸中间方向移动,迫使两端的弹簧组件压缩,中间气腔的空气通过气口B排出,同时使两活塞齿条同步带动输出齿轮轴顺时针方向旋转到达180° 。</p>
<p>从失去气源压力的操作 Operation from loss of air pressure</p> <p>When the position is at 180°, when the port B loses the source pressure or the solenoid valve is de-energized, the spring force forces the piston to move toward the middle of the cylinder, resulting in a clockwise rotation to the 90° position.</p> <p>When the position is at 0°, when the port A loses the air supply pressure or the solenoid valve is de-energized, the spring force forces the piston to move toward both ends of the cylinder, causing the counterclockwise rotation to the 90° position.</p>	<p>当位置在180° 时,气口B失去气源压力电磁阀断电时,弹簧推力迫使活塞向气缸中间方向移动,产生顺时针方向旋转至90° 位置。</p> <p>当位置在0° 时在气口A失去气源压力或电磁阀断电时,弹簧推力迫使活塞向气缸两端方向移动,产生逆时针方向旋转至90° 位置。</p>

图形&应用 Graphics & Applications

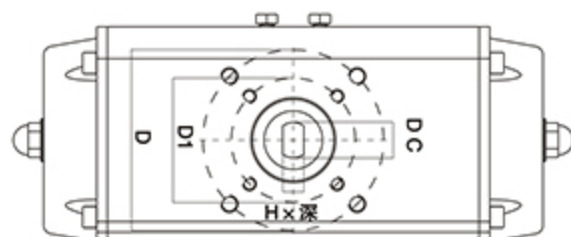


图形&应用 Graphics & Applications



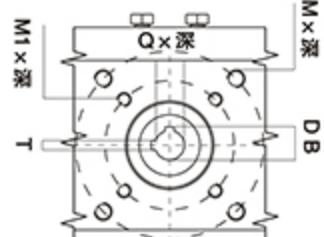
定制输出轴孔尺寸(mm) Customized output shaft hole size

H:平行对边 Parallel opposite



仰视图 Bottom view

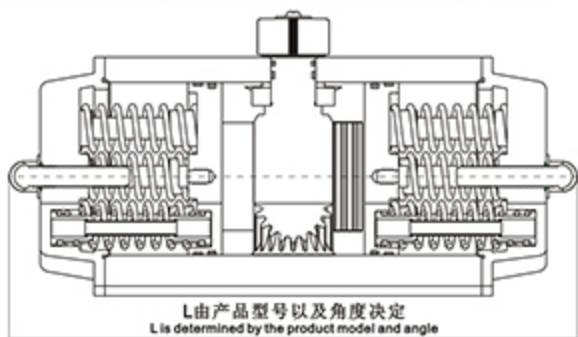
Q:键槽圆孔 Health trough hole



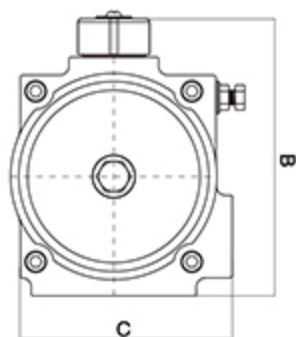
仰视图 Bottom view

备注 Remarks: RD-SC所有轴孔可根据客户要求定制。
All shaft holes of RD-SC can be customized according to customer requirements.

全程调节执行器 Full stroke adjustment actuator



L由产品型号以及角度决定
L is determined by the product model and angle



RDSC型气动执行器在端盖两端提供调节限位螺丝, 客户根据需要, 调节0°-90°、0°-120°、0°-135°或0°-180°内任意角度, 在所有执行器上可进行调节。

The RDSC pneumatic actuators provide adjustment limit screws at both ends of the end cap can adjust any angle within 0°-90°, 0°-120°, 0°-135° or 0°-180° as required, and can be adjusted on all actuators.

尺寸表 Dimension Table

型号 Model	直径 Diameter	B	C	DC	Hx深	D1	M1x深	Qx深	T	DB	D	Mx深	气源接口 Air connection
RD0020	Φ052	92	71.5	Φ13	10x30	Φ36	M5x8	Φ12.8x30	3	14.2	Φ50	M6x10	G1/4
RD0035	Φ063	107	83	Φ13	10x30	Φ50	M6x10	Φ12.8x30	3	14.2	Φ70	M8x13	G1/4
RD0050	Φ075	119.5	94	Φ13	10x30	Φ50	M6x10	Φ12.8x30	3	14.2	Φ70	M8x13	G1/4
RD0075	Φ083	128	103	Φ16.1	12x30	Φ50	M6x10	Φ15.9x30	5	18.4	Φ70	M8x13	G1/4
RD0110	Φ092	137.5	108.5	Φ16.1	12x30	Φ50	M6x10	Φ15.9x30	5	18.4	Φ70	M8x13	G1/4
RD0160	Φ105	153	121.5	Φ19.2	14x30	Φ70	M8x13	Φ19.1x30	5	21.6	Φ102	M10x16	G1/4
RD0255	Φ125	175	142	Φ22.4	17x35	Φ70	M8x13	Φ22.3x35	5	24.8	Φ102	M10x16	G1/4
RD0435	Φ140	194	152	Φ22.4	17x35	Φ102	M10x16	Φ22.3x35	5	24.8	Φ125	M12x18	G1/4
RD0665	Φ160	216.5	175	Φ28.8	22x40	Φ102	M10x16	Φ28.6x40	8	32.1	Φ125	M12x18	G1/4
RD1000	Φ190	230	213	Φ28.8	22x40			Φ28.6x40	8	32.1	Φ140	M16x20	G1/4
RD1200	Φ210	254	230	Φ32	24x45			Φ31.8x45	8	35.3	Φ140	M16x20	G1/4
RD1800	Φ240	292	260	Φ32	24x45			Φ31.8x45	8	35.3	Φ165	M20x25	G1/4-G1/2
RD2700	Φ270	332	294	Φ33.6	27x50			Φ33.4x50	10	37.4	Φ165	M20x25	G1/4-G1/2
RD4000	Φ300	354	334	Φ38.4	27x50			Φ38.1x50	10	42.4	Φ165	M20x25	G1/4-G1/2
RD6000	Φ350	450	383	Φ41.5	32x60			Φ41.3x60	12	45.3	Φ254	M20x25	G1/4-G1/2
RD8000	Φ400	506	520	Φ41.5	32x60			Φ41.3x60	12	45.3	Φ254	M20x25	G1/4-G1/2

0° ~ 180°特殊角度执行器 Special angle actuator

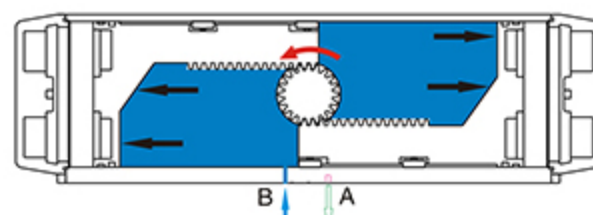
0° ~ 180°等特殊角度气动执行器由我公司综合了国内外最新技术, 通过CAD三维模型创新优化设计, 以满足用户对于特殊角度的需求。

Special angles such as 0° ~ 180° are performed by our company. The latest technology at home and abroad is integrated, and the CAD 3D model is used to innovate and optimize the design to meet the needs of users for special angles.



工作原理 working principle

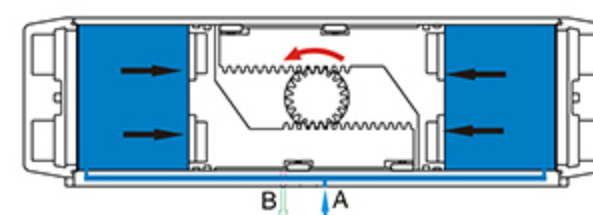
RD型顺时针烟旋转
RD type clockwise smoke rotation



1. 从B口进入中空, 压缩空气推动活塞向外运动, 带动齿轮轴逆时针旋转, A口排气。
2. 从A口进入两端, 压缩空气推动活塞向内运动, 带动齿轮轴顺时针旋转, B口排气。

1. From the B port into the middle cavity, the compressed air pushes the piston to move outward, driving the gear shaft to rotate counterclockwise, and the A port is exhausted.
2. From the A port into the two ends, the compressed air pushes the piston to move inward, driving the gear shaft to rotate clockwise, and B to exhaust.

RL型逆时针烟旋转
RL type counterclockwise smoke rotation



1. 从A口进入两端, 压缩空气推动活塞向内运动, 带动齿轮轴逆时针旋转, B口排气。
2. 从B口进入中空, 压缩空气推动活塞向外运动, 带动齿轮轴顺时针旋转, B口排气。

1. From the A port to the two ends, the compressed air pushes the piston to move inward, driving the gear shaft to rotate counterclockwise, and the B port to exhaust.
2. From the B port into the middle cavity, the compressed air pushes the piston to move outward, driving the gear shaft to rotate clockwise, and the A port is exhausted.

故障排除 Troubleshooting

故障现象 The fault phenomenon	检查项目 Check the project	解决方法 The solution
气动执行器不动作 Pneumatic actuators is not action	1. 电磁阀是否正常, 线圈是否烧坏, 阀芯是否被脏物卡死。 2. 对执行器单独供气检验, 是否正常工作, 如气缸串气不正常, 拆开执行器检查密封件是否已损坏, 气缸内孔表面是否已损坏。 3. 手动机构的手柄处于手动位置。 1. The solenoid valve is normal, whether the coil is burnt, valve core stuck. 2. The actuator gas inspection alone, whether to work properly, such as cylinder mixes up is not normal, apart of board line check whether the seal is damaged, cylinder bore surface is damaged. 3. Manual institutions handle in the manual position.	1. 检查电磁阀的接线, 更换线圈, 清除脏物。 2. 更换已坏密封圈, 更换气缸。 3. 将手柄扳到气动位置。 1. Check the connection, replace the coil of solenoid valve, remove the dirt. 2. Replace damaged seal ring, replace the cylinder. 3. Pull the lever to pneumatic position.
气动执行器动作迟缓、爬行 Pneumatic actuators slow, crawling	1. 气源压力不够, 气源管路堵塞流量过小。 2. 执行器扭矩过小。 3. 阀门阀芯或其它阀件装配太紧不合理。 1. Air pressure is not enough, air supply pipe plug flow is too small. 2. The actuator torque is too small. 3. The valve core or other valve assembly is too tight is not reasonable.	1. 增加气源压力到0.4~0.7MPa范围内, 排除堵塞。 2. 增大执行器型号规格。 3. 重新修理并装配, 调整阀门的开启力。 1. Air pressure is increased to 0.4 ~ 0.7 MPa range, eliminate congestion. 2. Increase the perform shape specifications. 3. To repair and assembly and adjustment valve opening force.
回信器无信号 Reply, no signal	1. 信号电源线路短路、断路, 行程开关损坏。 2. 开关位置不正确。 1. The short circuit, open circuit, signal power circuit trip switch is damaged. 2. The switch position is not correct.	1. 维修电源线路, 更换行程开关。 2. 重新调整到正确位置。 1. The maintenance of the power supply circuit, replace the travel switch. 2. To adjust to the correct position.

附件-气源三联件Appendix - gas source sanlian pieces

一.概述 overview

气源三联件是指空气过滤器(F),减压阀(R)和油雾器(L),属于气压传统系统中的组成部分,三大件是多数气动系统中不可缺少的气源装置,安装在用气设备近处,用以进入气动执行器之气源净化过滤和减压至仪表供给额定的气源压力,是压缩空气质量的最后保证。

空气过滤器(F)用于对气源的清洁,可过滤压缩空气中的水分,避免水分随气体进入装置。

减压阀(R)可对气源进行稳压,使气源处于恒定状态,可减小因气源气压突变时对阀门或执行器等硬件的损伤。

油雾器(L)可对机体运动部件进行润滑,可以对不方便加润滑油的部件进行润滑,大大延长机体的使用寿命。

The air supply triplets refer to the air filter (F), the pressure reducing valve (R) and the oil mist (L), which are part of the traditional pressure system. The three parts are indispensable air supply devices in most pneumatic systems, installed in the vicinity of gas equipment, used to enter the pneumatic actuator gas purification filter and decompression to the instrument to supply the rated air pressure, is the final guarantee of compressed air quality.

The air filter (F) is used to clean the air supply and filter the moisture in the compressed air to prevent moisture from entering the unit with the gas.

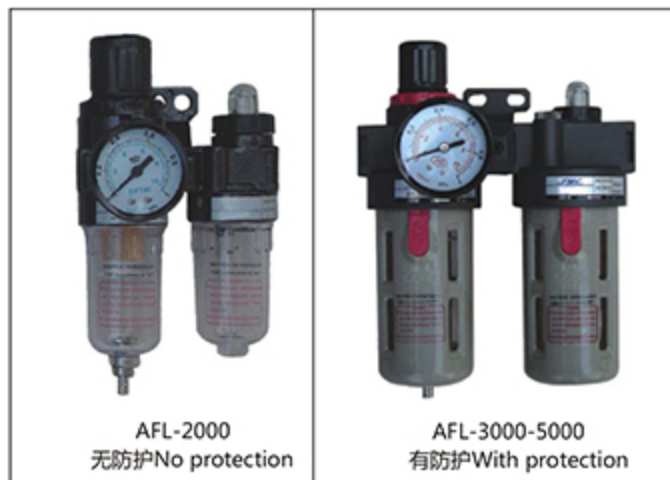
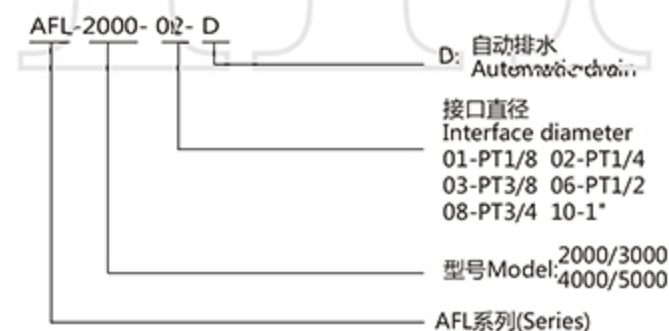
Pressure reducing valve (R) can regulate the air supply, so that the gas source in a constant state, can reduce the gas pressure changes when the valve or actuator and other hardware damage.

The oil mist (L) can lubricate the moving parts of the body and lubricate the components that are not convenient for lubricating oil, greatly extending the service life of the body.

二.主要技术参数main technical parameters

内容 content	型号 Model	
	AFC-系列 Series	BFC-系列 Series
工作温度 working temperature	-20 ~ 60°C	
最高压力 Maximum pressure	1.0MPa	
过滤度 Filtration degree	25um	
建议用油 Recommended Oil	1#油1#Oil-ISOVG32	
容器材料 Container material	聚碳酸酯 Polycarbonate	
防护罩 Protection cover	无 No	有 Yes
调压范围 Range of voltage regulation	0.05-0.85MPa	
阀型 Valve type	带溢流型 Relief Type	

三.型号编制 Model establishment



四.安装使用 Install and use

1. 过滤器排水有压差排水与手动排水二种方式。手动排水时当水位达到滤芯下方水平之前必须排出。

2. 压力调节时,在转动旋钮前请先拉起再旋转,压下旋转钮为定位。旋钮向右为调高出口压力,向左旋转为调低出口压力。调节压力时应逐步均匀地调至所需压力值,不应一步调节到位。

3. 给油器的使用方法:给油器使用JIS K2213 机油(ISO Vg32或同级用油)。加油量请不要超过杯子八分满。数字0为油量最小,9为油量最大。自9-0位置不能旋转,须顺时针旋转。

1. Filter drainage with pressure drainage and manual drainage in two ways. Manual drainage when the water level reaches the lower level of the filter element.

2. When the pressure is adjusted, please pull up and then rotate the knob before turning the knob. Turn the knob to the right to raise the outlet pressure and turn left to lower the outlet pressure. Adjust the pressure should be gradually evenly adjusted to the required pressure value, should not be adjusted in one step.

3. How to use the oiler: Use the JIS K2213 engine oil (ISO Vg32 or similar oil) for the oiler. Please do not go over the cup. The number 0 is the smallest oil, 9 is the largest oil. Since the 9-0 position cannot be rotated, it must be rotated clockwise.

五.注意事项 Matters needing attention

1. 部分零件使用PC(聚碳酸酯)材质,禁止接近或在有机溶剂环境中使用。PC杯清洗请用中性清洗剂。

2. 使用压力请勿超过其使用范围。

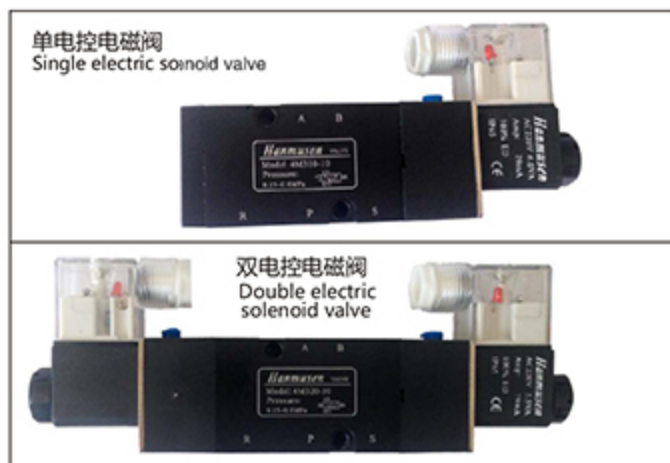
3. 当出口风量明显减少时,应及时更换滤芯。

1. Some parts use PC (polycarbonate) material, prohibit access to or in organic solvent environment. Please use a neutral cleaning agent for C cup cleaning.

2. Do not use the pressure beyond its use.

3. When the export air volume is significantly reduced, it should promptly replace the filter.

附件-电磁阀Appendix-Solenoid valve



一.概述 overview

HMS4M-电磁阀是用于气动阀门开启或关闭的电控元件。它符合NAMUR连接标准,直接安装气动执行器侧面,无需管子连接。根据仪表控制系统要求需要选择单电控或双电控;两位五通双电控电磁阀配双作用执行器,两位五通单电控电磁阀配单作用执行器,整机简单、紧凑、体积小、寿命可达50万次以上。该产品有本安基本型(IP67)以及防爆级别ExmIIBT6,其防爆级别适用于工厂的易爆环境场所。

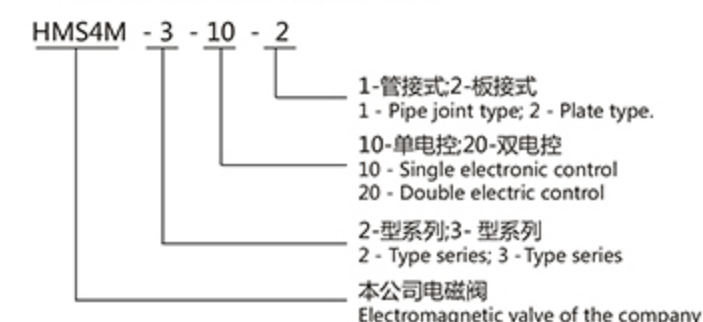
HMS4M type solenoid valve is used for pneumatic valve opened or closed electronic components. It accord with standard of NAMUR connection, install pneumatic actuator side directly, without the pipe connection. According to the request of instrument control system needs to choose single or double electric control electric control; Two five-way solenoid valves with actuators with double acting, two the 3-way magnet valve (with single-acting actuator, the machine is simple, compact, small volume, the life can reach more than 500000 times. The product has the basic Ann (Ip67), as well as the level of explosion-proof ExmIIBT6, its level of explosion-proof apply to factory and explosive environment.

二.主要技术参数 main technical parameters

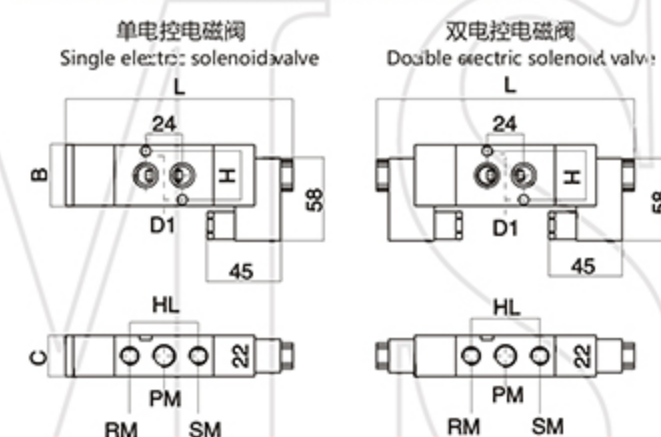
内容 content	型号 Model			
	4M-210	4M-220	4M-310	4M-320
工作温度 Working temperature	-20~70 °C			
换向时间(S) Reversing time(s)	0.05			
输入电流 Input current	0.1~5A			
输入电压 input voltage	20~250DV/AV			
防爆等级 Explosion-proof grade	ExdIIBt6			
防护等级 Protection grade	IP67			
防爆温度 Blast temperature	-20~85 °C			
气源接口 Air interface	PT(PF)(G) 1/4			
材质 material	6063铝合金 aluminum alloy			
重量 weight	200g	320g	300g	400g



三.型号编制 Model establishment



四.外形连接尺寸 Contour connection size



型号 model	L	B	C	H	HL	D1	PM	RM/SM
4M-210	118	35	22	24	36	Φ4.5	PT1/4	PT1/8
4M-220	170	35	22	24	36	Φ4.5	PT1/4	PT1/8
4M-310	137	40	27	28	45	Φ5.5	PT3/8	PT1/4
4M-320	190	40	27	28	45	Φ5.5	PT3/8	PT1/4

注:本公司可按用户要求配制电磁阀。
Note: solenoid valve can be made according to the requirements of customers of the company.

附件-限位行程开关盒 Appendix-limit switch box



一.概述 overview

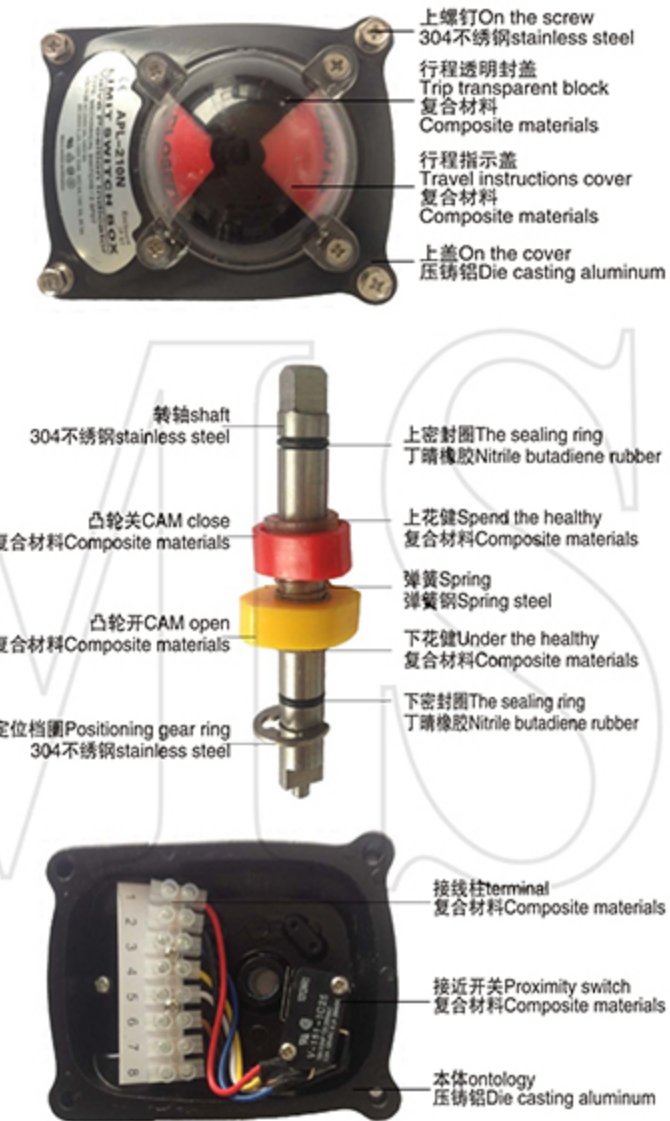
APL-N系列三种规格和ITS300型限位行程开关盒是传达角行程执行器和阀门位置信号的装置。它符合NAMUR标准安装，直接安装在执行器上部。其主要特点有：现场可视位置指示器，快速调整位置凸轮；可调式凸轮通过花键和弹簧安装，只要开关凸轮脱离花键便可旋转调整所需的位置，防掉外壳螺钉和两个电缆进口PT1/2管接口。内部行程开关预先连接接线端子。8个接线端子，可用于电磁阀的远程控制连接。

APL-N series three kinds of specifications and type ITS300 limit switch box is transmitted quarter-turn actuators and valve position signal of the device. It accord with NAMUR standard to install, directly installed in the upper actuator. Its main features are: the visual position indicator, CAM quickly adjust position; Adjustable CAM by flowers and spring installation, as long as the switch CAM from take nutrilite can rotate to adjust the desired location, off enclosure screw and two cable import PT1/2 interface. Internal travel switch connection terminals in advance. Eight terminals and can be used for electromagnetic valve remote control connection.

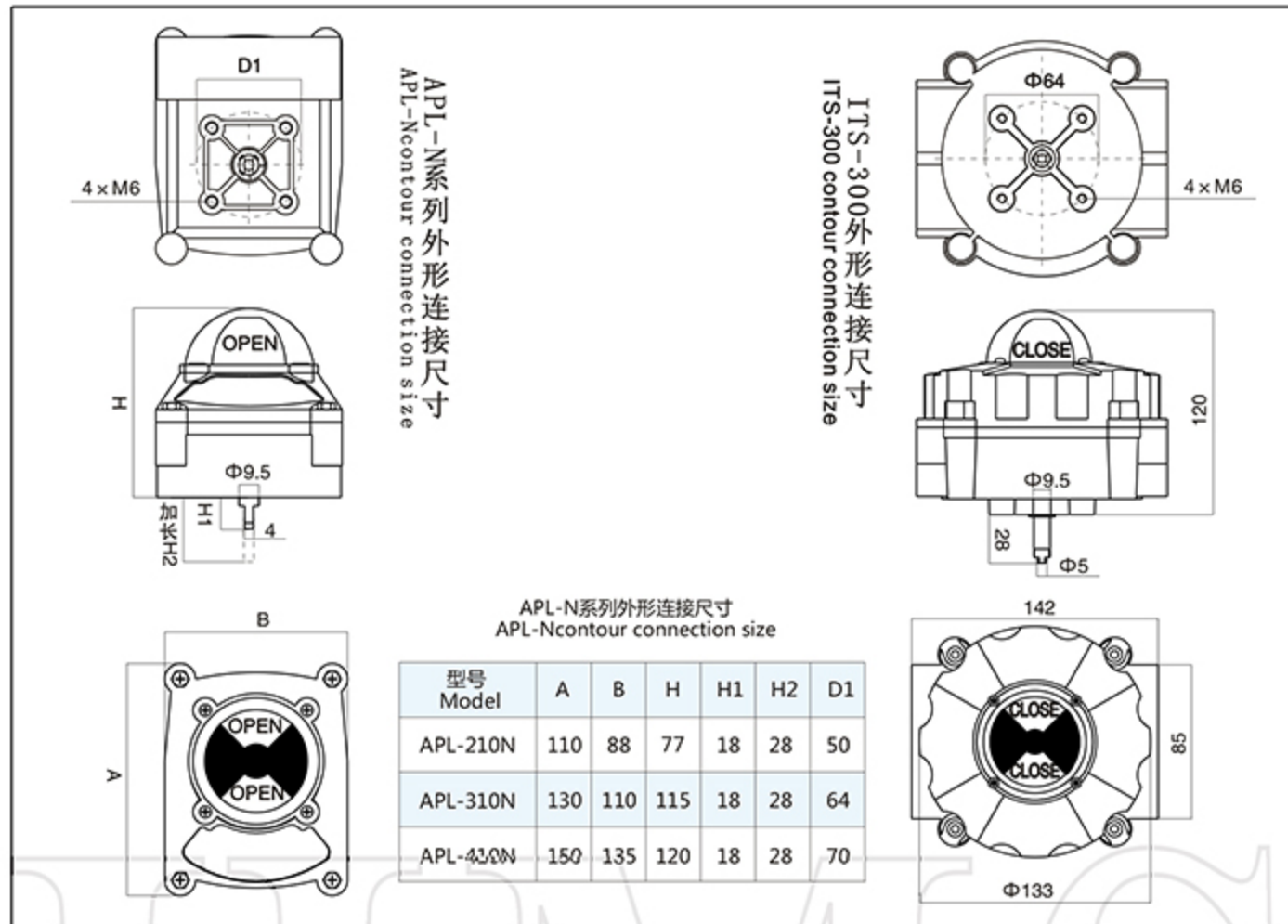
二.主要技术参数 main technical parameters

内容 content	型号 Model			
	APL-210N	APL-310N	APL-410N	ITS300
工作温度 Working temperature	-20 ~ 70°C			
工作角度 Work Angle	0 ~ 90°			
输入电流 Input current	-0.1 ~ 5A			
输入电压 input voltage	20 ~ 250DV/AV			
防爆等级 Explosion-proof grade	-----			ExdII Bt6
防护等级 Protection grade	IP67			
防爆温度 Blast temperature	-20 ~ 85°C			
电源接口 Power interface	PT(NPT)/PF(G) 1/2			
材质 material	压铸铝 Die casting aluminum			
重量 weight	0.36Kg	1.2Kg	1.6Kg	1.5Kg

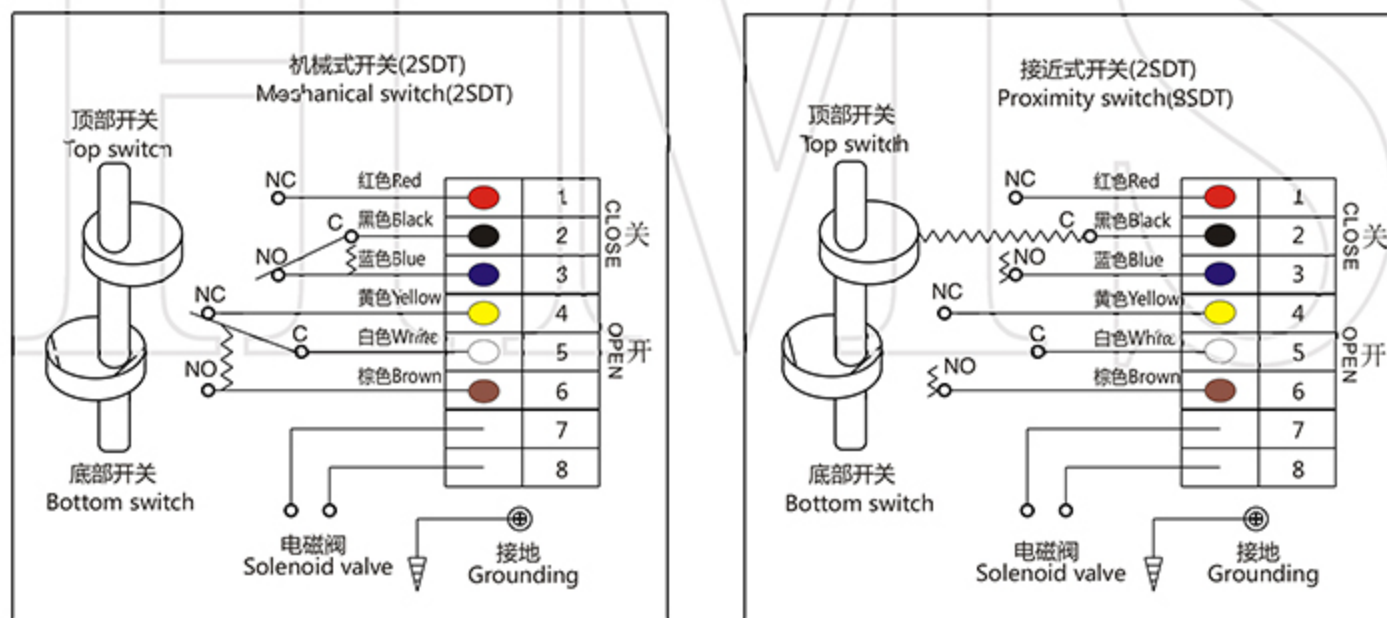
三.零件明细 parts subsidiary



四.外形连接尺寸 Connection size shape



五.接线图 Wiring diagram



附件-电气定位器Appendix - Electrical locator



一.概述 overview

YT-1000TR系列电气定位器与气动执行器配套使用,输入4~20DCmA的直流电信号转换成输出气压力,控制执行机构的动作。同时根据执行机构的位移行程进行反馈,使阀门的位置能够按调节器输出的控制信号进行正确定位。

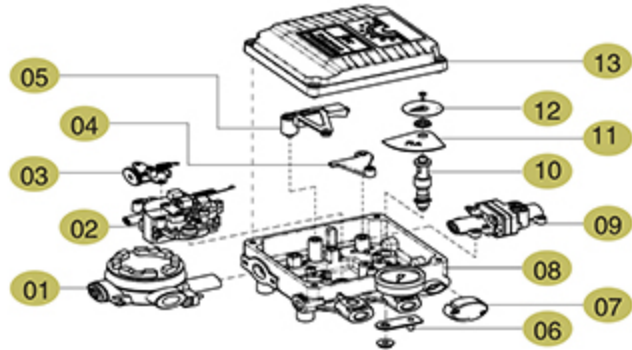
YT-1000TRS用于角行程单作用式(弹簧复位)气动执行器;YT-1000TRD用于角行程双作用式气动执行器。

YT-1000 tr series electrical locator with pneumatic actuators, input 4 ~ 20 dcma is converted into dc signal output gas pressure and control action of the actuator. At the same time, according to feedback by the displacement of the actuator stroke enables the position of the valve according to the regulation Output control signals for correct positioning.

YT-1000 TRS for quarter-turn single acting (spring return pneumatic actuators.

YT-1000 TRD for quarter-turn double-acting pneumatic actuators.

三.零件明细The parts subsidiary



序号 No	名称 Name	材料 Material
01	接线盒 Terminal block	压铸铝 Die casting aluminum
02	力矩马达 Torque motor	复合材料 Composite materials
03	零点调节旋钮 Zero adjustment knob	复合材料 Composite materials
04	连接件 fittings	压铸铝 Die casting aluminum
05	量程调节件 Range adjusting piece	压铸铝 Die casting aluminum
06	反馈杆 Feedback pole	304不锈钢 304 stainless steel
07	排气盒 Exhaust box	复合材料 Composite materials
08	下本体 The ontology	压铸铝 Die casting aluminum
09	先导阀 Pilot valve	压铸铝 Die casting aluminum
10	反馈轴 The feedback shaft	304不锈钢 304 stainless steel
11	凸轮 CAM	304不锈钢 304 stainless steel
12	指示器 indicator	复合材料 Composite materials
13	上盖 On the cover	压铸铝 Die casting aluminum

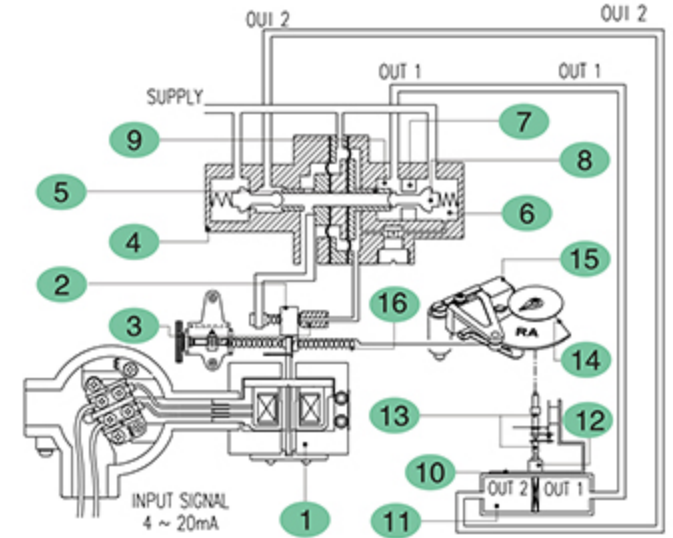
四.维护Maintenance

1. 定位器的气源处理装置应使用精度小于5μm的空气过滤器。
2. 内部的节流部位如夹尘,会引起零位漂移等现象,因此应定期保养时应使用清洗装置,保持喷嘴畅通。
3. 阀座的调整与定位器灵敏及泄气量直接有关,在出厂检验时已经调好,在使用中尽量不要调整。

1. The locator air handling unit should be used air filter precision is less than 5 microns.
2. Inside the throttling parts such as dust, will cause the phenomenon such as zero drift, so in regular maintenance should be used when cleaning device, keep clear of the nozzle.
3. The adjustment of the seat is associated with a sensitive and discouraged locator directly, at the time of factory inspection has been set, in use as far as possible not to adjust.

五.YT-1000R工作原理 working principle

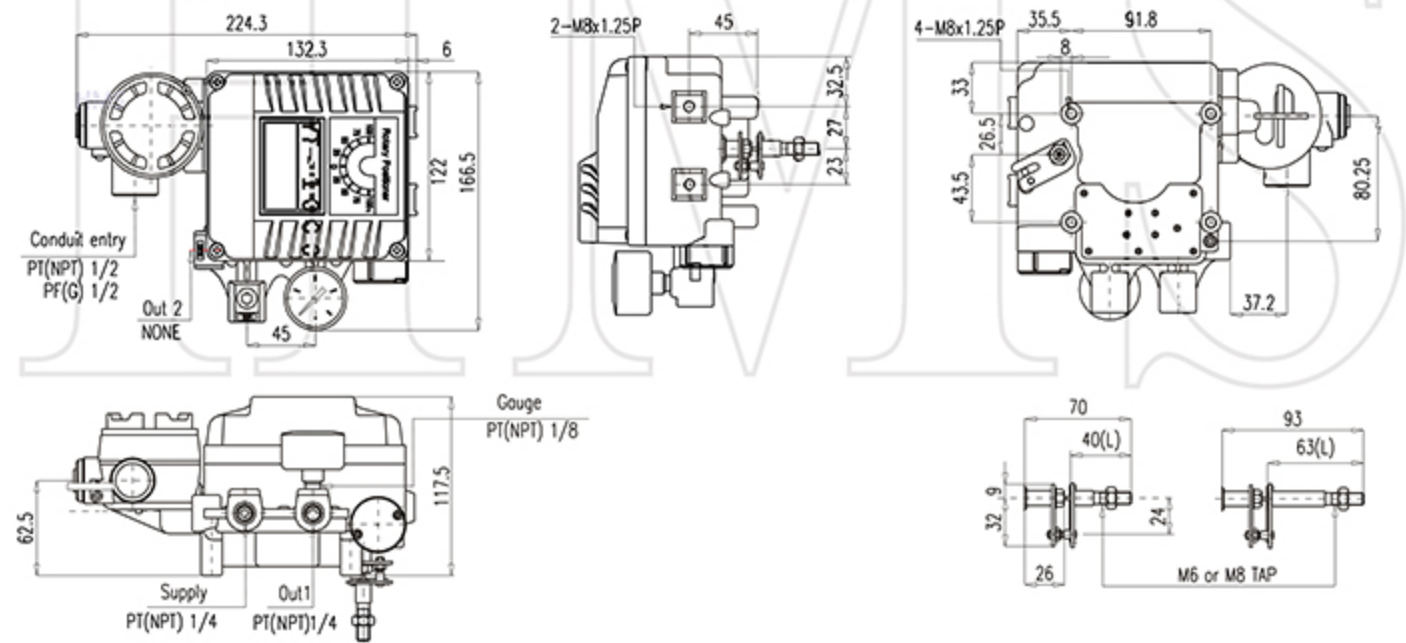
为了打开阀门增加电流信号,力矩马达1产生电磁场,挡板2受电磁场力远离喷嘴3,喷嘴3和挡板2间距变大,排出先导阀4内部的线轴5上方气压。受其影响线轴5向右边移动,推动挡住底座7的阀芯8气压通过底座7,输入到角行程气动执行机构10。随着角行程气动执行机构气室11内部压力增加,执行机构推杆12旋转,通过反馈杆13把执行机构推杆12的位移变化传达到滑板14这个位移变化又传达到量程15反馈杆,拉动量程弹簧16当量程弹簧16和力矩马达1的力保持平衡时,挡板2回到原位,减小与喷嘴3间距。随着通过喷嘴3排出空气量的减小,线轴5上方气压增加,线轴5回到原位,阀芯8重新堵住底座7,停止气压输入到角行程气动执行机构10,当角行程气动执行机构10的运动停止时,定位器保持稳定状态。



YT-1000R原理图
YT-1000 r principle diagram

In order to open the valve to increase the current signal, the torque motor 1 generates an electromagnetic field, the baffle 2 is subjected to an electromagnetic field force away from the nozzle 3. The distance between the nozzle 3 and the baffle 2 becomes large, and the air pressure above the bobbin 5 inside the pilot valve 4 is discharged. The spool 5 is moved to the right by its influence, and the valve body 8, which blocks the base 7, is pushed through the base 7, Corner Pneumatic Actuator 10. With the increase in the pressure inside the air chamber 11 of the aerial actuator, The actuator stem 12 is rotated and the displacement of the actuator stem 12 is transmitted to the displacement of the slider 14 is also transmitted to the range 15 of the feedback lever, pulling the span spring 16 when the span spring 16 and the moment of the torque motor 1 are maintained in balance, the baffle 2 is returned to its original position, and the distance from the nozzle 3 is reduced. along with The amount of air discharged through the nozzle 3 is reduced, the air pressure above the bobbin 5 is increased, the bobbin 5 is returned to its original position, and the spool 8 Re-block the base 7, stop the air pressure input to the angular stroke pneumatic actuator 10, when the angular stroke pneumatic When the movement of the mechanism 10 is stopped, the retainer remains in a steady state.

六.YT-1000F外形尺寸 Overall dimensions



二.技术参数 Main Technical parameters

内容 content	YT-1000	
	YT-1000-RD	YT-1000-RS
输入信号 The input signal	4~20mA DC	
阻抗 impedance	250±15Ω	
供给压力 Supply pressure	1.4~7.0kgf/cm ²	
角行程 Angular travel	0~90°	
气源接口 Air interface	PT(NPT)1/4	
压力表接口 Pressure gauge interface	PT(NPT)1/8	
电源接口 The power interface	PF 1/2(G 1/2)	
防爆等级 Explosion-proof grade	KTL:ExdIIIBT5 ExdIIICT5 ExdIIIBT6 ATEX:EEExdIIIBT5;JIS:ExsdIIIBT5 CSA:ExmdIIIBT5;NEPSI:ExialICY6	
防护等级 Protection grade	IP 67	
环境温度 Working temperature	标准型 standard: -20~70°C	
	高温型 High temperature type: -20~120°C 低温型 Low temperature type: -40~70°C	
线性 Linear	±1.0% F.S	
滞后度 Degree of lag	1.0% F.S	
灵敏度 The sensitivity	±0.5% F.S	±0.2% F.S
重复性 repetitive	±0.5% F.S	
空气消耗量 Air consumption	3LPM(Sup=1.4kgf/cm ² 20psi)	
流量 Flow to	80LPM(Sup=1.4kgf/cm ² 20psi)	
材质 The material	压铸铝 Die casting aluminum	
重量 The weight of the	2.8Kg(6.2Lb)	

附件-手动操作机构 Attachment - manual operating mechanism

一.蜗轮式手动机构 The worm gear type manually

手动机构是双作用气动执行器辅助操作工具，用于0-90°角行程开启阀门。气源正常情况下，用气动驱动阀门，当气源压力暂停，需要开启或关闭阀门时，启用手动机构进行人工驱动。

Manual mechanism is double-acting pneumatic actuators auxiliary operation tools, used in 0-90° Angle of open valve. Air under normal circumstances, use pneumatic drive valve, when the air pressure to suspend, need to open or close the valve, to enable manual drive manually.

二.蜗轮式手动机构的操作说明 The worm gear type manual instructions

1. 启用手动机构时，拨出限位销，逆时针将手柄旋转180°至上部，限位销自动限位，旋转手轮，进行手动操作。反之实现气动操作。

2. 手动操作时，顺时针转动手轮，阀门开启，逆时针转动手轮，阀门关闭。

3. 手动操作时，必须关闭气源；手动和气动不可同时使用，否则会使驱动装置损坏；使用气动前，必须检查手动机构处于气动驱动状态，即手柄在下方位置。

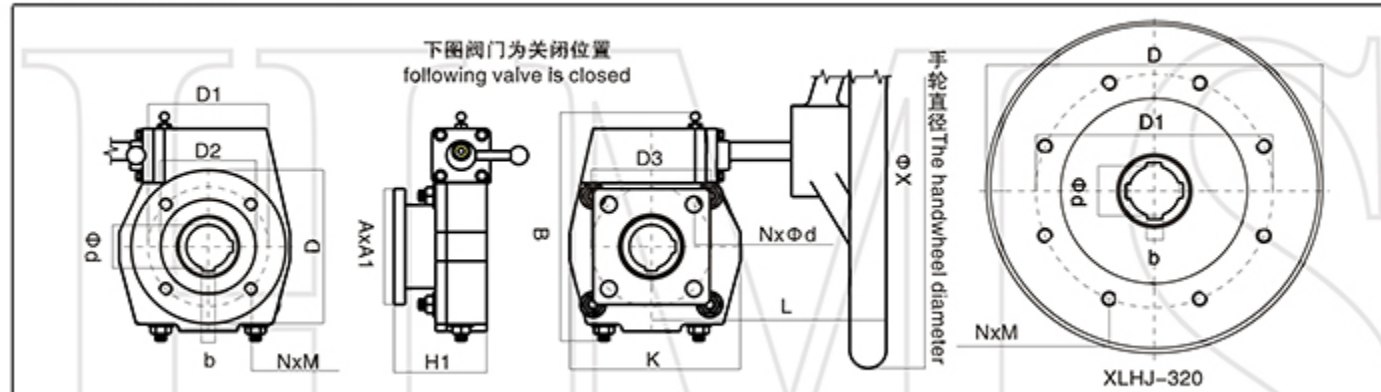
1.Enable manual institutions, allocated limit pin, will handle counterclockwise rotation 180° is supreme, limit pin automatic spacing, rotate handwheel, manual operation. Vice dash forward show pneumatic operation.

2.Manual operation, turn the handwheel clockwise, the valve opens, turn the handwheel counterclockwise, the valve closed.

3.Manual operation, must be closed gas source; Manual and pneumatic cannot be used at the same time, otherwise you will make the driving gear damage; Using pneumatic, must be checked manually agency is in a state of pneumatic drive, the handle is in below location.



三.外形及连接尺寸 The shape and connection size



型号 Model	D	D1	D2	Φd	b	N x M	A x A1	D3	N x Φ d	H1	ΦX	配标准件 With standard parts	L	B	K	选配执行器 Equipped with actuators
XLHJ-26	90	70	55	22.2	8	4 x M8	64 x 64	70	4 x Φ9	87	250	M8 x 30	192	166	104	RD035-110
XLHJ-38	125	70	55	22.2	8	4 x M8	100 x 100	102	4 x Φ12	84	300	M10 x 35	195	191	125	RD110-665
XLHJ-54	175	125	85	36	10	4 x M12	110 x 110	125	4 x Φ14	93	300	M12 x 40	233	234	175	RD665-1200
XLHJ-80	210	140	100	48	14	4 x M16	156 x 135	140	4 x Φ18	127	400	M16 x 55	277	311	234	RD1200-1800
XLHJ-78	210	165	130	76.2	20	4 x M20	162 x 162	165	4 x Φ22	128	600	M20 x 60	323	350	276	RD1800-6000
XLHJ-320	300	254	200	75	20	8 x M16	Φ300	254	8 x Φ18	244	500	M16 x 55	463	435	300	RD6000-8000

公司介绍 Company Profile

浙江汉姆森自控阀门有限公司经过二十多年的发展，它是以一家专业研究气动，液动、电动自动控制执行器以及各种成套阀门的专业厂家。集研究、开发、生产制造、销售、服务于一体的科技型公司，自成立以来已获得数项国家专利，并率先通过ISO9001国际质量体系认证。产品采用电脑CAD三维设计系统优化设计，不仅外形美观，并且质量可靠。产品大量采用精密加工中心机床CAM制造，确保各部件加工精度。

本公司一贯坚持以“科技创新，开拓进取”的企业宗旨，竭诚为广大用户提供优质满意的售前、售后服务。力求打造全球最大最强自动控制阀门专业企业

Zhejiang Hamusen Automation Instrument Co Ltd; 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.

