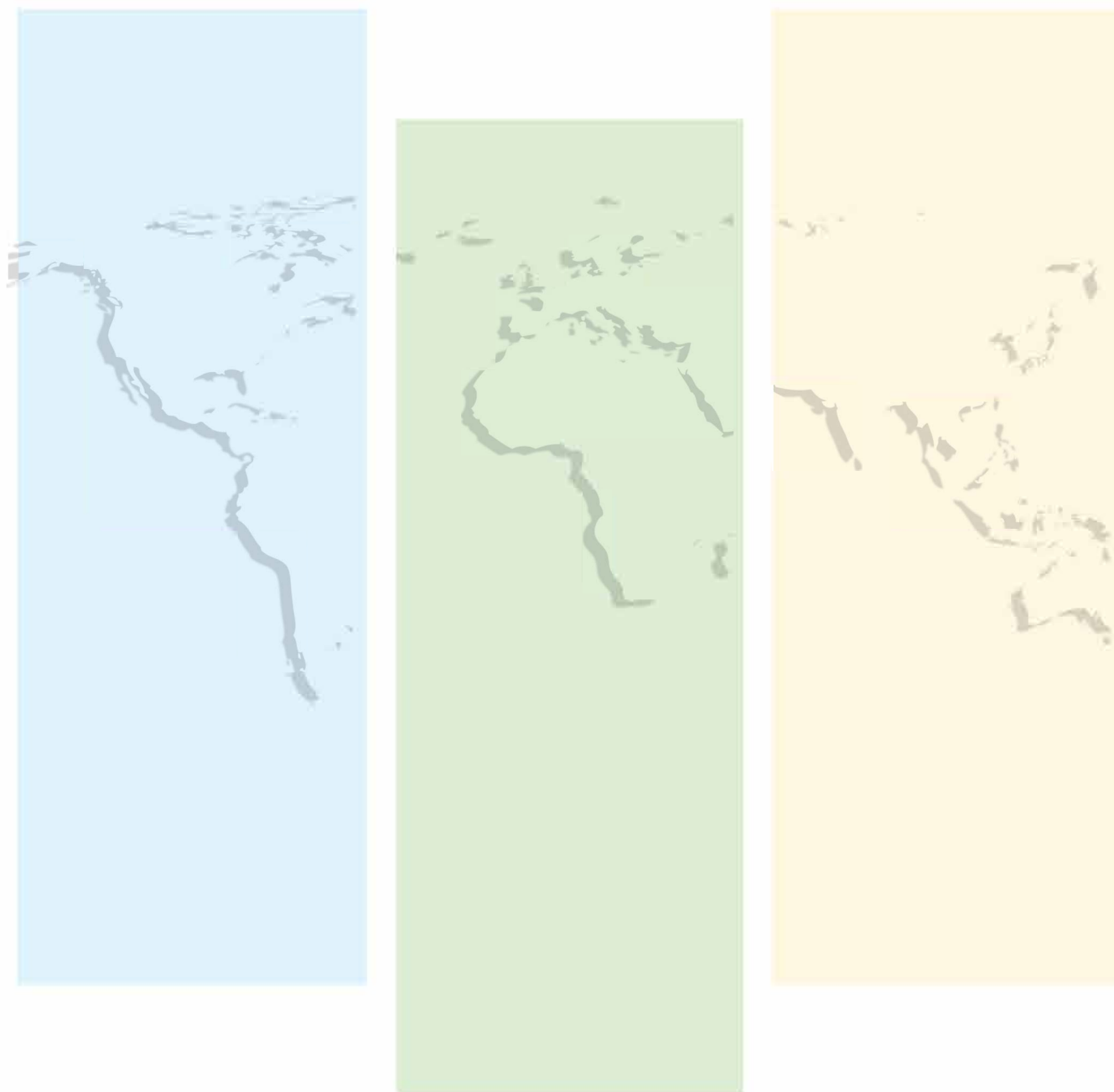




英国莱恩科赫工业技术有限公司

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Pneumatic Actuators

气动执行器



Torque Range

8 thru 8500 Nm

Independent Travel Stop Adjustment

Range of 5° for the 90° Rotation

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气动手轮机构
Hand Wheel Gear Operator

Construction 结构特点

1、指示器 Indicator

NAMUR标准指示器便于安装位置开关、定位器等附件。
Position indicator with NAMUR is convenient for mounting accessories such as Limit Switch box, Positioner and so on.

2、输出轴 Pinion

镀镍合金钢、高精度一体式输出轴同时符合NAMUR、ISO5211、DIN3337标准。可根据客户要求定制尺寸和不锈钢材料。The pinion is high-precision and integrative, made from nickelled-alloy steel, full conform to the latest standards of ISO5211, DIN3337, NAMUR. The dimensions can be customized and the stainless steel is available.

3、缸体 Actuator Body

ASTM6005压铸铝合金缸体可以采用硬质氧化、环氧树脂喷涂（根据要求喷涂兰色、橙色、黄色等）、PTFE涂层或镀镍满足不同要求。

According to the different requirements, the extruded aluminum alloy ASTM6005 Body can be treated with hard anodized, powder polyester painted (different colours is available such as blue, orange, yellow etc.). PTFE or Nickel plated.

4、端盖 End caps

压铸铝合金表面金属粉末喷涂各种颜色、PTFE涂层镀镍处理。
Die-casting aluminum powder polyester painted in different colours, PTFE or Nickel plated.

5、活塞 Pistons

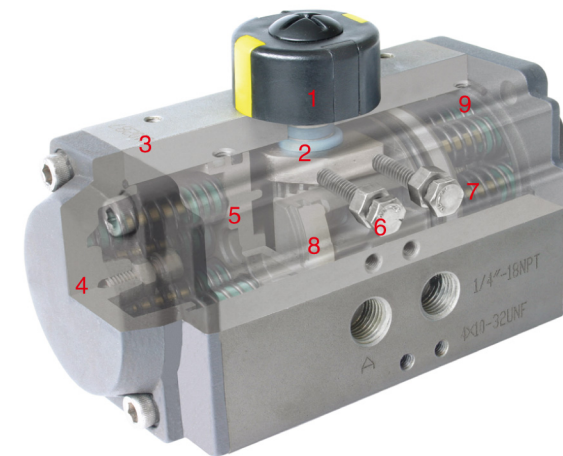
双活塞齿条、采用铸铝硬质氧化或者铸钢镀锌处理，安装位置对称、运作迅速、使用寿命长，简单的颠倒活塞可以改变旋转方向。

The twin rack pistons are made from Die-casting aluminum treated with Hard anodized or made from Cast steel with galvanization. Symmetric mounting position, long cycle life and fast operation, reversing rotation by simply inverting the pistons.

6、行程调节 Travel adjustment

两个独立的行程调节螺钉可以进行方便、精确 $\pm 5^\circ$ 的调节开、关位置。

The two independent external travel stop adjustment bolts can adjust $\pm 5^\circ$ at both open and close directions easily and precisely.



7、高性能弹簧 High performance springs

采用优质材料、涂层处理，预压装配。具有较强的抗腐蚀性和使用寿命。能够安全、简单的拆卸单作用执行器，通过改变弹簧数量满足不同的力矩输出范围。

Preloaded coating springs are made from the high quality material for resistant to corrosion and longer service life, which can be demounted safely and conveniently to satisfy different requirements of torque by changing quantity of springs.

8、轴承、导板 Bearings & Guides

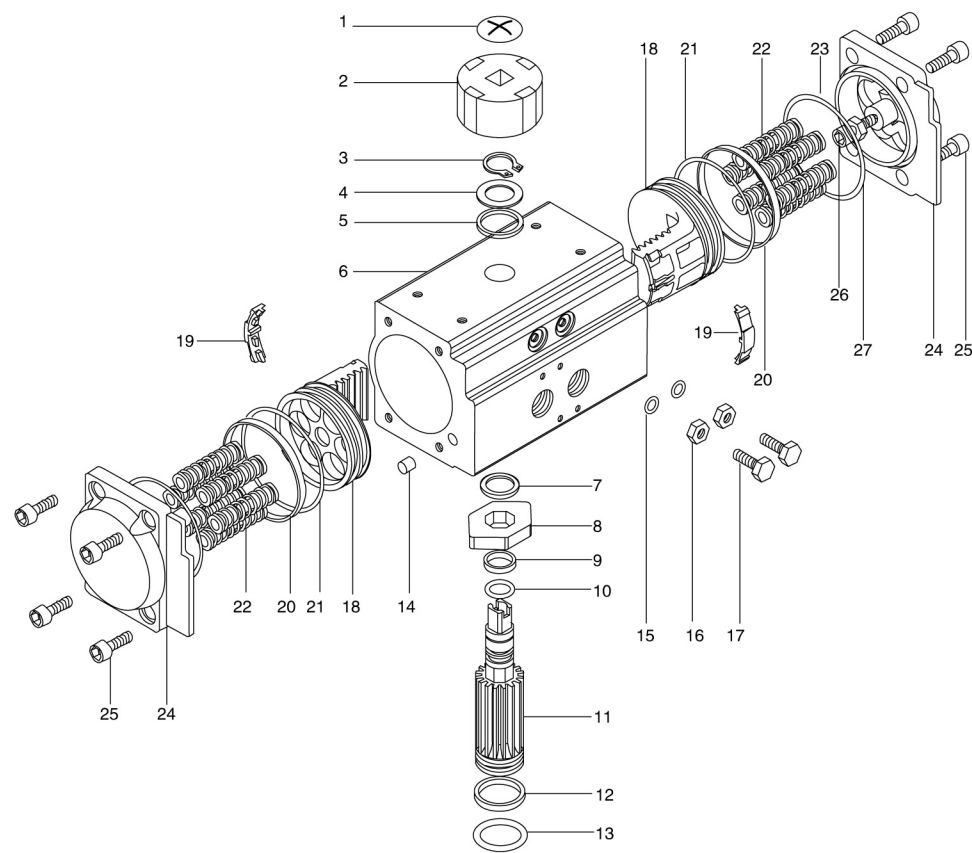
采用低摩擦、长寿命复合材料，避免了金属与金属的直接接触，维修更换简单方便。

Made from low friction, long-life compound material, to avoid the direct contact between metals. The maintenance and replacement are easy and convenient.

9、密封 O-rings

在常温工作条件下使用丁腈橡胶，在高温或低温时采用氟橡胶或硅橡胶。

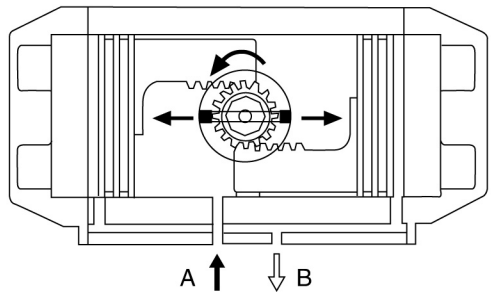
NBR rubber O-rings provide trouble-free operation at standard temperature ranges, For high and low temperature applications Viton or Silicone.



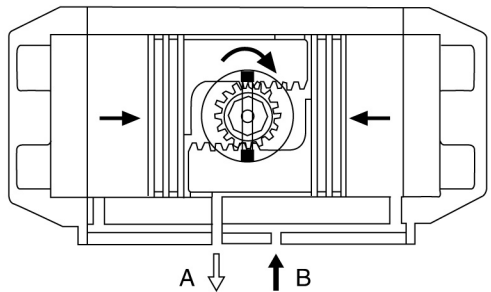
序号	名称	数量	材料	防腐处理	防腐处理
1	指示器螺钉	1	塑料		
2	指示器	1	塑料		
3	卡簧	1	不锈钢		
4	垫圈	1	不锈钢		
5	外垫片	1	工程塑料		
6	缸体	1	铸铝	硬质氧化等	
7	内垫片	1	工程塑料		
8	凸轮	1	合金钢		
9	上轴轴承	1	工程塑料		
10	上轴O圈	1	丁腈橡胶		氟橡胶/硅橡胶
11	齿轴	1	合金钢	镀镍	不锈钢
12	下轴轴承	1	工程塑料		
13	下轴O圈	1	丁腈橡胶		氟橡胶/硅橡胶
14	堵头	2	丁腈橡胶		氟橡胶/硅橡胶
15	调节螺钉O圈	2	丁腈橡胶		氟橡胶/硅橡胶
16	调节螺钉螺母	2	不锈钢		
17	调节螺栓	2	不锈钢		
18	活塞	2	铸铝/铸钢	氧化/镀锌	不锈钢
19	活塞导板	2	工程塑料		
20	活塞轴承	2	工程塑料		
21	活塞O圈	2	丁腈橡胶		氟橡胶/硅橡胶
22	弹簧	0~12	弹簧钢	浸漆	
23	端盖O圈	2	丁腈橡胶		氟橡胶/硅橡胶
24	端盖	2	铸铝	粉末喷涂等	
25	端盖螺栓	8	不锈钢		
26	限位螺栓	2	不锈钢		
27	限位螺母	2	不锈钢		

No.	Description	Qty	Standards Material	PROTECTION	OPTIONAL MATERIAL
1	Indicator Screw	1	Plastic		
2	Indicator	1	Plastic		
3	Spring clip	1	Stainless steel		
4	Thrust washer	1	Stainless steel		
5	Outside washer	1	Engineering plastics		
6	Body	1	Extruded aluminum alloy	Hard anodized etc	
7	Inside washer	1	Engineering plastics		
8	Cam	1	Alloy steel		
9	O-ring(pinion top)	1	NBR		Viton/Silicone
10	Bearing(pinion top)	1	Engineering plastics		
11	Pinion	1	Alloy steel	Nickel plated	Stainless Steel
12	O-ring(pinion bottom)	1	Engineering plastics		
13	Bearing(pinion bottom)	1	NBR		Viton/Silicone
14	Plug	2	NBR		Viton/Silicone
15	O-ring(Adjust screw)	2	NBR		Viton/Silicone
16	Nut(Adjust screw)	2	Stainless Steel		
17	Adjust screw	2	Stainless Steel		
18	Piston	2	Cast aluminum/casting	Anodized/Zinc galvanized	Stainless Steel
19	Guide(Piston)	2	Engineering plastics		
20	Bearing(Piston)	2	Engineering plastics		
21	O-ring(Piston)	2	NBR		Viton/Silicone
22	Spring	0~12	Spring steel	Dip coating	
23	O-ring(End cap)	2	NBR		Viton/Silicone
24	End cap	2	Cast alluminum	Powder polyster painted etc	
25	Cap screw	8	Stainless Steel		
26	Stop screw	2	Stainless Steel		
27	Nut(Stop screw)	2	Stainless Steel		

1. 双作用式 (俯视图) Dual action (planform)

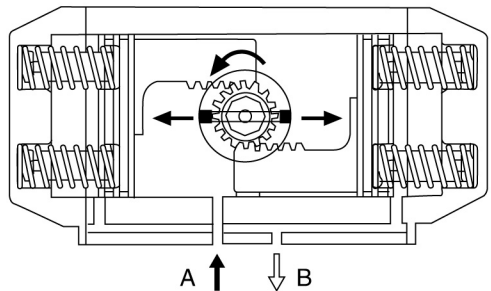


压缩空气由A口输入，使左右活塞向相反方向运动，输出轴逆时针方向转动，打开阀门，两活塞侧面的空气由B口排出。
Air to Port A forces the pistons outwards, causing the pinion to turn counterclockwise while the air is being exhausted from Port B.

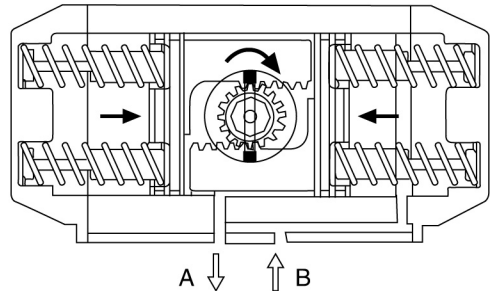


压缩空气由B口输入，使左右活塞向中心移动，输出轴顺时针方向转动，关闭阀门，两活塞中间的空气由A口排出。
Air to Port B forces the pistons inwards, causing the pinion to turn clockwise while the air is being exhausted from Port A.

2. 单作用式 (俯视图) Spring return (planform)



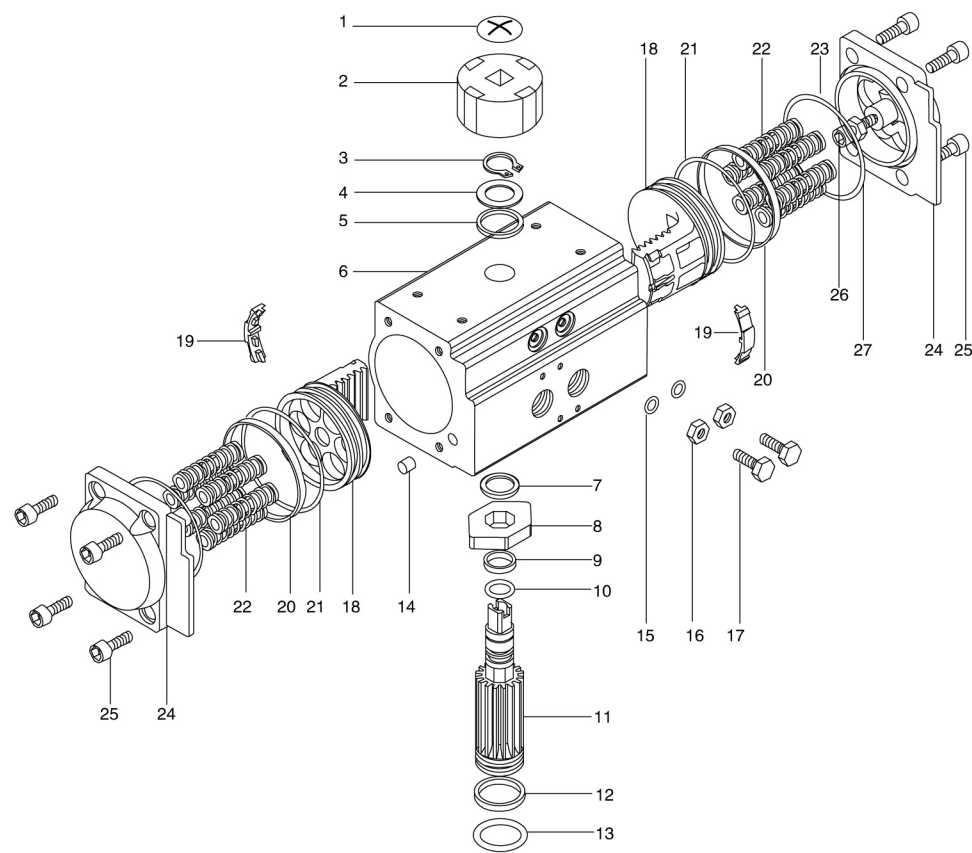
压缩空气由A口输入，使左右活塞向相反方向运动，输出轴逆时针方向转动，打开阀门，两活塞侧面的空气由B口排出。
Air to Port A forces the pistons outwards, causing the pinion to turn counterclockwise while the air is being exhausted from Port B.



失气或失电时，由于弹簧的作用使两活塞向中心移动，输出轴顺时针方向转动，关闭阀门，空气由A口排出，B口进气可加速关闭阀门。
In the event of loss of air pressure or power, the stored energy in the springs forces the pistons inwards, causing the pinion turns clockwise while air is being exhausted from Port A, and air to Port B can accelerate closing the valve.

注：1. 标准运作的旋转方向为顺时针关闭阀门，逆时针为打开阀门。
2. 颠倒活塞装配的旋转方向为逆时针关闭阀门，顺时针为打开阀门。

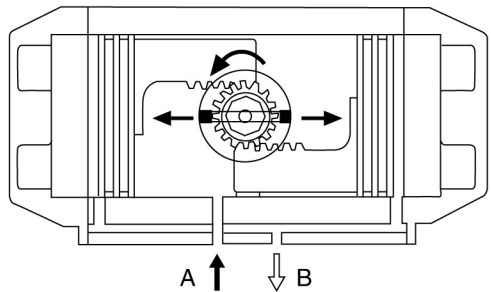
Note:
1. The standard rotation is clockwise for closing the valve, while counterclockwise for opening.
2. If the assembly direction of the piston is reversed, then the standard rotation is counterclockwise for closing the valve, clockwise for opening.



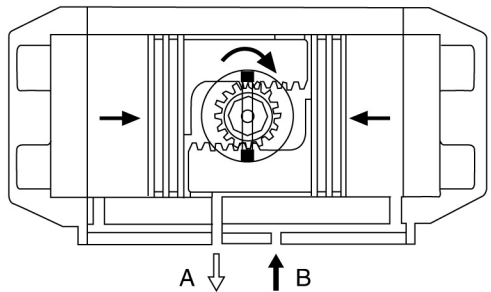
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4	垫圈	1	不锈钢		
5	外垫片	1	工程塑料		
6	缸体	1	铸铝	硬质氧化等	
7	内垫片	1	工程塑料		
8	凸轮	1	合金钢		
9	上轴轴承	1	工程塑料		
10	上轴O圈	1	丁腈橡胶		氟橡胶/硅橡胶
11	齿轴	1	合金钢	镀镍	不锈钢
12	下轴轴承	1	工程塑料		
13	下轴O圈	1	丁腈橡胶		氟橡胶/硅橡胶
14	堵头	2	丁腈橡胶		氟橡胶/硅橡胶
15	调节螺钉O圈	2	丁腈橡胶		氟橡胶/硅橡胶
16	调节螺钉螺母	2	不锈钢		
17	调节螺栓	2	不锈钢		
18	活塞	2	铸铝/铸钢	氧化/镀锌	不锈钢
19	活塞导板	2	工程塑料		
20	活塞轴承	2	工程塑料		
21	活塞O圈	2	丁腈橡胶		氟橡胶/硅橡胶
22	弹簧	0~12	弹簧钢	浸漆	
23	端盖O圈	2	丁腈橡胶		氟橡胶/硅橡胶
24	端盖	2	铸铝	粉末喷涂等	
25	端盖螺栓	8	不锈钢		
26	限位螺栓	2	不锈钢		
27	限位螺母	2	不锈钢		

No.	Description	Qty	Standards Material	PROTECTION	OPTIONAL MATERIAL
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9	O-ring(pinion top)	1	NBR		Viton/Silicone
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12	O-ring(pinion bottom)	1	Engineering plastics		
13	Bearing(pinion bottom)	1	NBR		Viton/Silicone
14	Plug	2	NBR		Viton/Silicone
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16	Nut(Adjust screw)	2	Stainless Steel		
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19	Guide(Piston)	2	Engineering plastics		
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21	O-ring(Piston)	2	NBR		Viton/Silicone
22	Spring	0~12	Spring steel	Dip coating	
23	O-ring(End cap)	2	NBR		Viton/Silicone
24	End cap	2	Cast alluminum	Powder polyster painted etc	
25	Cap screw	8	Stainless Steel		
26	Stop screw	2	Stainless Steel		
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1. 双作用式 (俯视图) Dual action (planform)

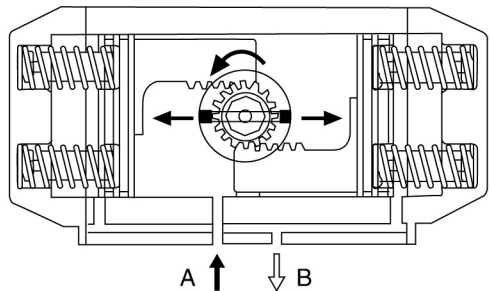


压缩空气由A口输入，使左右活塞向相反方向运动，输出轴逆时针方向转动，打开阀门，两活塞侧面的空气由B口排出。
Air to Port A forces the pistons outwards, causing the pinion to turn counterclockwise while the air is being exhausted from Port B.

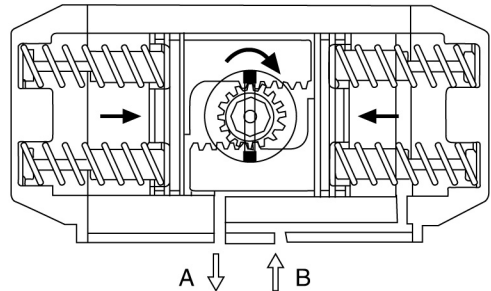


压缩空气由B口输入，使左右活塞向中心移动，输出轴顺时针方向转动，关闭阀门，两活塞中间的空气由A口排出。
Air to Port B forces the pistons inwards, causing the pinion to turn clockwise while the air is being exhausted from Port A.

2. 单作用式 (俯视图) Spring return (planform)



压缩空气由A口输入，使左右活塞向相反方向运动，输出轴逆时针方向转动，打开阀门，两活塞侧面的空气由B口排出。
Air to Port A forces the pistons outwards, causing the pinion to turn counterclockwise while the air is being exhausted from Port B.



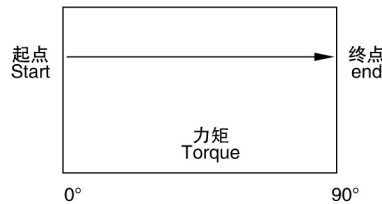
失气或失电时，由于弹簧的作用使两活塞向中心移动，输出轴顺时针方向转动，关闭阀门，空气由A口排出，B口进气可加速关闭阀门。
In the event of loss of air pressure or power, the stored energy in the springs forces the pistons inwards, causing the pinion turns clockwise while air is being exhausted from Port A, and air to Port B can accelerate closing the valve.

注：1. 标准运作的旋转方向为顺时针关闭阀门，逆时针为打开阀门。
2. 颠倒活塞装配的旋转方向为逆时针关闭阀门，顺时针为打开阀门。

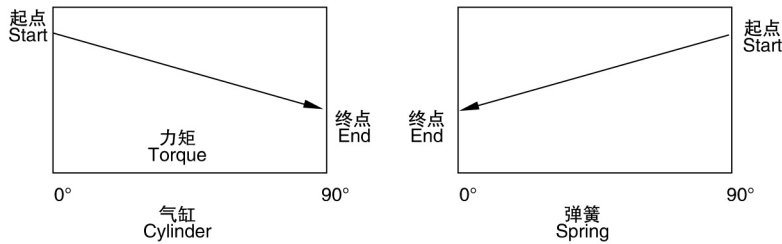
Note:
1. The standard rotation is clockwise for closing the valve, while counterclockwise for opening.
2. If the assembly direction of the piston is reversed, then the standard rotation is counterclockwise for closing the valve, clockwise for opening.

Output torque 输出扭矩

双作用执行器力矩图
Torque diagram double acting actuators



单作用执行器力矩图
Torque diagram single acting actuators



双作用式执行器输出力矩

Output torque of ST series double acting pneumatic actuator

型 号 Model	输入气源压力(单位: bar) Air pressure (unit: bar)						
	2	3	4	5	6	7	8
ST008	2.7	4.2	6.0	7.5	9.0	10.0	11.5
ST020	8.3	12.4	16.6	20.8	24.9	29.1	33.2
ST035	14.6	21.9	29.2	36.6	43.9	51.2	58.5
ST055	23.5	35.3	47.0	58.8	70.5	82.3	94.0
ST075	29.7	44.5	59.4	74.2	89.1	103	118
ST110	45.5	68.2	91.1	119	136	159	181
ST160	67.8	101	136	179	203	237	271
ST290	116	154	233	291	349	408	466
ST435	175	263	350	438	526	614	701
ST665	267	401	534	668	802	935	1069
ST1000	430	646	861	1185	1292	1508	1723
ST1400	526	888	1184	1480	1776	2072	2369
ST2100	773	1160	1546	2126	2785	3249	3713
ST3000	1174	1761	2349	3263	3916	4569	5221
ST4000	1526	2289	3052	4197	4578	5608	6409
ST6000	2285	3427	4570	6283	6854	8397	9596
ST8500	3256	4883	6511	8953	9767	11964	13673



Output torque 输出扭矩

单作用式执行器输出力矩

Output torque of ST series spring return actuator

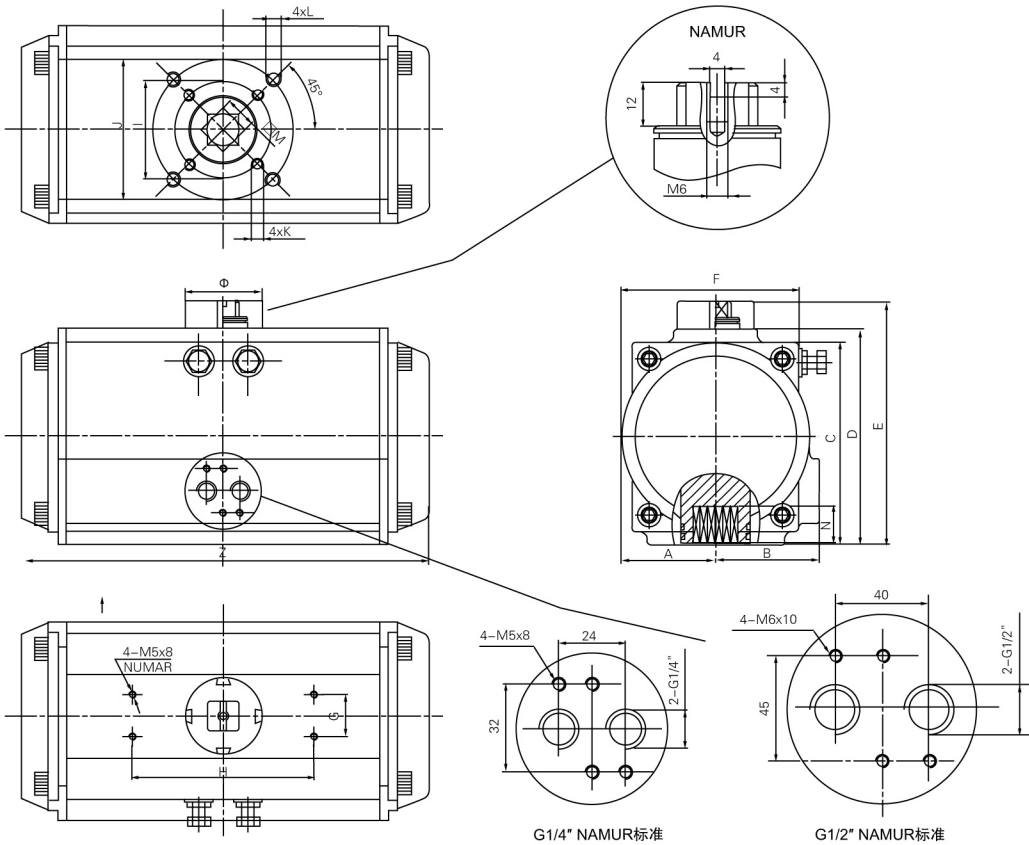
单作用执行器输出力矩 Output Torque of Spring Return Actuators																		
输出力矩 Output torque of air to springs																	弹簧输出力矩	
气源压力		2.5Bar		3Bar		4Bar		5Bar		6Bar		7Bar		8Bar				
Model 型号	弹簧 数量	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	90° Start	0° End	
ST020SR	K5	5.7	3.8	7.6	5.7											6.2	4.3	
	K6	4.9	2.5	6.9	4.5	10.9	8.5									7.4	5.0	
	K7	4.0	1.3	6.0	3.3	9.8	7.3	14.0	10.4							8.6	5.9	
	K8			5.2	2.0	9.2	6.0	13.2	9.1	17.2	14.1					9.9	6.7	
	K9			4.3	0.8	8.3	4.8	12.3	7.9	16.3	12.8	20.3	16.8			11.1	7.6	
	K10					7.4	3.6	11.5	6.7	15.5	11.6	19.5	15.6			12.4	8.5	
	K11					6.6	2.3	10.6	5.4	14.6	10.4	18.6	14.3	22.6	18.3	13.6	9.3	
	K12							9.7	4.2	13.8	9.1	17.8	12.2	21.8	17.1	14.8	10.2	
ST035SR	K5	11.4	7.7	15.0	11.4	22.3	14.9									10.4	6.8	
	K6	10.1	5.7	13.6	9.3	20.9	16.6	28.3	23.9							12.5	8.2	
	K7	8.6	3.6	12.5	7.2	19.5	14.5	26.8	21.9							14.6	9.6	
	K8			10.9	5.1	18.2	12.4	25.5	19.8	32.8	27.0	40.1	34.3			16.7	10.9	
	K9					16.8	10.4	24.1	17.7	31.4	24.9	38.7	32.2			18.8	12.3	
	K10					1.4	8.2	22.8	15.6	30.0	22.8	37.3	30.1	44.7	37.4	20.9	13.7	
	K11							21.5	13.5	28.7	20.7	36.0	28.0	43.3	35.3	22.9	15.0	
	K12							20.0	11.4	27.3	18.6	34.6	25.9	41.9	33.3	25.0	16.4	
ST055SR	K5	14.5	10.6	19.4	15.5	29.5	25.7									14.5	10.5	
	K6	12.4	7.6	17.3	12.6	27.4	22.7	37.5	32.8							17.4	12.7	
	K7	10.4	4.8	15.2	9.7	25.3	19.9	35.4	29.9							20.3	14.8	
	K8			13.1	6.8	23.1	16.9	33.3	27.0	43.2	37.0	53.3	47.0			23.2	16.9	
	K9					21.0	14.1	31.2	24.1	41.1	34.1	51.2	44.2			26.1	19.0	
	K10					19.0	11.1	28.8	21.2	39.0	31.2	49.1	41.2	59.1	51.2	29.0	21.1	
	K11							27.0	18.3	37.0	28.3	47.0	38.4	57.0	48.4	31.9	23.2	
	K12							24.9	15.4	34.9	25.4	44.9	35.4	54.9	45.4	34.7	25.3	
ST075SR	K5	23.3	16.1	31.1	24.0	46.8	39.7									23.0	15.8	
	K6	20.1	11.5	28.0	19.3	43.7	35.1	59.4	50.7							27.6	19.0	
	K7	17.0	6.9	24.8	14.8	40.5	30.5	56.2	46.2							32.2	22.1	
	K8			21.7	10.1	37.4	25.8	53.1	41.5	68.8	57.2	84.5	72.9			36.8	25.3	
	K9					34.2	21.3	49.9	37.0	65.6	52.6	81.2	68.3			41.4	28.5	
	K10					31.0	16.6	46.7	32.3	62.4	48.0	78.1	63.7	93.8	79.3	46.0	31.6	
	K11							43.6	27.7	59.3	43.4	75.0	59.1	90.6	74.8	50.6	34.8	
	K12							40.4	23.2	56.1	38.9	71.7	54.5	87.4	70.2	55.2	38.0	
ST110SR	K5	33.1	22.0	44.2	33.2	66.8	55.9									34.4	23.3	
	K6	28.4	15.2	39.6	26.4	62.2	49.0	84.8	71.6							41.2	28.0	
	K7	23.8	8.2	34.9	19.4	57.5	42.1	80.2	64.7							48.1	32.7	
	K8			31.3	12.6	52.9	35.2	75.5	57.9	98.1	80.5	120.7	103.0			55.0	37.3	
	K9					48.2	28.4	70.9	51.0	93.5	73.6	116.0	96.1			61.9	42.0	
	K10					43.6	21.5	66.2	44.1	88.8	66.7	111.3	89.2	134.0	111.8	68.7	46.7	
	K11							61.5	37.2	84.1	59.9	106.6	82.4	129.2	105.0	75.6	51.4	
	K12							56.8	30.4	79.4	53.0	101.9	75.5	124.5	98.0	82.5	56.0	
ST160SR	K5	51.0	33.4	67.5	49.9	100.6	83.0									49.2	31.6	
	K6	44.7	23.5	61.1	40.0	94.2	73.2	127.3	106.2							59.1	38.0	
	K7	38.4	13.7	54.9	30.3	87.9	63.4	121.0	96.4							68.9	44.3	
	K8			48.5	20.4	81.6	53.5	114.7	86.5	147.7	119.6	180.8	152.7			78.7	50.6	
	K9					75.3	43.7	108.4	76.8	141.5	109.8	174.5	142.9			88.6	56.9	
	K10					68.9	33.4	102.0	66.5	135.1	99.6	168.2	132.6	201.2	165.7	98.4	63.3	
	K11							95.7	57.0	128.7	90.1	161.8	123.1	194.8	156.2	108.3	69.6	
	K12							89.4	47.5	122.5	80.6	155.5	113.6	188.6	146.7	118.1	75.9	
ST290SR	K5	73	47	98	72	148	122									79	52	
	K6	63	31	88	56	138	107	188	157							94	63	
	K7	52	15	77	40	127	90	178	141							110	73	
	K8			67	25	117	75	167	125	217	176	268	226			125	84	
	K9					107	59	157	109	207	159	257	210			141	94	
	K10					96	44	146	94	196	144	247	194	297	245	157	105	
	K11							136	78	186	128	236	178	286	228	173	115	
	K12							125	63	176	113	226	163	276	213	188	125	
ST435SR	K5	128	85	171	127	256	213									129	86	
	K6	111	59	154	102	239	187	325	273							155	103	
	K7	94	33	137	76	222	162	308	247							181	120	
	K8			120	50	205	136	291	221	376	307	462	392			206	137	
	K9					187	110	273	196	358	281	444	367			232	155	
	K10					170	84	256	169	341	255	427	340	512	426	258	172	
	K11							238	143	324	229	409	314	495	400	284	189	
	K12							221	118	307	203	392	289	478	374	310	206	

Output torque 输出扭矩

单作用执行器输出力矩 Output Torque of Spring Return Actuators																	
输出力矩 Output torque of air to springs																	
气源压力		2.5Bar		3Bar		4Bar		5Bar		6Bar		7Bar		8Bar		弹簧输出力矩	
Model	弹簧数量	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	0° Start	90° End	90° Start	0° End
ST665SR	K5	193	124	259	191	392	324									208	140
	K6	165	83	232	149	365	282	498	498							250	168
	K7	137	41	203	107	336	240	469	469							292	196
	K8			176	66	309	199	442	442	575	465	708	598			333	223
	K9					280	157	413	413	546	423	679	556			375	251
	K10					253	115	386	386	519	381	652	514	785	647	417	279
	K11							358	358	491	340	624	473	757	606	458	307
	K12							330	330	463	298	596	431	729	564	500	335
ST1000SR	K5	332	222	438	329	651	542									309	200
	K6	292	161	398	267	611	480	824	693							371	240
	K7	252	99	358	205	571	418	784	631							433	280
	K8			318	143	531	356	744	569	957	782	1169	995			495	320
	K9					491	295	704	507	917	720	1130	933			557	360
	K10					451	233	664	446	877	658	1090	871	1302	1084	618	400
	K11							624	384	837	597	1050	809	1263	1022	680	440
	K12							584	322	797	535	1010	748	1223	960	742	480
ST1400SR	K5	390	285	523	418	789	684									380	275
	K6	335	209	468	342	734	608	1000	874							456	330
	K7	280	133	413	266	679	532	945	798							532	385
	K8			358	190	624	456	890	722	1156	988	1422	1254			608	440
	K9					569	380	835	646	1101	912	1367	1178			684	495
	K10					514	304	780	570	1046	836	1312	1102	1578	1368	760	550
	K11							725	494	991	760	1257	1026	1523	1292	836	605
	K12							670	418	936	684	1202	950	1468	1216	912	660
ST2100SR	K5	552	409	744	600	1129	985									554	410
	K6	470	297	662	489	1047	874	1432	1259							665	492
	K7	388	187	580	379	964	764	1349	1149							775	575
	K8			498	268	883	653	1267	1037	1652	1422	2037	1807			886	656
	K9					800	542	1185	926	1569	1311	1954	1696			998	739
	K10					718	431	1103	816	1488	1201	1872	1586	2257	1970	1108	821
	K11							1021	705	1406	1090	1791	1474	2176	1859	1219	903
	K12							939	594	1323	979	1708	1363	2093	1748	1330	985
ST3000SR	K5	903	675	1195	968	1779	1552									787	560
	K6	790	519	1083	811	1667	1396	2252	1981							943	672
	K7	679	361	972	654	1556	1238	2141	1823							1101	783
	K8			860	497	1444	1081	2029	1666	2614	2252	3199	2836			1258	895
	K9					1332	923	1917	1509	2502	2094	3087	2678			1416	1007
	K10					1220	767	1805	1352	2390	1937	2974	2521	3560	3107	1572	1119
	K11							1693	1194	2278	1779	2862	2364	3448	2949	1730	1231
	K12							1582	1037	2167	1623	2751	2207	3336	2792	1887	1342
ST4000SR	K5	1097	729													1061	730
	K6	935	494	1316	875											1273	876
	K7	772	258	1153	639	1916	1402									1485	1022
	K8			991	403	1754	1166	2517	1929							1697	1168
	K9					1592	930	2355	1693	3118	2456					1909	1314
	K10					1430	695	2193	1458	2956	2221	3719	2984	4482	3747	2122	1460
	K11							2030	122	2793	1985	3556	2748	4319	3511	2334	1606
	K12							1868	986	2631	1749	3394	2512	4157	3275	2546	1752
ST6000SR	K5	1553	964													1702	1173
	K6	1292	586	1863	1157											2043	1408
	K7	1031	208	1602	779	2745	1922									2383	1642
	K8			1341	401	2484	1544	3626	2686							2724	1877
	K9					2224	1165	3336	2307	4508	3449					3064	2112
	K10					1963	787	3105	1929	4247	3071	5390	4214	6532	5356	3405	2346
	K11							2844	1551	3986	2693	5129	3836	6271	4978	3745	2581
	K12							2584	1172	3726	2314	4869	3457	6011	4599	4086	2816
ST8500SR	K8	1736	411	2550	1225											3292	2100
	K9			2259	768	3887	2396									3703	2362
	K10			1967	311	3595	1939	5223	3567							4115	2624
	K11					3303	1482	4931	3110	3559	4738					4526	2887
	K12					3012	1025	4640	2653	6268	4281	7895	5908	9523	7536	4938	3149
	K13							4348	2195	5976	3823	7603	5450	9231	7078	5349	3412
	K14							4057	1738	5685	3366	7312	4993	8940	6621	5761	3674
	K15							3765	1281	5393	2909	7020	4536	8648	6164	6172	3937
	K16									5101	2452	6728	4079	8356	5707	6584	4199

Installation dimension 安装尺寸

外形及连接尺寸 Mounting connection and dimension

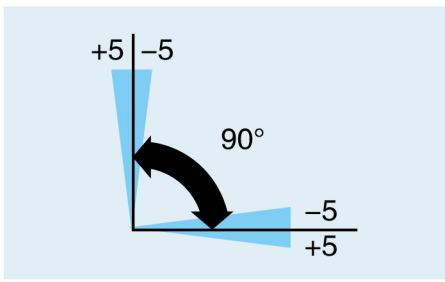


	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Z	Φ	气源接口 Air connection
ST020	30	41.5	65.5	72	92	65	30	80	Φ86	Φ50	M5x8	M6x10	11	14	147	Φ40	NAMUR G1/4"
ST035	36	47	81	87.5	107.5	72	30	80	Φ50	Φ70	M6x10	M8x13	14	18	168	Φ40	NAMUR G1/4"
ST050	42	53	94	99.5	119.5	81	30	80	Φ50	Φ70	M6x10	M8x13	14	18	184	Φ40	NAMUR G1/4"
ST075	46	57	98.5	108.7	128.7	92	30	80	Φ50	Φ70	M6x10	M8x13	17	21	204	Φ40	NAMUR G1/4"
ST110	50	58.5	111	116.5	136.5	98	30	80	Φ50	Φ70	M6x10	M8x13	17	21	262	Φ40	NAMUR G1/4"
ST160	57.5	64	122.5	133	153	109.5	30	80	Φ70	Φ102	M8x13	M10x16	22	26	268	Φ40	NAMUR G1/4"
ST255	67.5	74.5	145.5	155	175	127.5	30	80	Φ70	Φ102	M8x13	M10x16	22	26	301	Φ55	NAMUR G1/4"
ST435	75	77	161	172	192	137.5	30	80	Φ102	Φ125	M10x16	M12x20	27	31	390	Φ55	NAMUR G1/4"
ST665	87	87	184	197	217	158	30	80	Φ102	Φ125	M10x16	M12x20	27	31	458	Φ55	NAMUR G1/4"
ST1000	103	103	213	230	260	189	30	130		Φ140		M16x25	36	40	525	Φ80	NAMUR G1/4"
ST1400	113	113	235.5	255	285	210	30	130		Φ140		M16x25	36	40	532	Φ80	NAMUR G1/4"
ST2100	130	130	264.5	289	319	245	30	130		Φ165		M20x25	46	50	602	Φ80	NAMUR G1/4"
ST3000	147	147	299	326	356	273	30	130		Φ165		M20x25	46	50	722	Φ80	NAMUR G1/2"
ST4000	162	162	348	348	378	324	30	130	Φ165	Φ215	M20x25	M20x25	46	60	742	Φ80	NAMUR G1/2"
ST6000	190	190	402	402	432	380	30	130	Φ165	Φ215	M20x25	M20x25	46	60	860	Φ80	NAMUR G1/2"

工作技术条件/耗气量/重量

工作技术条件 Operating conditions

- 1.工作介质 Operating media
干燥或润滑的压缩空气或无腐蚀性气体，介质中杂质微粒小于30 μ m。
Dry or lubricated air, or the non-corrosive gases. The maximum particle diameter must less than 30 μ m.
- 2.气源压力 Air supply pressure
最小气源压力2.5巴，最大气源压力8巴。
The minimum supply pressure is 2.5 Bar. The maximum supply pressure is 8 Bar.
- 3.介质环境温度 Operating temperature
标准：-20℃ ~ +80℃ Standard: 20℃ ~ +80℃
低温：-35℃ ~ +80℃ Low temperature: -35℃ ~ +80℃
高温：-15℃ ~ +150℃ High temperature: -15℃ ~ +150℃
- 4.行程调节 Travel adjustment
0° 和90° 两个位置上有 ±5° 的调节范围
Have adjustment range of ±5° for the rotation at 0° and 90°
- 5.使用场合 Application
室内或室外安装 Either indoor or outdoor



耗气量计算 Air consumption

气缸开向容积和关向容积 Air volume opening % closing					
型 号 Model	开向容积(L) Air volume opening	关向容积(L) Air volume closing	型 号 Model	开向容积(L) Air volume opening	关向容积(L) Air volume closing
ST008	0.04	0.05	ST665	3.2	3.7
ST020	0.12	0.16	ST1000	5.4	5.9
ST035	0.21	0.23	ST1400	7.5	7.5
ST055	0.3	0.34	ST2100	9	11
ST075	0.43	0.47	ST3000	14	17
ST110	0.64	0.73	ST4000	23.8	29.7
ST160	0.88	0.95	ST6000	35.1	46.3
ST435	2.5	2.2	ST8500	52.6	56
ST665	3.2	3.7			

双作用式耗气量(L/分)=气缸容积（开向容积+关向容积）× [供气压力(Kpa)+101.3 / 101.3] × 次数/分钟。

单作用式耗气量(L/分)=气缸开向容积 × [供气压力(Kpa)+101.3 / 101.3] × 次数/分钟。

Air consumption of dual action actuator(L/min)=air volumc(Air volumc opening+air volumc closing) × ((air supply(Kpa)+101.3) ÷ 101.3) × action cycle times(L/min).

Air consumption of single action actuator(L/min)=air volume opening × ((air supply(Kpa)+101.3) ÷ 101.3 × action cycle times(L/min).

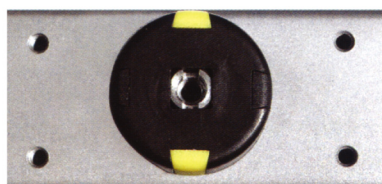
执行器重量 The weight of actuators

型 号 Model	ST008DA/SR		ST020DA/SR		ST035DA/SR		ST055DA/SR		ST075DA/SR		ST110DA/SR		ST160DA/SR		ST290DA/SR	
近似重量 Similar weight(kg)	0.7		1.4	1.5	2.0	2.1	2.7	2.9	3.1	3.6	4.6	5.2	6.8	6.9	8.9	10.1
型 号 Model	ST435DA/SR		ST665DA/SR		ST1000DA/SR		ST1400DA/SR		ST2100DA/SR		ST4000DA/SR		ST6000DA/SR		ST8500DA/SR	
近似重量 Similar weight(kg)	13	15	20	24	31	35	47	55	67	80	97	118	186	234	289	360

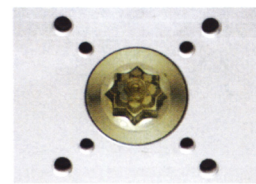
安装标准 Mounting Standard



气源接口符合NAMUR标准，可简单方便地安装电磁阀。
Air supply connection is designed in accordance with NAMUR Standard to in stall solenoid valves.



输出轴的NAMUR标准槽和缸体上部标准安装孔，可使限位开关、定位器直接啮合和安装。
The Namur drive pinion and the Namur top mounting connection permit direct installation of accessories such as limit switch box and positioner.

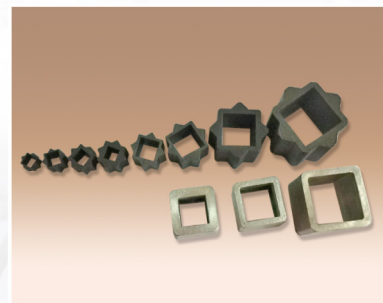


底部安装孔设计符合ISO5211、DIN3337标准，可以直接安装离合器（气动手轮机构）或安装支架。
Bottom mounting connection is designed in accordance with ISO5211 and DIN3337 standards for direct mounting with valve gear boxes or mounting brackets.

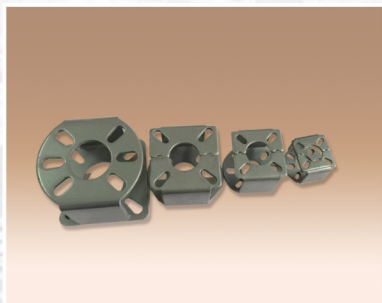
安装附件 Mounting Adaptors



连接轴



转接套



安装支架

特殊执行器简介

120° 、135° 、180° 双作用与单作用 Double Acting and Spring Return

为满足不同类型阀门及机械自动化的驱动要求，我司可根据客户要求定制不同行程（例120° 、135° 、180° 等）的气动执行器。

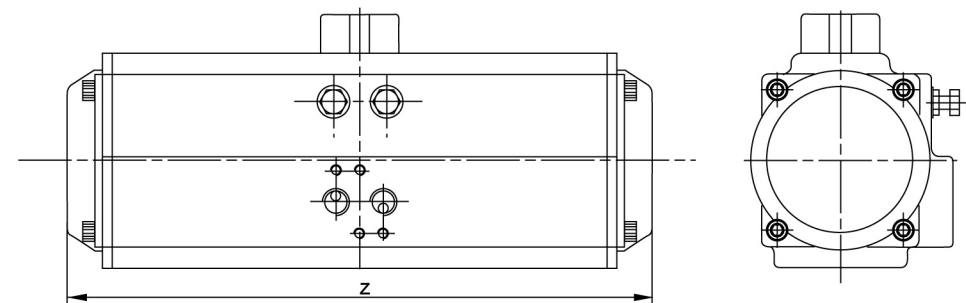
In order to meet the special requirements of control valve we produced special strokes actuators on costumer request (e.g. 120°,135°,180°etc.).

输出扭矩 Output Torque

输出扭矩请参考90° 行程气动执行器扭矩表

Output torque of double acting actuators please refer to the torque of 90° actuators.

180° 双作用执行器尺寸表 Length of DAx180°



Size	ST020	ST035	ST055	ST075	ST110	ST160	ST290	ST435	ST665	ST1000	ST1400
Z(mm)	213	243	258	298	362	386	429	569	652	756	760

If you enquire any further information of spring return actuators, please do not hesitate to contact us.

三位式执行器 Three Position Pneumatic Actuator

三位式气动执行器是一种特殊规格的执行机构，提供了0° ，45° ，90° 或0° ，90° ，180° 的三位式操作方式。中间位置是依靠两个辅助活塞的移动产生的机械制动来实现的。中间位置是可调的。如90° 行程的执行器能提供20° ，30° ，50° ，70° 等的中间位置。

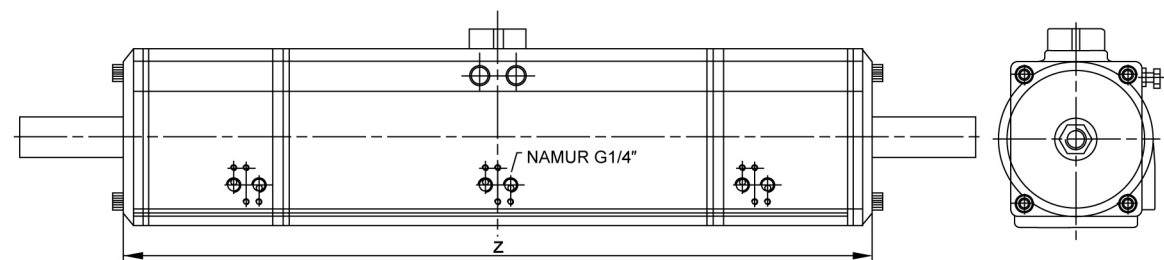
Three position actuator provide an operation of 0° ，45° ,90° or 0° ,90° ,180° , the midway position is achieved by a mechanical stop of movement on the 2 auxiliary pistons. This midway stop positions adjustable. Example: 90° actuator can provide 20° ,30° ,40° ,50° ,70° etc.

输出扭矩 Output Torque

输出扭矩请参考90° 行程气动执行器扭矩表

Output torque of double acting actuators please refer to the torque of 90° actuators.

90° 三位式双作用执行器尺寸表 Length of DAx3P(90°)



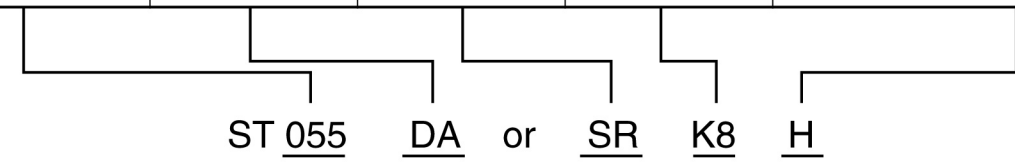
Size	ST020	ST035	ST055	ST075	ST110	ST160	ST290	ST435	ST665	ST1000	ST1400
Z(mm)	213	243	258	298	362	386	429	569	652	756	760

If you enquire any further information of spring return actuators, please do not hesitate to contact us.

选型与订购

一、气动执行器的型号说明 Sizing information and How to order

气动执行器型号 Actuator Model	双作用 Double-Acting	单作用 Spring-Return	弹簧数量 No of Springs	选项 Options
ST008 ST020 . . . ST8500	DA	SR	K5 K6 K7 K8 K9 K10 K11 K12	H=高温型150℃ High Temperature Actuator 150℃ L=低温型-35℃ Low Temperature Actuator-35℃ S=特殊涂层 Special Coating Treatment 3P=3位式气动执行器 3 Position Actuator SS=特殊行程气动执行器 60° 、120° 、180、360° 等 Speeial storke actuator



型号对照表 Model Comparison

型号Model	ST008	ST020	ST035	ST055	ST075	ST110	ST160	ST290	ST435
缸径Cyliner	Φ32	Φ52	Φ63	Φ75	Φ83	Φ92	Φ105	Φ125	Φ140

型号Model	ST665	ST1000	ST1400	ST2100	ST3000	ST4000	ST6000	ST8500
缸径Cyliner	Φ160	Φ190	Φ210	Φ240	Φ270	Φ300	Φ350	Φ400

二、双作用执行器的选型

在正常操作条件下，双作用执行器考虑的安全系数为20%–30%。

示例：

- 阀门力矩=100Nm
- 安全力矩=100 × (1+30%)=130Nm
- 气源压力=5Bar

双作用执行力矩表，选配双作用执行器最小规格为ST-160DA。

Sizing: Double Acting Actuators

The suggested safety factor for double acting actuators under normal working conditions is 20%–30%.

Example:

- The torque needed by valve=100N.m
- The torque considered safety factor (1+30%)=130N.m
- Air Supply=5Bar

According to the above table, we can choose the minimum model is ST-160DA.

三、单作用执行器的选型

在正常操作条件下，单作用执行器考虑的安全系数为30%–50%。

例如：

阀门需要力矩=100N.m

安全力矩=100 × (1+30%)=130Nm

气源压力=5Bar

对照单作用执行器输出力矩表，我们可以查到ST435SRK8输出力矩为

空气行程0° =297N.m

空气行程90° =227N.m

弹簧行程90° =211N.m

弹簧行程0° =141N.m

所有输出力矩均大于我们需求。

注意：

单作用执行器弹簧复位过程中，执行器B口通气不影响执行器输出力矩，相反帮助弹簧的复位。

Sizing: Spring Return Actuators

The suggested safety factor for spring return actuator under normal working conditions is 30%–50%.

Example:

The torque needed by valve=100N.m

The torque consider safety factor (1+30%)=130N.m

Air Supply=5Bar

According to the table of spring return actuators’ output, we find output torque of ST435SRK8 is:

Air stroke 0° =297N.m

Air stroke 90° =227N.m

Spring stroke 90° =211N.m

Spring stroke 0° =141N.m

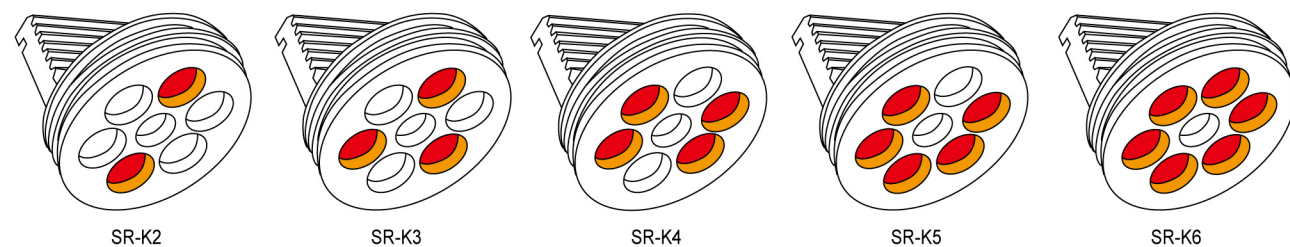
All the output torque is larger than we needed.

Attention:

During the restoration, the spring return actuators’ output torque will not be affected by the inputing air from the port B. On the contrary, it will help the restoration of springs.

单作用执行器弹簧安装形式

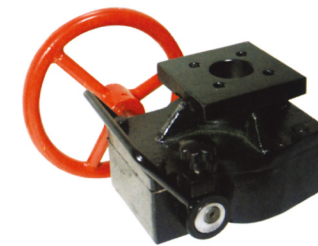
Springs mounting form for spring return type actuators



特点

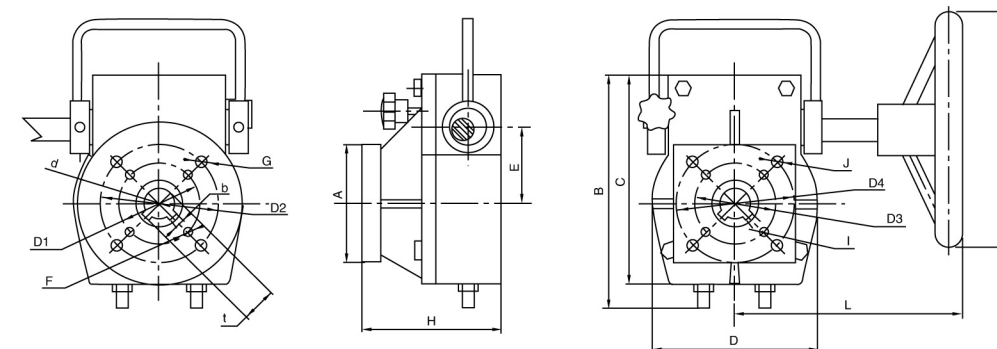
本减速器与气动装置联合使用，用于90° 开启的蝶阀、球阀、旋塞阀等，实现手动或气动驱动。

- 体积小、重量轻，设计合理、式样新颖；
- 产品系列化，输出转矩与气动装置，各种阀门匹配；
- 蜗轮连接内孔有相隔90° 的两个键槽，以使用户根据需要选择装置同阀体的相对位置；
- 转动手柄，旋转偏心装置180°，旋转限位螺母，实现气动；反之，实现手动；
- 产品出厂时，装有专用润滑脂，与阀装配后，整体密封、防尘、防水，防护等级为IP65。



No.	型号	速比	输入扭矩(Nm)	输出扭矩(Nm)	手轮直径(mm)	重量(Kg)
1	XLHJ26	26:1	70	300	f200	7.3
2	XLHJ38	38:1	60	550	f200	12
3	XLHJ54	54:1	120	1200	f300	17
4	XLHJ80	80:1	140	2000	f400	35
5	XLHJ78	78:1	200	3600	f600	49
6	XLHJ98	98:1	300	9000	f800	156
7	XLHJ100	100:1	400	13000	f800	190
8	XLHJ118	118:1	900	22100	f1000	540

XLHJ系列手轮机构连接尺寸及配量表



手轮型号	轴孔 d	键宽 b	键深 t	阀门连接孔		执行器连接孔			高 H	手轮 ΦK	E	L	B	C	D	气动执行器型号
				D1/D2	4-M1	D3/D4	4-Φ2	支架面A								
XLHJ26	22	6	25.4	70	4-M8	70	4-Φ9	70	99	200	50.5	155	160	145	110	ST008,020,035,055,075,110
XLHJ38	26	8	29.3	70	4-M8	70	4-Φ9	100	117	200	65	195	195	175	140	ST075,110
	38	10	41.3	102	4-M10	102	4-Φ12	110								ST160,290
XLHJ54	38	10	41.3	125	4-M12	125	4-Φ14	130	118	300	85	205	235	215	180	ST435,665
	48	14	51.8	140	4-M16	140	4-Φ18	130								ST1000DA,1400DA
XLHJ80	48	14	51.8	140	4-M16	140	4-Φ18	156	148	400	124	245	320	298	250	ST1000SR,1400SR
	60	18	64.4	165	4-M20	165	4-Φ22	156								ST2100DA
XLHJ78	60	18	64.4	165	4-M20	165	4-Φ22	220	150	600	142	265	360	340	285	ST2100SR
	80	18	84.4													ST3000,4000
XLHJ98	80	18	84.4	165	4-M20	165	4-Φ22	230	195	800	229	410	550	530	460	ST6000,8500DA
XLHJ100	100	20	105.3	254	8-M16	254	8-Φ18	300	195	800	258	430	605	585	520	ST8500SR
XLHJ118	120	32	129.3	356	8-M30	356	8-Φ32	Φ445	250	1000	391	550	900	870	800	
XLHJ118G	120	32	196	483	12-M36	483	12-Φ40	Φ600	275	1000	390	600	1050	900	850	

备注：ST008，020在安装手轮机构时需要加装连接板