

A系列气动执行器Pneumatic Actuators - A Series

概述 SUMMARY:



A系列气动执行机构

- 采用铝合金材质，双活塞齿轮齿条式设计，结构精密紧凑，动作迅速。
- 双向位置可调 $0^{\circ}\pm 4^{\circ}$ 、 $90^{\circ}\pm 4^{\circ}$ 。
- 分双作用DA与单作用SR两种作用形式；其单作用采用预载荷多根组合式弹簧 方便安装与维护。
- 标准行程为90度回旋转，另外也有120、135、180度等特殊行程供选择。
- 连接符合ISO5211(GB/T12223-2005)、NAMUR VDI/VDE3845标准。
- 是球阀、蝶阀的良好驱动装置。

A series pneumatic actuators

- Extruded aluminum with hard anodized body and pistons and caps, dual piston rack and pinion design for compact construction, fast operation.
- Double stroke adjustment position with rotation range of $0^{\circ}\pm 4^{\circ}$, $90^{\circ}\pm 4^{\circ}$.
- Double acting and spring return type; modular preloaded spring cartridge design for spring return type, easy install and maintenance.
- Standard operation rotation is 90° , special 120° 135° 180° etc available.
- Installation dimension standard according to ISO5211、DIN3337、NAMUR VDI/VDE3845.
- Good driving for ball valve and butterfly valve.

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设计与结构 Design&Construction:



1.缸体 Actuator Body

ASTM6005挤压铝合金型材，外表采用阳极硬质氧化、环氧树脂喷涂、PTFE涂层或镀镍处理。

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.

2.齿轮轴 Pinion

镀镍合金钢、高精密度一体式齿轮轴，同时符合NAMUR、ISO5211、DIN3337标准。

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.活塞 Pistons

双活塞齿条式，采用铸铝硬质氧化或碳钢防腐处理；安装位置对称、动作迅速、使用寿命长；简单的颠倒活塞即可改变旋转方向。

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.

4.端盖 End caps

压铸铝金属粉末喷涂各种颜色可选，PTFE或镀镍处理。

Die-casting aluminum powder polyester painted in different colours, PTFE or Nickel plated.

5.行程调节 Travel adjustment

两个独立的行程调节螺栓，可以方便进行开关位置 $\pm 4^\circ$ 的调节。

The two independent external travel stop adjustment bolts can adjust $\pm 4^\circ$ at both open and close directions easily and precisely.

6.O型圈 O-rings

在常温工作条件下使用定睛橡胶，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.

7.轴承、导板 Bearings & Guides

采用PTFE材料，低摩擦、使用寿命长，避免了金属间的直接接触，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.

8.高性能组合式弹簧 High performance springs

采用优质材质连接、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.

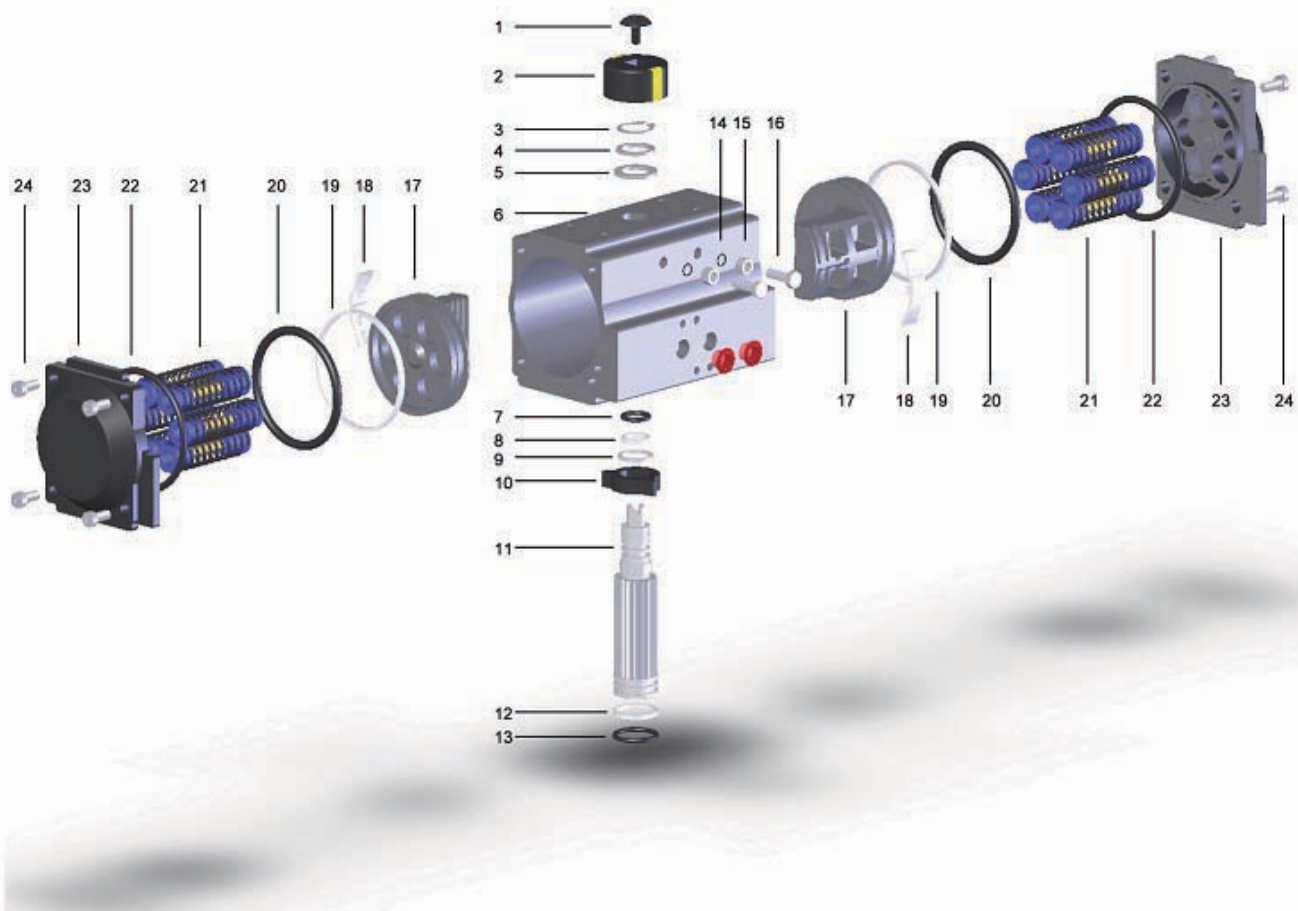
9.接口连接 Connection

符合NAMUR标准接口，方便电磁阀与限位开关的安装。

Air connection, position indicator with NAMUR are convenient for mounting accessories such as solenoid valve, limit switch box, positioner.

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零件及材料



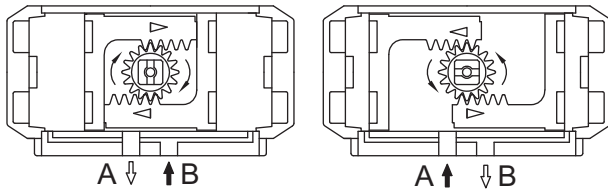
序号	名称	数量	材料/可选
1	指示螺钉	1	不锈钢(304)
2	指示器	1	塑料
3	弹性挡圈	1	不锈钢(304)
4	平垫片	1	不锈钢(304)
5	外垫片	1	PTFE / 工程塑料
6	缸体	1	挤压铝合金
7	轴上O型圈	1	NBR / Viton
8	轴上支承圈	1	PTFE / 工程塑料
9	内垫片	1	PTFE / 工程塑料
10	调节凸轮	1	合金钢
11	齿轮轴	1	优质碳素钢
12	轴下支承圈	1	PTFE / 工程塑料
13	轴下O型圈	1	NBR / Viton
14	调节螺栓O型圈	2	NBR / Viton
15	调节螺母	2	不锈钢(304)
16	调节螺栓	2	不锈钢(304)
17	活塞	2	铸造铝合金/碳钢
18	活塞O型圈	2	NBR / Viton
19	活塞支承圈	2	PTFE / 工程塑料
20	活塞档板	2	尼龙66
21	弹簧	0~12	优质弹簧钢
22	端盖O型圈	2	NBR / Viton
23	端盖	2	铸造铝合金
24	端盖螺栓	8	不锈钢(304)

No.	Description	Qty.	Material Standards/Optional
1	Indicator Screw	1	Stainless steel
2	Indicator	1	Plastic
3	Spring clip	1	Stainless steel
4	Washer	1	Stainless steel
5	Outside Washer	1	PTFE / Delrin
6	Body	1	Extruded aluminum alloy
7	O-ring(pinion Top)	1	NBR / Viton
8	Bearing(Pinion Top)	1	PTFE / Delrin
9	Inside Washer	1	PTFE / Delrin
10	Cam	1	Alloy steel
11	Pinion	1	Carbon steel nickel plated
12	Bearing(Pinion Bottom)	1	PTFE / Delrin
13	O-ring(Pinion Bottom)	1	NBR / Viton
14	O-ring(Adjust Screw)	2	NBR / Viton
15	Washer(Adjust Screw)	2	Stainless steel
16	Nut(Adjust Screw)	2	Stainless steel
17	Piston	2	Die-casting aluminum
18	O-ring(Piston)	2	NBR / Viton
19	Bearing(Piston)	2	PTFE / Delrin
20	Guide(Piston)	2	Nylon66
21	Spring	0~12	Spring steel
22	O-ring(End-cap)	2	NBR / Viton
23	End-cap	2	Die-casting aluminum
24	cap Screw	8	Stainless steel

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工作原理及动作标准 OPERATING PRINCIPLE & STANDARD ROTATION

双作用执行器 Double acting actuator

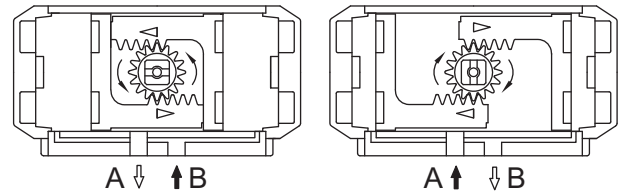


CCW

- 空气由A口输入,B口排出,活塞向外侧运动,轴逆时针方向旋转.
- 空气由B口输入,A口排出,活塞向内侧运动,轴顺时针方向旋转.

-Air to Port A forces the pistons outwards, causing the pinion to turn counterclockwise while the air is being exhausted from Port B.

-Air to Port B forces the pistons inwards, causing the pinion to turn clockwise while the air is being exhausted from Port A.



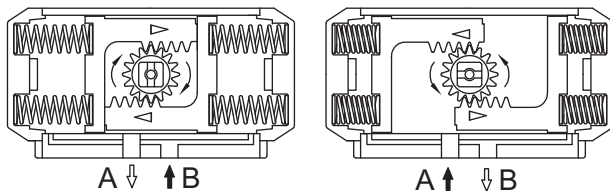
CW

- 空气由A口输入,B口排出,活塞向外侧运动,轴顺时针方向旋转.
- 空气由B口输入,A口排出,活塞向内侧运动,轴逆时针方向旋转.

-Air to Port A forces the pistons outwards, causing the pinion to turn clockwise while the air is being exhausted from Port B.

-Air to Port B forces the pistons inwards, causing the pinion to turn counterclockwise while the air is being exhausted from Port A.

单作用执行器 Spring return actuator

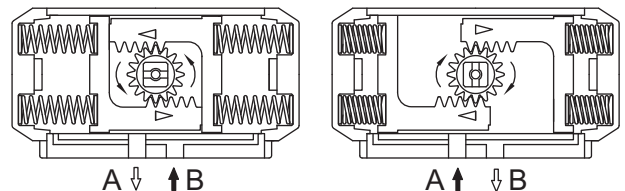


CCW

- 空气由A口输入时,弹簧压缩,B口排气,活塞向外侧运动,轴逆时针方向旋转.
- 失气时,弹簧复位,A口排气,活塞向内侧运动,轴顺时针方向旋转.

-Air to Port A forces the pistons outwards, causing the springs to compress. The pinion turns counterclockwise while air is being exhausted from Port B.

-Loss of air pressure on port A, the stored energy in the springs forces the pistons inwards. The pinion turns clockwise while air is being exhausted from port A.



CW

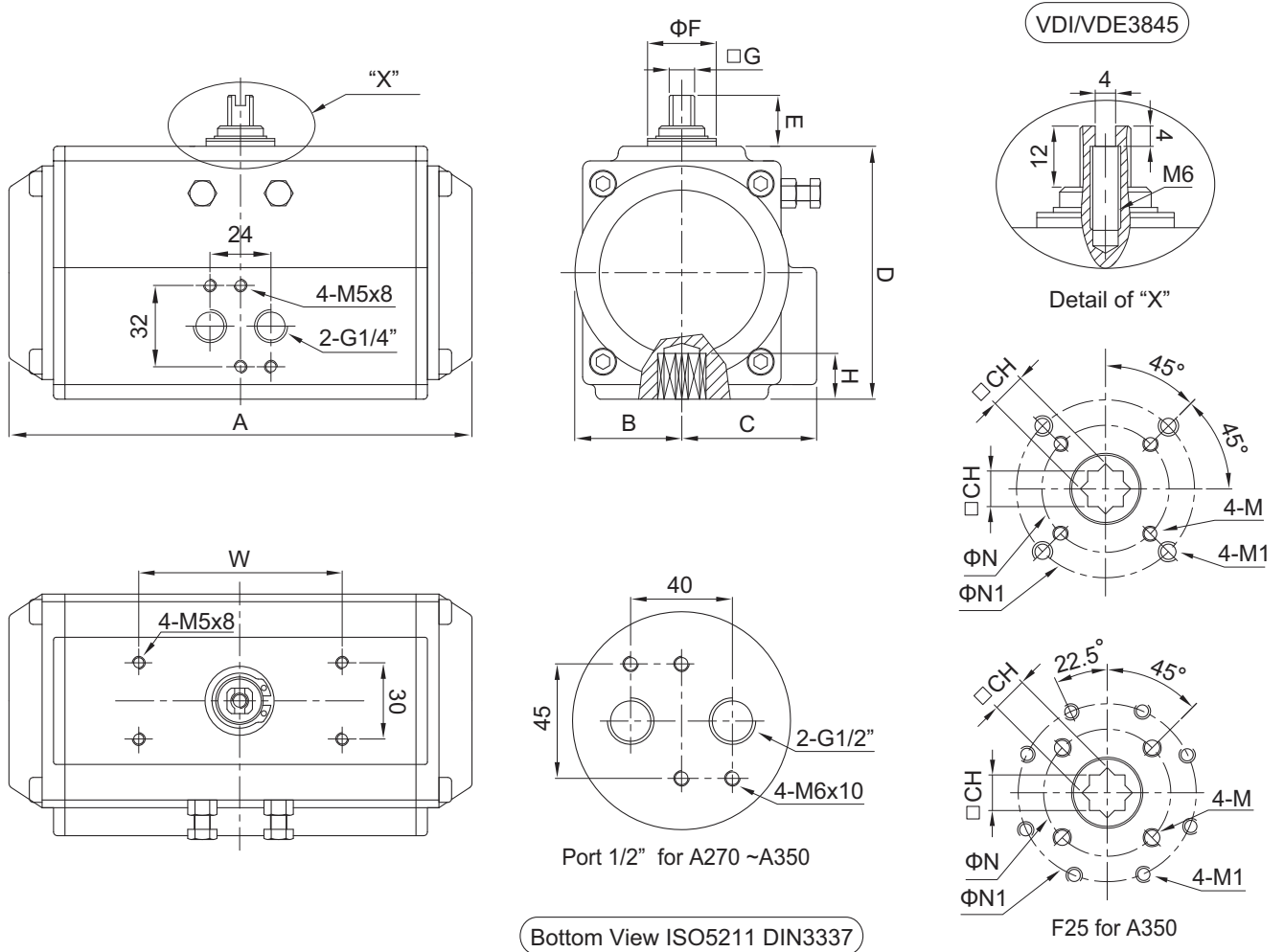
- 空气由A口输入时,弹簧压缩,B口排气,活塞向外侧运动,轴顺时针方向旋转.
- 失气时,弹簧复位,A口排气,活塞向内侧运动,轴逆时针方向旋转.

-Air to port B forces the pistons outwards, causing the springs to compress. The pinion turns counterclockwise while air is being exhausted from port B.

-Loss of air pressure on port A, the stored energy in the springs forces the pistons inwards. The pinion turns clockwise while air is being exhausted from port A.

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安装尺寸 DIMENSIONS



Unit:mm

Model	A	B	C	D	E	F	G	H	CH	ISO	N	N1	M	M1	W	Air Connection
A052	148	30	41	72	20	20	10	14	11	F03-F05	36	50	M5x8	M6x10	80	G1/4"
A063	169	36	47	87.7	20	27	10	18	14	F05-F07	50	70	M6x10	M8x13	80	G1/4"
A075	185	42	52.4	99.4	20	27	10	18	14	F05-F07	50	70	M6x10	M8x13	80	G1/4"
A083	205	46.2	54.4	108.6	20	27	10	21	17	F05-F07	50	70	M6x10	M8x13	80	G1/4"
A092	263	50	58	117	20	34	14	21	17	F05-F07	50	70	M6x10	M8x13	80	G1/4"
A105	269	57.5	63.8	132.8	20	34	14	26	22	F07-F10	70	102	M8x13	M10x16	80	G1/4"
A125	301	67.7	74	154.7	30	45	22	26	22	F07-F10	70	102	M8x13	M10x16	130	G1/4"
A140	392	75	75	172	30	50	22	31	27	F10-F12	102	125	M10x16	M12x20	130	G1/4"
A160	460	87.5	87.5	196	30	50	22	31	27	F10-F12	102	125	M10x16	M12x20	130	G1/4"
A190	527	103	103	230	30	72	32	40	36	F14	140		M16x25		130	G1/4"
A210	534	113	113	255	30	72	32	40	36	F14	140		M16x25		130	G1/4"
A240	605	130	130	290	30	72	32	50	46	F16	165		M20x25		130	G1/4"
A270	725	147	147	334	30	72	32	50	46	F16	165		M20x25		130	G1/2"
A300	760	162	173	354	30	72	32	50	46	F16	165		M20x25		130	G1/2"
A350	896	190	195	410	30	72	32	50	46	F16-F25	165	254	M20x25	M16x25	130	G1/2"

以上为90度回旋转尺寸。特殊行程、规格除长度“A”不一样外其余尺寸均一致，具体请联系工厂。

The above dimensions for 90° rotation, please contact factory for special dimension installation.

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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。

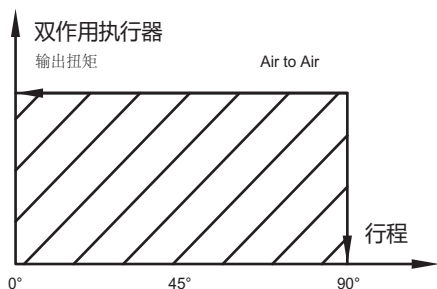
Air supply connection is designed in accordance with NAMUR Standard to install solenoid valves.

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。

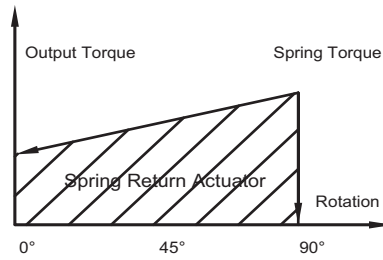
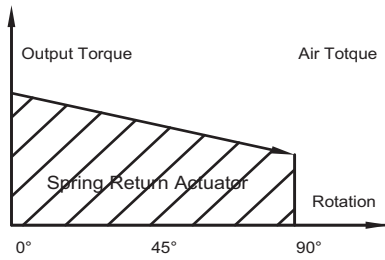
Bottom mounting connection is designed in accordance with ISO5211 and DIN3337 standards for direct mounting with valve gear boxes or mounting brackets.



双作用执行器输出扭矩表 (单位:N.m)

型号	气源压力 (单位 : Bar)									
	2	2.5	3	4	4.5	5	5.5	6	7	8
A052D	7.7	9.8	11.9	16.0	18.1	20.2	22.3	24.4	28.5	32.7
A063D	13.6	17.2	20.9	28.2	31.9	35.6	39.2	42.9	50.2	57.6
A075D	19.2	24.4	29.6	40.0	45.2	50.4	55.6	60.8	71.2	81.6
A083D	29.4	37.4	45.3	61.2	69.2	77.2	85.1	93.1	109.0	124.9
A092D	43.4	55.1	66.8	90.3	102.0	113.7	125.5	137.2	160.7	184.1
A105D	62.8	79.8	96.7	130.7	147.7	164.6	181.6	198.6	232.5	266.5
A125D	98	124	151	204	230	257	283	310	362	415
A140D	167	213	258	348	394	439	484	530	620	711
A160D	255	324	393	531	600	669	738	807	945	1083
A190D	411	522	634	856	967	1078	1189	1300	1523	1745
A210D	502	638	774	1045	1181	1317	1453	1589	1860	2132
A240D	738	938	1137	1536	1736	1935	2135	2334	2733	3132
A270D	1121	1424	1727	2333	2636	2939	3242	3545	4151	4757
A300D	1526	1908	2289	3052	3434	3815	4197	4578	5341	6104
A350D	2285	2856	3427	4570	5141	5712	6283	6854	7997	9139

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单作用执行器输出扭矩表 (单位: N.m)

气源压力		2.5Bar		3Bar		4Bar		5Bar		6Bar		7Bar		8Bar		弹簧输出	
型号	弹簧数量	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°
		Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
A052S	5	5.6	3.6	7.7	5.7											6.2	4.2
	6	4.8	2.4	6.9	4.5	11.0	8.6									7.4	5.0
	7	3.9	1.2	6.0	3.2	10.1	7.3	14.3	11.5							8.7	5.9
	8			5.2	2.0	9.3	6.1	13.5	10.3	17.7	14.5					9.9	6.7
	9					8.4	4.8	12.6	9.0	16.8	13.2	20.9	17.3			11.2	7.6
	10					7.6	3.6	11.8	7.8	16.0	12.0	20.1	16.1			12.4	8.4
	11							10.9	6.6	15.1	10.8	19.2	14.9	23.4	19.1	13.6	9.3
	12							10.0	5.3	14.2	9.5	18.3	13.6	22.5	17.8	14.9	10.2
A063S	5	10.4	6.8	14.1	10.5	21.4	17.8									10.4	6.8
	6	9.0	4.7	12.7	8.4	20.0	15.7	27.4	23.1							12.5	8.2
	7	7.7	2.6	11.4	6.3	18.7	13.6	26.1	21.0							14.6	9.5
	8			10.0	4.3	17.3	11.6	24.7	19.0	32.0	26.3	39.3	33.6			16.6	10.9
	9					16.0	9.5	23.4	16.9	30.7	24.2	38.0	31.5			18.7	12.2
	10					14.6	7.4	22.0	14.8	29.3	22.1	36.6	29.4	44.0	36.8	20.8	13.6
	11							20.6	12.7	27.9	20.0	35.2	27.3	42.6	34.7	22.9	15.0
	12							19.3	10.6	26.6	17.9	33.9	25.2	41.3	32.6	25.0	16.3
A075S	5	13.8	9.8	19.0	15.0	29.4	25.5									14.5	10.6
	6	11.7	7.0	16.9	12.2	27.3	22.6	37.7	33.0							17.4	12.7
	7	9.6	4.1	14.8	9.3	25.2	19.7	35.6	30.1							20.3	14.8
	8			12.7	6.4	23.1	16.8	33.5	27.2	43.9	37.6	54.3	48.0			23.2	16.9
	9					21.0	13.9	31.4	24.3	41.8	34.7	52.2	45.1			26.1	19.0
	10					18.9	11.0	29.3	21.4	39.7	31.8	50.1	42.2	60.5	52.6	29.0	21.1
	11							27.2	18.5	37.6	28.9	48.0	39.3	58.4	49.7	31.9	23.2
	12							25.1	15.6	35.5	26.0	45.9	36.4	56.3	46.8	34.8	25.3
A083S	5	21.6	14.4	29.5	22.3	45.4	38.2									23.0	15.8
	6	18.4	9.8	26.3	17.7	42.2	33.6	58.2	49.6							27.6	19.0
	7	15.3	5.2	23.2	13.1	39.1	29.0	55.1	45.0							32.2	22.1
	8			20.0	8.5	35.9	24.4	51.9	40.4	67.8	56.3	83.7	72.2			36.8	25.3
	9					32.7	19.8	48.7	35.8	64.6	51.7	80.5	67.6			41.4	28.5
	10					29.6	15.2	45.6	31.2	61.5	47.1	77.4	63.0	93.3	78.9	46.0	31.6
	11							42.4	26.6	58.3	42.5	74.2	58.4	90.1	74.3	50.6	34.8
	12							39.2	22.0	55.1	37.9	71.0	53.8	86.9	69.7	55.2	38.0
A092S	5	31.8	20.7	43.5	32.4	67.0	55.9									34.4	23.3
	6	27.1	13.8	38.8	25.5	62.3	49.0	85.7	72.4							41.3	28.0
	7	22.5	6.9	34.2	18.6	57.7	42.1	81.1	65.5							48.2	32.6
	8			29.5	11.8	53.0	35.3	76.4	58.7	99.9	82.2	123.4	105.7			55.0	37.3
	9					48.3	28.4	71.7	51.8	95.2	75.3	118.7	98.8			61.9	42.0
	10					43.7	21.5	67.1	44.9	90.6	68.4	114.1	91.9	137.5	115.3	68.8	46.6
	11							62.4	38.0	85.9	61.5	109.4	85.0	132.8	108.4	75.7	51.3
	12							57.8	31.1	81.3	54.6	104.8	78.1	128.2	101.5	82.6	55.9
A105S	5	48.2	30.6	65.1	47.5	99.1	81.5									49.2	31.6
	6	41.8	20.8	58.7	37.7	92.7	71.7	126.6	105.6							59.0	38.0
	7	35.6	10.9	52.5	27.8	86.5	61.8	120.4	95.7							68.9	44.2
	8			46.1	18.0	80.1	52.0	114.0	85.9	148.0	119.9	181.9	153.8			78.7	50.6
	9					73.8	42.1	107.7	76.0	141.7	110.0	175.6	143.9			88.6	56.9
	10					67.5	32.3	101.4	66.2	135.4	100.2	169.3	134.1	203.3	168.1	98.4	63.2
	11							95.1	56.4	129.1	90.4	163.0	124.3	197.0	158.3	108.2	69.5
	12							88.8	46.5	122.8	80.5	156.7	114.4	190.7	148.4	118.1	75.8
A125S	5	72	45	99	72	152	125									79	52
	6	61	29	88	56	141	109	194	162							95	63
	7	51	13	78	40	131	93	184	146							111	73
	8			67	25	120	78	173	131	226	184	279	237			126	84
	9					110	62	163	115	216	168	269	221			142	94
	10					99	46	152	99	205	152	258	205	310	257	158	105
	11							141	83	194	136	247	189	299	241	174	116
	12							131	67	184	120	237	173	289	225	190	126
A140S	5	124	82	169	127	260	218									130	88
	6	107	55	152	101	243	191	333	281							156	105
	7	90	30	134	74	225	165	315	255							182	123
	8			117	48	208	139	298	229	389	320	479	410			208	140
	9					189	113	279	203	370	294	460	384			234	158
	10					172	86	262	176	353	267	443	357	534	448	260	175
	11							244	150	335	241	425	331	516	422	286	193
	12							227	124	318	215	408	305	499	396	312	210

A-系列气动执行器 Pneumatic Actuators - A Series

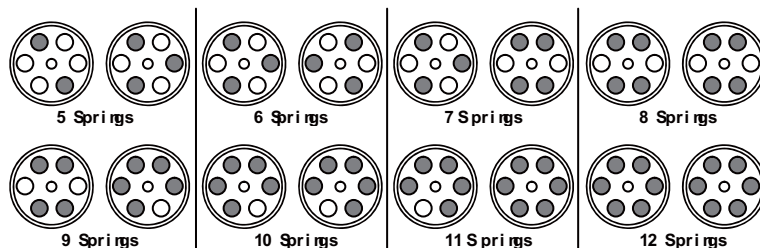
单作用执行器输出扭矩表 (单位: N.m)

气源压力	型号	2.5Bar		3Bar		4Bar		5Bar		6Bar		7Bar		8Bar		弹簧输出		
		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
A160S	5	183	112	252	181	390	319									210	140	
	6	154	69	223	138	361	276	499	414							252	168	
	7	126	27	195	96	333	234	471	372							294	196	
	8			168	54	306	192	444	330	582	468	720	606			336	223	
	9					277	149	415	287	553	425	691	563			378	251	
	10					249	107	387	245	525	383	663	521	801	659	420	279	
	11							359	202	497	340	635	478	773	616	462	307	
	12							331	160	469	298	607	436	745	574	504	335	
	A190S	5	321	311	432	422	654	644									210	200
		6	281	147	392	258	614	480	836	702							372	240
		7	240	85	351	196	573	418	795	640							434	280
		8			311	133	533	355	755	577	977	799	1200	1022			496	320
9						492	292	714	514	936	736	1159	959			558	360	
10						452	230	674	452	896	674	1119	897	1341	1119	620	400	
11								634	389	856	611	1079	834	1301	1056	682	440	
12								593	327	815	549	1038	772	1260	994	744	480	
A210S		5	360	254	496	390	768	662									380	275
		6	305	177	441	313	713	585	984	856							456	330
		7	249	101	385	237	657	509	928	780							532	385
		8			330	160	602	432	873	703	1145	975	1416	1246			608	440
	9					546	355	817	626	1089	898	1360	1169			684	495	
	10					491	278	762	549	1034	821	1305	1092	1577	1364	760	550	
	11							706	473	978	745	1249	1016	1521	1288	836	605	
	12							650	396	922	668	1193	939	1465	1211	912	660	
	A240S	5	524	378	723	577	1122	976									554	410
		6	441	266	640	465	1039	864	1438	1263							665	492
		7	357	155	556	354	955	753	1354	1152							775	575
		8			474	242	873	641	1272	1040	1671	1439	2070	1838			886	656
9						790	528	1189	927	1588	1326	1987	1725			998	739	
10						707	417	1106	816	1505	1215	1904	1614	2303	2013	1108	821	
11								1023	704	1422	1103	1821	1502	2220	1901	1219	903	
12								940	592	1339	991	1738	1390	2137	1789	1330	985	
A270S		5	858	629	1161	932	1767	1538									787	560
		6	745	472	1048	775	1654	1381	2260	1987							943	672
		7	633	312	936	615	1542	1221	2148	1827							1101	783
		8			823	456	1429	1062	2035	1668	2641	2274	3247	2880			1258	895
	9					1316	903	1922	1509	2528	2115	3134	2721			1416	1007	
	10					1203	745	1809	1351	2415	1957	3021	2563	3627	3169	1572	1119	
	11							1696	1192	2302	1798	2908	2404	3514	3010	1730	1231	
	12							1584	1033	2190	1639	2796	2245	3402	2851	1887	1342	
	A300S	5	1097	729	1478	1110	2240	1872									1061	730
		6	935	494	1316	875	2078	1637	2840	2399							1273	876
		7	772	258	1153	639	1916	1402	2678	2164							1485	1022
		8			991	403	1754	1166	2517	1929	3279	2692	4041	3454			1697	1168
9						1592	930	2355	1693	3116	2456	3878	3218			1910	1315	
10						1430	695	2193	1458	2956	2221	3719	2984	4482	3747	2122	1460	
11								2030	1222	2793	1985	3556	2748	4319	3511	2334	1606	
12								1868	986	2631	1749	3394	2512	4157	3275	2546	1752	
A350S		5	1553	965	2124	1536	3267	2679									1702	1173
		6	1292	586	1863	1157	3306	2300	4449	3443							2043	1408
		7	1031	208	1602	779	2745	1922	3888	3065							2383	1642
		8			1341	401	2484	1544	3626	2686	4769	3829	5912	4972			2724	1877
	9					2224	1165	3366	2307	4508	3449	5651	4592			3064	2112	
	10					1963	787	3105	1929	4247	3071	5390	4214	6532	5356	3405	2346	
	11							2844	1551	3986	2693	5129	3836	6271	4978	3745	2581	
	12							2584	1172	3726	2314	4869	3457	6011	4599	4086	2816	

单作用执行器弹簧安装形式 Springs mounting form for spring return actuators

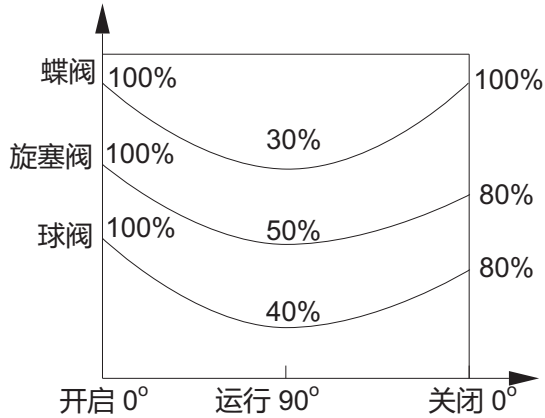
单作用执行器在选型过程中, 根据气压及阀门运行过程中的扭矩分配, 来选择弹簧数量, 以达到更加经济、合理的选配。

During selecting the spring return actuators, we can choose the more reasonable and more economical actuators, if we know the different torque needed by the valve working at opening, operating and closing.



A-系列气动执行器 Pneumatic Actuators - A Series

气动执行器的选型



在正常操作条件下，执行器的扭矩比阀门增加30-50%的安全系数来选型。

例如：

阀门扭矩=80N·m

安全力矩 (80+30%)=104N·m

空气压力=5Bar

对照执行器出力矩表双作用选092DA =113.6N.m

单作用选140SR K7:

- 空气行程开始 0°=308N·m
- 空气行程结束 90°=247N·m
- 弹簧行程开始 90°=181N·m
- 弹簧行程结束 0°=120N·m

这样所有输出力矩均大于阀门扭矩。

另外单作用执行器可根据阀门在运行过程中的扭矩变化来选型。

PNEUMATIC ACTUATOR SIZING INFORMATION

The suggested safety factor for pneumatic actuators under normal working conditions is to put 30~50% on valve torque.

Example:

The valve torque=80N.m

The torque considered safety factor (80+30%)=104Nm

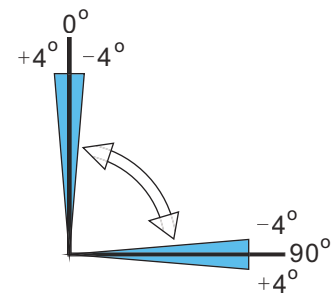
Air supply=5Bar

According to the pneumatic actuator output torque table , we can choose double acting type 092DA=113.6N.m, spring return type 140SR K7:

- Air stroke begin 0°=308N.m
- Air stroke end 90°=247N.m
- Spring stroke begin 90°=181N.m
- Spring stroke end 0° =120N.m

Such all the output torques of actuator are bigger than it of valve.

Additionally, spring return pneumatic actuator can be sized according to the variable valve running torque .



工作条件 OPERATING CONDITION

1.使用介质：经过50um过滤的洁净、干燥、无腐蚀性的压缩空气。

2.最大使用压力：8Bar(0.8Mpa)。

3.工作温度：标准型：-20°C ~ 80°C

低温型：-40°C ~ 80°C

高温型：-20°C ~ 150°C

4.润滑：执行器在出厂时均预加润滑脂，正常工作条件下无需额外添加。

5.行程调节：双向位置调整0°与90°度位置±4°可调。

1.Operating media: Filtered by 50um clean air, or dry, non-corrosive gas.

2.Max. air supply pressure:8Bar (120psi).

3.Operating temperature

• Standard temperature range: -20°C ~ 80°C (-4°F ~176°F)

• Low temperature range: -40°C ~ 80°C (-40°F ~176°F)

• How temperature range: -20°C ~ 150°C (-4°F ~302°F)

4.Lubrication: Under normal operating condition, need not accrete lubricant.

A-系列气动执行器 Pneumatic Actuators - A Series

耗气量计算 AIR CONSUMPTION

开向体积与关向体积-标准行程90度

Air volume opening & closing -90°

Unit:L

规格 Model	开向体积 Volume opening	关向体积 Volume closing	规格 Model	开向体积 Volume opening	关向体积 Volume closing
A052D	0.11	0.15	A140D	2.44	2.87
A063D	0.20	0.23	A160D	3.66	4.31
A075D	0.29	0.35	A190D	5.96	6.96
A083D	0.41	0.52	A210D	7.47	8.61
A092D	0.63	0.84	A240D	10.8	13.1
A105D	0.95	1.10	A270D	17.0	19.8
A125D	1.48	1.73			

耗气量取决于供气压力、行程、体积及动作次数。

计算如下：升/分= 气缸体积 (开向体积+关向体积) × $\left[\frac{\text{供气压力 (Kpa)} + 101.3}{101.3} \right]$ × 次数 (/分)

Air consumption rest with Air Supply. Air volume and Action cycle times, expressions:

L/Min= Air volume (Air volume Opening+Air volume closing) × $\left[\frac{\text{Air Supply (Kpa)} + 101.3}{101.3} \right]$ × Action cycle times (/min)

重量 WEIGHT-90°

Unit:Kg

Model	A052	A063	A075	A083	A092	A105	A125	A140	A160	A190	A210	A240	A270
DA	1.4	2.0	2.7	3.7	4.6	6.0	9.2	14	20	32	47	65	80
SR10	1.5	2.2	3.0	4.0	5.3	6.8	10.2	16	23	37	55	76	98

订购代码 Ordering Symbols

A 052 D - 90 1 S 1

A	A : 系列气动执行器 Series pneumatic actuator	
052	规格Size	052, 063, 075...
D	动作形式Type	D : 双作用 Double Acting S10 : 单作用及弹簧数量 Spring Return&springs Qty.
90	旋转角度 Rotation	90° 120° 135° 180°
1	装配形式 Configuration	1 : CCW(normally close) 2 : CW(normally open)
S	温度 Temperature	S : 标准型 Standard L : 低温型 Low temp. H : 高温型 High temp.
1	轴底部连接形式 Shaft bottom connection	1 : 双内方-标准 Double Square(star)--Standard 2 : 双D型-可选 Double D--Option 3 : 键槽型-可选 Bore with keyway--Option



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