EICMATION®

规格

设计
双活塞执行器，免维修
双作用或单作用

旋转
90°(调节±5°)

操作
DIN ISO 5211 在底部(根据尺寸表)齿轮根据 DIN 3337，电磁阀接口或信号发生器符合 NAMUR标准

气源介质
过滤后气体(除油、灰和水)

温度范围
NBR: -23°C - +80°C
HNBR: -40°C - +80°C
FKM: -20°C - +205°C

材料
壳体：铝合金(阳极氧化)

盖： 铸铝/不锈钢

齿轮： 不锈钢
合金钢，镀镍

导向：润滑塑料

密封：NBR/FKM/HNBR

紧固件：不锈钢

气源压力
3 - 7 bar

扭矩范围
根据图表

以上信息仅供参考，本公司保留修改的权利，恕不另行通知

Specification

DESIGN
Double-piston actuator, maintenance free, double-acting / single-acting

ROTATORY
90°(adjustment ±5°)

OPERATION
DIN ISO5211 in the bottom side (refer to dimension table),
Gear according to DIN 3337.Interface for Solenoid valve or signal generator acc.to NAMUR

PILOT MEDIA
Filtered gases (oil, ash and water removal)

TEMPERATURE RANGE
NBR: -23°C - +82°C
HNBR: -40°C - +80°C
FKM: -20°C - +205°C

MATERIALS
Body: Aluminium alloy(anodized)

Cap: Aluminium/stainless steel

Gears: Stainless steel
Alloy steel,nickel plated

Guides: Lubricated plastic

Seal: NBR/FKM/HNBR

Fasteners: Stainless steel

AIR SUPPLY
3 - 7 bar

TORQUE RANGE
According to diagram

The above information is for reference only and Eicmation reserves the right to alter without prior notice

型号:
PA

气动执行器
8Nm-8100Nm

双作用
单作用



Type:
PA

Pneumatic actuator
8Nm-8100Nm

Double-acting
Single-acting

举例说明： 比如 PA1113110
=气动执行器，双作用，铝合金，活塞Ø52mm ，NBR,齿轮，0-90°

执行器

1.字符 产品	2+3.字符 功能	4.字符 材质	5 + 6.字符 规格	7.字符 密封	8.字符 结构	9.字符 行程
PA=气动执行器	1=双作用 2=单作用常闭 3=单作用常开	1=铝合金 2=不锈钢	13=Ø52 22=Ø190 14=Ø63 23=Ø210 15=Ø75 24=Ø240 16=Ø83 25=Ø270 17=Ø92 26=Ø300 18=Ø105 27=Ø350 19=Ø125 28=Ø400 20=Ø140 21=Ø160	1=NBR 2=HNBR 3=FKM	1=齿轮	0=0-90° 1=0-120° 2=0-135° 3=0-150° 4=0-180° 5=0-270°

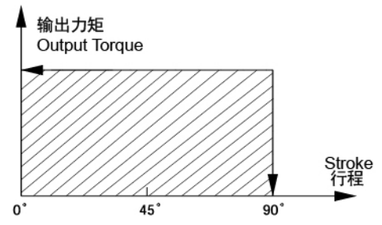
Ordering example: e.g. PA1113110
= Pneumatic actuator,Double acting,Aluminium alloyPiston Ø52mm ,NBR,Gear，0-90°

Actuator

A Type	B+C Function	D Material	E+F Specifications	G Seal	H Structure	I Stroke
PA=Pneumatic actuator	1=Double acting 2=Single acting-close 3=Single acting-open	1=Aluminium alloy 2=Stainless steel	13=Ø52 22=Ø190 14=Ø63 23=Ø210 15=Ø75 24=Ø240 16=Ø83 25=Ø270 17=Ø92 26=Ø300 18=Ø105 27=Ø350 19=Ø125 28=Ø400 20=Ø140 21=Ø160	1=NBR 2=HNBR 3=FKM	1=Pinion and rack	0=0-90° 1=0-120° 2=0-135° 3=0-150° 4=0-180° 5=0-270°

扭力输出变化和选型/Torque output change and model selection

双作用输出力矩/Output torque of double acting actuators

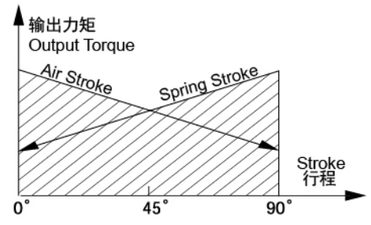


双作用执行器的选型 /Sizing:double acting actuator

在正常操作条件下，双作用执行器考虑的安全系数为20%-30%。
例如：
阀门力矩=100Nm
安全力矩=100x(1+30%)=130Nm
气源压力=5Bar
对照双作用力力矩表，选配双作用执行器最小规格为PA111831

The suggested safety factor for double acting actuator under normal working conditions is 20%-30%
Example: The torque valve = 100 Nm,The torque consider safety factor (1+30%)=130Nm,Air Supply = 5 Bar
According to the above table ,we can choose the minimum model is PA111831

单作用输出力矩/Output torque of spring return actuators



单作用执行器的选型 /Sizing:spring return actuator

在正常工作条件下，单作用执行器考虑的安全系数为30%-50%
例如：
阀门需要力矩 = 80Nm,安全力矩 = 80(1+30%) = 104Nm,气源压力=5Bar
对照单作用输出力矩表，我们可以查到PA212031 K7输出力矩为
空气行程 0° = 308Nm, 90° = 247Nm,弹簧行程 90° = 181Nm,0° = 120Nm
所有输出力矩大于我们需求。

The suggested safety factor for spring return actuator under normal working conditions is 30%-50%
Example: The torque needed by valve = 80 Nm,The torque consider safety factor (1+30%)=104Nm,Air Supply = 5 Bar
According to the table of spring return actuators'output,we find output torque of PA212031 K7 is:
Air stroke 0° = 308Nm,90° = 247Nm,Spring stroke 90° = 181Nm, 0° = 120Nm
All the output torque is larger than we needed.

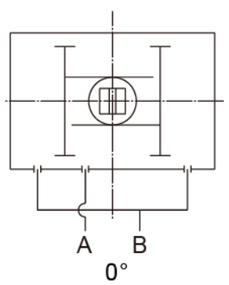
Art.PA-Series

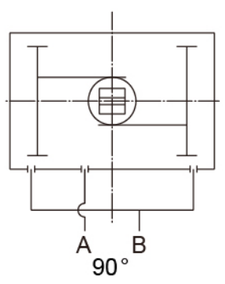
双作用执行器/Double Acting Actuators

逆时针/CCW

A口进气，压缩空气推动活塞向外运动，使执行器输出轴逆时针旋转（0°→90°）B口排气。
B口进气，压缩空气推动活塞向内运动，使执行器输出轴顺时针旋转（90°→0°）A口排气。

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.



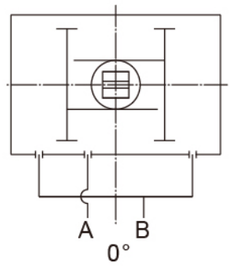


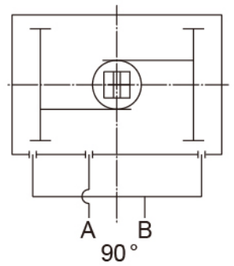
CCW

顺时针/CW

A口进气，压缩空气推动活塞向外运动，使执行器输出轴顺时针旋转（90°→0°）B口排气。
B口进气，压缩空气推动活塞向内运动，使执行器输出轴逆时针旋转（90°→0°）A口排气。

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 pinionto turn counterclockwise while the air is being exhausted from Port A.





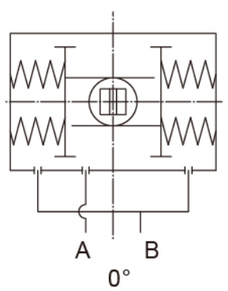
CW

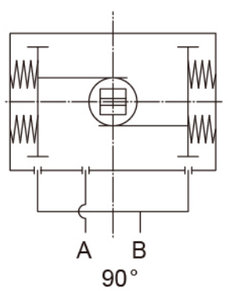
单作用执行器/Spring Return Actuators

逆时针/CCW

A口进气，压缩空气克服弹簧力，推动活塞向外运动，执行器输出轴逆时针旋转（0°→90°）B口排气。
执行器失气，活塞在弹簧力作用下像内运动，执行器输出轴顺时针旋转（90°→0°）A口排气。

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 stored energy in the spring forces the pistons inwards. The pinion to turn clockwise while the air is being exhausted from Port A.



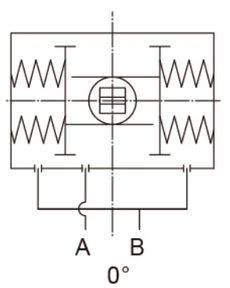


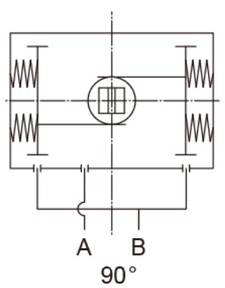
CCW

顺时针/CW

A口进气，压缩空气克服弹簧力，推动活塞向外运动，执行器输出轴顺时针旋转(90°→0°）B口排气。
执行器失气，活塞在弹簧力作用下像内运动，执行器输出轴逆时针旋转(90°→0°）A口排气。

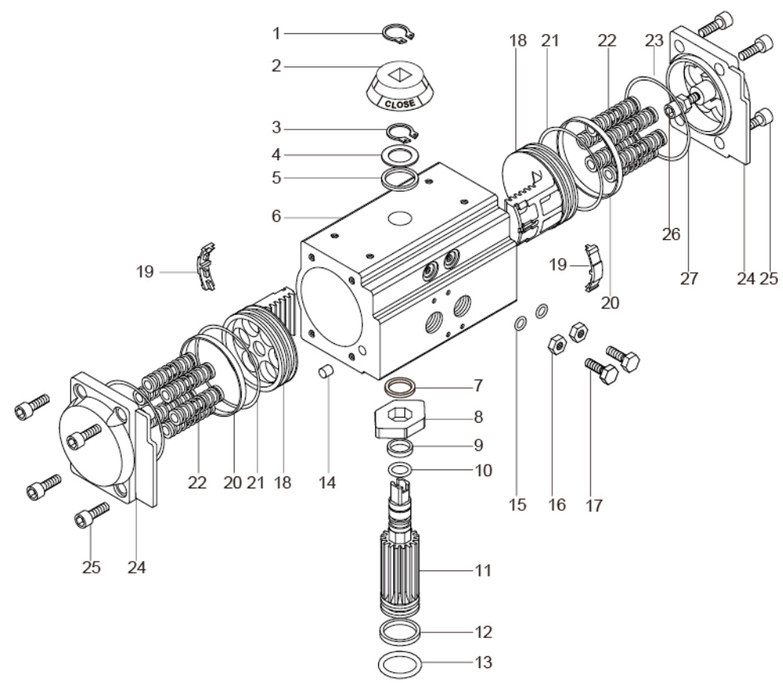
Air to Port B forces the pistons outwards,causing the springs to compress,The pinion turns cloctwise while air is being exhausted from Port B;
Loss of air pressure on port A,The stored stored energy in the spring forces the pistons inwards. The pinion to turn counterclockwise while the air is being exhausted from Port A.





CW

零件清单 /Parts list

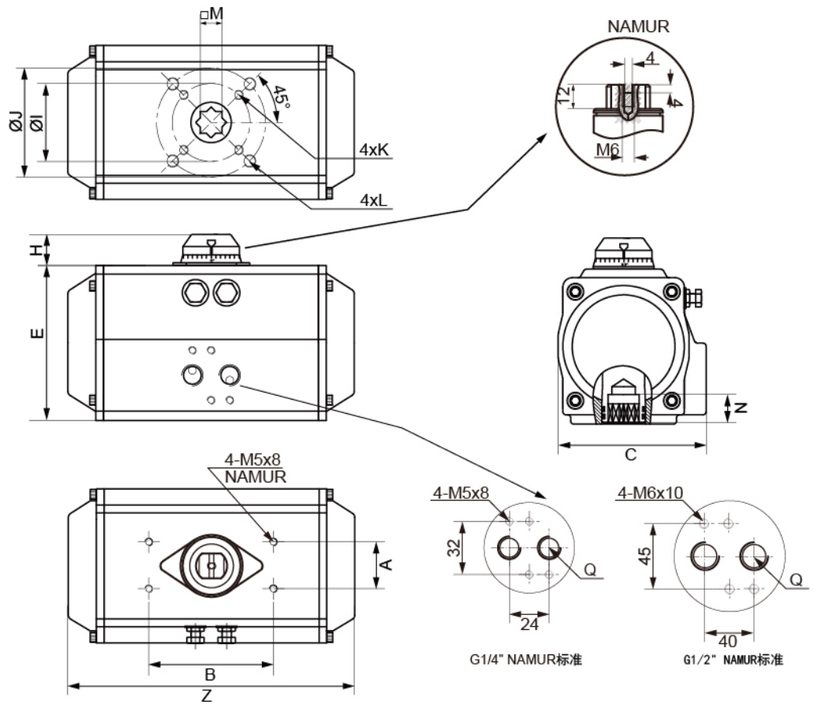


序号	名称	材料	数量
1	卡簧	不锈钢	1
2	指示器	塑料	1
3	卡簧	不锈钢	1
4	垫圈	不锈钢	1
5	外垫片	工程塑料	1
6	缸体	铸铝/硬质氧化等	1
7	内垫片	工程塑料	1
8	凸轮	合金钢	1
9	上轴O圈	丁腈橡胶/氟橡胶/硅橡胶	1
10	上轴轴承	工程塑料	1
11	齿轴	合金钢/镀 镍/不锈钢	1
12	下轴轴承	工程塑料	1
13	下轴O圈	丁腈橡胶/氟橡胶/硅橡胶	1
14	堵头	丁腈橡胶/氟橡胶/硅橡胶	2
15	调节螺钉O圈	丁腈橡胶/氟橡胶/硅橡胶	2
16	调节螺钉螺母	不锈钢	2
17	调节螺栓	不锈钢	2
18	活塞	铸铝/铸钢/阳极氧化/镀锌不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

NO.	Description	Standrd Meterial	Qty
1	Spring clip	Stainless Steel	1
2	Indicator	plastic	1
3	Spring clip	Stainless Steel	1
4	Thrust washer	Stainless Steel	1
5	Outside washer	engineering plastics	1
6	Body	Extruded alluminum alloy/Hard anodized etc	1
7	Inside washer	engineering plastics	1
8	Cam	Alloy steel	1
9	O-ring (pinion top)	NBR/Viton/Silicone	1
10	Bearing(pinion top)	engineering plastics	1
11	Pinion	Alloy steel/Nickel plated/Stainless Steel	1
12	Bearing(pinion bottom)	engineering plastics	1
13	O-ring pinion bottom	NBR/Viton/Silicone	1
14	Plug	NBR/Viton/Silicone	2
15	O-ring(Adjust screw)	NBR/Viton/Silicone	2
16	Nut(Adjust screw)	Stainless Steel	2
17	Adjust screw	Stainless Steel	2
18	Piston	Cast/alluminum/casting steel /anodized/Zinc /galvanized/Stainless Steel	2
19	Guide(Piston)	engineering plastics	2
20	Bearing(Piston)	engineering plastics	2
21	O-ring(Piston)	NBR/Viton/Silicone	2
22	Spring	Spring steel/dip coating	0~12
23	O-ring(End cap)	NBR/Viton/Silicone	2
24	End cap	Cast alluminum/powder painted etc	2
25	Cap screw	Stainless Steel	8
26	Stop screw	Stainless Steel	2
27	Nut(stop screw)	Stainless Steel	2

Art.PA-Series

尺寸 /Dimensions



型号Model	规格 Size	Z	E	C	H	B×A	N	M	J	I	L	K	Air connection
PA1113110	Ø52	147	72	72	20	80×30	14	11	Ø50	Ø36	M6×10	M5×7.5	NAMUR G1/4"
PA1114110	Ø63	172	88	83	20	80×30	18	14	Ø70	Ø50	M8×13	M6×10	NAMUR G1/4"
PA1115110	Ø75	184	100	95	20	80×30	20	14	Ø70	Ø50	M8×13	M6×10	NAMUR G1/4"
PA1116110	Ø83	204	109	103	20	80×30	21	17	Ø70	Ø50	M8×13	M6×10	NAMUR G1/4"
PA1117110	Ø92	262	117	109	20	80×30	22	17	Ø70	Ø50	M8×13	M6×10	NAMUR G1/4"
PA1118110	Ø105	268	133	121	20	80×30	26	22	Ø102	Ø70	M10×16	M8×13	NAMUR G1/4"
PA1119110	Ø125	301	155	143	20	80×30	27	22	Ø102	Ø70	M10×16	M8×13	NAMUR G1/4"
PA1120110	Ø140	394	173	152	20	80×30	32	27	Ø125	Ø102	M12×20	M10×16	NAMUR G1/4"
PA1121110	Ø160	458	198	174	20	80×30	34	27	Ø125	Ø102	M12×20	M10×16	NAMUR G1/4"
PA1122110	Ø190	528	232	206	30	130×30	40	36	Ø140	-	M16×24	-	NAMUR G1/4"
PA1123110	Ø210	532	257	226	30	130×30	40	36	Ø140	-	M16×24	-	NAMUR G1/4"
PA1124110	Ø240	660	291	260	30	130×30	50	46	Ø165	-	M20×25	-	NAMUR G1/4"
PA1125110	Ø270	740	330	294	30	130×30	50	46	Ø165	-	M20×25	-	NAMUR G1/2"
PA1126110	Ø300	798	354	336	30	130×30	60	46	Ø165	-	M20×25	-	NAMUR G1/2"
PA1127110	Ø350	880	408	385	30	130×30	60	46	Ø165	-	M20×25	-	NAMUR G1/2"
PA1128110	Ø400	950	464	516	30	130×30	60	55	Ø254	Ø165	8-M16×25	M20×25	NAMUR G1/2"

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耗气量/Air consumption

执行器/Actuator(Ømm)	52	63	75	83	92	105	125	140	160	190	210	240	270	300	350	400
中间体积/Middle volume(L)	0.12	0.21	0.3	0.43	0.64	0.95	1.6	2.5	3.7	5.9	7.5	11	17	23.8	35.1	52.6
两端体积/Both ends volume(L)	0.16	0.23	0.34	0.47	0.73	0.88	1.4	2.2	3.2	5.4	7.5	9	14	29.7	46.3	56

耗气量取决于供气压力、开关行程、体积及动作次数，计算如下：

升 / 分 = 气缸体积中间体积+两端体积) X [供气压力(Kpa)+101.3 / 101.3] X 次数/分钟

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

L/Min = Air volume (Intermediate volume+Both ends of the volume) X [Air Supply(Kpa)+101.3 / 101.3] X Action cycle times(/min)

执行器重量/Actuator weight

执行器/Actuator(Ømm)	52	63	75	83	92	105	125	140	160	190	210	240	270	300	350	400
单作用/Single acting actuator (Kg)	1.522	2.33	2.954	3.662	5.362	6.824	10.608	16.02	23.772	37.4	46.7	67.9	96.5	141.3	234	360
双作用/Double acting actuator (Kg)	1.426	2.172	2.722	3.356	4.766	6.066	9.504	14.234	20.762	32.8	38.9	56.7	79	114.8	186	289

扭矩(Nm)-双作用执行器 /Torque (Nm) double acting actuators

型号Model	输入气源压力(单位 bar)Air supply pressure (Unit: bar)					
	3.0	4.0	5.0	6.0	7.0	8.0
PA1113110	12.0	16.0	20.0	24.0	28.0	32.0
PA1114110	21.7	28.9	36.0	43.4	50.6	57.8
PA1115110	30.0	40.0	50.0	60.0	70.0	80.0
PA1116110	46.8	62.4	78.0	93.6	109.2	124.8
PA1117110	67.6	90.1	112.6	135.2	157.7	180.2
PA1118110	97.7	130.3	162.9	195.5	228.0	260.6
PA1119110	150.5	200.6	250.8	301.0	351.1	401.3
PA1120110	260.7	347.6	433.8	521.4	608.3	695.2
PA1121110	397.2	529.6	662.0	794.4	926.8	1059.2
PA1122110	640.2	853.6	1067.0	1280.4	1493.8	1707.2
PA1123110	798.0	1064.0	1330.0	1596.0	1862.0	2128.0
PA1124110	1154.3	1539.0	1923.8	2308.5	2693.3	3078.0
PA1125110	1755.0	2340.0	2924.0	3510.0	4095.0	4680.0
PA1126110	2291.4	3055.2	3819.0	4582.8	5346.6	6110.4
PA1127110	3426.0	4568.0	5710.0	6852.0	7994.0	9136.0
PA1128110	4872.0	6496.0	8120.0	9744.0	11368.0	12992.0

Art.PA-Series

扭矩(Nm)单作用执行器 /Torque (Nm) spring return actuators

型号Model	弹簧数量 Spring quantity	弹簧输出扭矩 (Nm) Spring output torque (Nm)		输入气源压力(单位bar)Air supply pressure (Unit: bar)									
				3.0		4.0		5.0		6.0		7.0	
				气源输出扭矩 (Nm) Air supply output torque (Nm)									
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
PA2113110	5	4.0	6.2	8.1	5.8	12.1	9.8						
	6	4.7	7.4	7.3	4.6	11.3	8.6						
	7	5.5	8.7	6.5	3.3	10.5	7.3	14.5	11.3				
	8	6.3	9.9			9.7	6.1	13.7	10.1				
	9	7.1	11.2			8.9	4.8	12.9	8.8	16.9	12.8		
	10	7.9	12.4			8.1	3.6	12.1	7.6	16.1	11.6	20.1	15.6
	11	8.7	13.6			7.3	2.4	11.3	6.4	15.3	10.4	19.3	14.4
	12	9.5	14.9					10.5	5.1	14.5	9.1	18.5	13.1
PA2114110	5	6.8	10.4	14.9	11.3	22.1	18.5						
	6	8.2	12.5	13.5	9.2	20.7	16.4						
	7	9.6	14.6	12.1	7.1	19.3	14.3	26.5	21.5				
	8	10.9	16.7			18.0	12.2	25.2	19.4				
	9	12.3	18.9			16.6	10.0	23.8	17.2	31.1	24.5		
	10	13.7	20.9			15.2	8.0	22.4	15.2	29.7	22.5	36.9	29.7
	11	15.0	22.9					21.1	13.2	28.4	20.5	35.6	27.7
	12	16.4	25.0					19.7	11.1	27.0	18.4	34.2	25.6
PA2115110	5	10.0	15.0	20.0	15.0	30.0	25.0						
	6	12.0	18.0	18.0	12.0	28.0	22.0						
	7	14.0	21.0	16.0	9.0	26.0	19.0						
	8	16.0	24.0			24.0	16.0	34.0	26.0				
	9	18.0	27.0			22.0	13.0	32.0	23.0	42.0	33.0		
	10	20.0	30.0			20.0	10.0	30.0	20.0	40.0	30.0	50.0	40.0
	11	22.0	33.0			18.0	7.0	28.0	17.0	38.0	27.0	48.0	37.0
	12	24.0	36.0					26.0	14.0	36.0	24.0	46.0	34.0
PA2116110	5	15.5	23.0	30.5	23.0	46.5	39.0						
		18.6	27.6	27.4	18.4	43.4	34.4						
	7	21.7	32.2			40.3	29.8	56.3	45.8				
	8	24.8	36.8			37.2	25.2	53.2	41.2				
	9	27.9	41.4			34.1	20.6	50.1	36.6	65.1	51.6		
	10	31.0	46.0			31.0	16.0	47.0	32.0	62.0	47.0	77.0	62.0
	11	34.1	50.6					43.9	27.4	58.9	42.4	73.9	57.4
	12	37.2	55.2					40.8	22.8	55.8	37.8	70.8	52.8
PA2117110	5	23.0	33.0	44.6	34.7	67.1	57.2						
	6	27.6	39.5	40.0	28.1	62.5	50.6						
	7	32.2	46.1			57.9	44.0	80.4	66.5				
	8	36.8	52.7			53.3	37.4	75.8	59.9				
	9	41.4	59.3			48.7	30.8	71.2	53.3	93.8	75.9		
	10	46.0	65.9			44.1	24.2	66.6	46.7	89.2	69.3	111.7	91.8
	11	50.6	72.5					62.0	40.1	84.6	62.7	107.1	85.2
	12	55.2	79.1					57.4	33.5	80.0	56.1	102.5	78.6
PA2118110	5	31.8	49.3	66.0	48.4	98.6	81.0						
	6	38.1	59.2	59.6	38.5	92.2	71.1						
	7	44.5	69.0			85.9	61.3	118.5	93.9				
	8	50.8	78.9			79.5	51.4	112.1	84.0				
	9	57.2	88.7			73.2	41.6	105.8	74.2	138.4	106.8		
	10	63.5	98.6			66.8	31.7	99.4	64.3	132.0	96.9	164.5	129.4
	11	69.9	108.5					93.1	54.4	125.7	87.0	158.2	119.5
	12	76.2	118.3					86.7	44.6	119.3	77.2	151.8	109.7
PA2119110	5	50.0	78.0	100	72	150	122						
	6	60.0	93.6	90	56	140	106						
	7	70.0	109.2			130	91	181	142				
	8	80.0	124.8			120	75	171	126				
	9	90.0	140.4			110	60	161	110	211	161		
	10	100.0	156.0			100	44	151	95	201	145	251	195
	11	110.0	171.6					141	79	191	129	241	179
	12	120.0	187.2					131	64	181	114	231	164

扭矩(Nm)单作用执行器 /Torque (Nm) spring return actuators

型号Model	弹簧数量 Spring quantity	弹簧输出扭矩 (Nm) Spring output torque (Nm)		输入气源压力(单位bar)Air supply pressure (Unit: bar)									
				3.0		4.0		5.0		6.0		7.0	
				气源输出扭矩 (Nm) Air supply output torque (Nm)									
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
PA2120110	5	86.0	129.0	174	131	261	218						
	6	103.2	154.8	157	105	244	192						
	7	120.4	180.6			227	166	314	253				
	8	137.6	206.4			209	141	296	228				
	9	154.8	232.2			192	115	279	202	366	289		
	10	172.0	258.0			175	89	262	176	349	263	436	350
	11	189.2	283.8					245	150	332	237	585	324
	12	206.4	309.6					228	124	315	211	402	298
PA2121110	5	139.5	192.5	258	205	390	337						
	6	167.4	231.0	230	166	362	298						
	7	195.3	269.5			334	260	467	393				
	8	223.2	308.0			306	221	439	354				
	9	251.1	346.5			278	183	411	316	543	448		
	10	279.0	385.0			250	144	383	277	515	409	647	541
	11	306.9	423.5					355	239	487	371	619	503
	12	334.8	462.0					327	200	459	332	591	464
PA2122110	5	190	320	451	320	664	533						
	6	227	384	413	256	626	469						
	7	265	448			588	405	802	619				
	8	303	512			550	341	764	555				
	9	341	576			512	277	726	491	939	704		
	10	379	640			474	213	688	427	901	640	1114	853
	11	417	704					650	363	863	576	1076	789
	12	455	768					612	299	825	512	1038	725
PA2123110	5	261	440	619	439	912	732						
	6	313	528	566	351	859	644						
	7	365	616			807	556	1101	850				
	8	417	704			755	468	1049	762				
	9	469	792			703	380	997	674	1290	967		
	10	521	880			651	292	945	586	1238	879	1531	1172
	11	573	968					893	498	1186	791	1479	1084
	12	625	1056					841	410	1134	703	1427	996
PA2124110	5	389	685	990	694	1449	1153						
	6	467	822	912	557	1371	1016						
	7	545	959			1293	879	1753	1339				
	8	622	1096			1216	742	1676	1202				
	9	700	1233			1138	605	1598	1065	2057	1524		
	10	778	1370			1060	468	1520	928	1979	1387	2439	1847
	11	856	1507					1442	791	1901	1250	2361	1710
	12	934	1644					1364	654	1823	1113	2283	1573
PA2125110	5	505	960	1434	979	2080	1625						
	6	606	1152	1333	787	1979	1433						
	7	707	1344			1878	1241	2523	1886				
	8	808	1536			1777	1049	2422	1694				
	9	909	1728			1676	857	2321	1502	2967	2148		
	10	1010	1920			1575	665	2220	1310	2866	1956	3513	2603
	11	1111	2112					2119	1118	2765	1764	3412	2411
	12	1212	2304					2018	926	2664	1572	3311	2219
PA2126110	5	725	1145	1522	1102	2271	1851						
	6	870	1374	1377	873	2126	1622						
	7	1015	1603			1981	1393	2730	2142				
	8	1160	1832			1836	1164	2585	1913				
	9	1305	2061			1691	935	2440	1684	3189	2433		
	10	1450	2290			1546	706	2295	1455	3044	2204	3793	2953
	11	1595	2519					2150	1226	2899	1975	3648	2724
	12	1740	2748					2005	997	2754	1746	3503	2495

Art.PA-Series

扭矩(Nm)单作用执行器 /Torque (Nm) spring return actuators

型号Model	弹簧数量 Spring quantity	弹簧输出扭矩(Nm) Spring output torque (Nm)		输入气源压力(单位bar)Air supply pressure (Unit: bar)									
				3.0		4.0		5.0		6.0		7.0	
				气源输出扭矩(Nm) Air supply output torque (Nm)									
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
PA2127110	5	1173	1703	2003	1474	3145	2616						
	6	1408	2043	1768	1133	2910	2275						
	7	1642	2384			2676	1935	3818	3077				
	8	1877	2724			2441	1594	3583	2736				
	9	2111	3065			2207	1254	3349	2396	4491	3538		
	10	2346	3405			1972	913	3114	2055	4256	3197	5398	4339
	11	2581	3746					2879	1715	4021	2857	5413	3999
	12	2815	4086					2645	1374	3787	2516	4928	3658
PA2128110	7	1837	2881	2812	1768								
	8	2099	3292	2550	1225								
	9	2362	3704	2259	768	3887	2396						
	10	2624	4115	1967	311	3595	1939	5223	3567				
	11	2886	4527			3303	1482	4931	3110	6559	4738		
	12	3149	4938			3012	1025	4641	2653	6268	4281	7895	5908
	13	3411	5350					4348	2195	5976	3823	7603	5450
	14	3674	5761					4057	1738	5685	3366	7312	4993
	15	3936	6173					3765	1281	5393	2909	7020	4536
	16	4198	6584							5101	2452	6728	4079