

Valves, Actuators, Accessories



Pneumatic Actuators



VAA INTERNATIONAL INC.

WHY VAA ?

- More than 20 years experience with valves, actuators, accessories, worldwide
- High quality engineering solutions
- Focus on customer satisfaction
- R&D production, quality control, testing, certification and documents are carried out by safe hands - our hands
- Motivated, enthusiastic and skilled employees

VAA INTERNATIONAL INC was established in 1990 to provide solutions in Valves, Actuators, Accessories of valve engineering and production.

VAA INTERNATIONAL INC designs and produces standard and custom-build products in accordance with international and custom standards.

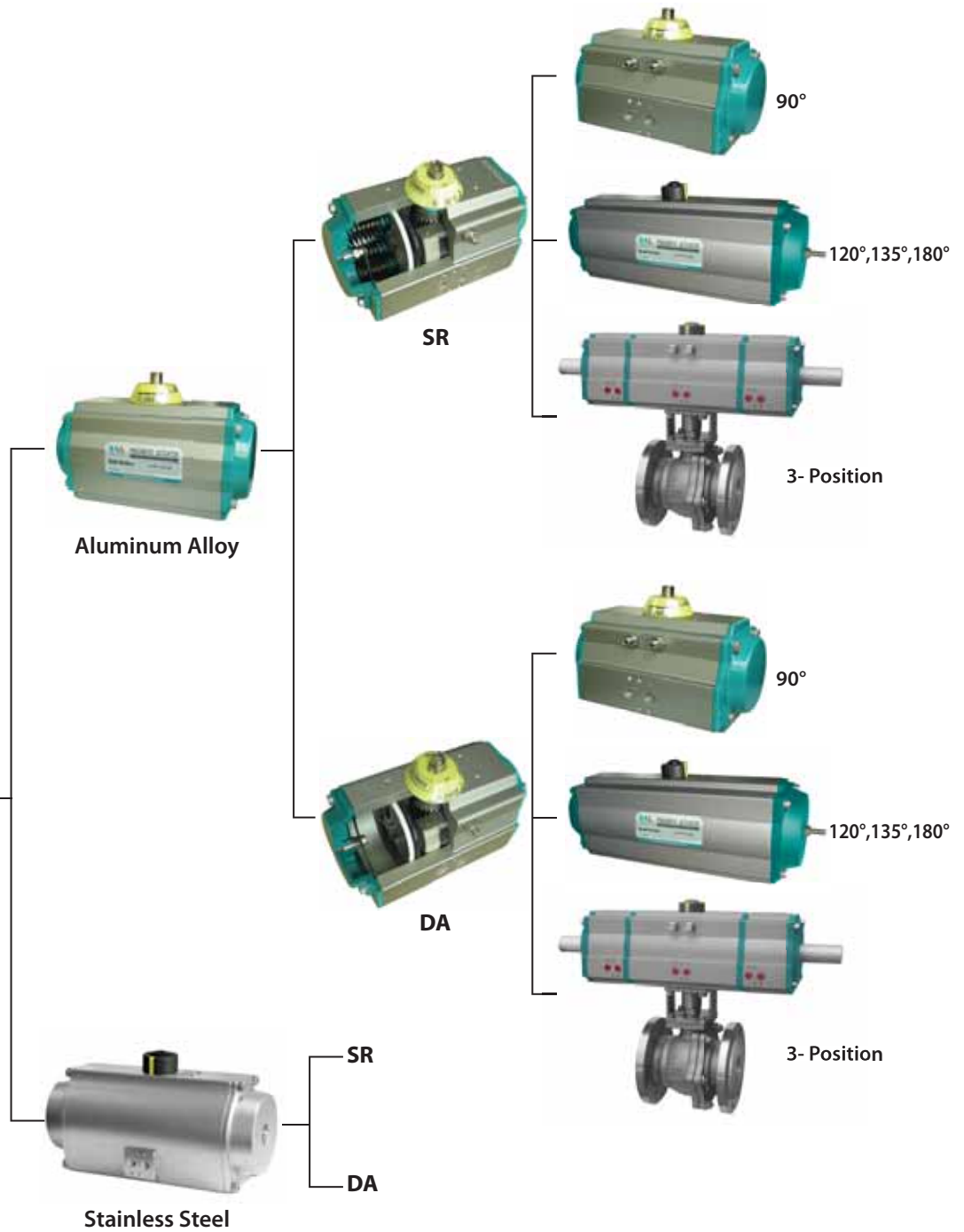
Our customers make also use of our great knowledge of engineering, concerning complicated projects and the maintenance service for all makes of V.A.A.



Scope of Supply



Pneumatic Actuator



Indicator



1. Hard anodized body

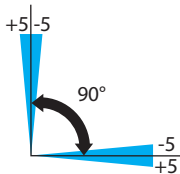
According to the different requirements, the extruded aluminum alloy ASTM6005 Body can be treated with hard anodized, powder polyester painted (different colours is available such as blue, orange, yellow etc.), PTFE or Nickel plated.

2. Rack pistons

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.

3. Travel stop adjustments

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

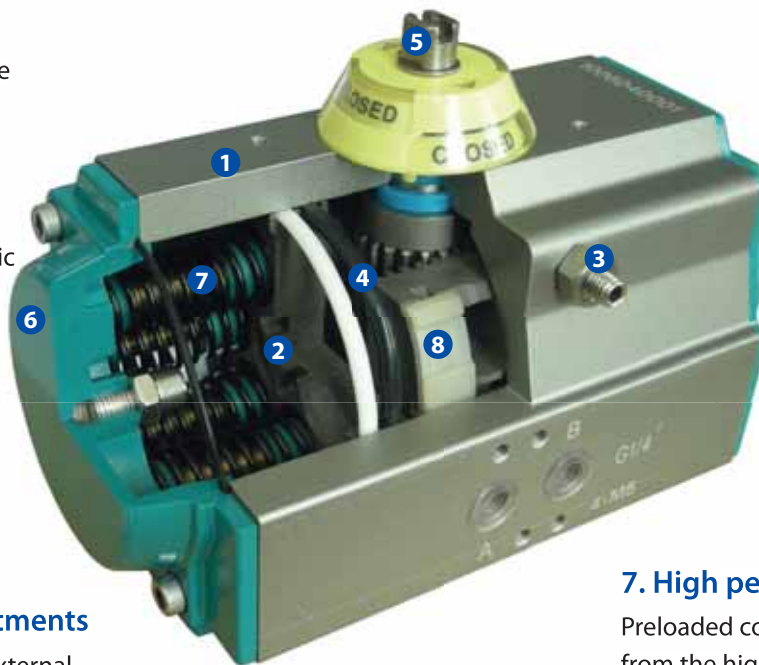


4. O-rings

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

5. Pinion

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.



6. End caps

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

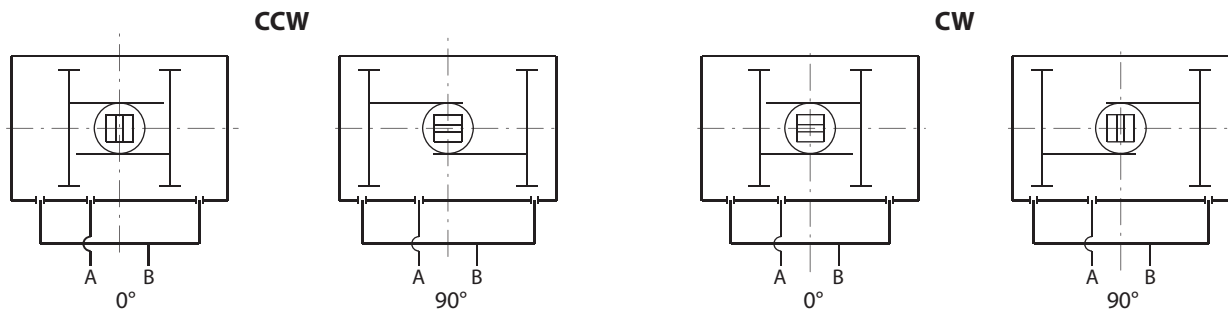
7. High performance springs

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. Bearings & Guides

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

Double Acting Actuators



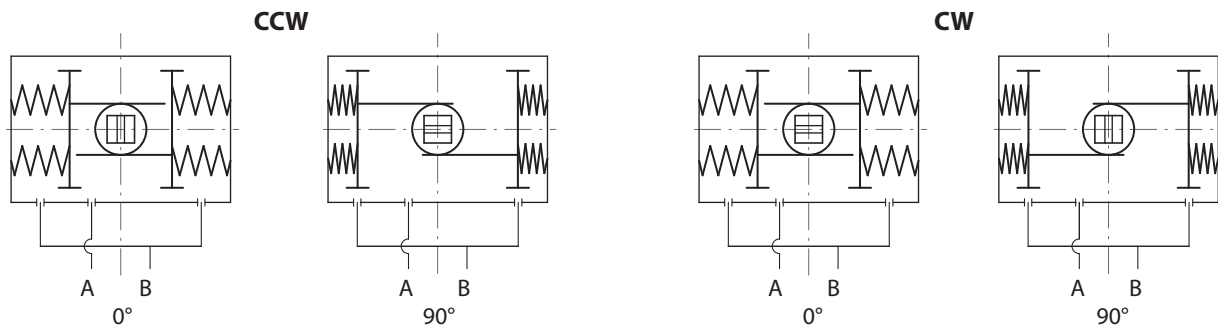
Air to Port A forces the pistons outwards, causing the pinion to turn counterclockwise while the air is being exhausted from Port B.

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

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.

Spring Return Actuators



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.

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.

Operating Conditions

1. Operating media

Dry or lubricated air or the non-corrosive gases
The maximum particle diameter must less than 30 um

2. Air supply pressure

The minimum supply pressure is 2.5 Bar
The maximum supply pressure is 8 Bar

3. Operating temperature

Standard : -20°C~+80°C
Low temperature : -35°C~+80°C
High temperature : -15°C~+150°C

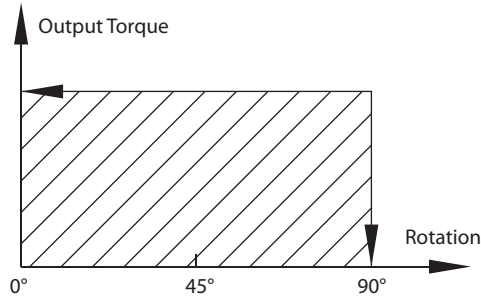
4. Travel adjustment

Have adjustment range of $\pm 5^\circ$ for the rotation at 0° and 90°

5. Application

Either indoor or outdoor

Output Torque of Double Acting Actuators

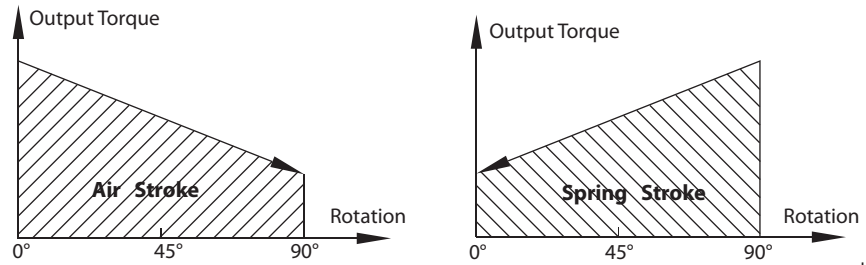


Unit: Nm

Model	Air supply pressure (Unit: bar)									
	2	2.5	3	4	4.5	5	5.5	6	7	8
ART007DA	3.1	3.8	4.6	6.1	6.9	7.6	8.4	9.2	10.7	12.2
ART012DA	4.8	6	7.2	9.6	10.8	12	13.2	14.4	16.8	19.2
ART020DA	8.0	10.0	12.0	16.0	18.0	20.0	21.9	23.9	27.9	31.9
ART035DA	14.6	18.2	21.9	29.2	32.8	36.5	40.1	43.8	51.1	58.4
ART050DA	20.1	25.1	30.1	40.1	45.1	50.2	55.2	60.2	70.2	80.3
ART075DA	31.4	39.2	47.0	62.7	70.5	78.4	86.2	94.1	109.7	125.4
ART110DA	45.1	56.4	67.7	90.3	101.6	112.9	124.1	135.4	158.0	180.6
ART160DA	66.1	82.7	99.2	132.2	148.8	165.3	181.8	198.4	231.4	264.5
ART255DA	100.3	125.4	150.5	200.6	225.7	250.8	275.9	301.0	351.1	401.3
ART435DA	171.0	213.8	256.5	342.0	384.8	427.5	470.3	513.0	598.5	684.0
ART665DA	266.0	332.5	399.0	532.0	598.5	665.0	731.5	798.0	931.0	1064.0
ART1000DA	425.6	532.0	638.4	851.2	957.6	1064.0	1170.4	1276.8	1489.6	1702.4
ART1200DA	532.0	665.0	798.0	1064.0	1197.0	1330.0	1463.0	1596.0	1862.0	2128.0
ART1800DA	769.5	961.9	1154.3	1539.0	1731.4	1923.8	2116.1	2308.5	2693.3	3078.0
ART2700DA	1169.6	1462.1	1754.5	2339.3	2631.7	2924.1	3216.5	3508.9	4093.7	4678.6
ART3800DA	1526	1908	2289	3052	3434	3815	4197	4578	5341	6104
ART5700DA	2285	2856	3427	4570	5141	5712	6283	6854	7997	9139
ART8000DA	3256	4070	4884	6512	7326	8140	8954	9768	11396	13024



Output Torque of Spring Return Actuators

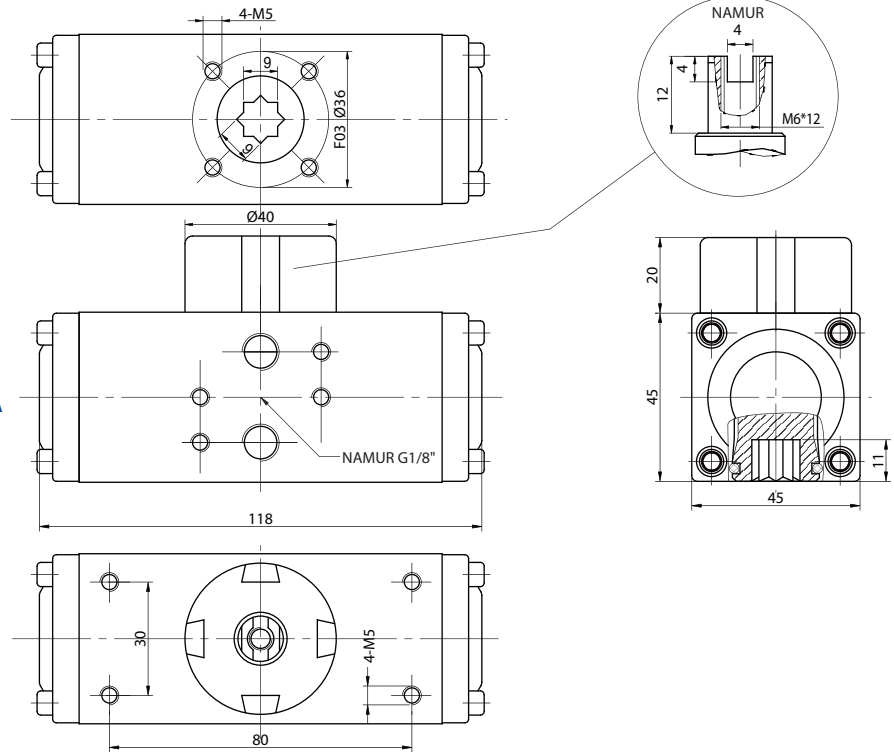


Unit: Nm

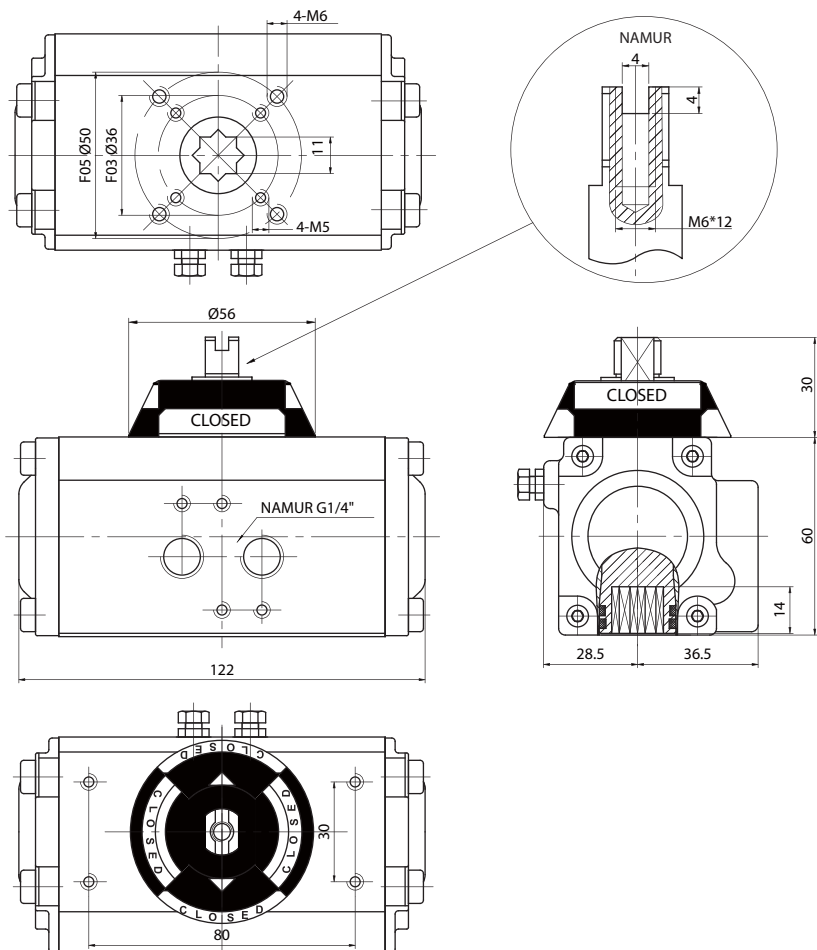
Output torque of air to springs																	
Air pressure		2.5BAR		3BAR		4BAR		5BAR		6BAR		7BAR		8BAR		Springs ¹ output	
Model	Spring Qty.	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°
		Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
ART020SR	K5	5.7	3.8	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
ART035SR	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
ART050SR	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
ART075SR	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
ART110SR	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	98.1	82.5	56.0
ART160SR	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
ART255SR	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
ART435SR	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 of air to springs														Springs' output	
Air pressure		2.5Bar		3Bar		4Bar		5Bar		6Bar		7Bar		8Bar			
Model	Spring Qty.	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
ART665SR	K5	193	124	259	191	392	324									208	140
	K6	165	83	232	149	365	282	498	415							250	168
	K7	137	41	203	107	336	240	469	373							292	196
	K8			176	66	309	199	442	237	575	465	708	598			333	223
	K9					280	157	413	290	546	423	679	556			375	251
	K10					253	115	386	248	519	381	652	514	785	647	417	279
	K11							358	207	491	340	624	473	757	606	458	307
	K12							330	165	463	298	596	431	729	564	500	335
ART1000SR	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
ART1200SR	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
ART1800SR	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
ART2700SR	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
ART3800SR	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	1222	2793	1985	3556	2748	4319	3511	2334	1606
	K12							1868	986	2631	1749	3394	2512	4157	3275	2546	1752
ART5700SR	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
ART8000SR	K7	2028	869													2880	1837
	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	6559	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	

Dimension of ART007DA



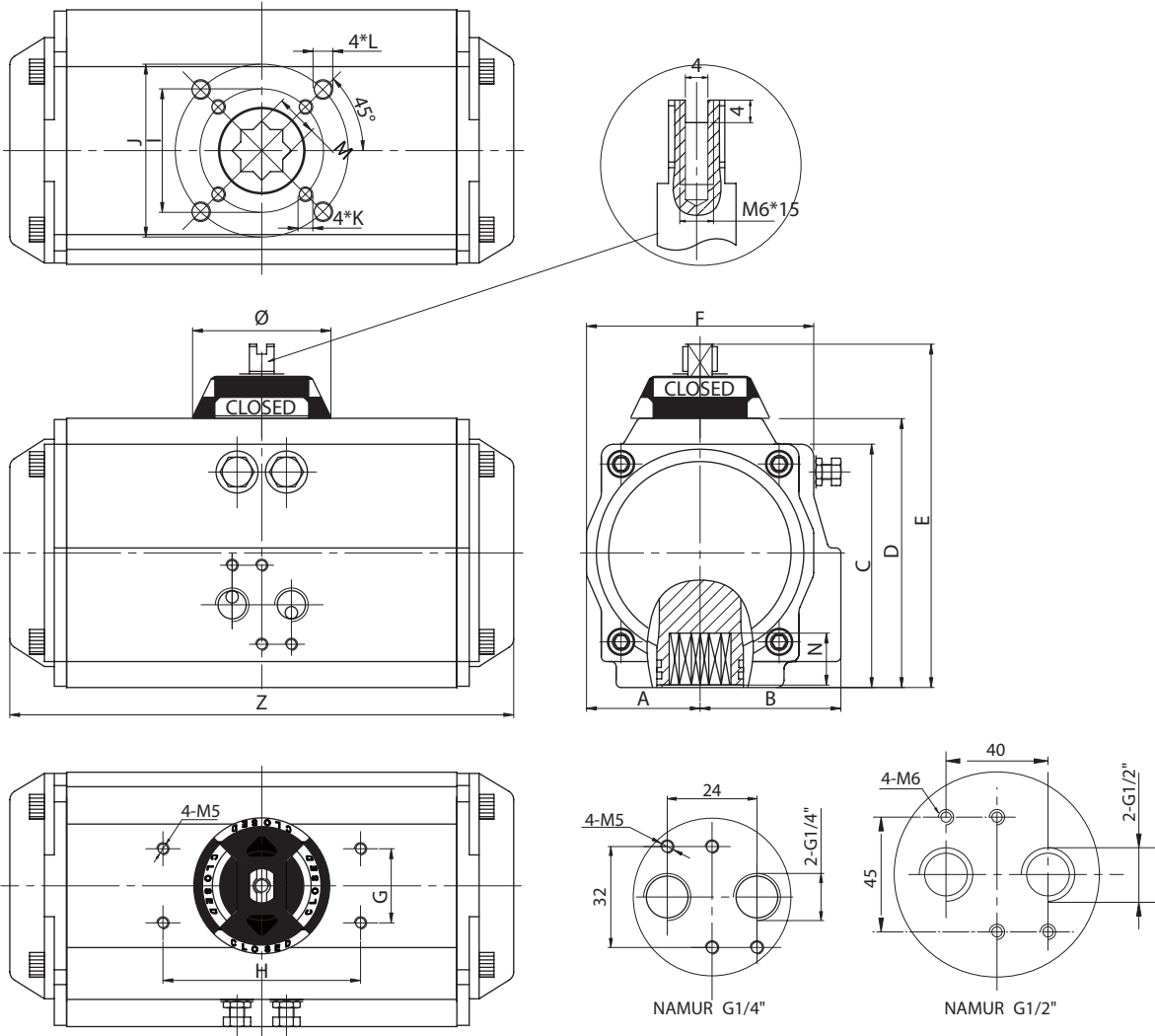
Dimension of ART012DA





FROM CA USA

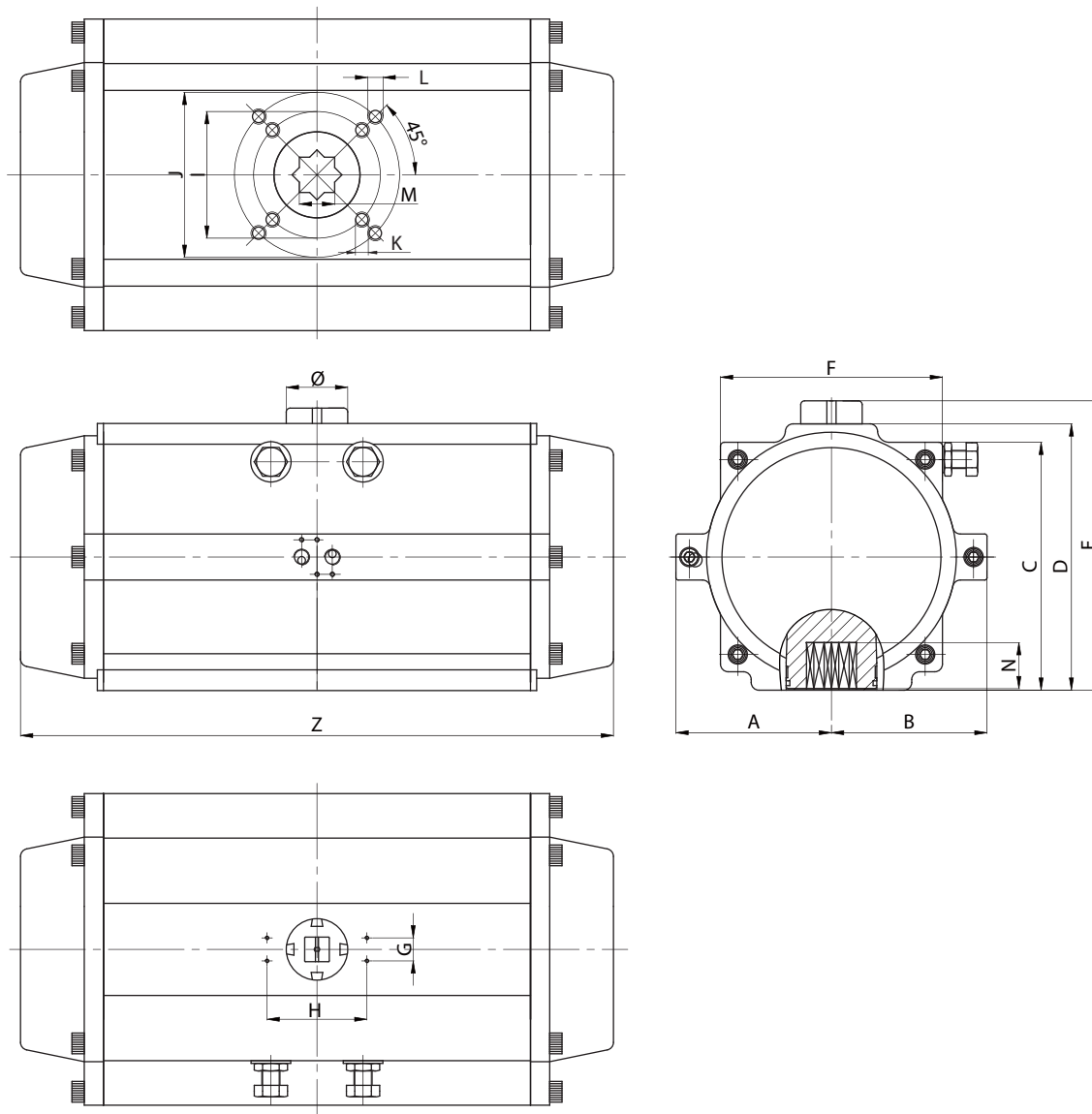
Dimension of ART020DA~ART2700DA



Unit: mm

Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Z	Ø	Air Connection
ART020	30	41.5	65.5	72	102	65	30	80	Ø36	Ø50	M5x8	M6x10	11	14	147	Ø56	NAMUR G1/4"
ART035	36	47	81	87.5	117.5	72	30	80	Ø50	Ø70	M6x10	M8x13	14	18	168	Ø56	NAMUR G1/4"
ART050	42	53	94	99.5	129.5	81	30	80	Ø50	Ø70	M6x10	M8x13	14	18	184	Ø56	NAMUR G1/4"
ART075	46	57	98.5	108.7	138.7	92	30	80	Ø50	Ø70	M6x10	M8x13	17	21	204	Ø56	NAMUR G1/4"
ART110	50	58.5	111	116.5	146.5	98	30	80	Ø50	Ø70	M6x10	M8x13	17	21	262	Ø56	NAMUR G1/4"
ART160	57.5	64	122.5	133	163	109.5	30	80	Ø70	Ø102	M8x13	M10x16	22	26	268	Ø56	NAMUR G1/4"
ART255	67.5	74.5	145.5	155	185	127.5	30	80	Ø70	Ø102	M8x13	M10x16	22	26	301	Ø68	NAMUR G1/4"
ART435	75	77	161	172	202	137.5	30	80	Ø102	Ø125	M10x16	M12x20	27	31	390	Ø68	NAMUR G1/4"
ART665	87	87	184	197	227	158	30	80	Ø102	Ø125	M10x16	M12x20	27	31	458	Ø68	NAMUR G1/4"
ART1000	103	103	213	230	260	189	30	130		Ø140		M16x25	36	40	525	Ø91	NAMUR G1/4"
ART1200	113	113	235.5	255	285	210	30	130		Ø140		M16x25	36	40	532	Ø91	NAMUR G1/4"
ART1800	130	130	264.5	289	319	245	30	130		Ø165		M20x25	46	50	602	Ø91	NAMUR G1/4"
ART2700	147	147	299	326	356	273	30	130		Ø165		M20x25	46	50	722	Ø91	NAMUR G1/2"

Dimension of ART3800DA~ART8000DA



Unit: mm

Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Z	Ø	Air Connection
ART3800	203	203	324	348	378	290	30	130	Ø165	Ø215	4-M20x25	4-M20x25	46	60	772	Ø80	NAMUR G1/2"
ART5700	230	230	380	410	440	336	30	130	Ø165	Ø215	4-M20x25	4-M20x25	46	60	870	Ø80	NAMUR G1/2"
ART8000	258	258	450	480	510	360	30	130	Ø165	Ø254	4-M20x25	8-M16x25	55	60	930	Ø80	NAMUR G1/2"

Cylinder

Unit: mm

Model	ART007	ART012	ART020	ART035	ART050	ART075	ART110	ART160	ART255
Cylinder	Ø32	Ø40	Ø52	Ø63	Ø75	Ø83	Ø92	Ø105	Ø125

Model	ART435	ART665	ART1000	ART1200	ART1800	ART2700	ART3800	ART5700	ART8000
Cylinder	Ø140	Ø160	Ø190	Ø210	Ø240	Ø270	Ø300	Ø350	Ø400

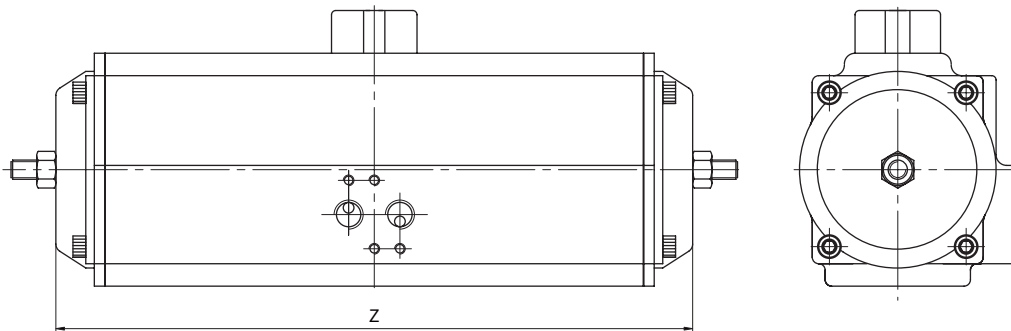
120°, 135°, 180° Double Acting and Spring Return

120°, 135°, 180° actuators provide rotations of 120°, 135° or 180°. The external travel stop is available as a standard in fully open position (120°, 135° or 180°) and in fully close position (0°), and it is easily and precisely adjustable of +/- 5° in both directions.

Output Torque

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

Dimension



Size	ART020	ART050	ART075	ART110	ART160	ART255	ART435	ART665	ART1000	ART1200	ART1800	ART2700
Z(mm)	330	376	378	432	520	594	733	840	1034	1034	1027	1170

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

Three Position Pneumatic Actuator

VAA 3 position pneumatic actuators provide an operation of 0° - 45° - 90°. The intermediate position is achieved by an external mechanical stop of movement on the 2 auxiliary pistons. This intermediate stop position is adjustable from 0-90, for example 5°, 20°, 30°, 50°, 75° etc. The intermediate position is easily achieved by adjusting the external nuts located outside the two end-caps.

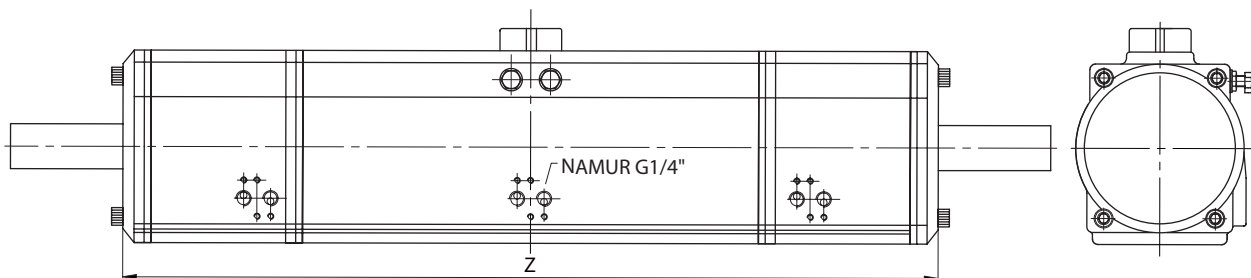
Both type, double acting and spring return, are available.

The 0°-90°-180° acting actuator is available.

Output Torque

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

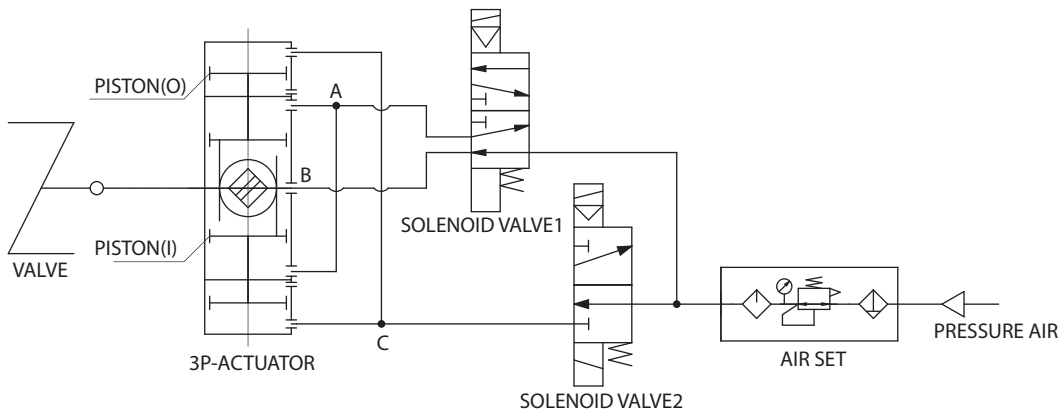
Dimension of double acting actuator



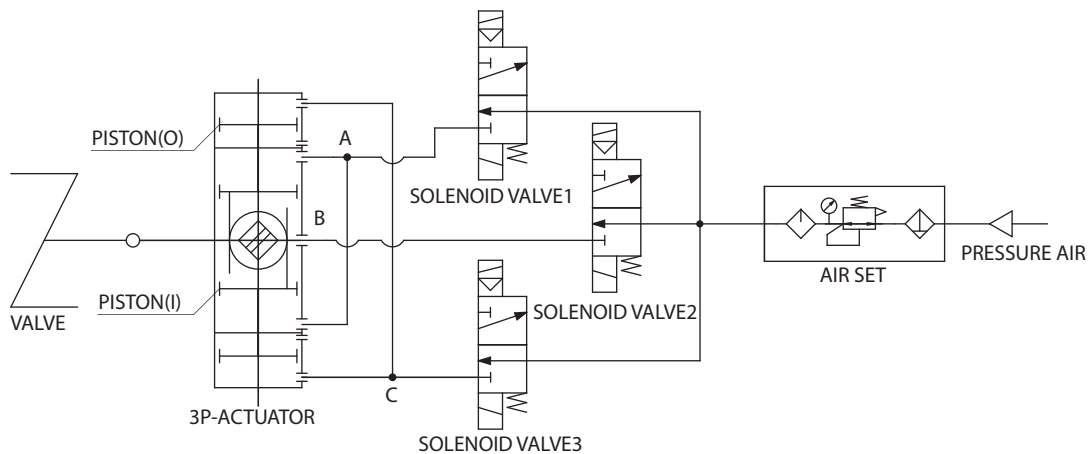
Size	ART020-3P	ART050-3P	ART075-3P	ART110-3P	ART160-3P	ART255-3P	ART435-3P	ART665-3P	ART1000-3P	ART1200-3P	ART1800-3P	ART2700-3P
Z(mm)	266	301	304	338	410	466	558	646	806	806	886	1000

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

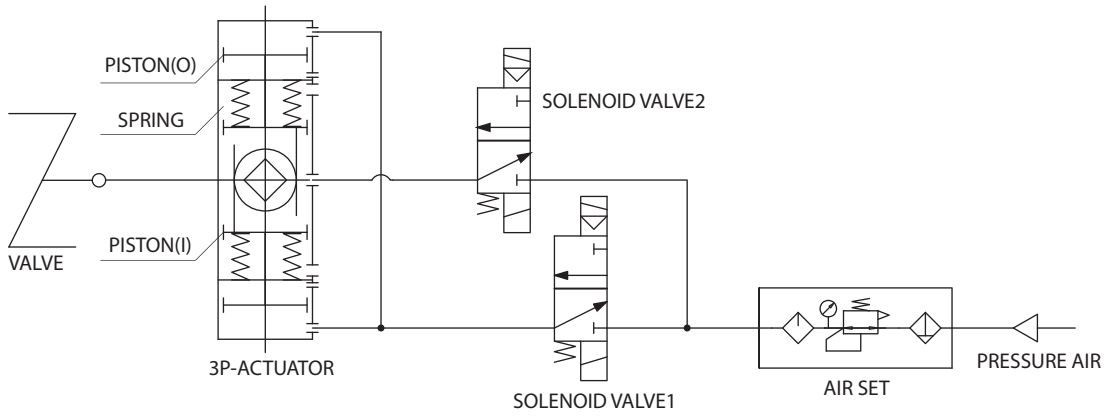
In order to control the operation of VAA 3-position pneumatic actuators a system of solenoid valves controlling a sequence of air supplies to the actuator is required as described below:



	0°	90°	30°	0°
SOLENOID VALVE1	OFF	ON	OFF	OFF
SOLENOID VALVE2	OFF	OFF	ON	OFF



	0°	30°	90°	30°	0°
SOLENOID VALVE1	OFF	OFF	ON	OFF	OFF
SOLENOID VALVE2	ON	OFF	OFF	ON	ON
SOLENOID VALVE3	OFF	ON	ON	ON	OFF



	0°	30°	90°	30°	0°
SOLENOID VALVE1	OFF	ON	OFF	ON	OFF
SOLENOID VALVE2	OFF	ON	ON	ON	OFF



A product of VAA



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