PNEUMATIC ACTUATORS

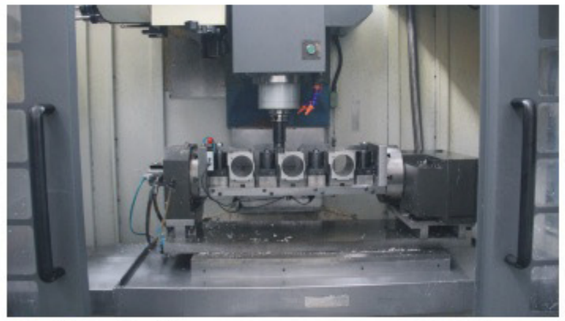
RT SERIES

PNEUMATIC ACTUATORS

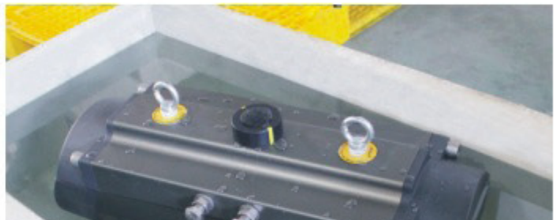
RT SERIES

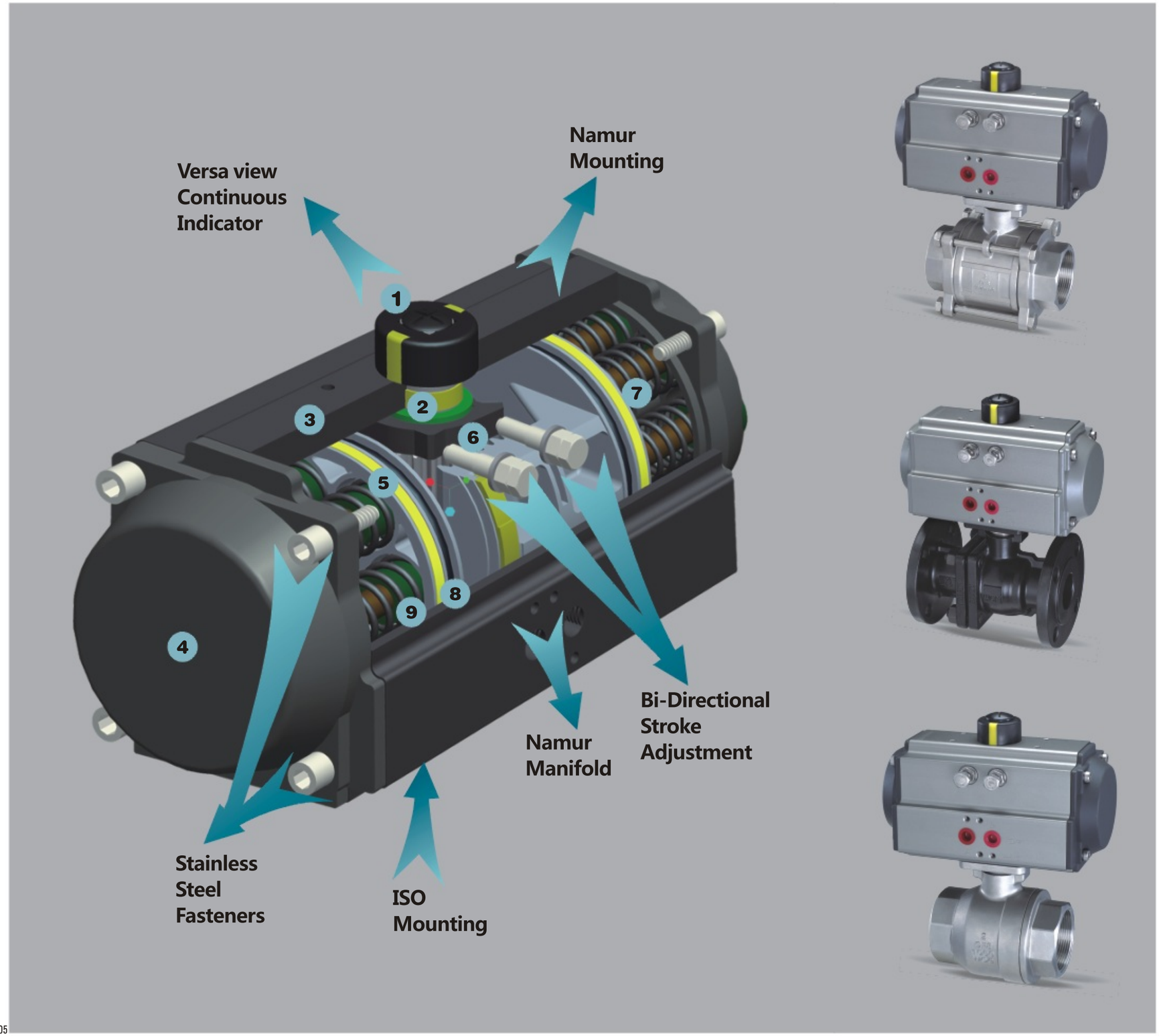
ACTUATORS

POV




SN-100四位扭矩测量机





PNEUMATIC ACTUATORS CONSTRUCTION

1、Indicator

Position indicator with NAMUR is convenient for mounting accessories such as Limit Switch box, positioner and so on.

2、Pinion

The pinion is high-precision and integrative, made form 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、Actuator 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.

4、End caps

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

5、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.

6、Travel adjustment

The tow independent external travel stop adjustment bolts can adjust±5°at both open and close directions easily and precisely.

7、High performance springs

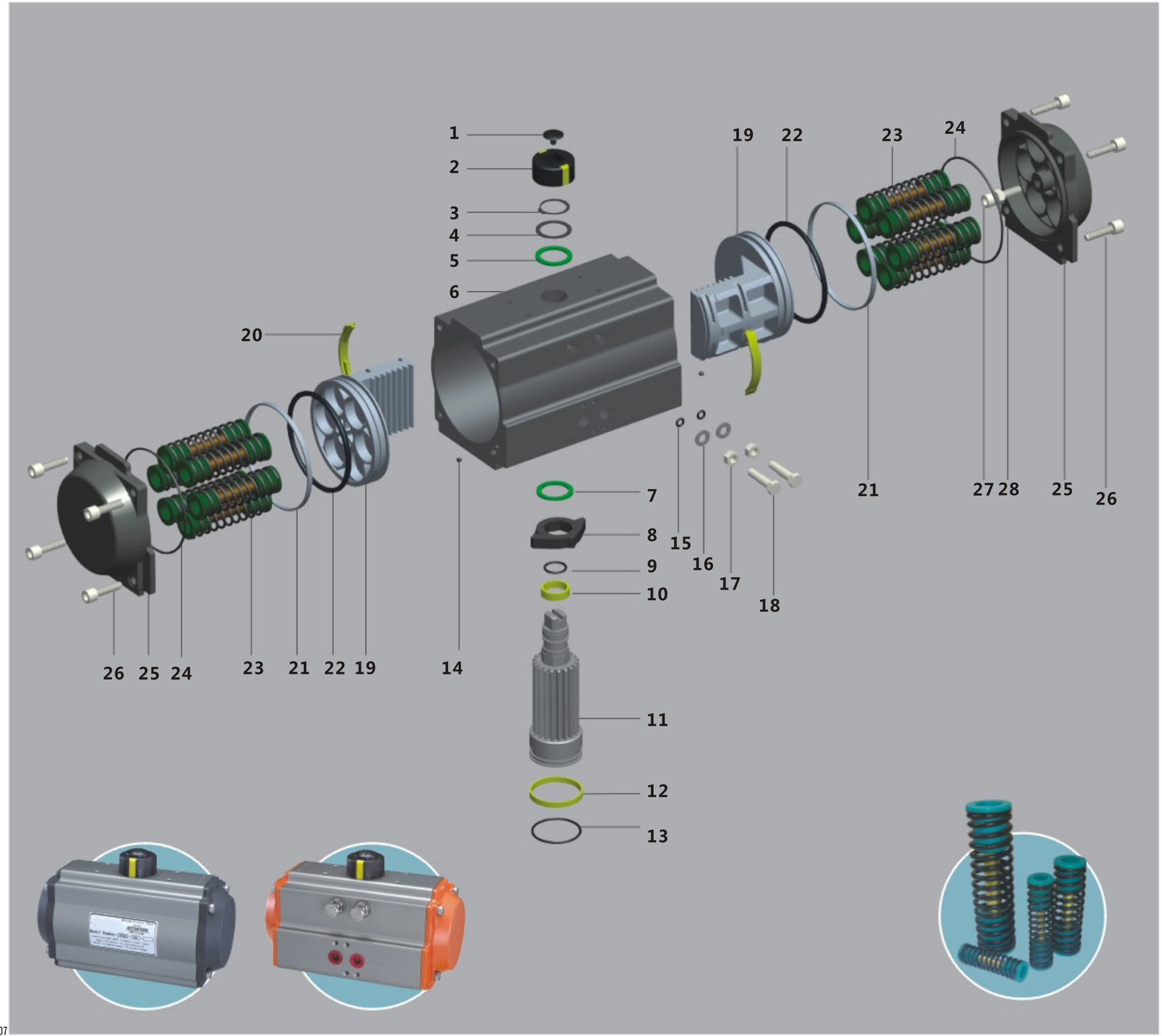
Preloaded coating springs are made from the high quality material for resistant to corrosion and longer service life, which can be denounced safely and conveniently to satisfy different requirements of torque by changing quantity of springs.

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.

9、O-rings

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

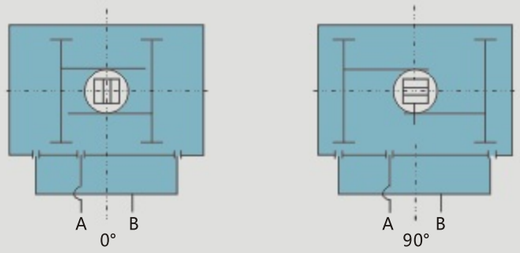


PNEUMATIC ACTUATORS PARTS AND MATERIAL

NO.	DESCRIPTION	QTY	STANDARD METERIAL	PROTECTION	OPTIONAL METERIAL
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	Bearing(pinion bottom)	1	engineering plastics		
13	O-ring (pinion bottom)	1	NBR		Viton/Silicone
14	Plug	2	NBR		Viton/Silicone
15	O-ring(Adjustment screw)	2	NBR		Viton/Silicone
16	Washer(Adjustment screw)	2	Stainless Steel		
17	Nut(Adjustment screw)	2	Stainless Steel		
18	Adjustment screw	2	Stainless Steel		
19	Piston	2	Cast aluminum/Cast steel	anodized/Zinc galvanized	Stainless Steel
20	Guide(Piston)	2	engineering plastics		
21	Bearing(Piston)	2	engineering plastics		
22	O-ring(Piston)	2	NBR		Viton/Silicone
23	Spring	0~12	Spring steel	Dip coating	
24	O ring(End cap)	2	NBR		Viton/Silicone
25	End cap	2	Cast aluminum	Powder polyester painted etc	
26	Cap screw	8	Stainless Steel		
27	Stop screw	2	Stainless Steel		
28	Nut(stop screw)	2	Stainless Steel		

THE OPERATING PRINCIPLE OF DOUBLE ACTING ACTUATOR

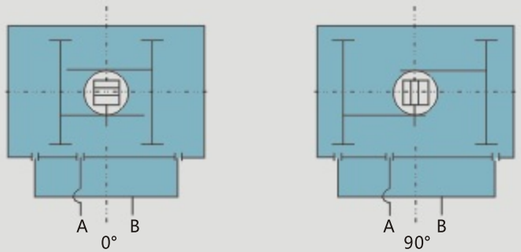
CCW



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



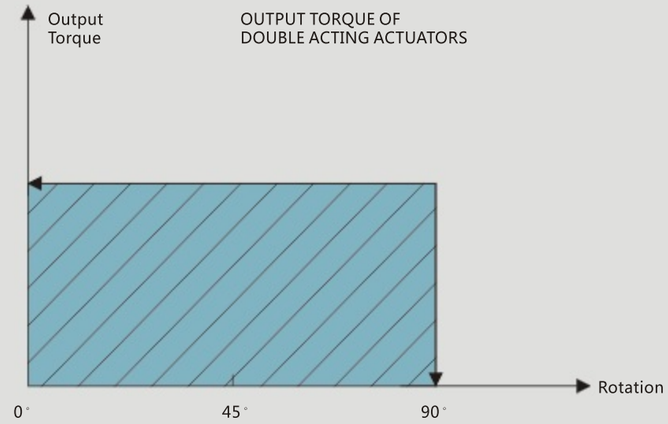
Air to Port A forces the pistons outwards, causing the pinion to turn clockwise while the air is being exhausted from Port B.

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

OUTPUT TORQUE OF DOUBLE ACTING ACTUATORS (Unit : N.m)

Model	Air supply pressure(Unit:bar)									
	2	2.5	3	4	4.5	5	5.5	6	7	8
RT52DA	8	10	12	16	18	20	22	24	28	32
RT63DA	15	18	22	29	33	37	40	44	51	58
RT75DA	20	25	30	40	45	50	55	60	70	80
RT83DA	31	39	47	63	71	78	86	94	110	125
RT92DA	45	56	68	90	102	113	124	135	158	180
RT105DA	66	83	99	132	149	165	182	198	230	265
RT125DA	100	125	150	201	226	251	275	301	350	401
RT140DA	171	214	257	342	385	428	470	513	599	684
RT160DA	266	333	400	532	599	665	732	798	930	1064
RT190DA	426	532	638	851	958	1064	1170	1277	1490	1702
RT210DA	532	665	798	1064	1197	1330	1463	1596	1862	2128
RT240DA	770	962	1154	1539	1731	1924	2116	2309	2693	3078
RT270DA	1170	1462	1755	2339	2632	2924	3217	3509	4094	4679
RT300DA	1526	1908	2289	3052	3434	3815	4197	4578	5341	6104
RT350DA	2285	2856	3427	4570	5141	5712	6283	6854	7997	9139
RT400DA	3256	4070	4884	6512	4326	8140	8954	9768	11396	13024

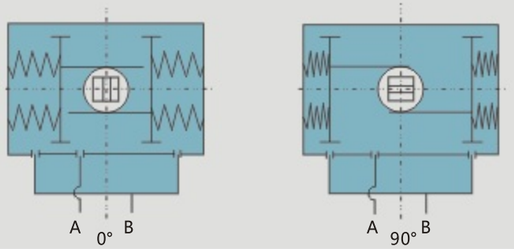
DOUBLE ACTING ACTUATOR SIZING GUIDE



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 RT105DA.

THE OPERATING PRINCIPLE OF SPRING RETURN ACTUATOR

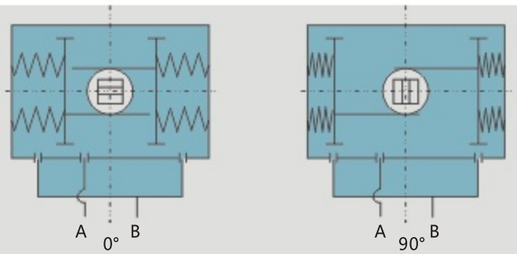
CCW



Air to port A forces the pistons outwards, causing the springs to compress, The pinion turns counter-clockwise 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.

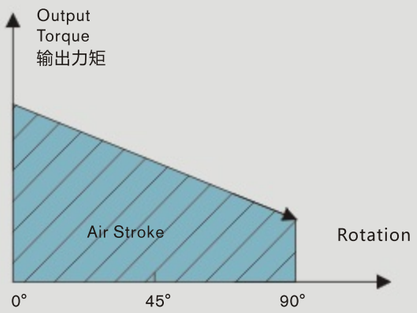
CW



Air to port A forces the pistons outwards, causing the springs to compress, The pinion turns counter-clockwise 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.

OUTPUT TORQUE OF SPRING RETURN ACTUATORS



NOTE

make sure that the torque necessary to operate the valve is compatible with the actuator torque(it depends on both actuator type and air supply).Please note that the requested torque depends not only on the valve, but on the working conditions and the safety margins of the plant in question, too!

OUTPUT TORQUE OF SPRING RETURN ACTUATORS

Output torque of air to springs																	Springs'output	
Air pressure		2.5Bar		3Bar		4Bar		5Bar		6Bar		7Bar		8Bar			
Model	Spring Q.ty	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
RT52SR	5	5.7	3.8	7.6	5.7											6.2	4.3
	6	4.9	2.5	6.9	4.5	10.9	8.5									7.4	5.0
	7	4.0	1.3	6.0	3.3	9.8	7.3	14.0	10.4							8.6	5.9
	8			5.2	2.0	9.2	6.0	13.2	9.1	17.2	14.1					9.9	6.7
	9			4.3	0.8	8.3	4.8	12.3	7.9	16.3	12.8	20.3	16.8			11.1	7.6
	10					7.4	3.6	11.5	6.7	15.5	11.6	19.5	15.6			12.4	8.5
	11					6.6	2.3	10.6	5.4	14.6	10.4	18.6	14.3	22.6	18.3	13.6	9.3
	12							9.7	4.2	13.8	9.1	17.8	12.2	21.8	17.1	14.8	10.2
RT63SR	5	11.4	7.7	15.0	11.4	22.3	14.9									10.4	6.8
	6	10.1	5.7	13.6	9.3	20.9	16.6	28.3	23.9							12.5	8.2
	7	8.6	3.6	12.5	7.2	19.5	14.5	26.8	21.9							14.6	9.6
	8			10.9	5.1	18.2	12.4	25.5	19.8	32.8	27.0	40.1	34.3			16.7	10.9
	9					16.8	10.4	24.1	17.7	31.4	24.9	38.7	32.2			18.8	12.3
	10					1.4	8.2	22.8	15.6	30.0	22.8	37.3	30.1	44.7	37.4	20.9	13.7
	11							21.5	13.5	28.7	20.7	36.0	28.0	43.3	35.3	22.9	15.0
	12							20.0	11.4	27.3	18.6	34.6	25.9	41.9	33.3	25.0	16.4
RT75SR	5	14.5	10.6	19.4	15.5	29.5	25.7									14.5	10.5
	6	12.4	7.6	17.3	12.6	27.4	22.7	37.5	32.8							17.4	12.7
	7	10.4	4.8	15.2	9.7	25.3	19.9	35.4	29.9							20.3	14.8
	8			13.1	6.8	23.1	16.9	33.3	27.0	43.2	37.0	53.3	47.0			23.2	16.9
	9					21.0	14.1	34.2	24.1	41.1	34.1	51.2	44.2			26.1	19.0
	10					19.0	11.1	28.8	21.2	39.0	31.2	49.1	41.2	59.1	51.2	29.0	21.1
	11							27.0	18.3	37.0	28.3	47.0	38.4	57.0	48.4	31.9	23.2
	12							24.9	15.4	34.9	25.4	44.9	35.4	54.9	45.4	34.7	25.3
RT83SR	5	23.3	16.1	31.1	24.0	46.8	39.7									23.0	15.8
	6	20.1	11.5	28.0	19.3	43.7	35.1	59.4	50.7							27.6	19.0
	7	17.0	6.9	24.8	14.8	40.5	30.5	56.2	46.2							32.2	22.1
	8			21.7	10.1	37.4	25.8	53.1	41.5	68.8	57.2	84.5	72.9			36.8	25.3
	9					34.2	21.3	49.9	37.0	65.6	52.6	81.2	68.3			41.4	28.5
	10					31.0	16.6	46.7	32.3	62.4	48.0	78.1	63.7	93.8	79.3	46.0	31.6
	11							43.6	27.7	59.3	43.4	75.0	59.1	90.6	74.8	50.6	34.8
	12							40.4	23.2	56.1	38.9	71.7	54.5	87.4	70.2	55.2	38.0
RT92SR	5	33.1	22.0	44.2	33.2	66.8	55.9									34.4	23.3
	6	28.4	15.2	39.6	26.4	62.2	49.0	84.8	71.6							41.2	28.0
	7	23.8	8.2	34.9	19.4	57.5	42.1	80.2	64.7							48.1	32.7
	8			31.3	12.6	52.9	35.2	75.5	57.9	98.1	80.5	120.7	103.0			55.0	37.3
	9					48.2	28.4	70.9	51.0	93.5	73.6	116.0	96.1			61.9	42.0
	10					43.6	21.5	66.2	44.1	88.8	66.7	111.3	89.2	134.0	111.8	68.7	46.7
	11							61.5	37.2	84.1	59.9	106.6	82.4	129.2	105.0	75.6	51.4
	12							56.8	30.4	79.4	53.0	101.9	75.5	124.5	98.1	82.5	56.0
RT105SR	5	51.0	33.4	67.5	49.9	100.6	83.0									49.2	31.6
	6	44.7	23.5	61.1	40.0	94.2	73.2	127.3	106.2							59.1	38.0
	7	38.4	13.7	54.9	30.3	87.9	63.4	121.0	96.4							68.9	44.3
	8			48.5	20.4	81.6	53.5	114.7	86.5	147.7	119.6	180.8	152.7			78.7	50.6
	9					75.3	43.7	108.4	76.8	141.5	109.8	174.5	142.9			88.6	56.9
	10					68.9	33.4	102.0	66.5	135.1	99.6	168.2	132.6	201.2	165.7	98.4	63.3
	11							95.7	57.0	128.7	90.1	161.8	123.1	194.8	156.2	108.3	69.6
	12							89.4	47.5	122.5	80.6	155.5	113.6	188.6	146.7	118.1	75.9

OUTPUT TORQUE OF SPRING RETURN ACTUATORS

Model	Spring Q.ty	Output torque of air to springs: 2.5Bar 0° Start	2.5Bar 90° End	3Bar 0° Start	3Bar 90° End	4Bar 0° Start	4Bar 90° End	5Bar 0° Start	5Bar 90° End	6Bar 0° Start	6Bar 90° End	7Bar 0° Start	7Bar 90° End	8Bar 0° Start	8Bar 90° End	Springs'output 90° Start	Springs'output 0° End
RT125SR	5	73	47	98	72	148	122									79	52
	6	63	31	88	56	138	107	188	157							94	63
	7	52	15	77	40	127	90	178	141							110	73
	8			67	25	117	75	167	125	217	176	268	226			125	84
	9					107	59	157	109	207	159	257	210			141	94
	10					96	44	146	94	196	144	247	194	297	245	157	105
	11							136	78	186	128	236	178	286	228	173	115
	12							125	63	176	113	226	163	276	213	188	125
RT140SR	5	128	85	171	127	256	213									129	86
	6	111	59	154	102	239	187	325	273							155	103
	7	94	33	137	76	222	162	308	247							181	120
	8			120	50	205	136	291	221	376	307	462	392			206	137
	9					187	110	273	196	358	281	444	367			232	155
	10					170	84	256	169	341	255	427	340	512	426	258	172
	11							238	143	324	229	409	314	495	400	284	189
	12							221	118	307	203	392	289	478	374	310	206
RT160SR	5	193	124	259	191	392	324									208	140
	6	165	83	232	149	365	282	498	415							250	168
	7	137	41	203	107	336	240	469	373							292	196
	8			176	66	309	199	442	237	575	465	708	598			333	223
	9					280	157	413	290	546	423	679	556			375	251
	10					253	115	386	248	519	381	652	514	785	647	417	279
	11							358	207	491	340	624	473	757	606	458	307
	12							330	165	463	298	596	431	729	564	500	335
RT190SR	5	332	222	438	329	651	542									309	200
	6	292	161	398	267	611	480	824	693							371	240
	7	252	99	358	205	571	418	784	631							433	280
	8			318	143	531	356	744	569	957	782	1169	995			495	320
	9					491	295	704	507	917	720	1130	933			557	360
	10					451	233	664	446	877	658	1090	871	1302	1084	618	400
	11							624	384	837	597	1050	809	1263	1022	680	440
	12							584	322	797	535	1010	748	1223	960	742	480
RT210SR	5	390	285	523	418	789	684									380	275
	6	335	209	468	342	734	608	1000	874							456	330
	7	280	133	413	266	679	532	945	798							532	385
	8			358	190	624	456	890	722	1156	988	1422	1254			608	440
	9					569	380	835	646	1101	912	1367	1178			684	495
	10					514	304	780	570	1046	836	1312	1102	1578	1368	760	550
	11							725	494	991	760	1257	1025	1523	1292	836	605
	12							670	418	936	684	1202	950	1468	1216	912	660
RT240SR	5	552	409	744	600	1129	985									554	410
	6	470	297	662	489	1047	874	1432	1259							665	492
	7	388	187	580	379	964	764	1349	1149							775	575
	8			498	268	883	653	1267	1037	1652	1422	2037	1807			886	656
	9					800	542	1185	926	1569	1311	1954	1696			998	739
	10					718	431	1103	816	1488	1201	1872	1586	2257	1970	1108	821
	11							1021	705	1406	1090	1791	1474	2176	1859	1219	903
	12							939	594	1323	979	1708	1363	2093	1748	1330	985
RT270SR	5	903	675	1195	968	1779	1552									787	560
	6	790	519	1083	811	1667	1396	2252	1981							943	672
	7	679	361	972	654	1556	1238	2141	1823							1101	783
	8			860	497	1444	1081	2029	1666	2614	2252	3199	2836			1258	895
	9					1332	923	1917	1509	2502	2094	3087	2678			1416	1007
	10					1220	767	1805	1352	2390	1937	2974	2521	3560	3107	1572	1119
	11							1693	1194	2278	1779	2862	2364	3448	2949	1730	1231
	12							1582	1037	2167	1623	2751	2207	3336	2792	1887	1342
RT300SR	5	1097	729													1061	730
	6	935	494	1316	875											1273	876
	7	772	258	1153	639	1916	1402									1485	1022
	8			991	403	1754	1166	2517	1929							1697	1168
	9					1592	930	2355	1693	3118	2456					1909	1314
	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
RT350SR	5	1553	964													1702	1173
	6	1292	586	1863	1157											2043	1408
	7	1031	208	1602	779	2745	1922									2383	1642
	8			1341	401	2484	1544	3626	2686							2724	1877
	9					2224	1165	3336	2307	4508	3449					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
RT400SR	7	2028	869													2880	1837
	8	1736	411	2550	1225											3292	2100
	9			2259	768	3887	2396									3703	2362
	10			1967	311	3595	1939	5223	3567							4115	2624
	11					3303	1482	4931	3110	6559	4738					4526	2887
	12					3012	1025	4640	2653	6268	4281	7895	5908	9523	7536	4938	3149
	13							4348	2195	5976	3823	7603	5450	9231	7078	5349	3412
	14							4057	1738	5685	3366	7312	4993	8940	6621	5761	3674
	15							3765	1281	5393	2909	7020	4536	8648	6161	6172	3937
	16									5101	2452	6728	4079	8356	5707	6584	4199

SPRING RETURN ACTUATOR SIZING GUIDE

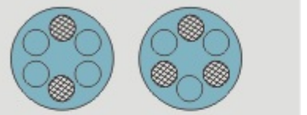
Spring Return Actuators
The suggested safety factor for spring return actuator under normal working conditions is 30-50%

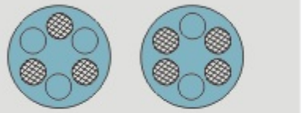
Example :
The torque needed by valve=80N.m
The torque consider safety factor (1+30%)=104 N.m
Air Supply=5Bar
According to the table of spring return actuators' output, we find output torque of RT140SR K7 is:
Air stroke 0°=308N.m
Air stroke 90°=247N.m
Spring stroke 90°=181N.m
Spring stroke 0°=120N.m
All the output torque is larger than we needed.

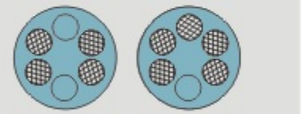
NOTE

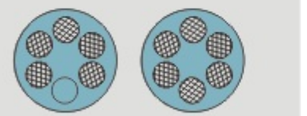
During the restoration, the spring return actuators' output torque will not be affected by the inputting air from the port B. On the contrary, it will help the restoration of springs.

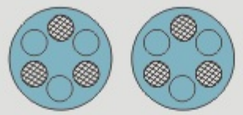
SPRING MOUNTING FORM FOR SPRING RETURN ACTUATORS

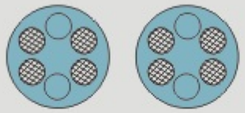

5 Springs

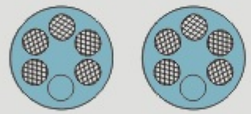

7 Springs

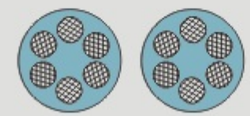

9 Springs


11 Springs


6 Springs


8 Springs

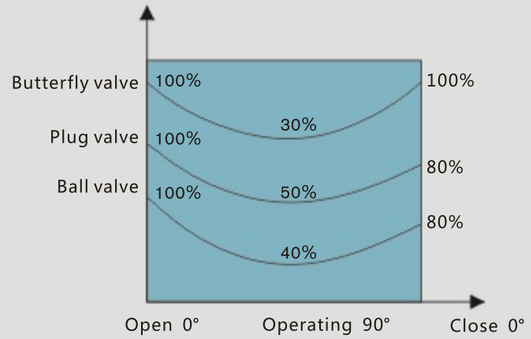

10 Springs


12 Springs

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.

EXAMPLE :
The max torque needed by the butterfly valve=104N.mThe torque after opened (operating)104x30%=32N.m Air Supply =5Bar
We can select the RT125SR K11 output torque is:
- Air stroke 0°=136N.m >104N.m
- Air stroke 90°=78N.m >32N.m
- Spring stroke 90°=173N.m >32N.m
- Spring stroke 0°=115N.m >104N.m

The above datas show the actuator's torque can satisfy the requirement of the butterfly valve.



OPERATING CONDITIONS

1. Operating medium

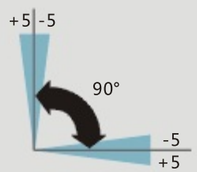
Dry or lubricated air, or the non-corrosive gases

The maximum particle diameter must less than 30μm

2. Air supply pressure

The minimum supply pressure is 2.5 Bar

The maximum supply pressure is 8 Bar



3. Operating temperature

Standard:-20℃~+80℃

Low temperature:-35℃~+80℃ High temperature:-15℃~+150℃

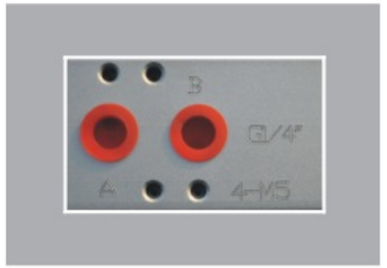
4. Travel adjustment Have adjustment range of ±5°for the rotation at 0° and 90°

5. Application Either indoor or outdoor

OPERATING TYPE

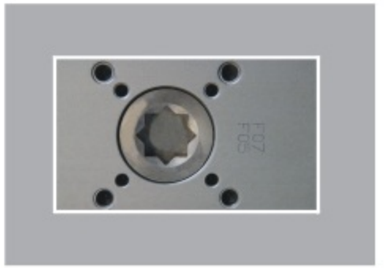
Double acting and spring return

THE MOUNTING HOLES AND SERIAL NUMBER



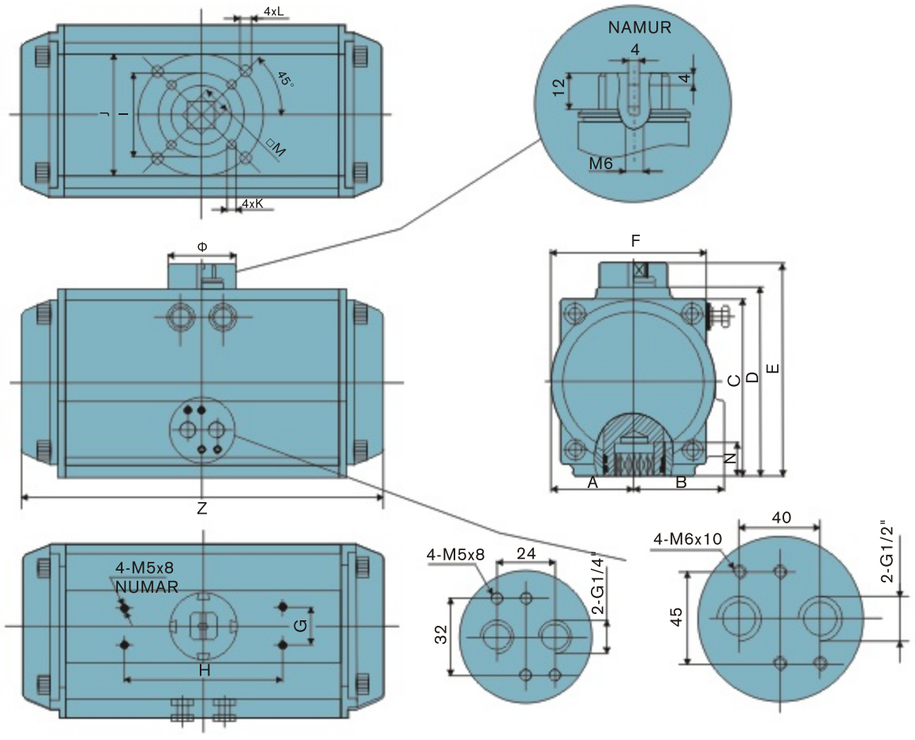
● Air supply connection is designed in accordance with NAMUR Standard to install solenoid valves

● The Namur drive pinion and the Namur top mounting connection permit direct installation of accessories such as limit switch box and positioner.



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

● Each actuator is marked with a serial number, air connection and bottom mounting holes are marked for easy track and distinction.



DIMENSION TABLE

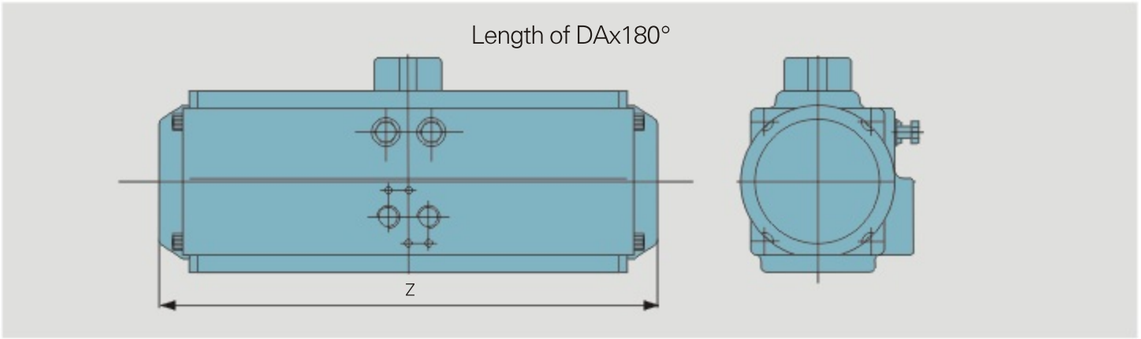
Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Z	Φ	Air connection
RT52	30	41.5	65.5	72	92	65	30	80	F03	F05	M5×8	M6×10	11	14	147	Φ40	NAMUR G1/4"
RT63	36	47	81	87.5	107.5	72	30	80	F05	F07	M6×10	M8×13	14	18	168	Φ40	NAMUR G1/4"
RT75	42	53	94	99.5	119.5	81	30	80	F05	F07	M6×10	M8×13	14	18	184	Φ40	NAMUR G1/4"
RT83	46	57	98.5	108.7	128.7	92	30	80	F05	F07	M6×10	M8×13	17	21	204	Φ40	NAMUR G1/4"
RT92	50	58.5	111	116.8	136.8	98	30	80	F05	F07	M6×10	M8×13	17	21	262	Φ40	NAMUR G1/4"
RT105	57.5	64	122.5	133	153	109.5	30	80	F07	F10	M8×13	M10×16	22	26	268	Φ40	NAMUR G1/4"
RT125	67.5	74.5	145.5	155	175	127.5	30	80	F07	F10	M8×13	M10×16	22	26	296	Φ55	NAMUR G1/4"
RT140	75	77	160.75	171.5	191.5	137.5	30	80	F10	F12	M10×16	M12×20	27	31	390	Φ55	NAMUR G1/4"
RT160	87	87	184	197	217	158	30	80	F10	F12	M10×16	M12×20	27	31	454	Φ55	NAMUR G1/4"
RT190	103	103	216	230	260	189	30	130		F14		M16×25	36	40	525	Φ80	NAMUR G1/4"
RT210	113	113	235.5	255	285	210	30	130		F14		M16×25	36	40	532	Φ80	NAMUR G1/4"
RT240	130	130	264	288	318	245	30	130		F16		M20×25	46	50	610	Φ80	NAMUR G1/4"
RT270	147	147	299	326	356	273	30	130		F16		M20×25	46	50	722	Φ80	NAMUR G1/2"
RT300	162	162	348	348	378	324	30	130	F16	F20	M20×25	M20×25	46	60	742	Φ80	NAMUR G1/2"
RT350	190	190	402	402	432	380	30	130	F16	F20	M20×25	M20×25	46	60	860	Φ80	NAMUR G1/2"
RT400	258	258	464	464	494	498	30	130	F16	F25	M20×25	8-M16×25	55	60	924	Φ80	NAMUR G1/2"

Double Acting and Spring Return

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

Output Torque

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



Size	RT52	RT63	RT75	RT83	RT92	RT105	RT125	RT140	RT160	RT190	RT210
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.

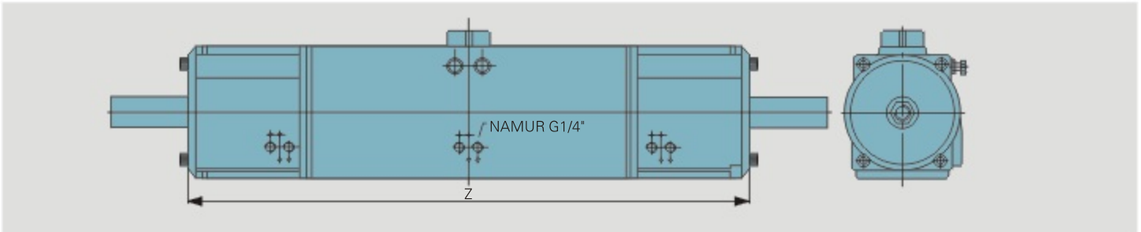
Three Position Pneumatic Actuator

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.

Output Torque

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

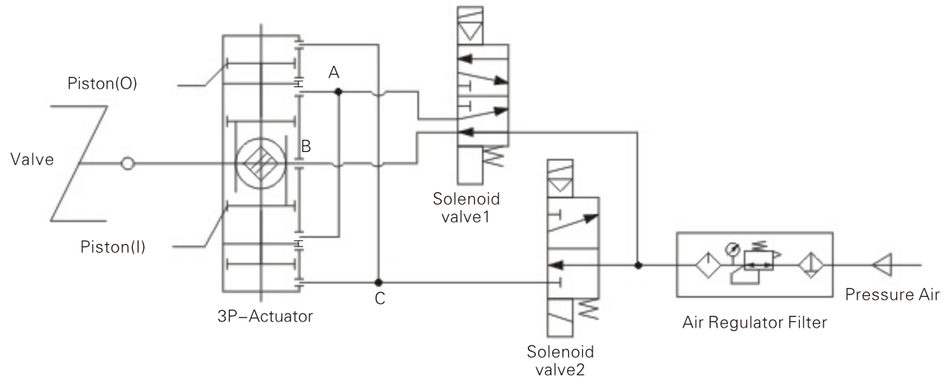
Length of DA-3P(90°)



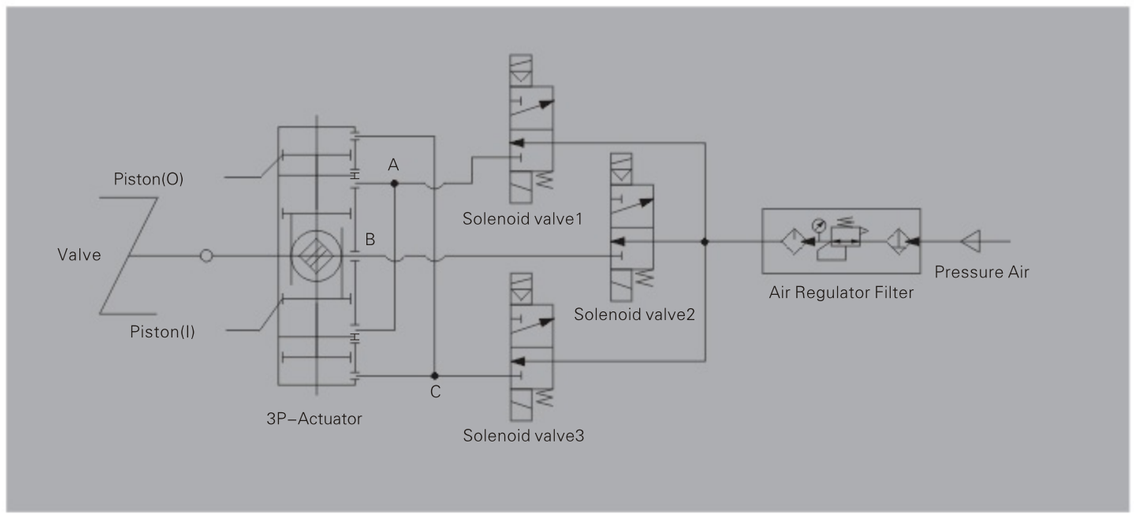
Size	RT52–3P	RT63–3P	RT75–3P	RT83–3P	RT92–3P	RT105–3P	RT125–3P	RT140–3P	RT160–3P	RT190–3P	RT210–3P
Z(mm)	266	303	306	336	394	410	456	570	646	788	788

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

Schematic Diagram

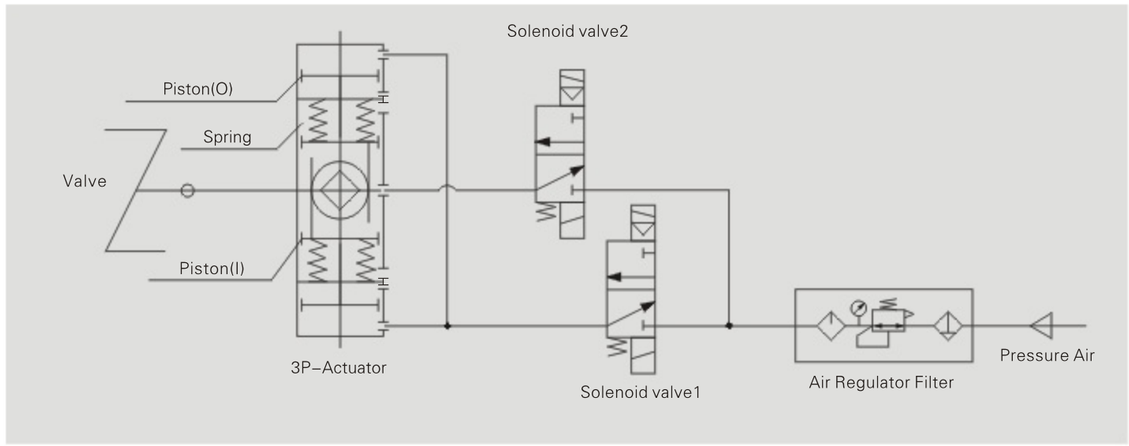


	0°	90°	30°	0°
电磁阀1 SOLENOID VALVE1	OFF	ON	OFF	OFF
电磁阀2 SOLENOID VALVE2	OFF	OFF	ON	OFF

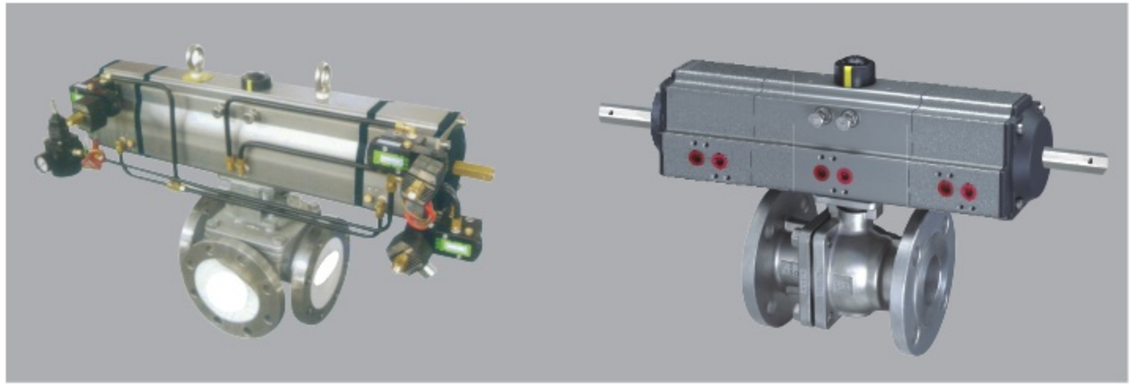


	0°	30°	90°	30°	0°
SOLENOID VALVE1	OFF	OFF	ON	OFF	OFF
SOLENOID VALVE2	ON	OFF	OFF	ON	ON
SOLENOID VALVE3	OFF	ON	ON	ON	OFF

Schematic Diagram

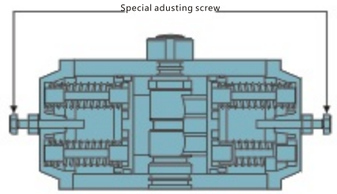


	0°	30°	90°	30°	0°
电磁阀1 SOLENOID VALVE1	OFF	ON	OFF	ON	OFF
电磁阀2 SOLENOID VALVE2	OFF	ON	ON	ON	OFF



Full-stroke adjusting limit actuator

RT series pneumatic actuators also can be fixed with adjusting screwa at both ends , any angle within 0° –90° , 0° –120° or 0° –180° adjustable by the customer according to actual needs: besides, all series of actuators are capable of fullstroke adjustment.



AIR CONSUMPTION

AIR VOLUME OPENING & CLOSING Unit:L

Model	Air volume opening	Air volume closing	Model	Air volume opening	Air volume closing 关向体积(升)
RT52	0.12	0.16	RT160	3.7	3.2
RT63	0.21	0.23	RT190	5.9	5.4
RT75	0.3	0.34	RT210	7.5	7.5
RT83	0.43	0.47	RT240	11	9
RT92	0.64	0.73	RT270	17	14
RT105	0.95	0.88	RT300	23.8	29.7
RT125	1.6	1.4	RT350	35.1	46.3
RT140	2.5	2.2	RT400	52.6	56

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

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

Series	Model	Spring Q.ty	Options
RT□DA RT□SR□ RT□□Ni	52 63 75 83 92 105 125	K5 K6 K7 K8 K9 K10 K11 K12	120°,135°,180° for special degree operation SS Stainless Steel Pinion

Series	Model	Spring Q.ty	Options
RT□DA RT□SR□ RT□□Ni	140 160 190 210 240 270 300 350 400	K5 K6 K7 K8 K9 K10 K11 K12	120°,135°,180° for special degree operation SS Stainless Steel Pinion

WEIGHT TABLE

Model	(DA)	(SR)
RT52(Φ52)	1.4kg	1.5kg
RT63(Φ63)	2.0kg	2.1kg
RT75(Φ75)	2.7kg	2.9kg
RT83(Φ83)	3.1kg	3.6kg
RT92(Φ92)	4.6kg	5.2kg
RT105(Φ105)	6.8kg	6.9kg
RT125(Φ125)	9.0kg	10.1kg
RT140(Φ140)	13.2kg	15.6kg

Model	(DA)	(SR)
RT160(Φ160)	20.1kg	24kg
RT190(Φ190)	31.3kg	35.3kg
RT210(Φ210)	46.8kg	54.8kg
RT240(Φ240)	67.3kg	80.2kg
RT270(Φ270)	96.9kg	118kg
RT300(Φ300)	110kg	130kg
RT350(Φ350)	186kg	234kg
RT400(Φ400)	289kg	360kg

HOW TO ORDER

All dimensions ,material are referred to updated catalogue and /or technical data sheet .

Model	Type	Spring Q.TY	ISO flange type	Square	Position Indicator	Seal
RT52	DA=Double Acting Standard Clockwise to close	Only for spring return	F05 F03	11	Standard : (already included no need to be specified)	Standard: NBR seals (no need to be specified)
RT63		5	F07 F05	14		
RT75		6	F07 F05	14		
RT83	DAo=Double Acting Clockwise to open	7	F07 F05	17		
RT92		8	F07 F05	17		
RT105		9	F10 F07	22	P : Position indicator for Proximity	HT= Viton seals (For High Temperature)
RT125	SR=Spring Return Standard Clockwise to close	10	F10 F07	22		
RT140		11	F12 F10	27		
RT160		12	F12 F10	27		
RT190			F14	36		LT=Silicon seals (For Low Temperature)
RT210			F14	36		
RT240	SRo=Spring to open		F16	46		
RT270			F16	46		
RT300			F16 F20	46		
RT350			F16 F20	46		
RT400			F16 F25	55		

Notes:

Standard Rotation for double acting and spring return is Clockwise to close (for double acting when port B is pressurized).
When the centering (Spigot) is requested the letter Y must be added after the flange tipe .Example F10Y.
Standard Square is diagonal square ,when parallel square is requested a letter L must be added after the square dimension .Example 17L
When indicator for proximity is requested it must be indicated with letter P. If not specified the actuators will be supplied with standard position indicator.

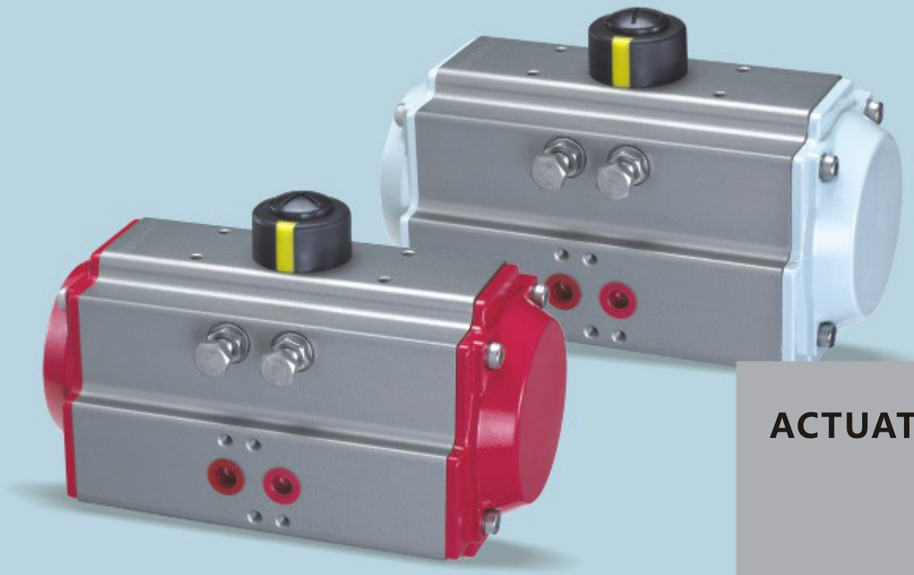
Example 1 : RT105 DA F07 Y 14
Description 1:Actuator Model RT105 ,Type Double Acting (clockwise to close) ,with Flange F07 Plus centering ,with diagonal square of 14mm ,
with standard indicator and standard NBR seals.

Example 1 : RT140 SRo 10 F12 27L P HT
Description:Actuator Model RT140 ,Type Spring return (spring to open) ,with 10 springs (5 per side) ,with Flange F12 ,with parallel square of 27mm ,with indicator for proximity and Viton seals for high temperature..

ORDINARY FAILURE AND IT'S SOLUTIONS

Failure phenomena	Checking item	Solution
Pneumatic valve does not act	Does the solenoid valve work normally? is the coil burned? Is the trim of the solenoid blocked by impurity?	Replace the solenoid valve or coil and clean out the impurity
	With air supplying the pneumatic actuator, are the O-rings or the cylinder broken?	Replace the broken O-rings and cylinder body.
	Is impurity blocking the valve?	Clean out the impurity, replace the broken parts
	Is the handle of the manual override at the manual position ?	Put the handle to the pneumatic position
Acting slowly	Is the air supply pressure not enough?	Improve the air pressure(0.4~0.7Mpa)
	Is the output torque of pneumatic actuator not enough?	Select a bigger model of the pneumatic actuator
	Is the valve stem or other parts assembled too tightened?	Reassemble and adjust the valve
	Is the air supply pipe blocked making the flow too small?	Clean out the block, replace the filter element
The feedback box has no signal	Is the power circuitry shorted out or stopped?	Check the circuitry
	Is the cam of the feedback box in the incorrect position?	Adjust the cam to the correct position
	Is the micro switch broken?	Replace the micro switch

SOME PNEUMATIC PRODUCTS



ACTUATOR

SOLENOID VALVE

LIMIT SWITCH

FILTER REGULATOR