



PNEUMATIC ACTUATORS



Wuxi Huaji Machinery Manufacturing Co.,Ltd.

Company Profile

Professional Manufacturer of Pneumatic Actuators

Huaji Machinery Manufacturing Co.,Ltd is a professional manufacturer of pneumatic actuator and pneumatic accessories. It is a high-tech comprehensive actuator enterprise with design, research and development, manufacturing, sales and service.

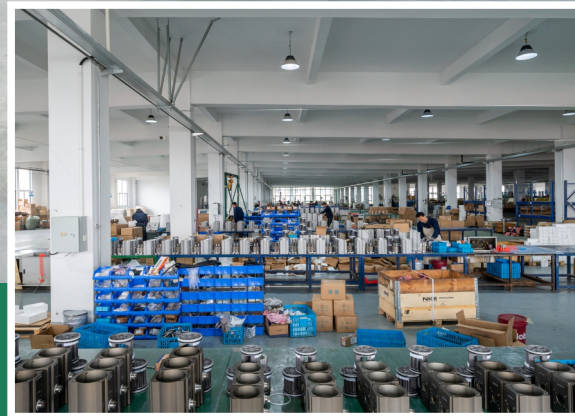
As the largest actuator manufacturer in China, our company covers an area of 27,000 square meters and annual output more than 1,000,000pcs.

We take great pride in our ability to offer affordable prices to our customers while maintaining the highest standards of quality. One of our key advantages is our ability to do customized solutions to meet customers' unique requirements and special applications. As we own experienced engineers and rich production experience in pneumatic actuators for nearly 20years.

We have long-term cooperation with famous companies, such as Chongqing Chuanyi Automation Co.,ltd,Wuzhong instrument Co.,ltd, AT, GT etc.



Workshop Display



Technical Characteristics >

AT series pneumatic actuators, with the integrated use of advanced precision machining equipment, high-quality materials and industrial art design technology. After rigorous testing and optimization of production line, AT series pneumatic actuators have lots of advantages like smooth and reliable operation, long working life, high corrosion resistance, flexible selection, competitive price and so on.

1. Piston

The teeth of piston machined by CNC machining center, makes the operation smoother and performance more reliable. Anodized treatment improves the corrosion and wear resistance.



2. End cap

The function of 95° position limit is optimally designed on the end cap, instead of extra limit screw. This design improves the safety and reliability.

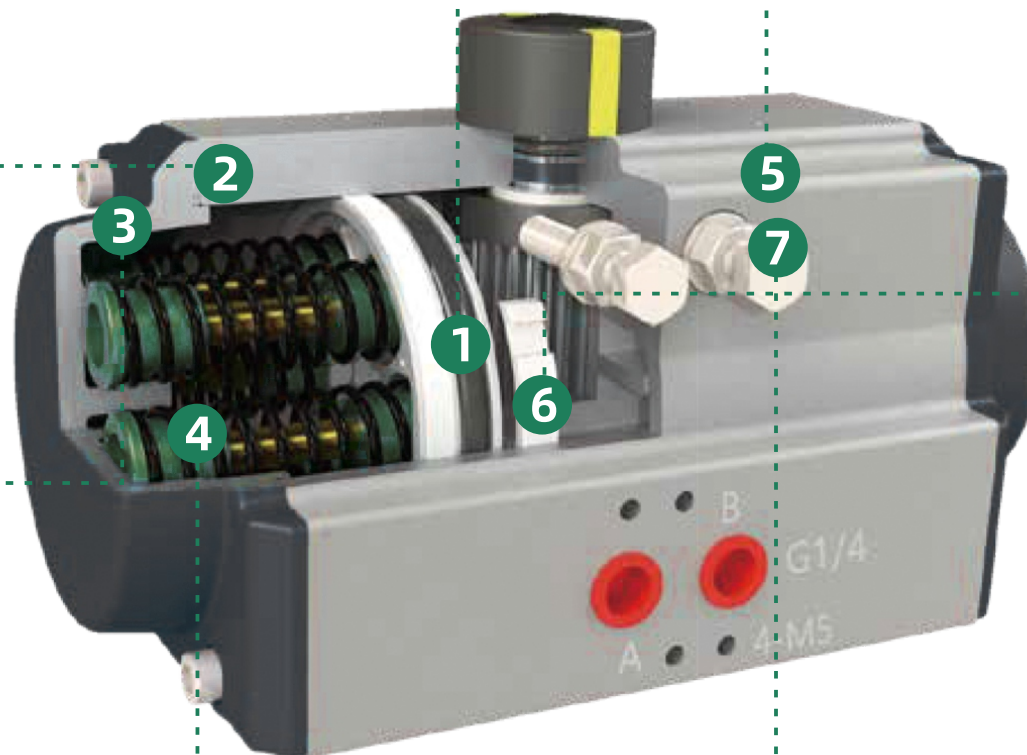


3. Fasteners

The stainless steel fasteners, are safe and beautiful with high corrosion resistance.

4. Spring

Preloaded and coated springs are made from high quality material for higher corrosion resistance and longer service life, which can be demounted safely and conveniently to satisfy different requirements of torque by changing quantity of springs. They are safe and beautiful with high corrosion resistance.



5. Body

According to different requirements, the surface of aluminum body can be treated with hard anodizing, powder polyester coating in colors (like black, blue, orange, red etc.), PTFE coating or Nickel plated.



6. Drive shaft

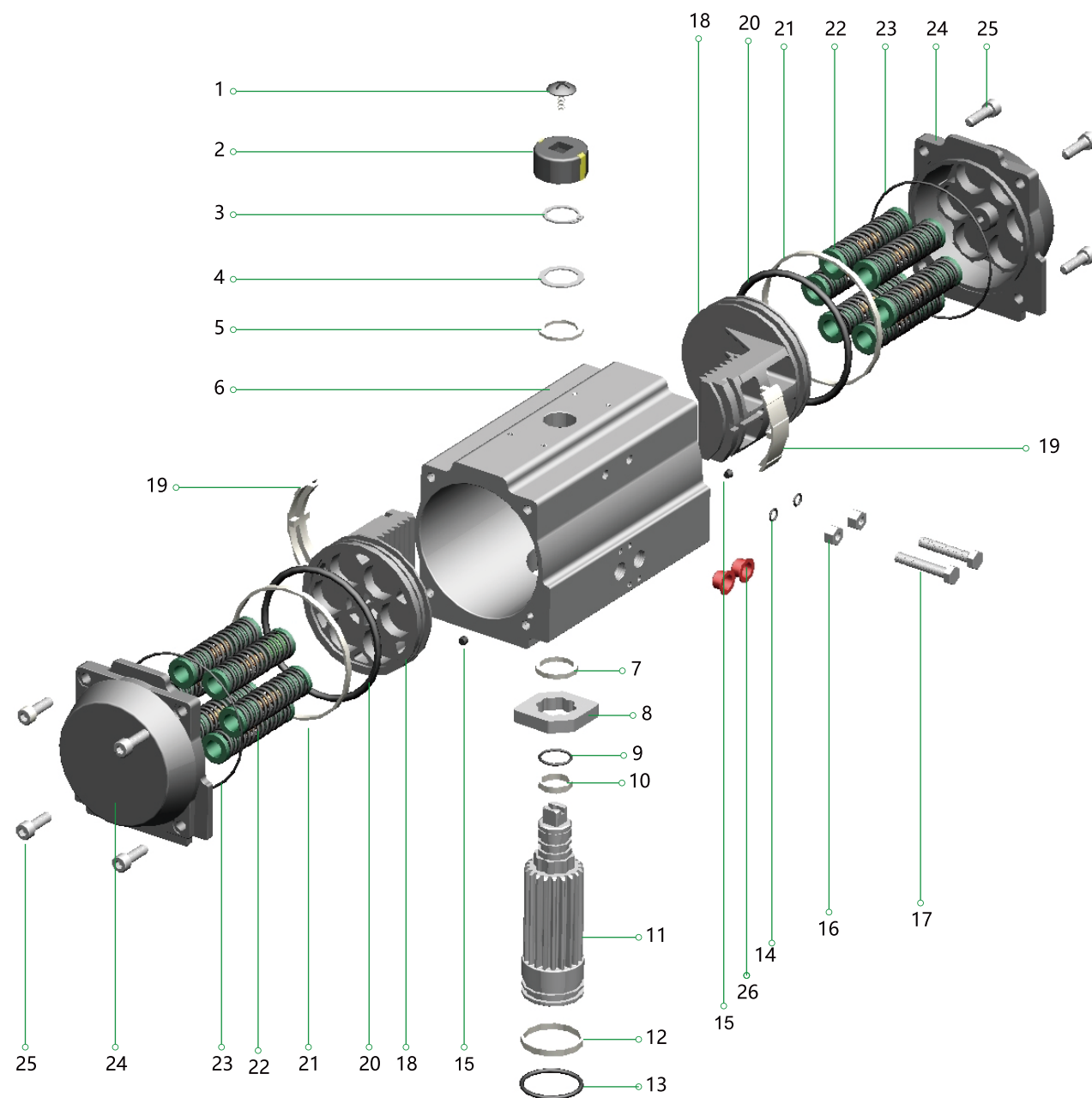
The drive shaft is high-precision and integrative, made from nickel plated alloy steel, full conform to the latest standards of ISO5211, DIN3337, NAMUR. The dimensions can be customized and the stainless steel is available.



7. Adjust screw

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

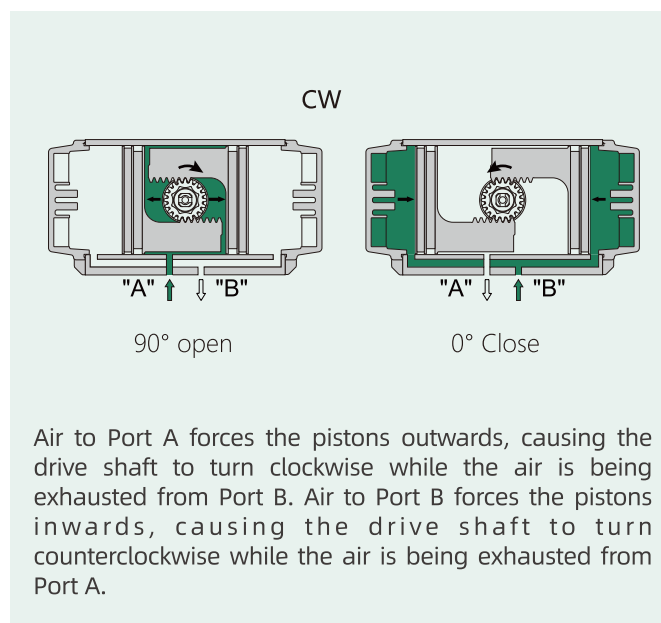
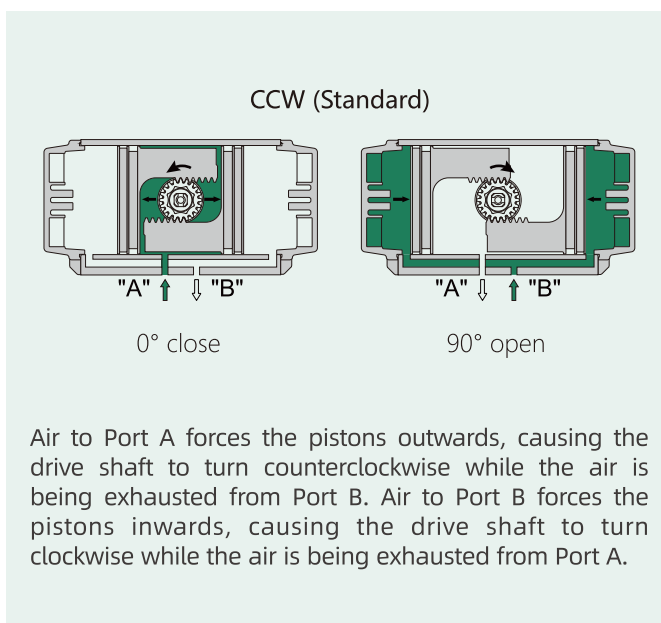
Parts and Material



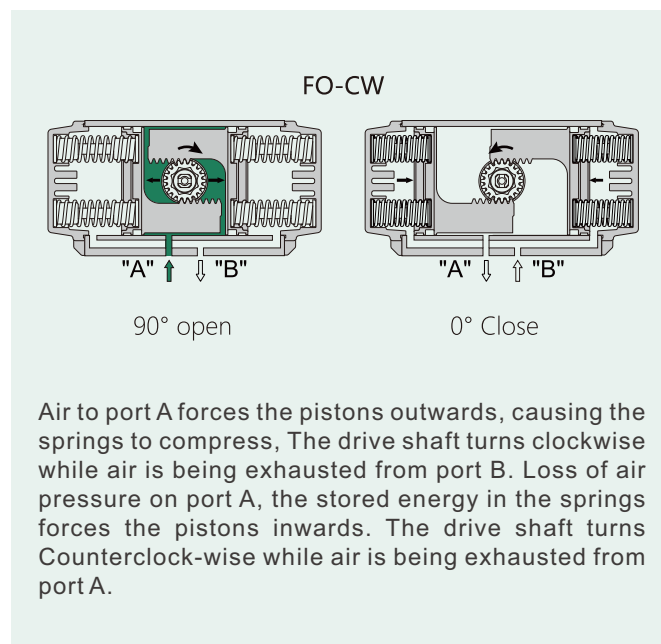
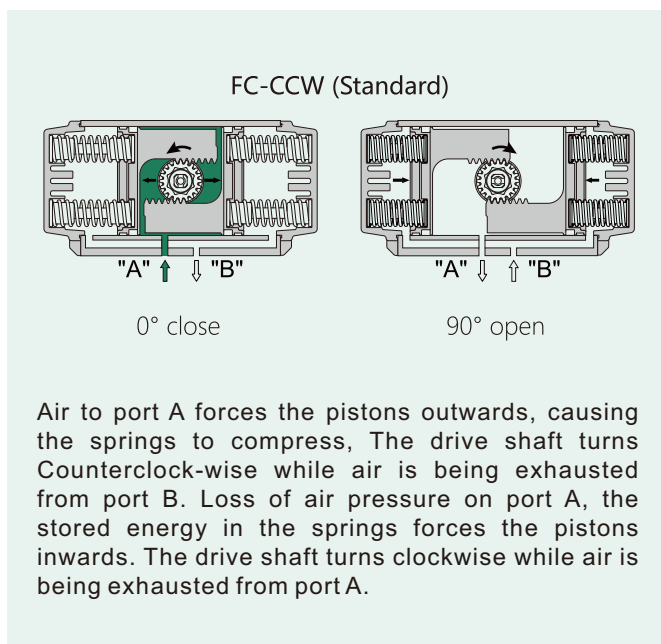
No.	Description	Qty.	Standard Material	Protection	Optional Material
1	Indicator screw	1	Plastic+Stainless steel		
2	Indicator	1	ABS Plastic		
3	Spring clip	1	Stainless steel		
4	Thrust washer	1	Stainless steel		
5	Outside washer	1	Polyformaldehyde		
6	Body	1	Extruded aluminum(6005-T5)	Hard anodized etc	
7	Inside washer	1	Polyformaldehyde		
8	Cam	1	45# steel		
9	O-ring (Shaft top)	1	NBR		Viton / LTNBR
10	Bearing (Shaft top)	1	Polyformaldehyde		
11	Drive Shaft	1	Alloy steel	Nickel plated	Stainless steel
12	Bearing (Shaft bottom)	1	Polyformaldehyde		
13	O-ring (Shaft bottom)	1	NBR		Viton / LTNBR
14	O-ring (Adjust screw)	2	NBR		Viton / LTNBR
15	Plug	2	NBR		
16	Nut	2	Stainless steel		
17	Adjust screw	2	Stainless steel		
18	Piston	2	Cast aluminum	Anodized	
19	Guide (Piston)	2	Nylon 66		
20	O-ring (Piston)	2	NBR		Viton / LTNBR
21	Bearing (Piston)	2	Polyformaldehyde		
22	Spring	0~12	Spring steel	Electrophoretic paint	
23	O-ring (End cap)	2	NBR		Viton / LTNBR
24	End cap	2	Cast aluminum	Powder polyester painted etc	
25	Cap screw	8	Stainless steel		
26	Dustproof plug	2	Plastic		

Operating Principle

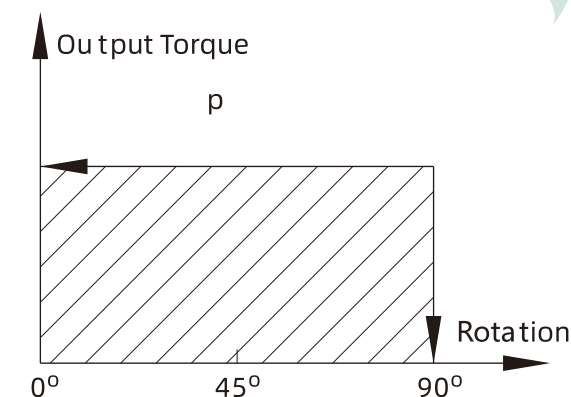
Double Acting Actuators



Spring Return Actuators



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
DA-32	3	4	5	6	7	8	8	9	11	12
DA-40	5	6	7	10	11	12	13	14	17	19
DA-52	8	10	12	16	18	20	22	24	28	32
DA-63	15	18	22	29	33	36	40	44	51	58
DA-75	20	25	30	40	45	50	55	60	70	80
DA-83	31	39	47	63	70	78	86	94	110	125
DA-92	45	56	68	90	102	113	124	135	158	181
DA-105	66	83	99	132	149	165	182	198	231	264
DA-125	100	125	150	200	226	251	276	301	351	401
DA-140	171	214	256	342	385	427	470	513	598	684
DA-160	266	332	399	532	598	665	731	798	931	1064
DA-190	426	532	638	851	958	1064	1170	1277	1490	1702
DA-210	532	665	798	1064	1197	1330	1463	1596	1862	2128
DA-240	769	962	1154	1539	1731	1924	2116	2308	2693	3078
DA-270	1170	1462	1754	2339	2632	2924	3216	3509	4094	4679
DA-300	1526	1908	2289	3052	3434	3815	4197	4578	5341	6104
DA-350	2285	2856	3427	4570	5141	5712	6283	6854	7997	9139
DA-400	3256	4070	4884	6512	7326	8140	8954	9768	11396	13024

Sizing: Double Acting Actuator

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

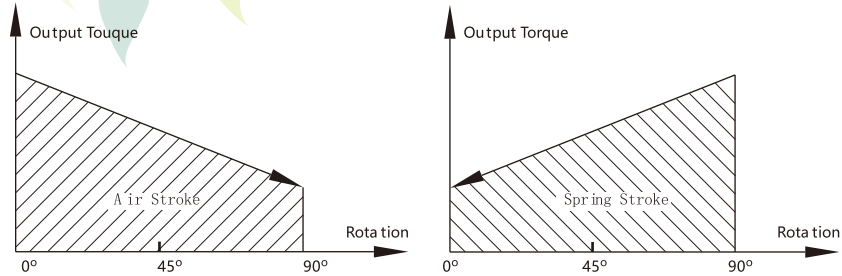
Air Supply=5Bar

According to the above table, we can select the model AT105-DA.



Unit:Nm

Output torque of Spring Return Actuator

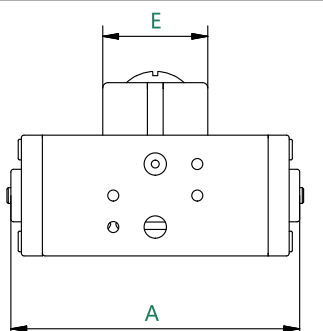
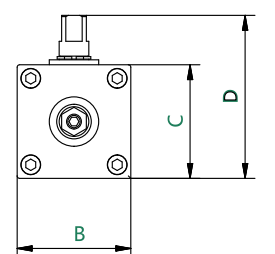
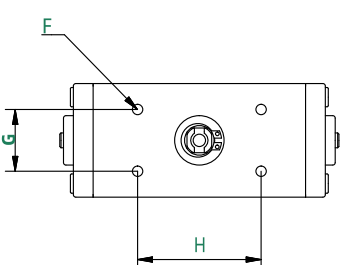
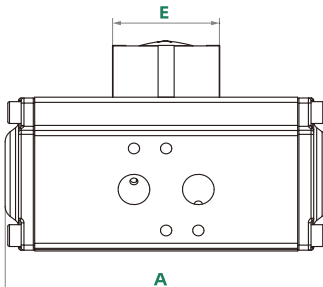
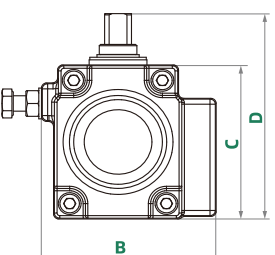
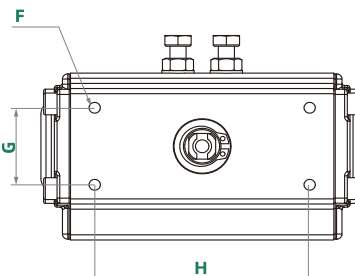
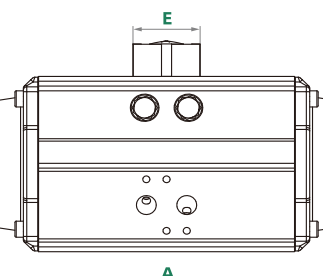
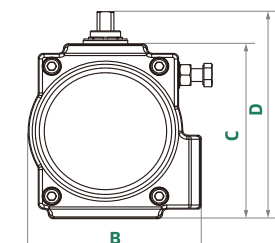
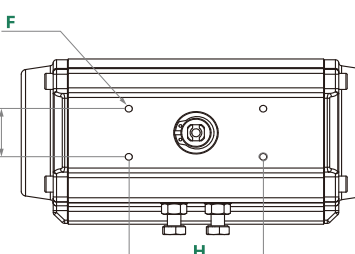
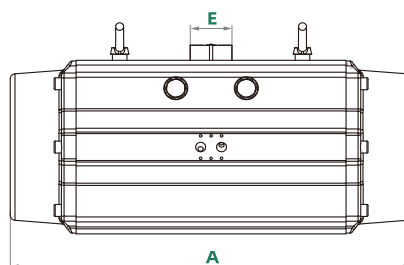
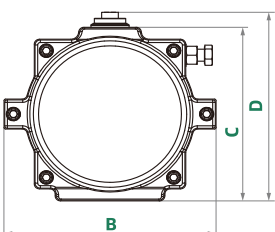
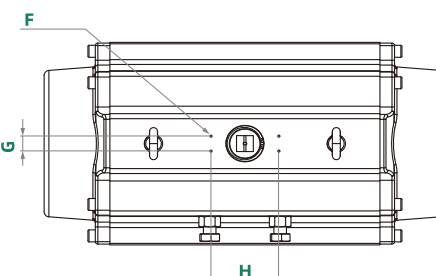


Unit:Nm

Output torque of air to springs																	Springs' output	
Air pressure		2.5BAR		3BAR		4BAR		5BAR		6BAR		7BAR		8BAR		90°	0°	
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	Start	End	
SR 40	K2	1.3		2.7		5.0	1.4	7.5	3.1	9.8	4.5					7.5	4.8	
SR-52	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	
SR-63	K12							9.7	4.2	13.8	9.1	17.8	12.2	21.8	17.1	14.8	10.2	
	K5	11.4	7.7	15.0	11.4	22.3	18.9									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					14	8.2	22.8	15.6	30.0	22.8	37.3	30.1	44.7	37.4	20.9	13.7	
SR-75	K11							21.5	13.5	28.7	20.7	36.0	28.0	43.3	35.3	22.9	15.0	
	K12								11.4	27.3	18.6	34.6	25.9	41.9	33.3	25.0	16.4	
	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	
SR-83	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	
	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	
SR-92	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	
	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	
SR-105	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	
	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	
SR-125	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	
	K5	73	47	98	72	148	122									79	52	
SR-150	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	

Output torque of air to springs																	Springs' output	
Air pressure		2.5BAR		3BAR		4BAR		5BAR		6BAR		7BAR		8BAR				
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	
SR-140	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
SR-160	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
SR-190	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
SR-210	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
SR-240	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
SR-270	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
SR-300	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
SR-350	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
SR-400	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	

Dimensions

	FRONT VIEW	SIDE VIEW	TOP VIEW
AT-32			
AT-40			
AT-52~350			
AT-400			

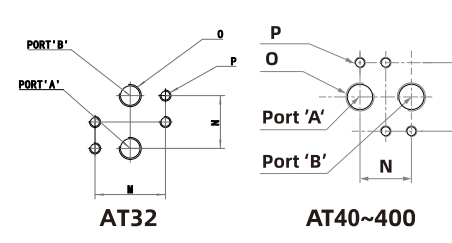
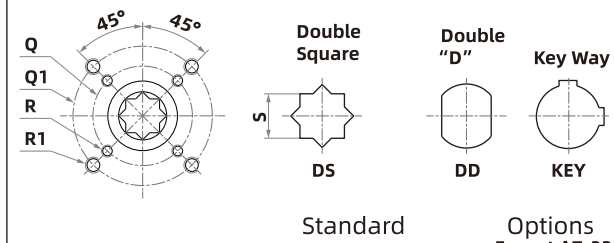
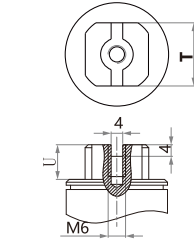


Dimensions

Unit:mm

Model	32	40	52	63	75	83	92	105	125	140	160	190	210	240	270	300	350	400
A	112	123	148	170	186	212	266	272	306	398	456	534	536	604	718	777	916	930
B	46	65	71.5	83	95	103	108.5	121.5	142	152.5	174	206	226	260	294	336	385	520
C	46	60	72	88	99.5	109	116.5	133	155	172	197	230	255	289	326	350	410	466
D	66	80	92	108	119.5	129	136.5	153	185	202	227	260	285	319	356	380	440	496
E	Φ40	Φ40	Φ40	Φ40	Φ40	Φ40	Φ40	Φ40	Φ55	Φ55	Φ55	Φ80	Φ80	Φ80	Φ80	Φ80	Φ80	Φ80
F	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8
G	25	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
H	50	80	80	80	80	80	80	80	80/130	80/130	80/130	130	130	130	130	130	130	130

Connection

Air connection NAMUR	Bottom view ISO 5211/DIN 3337	Shaft top NAMUR
 AT32 AT40~400	 Standard Options Except AT-32	

Connection

Unit:mm

Model	32	40	52	63	75	83	92	105	125	140	160	190	210	240	270	300	350	400
M	32	32	32	32	32	32	32	32	32	32	32	32	32	32	45	45	45	45
N	24	24	24	24	24	24	24	24	24	24	24	24	24	24	40	40	40	40
O	G1/8"	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"	G1/4"	G1/2"	G1/2"	G1/2"	G1/2"
P	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M5x8	M6x10	M6x10	M6x10	M6x10
Q	/	F03	F03	F05	F05	F05	F05	F07	F07	F10	F10	/	/	/	/	/	F16	F16
Q1	F03	F05	F05	F07	F07	F07	F07	F10	F10	F12	F12	F14	F14	F16	F16	F16	F25	F25
R	/	M5x8	M5x8	M6x10	M6x10	M6x10	M6x10	M8x13	M8x13	M10x16	M10x16	/	/	/	/	M20x25	M20x25	M20x25
R1	M5x6	M6x9	M6x9	M8x13	M8x13	M8x13	M8x13	M10x16	M10x16	M12x19	M12x19	M16x23	M16x23	M20x25	M20x25	M20x25	M16x24*	M16x24*
S	9x12	11x14	11x14	14x18	14x18	17x21	17x21	22x26	22x26	27x31	27x31	36x45	36x45	46x60	46x60	46x60	46x60	55x60
T	10	10	10	14	14	14	14	14	22	22	22	32	32	32	32	32	32	32
U	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12

* 8 screw holes

Operating Conditions >

Operating media

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

Air supply pressure

The minimum supply pressure is 2 Bar, the maximum supply pressure is 8 Bar

Operating temperature

Standard (NBR O-rings): -20°C ~ +80°C

High temperature (Viton O-rings): -20°C ~ +150°C

Low temperature (LTNBR O-rings): -40°C ~ +120°C

Travel adjustment

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

Lubrication

Actuators are factory lubrication located. Under normal operating

condition, need not to add lubricant

Application

Either indoor or outdoor

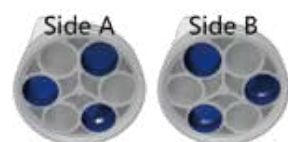
Spring Set Configuration >

Spring mounting form for spring return actuators

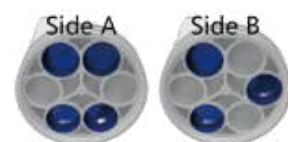
During selecting the spring return actuators, we can choose the more reasonable and more economical actuators, if we know the different torques of the valve at opening, operating and closing.



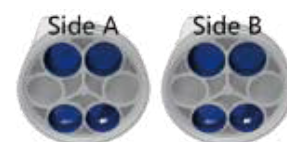
5 Springs



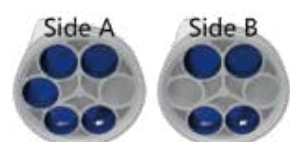
6 Springs



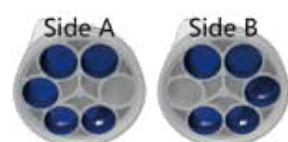
7 Springs



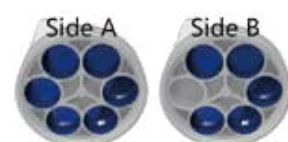
8 Springs



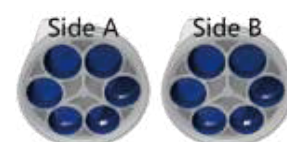
9 Springs



10 Springs



11 Springs



12 Springs

Weight >

型号	32	40	52	63	75	83	92	105	125	140	160	190	210	240	270	300	350	400
DA	0.55	0.95	1.3	2.05	2.60	3.25	4.45	5.95	9.15	13.7	19.6	31.7	37.8	52.75	75.5	100.6	160	197.3
SR-K8	-	-	1.41	2.1	2.75	3.5	4.95	6.5	10.1	15.3	22.1	36	43.9	61.35	90.1	118.2	192	227
SR-K10	-	0.97	1.43	2.15	2.8	3.6	5.05	6.65	10.5	15.7	22.75	37.1	45.45	63.5	93.8	122.6	200	234.3

Unit: kg

AT40SR only use 2 springs.
Note: Weights of AT32~AT270 include carton.

Operation Time >

Air Pressure: 5 bar

Unit:s

Double Acting			Spring Return (Spring Qty.)															
Size	0°~90°	90°~0°	Size	0°~90°	90°~0°	3+3	3+4	4+4	4+5	5+5	5+6	6+6	6+6	6+6	6+6	6+6	6+6	6+6
32DA	0.5	0.5	32SR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40DA	0.5	0.5	40SR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
52DA	0.6	0.6	52SR	2.46	0.48	2.48	0.46	2.5	0.44	2.52	0.42	2.54	0.4	2.56	0.38	2.58	0.36	
63DA	0.7	0.7	63SR	2.54	0.56	2.56	0.54	2.58	0.52	2.6	0.5	2.62	0.48	2.64	0.46	2.66	0.44	
75DA	0.8	0.7	75SR	2.62	0.64	2.64	0.62	2.66	0.6	2.68	0.58	2.7	0.56	2.72	0.54	2.74	0.52	
83DA	0.9	0.8	83SR	2.71	0.73	2.73	0.71	2.75	0.69	2.77	0.67	2.79	0.65	2.81	0.63	2.83	0.61	
92DA	1.0	1.0	92SR	2.89	0.86	2.91	0.84	2.93	0.82	2.95	0.8	2.97	0.78	2.99	0.76	3.01	0.74	
105DA	1.5	1.5	105SR	3.14	0.91	3.16	0.89	3.18	0.87	3.2	0.85	3.22	0.83	3.24	0.81	3.26	0.79	
125DA	2	2	125SR	4.24	1.2	4.26	1.18	4.28	1.16	4.3	1.14	4.32	1.12	4.34	1.1	4.36	1.08	
140DA	2.5	2.5	140SR	4.4	1.35	4.4	1.33	4.62	1.31	4.64	1.29	4.66	1.27	4.68	1.25	4.68	1.22	
160DA	4	3	160SR	4.74	1.77	4.76	1.75	4.78	1.73	4.8	1.71	4.82	1.69	4.82	1.67	4.84	1.65	
190DA	5	4	190SR	5.75	3.7	5.77	3.5	5.75	3.48	5.77	3.46	5.79	3.44	5.8	3.42	5.83	3.4	
210DA	5	4	210SR	8.25	4.8	8.4	4.6	8.42	4.58	8.44	4.56	8.46	4.54	8.48	4.52	8.5	4.5	
240DA	6	6	240SR	16.2	5.14	16.4	5.12	16.42	5.1	16.44	4.9	16.6	4.98	16.8	4.86	17	4.84	
270DA	8	8	270SR	17.6	6.28	17.8	6.26	17.6	6.24	17.8	6.2	18	6.18	18.2	6.16	18.4	6.14	
300DA	12	12	300SR	24	13.2	24.5	13	24.4	12.8	24.3	12.6	24.5	12.58	24.7	12.56	24.9	12.54	
350DA	14	14	350SR	31	17.3	31.5	17	31.3	16.8	31	16.6	31.2	16.58	31.4	16.56	31.6	16.54	
400DA	15	15	400SR	45	27	51	27	51.3	26.8	51.5	26.8	51.7	26.6	51.9	26.4	52.1	26.2	

* The operation time of the actuator depends on the CV values of the solenoid valves, filter regulator and pipes, it also depends on the air pressure, operating load and so on.

Air Consumption >

Air Volume Opening&Closing

Unit: L

Mode	Air volume opening	Air volume closing	Model	Air volume opening	Air volume closing
AT-32	0.04	0.05	AT-140	2.5	2.2
AT-40	0.08	0.11	AT-160	3.7	3.2
AT-52	0.12	0.16	AT-190	5.9	5.4
AT-63	0.21	0.23	AT-210	7.5	7.5
AT-75	0.30	0.34	AT-240	11.0	9.0
AT-83	0.43	0.47	AT-270	17.0	14.0
AT-92	0.64	0.73	AT-300	23.8	29.7
AT-105	0.95	0.88	AT-350	35.1	46.3
AT-125	1.6	1.4	AT-400	52.6	56.0

Air consumption rest with Air Supply. Air volume and Action cycle times, expressions:
L/Min=Air volume(Air volume Opening+Air volume closing)×[(Air Supply (Kpa)+101.3) ÷101.3]×Action cycle times/min

*** Standard Sizing: Spring Return**

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

Example:

The torque needed by valve=80Nm

The torque considered safety factor =80×(1+30%)=104Nm

Air Supply=5Bar

According to the above table, we can select the model AT-140SR7.

*** Economical Sizing: Spring Return**

We can choose the more reasonable and more economical actuators, if we know the different torque of the valve by opening, operating and closing.

Example:

The max torque needed by the butterfly valve=104Nm

The torque after opened (operating)104×30%=32Nm

Air Supply=5Bar

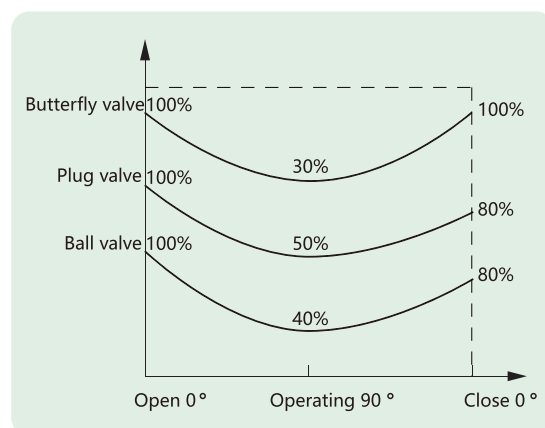
We can select the model AT-125SR10, output torque is:

Air stroke 0°=146Nm >104Nm

Air stroke 90°=94Nm >32Nm

Spring stroke 90°=157Nm >32Nm

Spring stroke 0°=105Nm >104Nm



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

model selection

Example: AT-75SR10 FC-CCW HT

1	2	3	4	5	6	7
AT	75	SR10	BLANK	FC-CCW	HT	BLANK
Series	Model	Type	Travel	Assembly	Operating Temperature	Connection
AT	32	DA	BLANK(90)	FC-CCW	BLANK: -20°C~+80°C HT: -20°C~+150°C LT: -40°C~+120°C	BLANK (Standard) Options *
	40	SR*	120	CCW		
	.		135	.		
	.	*SR+Spring Qty.	180	.		

*Example:
F04,DS11,30°80 H30

Code			Description					
1	AT		AT series pneumatic actuators					
2	75		Model of ATseries pneumatic actuators					
3	SR10		DA : Double Acting					
			SR : Spring Return+ Number of springs					
4	BLANK		BLANK : 90° strokes (Standard)					
			120 : 120° strokes (only Double Acting)					
			135 : 135° strokes (only Double Acting)					
			180 : 180° strokes (only Double Acting)					
5	DA	CCW	Air to port A, turn counterclockwise to open (DA Standard)					
		CW	Air to port A, turn clockwise to closed					
		FC-CCW	Failure closed. Air to port A, turn counterclockwise to open (SR Standard)					
		FO-CW	Failure open. Air to port A, turn clockwise to closed					
6	HT		BLANK : Standard (NBR O-ring): -20°C ~ +80°C					
			HT : High temperature (Viton O-ring): -20°C ~ +150°C					
			LT : Low temperature (LTNBR): -40°C ~ +120°C					
7	BLANK		Standard Connection					
	Model	Flange Connection (ISO 5211)		Drive Shaft Bottom Hole (ISO 5211)		Accessory Connection (VDI/VDE 3845)		Air Connection
		Standard	Options	Standard	Options	Standard	Options	Standard
	AT-32DA	F03		DS09		30x80 H20		G1/8"
	AT-40DA	F03+F05	F04	DS11		30x80 H20		G1/4"
	AT-52DA	F03+F05	F04	DS11		30x80 H20		G1/4"
	AT-63DA	F05+F07	F04+F07	DS14		30x80 H20		G1/4"
	AT-75DA	F05+F07	F04+F07	DS14		30x80 H20		G1/4"
	AT-83DA	F05+F07		DS17		30x80 H20		G1/4"
	AT-92DA	F05+F07		DS17		30x80 H20		G1/4"
	AT-105DA	F07+F10		DS22		30x80 H20		G1/4"
	AT-125DA	F07+F10		DS22		30x80 / 130 H30	30x80 / 130 H20	G1/4"
	AT-140DA	F10+F12		DS27		30x80 / 130 H30	30x80 / 130 H20	G1/4"
	AT-160DA	F10+F12		DS27	30x80 / 130 H30	30x80 / 130 H20	G1/4"	
	AT-190DA	F14	F10/F12	DS36		30x130 H30		G1/4"
	AT-210DA	F14	F10/F12	DS36		30x130 H30		G1/4"
	AT-240DA	F16	F12/F14	DS46		30x130 H30		G1/4"
	AT-270DA	F16	F14	DS46		30x130 H30		G1/2"
	AT-300DA	F16	Ø215	DS46		30x130 H30		G1/2"
	AT-350DA	F16+F25	Ø215	DS46		30x130 H30		G1/2"
	AT-400DA	F16+F25	Ø215	DS55		30x130 H30		G1/2"