

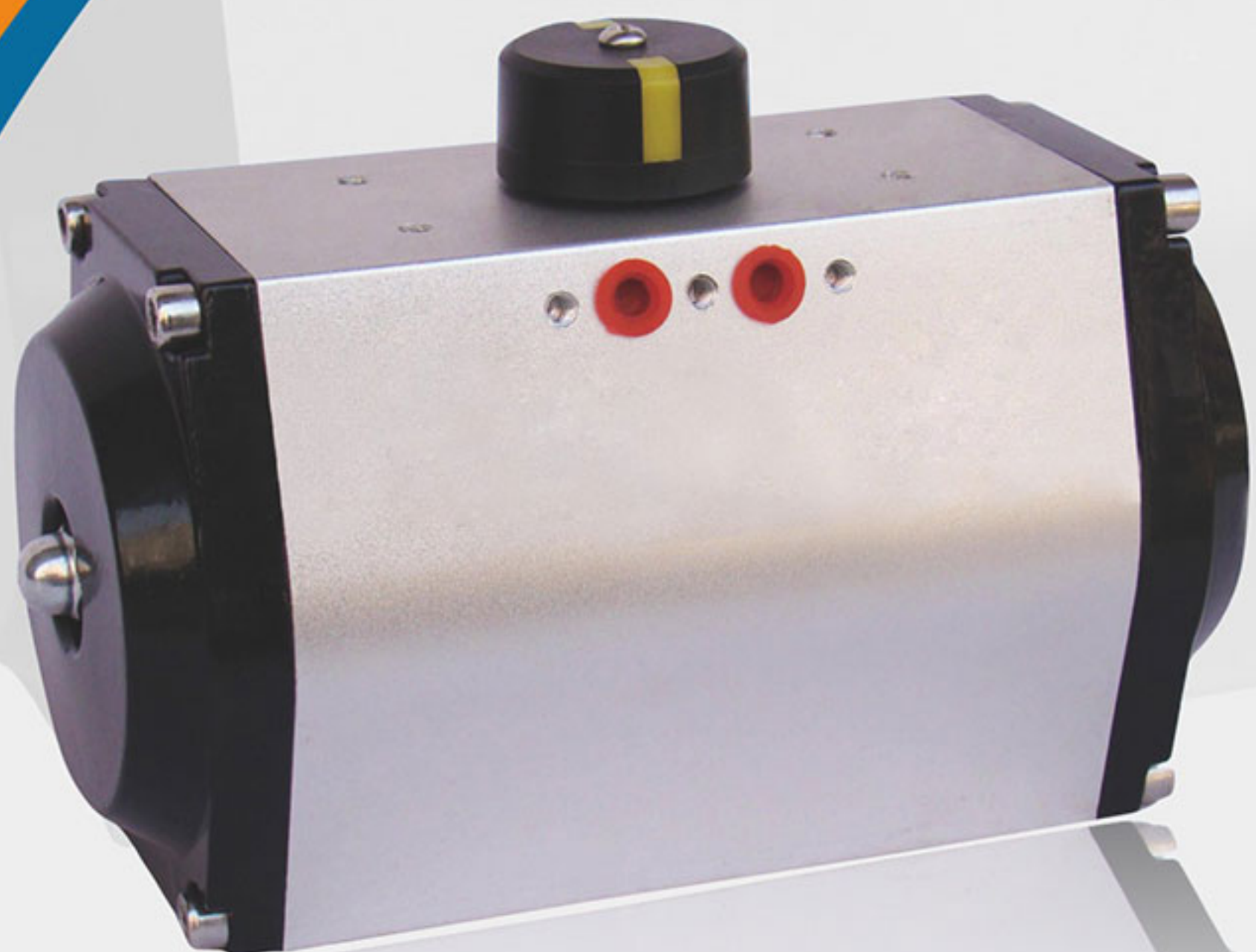


GT SERIES

PNEUMATIC ACTUATORS

ZHEJIANG JIUDING
AUTOMATIC CONTROL EQUIPMENT CO., LTD.

www.jdacv.com





JIUDING AUTOMATIC CONTROL EQUIPMENT, GOOD COMMITMENT

About JiuDing

Jiuding Automation Equipment Co., Ltd. specializing in the production of pneumatic actuator, electric actuator, hydraulic actuator, electric valve, pneumatic valve manufacturing (gas pneumatic butterfly valve, pneumatic ball valve), hydraulic valve, regulating valve, automatic control valve and all kinds of industrial valves and other various specifications of the various series.

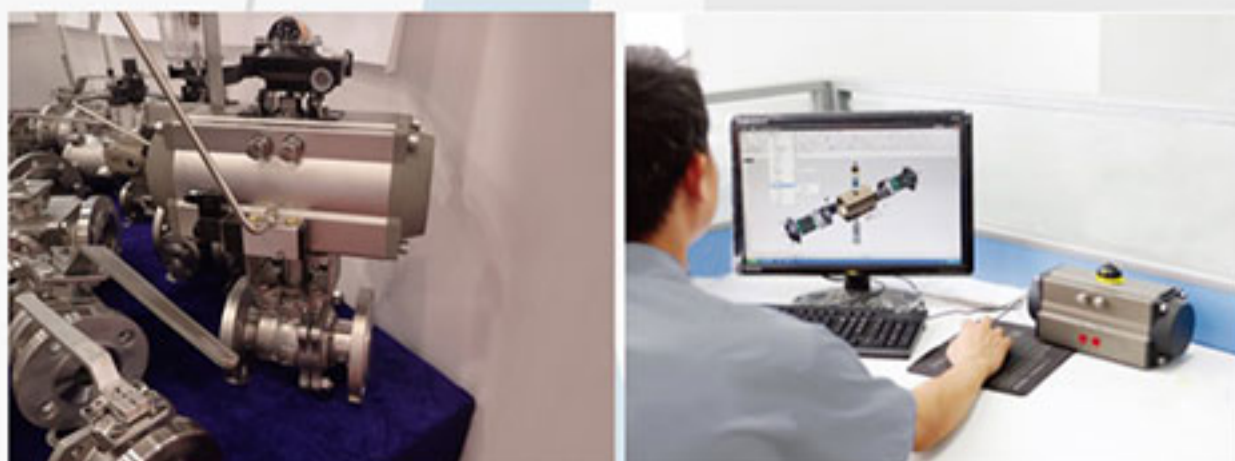
Jiuding Automation Equipment Co., Ltd. is located in "China valve village" - Oubei Town Code No. 62 North Road (next to the building, pump technology) company will keep with a new look, new ideas, continuous reform and innovation, design and produce more and better products to update the users feedback. Facing the new market competition and the pattern of global economic integration, Jiuding automation will be adhering to the "development concept of quality decision power", adhere to the "integrity-based, authoritative, abide by the commitment, innovation, forge ahead, steady development" policy, vigorously promote technological innovation, capital operation, internationalization development strategy three promote the transform ation from the traditional enterprise Jiuding automation to high-tech industry, respect knowledge talent, build an uplifting, unity and hard work of the "Jiuding" humanistic spirit, to create "strength of enterprises" striving for the new brilliant Jiuding automatic control.

Jiuding Automatic Control Equipment Co., Ltd. mainly produces pneumatic valves, pneumatic butterfly valves, pneumatic ball valves, and various industrial valves and other specifications of a variety of series of automatic control valves. Strive in the petroleum and chemical industry, metallurgy, electric power, building, heating, water supply and drainage, water treatment and other industries with high visibility and influence, continuous innovation in science and technology, and strive to develop the country generation, mainly by Chinese GB, JB, API, ANSI American Standard, British BS, German standard DIN, France, NF Japan JIS, JPI standard production. And, according to the special requirements of users smelting and manufacturing. The products are widely used in chemical industry, water treatment equipment, fertilizer, metallurgy, power, pharmaceutical, petrochemical introduction of the valve device ancillary products sold throughout the country and exported to the Middle East, Southeast Asia, Europe and the United States for all developed countries and regions. Welcome to inquire, order.



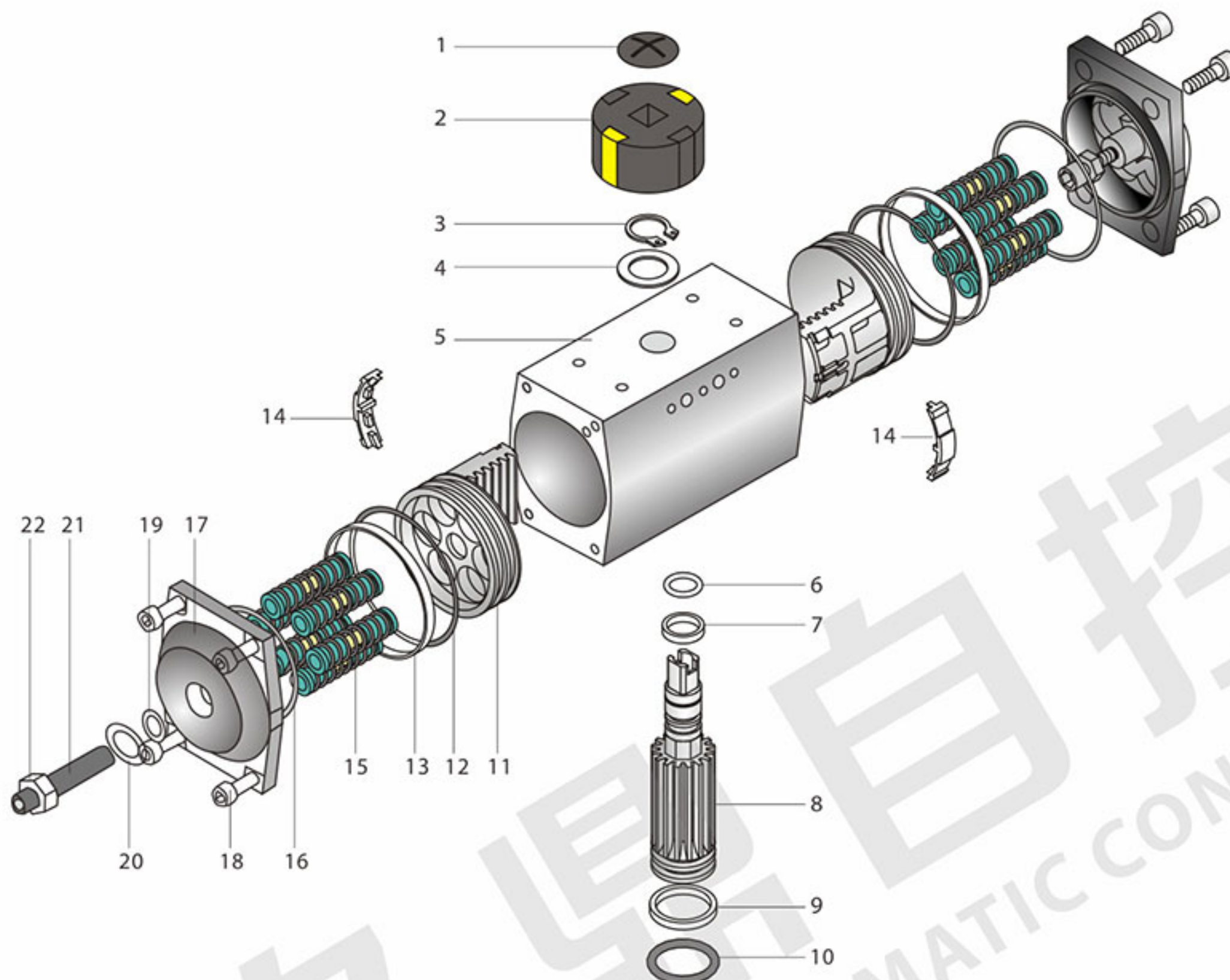
The longest journey begins with the first step, the reputation of sound source in service. Jiu Ding automatic control products have been all over the north and south, continue to deduce a unique "Jiu Ding Automatic Control" masterpiece. The implementation of boutique strategy, create brand benefits, with the spirit of truth-seeking, quality products, more perfect after-sales service, so that all users using "JIU DING" brand closely linked to join hands in creating a better future.

The Longest Journey Begins With The First Step, The Reputation Of Sound Source In Service



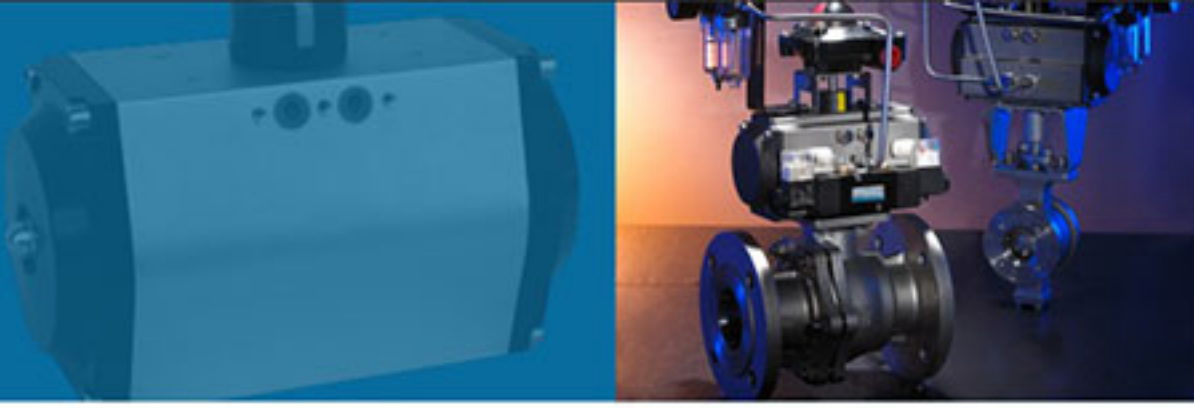


GT General Assembly Diagram of Pneumatic Actuator

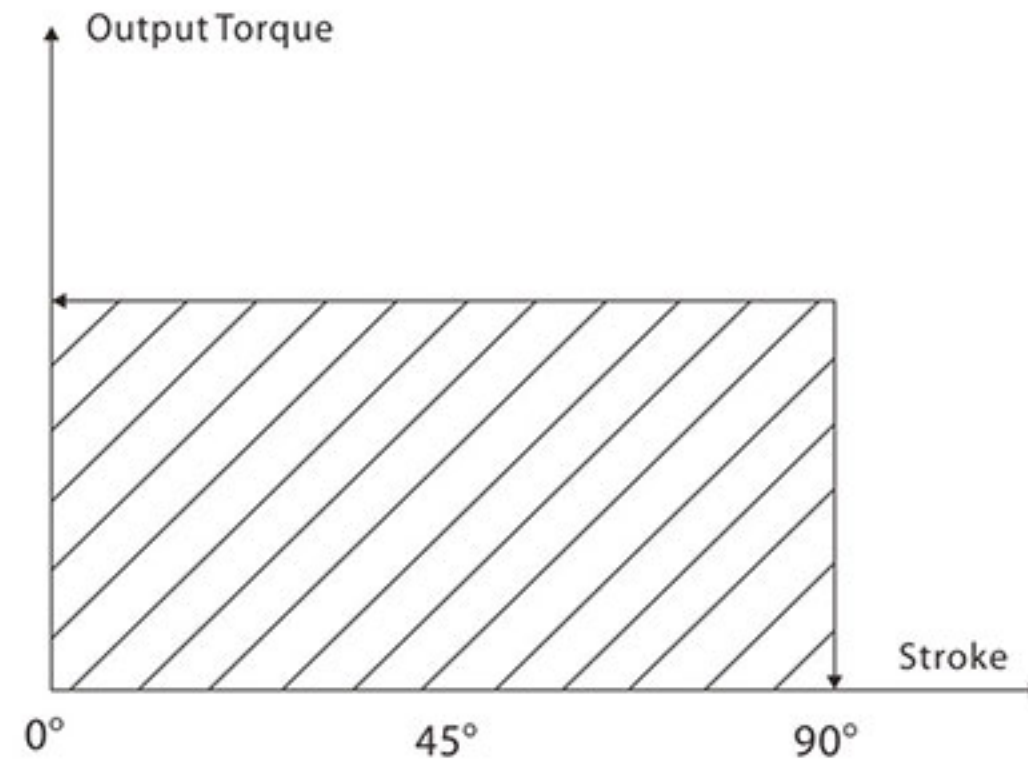


GT Pneumatic Actuator Parts And Materials

Serial number	Name	Number	Material Science	Antiseptic treatment	Optional materials
1	Indicator screw	1	Plastic		
2	Indicator	1	Plastic		
3	Axle gear	1	Stainless steel		
4	Outer gasket	1	Engineering plastic		
5	Cylinder block	1	Aluminium alloy	Hard oxidation	
6	Upper shaft "O" type ring	1	NBR		Fluorosilicone / silicone rubber
7	Upper shaft support ring	1	Engineering plastic		
8	Axis	1	Alloy steel	Plate with nickel	Stainless steel
9	Lower shaft support ring	1	Engineering plastic		
10	Lower shaft "O" ring	1	NBR		Fluorosilicone / silicone rubber
11	Piston	2	Die casting aluminum alloy	Hard oxidation	
12	Piston "O" ring	2	NBR		Fluorosilicone / silicone rubber
13	Piston support ring	2	Engineering plastic		
14	Piston guide plate	2	Engineering plastic		
15	Spring	0-12	Spring steel	Dipping paint	
16	End cover "O" ring	2	NBR		Fluorosilicone / silicone rubber
17	End cap	2	Die casting aluminum alloy	Powder spraying	
18	Fastening bolt for end cover	8	Stainless steel		
19	Adjusting screw "O" ring	2	NBR		Fluorosilicone / silicone rubber
20	Flat pad	2	Stainless steel		
21	Nut	2	Stainless steel		
22	Adjusting screw	2	Stainless steel		



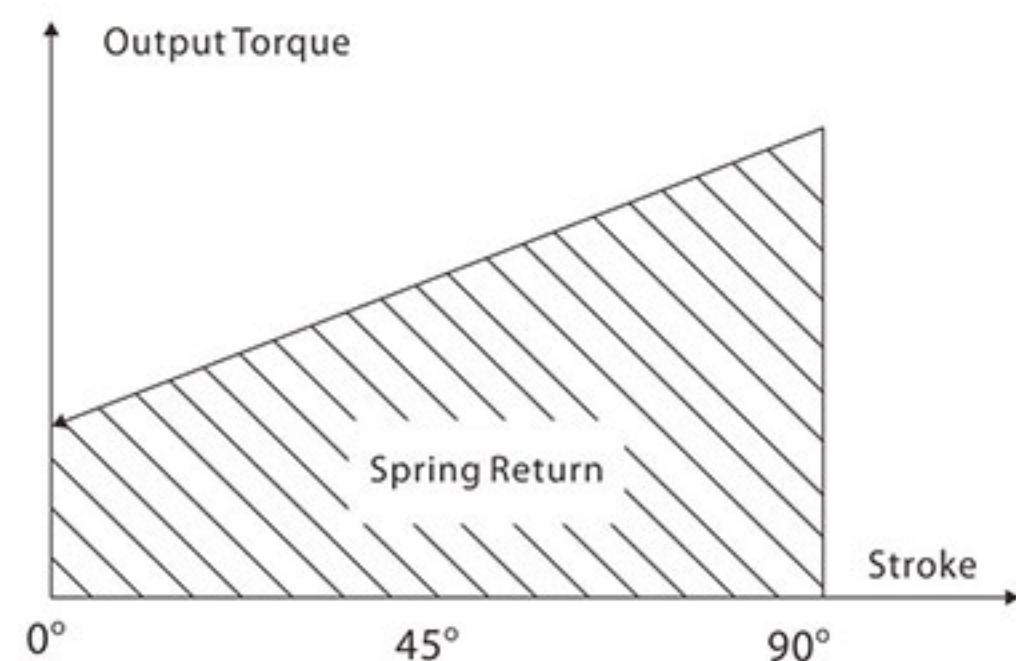
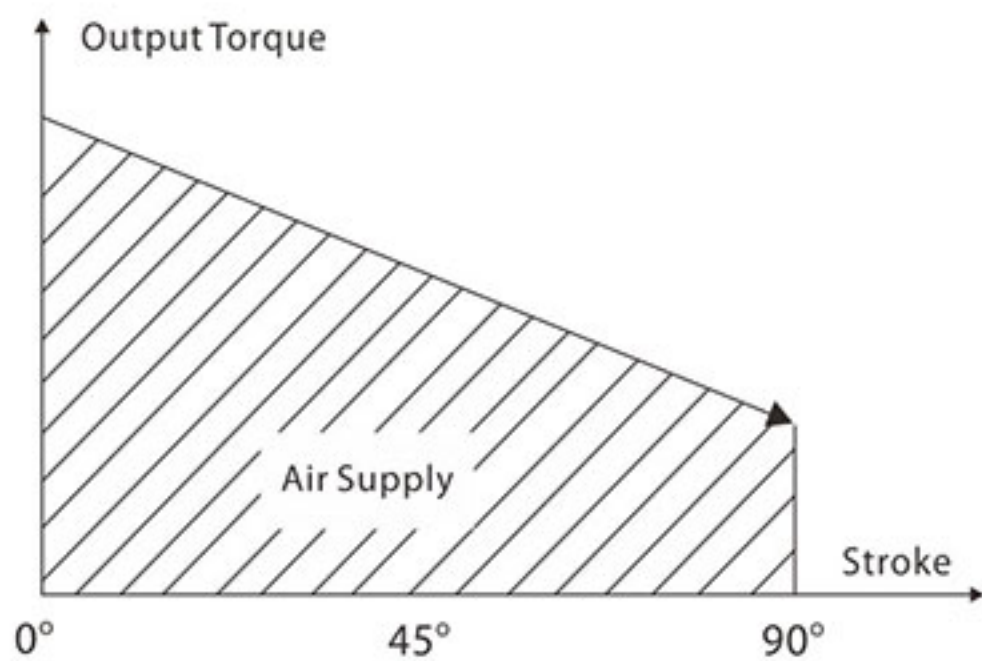
GT Pneumatic Actuator Double Acting Output Torque



GT Pneumatic Actuator Double Acting Output Torque

Model	Air supply (Bar)									
	2	2.5	3	4	4.5	5	5.5	6	7	8
GT52	8.1	10.1	12.1	16.1	18.1	20.2	22.2	24.2	28.2	32.3
GT63	14.2	17.8	21.3	28.4	32.0	35.5	39.4	42.6	49.7	56.8
GT83	30.8	38.5	46.2	61.6	69.4	77.1	84.8	92.5	107.9	123.3
GT110	72.2	90.2	108.3	144.4	162.4	180.5	198.5	216.5	252.6	288.7
GT127	115	144	173	231	260	289	318	346	404	462
GT160	229	286	344	458	515	573	630	687	802	916
GT190	388	485	582	775	872	969	1066	1163	1357	1551
GT210	526	658	789	1052	1184	1316	1447	1579	1842	2105
GT240	773	966	1160	1546	1740	1933	2126	2320	2706	3093
GT270	1174	1468	1761	2349	2642	2936	3229	3523	4110	4697
GT300	1526	1908	2289	3052	3434	3815	4197	4578	5343	6104
GT350	2285	2856	3427	4570	5141	5712	6283	6854	7997	9139

GT Pneumatic Actuator Single Acting Output Torque





GT Pneumatic Actuator Single Acting Output Torque

Air supply		Output torque of air supply against spring(N.m)												Single output torque (N.m)	
		3Bar		4Bar		5Bar		6Bar		7Bar		8Bar			
Model	Spring number	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
		Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
GTE 52	5	7.6	5.7											6.2	4.3
	6	6.9	4.5	10.9	8.5									7.4	5.0
	7	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
GTE 63	5	15.0	11.4	22.3	14.9									10.4	6.8
	6	13.6	9.3	20.9	16.6	28.3	23.9							12.5	8.2
	7	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	27.8	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			15.4	8.2	22.8	15.6	30.0	23.7	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
GTE 83	5	31.1	24.0	46.8	39.7									23.0	15.8
	6	28.0	19.3	43.7	35.1	59.4	50.7							27.6	19.0
	7	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	40.4	71.7	54.5	87.4	70.2	55.2	38.0
GTE 110	5	71.3	53.4	107.4	89.5									54.9	37.0
	6	64.0	42.3	100.1	78.4	136.2	114.5							66.0	44.3
	7	56.6	31.5	92.7	67.6	128.8	103.7							76.8	51.7
	8	49.2	20.4	85.3	56.5	121.4	92.6	157.4	128.6	193.5	164.7			87.9	59.1
	9			77.9	45.3	114.0	81.4	150.0	117.4	186.1	153.5			99.1	66.5
	10			70.5	34.4	106.6	70.5	142.6	106.5	178.7	142.6	214.8	178.7	110.0	73.9
	11					99.2	59.4	135.2	95.4	171.3	131.1	207.4	167.6	121.1	81.3
	12					91.8	48.4	127.8	84.4	163.9	120.5	200.0	156.6	132.1	88.7
GTE 127	5	114	86	172	146									87	59
	6	103	68	161	126	219	184							105	70
	7	91	51	149	109	207	167							122	82
	8	79	33	137	91	195	149	252	206	310	264			140	94
	9			126	73	186	131	241	188	299	246			158	105
	10				56	172	114	229	171	287	229	345	287	175	117
	11					160	96	217	153	275	211	333	269	193	129
	12					149	79	206	136	264	194	322	252	210	140
GTE 160	5	259	191	392	324									208	140
	6	232	149	365	282	498	415							250	168
	7	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

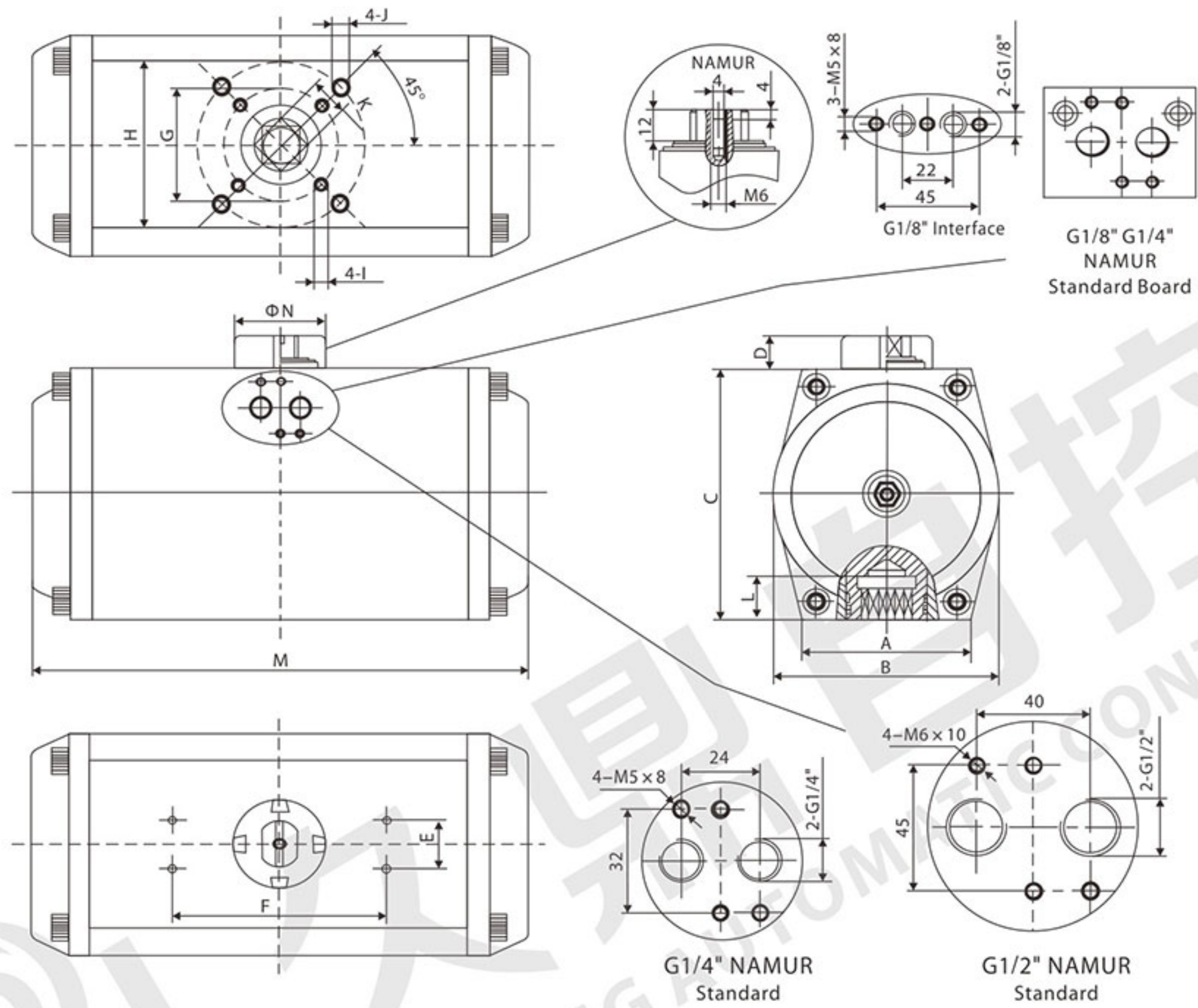


GT Pneumatic Actuator Single Acting Output Torque

Air supply		Output torque of air supply against spring(N.m)												Single output torque (N.m)	
Model	Spring number	3Bar		4Bar		5Bar		6Bar		7Bar		8Bar		0°	90°
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°		
		Start	End	Start	End	Start	End	Start	End	Start	End	Start	End	Start	End
GTE 190	5	438	329	651	542									309	200
	6	398	267	611	480	824	693							371	240
	7	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	446	837	597	1050	809	1263	1022	680	440
	12					584	322	797	535	1010	748	1223	960	742	480
GTE 210	5	523	418	789	684									380	275
	6	468	342	734	608	1000	874							456	330
	7	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	1026	1526	1292	836	605
	12					670	418	936	684	1202	950	1468	1216	912	660
GTE 240	5	744	600	1129	985									554	410
	6	662	489	1047	847	1432	1259							665	492
	7	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
GTE 270	5	1195	968	1779	1552									787	560
	6	1083	811	1667	1396	2252	1981							943	672
	7	972	654	1556	1238	2141	1826							1101	786
	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
GTE 300	5	1522	1139	2285	1902									1150	767
	6	1370	911	2133	1674									1378	919
	7	1218	683	1981	1446	2744	2209							1606	1071
	8	1066	455	1829	1218	2592	1981							1834	1223
	9			1677	990	2440	1753	3203	2516					2062	1375
	10			1525	762	2288	1525	3051	2288	3814	3051	4577	3814	2290	1527
	11					2136	1297	2899	2060	3662	2823	4425	3586	2518	1679
	12					1984	1069	2747	1832	3510	2595	4273	3358	2746	1831
GTE 350	5	2003	1474	3285	2578									1702	1173
	6	1863	1157	3006	2300									2043	1406
	7	1602	779	2745	1922	3886	3065							2383	1642
	8	1341	401	2484	1544	3626	2686							2724	1877
	9			2224	1165	3366	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



GT Pneumatic Actuator External



Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Air connection
GT52	50	59	74	20	30	80	Φ36	Φ50	M5×8	M6×10	11	14	125	40	G1/8"
GT63	60	70	88	20	30	80	Φ36	Φ50	M5×8	M6×10	14	18	140	40	G1/8"
GT75	65	83	100	20	30	80	Φ50	Φ70	M6×10	M8×13	14	18	183	40	G1/8"
GT92	74	103	116	20	30	80	Φ50	Φ70	M6×10	M8×13	17	21	218	40	G1/8"
GT110	90	120	140	20	30	80	Φ70	Φ102	M8×13	M10×16	17	21	230	40	NAMURG1/4"
GT127	102	141	160	20	30	80	Φ70	Φ102	M8×13	M10×16	22	26	300	55	NAMURG1/4"
GT140	106	153	173.5	30	30	130	Φ102	Φ125	M10×16	M12×20	27	31	352	55	NAMURG1/4"
GT190	125	206	234	30	30	130		Φ140		M16×25	36	40	500	80	NAMURG1/4"
GT210	135	226	255	30	30	130		Φ140		M16×25	36	40	530	80	NAMURG1/4"
GT240	155	256	290	30	30	130		Φ165		M20×25	46	50	602	80	NAMURG1/4"
GT270	190	294	320	30	30	130		Φ165		M20×25	46	50	722	80	NAMURG1/2"
GT300	196	324	348	30	30	130		Φ165		M20×25	46	60	820	80	NAMURG1/2"
GT350	220	380	407	30	30	130		Φ165		M20×25	46	60	900	80	NAMURG1/2"

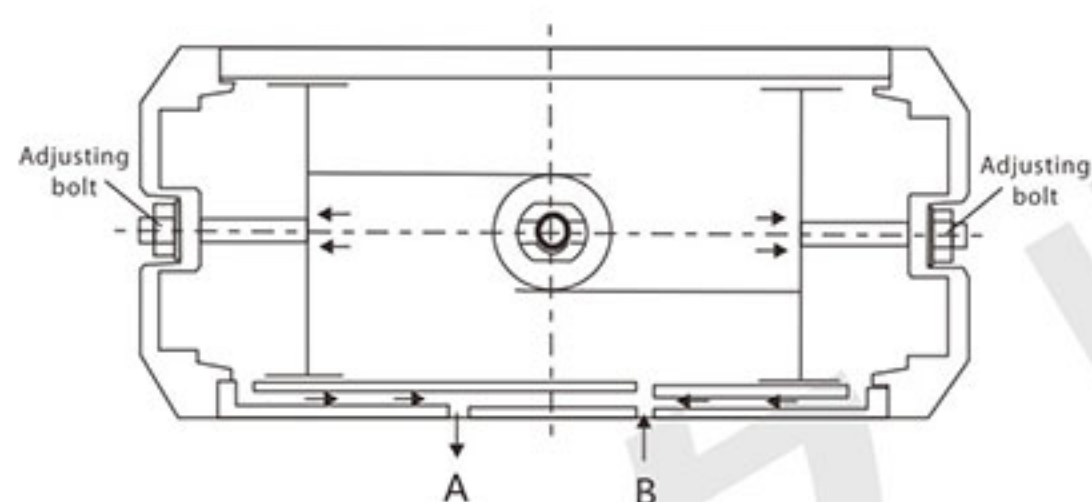


Performance And Feature

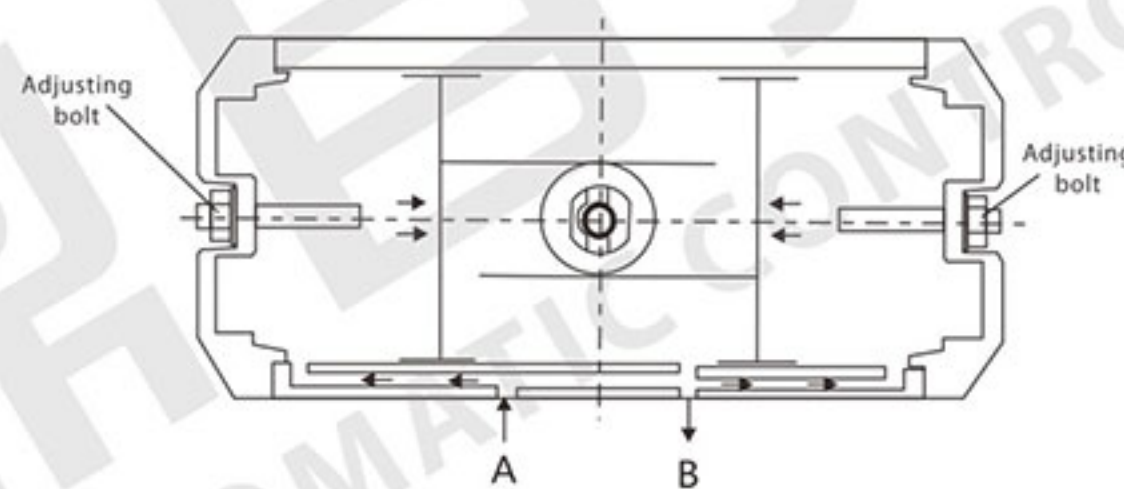
- 1.The extruded high quality aluminum alloy cylinder, with precision machining inner hole and fine grinding and hard anodized treatment surface, has long service life and low friction coefficient.
- 2.Compact double pistons rack & pinion structure, meshing precision,stable transmission, installation position symmetry, output torque constant, can be reversed by simply changing the piston assembly position.
- 3.Precompression load spring make installation, remove safe and convenient.
- 4.The travel adjustment screws on both sides of the cover can be adjusted at 0° and $90^{\circ} \pm 5^{\circ}$ one-way travel.
- 5.The installation connection size conforms to ISO5211, DIN3337 and VDI/VDE3845 and NAMUR standard.
- 6.All fasteners are made of stainless steel and have long corrosion resistance.
- 7.The seal material has normal temperature type, high temperature type,low temperature type. NBR for normal temperature,Viton for high temperature and silicon rubber for low temperature.
- 8.We can provide a variety of special angle travel (for example: 120° , 135° , 180° , etc.)and three type pneumatic actuators according to the requirement.

Operating Principle

Operating Principle Of Double Acting

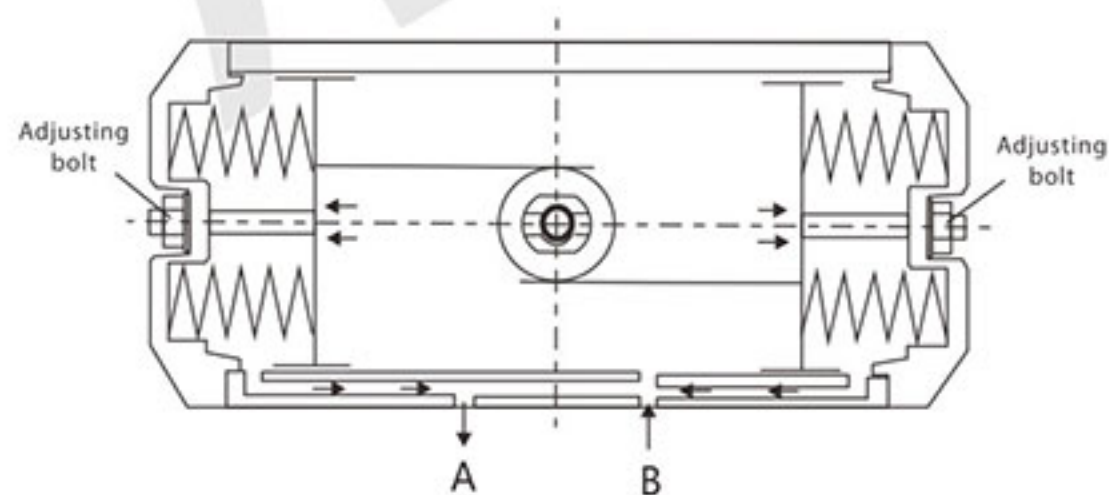


Compressed air from the air port (B) into the cylinder between the two pistons,force the pistons outwards,the air in both ends exhaust through the port (A), at the same time two pistons drive the output shaft rotate 90° counterclockwise the shaft indicator turn to open position At this time, the adjusting bolts on end caps can adjust ± 5 in the close position. After the adjustment.pls tighten the adjustment nuts to guarantee the cylinder seal.

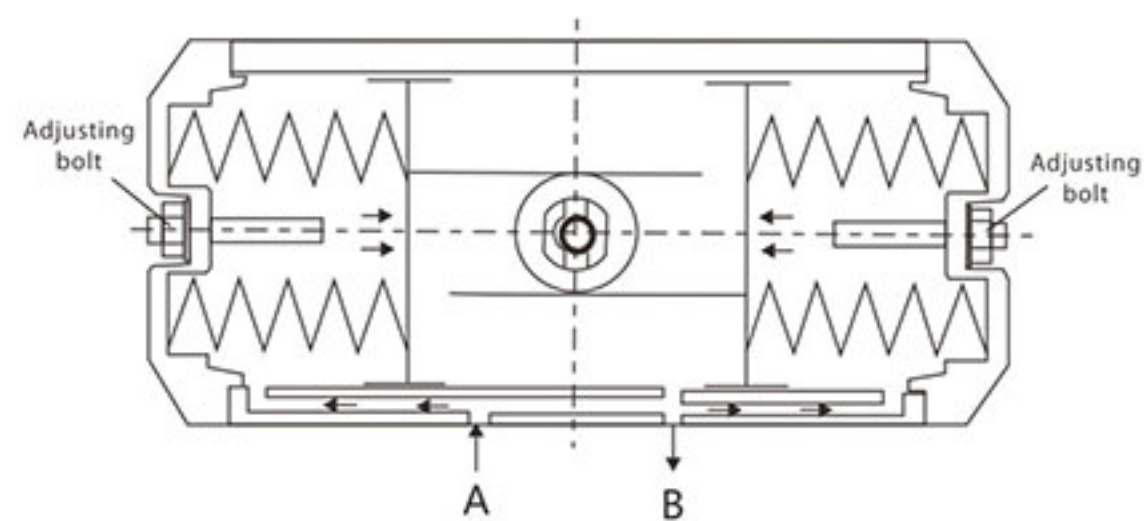


Compressed air from the air port (A) into both ends of the cylinder, force the pistons inwards,the air between two pistons exhaust through the port (B),at the same time two pistons drive the output shaft rotate 90° clockwise,the shaft indicator turn to close position.

Operating Principle Of Single Acting



Compressed air from the air port (B) into the cylinder between the two pistons, force the pistons outwards,force the springs on both ends to compress, the air in both ends exhaust through the port (A), at the same time two pistons drive the output shaft rotate 90° counterclockwise, the shaft indicator turn to open position.At this time, the adjusting bolts on end caps can adjust $\pm 5^{\circ}$ in the close position.After the adjustment.pls tighten the adjustment nuts to guarantee the cylinder seal.



Compressed air reversed by solenoid valve,the pistons inwards forced by spring,the air between two pistons exhaust through the port (B),at the same time two pistons drive the output shaft rotate 90° clockwise the shaft indicator turn to open position.



Working Technical Conditions

- 1、 Operating media: Compressed air, non-corrosive gases or oil;
- 2、 Air supply pressure: Double acting 2~8Bar, Single acting 2~8Bar;
- 3、 Working temperature: Standard temperature: -20°C~+80°C (NBR O-ring) Low temperature: -350°C~+80°C (Silicon rubber O-ring); High temperature: -15°C~+150°C (Viton O-ring);
- 4、 Travel adjustment: ± 5° adjustment range;
- 5、 Lubrication: Under normal operating condition, need not add lubricant;
- 6、 Installation: Indoor or outdoor;
- 7、 Max pressure: 10bar.

Gas Consumption Calculation

Model	Open volum(L)	Close volum(L)	Model	Open volum(L)	Close volum(L)
GT52	0.11	0.14	GT190	5.9	7.9
GT63	0.20	0.23	GT210	7.4	9.7
GT83	0.41	0.55	GT240	10.7	14.3
GT110	1.15	1.25	GT270	16.9	22.5
GT127	1.40	1.80	GT300	23.8	29.7
GT160	3.65	5.03	GT350	35.1	46.3

Gas consumption depend on air supply, stroke, volume and action times, calculation as below:

$$L/min = \text{cylinder volume}(\text{open volume} + \text{close volume}) + [\text{air supply}] \times \text{times}/\text{min}$$

Weight

Model	52	63	83	110	127	160
GTD	1.1kg	1.7kg	2.9kg	6.8kg	10.1kg	15.3kg
GTE	1.2kg	2.0kg	3.5kg	8.7kg	13.2kg	19.7kg

Model	190	210	240	270	300	350
GTD	29kg	36kg	50kg	71kg	110kg	186kg
GTE	35kg	44kg	62kg	89kg	130kg	234kg



Actuator Selection

Double Acting Actuator Selection

Under normal operation condition, double acting actuator consider safety factor 20%-30%,

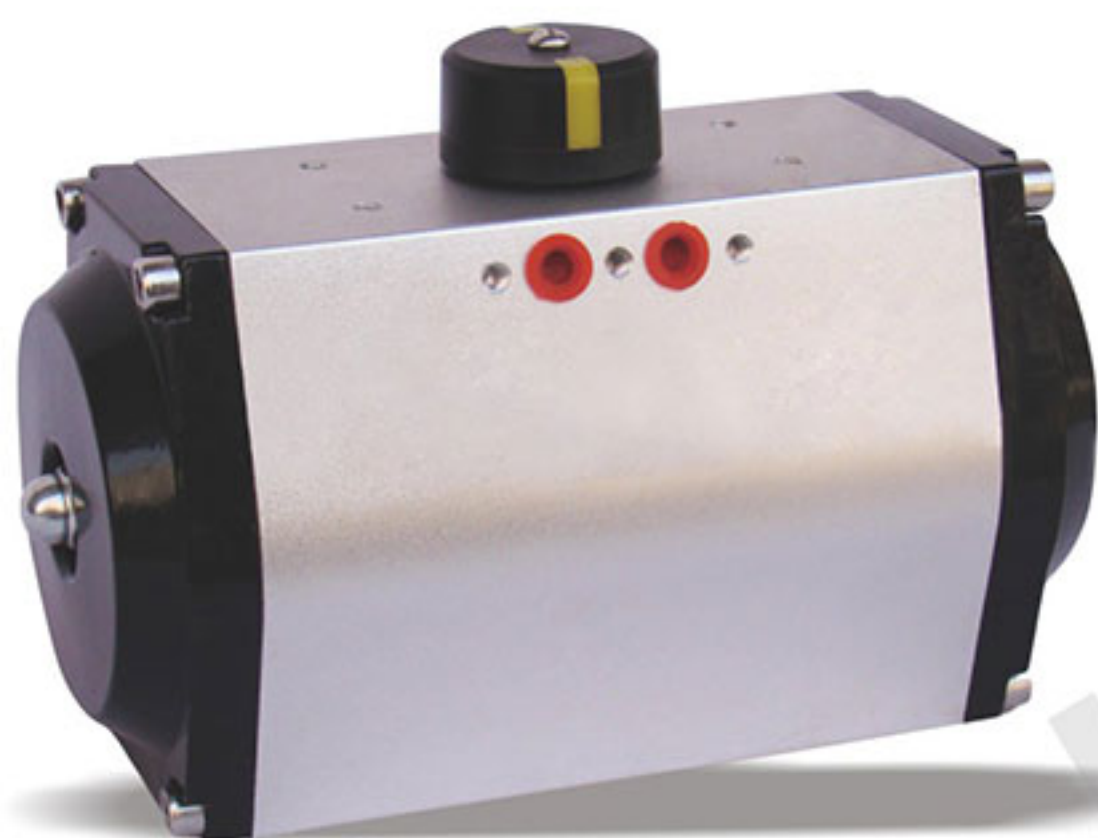
For ample:

Valve torque=100N.m

Torque with safety factor=100x(1+30%)=130N.m

Air supply=5Bar

Check the output torque of double acting, choose the smallest model JD-GTD105



Single Acting Actuator Selection

Under normal operation condition, single acting actuator consider safety factor 30% -50%, for example:

Valve torque=80N.m

Torque with safety factor=80x(1+30%)=104N.m

Air supply=5Bar

Check the output torque of single, acting, we will find the torque of model JD-GTE140K7

Air stroke 0° =308N.m

Air stroke 90° =247N.m

Spring stroke 90° =181N.m

Spring stroke 0° =120N.m

All output torque is greater than our demand.

Single Acting Pneumatic Actuator Economic Selection

When selecting single acting pneumatic actuator, if you know valve start torque, running torque and close torque, we can select more economic actuator.

For example: Butterfly valve biggest torque=104N.m

Running torque 104x30%=32N.m

Air supply=5Bar

We can select JD-ATE130Kg

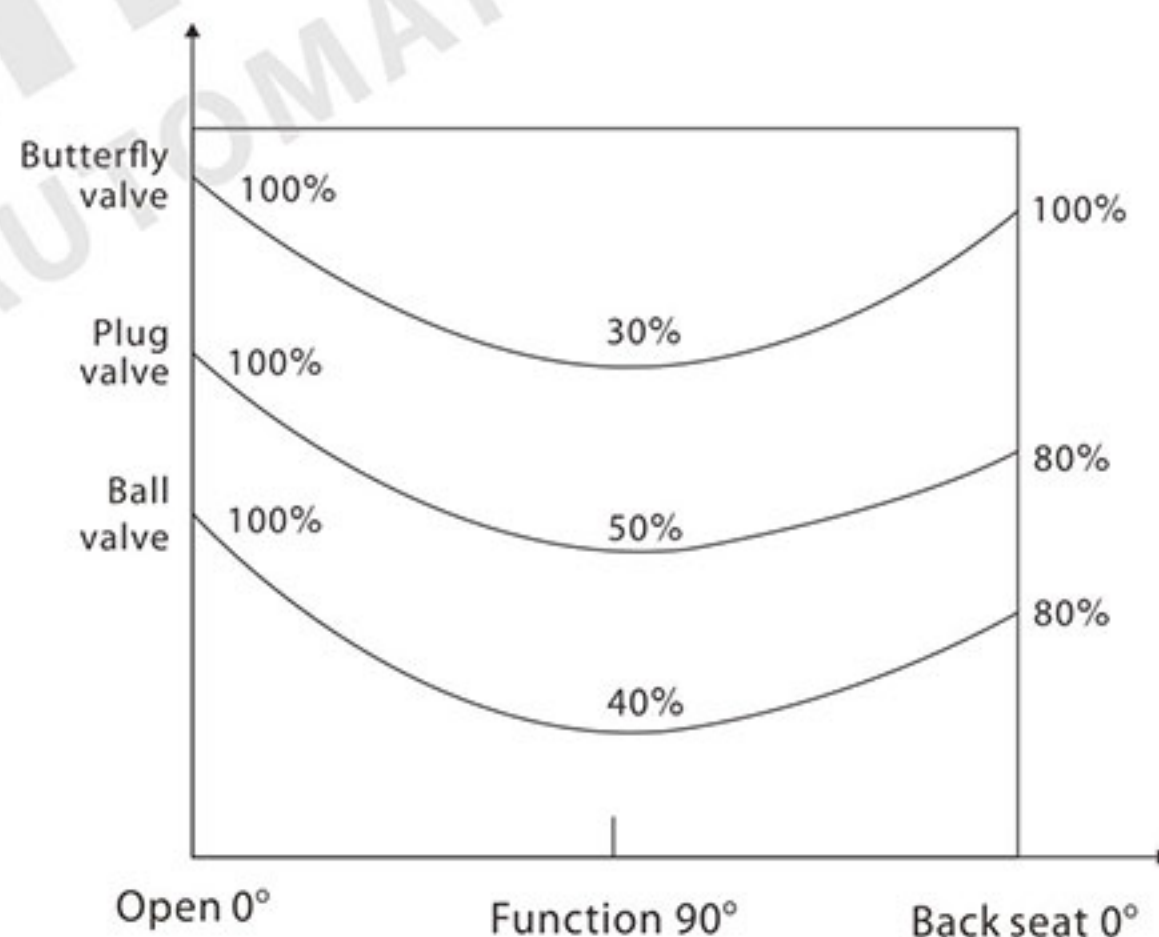
Air stroke 0° =183N.m > 104N.m

Air stroke 90° =127N.m > 32N.m

Spring stroke 90° =169N.m > 32N.m

Spring stroke 0° =113N.m > 104N.m

The above data show that the butterfly valve can meet the normal opening and closing.



Ordering Instructions

Content	Series	Action form	Specifications	Spring quantity	Travel angle	Product code
JD	GT	D	52	K10	90°	JD-GTD52-K10

GT
AT

D	Double action
E	Single action

52
63
75
.....

K8
K9
K10
.....

90°
120°
135°
180°

The specification of the technical
parameters are changed without notice!



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