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博雷(天津)控制系统制造有限公司
BOLLEY(TIANJIN) CONTROL SYSTEM MANUFACTURING CO., LTD.

GT SERIES PNEUMATIC
ACTUATORS

GT 系列气动执行器

COMPANY PROFILE

公司简介



博雷（天津）控制系统制造有限公司是一家集工程、阀门生产于一体的企业，引进美国先进阀门制造技术，为客户提供专业的过程自动化及控制设备等解决方案。一直以来稳步发展，经过多年的积累，博雷控制已经迈入了国际化公司的行列。

公司主导产品有闸阀、截止阀、蝶阀、球阀、止回阀、调节阀、减压阀、隔膜阀、旋塞阀、柱塞阀、疏水阀、电站阀、美标阀、水力控制阀等80多种品种、300多个系列、几千种规格。产品采用GB、JB、HG、API、ANSI、DIN、JIS、BS等国内外先进标准设计制造。通径从1/4"至96"（DN6-2400mm）、压力从150LB至2500LB（2MPa-42MPa）、工作温度为-196℃至800℃。主要材料有灰铸铁、球墨铸铁、铜、碳素钢、不锈钢、合金钢、低温钢、铬钼钢、沉淀硬化钢及其他特殊钢材。

我们以卓越的品质和服务取得了全球数以万计的用户的信赖及支持，所涉及的行业包括化工、石化、电力、环境、生物科技、燃气、染料、制药、供热、造纸、建筑食品、有色金属、钢铁以及其他工业领域。

我们重视客户提出的每一个要求，并按照客户提出的要求量身定做，力求为客户提供最好的解决方案，同时也能优化产品性能，客户感到满意与他们保持紧密的合作关系。我们坚持这样做并取得了成功，这是我们发展的动力。自从博雷控制诞生的那一刻起，我们力求每一个环节都做到精益求精，所以我们的质保系统渗透到每一个工序，确保每个员工用到的是最好的零配件，这是我们发展的根本。

为了确保产品质量和满足顾客的要求，我们坚持不断深化内部管理，努力提升全员质量意识，扩大全球营销团队，为国内外客户提供更方便快捷的服务。

**我们力求每一个环节都做到精益求精，
争做控制系统行业之美好明天的领航者！**



Bolley (Tianjin) Control System Manufacturing Co., Ltd. is a collection of engineering control system, valve production in a body's enterprise, introducing the advanced valve manufacturing technology, providing customers with professional solutions for process automation and control equipment, etc. Has been a steady development, after many years of accumulation, Bolley Control has entered the international company.

Company main products are gate valve, globe valve, butterfly valve, ball valve, check valve, regulating valve, relief valve, diaphragm valve, plug valve, plunger valve, steam trap, power station valve, american standard valve, hydraulic control valves, and more than 80 varieties, more than 300 series, thousands of specifications. Product by GB, JB, HG, API, ANSI, DIN, JIS, BS, and domestic and foreign advanced standards. Size from 1/4 "to 96" (DN6-2400mm), pressure from 150LB to 2500LB (2MPa - 42MPa), the working temperature to -196°C to 800°C. The main materials are gray cast iron, nodular cast iron, copper, carbon steel, stainless steel, alloy steel, low temperature steel, chrome molybdenum steel, precipitation hardened steel and other special steel.

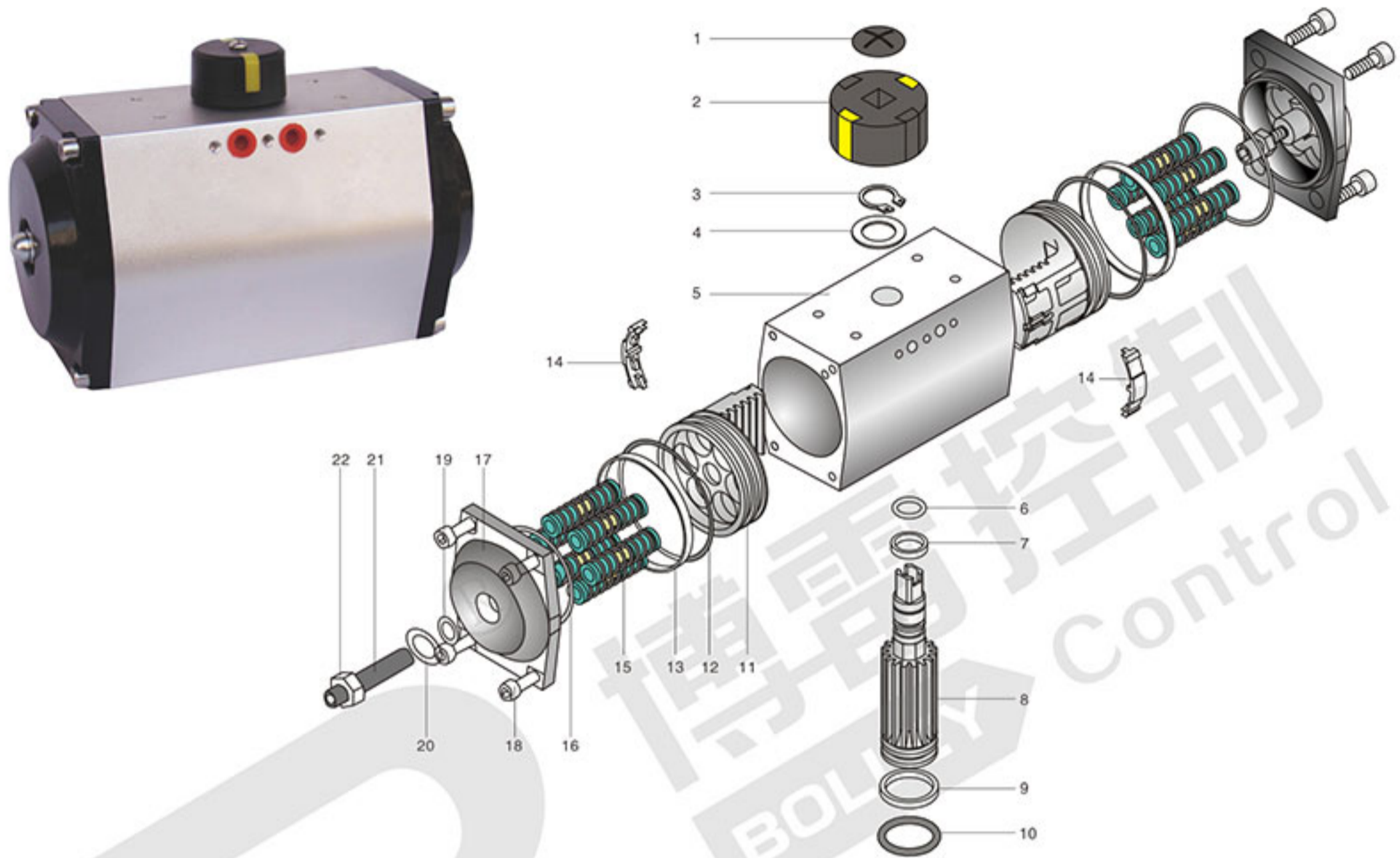
With our excellent quality and service has made the world tens of thousands of users trust and support, involved in industries including chemical, petrochemical, electric power, environmental, biological technology, gas, dyestuff, pharmaceutical, heating, papermaking, food, non-ferrous metals, steel and other industrial fields.

We attach importance to the customer request of each, and customized according to customer demand, makes every effort to provide customers with the best solution, but also can optimize product performance, customer satisfaction and their close relations of cooperation. We insist on doing this and has been a success, this is our development power. Since the birth of Bolley control that moment, we strive to do every link strives for perfection, so our quality assurance system to infiltrate every working procedure, to ensure that each employee use is one of the best parts, it is fundamental to our development.

In order to ensure product quality and meet the requirements of customers, we continuously deepen the internal management, efforts to enhance the quality consciousness, expand the global marketing team, to provide more convenient service to customers from home and abroad.

**We Strive To Achieve Excellence In Every Aspect,
To Control System Of Industry Leader A Better Tomorrow!**

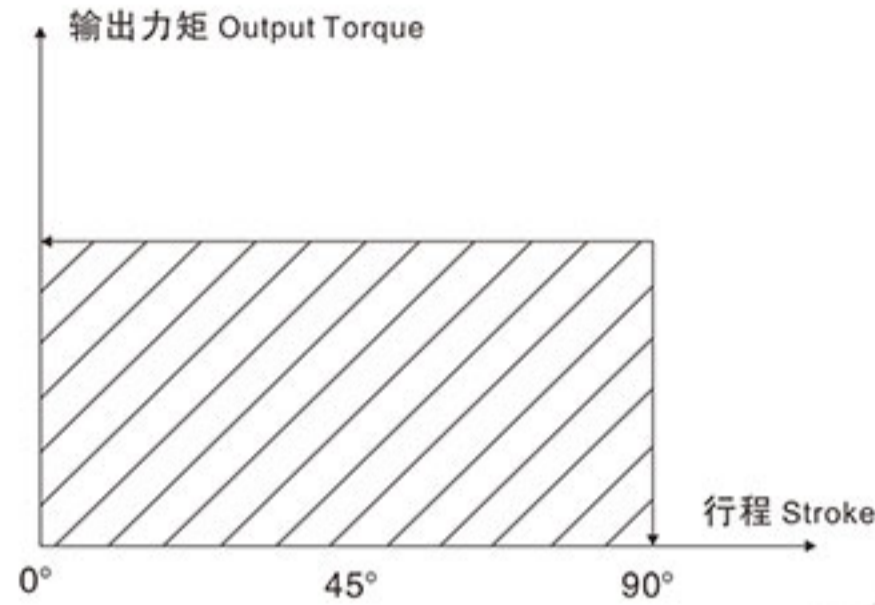
GT气动执行器总装图 GT General Assembly Diagram of Pneumatic Actuator



GT气动执行器主要零件 GT Pneumatic Actuator Parts And Materials

序号 Serial number	名称 Name	数量 Number	材料 Material Science	防腐处理 Antiseptic treatment	可选材料 Optional materials
1	指示器螺钉 Indicator screw	1	塑料 Plastic		
2	指示器 Indicator	1	塑料 Plastic		
3	轴挡 Axle gear	1	不锈钢 Stainless steel		
4	外垫片 Outer gasket	1	工程塑料 Engineering plastic		
5	缸体 Cylinder block	1	铝合金 Aluminium alloy	硬质氧化 Hard oxidation	
6	上轴"O"型圈 Upper shaft "O" type ring	1	丁腈橡胶 NBR		氟硅橡胶 Fluorosilicone / silicone rubber
7	上轴支承圈 Upper shaft support ring	1	工程塑料 Engineering plastic		
8	轴 Axis	1	合金钢 Alloy steel	镀镍 Plate with nickel	不锈钢 Stainless steel
9	下轴支承圈 Lower shaft support ring	1	工程塑料 Engineering plastic		
10	下轴"O"型圈 Lower shaft "O" ring	1	丁腈橡胶 NBR		氟硅橡胶 Fluorosilicone / silicone rubber
11	活塞 Piston	2	压铸铝合金 Die casting aluminum alloy	硬质氧化 Hard oxidation	
12	活塞"O"型圈 Piston "O" ring	2	丁腈橡胶 NBR		氟硅橡胶 Fluorosilicone / silicone rubber
13	活塞支承圈 Piston support ring	2	工程塑料 Engineering plastic		
14	活塞导板 Piston guide plate	2	工程塑料 Engineering plastic		
15	弹簧 Spring	0-12	弹簧钢 Spring steel	浸漆 Dipping paint	
16	端盖"O"型圈 End cover "O" ring	2	丁腈橡胶 NBR		氟硅橡胶 Fluorosilicone / silicone rubber
17	端盖 End cap	2	压铸铝合金 Die casting aluminum alloy	粉末喷涂 Powder spraying	
18	端盖紧固螺栓 Fastening bolt for end cover	8	不锈钢 Stainless steel		
19	调节螺杆"O"型圈 Adjusting screw "O" ring	2	丁腈橡胶 NBR		氟硅橡胶 Fluorosilicone / silicone rubber
20	平垫 Flat pad	2	不锈钢 Stainless steel		
21	螺母 Nut	2	不锈钢 Stainless steel		
22	调节螺杆 Adjusting screw	2	不锈钢 Stainless steel		

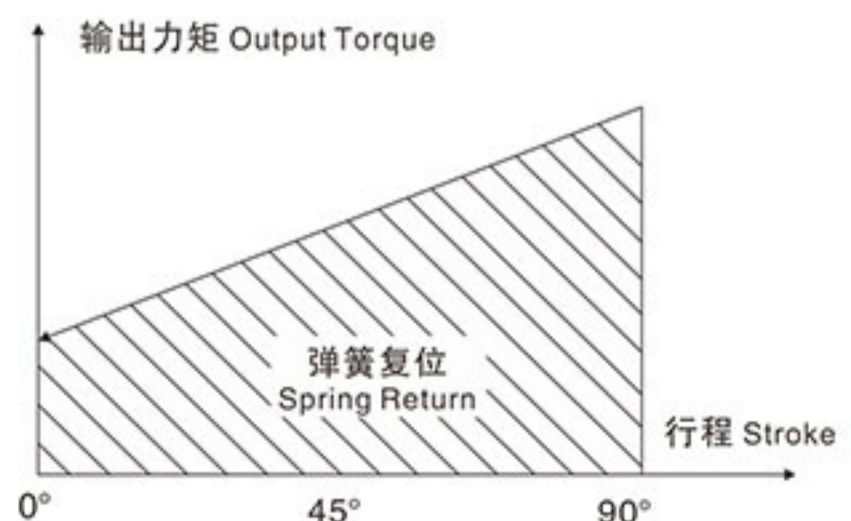
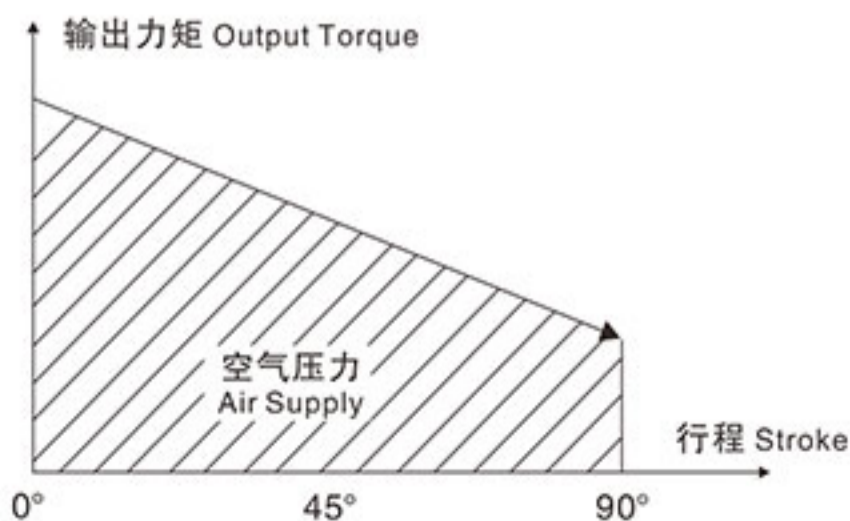
GT 气动执行器双作用力矩图 GT Pneumatic Actuator Double Acting Output Torque



GT 气动执行器双作用力矩表 GT Pneumatic Actuator Double Acting Output Torque

型号 Model	气源压力 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 气动执行器单作用力矩图 GT Pneumatic Actuator Single Acting Output Torque



GT 气动执行器单作用力矩表 GT Pneumatic Actuator Single Acting Output Torque

气源压力 Air supply		气源克服弹簧输出力矩 (N.m) Output torque of air supply against spring												弹簧输出力矩(Nm) Single output torque	
型号 Model	弹簧数量 Spring number	3Bar		4Bar		5Bar		6Bar		7Bar		8Bar		0°	90°
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°		
		开始 Start	结束 End	开始 Start	结束 End	开始 Start	结束 End	开始 Start	结束 End	开始 Start	结束 End	开始 Start	结束 End	开始 Start	结束 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	23.3	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		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 系列气动执行器

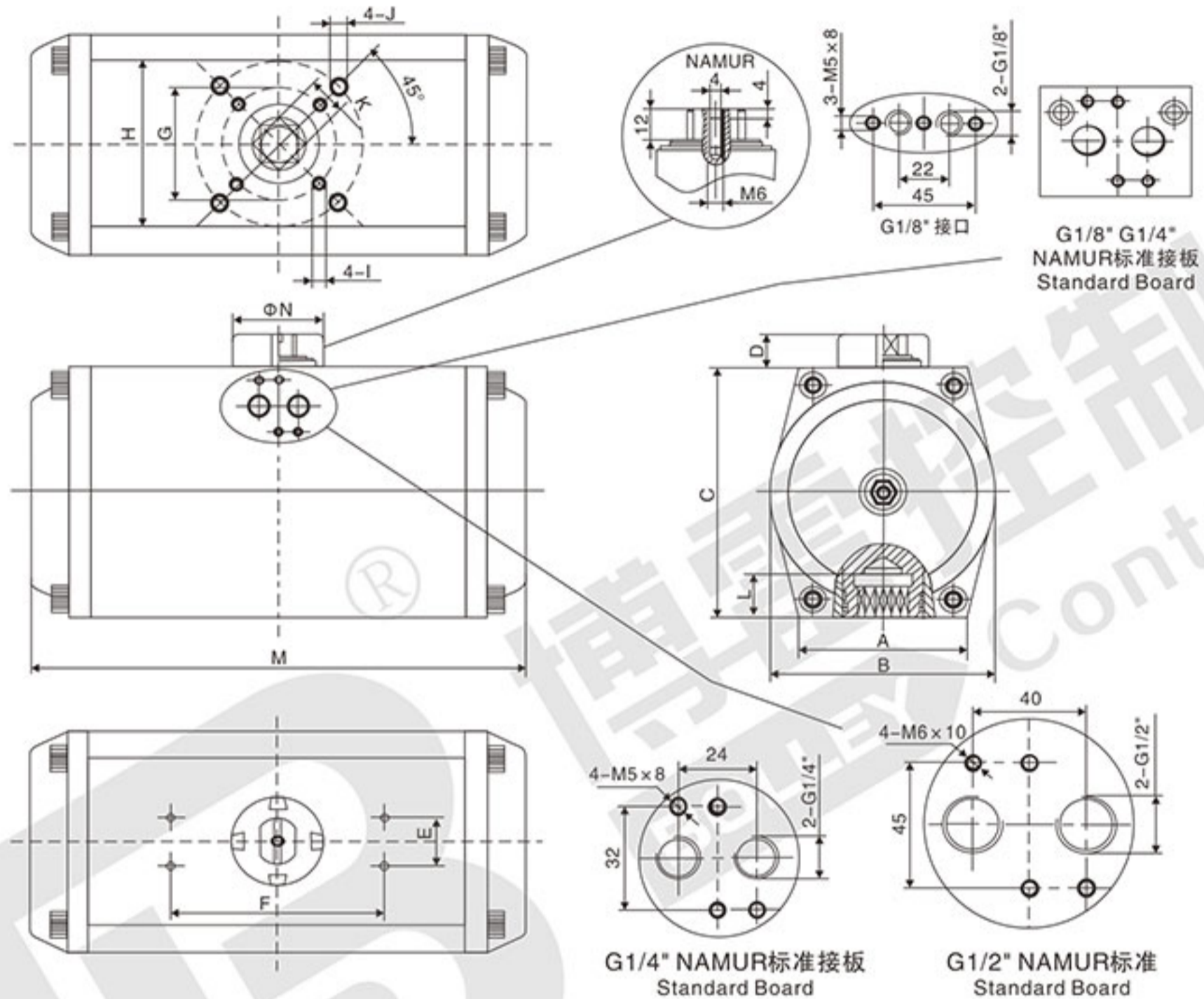
GT SERIES PNEUMATIC ACTUATORS



GT 气动执行器单作用力矩表 GT Pneumatic Actuator Single Acting Output Torque

气源压力 Air supply		气源克服弹簧输出力矩 (N.m) Output torque of air supply against spring												弹簧输出力矩(N.m) Single output torque	
		3Bar		4Bar		5Bar		6Bar		7Bar		8Bar			
型号 Model	弹簧数量 Spring number	0°		0°		0°		0°		0°		0°		0°	
		开始 Start	结束 End	开始 Start	结束 End	开始 Start	结束 End	开始 Start	结束 End	开始 Start	结束 End	开始 Start	结束 End	开始 Start	结束 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 气动执行器 外形 GT Pneumatic Actuator External



型号 Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	气源接口 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"
GT83	67	91	110	20	30	80	Φ50	Φ70	M6×10	M8×13	14	18	188	40	G1/8"
GT110	90	120	140	20	30	80	Φ70	Φ102	M8×13	M10×16	17	21	230	40	NAMUR G1/4"
GT127	102	141	160	20	30	80	Φ70	Φ102	M8×13	M10×16	22	26	300	55	NAMUR G1/4"
GT160	110	176	198	20	30	80	Φ102	Φ125	M10×16	M12×20	27	31	382	55	NAMUR G1/4"
GT190	125	206	234	30	30	130		Φ140		M16×25	36	40	500	80	NAMUR G1/4"
GT210	135	226	255	30	30	130		Φ140		M16×25	36	40	530	80	NAMUR G1/4"
GT240	155	256	290	30	30	130		Φ165		M20×25	46	50	602	80	NAMUR G1/4"
GT270	190	294	320	30	30	130		Φ165		M20×25	46	50	722	80	NAMUR G1/2"
GT300	196	324	348	30	30	130		Φ165		M20×25	46	60	820	80	NAMUR G1/2"
GT350	220	380	407	30	30	130		Φ165		M20×25	46	60	900	80	NAMUR G1/2"

性能和特点

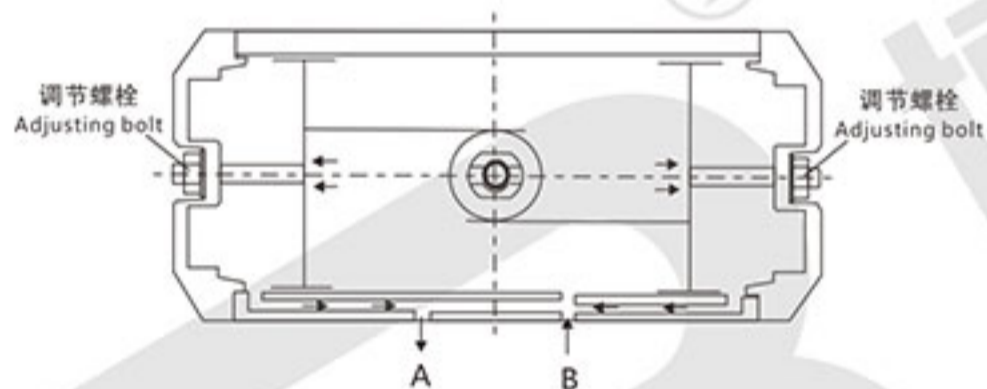
- 1、挤压成型的优质铝合金缸体，经精密加工的内孔和外部表面经细磨及硬质氧化处理，使用寿命长，摩擦系数低。
- 2、紧凑的双活塞齿轮、齿条式结构，啮合精确，传动平稳，安装位置对称，输出扭矩恒定，通过简单的改变活塞装配位置可得到反方向。
- 3、预压缩负荷弹簧，安装、拆卸安全、方便。
- 4、端盖两侧的行程调节螺钉可在 0° 和 $90^{\circ} \pm 5^{\circ}$ 单向的行程调节。
- 5、安装连接尺寸符合ISO5211、DIN3337和VDI/VDE3845以及NAMUR标准。
- 6、所有的紧固件均采用不锈钢材料，长期抗腐蚀。
- 7、密封件材料有常温型、高温型、低温型。在常温工作条件下使用丁腈橡胶，在高温或低温时采用氟橡胶或硅橡胶。
- 8、根据需要可提供多种角行程（例如： 120° 、 135° 、 180° 等）和三位式气动执行器。

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.

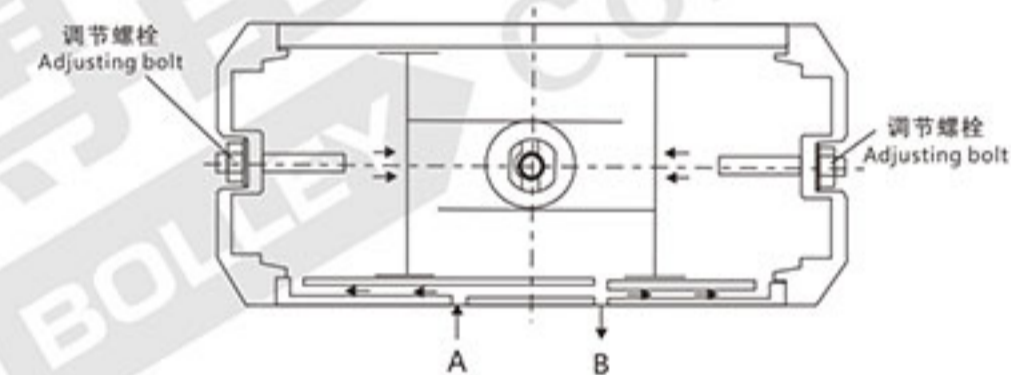
工作原理 Operating Principle

双作用工作原理 Operating Principle Of Double Acting



压缩空气从气口(B)进入气缸两活塞之间，使活塞分离向气缸两端移动，两端空气通过气口(A)排出，同时两活塞齿条同步带动输出轴逆时针旋转 90° ，轴的指示位置为开位，此时两端调节螺栓可以在关位的位置微量调节角度为 $\pm 5^{\circ}$ ，角度调节好后旋紧螺母，保证气缸密封。

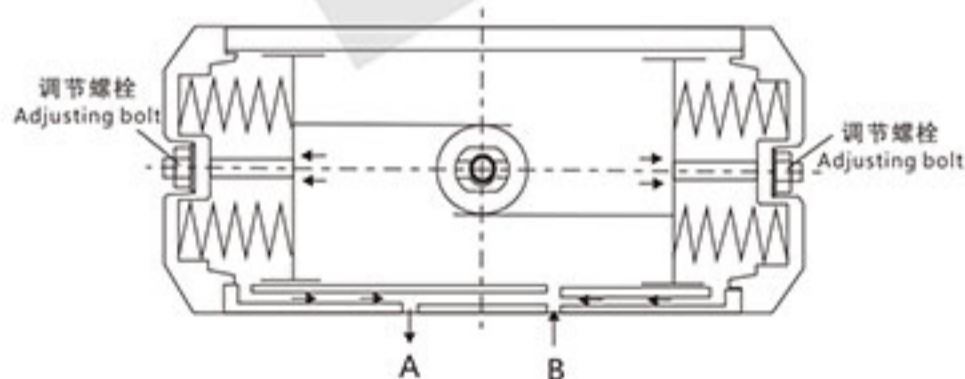
Compressed air from the air port (B) into the cylinder between the two pistons, force the pistons outwards, the air in both ends exhaust through the port (A), at the same time two pistons drive the output shaft rotate 90° counterclockwise the shaft indicator turn to open position. At this time, the adjusting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



压缩空气从气口(A)进入气缸两端，使活塞向气缸中间移动，两活塞之间空气通过气口(B)排出，同时两活塞齿条同步带动输出轴顺时针旋转 90° ，轴的指示位置为关位。

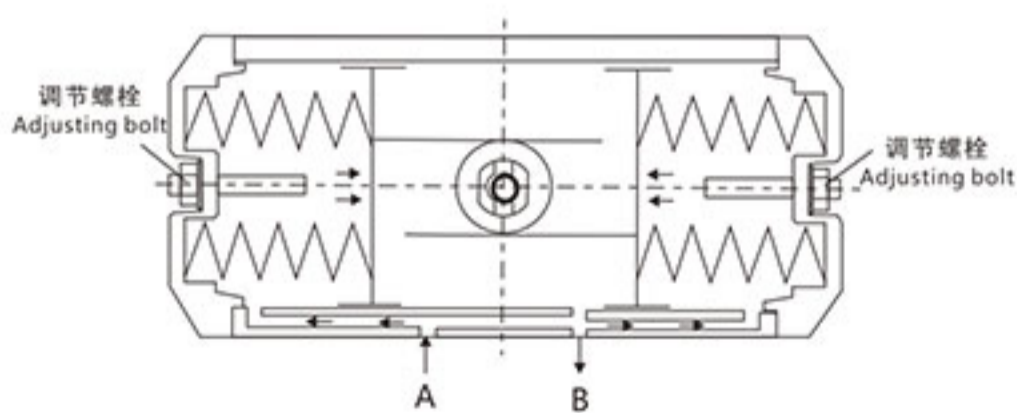
Compressed air from the air port (A) into both ends of the cylinder, force the pistons inwards, the air between two pistons exhaust through the port (B), at the same time two pistons drive the output shaft rotate 90° clockwise, the shaft indicator turn to close position.

单作用工作原理 Operating Principle Of Single Acting



压缩空气从气口(B)进入气缸两活塞之间，使活塞分离向气缸两端移动，迫使两端的弹簧压缩，两端空气通过气口(A)排出，同时两活塞齿条同步带动输出轴逆时针旋转 90° ，轴的指示位置为开位，此时两端调节螺栓可以在关位的位置微量调节角度为 $\pm 5^{\circ}$ ，角度调节好后旋紧螺母，保证气缸密封。

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.



压缩空气经过电磁阀换向后，气缸的两活塞在弹簧的弹力下向中间移动，两活塞之间空气通过气(B)排出，同时两活塞齿条同步带动输出轴顺时针旋转 90° ，轴的指示位置为关位。

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.

工作技术条件 Working Technical Conditions

- | | |
|---|--|
| <p>1、使用介质: 压缩空气、无腐蚀性气体和油;</p> <p>2、压力范围: 双作用2~8巴(Bar), 单作用2~8巴(Bar);</p> <p>3、工作温度: 标准型(使用丁腈橡胶O型圈) -20°C~+80°C;
低温型(使用低温丁腈橡胶O型圈) -35°C~+80°C;
高温型(使用氟橡胶O型圈) -15°C~+150°C;</p> <p>4、行程调整: 活塞在两端位置有±5°的可调范围;</p> <p>5、润滑: 在正常工作条件下, 不需添加润滑剂;</p> <p>6、安装: 适合室内或室外安装;</p> <p>7、最高使用压力: 输入气压不超过10巴。</p> | <p>1、Operating media: Compressed air, non-corrosive gases or oil;</p> <p>2、Air supply pressure: Double acting 2~8Bar, Single acting 2~8Bar;</p> <p>3、Working temperature: Standard temperature: -20°C~+80°C(NBR O-ring) Low temperature: -35°C~+80°C(Silicon rubber O-ring); High temperature: -15°C~+150°C(Viton O-ring);</p> <p>4、Travel adjustment: ±5° adjustment range;</p> <p>5、Lubrication: Under normal operating condition, need not add lubricant;</p> <p>6、Installation: Indoor or outdoor;</p> <p>7、Max pressure: 10bar.</p> |
|---|--|

耗气量计算 Gas Consumption Calculation

型号 Model	开向体积(升) Open volum(L)	关向体积(升) Close volum(L)
GT52	0.11	0.14
GT63	0.20	0.23
GT83	0.41	0.55
GT110	1.15	1.25
GT127	1.40	1.80
GT160	3.65	5.03

型号 Model	关向体积(升) Close volum(L)	关向体积(升) Close volum(L)
GT190	5.9	7.9
GT210	7.4	9.7
GT240	10.7	14.3
GT270	16.9	22.5
GT300	23.8	29.7
GT350	35.1	46.3

耗气量取决于供气压力、开关行程, 体积及动作次数, 计算如下:

$$\text{升/分} = \text{气缸体积}(\text{开向体积} + \text{关向体积}) \times \left[\frac{\text{供气压力(Kpa)} + 101.3}{101.3} \right] \times \text{次数/分钟}$$

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

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

重量表 Weight

型号 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

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

执行器选型 Actuator Selection

双作用执行器的选型 Double Acting Actuator Selection

在正常操作条件下，双作用执行器考虑的安全系数为20%–30%。

示例：

- 矩=100N.m
- 安全力矩=100 × (1+30%)=130N.m
- 气源压力=5Bar

对照双作用力矩表，选配双作用执行器最小规格为BL-GTD105

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 BL-GTD105

单作用执行器的选型 Single Acting Actuator Selection

在正常条件下单作用执行器考虑的安全系数为30%–50%。

例如：

- 阀门需要力矩=80N.m
- 安全力矩=80(1+30%)=104N.m
- 气源压力=5Bar

对照单作用执行器输出力矩表，我们可以查到BL-GTE140K7输出力矩为
空气行程0° =308N.m
空气行程90° =247N.m
弹簧行程90° =181N.m
弹簧行程0° =120N.m
所有输出力矩均大于我们需求。

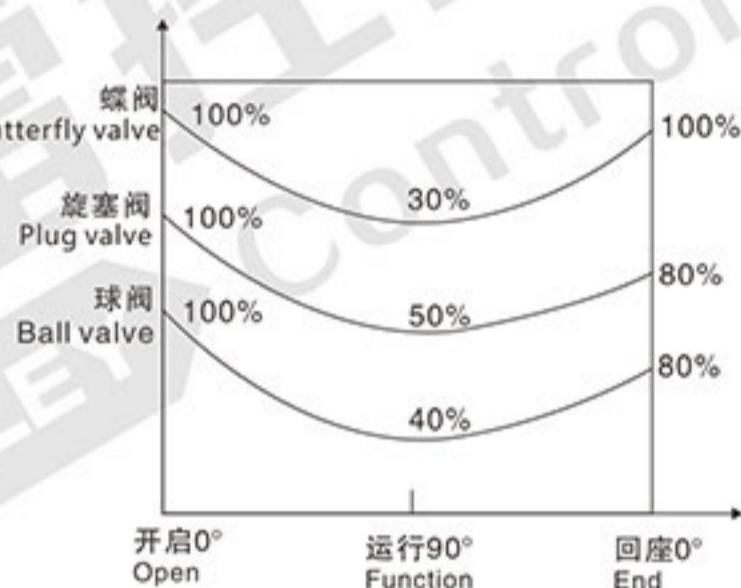
Under normal operation condition, single acting actuator consider safety factor 30%–50%, for example:

- 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 BL-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.



单作用执行器的经济选型

在单作用执行器的选配过程中，如果能够了解阀门在开启、运行和关闭时的扭矩分配，我们就可以更加经济、更加合理地选配执行器。

- 例如：蝶阀原最大扭矩=104N.m
- 打开后扭矩104x 30%=32N.m
- 气源压力=5Bar

我们可以选择BL-ATE130Kg

- 空气行程0° =183N.m>104N.m
- 空气行程90° =127N.m>32N.m
- 弹簧行程90° =169N.m>32N.m
- 弹簧行程0° =113N.m>104N.m

以上数据显示可以满足该蝶阀的正常启闭。

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 BL-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.

订货须知 Ordering Instructions

内容 Content	系列 Series	作用形式 Action form	规格 Specifications	弹簧数量 Spring quantity	行程角度 Travel angle	产品代码 Product code
BL	GT	D	52	K10	90°	BL-GTD52-K10

GT
AT

D	双作用 Double action
E	单作用 Single action

52
63
75
.....

K8
K9
K10
.....

90°
120°
135°
180°



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