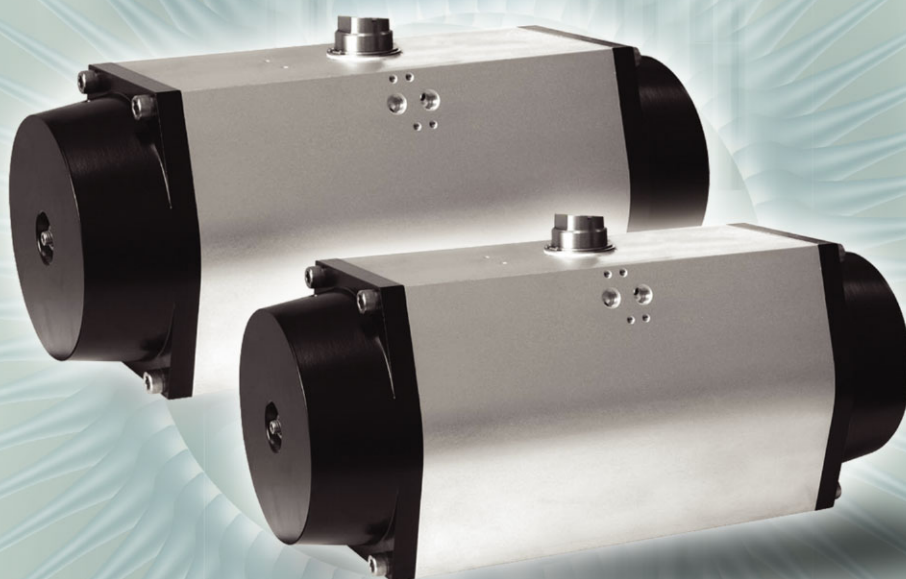




气动执行器

Pneumatic Actuators



VALVE AUTOMATION

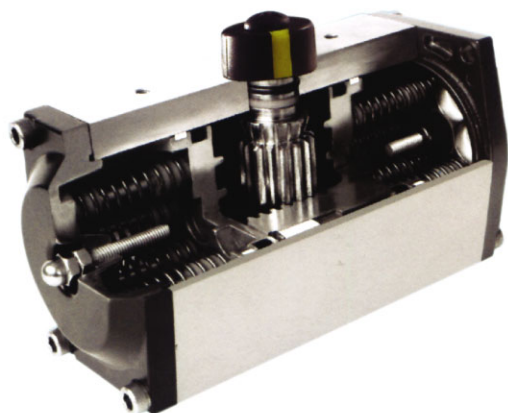
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No.1 性能、结构和设计特点

GT系列气动执行器综合了国际最新材料技术、精密加工技术、工业美术设计技术。经过设计、开发、测试、生产和工程运用，该系列执行器具有运行可靠、工作寿命长、可调范围大、防腐性能高、规格多、选型灵活、经济实惠等优点。

GT Series Pneumatic Actuators incorporate latest mechanical technology, materials available, through designing, developing, testing and engineering application, we have obtained a high grade product with the characteristics of reliability, high performance, long cycle life, large adjustment, highest levels of corrosion protection, wide selection of model with easy and economy.



GT系列气动执行器的设计特点

Designing features of GT Series Pneumatic Actuator

- 挤压铝质 (ASTM6005) 缸体，内表面细磨精加工，内部和外部均采用高级防腐技术，气缸磨擦系数小，使用寿命长，抗腐蚀性能强。
- 双活塞齿轮齿条式设计，结构紧凑，安装位置对称，改变输出轴转向方便，使用寿命长，动作迅速。
- 活塞齿条背面装有复合轴承及导向环，动作精确、磨擦系数小、使用寿命延长。
- 组合式预负荷镀层弹簧，工作寿命长。
- 高精度齿轮和齿条，啮合间隙小、精度高，输出功率大。不锈钢紧固件，安全美观，抗腐蚀性强。
- 采用国际规范尺寸：输出轴槽、螺孔；顶部安装孔尺寸符合NAMUR标准；气源接口尺寸符合NAMUR标准；底部安装孔尺寸符合ISO5211、DIN3337标准，方便安装电磁阀、限位开关等附件。
- Extruded aluminum ASTM6005 body with both internal and external corrosion protection having honed cylinder surface for longer life and low coefficient of friction.
- Dual piston rack and pinion design for compact construction, symmetric mounting position, high-cycle life and fast operation, reverse rotation can be accomplished in the field by simply inverting the pistons.
- Multiple bearings and guides on racks and pistons, low friction, high cycle life and prevent shaft blowout. Modular preloaded spring cartridge design, with coated spring for simple versatile range, greater safety and corrosion resistance, longer cycle life.
- Fully machined teeth on piston and pinion for accurate low backlash rack and pinion engagement, maximum efficiency. Stainless steel fasteners for long term corrosion resistance.
- Full conformance to the latest specifications; ISO5211, DIN 3337 and Namur or product interchangeability and easy mounting of solenoids, limit switches and other accessories.



No.2 工作技术条件/耗气量/重量

工作技术条件 Operating conditions

- 1.使用介质：压缩空气、无腐蚀性气体和油；
- 2.压力范围：双作用2~8巴（Bar），单作用2~8巴（Bar）
- 3.工作温度：标准型（使用丁腈橡胶O型圈）-20℃~+80℃
低温型（使用硅橡胶O型圈）-40℃~+80℃
高温型（使用氟橡胶O型圈）-20℃~+150℃
- 4.行程调整：在90°位置有±4°的可调范围；
- 5.润 滑：在正常工作条件下，不需添加润滑剂；
- 6.安 装：适合室内或室外安装；
- 7.最高使用压力：输入气压不超过10巴。

1. Operating media: Dry or lubricated air, the non-corrosive gases or oil
2. Air supply pressure: Double acting: 2~8 Bar, Spring return: 2~8 Bar
3. Operating temperature: Standard: -20℃~+80℃
Low temperature: -40℃~+80℃
High temperature: -20℃~+150℃
4. Travel adjustment: Have adjustant range of ±4° for the rotation at 90°
5. Lubrication: Under normal operating condition, need not accrete lubricant
6. Application: Either indoor or outdoor
7. Highest pressure: The maximum input pressure is 10 Bar



耗气量计算 Air Consumption

开向体积和关向体积 Air volume opening & closing

Unit: L

Model 型号	Volume opening 开向体积(升)	Volume closing 关向体积(升)
GT-32DA	0.04	0.04
GT-45DA	0.08	0.11
GT-52DA	0.11	0.14
GT-63DA	0.20	0.23
GT-75DA	0.29	0.38
GT-83DA	0.41	0.55
GT-92DA	0.62	0.91
GT-105DA	0.94	1.18
GT-125DA	1.47	1.85
GT-140DA	2.43	3.20

Model 型号	Volume opening 开向体积(升)	Volume closing 关向体积(升)
GT-160DA	3.65	5.03
GT-190DA	5.9	7.9
GT-210DA	7.4	9.7
GT-240DA	10.7	14.3
GT-270DA	16.9	22.5
GT-300DA	23.8	29.7
GT-350DA	35.1	46.3
GT-400DA	52.6	36
GT-500DA	132.6	110
GT-600DA	252.5	210

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

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：

$L/Min = \text{Air volume}(\text{Air volume Opening} + \text{Air volume closing})$

$\times [(\text{Air Supply(Kpa)} + 101.3) \div 101.3] \times \text{Action cycle times (/min)}$

升/分=气缸体积（开向体积+关向体积）×[(供气压力（Kpa）+101.3）÷101.3]×次数/分钟



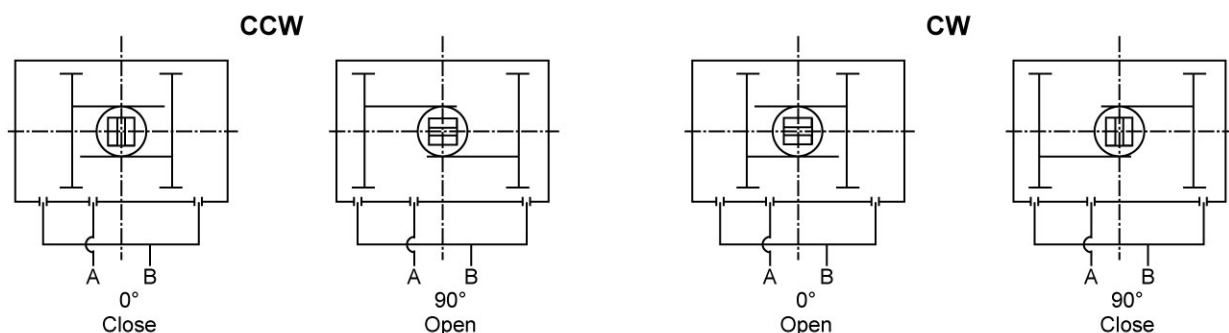
重量表 Weight table (kg)

型号Model	GT-32	GT-45	GT-52	GT-63	GT-75	GT-83	GT-92	GT-105	GT-125	GT-140
Weight(SR)	-	1.12	1.23	1.95	2.43	3.15	5.05	6.95	9.25	15.30
Weight(DA)	0.75	1.05	1.10	1.80	2.16	2.85	4.30	6.15	8.80	12.15
型号Model	GT-160	GT-190	GT-210	GT-240	GT-270	GT-300	GT-350	GT-400	GT-500	GT-600
Weight(SR)	23.80	44.80	53.60	76.80	115.00	130.00	234.40	360.40	1110.00	2130.00
Weight(DA)	20.10	38.10	45.10	63.00	93.80	110.00	186.50	289.00	980.40	1975.00

No.3 工作原理

工作原理 Operating Principle

双作用执行器 Double Acting Actuators



A口进气，压缩空气推动活塞向外运动，使执行器输出轴逆时针旋转（0-90°），B口排气。
B口进气，压缩空气推动活塞向内运动，使执行器输出轴顺时针旋转（90-0°），A口排气。

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

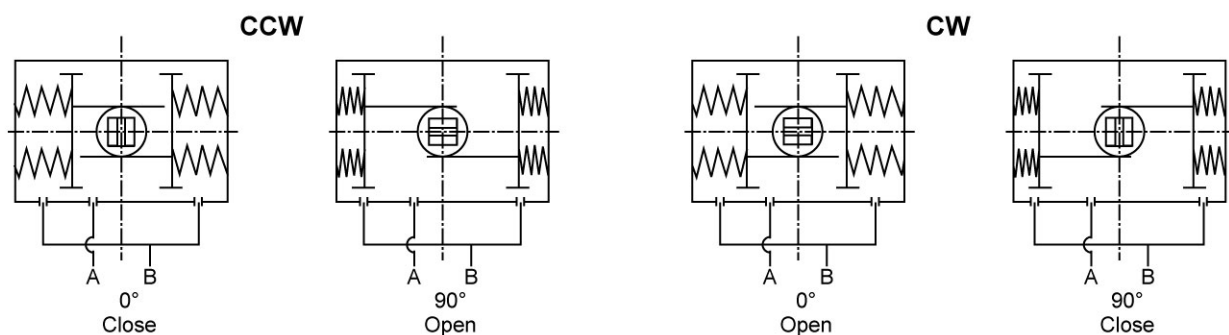
Air to Port B forces the pistons inwards, causing the pinion to turn clockwise while the air is being exhausted from Port A.

A口进气，压缩空气推动活塞向外运动，使执行器输出轴顺时针旋转（90-0°），B口排气。
B口进气，压缩空气推动活塞向内运动，使执行器输出轴逆时针旋转（0-90°），A口排气。

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.

单作用执行器 Spring Return Actuators



A口进气，压缩空气克服弹簧力，推动活塞向外运动，执行器输出轴逆时针转动（0-90°），B口排气；
执行器失气，活塞在弹簧力的作用下向内运动，执行器输出轴顺时针转动（90-0°），A口排气。

Air to Port A forces the pistons outwards, causing the springs to compress. The pinion turns counterclockwise while air is being exhausted from port B.

Loss of air pressure on port A, the stored energy in the springs forces the pistons inwards. The pinion turns clockwise while air is being exhausted from port A.

A口进气，压缩空气克服弹簧力，推动活塞向外运动，执行器输出轴顺时针转动（90-0°），B口排气；
执行器失气，活塞在弹簧力的作用下向内运动，执行器输出轴逆时针转动（0-90°），A口排气。

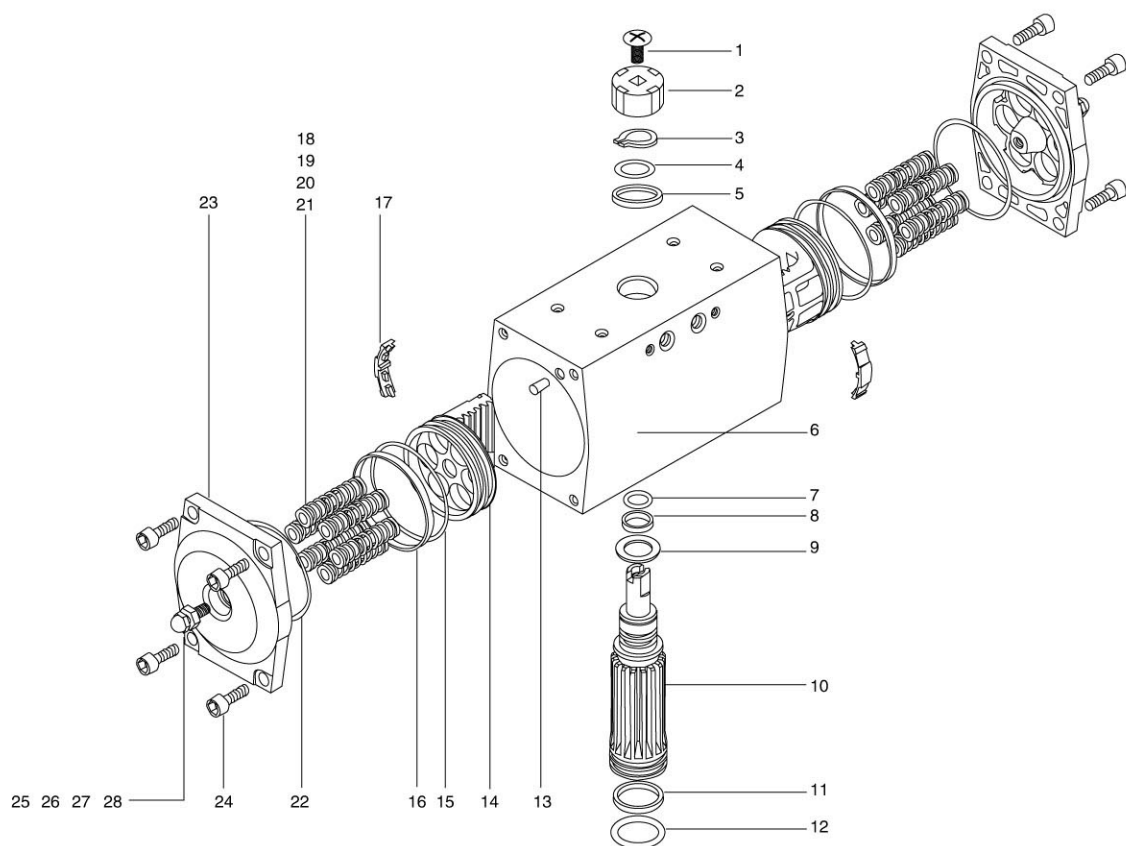
Air to Port B forces the pistons outwards, causing the springs to compress. The pinion turns counterclockwise while air is being exhausted from port B.

Loss of air pressure on port A, the stored energy in the springs forces the pistons inwards. The pinion turns clockwise while air is being exhausted from port A.

No.4 装配、零件和材料

GT系列气动执行器零件、材料一览表

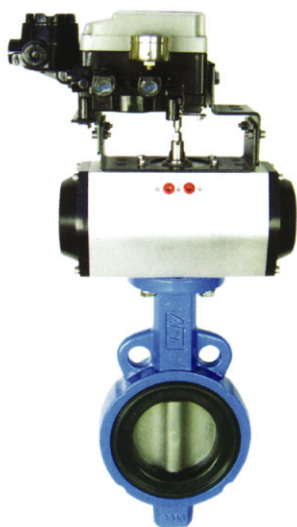
GT Series Actuators Parts and Material Table



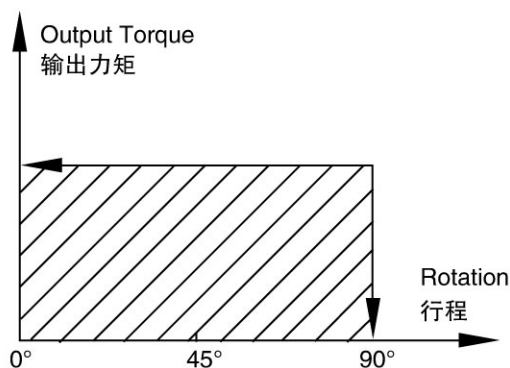
序号	名称	数量	材料
1	指示器螺钉	1	塑料
2	指示器	1	塑料
3	弹性挡圈	1	不锈钢
4	垫片	1	不锈钢
5	外垫片	1	工程塑料
6	缸体	1	铝合金
7	上轴"O"型圈	1	氟橡胶、丁腈橡胶
8	上轴支承圈	1	工程塑料
9	内垫片	1	工程塑料
10	轴	1	合金钢
11	下轴支承圈	1	工程塑料
12	下轴"O"型圈	1	氟橡胶、丁腈橡胶
13	塞头	2	橡胶
14	活塞	2	压铸铝/铸钢
15	活塞"O"型圈	2	氟橡胶、丁腈橡胶
16	活塞支承圈	2	工程塑料
17	活塞导板	2	尼龙66
18	弹簧	*	弹簧钢
19	弹簧左套	*	尼龙66
20	弹簧右套	*	尼龙66
21	弹簧套连杆	*	铜
22	端盖"O"型圈	2	氟橡胶、丁腈橡胶
23	端盖	2	压铸铝合金
24	端盖紧固螺杆	8	不锈钢
25	调节螺杆	2	不锈钢
26	调节螺杆螺帽	2	不锈钢
27	调节螺杆垫圈	2	不锈钢
28	调节螺杆"O"型圈	2	氟橡胶、丁腈橡胶

No.	Description	Qty	Standards Material
1	Indicator Screw	1	Plastic
2	Indicator	1	Plastic
3	Snap Ring	1	Stainless steel
4	Washer	1	Stainless steel
5	Outside Washer	1	Engineering plastics
6	Body	1	Alluminum Alloy
7	O-ring(Top)	1	Viton/NBR
8	Bearing Top	1	Plastic
9	Inside Washer	1	Plastic
10	Pinion	1	Nickel-plated steel
11	Bearing Bottom	1	Alloy steel
12	O-ring Bottom	1	Viton/NBR
13	Plug	2	NBR
14	Piston	2	Die-casting alluminum/steel
15	Piston O-ring	2	Viton/NBR
16	Piston Bearing	2	Plastic
17	Guide Piston	2	Nylon 66
18	Spring	*	Spring steel
19	Spring Retainer(L)	*	Nylon 66
20	Spring Retainer(R)	*	Nylon 66
21	Retainer Connector	*	Brass
22	End-Cap O-ring	2	Viton/NBR
23	End-Cap	2	Die-casting alluminum
24	End-Cap Stop Screw	8	Stainless steel
25	Adjust Screw	2	Stainless steel
26	Adjust Screw Nut	2	Stainless steel
27	Adjust Screw Washer	2	Stainless steel
28	Adjust Screw O-ring	2	Viton/NBR

No.5 输出扭矩



双作用执行器输出力矩
OUTPUT TORQUE OF DOUBLE
ACTING ACTUATORS



GT系列双作用气动执行器输出扭矩(单位: 牛米)

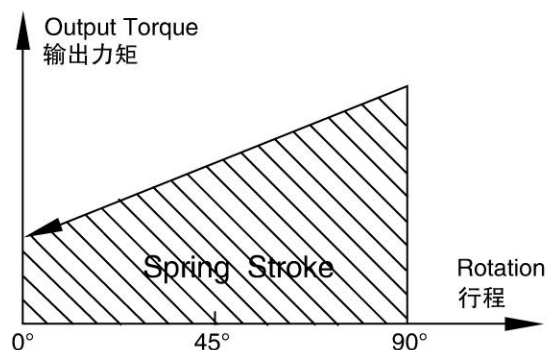
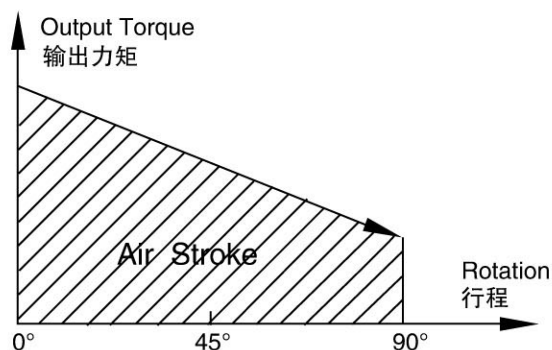
OUTPUT TORQUE OF GT SERIES PNEUMATIC ACTUATOR WITH DOUBLE ACTING (Unit: NM)

规格(Model)	气源压力(巴) (Air pressure (Bar))									
	2	2.5	3	4	4.5	5	5.5	6	7	8
GT-32DA	3.1	3.8	4.6	6.1	6.9	7.6	8.4	9.2	10.7	12.2
GT-45DA	6.0	7.6	9.1	12.1	13.6	15.1	16.6	18.1	21.1	24.2
GT-52DA	8.1	10.1	12.1	16.1	18.1	20.2	22.2	24.2	28.2	32.3
GT-63DA	14.2	17.8	21.3	28.4	32.0	35.5	39.1	42.6	49.7	56.8
GT-75DA	20.1	25.2	30.2	40.3	45.3	50.3	55.4	60.4	70.5	80.5
GT-83DA	30.8	38.5	46.2	61.6	69.4	77.1	84.8	92.5	107.9	123.3
GT-92DA	45.4	56.8	68.2	90.9	102.3	113.6	125.0	136.3	159.1	181.8
GT-105DA	65.8	82.2	98.7	131.6	148.0	164.4	180.9	197.3	230.2	263.1
GT-125DA	103	128	154	205	231	256	282	308	359	410
GT-140DA	175	219	263	351	395	439	482	526	614	702
GT-160DA	267	334	401	535	601	668	735	802	935	1069
GT-190DA	431	538	646	861	969	1077	1185	1292	1508	1723
GT-210DA	526	658	789	1052	1184	1316	1447	1579	1842	2105
GT-240DA	773	966	1160	1546	1740	1933	2126	2320	2706	3093
GT-270DA	1174	1468	1761	2349	2642	2936	3229	3523	4110	4697
GT-300DA	1526	1908	2289	3052	3434	3815	4197	4578	5341	6104
GT-350DA	2285	2856	3427	4570	5141	5712	6283	6854	7997	9139
GT-400DA	3256	4069	4883	6511	7325	8139	8953	9767	11394	13022
GT-500DA	8478	10598	12717	16956	19076	21195	23315	25434	29673	33912
GT-600DA	16278	20347	24417	32556	36625	40694	44764	48833	56972	65111

No.5 输出扭矩

单作用执行器输出力矩

OUTPUT TORQUE OF SPRING RETURN ACTUATORS



GT系列单作用气动执行器输出扭矩(单位: 牛米)

OUTPUT TORQUE OF GT SERIES PNEUMATIC ACTUATOR WITH SPRING RETURN (Unit: NM)

规格(Model)	弹簧根数 (Spring Q.ty)	气源压力(巴) (Air pressure (Bar))																	
		2		2.5		3		4		5		6		7		8		弹簧输出扭矩 (Spring s'output)	
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°
GT-45SR	5	3.0	1.2	4.6	2.8													4.6	2.9
	6	2.3	0.2	3.9	1.8	5.4	3.3											5.5	3.5
	7			3.3	0.8	4.8	2.3	7.8	5.3									6.5	4.1
	8					4.2	1.3	7.2	4.3	10.2	7.3							7.4	4.6
	9							6.6	3.4	9.6	6.4	12.6	9.4					8.3	5.2
	10							6.0	2.4	9.0	5.4	12.0	8.4	15.0	11.4	18.1	14.5	9.2	5.8
	11									8.4	4.4	11.4	7.4	14.4	10.4	17.5	13.5	10.1	6.4
	12									7.8	3.5	10.8	6.5	13.8	9.5	16.9	12.6	11.1	7.0
GT-52SR	5	3.7	1.6	5.7	3.6													6.2	4.2
	6	2.8	0.3	4.8	2.3	6.8	4.3											7.4	5.1
	7			3.9	1.0	5.9	3.0	9.9	7.0									8.6	5.9
	8					5.0	1.7	9.0	5.7	13.1	9.8							9.9	6.8
	9							8.1	4.4	12.2	8.5	16.2	12.5					11.1	7.6
	10							7.2	3.1	11.3	7.2	15.3	11.2	19.3	15.2	23.4	19.3	12.4	8.5
	11									10.4	5.9	14.4	9.9	18.4	13.9	22.5	18.0	13.6	9.3
	12									9.5	4.6	13.5	8.6	17.5	12.6	21.6	16.7	14.8	10.1
GT-63SR	5	7.0	3.2	10.6	6.8													10.4	6.8
	6	5.6	1.0	9.2	4.6	12.7	8.1											12.5	8.2
	7			7.7	2.4	11.2	5.9	18.3	13.0									14.6	9.6
	8					9.8	3.7	16.9	10.8	24.0	17.9							16.7	10.9
	9							15.4	8.6	22.5	15.7	29.6	22.8					18.8	12.3
	10							14.0	6.4	21.1	13.5	28.2	20.6	35.3	27.7	42.4	34.8	20.9	13.7
	11									19.7	11.3	26.8	18.4	33.9	25.5	41.0	32.6	22.9	15.0
	12									18.2	9.1	25.3	16.2	32.4	23.3	39.5	30.4	25.0	16.4
GT-75SR	5	9.0	4.9	14.1	10.0													14.5	10.5
	6	6.8	1.8	11.9	6.9	16.9	11.9											17.4	12.7
	7			9.7	3.9	14.7	8.9	24.8	19.0									20.3	14.8
	8					12.4	5.8	22.5	15.9	32.5	25.9							23.2	16.9
	9							20.3	12.9	30.3	22.9	40.4	33.0					26.1	19.0
	10							18.1	9.8	28.1	19.8	38.2	29.9	48.3	40.0	58.3	50.0	29.0	21.1
	11									25.9	16.8	36.0	26.9	46.1	37.0	56.1	47.0	31.9	23.2
	12									23.7	13.7	33.8	23.8	43.9	33.9	53.9	43.9	34.7	25.3
GT-83SR	5	14.2	6.6	21.9	14.3													23.0	15.8
	6	10.8	1.7	18.5	9.4	26.2	17.1											27.6	19.0
	7			15.2	4.6	22.9	12.3	38.3	27.7									32.2	22.1
	8					19.6	7.4	35.0	22.8	50.5	38.3							36.8	25.3
	9							31.6	18.0	47.1	33.5	62.5	48.9					41.4	28.5
	10							28.3	13.2	43.8	28.7	59.2	44.1	74.6	59.5	90.0	74.9	46.0	31.6
	11									40.5	23.8	55.9	39.2	71.3	54.6	86.7	70.0	50.6	34.8
	12									37.1	19.0	52.5	34.4	67.9	49.8	83.3	65.2	55.2	38.0

No.5 输出扭矩

GT系列单作用气动执行器输出扭矩(单位: 牛米)
OUTPUT TORQUE OF GT SERIES PNEUMATIC ACTUATOR WITH SPRING RETURN (Unit: NM)

规格(Model)	弹簧根数 (Spring Q.ty)	气源压力(巴) (Air pressure (Bar))																		弹簧输出扭矩 (Spring s'output)	
		2		2.5		3		4		5		6		7		8					
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°				
GT-92SR	5	20.8	9.2	32.2	20.6														34.4	23.3	
	6	15.9	2.0	27.3	13.4	38.7	24.8												41.2	28.0	
	7			22.4	6.1	33.8	17.5	56.5	40.2										48.1	32.7	
	8					28.9	10.3	51.6	33.0	74.3	55.7								55.0	37.3	
	9							46.7	25.8	69.4	48.5	92.1	71.2						61.9	42.0	
	10							41.8	18.5	64.5	41.2	87.2	63.9	110.0	86.7	132.7	109.4	68.7	46.1		
	11									59.5	34.0	82.2	56.7	105.0	79.5	127.7	102.2	75.6	51.4		
	12									54.6	26.8	77.3	49.5	100.1	72.3	122.8	95.0	82.5	56.0		
GT-105SR	5	32.5	14.0	48.9	30.4														49.2	31.6	
	6	25.8	3.6	42.2	20.0	58.7	36.5												59.1	38.0	
	7			35.6	9.7	52.1	26.2	85.0	59.1										68.9	44.3	
	8					45.4	15.8	78.3	48.7	111.1	81.5								78.7	50.6	
	9							71.7	38.4	104.5	71.2	137.4	104.1						88.6	56.9	
	10							65.0	28.0	97.8	60.8	130.7	93.7	163.6	126.6	196.5	159.5	98.4	63.3		
	11									91.1	50.4	124.0	83.3	156.9	116.2	189.8	149.1	108.3	69.6		
	12									84.5	40.1	117.4	73.0	150.3	105.9	183.2	138.8	118.1	75.9		
GT-125SR	5	47.9	20.5	72.9	45.5														78.4	52.4	
	6	36.9	4.0	61.9	29.0	87.9	55.0												94.1	62.8	
	7			50.8	12.5	76.8	38.5	127.8	89.5										109.7	73.3	
	8					65.8	22.0	116.8	73.0	167.8	124.0								125.4	83.8	
	9							105.8	56.5	156.8	107.5	208.8	159.5						141.1	94.2	
	10							94.8	40.0	145.8	91.0	197.8	143.0	248.8	194.0	299.8	245.0	156.8	104.7		
	11									134.8	74.5	186.8	126.5	237.8	177.5	288.8	228.5	172.4	115.2		
	12									123.7	58.0	175.7	110.0	226.7	161.0	277.7	212.0	188.1	125.7		
GT-140SR	5	84.7	39.3	128.7	83.3														129.0	85.8	
	6	66.6	12.1	110.6	56.1	154.6	100.1												154.8	102.9	
	7			92.6	29.0	136.6	73.0	224.6	161.0										180.5	120.1	
	8					118.5	45.8	206.5	133.8	294.5	221.8								206.3	137.3	
	9							188.5	106.7	276.5	194.7	363.5	281.7						232.1	154.4	
	10							170.4	79.5	258.4	167.5	345.4	254.5	433.4	342.5	521.4	430.5	257.9	171.6		
	11									240.3	140.4	327.3	227.4	415.3	315.4	503.3	403.4	283.7	188.7		
	12									222.3	113.2	309.3	200.2	397.3	288.2	485.3	376.2	309.5	205.9		
GT-160SR	5	120.0	47.7	187.0	114.7														208.3	139.7	
	6	90.6	3.9	157.6	70.9	224.6	137.9												250	168	
	7			128.2	27.0	195.2	94.0	329.2	228.0										292	196	
	8					165.8	50.2	299.8	184.2	432.8	317.2								333	223	
	9							270.4	140.3	403.4	273.3	353.7	440.3						375	251	
	10							241.0	96.4	374.0	229.5	508.0	363.5	641.0	496.5	775.0	630.5	417	279		
	11									344.6	185.6	478.6	319.6	611.6	452.6	745.6	586.6	458	307		
	12									315.2	141.7	449.2	275.7	582.2	408.7	716.2	542.7	500	335		
GT-190SR	5	220	105	327	212														293	190	
	6	178	40	285	147	393	255												352	227	
	7			243	82	351	190	566	405										410	265	
	8					309	125	524	340	740	556								469	303	
	9							482	275	698	491	913	706						527	341	
	10							440	210	656	426	871	641	1087	857	1302	1072	586	379		
	11									614	361	829	576	1045	792	1260	1007	645	417		
	12									572	296	787	511	1003	727	1218	942	703	455		
GT-210SR	5	237	126	369	258														360	260	
	6	179	46	311	178	442	309												432	313	
	7			253	99	384	230	647	493										503	365	
	8					326	150	589	413	853	677								575	417	
	9							531	333	795	597	1058	860						647	469	
	10							473	253	737	517	1000	780	1263	1043	1526	1306	719	521		
	11									679	437	942	700	1205	963	1468	1226	791	573		
	12									621	357	884	620	1147	883	1410	1146	863	625		

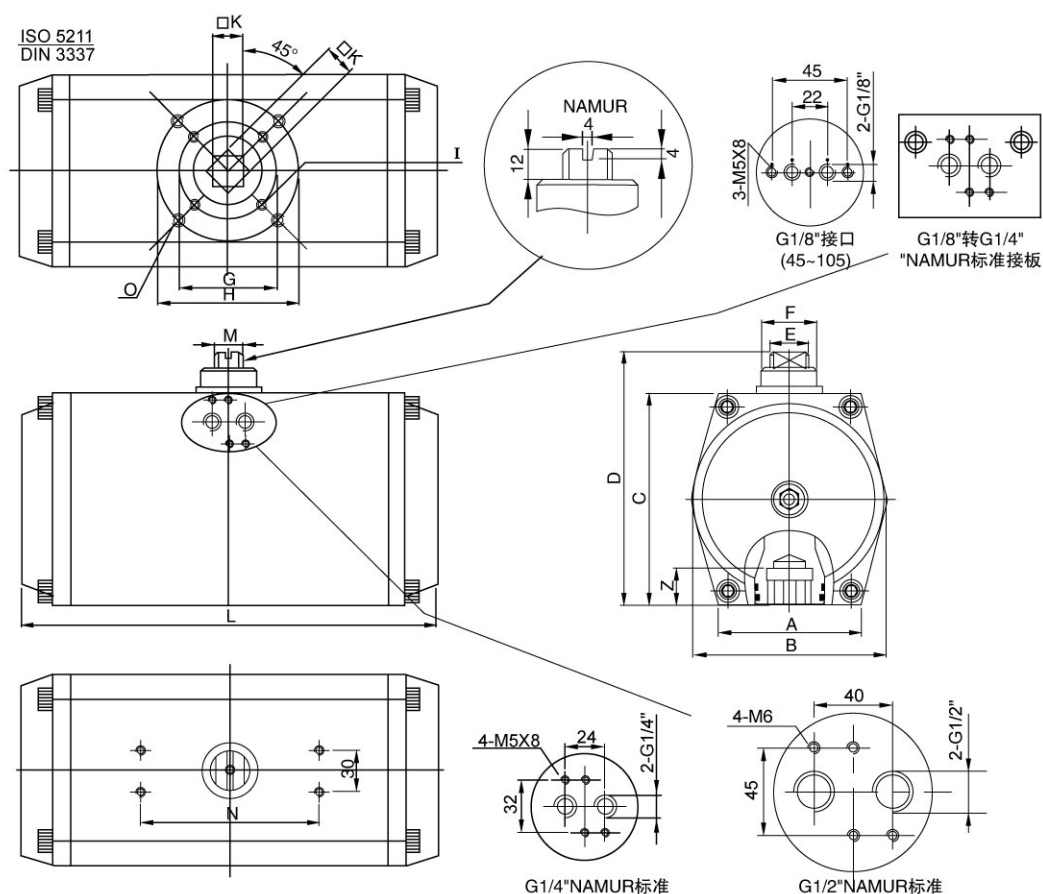
No.5 输出扭矩

GT系列单作用气动执行器输出扭矩(单位: 牛米)
OUTPUT TORQUE OF GT SERIES PNEUMATIC ACTUATOR WITH SPRING RETURN (Unit: NM)

规格(Model)	弹簧根数 (Spring Q.ty)	气源压力(巴) (Air pressure (Bar))																		
		2		2.5		3		4		5		6		7		8		弹簧输出扭矩 (Spring s' output)		
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°	
GT-240SR	5	341	190	534	383														525	389
	6	255	73	448	266	642	460												630	467
	7			361	150	555	344	941	730										735	544
	8					469	227	855	613	1242	1000								840	622
	9							768	496	1155	883	1542	1270						945	700
	10							682	380	1069	767	1456	1154	1842	1540	2229	1927	1050	778	
	11									983	650	1370	1037	1756	1423	2143	1810	1155	855	
	12									896	533	1283	920	1669	1306	2056	1693	1260	933	
GT-270SR	5	585	346	879	640														745	530
	6	467	181	761	475	1054	768												894	636
	7			644	309	937	602	1525	1190										1043	742
	8					819	437	1407	1025	1994	1612								1192	848
	9							1289	859	1876	1446	2463	2033						1341	954
	10							1171	694	1758	1281	2345	1868	2932	2455	3515	3042	1490	1060	
	11									1640	1115	2227	1702	2814	2289	3401	2876	1639	1166	
	12									1523	950	2110	1537	2697	2124	3284	2711	1788	1272	
GT-300SR	5	715	347	1097	729														1061	730
	6	553	112	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	
GT-350SR	5	982	393	1553	964														1702	1173
	6	721	15	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	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-400SR	7	1215	56	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	
GT-500SR	5	3909	1040	6029	3160														6546	4021
	6			5115	1672	7234	3791												8033	4825
	7			4201	185	6320	2304	10559	6543										9372	5629
	8					5407	816	9646	5055	13885	9294								10711	6433
	9							8732	3567	12971	7806	17210	12045						12050	7237
	10							7818	2080	12057	6319	16296	10558	20535	14797	24774	19036	13389	8041	
	11									11143	4831	15382	9070	19621	13309	23860	17548	14728	8846	
	12									10229	3343	14468	7582	18707	11821	22946	16060	16067	9650	
GT-600SR	4			10497	3966														14743	8668
	5					12105	3940												18429	10835
	6							17782	7984										22115	13001
	7							15319	3888	23457	12026								25801	15168
	8									20995	7931	29134	16070	37273	24209	45412	32348	29487	17335	

No.6 安装尺寸

GT系列执行器安装尺寸表 GT Series Actuator Dimension Table



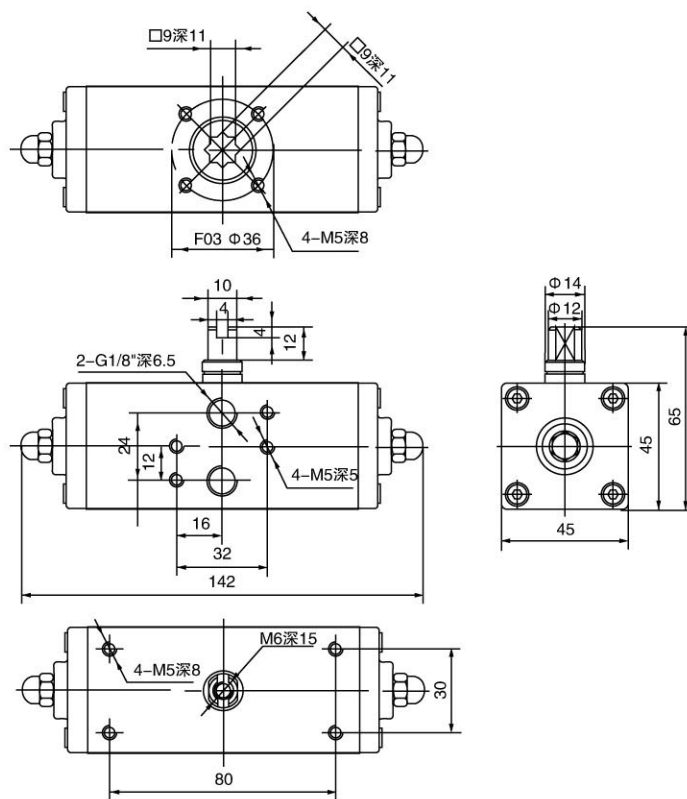
GT系列执行器安装尺寸表 GT Series Actuator Dimension Table

单位Unit: mm

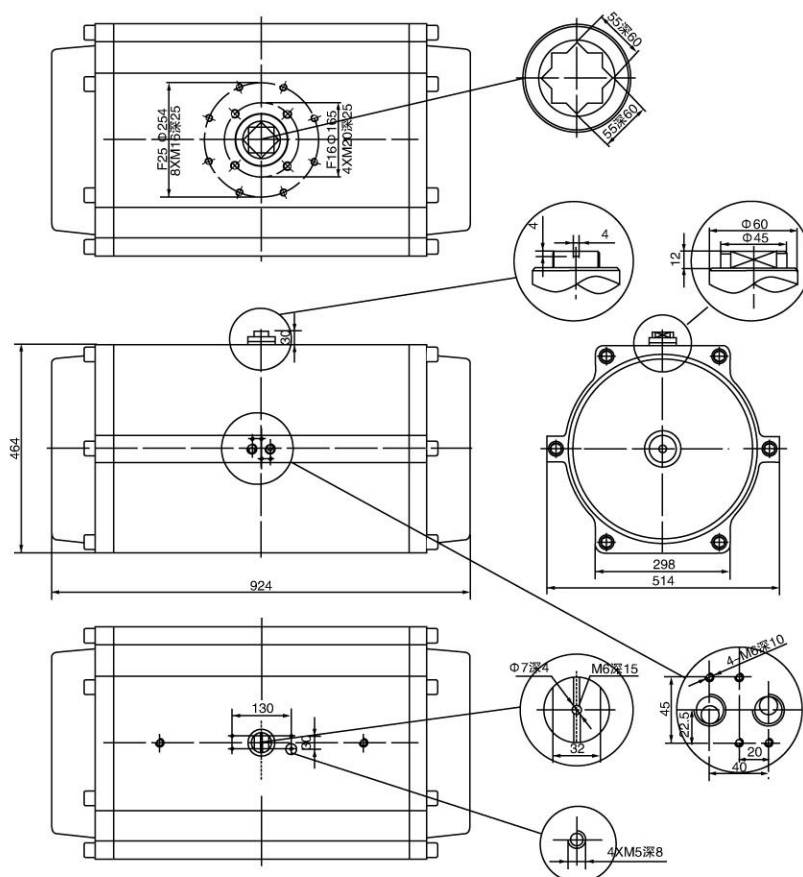
Model 型号	A	B	C	D	E	F	G	H	I	K	L	M	N	O	Z	Air Connection 接口螺纹
GT-45	48	58	65	95	12	14	φ 36	φ 50	M5X8	11	146	10	80	M6X10	14	1/8"G
GT-52	50	59	74	104	12	14	φ 36	φ 50	M5X8	11	146	10	80	M6X10	14	1/8"G
GT-63	60	72	88	118	12	18	φ 50	φ 70	M6X10	14	168	10	80	M8X13	18	1/8"G
GT-75	65	83	100	130	12	18	φ 50	φ 70	M6X10	14	184	10	80	M8X13	18	1/8"G
GT-83	67	90	109	139	14	18	φ 50	φ 70	M6X10	17	204	10	80	M8X13	21	1/8"G
GT-92	76	104	120	150	18	25	φ 50	φ 70	M6X10	17	260	14	80	M8X13	21	1/8"G
GT-105	90	115	133	163	20	25	φ 70	φ 102	M8X13	22	268	14	80	M10X16	26	1/8"G
GT-125	104	140	155	185	28	40	φ 70	φ 102	M8X13	22	298	20	130	M10X16	26	NAMUR1/4"G
GT-140	107	152	171.5	201.5	28	40	φ 102	φ 125	M10X16	27	390	20	130	M12X20	31	NAMUR1/4"G
GT-160	128	175.8	197	227	36	40	φ 102	φ 125	M10X16	27	458	28	130	M12X20	31	NAMUR1/4"G
GT-190	135	206	230	260	45	60		φ 140		36	525	32	130	M16X25	40	NAMUR1/4"G
GT-210	135	226	255	285	45	60		φ 140		36	532	32	130	M16X25	40	NAMUR1/4"G
GT-240	155	256	290	320	45	60		φ 165		46	602	32	130	M20X25	50	NAMUR1/4"G
GT-270	190	294	320	350	45	60		φ 165		46	722	32	130	M20X25	50	NAMUR1/2"G
GT-300	196	324	348	378	45	60		φ 165		46	742	32	130	M20X25	60	NAMUR1/2"G
GT-350	220	380	402	432	45	60		φ 165		46	860	32	130	M20X25	60	NAMUR1/2"G

No.6 安装尺寸

GT-32DA执行器

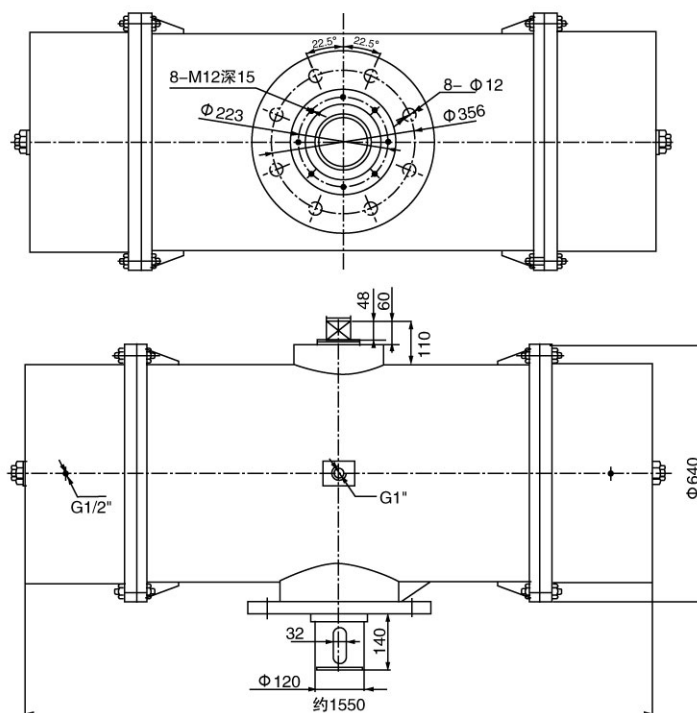


GT-400执行器

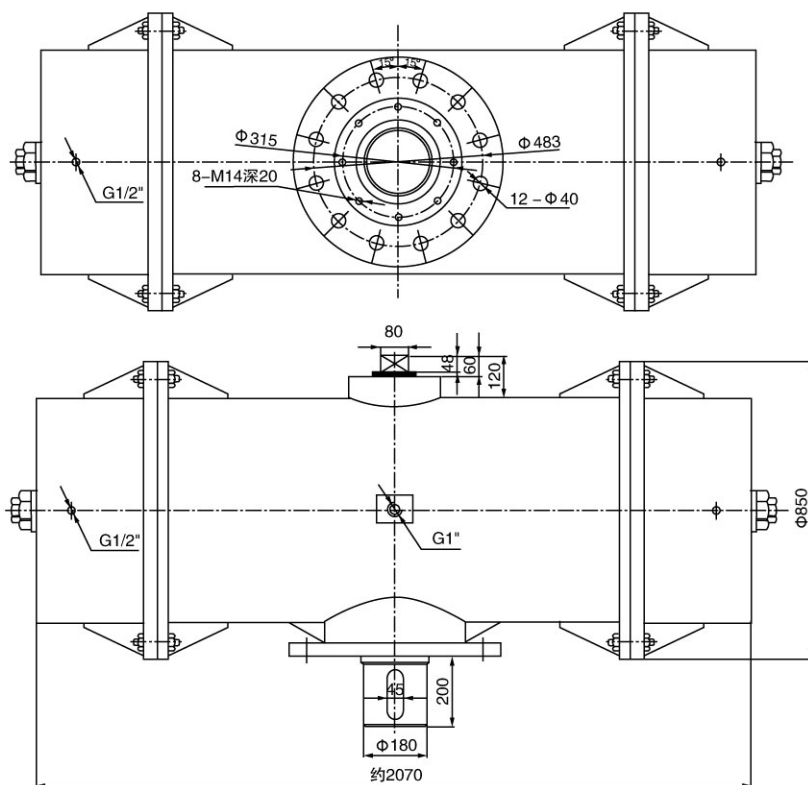


No.6 安装尺寸

GT-500执行器

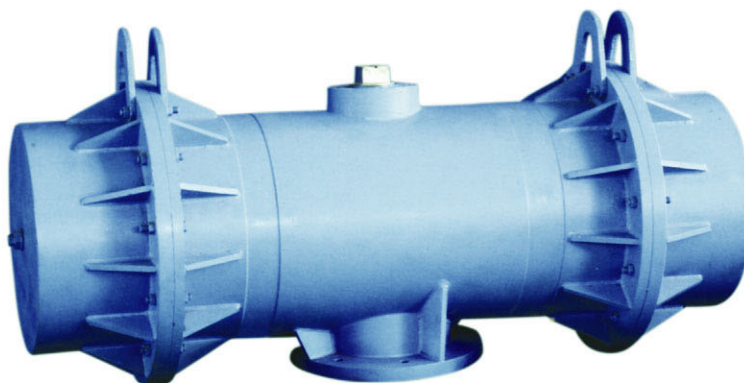


GT-600执行器



大规格气动执行器

大规格气动执行器在5巴压力下，输出的最大扭矩高达43000牛米，广泛应用于石油、化工、天然气和大型水利工程领域。大规格气动执行器的主要规格有GT-500DA (SR)，GT-600DA (SR)，执行器的三大件（缸体、活塞、齿轮轴）均采用优质碳素结构钢。

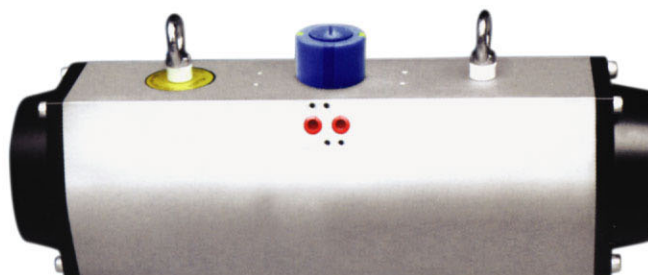


Large Specification GT Actuator provides an output torque up to 43000 Nm at 5 Bar supply air. This kind actuators are extensive used in the area of petroleum, chemical industry, natural gas and water conservancy project. The major models of Large Specification Actuator are GT-500DA(SR) and GT-600DA(SR). The body, pistons and pinion were made of high quality carbon steel insuring the high quality of actuator.

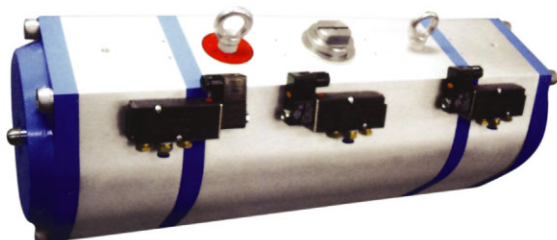
特殊行程气动执行器

为满足不同类型阀门及机械自动化的驱动要求，我司可根据客户要求定制不同行程（例60°、120°、145°、180°、360°等）的气动执行器。双作用特殊行程气动执行器的输出扭矩和安装尺寸可参照对应的标准系列执行器参数表。

In order to meet the special requirements of control valve we produced special strokes GT actuators on customer request (e.g. 60°, 120°, 145°, 180°, 360°etc.). The output torques and mounting Dimension of special strokes GT actuators with double acting can be found by consulting the relative tables of GT standard series actuators.



三位式气动执行器 Three Position Actuator



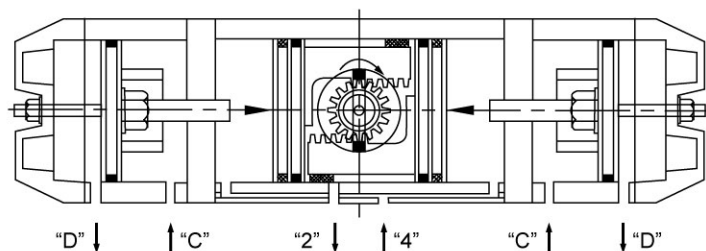
三位式气动执行器是一种特殊规格的执行机构，提供了 0° 、 45° 、 90° 或 0° 、 90° 、 180° 、的三位式操作方式。中间位置是依靠两个辅助活塞的移动产生的机械制动来实现的。中间位置是可调的。如 90° 行程的执行器能提供 20° 、 30° 、 50° 、 70° 等的中间位置。其工作原理如下：

Three position GT 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. Following is the principle of operation:

1. 全关位置。如图1所示，全闭位置是在气源同时进入4口，2口排出空气后实现的。

1. Fully Closed Position

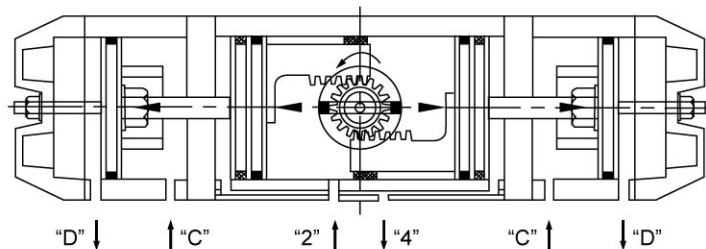
From chart 1 we can see that this position is obtained when air is supplied to port 4 and port 2 is in the state of exhaust air.



2. 全开位置。如图2所示，全开位置是在气源同时进入2口和C口，4口和D口排出空气后实现的。

2. Fully Open Position

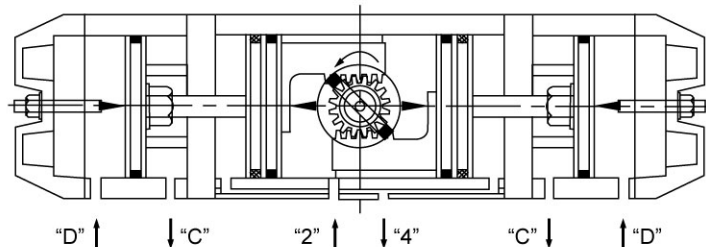
From chart 2 we can see that this position is obtained when air is supplied to port 2 and port C, meantime, port 4 and port D are in the state of exhaust air.



3. 中间位置。如图3所示，中间位置是在气源分别进入2口和D口，4口和C口排出空气后实现的。在实现中间位置的过程中，气源供到D口，迫使辅助活塞向中心移动，推杆作为机械限位使内部活塞在设定的中间位置停止。

3. Midway Position

From chart 2 we can see that this position is obtained when air is supplied to port 2 and port D, meantime, port 4 and port C are in the state of exhaust air. In fact that the midway position is achieved by a mechanical stop of movement on the two auxiliary pistons.



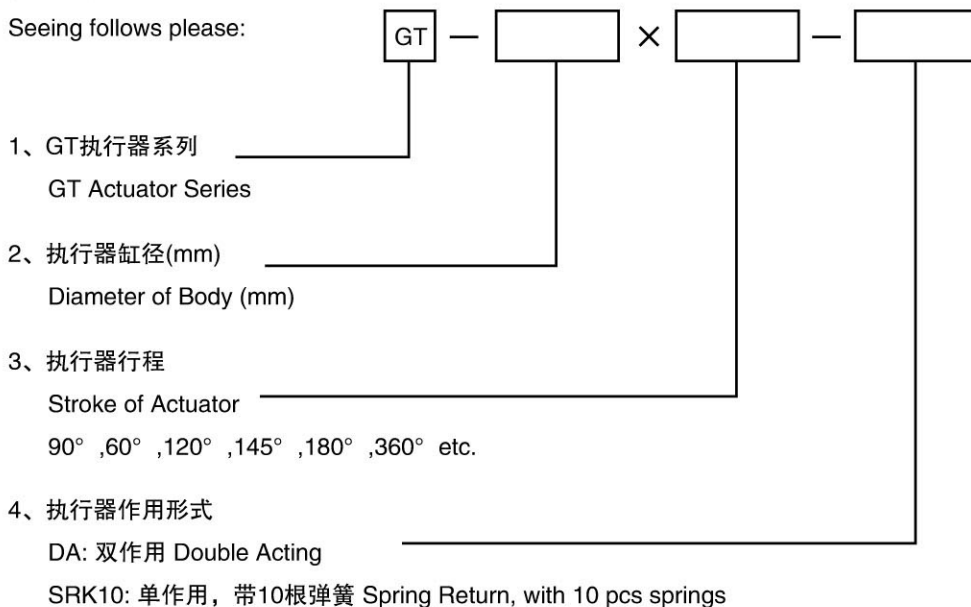
一、GT系列执行器的型号与规格

GT系列执行器的型号与规格表示方法共有四部分组成

There are four parts in the Model and specification of GT Series Actuators

如下图所示：

Seeing follows please:



例：Example: GT-92 × 90° SRK10

缸径92mm, 单作用执行器，带10根弹簧。

GT series Actuator, Spring Return type with 10 pcs springs, The diameter of body equal to 92mm.

二、双作用执行器的选型

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：

- 阀门力矩=100Nm
- 安全力矩=100 × (1+30%)=130Nm
- 气源压力=5Bar

双作用执行力矩表，选配双作用执行器最小规格为GT-105 × 90DA。

Sizing: Double Acting Actuators

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 GT-105 × 90DA.

三、单作用执行器的选型

在正常操作条件下，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%)=104Nm

气源压力=5Bar

对照单作用执行器输出力矩表，我们可以查到GT140 × 90SRK8输出力矩为

空气行程0° =294N.m

空气行程90° =221N.m

弹簧行程90° =206N.m

弹簧行程0° =137N.m

所有输出力矩均大于我们需求。

注意：

单作用执行器弹簧复位过程中，执行器B口通气不影响执行器输出力矩，相反帮助弹簧的复位。

四、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=104 × 30%=32Nm

气源压力=5Bar

我们可以选择GT-125 × 90° SRK11

空气行程0° =136N.m>104N.m

空气行程90° =78N.m>32N.m

弹簧行程90° =173N.m>32N.m

弹簧行程0° =115N.m>104N.m

以上数据显示可以满足该蝶阀的正常启闭。

Economical Sizing: Spring Return Actuators

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.

Sizing: 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%)=104N.m

Air Supply=5Bar

According to the table of spring return actuators' output, we find output torque of GT140 × 90SR K7 is:

Air stroke 0° =294N.m

Air stroke 90° =221N.m

Spring stroke 90° =206N.m

Spring stroke 0° =137N.m

All the output torque is larger than we needed.

Attention:

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.

Example:

The max torque needed by the butterfly valve=104N.m

The torque after opened (operating) 104 × 30%=32N.m

Air Supply=5Bar

We can select the GT-125 × 90° SRK11

output torque is:

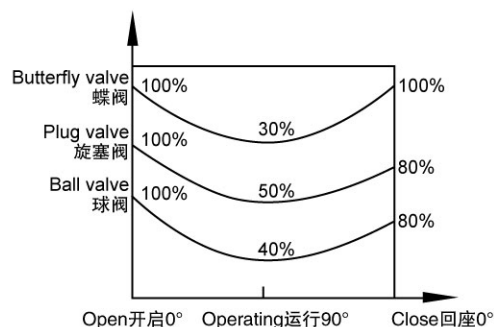
Air stroke 0° =136N.m>104N.m

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 actuators' torque can satisfy the requirement of the butterfly valve.



No.9 气动手轮机构

主要用途

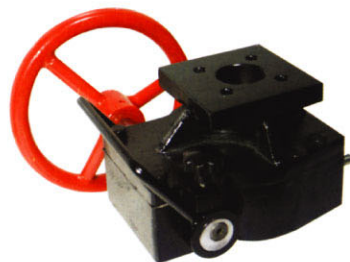
本减速器与气动装置联合使用，用于90° 开启的蝶阀、球阀、旋塞阀等，实现手动或气动驱动。

使用说明

1. 减速器底面与阀门连接，支架面与气缸连接，阀轴与蜗轮内孔配合穿过，阀轴端四方与气缸方孔配合；（工作过程：气动时，气缸带动阀轴，蜗轮同转。手动时，蜗杆与蜗轮啮合，带动阀轴转动，气缸活塞亦随动。）
2. 转动手柄（外转180°）在合上蜗杆时，会出现顶齿现象，需转动手轮一个角度即可合上；
3. 减速器的支架盖有三种，用户可根据需要选用，配置不同型号的气缸；
4. 气动与手动不能同时驱动。

特 点

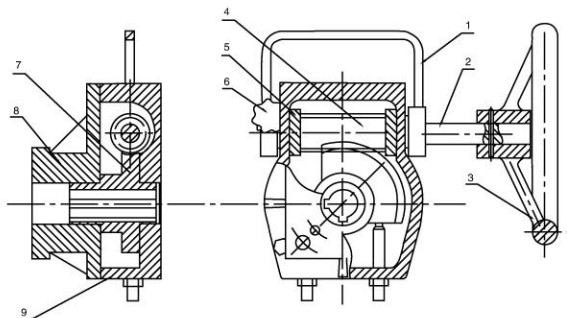
- 体积小、重量轻，设计合理、式样新颖；
- 产品系列化，输出转矩与气动装置，各种阀门匹配；
- 蜗轮连接内孔有相隔90° 的两个键槽，以使用户根据需要选择装置同阀体的相对位置；
- 转动手柄，旋转偏心装置180°，旋转限位螺母，实现气动；反之，实现手动；
- 产品出厂时，装有专用润滑脂，与阀装配后，整体密封、防尘、防水，防护等级为IP65。



No.	型号	速比	输入扭矩(Nm)	输出扭矩(Nm)	手轮直径(mm)	重量(Kg)
1	XLHJ26	26:1	70	300	φ200	7.3
2	XLHJ38	38:1	60	550	φ200	12
3	XLHJ54	54:1	120	1200	φ300	17
4	XLHJ80	80:1	140	2000	φ400	35
5	XLHJ78	78:1	200	3600	φ600	49
6	XLHJ98	98:1	300	9000	φ800	156
7	XLHJ100	100:1	400	13000	φ800	190
8	XLHJ118	118:1	900	22100	φ1000	540

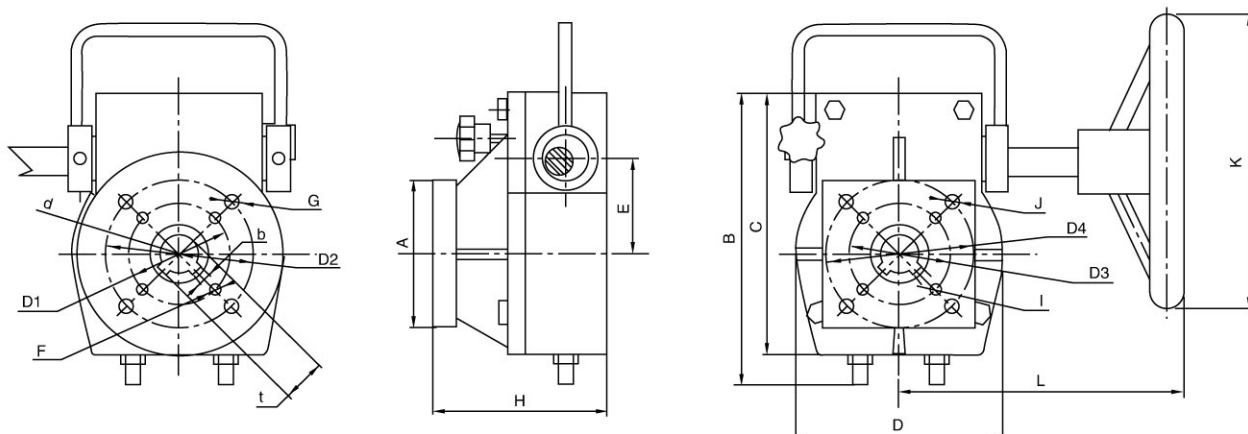
XLHJ系列手轮机构零件及材料

序号	名称	数量	材料	可选材质
1	手柄	1	Carbon steel	
2	蜗杆轴	1	45 GB699-88	
3	手轮	1	HT200 GB9439-88	WCB GB12229-88
4	蜗杆	1	45 GB699-88	
5	偏心套组件	1	Carbon steel	
6	限位组件	1	Carbon steel	
7	蜗轮	1	QT500-7 GB1348-88	
8	支架盖	1	HT200 GB9439-88	WCB GB12229-88
9	壳体	1	HT200 GB9439-88	WCB GB12229-88



No.9 气动手轮机构

XLHJ系列手轮机构连接尺寸及配量表



手轮型号	轴孔 d	键宽 b	键深 t	阀门连接孔		执行器连接孔			高 H	手轮 Φ	E	L	B	C	D	气动执行器型号
				D1/D2	4-M1	D3/D4	4-Φ2	支架面A								
XLHJ26	22	6	25.4	70	4-M8	70	4-Φ9	70	99	200	50.5	155	160	145	110	GT32~92
XLHJ38	26	8	29.3	70	4-M8	70	4-Φ9	100	117	200	65	195	195	175	140	GT83,92
	38	10	41.3	102	4-M10	102	4-Φ12	110								GT105,125
XLHJ54	38	10	41.3	125	4-M12	125	4-Φ14	130	118	300	85	205	235	215	180	GT140,160
	48	14	51.8	140	4-M16	140	4-Φ18	130								GT190DA,210DA
XLHJ80	48	14	51.8	140	4-M16	140	4-Φ18	156	148	400	124	245	320	298	250	GT190SR,210SR
	60	18	64.4	165	4-M20	165	4-Φ22	156								GT240DA
XLHJ78	60	18	64.4	165	4-M20	165	4-Φ22	220	150	600	142	265	360	340	285	GT240SR
	80	18	84.4													GT270, 300
XLHJ98	80	18	84.4	165	4-M20	165	4-Φ22	230	195	800	229	410	550	530	460	GT350, 400DA
XLHJ100	100	20	105.3	254	8-M16	254	8-Φ18	300	195	800	258	430	605	585	520	GT400SR
XLHJ118	120	32	129.3	356	8-M30	356	8-Φ32	Φ445	250	1000	391	550	900	870	800	GT500
XLHJ118G	120	32	196	483	12-M36	483	12-Φ40	Φ600	275	1000	390	600	1050	900	850	GT600

备注：GT32,45,52在安装手轮机构时需要加装连接板



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