



开拓进取 精益求精
Pioneering Excellence

无锡爱圣拓克流体控制有限公司
Ascend Torque Flow Controls Co., Ltd.

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Information contained herein, including the product specification is subject to change without notice.



AYO

系列拨叉式执行器

AYO SERIES
SCOTCH YOKE PNEUMATIC ACTUATORS

无锡爱圣拓克流体控制有限公司
Ascend Torque Flow Controls Co., Ltd.



打造执行器及阀门附件专业供应商

The Professional Provider of Actuators

爱圣拓克是中国较早研制、开发和生产齿轮齿条式气动执行器的工厂之一。经过近多年的改革与创新，爱圣拓克正向世界各地供应高质量的气动执行器和阀门控制产品。

为了给客户创造价值，爱圣拓克坚持不断改进并引进先进的生产工艺，严格控制产品质量。高精度的加工中心和专业的产品研发团队，为产品质量的可靠性、稳定性提供了有力保障，同时也保证了新产品研发的质量和效率。

公司本着“传承匠心，融合创新”的核心理念，竭诚为新老客户提供更周到的服务，更专业的技术，更卓越的产品。



关于我们

ABOUT US



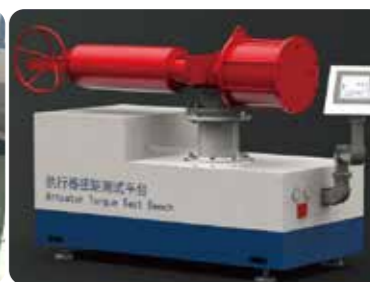
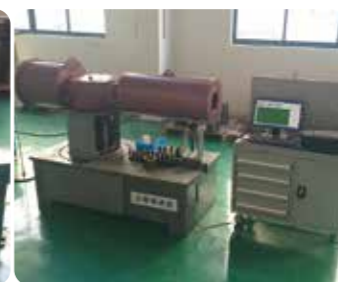
ASCEND TORQUE is a professional manufacturer of rack & pinion pneumatic actuator. With many years reform and innovation, ASCEND TORQUE is supplying the high-quality pneumatic actuators and other valve control products to all over the world.

To create customer value, **ASCEND TORQUE** continues to improve and introduce advanced production technology and strict control of product quality all the time. The world class production equipment and professional engineering team provides strong guarantee for the reliability and stability of product quality, and also for the quality and efficiency of researching and developing new products.

ASCEND TORQUE will offer all of our new and regular customers more attentive service, more professional technology and more excellent products.



二十年的行业经验 一站式的产品和服务
Twenty years experience "one-stop" goods and services





Structural Features

结构特点

Design and Construction 设计和结构

AYO series pneumatic and hydraulic actuators provide global customers the latest valve actuation design. It is a highly unique and reliable means of operating ball, butterfly or plug valves with 90 degree rotating mechanisms.

AYO系列执行器采用最新的设计方案，是球阀，蝶阀，旋塞阀和其他90度旋转机械装置安全的驱动方法。

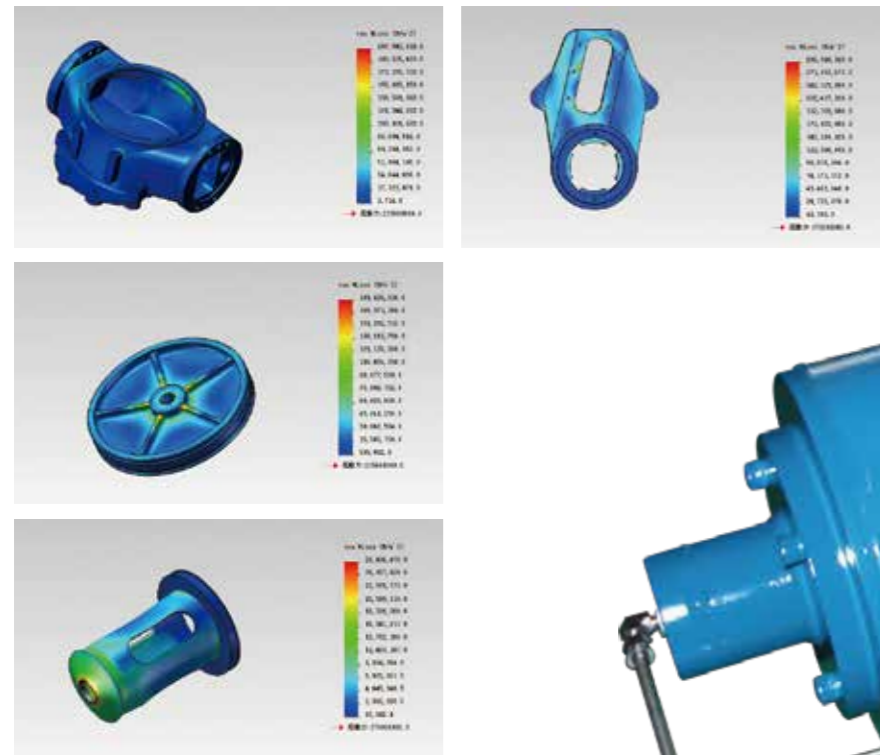
Robust yet Lightweight Design 高强度，精小型设计

Totally enclosed weatherproof center-body fabricated in carbon steel or ductile iron provides an excellent strength to weight ratio.

The mechanism of piston and yoke has an advantageous torque output.

全气候防护性中心箱体模块采用碳钢或者球铁材质，确保了足够的强度。

活塞式及传动拨叉式提供了最佳的扭矩输出特性。



Modular Design 模块化设计

AYO series actuators share a modular construction design. The centre body is available in ten sizes. A pneumatic or hydraulic cylinder can be attached to either or both sides. A spring cartridge can also be fitted to either side for ESD (emergency shut down) applications. Modular construction and stocking of components facilitates quick delivery times.

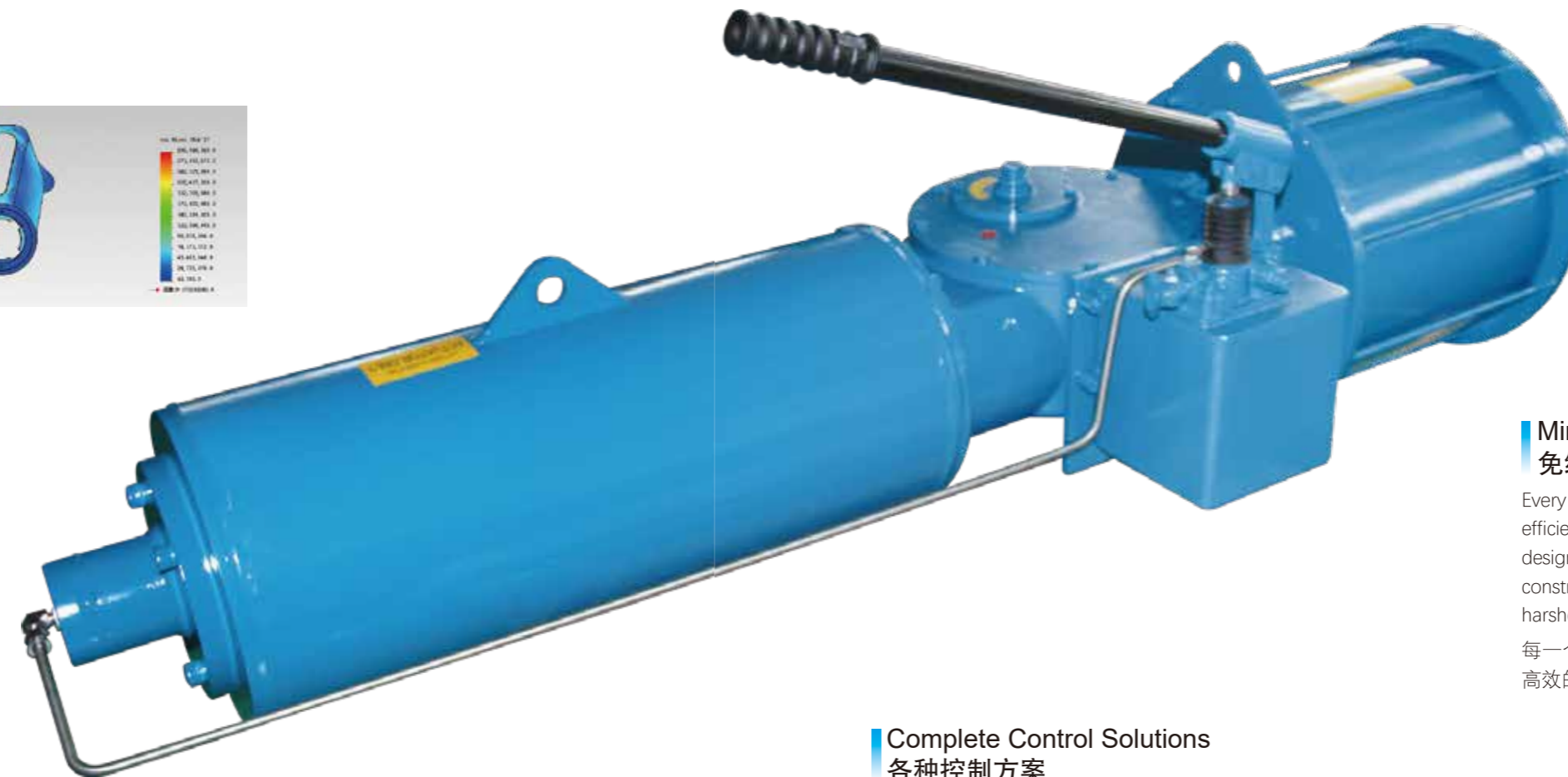
AYO系列执行器采用了模块化设计。中间箱体有10个规格，气缸或者液压缸可以单面安装也可以双面安装。需要紧急切断的工况，可以在箱体一侧安装一个弹簧复位模块。模块化设计的部件具有可替换，可仓储等特性，可以满足较短的供货周期。

Manual Override Options 手动功能

A dependable manual override facility is an important part in many valve/actuator applications. we has a variety of override options available to meet any requirement.

Availabale options include open or enclosed screws in both gear reducer and declutch override gear box, as well as a number of hydraulic override solutions.

独立的侧向手动装置是阀门或者执行器非常重要的一个部件。我们有各种手动方式满足不同的需求。手动方式有丝杠、齿轮、离合式齿轮，液压手动等方案。



Extensive Product Range 产品拓展

We offers the most extensive line of fluid power valve actuators. Products include low and high pressure pneumatic, hydraulic and pneumatic-hydraulic actuators.

我们可以提供多种驱动方式的阀门执行器，包括低气压，高气压气动、液动和气液联动等。

Minimum Maintenance 免维护工作

Every AYO actuator is built to provide long and efficient service with minimum maintenance. The design, engineering and materials used in their construction ensure optimum performance even in the harshest environments.

每一个AYO执行器都可以在免维护情况下提供长期高效的工作。

Complete Control Solutions 各种控制方案

Air Control component packages are a part of any actuator/valve installation.

We has extensive experience in the design and assembly of all types of air control systems to satisfy any customer requirement for on/off, control or ESD service. Control units can be mounted on a panel or in a cabinet and mounted either on the actuator or at a remote location.

气动控制系统是任何阀门和执行器的一个重要组成部分。我们在气路控制方面具有丰富的经验，满足客户有关开关、调节和紧急切断等各方面的要求。气路系统可以安装在一个面板或者控制箱内，可以安装在执行器上或者单独放置。

Performance Characteristics

性能特点

The pinion shape conforms to the latest standards of ISO5211, NAMUR. The dimensions can be customized and the stainless steel is optionally available.

A Position indicator acc. to NAMUR is convenient for the assembly of accessories such as Limit Switch box, Positioner etc..

输出轴同时符合NAMUR、ISO5211标准。也可按客户要求的尺寸定制。

NAMUR 标准指示器便于安装位置开关、定位器等附件。



The dual-material (rubber and PFA) encapsulated O-rings can be applied to a wide range of temperature and conditions. A double O-ring and bearing design ensures the stability and dependability of the modular cylinder.



各种材质橡胶密封圈及PFA包覆密封圈满足各种工况使用。双O形密封圈及导向环设计，确保气缸模块的稳定性及可靠性。

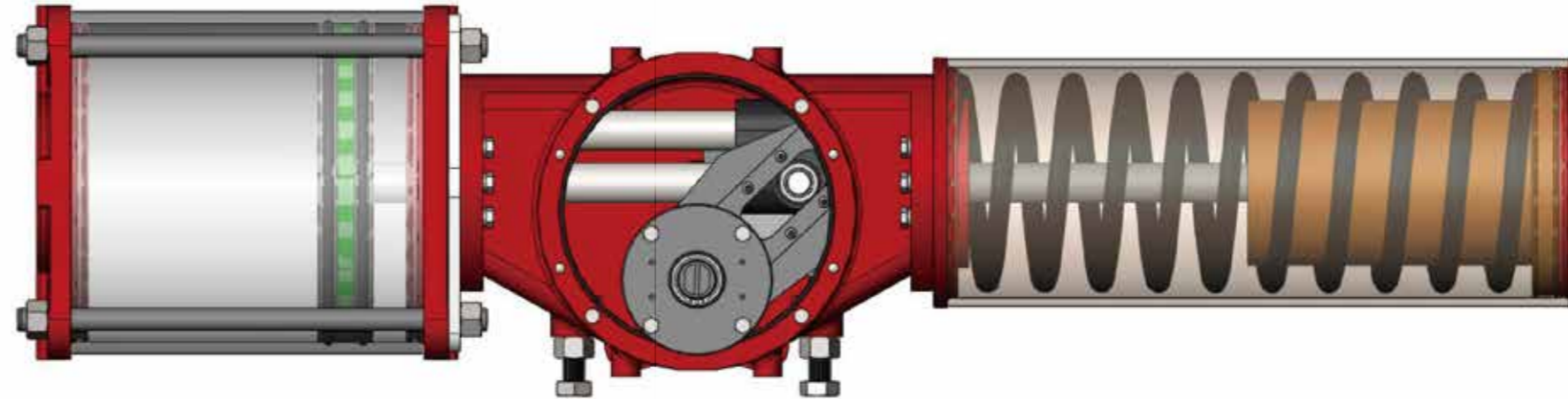


双O形密封圈及导向环设计，确保气缸模块的稳定性及可靠性。

AYO actuators have torque outputs for spring-return models up to 110,000Nm and double-acting models up to 240,000Nm at operating pressures of 3-10 bar.

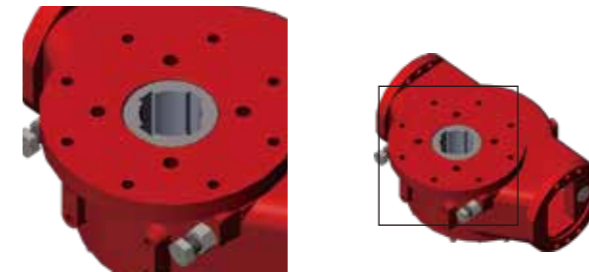
AYO单作用执行器可以提供超过110,000Nm，双作用可以提供超过240,000Nm的力矩输出。

工作压力: 3-10巴



Made from low friction, long-life compound material, to avoid any direct contact between metals. The maintenance is easy and convenient.

采用低摩擦、长寿命复合材料，避免了金属与金属的直接接触，维修更换简单方便。



Mounting Flange according to ISO 5211
底部与阀门连接法兰的尺寸符合ISO 5211标准。



AYO actuators are available with either B or C body modules.

B body modules provide a balanced torque ratio at both the break and end position.

C body modules have a torque advantage in applications where higher break torque is needed to unseat the valve and less critical needs at the run or full open positions.

AYO执行器可以提供B和C两种传动箱模块。

B传动箱能够提供起点和终点相同的输出力矩，更符合类似球阀的力矩需求。

C传动箱能够提供更大的起始输出扭矩，更符合类似蝶阀的力矩需求。

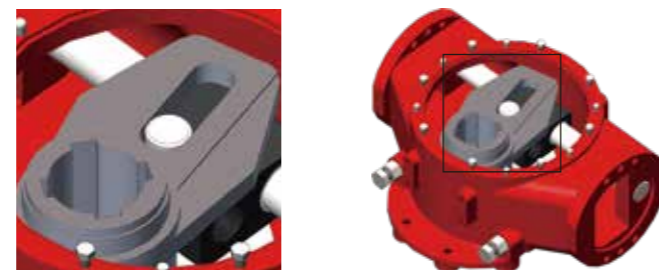
Operating temperatures:
Standard: -20°C ~ +80°C
High Temperature: -15°C ~ +150°C
Low Temperature: -40°C ~ +80°C

工作温度:

标准: -20°C ~ +80°C

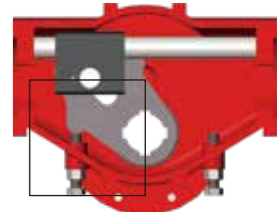
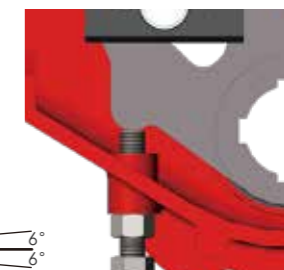
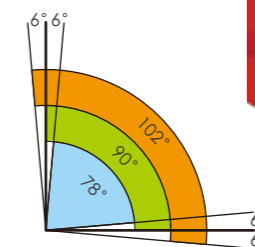
高温: -15°C ~ +150°C

低温: -40°C ~ +80°C



Integral bi-directional travel stops, adjustable from -6° to 96° of total valve travel, assist the AYO Series in prolonging valve seat integrity.

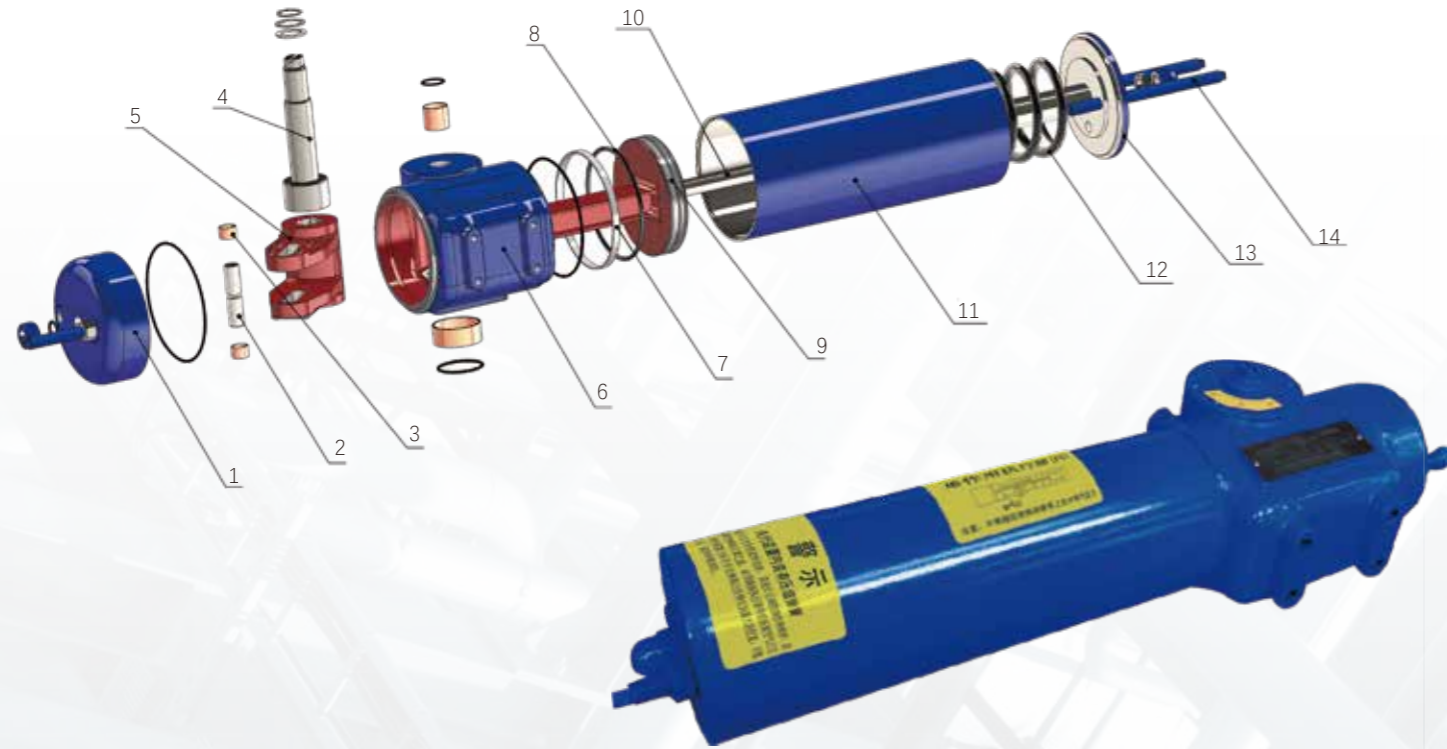
两个独立的行程调节螺钉可以进行方便、精确±6°的调节开、关位置。





Parts and Materials

零件与材料

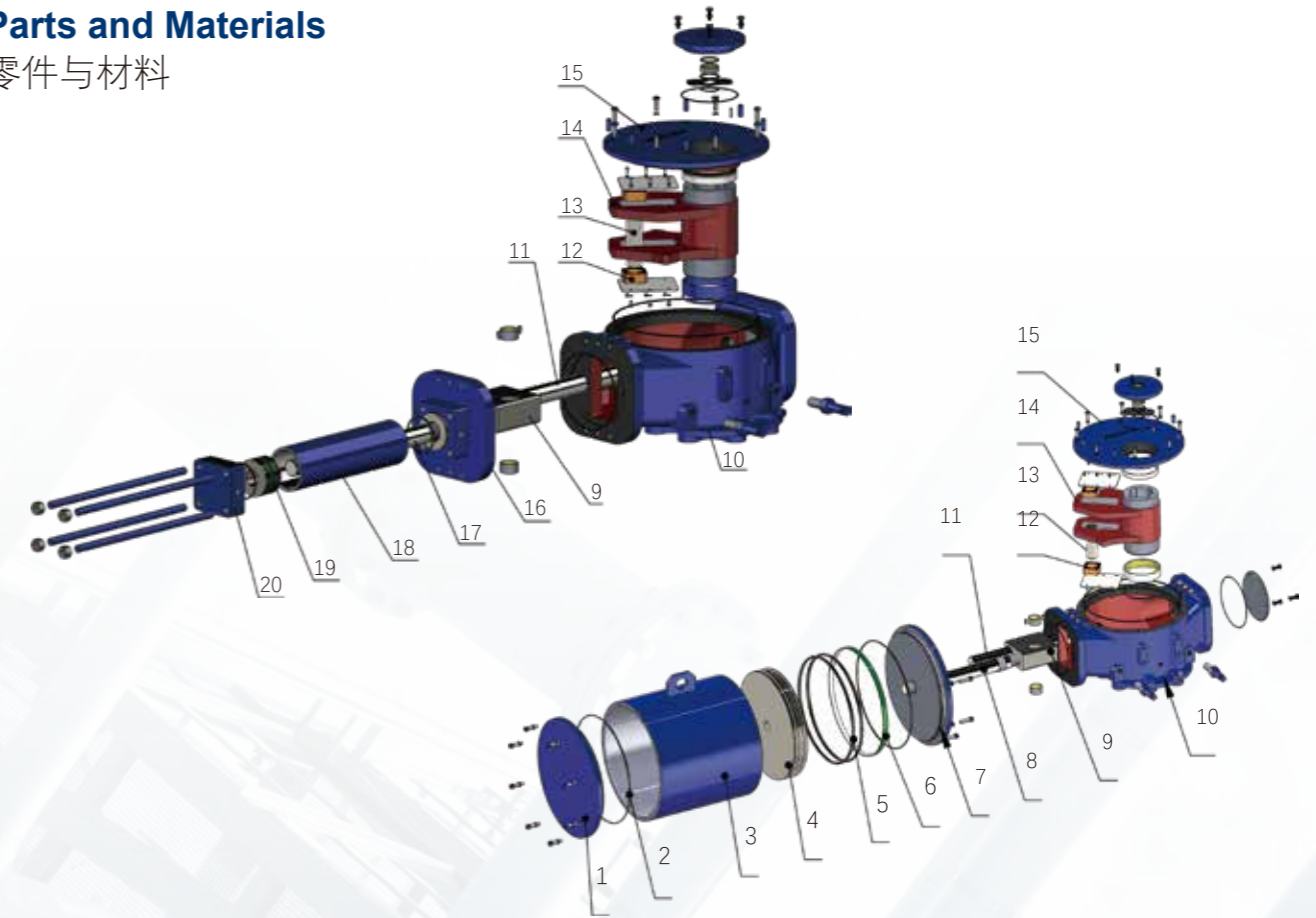


编号 No.	名称 Name	数量 Qty.	材料 Material	可选 Optional
1	端盖 End Cap	1	球墨铸铁 Ductile Iron	碳钢 Carbon Steel
2	传动销 Yoke Pin	1	合金钢 Alloy Steel	
3	轴承 Bearing	2	钢覆聚四氟乙烯 Steel & PTFE	
4	轴 Shaft	1	碳钢 Carbon Steel	
5	拨叉 Yoke	1	球墨铸铁 Ductile Iron	碳钢 Carbon Steel
6	箱体 Center Body	1	球墨铸铁 Ductile Iron	碳钢 Carbon Steel
7	导向环 Guide Ring	1	酚醛树脂 Resin	
8	O型圈 O-Ring	2	丁晴橡胶 NBR	HNBR, VMQ, FVMQ
9	活塞 Piston	1	球墨铸铁 Ductile Iron	碳钢 Carbon Steel
10	导杆 Guide Rod	1	合金钢 Alloy Steel	
11	气缸 Cylinder	1	碳钢 Carbon Steel	
12	弹簧 Spring	1	弹簧钢 Spring Steel	
13	缸盖 Cylinder Cap	1	球墨铸铁 Ductile Iron	碳钢 Carbon Steel
14	调节螺母 Stop Adjustment Screw	2	碳钢 Carbon Steel	



Parts and Materials

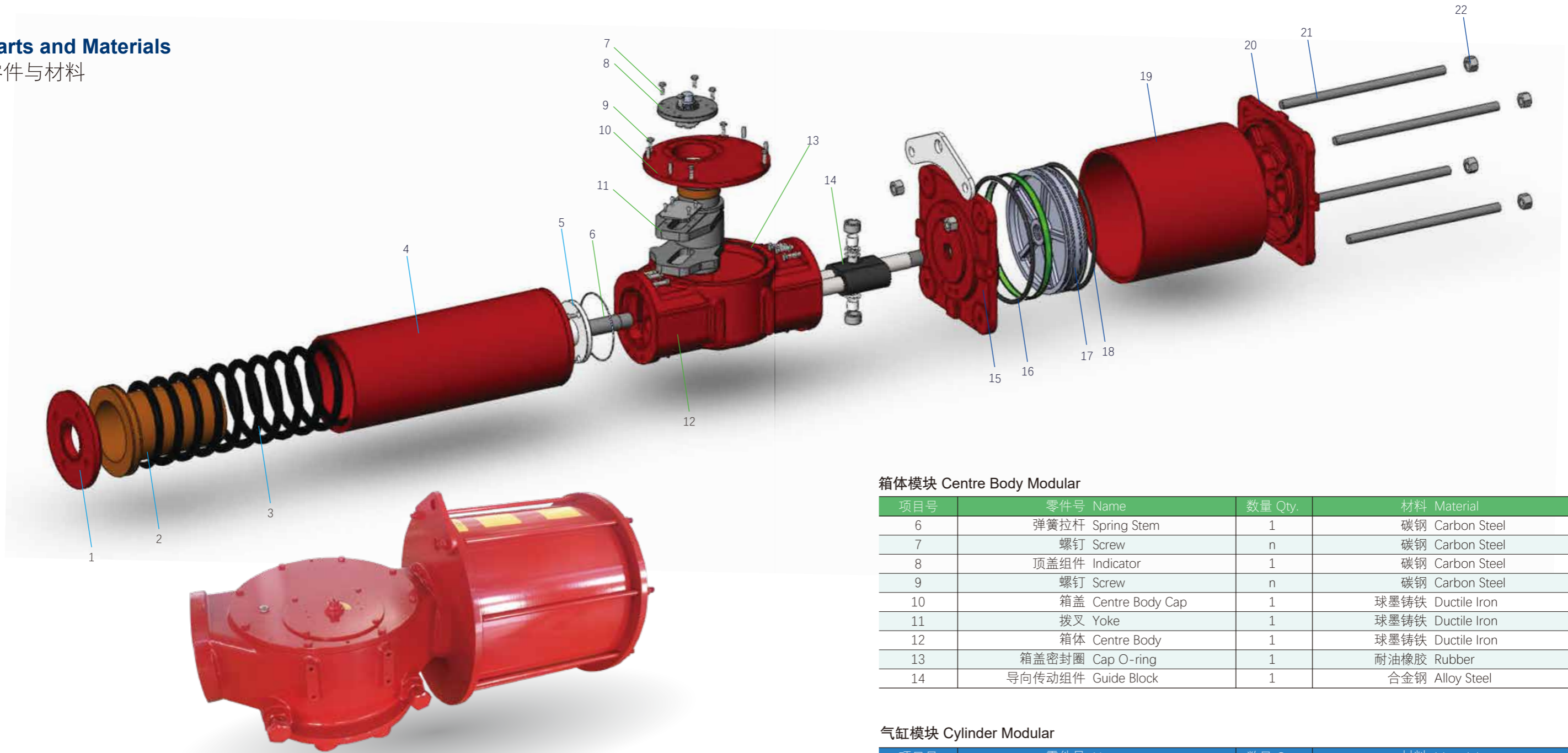
零件与材料



编号 No.	名称 Name	数量 Qty.	材料 Material	可选 Optional
1	缸盖 Cylinder Cap	1	球墨铸铁 Ductile Iron	碳钢 Carbon Steel
2	O型圈 O-ring	2	丁晴橡胶 NBR	HNBR, VMQ, FVMQ
3	气缸 Cylinder	1	碳钢 Carbon Steel	
4	活塞 Piston	1	球墨铸铁 Ductile Iron	碳钢 Carbon Steel
5	O型圈 O-ring	2	丁晴橡胶 NBR	HNBR, VMQ, FVMQ
6	导向环 Guide Ring	1	酚醛树脂 Resin	
7	气缸座 Cylinder Seat	1	球墨铸铁 Ductile Iron	碳钢 Carbon Steel
8	活塞杆 Piston Rod	1	合金钢 Alloy Steel	
9	导向传动组件 Guide Block	1	合金钢 Alloy Steel	
10	缸体 Center Body	1	球墨铸铁 Ductile Iron	碳钢 Carbon Steel
11	导向杆 Guide Rod	1	合金钢 Alloy Steel	
12	轴承 Bearing	2	钢覆聚四氟乙烯 Steel & PTFE	
13	传动销 Yoke Pin	1	合金钢 Alloy Steel	
14	拨叉 Yoke	1	球墨铸铁 Ductile Iron	碳钢 Carbon Steel
15	箱体盖 Center Body Cap	1	球墨铸铁 Ductile Iron	碳钢 Carbon Steel
16	气缸座 (液压) Cylinder Seat (Hydraulic)	1	碳钢 Carbon Steel	
17	活塞杆 (液压) Piston Rod (Hydraulic)	1	碳钢 Carbon Steel	
18	气缸 (液压) Cylinder (Hydraulic)	1	碳钢 Carbon Steel	
19	活塞 (液压) Piston (Hydraulic)	1	碳钢 Carbon Steel	
20	缸盖 (液压) Cylinder Cap (Hydraulic)	1	碳钢 Carbon Steel	

Parts and Materials

零件与材料



弹簧筒模块 Spring Modular

项目号	零件号 Name	数量 Qty.	材料 Material
1	弹簧筒盖 Tank Cap	1	碳钢 Carbon Steel
2	弹簧座 Spring Seat	1	碳钢 Carbon Steel
3	弹簧 Spring	1	弹簧钢 Spring Steel
4	弹簧筒 Spring Tank	1	碳钢 Carbon Steel
5	衬套座 Bear Seat	1	合金钢 Alloy Steel

箱体模块 Centre Body Modular

项目号	零件号 Name	数量 Qty.	材料 Material
6	弹簧拉杆 Spring Stem	1	碳钢 Carbon Steel
7	螺钉 Screw	n	碳钢 Carbon Steel
8	顶盖组件 Indicator	1	碳钢 Carbon Steel
9	螺钉 Screw	n	碳钢 Carbon Steel
10	箱盖 Centre Body Cap	1	球墨铸铁 Ductile Iron
11	拨叉 Yoke	1	球墨铸铁 Ductile Iron
12	箱体 Centre Body	1	球墨铸铁 Ductile Iron
13	箱盖密封圈 Cap O-ring	1	耐油橡胶 Rubber
14	导向传动组件 Guide Block	1	合金钢 Alloy Steel

气缸模块 Cylinder Modular

项目号	零件号 Name	数量 Qty.	材料 Material
15	气缸底座 Cylinder Seat	1	球墨铸铁 Ductile Iron
16	活塞O形圈 O-Ring	1	耐油橡胶 Rubber
17	活塞 Piston	1	碳钢 Carbon Steel
18	导向环 Guide Ring	1	酚醛树脂 Resin
19	缸体 Cylinder	1	碳钢 Carbon Steel
20	缸盖 Cylinder Cap	1	球墨铸铁 Ductile Iron
21	螺钉 Screw	n	碳钢 Carbon Steel
22	螺母 Screw Nut	n	碳钢 Carbon Steel



Output Torque of AYO-B Series Double Acting Actuator AYO-B系列气动执行器双作用输出扭矩

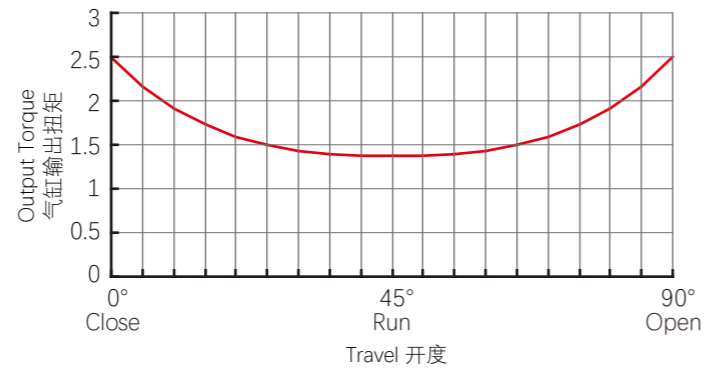


Table with 13 columns: Model, Output Torque (Nm) at 0.35, 0.4, 0.5, 0.6 Mpa, and Air Pressure (Mpa) at 0, 45, 90 degrees. Rows include models from AYO-B04 to AYO-B6902.



Output Torque of AYO-C Series Double Acting Actuator AYO-C系列气动执行器双作用输出扭矩

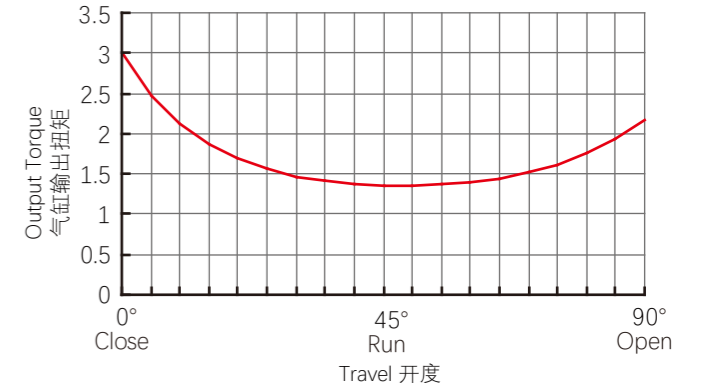


Table with 13 columns: Model, Output Torque (Nm) at 0.35, 0.4, 0.5, 0.6 Mpa, and Air Pressure (Mpa) at 0, 45, 90 degrees. Rows include models from AYO-C06 to AYO-C6802.



Output Torque of AYO-B Series Actuator with Spring Return (FC)

AYO-B系列气动执行器单作用输出扭矩 (FC)

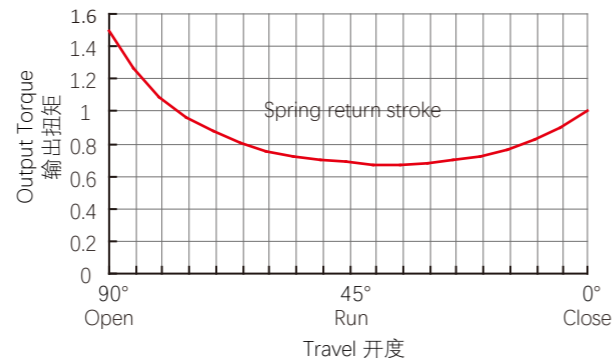
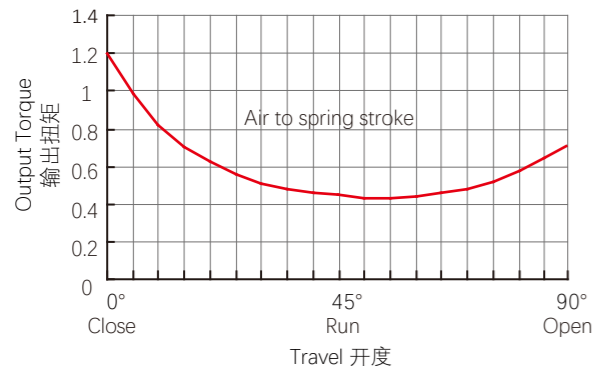


Table with 19 columns: Model 型号, Air to Spring (4Bar), Spring, Air to Spring (5Bar), Spring, Air to Spring (6Bar), Spring. Rows include models from AYO-B04 to AYO-B351.



Table with 19 columns: Model 型号, Air to Spring (4Bar), Spring, Air to Spring (5Bar), Spring, Air to Spring (6Bar), Spring. Rows include models from AYO-B1 to AYO-B6.

The torque of the springs can be customized to your needs. 可以根据需要定制弹簧数据。



Output Torque of AYO-C Series Actuator with Spring Return (FC)

AYO-C系列气动执行器单作用输出扭矩(FC)

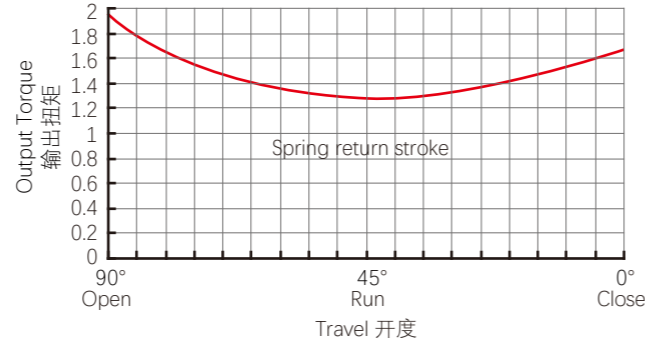
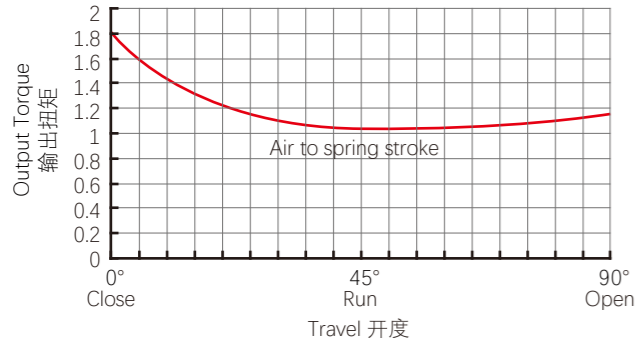


Table with 19 columns: Model 型号, Air to Spring (4Bar), Spring, Air to Spring (5Bar), Spring, Air to Spring (6Bar), Spring. Rows include models like AYO-C06-201-SRC4, AYO-C06-221-SRC4, AYO-C08-221-SRC4, AYO-C08-251-SRC4, AYO-C08-281-SRC4, AYO-C1-281-SRC4, AYO-C1-321-SRC4, AYO-C1-351-SRC4, AYO-C1-401-SRC4, AYO-C2-401-SRC4.



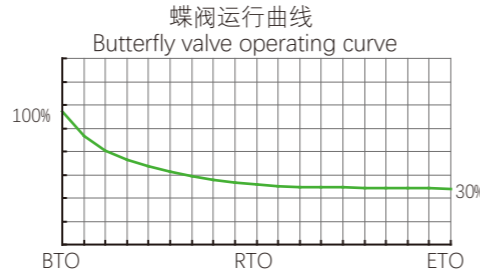
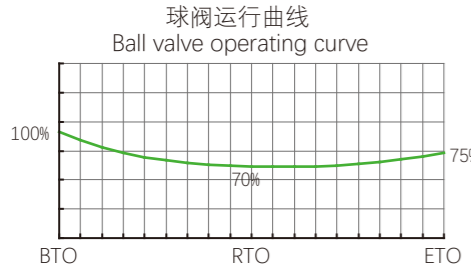
Table with 19 columns: Model 型号, Air to Spring (4Bar), Spring, Air to Spring (5Bar), Spring, Air to Spring (6Bar), Spring. Rows include models like AYO-C2-451-SRC4, AYO-C2-451-SRC5, AYO-C2-451-SRC6, AYO-C3-451-SRC4, AYO-C3-451-SRC5, AYO-C3-451-SRC6, AYO-C3-501-SRC4, AYO-C3-501-SRC5, AYO-C3-501-SRC6, AYO-C3-561-SRC4, AYO-C3-561-SRC5, AYO-C3-561-SRC6, AYO-C3-631-SRC4, AYO-C3-631-SRC5, AYO-C3-631-SRC6, AYO-C4-631-SRC4, AYO-C4-631-SRC5, AYO-C4-631-SRC6, AYO-C4-701-SRC4, AYO-C4-701-SRC5, AYO-C4-701-SRC6, AYO-C4-801-SRC4, AYO-C4-801-SRC5, AYO-C4-801-SRC6, AYO-C5-801-SRC4, AYO-C5-801-SRC5, AYO-C5-801-SRC6, AYO-C5-901-SRC4, AYO-C5-901-SRC5, AYO-C5-901-SRC6, AYO-C6-801-SRC4, AYO-C6-801-SRC5, AYO-C6-801-SRC6, AYO-C6-901-SRC4, AYO-C6-901-SRC5, AYO-C6-901-SRC6, AYO-C6-1001-SRC4, AYO-C6-1001-SRC5, AYO-C6-1001-SRC6.

The torque of the springs can be customized to your needs. 可以根据需要定制弹簧数据。

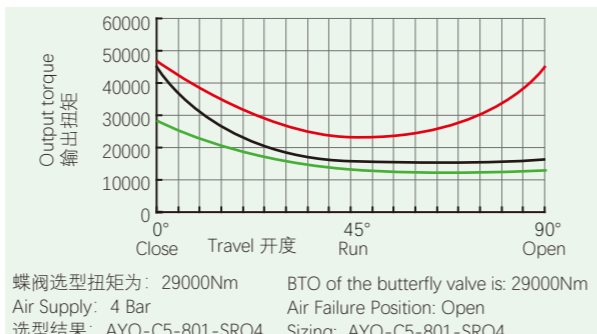
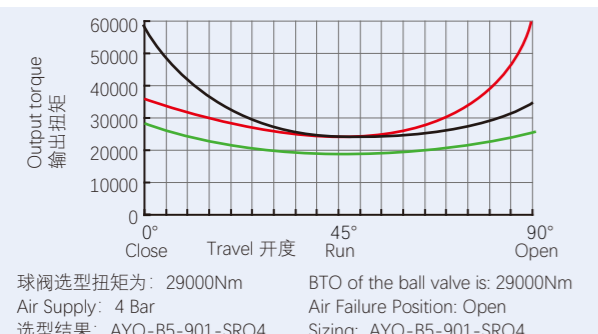
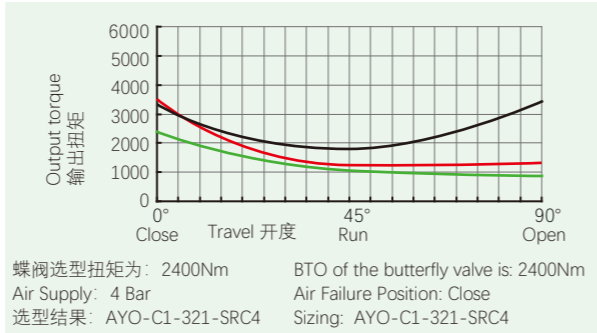
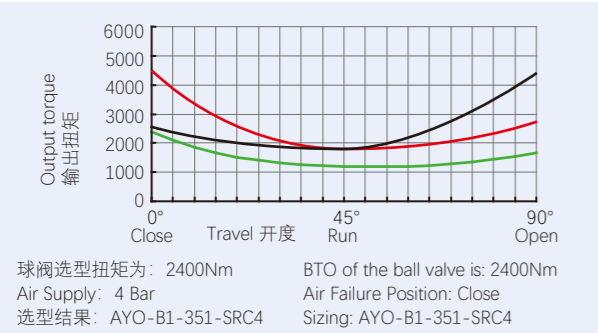
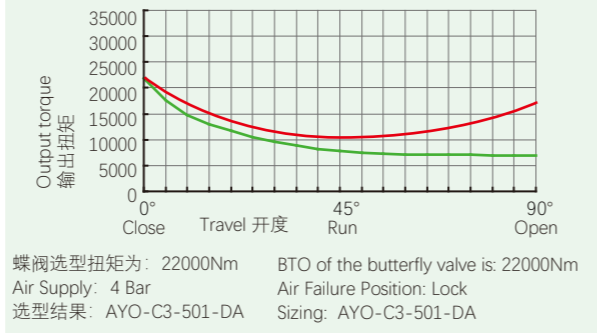
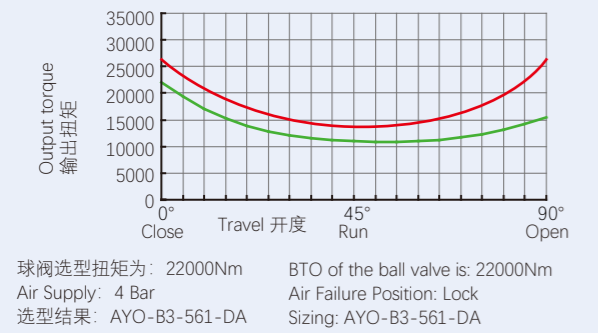


Sizing 选型

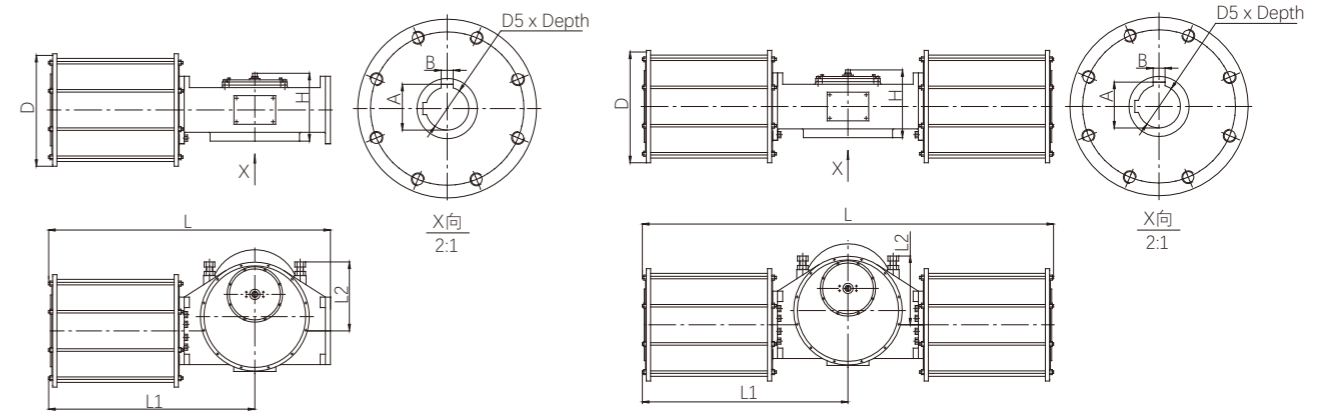
在执行器的选型过程中，如果能够了解阀门在选型、运行过程所需扭矩的状况，我们就可以更加经济、更加合理地选配执行器。
During selecting the actuators, we can choose the more reasonable and more economical actuators, if we know the different torque needed by the valve working at opening and operating.



■ 弹簧复位运行曲线 Spring return operating curve
 ■ 执行器运行曲线 Air to spring operating curve
 ■ 球阀(蝶阀)运行曲线 Ball valve (butterfly valve) operating curve



Dimension of AYO-B(C)Series Double Acting Actuator AYO-B(C)双作用执行器外形尺寸



Model 型号	L	L1	L2	H	D	D5	A	B	Connecting Flange 连接法兰 ISO 5211	Air Connection 气源接口
	mm									
AYO-B/C06-201-DA	675	505	180	212	225*225	Ø48*65	51.8	14	F14	3/8"G(NPT)
AYO-B/C08-221-DA	815	605	200	237	250*250	Ø60*100	64.4	18	F16	1/2"G(NPT)
AYO-B08-251-DA	815	605	200	237	280*280	Ø60*100	64.4	18	F16	1/2"G(NPT)
AYO-B/C1-281-DA	925	680	225	246	310*310	Ø72*120	76.9	20	F25/F16	1/2"G(NPT)
AYO-B/C1-321-DA	905	660	225	246	Ø395	Ø72*120	76.9	20	F25/F16	1/2"G(NPT)
AYO-B1-351-DA	905	660	225	246	Ø430	Ø72*120	76.9	20	F25/F16	3/4"G(NPT)
AYO-B/C2-351-DA	1055	775	285	269	Ø430	Ø100*150	106.4	28	F30/F25	3/4"G(NPT)
AYO-B/C2-401-DA	1055	775	285	269	Ø500	Ø100*150	106.4	28	F30/F25	1"G(NPT)
AYO-B/C2-451-DA	1055	775	285	269	Ø550	Ø100*150	106.4	28	F30/F25	1"G(NPT)
AYO-B/C3-451-DA	1250	915	330	310	Ø550	Ø160*200	169.4	40	F35/F30	1"G(NPT)
AYO-B/C3-501-DA	1250	915	330	310	Ø600	Ø160*200	169.4	40	F35/F30	1 1/4"G(NPT)
AYO-B/C3-561-DA	1250	915	330	310	Ø660	Ø160*200	169.4	40	F35/F30	1 1/4"G(NPT)
AYO-B3-601-DA	1250	915	330	310	Ø700	Ø160*200	169.4	40	F35/F30	1 1/4"G(NPT)
AYO-C4-561-DA	1450	1050	412	340	Ø660	Ø180*220	190.4	45	F40	1 1/4"G(NPT)
AYO-B/C4-601-DA	1450	1050	412	340	Ø700	Ø180*220	190.4	45	F40	1 1/4"G(NPT)
AYO-B/C4-631-DA	1450	1050	412	340	Ø730	Ø180*220	190.4	45	F40	1 1/2"G(NPT)
AYO-B/C4-701-DA	1450	1050	412	340	Ø810	Ø180*220	190.4	45	F40	1 1/2"G(NPT)
AYO-B4-801-DA	1450	1050	412	340	Ø910	Ø180*220	190.4	45	F40	1 1/2"G(NPT)
AYO-B/C4-502-DA	2120	1050	412	340	Ø600	Ø180*220	190.4	45	F40	1 1/4"G(NPT)
AYO-B4-562-DA	2120	1050	412	340	Ø660	Ø180*220	190.4	45	F40	1 1/4"G(NPT)
AYO-B/C5-701-DA	1690	1230	486	420	Ø810	Ø220*250	231.4	50	F48/F40	1 1/2"G(NPT)
AYO-B/C5-801-DA	1690	1230	486	420	Ø910	Ø220*250	231.4	50	F48/F40	1 1/2"G(NPT)
AYO-B/C5-901-DA	1690	1230	486	420	Ø1010	Ø220*250	231.4	50	F48/F40	2"G(NPT)
AYO-B5-1001-DA	1690	1230	486	420	Ø1110	Ø220*250	231.4	50	F48/F40	2"G(NPT)
AYO-B/C5-562-DA	2456	1230	486	420	Ø660	Ø220*250	231.4	50	F48/F40	1 1/4"G(NPT)
AYO-B/C5-602-DA	2456	1230	486	420	Ø700	Ø220*250	231.4	50	F48/F40	1 1/4"G(NPT)
AYO-B/C5-632-DA	2456	1230	486	420	Ø730	Ø220*250	231.4	50	F48/F40	1 1/2"G(NPT)
AYO-B5-702-DA	2456	1230	486	420	Ø810	Ø220*250	231.4	50	F48/F40	1 1/2"G(NPT)
AYO-C6-801-DA	2145	1555	658	490	Ø910	Ø280*320	292.4	63	F60/F48	1 1/2"G(NPT)
AYO-B/C6-901-DA	2145	1555	658	490	Ø1010	Ø280*320	292.4	63	F60/F48	2"G(NPT)
AYO-B/C6-1001-DA	2145	1555	658	490	Ø1110	Ø280*320	292.4	63	F60/F48	2"G(NPT)
AYO-B/C6-702-DA	3100	1555	658	490	Ø810	Ø280*320	292.4	63	F60/F48	1 1/2"G(NPT)
AYO-B/C6-802-DA	3100	1555	658	490	Ø910	Ø280*320	292.4	63	F60/F48	1 1/2"G(NPT)
AYO-B6-902-DA	3100	1555	658	490	Ø1010	Ø280*320	292.4	63	F60/F48	2"G(NPT)

The torque of the springs can be customized to your needs. 可以根据需要定制弹簧数据。

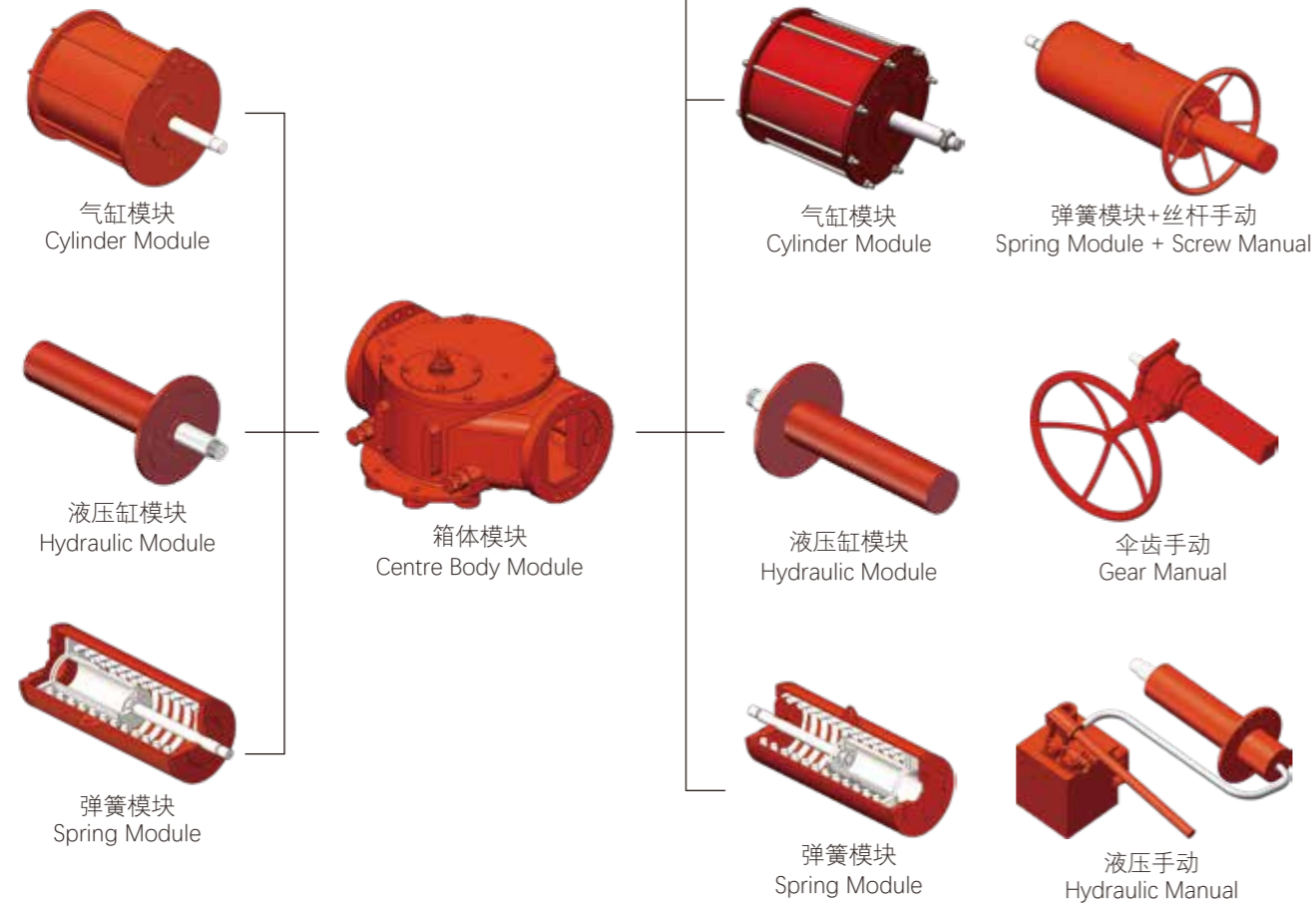


Modular Design

模块化设计

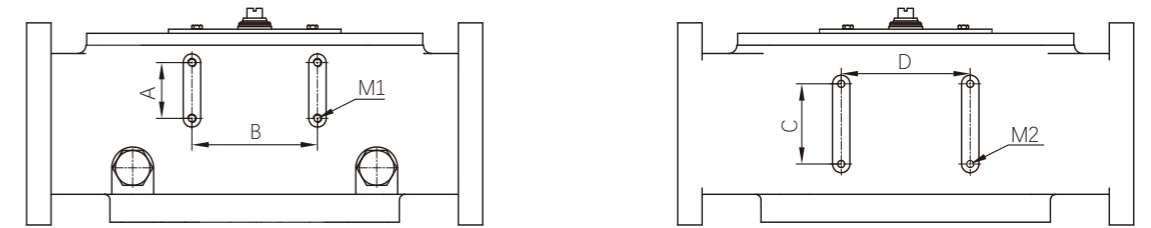
The AYO Series adds an extra measure of versatility with its field serviceable Modular configuration. It can be converted from a single acting to a double-acting version and add a hydraulic manual override after installation. Both the pneumatic and spring modules are removable without the need for special tools or disassembly of any modules.

AYO执行器采用最新模块化的设计。可以在不需要专用工具的情况下轻松实现单作用，双作用，手动操作等模块的组合和更换。



Body Connecting Dimension

箱体连接尺寸



箱体号 Body No.	AxB	CxD	螺纹孔 M1 Screwed Hole	螺纹孔 M2 Screwed Hole
B06/C06	50x90	80x125	4-M12 deep 18	4-M12 deep 18
B08/C08	50x125	80x125	4-M12 deep 18	4-M12 deep 18
B1/C1	50x125	80x125	4-M12 deep 18	4-M12 deep 18
B2/C2	80x125	95x155	4-M12 deep 18	4-M12 deep 18
B3/C3	80x180	115x185	4-M12 deep 18	4-M12 deep 18
B4/C4	80x220	115x230	4-M12 deep 18	4-M12 deep 18
B5/C5	80x220	140x310	4-M12 deep 18	4-M12 deep 18
B6/C6	100x220	180x400	4-M12 deep 18	4-M12 deep 18



How to Order 订购信息

UNIT 单元	1	2	3	4	5	6	7	Product code
CONTENT 内容	Series 系列	Body 箱体	Cylinder 气缸	Acting Type 动作形式	Spring 弹簧规格	Manual 手动方式	Specific Requirements 特殊要求	AYO-C1-501 -SRO4+HM+LT
CODE 代号	AYO	C1	501	SR	O4	HM	LT	
EXAMPLE 示例	AYO	C1	501	SR	O4	HM	LT	

