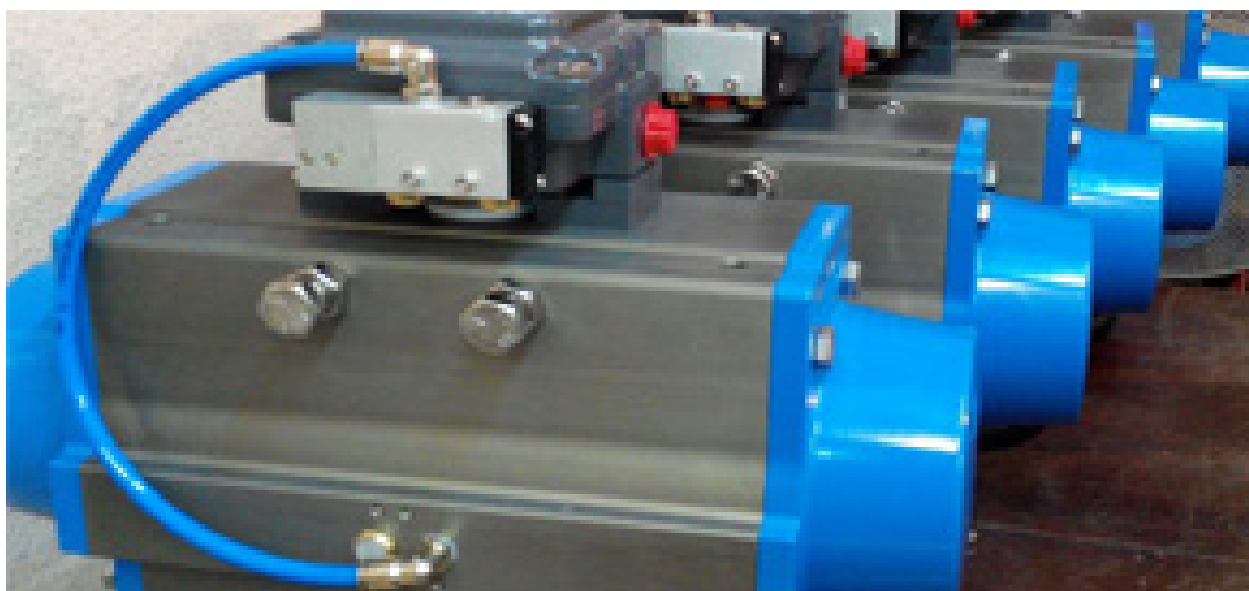


# Standard Pneumatic Actuators



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Астана (7172)727-132  
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# A 系列 不锈钢 气动 执行器

## A Series Stainless Steel Pneumatic Actuators

ALPHA-ACHEM A & AA Series pneumatic actuators are 100% stainless steel actuators with the strong point of the fourth generation rack & pinion pneumatic actuators. Based on latest CNC machining centers & mechanical manufacturing technology, and nearly 20 years know-how of the rack & pinion technology, this actuators we manufactured is a high grade product with the characteristics of reliability, high performance, long cycle life and already proved to be used in most corrosive chemicals as well as very harsh industrial atmospheres.

### 1. Wide scope of output torque / 品种规格多输出扭矩范围广

Totally, we have 10 different size (specifications) actuators for choice. The output torque range is from 15Nm to 3815Nm at 5 Bar. The AA-300 stainless steel actuator with 3815Nm is biggest one in the World now.



### 2. Excellent corrosion resistance / 独特的抗腐蚀性能

All main parts of A & AA series actuator and it's accessories are made from stainless steel. The body and end-caps is made by investment casting stainless steel. The CF8 (304) and CF8M (316) are available for choice. The pinion and fastening are made by 304 or 316 on requiring. Nearly 20 years experience of application proved that this kind of stainless steel pneumatic is able to offer excellent resistance to most corrosive chemicals (such as acid, alkali) as well as corrosive industry atmospheres, such as offshore, oil and gas platform, pharmaceutical and food industry.



### 3. Precision machining of tooth surface with smooth operation and long life

精加工齿面确保运行平稳工作寿命长

High level manufacturing technology for the rack & pinion in our workshop allows this actuator not only to cycle more than 1 million times free from failure but alos to offer exceptionally smooth actuation due to the low friction generated during rotral operations.



### 4. Flexible adjustment in travel ends / 方便灵活的行程两端双位调节

The two independent external travel stop bolts allow  $\pm 5^\circ$  adjustment at  $0^\circ$  and  $90^\circ$  of the quarter travel. This adjustments are only available for AA series.

# A Series Stainless Steel Pneumatic Actuators



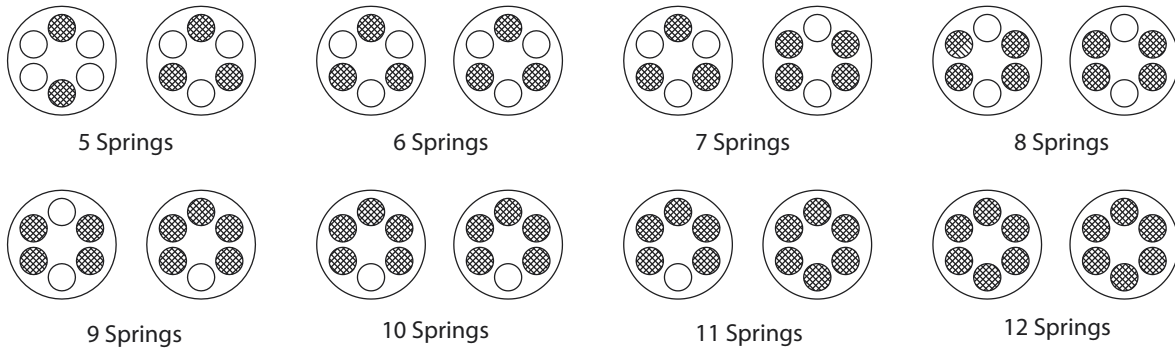
## 5. Namur and ISO5211 Mount / 采用国际通用的ISO5211和Namur安装标准

A & AA series Stainless Steel Pneumatic Actuators are designed to incorporate Namur mounting for solenoids, limit switches and positioners and offer a ISO5211 combination mounting pads that allow you to mount directly to quarter turn valves.



## 6. Single acting with high performance springs / 不锈钢弹药筒结构弹簧安装方便工作寿命长

Preloaded coating springs are made from the high quality material for resistant to corrosion and longer cycle life, which can be demounted safely and conveniently to satisfy different requirements of torque by changing quantity of springs.



Even spring set is recommended for high cycle application.

## 7. Classic A series stainless steel actuator is always available / 经典A型不锈钢执行器





# B 系列气动执行器

## B Series Pneumatic Actuators

Since 1998, the Chinese market has seen the production and sale of the rack & pinion pneumatic actuators. B series actuators were most popular in the market during the initial period. We are the first one to introduce this technology to China and begun to produce the A and B series pneumatic actuator in our factory. The successful sales and production in the last 30 years have proved that B series pneumatic actuator not only has the advantage of price, but also the quality and performance of the actuator can meet the demand of the market. Up to now, B series pneumatic actuator has successfully got the approvals of CE, SIL3 and ATEX. Here are the product features and working conditions.



### 1. Specification and Output Torque / 品种规格全输出扭矩范围广

Totally, we have 18 different size (specifications) actuators for choice. The output torque range is from 7Nm to 8140Nm at 5 bar for double acting. As for spring return, The output torque (fail closed) range is available to choice from 2.9Nm to 4199Nm.

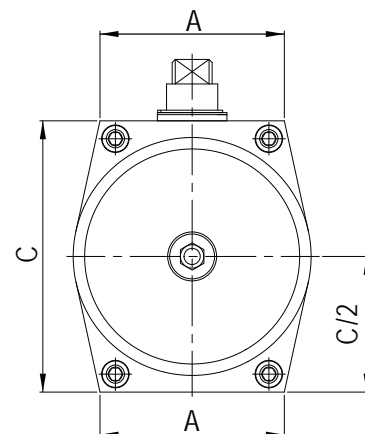


### 2. Symmetrical Shape Design / 对称设计重量轻成本低

Symmetry design of the B series pneumatic actuator is perfect. Because of the symmetrical design, the left and right end-caps of the B series actuator are interchangeable. More importantly, symmetrical design reduces the weight of the actuator, reduces the inventory of parts, and makes the actuator more competitive.



The left and right end-caps are interchangeable



Symmetrical Design of the body Shape

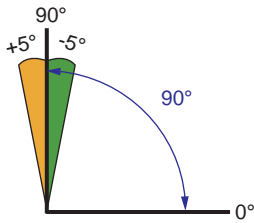
# B 系列气动执行器

## B Series Pneumatic Actuators

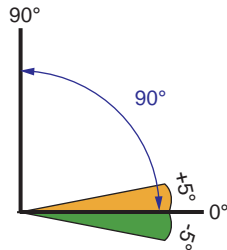


### 3. Rotary travel and it's adjusting / 灵活的单端限位调节

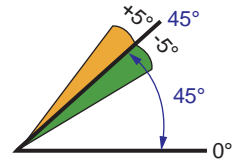
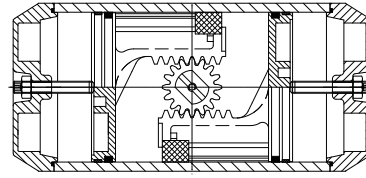
- 1) Rotary travel:  $0^\circ \sim 90 \pm 5^\circ$  (Standard Assembly); Rotary travel:  $0 \pm 5^\circ \sim 90^\circ$  (Reverse Assembly)
- 2) Small rotary travel:  $0^\circ \sim 45^\circ$ ,  $0^\circ \sim 55^\circ$  and  $0^\circ \sim 75^\circ$  and so on (Standard Assembly).



$0^\circ \sim 90 \pm 5^\circ$



$0 \pm 5^\circ \sim 90^\circ$



Lengthened adjusting bolt to implement non-standard rotary travel.



### 4. Namur Interface / Namur面设计方便附件直接安装

- 1) Top Namur interface design ensures the convenient and standardized assembly installation for accessories, such as the limit switch box, position sensors and positioner.
- 2) Armed with Namur adaptor, B series actuators are available for pressure connection with NAMUR solenoid valve or inline solenoid valve directly.

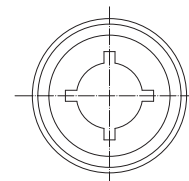
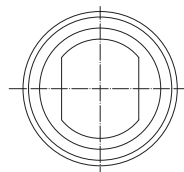
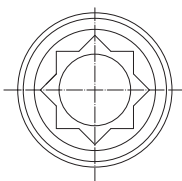
### 5. Valve Mounting / ISO5211法兰尺寸设计方便阀门直接安装

The valve mounting dimensions on D series actuator fully comply with the international standard of ISO5211:2001(E).

The British system mounting pattern is available for choice.

### 6. Driving mode / 多样化的驱动形式

This actuator is able to offer double square, double D or keyed (FK) female driving mode for a number of different new or existing valve stem configurations.





# C 系列气动执行器

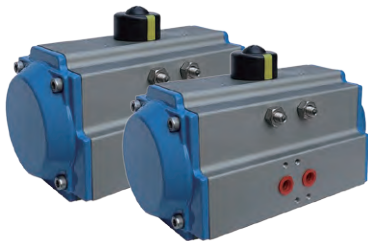
## C Series Pneumatic Actuators

As early as 2003, we started manufacturing AICHEM C series pneumatic actuators in partnership with Allied Flow Control Co. in USA. After 15 years of production and improvement, C series pneumatic actuator has become a high-quality classic product in ALPHA-AICHEM group. The actuator features a top mount multifunction indicator and open-close stops adjustment as a standard. In addition, the state-of-the-art engineering design has allowed us to reduce the size of the actuator without losing any torque. Up to now, C series pneumatic actuator has successfully got the approvals of CE, SIL3 and ATEX. Here are the product features and working conditions.



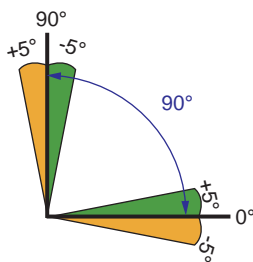
### 1. Specification and Output Torque

C series pneumatic actuator has 17 specifications and the model is C-40, C-52, C-63, C-75, C-83, C-92, ..... C-270, C-300, C-350 and C-400 respectively. Double acting and spring return is available for the actuator. The double acting actuator's output torque range is from 11.9Nm to 8140Nm at 5 bar and the spring return actuator's output torque (fail to closed) range is from 4.3Nm to 4199Nm.

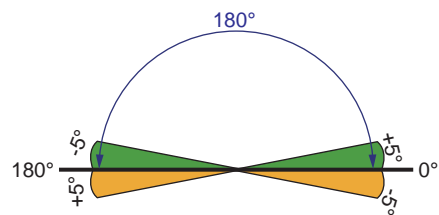
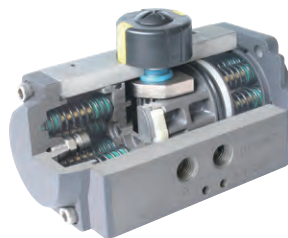


### 2. Travel Stroke and it's adjusting / 行程多样双限位调节方便

- 1) Standard stroke:  $0^{\circ} \sim 90^{\circ}$  with  $\pm 5^{\circ}$  adjustment at  $0^{\circ}$  (Closed) and  $90^{\circ}$  (Open) stops.
- 2) Large stroke:  $0^{\circ} \sim 180^{\circ}$  with  $\pm 5^{\circ}$  adjustment at  $0^{\circ}$  (Closed) and  $180^{\circ}$  (Open) stops. The open stop at  $100^{\circ}, 120^{\circ}, 130^{\circ}, 140^{\circ}, 150^{\circ}, 160^{\circ}$  or  $170^{\circ}$  also is available for optional.



Standard stroke



Large stroke

# C 系列气动执行器

## C Series Pneumatic Actuators



### 3. Namur Interface / Namur面设计方便附件直接安装

- 1) Top Namur interface design ensures the convenient and standardized assembly installation for accessories, such as the limit switch box, position sensors and positioner.
- 2) Solenoid valve Namur interface design are available for pressure connection with NAMUR solenoid valve or inline solenoid valve directly.

### 4. Valve Mounting / ISO5211 法兰尺寸设计方便阀门直接安装

The valve mounting dimensions on D series actuator fully comply with the international standard of ISO5211:2001(E). The British system mounting pattern is available for choice.

### 5. Driving mode / 多样化的驱动连接形式

This actuator is able to offer double square, double D or keyed (FK) female driving mode for a number of different new or existing valve stem configurations.



### 6. Material, Coating and working atmosphere / 多样化的表面涂层适用于独特的工作环境

The body and the end-cap of the actuator are made of extruded aluminum and die-casting aluminum respectively. Hard anodized coated for the body and anodized + polyester coated for the end-cap are standard coating for D series actuator. The nickel phosphorus or PTFE coated are optional for use in a harsh environment.



Hard anodized body  
polyester coated end-caps



polyester coated body  
polyester coated end-caps



Nickel phosphorus coated



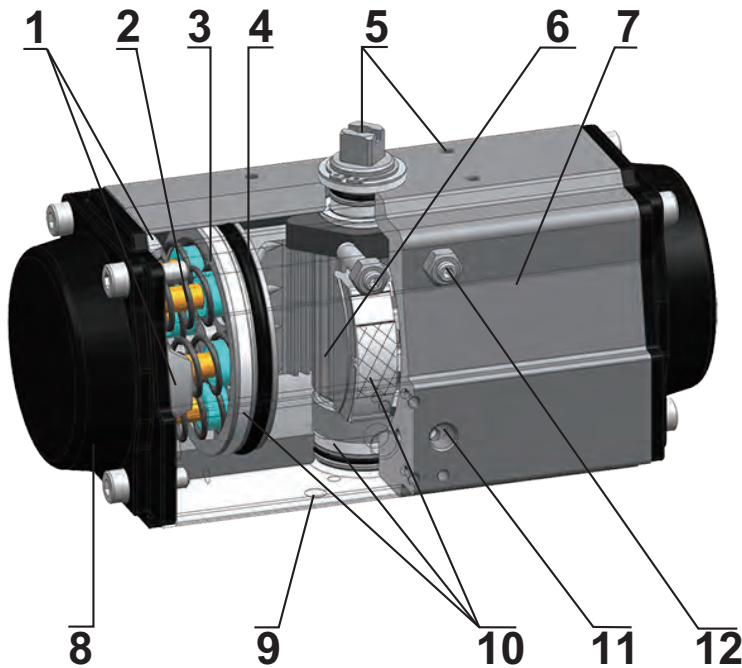
PTFE Coated



# D 系列气动执行器

## D Series Pneumatic Actuators

ACHEM D series pneumatic actuator is one of the main series in the actuator's family of ALPHA-ACHEM group. Based on advanced air flow control technology, high-precision machinery equipments, high quality materials and our awe and veneration toward the products, D series actuator has achieved high scores from our customers. So far, D actuator has been in the global market around 13 years since 2005 and more than one million actuators of various specifications were worked and operated safely on all kinds of quarter-turn valves worldwide. Up to now, AICHEM D series pneumatic actuator has successfully got the approvals of CE, SIL3 and ATEX. The D series actuators remain the world's leading because of the following features.



### 1. Safety limiter / 安全限位器

The safety limiter of the D series actuator is achieved by four lips on the end cap which can ensure that meshing motion of piston and pinion is always in a safe state.

### 2. Cartridge springs / 弹药筒结构弹簧

Preloaded and cartridge structure springs are made from piano spring material to ensure long term trouble-free operation. It can be demounted safely and conveniently to drive a variety of valves by changing quantity of springs.

### 3. Pistons / 压铸铝活塞

The twin rack pistons are made from die-casting aluminum coated with anodized. Symmetric mounting design ensures trouble-free fast operation in long life and has it very simple for reversing rotation by inverting the pistons in field.

### 6. Pinion / 齿轮轴

According to the latest standards of ISO5211, DIN3337, NAMUR, the pinion is designed and made of extruded low carbon alloy steel with nickel phosphorus coated for long-term operation even in a harsh environment.

### 7. Actuator body / 挤压铝缸体

Based on the latest standards of ISO5211, the body is designed and made of extruded aluminum ASTM6005. The hard anodized coated is standard for body surface and the polyester, nickel phosphorus or PTFE coated are optional in any colour.

### 4. O-rings and seals / 密封组件

NBR rubber o-rings provide excellent sealing effect for long-term trouble-free operation within standard temperature ranges. For high (150°C) or low temperature (-40°C), viton or LNBR rubber is used.

### 5. Top mounting / 顶部安装面

Namur (VDI/VDE 3845) design of position indicator and connection dimensions ensures the convenient and standardized assembly installation for accessories, such as the limit switch box, position sensors and valve positioner.



Namur Standardized Top Mounting



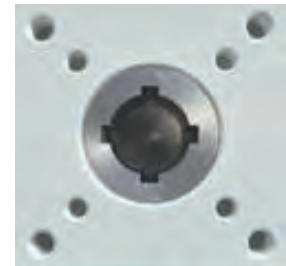


### 8. End caps / 端盖

The end-caps made from die-casting aluminum with anodized and polyester coated. The nickel phosphorus or PTFE coated are optional for use in a harsh environment. The coincidence design ensures end-caps and the body to be in perfect installation.

### 9. Valve mounting (Flange dimensions) / 底部阀门安装面

The flange dimensions on D series actuator fully comply with the international standard of ISO5211:2001(E). The British system mounting pattern is available for choice. This actuator is able to offer double square (FS), double D (FD) or keyed (FK) female drive form for a number of different new or existing valve stem configurations

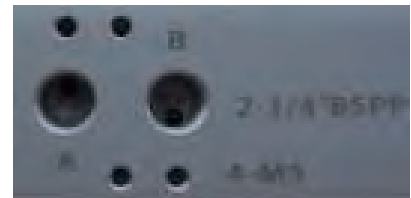


### 10. Bearings & guides / 导向板支撑圈

Which made from low friction, long-life compound material (POM and Nylon and 30% glass fiber) to avoid the direct contact between metals and ensure the long-term operation even in a harsh environment. The maintenance and replacement are easy and convenient.

### 11. Interface to solenoid valve / 电磁阀安装面

The design of this interface is fully comply with the international standard of Namur (VDI/VDE 3845) and BS EN15714-3:2009(E) which are available for pressure connection directly with NAMUR solenoid valve or inline solenoid valve.



### 12. Travel stops / 可调式行程限位器

Equipped with double adjustable travel stops that allow the actuators to drive the valve to the fully open or fully closed position with a range of  $\pm 5^\circ$ .



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