

# Spira-trol™

## General service control valves

CONTROL &  
INSTRUMENTATION  
SOLUTIONS



*First for Steam Solutions*

EXPERTISE | SOLUTIONS | SUSTAINABILITY

**spirax**  
**sarco**

# Spira-trol™

## General service control valves

Designed to meet the demands of today's industries, the Spirax Sarco Spira-trol™ control valve is robust, innovative and cost effective.

- **Adaptable to your needs**
  - a highly flexible modular design to meet your process requirements
- **Set and forget**
  - designed for steam and other industrial fluids giving exceptional valve life, easy commissioning and low maintenance requirements
- **Improved working environments**
  - noise and emission reducing options
- **Available in a wide range of sizes and connections**



Spira-trol™ has been used effectively across many industries.



No need for expensive upgrades  
Select a valve characteristic to complement your application

# Spira-trol™ Valve Range

|             |                        |                                     |
|-------------|------------------------|-------------------------------------|
| DN300 / 12" | Carbon Steel           |                                     |
| DN250 / 10" | Carbon Steel           |                                     |
| DN200 / 8"  |                        | Alloy Steel                         |
| DN150 / 6"  | Stainless Steel        | Stainless Steel                     |
| DN100 / 4"  | Carbon Steel           | Carbon Steel                        |
| DN50 / 2"   | SG Iron                |                                     |
| DN15 / 1"   | Cast Iron              |                                     |
|             | PN16 / PN25 / ANSI 150 | PN40 / ANSI 300    PN100 / ANSI 600 |



Valve stem sealing  
Choose a stem seal to match your operating temperature and minimise emissions

Safety and process efficiency



Plug  
Characterised and balanced plugs

Reduced flow trim  
Accuracy and adaptability of control

Seat  
Choose the best seating material for your application

# Spira-trol™

## Adaptable to your process requirements

The Spira-trol™ control valve has a modular design concept, which can incorporate many options within a single body envelope. This leads to a low number of components and a highly flexible system, where one valve can satisfy the needs of numerous industrial requirements. The outcome for the user is a general service control valve with an exceptionally low cost of ownership.

## Pneumatic actuation

### **Spira-trol™ with PN9000 Actuator and SP500 Smart Positioner**

For applications where pneumatic actuation is preferred, we have a range of pneumatic diaphragm actuators to suit a wide variety of differential pressures and applications. To ensure your plant is safe in the event of air failure they are available in either a spring-to-close or spring-to-open configuration, a handwheel is available as an option if required. Electro-pneumatic smart positioners allow your control system to communicate effectively with the valve assembly via one of our class leading SP400 or SP500 positioners.

## Safe, smart and green electric actuation

### **Spira-trol™ with AEL6 Smart Electric Actuator**

With increasing pressure on companies to reduce carbon emissions, there is an increasing demand for electrically actuated valves. They consume less energy and produce fewer carbon emissions over their lifetime when compared to pneumatic actuators. The AEL6 series also features higher positioning speeds comparable to pneumatic actuators. An optional supercapacitor fail-safe device is available, which means that this actuator may be used on applications where previously only pneumatic actuation was suitable.



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## Electric actuation

### **AEL5 Electric Actuator**

The AEL5 is a robust and user friendly actuator which is easy to install and commission, reducing total cost of ownership.

- Aluminium support for board and accessories
  - Highly durable and sturdy support for holding and/or fitting accessories
- User friendly adjustment of cams with stroke scale
  - precise valve setting
- User friendly valve stem connection
  - simple and securely locked connection to the valve stem minimising installation time.



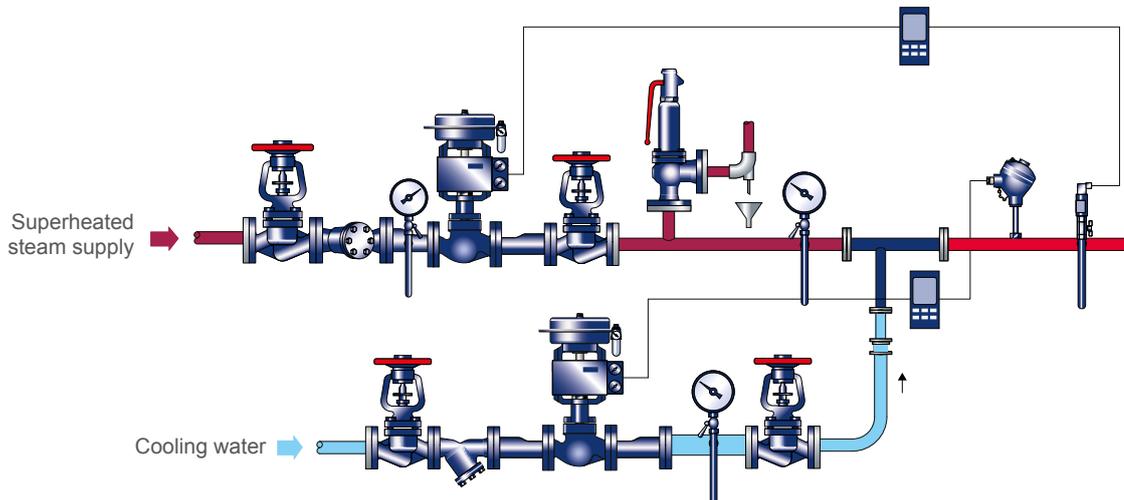
## Higher pressure and temperature general service applications

### **Spira-trol™ with TN2000 Actuator and SP500 Smart Positioner**

For higher pressure general service applications Spira-trol™ valves are available in a range of materials including alloy steel in sizes from DN15 to DN300 (½"- 12"). A range of trims including low-noise for gas applications, anti-cavitation for liquid applications and a balanced plug for optimised actuator selection are available. Coupled with our range of electric or pneumatic actuators and traditional or smart positioners we can provide a complete control valve assembly to suit your requirements.



## Typical Spira-trol™ installation overview



The above overview shows a typical pressure reduction and desuperheating station installation including a pressure control valve, a temperature control valve and a desuperheater. Each ancillary component of this installation ensures the longevity and proper operation of the control valves and the desuperheater.

The isolation valves ensure safety when maintenance of the system and products are required.

A strainer should always be installed upstream of a control valve to protect its internals from any potential debris in the line.

Further control system accessories such as pressure gauges, pressure sensors, pressure and temperature controllers and safety valves may also be required.

We can provide all of these items either loose for installation on site or as a complete package saving you valuable downtime.

## Robust, innovative and cost effective

### Increased stem seal life

Top and bottom guided valve stem ensures excellent alignment and long stem seal life. Scraper and dust rings ensure the stem seal is not damaged by the flow media or particles from the atmosphere. Viton 'O' rings ensure excellent sealing in low pressure and temperature media.

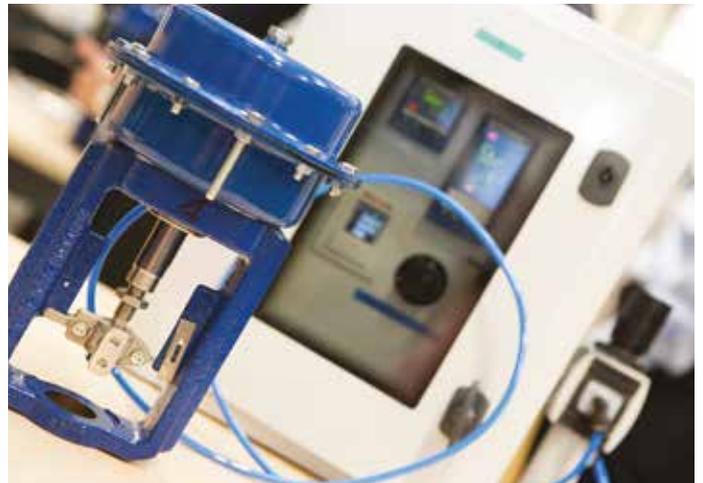
### Long-life valve internals

When compared to alternative designs, the cage retained seat and plug of the Spirax Sarco Spira-trol™ provides the user with better valve shut-off performance and reduced leakage across the seat. Hard trim materials as standard, designed for steam, giving a high resistance to erosion and corrosion on an extensive range of media. Large gallery area reduces the flow velocity, body erosion and noise output.

### Hassle free - with quick and easy installation and low maintenance requirements

All trim components are designed to clamp in place so the valve can quickly be configured to the user's specific process needs. During assembly the seat and plug are self-aligning using the clamp in place cage retained design. The simplicity of build also means that maintenance is quick and easy, with no special tools required.

- Quick to configure
- No special tools required
- Design performance easily achieved after maintenance.



## Adaptable to your process needs

### Improve your safety and process efficiency

Reduce noise or cavitation within the flow improving your working environment and extending the life of your valve.

- Standard
- Low Noise
- Anti-cavitation
- Multi-stage



### Reduced flow trim

A number of flow reductions are available allowing you to precisely match the appropriate trim to your process loads, giving you accurate control of each individual process and greater adaptability for application changes.



### Valve stem sealing

Minimise emissions through the valve stem by choosing a stem seal that is suitable for your operating temperature. Valve stem sealing options include PTFE chevrons and high temperature graphite rings.



### Bellows sealed bonnet

Robust bellows sealed option where zero emissions leakage is required.

- High temperature
- Low maintenance
- Zero emission



### Did you know?

Cavitation is a dynamic process that can cause metal erosion, and even major mechanical failure in extreme cases. When the pressure in a liquid flow drops below a certain point, bubbles of vapour can form. Then, as the flow pressure recovers further downstream of the valve trim, these bubbles implode and collapse back into liquid state. This releases energy that can produce wear on adjacent metal components.

## Select a valve characteristic to complement your application

Flow Characteristics

- Equal Percentage
- Fast Opening
- Linear



## Seat

Choose the seating material that best matches your media and shut-off requirement for a safe installation.

- Metal
- Soft seat



## Soft seat insert vs soft plug

Soft plug seals often fail due to exposure to the turbulent region of the flow. This will lead to leakages, contamination and eventual loss of control.

Locating the soft seat insert away from the turbulent region gives superior control valve longevity. Reducing the possibility of spoilt product due to contamination and leakage and vastly increasing equipment life.

The soft seat is easily checked and replaced without any need for removal from the line, making this a highly cost effective long term solution.



# Spira-trol™ positioner range

## EP500 Positioners

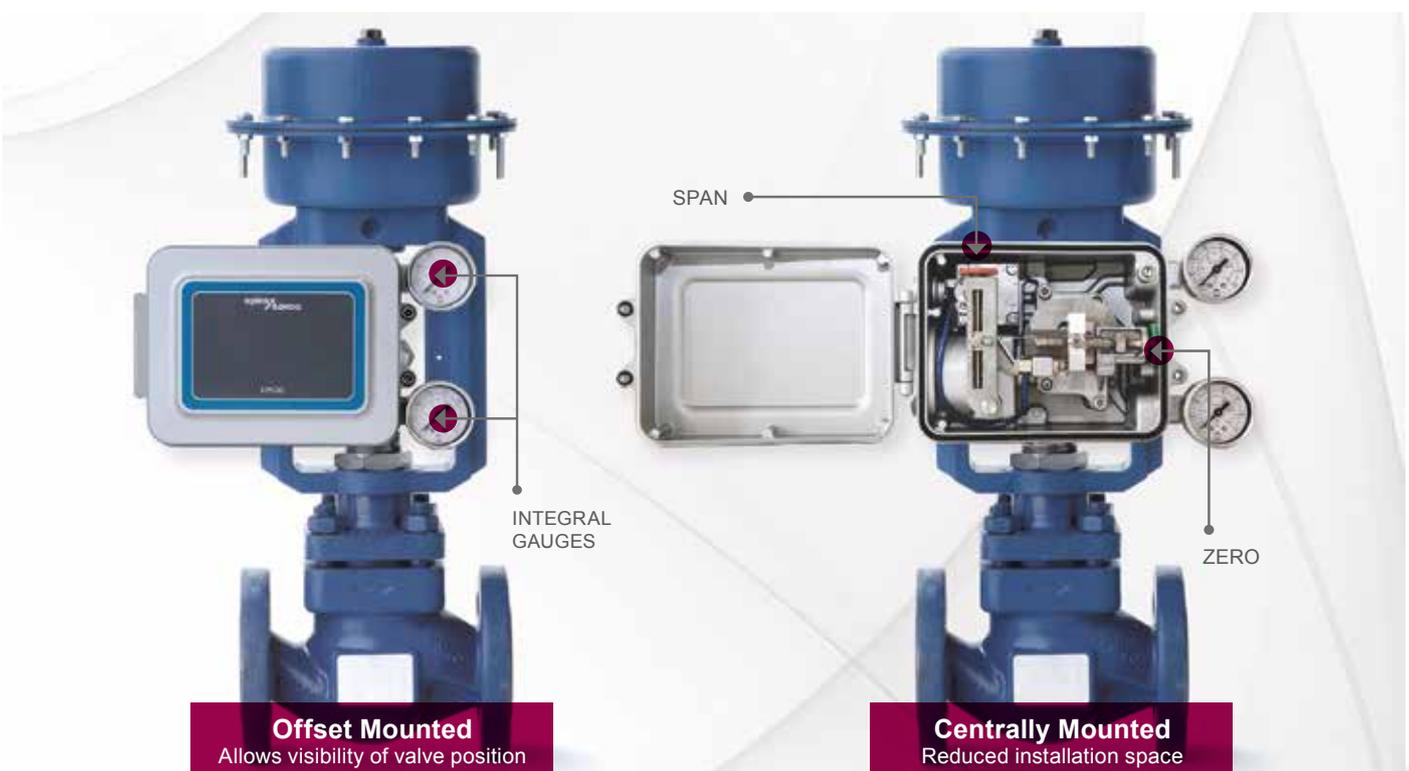
The EP500 combines outstanding accuracy and industry-leading reliability with an ease of installation, calibration and operation second to none.

- Easily commissioned and maintained via an ergonomically designed access hatch
- Integrated gauges simplifying the mounting and commissioning process and aiding fault finding
- Damping screw allows for improved control accuracy



### Technical Overview

|                             |  |
|-----------------------------|--|
| <b>Control signal input</b> | 4-20 mA – Capable of split-range control in conjunction with an appropriate controller   |
| <b>Actuator stroke</b>      | From 10mm to 100mm   |
| <b>Enclosure rating</b>     | IP65   |
| <b>Mounting</b>             | The EP500 can be mounted to any Spirax Sarco actuator and any other actuator that conforms to DIN IEC 534 (NAMUR)                                |
| <b>Gauges</b>               | Integral to the positioner   |
| <b>Approvals</b>            | Explosion proof or intrinsically safe ATEX approval options  |



#### Offset Mounted

Allows visibility of valve position

#### Centrally Mounted

Reduced installation space

## SP400 and SP500

### The smart solution

Reduce energy consumption with the ultra-efficient SP400 and SP500 positioners. These smart digital positioners consume approximately 1% of the air of a traditional electropneumatic positioner and have class-leading low impedance helping to save on controller power.

**Hall effect contactless feedback**, giving a zero lag between feedback and position, eliminating hysteresis.

**Simple single button push to commission** - quick and easy to set up, requiring no specialist training or skills.

**Highly efficient positioner, with the lowest steady state air consumption on the market** - increases profitability, reduces electricity cost and lowers CO<sub>2</sub> emissions.

## SP400 and SP500: World's most energy efficient positioner

Spirax Sarco has developed the world's most energy efficient digital electro-pneumatic valve positioners according to independent specialist, the Lloyds Registry EMEA, which has confirmed the air consumption rates of Spirax Sarco's SP400 and SP500 are the lowest available on the market today.

In response to market requirements, the SP400 and SP500 innovative design has not only reduced air leakage but its non-contact positioner technology minimises downtime for maintenance. With only 3 button pushes or fewer making it quick and easy to install and commission providing increased accuracy and reliability over mechanical linkages. The SP500 is feature rich and also supports the HART® protocol.

This recognition of the SP400 and SP500 electro-pneumatic smart positioner range – developed in-house by Spirax Sarco's dedicated instrumentation team in Italy - is a testament to the Company's focus on sustainability across the whole plant.

Lower leakage rates enable you to increase efficiency and save money throughout the plant.



The Lloyd's Register Group is one of the world leaders in assessing business processes and products to internationally recognised standards. The SP400 and SP500 have been certified by Lloyds Registry EMEA to have the minimal leak rate of 0.48 dm<sup>3</sup>/h (1.01 ft<sup>3</sup>/h), considerably less than the closest contender, which vastly reduces the cost of wasted compressed air.



**Operating Companies**

**EMEA**

- |                 |             |              |
|-----------------|-------------|--------------|
| Belgium         | East Africa | South Africa |
| Czech Republic  | Maghreb     | Spain        |
| Denmark         | Middle East | Sweden       |
| Egypt           | Norway      | Switzerland  |
| Finland         | Netherlands | Turkey       |
| * <b>France</b> | Poland      | * <b>UK</b>  |
| Germany         | Portugal    |              |
| Hungary         | Romania     |              |
| * <b>Italy</b>  | Russia      |              |

**Americas**

- |                    |                 |
|--------------------|-----------------|
| * <b>Argentina</b> | Colombia        |
| * <b>Brazil</b>    | * <b>Mexico</b> |
| Canada             | Peru            |
| Chile              | * <b>USA</b>    |

**Asia Pacific**

- |                |             |
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**Asia Pacific**

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- Myanmar

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- |          |            |              |
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**Americas**

- |                    |                     |                     |
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| Bolivia            | Guatemala           | Nicaragua           |
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| El Salvador        | Netherland Antilles | Uruguay             |

**Asia Pacific**

- |            |      |          |
|------------|------|----------|
| Bangladesh | Fiji | Pakistan |
|------------|------|----------|

\* Manufacturing sites



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