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**Saunders<sup>®</sup> S360 Actuator**

**CRANE**<sup>®</sup>

ChemPharma Flow Solutions

[www.saundersS360.com](http://www.saundersS360.com)  
[www.cranepharmasolutions.com](http://www.cranepharmasolutions.com)

## Saunders® S360 Actuator Overview

The Saunders® S360 piston actuator permits remote operation of the valve, either as an alternative to manual operation or as an integral part of a control system. The S360 is a compact, lightweight, piston-type pneumatic actuator which has been developed to deliver superior performance for sterile BioPharm applications.

### Key Features and Benefits

- ❶ Modular range delivers optimum dimensional envelope and closure performance
- ❷ Full 360° rotation of actuator allows flexible installation and air port alignment
- ❸ Smooth corrosion resistant profile optimizes cleanability

The Saunders® S360 housing is manufactured from polished 316 Stainless Steel producing a robust design, a clean OD profile and an attractive appearance. It can withstand typical industry wash down regimes.

The S360 is a piston-type actuator that provides reliable performance, high cycle life, lower air consumption and more compact design versus diaphragm type actuators.

The modular design offers two different spring-to-close versions; the S360 Lite with compact, lightweight design for typical applications and the S360 Power for maximum high pressure duty or for severe closure applications.

The S360 range also includes spring to open and double acting variations. All models have a bright yellow visual indicator as standard.



## Saunders® S360 Actuator Features and Benefits

### Full 360° Rotation

The Saunders® S360 features the ability to fully rotate the actuator head by 360°, enabling flexible installation and air port alignment.

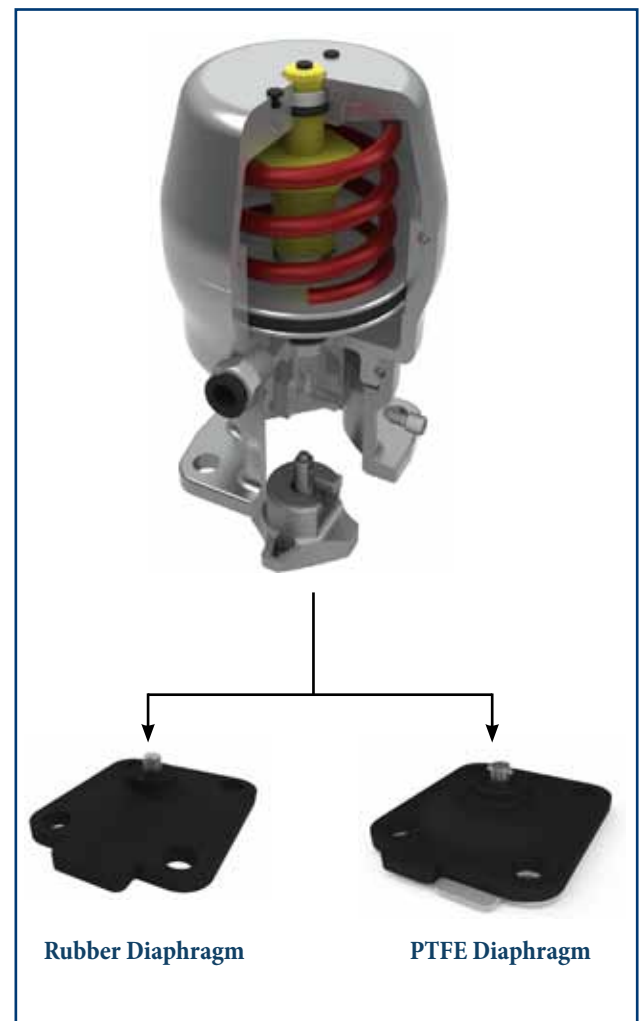
This in turn reduces installation cost and optimizes incorporation into compact valving arrays or skid arrangements.



*Refer to the Installation, Operation, and Maintenance Manual for complete instructions on 360° rotation and compressor conversion.*

### Easy Compressor Change

The Saunders® S360 has a unique compressor attachment that permits easy conversion of the compressor between rubber and PTFE diaphragms.



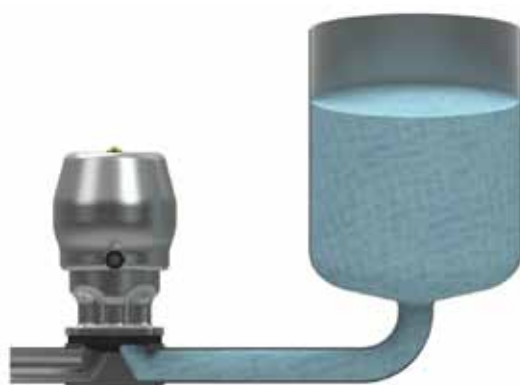
### Flanged Base or Shrouded

The S360 is available with both flanged and shrouded base. The flanged base allows attachment to block bodies that do not have a companion flange for assembly. The shrouded base covers the fasteners and is ideal for clean process areas (only available for 2-way bodies).

## Saunders® S360 Actuator Typical Applications

The Saunders® S360 Actuator has been designed and engineered to deliver optimum performance over the full range of operating conditions found in bioprocess plants. The diaphragm in a weir type diaphragm valve has a large wetted surface that is exposed to pressure in the process line. This means that line pressure has a large impact on required actuator opening and closing forces.

The majority of applications produce pressure on one side of the weir only. This condition is typically called 100% pressure drop, or 100%  $\Delta P$ . When this occurs, only half the wetted area of the diaphragm is exposed to line pressure.



100% Pressure Drop  
**line-pressure is on one side of weir only**

**This is the most common service condition.**

The force on the diaphragm is greatest when there is pressure on both upstream and downstream sides of the weir. This condition is generally called 0% pressure drop, or 0%  $\Delta P$ . When this occurs the total wetted area of the diaphragm is exposed to line pressure. This is not a common condition in BioPharm applications.



0% Pressure Drop  
**line-pressure is on both sides of weir**

**Maximum force is working against actuator.**

Please contact Saunders® directly or review actuator sizing charts and data sheets for additional information regarding actuator selection. Technical information, sizing charts, and datasheets can be accessed or downloaded at [www.cranebiopharm.com](http://www.cranebiopharm.com).

# Saunders® S360 Actuator Technical Specifications

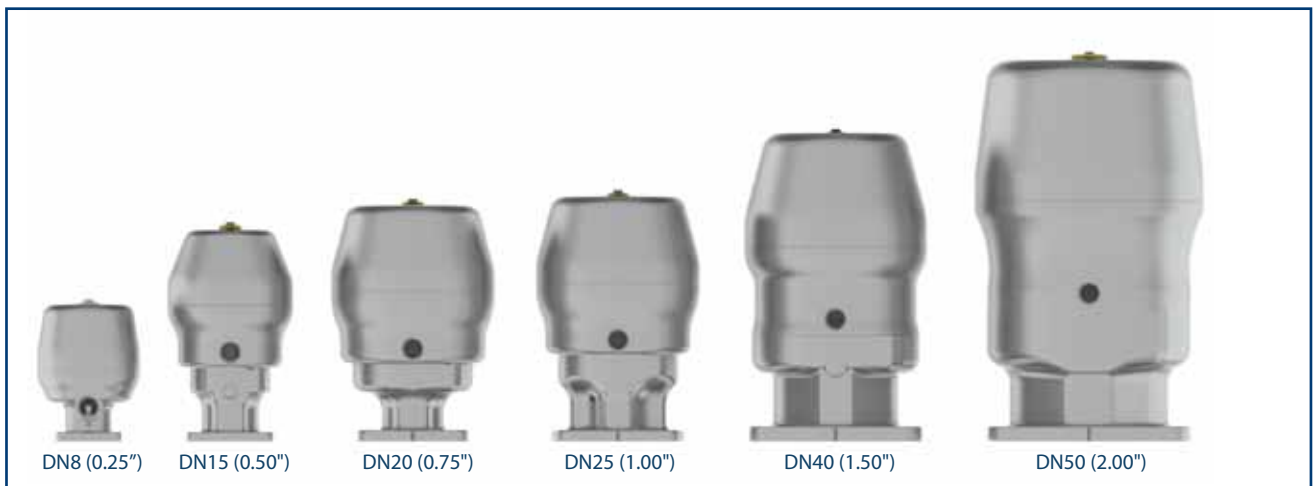
## Modular Design

The Saunders® S360 modular range delivers optimum dimensional envelope and closure performance. There are two different spring-to-close versions available; the S360 Lite and S360 Power actuator that delivers industry leading closure performance and allows complete flexibility to suit a wide range of pressure and flow conditions.



### Saunders® S360 Lite

The S360 Lite range provides standard closure for spring-to-close applications in a very compact, lightweight package and is ideal for most applications. The S360 Lite fits into tight piping arrays – and its compact size can even help reduce block valve design and is available through sizes DN8 – DN50 (0.25” – 2.00”).



Closure Performance (Saunders® S360 Lite Spring-to-Close)					
Style	Size	Line Pressure		Control Pressure	Weight
		PTFE	Rubber		
S360 Lite	DN8 (0.25")	8bar (116 psi)	16bar (232psi)	6bar (87psi)	0.57kg (1.3lbs)
S360 Lite	DN15 (0.50")	8bar (116 psi)	10bar (145psi)	6bar (87psi)	1.20kg (2.6lbs)
S360 Lite	DN20 (0.75")	8bar (116 psi)	10bar (145psi)	6bar (87psi)	2.10kg (4.6lbs)
S360 Lite	DN25 (1.00")	8bar (116 psi)	10bar (145psi)	6bar (87psi)	2.28kg (5.0lbs)
S360 Lite	DN40 (1.50")	8bar (116 psi)	10bar (145psi)	6bar (87psi)	3.50kg (7.7lbs)
S360 Lite	DN50 (2.00")	8bar (116 psi)	10bar (145psi)	6bar (87psi)	7.70kg (17lbs)

All pressures are gauge pressures. Line pressure values were determined with pressure on one side of the weir only. This condition is called 100% pressure drop, or 100% ΔP. Information on line pressure applied to both upstream and downstream sides of the weir is available on request.

## Saunders® S360 Actuator Technical Specifications

### Saunders® S360 Power

The Saunders® S360 Power range offers higher operating closure performance in a compact package for high operating pressure or atypical closing conditions with high pressure on both sides of the weir. The S360 Power spring-to-close actuator is available through sizes DN15 – DN50 (0.50" – 2.00").



Closure Performance (Saunders® S360 Power Spring-to-Close)					
Style	Size	Line Pressure		Control Pressure	Weight
		PTFE	Rubber		
S360 Power	DN15 (0.50")	16bar (232 psi)	16bar (232psi)	6bar (87psi)	1.20kg (2.6lbs)
S360 Power	DN20 (0.75")	16bar (232 psi)	16bar (232psi)	6bar (87psi)	2.80kg (6.2lbs)
S360 Power	DN25 (1.00")	16bar (232 psi)	16bar (232psi)	6bar (87psi)	2.90kg (6.4lbs)
S360 Power	DN40 (1.50")	16bar (232 psi)	16bar (232psi)	6bar (87psi)	5.75kg (12.7lbs)
S360 Power	DN50 (2.00")	16bar (232 psi)	16bar (232psi)	6bar (87psi)	9.67kg (21.3lbs)

*All pressures are gauge pressures. Line pressure values were determined with pressure on one side of the weir only. This condition is called 100% pressure drop, or 100% ΔP. Information on line pressure applied to both upstream and downstream sides of the weir is available on request.*

The Saunders® S360 actuator is also available in spring-to-open and double acting modes of operation through sizes DN8 – DN50 (0.25" – 2.00"). Please refer to Saunders® data sheets for additional information on S360 spring-to-open and double acting variants. Technical information, sizing charts, and datasheets can be accessed or downloaded at [www.saundersS360.com](http://www.saundersS360.com).

PDF dimensional drawings, 2D AutoCAD, and 3D IGES Files of the Saunders® S360 actuator are available at <http://drawings.craneflow.com>.

## Saunders® S360 Actuator Finishes & Accessories



### Marking

Identification label adhered to actuator and contains the following:

- 2D Bar Code\*
- Valve Size
- Model Identification
- Maximum Air Supply

\*Using a unique serial number the 2D bar code provides full traceability of assembly and test data.

### Surface Finish

The Saunders® S360 features a standard 25Ra (0.6µm) average polish on the air cylinder. An optional 15Ra (0.4µm) average polish is available on request.



### Available Accessories

- Position Feedback
- Adjustable Limit Open and Close Stop
- Valve Positioners
- Manual Override
- Other Accessories on Request

Visit [www.saundersS360.com](http://www.saundersS360.com) for additional information on other Saunders® products, including technical datasheets, drawing library, and product selection tools.

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