

Pneumatic Actuator

# SISTO-LAD

Diaphragm Actuator

## Type Series Booklet



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Type Series Booklet SISTO-LAD

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## Pneumatic Actuators

### Diaphragm Actuators

## SISTO-LAD



### SISTO-LAD product description

Pneumatic diaphragm actuator designed for valves with a linear stem movement (globe, diaphragm and gate valves).

They are suitable for building services, industrial plants, power stations, the food and beverages industries and the chemical industry.

The pneumatic actuators can also be used in potentially explosive atmospheres.

### Operating data

- Max. permissible control medium temperature: 80 °C
- Permissible ambient temperature: -10 °C to +80 °C

Actuator size [mm]	Actuator flange DIN ISO 5210 / DIN 3358	Permissible control pressure P <sub>ctr. perm.</sub> [bar]	Stroke [max. mm]
100	F07	6	20
150	F10	6	35
220	F10	6	55

**i** Pneumatic actuators from SISTO are suitable for compressed air of purity class 5:4:4 in accordance with ISO 8573-1. If there is a risk of frost, purity class 5:3:4 must be applied to prevent damage caused by icing.

### Design details

#### Design

- Actuator rod sealed by U-ring and scraper ring
- Double-acting actuator diaphragm with or without spring
- Adjustable travel stop in closing direction
- Flanges to DIN ISO 5210/DIN 3358

- Mechanical travel stop in opening direction
- Installation kit and mating dimensions see type series booklet of the valve type series
- Manual override available as standard for spring-to-close design

### Actuator function

- Actuator type LAD-AZ
  - Air-to-open
  - Air-to-close
- Actuator type LAD-OF
  - Spring-to-open
  - Air-to-close
- Actuator type LAD-SF
  - Air-to-open
  - Spring-to-close

### Accessories

- Exhaust regulator
- Throttling valve
- Actuator rods protruding from both ends (stroke limited in closing direction)
- Filter/pressure reducer
- Solenoid valves
- Limit switch(es)
- Silencer
- Positioner (not applicable for AZ)

### Product benefits

- Actuators with optimised stroke variants ensure full valve travel with minimum air consumption
- Smooth, low-friction movement of the piston assembly with double cup seal or low-friction piston ring

### Product information

#### Product information as per Regulation No. 1907/2006 (REACH)

For information as per chemicals Regulation (EC) No. 1907/2006 (REACH), see <https://www.ksb.com/ksb-en/About-KSB/Corporate-responsibility/reach/>.

#### Product information as per Directive 2014/34/EU (ATEX)

Valves without electrical components do not have a potential internal source of ignition and can be used in potentially explosive atmospheres, Group II, category 1 (zones 0+20), category 2 (zones 1+21) and category 3 (zones 2+22) to ATEX 2014/34/EU. Components such as electric actuators, position switches, block terminals, solenoid valves, etc. may in certain circumstances be covered by Article 1 of Directive 2014/34/EU. They must be subjected to a conformity assessment procedure and separate evidence of compliance must be provided (e.g. EC Declaration of Conformity or manufacturer's declaration).

### Related documents

Information/documents

Document	Reference number
Operating manual	0570.821

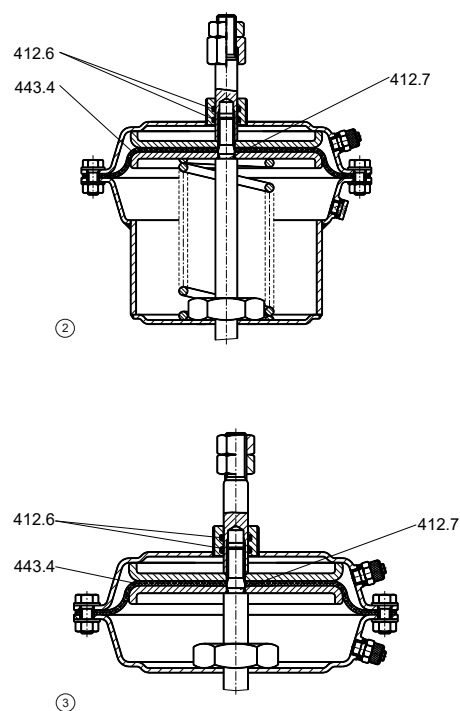
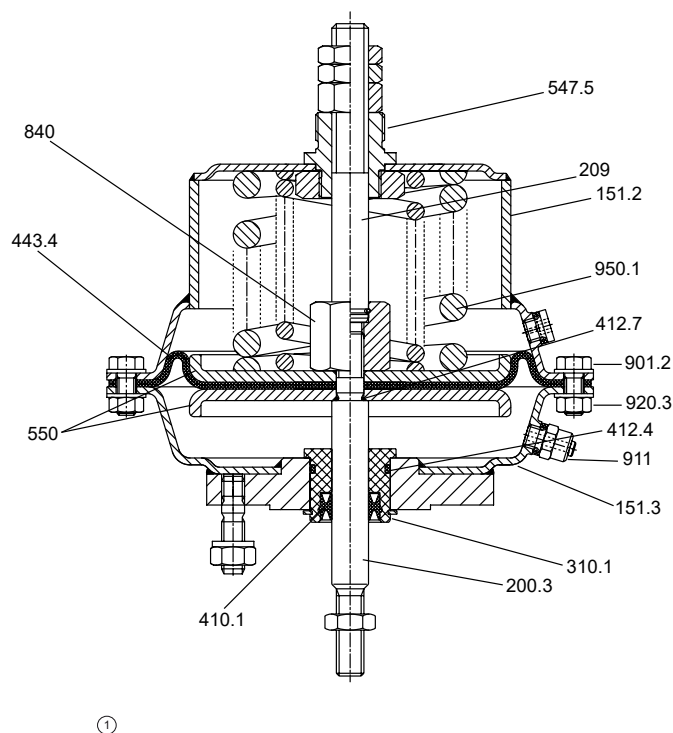
**Purchase order specifications****Actuator**

Please specify the following information in all enquiries or purchase orders:

1. Type
2. Control pressure  $P_{ctr}$
3. Accessories
4. Number of type series booklet
5. Valve travel
6. Break-to-open force
7. Break-to-close force
8. End-to-open force
9. End-to-close force

## Materials

### SISTO-LAD diaphragm actuator



1	LAD-SF type	2	LAD-OF type	3	LAD-AZ type
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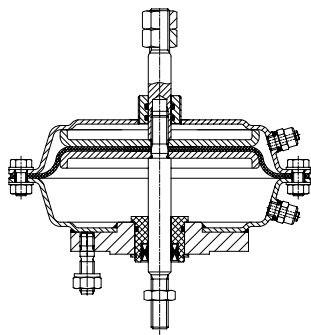
#### Parts list

Part No.	Description	Material	Material number
151.2	Upper housing section	Steel / PA-coated	-
151.3	Lower housing section with actuator flange	Steel / PA-coated	-
200.3	Stem	X14CrMoS17	1.4104
209	Piston rod	X14CrMoS17	1.4104
310.1 <sup>1)2)</sup>	Plain bearing	Plastic - POM	-
410.1 <sup>1)2)</sup>	Seal/wiper set	Plastic - L96-SFR/NBR	-
412.4 <sup>1)2)</sup>	O-ring	NBR	-
412.6 <sup>1)2)</sup>	O-ring	FPM	-
412.7 <sup>1)2)</sup>	O-ring	NBR	-
443.4 <sup>1)</sup>	Actuator diaphragm	NBR	-
547.5	Guide bush	SoMs59	-
550 <sup>2)</sup>	Diaphragm plate	Galvanised steel	-
840	Coupling	X14CrMoS17	1.4104
901.2	Hexagon head bolt	A2-70	-
911 <sup>3)</sup>	Compressed air port	MS	-
920.3	Nut	A2	-
950.1	Spring	Spring steel	-

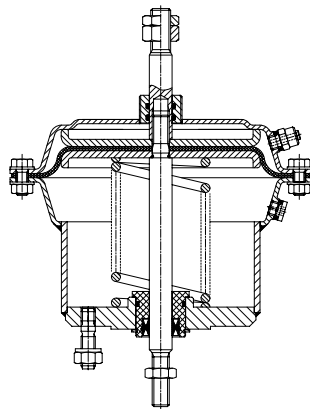
1 Recommended spare parts (= complete set of sealing elements)  
 2 We recommend having these parts replaced in our factory.  
 3 For 8x1 PA hose

**Variants**

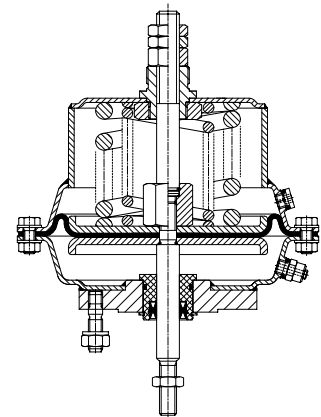
**SISTO-LAD diaphragm actuator and accessories**



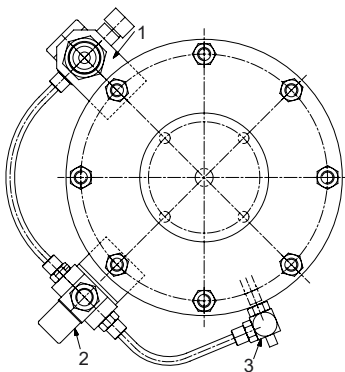
LAD-AZ type



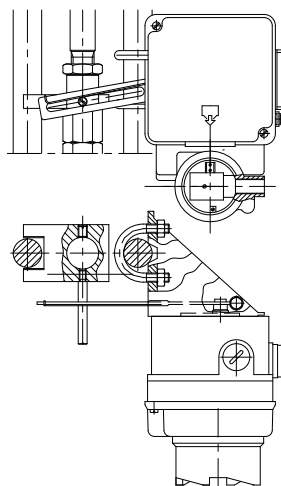
LAD-OF type



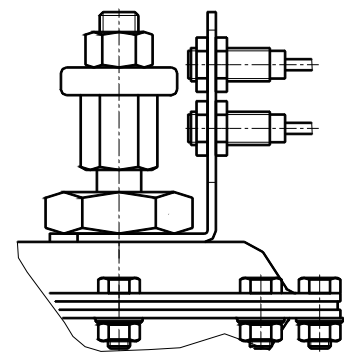
LAD-SF type



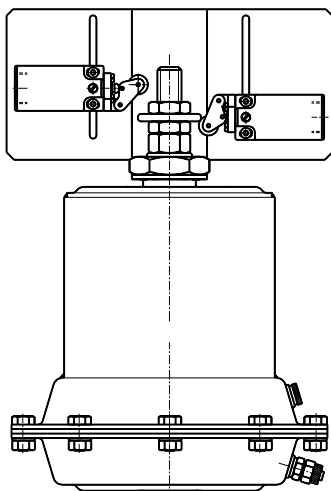
- 1) Filter/pressure reducer
- 2) Solenoid valve
- 3) Throttling valve



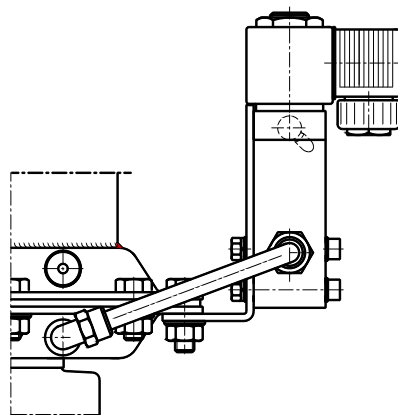
Configuration with positioner



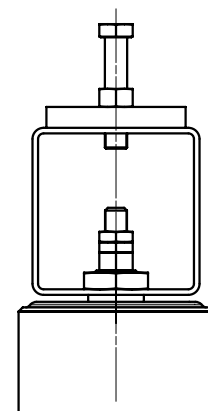
Configuration with proximity sensor



Configuration with mechanical limit switches

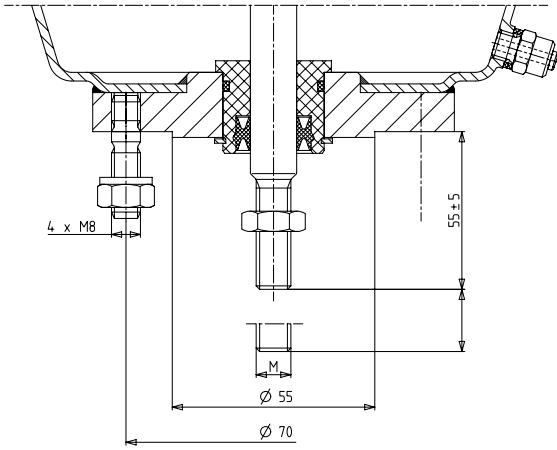


Configuration with solenoid valve

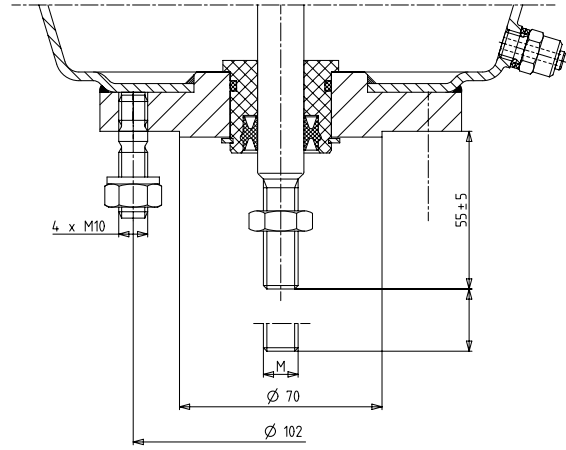


Adjustable travel stop in opening direction (optional)

9211.1/6-EN



Flange connection F07<sup>4)</sup>



Flange connection F10<sup>4)</sup>

Symbols key

Symbol	Description
M	M12 for LAD 100/150 M20 for LAD 220

**Mating dimensions as per standard**

Flange connection:                   DIN ISO 5210 / DIN 3358

<sup>4</sup> See "Symbols key" table







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