

Diaphragm Valve

SISTO-16S

PN 16
DN 15-200

Type Series Booklet



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Type Series Booklet SISTO-16S

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Diaphragm Valves

Diaphragm Valves – No Dead Volume, Soft-seated, Glandless

SISTO-16S



Main applications

- Chemical industry
- Homogenisation
- Industrial recirculation systems
- Air-conditioning systems
- Paint shops
- Seawater desalination/reverse osmosis
- Paper industry / pulp industry
- Petrochemical industry
- Refinery
- Flue gas desulphurisation
- Shipbuilding
- Process engineering
- Heat recovery systems
- Hot-water heating systems
- Water treatment

Fluids handled

- Waste water without faeces
- Aggressive fluids
- Inorganic fluids
- Service water
- Steam
- River water, lake water and groundwater
- Gas
- Fluids posing a health hazard

- Toxic fluids
- High-temperature hot water
- Highly aggressive fluids
- Condensate
- Corrosive fluids
- Fuels
- Cooling water
- Volatile fluids
- Solvents
- Seawater
- Fluids containing mineral oils
- Organic fluids
- Cleaning agents
- Brine
- Drinking water
- Other fluids on request.

Operating data

Table 1: Operating properties

Characteristic	Value
Nominal pressure	PN 16
Nominal size	DN 15 - 200
Max. permissible pressure [bar]	16
Min. permissible temperature [°C] ¹⁾	≥ -20
Max. permissible temperature [°C] ¹⁾	≤ +160

SISTO-LAD diaphragm actuator

- Max. permissible control medium temperature: 80 °C
- Permissible control pressure: 4 - 6 bar

SISTO-LAP piston actuator

- Max. permissible control medium temperature: 80 °C

Table 2: Permissible control pressure

Piston diameter	Actuator flange DIN ISO 5210 / DIN 3358	Permissible control pressure P _{ctr. perm.} [bar]
[mm]		
80 - 250	F10	5,5 - 10
250	F14	5,5 - 10
300	F10	5,5 - 7
300	F14	5,5 - 10
D250 ²⁾	F14	5,5 - 10
D300 ²⁾	F14	5,5 - 7

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.

¹⁾ The temperatures indicated are for orientation only; they are not valid for all operating conditions.

²⁾ Double piston

Valve body materials

Table 3: Overview of available materials

Material	Material number	Temperature limit
EN-GJS-400-18-LT	5.3103	-20 °C to +160 °C
GP240GH	1.0619	-20 °C to +160 °C

- Lead-sealable cap (prevents unauthorised actuation)
- Stem extension
- Certification to customer specification

Design details

Design

- Soft-seated weir-type shut-off valve in straight-way pattern
- Rising handwheel
- Shut-off and sealing to atmosphere by spiral-supported, completely enclosed diaphragm
- Position indicator with integrated stem protection
- Manufactured and tested to EN 13397
- Marked in accordance with DIN EN 19 (ISO 5209)
- TA-Luft-compliant design to VDI 2440

Variants

- Actuator (electric or pneumatic)
- Limit switches
- Locking device
- Body lined with IIR (butyl), temperature limit: +120 °C
- Body lined with NRH (hard rubber), temperature limit: +100 °C
- Body lined with PFA (DN 15 only), temperature limit: +160 °C
- Body lined with PTFE (anti-static), temperature limit: +160 °C
- Body lined with PTFE, temperature limit: +160 °C
- Body lined with TFM, temperature limit: +160 °C
- Body coated with ECTFE (Halar), temperature limit: +90 °C
- Body coated with PA (Rilsan), temperature limit: +60 °C
- Chain wheel
- Leakage detection hole and additional stem seal
- Diaphragm made of CSM, temperature limit: +80 °C
- Diaphragm made of EPDM, temperature limit: +140 °C
- Diaphragm made of SISTOMaXX (EPDM/W270), temperature limit: +90 °C
- Diaphragm made of EPDM-V (vacuum), temperature limit: +140 °C
- Diaphragm made of FKM, temperature limit: +120 °C³⁾
- Diaphragm made of IIR, temperature limit: +120 °C
- Diaphragm made of NBR, temperature limit: +90 °C
- Two-piece diaphragm made of TFM/EPDM, temperature limit: +160 °C
- Three-piece diaphragm made of TFM/PVDF/EPDM, temperature limit: +160 °C⁴⁾

³⁾ From DN 20

⁴⁾ DN 250 - 300: max. operating pressure 6 bar

Variants

Table 4: Overview of SISTO-16S variants

DN	Body material	Bonnet material	Lining				Coating	
			None	PTFE/TFM	IIR	NRH	PA (Rilsan)	ECTFE (Halar)
15	1.0619	1.0619	-	PFA only	-	-	-	-
20-200	5.3103	5.3103	x	x	x	x	x	x

Actuators

SISTO-LAD diaphragm actuator

- Sliding stem sealed by O-rings
- Mechanical travel stops in the actuator for closed position and open position
- Manual override available as standard for spring-to-close design
- Leakage detection hole from MD 65

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

SISTO-LAP piston actuator

- Double-acting piston, piston rod extending from one end only, with or without spring
- Piston rod sealed by U-ring and scraper ring
- Piston with double cup seal and vulcanised metal disc
- Mechanical travel stops in the actuator for closed position and open position
- Flanges to DIN ISO 5210/DIN 3358
- Piston diameters 80 to 300 = F10
- Piston diameters 250 to 300 = F14
- Leakage detection hole from MD 65 with screw (can be plugged)

Actuator function

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

Electric actuator

- Multi-turn actuator
- Linear actuator

Product benefits

- **Reliable sealing to atmosphere and absolutely tight shut-off**
The diaphragm provides absolutely tight shut-off as well as hermetic sealing to atmosphere and of all operating elements.
- **Maximum service life and pressure limit**
Maximised diaphragm life and pressure limit thanks to completely enclosed, spiral-supported diaphragm.
- **Excellent functional reliability**
Increased functional reliability of the diaphragm thanks to balanced diaphragm suspension.
- **Excellent resistance to corrosion and abrasion**
High-quality body materials and linings offer reliability and a long service life.
- **Smooth actuation**
The thrust bearing minimises the closing torques.
- **Optimised long-term operation**
The stem protection integrated in the position indicator prevents ingress of contaminants.
- **Fluid purity**
Valve hydraulics without dead volume ensure optimum conditions for high-purity fluids and protection against deposits.
- **Quick identification of valve position**
The valve's position can be easily identified via a clear visual indicator, also visible from a distance.
- **Reliable operation**
The stem and all internal operating elements are **not** in contact with the fluid.

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 Pressure Equipment Directive 2014/68/EU (PED)

The valves satisfy the safety requirements of Annex I of the European Pressure Equipment Directive 2014/68/EU (PED) for fluids in Groups 1 and 2.

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

Table 5: Information/documents

Document	Reference number
Operating manual	0570.821
Type series booklet SISTO-LAD (diaphragm actuator)	9211.1
Type series booklet SISTO-LAP (piston actuator)	9210.1

Purchase order specifications

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

Valve

1. Type
2. Nominal pressure
3. Nominal size
4. Operating pressure
5. Differential pressure

Pressure/temperature ratings

Table 7: Permissible operating pressure [bar]

PN	Material		[°C]							
	Designation	Number	-20 to +50	+100	+110	+120	+130	+140	+150	+ 160
16	EN-GJS-400-18-LT	5.3103	16,0	16,0	16,0	16,0	15,8	15,6	14,0	12,0
	GP240GH	1.0619	16,0	14,8	14,6	14,4	14,3	14,1	14,0	12,0

6. Operating temperature
7. Fluid handled
8. Pipe connection
9. Variants
10. Number of type series booklet
11. Certificate

Actuator

1. Type
2. Control pressure P_{ctr}
3. Accessories

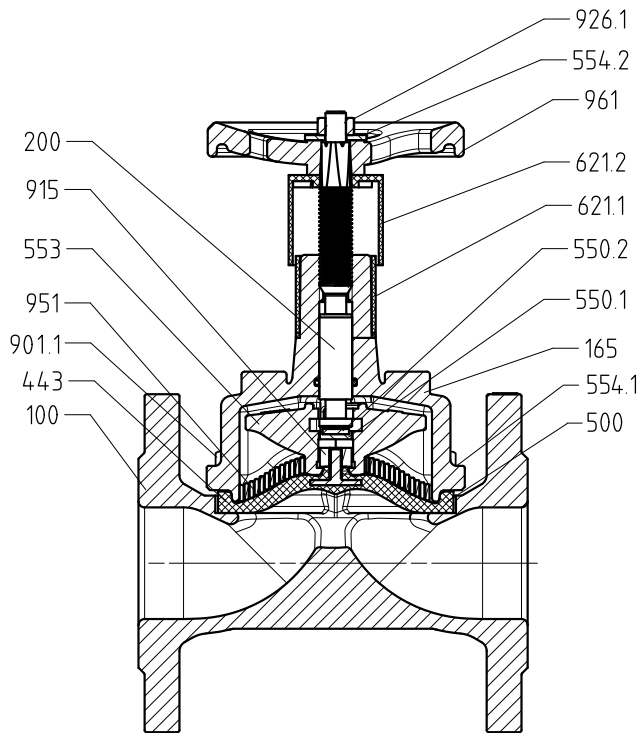
Flow coefficients

Table 6: Flow coefficients for unlined valves

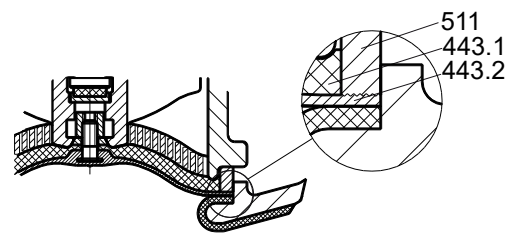
DN	Kvs value [m ³ /h]	DN	Kvs value [m ³ /h]
15	4,0	80	195,0
20	11,5	100	304,0
25	14,0	125	298,0
40	43,0	150	601,0
50	72,0	200	478,0
65	72,0		

Materials

Materials of SISTO-16S manually operated valve



SISTO-16S manually operated valve



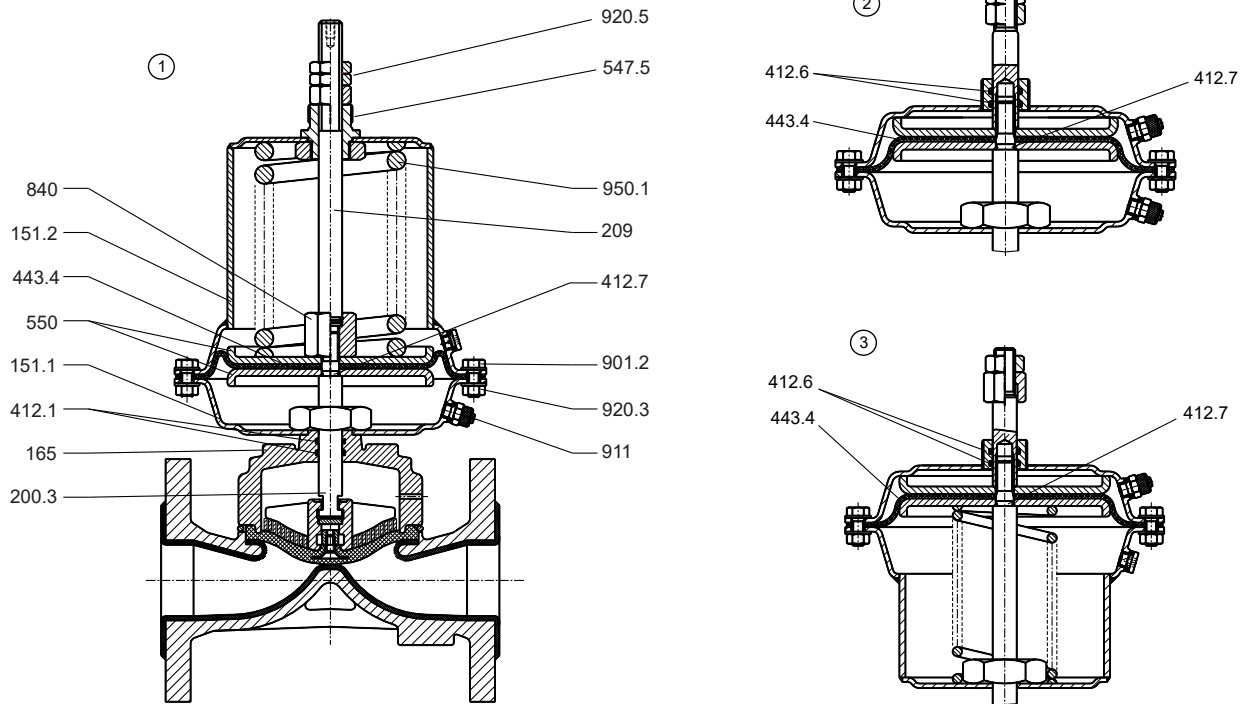
Variant with 2-piece diaphragm

Table 8: Parts list

Part No.	Description	Material	Material number	Note
100	Body	EN-GJS-400-18-LT	5.3103	DN 15 = 1.0619 with PFA lining
165	Bonnet	EN-GJS-400-18-LT	5.3103	DN 15 = 1.0619
200	Stem	X14CrMoS17	1.4104	-
443 ⁵⁾	Diaphragm	EPDM	-	Standard
443.1 ⁵⁾	Backing diaphragm	EPDM	-	-
443.2 ⁵⁾	Diaphragm	TFM	-	-
500	Ring	St 37 /A2E	-	-
511	Backing ring	St 37 /A2E	-	-
550.1	Bearing disc	11SMnPb30	1.0718	For DN 40-200
550.2	PTFE disc	PTFE/graphite	-	For DN 15; DN 40-200
553	Compressor	EN-GJS-400-15	5.3106	DN 15-25 = 1.0619
554.1	Washer	A2	-	For bodies with PA or ECTFE coating
554.2	Washer	A2	-	-
621.1	Position indicator, lower part	ASA Luran	-	-
621.2	Position indicator, upper part	ASA Luran	-	-
901.1	Hexagon head bolt	A2-70	-	PTFE/TFM variant: material 8.8
915	Floating nut	11SMnPb30	1.0718	-
926.1	Prevailing torque nut	A2-70	-	-
951	Support spiral	St 2K BK	-	From diaphragm diameter 65
961	Handwheel	EN-GJL-200	5.1300	DN 15 = PC

⁵ Recommended spare parts

Materials of SISTO-LAD diaphragm actuator



1	LAD-SF type	2	LAD-AZ type	3	LAD-OF type
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Table 9: Parts list

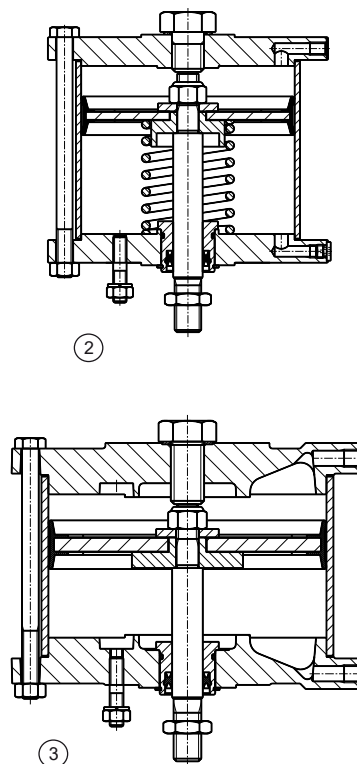
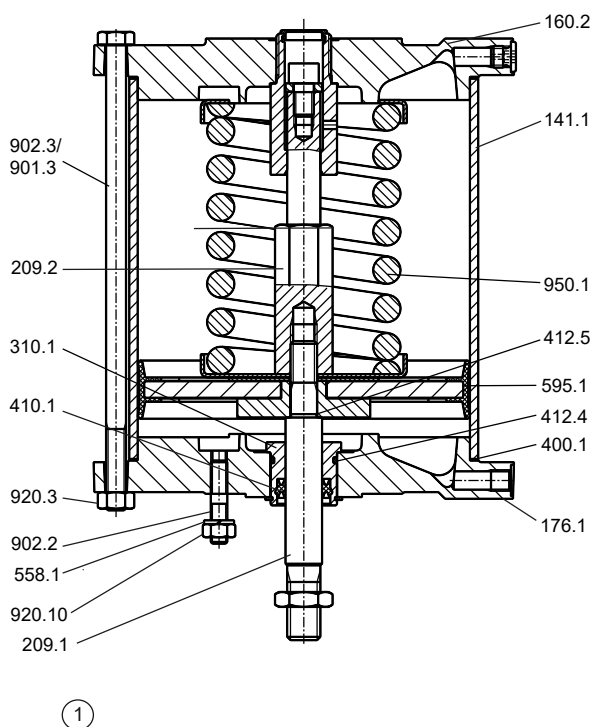
Part No.	Description	Material	Material number	Note
151.1	Lower housing section	Steel / PA-coated	-	-
151.2	Upper housing section	Steel / PA-coated	-	-
165	Bonnet	EN-GJS-400-18-LT	5.3103	-
200.3	Stem	X14CrMoS17	1.4104	-
209	Piston rod	X14CrMoS17	1.4104	-
412.1 ⁶⁾	O-ring	NBR	-	-
412.6 ^{6) 7)}	O-ring	NBR	-	-
412.7 ^{6) 7)}	O-ring	NBR	-	-
443.4 ⁶⁾	Actuator diaphragm	NBR	-	-
547.5	Guide bush	SoMs59	-	-
550 ⁷⁾	Diaphragm plate	Galvanised steel	-	-
840	Coupling	X14CrMoS17	1.4104	-
901.2	Hexagon head bolt	8.8 A2E	-	-
911	Compressed air port	Brass	-	For 8 x 1 polyamide (PA) hose
920.3	Nut	A2	-	-
920.5	Nut	A2	-	-
950.1	Spring	Spring steel	-	-

8635.101/22-EN

⁶ Recommended spare parts (= complete set of sealing elements)

⁷ We recommend having these parts replaced in our factory.

Materials of SISTO-LAP piston actuator



1	LAP-SF type	2	LAP-OF type	3	LAP-AZ type
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Table 10: Parts list

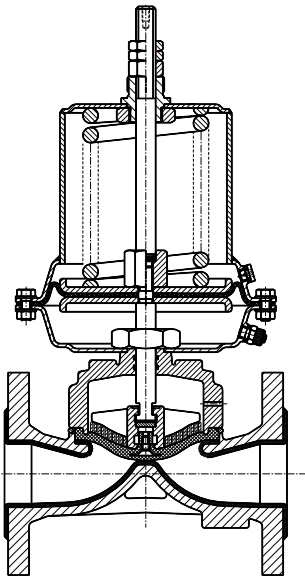
Part No.	Description	Material	Material number	Piston diameter [mm]
141.1	Cylinder	AlMgSi	3.3206	80 - 300
160.2	Top end cap	AlCu4PbMgMn AlSi7Mg0,3	3.1645 3.2371	80 - 160 200 - 300
176.1	Bottom end cap	AlCu4PbMgMn AlSi7Mg0,3	3.1645 3.2371	80 - 160 200 - 300
209.1	Lower piston rod	Stainless steel - X14CrMoS17	1.4104	80 - 300
209.2	Upper piston rod	Stainless steel - X14CrMoS17	1.4104	80 - 300
310.1 ^{8) 9)}	Plain bearing	Plastic – POM	-	80 - 300
400.1 ^{8) 9)}	Gasket	Plastic – AFM 30	-	80 - 300
410.1 ^{8) 9)}	Seal/wiper set	Plastic – L96-SFR/NBR	-	80 - 300
412.4 ^{8) 9)}	O-ring	NBR	-	80 - 300
412.5 ^{8) 9)}	O-ring	NBR	-	80 - 300
558.1	Lock washer	A2	-	80 - 300
595.1 ^{8) 9)}	Piston assembly	Steel/acrylonitrile butadiene rubber – St/NBR	-	80 - 300
901.3	Hexagon head bolt	8.8 galvanised	-	80 - 300
902.2	Stud	8.8 galvanised	-	80 - 300
902.3	Stud	A2-70	-	80 - 300
920.3	Nut	A2	-	80 - 300
920.10	Nut	A2	-	80 - 300
950.1	Spring	Spring steel	-	80 - 300

⁸ Recommended spare parts (= complete set of sealing elements)

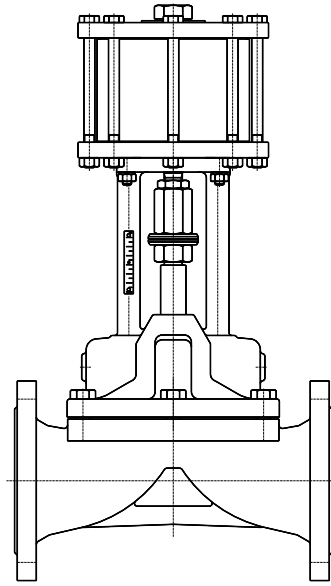
⁹ We recommend having these parts replaced in our factory.

Variants

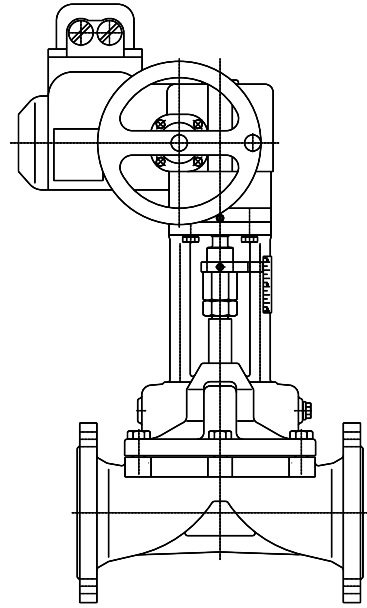
Illustrations of SISTO-16S manually operated valve variants



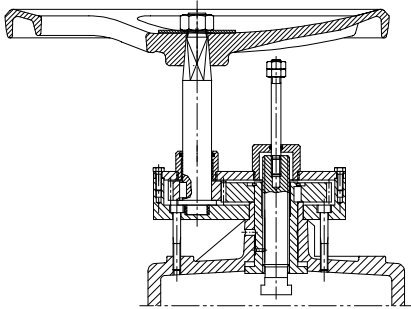
With SISTO-LAD



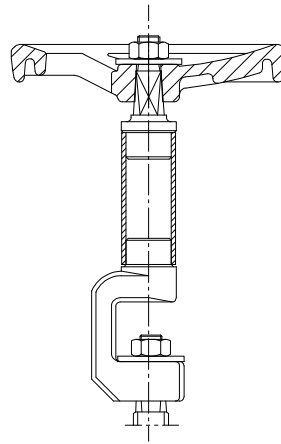
With SISTO-LAP



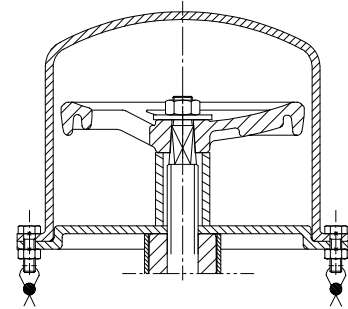
With electric actuator



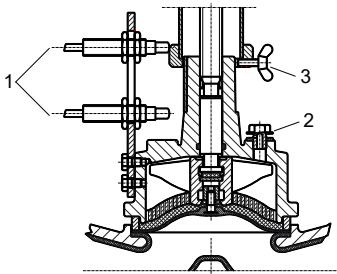
Gearbox



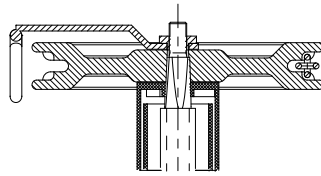
Stem extension



Lead-sealable cap

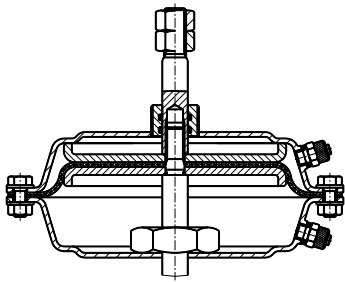


- 1 Limit switch
- 2 Leakage detection hole
- 3 Locking device

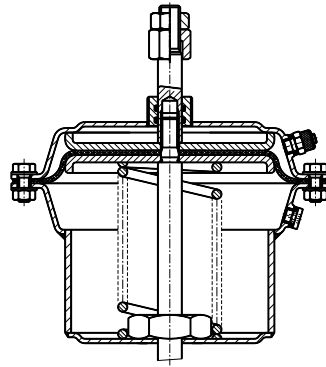


Chain wheel

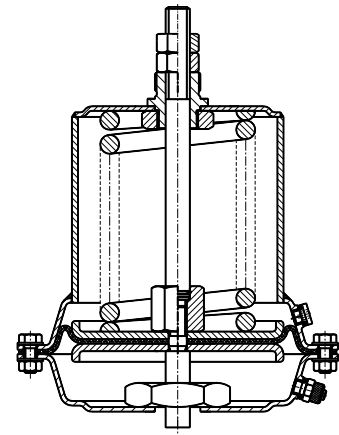
Variant illustrations of SISTO-LAD diaphragm actuator and accessories



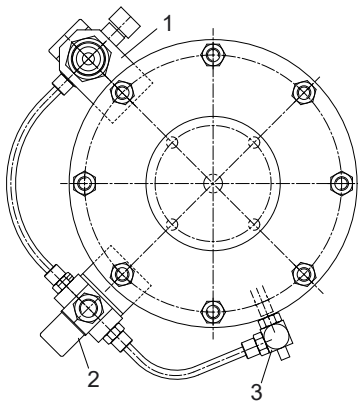
LAD-AZ type



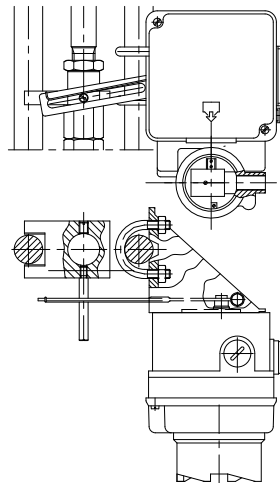
LAD-OF type



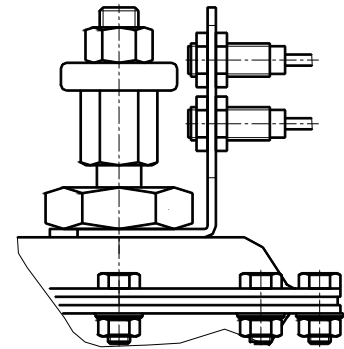
LAD-SF type



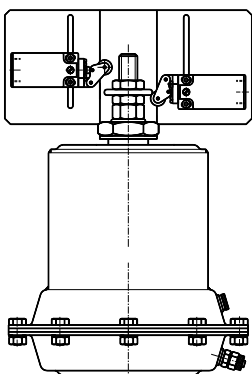
- 1 Filter/pressure reducer
- 2 Solenoid valve
- 3 Throttling valve



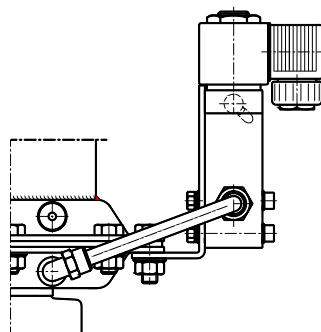
Configuration with positioner



Configuration with proximity sensor

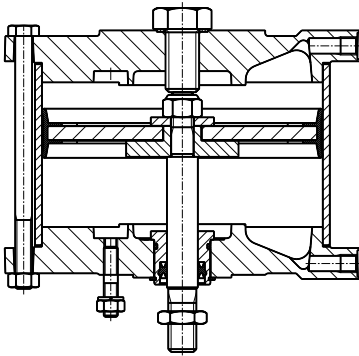


Configuration with mechanical limit switches

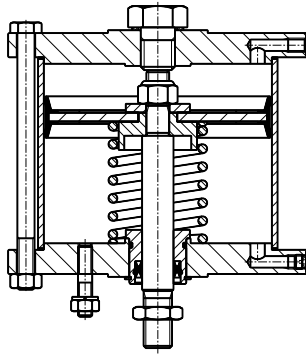


Configuration with solenoid valve

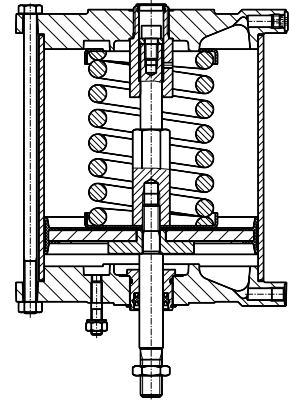
Variant illustrations of SISTO-LAP piston actuator and accessories



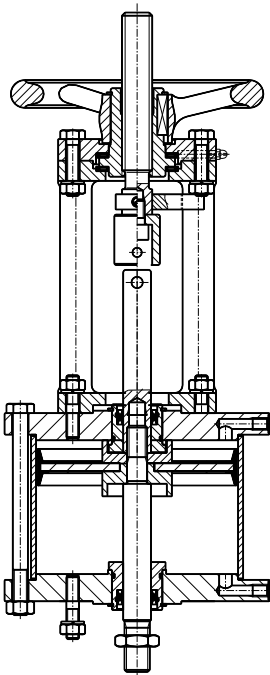
LAP-AZ type



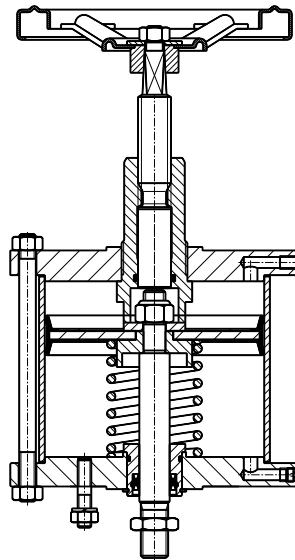
LAP-OF type



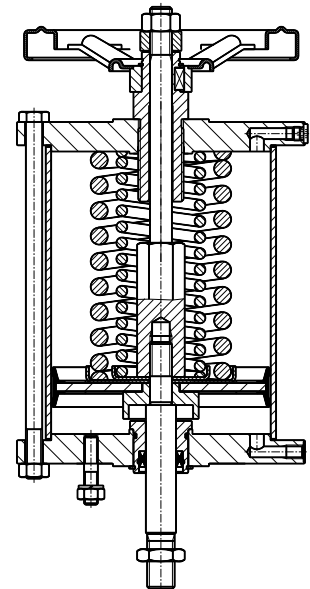
LAP-SF type



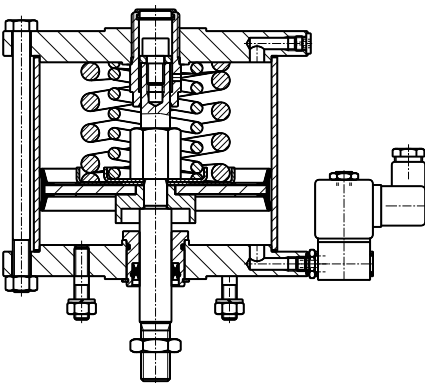
LAP-AZ type with emergency handwheel



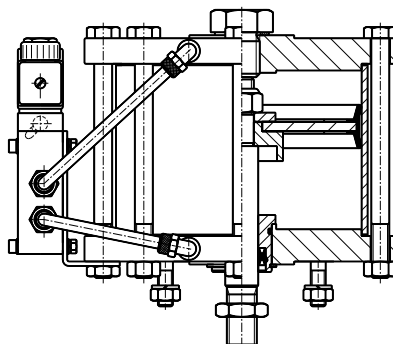
LAP-OF type with emergency handwheel



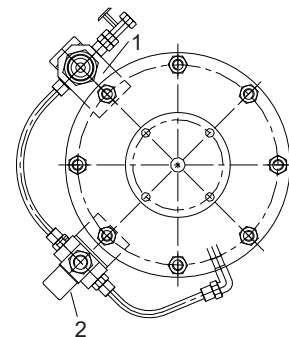
LAP-SF type with emergency handwheel



LAP-SF type with 3/2 directional control valve

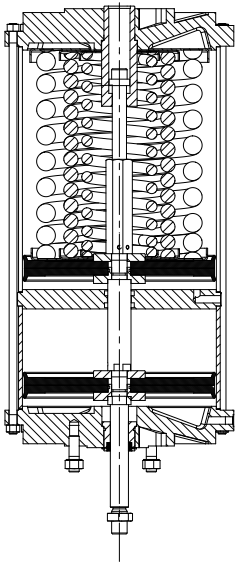


LAP-AZ type with 5/2 directional control valve

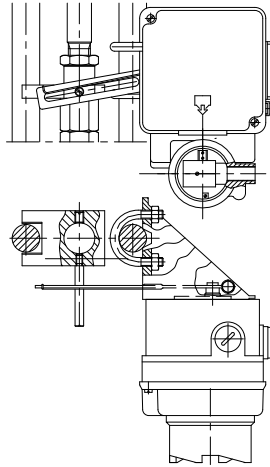


1 Filter/pressure reducer
2 Solenoid valve

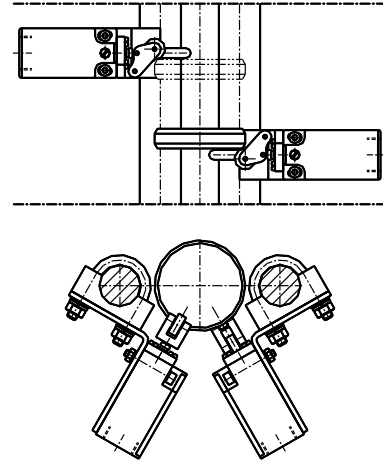
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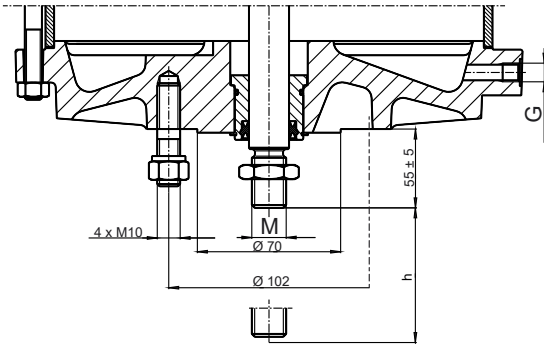
LAP-SF type with double piston



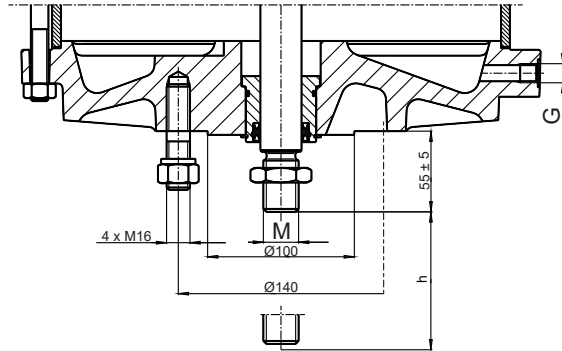
Configuration with positioner



Configuration with limit switches



Flange connection F10



Flange connection F14

Table 11: Symbols key

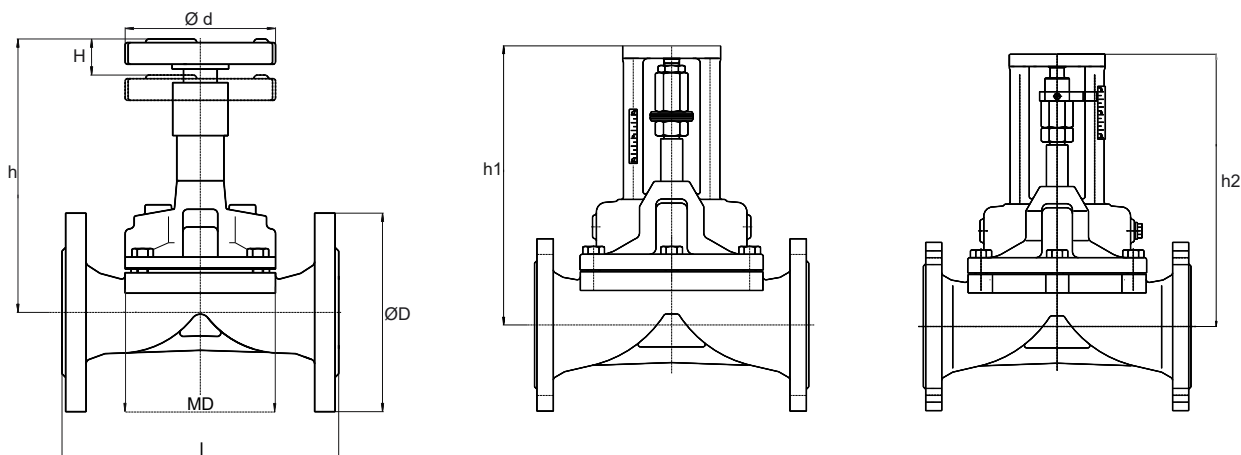
Symbol	Description
G	G1/8 in. for piston diameters 80/125/160 G1/4 in. for piston diameters 200/250/300
M	M12 for piston diameters 80/125 M20 for piston diameters 160 to 300 M24 for piston diameters D300/F14 optional

Mating dimensions as per standard

Flange connection: DIN ISO 5210 / DIN 3358
Pipe connection: DIN ISO 228 G1/8 in. and G1/4 in.

Dimensions and weights

Dimensions and weights of SISTO-16S manually operated valve



Manually operated valve

Prepared for SISTO-LAP

Prepared for electric actuator

Table 12: Dimensions and weights

DN	MD ¹⁰⁾ [mm]	l ¹¹⁾ [mm]	Ø D [mm]	H [mm]	Manually operated valve				Prepared for actuator		
					h ¹²⁾ [mm]	Ø d [mm]	Handwheel turns approx.	[kg]	Centre-to-top height with SISTO-LAP h1 ¹²⁾ [mm]	Centre-to-top height with electric actuator h2 ¹²⁾	
										F07/F10 [mm]	F14 [mm]
15 ¹³⁾	40	108	95	8	104	60	3	3,0	On request	On request	-
20	65	117	105	13	150	100	4	3,4	210	210	-
25	65	127	115	13	150	100	4	3,8	210	210	-
40	92	159	150	22	192	100	7	7,0	230	230	-
50	115	190	165	30	231	125	8	10,5	250	250	-
65	115	216	185	30	231	125	8	12,5	250	250	-
80	168	254	200	45	322	200 (250) ¹⁴⁾	9	21,5	305	320	-
100	202	305	220	60	388	250 (315) ¹⁴⁾	12	35,0	355	370	-
125	202	356	250	60	388	250 (315) ¹⁴⁾	12	40,0	355	370	-
150	280	406	285	80	512	400 (500) ¹⁴⁾	13	72,0	435	460	480
200	280	521	340	80	512	400 (500) ¹⁴⁾	13	90,0	435	460	480

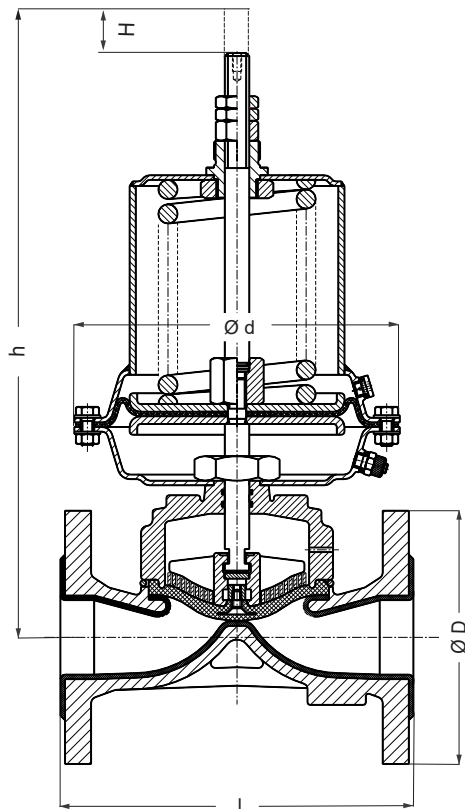
Mating dimensions as per standard

Face-to-face length: EN 558 R7
 Flanges: DIN EN 1092-2¹⁵⁾
 Flange facing: DIN EN 1092-2, type B

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10 MD = diaphragm diameter
 11 Add 6 mm to face-to-face length for rubber-lined and PTFE/TFM-lined valves.
 12 Add 5 mm to centre-to-top height for rubber-lined valves.
 13 With PFA lining only
 14 Optionally with a larger handwheel diameter for operating pressures > 10 bar, from DN 100, a gearbox can be used as an alternative.
 15 Optionally with bolt hole pattern to ASME B 16.5 - 2013 Cl. 150

Dimensions and weights of SISTO-LAD diaphragm actuator



Diaphragm valve with SISTO-LAD

Table 13: Dimensions and weights

DN	MD ¹⁶⁾ [mm]	l ¹⁹⁾ [mm]	Ø D [mm]	H [mm]	AZ/OF/SF	AZ	OF	SF	AZ/OF/SF	AZ	OF	SF	AZ/OF/SF	AZ	OF	SF	LAD-SF type			
					Actuator size 100				Actuator size 150				Actuator size 220				100	150	220	
					Ø d [mm]	h ¹⁷⁾¹⁸⁾ [mm]	Ø d [mm]	h ¹⁷⁾¹⁸⁾ [mm]	Ø d [mm]	h ¹⁷⁾¹⁸⁾ [mm]	Ø d [mm]	h ¹⁷⁾¹⁸⁾ [mm]	[kg]	[kg]	[kg]					
15	40	108	95	8	160	165	225	225	-	-	-	-	-	-	-	-	-	9,5	-	-
20	65	117	105	13	160	165	225	225	210	205	275	325	-	-	-	-	-	10,0	12,0	-
25	65	127	115	13	160	165	225	225	210	205	275	325	-	-	-	-	-	11,0	13,0	-
40	92	159	150	22	160	210	270	270	210	210	280	330	307	350	520	520	-	15,0	17,0	-
50	115	190	165	30	-	-	-	-	210	210	280	330	307	370	540	540	-	-	20,5	26,5
65	115	216	185	30	-	-	-	-	210	-	-	-	307	430	600	600	-	-	-	34,0
80	168	254	200	45	-	-	-	-	-	-	-	-	307	430	600	600	-	-	-	40,0
100	202	305	220	60	-	-	-	-	-	-	-	-	307	530	700	700	-	-	-	54,0
125	202	356	250	60	-	-	-	-	-	-	-	-	307	530	700	700	-	-	-	68,0

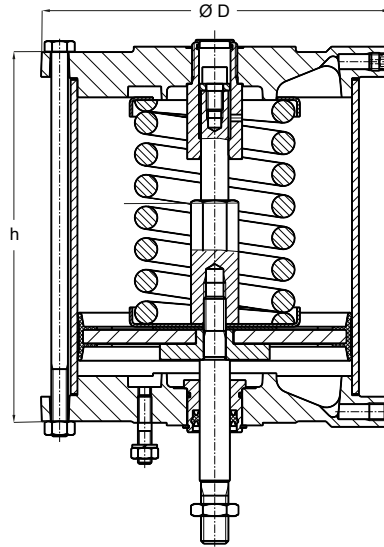
¹⁶⁾ MD = diaphragm diameter

¹⁷⁾ Add 5 mm to centre-to-top height for rubber-lined valves.

¹⁸⁾ Add 50 mm to centre-to-top height for limit switch configuration.

¹⁹⁾ Add 6 mm to face-to-face length for rubber-lined and PTFE/TFM-lined valves.

Dimensions and weights of SISTO-LAP piston actuator



SISTO-LAP

Table 14: Dimensions and weights for actuator function: air-to-open/air-to-close (AZ)

Type	Stroke [mm]	Ø D [mm]	h [mm]	[kg]
LAP-AZ-80-F10	15	130	111	4
LAP-AZ-80-F10	30	130	131	5
LAP-AZ-125-F10	15	170	131	6
LAP-AZ-125-F10	30	170	131	7
LAP-AZ-125-F10	45	170	151	8
LAP-AZ-125-F10	60	170	151	9
LAP-AZ-160-F10	30	210	168	11
LAP-AZ-160-F10	45	210	168	11
LAP-AZ-160-F10	60	210	188	12
LAP-AZ-200-F10	30	255	170	17
LAP-AZ-200-F10	45	255	190	17
LAP-AZ-200-F10	60	255	210	18
LAP-AZ-200-F10	80	255	230	20
LAP-AZ-250-F10	60	305	240	25
LAP-AZ-250-F10	80	305	260	28
LAP-AZ-250-F14	60	305	260	28
LAP-AZ-250-F14	80	305	260	28
LAP-AZ-300-F10	60	355	254	32
LAP-AZ-300-F10	80	355	274	35
LAP-AZ-300-F14	60	355	254	32
LAP-AZ-300-F14	80	355	274	35
LAP-AZ-D250-F14	80	355	424	47
LAP-AZ-D300-F14	80	355	432	61

Table 15: Dimensions and weights for actuator function: spring-to-open/air-to-close (OF)

Type	Stroke [mm]	Ø D [mm]	h [mm]	[kg]
LAP-OF-80.101-F10	15	130	151	5
LAP-OF-80.101-F10	30	130	151	6
LAP-OF-125.101-F10	15	170	151	7
LAP-OF-125.101-F10	30	170	151	8
LAP-OF-160.102-F10	30	210	188	12
LAP-OF-160.102-F10	45	210	208	13
LAP-OF-200.102-F10	30	255	210	19
LAP-OF-200.102-F10	45	255	210	19
LAP-OF-200.001-F10	45	255	310	22
LAP-OF-200.001-F10	60	255	330	23

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Type	Stroke [mm]	Ø D [mm]	h [mm]	[kg]
LAP-OF-250.002-F10	60	305	380	32
LAP-OF-250.002-F10	80	305	400	35
LAP-OF-250.002-F14	60	305	400	32
LAP-OF-250.002-F14	80	305	400	35
LAP-OF-300.002-F10	60	355	414	51
LAP-OF-300.012-F14	80	355	434	53
LAP-OF-D250.012-F14	80	305	504	54
LAP-OF-D300.012-F14	80	355	572	74

Table 16: Dimensions and weights for actuator function: air-to-open/spring-to-close (SF)

Type	Stroke [mm]	Ø D [mm]	h [mm]	[kg]
LAP-SF-80.001.5-F10	15	130	171	6
LAP-SF-80.001-F10	30	130	271	7
LAP-SF-125.002.5-F10	15	170	212	10
LAP-SF-125.002-F10	30	170	271	12
LAP-SF-160.012-F10	30	210	274	18
LAP-SF-160.012-F10	45	210	310	19
LAP-SF-200.003.5-F10	30	255	290	28
LAP-SF-200.003.7-F10	45	255	350	32
LAP-SF-200.003-F10	60	255	450	35
LAP-SF-200.003-F10	80	255	470	37
LAP-SF-250.004.7-F10	45	305	380	42
LAP-SF-250.004-F10	60	305	480	45
LAP-SF-250.004-F10	80	305	500	48
LAP-SF-250.004-F14	60	305	380	42
LAP-SF-250.004-F14	80	305	500	49
LAP-SF-300.034-F10	60	355	514	67
LAP-SF-300.034-F14	80	355	535	75
LAP-SF-D300.005-F14	80	355	732	99
LAP-SF-D300.034-F10	80	355	693	81
LAP-SF-D300.345-F14	80	355	732	122

Technical data

Actuator size of SISTO-LAD diaphragm actuator

Selection table for maximum permissible operating pressure in bar for SISTO valve with elastomer diaphragm

Minimum required control pressure: 4 bar / maximum permissible control pressure: 6 bar

Table 17: Symbols key

Symbol	Description
↑	Select smaller actuator.
↓	Select larger actuator.

Table 18: Operating pressure in bar for actuator function air-to-open/air-to-close (AZ)

Actuator size	Stroke [mm]	DN 15	DN 20-25	DN 40	DN 50-65	DN 80	DN 100-125
LAD-AZ-100	20	16	16	9	↓	↓	↓
LAD-AZ-150	35	↑	↑	16	11	↓	↓
LAD-AZ-220	56	↑	↑	↑	16	13	7

Table 19: Operating pressure in bar for actuator function spring-to-open/air-to-close (OF)

Actuator size	Stroke [mm]	DN 15	DN 20-25	DN 40	DN 50-65	DN 80	DN 100-125
LAD-OF-100.014	20	16	14	7	↓	↓	↓
LAD-OF-150.102	35	↑	16	16	9	↓	↓
LAD-OF-220.001	56	↑	↑	↑	16	10	5

Table 20: Operating pressure in bar for actuator function air-to-open/spring-to-close (SF)

Actuator size	Stroke [mm]	DN 15	DN 20-25	DN 40	DN 50-65	DN 80	DN 100-125
LAD-SF-100.001.5	20	16	9	4	↓	↓	↓
LAD-SF-150.002	35	↑	16	13	7	↓	↓
LAD-SF-220.003.7	56	↑	↑	↑	16	8	3
LAD-SF-220.004.7S ²⁰⁾	56	↑	↑	↑	↑	10	4

Selection table for maximum permissible operating pressure in bar for SISTO valve with TFM diaphragm

Minimum required control pressure: 4 bar / maximum permissible control pressure: 6 bar

Table 21: Operating pressure in bar for actuator function air-to-open/air-to-close (AZ)

Actuator size	Stroke [mm]	DN 15	DN 20-25	DN 40	DN 50-65	DN 80	DN 100-125
LAD-AZ-100	20	16	12	↓	↓	↓	↓
LAD-AZ-150	35	↑	16	16	6	↓	↓
LAD-AZ-220	56	↑	↑	↑	15	7	↓

Table 22: Operating pressure in bar for actuator function spring-to-open/air-to-close (OF)

Actuator size	Stroke [mm]	DN 15	DN 20-25	DN 40	DN 50-65	DN 80	DN 100-125
LAD-OF-100.014	20	16	10	↓	↓	↓	↓
LAD-OF-150.102	35	↑	16	14	5	↓	↓
LAD-OF-220.001	56	↑	↑	16	13	3	↓

Table 23: Operating pressure in bar for actuator function air-to-open/spring-to-close (SF)

Actuator size	Stroke [mm]	DN 15	DN 20-25	DN 40	DN 50-65	DN 80	DN 100-125
LAD-SF-100.001.5	20	16	4	↓	↓	↓	↓
LAD-SF-150.002	35	↑	16	9	3	↓	↓
LAD-SF-220.003.7	56	↑	↑	16	8	↓	↓
LAD-SF-220.004.7S ²⁰⁾	56	↑	↑	↑	16	5	2

Other selection options on request

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²⁰ Min. 5 bar

Actuator size of SISTO-LAP piston actuator

Selection table for maximum permissible operating pressure in bar for SISTO valve with elastomer diaphragm

Minimum required control pressure: 5.5 bar / maximum permissible control pressure: 10 bar

Table 24: Symbols key

Symbol	Description
↑	Select smaller actuator.
↓	Select larger actuator.

Table 25: Operating pressure in bar for actuator function air-to-open/air-to-close (AZ)

Actuator size	Stroke [mm]	DN 20-25	DN 40	DN 50-65	DN 80	DN 100-125	DN 150-200
LAP-AZ-80-F10	15/30	12	7	3	↓	↓	↓
LAP-AZ-125-F10	15/30	16	16	10	↓	↓	↓
LAP-AZ-125-F10	45/60	↑	↑	↑	5	↓	↓
LAP-AZ-160-F10	30	↑	↑	16	↓	↓	↓
LAP-AZ-160-F10	45/60	↑	↑	↑	9	5	↓
LAP-AZ-200-F10	30/45	↑	↑	↑	15	↓	↓
LAP-AZ-200-F10	60/80	↑	↑	↑	↑	8	3
LAP-AZ-250-F10/F14	60/80	↑	↑	↑	16	12	6
LAP-AZ-300-F10/F14	60/80	↑	↑	↑	↑	16	9
LAP-AZ-D250-F14	80	↑	↑	↑	↑	↑	12
LAP-AZ-D300-F14 ²¹⁾	80	↑	↑	↑	↑	↑	16

Table 26: Operating pressure in bar for actuator function spring-to-open/air-to-close (OF)

Actuator size	Stroke [mm]	DN 20-25	DN 40	DN 50-65	DN 80	DN 100-125	DN 150-200
LAP-OF-80.101-F10	15/30	8	4	2	↓	↓	↓
LAP-OF-125.101-F10	15/30	16	16	8	↓	↓	↓
LAP-OF-160.102-F10	30/45	↑	↑	16	8	↓	↓
LAP-OF-200.102-F10	30/45	↑	↑	↑	14	↓	↓
LAP-OF-200.001-F10	45/60	↑	↑	↑	↑	6	↓
LAP-OF-250.002-F10/F14	60/80	↑	↑	↑	16	9	4
LAP-OF-300.002-F10 ²¹⁾	60	↑	↑	↑	↑	15	↓
LAP-OF-300.012-F14	80	↑	↑	↑	↑	↑	7
LAP-OF-D250.012-F14	80	↑	↑	↑	↑	16	10
LAP-OF-D300.012-F14 ²¹⁾	80	↑	↑	↑	↑	↑	16

Table 27: Operating pressure in bar for actuator function air-to-open/spring-to-close (SF)

Actuator size	Stroke [mm]	DN 20-25	DN 40	DN 50-65	DN 80	DN 100-125	DN 150-200
LAP-SF-80.001.5-F10	15	8	↓	↓	↓	↓	↓
LAP-SF-80.001-F10	30	↑	5	2	↓	↓	↓
LAP-SF-125.002.5-F10	15	16	↓	↓	↓	↓	↓
LAP-SF-125.002-F10	30	↑	13	6	↓	↓	↓
LAP-SF-160.012-F10	30/45	↑	16	10	4	↓	↓
LAP-SF-200.003.5-F10	30	↑	↑	14	↓	↓	↓
LAP-SF-200.003.7-F10	45	↑	↑	16	9	↓	↓
LAP-SF-200.003-F10	60/80	↑	↑	↑	↓	4	↓
LAP-SF-250.004.7-F10	45	↑	↑	↑	14	↓	↓
LAP-SF-250.004F10/F14	60/80	↑	↑	↑	↓	7	3
LAP-SF-300.034-F10	60	↑	↑	↑	16	11	↓
LAP-SF-300.034-F14	80	↑	↑	↑	↑	↓	5
LAP-SF-D300.005-F14	80	↑	↑	↑	↑	16	8
LAP-SF-D300.345-F14	80	↑	↑	↑	↑	↑	11

Other selection options on request

²¹ Max. 7 bar

Actuator size of SISTO-LAP piston actuator

Selection table for maximum permissible operating pressure in bar for SISTO valve with TFM diaphragm

Minimum required control pressure: 5.5 bar / maximum permissible control pressure: 10 bar

Table 28: Symbols key

Symbol	Description
↑	Select smaller actuator.
↓	Select larger actuator.

Table 29: Operating pressure in bar for actuator function air-to-open/air-to-close (AZ)

Actuator size	Stroke [mm]	DN 20-25	DN 40	DN 50-65	DN 80	DN 100-125	DN 150-200
LAP-AZ-80-F10	15/30	10	↓	↓	↓	↓	↓
LAP-AZ-125-F10	15/30	16	16	5	↓	↓	↓
LAP-AZ-160-F10	30	↑	↑	10	↓	↓	↓
LAP-AZ-160-F10	45/60	↑	↑	↑	3	↓	↓
LAP-AZ-200-F10	30/45	↑	↑	16	9	↓	↓
LAP-AZ-200-F10	60/80	↑	↑	↑	↓	3	↓
LAP-AZ-250-F10/F14	60/80	↑	↑	↑	16	10	↓
LAP-AZ-300-F10/F14	60/80	↑	↑	↑	↑	16	5
LAP-AZ-D250-F14	80	↑	↑	↑	↑	↑	10
LAP-AZ-D300-F14 ²²⁾	80	↑	↑	↑	↑	↑	16

Table 30: Operating pressure in bar for actuator function spring-to-open/air-to-close (OF)

Actuator size	Stroke [mm]	DN 20-25	DN 40	DN 50-65	DN 80	DN 100-125	DN 150-200
LAP-OF-80.101-F10	15/30	5	↓	↓	↓	↓	↓
LAP-OF-125.101-F10	15/30	16	↓	↓	↓	↓	↓
LAP-OF-160.102-F10	30/45	↑	16	8	↓	↓	↓
LAP-OF-200.102-F10	30/45	↑	↑	16	↓	↓	↓
LAP-OF-200.001-F10	45/60	↑	↑	↑	6	↓	↓
LAP-OF-250.002-F10/F14	60/80	↑	↑	↑	12	3	↓
LAP-OF-300.002-F10 ²²⁾	60	↑	↑	↑	16	11	↓
LAP-OF-300.012-F14	80	↑	↑	↑	↑	↑	2
LAP-OF-D250.012-F14	80	↑	↑	↑	↑	16	8
LAP-OF-D300.012-F14 ²²⁾	80	↑	↑	↑	↑	↑	16

Table 31: Operating pressure in bar for actuator function air-to-open/spring-to-close (SF)

Actuator size	Stroke [mm]	DN 20-25	DN 40	DN 50-65	DN 80	DN 100-125	DN 150-200
LAP-SF-80.001.5-F10	15	4	↓	↓	↓	↓	↓
LAP-SF-125.002.5-F10	15	16	↓	↓	↓	↓	↓
LAP-SF-125.002-F10	30	↑	8	3	↓	↓	↓
LAP-SF-160.012-F10	30/45	↑	16	5	↓	↓	↓
LAP-SF-200.003.5-F10	30	↑	↑	7	↓	↓	↓
LAP-SF-200.003.7-F10	45	↑	↑	9	3	↓	↓
LAP-SF-250.004.7-F10	45	↑	↑	16	8	↓	↓
LAP-SF-250.004-F10	60	↑	↑	↑	↑	5	↑
LAP-SF-300.034-F10	60	↑	↑	↑	16	12	↓
LAP-SF-D300.034-F10 ²²⁾	60	↑	↑	↑	16	12	↓
LAP-SF-D300.005-F14	80	↑	↑	↑	↑	↑	5
LAP-SF-D300.345-F14	80	↑	↑	↑	↑	↑	10

Other selection options on request

²² Max. 7 bar



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