Diaphragm Valve

SISTO-10

PN 10
DN 15-300

Type Series Booklet

SISTO

Legal information/Copyright

Type Series Booklet SISTO-10

Contents

Diaphragm Valves

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

SISTO-10

Main applications

- Mining
- General irrigation systems
- Chemical industry
- Industrial recirculation systems
- Waste water treatment plants
- Air-conditioning systems
- Condensate transport
- Paint shops
- Seawater desalination/reverse osmosis
- Refinery
- Flue gas desulphurisation
- Swimming pools
- Process engineering
- Water treatment
- Water extraction
- Sugar industry

Fluids handled

- Waste water
- Aggressive fluids
- Inorganic fluids
- Brackish water
- Service water
- Distillate
- River water, lake water and groundwater
- Gas
- Toxic fluids
- Condensate
- Corrosive fluids
- Cooling water
- Volatile fluids
- Solvents
- Seawater
- Fluids containing mineral oils
- Oil
- Organic fluids
- Cleaning agents
- Lubricants
- Dipping paints
- Wash water
- Other fluids on request.

Operating data

Operating properties

Characteristic	Value
Nominal pressure	PN 10
Nominal size	DN 15 - 300
Max. permissible pressure [bar]	10
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

Permissible control pressure

Piston diameter	Actuator flange DIN ISO 5210 / DIN 3358	Permissible control pressure $P_{ctr.\ perm.}$
[mm]		[bar]
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.

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

Valve body materials

Overview of available materials

Material	Material number	Temperature limit
EN-GJL-250	5.1301	-10 °C to +160 °C
EN-GJS-400-18-LT	5.3103	-20 °C to +160 °C

Design details

Design

- Soft-seated shut-off valve in straight-way pattern
- Rising handwheel
- Shut-off and sealing to atmosphere by supported diaphragm (spiral-supported from DN 65)
- Position indicator with integrated stem protection
- Manufactured and tested to EN 13397
- Marked in accordance with DIN EN 19 (ISO 5209)

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 coated with ECTFE (Halar), temperature limit: +90 °C
- Body coated with PA (Rilsan), temperature limit: +60 °C
- Diaphragm made of CSM, temperature limit: +100 °C
- Diaphragm made of EPDM, temperature limit: +140 °C
- Diaphragm made of IIR, temperature limit: +120 °C
- Diaphragm made of NBR, temperature limit: +90 °C
- SISTOMaXX diaphragm (EPDM/W270), temperature limit +90 °C (only valid for DN 250-300)
- Two-piece diaphragm made of TFM/EPDM, temperature limit: +160 °C
- Chain wheel
- Lead-sealable cap (prevents unauthorised actuation)
- Stem extension
- Certification to customer specification

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

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

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

Diaphragm valve

- Reliable sealing ensured by one single sealing element (the diaphragm) which provides hermetic sealing to atmosphere and absolutely tight shut-off.
- Long service life: The diaphragm support increases valve life and extends the pressure limit of the diaphragm.
- Balanced diaphragm suspension for increased functional reliability of the diaphragm
- High resistance to corrosion and abrasion with high-quality body materials and linings
- High level of reliability with thrust bearing minimising the closing torques required
- Optimised long-term operation: The position indicator with integrated stem protection prevents the ingress of contaminants.
- High level of reliability: The valve hydraulics without dead volume ensure optimum conditions for high-purity fluids.
- Quick identification of valve position with clear visual indicator
- High operating reliability: The stem and all internal operating elements are not in contact with the fluid.

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SISTO-LAD diaphragm actuator

- Mounts directly on the valve, providing a compact assembly
- Minimised friction during actuation thanks to actuator diaphragm made of NBR
- Emergency operation of valve possible without compressed air supply (actuator type LAD-SF only)

SISTO-LAP piston actuator

- Smooth, low-friction movement of the piston assembly (up to 250 mm diameter pistons) with double cup seal and vulcanised metal disc
- Actuators with optimised stroke variants ensure full valve travel with minimum air consumption

Product information

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

For information as per chemicals Regulation (EC) No. 1907/2006 (REACH), see http://www.ksb.com/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

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
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

Flow coefficients for unlined valves

DN	Kvs value [m^3/h]	DN	Kvs value [m^3/h]
15	4,7	80	159,0
20	9,8	100	270,0
25	15,0	125	360,0
32	23,0	150	518,0
40	37,0	200	1112,0
50	69,0	250	1166,0
65	109,00	300	1260,0

Pressure/temperature ratings

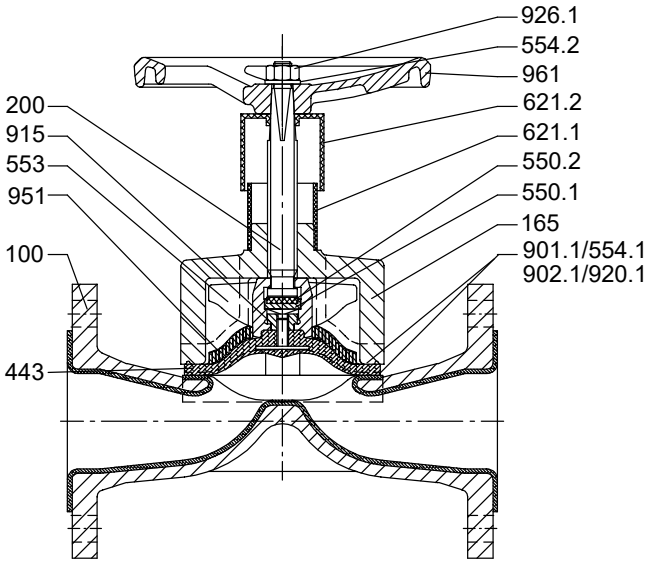
Permissible operating pressure [bar]

PN	Material	Material number	[°C]			
			-20	RT up to +120[3)]	+150	+160
10	EN-GJL-250	5.1301	-	10	9,0	8,7
	EN-GJS-400-18-LT	5.3103	10	10	9,7	9,6

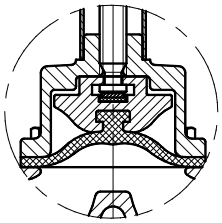
3 RT: room temperature +20°C

Materials

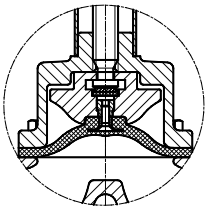
Materials of SISTO-10 manually operated valve



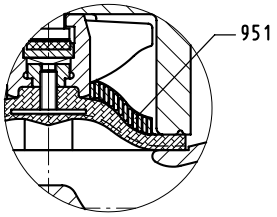
SISTO-10 manually operated valve



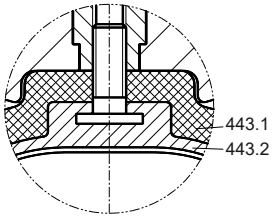
DN 15-20 design



DN 25-50 design



DN 65-300 design



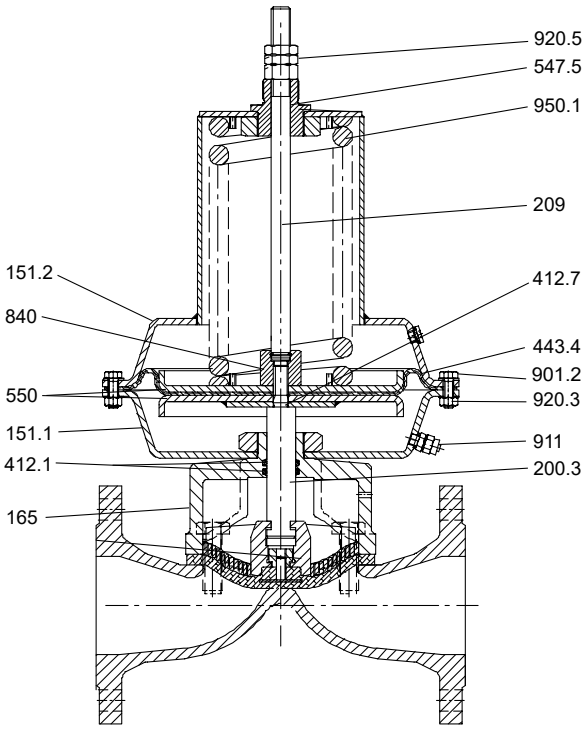
Design with
2-piece diaphragm

Parts list

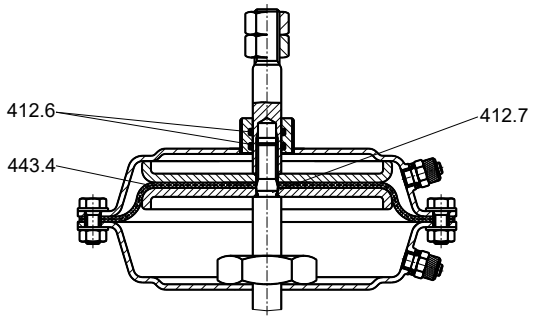
Part No.	Description	Material	Material number	Note
100	Body	EN-GJL-250	5.1301	Standard, DN 15, DN 200-300 = 5.3103
165	Bonnet	EN-GJL-250	5.1301	Standard
200	Stem	X14CrMoS17	1.4104	-
443[4)]	Diaphragm	EPDM	-	Standard
443.1[4)]	Backing diaphragm	EPDM	-	-
443.2[4)]	Diaphragm	TFM	-	-
550.1	Bearing disc	11SMnPb30	1.0718	For DN 25-300
550.2	PTFE disc	PTFE/graphite	-	For DN 25-300
553	Compressor	EN-GJL-250	5.1301	DN 15-20 = GD-ZnAl4Cu1
554.1	Washer	A2	-	For bodies with PA or ECTFE coating (DN 15-20 only)
554.2	Washer	A2	-	-
621.1	Position indicator, lower part	ASA Luran	-	-
621.2	Position indicator, upper part	ASA Luran	-	For DN 25-150 DN 200-300 = ASA/ABS
901.1	Hexagon head bolt	A2	-	For DN 15-65
902.1	Stud	A2	-	For DN 80-300
915	Floating nut	11SMnPb30	1.0718	For DN 25-300
920.1	Nut	A2	-	For DN 80-300
926.1	Prevailing torque nut	A2-70	-	For DN 25-300
951	Support spiral	St 2K BK	-	For DN 65-300
961	Handwheel	EN-GJL-200	5.1300	DN 15-20 = polycarbonate (PC)

4 Recommended spare parts

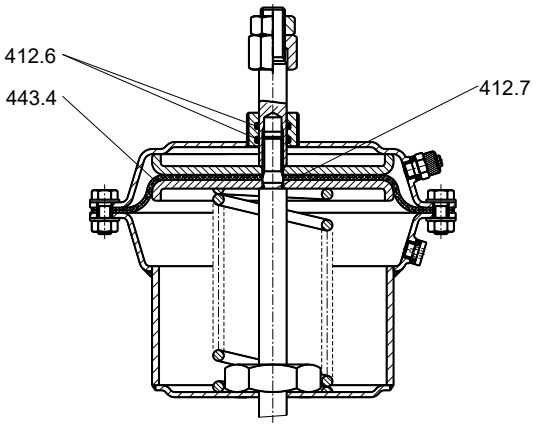
Materials of SISTO-LAD diaphragm actuator



LAD-SF type



LAD-AZ type



LAD-OF type

Parts list

Part No.	Description	Material	Material number	Note
151.1	Lower housing section	St 37/RN	-	-
151.2	Upper housing section	St 37/RN	-	-
165	Bonnet	EN-GJS-400-18-LT	5.3103	-
200.3	Stem	X14CrMoS17	1.4104	-
209	Piston rod	X14CrMoS17	1.4104	-
412.1[5)]	O-ring	FPM	-	-
412.6[5) 6)]	O-ring	NBR	-	-
412.7[5) 6)]	O-ring	NBR	-	-
443.4[5)]	Actuator diaphragm	NBR	-	-
547.5	Guide bush	SoMs59	-	-
550[6)]	Diaphragm plate	St 37/galvanised	-	-
840	Coupling	X14CrMoS17	1.4104	-
901.2	Hexagon head bolt	A2-70	-	-
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	-	-

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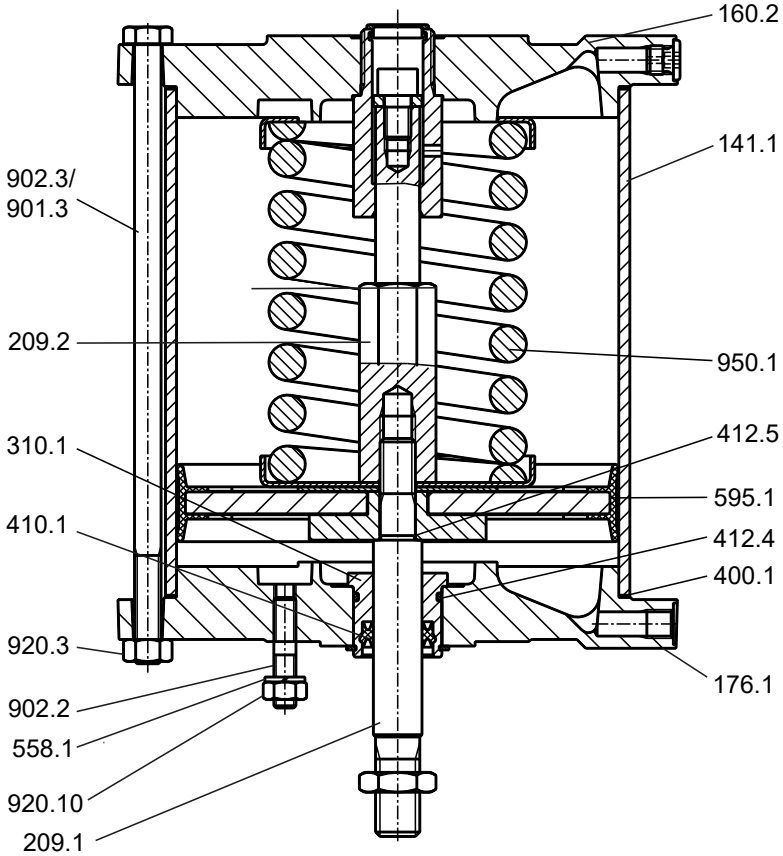
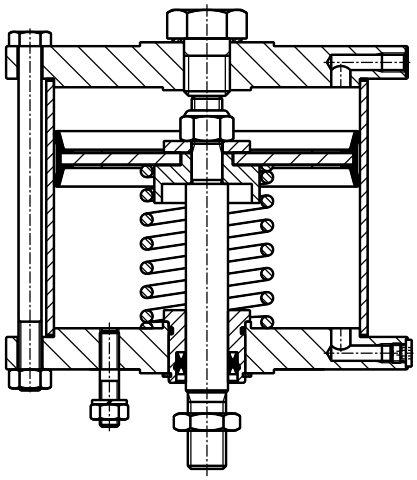
5 Recommended spare parts
6 We recommend having these parts replaced in our factory.

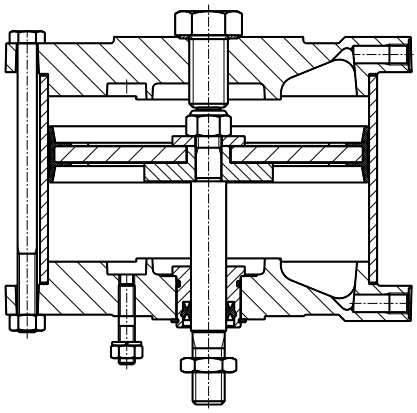
Materials of SISTO-LAP piston actuator



LAP-SF type



LAP-OF type



LAP-AZ type

Parts list

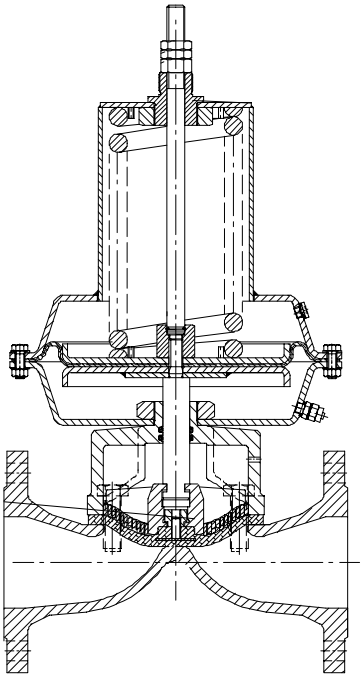
Part No.	Description	Material	Material number	Piston diameter [mm]
141.1	Cylinder	AlMgSi	3.3206	80 - 300
160.2	Top end cap	AlCu4PbMgMn AlSi7Mg0.3	3.1645 3.2371	80 - 160 200 - 300
176.1	Bottom end cap	AlCu4PbMgMn AlSi7Mg0.3	3.1645 3.2371	80 - 160 200 - 300
209.1	Lower piston rod	Stainless steel - X14CrMoS17	1.4104	80 - 300
209.2	Upper piston rod	Stainless steel - X14CrMoS17	1.4104	80 - 300
310.1[7) 8)]	Plain bearing	Plastic – POM	-	80 - 300
400.1[7) 8)]	Gasket	Plastic – AFM 30	-	80 - 300
410.1[7) 8)]	Seal/wiper set	Plastic – L96-SFR/NBR	-	80 - 300
412.4[7) 8)]	O-ring	NBR	-	-
412.5[7) 8)]	O-ring	NBR	-	-
558.1	Lock washer	A2	-	-
595.1[7) 8)]	Piston assembly	Steel/acrylonitrile butadiene rubber – St/NBR	-	80 - 300
901.3	Hexagon head bolt	8.8 A2E	-	-
902.2	Stud	8.8 A2E	-	-
902.3	Stud	A2-70	-	-

7 Recommended spare parts (= complete set of sealing elements)
8 We recommend having these parts replaced in our factory.

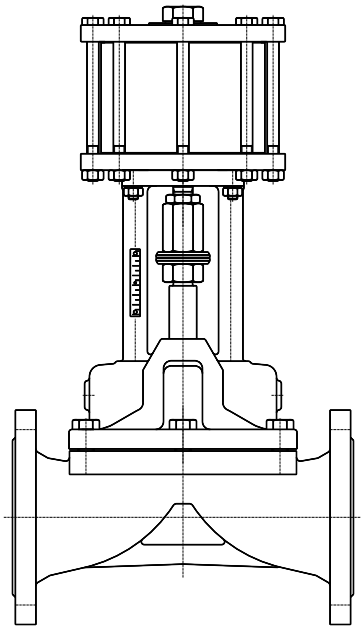
Part No.	Description	Material	Material number	Piston diameter [mm]
920.3	Nut	A2	-	-
920.10	Nut	A2	-	-
950.1	Spring	Spring steel	-	80 - 300

Variants

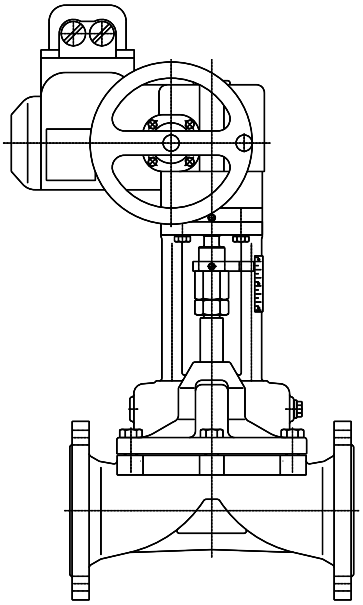
Illustrations of SISTO-10 manually operated valve variants



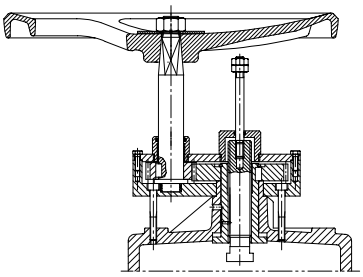
With SISTO-LAD



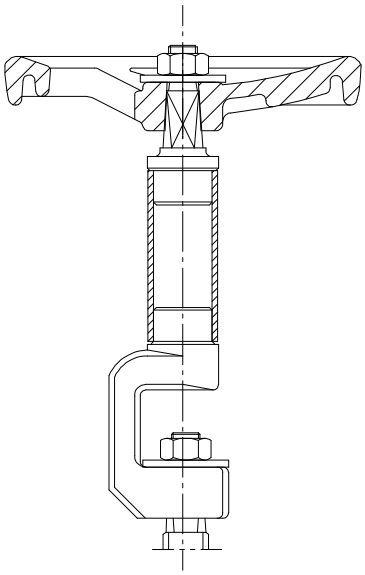
With SISTO-LAP



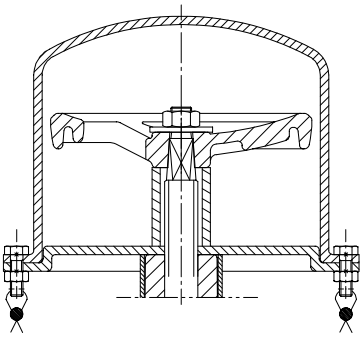
With electric actuator



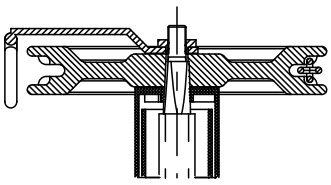
Gearbox



Stem extension

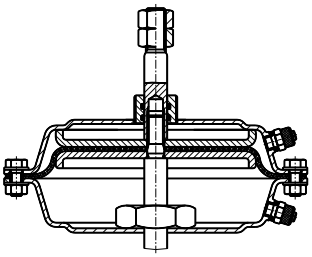


Lead-sealable cap

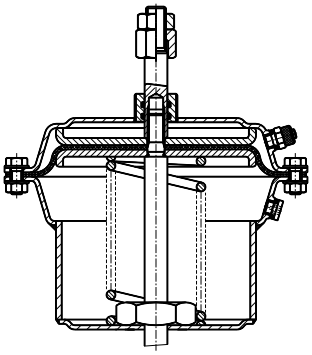


Chain wheel

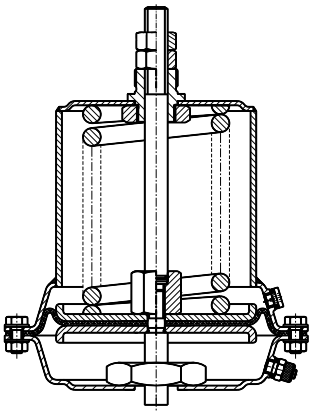
Variant illustrations of SISTO-LAD diaphragm actuator and accessories



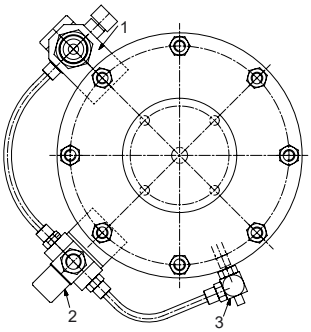
LAD-AZ type



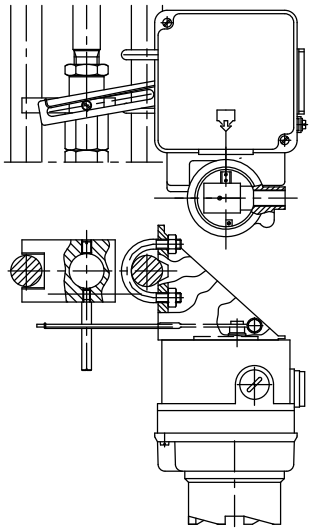
LAD-OF type



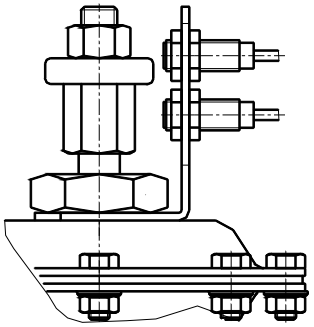
LAD-SF type



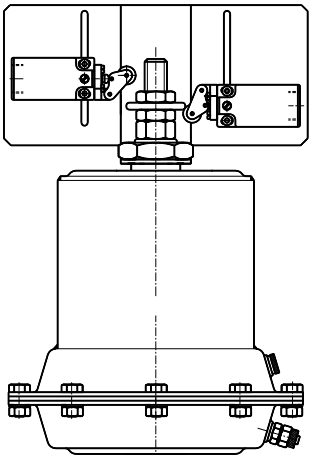
1) Filter/pressure reducer
2) Solenoid valve
3) Throttling valve



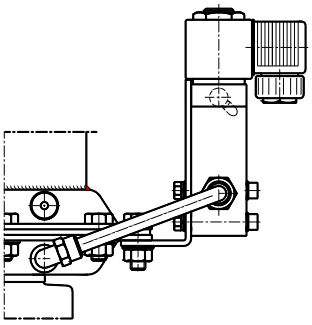
Configuration with positioner



Configuration with proximity sensor



Configuration with mechanical limit switches



Configuration with solenoid valve

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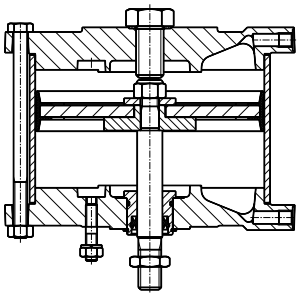
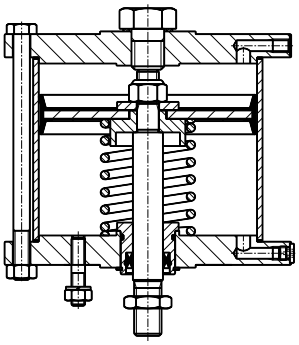
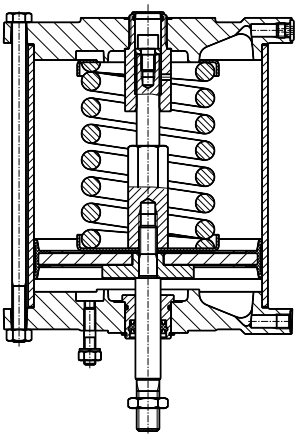
Variant illustrations of SISTO-LAP piston actuator and accessories



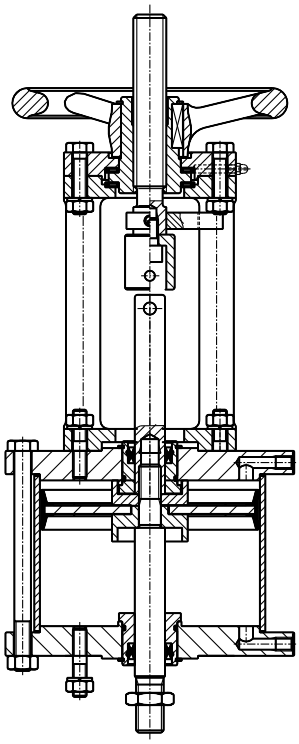
LAP-AZ type



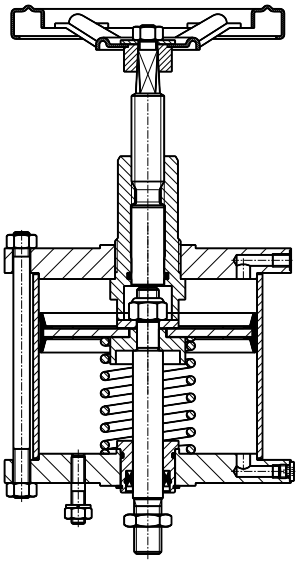
LAP-OF type



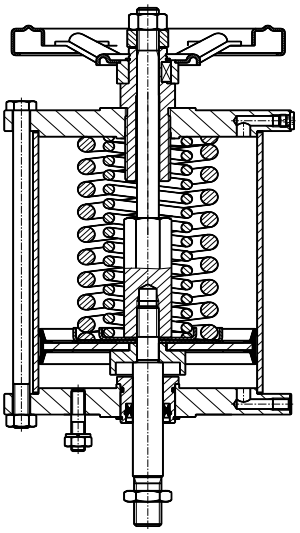
LAP-SF type



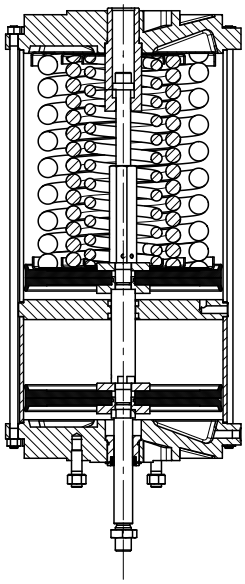
LAP-AZ type
with emergency handwheel



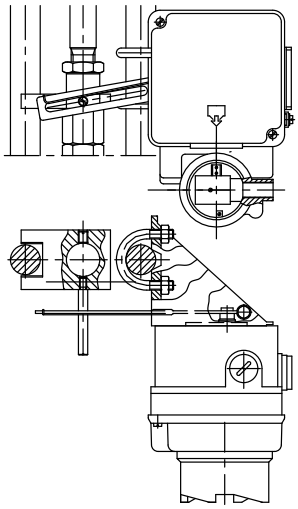
LAP-OF type
with emergency handwheel



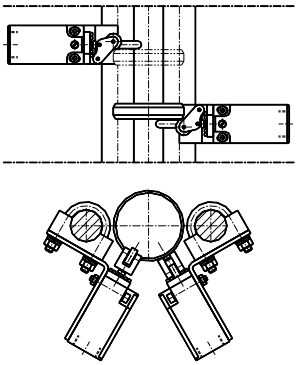
LAP-SF type
with emergency handwheel



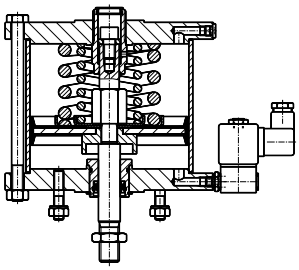
LAP-SF type with double piston



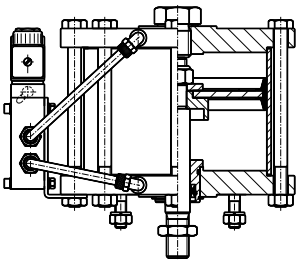
Configuration with positioner



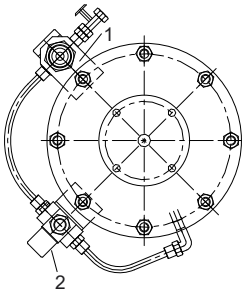
Configuration with limit switches



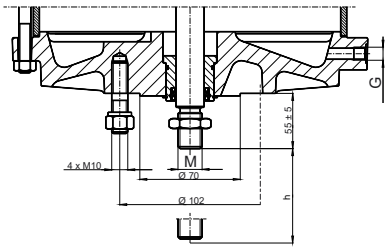
LAP-SF type with 3/2 directional control valve



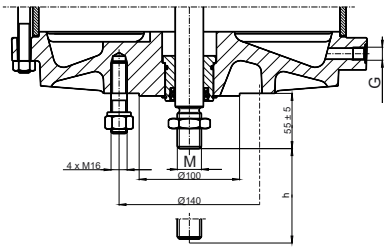
LAP-AZ type with 5/2 directional control valve



1) Filter/pressure reducer
2) Solenoid valve



Flange connection F10



Flange connection F14

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.

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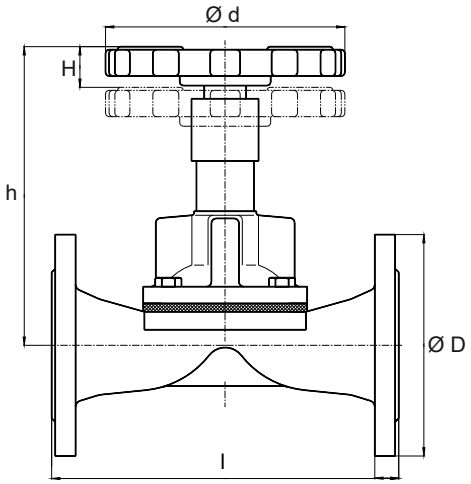
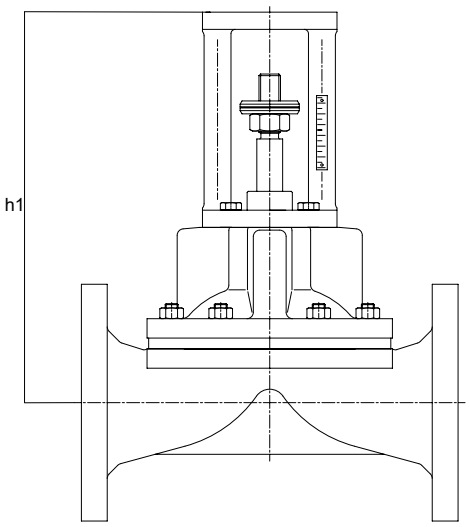
Dimensions and weights

Dimensions and weights of SISTO-10 manually operated valve



Manually operated valve



Diaphragm valve prepared for SISTO-LAP piston actuator and electric actuator

Dimensions and weights

DN	Diaphragm [mm]	l [mm]	Ø D [mm]	H [mm]	Manually operated valve				Prepared for actuator	
					h [mm][9)]	Ø d [mm]	Handwheel turns approx.	[kg]	Centre-to-top height h1 [mm]	Actuator flange
15	58 x 62	130	95	8	108	63	3	2,5	213	F10
20	58 x 62	150	105	8	108	63	3	3,0	213	F10
25	68 x 72	160	115	11	140	100	4	4,0	217	F10
32	90 x 100	180	140	18	165	100	6	5,5	227	F10
40	90 x 100	200	150	18	165	100	6	8,0	227	F10
50	107 x 124	230	165	26	200	125	7	11,5	242	F10
65	132 x 144	290	185	34	245	200	9	19,0	312	F10
80	157 x 187	310	200	40	265	200	10	25,0	320	F10
100	Ø 226	350	220	56	340	200	11	39,0	363	F10
125	Ø 258	400	250	72	405	250	15	53,0	395	F10
150	Ø 303	480	285	81	450	400	14	78,0	485	F10/F14
200	Ø 415	600	340	115	595	400	20	162,0	550	F10/F14
250	Ø 415	730	400	115	645	400	20	190,0	600	F10/F14
300	Ø 415	850	445	115	645	400	20	210,0	600	F10/F14

Mating dimensions as per standard

Face-to-face length:	EN 558-1 R1
Flanges:	DIN EN 1092-2
Flange facing:	DIN EN 1092-2, type B

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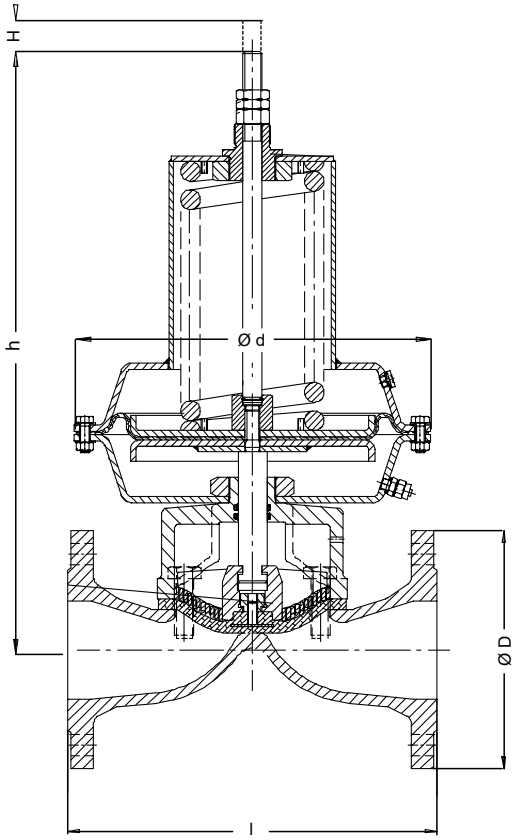
9 Add 5 mm for rubber-lined valves

Dimensions and weights of SISTO-LAD diaphragm actuator



Diaphragm valve with SISTO-LAD

Dimensions and weights

DN	Diaphragm [mm]	l [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 [mm][10)11)]			Ø d [mm]	h [mm][10)11)]			Ø d [mm]	h [mm][10)11)]			[kg]	[kg]	[kg]
15	58x62	130	95	8	160	190	250	250	210	220	290	340	-	-	-	-	9,5	11,5	-
20	58x62	150	105	8	160	190	250	250	210	220	290	340	-	-	-	-	10,0	12,0	-
25	68x72	160	115	11	160	210	270	270	210	240	310	360	-	-	530	530	11,0	13,0	-
32	90x100	180	140	18	160	210	270	270	210	240	310	360	-	-	530	530	12,5	14,5	-
40	90x100	200	150	18	160	210	270	270	210	240	310	360	-	-	530	530	15,0	17,0	-
50	107x124	230	165	26	-	-	-	-	210	250	320	370	307	-	540	540	-	20,5	26,5
65	132x144	290	185	34	-	-	-	-	210	290	360	410	307	410	580	580	-	28,0	34,0
80	157x187	310	200	40	-	-	-	-	-	-	-	-	307	430	600	600	-	-	40,0
100	Ø226	350	220	56	-	-	-	-	-	-	-	-	307	510	680	680	-	-	54,0
125	Ø258	400	250	72	-	-	-	-	-	-	-	-	307	-	-	-	-	-	68,0

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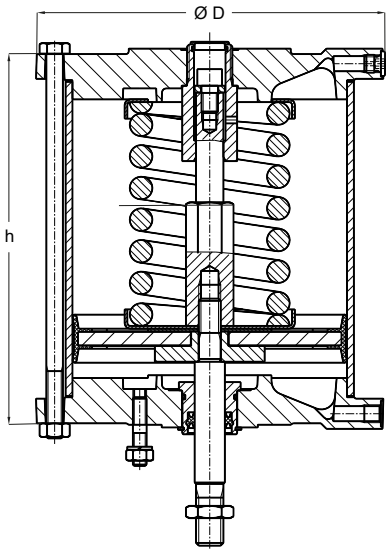
10 Add 5 mm for rubber-lined valves
11 Add 50 mm for limit switch configuration

Dimensions and weights of SISTO-LAP piston actuator



SISTO-LAP

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	45	210	168	11
LAP-AZ-160-F10	60	210	188	12
LAP-AZ-160-F10	80	210	208	13
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	80	305	260	28
LAP-AZ-300-F14	60	355	254	32
LAP-AZ-300-F14	80	355	274	35

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-125.102-F10	30	170	189	6
LAP-OF-160.001-F10	45	210	288	13
LAP-OF-160.102-F10	45	210	208	13
LAP-OF-160.102-F10	60	210	224	14
LAP-OF-200.001-F10	60	255	330	23
LAP-OF-200.001-F10	80	255	350	25
LAP-OF-250.001-F10	60	305	360	30
LAP-OF-250.002-F10	60	305	380	32
LAP-OF-250.002-F10	80	305	400	35
LAP-OF-250.002-F14	80	305	400	39
LAP-OF-300.002-F10	60	355	414	51
LAP-OF-300.002-F10	80	355	434	52

Type	Stroke [mm]	Ø D [mm]	h [mm]	[kg]
LAP-OF-300.002-F14	80	355	434	52
LAP-OF-300.012-F14	80	355	434	53
LAP-OF-D250.012-F14	80	305	504	54

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	80	305	500	49
LAP-SF-300.034-F10	60	355	514	67
LAP-SF-300.034-F10	80	355	535	70
LAP-SF-300.034-F14	80	355	535	75
LAP-SF-D300.034-F14	80	355	692	89

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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

Symbols key

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

Operating pressure [bar] for actuator function air-to-open/air-to-close (AZ)

Actuator size	Stroke [mm]	DN 15-20	DN 25	DN 32-40	DN 50	DN 65	DN 80	DN 100	DN 125[12)]
LAD-AZ-100	20	10	10	8	↓	↓	↓	↓	↓
LAD-AZ-150	35	↑	↑	10	10	10	↓	↓	↓
LAD-AZ-220	56	↑	↑	↑	↑	↑	10	10	6

Operating pressure [bar] for actuator function spring-to-open/air-to-close (OF)

Actuator size	Stroke [mm]	DN 15-20	DN 25	DN 32-40	DN 50	DN 65	DN 80	DN 100	DN 125[12)]
LAD-OF-100.014	20	10	10	7	↓	↓	↓	↓	↓
LAD-OF-150.102	35	↑	↑	10	10	10	↓	↓	↓
LAD-OF-220.001	56	↑	↑	↑	↑	↑	10	9	6

Operating pressure [bar] for actuator function air-to-open/spring-to-close (SF)

Actuator size	Stroke [mm]	DN 15-20	DN 25	DN 32-40	DN 50	DN 65	DN 80	DN 100	DN 125[12)]
LAD-SF-100.001.5	20	10	10	5	↓	↓	↓	↓	↓
LAD-SF-150.002	35	↑	↑	10	10	6	↓	↓	↓
LAD-SF-220.003.7	56	↑	↑	↑	↑	10	10	5	3
LAD-SF-220.004.7S[13)]	56	↑	↑	↑	↑	↑	↑	7	5

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

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

Operating pressure [bar] for actuator function air-to-open/air-to-close (AZ)

Actuator size	Stroke [mm]	DN 15-20	DN 25	DN 32-40	DN 50	DN 65	DN 80	DN 100	DN 125[12)]
LAD-AZ-100	20	8	8	↓	↓	↓	↓	↓	↓
LAD-AZ-150	35	10	10	10	8	2	↓	↓	↓
LAD-AZ-220	56	↑	↑	↑	10	10	10	4	↓

Operating pressure [bar] for actuator function spring-to-open/air-to-close (OF)

Actuator size	Stroke [mm]	DN 15-20	DN 25	DN 32-40	DN 50	DN 65	DN 80	DN 100	DN 125[12)]
LAD-OF-100.014	20	5	5	↓	↓	↓	↓	↓	↓
LAD-OF-150.102	35	10	10	10	6	↓	↓	↓	↓
LAD-OF-220.001	56	↑	↑	↑	10	10	10	2	↓

Operating pressure [bar] for actuator function air-to-open/spring-to-close (SF)

Actuator size	Stroke [mm]	DN 15-20	DN 25	DN 32-40	DN 50	DN 65	DN 80	DN 100	DN 125[12)]
LAD-SF-100.001.5	20	2	2	↓	↓	↓	↓	↓	↓
LAD-SF-150.002	35	10	10	8	2	↓	↓	↓	↓
LAD-SF-220.003.7	56	↑	↑	↑	10	10	3	↓	↓
LAD-SF-220.004.7S[13)]	56	↑	↑	↑	↑	↑	6	2	↓

Other actuators available on request.

12 Stroke limited to 56 mm
13 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

Symbols key

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

Operating pressure [bar] for actuator function air-to-open/air-to-close (AZ)

Actuator size	Stroke [mm]	DN 15-25	DN 32-40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
LAP-AZ-80-F10	15/30	10	8	5	2	↓	↓	↓	↓
LAP-AZ-125-F10	15/30	↑	10	10	10	↓	↓	↓	↓
LAP-AZ-125-F10	45/60	↑	↑	↑	↑	6	3	↓	↓
LAP-AZ-160-F10	45/60	↑	↑	↑	↑	10	6	↓	↓
LAP-AZ-160-F10	80	↑	↑	↑	↑	↑	↑	4	2
LAP-AZ-200-F10	60/80	↑	↑	↑	↑	↑	10	7	4
LAP-AZ-250-F10	60/80	↑	↑	↑	↑	↑	↑	10	↓
LAP-AZ-250-F14	80	↑	↑	↑	↑	↑	↑	↑	7
LAP-AZ-300-F14	60/80	↑	↑	↑	↑	↑	↑	↑	10

Operating pressure [bar] for actuator function spring-to-open/air-to-close (OF)

Actuator size	Stroke [mm]	DN 15-25	DN 32-40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
LAP-OF-80.101-F10	15/30	8	5	3	1	↓	↓	↓	↓
LAP-OF-125.101-F10	15/30	10	10	10	8	↓	↓	↓	↓
LAP-OF-160.102-F10	45/60	↑	↑	↑	10	10	↓	↓	↓
LAP-OF-200.001-F10	60/80	↑	↑	↑	↑	↑	9	↓	↓
LAP-OF-250.001-F10	60	↑	↑	↑	↑	↑	10	↓	↓
LAP-OF-250.002-F10	60/80	↑	↑	↑	↑	↑	↑	7	↓
LAP-OF-250.002-F14	80	↑	↑	↑	↑	↑	↑	↓	5
LAP-OF-300.002-F10[14)]	60/80	↑	↑	↑	↑	↑	↑	10	7
LAP-OF-300.002-F14	80	↑	↑	↑	↑	↑	↑	↑	8
LAP-OF-D250.012-F14	80	↑	↑	↑	↑	↑	↑	↑	10

Operating pressure [bar] for actuator function air-to-open/spring-to-close (SF)

Actuator size	Stroke [mm]	DN 15-25	DN 32-40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
LAP-SF-80.001.5-F10	15	8	↓	↓	↓	↓	↓	↓	↓
LAP-SF-80.001-F10	30	↓	5	3	1	↓	↓	↓	↓
LAP-SF-125.002.5-F10	15	10	↓	↓	↓	↓	↓	↓	↓
LAP-SF-125.002-F10	30	↑	10	10	6	↓	↓	↓	↓
LAP-SF-160.012-F10	30/45	↑	↑	↑	8	↓	↓	↓	↓
LAP-SF-200.003.7-F10	45	↑	↑	↑	↑	10	↓	↓	↓
LAP-SF-200.003-F10	60/80	↑	↑	↑	↑	↑	6	4	2
LAP-SF-250.004-F10	60/80	↑	↑	↑	↑	↑	10	6	↓
LAP-SF-250.004-F14	80	↑	↑	↑	↑	↑	↑	↑	3
LAP-SF-300.034-F10[14)]	60/80	↑	↑	↑	↑	↑	↑	9	↓
LAP-SF-300.034-F14	80	↑	↑	↑	↑	↑	↑	↑	6
LAP-SF-D300.034-F14	80	↑	↑	↑	↑	↑	↑	↑	6

Other actuators available on request.

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14 Max. 7 bar

Actuator size of SISTO-LAP piston actuator

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

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

Symbols key

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

Operating pressure [bar] for actuator function air-to-open/air-to-close (AZ)

Actuator size	Stroke [mm]	DN 15-25	DN 32-40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
LAP-AZ-80-F10	15/30	6	↓	↓	↓	↓	↓	↓	↓
LAP-AZ-125-F10	15/30	10	10	7	↓	↓	↓	↓	↓
LAP-AZ-160-F10	45/60	↑	↑	10	10	5	↓	↓	↓
LAP-AZ-200-F10	60/80	↑	↑	↑	↑	10	5	3	↓
LAP-AZ-250-F10	60/80	↑	↑	↑	↑	↑	10	10	↓
LAP-AZ-250-F14	80	↑	↑	↑	↑	↑	↑	↑	5
LAP-AZ-300-F14	60/80	↑	↑	↑	↑	↑	↑	↑	10

Operating pressure [bar] for actuator function spring-to-open/air-to-close (OF)

Actuator size	Stroke [mm]	DN 15-25	DN 32-40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
LAP-OF-125.101-F10	15/30	10	↓	↓	↓	↓	↓	↓	↓
LAP-OF-125.102-F10	30	↑	8	3	↓	↓	↓	↓	↓
LAP-OF-160.102-F10	45/60	↑	10	10	8	2	↓	↓	↓
LAP-OF-200.001-F10	60/80	↑	↑	↑	10	10	↓	↓	↓
LAP-OF-250.002-F10	60/80	↑	↑	↑	↑	↑	9	6	↓
LAP-OF-300.002-F10[15)]	60/80	↑	↑	↑	↑	↑	10	10	↓
LAP-OF-300.012-F14	80	↑	↑	↑	↑	↑	↑	↑	7
LAP-OF-D250.012-F14	80	↑	↑	↑	↑	↑	↑	↑	10

Operating pressure [bar] for actuator function air-to-open/spring-to-close (SF)

Actuator size	Stroke [mm]	DN 15-25	DN 32-40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
LAP-SF-125.002.5-F10	15	10	↓	↓	↓	↓	↓	↓	↓
LAP-SF-125.002-F10	30	↑	7	↓	↓	↓	↓	↓	↓
LAP-SF-160.012-F10	30/45	↑	10	7	↓	↓	↓	↓	↓
LAP-SF-200.003.5-F10	30	↑	↑	10	6	↓	↓	↓	↓
LAP-SF-200.003.7-F10	45	↑	↑	↑	10	5	↓	↓	↓
LAP-SF-250.004.7-F10	45	↑	↑	↑	↑	10	↓	↓	↓
LAP-SF-250.004-F10	60/80	↑	↑	↑	↑	↑	4	2	↓
LAP-SF-300.034-F10[15)]	60/80	↑	↑	↑	↑	↑	10	6	↓
LAP-SF-300.034-F14	80	↑	↑	↑	↑	↑	↑	↑	3

Other actuators available on request.

15 Max. 7 bar

31/08/2020

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