› **Naše technologie. Váš úspěch.**
Čerpadla ▪ Armatury ▪ Servis

Bezúdržbové membránové ventily PN16 s výstelkou / bez výstelky

SISTO

Aplikace

- Potravinářský a nápojový průmysl
- Průmysl, zařízení budov a elektrárny
- Chemické a procesní inženýrství
- Provozní voda
- Vzduch
- Olej
- Technické plyny
- Abrazivní a agresivní kapaliny

Více informací:
www.regom.cz

SISTO-16/ -20 se závitovým připojením

Váš kontakt:

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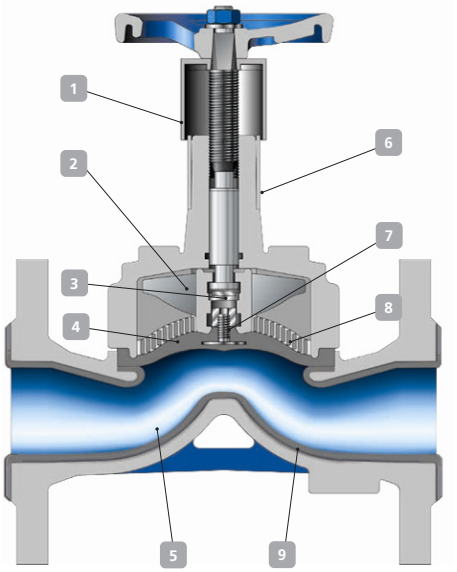
www.regom.cz

Bezúdržbové membránové ventily
PN16 s výstelkou / bez výstelky



SISTO-20

1 Optimalizovaný dlouhodobý provoz

Indikátor polohy s integrovanou ochranou vřetena zabraňuje vnuknutí nečistot.

2 Vysoká provozní spolehlivost

Vřeteno a všechny ovládací prvky ventilu nejsou v kontaktu s médiem.

3 Snadné ovládání

Axiální ložisko minimalizuje uzavírací momenty

4 Spolehlivé utěsnění vůči průchodu média a vůči atmosféře

Membrána zajišťuje hermetické utěsnění vůči atmosféře, průtoku média a všem ovládacím prvkům

5 Čistota média

Ventil bez mrtvých zón -> Žádná kontaminace média

(Konstrukce těla ventilu bez mrtvých zón zajišťuje dohled nad kontaminací a zabraňuje usazeninám)

6 Rychlé určení polohy ventilu

Polohu ventilu lze snadno identifikovat pomocí jasného vizuálního indikátoru, který je viditelný i z dálky.

7 Vysoká funkční spolehlivost

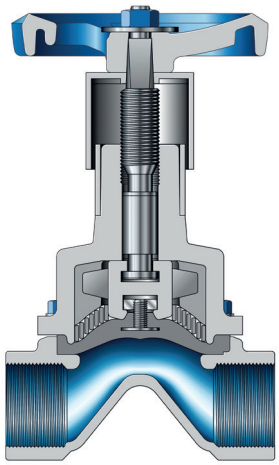
Vyvážené zavěšení membrány zvyšuje funkční spolehlivost membrány

8 Maximální životnost a tlakový limit

Zapouzdřená a podepřená membrána maximalizuje životnost a tlakový limit membrány.

9 Vysoká odolnost proti korozi a abrazi

Vysoce kvalitní povlaky poskytují bezpečnost a dlouhou životnost.



SISTO-16 se závitovým připojením

Materiály:	**SISTO-16**	**SISTO-20**	**SISTO-16S**
Tělo	Šedá litina	Tvárná litina, nerezová ocel	Tvárná litina
Výstelka	Ebonit, butilkaučuk	Ebonit, butilkaučuk, PTFE	Ebonit, butilkaučuk, PTFE
Povlak	Polyamid, ECTFE	Polyamid, ECTFE	Polyamid, ECTFE
Víko / horní díl ventilu	Šedá litina	Tvárná litina	Tvárná litina
Membrána	EPDM, IIR, CSM,NBR, FKM, TFM/EPDM	EPDM, IIR, CSM,NBR, FKM, TFM/EPDM	EPDM, IIR, CSM,NBR, FKM, TFM/EPDM
Připojení	Přírubové, závitové	Přírubové, závitové přivařovací	Přírubové

Technické údaje:			
Rozměry	15-300	15-300	15-200
Max. jmenovitý tlak	16 bar	16 bar	16 bar
Teplotní rozsah	-10 up do +160 °C	-20 až do +160 °C	-20 až do +160 °C

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Diaphragm Valve

SISTO-16

PN 16
DN 15-300

Type Series Booklet

Legal information/Copyright

Type Series Booklet SISTO-16

Contents

Diaphragm Valves

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

SISTO-16

Main applications

- Mining
- General irrigation systems
- Chemical industry
- Homogenisation
- Industry/process engineering
- Industrial recirculation systems
- Waste water treatment plants
- Air-conditioning systems
- Condensate transport
- Power stations
- Paint shops
- Seawater desalination/reverse osmosis
- Mining
- Paper industry / pulp industry
- Petrochemical industry
- Refinery
- Flue gas desulphurisation
- Shipbuilding
- Swimming pools
- Process engineering
- Heat recovery systems
- Hot-water heating systems
- Water treatment
- Water extraction

Fluids handled

- Waste water without faeces
- Aggressive fluids
- Inorganic fluids
- Brackish water
- Service water
- Steam
- Distillate
- Paints and varnishes
- 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
- Oil
- Organic fluids
- Cleaning agents
- Lubricants
- Brine
- Dipping paints
- Drinking water
- Wash water
- Other fluids on request.

Operating data

Operating properties

Characteristic	Value
Nominal pressure	PN 16[1)]
Nominal size	DN 15 - 300
Max. permissible pressure [bar]	16[2)]
Min. permissible temperature [°C][3)]	≥ -10
Max. permissible temperature [°C][3)]	≤ +160

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1 DN 250 - 300 = PN 10
2 DN 250 - 300 = 10 bar
3 The temperatures indicated are for orientation only; they are not valid for all operating conditions.

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[4)]	F14	5,5 - 10
D300[4)]	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.

Valve body materials

Overview of available materials

Material	Material number	ASTM[5)]	Temperature limit
EN-GJL-250 (GG25)	5.1301	A48 Class 35 (UNS F12401)	-10 °C to +160 °C
GX2CrNiMo19-11-2[6)]	1.4409	A351 Gr. CF3M (UNS J92800)	-10 °C to +160 °C

Model with flanged ends DN 15 - 300
Model with threaded socket ends DN 15 - 80

Design details

Design

- Models with flanged ends or threaded socket ends
- Soft-seated shut-off valve in straight-way pattern
- Rising handwheel
- Shut-off and sealing to atmosphere by spiral-supported, completely enclosed diaphragm.
  DN 250 and above: spiral-supported design only
- Position indicator with integrated stem protection
- Manufactured and tested to EN 13397
- Marked in accordance with DIN EN 19 (ISO 5209)
- Version in compliance with TA-Luft (German Clean Air Act) to VDI 2440 for DN 15 - 200

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
- Chain wheel
- Leakage detection hole and additional stem seal for DN 15 - 200
- 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 °C[7)]
- 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[8)]
- 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
- Leakage detection hole from MD 65

4 Double piston
5 ASTM materials similar to the materials indicated
6 Body with threaded socket ends
7 From DN 20
8 DN 250 - 300: max. operating pressure 6 bar

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

- **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 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

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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 with flanged ends

DN	MD[9] [mm]	Kvs value [m³/h]
15	40	4
20	65	11,5
25	65	14
32	92	35
40	92	43
50	115	72
65	168	141
80	168	195
100	202	304
125	202	298
150	280	601
200	280	478
250	415	1166
300	415	1260

Flow coefficients for unlined valves with threaded socket ends

DN	MD[9] [mm]	Kvs value [m³/h]
15	40	7,6
20	40	7,4
25	65	28,3
32	65	29
40	65	28
50	92	66,5
65	115	114
80	168	234

Pressure/temperature ratings

Permissible operating pressure [bar]

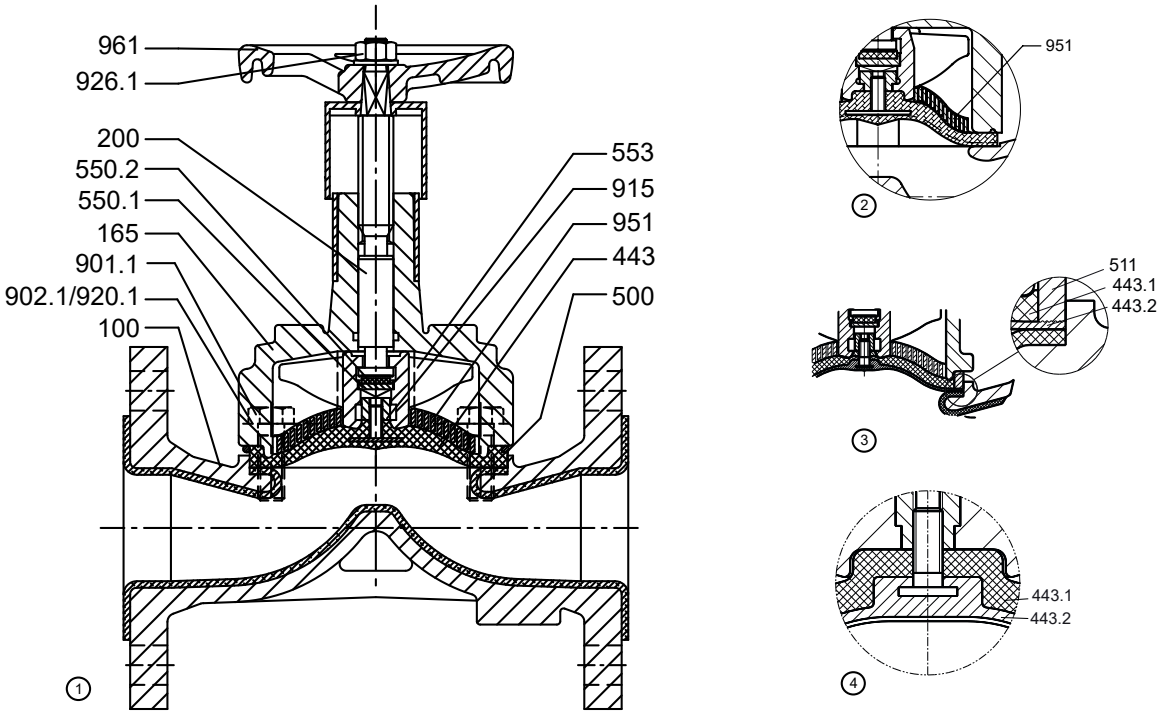
PN	Material		[°C]							
	Designation	Number	-10 to +50	+100	+110	+120	+130	+140	+150	+160
16	EN-GJL-250	5.1301	16,0	16,0	16,0	16,0	15,4	14,9	14,0	12,0
	GP240GH	1.0619	16,0	14,8	14,6	14,4	14,3	14,1	14,0	12,0
	GX2CrNiMo19-11-2	1.4409	16,0	15,1	14,8	14,5	14,2	13,9	13,7	12,0
10[10]	EN-GJS-400-18-LT	5.3103	10,0	10,0	10,0	10,0	9,9	9,8	9,0	8,0
	EN-GJL-250	5.1301	10,0	10,0	10,0	10,0	9,6	9,3	9,0	8,0

If a combination of different pressure enclosure materials is used, the respectively lowest permissible operating pressure shall apply.

9 MD = diaphragm diameter
10 DN 250 - 300

Materials

Materials of SISTO-16 manually operated valve with flanged ends



1	SISTO-16 manually operated valve with flanged ends	2	SISTO-16 manually operated valve with flanged ends, DN 250 - 300
3	Variant with 2-piece diaphragm, DN 15 - 200	4	Variant with 2-piece diaphragm, DN 250 - 300

Parts list

Part No.	Description	MD	Material	Material number	Note
100	Body	40	EN-GJS-400-18-LT	5.3103	NRH = 1.0619
		65 - 280	EN-GJL-250	5.1301	DN 200 = 5.3103
		415	EN-GJS-400-18-LT	5.3103	-
165	Bonnet	40	GP240GH	1.0619	-
		65 - 415	EN-GJL-250	5.1301	-
200	Stem	40 - 415	X14CrMoS17	1.4104	-
443[11)]	Diaphragm	40 - 415	EPDM	-	Standard
443.1[11)]	Backing diaphragm	40 - 415	EPDM	-	-
443.2[11)]	Diaphragm	40 - 415	TFM	-	-
500	Ring	40 - 280	Galvanised steel	-	-
511	Backing ring	40 - 280	Steel	-	-
550.1	Bearing disc	92 - 415	Steel	-	-
550.2	PTFE disc	40, 92 - 415	PTFE/graphite	-	-
553	Compressor	40	GP240GH	1.0619	-
		65	GD-ZnAl4Cu1	2.2141.05	-
		92 - 280	EN-GJS-400-15	5.3106	-
		415	EN-GJL-250	5.1301	-
901.1	Hexagon head bolt	40-280	A2	-	-
902.1	Stud	415	A2	-	-
915	Floating nut	40 - 415	Steel	-	-
920.1	Nut	415	A2	-	-
926.1	Prevailing torque nut	40 - 415	A2	-	-
951	Support spiral	65 - 415	Steel	-	-
961	Handwheel	40	Plastic	-	-
		65 - 415	EN-GJL-200	5.1300	-

11 Recommended spare parts

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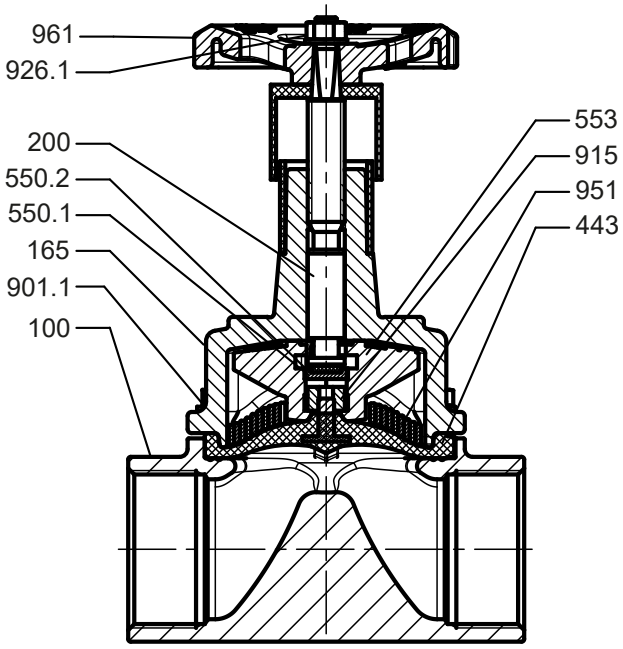
Materials of SISTO-16 manually operated valve with threaded socket ends



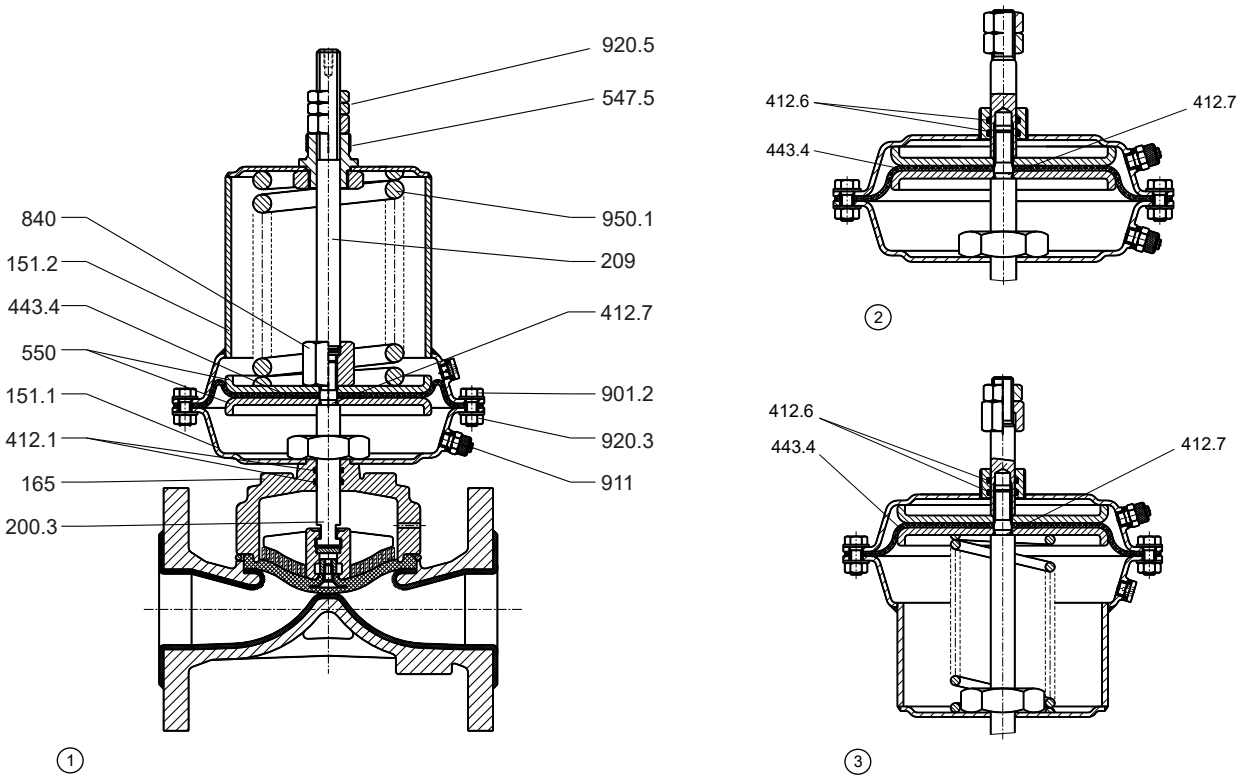
SISTO-16 manually operated valve with threaded socket ends, DN 15 - 80

Parts list

Part No.	Description	MD	Material	Material number	Note
100	Body	40 - 168	GX2CrNiMo19-11-2	1.4409	-
165	Bonnet	40	GP240GH	1.0619	-
		65 - 168	EN-GJL-250	5.1301	-
200	Stem	40 - 168	X14CrMoS17	1.4104	-
443[12)]	Diaphragm	40 - 168	EPDM	-	Standard
550.1	Bearing disc	92 - 168	Steel	-	-
550.2	PTFE disc	40, 92 - 168	PTFE/graphite	-	-
553	Compressor	40	GP240GH	1.0619	-
		65	GD-ZnAl4Cu1	2.2141.05	-
		92 - 168	EN-GJS-400-15	5.3106	-
901.1	Hexagon head bolt	40 - 168	A2	-	-
915	Floating nut	40 - 168	Steel	-	-
926.1	Prevailing torque nut	40 - 168	A2	-	-
951	Support spiral	65 - 168	Steel	-	-
961	Handwheel	40	Plastic	-	-
		65 - 168	EN-GJL-200	5.1300	-

12 Recommended spare parts

Materials of SISTO-LAD diaphragm actuator



1	LAD-SF type	2	LAD-AZ type	3	LAD-OF type

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[13)]	O-ring	NBR	-	-
412.6[13) 14)]	O-ring	NBR	-	-
412.7[13) 14)]	O-ring	NBR	-	-
443.4[13)]	Actuator diaphragm	NBR	-	-
547.5	Guide bush	SoMs59	-	-
550[14)]	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	-	-

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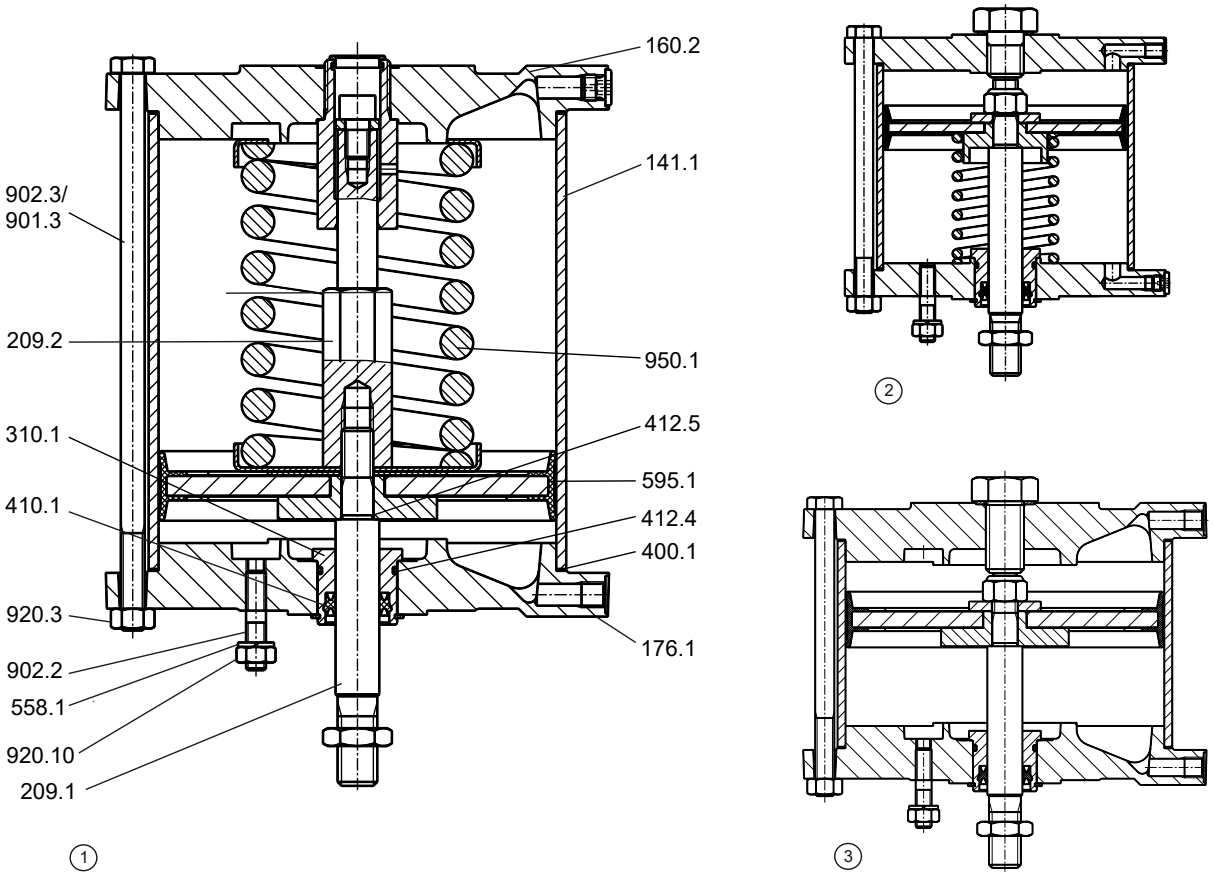
13 Recommended spare parts
14 We recommend having these parts replaced in our factory.

Materials of SISTO-LAP piston actuator



1	LAP-SF type	2	LAP-OF type	3	LAP-AZ type

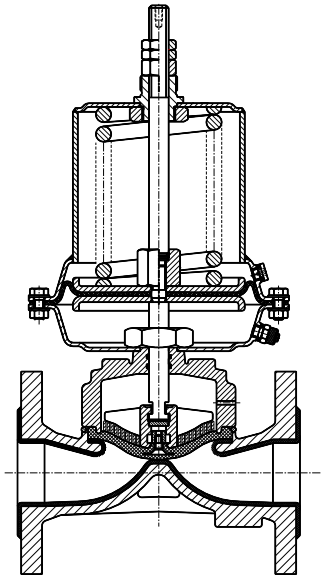
Parts list

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[15) 16)]	Plain bearing	Plastic – POM	-	80 - 300
400.1[15) 16)]	Gasket	Plastic – AFM 30	-	80 - 300
410.1[15) 16)]	Seal/wiper set	Plastic – L96-SFR/NBR	-	80 - 300
412.4[15) 16)]	O-ring	NBR	-	80 - 300
412.5[15) 16)]	O-ring	NBR	-	80 - 300
558.1	Lock washer	A2	-	80 - 300
595.1[15) 16)]	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

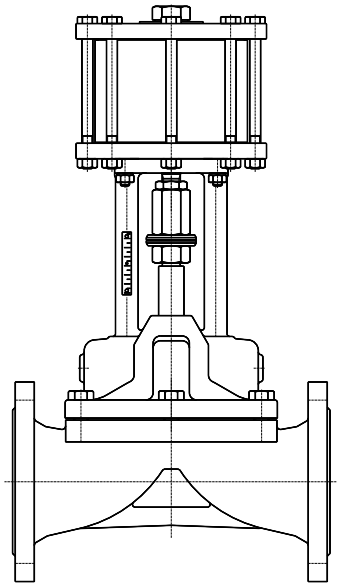
15 Recommended spare parts (= complete set of sealing elements)
16 We recommend having these parts replaced in our factory.

Variants

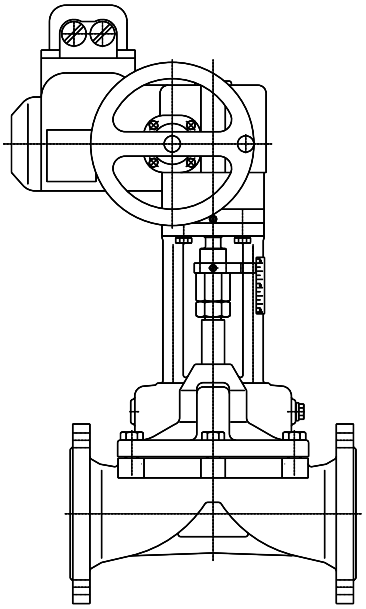
Illustrations of SISTO-16 manually operated valve variants



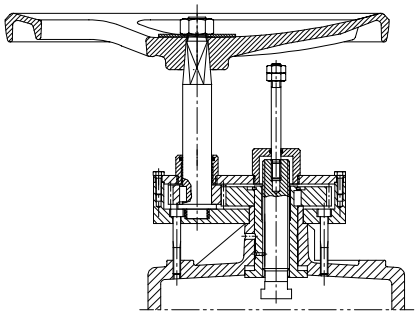
With SISTO-LAD



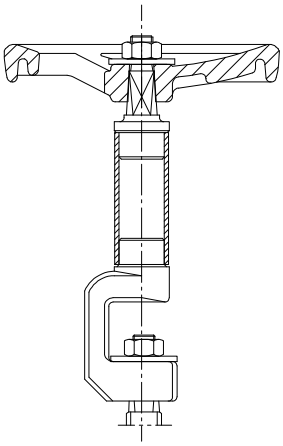
With SISTO-LAP



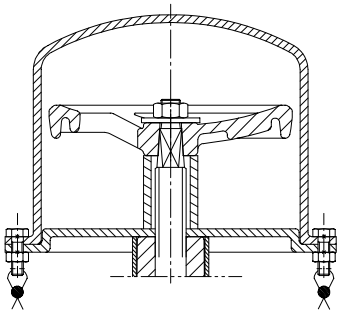
With electric actuator



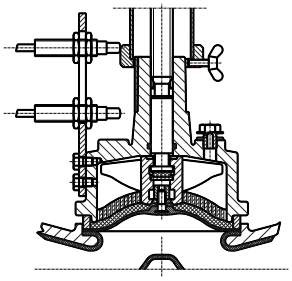
Gearbox



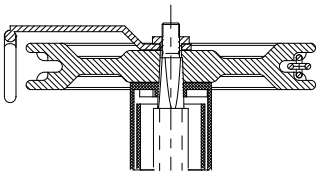
Stem extension



Lead-sealable cap



Limit switches, leakage detection hole, locking device



Chain wheel

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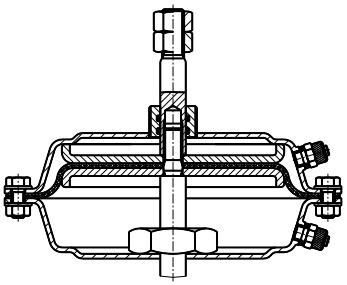
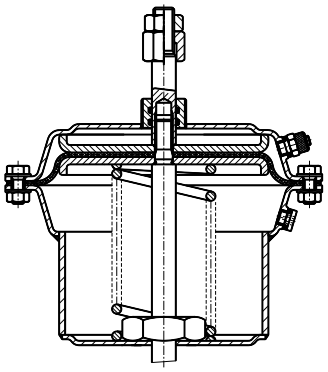
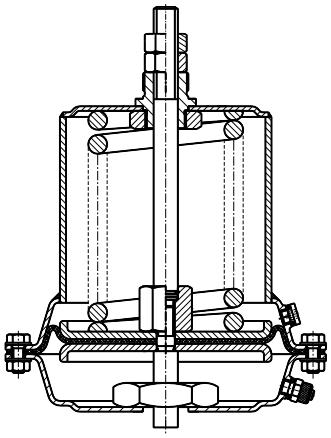
Variant illustrations of SISTO-LAD diaphragm actuator and accessories



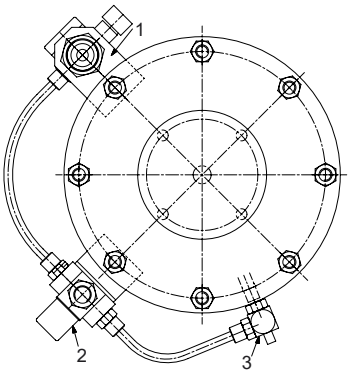
LAD-AZ type



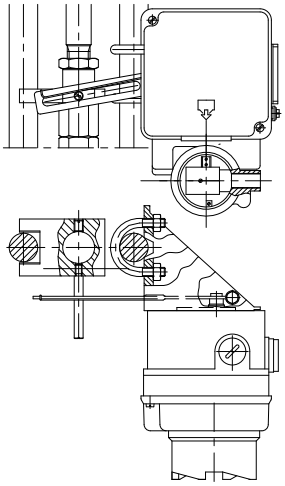
LAD-OF type



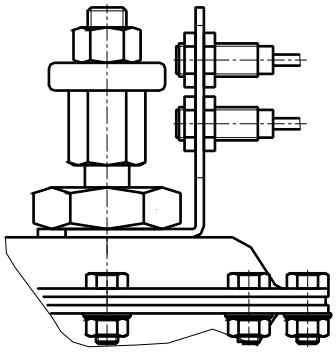
LAD-SF type



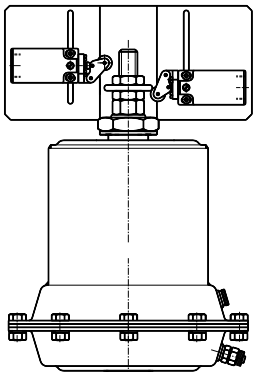
1) Filter/pressure reducer
2) Solenoid valve
3) Throttling valve



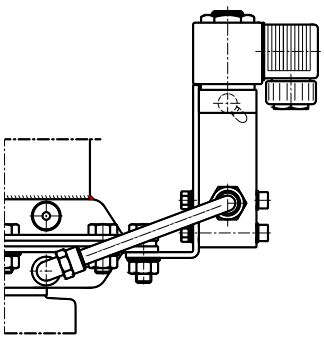
Configuration with positioner



Configuration with proximity sensor

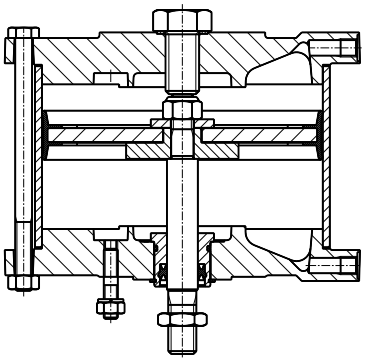


Configuration with mechanical limit switches

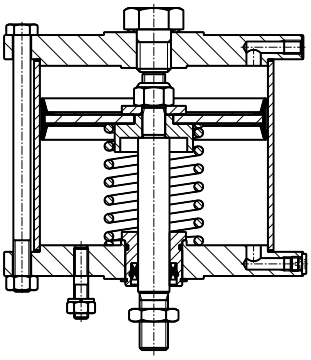


Configuration with solenoid valve

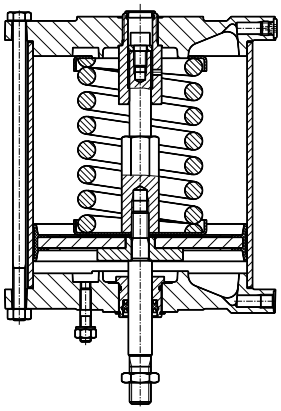
Variant illustrations of SISTO-LAP piston actuator and accessories



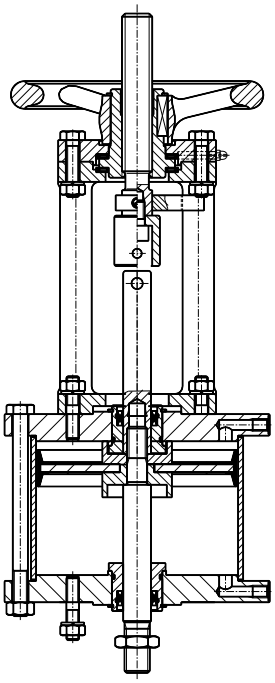
LAP-AZ type



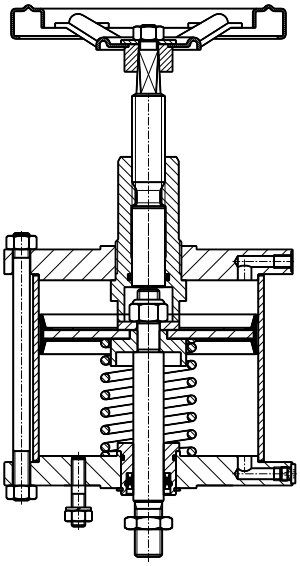
LAP-OF type



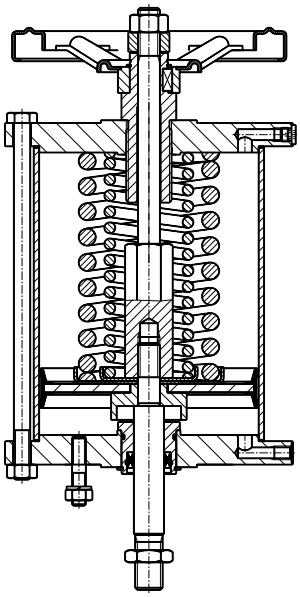
LAP-SF type



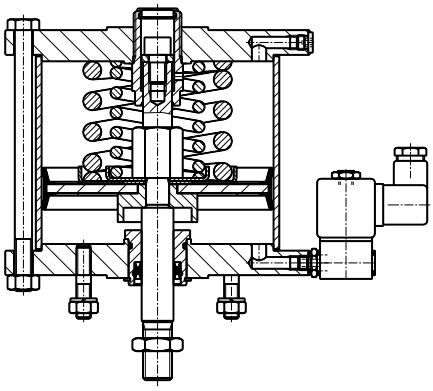
LAP-AZ type with emergency handwheel



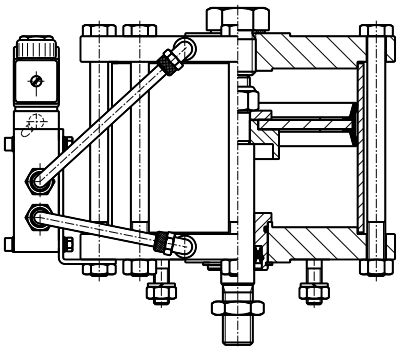
LAP-OF type with emergency handwheel



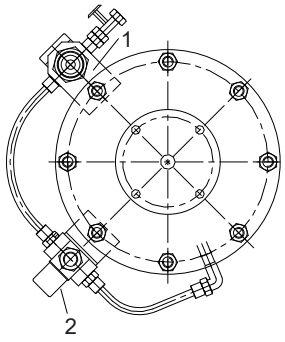
LAP-SF type with emergency handwheel



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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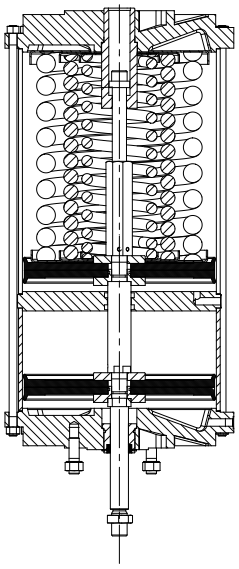
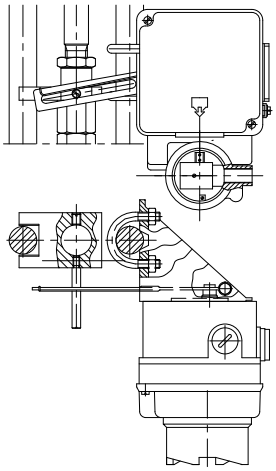
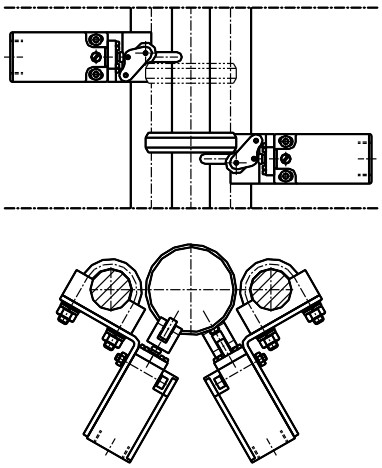


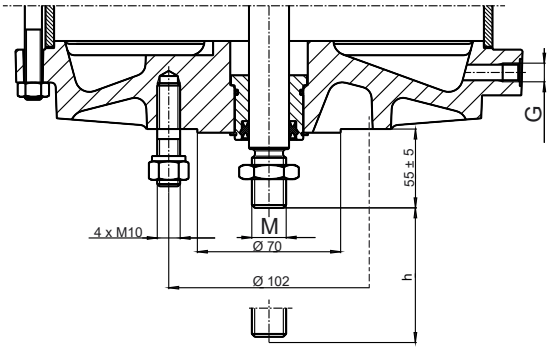
LAP-SF type with double piston



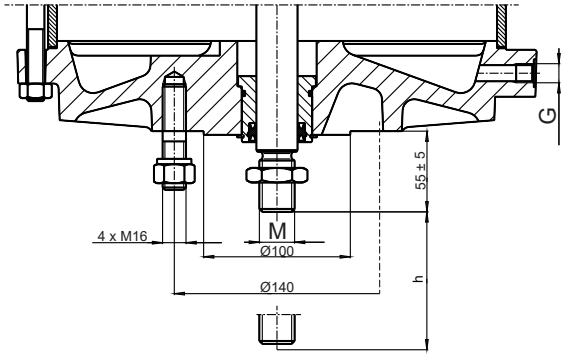
Configuration with positioner



Configuration with limit switches



Flange connection F10



Flange connection F14

Symbols key

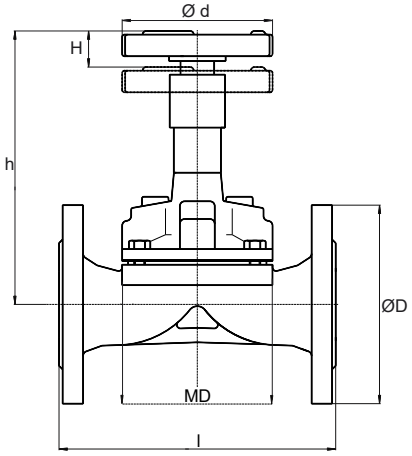
Symbol	Description
G	G1/8 in. for piston diameters 80/125/160 G1/4 in. for piston diameters 200/250/300
M	M12 for piston diameters 80/125 M20 for piston diameters 160 to 300 M24 for piston diameters D300/F14 optional

Mating dimensions as per standard

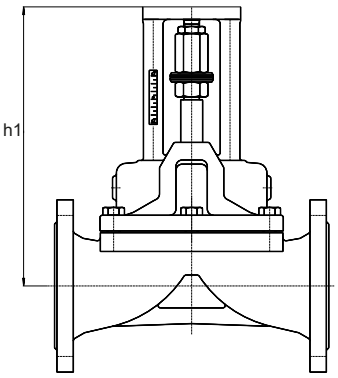
Flange connection: DIN ISO 5210 / DIN 3358
Pipe connection: DIN ISO 228 G1/8 in. and G1/4 in.

Dimensions and weights

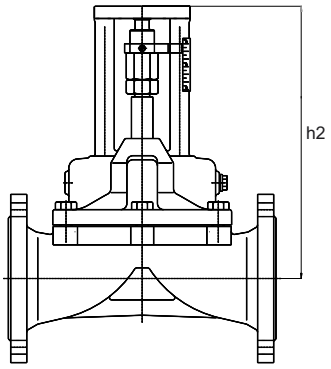
Dimensions and weights of SISTO-16 manually operated valve with flanged ends



SISTO-16 manually operated valve with flanged ends, DN 15 - 300



Prepared for SISTO-LAP (from MD 65)



Prepared for electric actuator (from MD 65)

Dimensions and weights

DN	MD[17] [mm]	l [mm]	Ø D [mm]	H [mm]	Manually operated valve				Prepared for actuator		
					h[18] [mm]	Ø d [mm]	Handwheel turns approx.	[kg]	Centre-to-top height SISTO-LAP h1 [mm][18]	Centre-to-top height of electric actuator h2[18]	
										F07/F10 [mm]	F14 [mm]
15	40	130	95	8	104	60	3	3,0	On request	On request	-
20	65	150	105	13	150	100	4	3,5	220	220	-
25	65	160	115	13	150	100	4	4,0	220	220	-
32	92	180	140	22	192	100	7	7,0	245	245	-
40	92	200	150	22	192	100	7	7,5	245	245	-
50	115	230	165	30	231	125	8	11,0	265	285	-
65	168	290	185	45	322	200 (250)[19]	9	20,5	350	370	-
80	168	310	200	45	322	200 (250)[19]	9	23,0	350	370	-
100	202	350	220	60	388	250 (315)[19]	12	36,5	390	410	-
125	202	400	250	60	388	250 (315)[19]	12	44,0	390	410	-
150	280	480	285	80	512	400 (500)[19]	13	80,0	500	520	540
200[20]	280	600	340	80	512	400 (500)[19]	13	95,0	500	520	540
250[21]	415	730	400	115	645	400	20	190,0	600	-	640
300[21]	415	850	445	115	645	400	20	210,0	600	-	640

Mating dimensions as per standard

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

17 MD = diaphragm diameter

18 Add 5 mm to centre-to-top height for rubber-lined valves

19 Optionally with a larger handwheel diameter for operating pressures > 10 bar; from DN 100, a gearbox can be used as an alternative.

20 Alternative: bolt hole pattern to DIN EN 1092-2 PN 10.

21 Bolt hole pattern to DIN EN 1092-2 PN 10. Optional: gearbox for operating pressures >5 bar.

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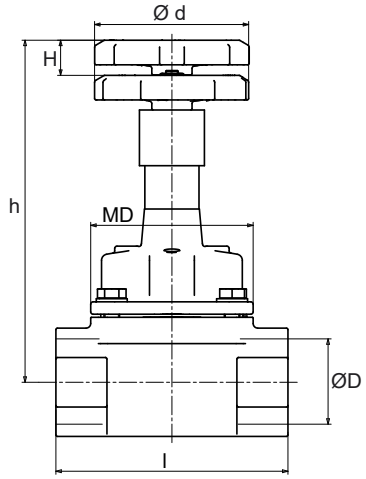
Dimensions and weights of SISTO-16 manually operated valve with threaded socket ends



SISTO-16 manually operated valve with threaded socket ends
DN 15 - 80

Dimensions and weights

DN	MD[22)] [mm]	Ø D [inch]	l [mm]	h [mm]	Ø d [mm]	H [mm]	[kg]
15	40	½	85	93	63	7	0,5
20	40	¾	95	96	63	7	0,6
25	65	1	105	151	100	13	2,5
32	65	1¼	120	154	100	13	2,5
40	65	1½	130	157	100	13	3,0
50	92	2	150	201	100	22	5,0
65	115	2½	185	248	125	30	8,0
80	168	3	220	329	200	45	16,5

Mating dimensions as per standard

Face-to-face lengths: DIN EN 16722

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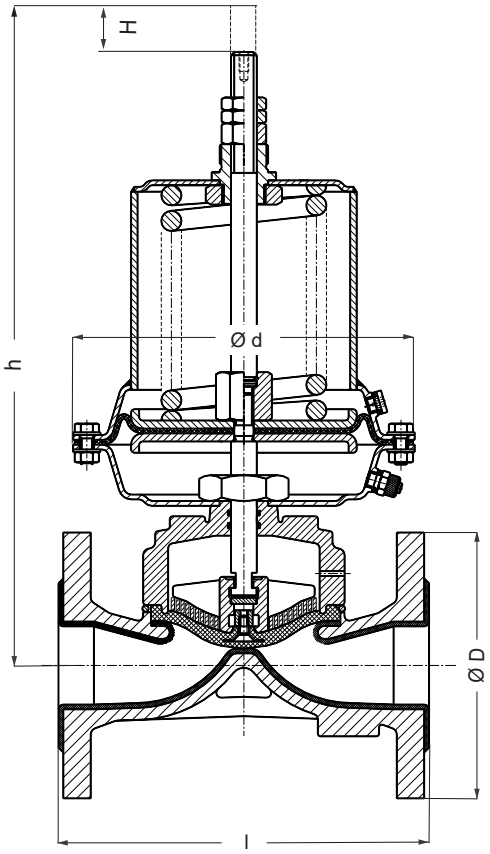
22 MD = diaphragm diameter

Dimensions and weights of SISTO-LAD diaphragm actuator



Diaphragm valve with SISTO-LAD

Dimensions and weights (for material 5.3103/1.0619)

DN	MD[23] [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[24)25)] [mm]			Ø d [mm]	h[24)25)] [mm]			Ø d [mm]	h[24)25)] [mm]			[kg]	[kg]	[kg]
15	40	130	95	8	160	165	225	225	210	-	-	-	-	-	-	-	9,5	-	-
20	65	150	105	13	160	165	225	225	210	205	275	325	-	-	-	-	10,0	12,0	-
25	65	160	115	13	160	165	225	225	210	205	275	325	-	-	-	-	11,0	13,0	-
32	92	180	140	22	160	210	270	270	210	210	280	330	307	350	520	520	12,5	14,5	-
40	92	200	150	22	160	210	270	270	210	210	280	330	307	350	520	520	15,0	17,0	-
50	115	230	165	30	-	-	-	-	210	210	280	330	307	370	540	540	-	20,5	26,5
65	168	290	185	45	-	-	-	-	-	-	-	-	307	430	600	600	-	-	34,0
80	168	310	200	45	-	-	-	-	-	-	-	-	307	430	600	600	-	-	40,0
100	202	350	220	60	-	-	-	-	-	-	-	-	307	530	700	700	-	-	54,0
125	202	400	250	60	-	-	-	-	-	-	-	-	307	530	700	700	-	-	68,0

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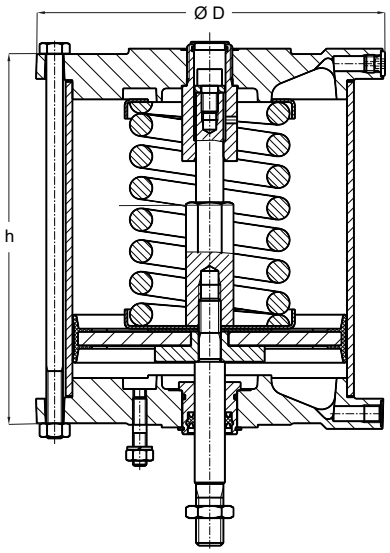
23 MD = diaphragm diameter
24 Add 5 mm for rubber-lined valves
25 Add 50 mm for limit switch configuration

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	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

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

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

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

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Technical data

Actuator size of SISTO-LAD diaphragm actuator

Selection table for maximum permissible operating pressure in bar for SISTO-16 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]	MD 40	MD 65	MD 92	MD 115	MD 168	MD 202
LAD-AZ-100	20	16	16	9	↓	↓	↓
LAD-AZ-150	35	↑	↑	16	11	↓	↓
LAD-AZ-220	56	↑	↑	↑	16	13	7

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

Actuator size	Stroke [mm]	MD 40	MD 65	MD 92	MD 115	MD 168	MD 202
LAD-OF-100.014	20	16	14	7	↓	↓	↓
LAD-OF-150.102	35	↑	16	16	9	↓	↓
LAD-OF-220.001	56	↑	↑	↑	16	10	5

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

Actuator size	Stroke [mm]	MD 40	MD 65	MD 92	MD 115	MD 168	MD 202
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[26)]	56	↑	↑	↑	↑	10	4

Selection table for maximum permissible operating pressure in bar for SISTO-16 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]	MD 40	MD 65	MD 92	MD 115	MD 168	MD 202
LAD-AZ-100	20	16	12	↓	↓	↓	↓
LAD-AZ-150	35	↑	16	16	6	↓	↓
LAD-AZ-220	56	↑	↑	↑	15	7	↓

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

Actuator size	Stroke [mm]	MD 40	MD 65	MD 92	MD 115	MD 168	MD 202
LAD-OF-100.014	20	16	10	↓	↓	↓	↓
LAD-OF-150.102	35	↑	16	14	5	↓	↓
LAD-OF-220.001	56	↑	↑	16	13	3	↓

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

Actuator size	Stroke [mm]	MD 40	MD 65	MD 92	MD 115	MD 168	MD 202
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[26)]	56	↑	↑	↑	16	5	2

Other selection options on request

26 Min. 5 bar

Actuator size of SISTO-LAP piston actuator

Selection table for maximum permissible operating pressure in bar for SISTO-16 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]	MD 65	MD 92	MD 115	MD 168	MD 202	MD 280
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[27)]	80	↑	↑	↑	↑	↑	16

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

Actuator size	Stroke [mm]	MD 65	MD 92	MD 115	MD 168	MD 202	MD 280
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[27)]	60	↑	↑	↑	↑	15	↓
LAP-OF-300.012-F14	80	↑	↑	↑	↑	↑	7
LAP-OF-D250.012-F14	80	↑	↑	↑	↑	16	10
LAP-OF-D300.012-F14[27)]	80	↑	↑	↑	↑	↑	16

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

Actuator size	Stroke [mm]	MD 65	MD 92	MD 115	MD 168	MD 202	MD 280
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[27)]	80	↑	↑	↑	↑	↓	5
LAP-SF-D300.005-F14	80	↑	↑	↑	↑	16	8
LAP-SF-D300.345-F14	80	↑	↑	↑	↑	↑	11

Other selection options on request

8635.1/24-EN

27 Max. 7 bar

Actuator size of SISTO-LAP piston actuator

Selection table for maximum permissible operating pressure in bar for SISTO-16 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]	MD 65	MD 92	MD 115	MD 168	MD 202	MD 280
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[28)]	80	↑	↑	↑	↑	↑	16

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

Actuator size	Stroke [mm]	MD 65	MD 92	MD 115	MD 168	MD 202	MD 280
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[28)]	60	↑	↑	↑	16	11	↓
LAP-OF-300.012-F14	80	↑	↑	↑	↑	↑	2
LAP-OF-D250.012-F14	80	↑	↑	↑	↑	16	8
LAP-OF-D300.012-F14[28)]	80	↑	↑	↑	↑	↑	16

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

Actuator size	Stroke [mm]	MD 65	MD 92	MD 115	MD 168	MD 202	MD 280
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[28)]	60	↑	↑	↑	16	12	↓
LAP-SF-D300.005-F14	80	↑	↑	↑	↑	↑	5
LAP-SF-D300.345-F14	80	↑	↑	↑	↑	↑	10

Other selection options on request

28 Max. 7 bar

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11/03/2021

8635.1/24-EN

Diaphragm Valve

SISTO-16S

PN 16
DN 15-200

Type Series Booklet

Legal information/Copyright

Type Series Booklet SISTO-16S

Contents

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
- Paints and varnishes
- 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

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

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.

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

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Valve body materials

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

Design details

Design

- Soft-seated 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: +100 °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 °C[3)]
- 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 °C
- Lead-sealable cap (prevents unauthorised actuation)
- Stem extension
- Certification to customer specification

3 From DN 20

Variants

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

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

- **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 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).

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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	4,0	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		

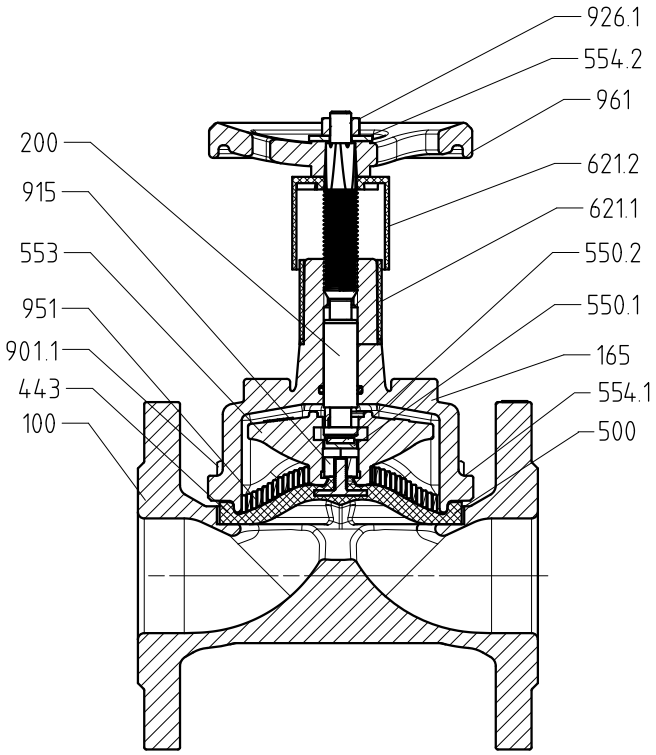
Pressure/temperature ratings

Permissible operating pressure [bar]

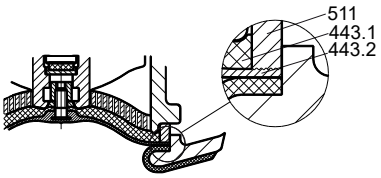
PN	Material		[°C]	
	Designation	Number	-20 to +140	+160
16	EN-GJS-400-18-LT	5.3103	16	12
	GP240GH	1.0619		

Materials

Materials of SISTO-16S manually operated valve



SISTO-16S manually operated valve



Variant with 2-piece diaphragm

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[4)]	Diaphragm	EPDM	-	Standard
443.1[4)]	Backing diaphragm	EPDM	-	-
443.2[4)]	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

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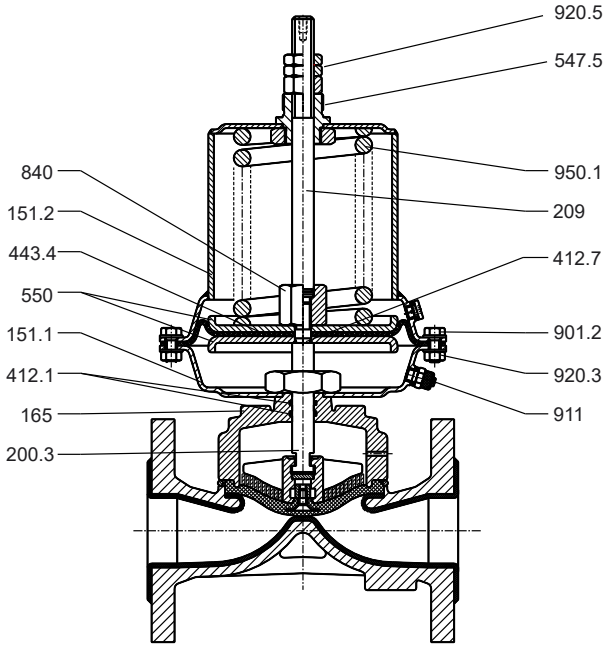
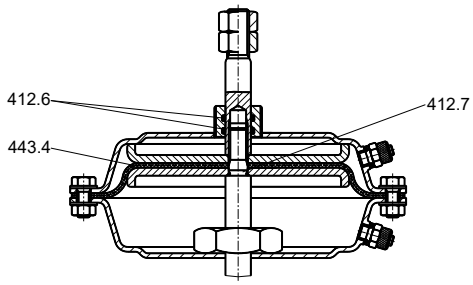
4 Recommended spare parts

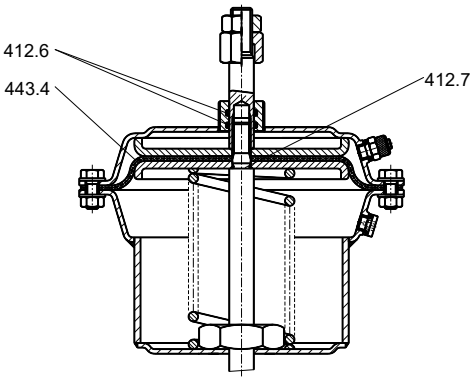
Materials of SISTO-LAD diaphragm actuator



LAD-SF type



LAD-AZ type



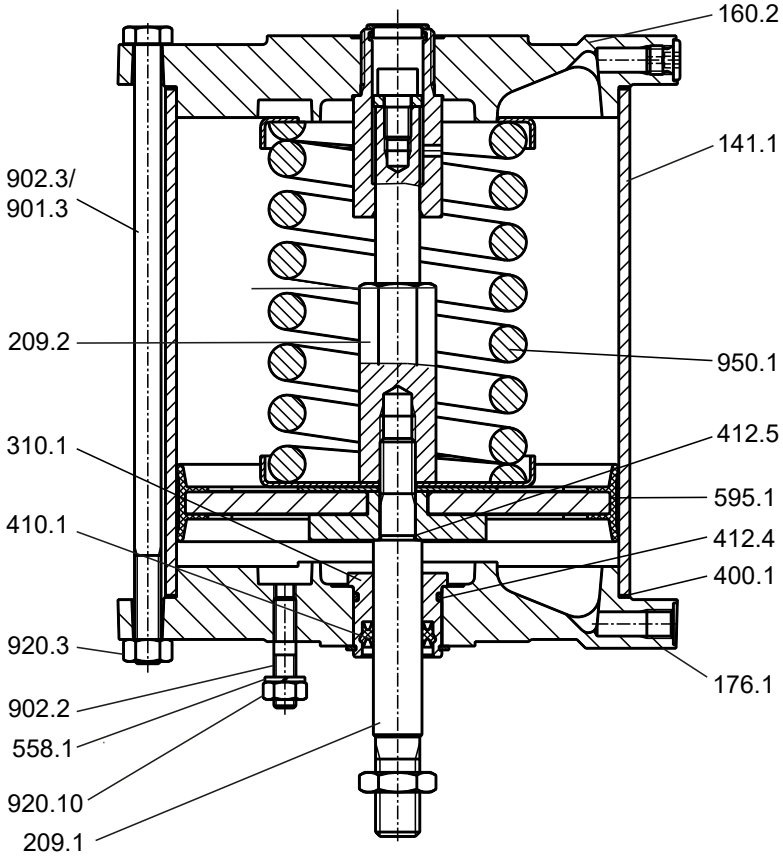
LAD-OF type

Parts list

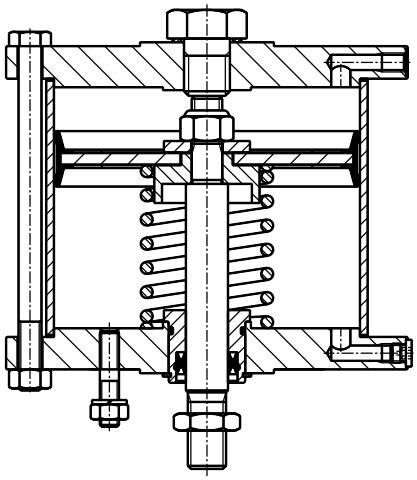
Part No.	Description	Material	Material number	Note
151.1	Lower housing section	St 37/RN	-	-
151.2	Upper housing section	St 37/RN	-	-
165	Bonnet	EN-GJS-400-18-LT	5.3103	-
200.3	Stem	X14CrMoS17	1.4104	-
209	Piston rod	X14CrMoS17	1.4104	-
412.1[5)]	O-ring	NBR	-	-
412.6[5) 6)]	O-ring	NBR	-	-
412.7[5) 6)]	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	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	-	-

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

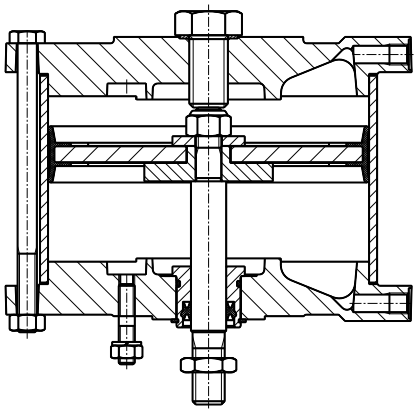
Materials of SISTO-LAP piston actuator



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	-	-

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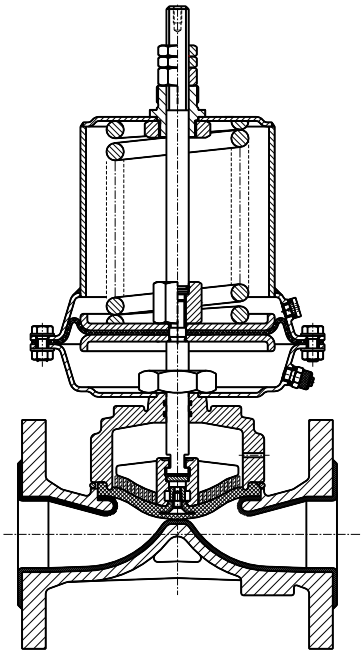
7 Recommended spare parts (= complete set of sealing elements)
8 We recommend having these parts replaced in our factory.

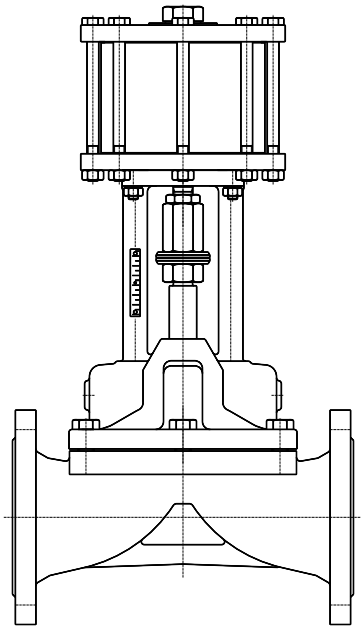
Part No.	Description	Material	Material number	Piston diameter [mm]
920.3	Nut	A2	-	-
920.10	Nut	A2	-	-
950.1	Spring	Spring steel	-	80 - 300

Variants

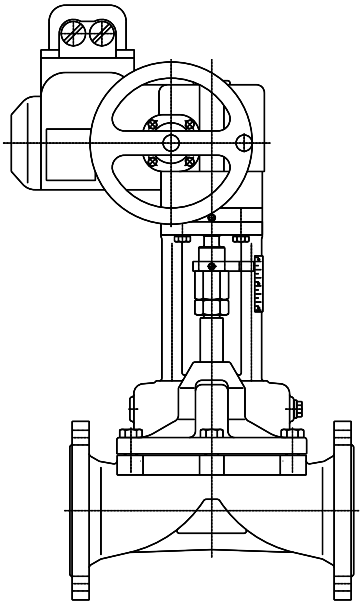
Illustrations of SISTO-16S manually operated valve variants



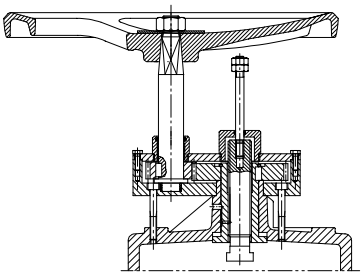
With SISTO-LAD



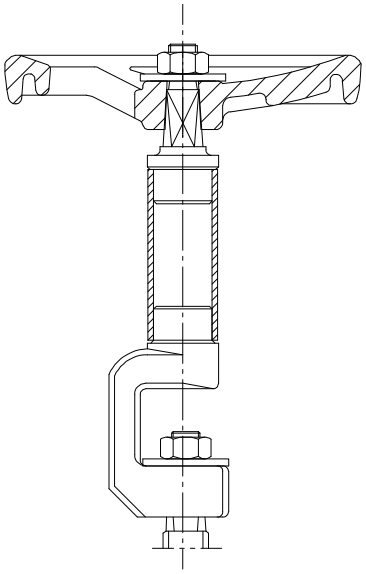
With SISTO-LAP



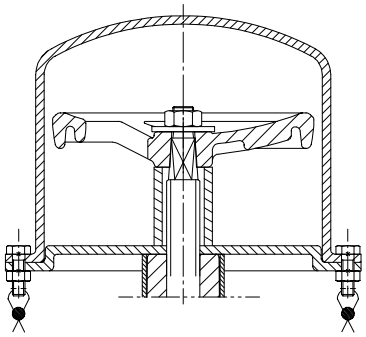
With electric actuator



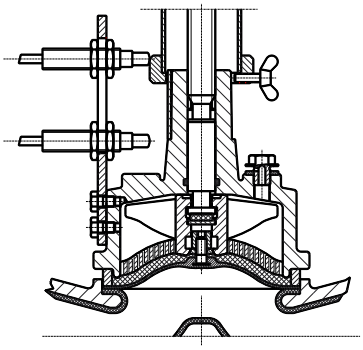
Gearbox



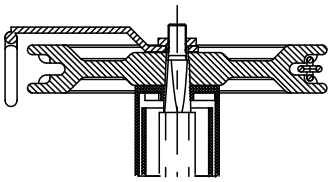
Stem extension



Lead-sealable cap



Limit switches, leakage detection hole,
locking device



Chain wheel

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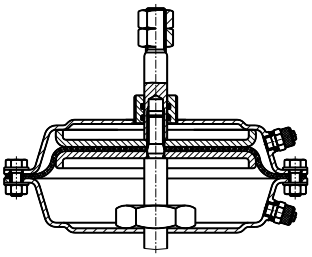
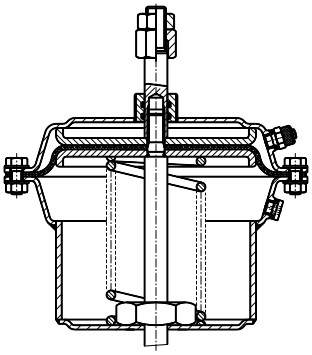
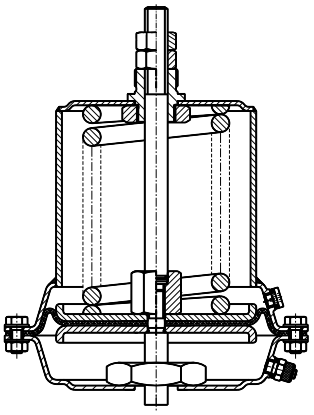
Variant illustrations of SISTO-LAD diaphragm actuator and accessories



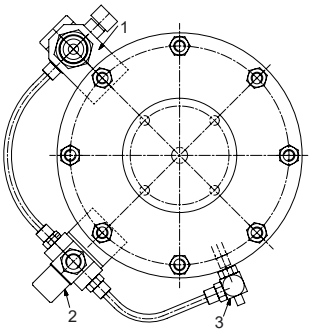
LAD-AZ type



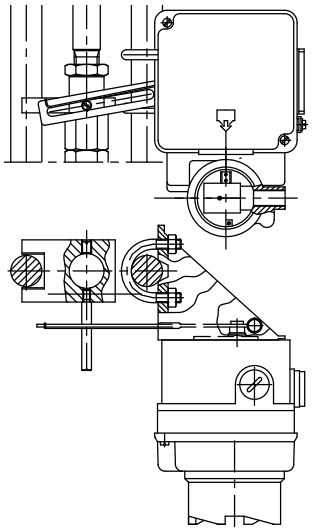
LAD-OF type



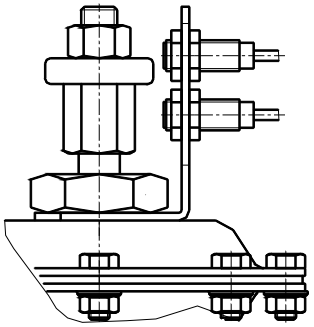
LAD-SF type



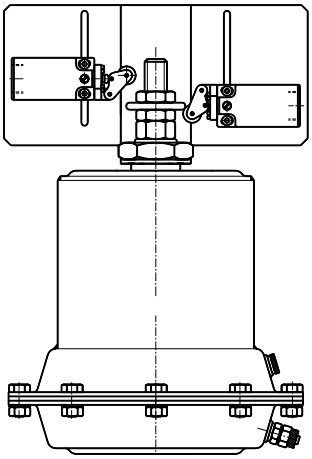
1) Filter/pressure reducer
2) Solenoid valve
3) Throttling valve



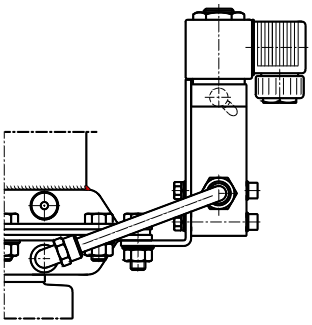
Configuration with positioner



Configuration with proximity sensor

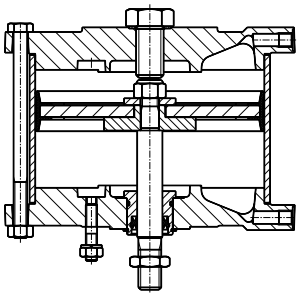


Configuration with mechanical limit switches

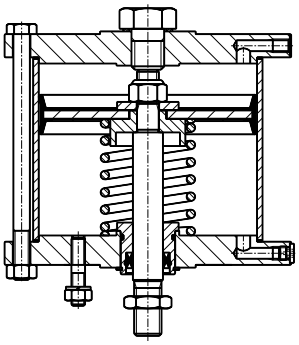


Configuration with solenoid valve

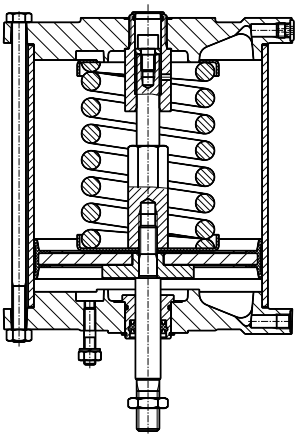
Variant illustrations of SISTO-LAP piston actuator and accessories



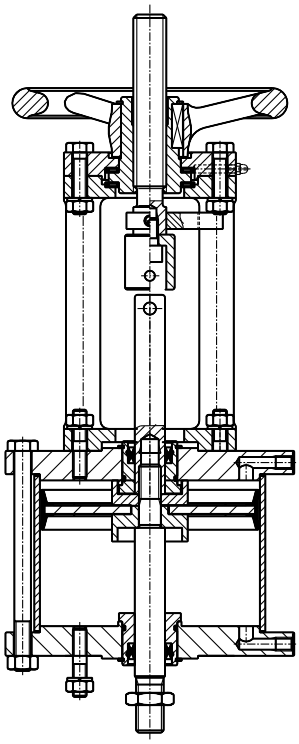
LAP-AZ type



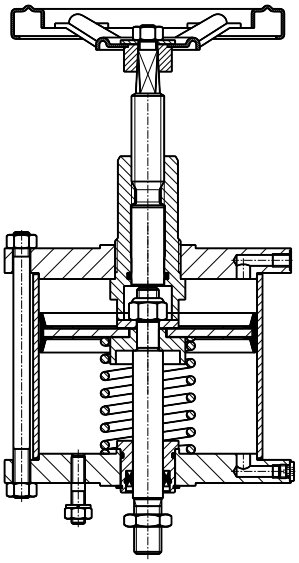
LAP-OF type



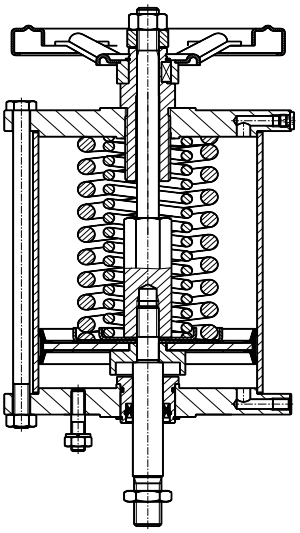
LAP-SF type



LAP-AZ type
with emergency handwheel



LAP-OF type
with emergency handwheel



LAP-SF type
with emergency handwheel

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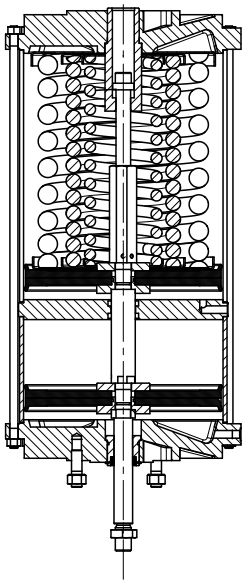
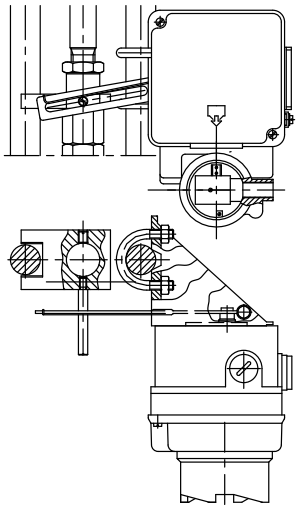
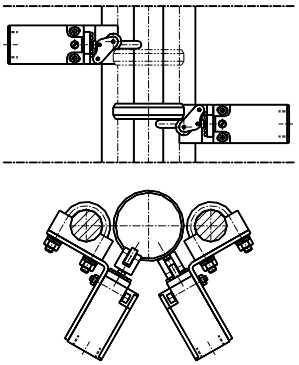


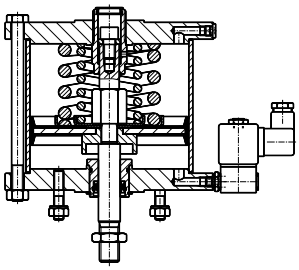
LAP-SF type with double piston



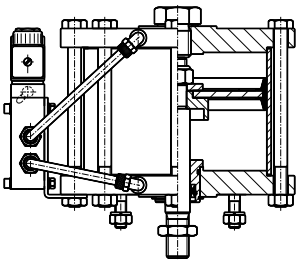
Configuration with positioner



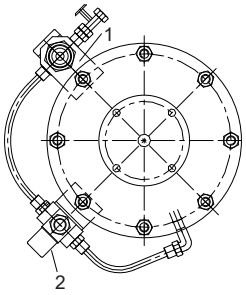
Configuration with limit switches



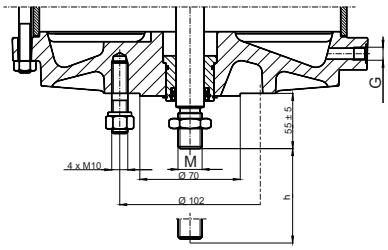
LAP-SF type with 3/2 directional control valve



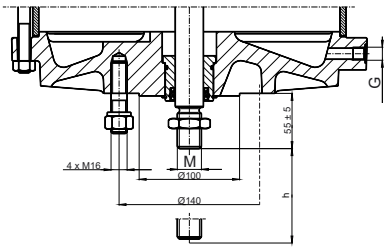
LAP-AZ type with 5/2 directional control valve



1) Filter/pressure reducer
2) Solenoid valve



Flange connection F10



Flange connection F14

Symbols key

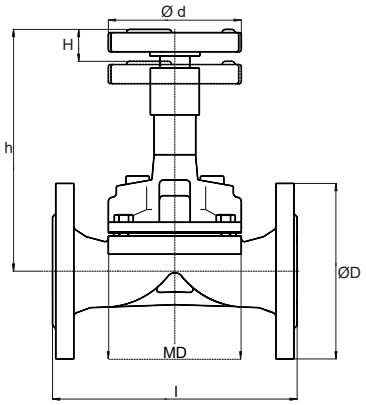
Symbol	Description
G	G1/8 in. for piston diameters 80/125/160 G1/4 in. for piston diameters 200/250/300
M	M12 for piston diameters 80/125 M20 for piston diameters 160 to 300 M24 for piston diameters D300/F14 optional

Mating dimensions as per standard

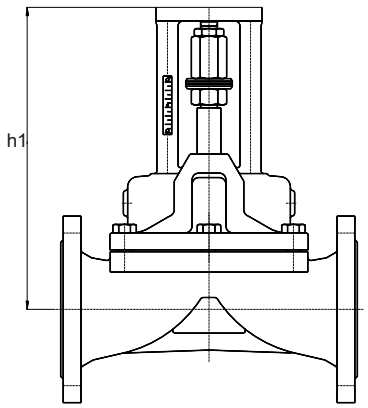
Flange connection:	DIN ISO 5210 / DIN 3358
Pipe connection:	DIN ISO 228 G1/8 in. and G1/4 in.

Dimensions and weights

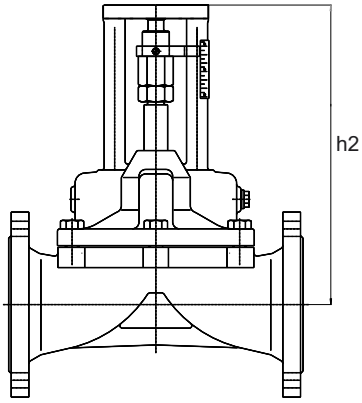
Dimensions and weights of SISTO-16S manually operated valve



Manually operated valve



Prepared for SISTO-LAP



Prepared for electric actuator

Dimensions and weights

DN	MD [mm][9]	l [mm][10]	Ø D [mm]	H [mm]	Manually operated valve				Prepared for actuator		
					h [mm][11]	Ø d [mm]	Handwheel turns approx.	[kg]	Centre-to-top height with SISTO-LAP h1 [mm][11]	Centre-to-top height with electric actuator h2[11]	
										F07/F10 [mm]	F14 [mm]
15[12]	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)[13]	9	21,5	305	320	-
100	202	305	220	60	388	250 (315)[13]	12	35,0	355	370	-
125	202	356	250	60	388	250 (315)[13]	12	40,0	355	370	-
150	280	406	285	80	512	400 (500)[13]	13	72,0	435	460	480
200	280	521	340	80	512	400 (500)[13]	13	90,0	435	460	480

Mating dimensions as per standard

Face-to-face length:	EN 558-1 R7
Flanges:	Bolt hole pattern ASME B 16.5 - 2013 Cl. 150
	DIN EN-1092-2
Flange facing:	DIN EN 1092-2, type B

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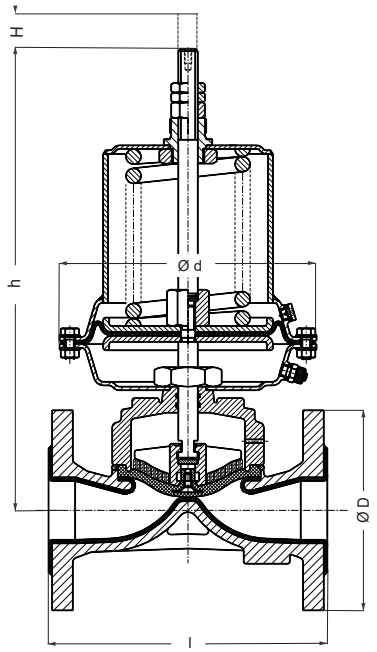
9 MD = diaphragm diameter
10 Add 6 mm to face-to-face length for rubber-lined and PTFE/TFM-lined valves
11 Add 5 mm to centre-to-top height for rubber-lined valves
12 With PFA lining only
13 Optionally with a larger handwheel diameter for operating pressures > 10 bar, from DN 100, a gearbox can be used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

Dimensions and weights of SISTO-LAD diaphragm actuator



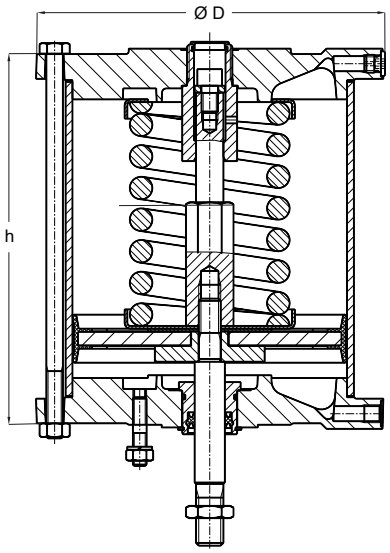
Diaphragm valve with SISTO-LAD

Dimensions and weights

DN	MD [mm][14]	l [mm][17]	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][15][16]			Ø d [mm]	h [mm][16][17]			Ø d [mm]	h [mm][16][17]			[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

14 MD = diaphragm diameter
15 Add 5 mm for rubber-lined valves
16 Add 50 mm for limit switch configuration
17 Add 6°mm for rubber-lined and PTFE/TFM-lined valves

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	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

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

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

Symbols key

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

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

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

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[18)]	56	↑	↑	↑	↑	10	4

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 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	↓

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	↓

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[18)]	56	↑	↑	↑	16	5	2

Other selection options on request

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18 5 bar minimum

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 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[19)]	80	↑	↑	↑	↑	↑	16

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[19)]	60	↑	↑	↑	↑	15	↓
LAP-OF-300.012-F14	80	↑	↑	↑	↑	↑	7
LAP-OF-D250.012-F14	80	↑	↑	↑	↑	16	10
LAP-OF-D300.012-F14[19)]	80	↑	↑	↑	↑	↑	16

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[19)]	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

19 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 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[20)]	80	↑	↑	↑	↑	↑	16

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[20)]	60	↑	↑	↑	16	11	↓
LAP-OF-300.012-F14	80	↑	↑	↑	↑	↑	2
LAP-OF-D250.012-F14	80	↑	↑	↑	↑	16	8
LAP-OF-D300.012-F14[20)]	80	↑	↑	↑	↑	↑	16

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[20)]	60	↑	↑	↑	16	12	↓
LAP-SF-D300.034-F10[20)]	60	↑	↑	↑	16	12	↓
LAP-SF-D300.005-F14	80	↑	↑	↑	↑	↑	5
LAP-SF-D300.345-F14	80	↑	↑	↑	↑	↑	10

Other selection options on request

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20 Max. 7 bar

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31/08/2020

8635.101/21-EN