



Diaphragm Valve

SISTO-KB

PN 10
DN 15 - 200

Type Series Booklet



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Type Series Booklet SISTO-KB

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Diaphragm Valves

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

SISTO-KB



Main applications

- Mining
- Chemical industry
- Drainage
- Drainage systems
- Descaling units
- Solids transport
- Maintaining groundwater levels
- Industrial recirculation systems
- Waste water treatment plants
- Condensate transport
- Fossil-fuelled power stations
- Paint shops
- Paper industry / pulp industry
- Petrochemical industry
- Refinery
- Flue gas desulphurisation
- Shipbuilding
- Sludge disposal
- Sludge processing
- Keeping in suspension
- Process engineering
- Washing plants
- Water treatment

Fluids handled

- Abrasive fluids
- Waste water with faeces
- Waste water without faeces
- Aggressive fluids
- Inorganic fluids
- Activated sludge
- Brackish water
- Service water
- Distillate
- Digested sludge
- Solids-laden fluids
- Solids (ore, sand, gravel, ash)
- River water, lake water and groundwater
- Fluids posing a health hazard
- Toxic fluids
- Corrosive fluids
- Cooling water
- Volatile fluids
- Solvents
- Seawater
- Fluids containing mineral oils
- Organic fluids
- Polymerising/crystallising fluids
- Raw sludge
- Lubricants
- Grey water
- Brine
- Dipping paints
- Wash water
- Other fluids on request.

Operating data

Table 1: Operating properties

Characteristic	Value
Nominal pressure	PN 10
Nominal size	DN 15 - 200
Max. permissible pressure [bar]	10
Min. permissible temperature [°C] ¹⁾	≥ -20
Max. permissible temperature [°C] ¹⁾	≤ +140

Control pressure of piston actuators

Max. permissible temperature (actuator/control fluid): 80 °C

Table 2: Permissible control pressure

Type	Piston diameter [mm]	Actuator flange DIN ISO 5210 / DIN 3358	Permissible control pressure P _{ctr. perm.} [bar]
SISTO-LAP	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
SISTO-DLAP.230	125 - 200	-	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

Table 3: Overview of available materials

Material	Material number	ASTM ³⁾	Temperature limit
EN-GJL-250 (GG25)	5.1301	A48 Class 35 (UNS F12401)	-10 °C to +140 °C
EN-GJS-400-18-LT (GGG40.3)	5.3103	A536 Gr. 60-40-18	-20 °C to +140 °C

Design details

Design

- Soft-seated shut-off valve in straight-way pattern
- Shut-off and sealing to atmosphere by diaphragm
- 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)
- 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
- Diaphragm made of CSM, temperature limit: +80 °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
- Stem extension
- Certification to customer specification

Actuators

Directly mounted piston actuator

- SISTO-DLAP.230 for DN 15 - 100
- Compact mounting without lantern
- Leakage detection hole
- Standard interface for accessories

Actuator function

- Actuator type DLAP.230 SF
 - Air-to-open
 - Spring-to-close
- Actuator type DLAP.230 OF
 - Spring-to-open
 - Air-to-close
- Actuator type DLAP.230 AZ
 - Air-to-open
 - Air-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

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

²⁾ Double drum

³⁾ ASTM materials similar to the materials indicated

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.
- **Low flow resistance coefficient**
Streamlined straight-through type body design
- **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 European chemicals regulation (EC) No. 1907/2006 (REACH) see <https://www.ksb.com/en-global/company/corporate-responsibility/reach>.

Product information as per European Pressure Equipment Directive 2014/68/EU (PED)

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

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

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

Related documents

Table 4: Information/documents

Document	Reference number
Operating manual	0570.821
Type series booklet SISTO-LAP (piston actuator)	9210.1
Type series booklet SISTO-SK-i	8676.5.

Available software

CAD portal, SISTO



This software uses the digital data of the SISTO products. (Click the QR code.)



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

Table 5: Flow coefficients for unlined valves

DN	Kvs value [m ³ /h]
15	7,2
20	12,2
25	32,0
32	45,0
40	64,0
50	108,0
65	205,0
80	284,0
100	504,0
125	792,0
150	1440,0
200	2210,0

Pressure/temperature ratings

Table 6: Permissible operating pressure [bar]

PN	Material		DN	[°C]			
	Designation	Number		-20	-10 to +60	+100	+140
10	EN-GJL-250	5.1301	15 - 100	-	10	8	6
			125 - 150	-	6	4,5	3
			200	-	3	2,5	2
	EN-GJS-400-18-LT	5.3103	15 - 100	10	10	8	6
			125 - 150	6	6	4,5	3
			200	3	3	2,5	2

Materials

Materials of SISTO-KB manually operated valve

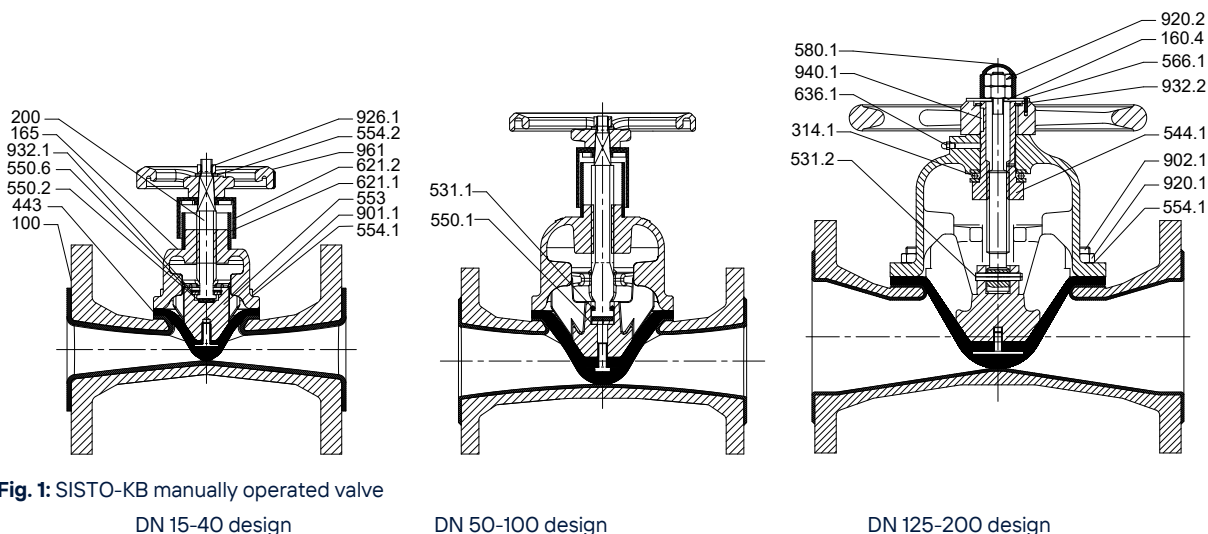


Table 7: Parts list

Part No.	Description	Material		Note
		Designation	Number	
100	Body	EN-GJL-250	5.1301	-
		EN-GJS-400-18-LT	5.3103	-
160.4	Handwheel cover	EN-GJL-200	5.1300	For DN 125 - 200
165	Bonnet	EN-GJS-400-18-LT	5.3103	DN 200: EN-GJL-250 (5.1301) or optional: EN-GJS-400-18LT (5.3103)
200	Stem	X14CrMoS17	1.4104	-
314.1	Thrust bearing	Steel	-	For DN 125 - 200
443 ⁴⁾	Diaphragm	EPDM	-	-
531.1	Locking sleeve	Spring steel	-	For DN 50 - 100
531.2	Locking sleeve	Spring steel	-	For DN 125 - 200
544.1	Threaded bush	EN-GJS-400-18-C	5.3126	For DN 125 - 200
550.1	Bearing disc	Steel	-	For DN 50 - 100
550.2	PTFE disc	PTFE/graphite	-	For DN 15 - 100
550.6	Segmental disc	A2	-	For DN 15 - 40
553	Compressor	EN-GJL-250	5.1301	DN 15 - 20 = 5.3106
554.1	Washer	A2	-	For bodies with PA or ECTFE coating
554.2	Washer	A2	-	For DN 15 - 100
566.1	Half round head grooved pin	4.6	-	For DN 125 - 200
580.1	Cap	PE	-	For DN 125 - 200
621.1	Position indicator, lower part	ASA Luran	-	For DN 15 - 100
621.2	Position indicator, upper part	ASA Luran	-	For DN 25 - 100
636.1	Lubricating nipple	Steel	-	For DN 125 - 200
901.1	Hexagon head bolt	A2-70	-	For DN 15 - 80
902.1	Stud	A2-70	-	For DN 100 - 200
920.1	Nut	A2	-	For DN 100 - 200
920.2	Nut	A2	-	For DN 100 - 200
926.1	Prevailing torque nut	A2-70	-	For DN 15 - 100
932.1	Circlip	Spring steel	-	For DN 15 - 40
932.2	Circlip	Spring steel	-	For DN 125 - 200
940.1	Key	St50K	-	For DN 125 - 200
961	Handwheel	EN-GJL-200	5.1300	DN 15 - 20 = PC

⁴ Recommended spare parts

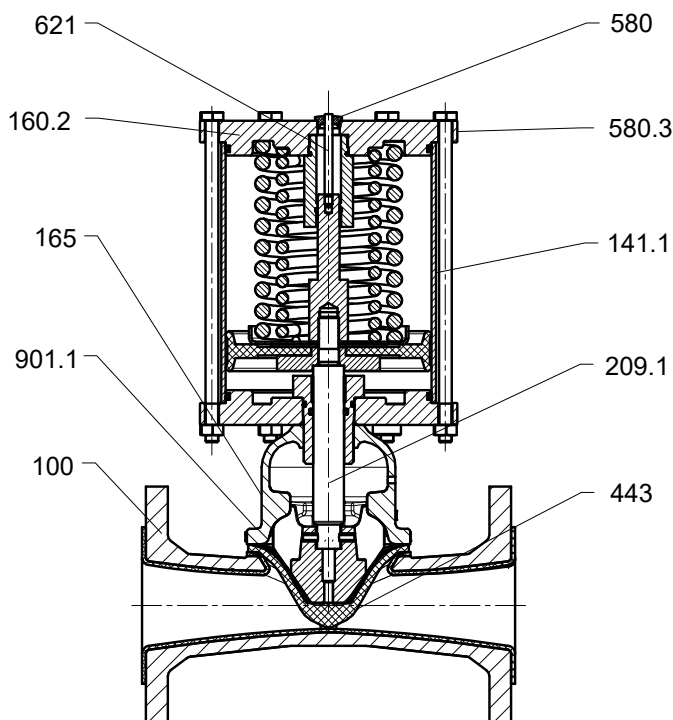
Materials of the directly mounted DLAP.230 piston actuator

Fig. 2: SISTO-DLAP.230

Table 8: Parts list

Part No.	Description	Material		Note
		Designation	Number	
100	Body	EN-GJL-250	5.1301	-
		EN-GJS-400-18-LT	5.3103	-
141.1	Cylinder	AlMgSi	3.3206	-
160.2	Top end cap	AlCu4PbMgMn	3.1645	-
165	Bonnet	EN-GJS-400-18-LT	5.3103	-
209.1	Piston rod	X14CrMoS17	1.4104	-
443 ⁴⁾	Diaphragm	EPDM	-	Standard
580	Cap	Plastic	-	M18 × 1 interface
580.3	Cap	Plastic	-	Air supply connection G $\frac{1}{8}$ inch
621	Position indicator	Plastic	-	-
901.1	Hexagon head bolt	A2-70	-	DN 100: stud

Materials of SISTO-LAP piston actuator

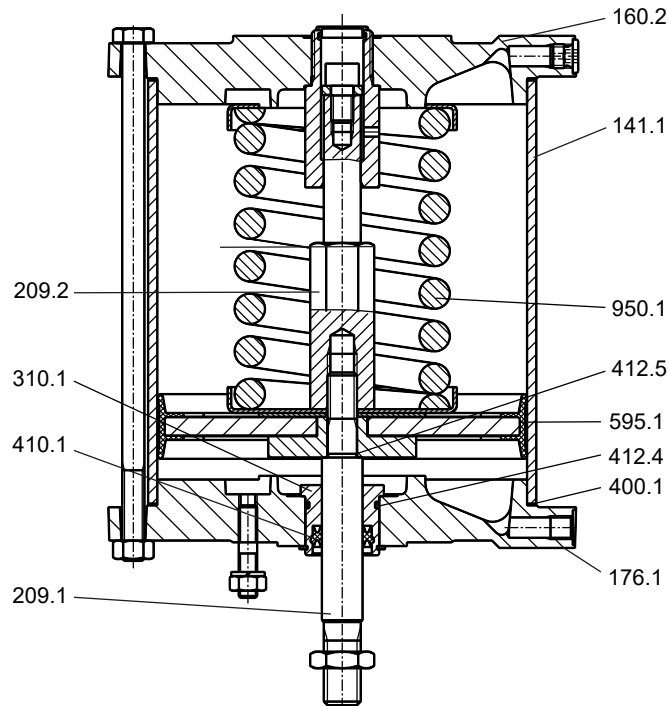


Fig. 3: SISTO-LAP-SF piston actuator

Table 9: Parts list

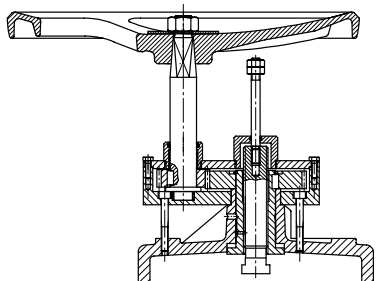
Part No.	Description	Material		Piston diameter [mm]
		Designation	Number	
141.1	Cylinder	AlMgSi	3.3206	80 - 300
160.2	Top end cap	AlCu4PbMgMn	3.1645	80 - 160
		AlSi7Mg0.3	3.2371	200 - 300
176.1	Bottom end cap	AlCu4PbMgMn	3.1645	80 - 160
		AlSi7Mg0.3	3.2371	200 - 300
209.1	Lower piston rod	X14CrMoS17	1.4104	80 - 300
209.2	Upper piston rod	X14CrMoS17	1.4104	80 - 300
310.1 ^{5) 6)}	Plain bearing	Plastic – POM	-	80 - 300
400.1 ^{5) 6)}	Gasket	Plastic – AFM 30	-	80 - 300
410.1 ^{5) 6)}	Seal/wiper set	Plastic – L96-SFR/NBR	-	80 - 300
412.4 ^{5) 6)}	O-ring	NBR	-	80 - 300
412.5 ^{5) 6)}	O-ring	NBR	-	80 - 300
595.1 ^{5) 6)}	Piston assembly	Steel/acrylonitrile butadiene rubber – St/NBR	-	80 - 300
950.1	Spring	Spring steel	-	80 - 300

⁵⁾ Recommended spare parts (= complete set of sealing elements)

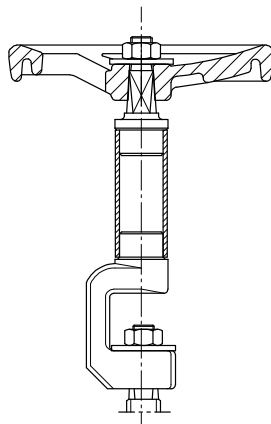
⁶⁾ We recommend having these parts replaced in our factory.

Variants and accessories

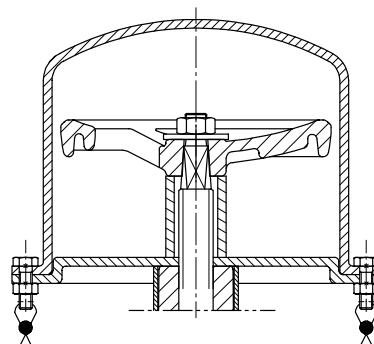
Variants and accessories of SISTO-KB manually operated valves



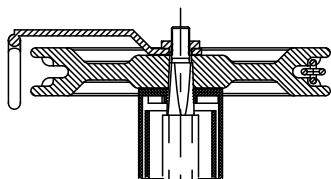
Gearbox



Stem extension

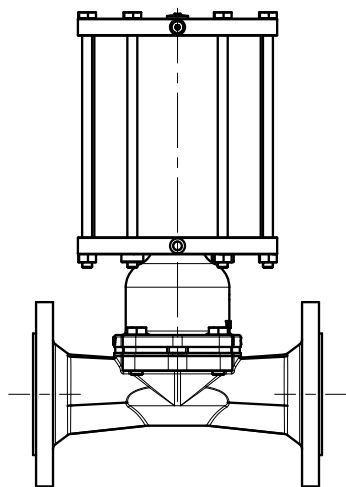


Lead-sealable cap

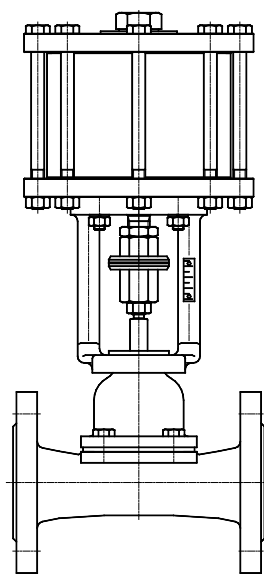


Chain wheel

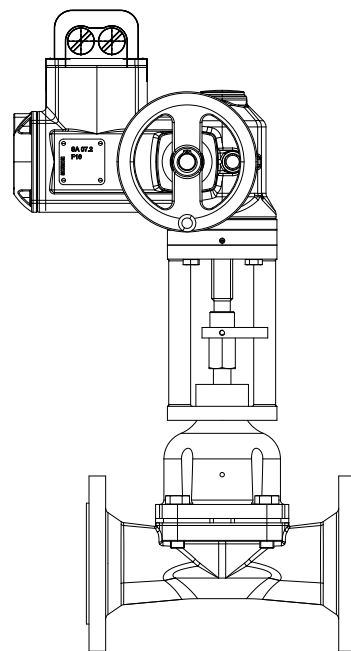
Variants of SISTO-KB with actuator



With directly mounted
pneumatic piston actuator

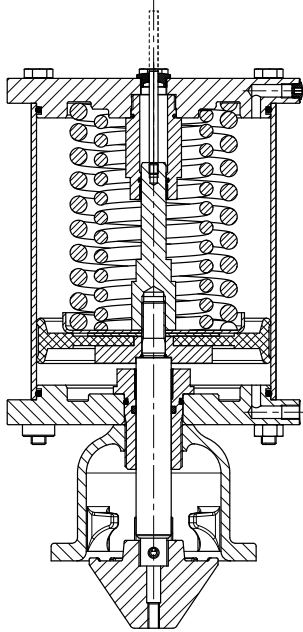


With mounted
pneumatic piston actuator

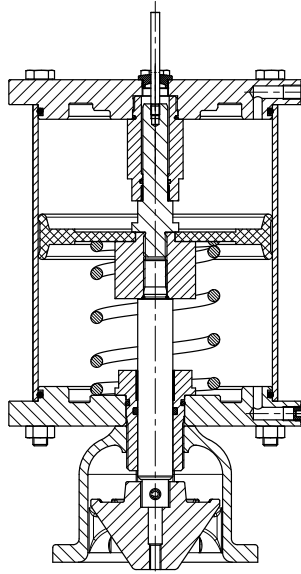


With electric actuator

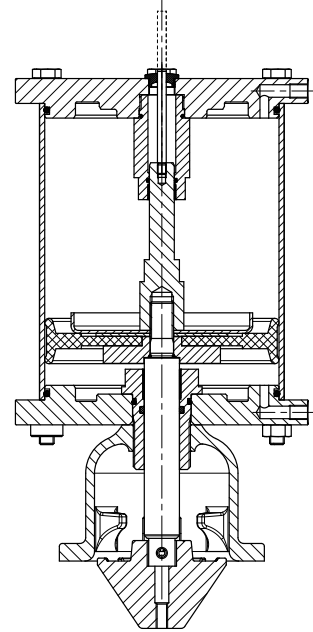
Variants and accessories of the directly mounted DLAP.230 piston actuator



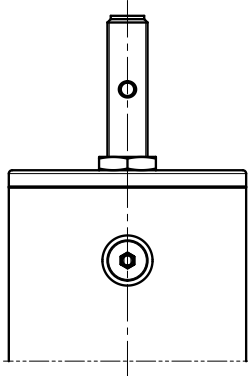
DLAP.230-SF



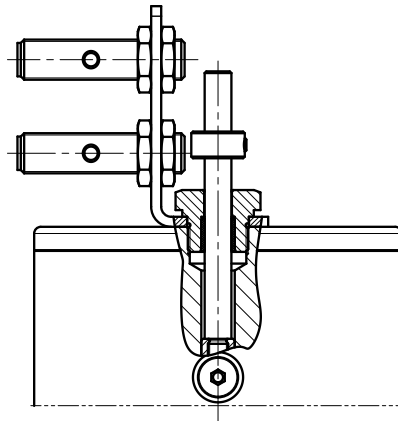
DLAP.230-OF



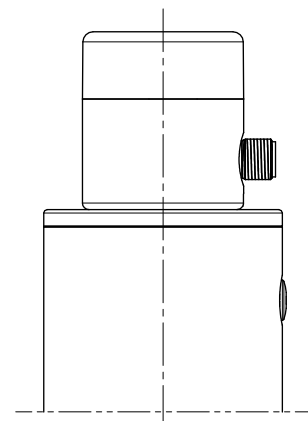
DLAP.230-AZ



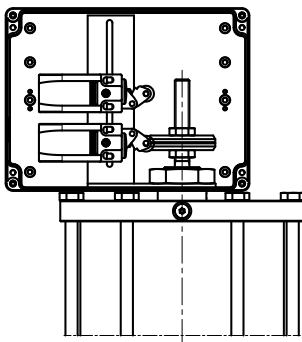
Directly mounted proximity switch
for open position



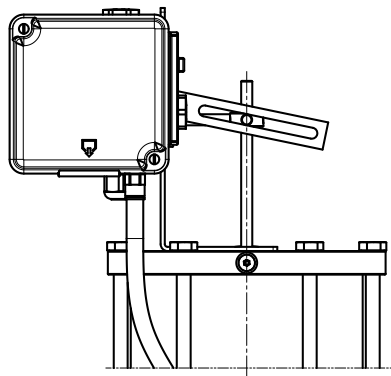
Inductive limit switches



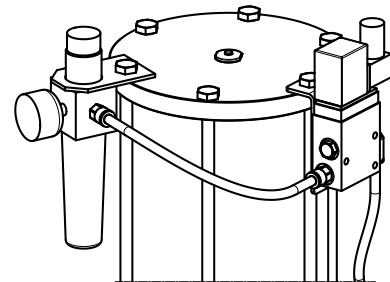
Intelligent actual-position feedback
unit
SK-i.310



Mechanical limit switch

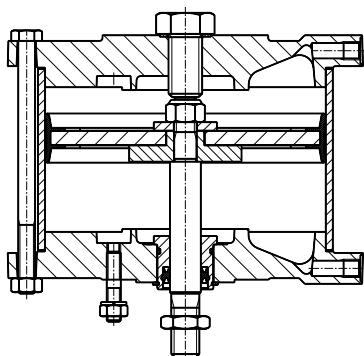


Positioner

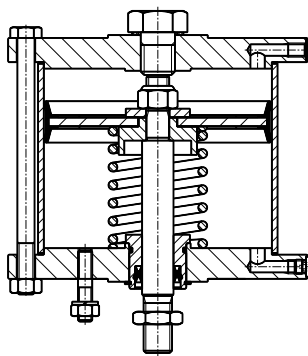


Solenoid valve and
filter/pressure reducer

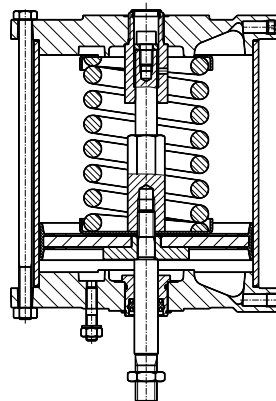
Variants and accessories of the SISTO-LAP piston actuator



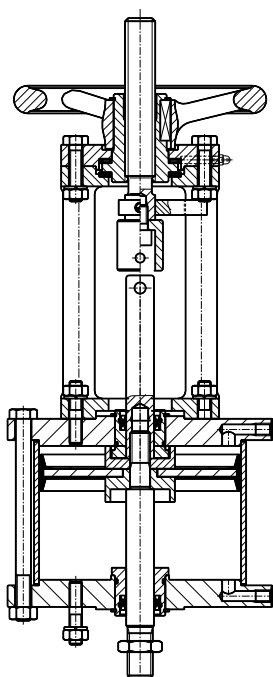
LAP-AZ type



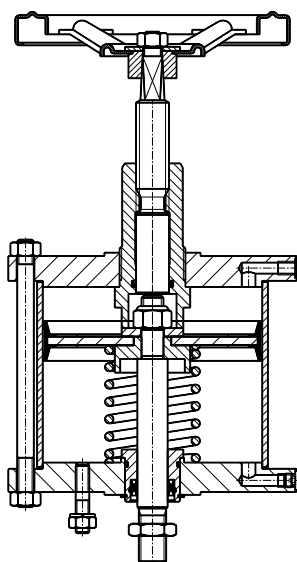
LAP-OF type



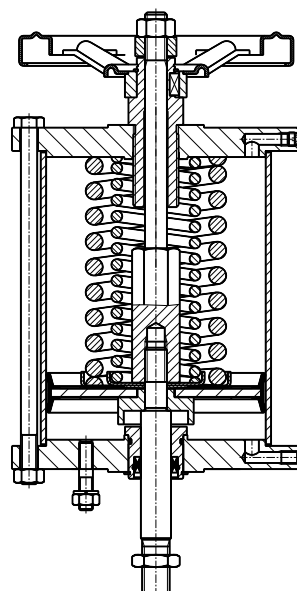
LAP-SF type



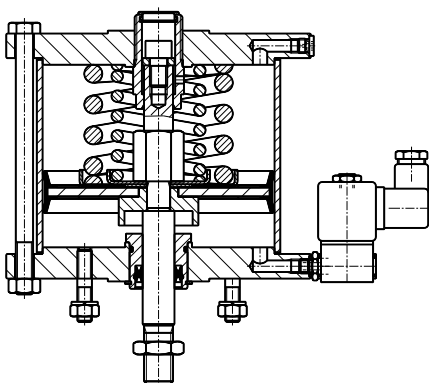
LAP-AZ type with emergency handwheel



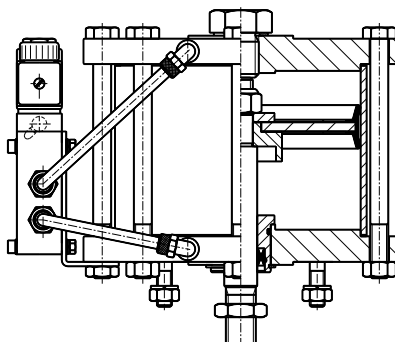
LAP-OF type with emergency handwheel



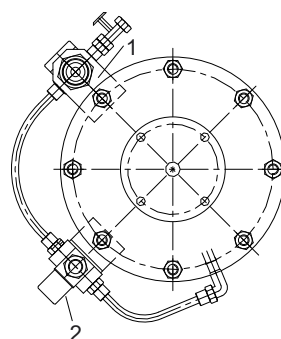
LAP-SF type with emergency handwheel



LAP-SF type with 3/2 directional control valve

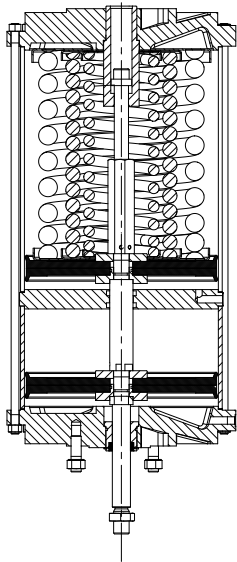


LAP-AZ type with 5/2 directional control valve

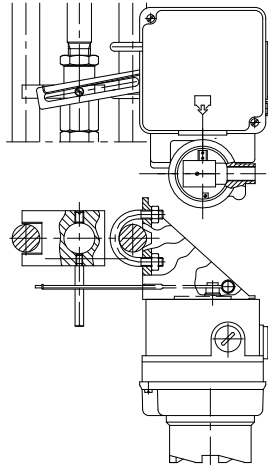


1 Filter/pressure reducer

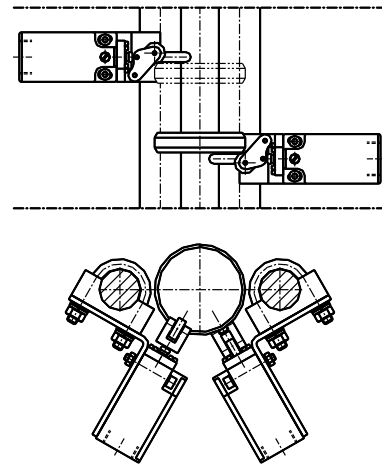
2 Solenoid valve



LAP-SF type with double piston

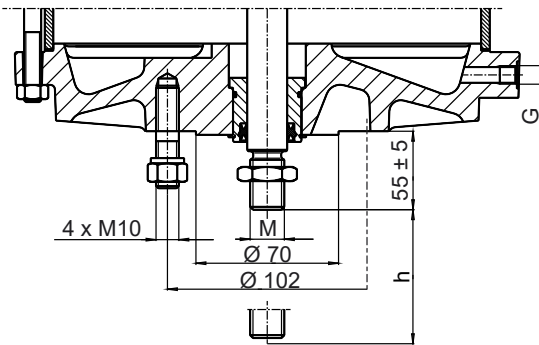


Configuration with positioner

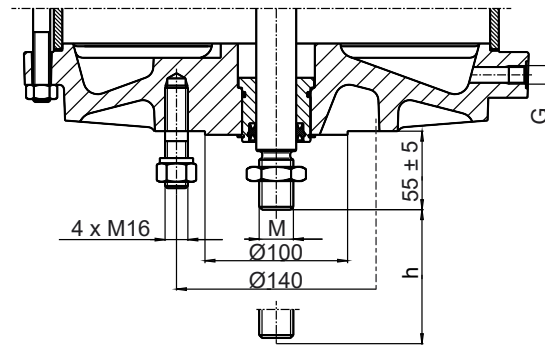


Configuration with mechanical limit switches

Interface



Flange connection F10



Flange connection F14

Table 10: Symbols key

Symbol	Description
G	G $\frac{1}{8}$ in. for piston diameters 80/125/160 G $\frac{1}{4}$ 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 G $\frac{1}{8}$ in. and G $\frac{1}{4}$ in.

Dimensions and weights

Dimensions and weights of SISTO-KB manually operated valve

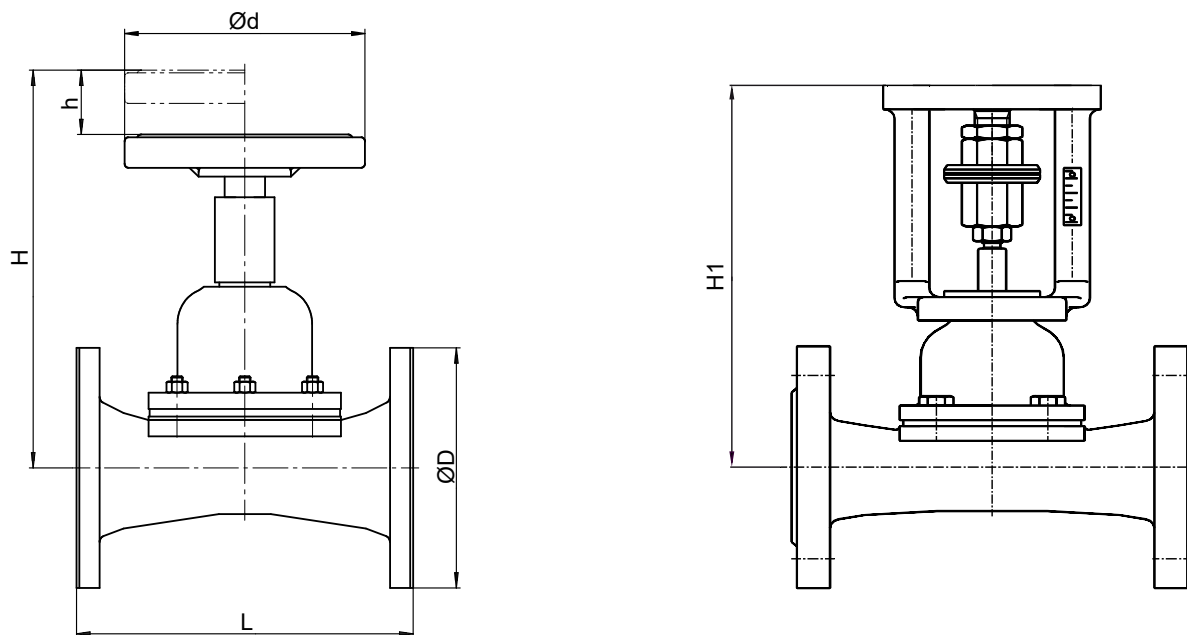


Fig. 4: SISTO-KB manually operated valve

Prepared for SISTO-LAP
piston actuator or electric actuator

Table 11: Dimensions and weights

DN	Diaphragm [mm]	L [mm]	Ø D [mm]	h [mm]	Manually operated valve				Prepared for actuator	
					H ⁷⁾ [mm]	Ø d [mm]	Handwheel turns	[kg]	Centre-to-top height H1 ⁷⁾ [mm]	Top flange
15	70 x 46	130	95	9	93	63	3	2,5	216	F10
20		150	105		93	63	3	3,1	216	F10
25	86 x 67	160	115	21	155	100	7	4,6	235	F10
32		180	140		155	100	7	5,7	235	F10
40		200	150		155	100	7	7,3	235	F10
50	111 x 86	230	165	33	220	125	8	10,5	300	F10
65	128 x 108	290	185	45	295	200	11	16,7	337	F10
80	169 x 134	310	200	46	320	200	11	23,0	362	F10
100	Ø 200	350	220	59	370	250	11	30,5	382	F10
125	Ø 230	400	250	73	360	320	15	47,3	444	F10
150	Ø 285	480	285	95	440	400	19	68,4	511	F10/F14
200	Ø 337	600	340	114	560	500	23	102,4	623	F10/F14

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

⁷ Add 5 mm to centre-to-top height for rubber-lined valves.

Dimensions and weights of SISTO-KB with directly mounted DLAP.230 piston actuator

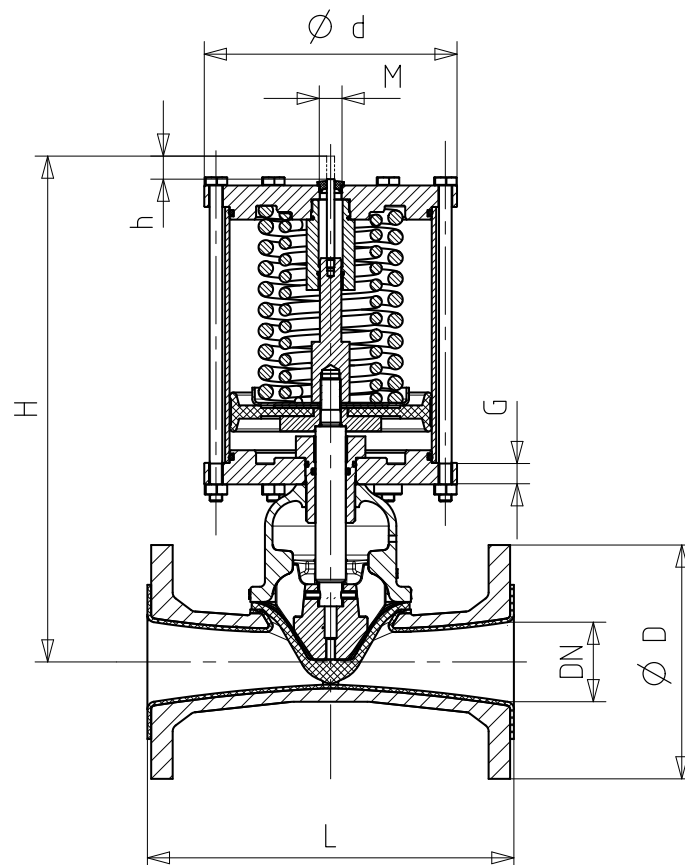


Fig. 5: SISTO-KB with DLAP.230

Table 12: Dimensions and weights

DN	Diaphragm [mm]	Piston [mm]	L [mm]	Ø D [mm]	h [mm]	H [mm]	Ø d [mm]	[kg]
15	70 × 46	125	130	165	9	300	46	9,1
20			150	165		300	71	9,7
25	86 × 67	125	160	165	21	333	71	12,2
32			180	165		333	89	13,8
40			200	165		333	89	14,6
50	111 × 86	125	230	165	31	358	165	18,0
		160		200		372	200	23,0
65	128 × 108	160	290	200	40	423	200	28,0
		200		250		468	250	37,5
80	169 × 134	160	310	200	46	454	200	35,0
		200		250		499	250	44,0
100	Ø 200	200	350	250	59	534	250	50,0

Table 13: Connections

Control air G	Interface for accessories M
G 1/8 in	M18 × 1

Dimensions and weights of SISTO-LAP piston actuator

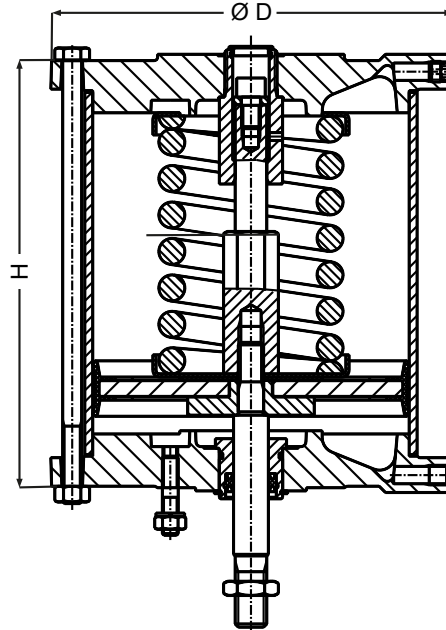


Fig. 6: SISTO-LAP

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

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-200-F10	45	255	190	18
LAP-AZ-200-F10	60	255	210	18
LAP-AZ-200-F10	80	255	230	20
LAP-AZ-250-F10	60	305	240	31
LAP-AZ-250-F10	80	305	260	32
LAP-AZ-250-F14	100	305	280	34
LAP-AZ-300-F14	100	355	294	44

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

Type	Stroke [mm]	Ø D [mm]	H [mm]	[kg]
LAP-OF-80.101-F10	15	130	151	5
LAP-OF-125.101-F10	15	170	151	7
LAP-OF-125.102-F10	30	170	189	6
LAP-OF-160.102-F10	30	210	188	11
LAP-OF-200.001-F10	45	255	310	21
LAP-OF-200.001-F10	60	255	330	22
LAP-OF-250.001-F10	45	305	340	35
LAP-OF-250.001-F10	60	305	360	30
LAP-OF-250.002-F10	80	305	400	35
LAP-OF-300.002-F10	80	355	434	52
LAP-OF-D250.012-F14	100	305	524	55

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

Type	Stroke [mm]	Ø D [mm]	H [mm]	[kg]
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-200.003.7-F10	45	255	350	32
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-300.034-F10	60	355	514	67
LAP-SF-300.034-F10	80	355	535	70
LAP-SF-D300.035-F14	100	355	812	127

Technical data

Actuator sizes of directly mounted DLAP.230 piston actuator

Selection table for maximum permissible operating pressure in bar for SISTO-KB

Minimum required control pressure: 5.5 bar
Maximum permissible control pressure 7 bar

Operating pressure for pressure applied on one side in accordance with EN12266-1.
Information on operating pressures applied on both sides is available on request.

Table 17: Operating pressure [bar] for actuator function: **type DLAP.230-AZ (air-to-open/air-to-close)**

DN	Diaphragm [mm]	Piston [mm]	Elastomer diaphragm [bar]
15	70 × 46	125	10
20		125	10
25		125	10
32		125	10
40		125	10
50	111 × 86	125	10
		160	10
65	128 × 108	160	9
		200	10
80	169 × 134	160	7
		200	10
100	Ø 200	200	8

Table 18: Operating pressure [bar] for actuator function: **type DLAP.230-OF (spring-to-open/air-to-close)**

DN	Diaphragm [mm]	Piston [mm]	Elastomer diaphragm [bar]
15	70 × 46	125	10
20		125	10
25		125	10
32		125	10
40		125	10
50	111 × 86	125	9
		160	10
65	128 × 108	160	7
		200	10
80	169 × 134	160	5
		200	10
100	Ø 200	200	7

Table 19: Operating pressure [bar] for actuator function: **type DLAP.230-SF (air-to-open/spring-to-close)**

DN	Diaphragm [mm]	Piston [mm]	Elastomer diaphragm [bar]
15	70 × 46	125	10
20		125	10
25		125	10
32		125	10
40		125	10
50	111 × 86	125	7
		160	10
65	128 × 108	160	6
		200	10
80	169 × 134	160	5
		200	9
100	Ø 200	200	5

Other selection options on request.

Actuator size of SISTO-LAP piston actuator

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

Minimum required control pressure: 5.5 bar

Maximum permissible pressure 10 bar

Table 20: Symbols key

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

Table 21: Operating pressure [bar] for actuator function: **type LAP-AZ (air-to-open/air-to-close)**

Actuator size	Stroke [mm]	DN 15 - 20	DN 25 - 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
LAP-AZ-80-F10	15/30	10	4	↓	↓	↓	↓	↓	↓
LAP-AZ-125-F10	15/30	↑	10	10	↓	↓	↓	↓	↓
LAP-AZ-125-F10	45/60	↑	↑	↑	3	↓	↓	↓	↓
LAP-AZ-160-F10	45/60	↑	↑	↑	8	5	3	↓	↓
LAP-AZ-200-F10	45	↑	↑	↑	10	10	↓	↓	↓
LAP-AZ-200-F10	60/80	↑	↑	↑	↑	↑	7	3	↓
LAP-AZ-250-F10	60/80	↑	↑	↑	↑	↑	10	6	↓
LAP-AZ-250-F14	100	↑	↑	↑	↑	↑	↑	↑	3
LAP-AZ-300-F14	100	↑	↑	↑	↑	↑	↑	↑	6

Table 22: Operating pressure [bar] for actuator function: **type LAP-OF (spring-to-open/air-to-close)**

Actuator size	Stroke [mm]	DN 15 - 20	DN 25 - 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150
LAP-OF-80.101-F10	15	7	↓	↓	↓	↓	↓	↓	↓
LAP-OF-125.101-F10	15	10	↓	↓	↓	↓	↓	↓	↓
LAP-OF-125.102-F10	30	↑	10	6	↓	↓	↓	↓	↓
LAP-OF-160.102-F10	30	↑	↑	10	↓	↓	↓	↓	↓
LAP-OF-200.001-F10	45/60	↑	↑	↑	10	8	5	↓	↓
LAP-OF-250.001-F10	45/60	↑	↑	↑	↑	10	10	↓	↓
LAP-OF-250.002-F10	80	↑	↑	↑	↑	↑	↑	5	↓
LAP-OF-300.002-F10 ⁸⁾	80	↑	↑	↑	↑	↑	↑	6	↓
LAP-OF-D250.012-F14	100	↑	↑	↑	↑	↑	↑	↑	6

Table 23: Operating pressure [bar] for actuator function: **type LAP-SF (air-to-open/spring-to-close)**

Actuator size	Stroke [mm]	DN 15 - 20	DN 25 - 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	↑	10	3	↓	↓	↓	↓	↓
LAP-SF-160.012-F10	30/45	↑	↑	10	2	↓	↓	↓	↓
LAP-SF-200.003.7-F10	45	↑	↑	↑	7	5	↓	↓	↓
LAP-SF-250.004.7-F10	45	↑	↑	↑	10	9	↓	↓	↓
LAP-SF-250.004-F10	60/80	↑	↑	↑	↑	↑	6	↓	↓
LAP-SF-300.034-F10 ⁸⁾	60/80	↑	↑	↑	↑	10	10	6	↓
LAP-SF-D300.035-F14	100	↑	↑	↑	↑	↑	↑	↑	6

Other selection options on request

⁸ Max. control pressure: 7 bar

Glossary

ATEX 2014/34/EU

The acronym ATEX is the French abbreviation for explosive atmospheres: "Atmosphère explosible". The ATEX product directive 2014/34/EU lays down rules to be met by equipment and protective systems intended for use in potentially explosive atmospheres in the European Union (EU).

DN

Nominal size; numeric designation of size of the components in a piping system

Grey water

Faecal-free waste water

LAP

Pneumatic piston actuator, available in versions AZ, OF and SF

LAP-AZ

LAP-AZ = OPEN/CLOSE = double-acting piston actuator (air-to-open / air-to-close)

LAP-OF

LAP-OF = opening spring = pneumatic piston actuator, fail-open (spring-to-open / air-to-close)

LAP-SF

LAP-SF = closing spring = pneumatic piston actuator, fail-close (air-to-open / spring-to-close)

Pressure Equipment Directive 2014/68/EU (PED)

The 2014/68/EU Directive sets out the requirements to be met by pressure equipment intended to be placed on the market in the European economic area.



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