

Diaphragm Valve

SISTO-10

PN10
DN 15-300
Maintenance-free
With or without Lining
Flanged Ends

Type Series Booklet



SISTO

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Type Series Booklet SISTO-10

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Diaphragm Valves

Soft-seated Glandless Diaphragm Valves

SISTO-10



Main applications

- Mining
- Irrigation
- Chemical industry
- Industrial recirculation systems
- Sewage treatment plants
- Air-conditioning systems
- Condensate transport
- Paint shops
- Seawater desalination / reverse osmosis
- Refineries
- Flue gas desulphurisation
- Swimming pools
- Process engineering
- Water treatment
- Water extraction
- Sugar industry

Fluids handled

- Waste water
- Aggressive fluids
- Inorganic fluids
- Brackish water
- Service water

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

Operating data

Characteristic	Value
Nominal pressure	PN10
Nominal size	DN 15-300
Max. permissible pressure	10 bar.
Max. permissible temperature ¹⁾	160 °C

Body materials

Overview of available materials

Material	Material number	Temperature limit ¹⁾
Grey cast iron	JL1040	-10 °C to +160 °C
Nodular cast iron	JS1049	-20 °C to +160 °C
Stainless steel	1.4408	-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 diaphragm (spiral-supported from DN 65)
- Position indicator with integrated stem protection
- Manufactured and tested to EN 13397
- Marked to DIN/EN 19 (ISO 5209)
- The valves satisfy the safety requirements of Annex I of the European Pressure Equipment Directive 97/23/EC (PED) for fluids in Groups 1 and 2.
- The valves do not have a potential internal source of ignition and can be used in potentially explosive atmospheres, Group II, category 2 (zones 1+21) and category 3 (zones 2+22) to ATEX 94/9/EC.

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

Variants

- Body lined with IIR (Butyl); temperature limit: +120 °C
- Body lined with NRH (hard rubber); temperature limit: +100 °C
- Body coated with PA (Rilsan); temperature limit +90 °C
- Body coated with ECTFE (Halar); temperature limit +90 °C
- Diaphragm made of CSM; temperature limit +100 °C
- 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
- Electric actuators
- Pneumatic actuators
- Certification to customer specification

Product benefits

- No contamination of fluid handled, as all functional parts are located outside the wetted section
- Closing torques minimised by thrust bearing
- Spiral-supported diaphragm (DN 65 - 300) for increased operating reliability, longer valve life and higher pressure limit
- The valve hydraulics without dead volume offers optimum conditions for high-purity fluids.
- Highly corrosion-resistant due to high-quality linings
- Optimised functional reliability of the diaphragm thanks to balanced diaphragm suspension
- Position indicator with integrated stem protection for increased operating reliability

Related documents

- Operating manual 0570.821
- Type series booklet MAT-P (pneumatic actuators) 9210.1
- Type series booklet SISTOMAT-PC (pneumatic actuators) 8641.1 PC
- SISTOMAT-E, MTAE/LAE (electric actuators) see SISTO price list 0570

On all enquiries/orders please specify

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

Flow characteristics

Flow coefficients

DN	Kvs value [m³/h]	DN	Kvs value [m³/h]
15	5.0	80	126.0
20	7.9	100	216.0
25	12.0	125	311.0
32	19.0	150	414.0
40	30.0	200	1120.0
50	55.0	250	-
65	87.0	300	-

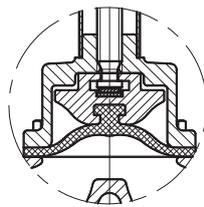
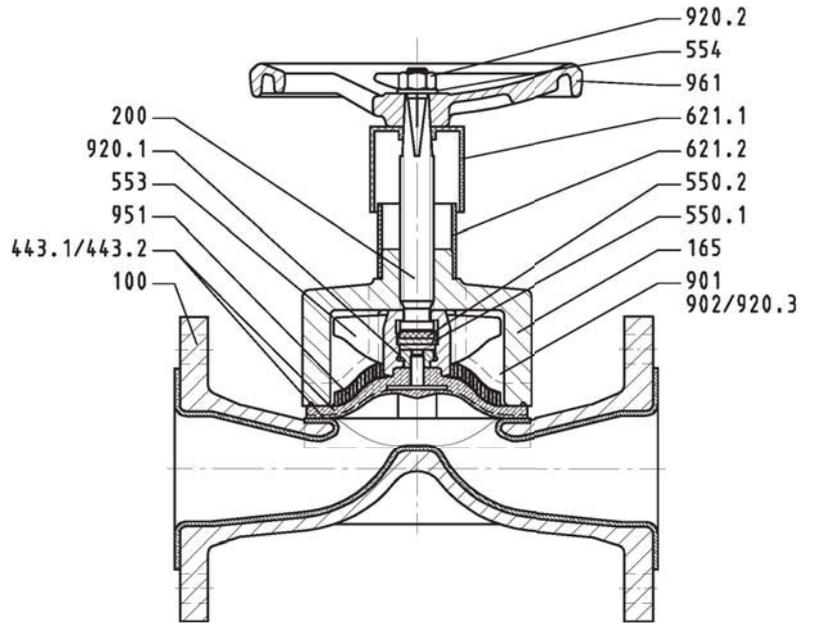
Pressure/temperature ratings

Permissible operating pressures in bar at a temperature of °C (to EN 1092-2/ EN 1092-1)

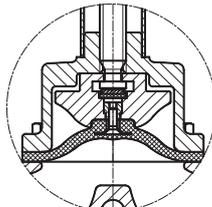
Nominal pressure	Material	-20	RT ²⁾	+50	+100	+120	+150	+160
10	JL1040	10	10	10	10	10	9.0	8.7
	JS1049	10	10	10	10	10	9.7	9.6
	1.4408	9.1	9.1	8.7	7.8	7.48	7.0	6.88

2) RT: room temperature +20°C

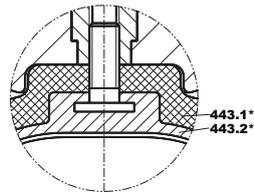
Materials



Design DN 15-20



Design DN 25-50



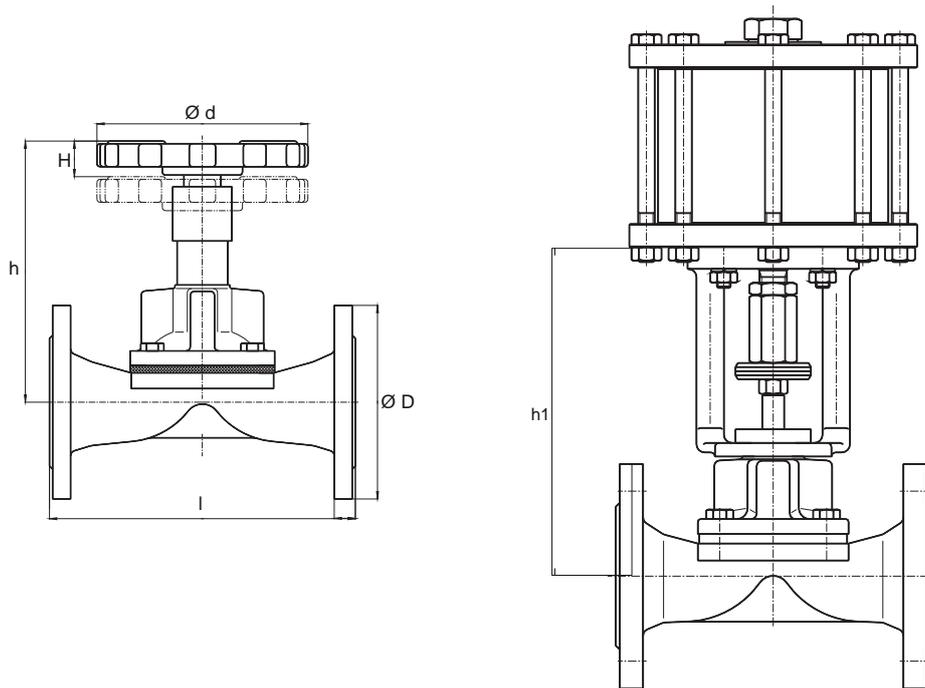
Design with PTFE diaphragm

Parts list

Part No.	Description	Material	Note
100	Body	JL1040	Standard, DN 200-300 JS-1025
165	Bonnet	JL1040	Standard
200	Stem	1.4104	
443 ³⁾	Diaphragm	EPDM	Standard
443.1 ³⁾	Backing diaphragm	EPDM	
443.2 ³⁾	Diaphragm	PTFE	
550.1	Bearing disc	9S20	On DN 25-300
550.2	Disc	PTFE/graphite	On DN 25-300
553	Compressor	JL1040	GD-ZnAl4Cu1 for DN 15-20
554	Disc	StA2E	
621.1	Position indicator, upper part	ABS Luran	On DN 25-300
621.2	Position indicator, lower part	ABS Luran	
901	Hexagon head bolt	A2	On DN 15-65
902	Stud	A2	On DN 80-300
920.1	Square nut	9S20K	On DN 25-300
920.2	Hexagon nut	A2	On DN 25-300
920.3	Hexagon nut	A2	On DN 80-300
951	Support spiral	St 2K BK	On DN 65-300
961	Handwheel	JL1030	DN 15-20: ABS Luran

³⁾ Recommended spare parts

Dimensions



Dimensions in mm

DN	Diaphragm MD (Ø/AxB)	l	Ø D	H	Manually operated valve				Actuated valve	
					h ⁴⁾	Ø d	Handwheel turns approx.	[kg]	Centre-to-top height h1	Top flange
15 ⁵⁾	58 x 62	130	95	8	108	63	3	2.5	213	F10
20 ⁵⁾	58 x 62	150	105	8	108	63	3	3.0	213	F10
25	68 x 72	160	115	11	140	100	4	4.0	217	F10
32	90 x 100	180	140	18	165	100	6	5.5	227	F10
40	90 x 100	200	150	18	165	100	6	8.0	227	F10
50	107 x 124	230	165	26	200	125	7	11.5	242	F10
65	132 x 144	290	185	34	245	200	9	19.0	312	F10
80	157 x 187	310	200	40	265	200	10	25.0	320	F10
100	Ø 226	350	220	56	340	200	11	39.0	363	F10
125	Ø 258	400	250	72	405	250	15	53.0	395	F10
150	Ø 303	480	285	81	450	400	14	78.0	485	F10/F14
200	Ø 415	600	340	115	595	400	20	162.0	550	F10/F14
250	Ø 415	730	395	115	645	400	20	190.0	600	F10/F14
300	Ø 415	850	445	115	645	400	20	210.0	600	F10/F14

Mating dimensions - Standards

Face-to-face length: EN 558-1 R1 (ISO 5752/1)
 Flange dimensions: DIN EN 1092-2 (BS 4504)
 Flange facing: DIN EN 1092-2, type B

⁴⁾ Add 5 mm for rubber-lined valves
⁵⁾ Diaphragm valves in material 1.4408 with dimensions of DN 25 valve

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