Swing Check Valve

SISTO-RSK/-RSKS

PN 16
DN 25 - 300

Type Series Booklet

Legal information/Copyright

Type Series Booklet SISTO-RSK/-RSKS

Contents

Swing check valves

Swing Check Valves to DIN/EN

SISTO-RSK/-RSKS

Main applications

- Mining
- General irrigation systems
- Chemical industry
- Disposal
- Fire-fighting systems
- Domestic water supply
- Nuclear power stations
- Waste water treatment plants
- Fossil-fuelled power stations
- Seawater desalination
- Process engineering
- Water treatment
- Water supply systems

Fluids handled

- Abrasive fluids
- Waste water with/without faeces
- Aggressive fluids
- Inorganic fluids
- Brackish water
- Service water
- Solids-laden fluids
- River water, lake water and groundwater
- Fluids posing a health hazard
- Toxic fluids
- Highly aggressive fluids
- Condensate
- Corrosive fluids
- Valuable fluids
- Cooling water
- Fire-fighting water
- Solvents
- Seawater
- Fluids containing mineral oils
- Organic fluids
- Radioactive fluids
- Cleaning agents
- Grey water
- Brine
- Drinking water
- Wash water
- Other fluids on request.[1)]

Operating data

Table 1: Operating properties

Characteristic	Value
Nominal pressure	PN 16
Nominal size	DN 25 - 300
Max. permissible pressure [bar]	1-16
Min. permissible temperature [°C][2)]	≥ -20 (-30[3)])
Max. permissible temperature [°C]	≤ +140

Permissible differential pressure: 1 bar - 16 bar

8675.1/26-EN

1 Throughflow of gaseous fluids is possible. Backflow of liquid fluids is prevented.
2 The temperatures indicated are for orientation only; they are not valid for all operating conditions.
3 For limited operating conditions on request.

Valve body materials

Table 2: Overview of available materials

Material	Material number	ASTM[4)]	Temperature limit
EN-GJS-400-18-LT (GGG40.3)	5.3103	A536 Gr. 60-40-18	-20 °C to +140 °C

Design details

Design

- Check valve to DIN EN 16767
- Marked in accordance with DIN EN 19 (ISO 5209)
- No moving external components
- Soft rubber encapsulated valve disc with slanted seat
- Soft-seated swing check valve in straight-way pattern with straight-line flow path

Variants

- Body and cover lined with IIR (butyl), temperature limit: +120 °C
- Body and cover lined with NRH (hard rubber), temperature limit: +100 °C
- Body and cover coated with ECTFE (Halar) inside and outside , temperature limit: +90 °C
- **Model approved for drinking water:** Body and cover coated with PA (Rilsan)[5)] inside and outside, SISTOMaXX (EPDM/W270) encapsulated valve disc with EPDM/W270 joint ring, temperature limit +60 °C
- IIR-encapsulated valve disc, temperature limit: +120 °C
- CSM-encapsulated valve disc, temperature limit: +80 °C
- EPDM-encapsulated valve disc, temperature limit: +140 °C
- NBR-encapsulated valve disc, temperature limit: +90 °C
- FKM-encapsulated valve disc, temperature limit: +120 °C
- With flushing connection

Product benefits

- Streamlined body design provides low flow resistance coefficient.
- Short stabilisation distances
- Valve hydraulics without dead volume ensure optimum conditions for high-purity fluids.
- Static sealing to atmosphere
- Pre-loaded valve disc and short travel to closure prevent pressure surges.
- Maintenance-free
- Soft rubber encapsulated valve disc ensures reliable shut-off.

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 3: Information/documents

Document	Reference number
Operating manual SISTO-RSK/-RSKS	8675.10

Purchase order specifications

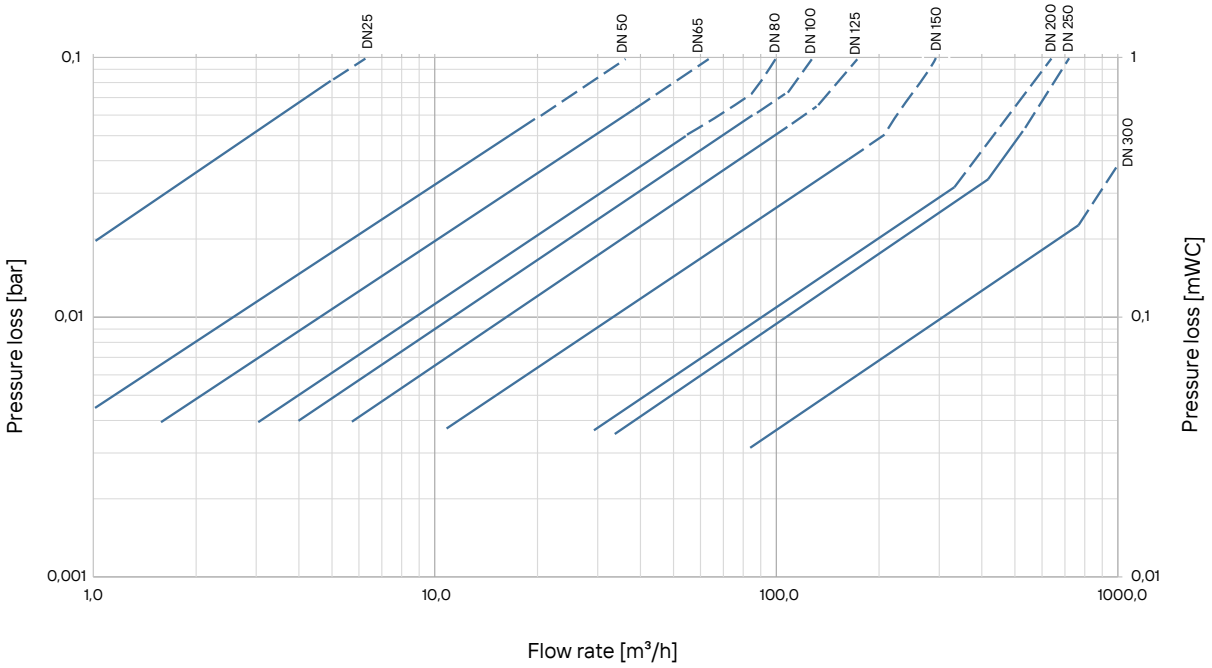
Please specify the following information in all enquiries or purchase orders:

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

4 ASTM materials similar to the materials indicated

5 In compliance with KTW recommendations for the use of elastomers in drinking water issued by the German Environment Agency

Flow characteristics



Water at 20°C, without lining

The (continuous) curves represent the flow rate ranges for optimum use of the swing check valves at a recommended max. flow velocity of 3 m/s.

Flow coefficients

Table 4: Flow coefficients for unlined valves

DN	Kvs value [m³/h]	
	RSK	RSKS
25	24.0	-
40	115,0	115,0
50	115,0	115,0
65	-	186,0
80	310,0	310,0
100	380,0	380,0
125	500,0	500,0
150	1010,0	1010,0
200	-	2000,0
250	-	2250,0
300	-	5000,0

Pressure/temperature ratings

Table 5: Permissible operating pressure [bar]

PN	DN	Material		[°C]		
		Designation	Number	-20 to +100	+120	+140
16	25 - 300	EN-GJS-400-18-LT	5.3103	16	12	8

8675.1/26-EN

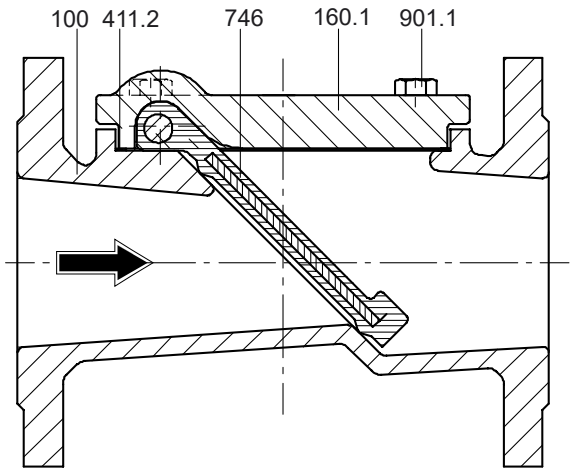
Opening pressure at room temperature

- Valve in as-supplied condition
- Fluid handled: water

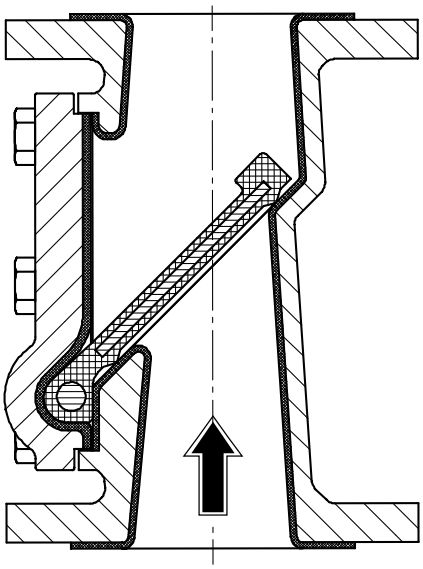
Table 6: Opening pressure at room temperature

DN	Opening pressure [barg]
25	< 0,05
50	< 0,05
80	< 0,05
100	< 0,05
125	< 0,09
150	< 0,09
200	< 0,09
250	< 0,09
300	< 0,15

Materials



Horizontal installation position[6)]
(Shown: variant without lining)



Vertical installation position[7)]
(Shown: variant with lining)

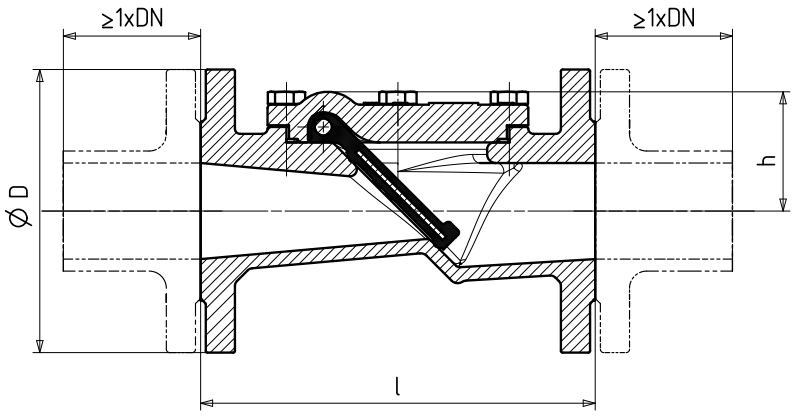
Table 7: Parts list

Part No.	Description	Material	
		Designation	Number
100	Body	EN-GJS-400-18-LT	5.3103
160.1	Cover	EN-GJS-400-18-LT	5.3103
411.2[8)]	Joint ring	EPDM	-
746[8)]	Valve disc	S355/IIR	-
901.1	Hexagon head bolt	A2-70	-

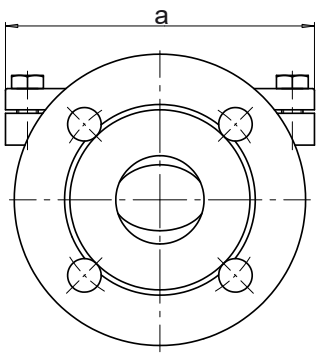
8675.1/26-EN

6 Recommended installation position
7 Vertical installation is only permitted if the fluid does not contain any solids.
8 Recommended spare parts

Dimensions and weights



Front view / sectional drawing with upstream/downstream stabilisation distances



Side view

Table 8: Dimensions and weights

DN	l [mm]		a [mm]		h [mm]	ØD [mm]	[kg]	
	RSK	RSKS	RSK	RSKS			RSK	RSKS
25	160	-	84	-	43	115	4,2	-
40	200	180[9)]	164	164	75	150	12,8	12,9
50	230	200	175	164	75	165	12,8	13,1
65	-	240	-	175	75	185	-	14
80	310	260	224	232	100	200	25,9	23,9
100	350	300	224	232	100	220	28,2	27,4
125	400	350	290	290	135	250	50	45,7
150	480	400	290	290	125	285	55,5	61,5
200	-	500	-	390	175	340	-	108,7
250	-	600	-	390	175	400	-	138,9
300	-	700	-	550	250	455	-	285,8

Mating dimensions as per standard

RSK face-to-face length:	EN 558 R1
RSKS face-to-face length:	EN 558 R48
Flanges:	DIN EN 1092-2
Flange facing:	DIN EN 1092-2, type B

Installation instructions

Swing check valves can be installed horizontally and vertically. Installation in horizontal pipes is preferable. Recommended installation positions, see drawings (⇨ Page 8) .

When installing them in vertical pipes, make sure that the flow direction is upward. Vertical installation is only permitted if the fluid does not contain any solids.

The flow direction must correspond to the cast-on flow direction arrow (see illustrations (⇨ Page 8)).

Recommended stabilisation distances upstream and downstream of the swing check valve ≥ 1 x DN (see drawing above).

9 PN 10 only – flange thickness not in compliance with DIN EN 1092-2

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

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.

Waste water

Water which has been changed by some type of use, e.g. domestic grey water

8675.1/26-EN

2025-04-30

8675.1/26-EN

SISTO Armaturen S.A.
18, rue Martin Maas • L-6468 Echternach
Tel.: +352 325085-1 • Fax: +352 328956
E-Mail: sisto@ksb.com
www.sisto.lu

A KSB Company • KSB