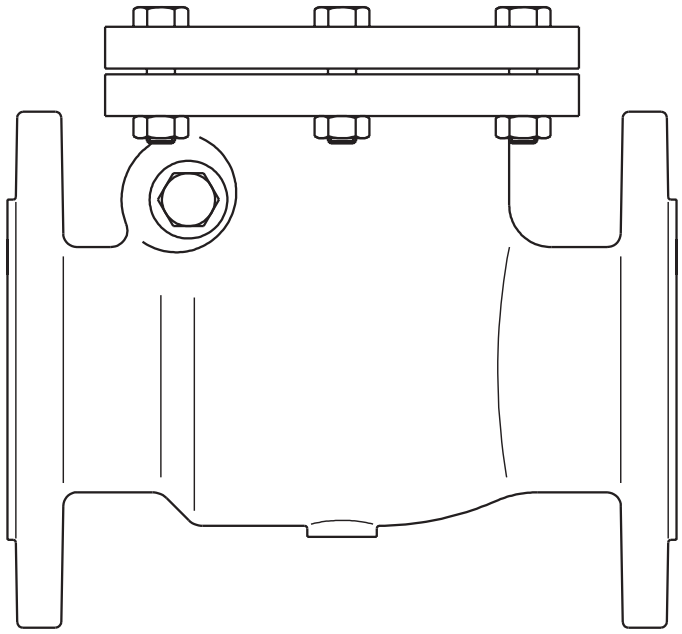
oventrop

Valves, controls + systems

EN

Swing type check valve (flanged model)
PN 16
Operating instructions



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1. General information

The original operating instructions were drafted in German.

The operating instructions in other languages have been translated from German.

1.1 Validity of the operating instruction

These operating instructions are valid for the Oventrop swing type check valve (flanged model) PN 16.

DN	Item no.
40	1073049
50	1073050
65	1073051
80	1073052
100	1073053
125	1073054
150	1073055
200	1073056
250	1073057
300	1073058

1.2 Extent of supply

Please check your delivery for any damage caused during transit and for completeness.

Items included in the delivery:

- Swing type check valve PN 16
- Safety and installation advice

1.3 Contact

Contact address

OVENTROP GmbH & Co. KG

Paul-Oventrop-Straße 1

59939 Olsberg

GERMANY

www.oventrop.com

Technical services

Phone: +49 (0) 29 62 82-234

1.4 Declaration of conformity

Oventrop GmbH & Co. KG hereby declares that this product complies with the basic requirements and other relevant provisions of the EC Directives concerned.

The declaration of conformity can be obtained from the manufacturer.

1.5 Used symbols

	Highlights important information and further explanations.
▶	Action required
•	List
1. 2.	Fixed order. Steps 1 to X.
▷	Result of action

2. Safety-related information

2.1 Correct use

Operating safety is only guaranteed if the product is used correctly.

Oventrop swing type check valves PN16 are used in central heating and cooling systems and industrial plants with closed circuits which are operated with non-aggressive and harmless fluids.

The swing type check valve prevents a back flow of the used media.

The swing type check valves are not suitable for use on pulsating flow.

Any other use of the product will be considered incorrect use.

Claims of any kind against the manufacturer and/or its authorised representatives due to damage caused by incorrect use will not be accepted.

Observance of the operating instructions is part of compliance with correct use.

2.2 Warnings

Each warning contains the following elements:

Warning symbol SIGNAL WORD
Type and source of danger! Possible consequences if the danger occurs or the warning is ignored. ▶ Ways to avoid the danger.

The signal words identify the severity of the danger arising from a situation.

⚠ DANGER
Indicates an imminent danger with high risk. The situation will lead to death or serious injury if not avoided.

⚠ CAUTION
Indicates a possible danger with lower risk. The situation will lead to minor and reversible injury if not avoided.

NOTICE
Indicates a situation that may lead to damage to property if not avoided.

2.3 Safety notes

We have developed this product in accordance with current safety requirements.

Please observe the following notes concerning safe use.

2.3.1 Danger caused by inadequately qualified personnel

Any work on this product must only be carried out by qualified tradesmen.

As a result of their professional training and experience as well as their knowledge of the relevant legal regulations, qualified tradesmen are able to carry out any work on the described product professionally.

2.3.2 Risk of injury from heavy product

- ▶ Wear safety shoes during installation.
- ▶ Install the product with the help of several persons, if necessary.
- ▶ Use a suitable hoisting device if necessary.

2.3.3 Risk of injury from pressurised components

- ▶ Only carry out work when the system is depressurised.
- ▶ Observe the permissible operating pressures during operation.

2.3.4 Risk of injury from hot or cold components and surfaces

- ▶ Wear suitable protective clothing to avoid unprotected contact with hot or cold system components and fittings.
- ▶ If necessary, wait until the product has nearly reached the ambient temperature before carrying out work.

2.3.5 Risk of injury in case of improper work

Stored energies, angular components, protrusions and edges both inside and outside the product may cause injuries.

- ▶ Wear suitable protective clothing.
- ▶ Before starting work, make sure that there is enough space.
- ▶ Handle open and sharp-edged components with care.
- ▶ Make sure that the work place is tidy and clean to avoid accidents.

2.3.6 Availability of the operating instructions

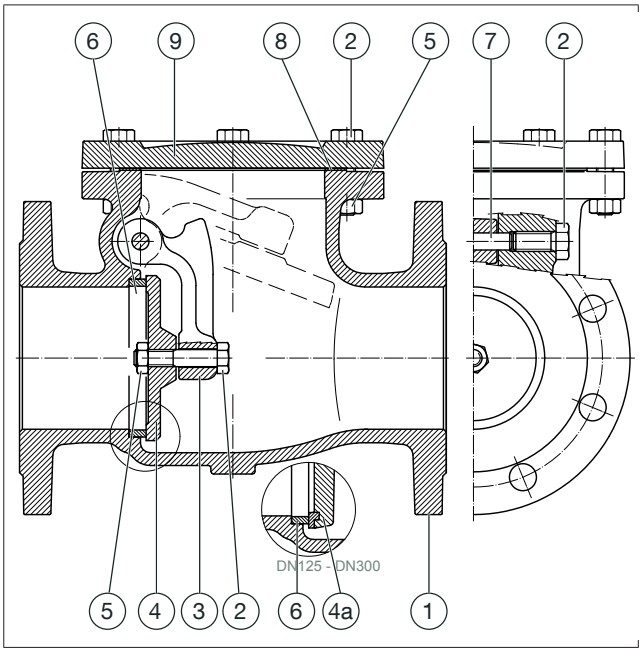
Any person working on the product has to read and apply these operating instructions and all other valid documents.

The operating instructions must be available at the installation location of the product.

- ▶ Hand these operating instructions and all other relevant documents (e.g. accessory manuals) over to the user.

3. Technical description

3.1 Construction



Illust. 1: Construction of the swing type check valve

(1)	Body
(2)	Screw
(3)	Fastening arm of the flap
(4)	Flap DN40-DN100
(4a)	Flap with seat ring DN125-DN300
(5)	Nut
(6)	Seat ring
(7)	Pin
(8)	Seal
(9)	Cover

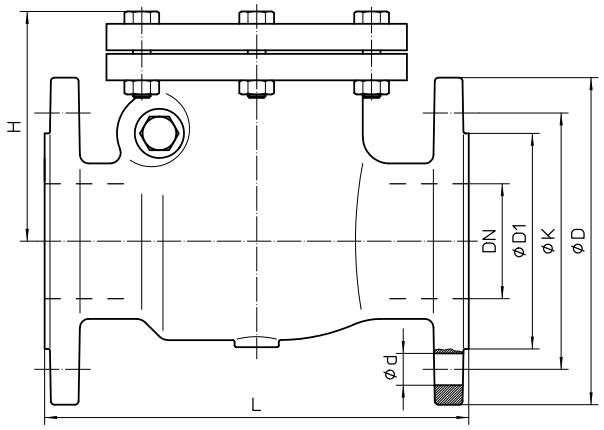
3.2 Functional description

If the fluid is transported against the direction of flow, the flap of the swing type check valve closes (see position 4 in Illust. 1 Page 6) and a back flow of the fluid is prevented.

3.3 Technical data

General data	
Operating pressure (p_s)	max. 16 bar (PN 16)
Operating temperature (t_s)	-10 to 120°C
Fluid	Non-aggressive, harmless fluids (e.g. water or water and glycol mixtures according to VDI 2035/ ÖNORM 5195)
Flow velocity	max. 3 m/s
Flanged connections	According to DIN EN 1092-2 PN16

Materials	
Body	Cast iron (EN GJL-250, DIN EN 1561)
Cover	- Cast iron (EN GJL-250, DIN EN 1561) - Asbestos free gasket
Flap	- Up to DN 100: brass - On size DN 125 and above: cast iron (EN GJL-250, DIN EN 1561) with brass seat ring



Illust. 2: Dimensions

	Item no. 1073049	Item no. 1073050	Item no. 1073051
H	115	125	130
DN	40	50	65
ø D1	84	102	122
ø K	110	125	145
ø D	150	165	185
L	180	200	240
nxød	4x19	4x19	4x19
Weight (kg)	9	10	15
k_{VS} value	85	132	326

	Item no. 1073052	Item no. 1073053	Item no. 1073054
H	140	160	180
DN	80	100	125
ø D1	138	158	188
ø K	160	180	210
ø D	200	220	250
L	260	300	350
nxød	8x19	8x19	8x19
Weight (kg)	20	26	36
k_{VS} value	490	770	1020

	Item no. 1073055	Item no. 1073056	Item no. 1073057
H	200	220	290
DN	150	200	250
ø D1	212	268	320
ø K	240	295	355
ø D	285	340	405
L	400	500	600
nxød	8x23	12x23	12x28
Weight (kg)	50	73	134
k_{VS} value	1700	2410	3870

	Item no. 1073058		
H	330		
DN	300		
ø D1	378		
ø K	410		
ø D	460		
L	700		
nxød	12x28		
Weight (kg)	199		
k_{VS} value	5670		

4. Transport and storage

Temperature range	-20 °C to +55 °C
Relative air humidity	max. 95%
Particles	Store dry and free from dust
Mechanical influences	Protected from mechanical agitation
Weather influences	Do not store outdoors
	Protect from direct sunlight
Chemical influences	Do not store together with aggressive fluids

5. Installation

- ▶ In case of vertical flow direction install the product so that the flap can be opened upwards.
- ▶ In case of horizontal flow direction install the product so that the flap suspension points upwards.
- ▶ Do not install the product in close proximity to a pump. The minimum distance is ten times the diameter of the used pipe.
- ▶ Make sure that the product and the pipework are free from impurities.
- ▶ Observe the direction of flow.
- ▶ Install the product free from tension.

WARNING

Risk of injury from heavy product

- ▶ Wear safety shoes during installation.
- ▶ Install the product with the help of several persons, if necessary.
- ▶ Use a suitable hoisting device if necessary.

WARNING

Risk of injury from pressurised components

Fluids escaping under pressure may lead to injuries.

- ▶ Only carry out work when the system is depressurised.
- ▶ When retrofitting an existing system: drain the system or close the supply pipes of the section of the system and depressurise it.
- ▶ Wear safety goggles.

CAUTION

Risk of injury from hot or cold components and surfaces

- ▶ Wear suitable protective clothing to avoid unprotected contact with hot or cold system components and fittings.
- ▶ If necessary, wait until the product has nearly reached the ambient temperature before carrying out work.

1. Completely remove the adhesive foil from the sealing surfaces of the flanges.
2. Align the swing type check valve exactly with the adjoining flanges. Fully use the sealing surface.
3. Tighten the flange screws by hand.
4. Tighten the flange screws crosswise.

6. Commissioning

- ▶ Before commissioning, fill and bleed the installation, with due consideration of the permissible operating pressures.
- ▶ After installation, check all installation points for leaks.

7. Removal and disposal

⚠ WARNING
Risk of injury from pressurised components Fluids escaping under pressure may lead to injuries. ▶ Only carry out work when the system is depressurised. ▶ Wear safety goggles.

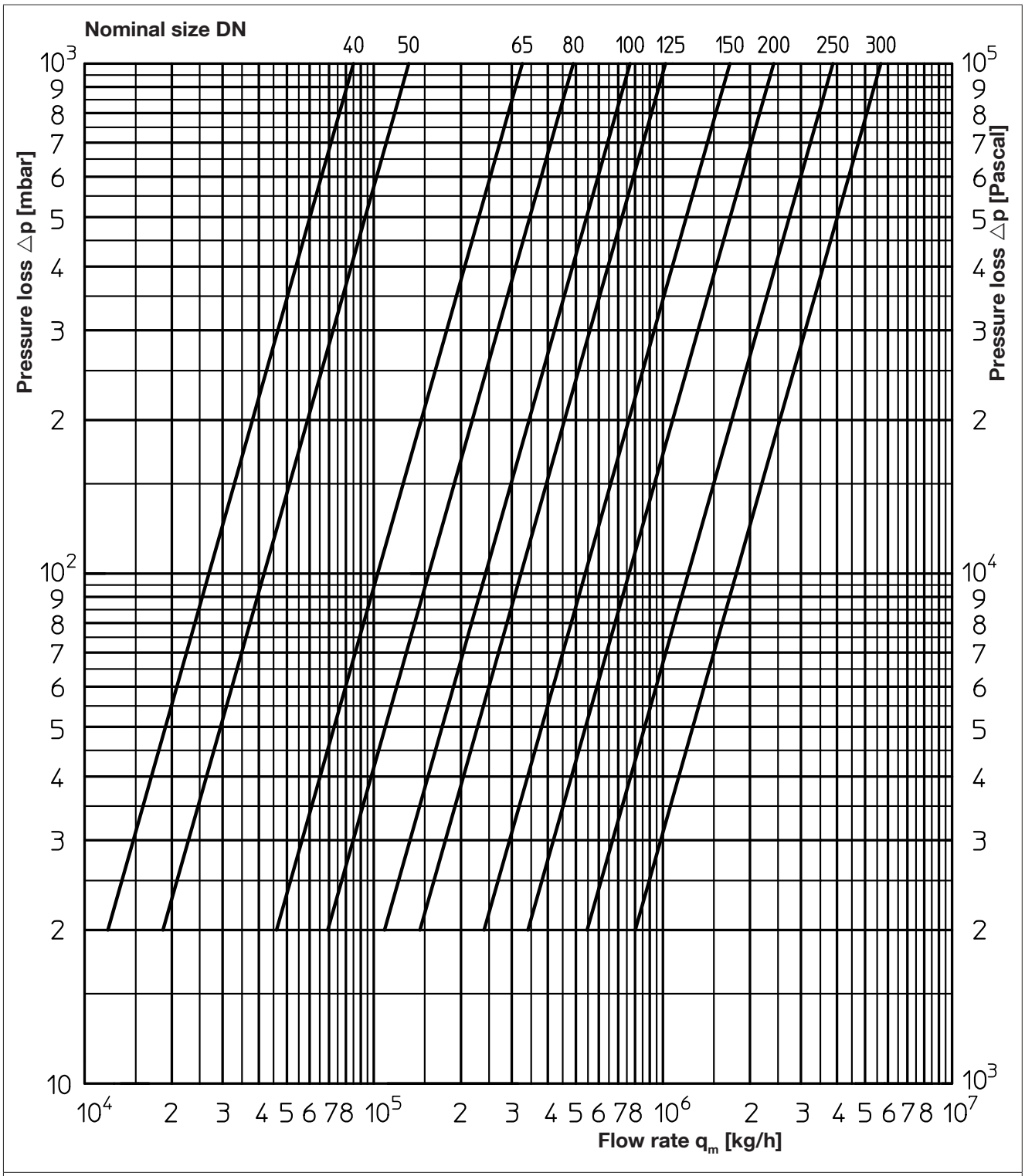
⚠ CAUTION
Risk of injury from hot or cold components and surfaces ▶ Wear suitable protective clothing to avoid unprotected contact with hot or cold system components and fittings. ▶ If necessary, wait until the product has nearly reached the ambient temperature before carrying out work.

NOTICE
Risk of environmental pollution! Incorrect disposal (for instance with standard waste) may lead to environmental damage. ▶ Dispose of packaging material in an environmentally friendly manner. ▶ Dispose of the components appropriately.

If no return or disposal agreement has been made, dispose of the product yourself.

- ▶ If possible, recycle the components.
- ▶ Dispose of components which cannot be recycled according to local regulations.

8. Appendix



Illust. 3: Flow chart

OVENTROP
GmbH & Co. KG
Paul-Oventrop-Straße 1
59939 Olsberg
GERMANY
www.oventrop.com

107305082 V02.10.2019