

## GESTRA Steam Systems

## Product Range A2

### Non-Return Valve

### RK 49 for Flanges PN 63/100/160, DN 15-200

### Class 400/600/900, NPS ½ – 8

### RK 49

#### Description

Wafer-type non-return (check) valve for sandwiching between flanges. Valve designed with spring for installation in any position. Without spring only for vertical lines with upward flow. For liquids, gases and vapours. Observe classification according to Pressure Equipment Directive (PED).

#### Pressure/Temperature Ratings

RK 49, PN 160		EN 1092-1 (2007), material group 15E0, 1.4581								
Design temperature [°C]		20	100	200	300	350	400	450	500	550
DN 15 – 65	[bar g]	160.0	160.0	149.3	133.3	128.7	124.9	122.6	120.3	119.6

RK 49, CL 900		EN 1759-1 (2004), material group 15E0, 1.4581								
Design temperature [°C]		20	100	200	300	350	400	450	500	550
DN 15 – 65	[bar g]	151.0	133.0	120.0	104.0	101.3	97.2	94.3	84.6	74.9

RK 49, PN 160		EN 1092-1 (2007), material group 5E0, 1.7357								
Design temperature [°C]		20	100	200	300	350	400	450	500	550
DN 80 – 200	[bar g]	160.0	160.0	160.0	160.0	152.3	144.0	134.8	104.3	37.3

RK 49, CL 900		EN 1759-1 (2004), material group 5E0, 1.7357								
Design temperature [°C]		20	100	200	300	350	400	450	500	550
DN 80 – 200	[bar g]	155.0	155.0	142.0	127.0	117.0	110.0	101.0	84.6	33.6

Minimum temperature: -10 °C

Valve disc sealing	Seat tightness
metal-to-metal RK 49, DN 15-65	EN 12266-1, P 12, leakrate C
metal-to-metal RK 49, DN 80-200	EN 12266-1, P 12, leakrate C

For additional information on chemical resistance see GESTRA Information "Chemical Resistance".

#### End connection

DIN / EN	ASME
EN 1092-1 (2007), form B2 PN 63/100/160 (optional: form D or form E)	ASME B 16.5 Class 400/600/900 RF (optional: ring joint facing)

#### Dimensions

Nominal size	[mm]	15	20	25	32	40	50	65	80	100	125	150	200
	[inch]	½	¾	1	1¼	1½	2	2½	3	4	5	6	8
L <sup>2)</sup>	[mm]	25	31.5	35.5	40	45	56	63	71	80	110	125	160
∅ D	[mm]	54	63	74	84	95	110	130	150	178	211	248	305
Weight	[kg]	0.43	0.7	1.0	1.4	2.0	3.0	4.7	7.1	12.1	18.2	29.4	47.5

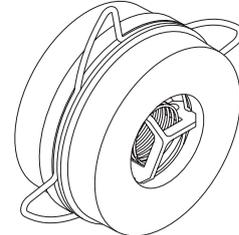
<sup>2)</sup> Short overall length to EN 558-1, series 52 (≙ DIN 3202-3, series K5)

#### Materials

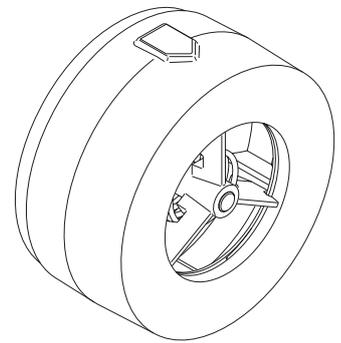
DN 15 – 65	DIN/EN	ASTM equivalent	Category
Body, seat, guide ribs and insert	1.4581	A 351 CF 8M	(Cast) austenitic stainless steel
Valve disc	1.4986		Forged steel, heat resistant
Spring to close	2.4632		Nimonic 90
Retaining ring	1.4571	A 313 type 316	(Forged) austenitic stainless steel
Centring ring	1.4310	A 313 type 302	Stainless cast steel

DN 80 – 200	DIN/EN	ASTM	Category
Body	1.7357	A 217 WC6	Forged steel, heat resistant
Hard faced seat	2.4806		
Plug	1.4923		Forged steel, heat resistant
Insert	1.4581	A 351 CF 8M	(Cast) austenitic stainless steel
Spring to close	2.4632		Nimonic 90
Retaining ring	1.4571	A 313 type 316	(Forged) austenitic stainless steel
Centring ring <sup>3)</sup>	1.4310	A 313 type 302	Stainless cast steel

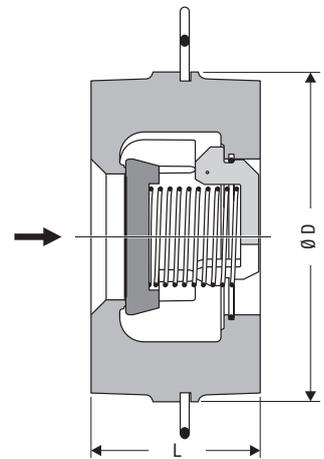
<sup>3)</sup> only for DN 80 and 100



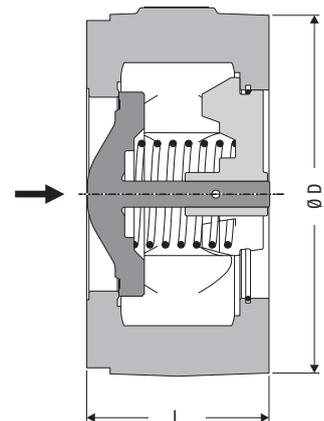
DN 15-65



DN 80-200



DN 15-65



DN 80-200

**Non-Return Valve  
RK 49 for Flanges  
PN 63/100/160, DN 15-200  
Class 400/600/900, NPS ½ – 8**

**Opening Pressures**

Differential pressures at zero volume flow.

DN	Opening pressures [mbar]			
	Direction of flow			
	without spring ↑	with spring ↑   →   ↓		
15	16.5	73	56.5	40
20	17.5	74	57.0	40
25	18.0	76	58.0	40
32	18.0	76	58.0	40
40	19.5	73	59.5	40
50	22.0	84	62.0	40
65	23.0	87	63.0	40
80	17.5	75	57.5	40
100	20.0	80	60.0	40
125	23.0	86	63.0	40
150	24.0	88	64.0	40
200	29.0	98	69.0	40

**Specification Text**

GESTRA DISCO Non-return valve type RK 49 for flanges PN 63/100/160.

Wafer design with extremely short overall length to EN 558-1, series 52.

Suitable for fitting between pipe flanges to DIN / EN, and ASME. Broad sealing surfaces. Installation in any position. Optional connection for electrostatic discharge line. Metal-to-metal seat. Designed in accordance with PED 97/23/CE, with CE marking. Specification of nominal pressure, size and body material according to EN 19.

**Inspection & Certification**

Documentation regarding material tests and in-house examination with test report EN10204-2.2 or inspection certificate EN10204-3.1 or 3.2 available at extra cost. All inspection requirements have to be stated with the enquiry or order. After supply of the equipment certification cannot be established. Charges and extent of the above mentioned test certificates as well as the different tests confirmed therein are listed in our Price List "Test and Inspection Charges for Standard Equipment". For other tests and inspections than those listed above, please consult us.

**Approvals**

GOST-R, Rostechndors

**Please note:**

The selected non-return valve must ensure that the minimum volume flowrate keeps the valve disk in the open position (see Pressure Drop Chart, "Full opening / stable range").

Supply in accordance with our general terms of business.

**Pressure Drop Chart**

Values for water at 20 °C. To read the pressure drop for other fluids the equivalent water volume flowrate must be calculated.

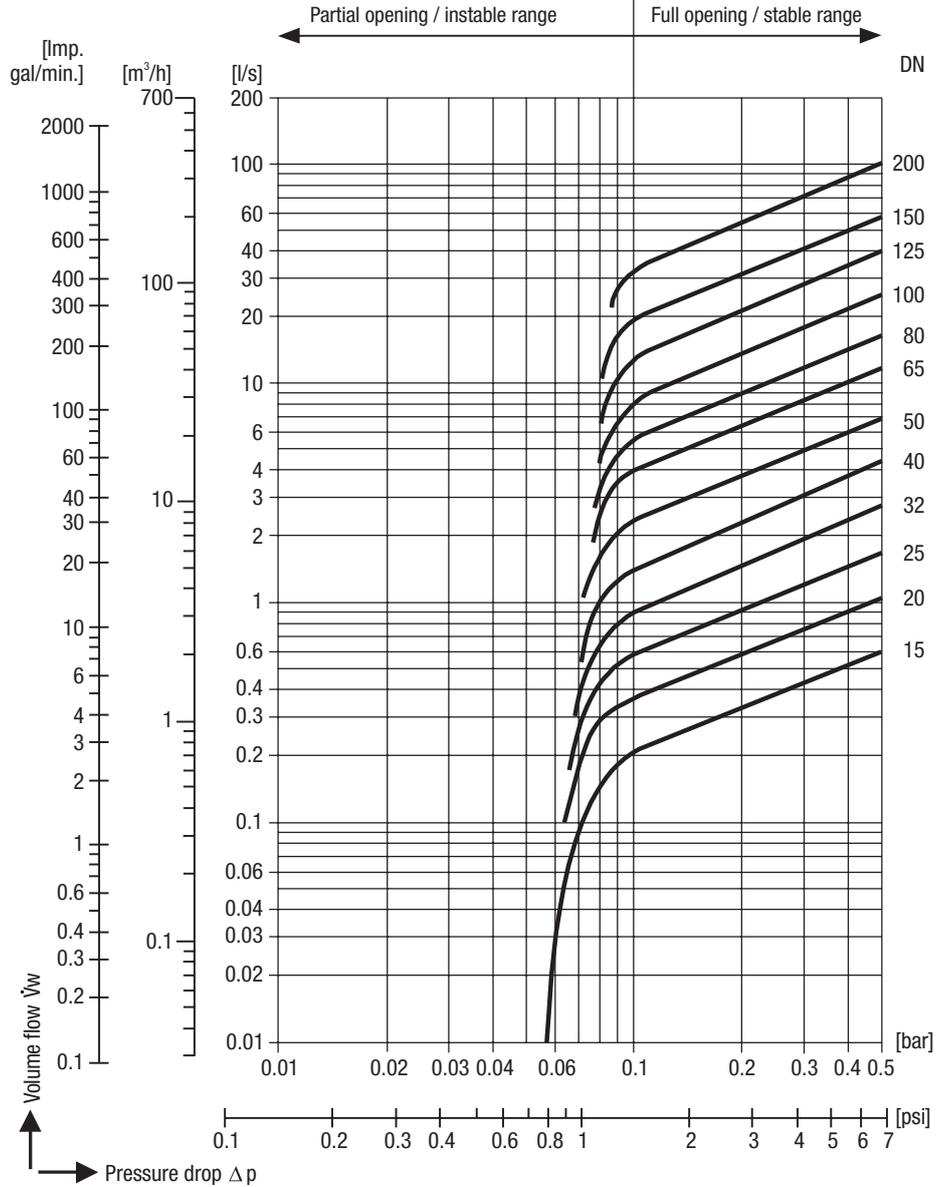
The values indicated in the chart are applicable to spring-loaded valves with horizontal flow. With vertical flow insignificant deviations occur only within the range of partial opening.

$$\dot{V}_w = \dot{V} \cdot \sqrt{\frac{\rho}{1000}}$$

$\dot{V}_w$  = Equivalent water volume flow in l/s or m³/h

$\rho$  = Density of the fluid (operating condition) in kg/m³

$\dot{V}$  = Equivalent water volume flow (operating condition) in l/s or m³/h



**PED (Pressure Equipment Directive)**

The equipment fulfills the requirements of the Pressure Equipment Directive PED 97/23/EC. For applications with fluids of group 1 and 2. With CE marking (apart from equipment according to section 3.3 that is excluded from the scope of this directive). For more information please refer to our PED Declaration of Conformity.

**ATEX (Atmosphère Explosible)**

The equipment does not have its own potential source of ignition and is therefore not subject to the ATEX Directive 94/9/EC. Applicable in Ex zones (surrounding atmosphere) 0, 1, 2, 20, 21, 22 (1999/92/EC). The equipment is not Ex marked. For more information refer to our ATEX Declaration of Manufacturer.

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