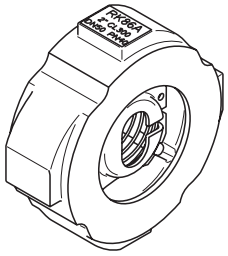
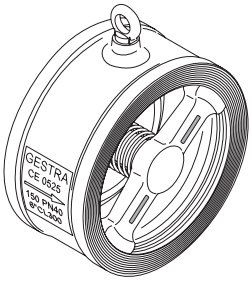
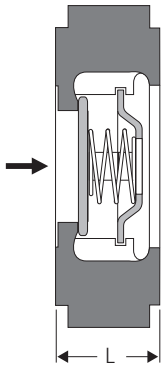
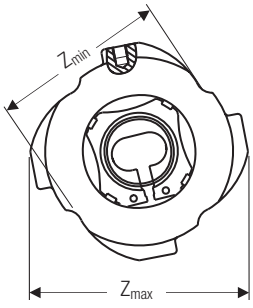


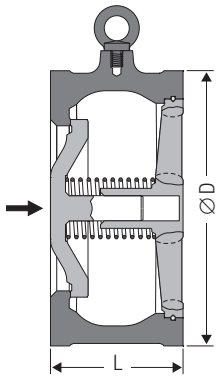
DN 15-100 mm (½ – 4")
Standard design fitted with M8 antistatic connection



DN 125-200 mm (5 – 8")
Standard design fitted with M8 antistatic connection







Non-Return Valve

RK 86, 86A for Sandwiching between Flanges PN 10/16/25/40, DN 15-200 ASME Class 125/150/300, NPS ½-8

Description

Wafer-type non-return (check) valve for sandwiching between flanges. Valve with spring for installation in any position. Without spring only for vertical lines with upward flow. Self-centering valve body. Application for liquids, gases and vapours (observe classification according to PED).

Pressure/Temperature Rating

RK 86	ASME B16.34, Class 300										Design
[°C]	–200	–10	20	100	200	300	350	400	500	550	
DN 15 – 100		51.1	51.1	46.6	43.8	39.8					metal-to-metal (standard)
[bar] g		51.1	51.1	46.6	43.8	39.8	37.6				metal-to-metal with Nimonic®-springs
DN 125 – 200		51.1	51.1	46.6	43.8	39.8					metal-to-metal (standard)
[bar] g		51.1	51.1	46.6	43.8	39.8	37.6	34.7			metal-to-metal with Nimonic®-springs

RK 86 A	ASME B16.34, Class 300										Design
[°C]	–200	–10	20	100	200	300	350	400	500	550	
DN 15 – 200	49.6	49.6	49.6	42.2	35.7	31.6					metal-to-metal (standard)
[bar] g	49.6	49.6	49.6	42.2	35.7	31.6	30.3	29.4	28.2	24.9	metal-to-metal with Nimonic®-springs

Valve seats	**t_{min} [°C]**	**t_{max} [°C]**	**Application**	**Leakage rate**
metal-to-metal RK 86, DN 15-100	–10	350	Liquids, gases, steam	EN 12266-1, P12, Leakage rate C
metal-to-metal RK 86, DN 125-200	–10	400	Liquids, gases, steam	EN 12266-1, P12, Leakage rate C
metal-to-metal RK 86A, DN 15-200	–200	550	Liquids, gases, steam	EN 12266-1, P12, Leakage rate C
PTFE, DN125 to DN 200: -25°C to 200°C	–190	250	Aggressive fluids	EN 12266-1, P12, Leakage rate C
EPDM	–40	150	Water, condensate, steam	EN 12266-1, P12, Leakage rate A
FPM	–25	200	Mineral oils, gases, air	EN 12266-1, P12, Leakage rate A

For additional information on chemical resistance go to www.gestra.de and click on "Technical Support" and then on "Chemical Resistance".

End Connections

DIN[1]	ASME	BS 10[3]	JIS[4]
EN 1092-1 PN 10/16/25/40[2]	B 16.1 Class 125 FF B 16.5 Class 150/300 RF	Table D, E, F, H, J	B2238 10K

[1] DN 125–200 mm (5–8"): On request form D or E acc. to EN 1092. [2] DN 15–100 mm (½–4") also suitable for PN 6.
[3] For installation between flanges DN 15 mm (½"), BS 10, table H and J, please use RK 86/86A, DN 20 mm (¾").
[4] As standard for installation between Fl. JIS 10K (except DN 80 mm). When ordering please indicate nominal size (reworking required).

Dimensions and Weights

Nominal sizes		[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
Dimensions [mm]		L[5]	16	19	22	28	31.5	40	46	50	60	90	106	140
		Z_{min}	44	53	64	73	83	96	110	128	151			
		Z_{max}	67	76	82	93	104	118	136	158	186			
∅ D	PN 10/16											194	220	275
	PN 25											194	226	286
	PN 40											194	226	293
	Class 125/150											194	220	275
	Class 300											216	251	308
Weight		[kg]	0.27	0.38	0.52	0.8	1.12	1.78	2.43	3.37	5.34	11	14	25

[5] Short overall length according to EN 558-1, series 49 (≙ DIN 3202, part 3, series K4)

Materials

DN 15–100 (¼ – 4")		DIN/EN	ASTM	Category
Body, seat and guide ribs	RK 86	1.4317	A 743-CA 6-NM	Chromium steel
	RK 86 A	1.4408	A 351 CF8M	Stainless steel
Valve disc, spring retainer		1.4571		Stainless steel
Spring				Stainless steel

DN 125–200 (5 – 8")		DIN/EN	ASTM	Category
Body	RK 86	1.0619	A 216 WCB	Cast steel (carbon steel)
	hard faced seat	1.4502		
	RK 86 A	1.4408	A351CF8M	Stainless steel
Valve cone	RK 86	1.4006	A 182F6	Chromium steel
Guide	RK 86	1.4107		Chromium steel
Guide	RK 86 A	1.4408		Stainless steel
Valve cone	RK 86 A	1.4404	A 182F316	Stainless steel
Spring	RK 86 and 86A	1.4571		Stainless steel

*) For the use in hygienic installations, foodstuff industry, pharmaceutical industry and similar applications please order RK 86 A in **pickled** design.

Non-Return Valve

RK 86, 86A for Sandwiching between Flanges PN 10/16/25/40, DN 15-200 ASME Class 125/150/300

Opening pressures

Differential pressures at zero volume flow

DN	Opening pressures in mbar			
	Direction of flow			
	without springs	with springs		
	↑	↑	→	↓
15	2.5	10	7.5	5
20	2.5	10	7.5	5
25	2.5	10	7.5	5
32	3.5	12	8.5	5
40	4.0	13	9	5
50	4.5	14	9.5	5
65	5.0	15	10	5
80	5.5	16	10.5	5
100	6.5	18	11.5	5
125	12.5	35	22.5	10
150	14.0	38	24.0	10
200	13.5	37	23.5	10

1 mbar = 0.0145 psi = 100 mm w.g. = 0.4 in w.g.

On request at extra charge, special springs (spiral/disk springs) between 20 mbar and 3000 mbar available.

Enquiry Specification

GESTRA Non-Return Valve RK 86 / RK 86A

Valve seat: metal-to-metal / EPDM / FPM / PTFEWafer-pattern check valve for sandwiching between flanges PN 6/10/16/25/40,
Class 150/300
Short overall length to EN 558-1 R-49

DN 15-100:

Spring to close: 1.4571, opening pressure: 5 mbar
For upward, downward or horizontal flow.
Patented fixed centring cams ensure easy and accurate alignment between flanges and optimum guidance in horizontal and vertical pipelines, connection for electrostatic discharge line, larger inlet and outlet sealing surfaces, specially designed spring caps ensure centric spring support.

DN 125-200:

Spring to close: 1.4571, opening pressure: 10 mbar
For upward, downward or horizontal flow.
Adjusted diameter ensures accurate body centering, eyebolts simplify installation, connection for electrostatic discharge line, valve disk is centrally aligned and guided by ribs, hardened seat, disk and spring guides unaffected by dirt.

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 / stable range). Valve construction is very robust, but they are not recommended for use on compressors or where pulsating flow exists. If in doubt please consult us and we will carry out the pressure drop calculation and select a suitable valve.

Supply in accordance with our general terms of business.

Pressure Drop Chart

The curves given in the chart are valid for water at 20 °C. To read the pressure drop for other fluids the equivalent water volume flowrate $\dot{V}_w$ must be calculated and used in the graph.

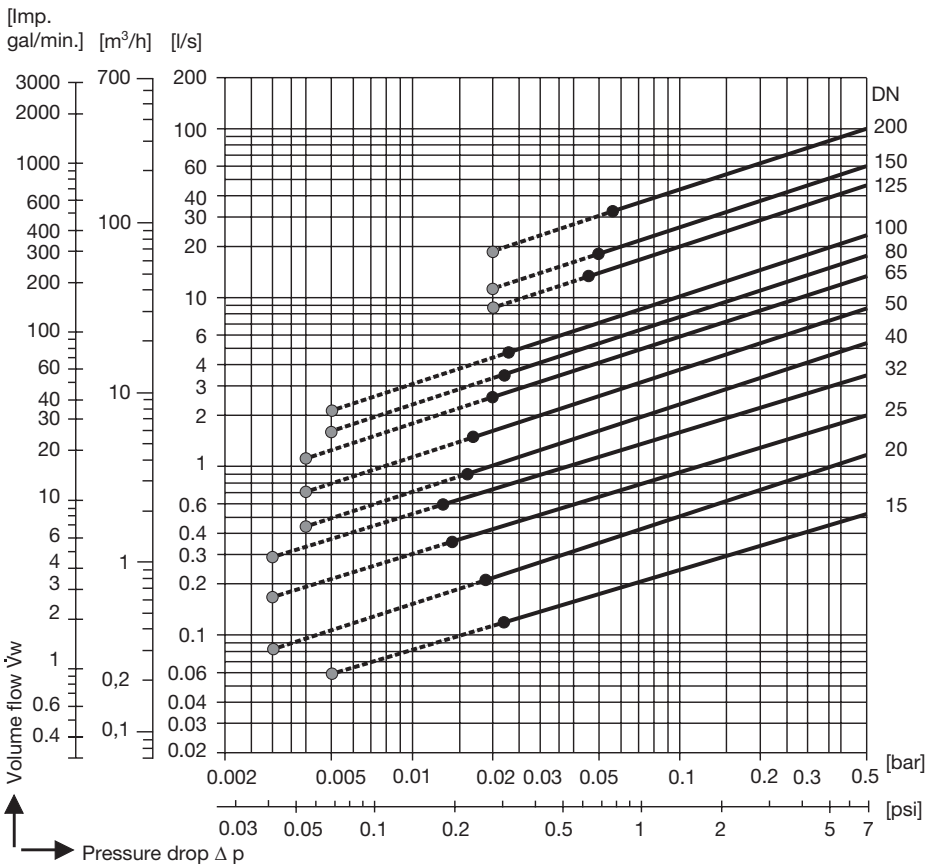
The values indicated in the chart are applicable for spring-assisted valves with horizontal flow and to valves without spring installed in vertical pipes with upward flow.

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

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

ρ = Density of fluid (operating condition) in kg/m³

$\dot{V}$ = Volume of fluid (operating condition) in l/s or m³/h



- Required minimum volume flow $\dot{V}_W$ for equipment without spring installed in vertical pipes with upward flow.
- Required minimum volume flow $\dot{V}_W$ for equipment with standard spring and horizontal flow.

When ordering please state:

Fluid, flowrate, service pressure and temperature, standard of pipe flange.

Inspection & Certification

Documentation regarding material tests and in-house examination with test report EN10204 available. 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.

Application of European Directives

Pressure Equipment Directive

The equipment conforms to this directive and can be used for the following media:

■ Fluids of group 1 and 2

ATEX Directive

The equipment does not have its own potential ignition source and is not subject to this directive.
When installed, static electricity may arise between the equipment and the connected system. When used in potentially explosive atmospheres, the plant manufacturer or plant operator is responsible for discharging or preventing possible static charge.
If it is possible for medium to escape, e.g. through actuating mechanisms or leaks in threaded joints, the plant manufacturer or plant operator must take this into consideration when dividing the area into zones.

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