FLOWSERVE GESTRA

# Non-Return Valve RK 86, 86A for Flanges PN 10/16/25/40 ASME Class 125/150/300

### 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 for valves with metal-to-metal seat<sup>1</sup>)

		U					· '				
Service	temp.	٥°	20	100	200	300	350	400	500	550	Min. temp.
vice e <sup>2</sup> )	DV 00	DN 15-100	51	46.4	43.9	38.9	36.9				–10 °C
ser	KK 80	DN 125 – 200	51	46.4	43.9	38.9	36.9	34.5			–10 °C
Max	RK 86 A	DN 15-200	49.6	42.3	35.8	31.6	30.4	29.3	27.3	24	-200°C

For temperatures above 300 °C (572 °F) use a Nimonic spring. Linear interpolation between pressure and temperature ratings possible

According to AD 2000, W5 service pressure for 1.4408 must not exceed 300 °C.

<sup>2</sup>) Sizing according to ASME 300.

Soft seats (Note pressure/temperature ratings in the above table for metal-to-metal seat.)

EPDM: -40 to +150 °C for water, condensate and steam.

FPM: -25 to +200 °C for oils, gases and air.

Tightness with soft seats of EPDM and FPM in accordance with DIN 3230, part 3, leakage rates BN 1, BO 1.

Permissible leakage rates with metal-to-metal seat in accordance with DIN 3230, part 3, leakage rates BN 2, BO 3. Chemical resistance see GESTRA Database "Chemical Resistance"

#### **Connections** of wafer-type valves

Standard valves for fitting between flanges to							
DIN <sup>3</sup> )	BS 10⁵)	ASME	JIS <sup>6</sup> )				
EN 1092-1 PN 10/16/25/40⁴)	Table D, E, F, H, J	B 16.1 Class 125 FF B 16.5 Class 150/300 RF	B2238 10K				

 $^3)\,$  DN 125–200 mm (5–8"): On request form D or E acc. to EN 1092.  $^4)\,$  DN 15–100 mm (½–4") also suitable for PN 6.

For installation between flanges DN 15 mm (1/2"), BS 10, table H and J, please use RK 86/86A, DN 20 mm (3/4").

9) As standard for installation between FI. JIS 10K (except DN 80 mm). When ordering please indicate nominal size (reworking required).

#### Dimensions

Nominal [mm]		15	20	25	32	40	50	65	80	100	125	150	200	
sizes		[inch]	1⁄2	3⁄4	1	1¼	1½	2	21⁄2	3	4	5	6	8
Dimensions [mm]		L7)	16	19	22	28	31.5	40	46	50	60	90	106	140
		$arnothing D_{min}$	44	53	64	73	83	96	110	128	151			
		$arnothing D_{max}$	67	76	82	93	104	118	136	158	186			
	Class	125/150										194	220	275
PN 10/16 Ø D PN 25 PN 40		)/16										194	220	275
											194	226	286	
		)										194	226	293
	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	
) Short overall length according to EN 558-1, series 49 (≙ DIN 3202, part 3, series K4)														

Materials\*)

DN 15-100 (1/4 -	4")	DIN reference	ASTM equivalent			
Body, seat and	RK 86	GX4CrNi13-4	1.4317	A 743-CA 6-NM		
guide ribs	RK 86 A	GX5CrNiMo19-11-2	1.4408	A 351 CF 8 M		
Valve disc, spring retainer		VECHIMOTITZ 12 2	1 4571	A 182 F 316		
Spring		X00110101117-12-2		A 313 Type 316		
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DN 125-200 (5 -	- 8")	DIN reference	ASTM equivalent			
	RK 86	GP240GH	1.0619	A 216 WCB		
Body	hard faced seat	X8CrTi18	1.4502	A 268		
	RK 86 A	GX5CrNiMo19-11-2	1.4408	A 351 CF 8 M		
Valve cone	RK 86	X12Cr13	1.4006	A 182 F 6		
Guide	RK 86	GX8CrNi12	1.4107	A 217-CA15		
Guide	RK 86 A	GX5CrNiMo19-11-2	1.4408	A 351 CF 8 M		
Valve cone	RK 86 A	X6CrNiMoTi17-12-2	1.4571	A 182 F 316		
Spring	RK 86 and 86 A	X6CrNiMoTi17-12-2	1.4571	A 313 Type 316		

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

Issue Date: 11/04

Product Range Group A2

# RK 86, RK 86A



DN 15-100 mm (1/2-4") PN 6/10/16/25/40 ASME Class 125/150/300 Standard design fitted with M8 antistatic connection





DN 125-200 mm (5-8") PN 10/16/25/40 ASME Class 125/150/300 Standard design fitted with M8 antistatic connection

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#### **Opening pressures**

Differential pressures at zero volume flow

DN		Opening pressures in mbar						
		Direction of flow						
		without	without with springs					
[mm]	[in]	springs	Ť	<b>→</b>	↓			
15	1⁄2	2.5	25	22.5	20			
20	3⁄4	2.5	25	22.5	20			
25	1	2.5	25	22.5	20			
32	1¼	3.5	27	23.5	20			
40	1½	4.0	28	24.0	20			
50	2	4.5	29	24.5	20			
65	21⁄2	5.0	30	25.0	20			
80	3	5.5	31	25.5	20			
100	4	6.5	33	26.5	20			
125	5	12.0	34	22.0	10			
150	6	13.5	37	23.5	10			
200	8	16.0	42	26.0	10			

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

On request at extra charge, special springs for opening pressures:

Between 5 and 1000 mbar for DN 15–50 mm ( $\frac{1}{2}$ –2"), between 5 and 700 mbar for DN 65 and 80 mm (2 $\frac{1}{2}$ , 3"), between 5 and 500 mbar for DN 100–200 mm (4–8").

# **Enquiry Specification**

GESTRA DISCO non-return valve RK 86...

PN 10/16/25/40.

Wafer design with extremely short overall length to EN 558-1, series 49.

Suitable for fitting between flanges to DIN, BS or ASME. Indications on pressure, nominal size (DN), body material. Metal-to-metal seat or soft seat (EPDM or FPM).

### **Order Specification**

Type RK 86..., DN...

Metal-to-metal or soft seat, EPDM or FPM.

Fluid, flowrate, pressure and temperature. Type of pipe flanges

#### Note

The valves should not be used on compressors or where pulsating flow exists.

For these applications please consult us.

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 must be calculated and used in the graph.

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



- Equivalent water volume flow in I/s or m<sup>3</sup>/h
- $\rho$  = Density of fluid
  - (operating condition) in kg/m<sup>3</sup> = Volume of fluid
    - Volume of fluid (operating condition) in I/s or m<sup>3</sup>/h

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# CE

These products comply with the requirements of the EC Pressure Equipment Directive (PED) 97/23/EC. Classified for application with fluids of group 1 and 2 (hazardous and non-hazardous substances). DN 32-200 mm with CE marking. DN 15-25 mm are excluded from the scope of this Directive and **not entitled** to bear the CE marking.

# ATEX

RK 86, 86A are excluded from the scope of the Directive 94/9/EC (ATEX) and can be used in the potentially explosive zones (1999/92/EC) 0, 1, 2, 20, 21 and 22.

