



KIESELMANN
FLUID PROCESS GROUP

Operating instructions

- Translation of the original -

5091 xxx 000-xxx

Check valve (O-Ring - design)

DN 10 - DN 100,
DN 1inch - DN 4inch

EPDM

Male part - welding end (G-S)



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2. Information for your safety

We are pleased that you have decided for a high-class KIESELMANN product. With correct application and adequate maintenance, our products provide long time and reliable operation.




Before installation and initiation, please carefully read this instruction manual and the security advices contained in it. This guarantees reliable and safe operation of this product and your plant respectively. Please note that an incorrect application of the process components may lead to great material damages and personal injury.

In case of damages caused by non observance of this instruction manual, incorrect initiation, handling or external interference, guarantee and warranty will lapse!

Our products are produced, mounted and tested with high diligence. However, if there is still a reason for complaint, we will naturally try to give you entire satisfaction within the scope of our warranty. We will be at your disposal also after expiration of the warranty. In addition, you will also find all necessary instructions and spare part data for maintenance in this instruction manual. If you don't want to carry out the maintenance by yourself, our KIESELMANN service team will naturally be at your disposal.

3. Marking of security instructions in the operating manual

Hints are available in the chapter "safety instructions" or directly before the respective operation instruction. The hints are highlighted with a danger symbol and a signal word. Texts beside these symbols have to be read and adhered to by all means. Please continue with the text and with the handling at the valve only afterwards.

Symbol	Signal word	Meaning
	DANGER	Imminent danger which may cause severe personal injury or death.
	ATTENTION	Dangerous situation which may cause slight personal injury or material damages.
	NOTE	Marks application hints and other information which is particularly useful.

4. Safety instructions

4.1 Field of application

The check valve is suitable for use as a reflux - check valve for gas and fluid in plants in the food and beverage, in pharmaceutical, biotechnological and chemical industries.



ATTENTION

- To avoid danger and damage, the fitting must be used in accordance with the safety instructions and technical data contained in the operating instructions.

4.2 General safety instructions



DANGER

- Dismantling the valve or valve assemblies from the plant can cause injuries from fluids or gases flowing out. Dismantle the valve or valve assembly only when the plant has been rendered pressure-less and free of liquid and gas.

4.3 General notes



NOTE

All data are in line with the current state of development. Subject to change as a result of technical progress.

5. Function

5.1 Description of function

The valve open against spring power with flow pressure > X bar in flow direction "A" (see Tab.). The valve close added by spring power with flow pressure > 0,1 bar in flow direction "B".

		Nominal diameter										
		DIN	10	15	20	25	32	40	50	65	80	100
		INCH	-	-	-	1	-	1½	2	2½	3	4
Flow pressure			10	15	20	25	32	40	50	65	80	100



NOTE

A pressure from min 0,8 bar is necessary for a leakproof shut off in flow direction "B".

6. Installation informations

6.1 Installation instructions

Fitting position

After definition of the flow direction 'opening or close' is the installation position arbitrary.

6.2 Welding guidelines

Sealing elements integrated in weld components must generally be removed prior to welding. To prevent damage, welding should be undertaken by certified personnel (EN287). Use the TIG (tungsten inert gas) welding process.



NOTE

Impurities can cause damage to the seals. Clean inside areas prior to assembly.

7. Maintenance

7.1 Maintenance

The maintenance intervals depend on the operating conditions "temperature, temperature-intervals, medium, cleaning medium, pressure and opening frequency". We recommend replacing the seals every 3 years. The user, however should establish appropriate maintenance intervals according to the condition of the seals.



NOTE

		<u>Lubricant recommendation</u>
EPDM; Viton; K-flex; NBR; HNBR	⇒	Klüber Paraliq GTE703*
Silicone	⇒	Klüber Sintheso pro AA2*
Thread	⇒	Interflon Food*

**) It is only permitted to use approved lubricants, if the respective fitting is used for the production of food or drink. Please observe the relevant safety data sheets of the manufacturers of lubricants.*

7.2 Cleaning

The cleaning of the valve takes place during the pipe cleaning.

8. Technical Data

Valve size:	DIN: DN 10 - DN 100 INCH: DN 1 inch - DN 4inch
Connections:	<ul style="list-style-type: none">• Male part (G) DIN11851• Welding end (S) DIN11850
Temperature range:	<ul style="list-style-type: none">• Product temperature: +0° to +95°C medium-dependent• Sterilization temperature: +140°C (SIP 30 min)
Operating pressure:	10 bar
Vacuum:	1,5 - 10 ⁻⁶ mbar x 1/3 (test pressure 0,5mbar)
Material in product contact: (design-dependent)	Stainless steel: <ul style="list-style-type: none">• 1.4301 / AISI304• 1.4404 / AISI316L
	Surfaces: <ul style="list-style-type: none">• Ra < 0,8µm e-polished
	Seal material: <ul style="list-style-type: none">• EPDM (FDA)

9. Disassembly and assembly

9.1 Disassembly

see Fig. 1 /page 6

- Unscrew the union nuts at both ends and dismantle the complete valve out of the system.
- Remove the inner parts out of the housing (8).
- Dismantle the O-Rings (2) and (7).

9.2 Assembly

- Thoroughly clean and slightly lubricate mounting areas and running surfaces. (see "7.1 Maintenance" on page 5).
- Assemble in reverse order.



NOTE

At least a installations measure 'X' is axial for the installation and removal necessary. (see measure X Fig. 2 /page 7)

- Check the valve function.

10. Drawing DN10 - DN100

- 1) Union nut
- 2) O-Ring
- 3) Liner
- 4) Guidance
- 5) Spring
- 6) Plate
- 7) O-Ring
- 8) Housing

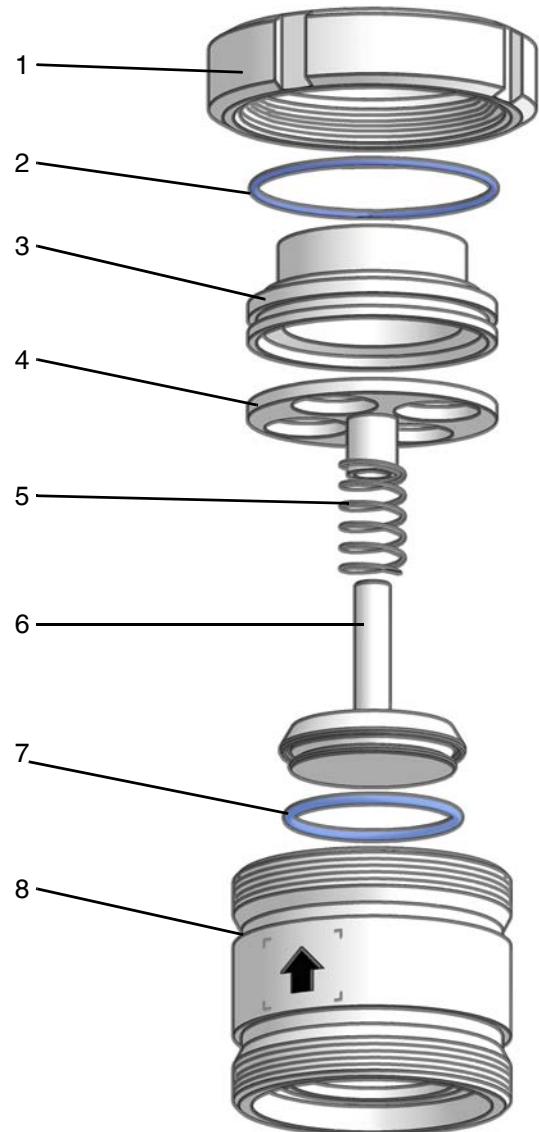


Fig. 1

Check valve Type: 5091xxx000-xxx

11. Dimensions

DN	D1	D2	D3	L	X
10	13x1,5	10	Rd28x1/8	59	46
15	19x1,5	16	Rd34x1/8	64	50
20	23x1,5	20	Rd44x1/6	71	58
25	29x1,5	25,5	Rd52x1/6	65	50
32	35x1,5	30	Rd58x1/6	69	51
40	41x1,5	36	Rd65x1/6	78	59
50	53x1,5	47	Rd78x1/6	86	66
65	70x2	64	Rd95x1/6	103	75
80	85x2	77	Rd110x1/4	118	88
100	104x2	100	Rd130x1/4	158	117

1 INCH	25,4x1,65	22,1	Rd52x1/6	65	52
1½ INCH	38,1x1,65	34,8	Rd65x1/6	78	59
2 INCH	50,8x1,65	47,5	Rd78x1/6	86	66
2½ INCH	63,5x1,65	60,2	Rd95x1/6	106	78
3 INCH	76,1x2,00	72,1	Rd110x1/4	122	92
4 INCH	101,6x2,00	97,6	Rd130x1/4	158	117

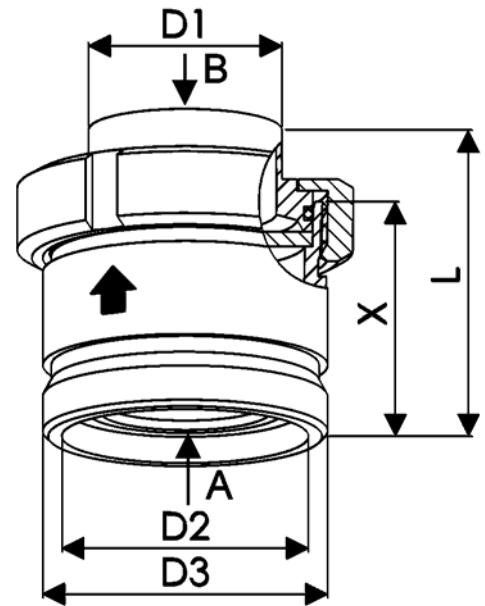


Fig. 2

12. Wearing parts

Seal-kit - EPDM O-Ring - design: 5099 DN 029-054 (included Item 2, 5, 7)

Gasket seal - design: 5099 DN 000-054 (included Item 2, 5, X)

DN	Seal-kit O-Ring - design	Item 2	Item 5	Item 7	Item X
DIN / INCH	EPDM (incl. Item 2,5,7)	O-Ring	Spring	O-Ring (valve plate)	Gasket seal (valve plate) (design up to 09/2010)
10 / -	5099 010 029-054	2005 010 000-054	8150 115 030-031	2304 009 025-170	-
15 / -	5099 015 029-054	2005 015 000-054	8150 117 070-031	2304 012 030-170	-
20 / -	5099 020 029-054	2005 020 000-054	8150 117 070-031	2304 014 030-170	-
25 / 1	5099 025 029-054	2304 035 030-170	8150 117 060-031	2304 020 030-170	2355 027 004-054
32 / -	5099 032 029-054	2304 042 030-170	8150 117 060-031	2304 024 035-170	2355 032 004-054
40 / 1½	5099 040 029-054	2304 046 030-170	8150 181 000-031	2304 028 035-170	2355 028 005-054
50 / 2	5099 050 029-054	2304 060 030-170	8150 182 000-031	2304 041 035-170	2355 049 005-054
65 / 2½	5099 065 029-054	2304 085 035-159	8150 209 000-031	2304 057 035-170	2355 066 005-054
80 / 3	5099 080 029-054	2304 100 040-159	8150 236 000-031	2304 069 035-170	2355 079 055-054
100 / 4	5099 100 029-054	2304 117 035-159	8150 236 000-031	2304 079 035-170	2355 103 008-054

13. Valve size

DIN	025 = DN25	040 = DN40	050 = DN50	065 = DN65	080 = DN80	100 = DN100	125 = DN125	150 = DN150
INCH	026 = DN1	038 = DN1½	051 = DN2	064 = DN2½	076 = DN3	101 = DN4	-	-

DN = Nominal diameter = e.g. 5091 051 000-041

Check valve Type: 5091xxx000-xxx