Operating instructions

- Translation of the original -

5091 xxx 560-xxx

Check valve

DN 10 - DN 100

EPDM O-Ring design
Liner/nut - Male part (K/M - G)

3.12.13

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2. General safety instructions

2.1 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.

2.2 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.
ℹ	**NOTE**	Marks application hints and other information which is particularly useful.

2.3 Designated use

The fitting is designed exclusively for the purposes described below. Using the fitting for purposes other than those mentioned is considered contrary to its designated use. KIESELMANN cannot be held liable for any damage resulting from such use. The risk of such misuse lies entirely with the user. The prerequisite for the reliable and safe operation of the fitting is proper transportation and storage as well as competent installation and assembly.

Operating the fitting within the limits of its designated use also involves observing the operating, inspection and maintenance instructions.

2.4 Personnel

Personnel entrusted with the operation and maintenance of the tank safety system must have the suitable qualification to carry out their tasks. They must be informed about possible dangers and must understand and observe the safety instructions given in the relevant manual. Only allow qualified personnel to make electrical connections.

2.5 Modifications, spare parts, accessories

Unauthorized modifications, additions or conversions which affect the safety of the fitting are not permitted. Safety devices must not be bypassed, removed or made inactive. Only use original spare parts and accessories recommended by the manufacturer.

2.6 General instructions

The user is obliged to operate the fitting only when it is in good working order. In addition to the instructions given in the operating manual, please observe the following:

- relevant accident prevention regulations
- generally accepted safety regulations
- regulations effective in the country of installation
- working and safety instructions effective in the user's plant.

3. Safety instructions

3.1 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.

3.2 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.

3.3 General notes

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

4. Function

4.1 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 **INCH**	10 -	15 -	20 -	25 1	32 -	40 1½	50 2	65 2½	80 3	100 4
Flow pressure *	0,50	0,4	0,2	0,11	0,09	0,14	0,15	0,16	0,15	0,07

**) measured in installation position and flow direction from bottom to top*

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

5. Installation informations

5.1 Installation instructions

Fitting position

Check valve be installed preferably vertically, with the flow direction from bottom to top.

5.2 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.

6. Maintenance

6.1 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 1 years. The user, however should establish appropriate maintenance intervals according to the condition of the seals.

NOTE

		Lubricant recommendation
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.*

6.2 Cleaning

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

7. Technical Data

Valve size:	DN 10 - DN 100	
Connections:	• Male part (G) DIN11851 • Liner/nut (K/M) DIN11851	
Temperature range:	• Product temperature: • Sterilization temperature:	+0° to +95°C medium-dependent EPDM +140°C (SIP 30 min)
Operating pressure:	10 bar	
Vacuum:	1,5 - 10^{-6} mbar x $^{L}/_{S}$ (test pressure 0,5mbar)	
Material in product contact:	Stainless steel:	• 1.4301 / AISI304 • 1.4404 / AISI316L
	Surfaces:	• Ra < 0,8µm e-polished
	Seal material:	• EPDM (FDA)

Nominal diameter DN

DIN	10	15	20	25	32	40	50	65	80	100
KV-value (m³/h)	1	3,5	4,5	18	28,5	36	60	104	150	230

8. Disassembly and assembly

8.1 Disassembly

see Fig. 1 /page 5

- 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 seal (2) respectively O-Ring (2) and O-Ring (7).

8.2 Assembly

- Thoroughly clean and slightly lubricate mounting areas and running surfaces. (see “6.1 Maintenance” on page 4).
- 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 6)
In part by alternating sides, push and roll the O-Ring (7) into the groove with a round component.

- Check the valve function.

9. Drawing

1) *Union nut*
2) *Seal / O-Ring*
3) *Liner*
4) *Guidance*
5) *Spring*
6) *Plate*
7) *O-Ring*
8) *Housing*
9) *Receiver*

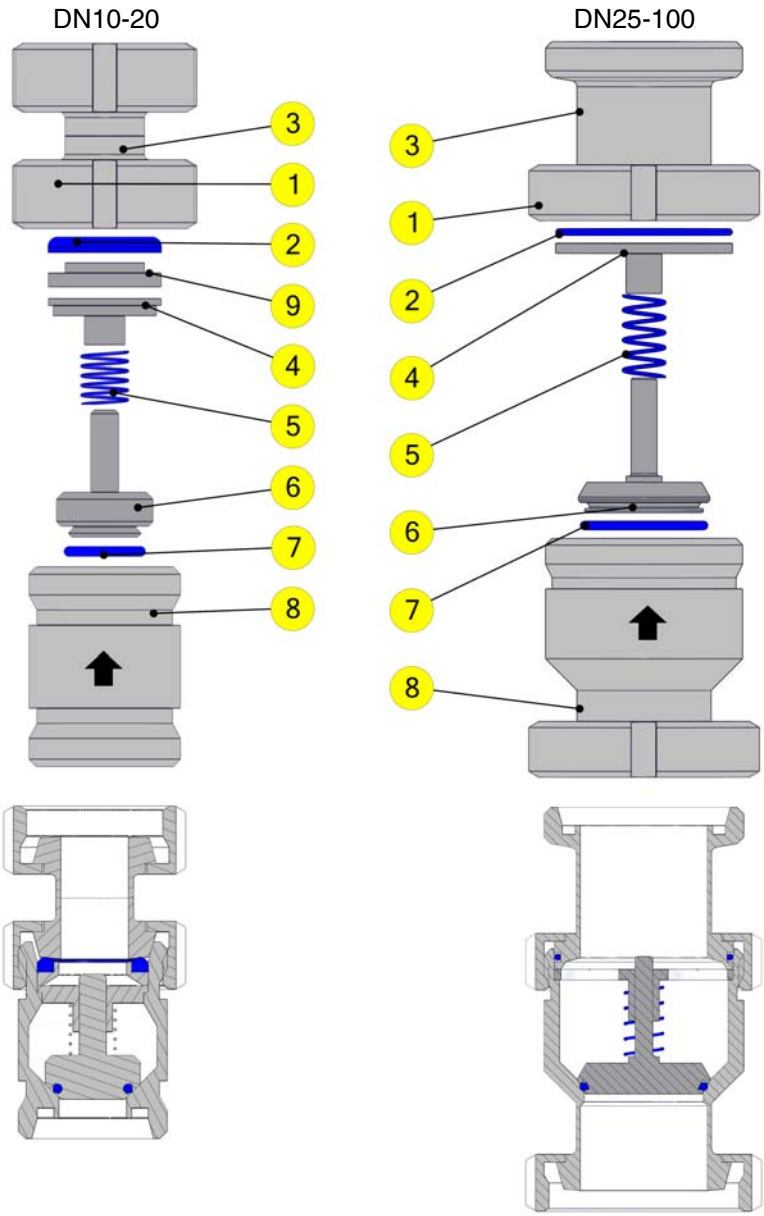

Fig. 1

10. Dimensions

DN	D1	D2	D3	L	X
10	10	10	Rd28x1/8	75	45
15	16	16	Rd34x1/8	82	50
20	20	20	Rd44x1/6	88	58
25	26	22,5	Rd52x1/6	114	70
32	32	30	Rd58x1/6	125	75
40	38	36	Rd65x1/6	136	84
50	50	47	Rd78x1/6	149	94
65	66	64	Rd95x1/6	173	105
80	81	77	Rd110x1/4	199	124
100	100	100	Rd130x1/4	246	151

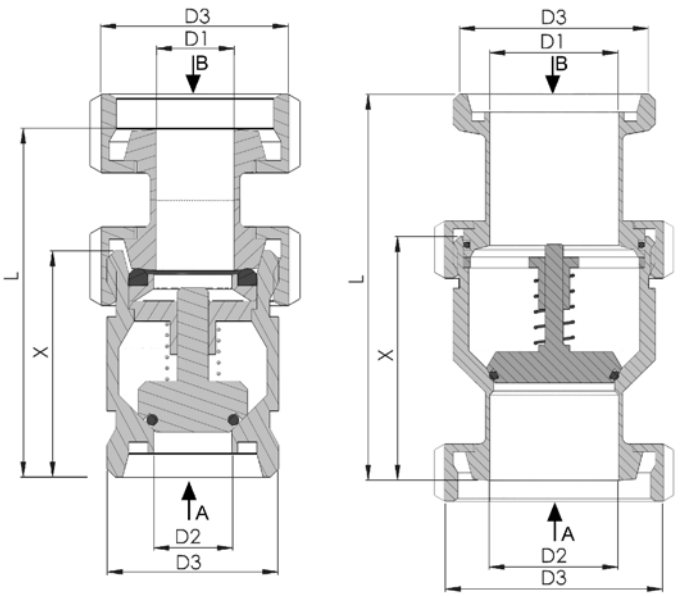

Fig. 2

11. Wearing parts

DN	Item 2	Item 5	Item 7
	Seal / O-Ring	Spring	O-Ring (valve plate)
10	2005 010 000-054	8150 115 030-031	2304 009 025-170
15	2005 015 000-054	8150 117 070-031	2304 012 030-170
20	2005 020 000-054	8150 117 070-031	2304 015 030-170
25	2304 035 030-170	8150 117 060-031	2304 020 030-170
32	2304 042 030-170	8150 117 060-031	2304 024 035-170
40	2304 046 030-170	8150 181 000-031	2304 028 035-170
50	2304 060 030-170	8150 182 000-031	2304 041 035-170
65	2304 085 035-159	8150 209 000-031	2304 057 035-170
80	2304 100 040-159	8150 236 000-031	2304 069 035-170
100	2304 117 035-159	8150 236 000-031	2304 079 035-170

Gasket seal (valve plate) (design up to 09/2010)
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2355 027 004-054
2355 032 004-054
2355 028 005-054
2355 049 005-054
2355 066 005-054
2355 079 005-054
2355 103 008-054