

Check valve type ZR05/ZR06/ZR07/ZR08/ZR12/ZR13



description:

Check valves allow the medium to flow just in one direction. If the flow of the medium changes the direction, the check valve will close automatically.

features:

- suitable for neutral and not neutral **liquid & gaseous media**
Group 1 & 2
- very short length
- low opening pressure
- mounting between flanges
- integrated sealed by an O-ring
- direction of flow horizontal (disc must be free-hanging), vertical from below

connection:

DN 32, 40, 50, 65, 80, 100, 125, 200, 250, 300, 350, 400, 450, 500, 600

temperature:

-20°C to +120°C
- depending on design

pressure:

0,0 bar – 8,0 bar
- depending on design

Material:

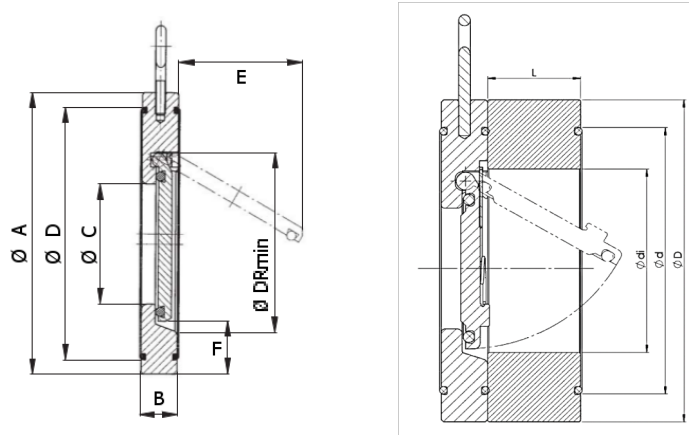
Part	Type ZR05	ZR06	ZR07	ZR08	ZR12	ZR13
Body:	PVC-U	PP	PVC-U	PP	PVDF	PVDF
Disc:	PVC-U	PP	PVC-U	PP	PVDF	PVDF
Spring:	Without spring	Without spring	Stainless steel	Stainless steel	Without spring	Hastelloy C4
Temperature:	0°C to 60°C	0°C to 90°C	0°C to 60°C	0°C to 90°C	-20°C to max.120°C (depending on the seal)	

Seal*:

NBR	-20°C to +90°C	EPDM	-20°C to +120°C
FPM	-15°C to +120°C	PTFE	-20°C to +120°C

* Please note the maximum temperature ranges of the materials

Dimensions:



DN		A		B		C	D	E	F	DR	ø di	ø d	ø D	L
SIZE		PN10	ANSI 150	without spring	with spring									
32	1 1/4"	85	74	15	15	18	59	22	25	37	37	59	85	20
40	1 1/2"	95	83	16	16	22	72	25	28	43	46	72	95	20
50	2"	109	105	18	18	32	86	37	29	54	58	86	109	25
65	2 1/2"	129	124	20	20	40	109	50	31	70	70	105	129	40*
80	3"	144	137	20	20	54	119	61	32	82	82	119	144	40*
100	4"	164	175	23	23	70	146	77	31	106	106	146	164	50
125	5"	195	197	23	23	92	173	98	35	131	130	173	194,5	50**
150	6"	220	222	26	26	112	197	120	40	159	158	197	220	50
200	8"	275	279	34	34	154	255	160	38	207	206	255	275	70
250	10"	330	340	40	40	192	312	190	41	260	259	312	330	100
300	12"	380	410	45	45	227	363	220	41	309	308	363	380	165
350	14"	440	451	49	49	266	416	250	54	341	-	-	-	-
400	16"	491	514	65	65	310	467	290	55	392	-	-	-	-
450	18"	541	549	68	78	350	520	340	61	442	-	-	-	-
500	20"	596	606	78	87	400	550	390	58	493	-	-	-	-
600	24"	698	718	97	-	486	659	470	60	595	-	-	-	-

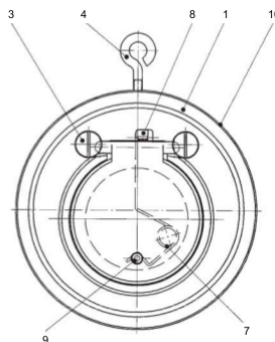
Face to face: short
 Flange acc. to: DIN EN 1092-1 PN10 / PN16 / PN25 / PN40 –
 ASME B16.5 ANSI 150

*PVDF = 30

**PVDF = 40

Parts:

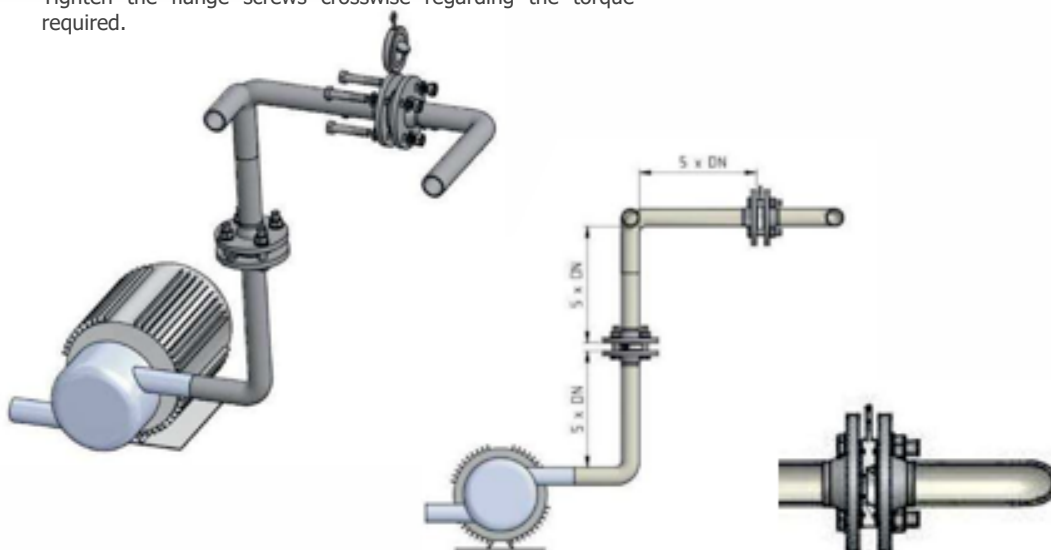
- 1 Body
- 2 Disc
- 3 Screw
- 4 Ring screw
- 5 O-ring
- 6 O-ring
- 7 Spring (OPTIONAL)
- 8 Plate
- 9 Jig
- 10 Plate



Installation Instruction:

The personnel must pay special attention, when swing check valves are unpacked and transported. The valve is to be held in a horizontal position in a way that it can open at the top only. This is to avoid, that the valve unintentionally drops down and is damaged. The following aspects are to be considered during the installation of swing check valves:

- Possible damages to the swing check valves and O-rings are to be checked prior to installation. Check if the valve can be moved. Damaged parts must not be installed.
- Make sure that only those swing check valves are being installed, that meet the operational requirements regarding pressure category, chemical resistance, connection and dimensions.
- Make sure to install a minimum of 5 x nominal diameter of straight pipeline in front of and behind the swing check valve.
- Exit supports allow a greater opening angle and higher throughput values.
- Do not install the valves directly onto a pump flange.
- Avoid pulsation and pressure impact.
- Vertical throughput is allowable only if the valve can open at the top.
- In case of horizontal throughput, the ring screw must be at the top.
- Watch throughput direction (see arrow on the plate) !
- The swing check valves are placed between the flanges by means of a ring screw. They are put in their central position according to the outer diameter of the case and the flange screw inner side.
- Tighten the flange screws crosswise regarding the torque required.



General safety advices:

The safety advices for the pipe system, in which the valves are to be mounted, are to be followed. The same applies to the dual plate check valves.

In pipe systems, where our dual plate check valves are to be used, the planning/installing person and the operator are responsible for the following issues:

- The dual plate check valves is to be used according to the regulation in p.1
- The pipe system is to be installed correctly and its operation is to be checked regularly
- The dual plate check valves is to be mounted, removed and repaired by qualified personnel only. The staff is to be regularly instructed according to all relevant regulations concerning working safety and environmental protection, especially in the field of pipes under pressure.
- These staff members have to be informed about the manual and the advices included.

Opening pressure:

DN		Kv-Value	Opening pressure (mbar)			
			without spring		with spring	
Size	m3/h		↑	↔	↑	↔
32	1 1/4"	16,2	~2	~0,2	~4	~2,2
40	1 1/2"	22,2	~2	~0,2	~4	~2,2
50	2"	54	~3	~0,2	~5	~2,2
65	2 1/2"	75	~3	~0,2	~5	~2,2
80	3"	112	~3	~0,2	~5	~2,2
100	4"	172	~3	~0,2	~5	~2,2
125	5"	342	~3	~0,2	~5	~2,2
150	6"	490	~3	~0,2	~5	~2,2
200	8"	1.128	~4	~0,2	~6	~2,2
250	10"	1.500	~4	~0,2	~6	~2,2
300	12"	1.914	~4	~0,2	~6	~2,2
350	14"	2.800	~5	~0,2	~7	~2,2
400	16"	3.700	~7	~0,3	~9	~2,3
450	18"	4.500	~8	~0,3	~10	~2,3
500	20"	6.450	~8	~0,3	~10	~2,3
600	24"	6.800	~11	~0,4	~13	~2,4

A minimum back pressure of 0.3 bar is required to keep the swing check valves tight.

Maximum working pressure:

Maximum allowed back pressure in bar:

Size		PVC-U	PP	PVDF
		0°C ... 25°C / 40°C / 60°C	0°C ... 25°C / 50°C / 80°C	-20°C ... 25°C / 60°C / 120°C
DN32	1 1/4"	10* / 6* / 1,5*	10* / 5* / 1,5*	10* / 6,3* / 1,2*
DN40	1 1/2"	9,2 / 5,9 / 1,3	9,2 / 5,9 / 1,3	9,2 / 5,9 / 1,3
DN50	2"	10* / 6* / 1,5*	10* / 5* / 1,5*	10* / 6,3* / 1,2*
DN65	2 1/2"	10* / 6* / 1,5*	10* / 5* / 1,5*	10* / 6,3* / 1,2*
DN80	3"	10* / 6* / 1,5*	10* / 5* / 1,5*	10* / 6,3* / 1,2*
DN100	4"	8,4 / 5 / 1,2	8,4 / 4,2 / 1,2	8,4 / 5,3 / 1
DN125	5"	4,7 / 2,8 / 0,72	4,7 / 2,8 / 0,72	4,7 / 2,8 / 0,72
DN150	6"	2,9 / 1,7 / 0,45	2,9 / 1,4 / 0,45	2,9 / 1,8 / 0,36
DN200	8"	5,5 / 3,3 / 0,84	5,5 / 2,7 / 0,84	5,5 / 3,5 / 0,67
DN250	10"	5* / 4* / 0,75*	5* / 2,5* / 0,75*	5* / 3,15* / 0,6*
DN300	12"	4,1 / 2,4 / 0,62	4,1 / 2 / 0,62	4,1 / 2,6 / 0,5
DN350	14"	5* / 4* / 0,75*	5* / 2,5* / 0,75*	5* / 3,15* / 0,6*
DN400	16"	5* / 4* / 0,75*	5* / 2,5* / 0,75*	5* / 3,15* / 0,6*
DN450	18"	5* / 4* / 0,75*	5* / 2,5* / 0,75*	5* / 3,15* / 0,6*
DN500	20"	5* / 4* / 0,75*	5* / 2,5* / 0,75*	5* / 3,15* / 0,6*
DN600	24"	5* / 4* / 0,75*	5* / 2,5* / 0,75*	5* / 3,15* / 0,6*

* back pressure is equivalent to the max. allowed pressure in flow direction

Das Diagramm zeigt die Beziehung zwischen Durchfluss und Druckverlust für verschiedene Rohrgrößen. Die Y-Achse (Druckverlust) ist logarithmisch skaliert, die X-Achse (Durchfluss) ebenfalls. Die Linien sind wie folgt beschriftet:

- DN12
- DN40
- DN50
- DN65
- DN80
- DN100
- DN125
- DN150
- DN200
- DN250
- DN300
- DN350
- DN400
- DN450
- DN500
- DN600

Type	Soft seat*	Metal seat
ZR05	A	≥ G
ZR06	A	≥ G
ZR07	A	≥ G
ZR08	A	≥ G
ZR12	A	≥ G
ZR13	A	≥ G

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Structure Article number:

type	model	seal	diameter
ZR05	00 – DIN	01 – EPDM	06 – DN32
ZR06		02 – FPM	07 – DN40
ZR07		03 – PTFE	08 – DN50
ZR08		04 – NBR	09 – DN65
ZR12			10 – DN80
ZR13			11 – DN100
			12 – DN125
			13 – DN150
			14 – DN200
			15 – DN250
			16 – DN300
			17 – DN350
			18 – DN400
			19 – DN450
			20 – DN500
			21 – DN600

Example no. ZR08000306:

ZR08	00	03	06
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Article no. ZR08100306

Check valve

Body: PP

Disc: PP

Spring: Stainless steel

Model: DIN

Seal: PTFE

Diameter: DN32

Check valve with spring available up to DN300, larger sizes on request.

Image similar, subject change without notice.