

Swing 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 to 10,0 bar
- depending on design

materials:

components / type	ZR05	ZR06	ZR07	ZR08	ZR12	ZR13
body	PVC-U	PP-H	PVC-U	PP-H	PVDF	PVDF
disc	PVC-U	PP-H	PVC-U	PP-H	PVDF	PVDF
spring	-	-	1.4571	1.4571	-	Hastelloy C4

seal	temperature			Seal with standard conformities / approvals up to DN300
	ZR05 / ZR07	ZR06 / ZR08	ZR12 / ZR13	
NBR	0°C to +60°C	0°C to +90°C	-20°C to +100°C	DIN EN 549, BAM, REACH, RoHS
EPDM			-20°C to +120°C	KTW UBA, DVGW W 270, WRAS, NSF, FDA, BfR XXI Kat. 4, ADI-free, 3A, USP CI. 6, BAM, REACH, RoHS
FKM				DIN EN 549, ADI-free, REACH, RoHS
PTFE			KTW UBA, DVGW W 270, WRAS, FDA, BfR, ADI-free, EU 10/2011, 3A, USP CI. 6, REACH, RoHS	

maximum working pressure* / maximum permissible back pressure in bar:

size	PCV-U (ZR05 + ZR07)				PP-H (ZR06 + ZR08)				PVDF (ZR12 + ZR13)			
	max. pressure	max. back pressure			max. pressure	max. back pressure			max. pressure	max. back pressure		
		0-25°C	40°C	60°C		0-25°C	40°C	60°C		0-25°C	40°C	60°C
DN32	10	10	10	1,5	8	8	3,2	0,64	10	10	6,3	1,2
DN40	10	9,2	9,2	1,3	8	3,6	1,	0,29	10	9,2	5,9	1,3
DN50	10	10	10	1,5	8	6,1	2,4	0,49	10	10	6,3	1,2
DN65	10	10	10	1,5	8	5,6	2,2	0,45	10	10	6,3	1,2
DN80	10	10	10	1,5	6	4,7	1,9	0,38	10	10	6,3	1,2
DN100	10	8,4	8,4	1,2	6	3,3	1,3	0,27	10	8,4	5,3	1
DN125	10	4,7	4,7	0,72	6	1,9	0,76	0,15	10	4,7	2,8	0,72
DN150	6	2,9	2,9	0,45	6	1,2	0,48	0,1	8	2,9	1,8	0,36
DN200	6	5,5	5,5	0,84	6	2,2	0,89	0,18	8	5,5	3,5	0,67
DN250	5	5	5	0,75	5	2,1	0,86	0,17	5	5	3,15	0,6
DN300	5	4,1	4,1	0,2	5	1,6	0,66	0,13	5	4,1	2,6	0,5
DN350	5	5	4	0,75	5	2,3	0,92	0,18	5	5	3,15	0,6
DN400	5	5	4	0,75	5	3,3	1,3	0,26	5	5	3,15	0,6
DN450	5	5	4	0,75	5	3,2	1,3	0,26	5	5	3,15	0,3
DN500	5	5	4	0,75	5	3,1	1,2	0,25	5	5	3,15	0,3
DN600	5	5	4	0,75	5	3,4	1,3	0,28	5	5	3,15	0,3

* maximum working pressure depending on temperature, please consider pressure-temperature-diagram (see next page)

opening pressure:

DN	Kv-value	opening pressure (in 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

test meeting the requirement of PED acc. to DIN EN 12266:

The tightness corresponds to the specified leakage rates:

type	soft seat
ZR05 / ZR06 / ZR07 / ZR08 / ZR12 / ZR13	A*

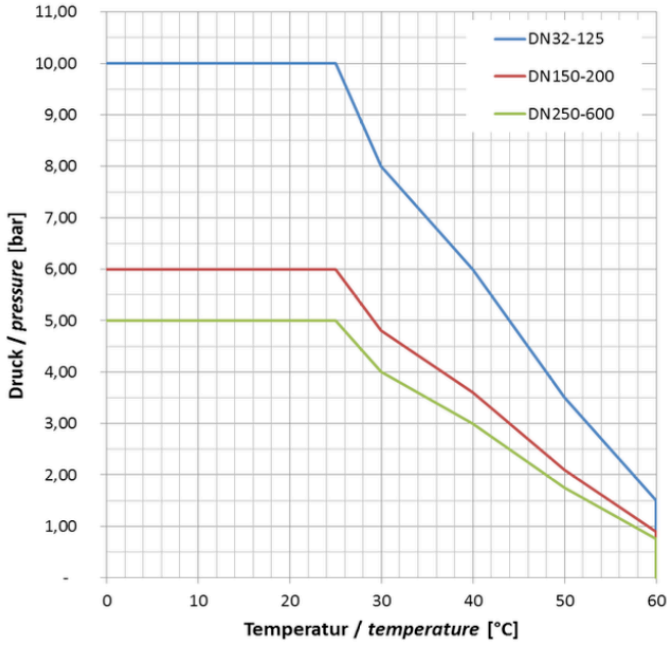
* in order to achieve the specified leakage rate, the following back pressures are required:

- NBR / EPDM / FKM at least 0,3 bar
- PTFE at least 1,0 bar

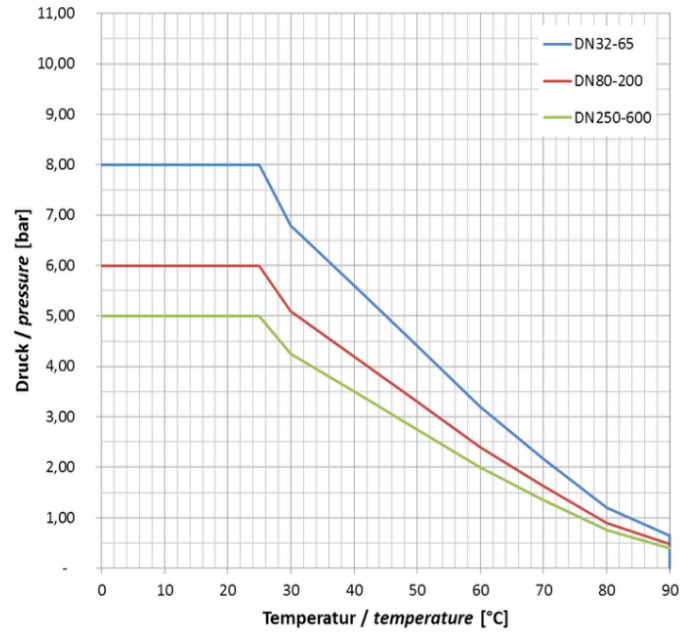
pressure-temperature-diagram:

The pressure-temperature diagrams are referring to the medium pressure in flow direction. If pressure against the closed disc occurs in the piping system (back pressure), it has to be limited according to the values given in the table on page 2.

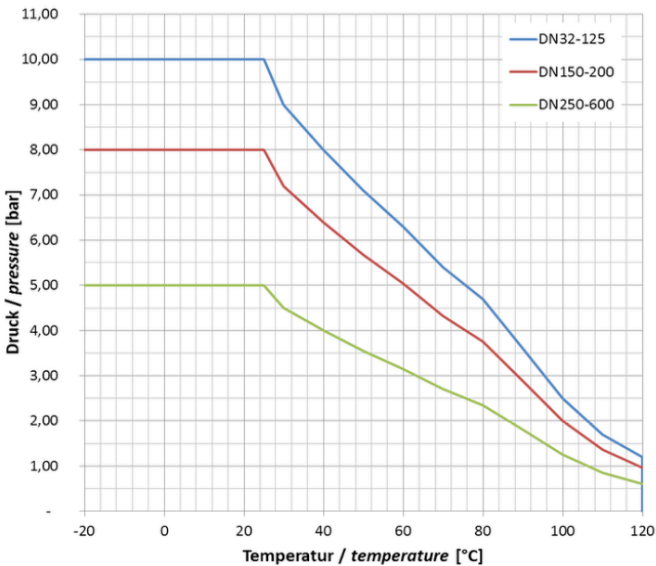
PVC-U / ZR05 + ZR07:



PP-H / ZR06 + ZR08

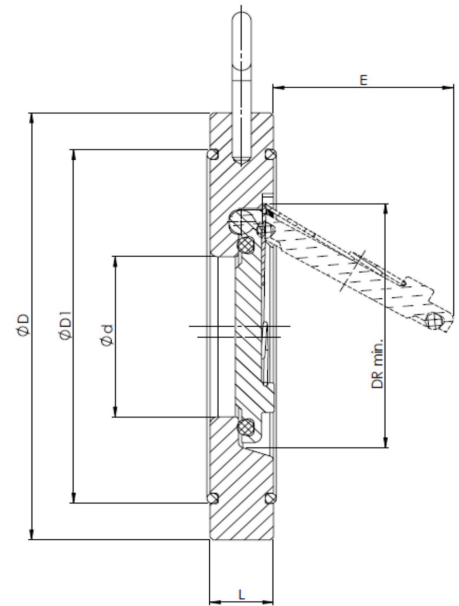


PVDF / ZR12 + ZR13:



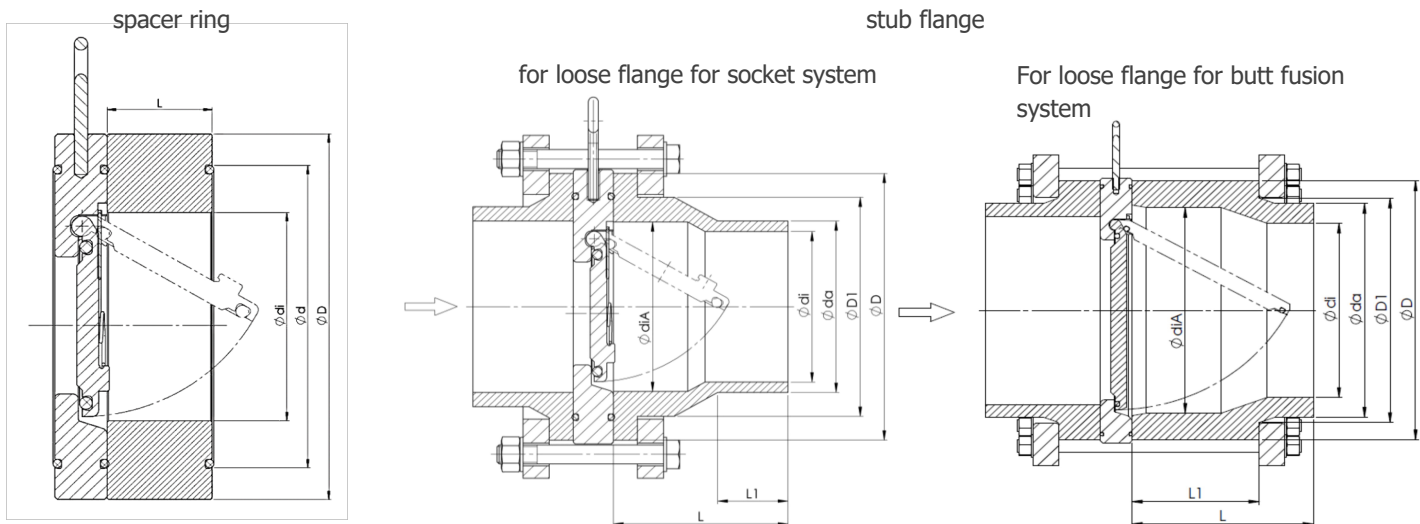
dimensions:

DN		øD PN10	L		ød	øD	E	DR
SIZE			without spring	with spring				
32	1 1/4"	85	15	15	18	59	22	37
40	1 1/2"	95	16	16	22	72	25	43
50	2"	109	18	18	32	86	37	54
65	2 1/2"	129	20	20	40	105	50	70
80	3"	144	20	20	54	119	61	82
100	4"	164	23	23	70	146	77	106
125	5"	195	23	23	92	173	94	131
150	6"	220	26	26	105	197	100	159
200	8"	275	34	34	154	255	152	207
250	10"	330	40	40	192	312	180	260
300	12"	380	45	45	227	363	215	309
350	14"	440	49	49	266	416	245	341
400	16"	491	65	65	310	467	285	392
450	18"	541	68	78	350	520	330	443
500	20"	596	78	87	400	550	385	493
600	24"	698	97	109	486	659	470	595



Face-to-face: short installation length
 Flange connection: DIN EN 1092-1 B1, PN10

outlet flange adaptor:

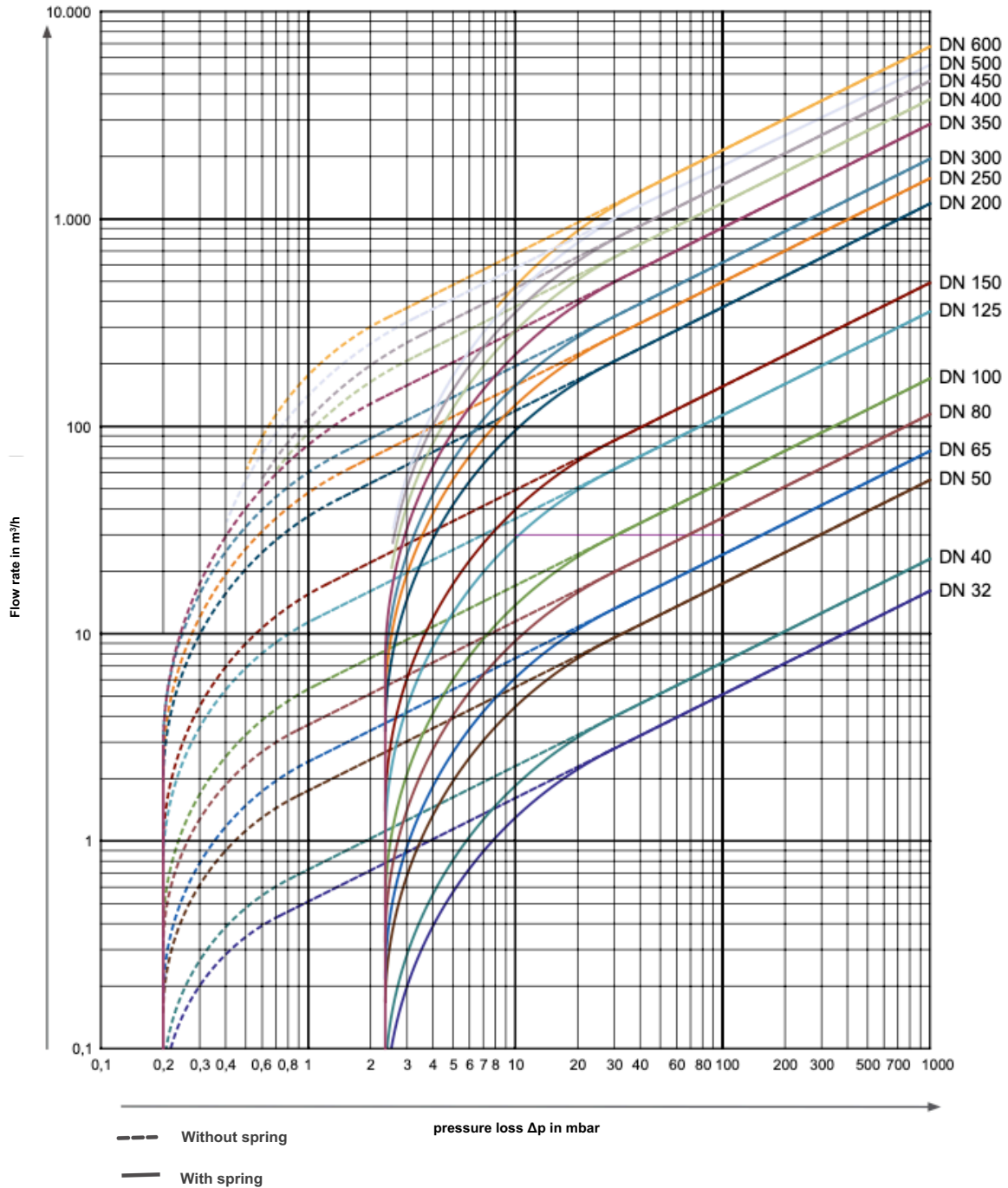


During the installation of the swing check valve between flanges according to DIN EN 1092-1 – PN10 the internal diameter (di) on the length (L) must be adhered on the outgoing side to ensure that the disc is able to open correctly. Because the internal diameter of plastic pressure pipes is partially much smaller than the flange connection of the corresponding size, a special outlet flange adaptor is necessary.

Above mentioned outlet flange adaptors available on request

pressure-loss diagram:

The diagram values are valid for water at a temperature of 20 °C. At the opening of the valve, the curves apply to operation in horizontal pipelines. For calculations for other fluids or temperatures, please contact us.



general safety advices:

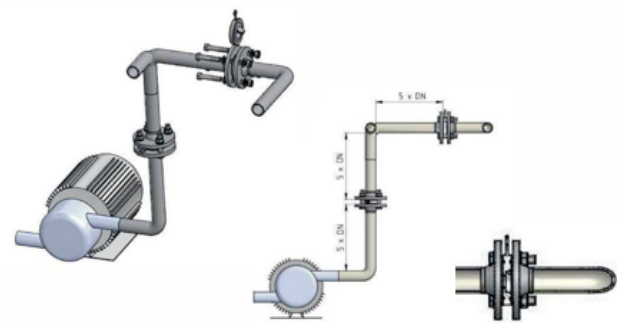
The safety advices for the pipe system, in which the valves are to be mounted, are to be followed. The same applies to the dual plate check valves.

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.

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

Thread	M12	M16	M20	M24	M27
Torque Nm	20	35	60	100	165

outlet flange adaptor:

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Above mentioned outlet flange adaptors (see page 4) available on request.

structure article number:

type*	version	seal	size**
ZR05	00 – DIN	01 – EPDM	06 – DN32
ZR06		02 – FPM	07 – DN40
ZR07		03 – PTFE	08 – DN50
ZR08			09 – DN65
ZR12		04 – NBR	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**

Article no. ZR08000306

Swing check valve

Body: PP-H

Disc: PP-H

Spring: stainless steel

Version: DIN

Seal: PTFE

Size: DN32

* Version with spring available up to DN400, larger nominal sizes on request.

** Design without spring larger than DN600 on request.

Image similar, subject change without notice.