

GEMÜ ZRSK

Metal check valve



Features

- Weight and space-saving construction
- Short length
- Simple construction
- Option with return spring
- Bubble tight sealing in accordance with EN 12266-1/P12, leakage rate A and G

Description

GEMÜ ZRSK is a metal check valve with integrated flange seal. The valve body, disc and seal are available in various materials. The GEMÜ ZRSK is clamped between two flanges during installation. The centring is based on the outside diameter of the housing.

Technical specifications

- **Media temperature :** -40 to 200 °C
- **Ambient temperature:** -40 to 95 °C
- **Operating pressure :** 1 to 16 bar
- **Nominal sizes:** DN 32 to 600
- **Connection types:** Flange
- **Connection standards:** ANSI | DIN | EN | ISO
- **Body materials:** 1.0460, galvanized cast steel material | 1.4408, investment casting material | 1.4571, forged material | 2.0975, cast bronze material
- **Seal materials:** EPDM | FKM | NBR | PTFE
- **Disc materials:** 1.0460, galvanized cast steel material | 1.4408, investment casting material | 1.4571, forged material
- **Conformities:** ATEX | EAC | FDA

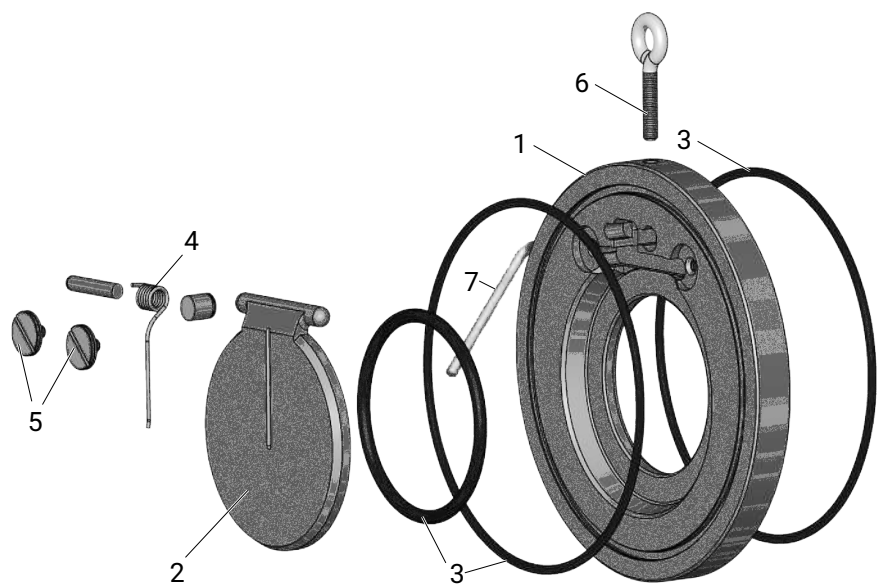
Technical data depends on the respective configuration



further information
webcode: GW-ZRSK



Product description



Item	Name	Materials
1	Body	1.4408 investment casting, 1.0460 galvanized, 1.4571, alu bronze (CC333G) 2.0975, 1.4469 super duplex
2	Disc	1.4408 investment casting, 1.0460 galvanized, 1.4571, 1.4469 super duplex
3	Seal (O-ring)	NBR, EPDM, FKM, PTFE
4	Spring	1.4571, Hastelloy
5	Screws	1.4571
6	Eye bolt	1.4571
7	Manual override	

Availability

Valve body

DN	Connection code ¹⁾			
	1	2	3	D
32	X	-	X	X
40	X	-	X	X
50	X	-	X	X
65	X	-	X	X
80	X	-	X	X
100	X	-	X	X
125	X	-	X	X
150	X	-	X	X
200	X	-	X	X
250	X	X	X	X
300	X	X	X	X
350	X	X	X	X
400	X	X	X	X
450	X	X	X	X
500	X	X	X	X
600	X	X	X	X

The manual override (code H) is only available in nominal sizes DN 50 to 300 and with body material 1.4571 (code 46).

1) Connection type

Code 1: PN 6 / flange EN 1092
 Code 2: PN 10 / flange EN 1092
 Code 3: PN 16 / flange EN 1092
 Code D: ANSI B16.5, Class 150

Product compliance

	Approved designs		
	Body material	Disc material	Seal code
Drinking water			
DVGW	1.4408, investment casting (code 37), 1.4571 (code 46)	1.4408 (code 37), 1.4571 (code 46)	EPDM with KTW approval (code 18)
Food			
FDA	1.4408, investment casting (code 37), 1.4571 (code 46)	1.4408 (code 37), 1.4571 (code 46)	EPDM with KTW approval (code 18) PTFE (code 5)
Explosion protection*			
ATEX	X	X	X

* only for designs without manual override

Order data

The order data provide an overview of standard configurations.

Please check the availability before ordering. Other configurations available on request.

Order codes

1 Type	Code
Check valve	ZRSK

2 DN	Code
DN 32	0032
DN 40	0040
DN 50	0050
DN 65	0065
DN 80	0080
DN 100	0100
DN 125	0125
DN 150	0150
DN 200	0200
DN 250	0250
DN 300	0300
DN 350	0350
DN 400	0400
DN 450	0450
DN 500	0500
DN 600	0600

3 Operating pressure	Code
6 bar	1
10 bar	2
16 bar	3

4 Connection type	Code
PN 6 / flange EN 1092	1
PN 10 / flange EN 1092	2
PN 16 / flange EN 1092	3
ANSI B16.5, Class 150	D

5 Body material	Code
1.4408, investment casting	37
1.0460, galvanized	3HD
1.4571	46
2.0975/CC333G	5A0
1.4469, super duplex	4W1

6 Disc material	Code
1.4408	37
1.0460, galvanized	3HD
1.4571	46
1.4469, super duplex	4W1

7 Seal material	Code
NBR	2
FKM	4
PTFE	5

7 Seal material	Code
EPDM	14
EPDM (FDA, DVGW-Water certification)	18
Steel	10

8 Spring return	Code
Without return spring	F0
Spring 1.4571	F1
Spring Hastelloy	F2

9 Manual override	Code
Manual override	H
Without	

10 Type of design	Code
Without	
Valve free of oil and grease, media wetted area cleaned and packed in PE bag	0107
Media wetted area cleaned to ensure suitability for paint applications, parts sealed in plastic bag	0101
Check valve with bonded O-ring	2577

11 Special version	Code
Without	
ATEX certification	X

Order example

Ordering option	Code	Description
1 Type	ZRSK	Check valve
2 DN	0100	DN 100
3 Operating pressure	3	16 bar
4 Connection type	3	PN 16 / flange EN 1092
5 Body material	46	1.4571
6 Disc material	46	1.4571
7 Seal material	14	EPDM
8 Spring return	F0	Without return spring
9 Manual override		Without
10 Type of design		Without
11 Special version		Without

Technical data

Medium

Working medium: Liquid and gaseous fluids of groups 1 (explosive, flammable, toxic, oxidizing) and 2 (other fluids) acc. to the Pressure Equipment Directive 2014/68/EU.

Temperature

Media temperature:	Seal material:
	NBR (code 2): -10 – 90 °C
	EPDM (code 14): -10 – 95 °C
	FKM (code 4): -10 – 150 °C
	PTFE (code 5): -40 – 200 °C
	Metallic (code 10) -40 – 200 °C

Pressure

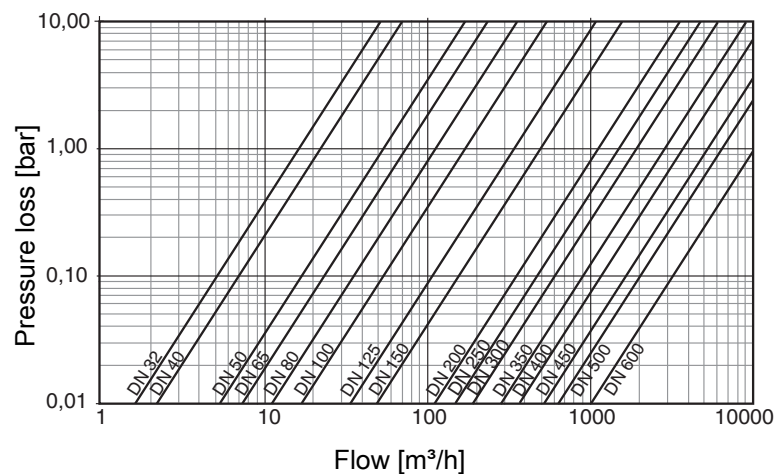
Operating pressure:	DN 32 – 300: Max. 16 bar
	DN 350 – 600: Max. 10 bar

According to the Pressure Equipment Directive depending on nominal size and material (temperature 20 °C) for liquids of groups 1 and 2.

Vacuum: Can be used up to a vacuum of 100 mbar (abs), or with bonded O-ring (K-no. 2577) up to a vacuum of 20 mbar (abs)

These values apply to room temperature and air. The values may deviate for other media and other temperatures.

Pressure loss:



The diagram values are valid for water at 20 °C.
Please contact GEMÜ for the calculation of other fluids.

Pressure for disc opening:

A minimum back pressure of 0.3 bar is required for sealing the check valve.

DN	Piping			
	Horizontal		Vertical	
	Spring			
	Without	with	Without	with
32	2.0	15.0	10.0	25.0
40	2.0	15.0	10.0	25.0
50	2.0	15.0	10.0	25.0
65	2.0	15.0	10.0	25.0
80	2.0	15.0	10.0	25.0
100	2.0	15.0	10.0	25.0
125	2.0	15.0	10.0	25.0
150	2.0	15.0	10.0	25.0
200	4.0	17.0	14.0	25.0
250	4.0	17.0	14.0	25.0
300	4.0	17.0	14.0	25.0
350	6.0	18.0	18.0	27.0
400	6.0	18.0	18.0	28.0
450	6.0	18.0	18.0	28.0
500	6.0	18.0	24.0	34.0
600	6.0	18.0	26.0	36.0

Pressures in mbar

Leakage rate:

A acc. to EN 12266-1 (with plastic seal)

G acc. to EN 12266-1 (metallic sealing)

Kv values:

DN	Kv values
32	16.2
40	22.2
50	54.0
65	75.0
80	112.0
100	172.0
125	342.0
150	490.0
200	1128.0
250	1500.0
300	2290.0
350	2890.0
400	3700.0
450	5000.0
500	6550.0
600	9500.0

Kv values in m³/h

Product compliance

Machinery Directive:	2006/42/EC
Pressure Equipment Directive:	2014/68/EU
Food:	FDA*
Drinking water:	Seal material O-ring EPDM (code 18) with DVGW approval *
Environment:	RoHS
Explosion protection:	ATEX (2014/34/EU)

* This feature is not possible for all versions.
For further information see Availability.

Mechanical data

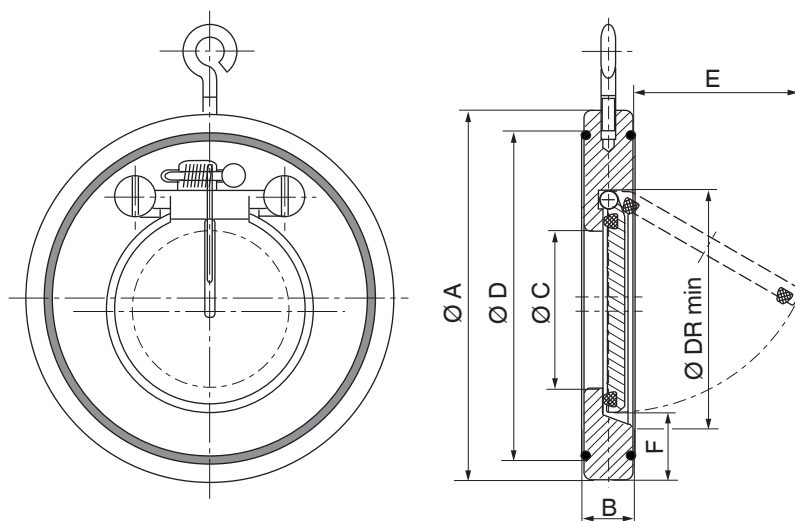
Weight:

DN	Material code ¹⁾	
	37, 3HD, 46	4W1, 5A0
32	0.5	0.47
40	0.78	0.73
50	0.9	0.85
65	1.23	1.15
80	1.5	1.4
100	2.4	2.25
125	3.3	3.1
150	4.6	4.3
200	7.5	7.10
250	13.0	12.2
300	21.3	20.0
350	33.3	31.22
400	46.9	44.0
450	71.0	67.0
500	90.0	85.0
600	128.0	120.0

Weights in kg

- 1) **Body material**
 Code 37: 1.4408, investment casting
 Code 3HD: 1.0460, galvanized
 Code 46: 1.4571
 Code 5A0: 2.0975/CC333G
 Code 4W1: 1.4469, super duplex

Dimensions



DN						Manual override						
						Without		with				
						without spring	with spring					
	Connection code ¹⁾											
	1	2	3	D	2	1, 2, 3, D						
øA					F	B			øC	øD	øDR min	E
32	79.0	85.0	85.0	74.0	25.0	15.0	15.0	-	18.0	59.0	37.0	22.0
40	89.0	95.0	95.0	83.0	28.0	16.0	16.0	-	22.0	72.0	43.0	25.0
50	98.0	109.0	109.0	105.0	29.0	14.0	14.0	19.0	32.0	86.0	54.0	37.0
65	118.0	129.0	129.0	124.0	31.0	14.0	14.0	19.0	40.0	109.0	70.0	50.0
80	134.0	144.0	144.0	137.0	32.0	14.0	14.0	20.0	54.0	119.0	82.0	61.0
100	154.0	164.0	164.0	175.0	31.0	18.0	18.0	23.0	70.0	146.0	106.0	77.0
125	184.0	195.0	195.0	197.0	35.0	18.0	18.0	24.0	92.0	173.0	131.0	98.0
150	209.0	220.0	220.0	222.0	35.0	20.0	20.0	29.0	112.0	197.0	159.0	120.0
200	264.0	275.0	275.0	279.0	38.0	22.0	22.0	30.0	154.0	255.0	207.0	160.0
250	319.0	330.0	331.0	340.0	41.0	26.0	26.0	35.0	192.0	312.0	260.0	190.0
300	375.0	380.0	386.0	410.0	41.0	32.0	32.0	43.0	227.0	363.0	309.0	220.0
350	425.0	440.0	446.0	451.0	54.0	38.0	-	48.0	266.0	416.0	341.0	250.0
400	475.0	491.0	499.0	514.0	55.0	44.0	-	-	310.0	467.0	392.0	290.0
450	-	541.0	558.0	549.0	60.0	52.0	-	-	350.0	520.0	442.0	340.0
500	580.0	596.0	621.0	606.0	58.0	58.0	-	-	400.0	550.0	493.0	390.0
600	681.0	698.0	738.0	718.0	60.0	62.0	-	-	486.0	660.0	595.0	470.0

Dimensions in mm

1) Connection type

Code 1: PN 6 / flange EN 1092
 Code 2: PN 10 / flange EN 1092
 Code 3: PN 16 / flange EN 1092
 Code D: ANSI B16.5, Class 150

Certificates

Certificate	Standard	Item number
2.1 Certificate of compliance with the order	EN 10204	88535071
3.1 Material	EN 10204	88490978
3.1 Pressure test	DIN EN 12266-1 P10, P11, P12	88306836



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