

GEMÜ RSK

Plastic 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, leak rate A

Description

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

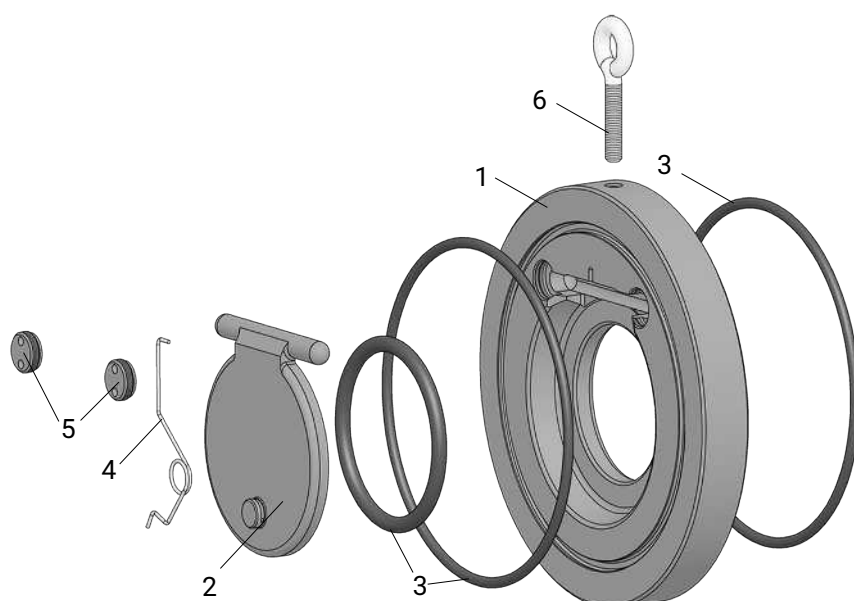
Technical specifications

- **Media temperature:** -4 to 248 °F
- **Ambient temperature:** 32 to 140 °F
- **Operating pressure :** 15 to 150 psi
- **Nominal sizes:** 1 1/4" (DN 32) to 24" (DN 600)
- **Connection types:** Flange
- **Connection standards:** ANSI | DIN | EN | ISO | JIS
- **Body materials:** PP | PVC-U, grey | PVDF
- **Seal materials:** EPDM | FKM | NBR | PTFE
- **Disc materials:** PP-H | PVC-U | PVDF
- **Conformities:** EAC | FDA | TA Luft (German Clean Air Act)

Technical data depends on the respective configuration



Product description



Item	Name	Materials
1	Body	PVC-U grey, PP, PVDF
2	Disc	PVC-U grey, PP, PVDF
3	Seal (O-ring)	NBR, EPDM, FKM, PTFE (encapsulated)
4	Spring	1.4571, Hastelloy
5	Screws	PVC-U grey, PP, PVDF
6	Eye bolt	1.4571

Availability

Valve body

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

Product compliance

Conformities	Seal material order code
Drinking water	
DVGW (German Technical and Scientific Association for Gas and Water)	PTFE (code 5) EPDM (code 14)
KTW	PTFE (code 5) EPDM (code 14)
WRAS (UK Water Regulations Advisory Scheme)	PTFE (code 5) EPDM (code 14)
NSF	EPDM (code 14)
Foodstuffs	
FDA	PTFE (code 5) EPDM (code 14)
BfR (German Federal Institute for Risk Assessment)	PTFE (code 5) EPDM (code 14)
3A	PTFE (code 5) EPDM (code 14)
USP Cl. IV	PTFE (code 5) EPDM (code 14)
Regulation (EC) No. 10/2011*	PTFE (code 5)
ADI-free	PTFE (code 5) EPDM (code 14) FKM (code 4)
Air	
TA Luft (German Clean Air Act)	No order code required
Oxygen	
BAM	EPDM (code 14) NBR (code 2)
Gas	
DIN EN 549	NBR (code 2) FKM (code 4)
Chemicals	
REACH	No order code required
RoHS	No order code required

Order data

Order codes

1 Type	Code
Check valve	RSK

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 Betriebsdruck	Code
5 bar	7
6 bar	1
8 bar	8
10 bar	2

4 Connection type	Code
PN 6/flange EN 1092	1
PN 10/flange EN 1092	2

4 Connection type	Code
ANSI B16.5, Class 150	D

5 Housing material	Code
PVC-U	1
PP	5
PVDF	20

6 Disc material	Code
PVC-U	1
PP	5
PVDF	20

7 Sealing material	Code
NBR	2
FKM	4
PTFE	5
EPDM	14

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

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

Order example

Order option	Code	Description
1 Type	RSK	Check valve
2 DN	0100	DN 100
3 Betriebsdruck	1	6 bar
4 Connection type	2	PN 10/flange EN 1092
5 Housing material	5	PP
6 Disc material	5	PP
7 Sealing material	5	PTFE
8 Spring return	F0	Without return spring
9 Type of design		Without

Technical data

Medium

Working medium:

Corrosive, inert, gaseous and liquid media which have no negative impact on the physical and chemical properties of the body, disc and seal material.

The product can be used under the following conditions (classification in accordance with the Pressure Equipment Directive 2014/68/EU Annex I):

- **Connection sizes DN 32–100**

Fluids of group 1* (dangerous fluids) gaseous or liquid

- **Connection sizes DN 125–600**

Fluids of group 2* (non-dangerous fluids) liquid

* Definition in accordance with Article 2, Numbers 7 and 8 of Regulation (EC) No. 1272/2008 (CLP Regulation).

Operation with unstable gases is impermissible for all nominal sizes.

Temperature

Media temperature:

Seal	Material code ¹⁾		
	1	5	20
NBR	32° F ... +140 °F	32 °F ... +194°F	-4 °F ... +212 °F
EPDM			-4 °F ... +248 °F
FKM			-4 °F ... +248 °F
PTFE			-4 °F ... +248 °F

1) **Housing material**

Code 1: PVC-U

Code 5: PP

Code 20: PVDF

Pressure

Operating pressure:

DN	Max. permissible pressure in-line with flow direction*		
	Material code ¹⁾		
	1	5	20
32	145.0	116.0	145.0
40	145.0	116.0	145.0
50	145.0	116.0	145.0
65	145.0	116.0	145.0
80	145.0	87.0	145.0
100	145.0	87.0	145.0
125	145.0	87.0	145.0
150	87.0	87.0	116.0
200	87.0	87.0	116.0
250	72.5	72.5	72.5
300	72.5	72.5	72.5
350	72.5	72.5	72.5
400	72.5	72.5	72.5
450	72.5	72.5	72.5
500	72.5	72.5	72.5
600	72.5	72.5	72.5

Pressures in PSI

1) **Housing material**

Code 1: PVC-U

Code 5: PP

Code 20: PVDF

* The max. permissible pressure is dependent on the nominal size and temperature (see pressure/temperature diagram). The pressures referred to above only apply in-line with flow direction. If pressure is applied against the closed valve (back pressure), see the table on back pressure.

Filling volume:

DN	Material code ¹⁾								
	1			5			20		
	32 °F ... 77 °F	104 °F	140 °F	32 °F ... 77 °F	140 °F	194 °F	-4 °F ... 77 °F	140 °F	248 °F
32	145.04*	87.02*	21.76*	145.04*	58.02*	11.60*	145.04*	91.38*	17.40*
40	133.44	79.77	18.86	52.21	20.31	4.21	133.44	84.12	15.95
50	145.04*	87.02*	21.76*	88.47	34.81	7.11	145.04*	91.38*	17.40*
65	145.04*	87.02*	21.76*	81.22	31.91	6.53	145.04*	91.38*	17.40*
80	145.04*	87.02*	21.76*	62.37	24.66	4.93	145.04*	91.38*	17.40*
100	121.83	72.52	17.40	47.86	18.86	3.92	121.83	76.87	14.50
125	68.17	40.61	10.44	27.56	11.02	2.18	68.17	43.51	8.27
150	42.06	24.66	6.53	17.40	6.96	1.45	42.06	26.11	5.22
200	79.77	47.86	12.18	31.91	12.91	2.61	79.77	50.76	9.72
250	76.87	46.41	11.60	30.46	12.47	2.47	76.87	47.86	9.28
300	59.47	34.81	8.99	23.21	9.57	1.89	59.47	37.71	7.25
350	82.67	49.31	12.47	33.36	13.34	2.61	82.67	52.21	10.01
400	87.02*	52.21*	13.05*	47.86	18.86	3.77	87.02*	53.66*	10.44*
450	87.02*	52.21*	13.05*	46.41	18.86	3.77	87.02*	53.66*	10.44*
500	87.02*	52.21*	13.05*	44.96	17.40	3.63	87.02*	53.66*	10.44*
600	72.52*	43.51*	10.88*	49.31	18.86	4.06	72.52*	45.69*	8.70*

Pressures in PSI

1) **Housing material**

Code 1: PVC-U

Code 5: PP

Code 20: PVDF

* Back pressure corresponds to the max. permissible pressure in-line with flow direction.

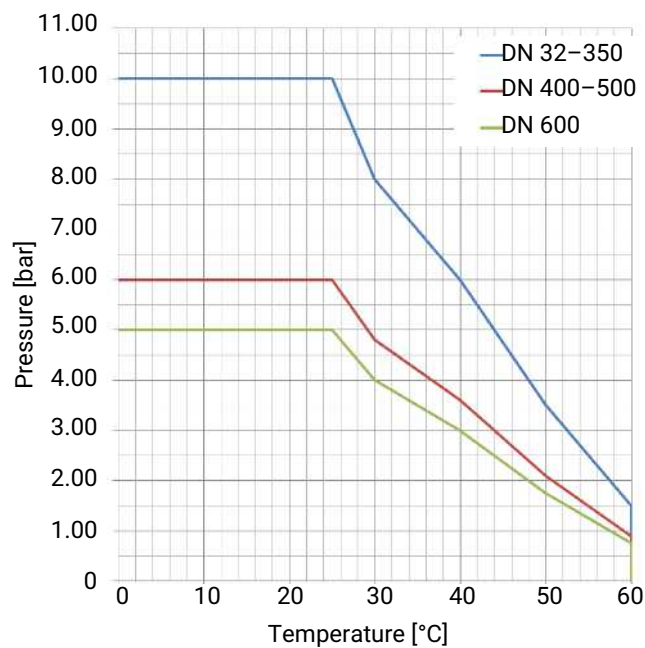
Vacuum:

Can be used up to a vacuum of 3.0 inhg (abs), or with bonded O-ring (K-no. 2577) up to a vacuum of 0.6 inhg (abs)

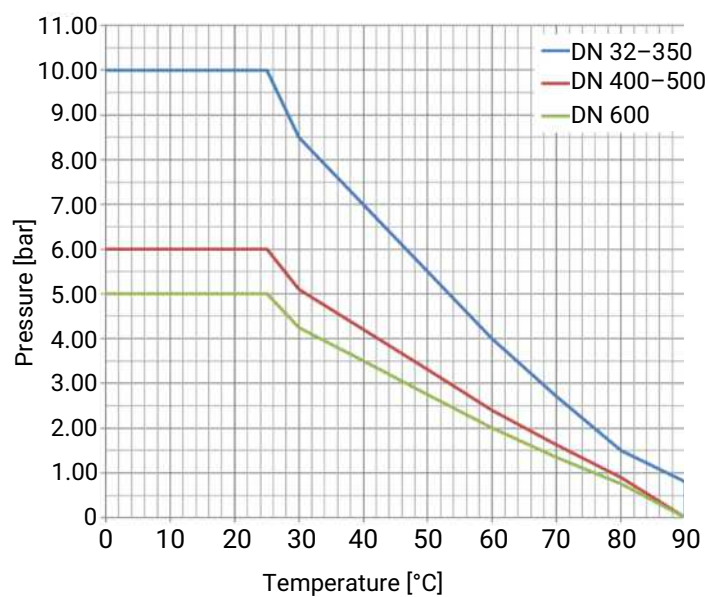
These values apply to room temperature and air. The values may deviate for other media and other temperatures.

Pressure/temperature diagram:

Body material PVC-U, grey (Code 1)

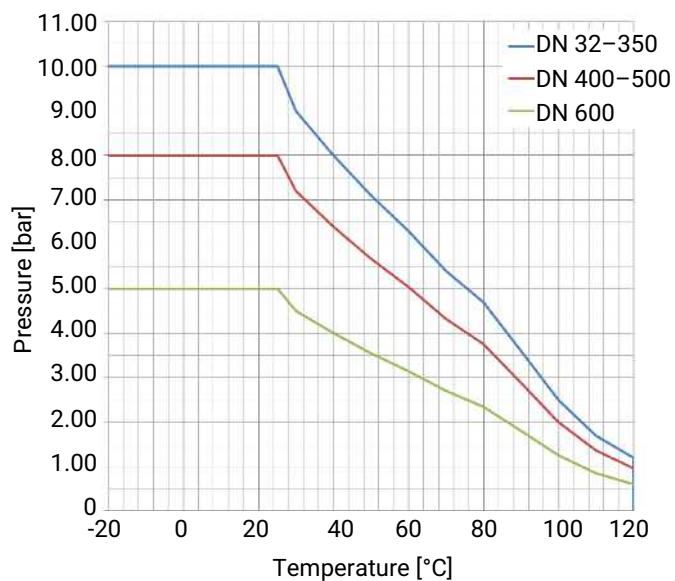


Body material PP (Code 5)

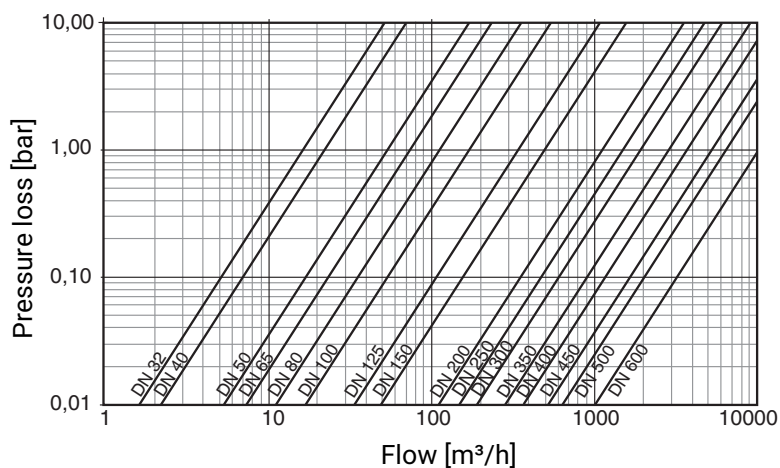


Pressure/temperature diagram:

Body material PVDF (Code 20)



Pressure loss:



The diagram values apply to water at 68 °F.

For the calculation of other fluids, please contact us.

Pressure for disc opening:

DN	Piping			
	Vertical (design with- out spring)	Horizontal (design with- out spring)	Vertical (design with spring)	Horizontal (design with spring)
32	0.029	0.003	0.058	0.032
40	0.029	0.003	0.058	0.032
50	0.044	0.003	0.073	0.032
65	0.044	0.003	0.073	0.032
80	0.044	0.003	0.073	0.032
100	0.044	0.003	0.073	0.032
125	0.044	0.003	0.073	0.032
150	0.044	0.003	0.073	0.032
200	0.058	0.003	0.087	0.032
250	0.058	0.003	0.087	0.032
300	0.058	0.003	0.087	0.032
350	0.073	0.004	0.102	0.033
400	0.102	0.004	0.131	0.033
450	0.116	0.004	0.145	0.033
500	0.116	0.004	0.145	0.033
600	0.160	0.006	0.189	0.035

Pressures in PSI

Acc. to EN 12266-1

To achieve the stated leakage rate, a back pressure of at least 4.4 psi is required for tight sealing.

Leakage rate:

Leakage rate A according to P12 EN 12266-1

Cv values:

DN	Cv value
32	18.95
40	25.97
50	63.18
65	87.75
80	131.04
100	201.24
125	400.14
150	573.30
200	1319.76
250	1755.00
300	2239.38
350	3276.00
400	4329.00
450	5265.00
500	6376.50
600	7956.00

Cv values in gpm

Mechanical data

Weight:

DN	Material code ¹⁾		
	1	5	20
32	0.26	0.20	0.35
40	0.35	0.24	0.42
50	0.49	0.33	0.60
65	0.73	0.49	0.93
80	0.86	0.57	1.10
100	1.26	0.82	1.59
125	1.72	1.10	2.18
150	2.43	1.59	3.09
200	4.63	3.09	5.95
250	7.72	4.86	9.70
300	11.24	7.05	14.33
350	16.98	11.02	21.61
400	27.78	17.86	35.49
450	39.02	24.69	49.60
500	51.81	33.07	66.50
600	87.96	56.00	111.99

Weight in lb

1) **Housing material**

Code 1: PVC-U

Code 5: PP

Code 20: PVDF

Product compliance

Machinery Directive: 2006/42/EC

Pressure Equipment Directive: 2014/68/EU

Food: FDA*
BfR XXI cat. 4*
3A*
USP* Class VI
Regulation (EC) No. 10/2011*
ADI-free*

Drinking water: KTW*
FDA
NSF*
WRAS

Environment: RoHS

TA Luft (German Clean Air Act): The product meets the following requirements under the max. permissible operating conditions:

- Tightness or compliance with the specific leak rate within the sense of TA-Luft as well as VDI 2440
- Compliance with the requirements in accordance with DIN EN ISO 15848-1, Table C.2, Class BH

Technical data

Oxygen: BAM*

Gas: DIN EN 549*

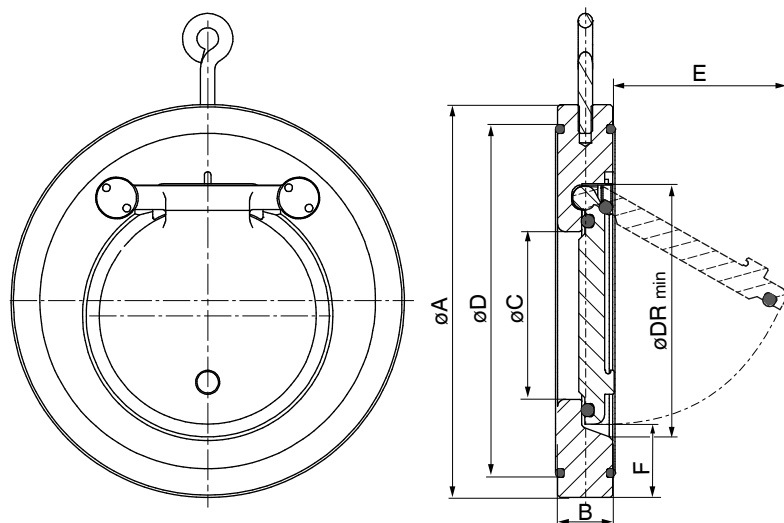
Chemicals: REACH

Explosion protection: ATEX (2014/34/EU)

* This feature is not possible for all versions.

Dimensions

Design version A

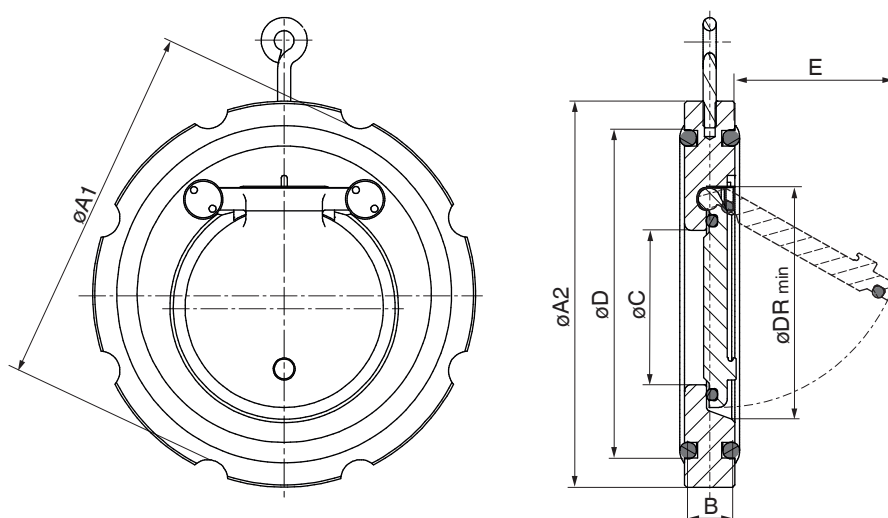


DN	$\phi DR \text{ min.}$	PN 6	PN 10	ANSI 150	JIS 10K	With spring	Without spring	ϕC	ϕD	E	F
ϕA						B					
32	1.46	3.11	3.35	2.91	3.35	0.59	0.59	0.71	2.32	0.87	0.98
40	1.69	3.50	3.74	3.27	3.58	0.63	0.63	0.87	2.83	0.98	1.10
50	2.13	3.86	4.29	4.13	4.13	0.71	0.71	1.26	3.39	1.46	1.14
65	2.76	4.65	5.08	4.88	4.88	0.79	0.79	1.57	4.13	1.97	1.22
80	3.23	5.28	5.67	5.39	5.31	0.79	0.79	2.13	4.69	2.4	1.26
100	4.17	6.06	6.46*	6.89*	6.30	0.91	0.91	2.76	5.75*	3.03*	1.22
125	5.16	7.24	7.68	7.76	7.52	0.91	0.91	3.62	6.81	3.70*	1.38
150	6.26	8.23	8.66*	8.74*	8.66	1.02	1.02	4.13	7.76*	3.94*	1.57
200	8.15	10.39	10.83*	10.98*	10.67	1.34	1.34	6.06	10.04*	5.98*	1.50
250	10.24	12.56	12.99*	13.39*	13.15	1.57	1.57	7.56	12.28*	7.09*	1.61
300	12.17	14.76	14.96*	16.14*	14.96	1.77	1.77	8.94	14.29*	8.46*	1.61
350	13.43	16.73	17.32	17.76	16.69	1.93	1.93	10.47	16.38	9.65	2.13
400	15.43	18.70	19.33	20.24	19.17	2.56	2.56	12.20	18.39	11.22	2.17
450	17.44	20.87	21.30	21.61	21.30	2.68	3.07	13.78	20.47	12.99	2.40
500	19.41	22.83	23.46	23.86	23.46	3.07	3.43	15.75	21.65	15.16	2.28
600	23.43	26.81	27.48	28.27	27.48	3.82	3.82	19.13	25.94	18.50	2.36

Dimensions in inch

* Design version B is used as standard for these connection types and nominal sizes.

Design version B



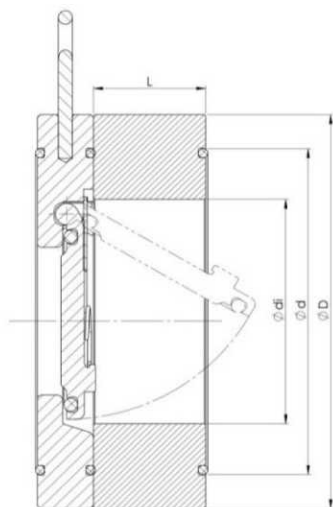
DN	$\phi DR_{min.}$	PN 10	ANSI 150	B	ϕC	ϕD	E
		$\phi A1$	$\phi A2$				
100	4.17	6.46	6.89	0.91	2.76	6.02	3.03
150	6.26	8.66	8.74	1.02	4.13	7.81	3.94
200	8.15	10.83	10.98	1.34	6.06	10.22	5.98
250	10.24	12.99	13.36	1.57	7.56	12.24	7.09
300	12.17	14.96	16.14	1.77	8.94	9.72	8.46

Dimensions in inch

Special flange adaptor

The special flange adaptor must be ordered separately.

Dimensions of spacer ring as special flange adaptor



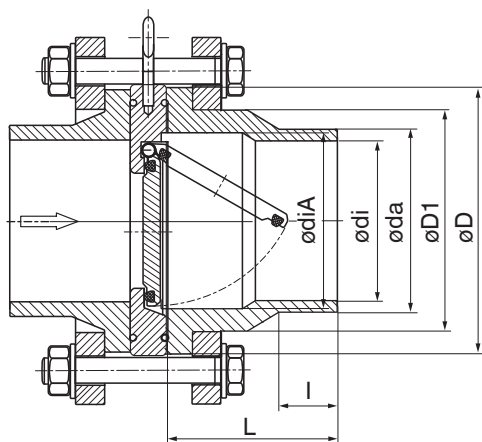
DN	$\varnothing d_i$	$\varnothing d$	$\varnothing D$	L
32	1.46	2.32	3.35	0.79
40	1.81	2.83	3.74	0.79
50	2.28	3.39	4.29	0.98
65	2.76	4.13	5.08	1.57*
80	3.23	4.69	5.67	1.57*
100	4.17	5.75	6.46	1.97
125	5.12	6.81	7.66	1.97**
150	6.22	7.76	8.66	1.97
200	8.11	10.04	10.83	2.76
250	10.20	12.28	12.99	3.94
300	12.13	14.29	14.96	6.50

Dimensions in inch

* PVDF = 30

** PVDF = 40

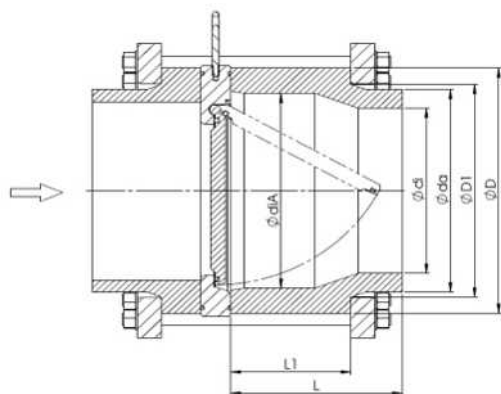
Dimensions of special flange adaptor



DN	ØD	L	Øda	Ødi		ØdiA	I	ØD1	Item no.	
				PN 6	PN 10				PP	PE
32	3.15	2.56	1.57	1.38	1.26	1.46	1.18	1.97	88413915	-
40	3.54	2.68	1.97	1.69	1.61	1.69	1.18	2.40	88322123	88321090
50	4.13	2.91	2.48	2.13	2.01	2.13	1.18	3.03	88299955	88320179
65	4.92	3.07	2.95	2.60	2.40	2.76	1.18	3.58	88242365	88207359
80	5.51	3.43	3.54	3.11	2.87	3.23	1.38	4.29	88264813	88241582
100	6.30	4.02	4.33	3.82	3.54	4.17	1.38	5.20	88312179	88207361
125	7.48	4.92	5.51	4.88	4.49	5.12	1.85	6.54	88263989	88390510
150	8.46	5.91	6.30	5.55	5.12	6.22	2.05	7.44	88276859	88413927
200	10.62	7.87	7.87	6.97	6.42	8.11	2.17	9.80	88249170	88413934
250	12.80	8.86	9.84	8.70	8.03	10.20	2.48	11.54	88265064	88413928
300	14.76	10.04	12.40	11.02	10.12	12.13	2.60	13.27	88413916	88413929

Dimensions in inch

Suitable for loose backing flange for socket system



DN	ØD	L	Øda	Ødi		ØdiA	I	ØD1
				PN 6	PN 10			
350	16.93	11.22	13.98	12.36	11.42	13.46	7.87	14.69
400	19.33	13.78	15.75	13.94	12.87	15.35	10.63	16.81
450	21.30	14.57	17.72	15.71	14.49	17.32	11.42	18.07
500	23.46	14.96	19.69	17.44	16.10	19.29	11.81	20.87
600	27.48	17.72	24.80	21.97	20.28	22.83	14.57	25.28

Dimensions in inch

Suitable for loose backing flange for butt welding system



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