



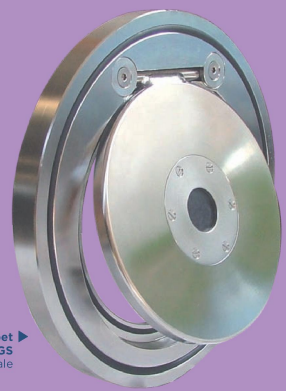
VALVOLE DI
RITEGNO



G VALVOLE DI RITEGNO

VALVOLE DI RITEGNO A DISCO
serie GA - GB - GH - GN - GT

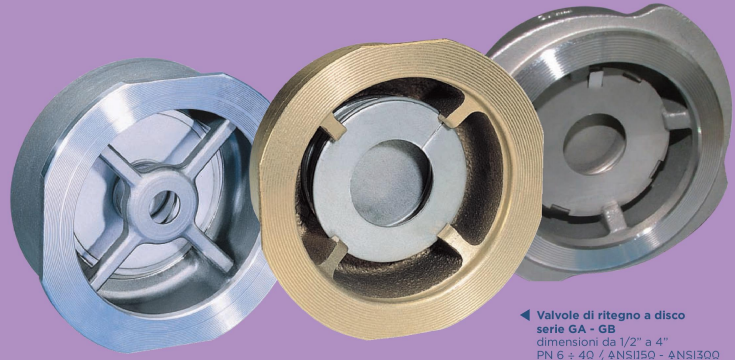
VALVOLE DI RITEGNO A CLAPET
serie GS



Valvole di ritegno a clapet
serie GS
tipo bidirezionale



Valvole di ritegno a clapet
serie GS
dimensioni da 2" a 24"
PN 6 + 25 / ANSI 150 - ANSI 300
acciaio - acciaio inox
acciai speciali
(Duplex® - Superduplex® - Hastelloy®)



Valvole di ritegno a disco
serie GA - GB
dimensioni da 1/2" a 4"
PN 6 + 40 / ANSI 150 - ANSI 300
acciaio - acciaio inox - bronzo

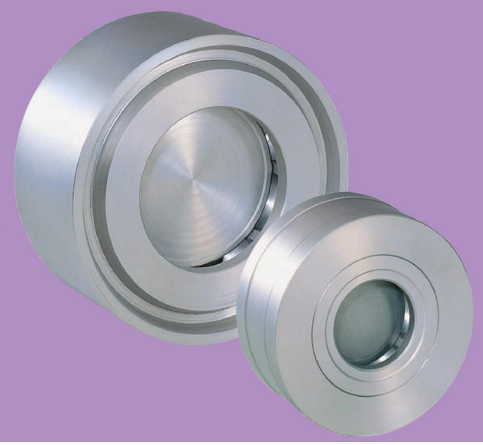


Valvole di ritegno a disco
serie GH
dimensioni da 5" a 8"
RN 10 - 16 / ANSI 150
acciaio - acciaio inox



Valvole di ritegno a disco
serie GB 021
dimensioni da 1/2" a 4"
EN 10 - 16 / ANSI 150
Polipropilene

Valvole di ritegno a disco
serie GB 023
dimensioni da 1/2" a 4"
RN 10 - 16 / ANSI 150
PTFE



Valvole di ritegno a disco
serie GN - GT
dimensioni da 1/2" a 4"
PN 40 + 100
ANSI 150 - ANSI 900
acciaio - acciaio inox
acciai speciali
(Duplex®
Superduplex®
Hastelloy®)

disc type

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GA 015

DN 15 - 100 • 1/2" - 4"

GB 015

DN 15 - 100 • 1/2" - 4"

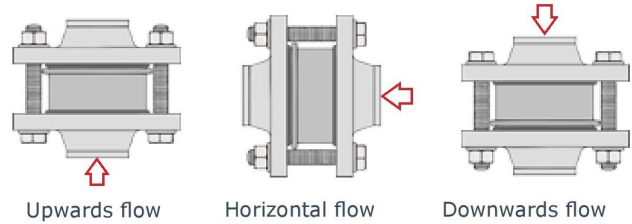
GB 019

DN 15 - 100 • 1/2" - 4"

Features and Advantages:

Little dimensions and low weights
 Face to face acc.to **DIN EN 558-1 Series 49 (DIN 3202 K4)**.
 Opening pressure from 20 to 500 mBar.
 Usable also as vacuum breaker, overpressure and bottom valve.
 No leakage with soft seat and acc.to **DIN 3230 BN3** with metal seat.
 Low head losses.

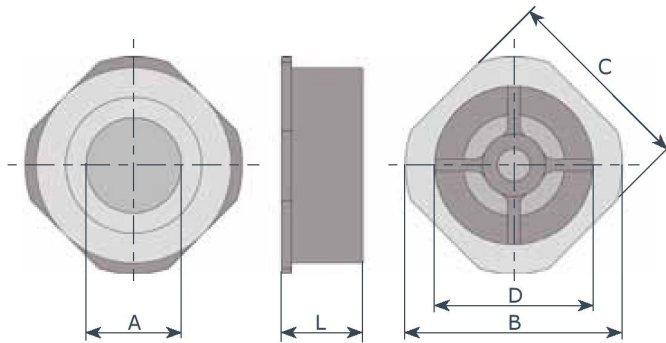
To be installed in any position:



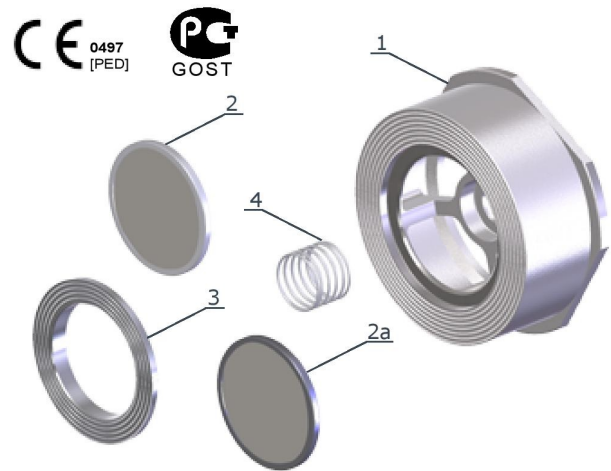
GA 015 DN 15 - 100 • 1/2" - 4"

Features:

DN 15/100: P max: **52 Bar**
 Flange:
 DN 15÷80 **PN 6÷40, A150÷300**
 DN 100 **PN 10÷40, A150÷300**



Certifications:



DN	15	20	25	32	40	50	65	80	100	item	q.ty	part	material
A	15	20	24	31	38	47	62	77	95	1	1	body	• A351 - CF8M (AISI 316)
B	53	63	73	84	94	107	131	140	162	2	1	disc -standard	• A240 (AISI 316L)
C	45	55	65	74	84	98	118	130	162	2A	1	on request	• A240 (AISI 316L) + NBR • A240 (AISI 316L) + EPDM • A240 (AISI 316L) + FKM
D	27	33	38	54	64	78	96	105	130	3	1	seat disc on request	• A182 (AISI 316) • A182 (AISI 316) + PTFE
L	16	19	22	28	32	40	46	50	60	4	1	spring -standard on request	• AISI 316 • Hastelloy C4
Kg	0.11	0.14	0.26	0.4	0.6	0.95	1.3	1.9	3.4				

This type of valve cannot be used with spirometallic packing.

flow	minimum opening pressure with standard springs										special spring table										
	DN	15	20	25	32	40	50	65	80	100	DN	15	20	25	32	40	50	65	80	100	
▲	mBar	25	25	25	27	29	29	31	32	33	50 mBar	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
▶	mBar	23	23	23	24	25	25	26	26	27	100 mBar	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
▼	mBar	21	21	21	21	21	21	21	21	21	200 mBar	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
▲	mBar	2	2	2	3	4	4	5	5	6	300 mBar	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
without spring	mBar	2	2	2	3	4	4	5	5	6	500 mBar	Y	Y	Y	Y	Y	Y	N	N	N	N

Y = available / N = not available
 Opening values may vary ±10%

GB 015 DN 15 - 100 • 1/2" - 4"

GB 019 DN 15 - 100 • 1/2" - 4"

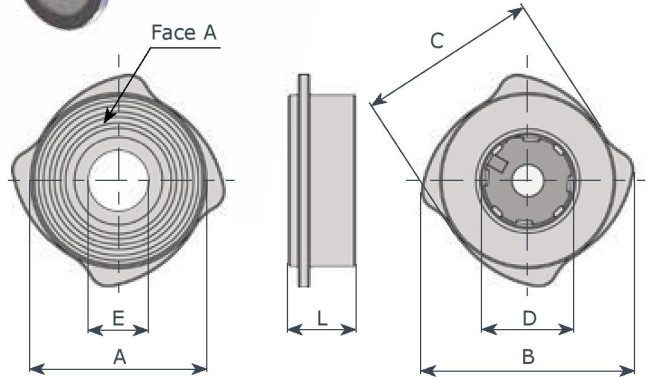
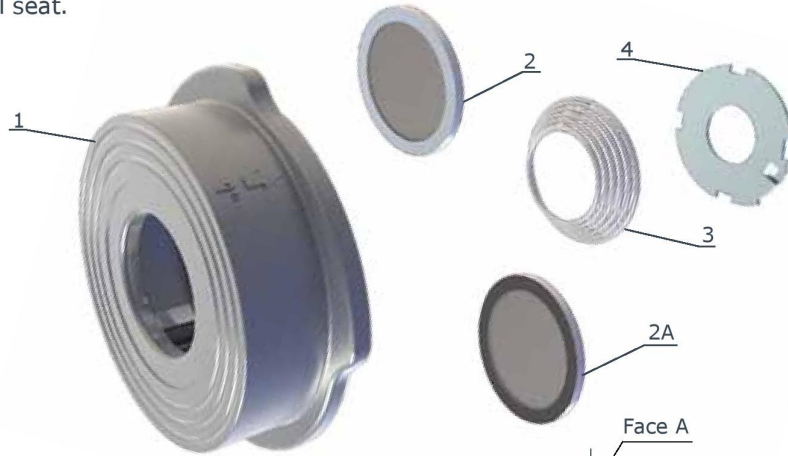
Features:

DN 15/100: P max: 52 Bar
 Flange:
 DN 15÷80 PN 6÷40, A150÷300
 DN 100 PN 10÷40, A150÷300

This type of valve can be used with API 601 spirometallic packings only with finishing of "Face A" (see dimensions) Stock finish AARH 250/500.
 No leakage with soft seat and acc.to **DIN 3230 BN3** with metal seat.

DN 15/100: P max: 16 Bar
 Flange:
 DN 15÷80 PN 6÷16,
 DN 100 PN 10÷16

Certifications:



GB 015

item	q.ty	part	material
1	1	body	• A351 - CF8M (AISI 316)
2	1	disc -standard	• A240 (AISI 316L)
2A	1	on request	• A240 (AISI 316L) + NBR • A240 (AISI 316L) + EPDM • A240 (AISI 316L) + FKM
3	1	spring standard	• AISI 316
4	1	top ring	• A240 (AISI 316L)

GB 019

item	q.ty	part	material
1	1	body	• bronze B-584
2	1	disc -standard	• A240 (AISI 316L)
2A	1	on request	• A240 (AISI 316L) + NBR • A240 (AISI 316L) + EPDM • A240 (AISI 316L) + FKM
3	1	spring standard	• AISI 316
4	1	spring top ring	• A240 (AISI 316L)

GB 015

DN	15	20	25	32	40	50	65	80	100
A	43	48	58	68	75	94	113	129	159
B	54	64	71	81	93	110	130	149	181
C	45	54	63	72	82	95	115	131	160
D	23	28	36	50	58	71	86	105	130
E	14	19	25	31	38	48	62	77	95
L	17	20	22	28	32	40	46	50	60
Kg	0.11	0.18	0.26	0.4	0.55	1	1.5	2	3.2

minimum opening pressure with standard springs

flow	DN	15	20	25	32	40	50	65	80	100
▲	mBar	25	25	25	27	28	30	30	25	21
▶	mBar	23	23	23	25	23	24	24	19	15
▽	mBar	21	21	21	22	18	18	18	13	9
▲ without spring	mBar	na	na	na	na	na	na	na	na	na

GB 019

DN	15	20	25	32	40	50	65	80	100
A	37	45	55	65	74	89	107	126	147
B	49	60	70	80	90	107	127	140	162
C	44	54	64	76	86	96	116	132	154
D	32	39	46	57	65	80	97	113	127
E	15	20	24	31	38	47	62	77	95
L	16	19	22	28	32	40	46	50	60
Kg	0.11	0.14	0.26	0.36	0.46	0.9	1.6	2.1	2.8

GB 021 DN 15 - 100 • 1/2" - 4"

GB 023 DN 15 - 100 • 1/2" - 4"

Features:

Flange:

DN 15÷100 PN 10÷16

Max working pressure: 6 Bar

Max working temperature: 110°C

This type of valve cannot be used with spimetallic packing.

Flange:

DN 15÷100 PN 10÷16

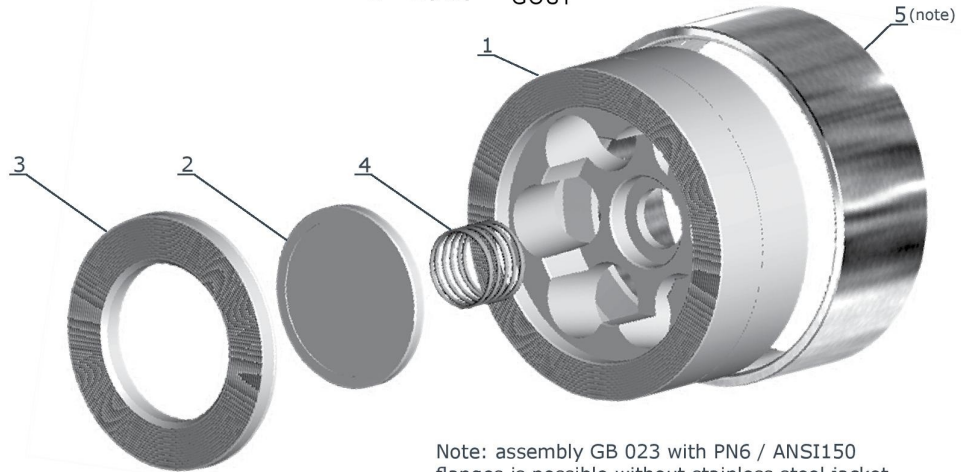
Max working pressure: 6 Bar

Max working temperature: 180°C

Certifications:



On request spring can be coated with a PTFE pipe sealed at the end.



Note: assembly GB 023 with PN6 / ANSI150 flanges is possible without stainless steel jacket.

		GB 021	GB 023
item	q.ty	part	material
1	1	body	• polypropylene (PP) • PTFE
2	1	disc	• polypropylene (PP) • PTFE
3	1	seat	• polypropylene (PP) • PTFE
4	1	spring <i>on request</i>	• Hastelloy C4 • AISI 316 + PTFE • AISI 316 + Nyflon
5	1	jacket	• Hastelloy C4 • AISI 316 + PTFE • AISI 316 + Nyflon • AISI 304

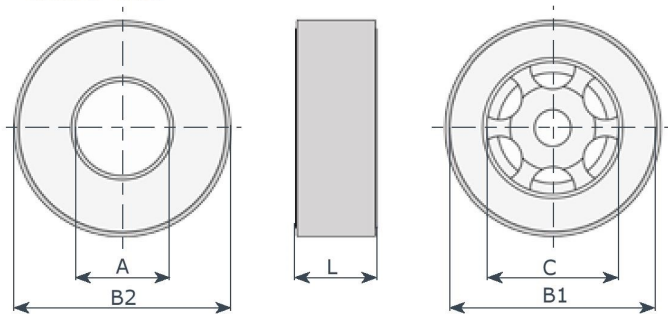
DN	15	20	25	32	40	50	65	80	100
screw	4x M12	4x M12	4x M12	4x M16	4x M16	4x M16	4x M16	4x M16	8x M16
tightening torque Nmt	10	10	20	35	35	35	40	40	45

Note for installation:

Centre the valve carefully before tightening the flanges. Tighten the flange screws by applying the torque values shown nearby. Remember to cross tighten the screws. These values are measured at room temperature with new screws and lubricated threads.

special spring table									
DN	15	20	25	32	40	50	65	80	100
50 mBar	Y	Y	Y	Y	Y	Y	Y	Y	Y
100 mBar	Y	Y	Y	Y	Y	Y	Y	Y	Y
200 mBar	Y	Y	Y	Y	Y	Y	Y	Y	Y
300 mBar	Y	Y	Y	Y	Y	Y	Y	Y	Y
500 mBar	Y	Y	Y	Y	Y	Y	N	N	N

Y = available / N = not available
Opening values may vary ±10%



minimum opening pressure with standard springs										
flow	DN	15	20	25	32	40	50	65	80	100
▲	mBar	23	23	24	25	26	26	27	27	29
▶	mBar	22	22	22.5	23	23.5	23.5	24	24	25
▽	mBar	21	21	21	21	21	21	21	21	21
▲ w/o spring	mBar	1	1	1.5	2	2.5	2.5	3	3	4

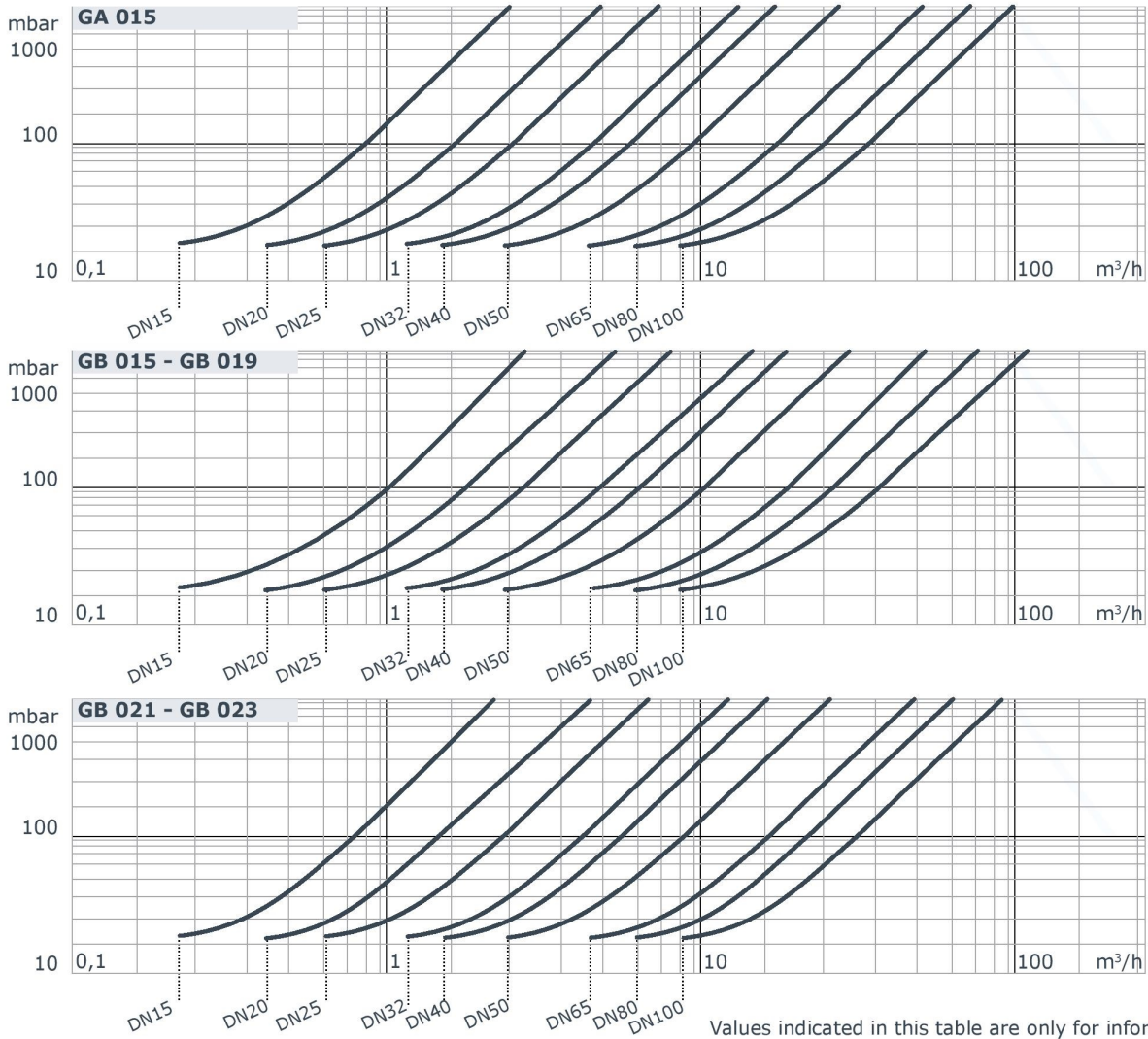
DN	15	20	25	32	40	50	65	80	100
A	15	20	25	32	38	47	63	79	96
B1	44	54	64	75	85	96	116	133	154
B2	50	60	70	80	90	107	130	140	62
C	30	38	45	56	65	78	95	100	120
L	16	19	22	28	32	40	46	50	60
GB 021 Kg	0.03	0.04	0.06	0.09	0.13	0.22	0.32	0.4	0.6
GB 023 Kg	0.11	0.16	0.24	0.32	0.4	1	1.4	1.7	2.2

Check valves

Disc type

GA 015 GB 015 GB 019 GB 021 GB 023

Head losses (H₂O - 20°C - horizontal flow, standard spring)



Formula for calculation of equivalent flow rate to H₂O

$$Q_e = Q \sqrt{\frac{d}{1000}}$$

For different liquid, gas or steam head losses are determined by equivalent water flow rate, as follows:

Q_e equivalent water flow (m³/h o l/s) Q fluid flow (m³/h o l/s) d fluid specific gravity (Kg/m³)

Temperature - pressure diagram

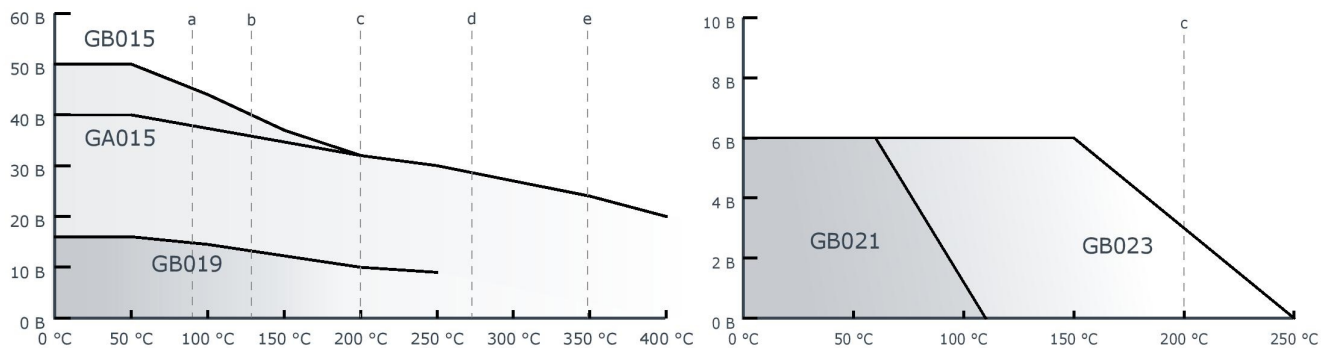
a NBR T_{MAX} = 95°C

d spring AISI 316 T_{MAX} = 270°C

b EPDM T_{MAX} = 130°C

e spring HASTELLOY C4 T_{MAX} = 350°C

c FKM PTFE T_{MAX} = 200°C



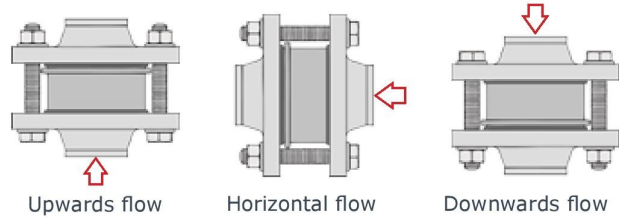
GN 011 - GN 015 - GN 115
DN 15 - 100 • 1/2" - 4"

GT 011 - GT 015 - GT 115
DN 15 - 100 • 1/2" - 4"

Features and Advantages:

Little dimensions and low weights.
Face to face acc. to **DIN EN 558-2 Series 52 (DIN 3202 K5)**
Opening pressure from 20 to 500 mBar.
No leakage with soft seat; acc. to DIN 3230 BN3 with metallic seat.
Low head losses.
Usable also as vacuum breaker, overpressure and bottom valve.

To be installed in any position:



GN 011 - GN 015 - GN 115 Pmax: 52 Bar

GT 011 - GT 015 - GT 115 Pmax: 160 Bar

Flange:
DN 15÷100 PN 10÷40, A150÷300

Flange:
DN 15÷100 PN 63÷160, A600÷900

This type of valve cannot be used with spirometallic packing.

This type of valve cannot be used with spirometallic packing.

item	q.ty	part	GN 011 - GT 011 material	GN 015 - GT 015 material	GN 115 - GT 115 material
1	1	body	• zinc plated steel A105	• A182 (AISI 316)	• Hastelloy B574/99
2	1	disc -standard	• A240 (AISI 316L)	• A240 (AISI 316L)	• Hastelloy B574/99
3	1	O Ring	• NBR • EPDM • FKM • PTFE	• NBR • EPDM • FKM • PTFE	• NBR • EPDM • FKM • PTFE
4	1	spring -standard on request	• AISI 316 • --	• AISI 316 • Hastelloy C4	• Hastelloy C4 • --
5	1	seat	• A182 (AISI 316)	• A182 (AISI 316)	• Hastelloy B574/99

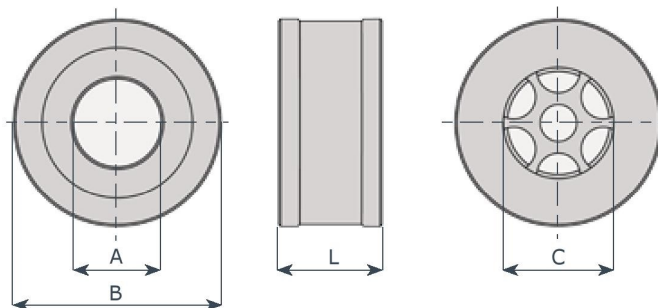
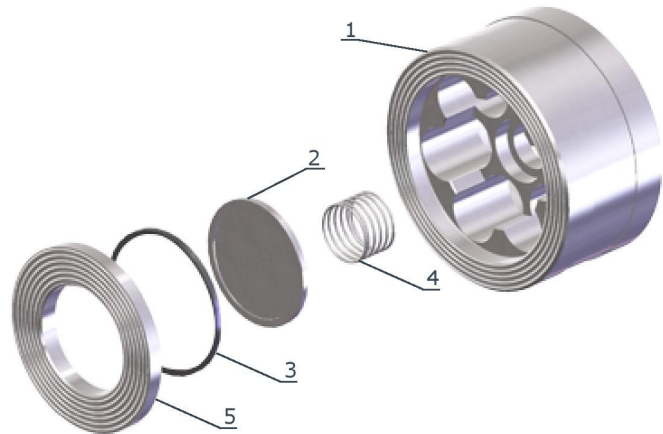
Certifications:



minimum opening pressure with standard springs

flow	DN	15	20	25	32	40	50	65	80	100
▲	mBar	25	25	25	27	29	29	31	32	33
▶	mBar	23	23	23	24	25	25	26	26	27
▼	mBar	21	21	21	21	21	21	21	21	21
▲	mBar	2	2	2	3	4	4	5	5	6

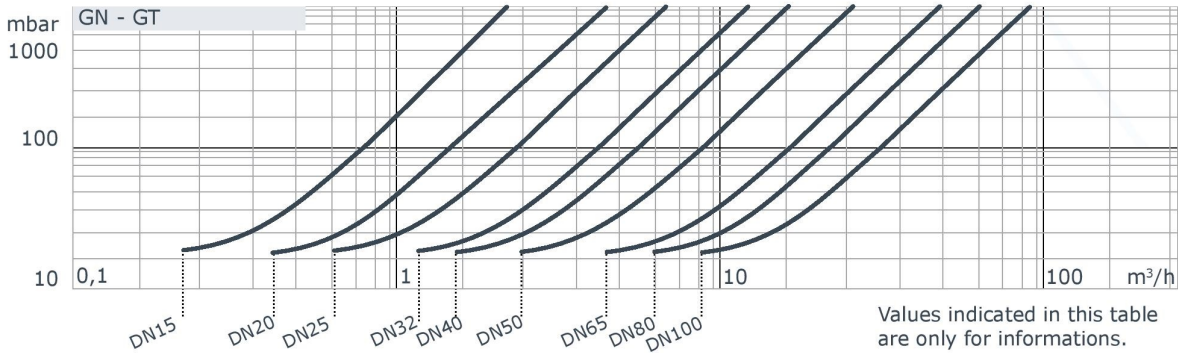
without spring



DN	15	20	25	32	40	50	65	80	100
A	15	20	24	30	38	47	62	77	96
B	46	60	70	80	90	107	130	145	178
C	21	25	30	40	48	60	85	90	110
L	25	31.5	35.5	40	45	56	63	71	80
Kg	0.3	0.6	1	1.3	1.8	2.5	4	5.9	8

GN 011 - GN 015 GT 011 - GT 015 GN 115 - GT 115

Head losses (H₂O - 20°C - horizontal flow, standard spring)

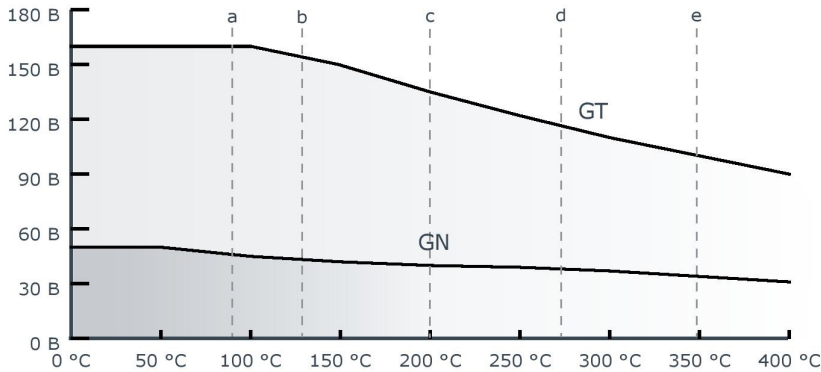


Formula for calculation of equivalent flow rate to H₂O

$$Q_e = Q \sqrt{\frac{d}{1000}}$$

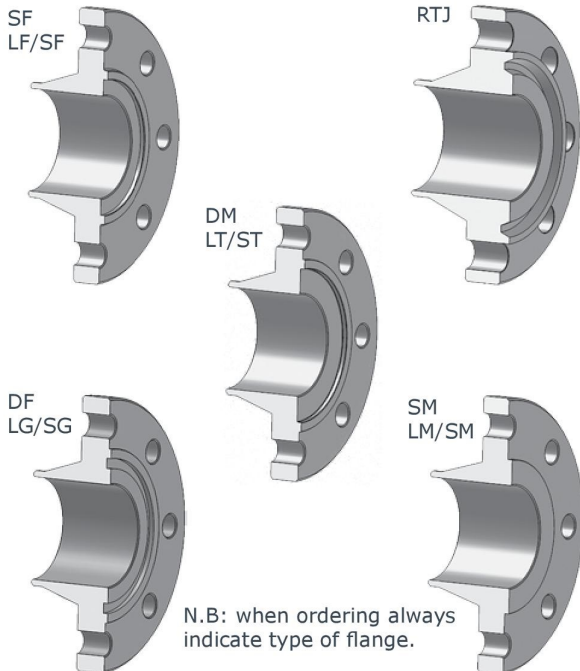
For different liquid, gas or steam head losses are determined by equivalent water flow rate, as follows:
 Q_e equivalent water flow (m³/h o l/s) Q fluid flow (m³/h o l/s) d fluid specific gravity (Kg/m³)

Temperature - pressure diagram



- a NBR T_{MAX} = 95°C
- b EPDM T_{MAX} = 130°C
- c FKM PTFE T_{MAX} = 200°C
- d spring AISI 316 T_{MAX} = 270°C
- e spring HASTELLOY C4 T_{MAX} = 350°C

GN and GT valves can be inserted between following flanges:

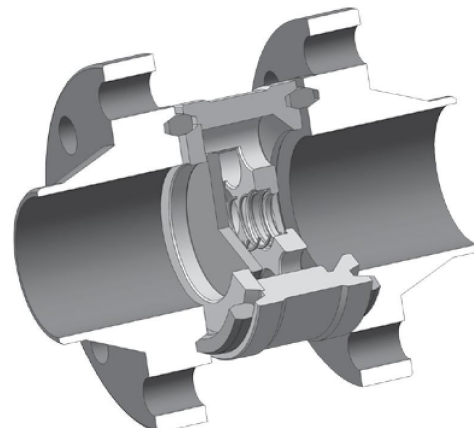


special spring table

DN	15	20	25	32	40	50	65	80	100
50 mBar	Y	Y	Y	Y	Y	Y	Y	Y	Y
100 mBar	Y	Y	Y	Y	Y	Y	Y	Y	Y
200 mBar	Y	Y	Y	Y	Y	Y	Y	Y	Y
300 mBar	Y	Y	Y	Y	Y	Y	Y	Y	Y
500 mBar	Y	Y	Y	Y	Y	Y	N	N	N

Y = available / N = not available
 Opening values may vary ±10%

Application of GT valves with ANSI RTJ flanges:



GH 011 - GH 015

DN 125- 200 • 5" - 8"

Features and Advantages:

Little dimensions and low weights.

Face to face acc. to **DIN EN 558-1 Series 49**

(DIN 3202 K4).

Opening pressure from 10 to 500 mBar.

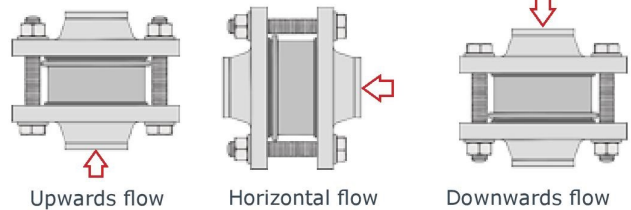
Usable also as vacuum breaker, overpressure and bottom valve.

No leakage with soft seat.

acc. to DIN 3230 BN3 with metallic seat.

Low head losses.

To be installed in any position:



GH 011 - GH 015

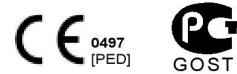
P max: 25 Bar

Flange:

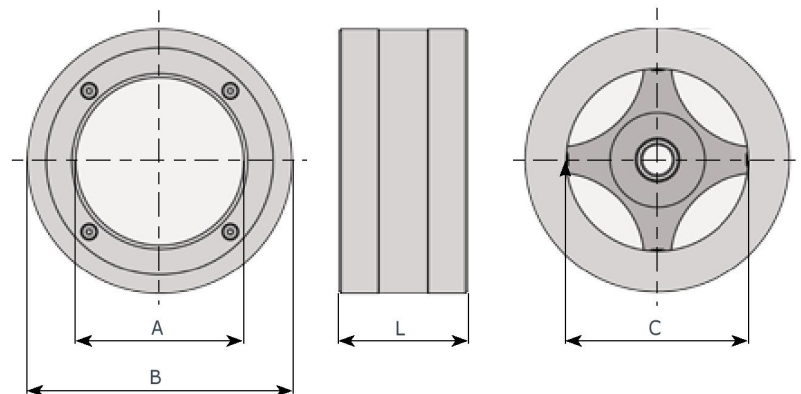
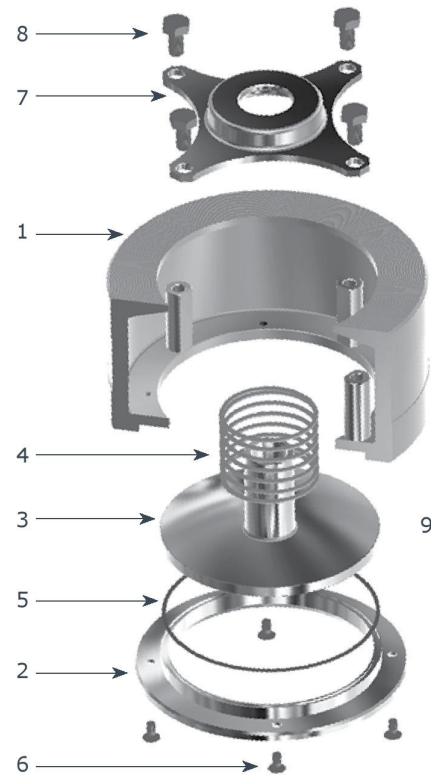
DN 125÷200 PN 10÷25, A150

This type of valve cannot be used with spirometallic packing.

Certifications:



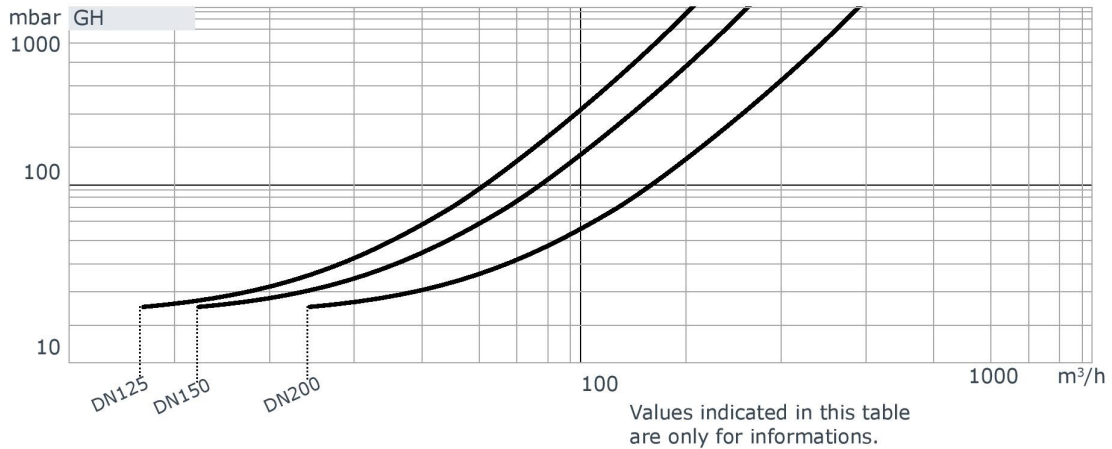
item	q.ty	part	GH 011 material	GH 015 material
1	1	body	• zinc plated steel	• A351 - CF8M (AISI 316)
2	1	seat	• A240 (AISI 316L)	• A240 (AISI 316L)
3	1	disc	• A240 (AISI 316L)	• A240 (AISI 316L)
4	1	spring -standard on request	• AISI 316	• AISI 316 • Hastelloy C4
5	1	O-Ring	• NBR • EPDM • FKM • PTFE	• NBR • EPDM • FKM • PTFE
6	4	screw	• A182 (AISI 316)	• A182 (AISI 316)
7	1	spring housing	• A182 (AISI 316)	• A182 (AISI 316)
8	4	screws	• A4 (AISI 316)	• A4 (AISI 316)
9	4	studs	• A182 (AISI 316)	• A182 (AISI 316)



DN	125	150	200
A	120	140	183
B	190	218	273
C	125	150	200
L	90	106	140
GH 011 Kg	6.5	9.8	21.2
GH 015 Kg	6.7	10.5	22.4

GH 011 - GH 015

Head losses (H₂O - 20°C - horizontal flow, standard spring)



Formula for calculation of equivalent flow rate to H₂O

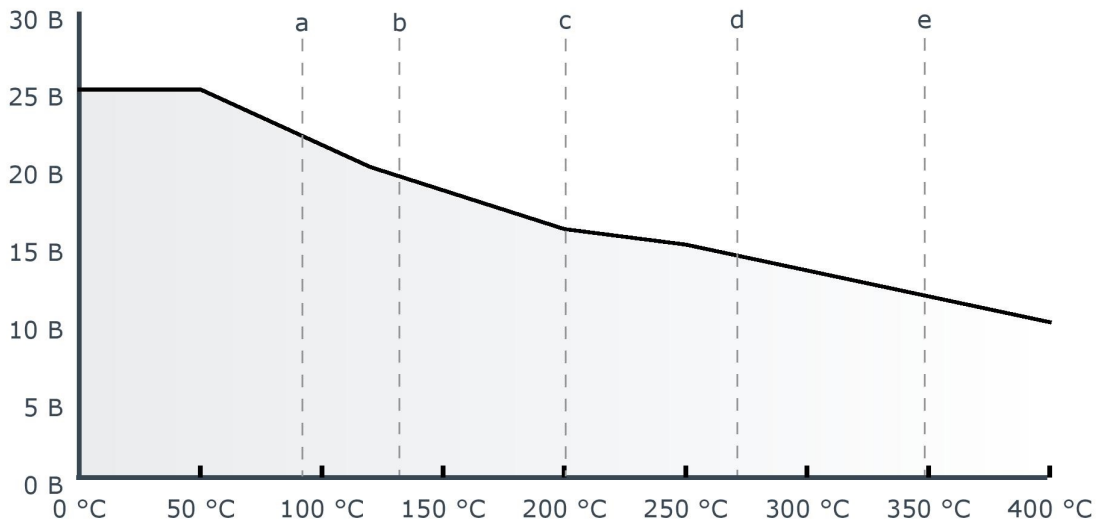
$$Q_e = Q \sqrt{\frac{d}{1000}}$$

For different liquid, gas or steam head losses are determined by equivalent water flow rate, as follows:

Q_e equivalent water flow (m³/h o l/s) Q fluid flow (m³/h o l/s) d fluid specific gravity (Kg/m³)

Temperature - pressure diagram

- a NBR T_{MAX} = 95°C
- b EPDM T_{MAX} = 130°C
- c FKM T_{MAX} = 200°C
- d spring AISI 316 T_{MAX} = 270°C
- e spring HASTELLOY C4 T_{MAX} = 350°C



minimum opening pressure with standard springs

flusso	DN	125	150	200
△	mBar	34	36	36
▷	mBar	22	23	27
▽	mBar	17	18	18
△ without spring	mBar	8	9	10

special spring table

DN	125	150	200
10 mBar	Y	Y	Y
20 mBar	Y	Y	Y
30 mBar	Y	Y	Y
50 mBar	Y	Y	Y
100 mBar	Y	Y	Y
200 mBar	Y	Y	Y
300 mBar	Y	Y	Y
500 mBar	Y	Y	Y

Opening values may vary ±10%

Y = available
N = not available

GS 011 - GS 015

DN 40 - 500 • 1 1/4" - 20"

Features and Advantages:

Little dimensions and low weights.
 Easy mounting between flanges with any packing. To be installed with vertical (only upwards) or horizontal flow. For downwards fluids spring version is to be used.
 No leakage with soft seat; acc. to API 598 with metallic seat.
 Low head losses.

NOTE 1: In these pages you will find the description of the standard swing check valves.

On request different materials can be supplied (Aluminium-Bronze, Hastelloy, Monel, Duplex, etc.).

NOTE 2: The standard GS valve cannot be installed between flanges with spirometallic packings. For this application the body finishing must be modified and the O.rings removed. Please contact our technical department for assistance.

GS 011 - GS 015

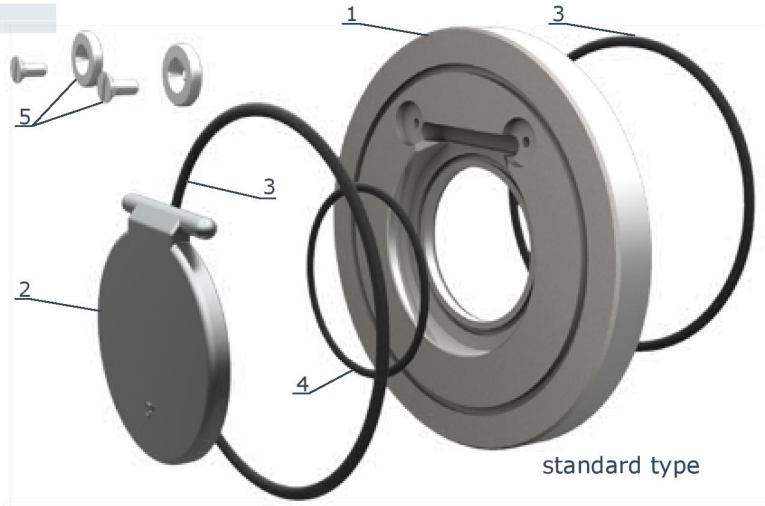
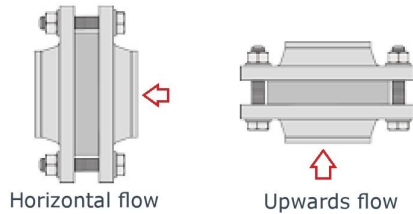
Flanges:

DN 40÷500 PN 6÷16, A150 - P max:25 Bar
 DN 40÷300 ANSI 300 - P max:52 Bar

Certifications:

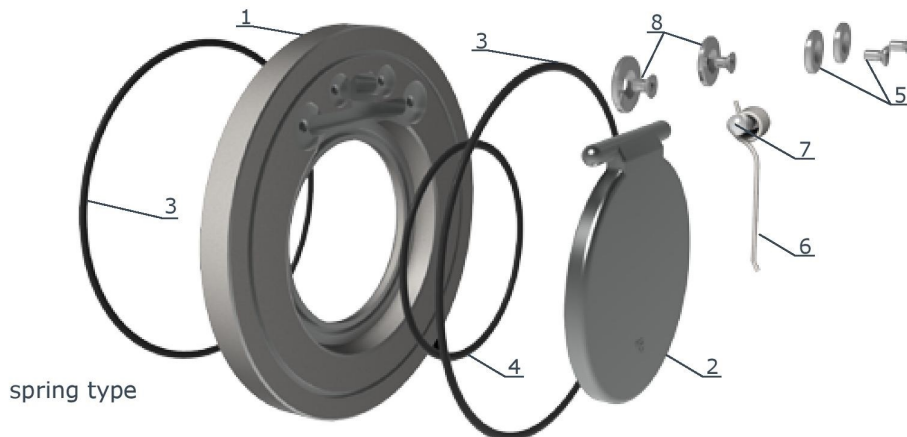


To be installed in two positions:



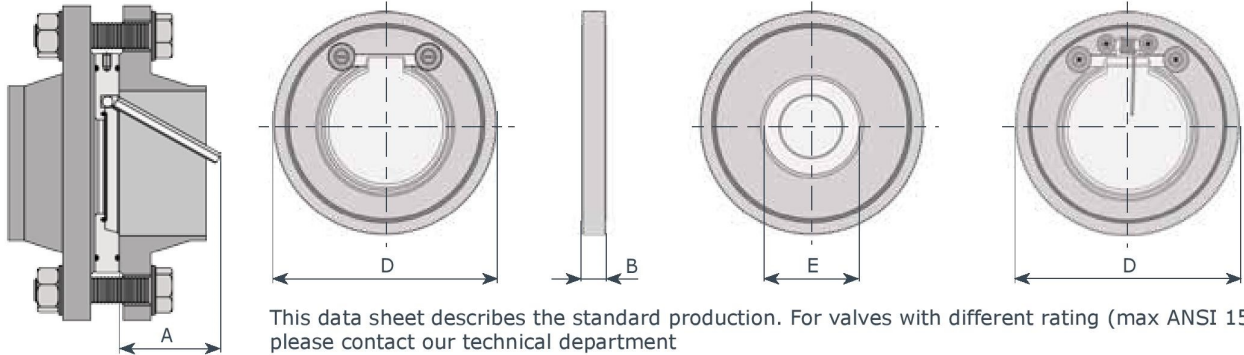
standard type

			GS 011	GS 015
item	q.ty	part	material	material
1	1	body	• zinc plated steel	• AISI 316
2	1	clapet	• AISI 316 (DN 40-200) • zinc plated steel (DN 250-500)	• AISI 316
3-4	1	O.ring	• NBR (BUNA) • EPDM • FKM (VITON) • PTFE	• NBR (BUNA) • EPDM • FKM (VITON) • PTFE
5	2 + 2	screw	• AISI 316	• AISI 316
6	1	spring	• AISI 316	• AISI 316
7	1	pin	• AISI 316	• AISI 316
8	2 + 2	screw	• AISI 316	• AISI 316



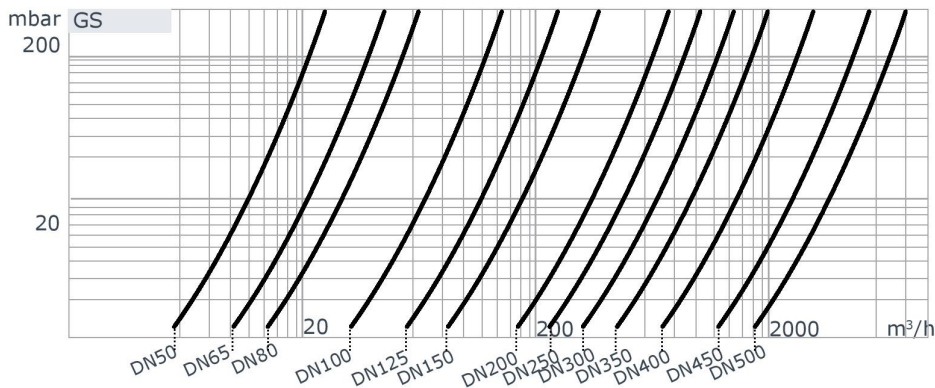
spring type

GS 011 - GS 015



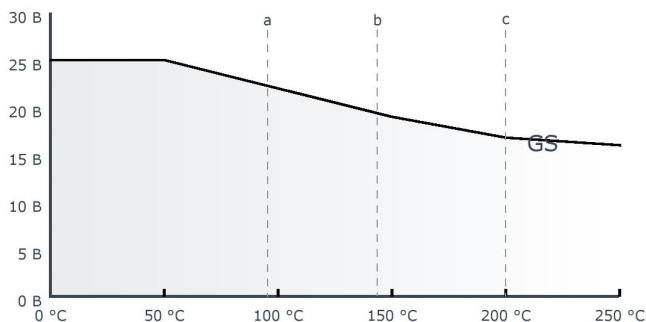
DN	A	PN 6			PN 10			PN 16			ANSI 150			Kg max	ANSI 300			Kg
		D	E	B	D	E	B	D	E	B	D	E	B		D	E	B	
40	30	88	22	14	95	22	14	95	22	14	86	22	14	0.7	95	22	14	0.7
50	35	98	32	14	109	32	14	109	32	14	106	32	14	0.9	109	32	14	0.9
65	48	118	40	14	128	40	14	128	40	14	124	40	14	1.2	128	40	14	1.2
80	60	134	54	14	145	54	14	145	54	14	138	54	14	1.5	145	54	14	1.5
100	78	154	70	18	164	70	18	164	70	18	175	70	18	2.5	179	70	18	3.2
125	98	184	92	18	195	92	18	195	92	18	195	92	18	3.2	214	92	32	7.6
150	117	209	112	20	221	112	20	221	112	20	221	112	20	5.3	242	112	32	10.3
200	160	264	154	22	275	154	22	275	154	22	279	154	22	9.7	308	154	42	19.7
250	200	319	200	26	330	200	26	330	200	26	339	200	26	16.2	359	200	47	24.8
300	235	375	240	32	380	240	32	387	240	32	410	240	32	28	425	240	52	45.6
350	258	425	270	38	440	270	38	447	270	38	450	270	38	32	-	-	-	-
400	300	475	310	44	490	310	44	495	310	44	514	310	44	48	-	-	-	-
450	331	530	360	50	540	360	50	557	360	50	548	360	50	63	-	-	-	-
500	368	580	405	56	595	405	56	619	405	56	605	405	56	87	-	-	-	-

Head losses (H₂O - 20°C - horizontal flow, standard spring)



- a NBR T_{MAX} = 95°C
- b EPDM T_{MAX} = 130°C
- c VITON
PTFE T_{MAX} = 200°C

Temperature - pressure diagram



Formula for calculation of equivalent flow rate to H₂O

$$Q_e = Q \sqrt{\frac{d}{1000}}$$

For different liquid, gas or steam head losses are determined by equivalent water flow rate, as follows:

- Q_e equivalent water flow (m³/h o l/s)
- Q fluid flow (m³/h o l/s)
- d fluid specific gravity (Kg/m³)