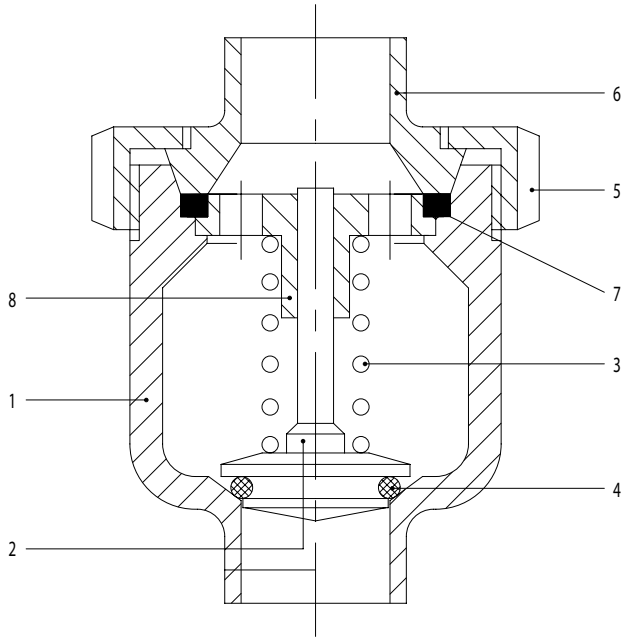
CHECK VALVES

- High strength construction from solid stainless steel block.
- Wide diaphragm opening to permit passage of solid particles.
- PTFE sealing gasket or other elastomers on request.
- Equipped with low-pressure springs allowing either vertical or horizontal valve operation.
- Standard finish: 120 grain external polishing and internal glazing. Other finishes on request.
- Maximum operating pressure: 10 bars.
- Maximum operating temperature: +120 ^{O}C
- Minimum operating temperature: -20 ^{O}C

1. Valve casing
2. Head seal
3. Spring
4. PTFE seal
5. Nut
6. Union
7. Seal
8. Diaphragm



No.	Code	Norm	1" 25	D25 28	D32 34	1 1/2" 38	D40 40	2" 51	D50 52	2 1/2" 63	D65 70	3" 76	D80 85	4" 101	D100 101	Mat.
1	641	D		28	34		40		52		70		85		101	4L/6L
1	641	S	25			38		51		63		76		101		4L/6L
1	641	B	25			38		51		63		76		101		4L/6L
1	641	I	25			38		51		63		76		101		4L/6L
2	640		25	28	34	38/40	38/40	51/52	51/52	63	70	76	85	101	101	6L
3	640		25/34	25/34	25/34	38/40	38/40	51/52	51/52	63/70	63/70	76/85	76/85	101	101	4L
4	640		25	28	34	38/40	38/40	51/52	51/52	63	70	76	85	101	101	T/E/S/V
5	121	D		40	50		50		65		80		100		100	4L
5	121	S	38			51		63		76		101		101		4L
5	121	B	38			51		63		76		101		101		4L
5	121	I	38			51		63		76		101		101		4L
6	116	D		40/28	50/34		50/40		65/52		80/70		100/85		101/101	4L/6L
6	116	S	38/25			51/38		63/51		76/63		101/76		101/101		4L/6L
6	116	B	38/25			51/38		63/51		76/63		101/76		101/101		4L/6L
6	116	I	38/25			51/38		63/51		76/63		101/76		101/101		4L/6L
7	131	D		40	50		50		65		80		100			E
7	131	S	38			51		63		76		101		101		E
7	131	B	38			51		63		76		101		101		E
7	131	I	38			51		63		76		101		101		E
8	640	D		25	32		40		50		65		80		100	6L
8	640	S	25			38		51		63		76		101		6L
8	640	B	25			38		51		63		76		101		6L
8	640	I	25			38		51		63		76		101		6L

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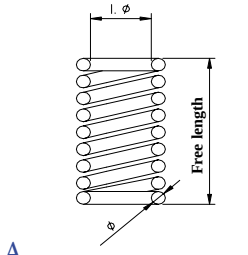
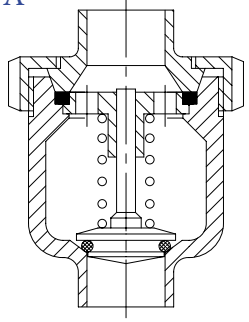
CHECK VALVES

Spring:

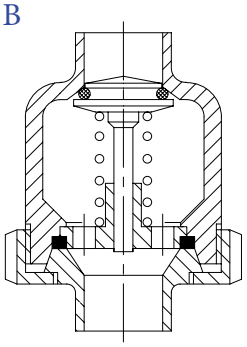
Valve size	Spring code	I Ø	Ø wire	Free length	No. coils
12	640 12 03	11 mm	0,8 mm	44	20
19	640 19 03	12,2 mm	0,9 mm	60	16
25/34	640 25/34 03	15,5 mm	1 mm	72	17 ¾
38/40	640 38/40 03	15,5 mm	1,3 mm	70	18
51	640 51 03	15,5 mm	1,3 mm	72	15
63/70	640 63/70 03	15,5 mm	1,5 mm	72	18 ½
76/80	640 76/80 03	20,4 mm	2 mm	70	16
101	640 101 03	20,5 mm	2,3 mm	82	16



A



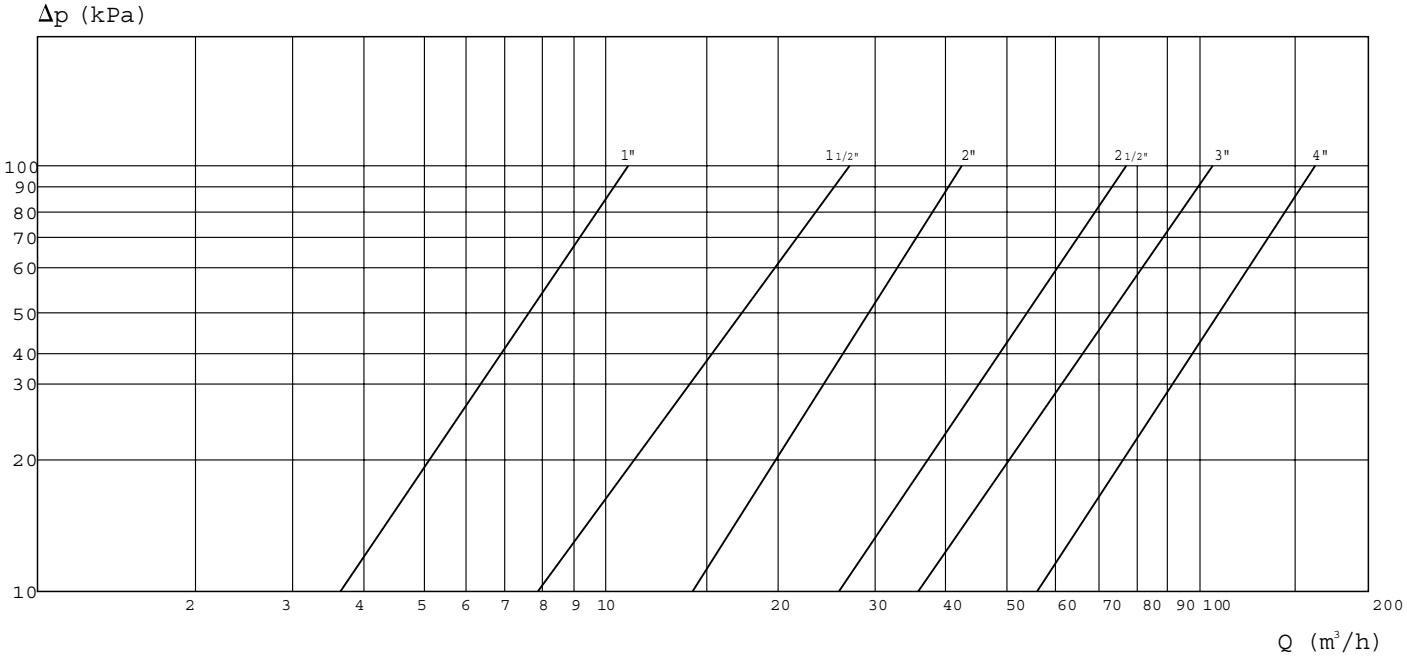
B



Opening pressure range:

Valve size	bars	640 25/34 03	340 38/40 03	640 51 03	640 63/70 03	640 76/80 03
25	A	0,152	0,341	1,000	1,120	1,283
	B	0,116	0,305	0,968	1,084	1,247
28	A	0,119	0,266	0,780	0,870	0,996
	B	0,089	0,236	0,750	0,840	0,966
38/40	A	0,055	0,115	0,219	0,361	0,418
	B	0,029	0,089	0,193	0,334	0,392
51	A	0,036	0,067	0,096	0,196	0,228
	B	0,080	0,035	0,069	0,168	0,200
63	A				0,083	0,101
	B				0,057	0,075
70	A				0,073	0,089
	B				0,046	0,061
76	A					0,069
	B					0,040
85	A					0,063
	B					0,036

Pressure drop:



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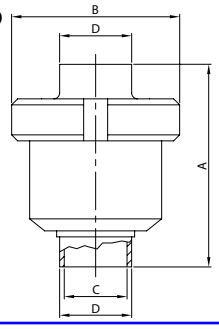
CHECK VALVES

Check valve welding ends DIN
AISI 304L, AISI 316L

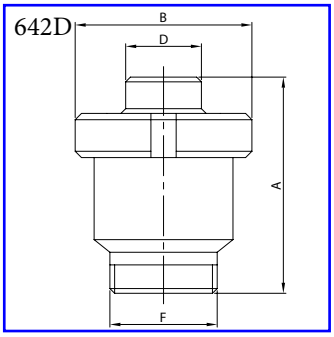
641D



DN	A	B	C	D	Kg
25	87,0	78,0	25,0	28,0	1,10
32	89,0	92,0	31,0	34,0	1,65
40	97,0	92,0	37,0	40,0	1,53
50	101,5	112,0	49,0	52,0	2,44
65	119,5	138,0	66,0	70,0	4,01
80	132,0	148,0	81,0	85,0	5,34
100	118,0	148,0	97,6	101,6	6,33
104	118,0	148,0	100,0	104,0	6,33

Check valve male end / taper part expanding DIN
AISI 304L, AISI 316L

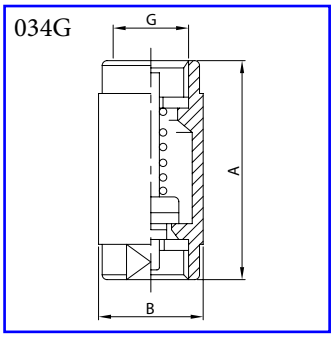
642D



DN	A	B	D	F	Kg
25	89,0	78,0	35,0	52-6	1,12
32	94,0	92,0	41,0	58-6	1,67
40	105,0	92,0	48,0	65-6	1,56
50	109,5	112,0	61,0	78-6	2,50
65	132,5	138,0	79,0	95-6	4,17
80	133,5	148,0	93,0	110-4	5,55
100	126,0	158,0	114,0	130-4	7,05
104	126,0	158,0	114,0	130-4	7,05

Check valve GAS
AISI 316L

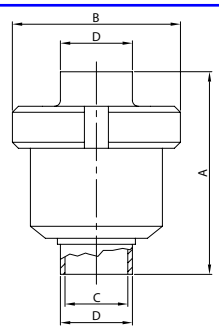
034G



DN	A	B	G	Kg
14	60,0	22,0	1/4”	0,10
38	65,0	25,0	3/8”	0,14
12	75,0	30,0	1/2”	0,22
34	80,0	38,0	3/4”	0,28
100	85,0	48,0	1”	0,60
114	90,0	60,0	1 ¼”	0,80
112	95,0	65,0	1 ½”	1,24
200	105,0	75,0	2”	1,53

Check valve welding ends SMS
AISI 304L, AISI 316L

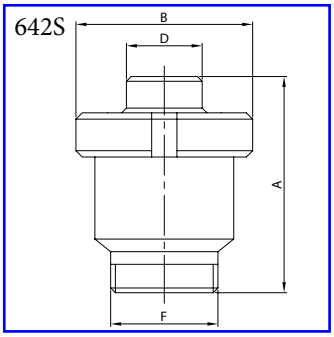
641S



DN	A	B	C	D	Kg
25	76,0	74,0	22,4	25,4	1,10
38	98,0	84,0	35,1	38,1	1,53
51	94,0	100,0	47,8	50,8	2,44
63	108,0	114,0	60,5	63,5	4,01
76	126,0	154,0	72,9	76,2	5,34
101	118,0	154,0	97,6	101,6	6,33

Check valve male part / taper part expanding SMS
AISI 304L, AISI 316L

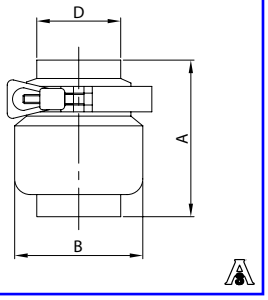
642S



DN	A	B	D	F	Kg
25	79,5	74,0	32,0	40-60	1,12
38	102,0	84,0	48,0	60-6	1,56
51	100,0	100,0	61,0	70-6	2,50
63	122,5	114,0	73,5	85-6	4,17
76	132,0	154,0	86,0	98-6	5,55
101	127,0	154,0	116,0	132-6	7,05

Check valve plain end CLAMP
AISI 316L

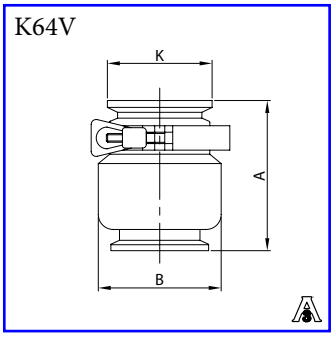
W64V



DN		A	B	D	Kg
1/2”	12	74,0	25,0	12,7	0,24
3/4”	19	75,0	25,0	19,0	0,52
1”	25	94,0	50,5	25,4	0,88
1 ½”	38	95,0	64,0	38,1	1,07
2”	51	102,0	77,5	50,8	1,75
2 ½”	63	111,0	91,0	63,5	2,14
3”	76	125,0	119,0	76,2	3,95
4”	101	136,0	131,0	101,6	4,90

Check valve end ferrule CLAMP
AISI 316L

K64V



DN		A	B	K	Kg
1/2”	12	74,0	25,0	25,0	0,26
3/4”	19	75,0	40,0	25,0	0,54
1”	25	94,0	50,5	50,5	0,90
1 ½”	38	95,0	64,0	50,5	1,10
2”	51	102,0	77,5	64,0	1,80
2 ½”	63	111,0	91,0	77,5	2,20
3”	76	125,0	119,0	91,0	4,02
4”	101	136,0	131,0	119,0	5,00

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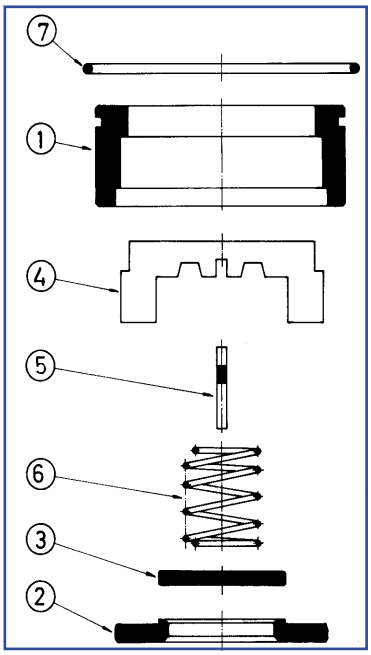
Main catalogue - page 227

DISC CHECK VALVE



- Disc check valve with centering ring for placing between flanges in accordance with DIN, UNE, ANSI, BS, etc. norms. DN-15 to 100 (DN-125 to 200 see catalogue for Model 172).
- For liquids, gases and steam.
- For use in hydraulic, pneumatic, heating and steam systems, chemical and food industries, etc.

Specifications:

- Reduced assembly time in accordance with DIN-3202, part 3, series K4.
- Minimum load loss.
- Avoids ram shock when closing at zero pressure, remaining completely watertight at the time of fluid reversion.
- Highly tightness, exceeding the requirements of DIN-3230. Page 3.
- Easily assembled in any position in accordance with the direction of the fluid flow. Without spring only in vertical ascending direction.
- The valves have one single centering ring for placing between flanges according to DIN and UNE norms (PN-6, 10, 16, 25 and 40), ASA (ANSI) (PSI-150 and 300) and other norms (NF, BS, etc.), with the exception of the DN-100 valve with 3 centering rings duly marked with their corresponding flange norms to aid assembly.

IMPORTANT:

Depending on demand:

- Possibility of manufacture in other types of material, for use in special working conditions (high temperatures, fluids, etc.).
- The fastener disc could be fitted up with PTFE joint (Teflón), Silicone's rubber, Fluorelastomer (Vitón), etc.

No.	Piece	Material		
		Bronze	Carbon steel	Stainless steel
1	Body	Bronze (DIN-2.1086.04 GC-CuSn10Zn)	Carb. steel (DIN-1.0580 ST-52)	Stainless steel (DIN-1.4401)(AISI-316)
2	Seating	Bronze (DIN-2.1086.04 GC-CuSn10Zn)	Stainless steel (DIN-1.4028)(AISI 420)	Stainless steel (DIN-1.4401)(AISI-316)
3	Sealing disc	Stainless steel (DIN-1.4028)(AISI-420)	Stainless steel (DIN-1.4028)(AISI-420)	Stainless steel (DIN-1.4401)(AISI-316)
4,5	Spring press	Stainless steel (DIN-1.4401)(AISI-316)	Stainless steel (DIN-1.4401)(AISI-316)	Stainless steel (DIN-1.4401)(AISI-316)
6	Spring	Stainless steel (DIN-1.4571)(AISI-316Ti)	Stainless steel (DIN-1.4571)(AISI-316Ti)	Stainless steel (DIN-1.4571)(AISI-316Ti)
7	Centering ring	Stainless steel (DIN-1.4300)(AISI-302)	Stainless steel (DIN-1.4300)(AISI-302)	Stainless steel (DIN-1.4300)(AISI-302)
DN		15 to 100		
PN		16	40	40
Operating conditions	Pressure (bar)	16 / 15 / 14 / 13	40 / 35 / 28 / 21	40 / 34 / 32 / 29
	Max. temp. °C	120 / 180 / 200 / 250	120 / 200 / 300 / 400 (1)	120 / 200 / 300 / 400 (1)
	Min. temp. °C	-60	-10	-60

(1) For temperatures exceeding 300°C without spring only or depending on demand, with special spring.

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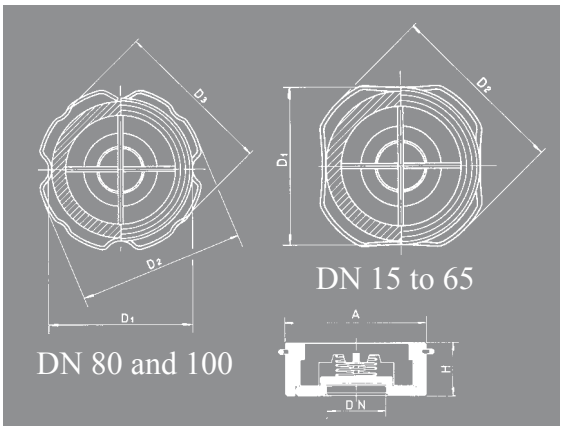
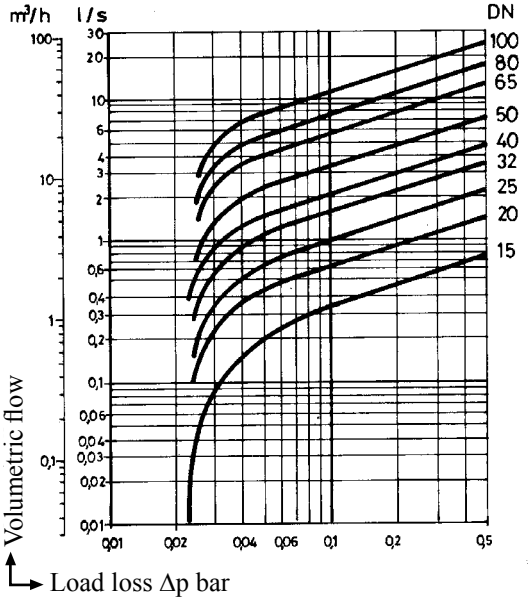
DISC CHECK VALVE

DN		15	20	25	32	40	50	65	80	100		
										Ring I	Ring II	Ring III
H		17	20	22	28	32	40	46	50	60	-	-
A		44,5	54,5	64,5	75	84	97,5	117	133	153	-	-
D1		44,5	54,5	64,5	75	84	97,5	117	133	153	-	-
D2		52	65,5	72	83	93,5	110	127	154	168,5	192	178
D3		-	-	-	-	-	-	-	142,5	162,5	176	173
Weight (kg)	Bronze	0,14	0,24	0,35	0,56	0,82	1,10	2,15	2,90	4,02		
	Carbon steel	0,11	0,21	0,30	0,51	0,75	1,05	1,92	2,70	3,90		
	Stainless steel	0,11	0,21	0,30	0,51	0,75	1,05	1,92	2,70	3,90		
Code	Bronze 2003-170.	5021	5341	5101	5141	5121	5201	5221	5301	5401		
	Carbon steel 2003-170.	8024	8344	8104	8144	8124	8204	8224	8304	8404		
	Stainless steel 2003-170.	8022	8342	8102	8142	8122	8202	8222	8302	8402		



		Opening pressure (mbar)				Flow coefficient	
		Without spring	With spring			Kv m^3/h Δp=1 bar	Cv l/min Δp=1 Psi =0,07 bar
Direct of fluid flow		▲	▲	►	▼		
DN	15	2,51	22,00	20,50	17,00	3,96	15,80
	20	2,38	21,90	20,50	17,10	7,20	32,50
	25	1,96	21,50	20,50	17,50	10,80	49,20
	32	3,70	23,20	20,50	15,80	18,00	80,00
	40	4,00	23,50	20,50	15,50	23,00	105,00
	50	4,11	23,60	20,50	15,40	36,00	166,00
	65	4,95	24,40	20,50	14,60	60,00	306,00
	80	5,64	25,10	20,50	13,90	79,00	382,00
	100	6,81	26,30	20,50	12,70	118,00	540,00



Load losses

The adjoining diagram reflects the load loss curves for water at 20°C. Values are based on valves without springs and installed horizontally.
In the case of vertical flow, the variations are virtually unimportant.

In order to determine other fluids load losses, calculate the flow of these equivalent to water.

$$Qa = \sqrt{(q/1000)} * Q$$

Qa Flow equivalent to water in m3/h.
q Fluid density in operating conditions (kg/m3)
Q Fluid flow in operating conditions (m3/h)

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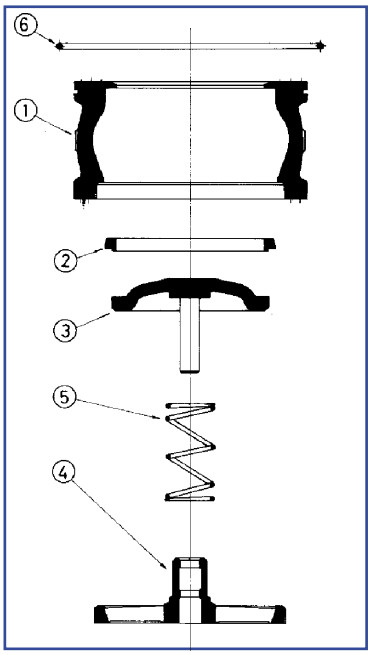
DISC CHECK VALVE



- Disc check valve with centering ring for placing between flanges in accordance with DIN, UNE, ANSI, BS, etc. norms.
- DN-125 to 200 (DN-15 to 100 see catalogue for Model 170).
- For liquids, gases and steam.
- For use in hydraulic, pneumatic, heating and steam systems, chemical and food industries, etc.

Specifications:

- Reduced assembly time in accordance with DIN-3202, part 3, series K4.
- Minimum load loss.
- Avoids ram shock when closing at zero pressure, remaining completely tightness at the time of fluid reversion.
- Highly watertight, exceeding the requirements of DIN-3230. Page 3.
- Easily assembled in any position in accordance with the direction of the fluid flow. Without spring only in vertical ascending direction.
- The valves have one single centering ring for placing between flanges according to DIN and UNE norms (PN-6, 10, 16, 25 and 40), ASA (ANSI) (PSI-150 and 300) and other norms (NF, BS, etc.).

IMPORTANT:

Depending on demand:

- Possibility of manufacture in other types of material, for use in special working conditions (high temperatures, fluids, etc.).

No.	Piece	Material		
		Bronze	Cast steel	Stainless steel
1	Body	Bronze (DIN-2.1086.01 G-CuSn10Zn)	Cast steel (DIN-1.0619 GS-C 25)	S. steel (DIN-1.4408)(ASTM A351 CF8M)
2	Seating	Bronze (DIN-2.1086.01 G-CuSn10Zn)	S. steel (DIN-1.4408)(ASTM A351 CF8M)	S. steel (DIN-1.4408)(ASTM A351 CF8M)
3	Sealing disc	Bronze (DIN-2.1086.01 G-CuSn10Zn)	S. steel (DIN-1.4408)(ASTM A351 CF8M)	S. steel (DIN-1.4408)(ASTM A351 CF8M)
4	Lead	Bronze (DIN-2.1086.01 G-CuSn10Zn)	S. steel (DIN-1.4408)(ASTM A351 CF8M)	S. steel (DIN-1.4408)(ASTM A351 CF8M)
5	Spring	S. steel (DIN-1.4571)(AISI-316Ti)	S. steel (DIN-1.4571)(AISI-316Ti)	S. steel (DIN-1.4571)(AISI-316Ti)
6	Centering ring	S. steel (DIN-1.4300)(AISI-302)	S. steel (DIN-1.4300)(AISI-302)	S. steel (DIN-1.4300)(AISI-302)
DN		125 to 200		
PN		16	40	40

Operating conditions												
Pressure (bar)	16	15	14	13	40	35	28	21	40	34	32	29
Max. temp. ^{o}C	120	180	200	250	120	200	300	400 (1)	120	200	300	400 (1)
Min. temp. ^{o}C	-60				-10				-60			

(1) For temperatures exceeding 300°C without spring only or depending on demand, with special spring.

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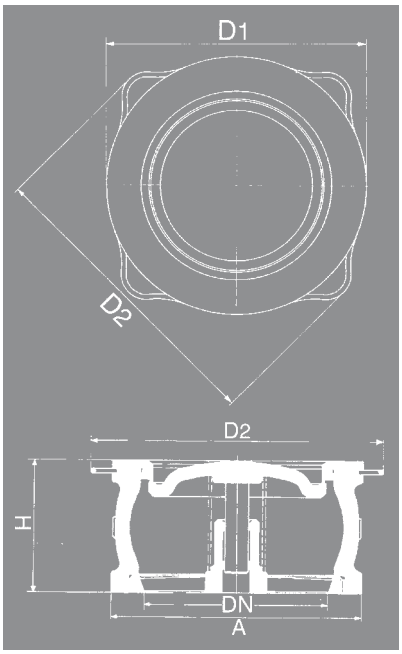
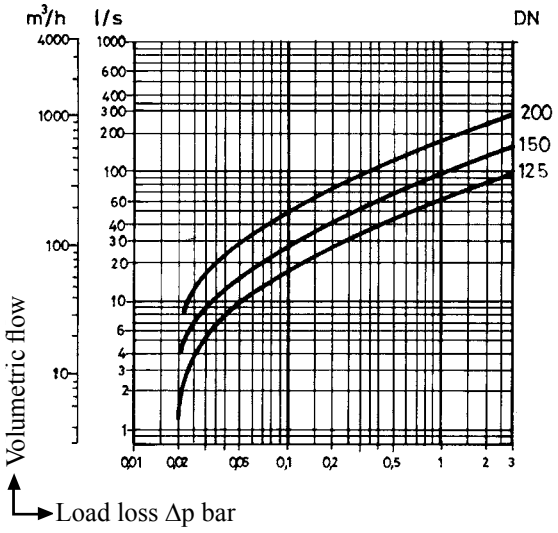
DISC CHECK VALVE



DN		125	150	200
H		90	106	140
A		180	205	262
D1		180	205	262
D2		205	240	300
Weight (kg)	Bronze	8,13	12,05	21,66
	Cast steel	6,90	10,78	19,13
	Stainless steel	6,93	10,83	19,21
Code	Bronze	2003-172.5501	2003-172.5601	2003-172.5801
	Cast steel	2003-172.8504	2003-172.8604	2003-172.8804
	Stainless steel	2003-172.8502	2003-172.8602	2003-172.8802

		Opening pressure (mbar)								Flow coefficient	
		Without spring		With spring							
Direction of fluid flow		▲		▲		►		▼		Kv m³/h	Cv l/min
Valve material		Bronze	Cast/ Stainless steel	Bronze	Cast/ Stainless steel	Bronze	Cast/ Stainless steel	Bronze	Cast/ Stainless steel	ΔP = 1 bar	ΔP = 1 Psi =0,07 bar
DN	**125**	8,40	7,50	28,40	27,50	22,00		11,60	12,50	210,00	700,00
	150	11,70	10,50	31,70	30,50	24,00		8,30	9,50	349,00	1250,00
	200	13,00	11,60	33,00	31,60	24,00		7,00	8,40	640,00	2340,00



Load losses

The adjoining diagram reflects the load loss curves for water at 20°C. Values are based on valves without springs and installed horizontally. In the case of vertical flow, the variations are virtually unimportant. In order to determine other fluids load losses, calculate the flow of these equivalent to water.

$Qa = \sqrt{(q/1000)} * Q$

Qa Flow equivalent to water in m3/h
q Flow density in operating conditions in kg/m3
Q Fluid flow in operating conditions in m3/h

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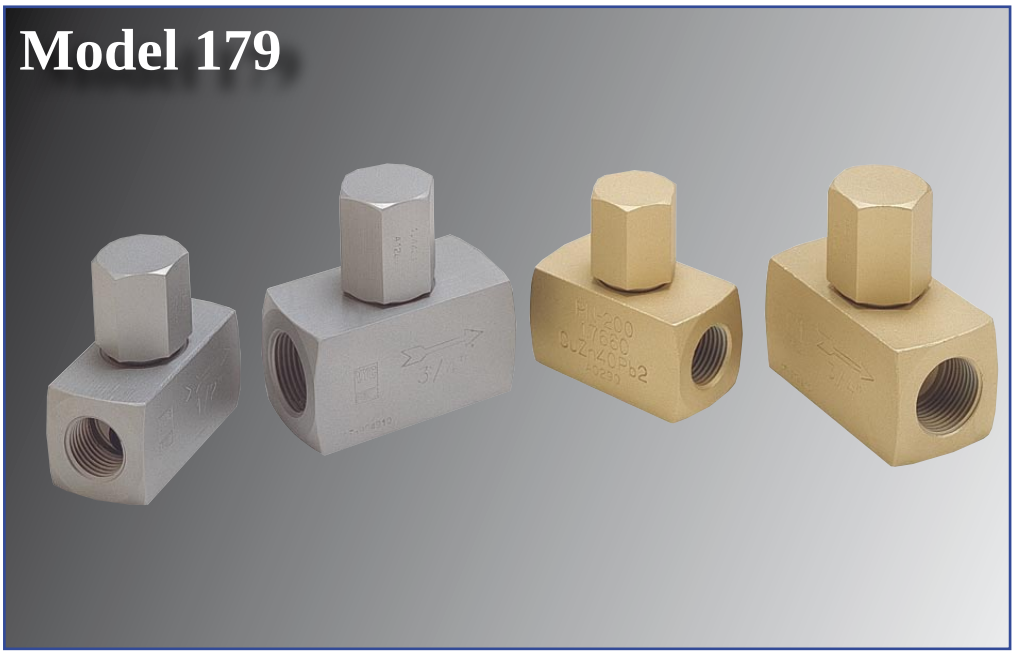
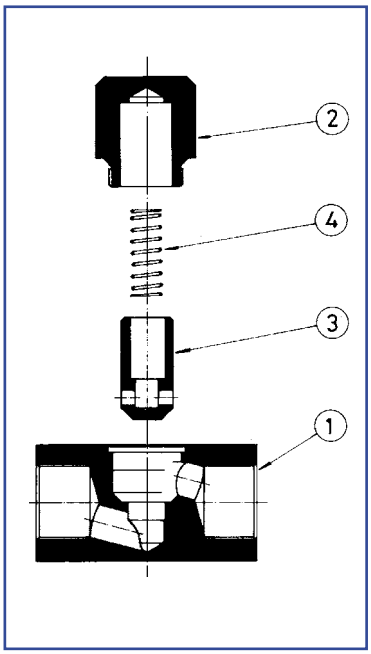
PISTON CHECK VALVE





- For liquids, gases and steam.
- For use in hydraulic, pneumatic, heating and steam systems, chemical and food industries, etc.

Specifications:

- Spring operated piston closure.
- Reduced pitch.
- Avoids ram shock when closing at zero pressure, remaining completely watertight at the time of fluid reversion.
- Highly tightness, exceeding the requirements of DIN-3230. Page 3.
- Easily assembled in any position in accordance with the direction of the fluid flow. Without spring only for horizontal mounting.
- Fully constructed from laminated bars.

IMPORTANT

Depending on demand:

- Possibility of manufacture in other types of material, for use in special working conditions (high temperatures, fluids, etc.).
- Other connections.
- O-ring gasket closure.

No.	Piece	Material		
		Brass	Carbon steel	Stainless steel
1	Body	Brass (DIN-1.7660 CuZn40Pb2)	C. steel (DIN-1.1191 Ck-45)	S. steel (DIN-1.4401) (AISI-316)
2	Cap	Brass (DIN-1.7660 CuZn40Pb2)	C. steel (DIN-1.1191 Ck-45)	S. steel (DIN-1.4401) (AISI-316)
3	Piston	S. steel (DIN-1.4401) (AISI-316)	S. steel (DIN-1.4401) (AISI-316)	S. steel (DIN-1.4401) (AISI-316)
4	Spring	S. steel (DIN-1.4571) (AISI-316Ti)	S. steel (DIN-1.4571) (AISI-316Ti)	S. steel (DIN-1.4571) (AISI-316Ti)
DN		1/4“ to 2“ (GAS, NPT or SW)		
PN		200	250	250

Operating conditions												
	Pressure (bar)	200	175	34	250	211	180	167	250	207	170	164
	Max. temp. °C	120	150	200	120	300	350 (1)	400 (1)	120	200	350 (1)	400 (1)
	Min. temp. °C	-60			-10				-60			

(1) For temperatures exceeding 300°C without spring only or depending on demand, with special spring.

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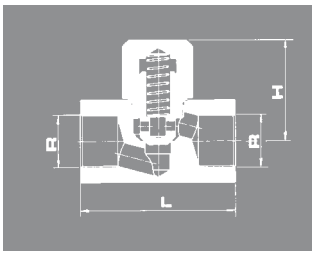
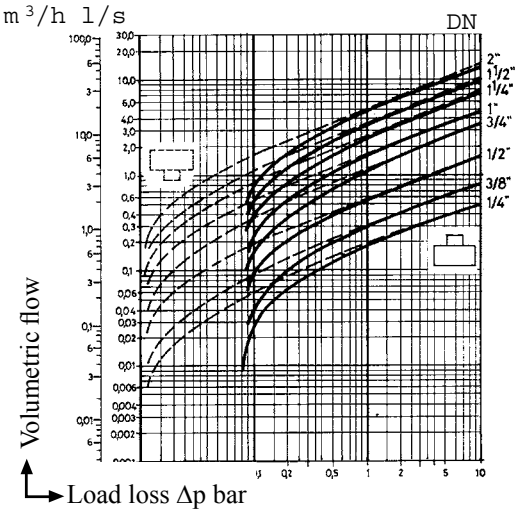
PISTON CHECK VALVE



R			1/4“	3/8“	1/2“	3/4“	1“	1 1/4“	1 1/2“	2“
Connections			Whitworth gas-tight cylindrical female thread ISO 228/1 1978 (DIN-259)							
			NPT thread ANSI - B 2.1							
			Socket welding ends SW ANSI - B 16.11							
H			34	39	48	55	62	64	82	85
L			50	55	65	75	90	95	100	112
Reduced pitch Ø			6,00	8,00	9,50	11,50	15,00	17,00	21,00	25,00
Weight (kg)	Brass		0,31	0,47	0,92	0,95	2,21	2,66	3,82	6,43
	Carbon steel		0,29	0,44	0,78	0,88	2,05	2,47	3,56	6,16
	Stainless steel		0,29	0,44	0,79	0,90	2,07	2,50	3,61	6,24
Code	Brass 2003-179.	GAS	0041	0381	0021	0341	0101	0141	0121	0201
		NPT	00411	03811	00211	03411	01011	01411	01211	
	Carbon steel 2003-179.	GAS	0044	0384	0024	0344	0104	0144	0124	0204
		NPT	00441	03841	00241	03441	01041	01441	01241	02041
		SW	00442	03842	00242	03442	01042	01442	01242	02042
	Stainless steel 2003-179.	GAS	0042	0382	0022	0342	0102	0142	0122	0202
		NPT	00421	03821	00221	03421	01021	01421	01221	02021
		SW	00422	03822	00222	03422	01022	01422	01222	02022

		Opening pressure (mbar)				Flow coefficient				
						Kv m^3/h ΔP = 1 bar	Cv l/min ΔP = 1 Psi = 0,07 bar			
		Without spring	With spring			With spring	Without spring	With spring		
Direction of fluid flow						 (1)	 (2)	 (2)	 (3)	
DN	1/4“	34,10	49,60	79,10	10,90	0,68	1,98	1,32	-	2,65
	3/8“	35,50	51,00	81,50	10,50	1,10	2,76	2,22	-	4,20
	1/2“	34,80	51,00	80,80	11,20	2,10	6,95	4,53	-	8,90
	3/4“	32,80	44,00	76,80	10,20	4,10	11,76	9,06	-	16,70
	1“	34,60	54,10	80,40	11,20	6,20	16,80	13,20	-	25,80
	1 1/4“	34,80	55,40	86,90	11,10	9,80	33,00	21,90	-	40,80
	1 1/2“	35,00	55,90	82,00	11,00	12,90	44,00	21,50	-	52,20
	2“	34,00	56,00	76,10	10,40	19,40	58,20	45,90	-	71,50

(1) For other mounting positions, with or without spring, the flow coefficient varies by ± 2%.
(2) Flow coefficient for orientation. The volumetric flows which cause loss of pressure to 0,07 bar = 1 Psi are in unstable areas (See diagram of pressure loss).
(3) Opening pressures are greater then 0,007 bar = 1 Psi. The Cv coefficient cannot be determined.



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Qa Flow equivalent in m3/h
q Fluid density in operating conditions (kg/m3)
Q Fluid flow operating conditions (m3/h)

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