

Technische Dokumentation Technical Documentation



XOMOX **Fully Lined Check Valves**



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XOMOX Fully Lined Ball Check Valve, Type B201 (DIN) B202 (ASME) B203 (JIS)



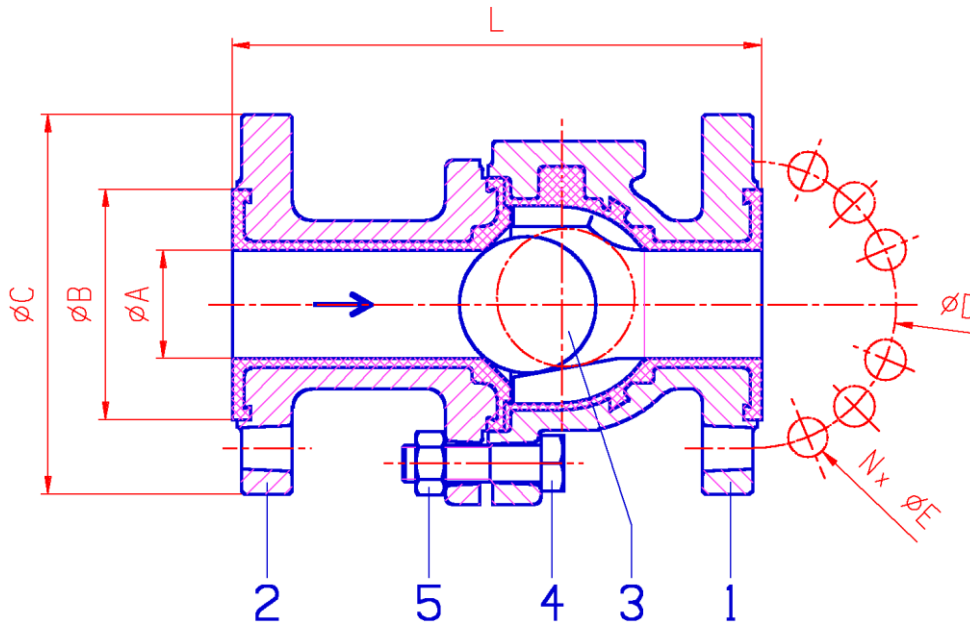
Design Features & Benefits

- Robust, two-piece body design in ductile iron EN-JS1049
- RAL 2009 , FV7133 , AY-PUR-coated body prevents external corrosion
- Excellent diffusion and corrosion resistance due to virgin fluorocarbon, locked-in resins (high-quality PFA, PFA-AS, ETFE or PVDF lining materials)
- Locked-in linings by special grooves in the body castings
- Prevent any backflow of process media within the pipe system
- Reliable and multi-purpose safety devices with long life-time
- Suitable for horizontal and vertical mounting even at low differential pressures
- Exact ball guidance at valve body lining guarantees that ball rolls into the seat due to gravitation.
- More economical than Y-types
- Self-cleaning effect due to permanent ball rotation, resistance against solid particles
- Low space requirements
- Maximal operating pressure: PVDF 120°C, ETFE 150°C, PFA: 200°C
- Tightness check: EN 12266-1 Leakage rate C

Registered patent 297 08 655.3

Applied / registered for European / international patents

Technical Details



Dimensional Chart B201 (DIN version)

DN	A	B	C	D	N x E	L	Weight in kg	Opening Pressure Vertical Position	Kv values
15	15	43	95	65	4 x 14	130	4.1	19 mbar	0.68 m ³ /h
20	20	53	105	75	4 x 14	150	5.2	11 mbar	0.95 m ³ /h
25	23	63	115	85	4 x 14	160	5.2	9 mbar	1.93 m ³ /h
32	29	74	140	100	4 x 18	180	6.0	9 mbar	On request
40	36	84	150	110	4 x 18	200	10.7	12 mbar	43 m ³ /h
50	47	100	165	125	4 x 18	230	13.3	12 mbar	75 m ³ /h
65	60	119	185	145	4 x 18	290	28	25 mbar	On request
80	78	134	200	160	8 x 18	310	31	22 mbar	203 m ³ /h
100	95	154	220	180	8 x 18	350	47	32 mbar	227.5 m ³ /h
150	145	210	286	240	8 x 18	480	86	37 mbar	261.5 m ³ /h

Dimensional Chart B202 (ASME version)

NPS	A	B	C	D	N x E	L	Weight in kg	Opening Pressure Vertical Position	Kv values
½"	15	40	89	60	4 x 15,9	130	4,05	19 mbar	0,68 m ³ /h
¾"	20	50	98	69	4 x 15,9	150	5,15	11 mbar	0,95 m ³ /h
1"	23	51	108	79	4 x 15,9	152,4	5,15	9 mbar	1,93 m ³ /h
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1½"	36	73	127	98	4 x 15,9	178	10,65	12 mbar	43 m ³ /h
2"	47	92	152	120	4 x 19	203	13,30	12 mbar	75 m ³ /h
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3"	78	125	191	152	4 x 19	241	31	22 mbar	203 m ³ /h
4"	95	157	229	190,5	8 x 19	292	47	32 mbar	227,5 m ³ /h
6"	145	210	279	241	8 x 22,2	356	86	37 mbar	261,5 m ³ /h

Dimensional Chart B203 (JIS version)

DN	A	B	C	D	N x E	L	Weight in kg	Opening Pressure Vertical Position	Kv values
15	15	43	95	70	4 x 15	130	4.1	19 mbar	0.68 m ³ /h
20	20	53	105	75	4 x 15	150	5.2	11 mbar	0.95 m ³ /h
25	23	63	115	90	4 x 19	160	5.2	9 mbar	1.93 m ³ /h
32	29	74	140	100	4 x 19	180	6.0	9 mbar	On request
40	36	84	150	105	4 x 19	200	10.7	12 mbar	43 m ³ /h
50	47	100	165	120	4 x 19	230	13.3	12 mbar	75 m ³ /h
65	60	119	185	140	4 x 19	290	28	25 mbar	On request
80	78	134	200	160	8 x 19	310	31	22 mbar	203 m ³ /h
100	95	154	220	175	8 x 19	350	47	32 mbar	227.5 m ³ /h
150	145	210	286	240	8 x 23	480	86	37 mbar	261.5 m ³ /h

Materials of Construction

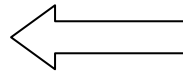
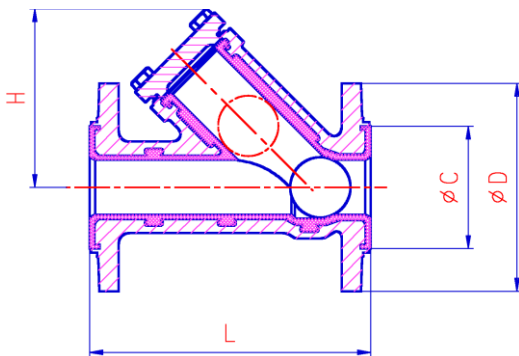
Item	Qty.	Description	Material
1	1	Body	Lined EN-JS1049,
2	1	Flange	Lined EN-JS1049,
3	1	Ball	Solid Teflon® PTFE
4	2	Screws	A4-70 EN 24017 / ASTM 193 Gr.B7 (Zinc plated)
5	2	Hexagon Nuts	A4 EN 24032) / ASTM 194 Gr.H2 (Zinc plated)

XOMOX Fully Lined Flanged Ball Check Valve (45°), Type B101 / B102 / B103

Type B101 Flanges as per DIN PN 10-16
 Type B102 Flanges as per ASME Class 150
 Type B103 Flanges as per JIS 10 K

Suitable for mounting in either horizontal or vertical position

Other pressure classes on request



Flow Direction

Installation and operating direction is marked on the valve body by an arrow.

Dimensions in mm

DN B101	NPS B102*	DN B103	L			H			Approx. weight in kg	Ball weight in gr.
			B101	B102	B103	B101	B102	B103		
15	**1½	15	150	150	150	85	85	85	3.2	12
20	¾	20	150	150	150	85	85	85	3.2	12
25	1	25	160	160	160	93	93	93	4.0	33
32	*1¼	32	200			120			6.8	76
40	1½	40	200	200	200	120	120	120	6.8	76
50	2	50	230	230	230	145	145	145	9.2	130
80	3	80	310	310	310	185	185	185	19.0	585
100	4	100	350	350	350	220	220	220	23.6	740

* Only on request
 ** Flange holes threaded

Materials

Body: EN-JS 1049
 Body lining: PFA or PFA-AS PVDF or ETFE
 Ball: Teflon® PTFE solid ball
 Tightness check: EN 12266-1 Leakage rate C

Other materials upon request.

Pressure-Temperature-Rating

Temperature in °C	- 40	- 20	0	20	40	60	80	100	120	140	150	160	170	180
Oper. Pressure (bar) PVDF - ETFE	0	5	10	10	10	10	10	10	10	8				
Oper. Pressure (bar) PFA, PFA-AS	0	5	10	10	10	10	10	10	10	10	10	9	8	5

Maximal operating pressure: 10 bar

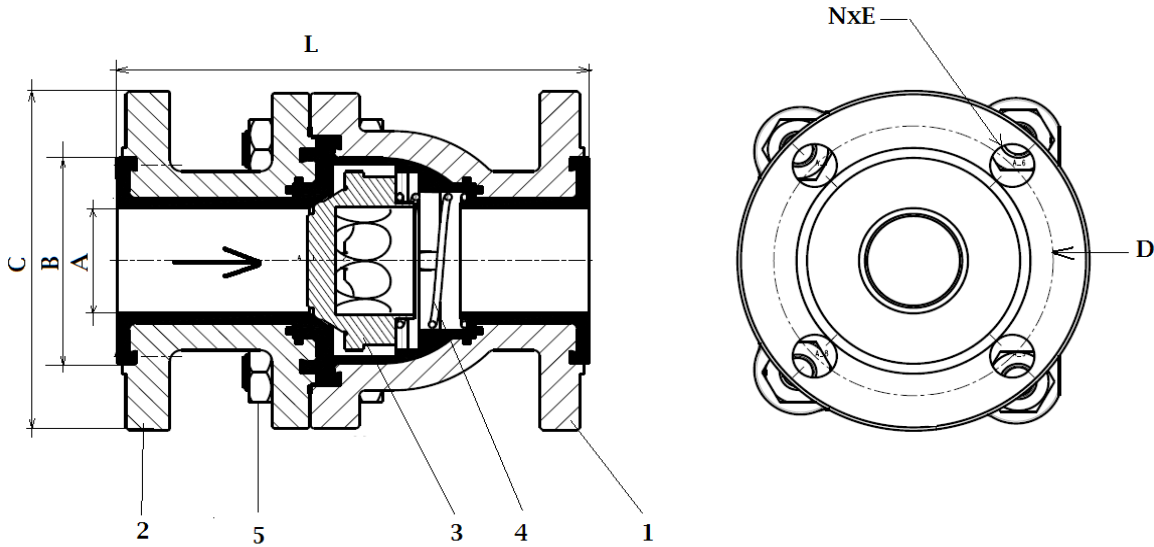
XOMOX Fully Lined Piston Check Valve (spring loaded), Type C201 (DIN) C202 (ASME) C203 (JIS)



Design Features & Benefits

- Robust, two-piece body design in ductile iron EN-JS1049
- RAL 2009 , FV7133 , AY-PUR-coated body prevents external corrosion
- Excellent diffusion and corrosion resistance due to virgin fluorocarbon, locked-in resins PFA, PFA-AS , ETFE or PVDF lining materials)
- Locked-in linings by special grooves in the body castings
- Prevent any backflow of process media within the pipe system
- Reliable and multi-purpose safety devices with long life-time
- Suitable for horizontal and vertical mounting even at low differential pressures
- Low space requirements
- Maximal operating pressure: PVDF 120°C, ETFE 150°C, PFA: 200°C
- Tightness check: EN 12266-1 Leakage rate A

Technical Details



Dimensional Chart C201 (DIN version)

DN	A	B	C	D	N x E	L	Weight in kg	Opening Pressure Horizontal Position	Opening Pressure Vertical Position ↑	Opening Pressure Vertical Position ↓	Kv Values
15	15	43	95	65	4 x 14	130	4.1	37 mbar	40 mbar	11 mbar	5,3 m ³ /h
20	20	53	105	75	4 x 14	150	5.2	37 mbar	40 mbar	11 mbar	7.4 m ³ /h
25	23	63	115	85	4 x 14	160	5.2	37 mbar	40 mbar	11 mbar	15 m ³ /h
32	29	74	140	100	4 x 18	180	6.0	37 mbar	40 mbar	11 mbar	On request
40	36	84	150	110	4 x 18	200	10.6	48 mbar	51 mbar	45 mbar	25,5 m ³ /h
50	47	100	165	125	4 x 18	230	13.4	42 mbar	46 mbar	38 mbar	38 m ³ /h
65	60	119	185	145	4 x 18	290	28	40 mbar	49 mbar	30 mbar	On request
80	78	134	200	160	8 x 18	310	31	55 mbar	72 mbar	38 mbar	86.5 m ³ /h
100	95	154	220	180	8 x 18	350	47	55 mbar	69 mbar	42 mbar	119,2 m ³ /h
150	145	210	286	240	8 x 18	480	86	40 mbar	56 mbar	24 mbar	138 m ³ /h

Dimensional Chart C202 (ASME CL150 version)

NPS	A	B	C	D	N x E	L	Weight in kg	Opening Pressure Horizontal Position	Opening Pressure Vertical Position ↑	Opening Pressure Vertical Position ↓	Kv Values
½"	15	40	89	60	4 x 15,9	130	4.0	37 mbar	40 mbar	11 mbar	5,3 m ³ /h
¾"	20	50	98	69	4 x 15,9	150	5.1	37 mbar	40 mbar	11 mbar	7.4 m ³ /h
1"	23	51	108	79	4 x 15,9	152,4	5.1	37 mbar	40 mbar	11 mbar	15 m ³ /h
1½"	36	73	127	98	4 x 15,9	178	10.45	48 mbar	51 mbar	45 mbar	25.5 m ³ /h
2"	47	92	152	120	4 x 19	203	13.2	42 mbar	46 mbar	38 mbar	38 m ³ /h
3"	78	125	191	152	4 x 19	241	30.3	55 mbar	72 mbar	38 mbar	86.5 m ³ /h
4"	95	157	229	190,5	8 x 19	292	46.4	55 mbar	69 mbar	42 mbar	119.2 m ³ /h
6"	145	210	279	241	8 x 22,2	355	85.2	40 mbar	56 mbar	24 mbar	138.0 m ³ /h

Dimensional Chart C202 (ASME CL300 face to face and drilled version)

NPS	A	B	C	D	N x E	L	Weight in kg	Opening Pressure Horizontal Position	Opening Pressure Vertical Position ↑	Opening Pressure Vertical Position ↓	Kv Values
1/2"	15	?	?	?	?	?	?	37 mbar	40 mbar	11 mbar	5,3 m ³ /h
3/4"	20	?	?	?	?	?	?	37 mbar	40 mbar	11 mbar	7.4 m ³ /h
1"	23	?	?	?	?	?	?	37 mbar	40 mbar	11 mbar	15 m ³ /h
1 1/2"	36	?	?	?	?	?	?	48 mbar	51 mbar	45 mbar	25.5 m ³ /h
2"	47	?	?	?	?	?	?	42 mbar	46 mbar	38 mbar	38 m ³ /h
3"	78	?	?	?	?	?	?	55 mbar	72 mbar	38 mbar	86.5 m ³ /h
4"	95	?	?	?	?	?	?	55 mbar	69 mbar	42 mbar	119.2 m ³ /h
6"	145	?	?	?	?	?	?	40 mbar	56 mbar	24 mbar	138.0 m ³ /h

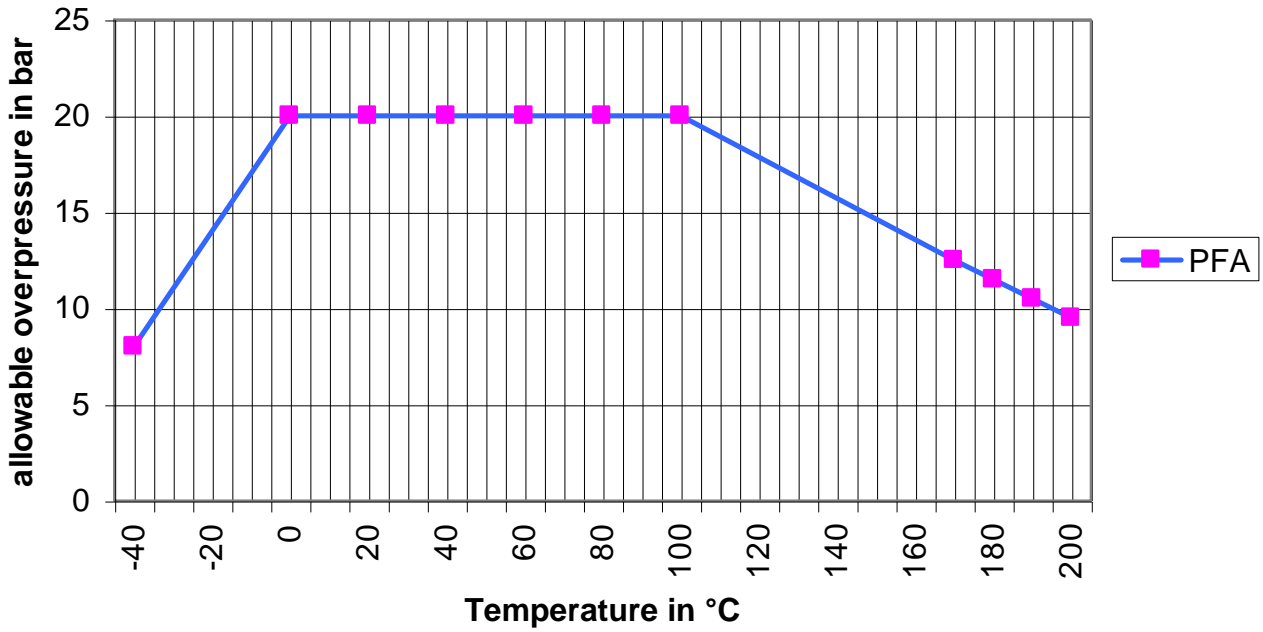
Dimensional Chart C203 (JIS version)

DN	A	B	C	D	N x E	L	Weight in kg	Opening Pressure Horizontal Position	Opening Pressure Vertical Position ↑	Opening Pressure Vertical Position ↓	Kv Values
15	15	43	95	70	4 x 15	130	4.1	37 mbar	40 mbar	11 mbar	5,3 m ³ /h
20	20	53	105	75	4 x 15	150	5.2	37 mbar	40 mbar	11 mbar	7.4 m ³ /h
25	23	63	115	90	4 x 19	160	5.2	37 mbar	40 mbar	11 mbar	15 m ³ /h
32	29	74	140	100	4 x 19	180	6.0	37 mbar	40 mbar	11 mbar	On request
40	36	84	150	105	4 x 19	200	10.6	48 mbar	51 mbar	45 mbar	25,5 m ³ /h
50	47	100	165	120	4 x 19	230	13.4	42 mbar	46 mbar	38 mbar	38 m ³ /h
65	60	119	185	140	4 x 19	290	28	40 mbar	49 mbar	30 mbar	On request
80	78	134	200	150	8 x 19	310	31	55 mbar	72 mbar	38 mbar	86.5 m ³ /h
100	95	154	220	175	8 x 19	350	47	55 mbar	69 mbar	42 mbar	119,2 m ³ /h
150	145	210	286	240	8 x 23	480	86	40 mbar	56 mbar	24 mbar	138 m ³ /h

Part Description

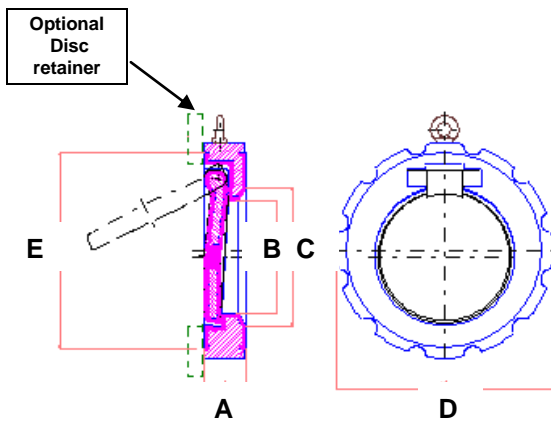
Item.	Qty.	Description	Material
1	1	Body	Lined / EN-JS1049 / ???
2	1	Flange	Lined / EN-JS1049 / ???
3	1	Piston	PTFE Teflon®
4	1	Spring	1.4310 / PTFE Teflon®
5	2	Hexagon Screws	A4-70 EN 24017
5	2	Hexagon Nuts	A4 EN 24032

Pressure-Temperature Range



Type 170 as per DIN PN 10-16
Type 0170 as per ASME Class 150
Type 8170 as per JIS 10 K

Swing check valves for piping systems
as per ASME Class 300 and BS on request.



Dimensions in mm

DN 170	NPS 0170	DN 8170	A	B	C	D	E	Approx. weight / kg	Inner pipe diameter *	
									min.	max.
80	3	3	46	42	64	142	124	3.1	73	82
100	4	4	52	65	80	180	152	5.6	95	106
150	6	6	56	111	128	233	207	11.6	145	160
200	8	8	60	133	175	295	260	17.5	192	200
250	10	10	68	184	224	348	317	28.5	242	260
300	12	12	78	232	272	398	367	42.0	292	310

Materials

Body:	EN-JS1049	DN 80 - 150 / NPS 3 - 6
	Steel 1.0038	DN 200 – 300 / NPS 8 – 12
Body lining:	PFA, PFA-AS	
Disc:		
DN 80 – 100:	PFA or PFA-AS without metal core	
DN 150 – 200:	Disc core in 1.0038	
DN 250 - 300:	Disc core in EN-JS1049	
	PFA or PFA-AS lining available (Other materials upon request.)	
Tightness check:	EN 12266-1 Leakage rate C	

* **Caution:** Required to retain disc in valve body. If pipe I.D. exceeds maximum, use optional disc retainer.

Pressure-Temperature-Rating

Temperature in °C	- 40	- 20	0	20	40	60	80	100	120	140	150	160	170	180
Oper. Pressure (bar) PFA	0	5	10	10	10	10	10	10	10	10	10	9	8	5

Maximal operating pressure: 10 bar

Pressure drop rating for swing check valve Type 170

Pressure drop

DN	KVA (m/ h)
80	85
100	200
150	570
200	1200
250	1680
300	2700

Subject to technical modifications.

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