

**Twin plate check valves**

**Cast iron body : PN 16**  
**Ductile iron body : PN 25**  
**Sizes 50 to 600 mm (2 to 24")**

### Applications

- Heating, air conditioning,
- Pumping station, water supply, irrigation, water treatment...
- General circuits: water, air, industrial gas, . . .

### Working conditions

- Temperature range:
  - cast iron body: from -5° C up to +100° C
  - ductile iron body: -18° C up to +100° C
- Maximum working pressure (M.W.P):
  - cast iron body: 16 bar at ambient temperature,
  - ductile iron body: 25 bar at ambient temperature
- Vacuum service down to 0 bar absolute.
- Maximum fluid velocity:
  - liquids: refer to diagram page 3
  - gas: 75 m/s.

### Design

- One-piece wafer type body ensuring maximum life and corrosion resistance
- Twin plate configuration
- Metal/elastomer sealing
- Upstream/downstream sealing in accordance with NF E 29-311 rate 3, ISO 5208 category A, API 598 and DIN 3230 rate 1.
- Face-to-face dimensions in accordance with:
  - API 594 class 125 for cast iron body check valves, except sizes 65 to 300 mm ( 2 1/2 to 12").
  - API 594 class 150 for ductile iron body check valves.

- Connection between flanges:
  - PN 10, 16 and ASME B 16-5 class.125 for cast iron body check valves,
  - PN 10, 16, 20, 25 and ASME B 16-5 class.150 for ductile iron body check valves.
- Marking in accordance with EN 19 standard.External coating Polyurethane paint 80 µ thickness, colour blue RAL 5002.
- The valves meet the safety requirements of the pressure equipments Directive 97/23/EC (PED) appendix 1 for fluids of the groups 1 and 2.

### Materials

	AMRI code
• Body:	
- cast iron ASTM A126 cl. B	3t
- ductile iron ASTM A 395	3g
• Plates:	
- stainless steel ASTM A 351 gr. CF 8M	6
- ductile iron ASTM A395 (size ≥ 250)	3g
• Metal/elastomer sealing with AMRING® seat in high content nitrile	K
• Springs in 316 stainless steel	

- For the other parts, please refer to the part list (page 2)

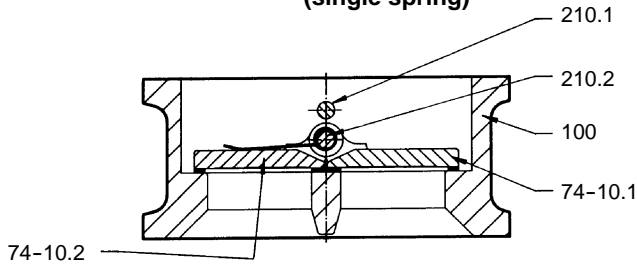
### Data to be supplied when ordering

- Serie 2000 check valve, in accordance with leaflet 8480.1/4 - 20.
- Size.
- Connection drilling pattern.
- Working conditions:
  - nature of fluid,
  - pressure,
  - temperature.

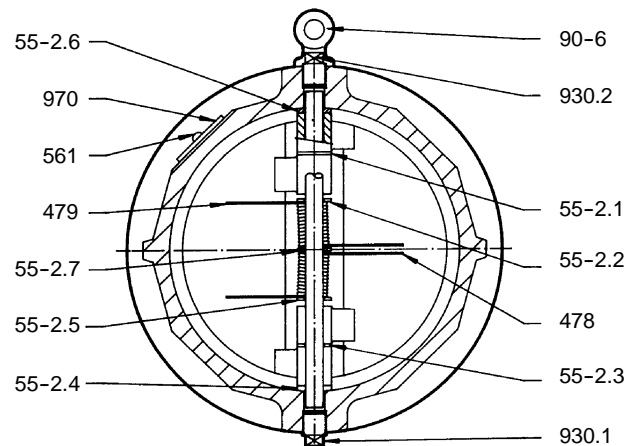
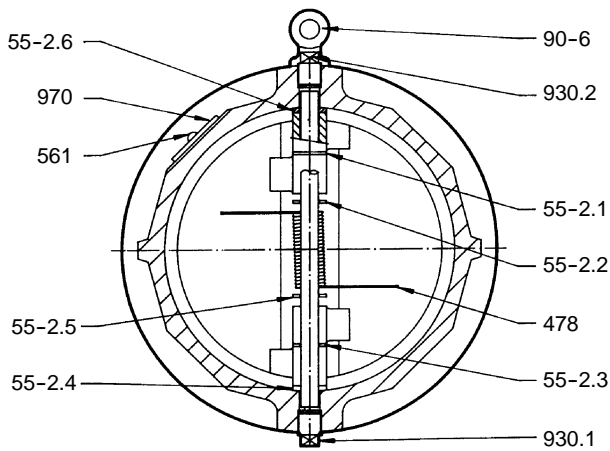
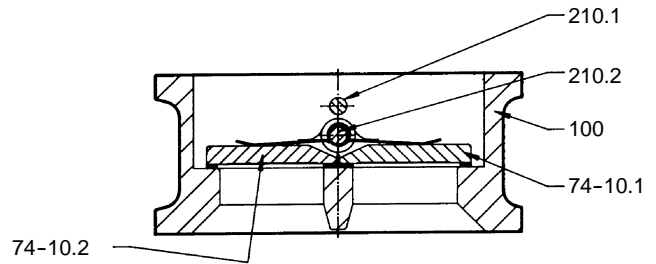


**Construction**

**Sizes 50 to 350 - Size 450 mm (2 to 14" - 18")  
(single spring)**



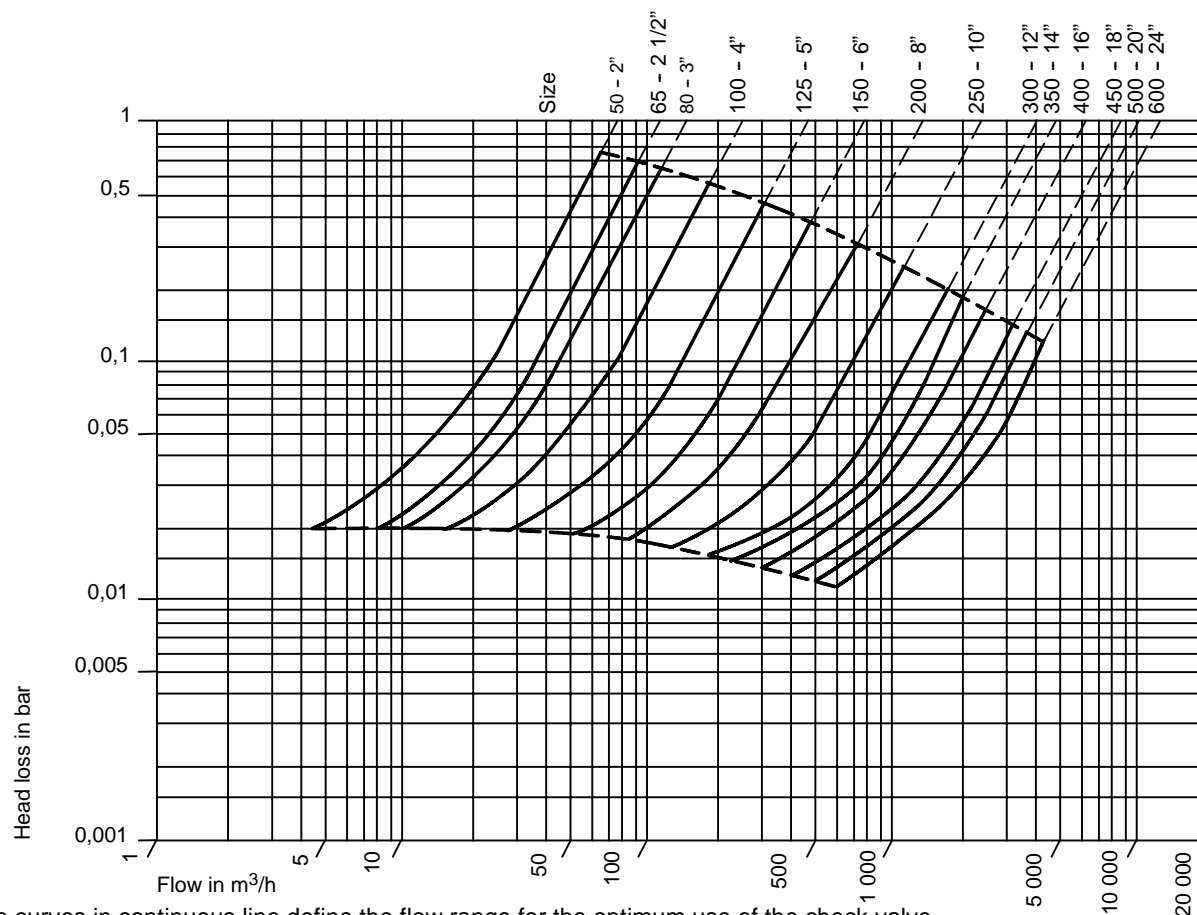
**DN 400, 500 and 600 mm  
(double spring)**



Item	Designation	Size (mm)	Materials
100	Body	50 to 600	Cast iron or ductile iron
210.1	Pin retainer	50 to 600	316 stainless steel
210.2	Pin retainer	50 to 600	316 stainless steel
478	Spring (right hand)	50 to 600	316 stainless steel
479	Spring (left hand)	400, 500 and 600	316 stainless steel
55-2.1	Friction washer	50 to 600	PTFE filled or 316L stainless steel
55-2.2	Friction washer	50 to 600	PTFE filled or 316L stainless steel
55-2.3	Friction washer	50 to 600	PTFE filled or 316L stainless steel
55-2.4	Friction washer	50 to 600	PTFE filled or type 316L stainless steel
55-2.5	Friction washer	50 to 600	PTFE filled or 316L stainless steel
55-2.6	Friction washer	50 to 600	PTFE filled or 316L stainless steel
55-2.7	Friction washer	400, 500 and 600	PTFE filled or 316L stainless steel
561	Grooved pin	50 to 600	Stainless steel
74-10.1	Plate	50 to 600	Stainless steel (ND ≤ 200) or ductile iron (ND ≥ 250)
74-10.2	Plate	50 to 600	Stainless steel (ND ≤ 200) or ductile iron (ND ≥ 250)
90-6	Eye bolt	200 to 600	Carbon steel
930.1	Stop pin retainer	50 to 600	Carbon steel
930.2	Hinge pin retainer	50 to 600	Carbon steel
970	Identification plate	50 to 600	Stainless steel

**Production range**

Pressure class	Materials			Type	Connections
	Body	Plates	Seat		
PN 16	Cast iron	Stainless steel	Nitrile	3t 6 K	PN 10 , 16 and ASME B16.1 class.125
		Ductile iron (DN ≥ 250)		3t 3g K	
PN 25	Ductile iron	Bronze ≤ 300	Nitrile	3g 6 K	PN 10, 16, 20 and 25 and ASME B16.5 class.150
		Stainless steel		3g 3g K	
		Ductile iron (DN ≥ 250)			

**Pressure drops in water flow**


The curves in continuous line define the flow range for the optimum use of the check valve.

**Pressure drops in water flow**

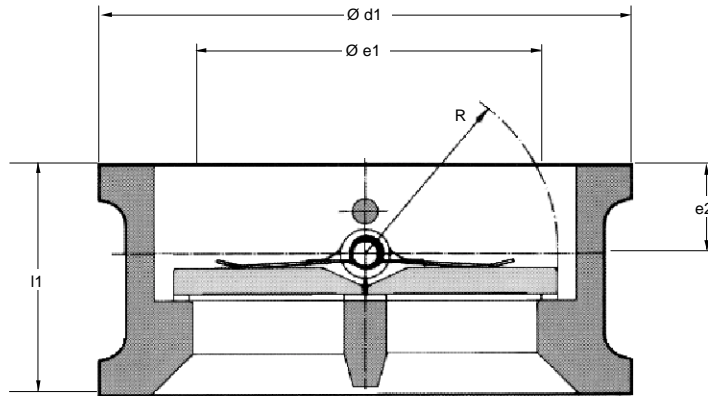
DN		Flow coefficient in full open position		Zeta	DN		Flow coefficient in full open position		Zeta
mm	inch	Kvo	Cvo		mm	inch	Kvo	Cvo	
50	2	75	87	1,77	250	10	2300	2668	1,18
65	2 1/2	112	130	2,27	300	12	3850	4466	0,87
80	3	141	163	3,29	350	14	4600	5336	1,13
100	4	240	278	2,77	400	16	6000	6960	1,13
125	5	450	522	1,92	450	18	8500	9860	0,91
150	6	750	870	1,43	500	20	10000	11600	0,99
200	8	1300	1508	1,51	600	24	12500	14500	1,32

Unités : Kvo en m<sup>3</sup>/h/bar<sup>1/2</sup> - Cvo en gallon US/mn/PSI<sup>1/2</sup>

**Dimensions (mm) and weights (kg)**

**PN 16 - Cast iron body - Sizes 50 to 200 mm (2" to 8") : type 3t 6 K**

**Sizes 250 to 600 mm (10" to 24"): type 3t 3g K**



DN		Connection						Average-weight *
		PN 10		PN 16		Class 125		
mm	inch	Ø d1	l1	Ø d1	1	Ø d1	l1	kg
50	2	110	54	110	54	104,9	54	1,5
65	2 1/2	130	54	130	54	123,9	54	2,8
80	3	145	57	145	57	136,6	57	3,6
100	4	165	64	165	64	174,7	64	4,5
125	5	195	70	195	70	196,8	70	6,5
150	6	221	76	221	76	222,2	76	9
200	8	276	95	276	95	279,4	95	16
250	10	331	108	331	108	339,5	108	27
300	12	381	143	381	143	409,4	143	42
350	14	440	184	446	184	450,8	184	77
400	16	491	191	498	191	514,3	191	107
450	18	541	203	558	203	536,7	203	134
500	20	596	213	620	213	606,5	213	170
600	24	698	222	737	222	717,5	222	254

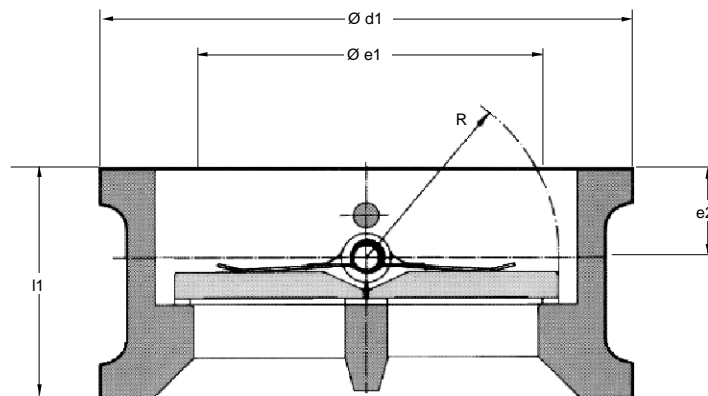
\* Average weight for manufactured check valve according to a connection corresponding to the pressure class.

DN		Plate clearance		
mm	inch	e1	e2	R
50	2	35	25,8	30
65	2 1/2	57	26	36
80	3	75	25,6	42
100	4	99	29,6	54
125	5	123	30,8	65
150	6	155	28,8	79
200	8	198	40	103

DN		Plate clearance		
mm	inch	e1	e2	R
250	10	248	39,9	127
300	12	291	56,8	153
350	14	302	93,9	175
400	16	366	89,9	200
450	18	422	86,1	224
500	20	471	94,3	250
600	24	577	87,5	298

**Dimensions (mm) and weights (kg)**

PN 25 - Ductile iron - Sizes 50 to 200 mm (2" to 8") : type 3g 6 K  
 Sizes 250 to 600 mm (10" to 24") : type 3g 3g K



DN		Connection										Average weight *
		PN 10		PN 16		PN 20		PN 25		Class 150		
mm	inch	Ø d1	l1	Ø d1	l1	Ø d1	l1	Ø d1	l1	Ø d1	l1	kg
50	2	104,6	60	104,6	60	104,6	60	104,6	60	104,6	60	2,3
65	2 1/2	123,7	67	123,7	67	123,7	67	123,7	67	123,7	67	2,7
80	3	136,4	73	136,4	73	136,4	73	136,4	73	136,4	73	3
100	4	164	73	164	73	174,5	73	174,5	73	174,5	73	6
125	5	194	86	194	86	194	86	194	86	194	86	10
150	6	220	98	220	98	220	98	226	98	220	98	13,3
200	8	275	127	275	127	275	127	286	127	275	127	25
250	10	330	146	330	146	330	146	343	146	330	146	39
300	12	380	181	380	181	409,5	181	403	181	409,5	181	68
350	14	440	184	446	184	450,8	184	460	184	450,8	184	79
400	16	491	191	498	191	514,4	191	517	191	514,4	191	109
450	18	541	203	558	203	549,3	203	567	203	549,3	203	125
500	20	596	219	620	219	606,4	219	627	219	606,4	219	171
600	24	698	222	737	222	717,5	222	739	222	717,5	222	245

\* Poids moyen pour clapet réalisé au gabarit de raccordement correspondant à la classe de pression.

DN		Plate clearance		
mm	inch	e1	e2	R
50	2	-	33,6	30
65	2 1/2	36	32,6	36
80	3	50	36,3	42
100	4	84	38,6	54
125	5	107	42,7	65
150	6	142	44,6	81
200	8	191	48,3	104

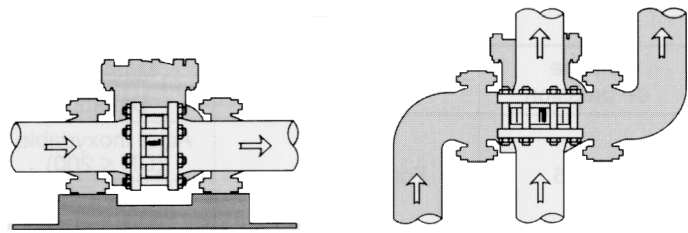
DN		Plate clearance		
mm	inch	e1	e2	R
250	10	238	56	128
300	12	280	70,4	154
350	14	307	91	175
400	16	379	77,1	201
450	18	431	76,5	225
500	20	482	81,5	251
600	24	585	76,4	299

### Installation

The MODEL 2000 check valve design allows a rapid and easy installation between standardized flanges:

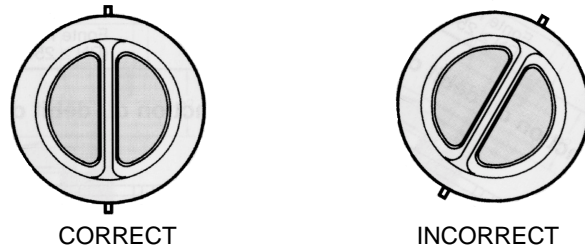
- reduced weight and overall dimensions,
- no additional pipe supports are required,
- suitable for horizontal and vertical up flow,
- no special tools are needed for installation,
- low maintenance.

The MODEL 2000 check valves, in the standard configuration, is offered with flat faces (FF). On request, raised faces (RF) can be supplied. The flange faces are machined "Smooth finish" (Ra max : 3,2µ) or "Stock finish".



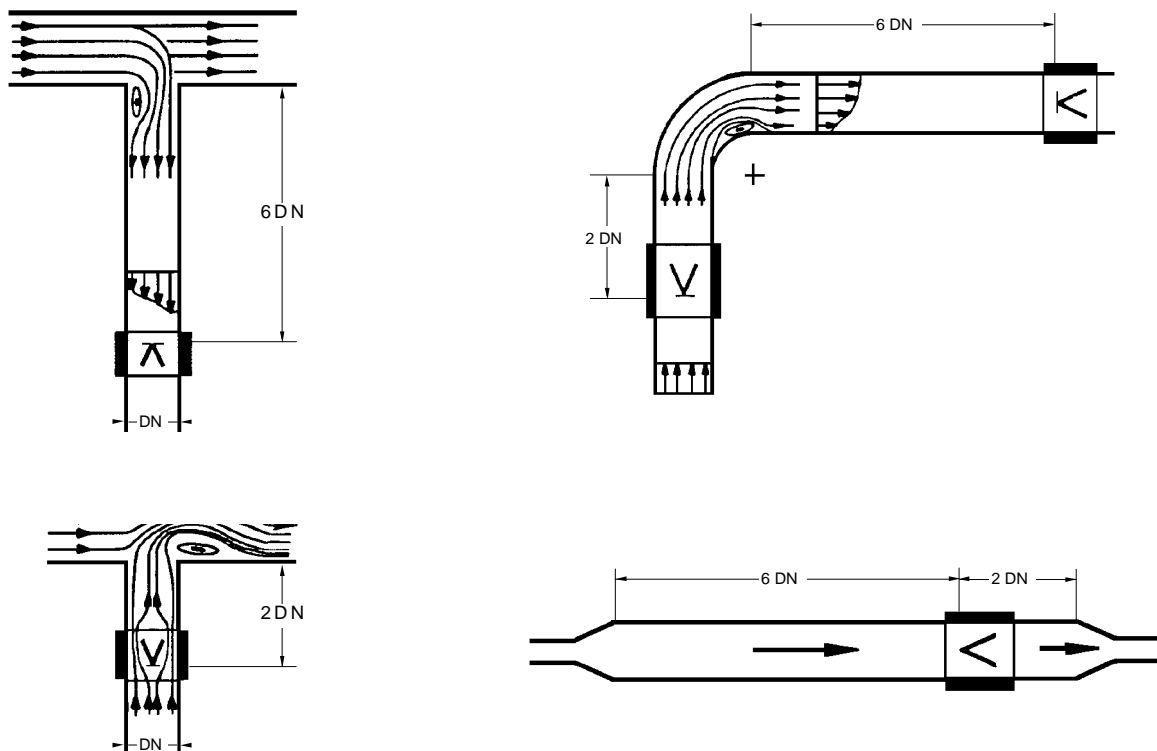
### Optimum installation

In a horizontal pipe, the check valve must always be installed with its hinge pin in the vertical position.



In a piping system, some minimum distances must be respected between the check valve position and a bend or tee. The following drawings show some horizontal pipe configurations (viewed from above) in which the check valve is installed with its hinge pin in the vertical position.

The minimum recommended distance for a check valve installed downstream from a bend, tee, pump or valve causing disturbance is 6 sizes. When such a unit is downstream of the check valve, it is necessary to respect a distance of at least 2 sizes.







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