

C 221 RB

Control valves

Altitude valves pilot and pressure sustaining
function in bottom fill version

Technical Data Sheet



Description

The control valves C 221 RB prevents from overflowing and maintains a constant level in the tank thanks to the pilot and guarantees a minimum upstream pressure. Re-openings of the valve at about 30cm below the high level. Equipped with check valves, it closes automatically in case of backflow (C221C - consult us).



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Control valves - Altitude valves pilot and pressure sustaining function in bottom fill version

DN " mm	PN	PFA in bar	PS				Cat	Ref.	Weight* Kg
			L1	L2	G1	G2			
1 1/2	10/16/25	25	25	25	x	x	4.3	-	8
40	10/16/25	25	25	25	x	x	4.3	-	12
50	10/16/25	25	25	25	x	x	4.3	149B002652	13
65	10/16/25	25	25	25	x	x	4.3	149B22106N	21
80	10/16/25	25	20	25	x	x	4.3	149B22108N	26
100	10/16	16	16	16	x	x	4.3	149B22110N	39
125	10/16	16	16	16	x	x	4.3	-	59
150	10/16	16	16	16	x	x	4.3	149B22112N	73
200	10	10	10	10	x	x	4.3	149B22114N	122
250	10	10	10	10	x	x	I	149B22115N	208
300	10	10	10	10	x	x	I	149B22116N	328

* Weight of valve alone

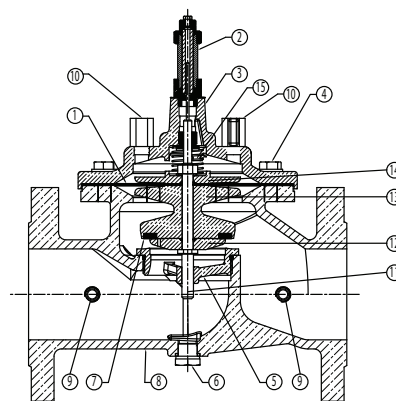
Important notice :

The indicated pressure for the different categories of fluids (L1/L2/G1/G2) is under no condition a guarantee of use. Therefore, it is essential to validate the use of products under given operating conditions.

Technical features	
Operating temperature	-10°C to 80°C, for temperatures over 80°C, consult us
Upstream pressure	Mini. : 1 bar / Maxi. : 25 bar (voir tableau ci-dessus)
Connection	DN 40 to 300 mm : with flange PN (see table above) DN 1"1/2 : threaded F/F
Mediums	Clear water 2 mm
Vertical mounting	In optional

Nomenclature and materials

N°	Description	Materials
1	Membrane	EPDM / Polyamide
2	Position indicator with purge	Brass and stainless steel
3	Valve head high pressure	Ductile iron / Epoxy Int/Ext
4	Nuts and bolts	Stainless steel
5	Removable streamlined	Stainless steel
6	Body drain plug	Brass
7	Reversible seal	EPDM
8	Body high pressure	Ductile iron / Epoxy Int/Ext 150μ ± 50μ
9-10	Valve	Chromed brass
11	Stem	Stainless steel
12	Flange	Stainless steel
13	Seal carrier	Bronze (DN40-50) Cast iron / Epoxy
14	Plate	Bronze (DN40-50) Cast iron / Epoxy
15	Spring	Stainless steel



standard flow valve

Approvals



International construction Standards :

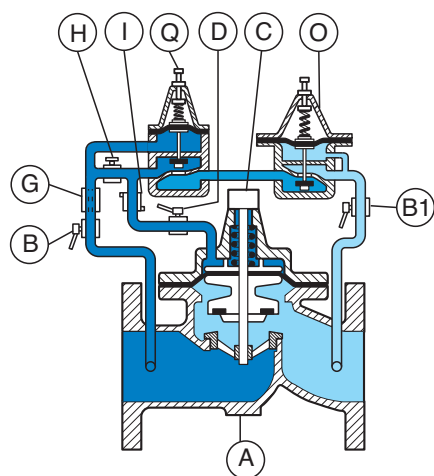
Directive 2014/68/UE

Connection with flange PN according to EN 1092-2

Application

The control valves C 221 RB should be used when the supply pressure is much higher (1 bar) than the head of the full tank.

Operation

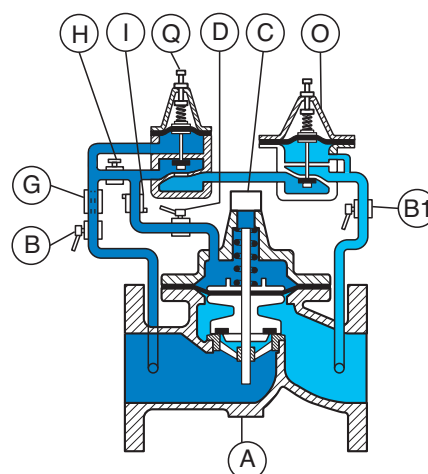


Bottom filling of the tank :

No pressure plug from pilot to tank.

As soon as the level in the tank goes down and if the upstream pressure is high enough, pilot valve (Q) is open and pilot valve (O) begins to open.

The upper chamber empties partly, the valve (A) opens.



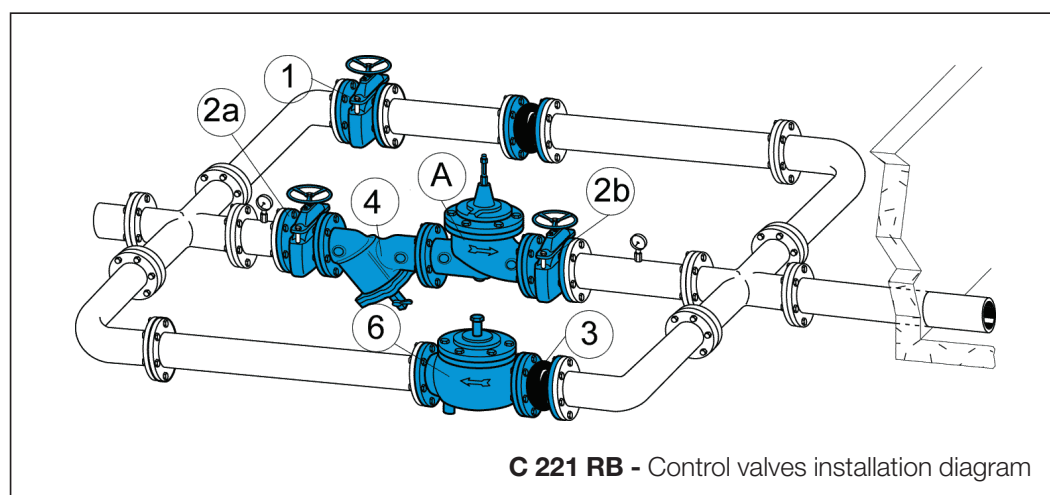
Bottom filling of the tank :

No pressure plug from pilot to tank.

As soon as the level is maximum, and if the up-stream pressure is high enough, pilot valve (Q) is open and pilot valve (O) closes.

The upstream pressure pushes on the membrane and valve (A) closes.

Installation



N°	Description
A	Main valve
B	Upstream isolation valve
B1	Downstream isolation valve
C	Position indicator with drain
D	Chamber isolation valve
G	Filter
H	Orifice-needle valve
I	Flow control
O	Pilot C201
Q	Pilot C301
1	Isolation valve of the by-pass
2a	Upstream isolation valve of the main water pipe
2b	Downstream isolation valve of the main water pipe
3	Rubber expansion joint
4	Filter
6	Non return valve of the by-pass

Pilot setting ranges :

Upstream pilot :

- 1 to 2,41 bar
- 1,72 to 8,6 bar (standard)
- 6,89 to 17,24 bar
- 13,78 to 25 bar

Altitude pilot :

- 1,5 to 13 m
- 13 to 27 m (standard)
- 20 to 55 m

Installation :

- Install a strainer upstream
- Install an air relief valve down-stream or at the high point near the control valve
- Vertical setting up : change the spring of the main valve (option 7)

Other types :

- C221S, C201, C201C, C201DS, C201S, C201M

Maintenance

We recommend a maintenance programme of between 6 to 12 months according to the quality of the water and to the pressure :

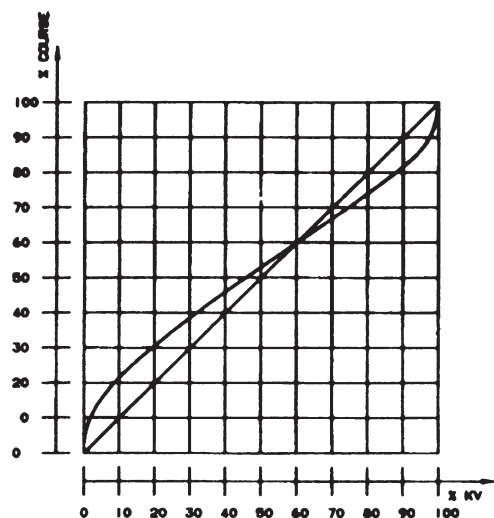
- Purging the upper chamber
- Flushing the valves not frequently used
- Checking and cleaning filters of the pilot circuit and main piping system.
- Checking the working (pressures)

Every 5 years, general maintenance is advisable :

- Dismantling
- Cleaning of main valve and pilot valve
- Preventive removing of the seals (set available - please consult us)
- Reassembling and tests.

Operating characteristics

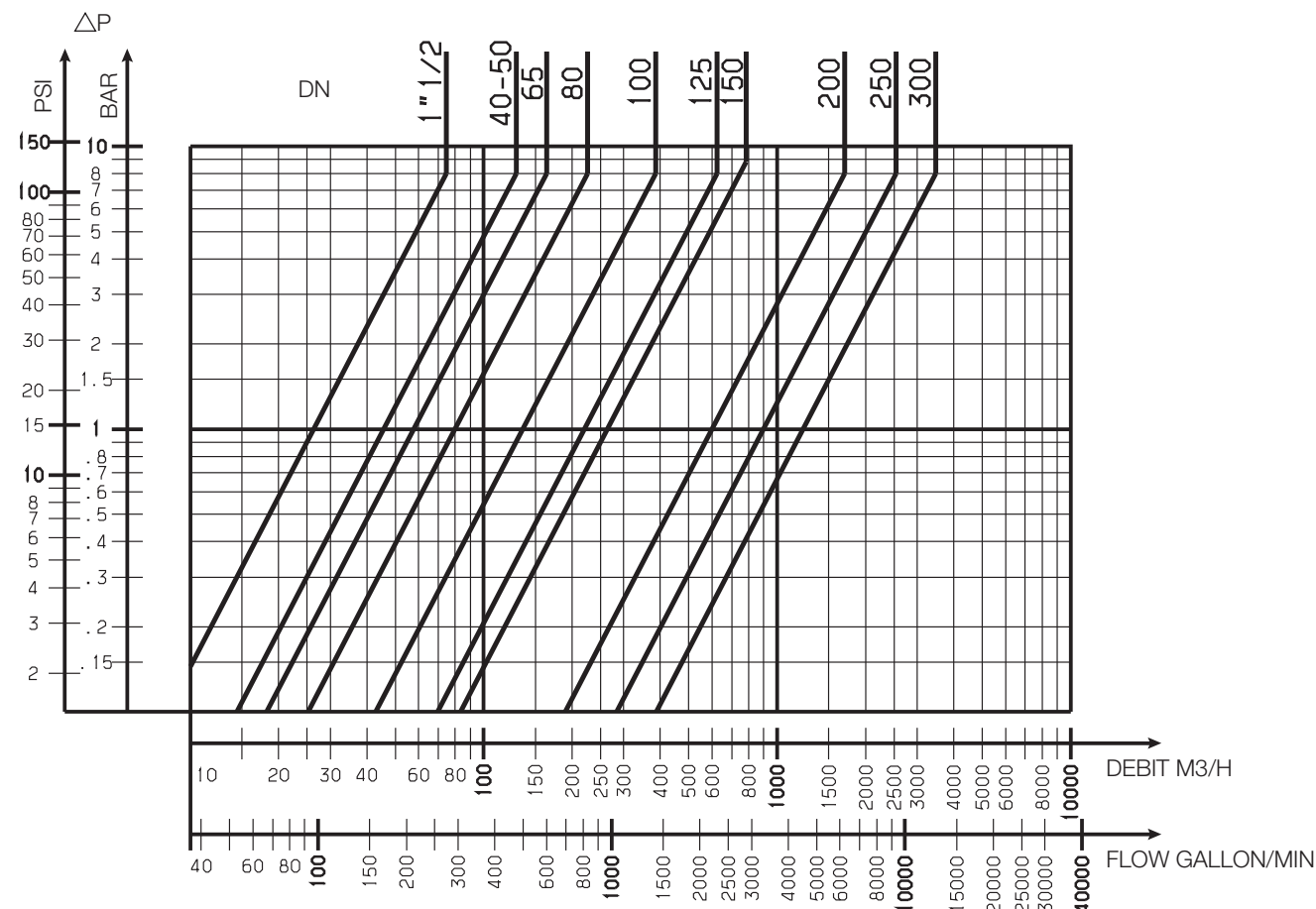
Choice of base valve



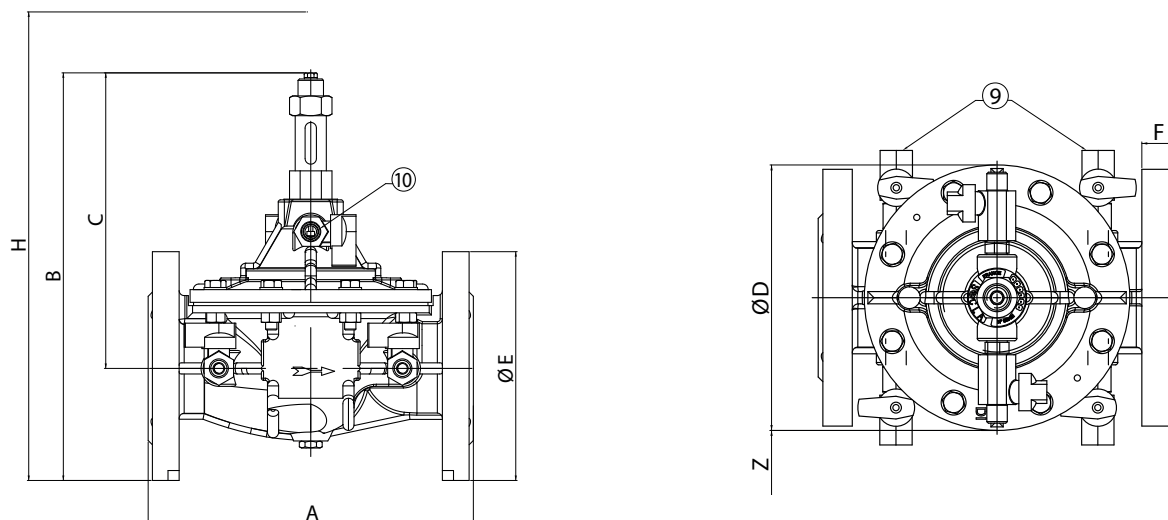
DN	Mini	Maxi	KV		ζ	PN	PFA	PN	PFA	PN	PFA
			m³/h	L/s							
1" 1/2	0,520	20,34	26,35	7,32	5,78	10/16	16	25	25	-	-
40	0,675	32,00	45,66	12,68	1,93	10/16	16	25	25	-	-
50	0,675	32,00	45,66	12,68	4,70	10/16	16	25	25	-	-
65	0,855	54,00	57,75	16,08	8,39	10/16	16	25	25	-	-
80	1,600	82,00	80,00	22,22	10,00	10/16	16	25	25	-	-
100	2,720	127,00	136,00	37,78	8,47	10/16	16	25	25	-	-
125	4,400	199,00	220,00	61,11	7,90	10/16	16	25	25	-	-
150	5,280	286,00	264,00	73,33	11,38	10/16	16	25	25	-	-
200	13,500	509,00	600,00	66,67	6,96	10	10	25	25	16	16
250	25,000	795,00	900,00	50,00	7,56	10	10	25	25	16	16
300	40,900	1145,00	1224,00	40,00	8,47	10	10	25	25	16	16

Headloss chart

Solid line: Base valve completely open



Sizing



standard flow valve

DN	A	B	C	Ø D	Ø E	F	H	Z	9	10
”	mm	mm	mm	mm	mm	mm	mm	mm	”	”
1 1/2(F/F)	230	267	210	170	6 pans ⁽¹⁾	-	400	254	1/4	3/8
40	230	285	210	170	152	23	400	254	1/4	3/8
50	230	285	210	170	161	23	400	254	1/4	3/8
65	290	352	257	200	185	24	470	254	3/8	1/4
80	310	372	272	217	200	26	500	254	3/8	3/8
100	350	423	302	241	235	28	510	254	3/8	3/8
125	400	506	371	296	270	30	570	254	3/8	3/8
150	480	551	401	363	300	20	650	254	3/8	3/8
200	600	709	529	467	360	22	750	254	3/8	3/8
250	730	844	631	587	425	24	900	254	1/2	1/2
300	850	975	730	680	486	27	1100	254	1/2	1/2

(1) 78/plats

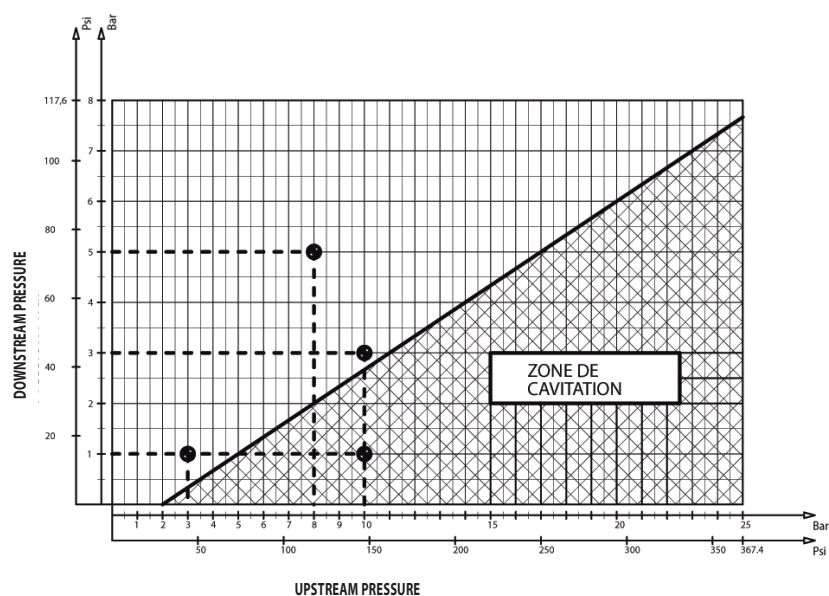
Other operating characteristics

Cavitation

A too large differential pressure and a low downstream pressure may result in damage to the valve by cavitation.

To avoid it, refer to the cavitation curve and if needed, reduce the differential pressure by installing and connecting two or more control valves in same line (consult us).

Stainless steel seat and counter seat are standard.



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