

# Chapter 3

## Regulation Systems

STABILISERS

PROTECTION

DESBORDES PRESSURE  
REDUCING VALVES

MISCELLANEOUS

SOLENOID VALVES

AIR VALVES

## Chapter 3.1

# Choosing a specific control system

### SELECTION PROCESS

Required to equalise, at different levels, the circulation of water in distribution systems, control valves fulfil multiple functions. The tables below allow you to make a preliminary selection in line with your specific needs.

#### PRESSURE CONTROL

	C 101	C 101 C	C 101 DS	C 102	C 104	C 104 C	C 108	C 108 C	C 301	C 301 C	C 301 DS	C 306	C 306 C	C 401	C 401 C	C 1001 C
Modulating*																
Downstream reducing and stabilizing																
Downstream reducing and stabilizing with 2 settings																
Upstream sustaining																
Holding a differential pressure																
Backflow prevention feature																
Backflow prevention on the discharge circuit																
Double direction flow if upstream P. < downstream P.																
Full opening at a preset upstream pressure																

#### FAVOUR FUNCTION

	C 801	C 802
Fully closed or fully open* (non modulating)		
Adjustable opening or closing		
Normally closed when switched off		
Normally open when switched off		
Electrically operated		

\*A "modulating" valve holds a certain level of opening allowing to maintaining the preset function parameters.

#### FLOW AND LEVEL CONTROL

	C 901	C 901 C	C 902	C 902 C	C 903	C 903 C	C 904	C 904 C	C 907	C 907 C
Modulating*										
Maintaining a maximum flow										
Reducing and stabilizing flow downstream										
With upstream pressure sustaining in addition										
Holding a differential pressure										
Controlling the upper level										
Backflow prevention feature										

#### PROTECTION AND CONTROL

	C 501	C 502	C 503	C 601	C 906	AB 900
Against water hammer						
Against electrical failures						
Pump protection						
Slow opening and closing						
Electrically operated (3 ways solenoid valve)						
Against "overspeed flow"						
Against downstream pipe breakage						

**RESERVOIR CONTROL**

	C 201	C 201 C	C 201 DS	C 221	C 701	C 702	C 707	C 707 C	C 727	C 717	C 737
Modulating*											
Non modulating (fully open or fully closed)											
Controlling the upper level											
Opens at low level - Closes at upper level											
With upstream sustaining											
With backflow prevention feature											
Upstream double direction flow if P < Tank P.											
Levels set by floats or sensors											
Float operated											
Mechanically operated											
Electrically operated (2 ways solenoid valve)											

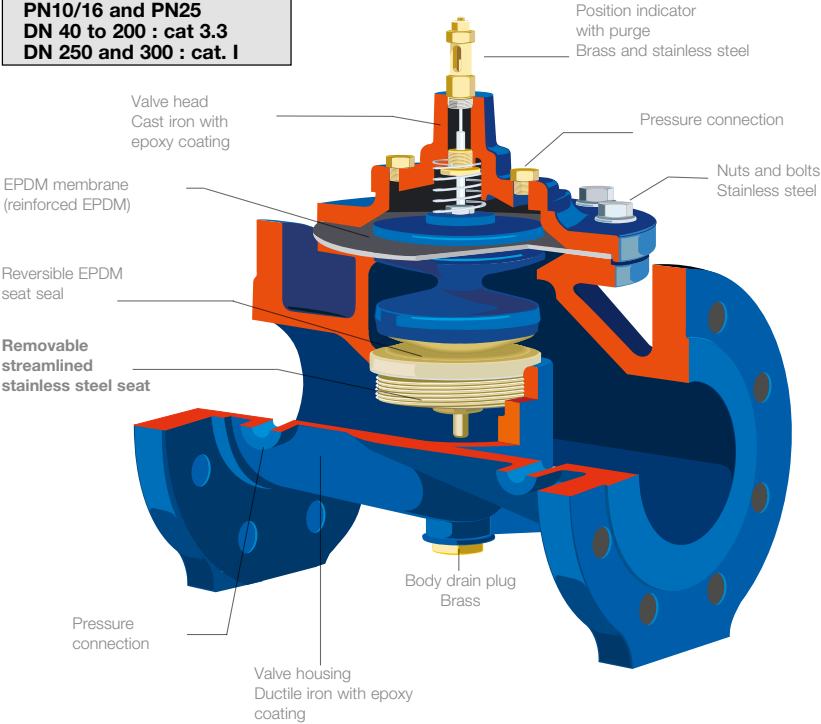
**AIR CONTROL**

	VE 120	VE 320	VE 330
Clear water			
Releasing air under pressure			
Fast release of air			
Fast influx of air			
Waste water			
Releasing air under pressure			
Fast influx of air			

**MAIN VALVE**

**CE** PED 97/23/CE  
**for all control valves**  
**PN10/16 and PN25**  
**DN 40 to 200 : cat 3.3**  
**DN 250 and 300 : cat. I**

PN according to EN 1092-2



**PRESSURE TABLE FOR CONTROL VALVES**

DN " mm	PN	PFA bar	PS				Cat	
			L1	L2	G1	G2		
1 1/2"		10/16	16	16	16	x	x	3.3
	40 and 50	10/16	16	16	16	x	x	3.3
	65	10/16	16	16	16	x	x	3.3
	80	10/16	16	16	16	x	x	3.3
	100	10/16	16	16	16	x	x	3.3
	125	10/16	16	16	16	x	x	3.3
	150	10/16	16	16	16	x	x	3.3
	200	10	10	10	10	x	x	3.3
	250	10	10	10	10	x	x	I
	300	10	10	10	10	x	x	I
	200	16	16	10	16	x	x	3.3
	250	16	16	10	16	x	x	I
	300	16	16	10	16	x	x	I
1 1/2"		25	25	25	25	x	x	3.3
	40 and 50	25	25	25	25	x	x	3.3
	65	25	25	25	25	x	x	3.3
	80	25	25	25	25	x	x	3.3
	100	25	25	20	25	x	x	3.3
	125	25	25	16	25	x	x	3.3
	150	25	25	13	25	x	x	3.3
	200	25	25	10	25	x	x	3.3
	250	25	25	10	25	x	x	I
	300	25	25	10	25	x	x	I

**INSTALLATION EXAMPLE TYPE C101 - C102 - C104 - C108**



Butterfly valve  
SOCLA  
page 152



Filter Y333P  
SOCLA  
page 8



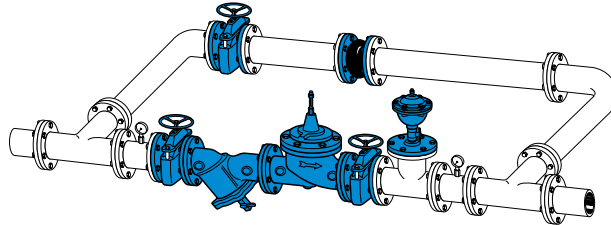
Rubber expansion joint  
SOCLA  
page 146



Pressure gauge  
page 132



Air valve VE120  
SOCLA  
page 141



**REGULATION MAINTENANCE**

We recommend a maintenance control each 6 or 12 months according to the quality of the water.

Checking and cleaning filters of the pilot circuit and main piping system.

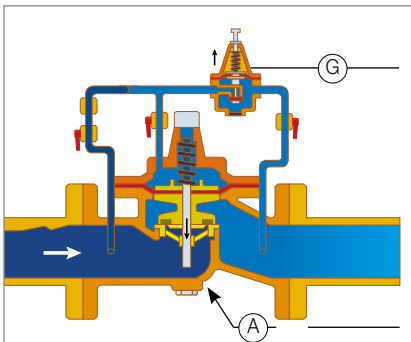
Purging the upper chamber by means of the visual position indicator.

Flushing the valves not frequently used.

Every 5 years, a general maintenance is advisable.

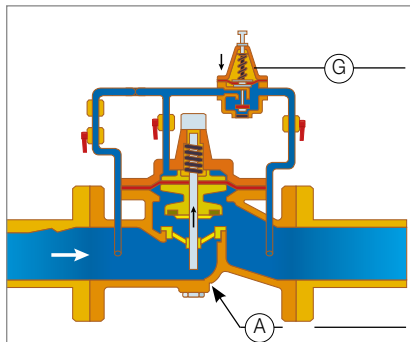
**WORKING PRINCIPLE (PRESSURE REDUCING VALVE TYPE C101)**

**CLOSING**



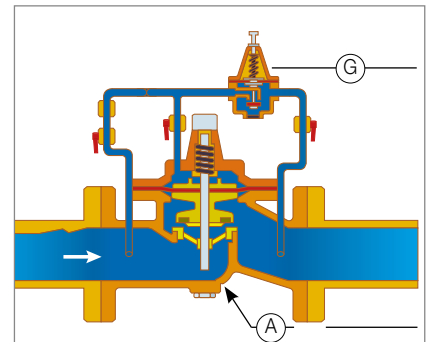
When the downstream pressure rises, the pilot valve G closes. Pressure in the upper chamber rises also and forces the membrane to close the main valve A which reproduces the movement of the pilot.

**OPENING**



When the downstream pressure is too low, no pressure is acting on the membrane and the pilot G opens. Pressure in the upper chamber is released and the valve A opens reproducing the movement of the pilot.

**CONTROLLING**



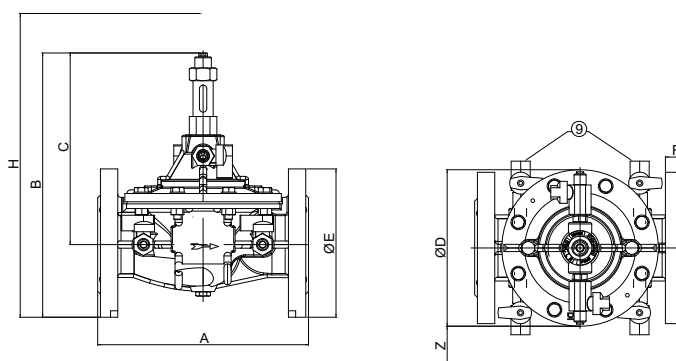
When the pilot G opens or closes, pressure in the upper chamber forces more or less on the membrane to open or close the main valve.

## TECHNICAL INFORMATION

Minimum upstream pressure : 1 bar  
 TEMPERATURE MAX : 90° C  
 Version with flanges : PFA 25 if not indicated  
 Threaded version 1"1/2 F/F except C 900  
 Vertical installation : IN OPTION

H : MAX. VERTICAL  
 OVERALL DIMENSION  
 (including the pilot circuit)

⑨ PRESSURE GAUGES



## DIMENSIONS (EXCEPT TYPE 900)

DN	A mm	B mm	C mm	Ø D mm	Ø E mm	F mm	H mm*	H mm C501	Z mm	Kg	9	10
1" 1/2(F/F)	230	267	210	170	6 pans (1)	-	400	800	254	8	1/4	1/4
40	230	285	210	170	152	23	400	800	254	12	1/4	1/4
50	230	285	210	170	161	23	400	800	254	13	1/4	1/4
65	290	352	257	200	185	24	470	770	254	21	3/8	1/4
80	310	372	272	217	200	26	500	790	254	26	3/8	3/8
100	350	423	302	241	235	28	510	810	254	39	3/8	3/8
125	400	506	371	296	270	30	570	870	254	59	3/8	3/8
150	480	551	401	363	300	20	650	1070	254	73	3/8	3/8
200	600	709	529	467	360	22	750	1150	254	122	3/8	3/8
250	730	844	631	587	425	24	900	1260	254	208	1/2	1/2
300	850	975	730	680	486	27	1100	1370	254	328	1/2	1/2

It is advisable to use a strainer upstream and an air relief valve downstream

\*(Except C501) (1) 78 / flats

## DIMENSIONS 901 - 902 - 903 - 904 - 906

DN	A mm	B mm	C mm	Ø D mm	Ø E mm	F mm	H mm	Z mm	Kg	9	10
40	274	285	210	170	152	23	400	254	15	1/4	3/8
50	274	285	210	170	161	23	400	254	16	1/4	3/8
65	314	352	257	200	185	24	470	254	24	3/8	1/4
80	334	372	272	217	200	26	500	254	29	3/8	3/8
100	374	423	302	241	235	28	510	254	42	3/8	3/8
125	430	506	371	296	270	30	570	254	63	3/8	3/8
150	512	551	401	363	300	20	650	254	77	3/8	3/8
200	626	709	529	467	360	22	750	254	127	3/8	3/8
250	760	844	631	587	425	24	900	254	218	1/2	1/2
300	880	975	730	680	486	27	1100	254	348	1/2	1/2

Connection : flanges drilled PN 10 - PN 16 - PN 25 : to be specified

## IMPORTANT

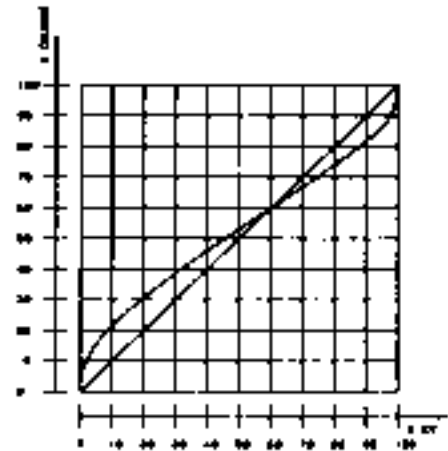
- Pilot circuit always mounted on the right hand side of valve, looking downstream direction of valve (for other execution, consult us).
- Control valve installed according to your parameters. These parameters are always required with the order : this is necessary to guarantee a correct functioning of your installation.

HOW TO SELECT THE RIGHT SIZE

KV FACTOR

FLOW RATE OPENING

Sizes	Except C 900	C900	Maxi m <sup>3</sup> /h	m <sup>3</sup> /h	L/s	ζ
1"1/2	0,520	-	20,34	26,35	7,32	5,78
40	0,675	5	32,00	45,66	12,68	1,93
50	0,675	7	32,00	45,66	12,68	4,70
65	0,855	14	54,00	57,75	16,08	8,39
80	1,600	18	82,00	80,00	22,22	10,00
100	2,720	28	127,00	136,00	37,78	8,47
125	4,400	44	199,00	220,00	61,11	7,90
150	5,280	64	286,00	264,00	73,33	11,38
200	13,500	113	509,00	600,00	166,67	6,96
250	25,000	177	795,00	900,00	250,00	7,56
300	40,900	255	1145,00	1224,00	340,00	8,47



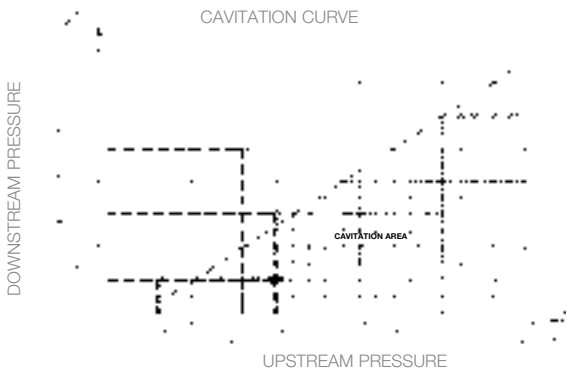
To size this valve correctly and avoid undesirable operating characteristics (noise, excessive wear, poor regulation) which result from oversizing (or undersizing), use the sizing guide and choose the smallest valve size compatible with the indicated flow rates.

NOTE :

- 1 - For a throttling valve application requiring a wide range of flows a dual valve installation should be used.
- 2 - The maximum flow rates listed above were calculated by using a velocity of 4,5 m/second. The throttling valve is capable of handling larger flows for short periods of time ; however, the increase in maximum flow should be limited to 25% of the above values.
- 3 - For C900 series : min. flow 1m<sup>3</sup>/s.a

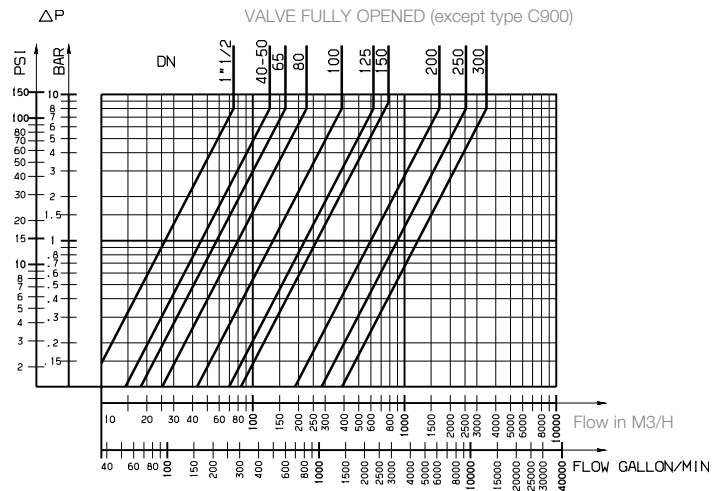
CAVITATION

HEADLOSS CHART



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.

To avoid cavitation please refer to above diagram 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



Chapter 3.2

Stabilisers

PRESSURE REDUCING VALVES

C101

Controls and maintains a constant preset reduced downstream pressure regardless of variations in downstream demand or upstream pressure.



DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300

C101C

Type C 101 provided with a check valve feature.



DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300

C102

Type C 101 equipped with two identical pilot valves. The addition of a second pilot allows uninterrupted working while servicing one of the pilots or ease the change of a different pressure setting.

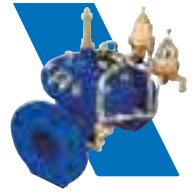


DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300



**C108**

Type C 101 enables the main valve to fully open if the upstream pressure is below a preset level.



DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300

**COMBINED PRESSURE REDUCING VALVES**

**C104**

Working with two pilots, maintains a preset upstream pressure and a preset downstream pressure reduction.



DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300

**C104C**

Type C 104 provided with a check valve feature.



DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300

**BACK PRESSURE VALVES**

**C301**

Controls and maintains a preset upstream pressure, regardless of variations in downstream demand.



DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300

**C301C**

Type C 301 provided with a check valve feature.



DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300



**DIFFERENTIAL BACK PRESSURE**

**C306**

Differential pressure valve : maintains a constant preset differential pressure across the valve or a pump.



DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300



**C306C**

Type C 306 provided with a check valve feature.



DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300



## Chapter 3.3

# Altitude

### ALTITUDE VALVES FLOAT OPERATED

#### C701

Controls the level of a tank. Maintains constant level by means of float tap regulation. (Connecting pipe Ø10/12 mm from the pressure tap to the valve not included)



DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300

#### C702

Type C 701 provided with a preset sustaining upstream pressure feature. (Connecting pipe Ø10/12 mm from the pressure tap to the valve not included)



DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300

#### C717

Regulates mechanically water in a tank by a volume by means of a float with 2 positions. Closes at a preset high water level, opens at a given low water level. Maximum difference of level : 3,6m. (Connecting pipe Ø4/6 mm from the pressure tap to the valve not included)



DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300

**C737**

Type C717 provided with a pre-set upstream pressure sustaining feature. Maximum difference of level : 3,6 m. Connecting pipe Ø4/6 mm from the pressure tap to the valve non included.



DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300

**C707**

Regulates contents of a tank by volume of water using float regulation (not included) : closes at a preset high water level and opens at a given low water level.



DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300

**C727**

Type C 707 provided with a preset upstream pressure sustaining feature.

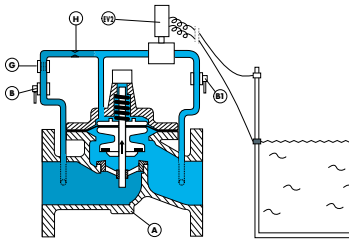


DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300

**WORKING PRINCIPLE**

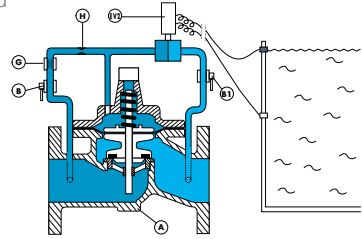
EXAMPLE : Type C707

The low level sensor opens the solenoid valve, emptying the upper chamber. The main valve opens.



The upper level sensor closes the solenoid valve, the upstream pressure in the upper chamber closes the main valve.

- A Main valve housing : cast iron
- B Upstream isolation valve : nickel-plated brass
- ⓑ Downstream isolation valve : nickel-plated brass
- ⓔ 2 ways solenoid valve - G Filter : brass
- H Orifice-needle valve : stainless steel or brass



**ALTITUDE VALVES PILOT OPERATED**

**C201**

Prevents overflowing and maintains the level of water in a storage tank, pilot controlled exists in top-fill or bottom-fill versions. Minimum setting : 2 m.



DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300

**C221**

Same control valve as C201 but fitted with a preset upstream sustaining pressure function exists in top-fill or bottom-fill versions. Minimum setting : 2m



DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300

Chapter 3.4

Protection

OVERPRESSURE PROTECTION, DISCHARGE VALVE

C401

Installed for the protection against the excess of pressure.



DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300



C401C

Type C401 provided with a check valve feature.



DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300



ANTI-WATER HAMMER PROTECTION

C501

Eliminates all pressure fluctuations which occur when pump starts, during electric power failure or pump failure.



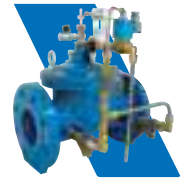
DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300



**PUMP PROTECTION**

**C601**

Eliminates pressure fluctuations and water hammer in the mains, when pump starts and shuts down, by slow and controlled opening and closing operation.



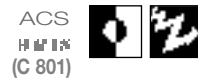
DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300

**ON/OFF OPTION ELECTRICALLY CONTROLLED**

**C801/C802**

C801 : With solenoid valve normally closed. Opens when contact is on. PN depending on solenoid valve.

C802 : With solenoid valve normally open. Closed when contact is on.



DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300

**OVERSPEED PROTECTION**

**C906**

Safety valve which closes when the flow speed exceeds a preset value. Protects against downstream pipe breakage. Re-set manually.

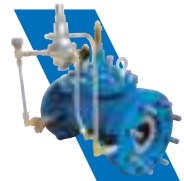


DN	DN
40 and 50	150
65	200
80	250
100	300
125	

**FLOW RATE CONTROL/FLOW LIMITER**

**C901**

Controls and maintains a preset maximum flowrate at the delivery, regardless of changing upstream and downstream pressures.



DN	DN
40 and 50	150
65	200
80	250
100	300
125	

**FLOW RATE CONTROL/FLOW LIMITER**

**C902**

Type C 901 provided with a preset downstream reduced pressure control feature.

DN	DN
40 and 50	150
65	200
80	250
100	300
125	



**C903**

Type C 901 + a control of high level of water in a tank by means of a regulating pilot. (Exists in top-fill or bottom-fill versions).

DN	DN
40 and 50	150
65	200
80	250
100	300
125	



**C904**

Type C 901 provided with a preset sustaining upstream pressure feature.)

DN	DN
40 and 50	150
65	200
80	250
100	300
125	



**PRESSURE GAUGES**

**OPTION 1**

Pressure gauges with purge taps. (10 bar, 16 bar, 25 bar)

DN	DN
1" 1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300





**SOLENOID VALVE**

**OPTION 2**

2 way solenoid valve PN25 (on certain versions) Others : consult us - IP65

Normally Closed		Normally Open	
DC	12V/CC	DC	12V/CC
DC	24V/CC	DC	24V/CC
AC	24V/50Hz	AC	24V/50Hz
AC	220V/50Hz	AC	220V/50Hz



**POSITION INDICATOR**

**OPTION 3**

Mechanical position indicator (maxi 6 A, 300 V) 1 N.O. contact and 1 N/C contact - IP67

DN	DN
1"1/2 (F/F)	125
40 and 50	150
65	200
80	250
100	300



**MOTORISATION**

**OPTION 4**

TYPE C900 EXCEPT C906 MOTORISATION of regulating pilot

- Remote signal : 0-20 mA - 0-10 volt
- Supply voltage : 24 volts/50Hz
- Controllable flow rate by intensity variation
- Selection by switch



**OVERPRESSURE PROTECTION - WATER DISTRIBUTION**

**AB900 PN 16\***

Safety valve to protect pipe systems from water hammering.  
Cast iron or C-steel cap, C-steel flange, polyurethane seal, steel spring.  
PFA PRESSURE 16 bar\*

- \* DN200, 2 settings : 149B5897A (PN10) - 1 to 10 bar  
149B5897C (PN16) - 9 to 16 bar

APPROVAL : ACS



Part Number	DN
149B 5891	60
149B 5892	65
149B 5893	80
149B 5894	100
149B 5895	125
149B 5896	150
149B 5897*	200

3 settings available A : 1 to 7 bar - B : 6 to 12 bar C : 10 to 16 bar

Dimensions at the end of the section.

**AB900 PN 25**

Relief valve for protecting the pipes against water hammering. Cast iron or steel cap, steel flange, polyurethane valve seal, steel spring.

PFA PRESSURE 25 bar

APPROVAL : ACS



3

Part Number	DN
149B 009172	60
149B 009174	65
149B 009175	80
149B 009176	100
149B 009178	125
149B 009179	150

Spring : 16 to 25 bar

Dimensions at the end of the section.

**WATER DISTRIBUTION AND HOT WATER HEATING SYSTEMS****14BIS HP**

Safety valve with progressive opening @ 80°C

Casing : bronze - brass

Spring : stainless steel

14BIS HP : delivered unset and not safety sealed, settings from 2 to 15 bar

14BIS HP PL : delivered preset and safety sealed, settings from 2 to 15 bar (requested setting to be specified while ordering).

APPROVAL : ACS

**male/female**

Part Number	DN
<b>male/female</b>	
149B7089	3/8"
149B7095	1/2"
149B56836	3/4"
149B7113	1"
<b>14 BIS HP PL</b>	
149B7255	3/8"
149B7096	1/2"
149B7106	3/4"
149B7114	1"

Dimensions at the end of the section.

**14BIS BP**

Safety valve with progressive opening @ 80°C

Casing : bronze - brass

Spring : stainless steel

14BIS BP : delivered unset and not safety sealed, setting from 0.5 to 1.9 bar

14BIS BP PL : delivered preset and safety sealed, settings from 0.9 to 1.9 bar (requested setting to be specified while ordering).

APPROVAL : ACS



**male/female**

Part Number	DN
<b>male/female</b>	
149B7077	3/8"
149B7079	1/2"
149B7081	3/4"
149B7083	1"
<b>14 BIS BP PL</b>	
149B7078	3/8"
149B7080	1/2"
149B7082	3/4"
149B7084	1"

Dimensions at the end of the section.

**14BIS HPT & 14BIS BPT**

Safety valve with progressive opening @ 80°C

Casing : bronze - brass

Spring : stainless steel

14BIS HPT and 14BIS BPT : fitted with a PTFE coated disc for temperature higher than 80°C, up to 200°C

This valve is never preset or safety sealed

APPROVAL : ACS



**male/female**

Part Number	DN
<b>14BIS HPT male/female</b>	
149B7121	3/8"
149B7122	1/2"
149B7123	3/4"
149B7124	1"
<b>14 BIS BPT male/female</b>	
149B7085	3/8"
149B7086	1/2"
149B7087	3/4"
149B7088	1"

Dimensions at the end of the section.

**EVACUATES PRESSURE FOR WATER APPLICATION****SV1821 - female / female**

θ 75°C

Settings : 1 to 12 bar maximum

No pre-setting in standard (on request, possibility to pre-set)

BODY : brass

SPRING : carboxylated steel C72

SEAL SEAT : NBR



3

Part Number	DN
149B6834	3/8"
149B6835	1/2"
149B6836	3/4"
149B6837	1"
149B6838	1 <sup>1</sup> / <sub>4</sub> "
149B6839	1 <sup>1</sup> / <sub>2</sub> "
149B6840	2"
149B6841	2 <sup>1</sup> / <sub>2</sub> "
149B6842	3"

**RP204 - female / female**

GUARANTEED UPSTREAM PRESSURE 40 bar θ 80°C

Pressure gauge 1/4" connection

Spring : 1 to 7 bar

Preset : 3 bar

Membrane : EPDM

BODY : brass - Bronze DN 2" 1/2 to 4"

SEAT SEAL : EPDM

SEAT AND SPRING : stainless steel

APPROVAL : ACS



Part Number	DN
149B6670	15
149B6671	20
149B6672	25
149B6664	32
149B6665	40
149B6666	50
149B6667	65
149B6668	80
149B6673	100

OVERALL DIMENSIONS

Type AB900

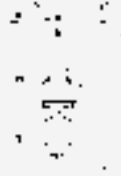
Type AB900



DN	A mm	B mm	h mm	Kg
60	380	510	120	30
65	380	510	120	30
80	380	510	120	32
100	400	520	120	36
125	570	550	130	65
150	570	550	150	80
200	690	700	180	120

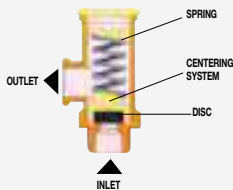
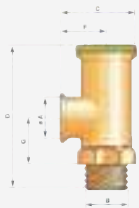
Type AB900

Type AB900



DN	H mm	L x l mm
60-65	1200	1500 x 1500
80	1200	1500 x 1500
100	1200	1500 x 1500
125	1500	1700 x 1700
150	1500	1700 x 1700
200	1700	1700 x 1700

14BIS

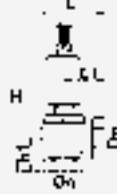


Types  
 14BIS HP - 14BIS HP PL  
 14BIS BP - 14BIS BP PL  
 14BIS HPT - 14BIS BPT  
 male/female

DN	θ B mm	θ A mm	C mm	D mm	F mm	G mm	Kg
3/8"	12/17	12/17	40	71	24	20	0,165
1/2"	15/21	12/17	40	71	24	20	0,170
3/4"	20/27	15/21	48	83	28	26,5	0,290
1"	26/34	20/27	57	95	33	31,5	0,450

SV1821

Type SV1821  
 female/female



DN	L mm	L1 mm	H mm	h1 mm
3/8"	45	24	118	25
1/2"	55	36	124	30
3/4"	64	40	148	32
1"	75	48	163	40
1"1/4	89	56	193	43
1"1/2	100	62	212	47
2"	123	75	238	60
2"1/2	146	87	300	75
3"	150	85	325	86

**RP204**

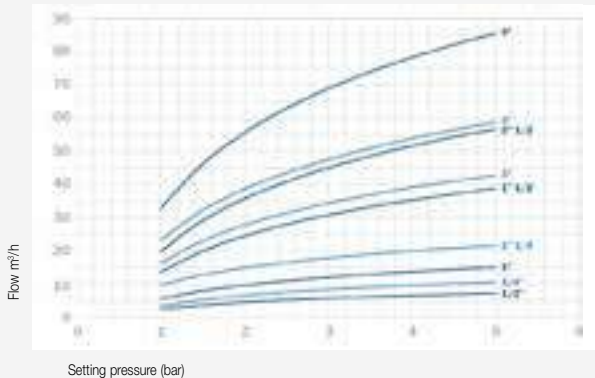


Type RP 204  
female/female

DN	D		L mm	A mm	H mm	h1 mm	h2 mm
	mm	"					
15	15/21	1/2"	76	73	155,5	67,5	88
20	20/27	3/4"	91	89	196	73	123
25	26/34	1"	105	101	201	81	120
32	33/42	1 1/4"	138	124	235	82,5	152,5
40	40/49	1 1/2"	170	154	256	95	161
50	50/60	2"	184	169	270	92,5	177,5
65	66/76	2 1/2"	206,5	180	330	121,5	208,5
80	80/90	3"	204	192	374	143	231
100	102/114	4"	274	262	495,5	175	320,5

**HEADLOSS CHART**

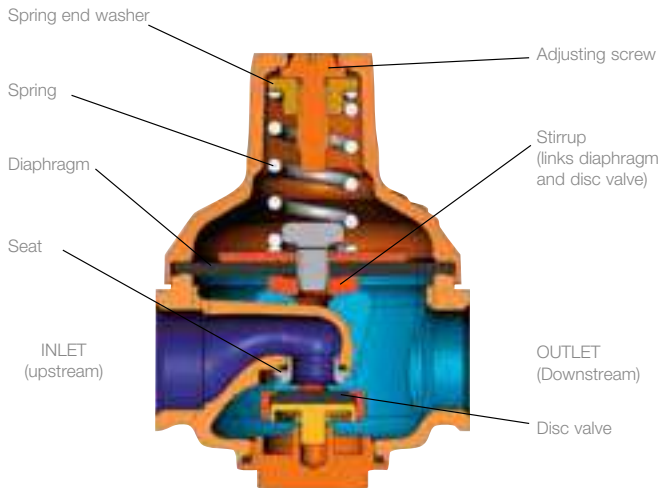
**TYPE RP204**



## Chapter 3.5

# Desbordes Pressure Reducing Valves

All pressure reducing valve bodies are made of bronze. Due to their design, they are not affected by scale or dirt, and do not need any maintenance. They are suitable for cold and hot water up to 80°C for a maximum upstream pressure of 25 bar and reduce pressure between 0.5 and 6 bar. They can be installed in any position if flow direction stipulated by the arrow is respected. They can be fitted on compressed air, neutral gases and fuel oil at ambient temperature circuits. Consult us for starting DN50 on compressed air and neutral gases applications. The ranges of figures 7, 8, 9, 10 and 11 are in accordance with the european standard EN1567. Serie 11 fulfils higher specification controlled by  label. All pressure reducing valve bodies are guaranteed for 5 years.



The outlet pressure acts on the bottom face of the diaphragm, compressing the spring when it exceeds the pre-set value and thus closing the valve.

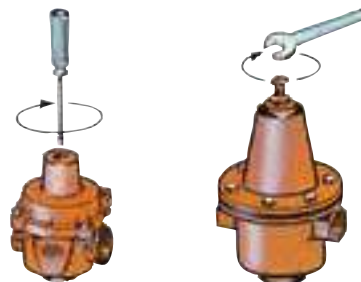
As long as no water is drawn off the downstream side (no flow condition), the outlet pressure is thus kept at the pre-set value.

When water is drawn off on the downstream side, the outlet pressure decreases and the spring pushes against the diaphragm, opening the valve. Under prolonged flow conditions, a self-damping effect occurs in the valve opening instead of a series of pulsating opening and closing movements.

The Desbordes pressure reducing valve is also a pressure regulating valve.

### SETTING THE PRESSURE REDUCING VALVE

To increase downstream pressure :



To decrease downstream pressure :



### INSTALLATION



In domestic water supply, the Desbordes pressure reducing valves are fitted just after the water meter and thus protect the whole installation

If there is a frost risk, they should be drained.

They can be fitted in any position (horizontal, upside down, fluid ascending or reversed and inclined) but the direction of flow indicated by the engraved arrow on the valve body, must be respected.



The setting of the Desbordes pressure reducing valve must be operated under no flow condition. Downstream isolating valve must be shut. The static pressure will be adjusted.

To increase downstream pressure : tighten adjusting screw (clockwise).

To decrease downstream pressure :

- Slacken the adjusting screw (anticlockwise).

- Release the pressure by slightly opening a tap on the downstream side. Close the tap.

- Tight the adjustment screw again until requested pressure is reached.

A slight pressure drop on the downstream side is normal : it corresponds to the head loss of the valve itself.

## FOR WATER DISTRIBUTION DOMESTIC AND INDIVIDUAL

**10 & 10RC male / 10BIS & 10BISRC female/female**

Maximum upstream pressure 25 bar @ 80°C

10 : Pressure gauge connection at the bottom of the casing

10 BIS : With 1/4" plugs on both sides to allow pressure gauge connection

Possibility of assembly of compensating spring (except for 4" size) to obtain settings at 0.5 bar

Setting : from 1 to 6 bar (indicative value according to EN1567 standard)

Pre-set at 3 bar

CASING : bronze

APPROVALS : ACS

10 - 10BIS : 

3

Part Number	DN	Part Number	DN
<b>10</b>		<b>10RC</b>	
149B7000	15	149B7029	15
149B7001	20	149B7030	20
149B7002	25	149B7031	25

Part Number	DN	Part Number	DN
<b>10BIS</b>		<b>10BIS RC</b>	
149B7003	10	149B7019	10
149B7004	15	149B7020	15
149B7005	20	149B7021	20
149B7006	25	149B7022	25
149B7007	32	149B7023	32
149B7008	40	149B7024	40
149B7009	50	149B7025	50
149B7011	65	149B7027	65
149B7012	80	149B7028	80
149B7225	100	-	100



Dimensions at the end of the section.

**10TER & 10TER RC with flanges**

Maximum upstream pressure 16 bar @ 80°C

Flange drilling PN16

Standard EN1092.

With 1/4" plugs on both sides to allow pressure gauge connection

APPROVAL : ACS



Part Number	DN	Part Number	DN
<b>10 TER</b>		<b>10TER RC</b>	
149B7032	32	149B7038	32
149B7033	40	149B7039	40
149B7034	50	149B7040	50
149B7036	65	149B7042	65
149B7037	80	149B7043	80
149B7226	100	-	100

Dimensions at the end of the section.



SEA WATER APPLICATIONS VERY AGGRESSIVE WATER

10 BIS BZ female/female

Maximum upstream pressure 25 bar @ 80°C

All internal components in Bronze

With 1/4" plugs on both sides to allow pressure gauge connection - Setting : from 1 to 6 bar (indicative value according to EN1567 standard)

APPROVAL : ACS

Manufactured on order only



Part Number	DN
149B7013	25
149B7014	32
149B7015	40
149B7016	50
149B7017	65
149B7018	80

Dimensions at the end of the section.

SPARE PARTS

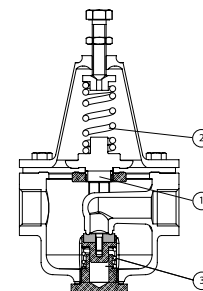
for pressure reducers Ref. 10, 10 BIS and 10 TER

\* The complete stirrup includes :

the stirrup, the stirrup plug, the diaphragm, the seal and the counter seat, fully assembled.

DN100 : membrane (ref. 149F023362)

1. Complete stirrup*	2. Setting spring	3. Compensating spring	DN	mm	"
Part Number	Part Number	Part Number			
149B7045	149B7285	149F025550	10	12/17	3/8
149B7045	149B7285	149F025550	15	15/21	1/2
149B7046	149B7286	149B7354	20	20/27	3/4
149B7047	149B7287	149F025552	25	26/34	1
149B7048	149B7288	149B7356	32	33/42	1¼
149B7049	149B7289	149F025554	40	40/49	1½
149B7050	149B7290	149F025555	50	50/60	2
149B7052	149F025528	149F025556	65	66/76	2½
149B7053	149B7293	149F025557	80	80/90	3
	consult us		100	102/114	4



Pressure gauge nipple - 487 female/male

Female/male with 1/4" plug

Casing in bronze

Part Number	DN
149B7179	1/2
149B7180	3/4
149B7181	1
149B7182	1¼
149B7183	1½
149B7184	2
149B7185	2¼
149B7186	2½
149B7187	3





**FLATS AND HOUSES INDIVIDUAL WATER SUPPLY**

**11 & 11RC male/male / 11BIS & 10BISRC female/female / 11EP female/male**

Maximum upstream pressure 25 bar @ 80°C  
 Downstream setting : 1 to 5.5 bar (indicative value according to EN1567 standard)  
 Possibility of assembly of compensating spring to obtain settings at 0.5 bar  
 With 1/4" plugs on both sides to allow pressure gauge connection  
 Pre-set at 3 bar  
 casing : bronze  
 seat : stainless steel DN 15 and 20  
 11 : male/male  
 11 BIS : female/female  
 11 EP : union-nut/male  
 APPROVALS : ACS   : DN15-20-25  
 : (11-11BIS)

Part Number	DN	Part Number	DN
<b>11</b>		<b>11RC</b>	
149B7054	15	149B7068	15
149B7055	20	149B7069	20
149B7489	25		
149B7548	32		
149B7567	40		
149B7565	50		

Part Number	DN	Part Number	DN
<b>11BIS</b>		<b>11BIS RC</b>	
149B7056	15	149B7063	15
149B7057	20	149B7064	20
149B7314	25		
149B7549	32		
149B7558	40		
149B7561	50		


Part Number	DN
<b>11EP</b>	
149B7511	20



Dimensions at the end of the section.

**FLATS AND HOUSES INDIVIDUAL WATER SUPPLY**

**11 DO male/male**

Maximum upstream pressure 25 bar @ 80°C  
 Settings : from 1 bar to 5.5 bar (indicative value according to EN1567 standard)  
 Delivered pre-set at 3 bar  
 Equipped with 2 plugs 1/4" on each side to allow the mounting of a pressure gauge and 2 fittings removables  
 casing : bronze  
 COVER : Bronze (\*cover : composite material)  
 seat : stainless steel  
 APPROVALS : ACS  : DN15-20-25



Part Number	DN	Part Number	DN
<b>11</b>		<b>11RC</b>	
149B7640	15	149B7218	20*
149B7641	20		
149B7228	25		
149B7550	32		
149B7559	40		
149B7562	50		

Dimensions at the end of the section.

**VERY LOW PRESSURE, AGRICULTURE, IRRIGATION, LABORATORY**

**11BIS RCBP female/female**

Maximum upstream pressure 10 bar @ 80°C  
 Settings : from 0.1 bar to 0.6 bar  
 With 1/4" plugs on both sides to allow pressure gauge connection  
 Table of flow available on request  
 Casing : bronze  
 Seat : stainless steel  
 APPROVAL : ACS



Part Number	DN
149B7065	20

Dimensions at the end of the section.

**MULTI 7 - FLATS AND HOUSES INDIVIDUAL WATER SUPPLY**

**MULTI 7 MULTI CONNECTIONS**

Maximum upstream pressure 16 bar @ 80°C  
 With 1/4" plugs on both sides to allow pressure gauge connection  
 CASING : Bronze - Pre-set at 3 bar  
 Downstream setting : 1 to 5.5 bar (indicative value according to EN1567 standard)  
 Delivered with 3 nuts allowing 16 different connecting possibilities in 1/2" and 3/4"  
 APPROVAL : ACS



Part Number	DN
149B7540	20

Dimensions at the end of the section.



**JUNIOR - FLATS AND HOUSES INDIVIDUAL WATER SUPPLY**

**JUNIOR**

Maximum upstream pressure 16 bar @ 80°C  
 With 1/4" plugs on both sides to allow pressure gauge connection  
 Downstream setting : 1 to 5.5 bar (indicative value according to EN1567 standard)  
 Possibility to set-up pre-set at 3 bar downstream  
 casing : bronze  
 APPROVAL : ACS  
 7BIS : female/female  
 7EP : union-nut/male  
 7SP : male/union-nut

Part Number	DN
<b>7BIS - female/female</b>	
149B7209	15
149B7210	20
149B7552	25
149B7553	32
149B7554	40
149B7555	50

Part Number	DN
<b>7EP - female/male</b>	
149B7211	15
149B7212	20

Part Number	DN
<b>7SP - male/female</b>	
149B7248	20

Dimensions at the end of the section.



**PROTECTION OF INDIVIDUAL DEVICE, WATER HEATER**

**SECURO 5 SP male/female**

Maximum upstream pressure 16 bar @ 80°C  
 1/4" pressure gauge connection and drain at the bottom of the casing  
 Downstream setting : 1 to 5.5 bar (indicative value according to EN1567 standard) - Possibility to set-up pre-set at 3 bar downstream  
 Casing : chrome plated bronze  
 Upstream connection : male, downstream : with union nut  
 APPROVAL : ACS


Part Number	DN
149B7312	20

Dimensions at the end of the section.



**WATER SUPPLY OF HOUSE BLOCKS, COLLECTIVE HOUSING**

**REDUNEUF 9 male/male & 9 BIS female/female**

Maximum upstream pressure 25 bar @ 80°C  
 Non-adjustable set at 3 bar  
 With 1/4" plugs on both sides to allow pressure gauge connection  
 Casing : bronze  
 Seat in stainless steel  
 APPROVALS :  ACS



Part Number	DN
<b>9 male/male</b>	
149B7219	15
149B7220	20
149B7221	25

Part Number	DN
<b>9BIS female/female</b>	
149B7222	15
149B7223	20
149B7224	25



Dimensions at the end of the section.

**PRESSURE REDUCING VALVE QUATRO**

**12 BIS SR female / female**

Maximum upstream pressure 25 bar @ 80°C  
 Pressure reducing valve - setting from 1 to 5.5 bar (indicative value according to EN1567 standard)  
 Antipollution check valve  
 Drain valve to allow the emptying of the downstream installation  
 Pre-set at 3 bar  
 With 1/4" plugs on both sides to allow pressure gauge connection  
 APPROVAL : ACS

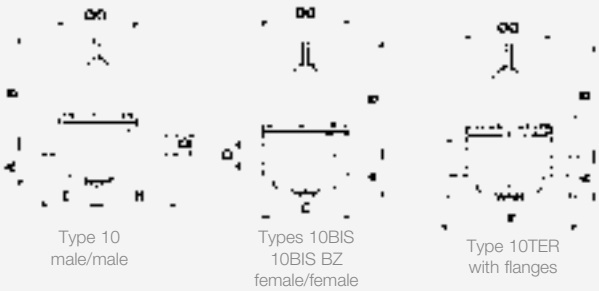


Part Number	DN
149B7076	20

Dimensions at the end of the section.

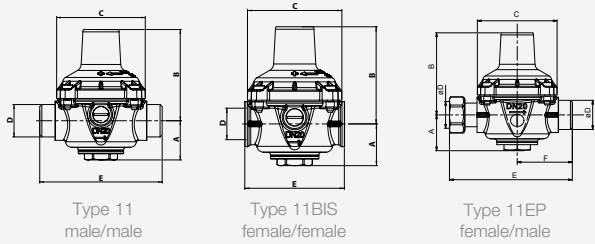
OVERALL DIMENSIONS

Type 10



DN	D		A mm	B mm	C mm	E mm	F mm	G mm	H mm	Kg			
	mm	"								10	10BIS	10TER	10BISBZ
10	3/8	12/17	48	120	92	65	-	92	95	1,3	1,25	-	-
15	1/2	15/21	48	120	92	65	-	92	95	1,3	1,25	-	-
20	3/4	20/27	55	130	108	78	-	108	102	1,90	1,75	-	-
25	1	26/34	60	160	123	88	-	123	116	2,6	2,70	-	2,70
32	1 1/4	33/42	77	180	155	-	240	155	-	4,80	8,50	4,80	-
40	1 1/2	40/49	84	205	172	-	260	172	-	6,50	10,9	6,50	-
50	2	50/60	105	235	198	-	288	198	-	9,80	14,3	9,80	-
65	2 1/2	66/76	118	270	215	-	305	215	-	13,5	21,3	13,5	-
80	3	80/90	143	300	234	-	330	234	-	17,9	27,9	17,9	-
100	4	102/114	120	350	250	-	385	260	-	33,6	50,0	-	-

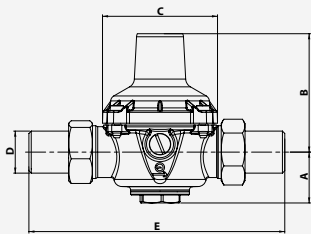
Type 11



DN	D		A mm	B mm	C mm	E mm Ref. 11	E mm Ref. 11bis	Kg	
	mm	"						Ref. 11	Ref. 11bis
15	15/21	1/2	31	60	59	85	66	0,70	0,70
20	20/27	3/4	32	75	73	100	76,5	0,90	0,90
25	26/34	1	40	102	94	122	98	2,00	1,90
32	33/42	1 1/4	51	179	104	132	126	3,90	3,90
40	40/49	1 1/2	46	185	104	132	132	5,00	4,20
50	50/60	2	54	194	104	146	146	5,30	5,20

DN	D		A mm	B mm	E mm	F mm	C mm	Kg
	mm	"						
20	20/27	3/4	31	75	112	50	73	0,88

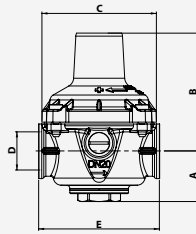
Type 11DO



Type 11DO male/male

DN	D		A mm	B mm	C mm	E mm	Kg
	mm	"					
15	15/21	1/2	31	60	59	140	0,90
20	20/27	3/4	32	75	73	160	1,30
25	26/34	1	40	102	94	180	2,50
32	33/42	1 1/4	51	179	104	200	4,60
40	40/49	1 1/2	46	185	104	220	5,00
50	50/60	2	54	194	104	250	5,50

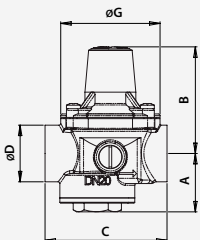
Type 11BIS RCBP



Type 11BIS RCBP female/female

DN	D		A mm	B mm	C mm	E mm	Kg
	mm	"					
20	20/27	3/4	32	75	73	76,5	0,92

### MULTI 7



Type MULTI 7  
multi connections

DN	D		A mm	B mm	C mm	G mm
	mm	"				
20	20/27	3/4	33	61	70	57

### 7 Junior



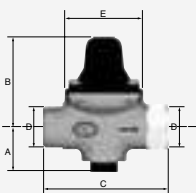
Type 7BIS  
female/female

Type 7EP  
female/male

Type 7SP  
male/female

D	D		A mm	B mm	C mm	E mm	F "	G mm	H "	Kg		
	mm	"								7BIS	7EP	7SP
15	15/21	1/2	30	56	64,5	92	3/4	50	-	0,5	0,5	-
20	20/27	3/4	33,5	61	70	95	3/4	57	3/4	0,6	0,8	0,8
25	26/34	1	30	68	81	-	-	70	-	0,95	-	-
32	33/42	1 <sup>1/4</sup>	34,5	91	97	-	-	81	-	1,55	-	-
40	40/49	1 <sup>1/2</sup>	36,5	106	110	-	-	92	-	2,05	-	-
50	50/60	2	45,5	106	135	-	-	120	-	3,70	-	-

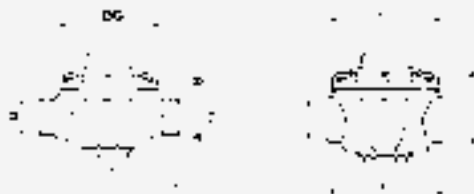
### 5 SP



Type 5 SP  
male/female

DN	D		A mm	B mm	C mm	E mm	kg
	mm	"					
20	20/27	3/4	29	58	82	50	0,4

### Type 9

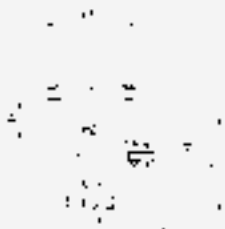


Type 9  
male/male

Type 9BIS  
female/female

DN	D		A mm	B mm	E mm	C mm	G mm	Kg	
	mm	"						9	9 BIS
15	15/21	1/2	31	53	66	85	59	0,55	0,56
20	20/27	3/4	31	59	76,5	100	73	0,78	0,84
25	26/34	1	43	66	98	122	94	1,45	1,54

### 12BIS



Type 12BIS  
female/female

DN	D		A mm	B mm	C mm	G mm	SR mm	kg
	mm	"						
20	20/27	3/4	78	75	104	73	44	1,05

# Chapter 3.6

## Miscellaneous

### WATER HAMMER ARRESTORS

#### 21 Range

Cold or Hot water θ 80°C

Shown in chrome plated version

To be placed at the closest point to the water hammer generating area

Operating pressure 3 bar, maxi 5 bar (for upper pressure, see industrial anti-water hammer devices)

APPROVAL : ACS

21 : water hammer arrestor for straight line

21BIS D : water hammer arrestor for straight line

21BIS E : angle water hammer arrestor

21BIS EB : vertical dead end water hammer arrestor

21BISFLEX : straight line water hammer arrestor with flexible hose

Part Number	DN
<b>21 male/male</b>	
149B7138	20
<b>21BIS D female/female</b>	
149B7243	15
<b>21BIS E female/female</b>	
149B7244	15
<b>21BIS EB female</b>	
149B7245	20
<b>21BIS Flex female/female</b>	
149B7246	15

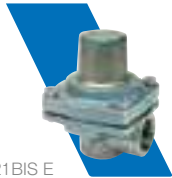
Dimensions at the end of the section.



21



21BIS D



21BIS E



21BIS EB



21BIS FLEX



**PRESSURE GAUGES**

**212AD**

«PRESSE» gauge for quick inspection of pressure on any orifice from 8 to 20 mm  
 Rubber connection  
 Dial from 0 to 10 bar



Part Number
149B7145

**2212 B male**

Gauge with central needle  
 ABS casing  
 Male thread 1/4" vertical  
 Diameter 50 mm



Part Number	Scale in bar
149B7157	1
149B7161	4
149B7162	6
149B7158	10
149B7159	16
149B7160	25

**212G male**

Gauge with glycerine bath -Glycerine bath protects from vibrations  
 Stainless steel casing  
 Male thread 1/4" vertical  
 Diameter 60 mm



Part Number	Scale in bar
149B7139	1
149B7143	4
149B7144	6
149B7140	10
149B7141	16
149B7142	25

**3212 B male**

Gauge with central needle  
 ABS casing with axial connection  
 Male thread 1/4" horizontal  
 Diameter 50 mm



Part Number	Scale in bar
149B7176	4
149B7177	6
149B7174	10
149B7175	16

**312 G male**

Gauge with glycerine bath  
 Glycerine bath protects from vibrations  
 Stainless steel casing with axial connection  
 Male thread 1/4" vertical  
 Diameter 60 mm



3

Part Number	Scale in bar
149B7176	4
149B7177	6
149B7174	10
149B7175	16

**213 BIS male/female**

Stop valve in brass with automatic drain cock  
 Male thread 1/4" Female output



Part Number	DN
149B7156	1/4
149B7155	3/8

**PRESSURE SWITCHES****Pressure Switch CS**

θ 60°C  
 Pressure switch CS - Pressure switch triphased and monophased.  
 2 to 20 bar, 12 amperes, 220-415 volt, IP43, 1/2" connections.  
 For control of boosting pumps, hydrophoric groups



Part Number without valve	Setting range (*) (bar)	Part Number with valve compression	Setting range (*) (bar)
149B 5906	2 - 6	149B 5909	2 - 6
149B 5907	4 - 12	149B 5910	4 - 12
1	UV	1	UV

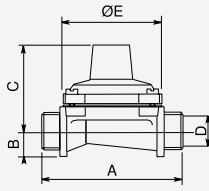
\*Air Pressure

**Accessories**

DECOMPRESSION VALVE  
 To be mounted on pressure switch CS (above)

Part Number without valve	UV
149B 5905	1

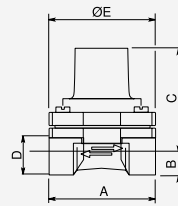
**21**



Type 21  
male/male

DN	D		A mm	B mm	C mm	E mm	kg
	mm	"					
20	20/27	3/4	100	18,0	61,0	72,5	0,75

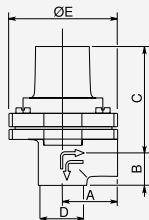
**21BIS D**



Type 21BIS D  
female/female

DN	D		A mm	B mm	C mm	E mm	kg
	mm	"					
15	15/21	1/2	59,0	13,5	59,0	59,0	0,50

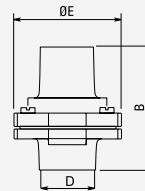
**21BIS E**



Type 21BIS E  
female/female

DN	D		A mm	B mm	C mm	E mm	kg
	mm	"					
15	15/21	1/2	29,5	17,0	59,0	59,0	0,50

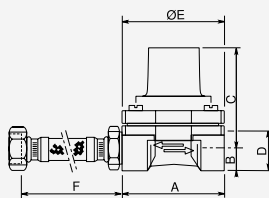
**21BIS EB**



Type 21BIS EB  
female

DN	D		E mm	B mm	kg
	mm	"			
20	20/27	3/4	59,0	66,0	0,45

**21BIS FLEX**



Type 21BIS FLEX  
female/female

DN	D		A mm	B mm	C mm	E mm	F mm	kg
	mm	"						
15	15/21	1/2	59,0	13,5	59,0	59,0	130	0,50

## Chapter 3.7

## Solenoid Valves

3

## SOLENOID VALVES

**INDIRECT ACTION, NORMALLY CLOSED - WKB2 female/female**

θ max 100°C

Membrane solenoid valve, indirect action (pilot) normally closed. 2 ways. Brass body. Brass and stainless steel inner system.

EPDM membrane (-30°C +100°C).

Operating pressure : please consult us

FKM membrane (0°C +100°C).

Operating pressure : please consult us

Protection : IP 65 with connection

Option : manual action on request

Approval :  (EPDM version )  
ACS



Part Number 220V/50Hz	Part Number 24V/50Hz	Part Number 24DC	∅ “	mm	UV
<b>EPDM</b>					
149B 6699	149B 6706	149B 6713	3/8	12	1
149B 6700	149B 6707	149B 6714	1/2	15	1
149B 6701	149B 6708	149B 6715	3/4	20	1
149B 6702	149B 6709	149B 6716	1	25	1
149B 6703	149B 6710	149B 6717	1 1/4	32	1
149B 6704	149B 6711	149B 6718	1 1/2	40	1
149B 6703V	149B 6710V	149B 6717V	1 1/4	32	1
149B 6704V	149B 6711V	149B 6718V	1 1/2	40	1
149B 6705V	149B 6712V	149B 6719V	2	50	1
<b>FKM</b>					
149B 6705	149B 6712	149B 6719	2	50	1
149B 6699V	149B 6706V	149B 6713V	3/8	12	1
149B 6700V	149B 6707V	149B 6714V	1/2	15	1
149B 6701V	149B 6708V	149B 6715V	3/4	20	1
149B 6702V	149B 6709V	149B 6716V	1	25	1

Dimensions at the end of the section.

**INDIRECT ACTION, NORMALLY OPEN - WZB2 female/female**

θ max 100°C

Membrane solenoid valve, indirect action (pilot) normally open. 2 ways. Brass body. Brass and stainless steel inner system.

EPDM membrane (-30°C +100°C).

Operating pressure : please consult us

FKM membrane (0°C +100°C).

Operating pressure : please consult us

Protection : IP 65 with connection

Approval :  (EPDM version )



Part Number 220V/50Hz	Part Number 24V/50Hz	Part Number 24DC	Ø		UV
			“	mm	
<b>EPDM</b>					
149B 6720	149B 6727	149B 6734	3/8	12	1
149B 6721	149B 6728	149B 6735	1/2	15	1
149B 6722	149B 6729	149B 6736	3/4	20	1
149B 6723	149B 6730	149B 6737	1	25	1
149B 6724	149B 6731	149B 6738	1 1/4	32	1
149B 6725	149B 6732	149B 6739	1 1/2	40	1
149B 6726	149B 6733	149B 6740	2	50	1
<b>FKM</b>					
149B 6720V	149B 6727V	149B 6734V	3/8	12	1
149B 6721V	149B 6728V	149B 6735V	1/2	15	1
149B 6722V	149B 6729V	149B 6736V	3/4	20	1
149B 6723V	149B 6730V	149B 6737V	1	25	1
149B 6724V	149B 6731V	149B 6738V	1 1/4	32	1
149B 6725V	149B 6732V	149B 6739V	1 1/2	40	1
149B 6726V	149B 6733V	149B 6740V	2	50	1

Dimensions at the end of the section.

**INDIRECT ACTION, DIRECT ACTION 1/8”, 1/4” - WB12 female/female**

θ max 100°C

Membrane solenoid valve, indirect action (pilot) except 1/8”, 1/4” direct action normally closed. 2 ways. 316 stainless steel body and stainless steel inner system. FKM membrane (0°C +100°C).

DN 1/8-1/4 (-10°C to + 100°C).

Operating pressure : please consult us.

Protection IP65 with connection.

Option : manual action on request except 1/4”, 1/8”



Part Number 220V/50Hz 9W	Part Number 24V/50Hz 9W	Part Number 24DC 15W	Ø		UV
			“	mm	
149B 6741	149B 6749	149B 6757	1/8	3	1
149B 6742	149B 6750	149B 6758	1/4	4,5	1
149B 6743	149B 6751	149B 6759	3/8	15	1
149B 6744	149B 6752	149B 6760	1/2	15	1
149B 6745	149B 6753	149B 6761	3/4	20	1
149B 6746	149B 6754	149B 6762	1	25	1
149B 6747	149B 6755	149B 6763	1 1/4	32	1
149B 6748	149B 6756	149B 6764	1 1/2	40	1

Dimensions at the end of the section.

**INDIRECT ACTION, NORMALLY CLOSED - WZE2 female/female**

θ max 100°C

Membrane solenoid valve, indirect action (pilot) normally closed. 2 ways. brass body, brass and stainless steel inner system.

EPDM membrane (-30°C +100°C).

Operating pressure : please consult us

Protection : IP 65 with connection

Approval :  ACS



3

Part Number 220V/50Hz	Part Number 24V/50Hz	Part Number 24DC	“	Ø mm	UV
149B 6765	149B 6768	149B 6771	3/8	10	1
149B 6766	149B 6769	149B 6772	1/2	10	1
149B 6767	149B 6770	149B 6773	3/4	18	1

Dimensions at the end of the section.

**ASSISTED LIFT OPERATED, NORMALLY CLOSED - HK2 female/female**

θ max 100°C

Solenoid valve with direct action, assisted lift operated, normally closed. 2 ways. DZR brass body. Brass and stainless steel inner system.

EPDM membrane (-30°C +100°C).

Operating pressure : please consult us

Protection : IP 65 with connection.

Approval :  ACS



Part Number 220V/50Hz	Part Number 24V/50Hz	Part Number 24DC	“	Ø mm	UV
149B 6789	149B 6793	149B 6797	3/8	10	1
149B 6790	149B 6794	149B 6798	1/2	12	1
149B 6791	149B 6795	149B 6799	3/4	18	1
149B 6792	149B 6796	149B 6800	1	22	1

Dimensions at the end of the section.

**DIRECT ACTION FOR GAS OIL, NORMALLY CLOSED - AKB2 female/female**

θ max 100°C

Solenoid valve with direct acting, for gas oil, normally closed. 2 ways. Brass body. Brass and stainless steel inner system.

FKM Membrane : -10°C +100°C.

Operating pressure : please consult us

Protection : IP 65 with connection



Part Number 220V/50Hz	Part Number 24V/50Hz	Part Number 24DC	“	Ø mm	UV
149B 6774	149B 6779	149B 6784	1/8	3	1
149B 6775	149B 6780	149B 6785	1/4*	3	1
149B 6776	149B 6781	149B 6786	1/4	4,5	1
149B 6777	149B 6782	149B 6787	3/8	4,5	1
149B 6778	149B 6783	149B 6788	1/2	8	1

Dimensions at the end of the section.

**Coil**

θ max ambient 40°C

Coil without connection for solenoid valve : WZB2 - WKB2 - WKE2 - WBI2 - HK2 - AKB2  
(IP65 with connection)



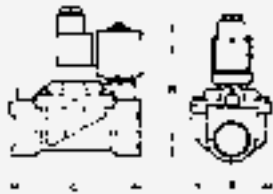
Part Number	Tension	UV
149B 5290	220/230V 50Hz 9W	1
149B 5291	380/400V 50Hz 9W	1
149B 5292	24V 50Hz 9W	1
149B 5293	12V 50Hz 9W	1
149B 5294	110V 50Hz 9W	1
149B 5295	12V d.c 15W	1
149B 5296	24V d.c 15W	1
149B 5583	48V 50Hz 9W	1

OVERALL DIMENSIONS

IMPORTANT

- All technical information concern standard coils
- All solenoid valves can be delivered with a standard coil 220 V / 50 Hz ref. 5290 or 24 V / 50 Hz ref. 5292 or 24 V DC ref. 5296 and a connector
- All our solenoid valves can be delivered ON DEMAND with a different coil at the same price as the standard.

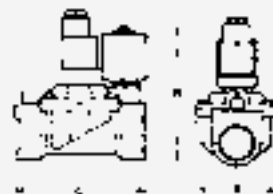
WKB2 - WZB2



Types WKB2  
WZB2

Connect. FF	Passage	A mm	B mm	C mm	kg	Kv m <sup>3</sup> /H	T opening ms*	T closing ms*
3/8	15	52	109	80	0,96	2,5	40	350
1/2	15	52	109	80	0,96	4	40	350
3/4	20	58	116	90	1,16	8	40	1000
1	25	70	130	109	1,56	11	300	1000
1 1/4	32	82	142	120	2,16	18	1000	2500
1 1/2	40	95	156	130	3,36	24	1500	4000
2	50	113	167	162	4,46	40	5000	10000

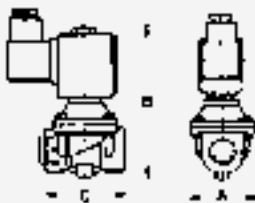
WB12



Type  
WB12

Connect. FF	Passage	A mm	B mm	C mm	kg	Kv m <sup>3</sup> /H	T opening ms*	T closing ms*
1/8	3	34	84	35	0,36	0,30	20	20
1/4	4,5	34	84	35	0,36	0,55	20	20
3/8	15	52	109	80	0,96	2,5	40	350
1/2	15	52	109	80	0,96	4	40	350
3/4	20	58	116	90	1,16	8	40	1000
1	25	70	130	109	1,56	11	300	1000
1 1/4	32	82	142	120	2,16	18	1000	2500
1 1/2	40	95	156	130	3,36	24	1500	4000

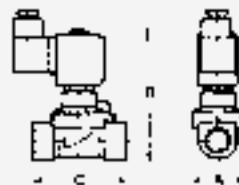
WKE2



Types WKE2

Connect. FF	Passage	A mm	B mm	C mm	kg	Kv m <sup>3</sup> /H	T opening ms*	T closing ms*
3/8	10	48	90	51,5	0,45	1,5	50	300
1/2	10	54	90	51,5	0,45	1,5	50	300
3/4	18	62	101	90	0,81	6	200	500

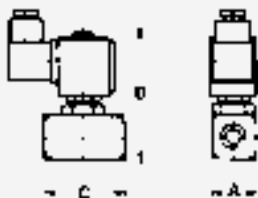
HK2



Types HK2

Connect. FF	Passage	A mm	B mm	C mm	kg	Kv m <sup>3</sup> /H	T opening ms*	T closing ms*
3/8	10	52,5	103,5	58	0,76	2,5	100	100
1/2	12	52,5	103,5	58	0,76	4	100	100
3/4	18	58	110	90	0,96	6	150	100
1	22	58	118,6	90	1,26	7	150	100

AKB2



Types AKB2

Connect. FF	Passage	A mm	B mm	C mm	kg	Kv m <sup>3</sup> /H	T opening ms*	T closing ms*
1/8	3	34	84	38	0,36	0,30	20	20
1/4	3	34	84	38	0,36	0,30	20	20
1/4	4,5	34	84	38	0,36	0,55	20	20
3/8	4,5	34	84	38	0,36	0,55	20	20
1/2	8	48	90	49	0,45	1	20	30

\* The indicated times concern the medium water.  
The exact time depends of pressure conditions.



## Chapter 3.8

# Air Valves

### AIR CONTROL WATER DISTRIBUTION SYSTEMS

All water pipes carry air... This air may have been introduced at the time the water system was filled, or during maintenance work, but can also arise from the working of pumps or dissolved air in reservoirs... Depending upon its source and upon the pressure in the network, the air can arise in the form of bubbles or in emulsion. Indeed the higher the water pressure the greater the quantity of air dissolved in it. Decompression resulting from fluctuations in flow along the network (bends, junctions...) encourages the air to degasify. It will naturally rise and accumulate at high points.

The installation of automatic equipment such as air valves and anti-water hammer valves allows most of the problems caused by air to be solved.



### TRIPLE FUNCTION FOR CLEAR WATER

#### VE320 with flange PN16

PRESSURE PFA 16 bar θ 60°C

Triple function air valves for clear water. Ductile iron casing, PA 6 (polyamid) spindle, stainless steel drain cock, NBR (nitrile) drain cock seal, large orifice seal in polyurethane or NBR (DN100).

APPROVAL : ACS



Part Number	DN
149B 5884	40-50-60
149B 5885	65
149B 5886	80
149B 5887	100
With stop valve*	
149B 5884 R	40-50-60
149B 5885 R	65

\*Other Ø consult us

#### VE320 with flange PN25

PRESSURE PFA 16 bar θ 60°C

Triple function air valves for clear water. Ductile iron casing, PA 6 (polyamid) spindle, stainless steel drain cock, NBR (nitrile) drain cock seal, large orifice seal in polyurethane or NBR (DN100).

APPROVAL : ACS



Part Number	DN
149B 0091 66	40-50-60
149B 0091 68	65
149B 0091 70	80
149B 0091 71	100
With stop valve*	
149B 0091 67	40-50-60
149B 0091 69	65

\*Other Ø consult us

**TRIPLE FUNCTION FOR WASTE WATER****VE330 with flange PN16**

PRESSURE PFA 16 bar θ 60°C

Delivered with set pin.

SEAL in polyurethane.

CASING : DN80 and 100, GJS ductile iron DN150 in Steel

SPINDLE : Polyamid (PA66).



3

Part Number	DN
149B 5888	80
149B 5889	100
149B 5890	150

Air valve with stop valve : consult us

**SINGLE FUNCTION FOR CLEAR WATER****VE120**

PRESSURE PFA 16 bar θ 100°C

Ductile iron casing, NBR (nitrile) seal.

Drain valve : nickel plated brass.

APPROVAL : ACS



Part Number	Designation
149B 2867	Air valve alone F1"
149B 2867 BR	Air valve with flange with connection*
149B 2867 RM	Air valve with connection M1"
149B 2867 VA	Air valve with stop valve M1"
149B 2867 VB	Air valve with stop valve + with flange*

\*Flange DN 40 / 50 / 60

**VE120 with flange PN25**

PRESSURE PFA 25 bar θ 100°C

Ductile iron casing, NBR (nitrile) seal.

Drain valve : nickel plated brass.

APPROVAL : ACS



Part Number	Designation
149B 2868	Air valve alone F1"
149B 2868 BR	Air valve with flange with connection*
149B 2868 RM	Air valve with connection M1"
149B 2868 VA	Air valve with stop valve M1"
149B 2868 VB	Air valve with stop valve + with flange*

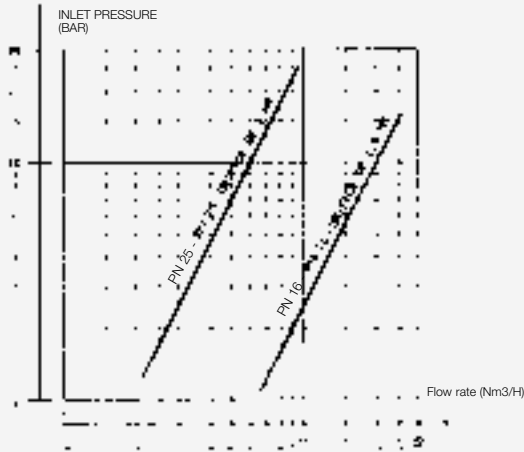
\*Flange DN 40 / 50 / 60

OVERALL DIMENSIONS & TECHNICAL INFORMATION

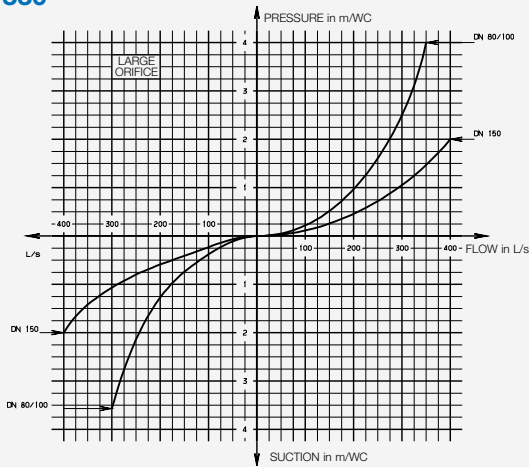
TECHNICAL PARAMETERS FLOW/PRESSURE GRAPHS

These flow chart indicate the flow of air evacuated or sucked in by the large orifice of the air valves. The choice of present flow rate of the air valve is a function of the loss of pressure which can be sustained by the system.

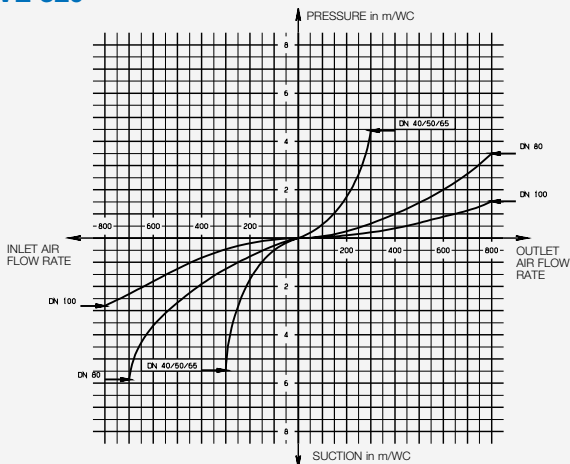
VE 120



VE 330



VE 320



VE320



Type VE320

DN	For pipe Ø mm	A mm	B mm	Kg
40/50/60	≤ 200	196	380	12
65	≤ 200	196	375	12
80	≤ 500	224	350	19
100	≤ 1000	224	400	22
<b>With Stop Valve</b>				
40/50/60	≤ 200	196	465	13
65	≤ 200	196	456	13

TRIPLE FUNCTION AIR VALVE TYPE VE 320 FOR CLEAR WATER

This model ensures continuous and automatic evacuation, but also influx and release of air at fast speed.

FUNCTION 1



FAST RELEASE OF AIR

FUNCTION 2



RELEASING AIR UNDER PRESSURE

FUNCTION 3



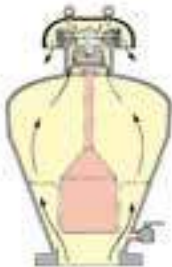
RAPID INFLUX OF AIR

**3 FUNCTION AIR VALVES FOR WASTE WATER**

This model works in the same way as VE 320.

The body of the valve is simply over-sized to avoid contact between waste water and the top part of the moving section.

**1. FUNCTION**



**FAST RELEASE OF AIR**

**2. FUNCTION**



**RELEASING AIR UNDER PRESSURE**

**3. FUNCTION**



**RAPID INFLUX OF AIR**

**MAINTENANCE OF AIR VALVES**

To check that an air valve works correctly, simply unscrew the screw in the middle of the air valve cover's :

- a jet of water indicates that the apparatus works correctly.
- pressure air jet indicates that the air valve is doesn't perform correctly and should be cleaned.

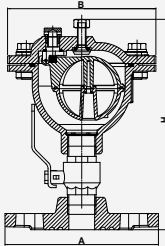
**VE330**



Type VE330

DN	For pipe Ø mm	A mm	B mm	Kg
80	80 to 200	325	580	33,0
100	200 to 600	325	580	33,0
150	> 600	360	650	55,0

**VE120**



Type VE120

DN	A mm	B mm	Total Length	Kg
Air valve alone F 1"		175	158	5,00
Air valve with flange with connection 40/50/60	185	175	214	8,10
Air valve with connection M1"		175	180	5,00
Air valve with stop valve M1"		175	218	5,30
Air valve with stop valve + with flange 40/50/60	185	175	246	8,40

**VE120**



Type VE120

DN	H mm	L X I mm	* mm
40 - 50 - 60	900	600 x 600	150 x 150

\*Minimum air entrance section of air at top of manhole

**VE320**



Type VE320

DN	H mm	L X I mm	* mm
50-40/60-65	1100	600x600	150 x 150
80	1200	600x600	200 x 200
100	1300	600 x 600	300 x 300

\*Minimum air entrance section of air at top of manhole

**VE330**



Type VE330

DN	H mm	L X I mm	* mm
80/100	1200	1000 x 1000	300 x 300
150	1500	1200 x 1200	300 x 300

\*Minimum air entrance section of air at top of manhole