

## Float control on-off valve type E2110-14



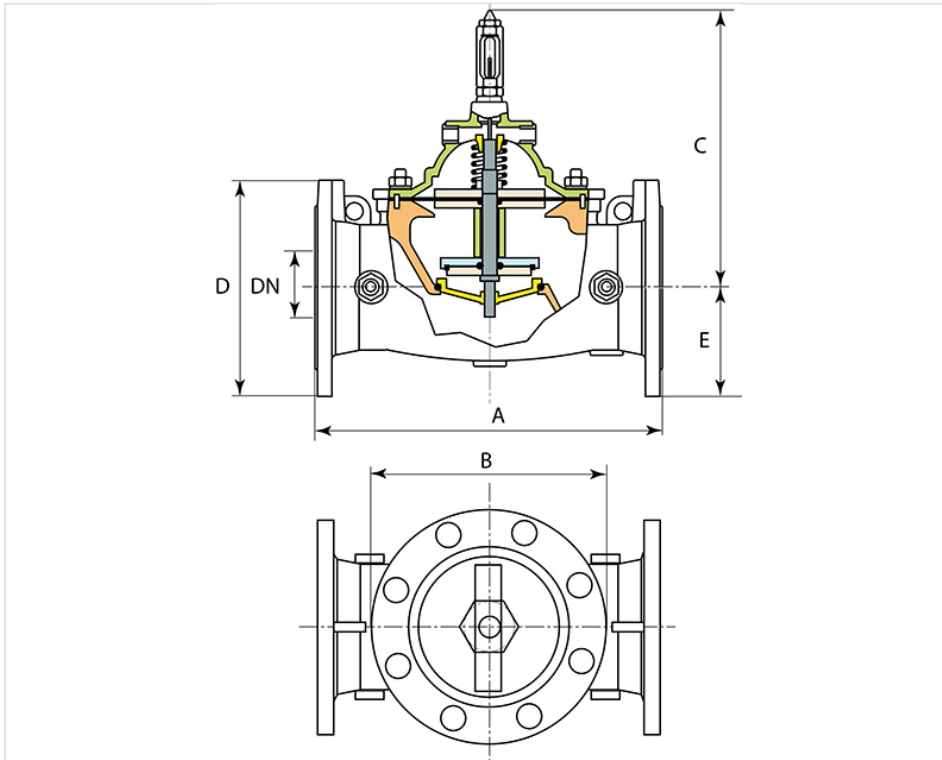
Flanges in conformity with ISO 7005-2.

### PN10-16

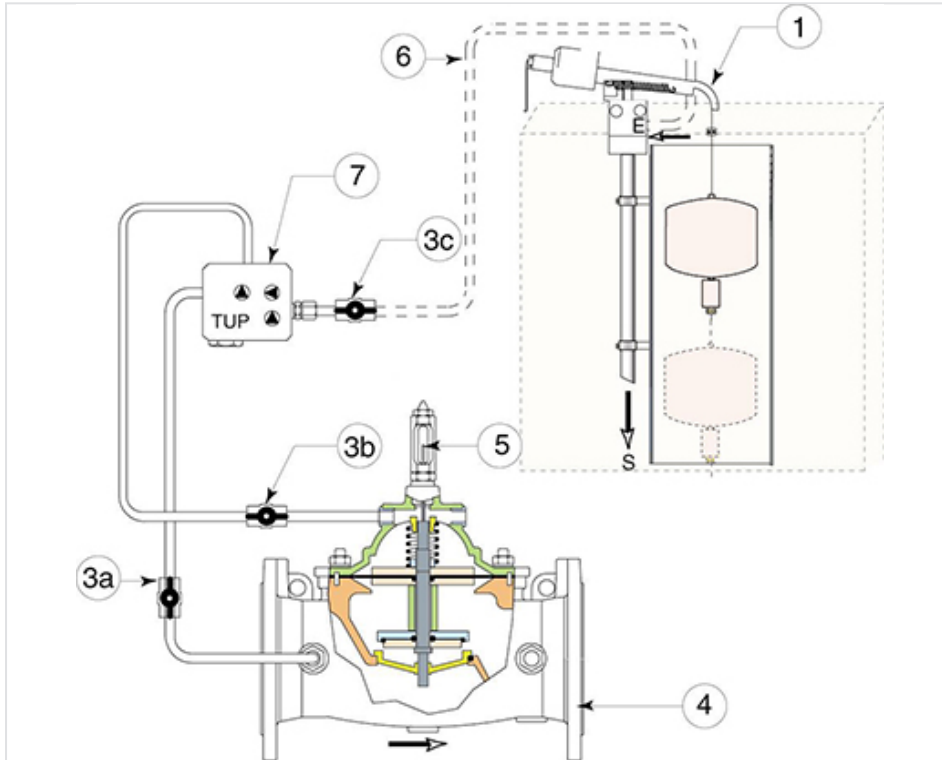
DN mm	A mm	B mm	C mm	D mm	E mm
50	230	148	246	165	85
60	290	148	246	185	95
65	290	148	246	185	95
80	310	148	246	200	100
100	350	206	272	220	110
125	400	267	330	250	125
150	480	267	330	285	145
200	600	356	402	340	170
250	730	445	569	400	200
300	850	597	649	455	230
350	980	597	649	520	255
400	1100	750	786	565	285
500	1250	842	840	670	335
600	1450	905	956	780	390
700	1650	1110	1080	910	460

## PN25

DN mm	A mm	B mm	C mm	D mm	E mm
50	230	148	246	165	85
60	290	148	246	185	95
65	290	148	246	185	95
80	310	148	246	200	100
100	350	206	272	220	110
125	400	267	330	250	125
150	480	267	330	285	145
200	600	356	402	340	170
250	730	445	569	400	200
300	850	597	649	455	230
350	980	597	649	520	255
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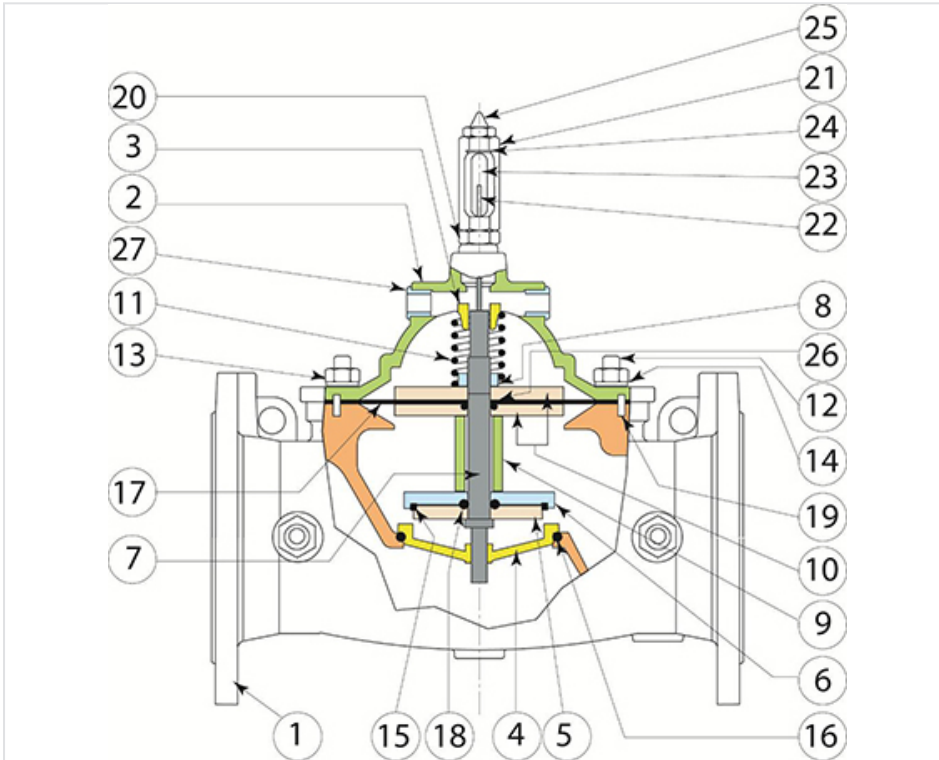


**Hydraulic scheme**



Item	Description	Material
1	Float pilot on-off F35	AISI 304
3a 3b 3c	Ball valve	Brass Ni-plated
4	Main valve E2001	
5	Position indicator with manual venting cock E50	
6	Tube (not included)	Inox AISI 304
7	Centralized control unit TUP-93	

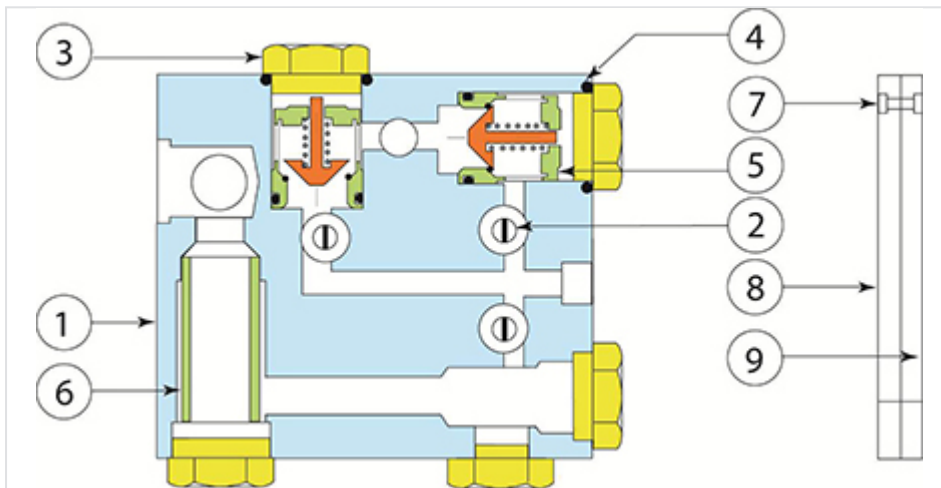
## Material and coating



Item	Quantity	Description	Material
01	01	Body	FGS 400-15 (coating BFE epoxy 250µm mini)
02	01	Cover	FGS 400-15 (coating BFE epoxy 250µm mini)
03	01	Cover bearing	Bronze
04	01	Seat	AISI 316
05	01	Quad-ring retainer plate	AISI 316
06	01	Quad-ring retainer size 50-200	AISI 316
07	01	Stem	AISI 303
08	02	Stem nuts	AISI 303
09	01	Spacer	AISI 303
10	02	Diaphragm washers epoxy coated	Steel
11	01	Spring	AISI 302
12	*	Stud	AISI 303
13	*	Nut	AISI 303
14	*	Washer	AISI 303

Item	Quantity	Description	Material
15	01	Quad-ring	NBR (KTW-WRC)
16	01	Seat O-ring	Viton
17	01	Diaphragm	NBR nylon reinforced (KTW-WRC)
18	01	O-ring	NBR
19	02	Centring taper pin	AISI 303
20	01	Base position indicator	Brass Ni-plated
21	01	Position indicator housing	Brass Ni-plated
22	01	Position indicator stem	AISI 303
23	01	Position indicator	Glass
24	02	O-ring	NBR
25	01	Brass Ni-plated	Brass Ni-plated
26	01	O-ring	NBR
27	01	Reduction	AISI 304

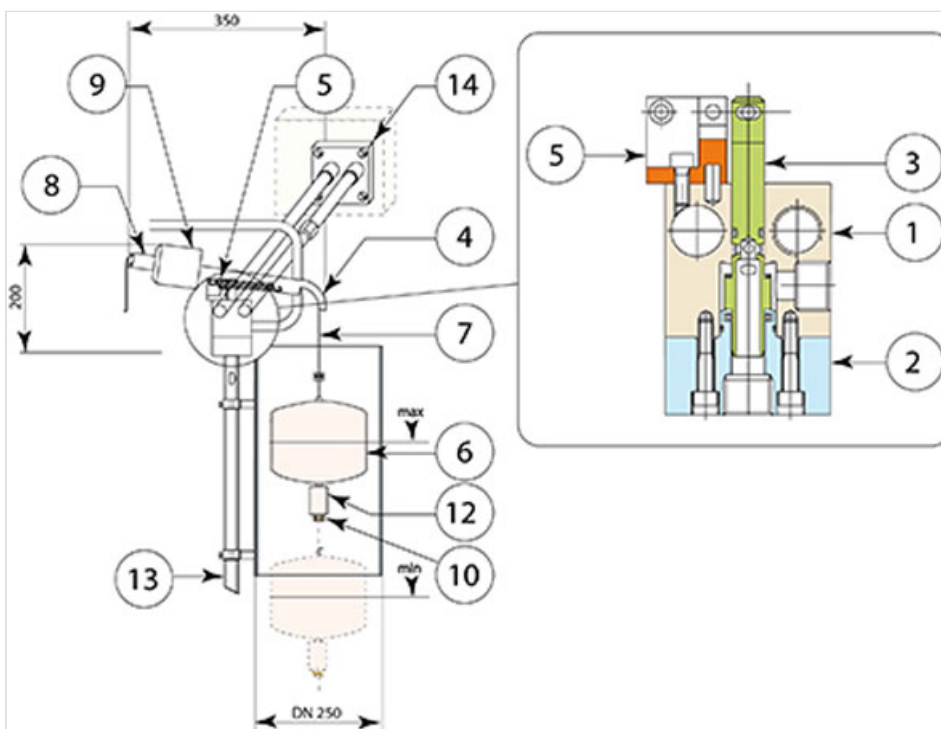
## Central Control Unit TUP 93



Item	Quantity	Description	Material (type)
01	01	Body	AISI 303
02	03	Cock	AISI 303
03	03	Plug	AISI 303
04	03	O-ring	NBR
05	02	Non return valve (WRC)	
06	01	Screen	AISI 316

Item	Quantity	Description	Material (type)
07	01	Rivet	Brass
08	01	Bottom label	Polycarbonate makrolon
09	01	Top label	Polycarbonate makrolon

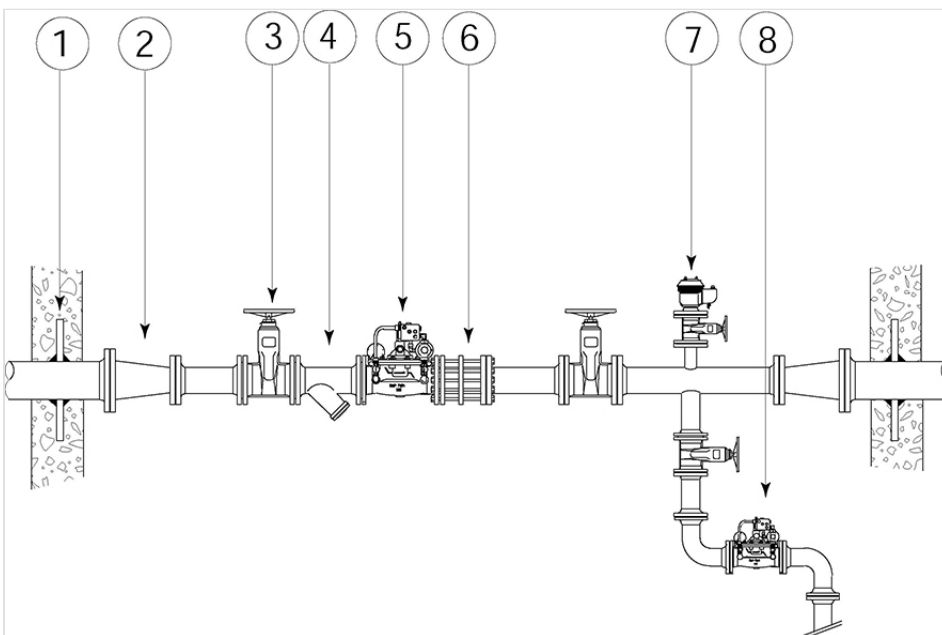
### Float pilot on-off F35



Item	Description	Material
1	Body	AISI 304
2	Base	AISI 304
3	Obturator	AISI 304
4	Pilot lever	AISI 304
5	Support lever	Bronze
6	Float	AISI 304
7	Cable	AISI 316
8	Counterweight	Bronze
9	Cable stretcher	Bronze
10	Clamp	Brass + inox

Item	Description	Material
11	Spring	Inox
12	Counterweight	Bronze
13	Kit support (not included)	
14	Tie plate (not included)	

## Mounting scheme (II)



Item	Quantity	Description
01	2	Attachment flange
02	2	Flanged taper
03	3	Isolating valve
04	1	Strainer with drain cock
05	1	Automatic control valve E2001
06	1	Dismantling joint
07	1	Air release / vacuum breaker valve
08	1	Security valve

## Installation

### Packing and storage

The valves are packed in special cardboard boxes. Outside the carton are clearly pointed out:

- The arrow indicating the position of the valve
- The name of the customer
- The code of the valve
- The number of order confirmation

The valve is protected by two hardening foam cushions, carefully coated by a thermal plate.

This kind of packing if properly stored avoids all the damages originated from transport, unloading, and handling before installation. Avoid storing it under the rain for more than 24 hours!

Open the upper side of the carton and remove the upper cushion. Do not lift the valve by utilizing the pilot, the pilot circuit, or the position indicator.

For any kind of handling we recommend to utilize proper eyebolts.

### Installation

The mounting scheme of the valve is shown on the drawing.

If the valve is working as pressure sustaining device in a transport line, it may be recommended to install a by-pass around it, which will allow to put it out of service during some hours for maintenance purpose, without generating problem for the exploitation of the system.

The choice of the proper "by-pass" alternative must be taken considering the following points:

1. Can the main transport/feeding line be put out of service during some hours (corresponding to the requested time for maintaining the MAIN VALVE), without generating problem for the exploitation of the system? In particular, it must be considered that an empty system may require several hours to be vented properly.
2. Pressure relief: Has the downstream or upstream zone of the system to be protected against any risk of pressure surge (quick closing of heavy demands, closing time) ?

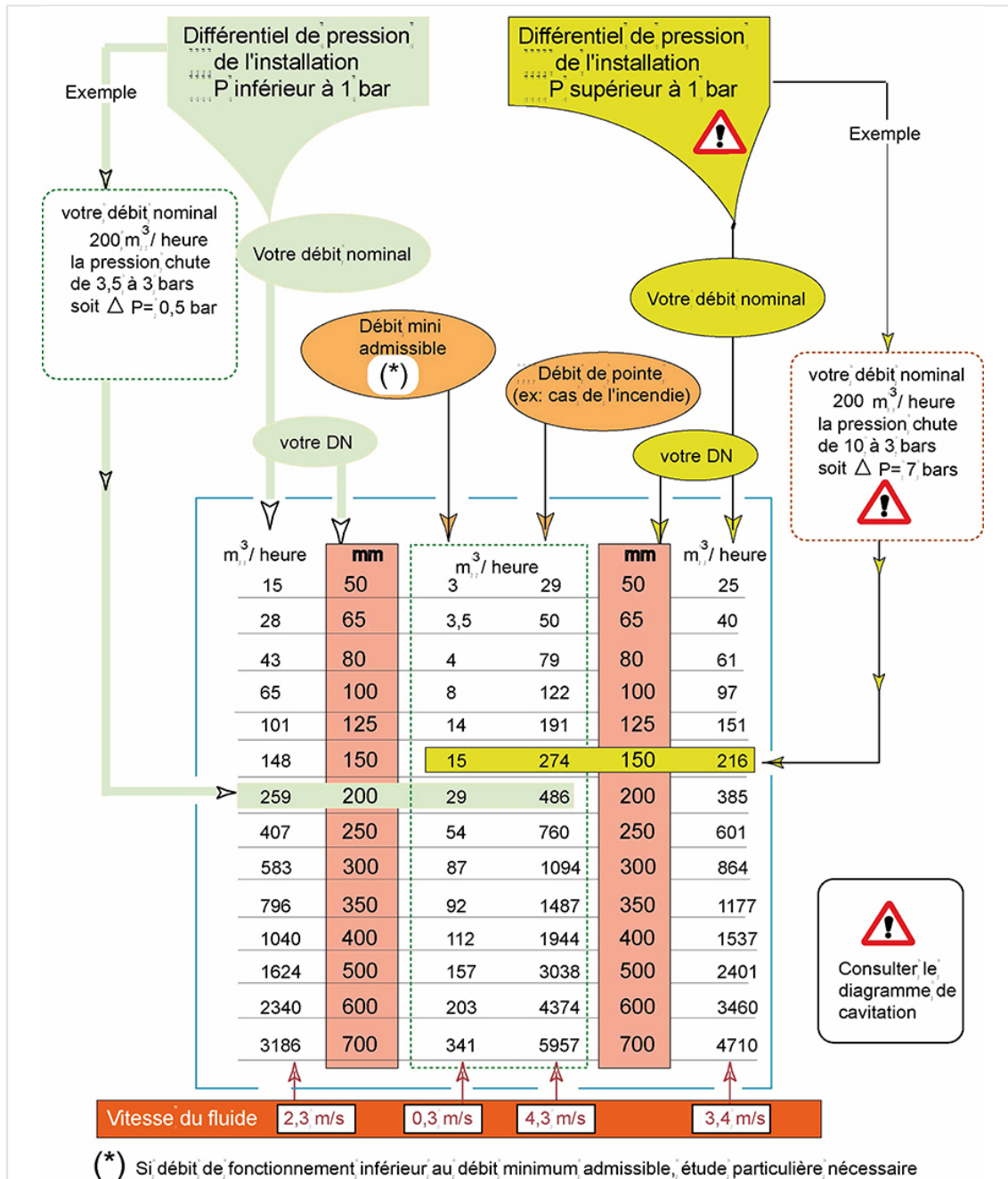
Should installation require the main valve stem to be horizontal (cover pointed sideways), manufacturer should be consulted concerning valves of DN200 mm and larger.

**Note:** All sizes on request are available with an additional venting cover device ( venting cock installed at the top of the cover ) to permit a simple escaping of air during the first commissioning.

- Before control valve assembly, make sure that pipeline it is free from foreign matters or any other obstacle. (note: pipeline must be cleaned, possibly, before assembly. For an ideal pipeline cleaning we suggest a 1.5 m/sec speed during several hours!).
- In presence of foreign matters into the fluid it is indispensable to adopt a strainer on valve upstream side.
- Keep free around the valve space enough for operations as maintenance and calibration.
- Set up the valve according to main valve cast arrow indicating flow sense.
- Install the valve so that the FLOW ARROW marked on the valve body matches flow through the line:  
UPSTREAM → DOWNSTREAM

Start up of an automatic control valve requires that proper procedures be followed. Time must be allowed for the valve to react to adjustments and the system to stabilize. The objective of the following procedure is to bring the valve into service in a controlled manner.

## Functioning



### Operation of tank filling:

- Inlet pressure > higher than the water column between the valve and the float pilot.

- The float-controlled valve E2110-14 is equipped with a float pilot valve (1) remote mounted on the reservoir that is providing the closing of the main valve (4) at maximum level [Lmax] of the reservoir and re-opening of the main valve (4) at the prescribed minimum level [Lmin] of the reservoir.

### Opening of the valve:

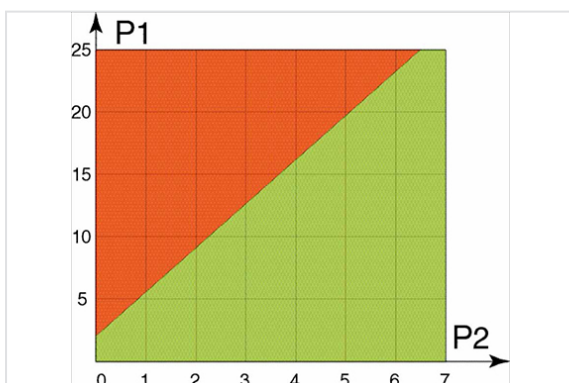
When the reservoir level reaches the prescribed MINIMUM LEVEL, set on the float pilot valve (1) by the stop [Lmin], it switches the float pilot back in its opened position (float arm DOWN). The inlet control pressure, discharged from the control chamber of the main valve (4), through the TUP - 93 (7) and the pilot valve from discharging holes (S), opens the main valve - The main valve (4) opens to fill the reservoir. The opening speed can be adjusted on the centralized control unit TUP - 93, from 1 (lowest opening speed) up to 6 (maximum opening speed). The opening speed setting MUST NEVER remains on position "0", otherwise the main valve will not open.

**Note:** inlet pressure MUST BE higher than the tank head pressure in order to open the main valve for filling the reservoir.

### Closing of the valve:

When the level of the reservoir is reaching the prescribed MAXIMUM LEVEL, set on the float pilot valve (1) with the stop [Lmax], it switches the float pilot in its closed position (float arm is UP). The inlet control pressure, forced into the control chamber of the main valve (1) through the TUP- 93 unit (7), closes the main valve (4). - The main valve (4) closes. The closing speed can be adjusted on the centralized control unit TUP - 93, from 1 (lowest closing speed) up to 6 (maximum closing speed). The closing speed setting MUST NEVER remains on position "0", otherwise the main valve will not close.

### Limit conditions



Cavitation diagram: it is the admissible differential pressure normally used in the regulating valve.

P1 = maximum inlet pressure of the valve

P2 = minimum outlet pressure, before danger of cavitation occurs

Green area = no danger of cavitation (and therefore no significant wear on the valve)

Red area = notable danger of cavitation (with accelerate wear and damage to the valve)

## Maintenance

The quality of the material used in the manufacture of our valves should produce no wear of the internal components.

### However we are recommending:

#### After 6 months of service:

- Control and clean eventually the TUP - 93 screen

**Note:** an obstructed screen due progressively the valve out of order.

#### After 12/18 months of service:

- Control and clean the TUP - 93screen.
- Take the main valve apart, by removing first the complete pilot circuit.
- Unscrew the stud nuts and remove the cover and internal diaphragm assembly.
- Check for any eventual damage of the QUAD-RING and the diaphragm.
- Clean thoroughly the internal part of the valve, grease slightly the stem at both guided locations (water grease, non-toxic!!).
- Assemble the main valve and the pilot circuit.
- Put the valve back into service.

This control should then allow to determine the cycle of the requested maintenance, since it is taking into consideration the true service conditions of the valve.

For any further information contact our Customer Service, indicating all data as per plastic label on main valve body. Give full detailed information's about working conditions, the type of problem, and report the adjusting values (OS-CS-RS).

*The information on this sketch is, to the best of our knowledge correct at the time of printing. However Saint-Gobain are constantly looking at ways of improving their products and services therefore reserve the right to change without prior notice, any of the data shown. Any orders placed will be subject to our Standard Conditions of Sale, available on request.*