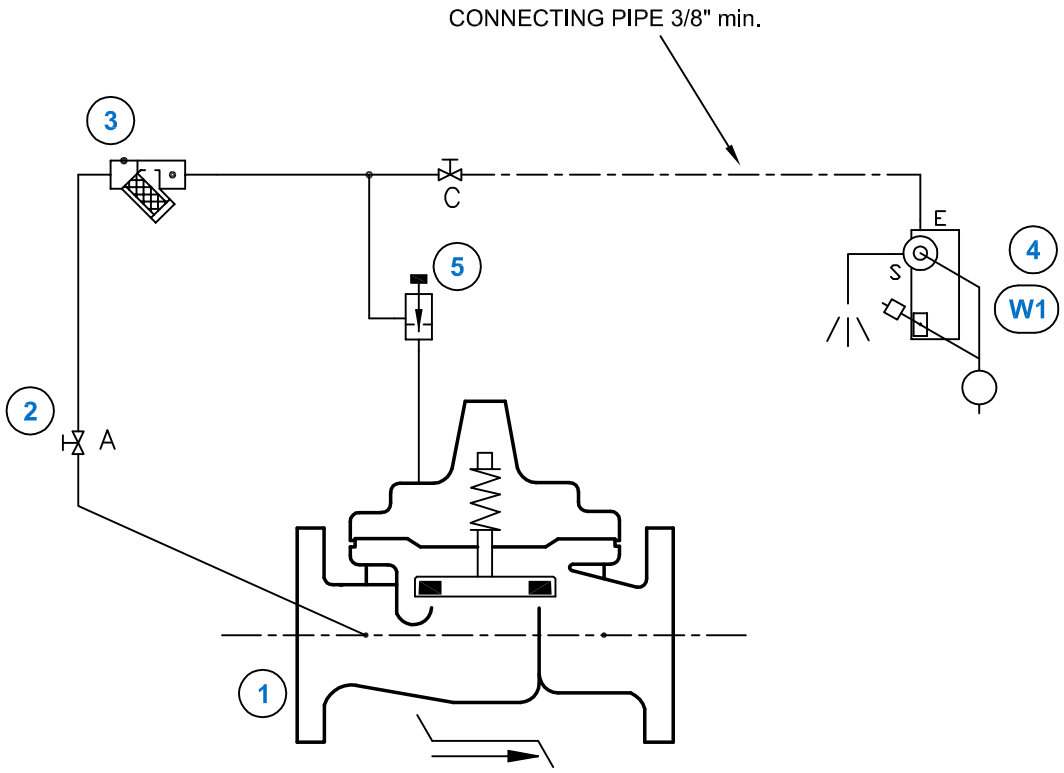
CLA-VAL 100-CF9

On/Off Float Level Control Valve



STANDARD EQUIPMENT			
No	**Description**	**Qty**	**Type**
1	MAIN VALVE HYTROL AE/GE/NGE	1	100-01
2	ISOLATION BALL VALVE	2	RB-117
3	STRAINER WITH INCORPORATED ORIFICE	1	X44-A
4	2-WAY ON/OFF FLOAT LEVEL CONTROL	1	CF9
5	NEEDLE VALVE	1	6120

OPTIONAL FEATURES			
No	**Description**	**Qty**	**Type**
W1	ANTI-FREEZE FEATURE	1	-

NOTES

AE/GE : DN 32 - DN 150 / NGE : DN 50 - DN 200

(E) = INLET (BRONZE)
(S) = OUTLET (SS-STEEL)

OPTIONAL FEATURES : —— —— —— ——
NOT FURNISHED BY CLA-VAL : —— – —— – ——

Operating data

1.1 HYDRAULIC REMOTE CONTROL

The 2-way float control (**4**) is a non modulating, two positions, on-off pilot. It is operated mechanically through a stainless steel float Ø 180 mm, which moves freely along its float rod, which is equipped with two adjustable rings, allowing the "maximum" and the "minimum" levels to be set.

At maximum level, the float control (**4**) is closed forcing control pressure into the control chamber of the main valve (**1**), causing it to close.

At minimum level, the float level control valve (**4**) is fully opened, thus the control chamber is under static pressure, corresponding to the height between the main valve (**1**) and the float level control valve (**4**). The pressure at the inlet of the main valve (**1**), being higher than the static one, opens the main valve (**1**), thus allowing the reservoir to be filled.

Note: To guarantee good operation of the system, the dynamic pressure at the inlet of the main valve (**1**) must always be higher than the height difference between the main valve (**1**) and the float control (**4**) - augmented by twice the pressure drop of the valve at max. rate of flow. As a consequence, the float control (**4**) should be installed at a height which is always beneath that of the inlet feeding pipe of the reservoir. However, if this condition cannot be met (reservoir bottom feeding), check that at maximum reservoir level, the main valve inlet dynamic pressure is able to feed the float control (**4**) to ensure proper control of the main valve (**1**). Furthermore, the float level control (**4**) must be installed in the storage tank, over the top of the maximum level of the reservoir and its float should be protected by a stilling well to prevent any water turbulence disturbing its proper operation.

The float level control (**4**) is equipped with an unbalanced locking feature that prevents the valve commuting between maximum and minimum levels.

1.2 OPENING / CLOSING SPEED

A calibrated orifice within the strainer X44-A (**3**) and needle valve 6120 (**5**) control the closing speed of the main valve (**1**). Needle valve (**5**) controls the opening speed of the main valve (**1**).

Needle valve (5) adjustment: Turn the adjusting stem of needle valve (**5**) clockwise to make the main valve close / open more slowly.

Note: Do not close needle valve (**5**) completely otherwise the main valve (**1**) will not close or open (suggested initial setting of needle valve is 1 turn open).

If high speed opening and low speed closing of main valve (**1**) are required by the operating conditions, it may be necessary to replace the original orifice plug of strainer (**3**) by a smaller one.

1.3 (E*) EUROPEAN STANDARDS

ITEM (**2**) - Isolation ball valve:

The isolation ball valves RB-117 (**2**) are used to isolate the pilot system from main line pressure, in particular if the strainer screen (**3**) has to be cleaned. These isolation ball valves must be open during normal operation.

ITEM (**3**) - Y-Strainer with incorporated orifice:

The strainer X44-A (**3**) is installed in the pilot supply line to protect the pilot system from foreign particles. The strainer screen must be cleaned periodically.

1.4 OPTIONAL FEATURES

Suffix (**W1**) - Anti-freeze feature:

The float level control valve (**4**) is then equipped with a bypass pipe which insures, in its closed position, a practically constant rate of flow through the pilot circuit of the main valve (**1**).

This eliminates the risk of freezing in case of low temperature.

1.5 ▸ CHECK LIST FOR PROPER OPERATION

- ☐ System valves open upstream and downstream (if existing).
- ☐ Air removed from the main valve cover and pilot system at all high points.
- ☐ Isolation ball valves (**2**) open.
- ☐ Periodic cleaning of strainer (**3**) is recommended.
- ☐ Needle valve (**5**) open at least of 1 turn.
- ☐ Connect pipe size 3/8" minimum (1/2" if its length is greater than 5 m) between pilot system valve cock (**2C**) and inlet "E" of float level control (**4**) correctly without a high point. If a high point cannot be prevented, a venting cock 1/4" must be installed.
- ☐ Spherical float ball must be protected against water waves or turbulence by installing a stilling tube $Ø_{id}$ = 250 mm.
- ☐ Install the spherical float ball and eventually the correct counterweight (see next point below) on its guiding rod and adjust the location of the two level rings at the required max. and min. levels. Lock properly the two set ring fixing screws, as well as the rod elements themselves to prevent them falling into the reservoir.
- ☐ If the length of the guiding float rod is L ≤ 1 m, use the float counterweight (300 g). Don't use it if the total rod length is longer than 1 m. Contact CLA-VAL Europe if the total rod length is over 2.5 m.