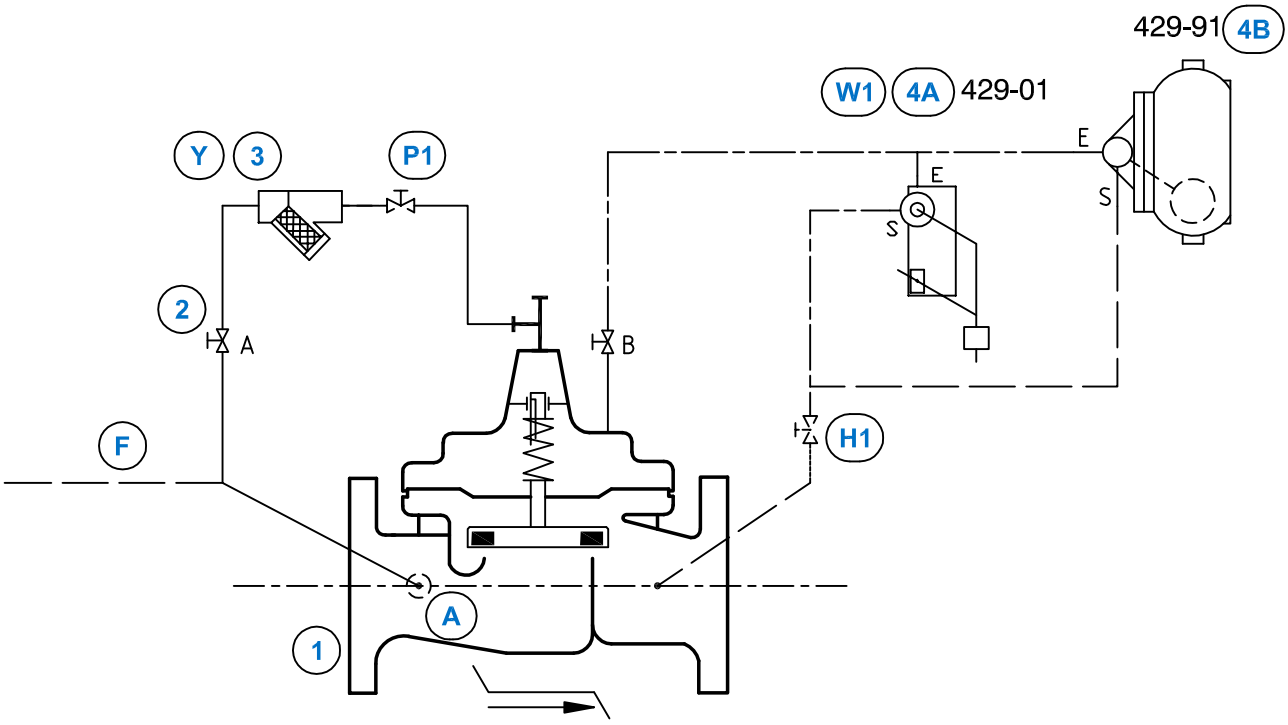
CLA-VAL 429-01/91

Modulating Float Level Control Valve



STANDARD EQUIPMENT			
No	**Description**	**Qty**	**Type**
1	MAIN VALVE HYTROL/X743 AE/GE/NGE	1	100-01/X743
2	ISOLATION BALL VALVE	2	RB-117
3	STRAINER	1	X43
4A	2-WAY MODULATING FLOAT LEVEL CONTROL	1	CFM-9
4B	2-WAY MODULATING FLOAT CHAMBER LEVEL CONTROL	1	CFCM-M1E

OPTIONAL FEATURES			
No	**Description**	**Qty**	**Type**
A	FLOW CLEAN STRAINER	1	X46A
F	REMOTE SENSING	1	-
H1	DRAIN TO MAIN VALVE OUTLET	1	RB-117
P1	ISOLATION BALL VALVE	1	RB-117
W1	ANTI-FREEZE FEATURE	1	-
Y	HIGH CAPACITY STRAINER	1	X43/80-EP

NOTES

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

E : INLET FLOAT VALVE (RED)
S : OUTLET FLOAT VALVE (BLUE)

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

Operating data

1.1 INSTALLATION

Float control CFM-9 (**4A**) [429-01] must be installed in the reservoir above the maximum water level; when closed the float ball position must be set in order to correspond to the prescribed maximum level of the reservoir (adjustment by means of the two stop collars, which must always maintain the float ball firmly together with the float rod).

The discharging pipe should avoid any turbulence in the reservoir, in order to ensure a quiet action of the float pilot (stilling tube for the float ball is recommended).

Or

Float control CFCM-M1E (**4B**) [429-91] must be installed in parallel with the reservoir, as communicating vessels. When closed the float ball position must be set in order to correspond to the prescribed maximum level.

Note: Pilot (**4A**) or (**4B**)

The connecting pipe between the main valve chamber (**1**) and the inlet "E" of the float pilot (**4**) (not included in the CLA-VAL Europe standard equipment) must be sized in R 1/2", if its length is smaller than 5 m or in R 3/4" if its length is larger than 5 m. If it presents high point(s), this (these) one(s) should be equipped with venting cock(s) or automatic air release valve(s). The discharging pipe between the outlet "S" of float pilot and the reservoir / outlet of main valve (**1**), must be sized on the same way.

1.2 OPERATION

Opening operation:

As the float (liquid level) lowers, flow increases through float control (**4**) and reduces main valve cover pressure. This causes the main valve (**1**) to open until flow through the main valve integrated admission is balancing the flow through float control (**4**); the requested partial opening of main valve (**1**) corresponding to the requested fed flow is reached.

Closing operation:

As the float (liquid level) rises, flow decreases through float control (**4**) and increases main valve cover pressure. This causes the main valve (**1**) to close until flow through the main valve integrated admission, whose section varies linearly and proportionally with its opening stroke, is balancing the float control (**4**) discharged flow . While the main valve (**1**) is closed, the minimum possible opening of the integrated admission maintains a permanent pressure in the chamber of the main valve (**1**). This pressure is either provided by the inlet pressure of the main valve or an independent operating pressure.

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. These isolation ball valves must be open during normal operation.

ITEM (**3**) - Strainer:

A strainer X43 (**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 (**A**) - Internal strainer self-cleaning:

In certain cases the screwed in self-cleaning strainer X46A (**A**) at the main valve (**1**) body inlet reduces maintenance, which the screen of the standard strainer (**3**) is requesting.

The installation of the strainer (**A**) replaces not only the strainer (**3**), but the isolation ball valve(s) (**2A**) and [(**P1**) if installed]. For cleaning purpose of strainer (**A**), this one has to be screwed out from the main valve (**1**) body, putting therefore the main valve (**1**) out of service during the maintenance period.

Suffix (**F**) - Independent operating pressure:

Pilot supply pressure is obtained from an independent source, which must be equal or bigger than pressure at the main valve (**1**) inlet at all times.

Suffix (**H1**) - Discharging pressure orifice of float pilot connected to outlet of main valve:

If the discharge "S" of the float pilot cannot be discharged into the reservoir or if the pressure at the outlet of the main valve (**1**) is varying, then the orifice "S" must be connected to the outlet of main valve (**1**), at the corresponding isolation ball valve.

Suffix (**P1**) - Isolation ball valve:

In order to clean the strainer (**3**) without stopping the main valve operation, the isolation ball valves (**P1**) and (**2B**) must be closed. The main valve (**1**) will then be locked in its current operating position. After closing ball valve (**2A**) the strainer (**3**) can be cleaned. The same reverse procedure allows the main valve (**1**) to be put again in standard service.

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

The float control (**4**) is equipped with an adjustable stroke limiter, which allows a permanent minimum rate of flow through the pilot system, even when the main valve (**1**) is closed. This artificial leakage prevents any freezing of the pilot tubing.

Suffix (**Y**) - High capacity filter:

When too many foreign particles are contained into the control pressure, it is recommended to replace the standard filter (**3**) by the high capacity filter X43/80-EP (**Y**), whose screen (∅ 80 x 110 mm) offers a much bigger filtration surface.

1.5 ▸ CHECK LIST FOR PROPER OPERATION

- ☐ System valves open upstream and downstream.
- ☐ Air removed from the main valve cover and pilot system at all high points.
- ☐ Isolation valves (**2A**), (**2B**) and [(**P1**) if installed] open.
- ☐ Periodic cleaning of strainer (**3**) or of high capacity filter, [optional feature (**Y**)] is recommended.
- ☐ Periodical checking of the self-cleaning strainer [optional feature (**A**)].
- ☐ Float pilot (**4**) properly installed and connected to main valve (**1**) as prescribed.
- ☐ Remote control line properly connected [optional feature (**F**)].