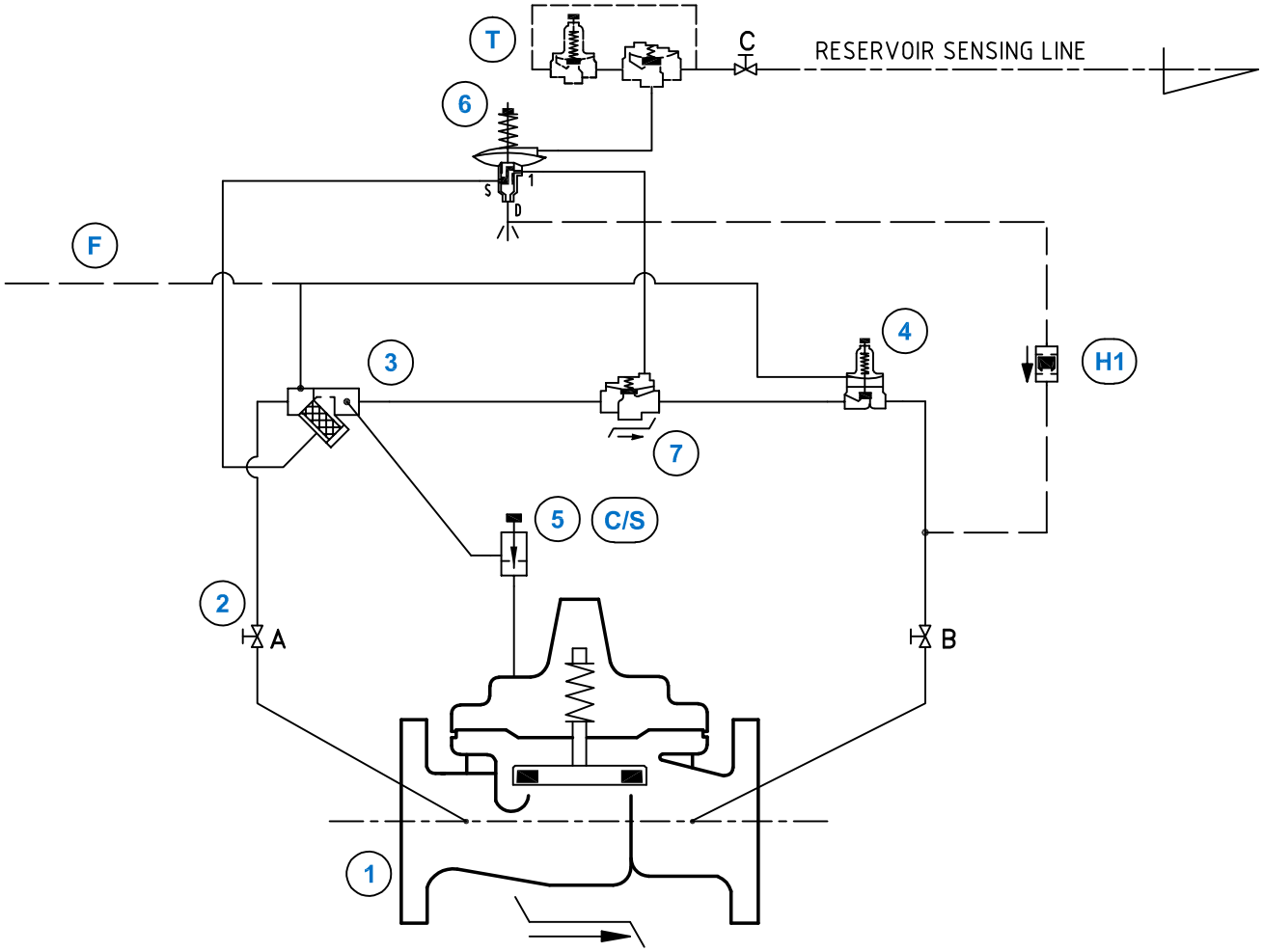
CLA-VAL 210-66

On/Off Altitude Level Control Valve and Upstream Pressure Control



STANDARD EQUIPMENT			
No	**Description**	**Qty**	**Type**
1	MAIN VALVE HYTROL AE/GE/NGE	1	100-01
2	ISOLATION BALL VALVE	3	RB-117
3	STRAINER WITH INCORPORATED ORIFICE	1	X44-A
4	PRESSURE RELIEF CONTROL	1	CRL / CRL-60
5	NEEDLE VALVE	1	6120
6	3-WAY ON/OFF ALTITUDE LEVEL CONTROL	1	CDS-6A
7	AUXILIARY VALVE HYTROL	1	100-KHR

OPTIONAL FEATURES			
No	**Description**	**Qty**	**Type**
C	ONE-WAY FLOW CONTROL (CLOSING SPEED)	1	CV
F	REMOTE SENSING	1	-
H1	DRAIN TO MAIN VALVE OUTLET	1	CDC-1
S	ONE-WAY FLOW CONTROL (OPENING SPEED)	1	CV
T	DELAYED OPENING	1	CVC & 81-01

NOTES

AE/GE : DN 32 - DN 400 / NGE : DN 50 - DN 600

OPTIONAL FEATURES : —— —— —— ——

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

Operating data

1.1 PRESSURE SUSTAINING FEATURE

Pressure relief control CRL (**4**) is a "normally closed" control that senses main valve inlet pressure changes. An increase in inlet pressure tends to open control (**4**) and a decrease in inlet pressure tends to close control (**4**) is higher than the set point of control (**4**). This causes main valve cover pressure to vary and the main valve (**1**) modulates (opens and closes), maintaining a relatively constant inlet pressure. When inlet pressure is lower than the set point of control (**4**), control (**4**) closes. This pressurizes the main valve cover and the main valve (**1**) closes, maintaining the desired back pressure.

Pressure relief control (4) adjustment: Turn the adjusting screw clockwise to increase the setting.

1.2 ALTITUDE VALVE FEATURE

Altitude control CDS-6A (**6**) is a spring loaded, 3-way, diaphragm actuated control that senses pressure in the reservoir. When the reservoir pressure (liquid level) is lower than the set point of control (**6**), ports "I" and "D" are interconnected. This relieves main valve cover pressure to atmosphere and the main valve (**1**) opens to fill the reservoir. Reservoir sensing pressure increases as the liquid level rises in the reservoir. When reservoir pressure increases to the set point of control (**6**), control (**6**) shifts, interconnecting ports "S" and "I". This pressurizes the main valve cover and the main valve (**1**) closes.

Altitude control (6) adjustment: Turn the spring adjusting nut clockwise to increase the liquid level shutoff point, counterclockwise to decrease the liquid level shutoff point.

1.3 CLOSING / OPENING SPEED CONTROL

Flow control valve 6120 (**5**) controls the closing and the opening speed of the main valve (**1**).

Flow control valve (5) adjustment: Turn the adjusting screw of control (**5**) clockwise to make the main valve (**1**) close and open slower.

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

1.4 (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**) - 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.

1.5 OPTIONAL FEATURES

Suffix (**F**) - Remote sensing:

Remote sensing is obtained from a point upstream of the main valve (**1**) inlet, by a pipe (not furnished by CLA-VAL Europe) size Ø 12 mm, which must not have any high points and so formation of air pockets and avoid any pulsation of control.

Suffix (**H1**) - Pilot drain to outlet:

Check valve CDC-1 (**H1**) and cock RB-117 (**2B**) are used when pilot drain to atmosphere is not desired. When outlet pressure is higher than inlet pressure check valve (**H1**) closes, maintaining main valve (**1**) in position of partial opening.

Suffix (**C**) - Closing speed:

Flow control CV (**C**) regulates the closing speed of main valve (**1**).

Flow control (C) adjustment: Turn the adjusting screw clockwise to make the main valve (**1**) close more slowly.

Suffix (**S**) - Opening speed:

Flow control CV (**S**) regulates the opening speed of main valve (**1**).

Flow control (S) adjustment: Turn the adjusting screw clockwise to make the valve open more slowly.

Suffix (**T**) - Delayed opening feature:

Differential control CVC is closed during the reservoir filling cycle. As the liquid level rises in the reservoir, check valve 81-01 opens. This directs static reservoir pressure into the sensing chamber of altitude control (**6**). When the reservoir is filled and the main valve (**1**) closes, the liquid level has reached the high point and check valve 81-01 closes. As the reservoir level lowers, check valve 81-01 remains closed, trapping pressure in the sensing chamber of altitude control (**6**). When the level lowers to the desired reopening point, differential control CVC opens and releases the trapped pressure from altitude control (**6**) which shifts, permitting the main valve (**1**) to reopen and fill the reservoir.

Differential control CVC adjustment: Turn the adjusting screw clockwise to increase the delay of opening.

1.6 ▸ 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 ball valves (**2**) open.
- ☐ Periodic cleaning of strainer (**3**) is recommended.
- ☐ Flow control (**5**) minimum 1 turn open.
- ☐ Reservoir sensing line connected without high point(s) or high point(s) to be equipped with venting cock(s).