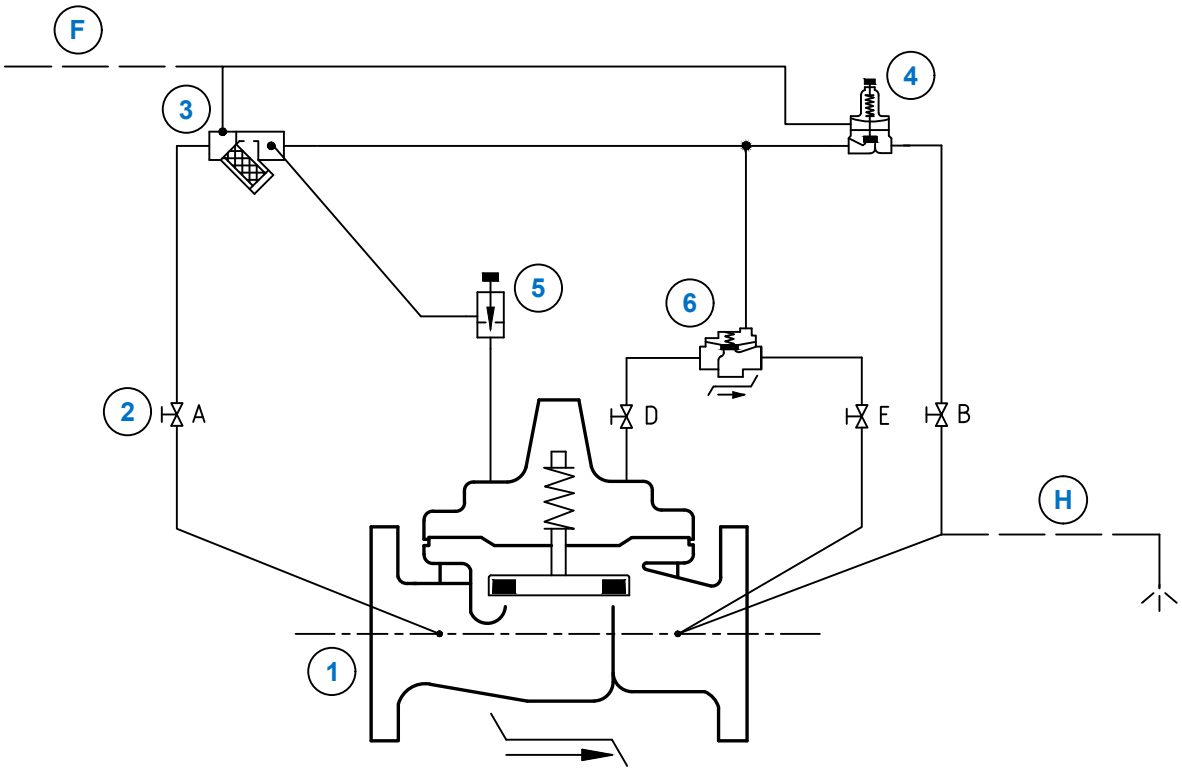
CLA-VAL 50-37

Pressure Relief Valve with High Opening Speed



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

OPTIONAL FEATURES			
No	**Description**	**Qty**	**Type**
F	REMOTE SENSING	1	-
H	DRAIN TO ATMOSPHERE	1	-

NOTES

AE/GE : DN 32 - DN 400 / NGE : DN 50 - DN 600
(#) = According to valve size this feature type could change

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

Operating data

1.1 PRESSURE RELIEF FEATURE

Pressure relief control SERIE CRL (**4**), adjusted at its set point value [P_0] is a "normally closed" control that responds to main valve (**1**) inlet pressure [P_1] changes. An inlet pressure [P_1] above the set point [P_0] tends to open pressure relief control (**4**) and an inlet pressure [P_1] below the set point [P_0] tends to close pressure relief control (**4**).

Any inlet pressure [P_1] increase above the pilot (**4**) set point [P_0] generates the opening of pilot (**4**), thus lowering the auxiliary valve (**6**) as well as the main valve (**1**) cover pressure and generating their respective opening.

When inlet pressure [P_1] is becoming lower than the prescribed pressure [P_0] set on pilot (**4**) this last one is closing generating the immediate closure of auxiliary valve 100-KHR (**6**) and the progressive closure of main valve (**1**).

Pressure relief control (4) adjustment: Turn the adjusting screw clockwise to increase the setting of the [P_0] value, respectively the opposite way to decrease the setting.

1.2 HIGH OPENING SPEED FEATURE

When the inlet pressure [P_1] increases above the value [P_0] set on the pilot (**4**), this last one opens and generates the simultaneous opening of the main valve (**1**) and of the auxiliary valve (**6**). The opening speed of the main valve (**1**) is quite low, depending the setting of the flow control 6120 (**5**), but the fast opening of the auxiliary valve (**6**) accelerates the discharge action of the main valve (**1**) cover pressure, respectively its opening speed, permitting then to limit the upstream overpressure.

As soon as the standard upstream pressure is reached again, control (**4**) closes and let the auxiliary valve (**6**) close, permitting then to close the main valve (**1**) through the flow control 6120 (**5**).

1.3 CLOSING / OPENING SPEED CONTROL

The strainer X44-A (**3**) calibrated orifice size can modify the regulating valve operating reaction (opening / closing), but the flow control 6120 (needle valve) (**5**) control the closing / opening speed of the main valve (**1**). In addition, the flow control (**5**) permits by its progressive closure to increase the opening's priority of the auxiliary valve (**6**), respectively then the one of the main valve (**1**).

Closing speed control (5) adjustment: Turn the adjusting screw clockwise to close slower, respectively the opposite way to close faster.

Notes:

a. The flow control (**5**) must never be closed completely, which would lock the main valve (**1**) in a in a single position and prevent any tight closure! (Recommended initial setting: Flow control (**5**) open at least one turn).

b. The flow control (**5**) must not be opened too much, otherwise it will not permit the opening of the auxiliary valve (**6**), preventing the accelerated opening of main valve (**1**). (Recommended initial setting: Flow control (**5**) not open more than three turns).

If the accelerated opening speed with slow main valve closing speed is still not efficient enough, it may be recommended to change the strainer X44-A (**3**) calibrated orifice size with a smaller one.

1.4 STANDARD EQUIPMENT

No (**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.

No (**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

No (**F**) - Remote sensing:

Remote pressure sensing of a point located upstream of the main valve (**1**) inlet permits to regulate the pressure at that particular point. The sensing line (not furnished by CLA-VAL Europe) between the specific point and the pilot (**4**) consists of a rigid pipe size Ø 9x12 mm presenting no high point to avoid any air pocket formation, respectively any pulsation of the regulating valve.

No (**H**) - Drain to atmosphere:

The outlet of isolation ball valve (**2B**) is not connected to outlet of main valve (**1**), but directly to atmosphere.

1.6 ▸ CHECK LIST FOR PROPER OPERATION

- ☐ System valve(s) 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.
- ☐ Needle valve (**5**) open 1 turn.
- ☐ Remote control line properly connected [optional feature (**F**)].
- ☐ Atmospheric drain line properly connected [optional feature (**H**)].