ALPINE ACV SERIES

Alpine Bi-Level Control Valve IOM Manual

Installation, Operating and Maintenance Manual : BT110-14 Bi - Level Control valve

The Modulating Pilot Can Be Fitted directly On To the Valve Or A Remote Reservoir Pilot c/w Counterweight Can Be Installed In The Reservoir

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Drawing No 1

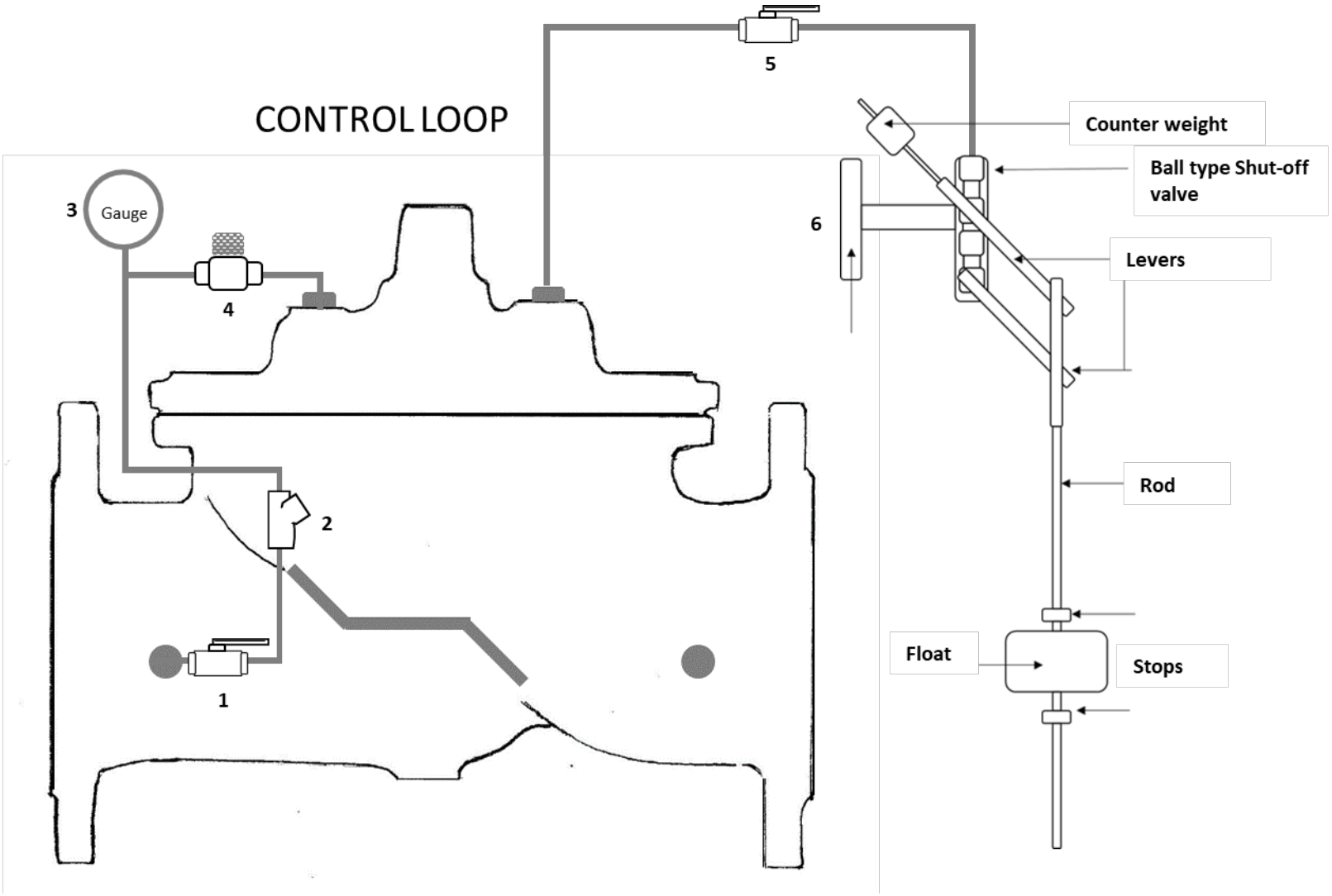
ULTRA / ALPINE SERIES

BT110-14 Bi-Level Control Valve

LEGEND

1 Upstream Ball valve
2 Y Strainer
3 Upstream Gauge
4 Flow Controller
5 Reservoir Ball valve
6 Bi-Level Pilot

Note U.C.V. may have an added feature of a bonnet ball valve which when in the closed position freezes the valve in its set position. Enabling work to be done on the control loop without closing the pipe line. <u>This must remain open during normal operations</u>



FUNCTION

The function of a Bi – Level control valve is to maintain the upper and lower reservoir water levels at pre-determined water height settings

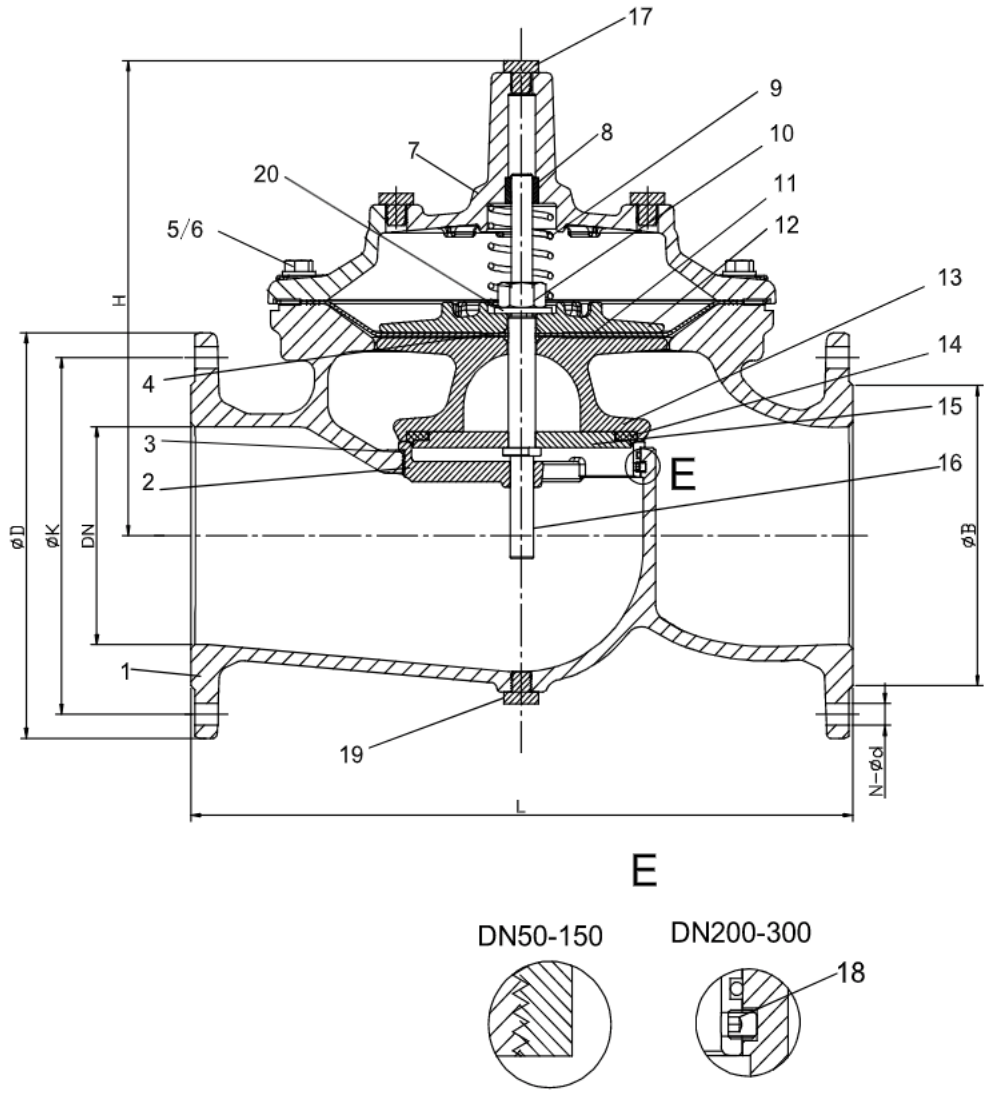
CONSIDERATIONS

* The water pressure entering the reservoir should not exceed 4bar/400Kpa
- The sense line to the reservoir should be ½ inch – ¾ inch in diameter
- The valve should be installed as close to the reservoir as possible
- If the reservoir is a top feed, a Stilling well should be added for the Bi-level pilot
- Check the valve flow direction
- Check for broken/loose Control loop fittings
- Install the Bi-level pilot within the range of the upper and lower water levels

COMMISSIONING (Refer drawing No 1)

- Close the mainline upstream and downstream isolating valves on either side of the control valve
- Set the Flow Controller (No 4) to the halfway position (Clock-wise closing)
- Close the reservoir ball valve (No 5)
- Make sure the upstream ball valve (No 1) is in the open position
- Slowly open the upstream mainline isolating valve
- Bleed off all accumulated air trapped inside the valve bonnet by loosening one of the gland nuts at the highest point on the valve
- Open the mainline downstream isolating valve. The valve should remain in the closed position.
- Set the pilot valve stops at the proposed upper and lower reservoir water levels
- Open the reservoir ball valve. The valve should now open the line to the reservoir
- If the valve does not open : 1 Check that the bi-level pilot rod is in the down position if it is 2 Close the control loop needle valve (No 4) until the valve starts opening
- Lift the bi-level pilot rod the valve should close
- **NOTE : The setting of the Flow Controller is critical to the opening and closing of a level control valve**
- **Too far open the valve will not open**
- **Too far closed the valve will not close**

Drawing No 2



PARTS LIST - SPECIFICATIONS

No	Description	Material	Standard
1	Body	Ductile Iron	GJS 500 – 7
2	Seat	Stainless Steel	AISI 304 / 316
3	O-ring	Rubber	NBR
4	O-ring	Rubber	NBR
5	Bolt	Stainless Steel	A2 / A4
6	Washer	Stainless Steel	A2 / A4
7	Bonnet	Ductile Iron	GJS 500 – 7
8	Bush	Bronze	C61900
9	Spring	Stainless Steel	AISI 304 / 316
10	Caulking Nut	Stainless Steel	A4
11	Diaphragm	Nylon Reinforced Rubber	EPDM + Nylon Fabric
12	Fixing Holder	Ductile Iron	GJS 500 – 7
13	Disc Holder	Ductile Iron	GJS 500 – 7
14	Seal	Rubber	EPDM
15	Seal Retainer	Stainless Steel	AISI 304 / 316
16	Stem	Stainless Steel	AISI 304 / 316
17	Plug	Stainless Steel	AISI 304 / 316
18	Screw	Stainless Steel	A2 / A4
19	Plug	Stainless Steel	A2 / A4
20	Washer	Stainless Steel	A2 / A4

MAINTENANCE (Refer Drawing No 2)

The Ultra Bi – Level needs periodic maintenance of six months:
N.B. Make sure there is no pressure In or directly upstream of the valve - Use the mainline isolating valves to ensure personnel safety

- Check the tightness of the Control Loop fittings
- Check the flanges for leaks
- Check the stops on the Bi-level pilot
- Remove the bonnet and check the diaphragm (11) for Rips or damage
- Lift the diaphragm assembly out
- Check the O Rings (3 & 4) and seal (14)
- Check the Disc Holder (13) for cavitation wear

TROUBLE SHOOTING GUIDE

Valve refuses to open

- Stem Jammed or blockage on top of stem
- Blockage on the downstream Control Loop
- Leak on the upstream Control Loop
- Diaphragm torn
- Reservoir ball valve closed
- Bi- Level Pilot blocked or damaged
- Low upstream pressure

Valve Refuses to close

* Debris underneath the stem
- Blockage on the upstream Control Loop
- Leak on the downstream Control Loop
- Torn Diaphragm
- Upstream ball valve closed