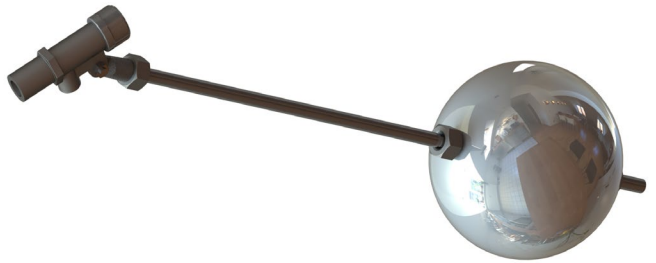
ALPINE ACV SERIES

Alpine Modulating Control Valve IOM Manual



Installation, Operating and Maintenance Manual – BT110-10 Modulating Level Control

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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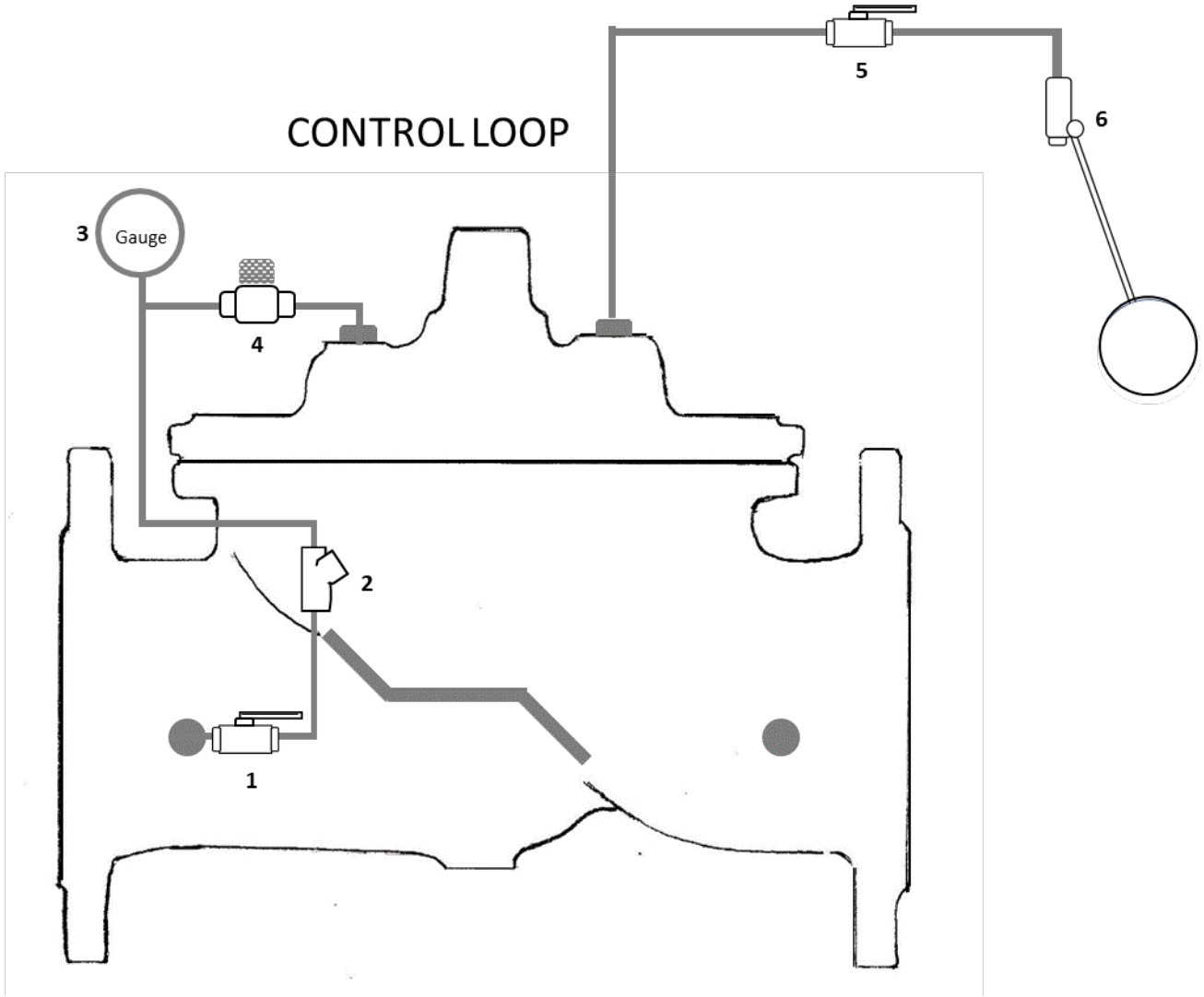
ULTRA / ALPINE SERIES

BT110-10 Modulating Level Control

LEGEND

1 Upstream Ball valve
2 Y Strainer
3 Upstream Gauge
4 Flow Controller
5 Reservoir Ball valve
6 Modulating 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 Modulating level control valve is to maintain a constant level in storage tanks and reservoirs.
Valve controlled flow into the tank is proportional to the discharge flow, keeping the tank full

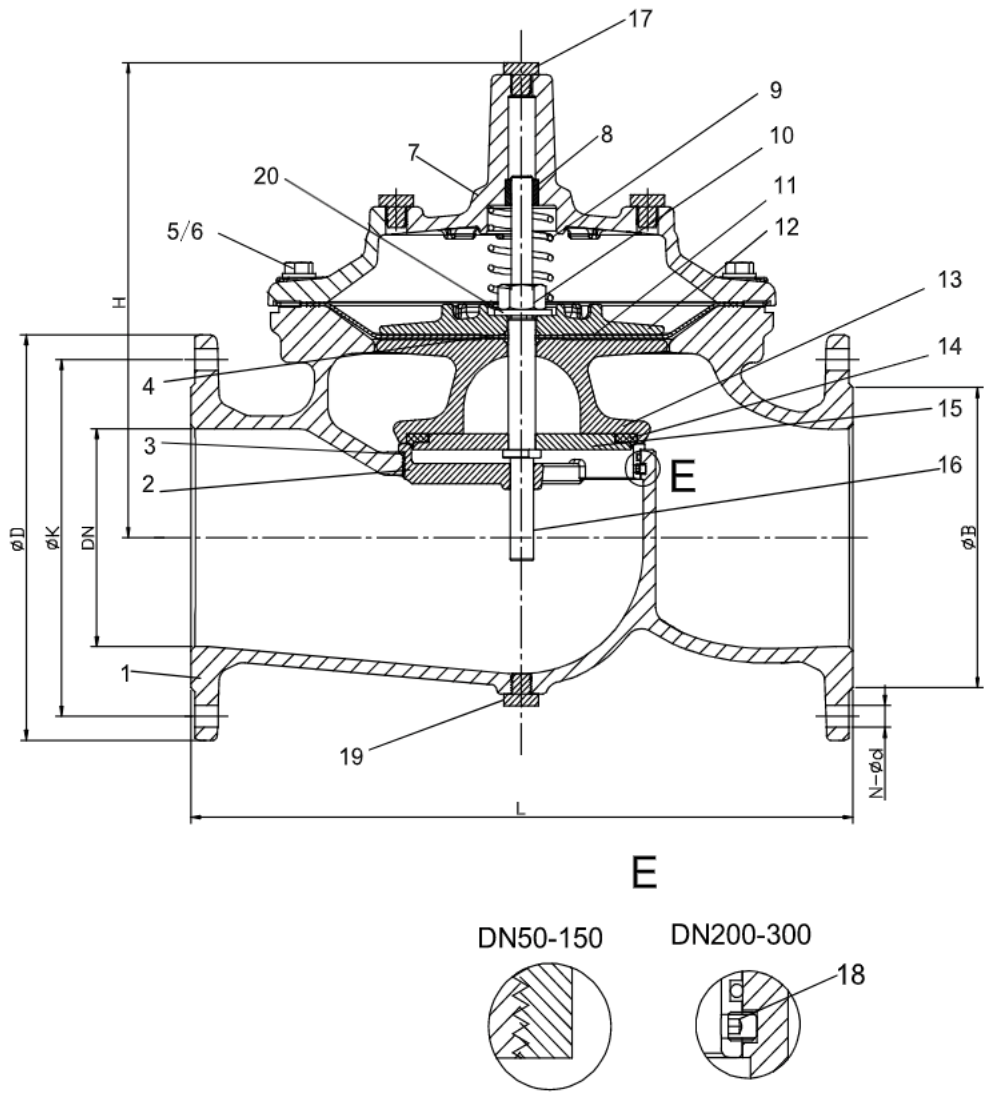
CONSIDERATIONS

- The water level should be as still as possible as the modulating pilot is sensitive to movement.
- If the water level is turbulent a stilling well should be added.
- The water pressure entering the tank should not be above 4 bar / 400Kpa.
- If the water pressure is too high, a fixed ratio valve should be added upstream of the valve.
- The sense line to the tank should be 3/8 inch – ½ inch ID.
- The valve should be installed as close to the tank as possible.

COMMISSIONING (Refer to drawing No 1)

- Close the mainline Upstream and downstream isolating valves on either side of the valve.
- Set the flow controller (No 4) to the halfway position (Clockwise closing).
- Close the reservoir ball valve (No 5).
- Make sure the Upstream ball valve (No1) 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 downstream isolating valve. The valve should remain in the closed position.
- Open the reservoir ball valve. The valve should now open the line to the tank
- If the valve does not open: 1. Check the Modulating pilot is in the open position. 2. Close the Control Loop Flow Controller until the valve starts opening.
- **NOTE: The setting of the Flow controller is critical to the opening and closing of a level control valve**
- **Too far open and the valve will not open**
- **Too far closed and 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 Modulating Level Control 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
- 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
- Modulating 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