ALPINE ACV SERIES

AFC Pressure Sustaining/ Solenoid Control Valve IOM Manual

A506

Relief/Sustaining
Pilot P500

Installation, Operating and Maintenance Manual BT116-113 Pressure Sustaining/Solenoid Control Valve

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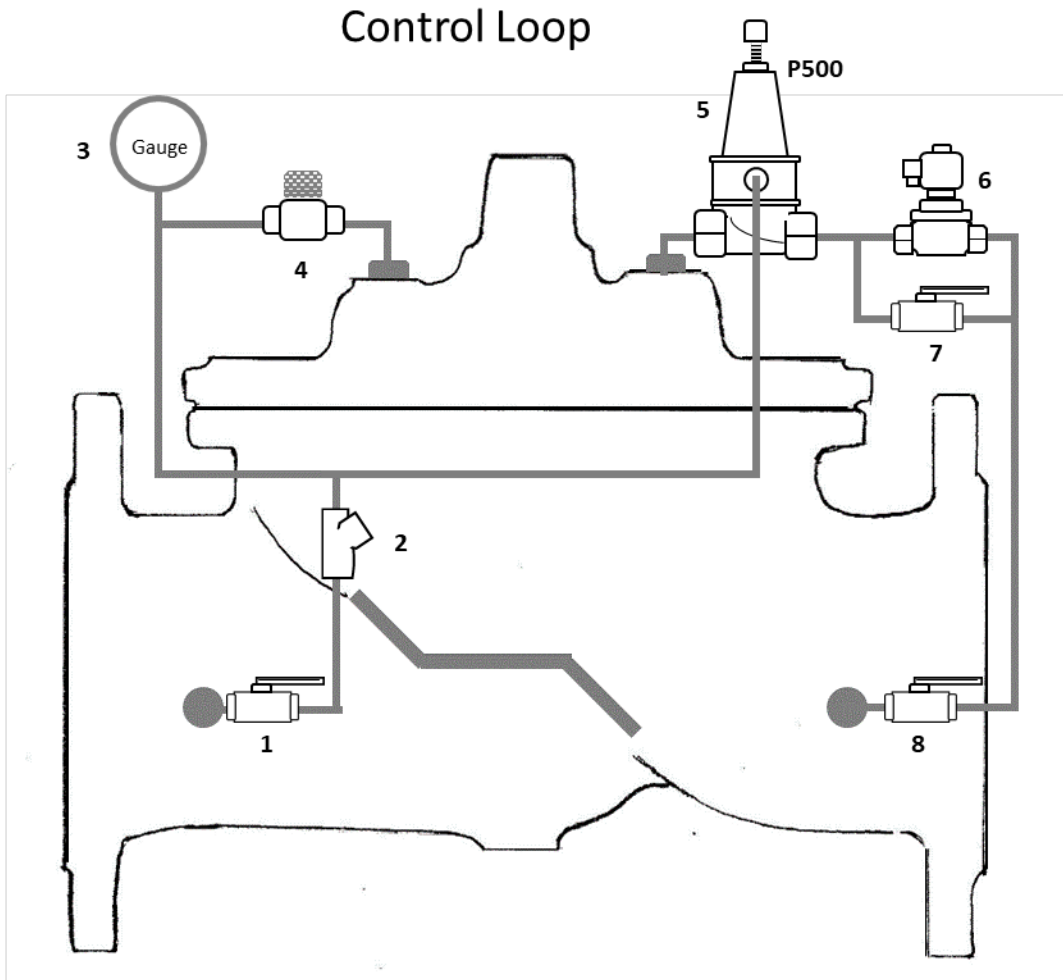
ULTRA / ALPINE SERIES

BT116/113 Pressure Sustaining / Solenoid Valve

LEGEND

1 Upstream Ball valve
2 T – Strainer
3 Upstream Pressure Gauge
4 Flow Controller
5 Sustaining pilot P500
6 Solenoid valve
7 By pass Ball valve
8 Downstream Ball valve



FUNCTION : To maintain a minimum upstream set pressure regardless of flow conditions / to act as a electronically shut off valve using a solenoid

CONSIDERATIONS :

- The coil of the solenoid valve can be 24V AC…..24V DC……110V AC/DC…….220V AC ……..380A AC. This should also be specified when ordering the valve
  NOTE: 220 AC can be dangerous to personnel working on the valve around water.

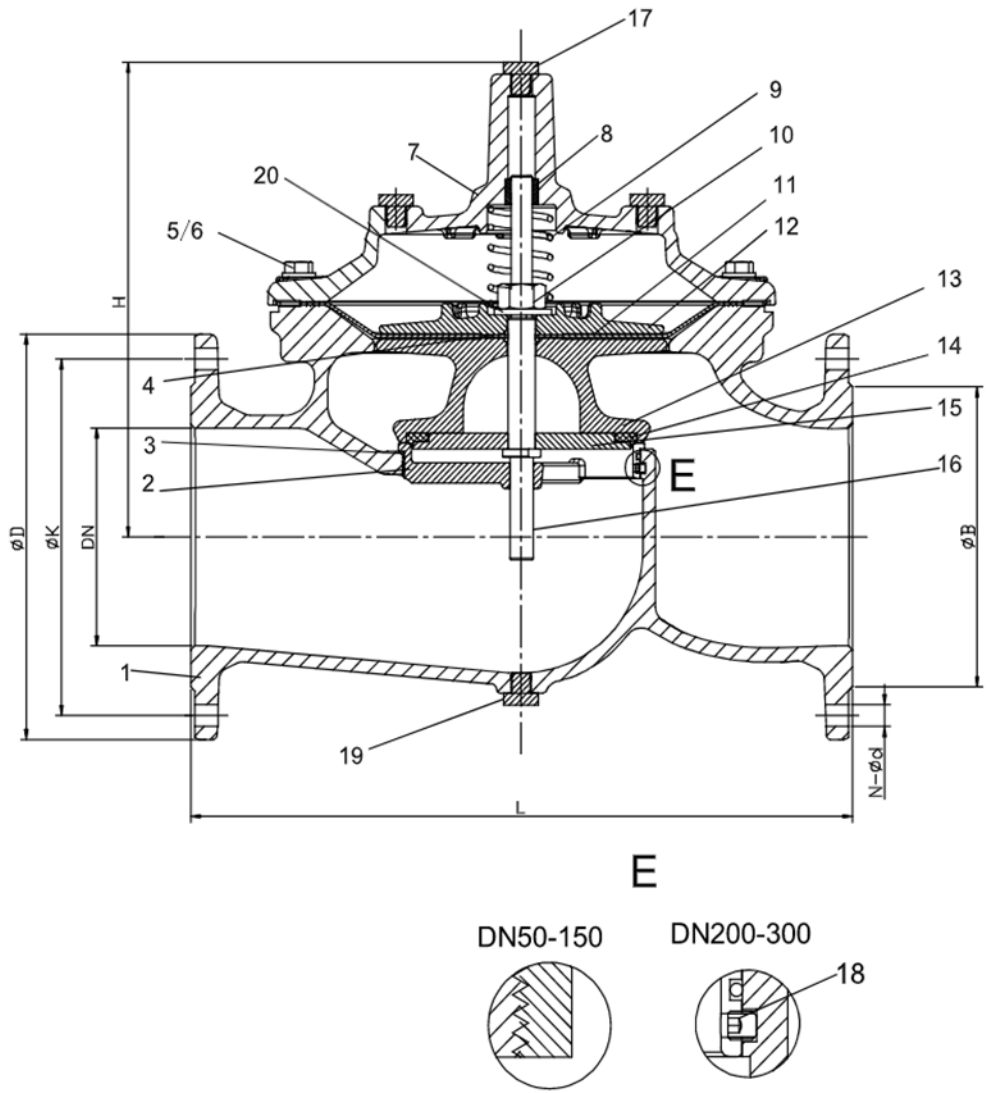
* Due to local (Load – Shedding) problems Ultra Control Valves have added manual override systems to our electronically controlled valves

COMMISSIONING : Refer to 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 (Clockwise closing)
- Make sure the upstream ball valve (No1) is in the open position
- Close the downstream ball valve (No 6)
- Slowly open the mainline upstream isolating valve
- Bleed off all the accumulated air trapped inside the bonnet by loosening one of the gland nuts at the highest point on the valve
- Open the downstream mainline isolating valve. The valve should remain in the closed position
- **SUSTAINING SETTING** Turn the P500 (No 5) adjustment screw all the way out (anti-clockwise) Open the By-pass Ball valve (No 7)
- Slowly open the downstream ball valve(No 6). The valve should open
- While monitoring the Upstream Pressure gauge turn the P500 Pilot adjustment screw in (Clockwise) keep turning it in until the sustaining upstream pressure is achieved
- Close the solenoid by – pass ball valve (No 7)

NOTE : Ball valve operation……. Closing the Upstream ball valve No1 will open the main valve
Closing the downstream ball valve No 6 will close the main valve
Opening the by-pass ball valve (No 7) By-passes the solenoid valve

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 Sustaining/ Solenoid needs periodic maintenance of 1 – 2 years depending on operating conditions
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 coil of the solenoid
- 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
- Downstream ball valve closed
- Solenoid / sustaining pilot 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