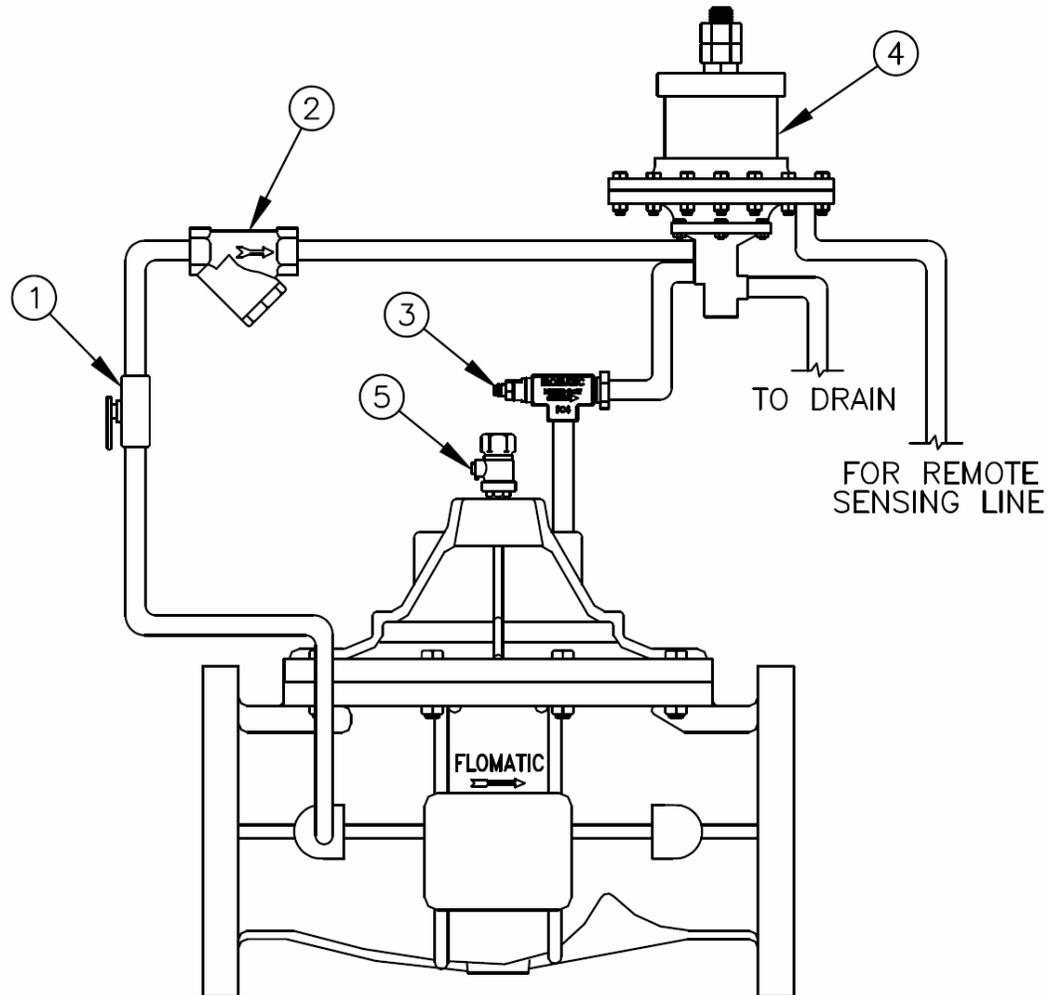


Operation & Maintenance Manual

Place this manual with valve or person responsible for maintenance of the valve

Part List

1. Isolation Valve
2. Y-Strainer
3. Flow Control Valve (FC4)
4. Pilot Valve (Model ANP)
5. 1/4" Air Bleeder



Model C/CA/CF/CFA 205-Single Acting Altitude Valve (non-modulating)

YOUR PRODUCT INFORMATION:

Model Number: _____

Date: _____

Serial Number: _____

Valve Size: _____

Factory Pilot Preset: _____ *psi*

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SINGLE ACTING (ONE WAY) ALTITUDE VALVE (NON-MODULATING TYPE)

The Model C205 Single Acting (One Way) Altitude Valve closes at a preset maximum water level to prevent overflow of a standpipe, elevated tank, or reservoir and opens to refill when the water level lowers. As a non-modulating altitude valve, it is either fully open or fully closed.

This type of Altitude Valve should be used when the supply pressure is only slightly higher than the head developed by a full standpipe or elevated tank.

Flow from the tank is usually to another distribution system or through a bypass check valve back to the supply.

SHIPMENT:

When shipped, controls are usually mounted on the main valve. If control subassemblies are shipped separately, all connections are tagged to insure correct assembly.

INSTALLATION:

1. Flush the pipeline before inserting the valve. **Exercise extreme caution to prevent dirt/debris from entering valve and pilot assembly.**
2. Install the valve with the "arrow" on body pointing in the direction of flow (usually towards the tank or reservoir).
3. Attach subassemblies to main valve if necessary.
4. Allow enough clearance above valve for removal of diaphragm assembly.
5. Connect remote sensing line from the reservoir. **The sensing line should be connected directly to the reservoir.** The sensing line should be a minimum of 3/4" diameter and should be pitched upwards towards the reservoir or tank to avoid air pockets.
6. Connect the pilot exhaust to drain. We suggest that it be connected so that the flow is visible, this will help when adjusting the pilot.

START-UP:

1. Install pressure gauges to inlet and outlet (optional).
2. Open both isolation valves on the control assembly.
3. Open 1/4" air bleeder at the top of the main valve.
4. Open main line shut-off valve (usually a gate or butterfly valve) on the outlet side of the main valve about 1/4 open.
5. Slowly open main line shut-off valve on the inlet side, this will allow the valve to begin filling the reservoir.
6. Allow all air to bleed off of the top cover of the main valve. Close 1/4" air bleeder when **all air has been removed** from valve cover.
7. Open the 1/4" air bleeder on the underside of the pilot control located across from the sensing line connection. Close air bleeder when all air has been removed.
8. Watch the altitude gauge and note the level where the valve closes.
9. If the level requires adjustment, turn the adjusting screw of the altitude valve counter clockwise to decrease the fill level or clockwise to increase the level. CAUTION: any adjustment should be done slowly.

OPERATION:

The Model C/CA/CF/CFA 205 Single Acting (One Way) Altitude Valve maintains a preset fill level in a tank or reservoir by sensing the water column pressure through the altitude pilot (ANP) and correspondingly opening or closing the main valve body. The valve functions as a two position control valve being either fully open or fully closed. The valve allows for normal forward flow to fill the tank or reservoir and closes fully at the high water set point. When the level in the tank or reservoir drops below the high water setting of the ANP the control valve will open to re-fill the system.

The valve is hydraulically controlled and pilot operated. The ANP operates on head pressure from the tank or reservoir which is connected via a separate sensing line. The desired fill level of the tank or reservoir is obtained by adjusting the spring tension on the ANP. When the head pressure drops below the pressure setting of the ANP it will open allowing for the pressure above the main valve diaphragm to be released to atmosphere therefore allowing the main valve to open. As the level in the tank or reservoir reaches the pilot setting, the spring tension in the pilot will overcome the force of the head against it and it will close directing the upstream system pressure to the top cover of the diaphragm causing the main valve to close tight. The closing speed of the main valve is determined and adjusted by the closing speed controller.

TROUBLE SHOOTING GUIDE

A. PROBLEM : Valve fails to close on high water level	
CAUSE	CORRECTION
<ol style="list-style-type: none"> 1. Pilot set too high. 2. Pilot isolation valve is closed. 3. FC4 closed tight. 4. Pilot sensing not connected or air bound. 	<ol style="list-style-type: none"> 1. Lower setting of ANP by turning the adjusting screw counter-clockwise. 2. Open isolation valve 3. Open ½ turn or required 4. Check the connection and make sure that sensing line valve is open and water flows freely without air.
B. PROBLEM: Valve fails to open	
CAUSE	CORRECTION
<ol style="list-style-type: none"> 1. ANP is set too low. 2. Sensing line is not connected/obstructed/air bound 4. ANP vent obstructed. 5. System inlet pressure too low. 	<ol style="list-style-type: none"> 1. Increase setting of ANP by turning the adjusting screw clockwise. 2. Connect/clean/remove air from sensing line. 3. Check vent for obstruction. 4. Check system supply.
<p>Test To Isolate Source Of Problem (After visual inspection of external leaks)</p>	
<p>1. With the main line gate valves open and the altitude valve pressurized apply false pressure to the sensing port of the ANP. THE MAIN VALVE SHOULD CLOSE.</p> <p>If the valve remains fully open the source of the problem could be: <i>(A) Fouled closing speed controller; (B) fouled Y-strainer; (C) control isolation valve at inlet is closed; (D) ruptured main valve diaphragm.</i></p> <p>If the valve is partially closed the source of the problem could be: <i>(A) Damaged main valve seat packing or seat ring; (B) debris under seat; (C) main valve is air-bound; (D) damaged stem O-ring.</i></p> <p>If the valve closes fully, the source of the problem could be: <i>(A) Pilot valve out of adjustment; (B) damaged pilot valve stem or set ring; (C) partially fouled y-strainer or closing speed controller.</i></p>	
<p>2. With the main line gate valves open and the altitude valve pressurized, close the isolation valve on the control piping and open the ¼" air bleeder to release water out of the chamber above the diaphragm of the valve. Water will flow from the air bleeder as the valve moves to the full open position.</p> <p>If water continues to flow, the source of the problem could be: <i>(A) damaged main valve diaphragm or stem seal O-ring; (B) loose locknut.</i></p>	