PROBLEM	PROBABLE CAUSE	CORRECTION
Valve fails to open.	Valve installed backwards.	Check flow arrow, reverse valve in line.
	Blocked ports to solenoid or manual bleed.	Clean ports.
	Lack of operating pressure	Make sure inlet pressure is 2 psi minimum.
	Cover stem fully closed.	Turn cover stem counterclockwise to open.
	No water pressure at valve inlet.	Check upstream valves and pressure, back-flow, master valve or gate valve, isolation valve.
	No electrical signal to solenoid.	Check for power at solenoid and controller.
	Regulator not adjusted.	Turn regulator screw in to increase pressure.
	Internal foreign matter.	Remove cover, clean valve thoroughly.
	Internal metering pin left out.	Remove cover, replace metering pin flat side down.
	Restriction in pilot assy.	Remove and clean pilot assy, passages. Check tube for blockage.
	If after long satisfactory service, Check diaphragm assy. for wear.	Eliminate other causes, then replace worn pin bearing or diaphragm assy.
Valve fails to close.	Internal foreign matter.	Remove cover, clean valve thoroughly.
	Matter under solenoid plunger.	Remove solenoid, clean and check proper position of grommet.
	Manual bypass left open.	Close manual bypass screw.
	Residual electrical signal at solenoid.	Remove power from solenoid or at controller.
	Ruptured diaphragm.	Replace diaphragm.
Downstream pressure to low.	Valve installed backwards.	Check flow arrow, reverse valve in line.
	Lack of operating pressure	Check pressure at valve inlet, check pressure at back flow.
	Lack of operating flow	Check other in-line valves for open, insulation valve, gate valves, master valves.
	Internal foreign matter.	Remove cover, clean valve thoroughly.

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PROBLEM	PROBABLE CAUSE	CORRECTION
Downstream pressure to low.	Restriction in pilot assy.	Remove and clean pilot assy. passages.
	Regulator not adjusted.	Turn regulator screw in to increase pressure.
	If after long satisfactory service, Check diaphragm assy. for wear.	Eliminate other causes, then replace worn pin bearing or diaphragm assy.
Downstream pressure too high.	Internal foreign matter.	Remove cover, clean valve thoroughly.
	Regulator not adjusted.	Turn regulator screw out to decrease pressure.
	Ruptured diaphragm.	Replace diaphragm.
	Cover Manual bypass left open.	Close cover manual bypass screw.
Valve closes too slowly	Lack of differential pressure across valve.	Slowly close flow stem until valve closes at desired rate. Set flow control at (4) full turns from completely open.
Valve closes too quickly	If after long satisfactory service, Check diaphragm assy. for wear.	Eliminate other causes, then replace worn pin bearing or diaphragm assy. Slowly open flow stem until valve closes slower.

Multiple valves connected to a single clock-controller station should be wired in parallel. The valves are designed to operate with a nominal 24 VAC at the valve connection. Table A lists the minimum voltage and current requirements as a function of the upstream water pressure.

Another factor to consider is the pressure loss within the 2000 pressure control valves. The optimum-size valve may or may not be the same as the pipe size. First, estimate the gallons per minute (GPM) that must flow through the valve. Then subtract the desired downstream pressure from the minimum upstream pressure. Pressure loss caused by the pressure-regulation function should be less than this figure. Table A and B indicated the minimum-size valve you can select for a given flow rate. Table C and D list the required wire size as a function of both distance and number of valves.

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A. Minimum Power To Activate Valve 2000, 2160, 2260, 2265

Pressure (PSI)	Voltage (60 Hz RMS)	Current (60 Hz RMS)
100	21.VAC	375mA
125	22.0VAC	390mA
150	23.0VAC	405mA

B. Minimum Power To Activate Valve 2030, 2230, 2250

Pressure (PSI)	Voltage (60 Hz RMS)	Current (60 Hz RMS)
100	15.5VAC	62mA
125	16.2VAC	65mA
150	17.7VAC	68mA

C. Distance (Feet) vs. Wire Size (at 150 PSI) 2000, 2160, 2260,2265

No. of Valves	18 Gauge Wires	16 Gauge Wires	14 Gauge Wires	12 Gauge Wires	10 Gauge Wires
1	1,500	2,400	3,800	6,000	9,600
2	750	1,220	1,900	3,000	4,800
3	250	407	633	1,000	1,600
4	63	102	158	250	400

D. Distance (Feet) vs. Wire Size (at 150 PSI) 2030, 2050, 2230

No. of Valves	18 Gauge Wire	16 Gauge Wire	14 Gauge Wire
1	7,000	11,000	17,000
2	3,500	5,500	8,500
3	2,300	3,600	5,500
4	1,750	2,700	4,200
5	1,400	2,200	3,400
6	1160	1,800	2,800

C. Pressure Loss (in PSI) at Various Flow Rates (minimum flow rate: .01 GPM}

Size	Flow Pattern		10	15	20	25	30	35	40	45	50	55	60	65	70	80	90	100	120	140	160	180	200	225	250	275	300	325	350	375	400
	Straight	P	1.0	1.24	2.2	3.4	5.0	6.7	8.8	11.1	13.7	16.6	19.7																		
1"	Angle	R			1.7	2.7	3.9	5.2	6.8	8.7	10.7	12.9	15.4																		
1 1/4"	Straight	E			1.5	2.3	3.3	4.5	5.8	7.4	9.1	11.0	13.1	15.3	17.8																
	Angle	S			1.3	2.0	2.8	3.9	5.1	6.4	7.9	9.6	11.4	13.3	15.5																
1 1/2"	Straight	S					1.3	1.8	2.4	3.0	3.7	4.5	5.0	5.4	6.3	9.5	12.0	14.8													
	Angle	u						1.5	1.9	2.4	3.0	3.6	4.3	5.9	6.8	7.6	9.7	11.9													
2"	Straight	R												1.6	1.8	2.4	3.0	3.7	5.3	7.3	9.5	12.0	14.8								
	Angle	E												1.3	1.5	2.0	2.5	3.1	4.5	6.1	7.9	10.0	12.3								
2½"	Straight	L												1.0	1.2	1.5	1.9	2.4	3.4	4.6	6.1	7.7	9.5	12.0	14.8	17.9	21.3				
	Angle	0														1.2	1.6	1.9	2.8	3.8	4.9	6.3	7.7	9.8	12.0	14.6	17.4				
3"	Straight	S															1.2	1.5	2.1	2.8	3.7	4.7	5.8	7.3	9.1	11.0	13.1	5.3	17.8	20.4	23.2
	Angle	S															1.0	1.2	1.7	2.3	3.0	3.8	4.7	6.0	7.4	8.9	10.6	2.5	14.5	16.6	18.9

In this range:
Consult with factory

Use 1 psi drop in this range

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