



# WATERMASTER

## Sprinkler Problem Solving Guide

### SYSTEM WON'T TURN ON!

#### 💧 Check Main Supply Source

- 💧 Is the valve ahead of the water meter turned on?
- 💧 Does the pump have power and water?

#### 💧 Check System Isolation Valves

- 💧 Is the system isolation main gate/ball valve open all the way?
- 💧 Is the backflow prevention device operating properly?
- 💧 Is there a problem with the system master electric valve? (check Valve Function Section)

#### 💧 Check the Controller

- 💧 Is the controller plugged in?
- 💧 Has the controller been program properly? Many solid state controllers have several programs with several start times. All of them need to be checked. Is water budgeting set correctly?
- 💧 In an electromechanical controller, are the knobs and pins in the correct positions?
- 💧 In a solid-state controller there may be a ghost program. Unplug the controller and the backup battery. Let the clock set idle for 3 minutes and reprogram.
- 💧 Are Rain and /or Freeze Sensors keeping the system from coming on?
- 💧 Is there power to the controller? Check the electrical receptacle with a volt/ohm meter. Do this by setting the meter to read "Volts" and stick the red and black leads into the receptacle. The meter should read between 110 volts and 130 volts.
- 💧 Does the controller have a fuse? Check to see if it is burned out?
- 💧 Is the transformer working? Check the output wires with a volt/ohm meter set on volts. Stick the red and black leads on to the terminals connected to the transformer. output wires. The meter should read 24 volts to 25 volts. Most solenoids will not operate below 19volts.
- 💧 Are all the wires properly attached to the terminal strip?
- 💧 Talk to Watermaster about repairing or replacing the controller.

## SECTION OR ZONE WILL NOT COME ON!

- ◆ Is the station programmed correctly at the controller?
- ◆ Is the valve installed correctly? Check flow arrow to make sure that the valve was not installed backward. This is usually a new installation problem.
- ◆ If the section valve has a flow control handle, is it set in an open condition? Reset the flow handle to two complete turns open if it is completely closed. Reset the flow handle to where there is a slight hissing sound coming from the valve when water is flowing.
- ◆ Will the valve come on if you turn the manually bleed on? (If your system has a master valve, you may have to manual bleed it also.)
- ◆ Open the controller so the terminal strip is exposed. Disconnect the common wire from the terminal and with a volt/ohm meter set on "Ohms" touch or clamp the black lead to the common wire. **MAKE SURE THE CONTROLLER IS IN THE OFF POSITION.** Touch the red lead to each active station post.
- ◆ A reading between 20-60 Ohms indicates a good solenoid and electrical circuit. Turn the water source off, remove the valve bonnet and check the inlet/outlet ports for plugging or contamination. Unscrew the solenoid and check the plunger and spring for freedom of movement. If the valve has a metering rod make sure it is in place, and not worn. Reassemble the valve, turn the water on. Test for operation.
- ◆ A reading below 20 Ohms indicated a bad solenoid or a short in the wiring. Go to the solenoid location, cut the solenoid lead wires and apply the meter leads to each wire. A good solenoid will read between 20-60 Ohms. If the solenoid reads below 20 Ohms replace the solenoid. NOTE: Two solenoids connected to the same station will produce a reading at half that of a single solenoid. Check each solenoid separately in this situation.
- ◆ At the controller, if the Ohm meter reading is below 20 Ohms and the solenoid reading is good, there is a short in the wiring. The short is located between the valve and the controller. A short indicates the current is taking a "shortcut" back to the controller, which creates the lower rating. Fault locator devices are available to locate this problem. Contact Watermaster if you have a need for a Fault Locator.
- ◆ At the controller, if the Ohm meter reads infinity ( $\infty$ ) or shows a reading like 1.1m or 28k, the problem is a broken wire. With a broken wire, the current has no way of returning to the meter. The Ohm meter responds with an infinity reading. (Check your specific meter manual for the exact reading.)
- ◆ At the controller, if the Ohm meter reads between 60-150 Ohms, the problem is most likely a bad splice. If the resistance is above 60 Ohms (an open) test the solenoid without the field wires connected described above. Replace the solenoid if the resistance is still above 60 Ohms. More than likely, the solenoid will test within proper limits. If this is the case, cut out the wire connectors, twist the station and common wires together at the valve location and retest the resistance from the controller. The resistance should now read very low, possibly 2 Ohms or below. If the resistance is this low, the problem is caused by a faulty wire connector. Install new waterproof wire connectors on the existing solenoid and test the resistance again at the controller. If the resistance is still high when the station and common wires are twisted together, then there is an open somewhere between the valve and the controller. Wire-tracing equipment should be used to locate the problem.