

Irrigation System 100 - Light Overnight Freezes - Spring or Fall

By Clark Anderson

The overnight low temperature is predicted to dip **below freezing!** There has been no precipitation, the grass is still green and the trees have some green leaves or buds. It is warm enough during the day to keep the soil and the underground part of the irrigation system well above freezing. At the side of your house is the somewhat expensive Backflow Prevention Assembly (Check Valve). For a quick freeze-thaw cycle there are two methods to protect it:

- 1) Insulate it from the cold; or
- 2) Drain all of the water out of it.

Insulating the Backflow Prevention Assembly for a light overnight freezes:

- 1) Wrap it loosely with old blanketing to keep cold drafts from circulating next to it.
- 2) Seal it inside a garbage bag to keep it dry and out of the wind. I like to use black plastic to help it absorb some warmth from the sun. Secure the bag with tape to keep the wind out.

'Partial Shutdown' Draining the Backflow Prevention Assembly:

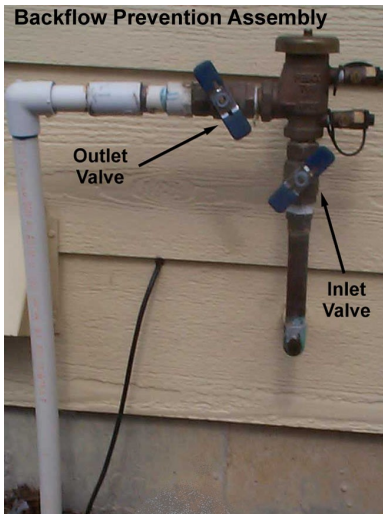
Most parts are plastic and do NOT require tools.

In the garage:

You can turn off your electronic irrigation control. Ours is a RainBird eController with a rotary switch that can be turned to the 'Off' position. Some controllers have a 'Rain' setting for this purpose.

In the basement on the copper pipe going up and out the side of the house:

Close the Sprinkler System Supply Valve. In the closed position, the handle will be perpendicular to the pipe. It, symbolically, crosses the pipe to indicate no flow.



At the side of the house at the Backflow Prevention Assembly (Check Valve):

- 1) Half close the Inlet Valve (nearest to the copper pipe that enters the house). In the half-closed position the handle is at 45 degrees to the copper pipe.
- 2) Half close the Outlet Valve, nearest to the (possibly white plastic) pipe that enters the ground. In the half-closed position the handle is at 45 degrees to the (possibly white plastic) pipe that enters the ground.

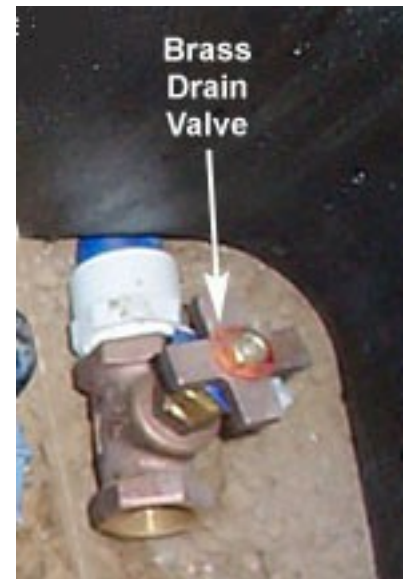
The half open-closed valve position allows for the air and water to pass freely either way.

Outside, in the Solenoid Control Valve Pit, under the green cover: (See illustration.)

- 1) Open the brass Drain Valve (turning the cross-shaped handle counter-clockwise).

After opening the valve all of the way, I like to 'close' it a partial turn so that much later when I return to the valve I can easily tell that it is not closed tight. For this brass valve, I like to use my 'spanner' tool. It is a steel rod with a triangular handle at one end and two-prong fork to fit the valve knob on the other end. This drain valve is at an elevation lower than the Backflow Prevention Assembly, but it is definitely not at the lowest point in the entire irrigation system!

- 2) You can replace the green cover.



Back in the basement on the copper pipe going up and out the side of the house:

Provide a container to catch about 2-3 cups of water. Open the Bleed Valve, the small brass knob on the side of the larger valve body. (No tool needed.) You only need to turn it 1-turn counter-clockwise to let some water drip out. Not much water will come out until the next step, when you are outside. Do not lose this little brass cap!

This partial shutdown can protect the parts that are above ground from a light frost because gravity can drain the water out from the more elevated parts.

For two reasons, we need to use the complete shutdown process before any hard, extended freezes.

- 1) Our underground plumbing uses white PVC pipe that is pretty strong, but brittle. The black 'Poly' Ethylene hose is more resilient.
- 2) Our irrigation system does not have drain valves at all of the low points.

My first year in this home, my main PVC pipe running from the Backflow Prevention Assembly to the Solenoid Control Valve Pit, froze and split at its low point, under the driveway a yard or two up from the sidewalk. The concrete driveway is denser than soil and a much poorer insulator from the cold winter weather.

Resume irrigation, after the 'Partial Shutdown', to give the trees, shrubs and lawn that needed water:

Outside, in the Solenoid Control Valve Pit, under the green cover: (See illustration.)

- 1) Close the brass Drain Valve (turning the cross-shaped handle clockwise). I like to use my 'spanner' tool. It is a steel rod with a triangular handle at one end and two-prong fork to fit the valve knob on the other end.

Make sure everything here is closed! I forgot once and had local flooding and a bigger water bill.

- 2) You can replace the green cover.

At the side of the house at the Backflow Prevention Assembly (Check Valve):

- 1) Close the Outlet Valve, nearest to the white plastic pipe into the ground. In the closed position the handle is perpendicular to the white plastic pipe.
- 2) Close the Inlet Valve (nearest to the copper pipe into the house). In the closed position the handle is perpendicular to the copper pipe.
- 3) Verify that the two bleed valves are closed (test cocks for blowing out the lines). You will need a screwdriver to turn the slots to be perpendicular to the tube.

In the basement on the copper pipe going up and out the side of the house:

- 1) Close the Bleed Valve, the small brass knob on the side of the larger valve body. (No tool needed.)
- 2) Open the Sprinkler System Supply Valve. In the open position, the handle will be parallel to the pipe.

Back at the side of the house at the Backflow Prevention Assembly:

- 1) Slowly, start to open the Backflow Prevention Assembly Supply Inlet Valve until the water surges and splashes some, then open it the rest of the way. The water surge and splash stops when the Backflow Prevention Assembly is pressurized. In the open position, the Handle should be parallel to the copper pipe.
- 2) Slowly, open the Outlet Valve. In the open position, the handle should be parallel to the white plastic pipe. You can hear the rush of the water entering the irrigation system. This rushing sound should stop fairly soon.

It is wise to look in the Solenoid Control Valve Pit under its green cover for any leaks. There should be no puddles in there.

In the garage:

Once you are satisfied there are no leaks, turn on your electronic irrigation control and ready to irrigate.