



## Winterizing your irrigation system

**A**S FALL APPROACHES and temperatures drop, the water in your irrigation systems can expand as it freezes. Now is the time to start thinking about preparing your irrigation systems for winter. Since automatic irrigation systems are usually buried only about 12 inches below the surface of the soil, water left in an irrigation system in freezing climates over the winter, even a mild winter, will certainly freeze, causing damage to pipes, fittings, valves, and sprinklers. Damage caused by a frozen irrigation system can be expensive and time consuming to repair next spring. Preventing winter damage by properly winterizing the irrigation system is an important consideration now.

Using compressed air to force water out of the irrigation system is the most common method of winterization. However, irrigation systems equipped with automatic or manual drain valves may not require compressed air to winterize if the piping has been installed with slope leading toward the drain valve. If you are not sure that the system was designed to drain itself completely, then use compressed air. Using compressed air on an irrigation system equipped with automatic or manual drain valves will not harm the components of the irrigation system when properly executed and will ensure the irrigation system is properly winterized.

### SELECTING AN AIR COMPRESSOR

A properly sized air compressor is critical in effectively and efficiently blowing air into the irrigation system, forcing water out through the sprinklers. Air compressors are available in various sizes. The most common portable air compressor, which represents roughly 80% of the portable air compressors going into rental fleets today, is the 185 portable air compressor.

**A note of caution:** The expanding air coming from the air compressor into the irrigation system will get hot and may melt the plastic pipe.

This machine is rated at 185 cfm at 100 psi at full load. You can find one through a contractor's equipment rental shop that is more than adequate to get the job done for most residential and commercial irrigation systems. Smaller 5 horsepower electric air compressors, although capable of delivering 100 psi, are not capable of delivering enough volume of air to adequately winterize an irrigation system. For winterizing sprinkler systems, it is the volume of air that is more important than high pressure. In fact too high of pressure will cause damage. The preferred operating pressure will be set at 40-50 psi. This is enough air pressure to evacuate the water through the sprinklers within each zone.

### WINTERIZING AN IRRIGATION SYSTEM WITH COMPRESSED AIR

A note of caution: The expanding air coming from the air compressor into the irrigation system will get hot and may melt the plastic pipe. Carefully check the temperature of the air-hose connection at the blow-out point, and make sure to slow down or stop momentarily if it feels too hot. Cycling through each zone two or three times for short intervals will prevent too much heat buildup. Another option is to use long stretches of compressor hose laid on the ground to absorb much of the heat before it enters the sprinkler system. Those who have experience winterizing large systems will use a combination of both or try and find an air compressor that will blow cold air. They are not as common, but they do exist.

### DRAIN SYSTEM WINTERIZATION

Although using compressed air is the most common method for winterizing an automatic irrigation system, there are two systems that do not require the technique. The first type is a system equipped with automatic drains that open when the system pressure falls below 10 psi. For these systems, it is usually only necessary to turn off the water.

An irrigation system equipped with manual drain valves requires locating and

opening the drain valve for each zone and the main line. Once the valves have emptied, the manual drains must then be closed. The backflow devices and irrigation controllers also need to be winterized.

With either of the systems, it is important to activate each valve to drain water out of the valve and allow air to enter into the system to slowly push water toward the drains.

### BACKFLOW WINTERIZATION

There are several types of backflow devices or assemblies used in irrigation systems that are connected to potable water systems. The most common is a pressure vacuum breaker. In order to winterize this device, open the top of the pressure vacuum breaker and remove the internal discs and springs. Storing these components near the irrigation controller makes them easier to find come springtime. Turn the handles on the two ball valves and all test ports to a partially open 45 degree position. Ball valves, when fully closed or fully open, will trap water in between the ball and the valve housing. The valve housing will crack during a freeze if not left partially open.

Some newer pressure vacuum breakers are freeze resistant, with a built-in relief valve to protect the internal components and the body from freezing. It is not necessary to remove the internal components in these devices.

The other types of backflow assemblies used in irrigation systems are a reduced pressure principle backflow device, or RPZ or in some areas a double check valve is permitted for use on irrigation systems. In either case, it is usually best to remove this device completely during the winter and store indoors. Then cap the pipes to the irrigation system. If removal of the backflow device is not possible, carefully follow the manufacturer's instructions for winterization. Each manufacturer has specific instructions for winterizing.

### IRRIGATION CONTROLLER AND RAIN SENSOR WINTERIZATION

To prepare the irrigation controller for winter, simply turn the controller to the

“off” or “rain shutdown” position. You can also disconnect the power and remove the battery, but this is not necessary. It is important not to allow the controller to cycle through an irrigation schedule without water in the system because the remote control valves require water to move through the solenoid assembly for cooling purposes.

If your irrigation system is equipped with a rain sensor or a soil moisture sensor, it is not usually necessary to cover or remove the sensor for the winter. Check with the manufacturer to make sure the sensor does not require any special instructions for winterization.

### PUMP WINTERIZATION

Centrifugal pumps have a drain valve located at the base of the pump housing that needs to be removed and stored for the winter. The power supply for the pump should also be disconnected to prevent the pump from being accidentally turned on without any water, as a pump running without water will quickly burn up. Additionally, if the pump is drawing water from a lake or stream, the intake hose has a foot valve located at the base of the suction line. It is necessary to completely remove the intake or suction line from the water and store it for the winter. Sometimes a check valve is also located on the discharge side of the pump, which also needs to be removed and stored for the winter. Any part of the pumping system that can be exposed to freezing conditions will need to have the water drained to prevent damage. Often there are drain plugs or valves meant to be opened to facilitate drainage.

Preparing an irrigation system for winter can be a complicated process. An improperly winterized irrigation system can be an expensive repair the following season. Save time and money next year by investing in proper winterization of the irrigation system now. ■

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