



Getting ready for winter

Editor's note: *The air will be crisp for a lot of the country by the time you read this, a sure sign cold and snow and ice are around the corner. Here we present information to help you get ready for it.*

IRRIGATION SYSTEMS

Winterizing your irrigation system properly is the one of the biggest factors affecting sprinkler system longevity. This article will provide a general overview of winterization including procedures and equipment needed to properly winterize an irrigation system, helping to prolong the life and integrity of the irrigation system.

Winterizing consists of using compressed air to force water out of the irrigation system before it can freeze and cause damage. Because water expands as it freezes, water left in the irrigation system may damage sprinklers and other components when it

freezes. Piping, fittings, valves, and control valves may need to be repaired or replaced in the spring if the irrigation system is not properly winterized. Winterization should be done after 1-2 frosts, which usually is about the time when you have mowed the turf for the last time of the season. Even when air temperatures fall below freezing for a couple of hours the soil temperatures are still warm enough to keep irrigation system components from freezing.

As far as equipment is concerned, having a correctly sized air compressor is the most important component. Correct air volume and pressure settings are the key to properly winteriz-

ing an irrigation system. Air volume is a key component because the compressed air is used to fill the pipes and force the water out of the system. For example, a small compressor used to inflate tires will have more than enough pressure, but not enough volume to fill the pipes with air. The volume of air needed depends on the size and length of pipe and number of sprinklers. Generally a 90-135CFM (Cubic Feet per Minute) compressor will do a satisfactory job on most sports fields. For golf courses or large sports field complexes a compressor of 185 CFM-750 CFM are required.

Although the volume of compressed air is a driving factor for a good winterization to be performed, don't overlook the importance of air pressure. Most sports fields can be winterized using 40 psi-60 psi of air pressure. It is important to know that air is more easily compressed than water. With this in mind, it is best to use an external pressure regulator on the air compressor. This regulator is simply a pressure gauge

Winterizing consists of using compressed air to force water out of the irrigation system before it can freeze and cause damage.





and ball valve used to regulate the air pressure going through the lines. These units can be made pretty easily, or rented at most tool rental agencies for \$8-\$10 per day. It is easier to monitor and adjust the pressure output from an external regulator, but if you choose not to use one then you must adjust the pressure internally on the compressor. There is usually a pressure gauge and set screw on the compressor under the hood.

PROCEDURES

Procedures for properly winterizing an irrigation system are easy to follow, and some of these steps may not even be necessary with all systems. The first step in winterizing an irrigation system is to shut off the water supply. There should be a valve between the main water supply and the backflow preventer. Close this valve and then close the valve on the downstream or outbound side of the backflow preventer. Depending on how your system was designed, there may be a valve to close between the backflow preventer and point of connection for the air compressor.

Next, go to the controller and set a zone/station to run for 10-15 minutes while you set up the compressor and fittings. Always keep a zone open from start to finish avoiding pressure build up and damage to system components. It is best to blow out the system from the zone/station closest to the water source and end at the zone/station farthest from the water source. This will push the air from the beginning of the system to the end or farthest point from the water supply, insuring that minimal water is left in the system.

Connect the compressor to the system mainline. This is usually done using a quick coupler valve or service "T" fitting. If possible, avoid connecting to the backflow preventer as high volume and high air pressure can damage the internal parts. Once you are connected to the mainline, open the compressor to about 40 psi-45 psi. After a short delay, you should see water being forced out of the zone that was manually set to run in the previous step. If the sprinklers do not reach full pop-up height add more air pressure in

small increments until they look like they are operating normally.

From the controller, manually go through each zone/station for 1-2 minutes. Letting a zone/station run longer can produce heat which can damage rubber components or seals in the sprinklers and

If your pump is not enclosed/ heated it is especially important to winterize the system before heavy freezing occurs to give it some time to dry out before winter sets in.

valves. After each zone/station has been gone through once repeat the process one to two more times to make sure the water has been flushed out of the system.

Once the system has been blown out, open drain valves (if applicable) to drain any remaining water from the system. This will also discharge any back pressure left in the pipes. Drain the pump if applicable. Usually opening the drain plug on the bottom of the pump is sufficient, but 10 psi-15 psi of air through the pump will insure it is properly winterized. Do not put high amounts of air pressure through the pump as this may cause damage to the pump components. It is also a good idea to disconnect the pump wiring from the controller as well as disconnecting the power supply. This will keep the pump from operating dry if there is a power surge.

The next step is to winterize the backflow preventer. If the device was installed using unions it should be fairly easy to

remove the device entirely and place it inside for the winter. If removal of the backflow preventer is not an option, then you should close the valves on each end of the device and open the test cock valves on the device. There are usually four of these one-quarter-inch fittings sticking out from the device. Use a screwdriver to open these valves. Turn the slotted fitting a quarter turn until it is perpendicular to the backflow preventer and blow 10 psi-15psi of air through these valves to flush water from the backflow device. Leave all valves on the backflow preventer open at a 45-degree angle. This allows any water that may freeze to expand through the openings instead of cracking the brass fittings if the valves are left closed.

Winterizing a vertical turbine pump can be difficult, but is still important even if it is enclosed in a heated pump house. It is a good idea to check the heating source every couple of days to make sure it is operating properly. If your pump is not

enclosed/heated it is especially important to winterize the system before heavy freezing occurs to give it some time to dry out before winter sets in. If you are unfamiliar with your pump it is a good idea to contact the manufacturer's representative to see if they have any recommended procedures.

First, open the connections or valves for Check Valves, Flow Sensors, and "Z" pipe. Next, open the closed isolation valve to the mainline and use the backpressure from the piping system to flush water from these components. It may be necessary to put small amounts of compressed air through these components to completely flush them.

Following these steps to properly winterize your irrigation system will make the spring turn-on quicker and easier with fewer repairs to be made. ■

Jeremy Link, CSFM is the owner of EcoFriendly Irrigation, LLC, Cincinnati, OH, link@ecofriendlyirrigation.com

70% INFLOW RATE **WATER MUST ENTER TO EVER EXIT!**

• 7 to 25 times higher inflow rate than most other systems • Capable of withstanding over 11,000lbs/ft²

Hydraway
Drainage Systems

800.223.7015 hydraway.net