Winterizing your irrigation system

In a climate where the frost line extends beyond the depth of installed pipe, it is advisable to "winterize" the sprinkler system to avoid damage. Special attention should be given to removing water from the pipes, valves and sprinkler heads before the first frost occurs. This may be accomplished using three techniques; the manual drain valve method, the automatic drain valve system or the air blow-out practice.

This guide deals with the air-blow out practice as it is the only way to ensure water has been removed from the system. Local irrigation contractors usually offer this service for a reasonable fee that may also include start-up in the spring. Depending on how extensive your system is and what type of equipment you have installed, you may want to choose a professional who is fully equipped to provide this service. Visit our website www.krain.com or call 800-735-7246 for professionals in your area.

DESCRIPTION OF PROCEDURE:

- Compressed air is used to force water through all of the irrigation system components including the mainline pipe, sprinkler control valves, lateral pipes and out through the sprinkler heads. To obtain proper air volume, you will need to rent or buy a compressor capable of providing 20 to 25 cubic feet per minute (CFM) of air volume.
- Air pressure must not exceed 50 pounds per square inch (psi) during the blow out procedure.
- A pressure-regulating valve must be used to avoid over pressurization of the system. Air volume should be high and air pressure low. This combination of high volume/low pressure will minimize the damage that can occur during the winterization process. It is very important to select the right air compressor for the job. Some small shop compressors may not be adequate to complete the winterization procedure properly. If the appropriate air compressor is not available, call an irrigation contractor.
- Do not try to use an air compressor with high pressure (120 psi) and low volume to evacuate water from the system. It is not an acceptable practice to allow the compressor to fill the holding tank of the compressor and the closed mainline with high pressurized air hoping the surge of excess pressure will compensate for the lack of compressor size and blow the line clean upon opening the sprinkler control valve. This is a dangerous practice that places very severe stresses on all of the components of the system.
- Do not run the compressor without at least one sprinkler control valve open. This lessens the chance that the system could over pressurize. It is a common misbelief that if the system can withstand 120 psi of water pressure, similar air pressure will not damage the system. This is not true! The viscosity of air is much lower than water, generating much higher stresses that can cause severe damage to the system.
- There should be a separate provision on the sprinkler system mainline for hooking up the air hose. This could be a quick connect fitting, a manual gate valve, a plugged "tee" or simply a capped pipe in the line. This adapter should be located as close to the water source as possible.
- Check with your air compressor manufacturer for the correct procedure and equipment to hook up to the sprinkler system.

Winterizing your irrigation system

WARNING!

- **WEAR ANSI APPROVED EYE PROTECTION!**
- Extreme care must be taken when blowing out the system to avoid excessive pressure which can damage valves or sprinkler pipe or cause physical injury due to flying debris.
- Do not stand over any irrigation components (pipes, sprinklers, and valves) during air blow out.
- Air pressure must not exceed 50 pounds per square inch (psi). Compressor must be capable of delivering 20 to 25 Cubic Feet Per Minute of air volume.
- Do not run equipment for longer than 1 minute on air.
- Do not run the air compressor without a sprinkler zone control valve being open first – from start up to compressor shut down.

PROCEDURE:

Blow out procedure activating sprinkler control valves from the timer

1. Close mainline sprinkler shutoff valve.
2. Relieve the water pressure on the mainline by activating a circuit, or zone from your timer. Activate the circuit that is farthest from the air connection before introducing air into the piping.
3. Attach the compressor hose to the blow out adapter.
4. Set the pressure-regulating valve on the compressor to 50 psi.
5. Turn on the compressor. Gradually increase the flow of air until the sprinkler heads pop up. The amount of flow or volume required will be dependent upon the length of the pipe run and the number of heads.
6. Sustained heat from the compressed air may damage pipe and other components.

   DO NOT blow any circuit more than 1 minute at a time. Switch to another station, or zone, by advancing the timer to the next circuit.

   DO NOT turn the timer off at any time during this operation until the compressor is first shut off.
7. In order to ensure adequate drainage of lines, repeat the cycle two or more times activating each zone from the timer until nothing more than a fine mist appears from the heads. Many sprinklers that use plastic gears in their drive mechanisms also use water for lubrication and cooling. If a circuit is allowed to run with nothing but air for extended periods there is a significant risk of damaging the drive mechanism of the sprinkler.
8. After blowing out all the zones, leave one zone on while shutting down the compressor. Turn the compressor off at this time.
9. Unhook the compressor from the adapter to the sprinkler system mainline.
10. Turn the timer to “Off”.