



Superintendent Brian Heywood opens his gear drive and impact rotors before using a 185 or 205 cfm air compressor to blow out all the water.

IRRIGATION EQUIPMENT: AVOIDING WINTER DAMAGE

Three superintendents suggest a few basic steps to prevent winter damage to irrigation equipment.

by David Ferron, Rain Bird Golf Division

Your irrigation system represents a substantial investment of money to maintain quality turfgrass, so don't let winter's extreme temperatures damage its pipes.

Winter weather can be unpredictable. In many parts of the country, temperatures will sink low enough to warrant draining or blowing out all the water in the pipe network to prevent cracking. In the coldest areas, the ground may freeze from three to four

feet deep. Superintendents must take the maximum precautions for their area.

Snow cover during much of the winter season will help keep the ground from freezing very deep, but most superintendents still blow out the pipe network since it takes less time and expense than repairs the following spring.

Golf courses in transition zones must keep water in their pipes to

maintain soil moisture during some of the dry winter months. Superintendents there are taking a chance and can expect some damage in the coldest winters.

Jim Perrin, superintendent of Cameron Park (Calif.) Country Club, does not blow his irrigation system out and may have damage if the winter temperatures dip too low, like in 1988 when he lost two brass gate valves on his back flow preventer.

If you are new to the area, ask nearby superintendents what precautions they take. Experience is the best source of information.

Two methods are used to remove water from the irrigation system: via drains installed in the pipe network or by blowing out the water with an air compressor.

Draining downhill works

Draining will work on some small irrigation systems if the pipe is set with a slight downhill grade. Draining may leave pockets of water on large systems, which could cause problems. Blowing the water out of the pipe with a large air compressor is the most thorough method used today.

Bo Cichuniec, superintendent of The Country Club at Castle Pines, Castle Rock, Colo., says winter damage is only a problem when the winterization process is not done correctly.

Cichuniec may need to water the greens and tees in winter since the ground does not maintain any snow cover. When the irrigation system was designed, a secondary main line was added two to three feet deeper than the primary main line, allowing it to remain charged throughout the year.

Quick-couplers are attached along the fairways and around each green and tee. A stop-and-waste valve is opened manually to charge the quick-coupler and turned off after each use. The stop-and-waste has a drain hole to allow the water to escape from the

four-foot nipple.

Cichuniec says his primary problem is when a gate valve leaks water back into the shallower system. Golf course personnel must be sure to close all the gate valves tightly to prevent any damage.

Cichuniec uses a 750 cubic feet per minute (cfm) air compressor to blow out the irrigation pipe network. He says that it can take up to two days to complete the job. He attaches the air compressor to a quick-coupler at the pump station and pushes the water out from there.

Cichuniec is lucky that most of his golf course lies on the side of a mountain and the slope is downhill from the pump station. The main line connection to the pump is to a 14-inch pipe that holds a very large volume of water. His sprinklers are valve-in-head models and he's able to use the controller to turn on each rotor, keeping it on until air begins to come out the nozzle.

Reduce air friction

It's important not to allow the air to leave the rotor for a long period since air causes friction and heat can build up easily. Cichuniec says he has heard of pipe melting from air moving through at high velocity, but he hasn't had any such trouble.

Brian Heywood, superintendent at Jackson Hole Golf and Tennis Club, Jackson, Wyo., begins winterizing his system by draining the pipe in the lower areas. He then rents a 185 or 205 cfm compressor to blow out the rest of the water, start-

ing from the higher end of the course and working downhill through the valves. He adds it may take five days to do a thorough job.

During most of the winter season the course has a good three feet of snow cover, which helps keep the lines open and safe from damage, even though air temperatures are well below zero during the coldest months of the season.

Activate all rotors

The crew at Jackson Hole turns on every rotor. Heywood has both gear drive and impact rotors on his course. He notes that gear drive rotors require more air to get them to turn on and suggests turning them on manually to insure water removal.

John Alexander, superintendent at Bend (Ore.) Country Club, waits as long as he can before blowing his system out to prevent the soil from drying out. He starts from the highest points on the course and uses the clock to turn on the sprinklers.

Alexander emphasizes that it is important not to let the air leave the sprinkler for too long a time. In the past he has melted a two-inch brass valve. He also prefers a smaller compressor since a 650 to 750 cfm model melted some four-inch pipe and blew sprinklers out of the ground.

Compressors vary in size from small 10 to 15 cfm to the very large 750 cfm size. The size you choose will depend on the amount of water you are trying to remove. The volume of water will depend on the pipe size that makes up the hydraulic network of your irrigation system.

What compressor size?

Alexander prefers using a smaller compressor and going through the system a couple times to be sure all the water is removed.

Cichuniec says that it takes two full days to get all the water out of his 14-inch mainline leaving the pump house. While the air easily pushes the water out of the top half section of pipe, it takes a little extra effort to get the rest out.

Though there are no specific rules of thumb when it comes to choosing an air compressor, the best way is to start small and work your way up.

The most important element to remember when removing water from your irrigation system is to begin releasing the water at the highest point on the golf course and work down from there. Use the controller to electrically turn on the sprinklers or turn each on manually, and be sure not to let the air leave the rotor for a very long time. **LM**



Wyoming's three feet of snow cover is probably enough to protect irrigation lines from freezing and cracking, but Heywood takes no chances.