



Proper winter and spring maintenance techniques are a must for maintaining an irrigation system.

SPRING TROUBLESHOOTING

As winter's ice and snow thaw, so do irrigation systems. Here are some suggestions on how to avoid spring irrigation problems, and what to do if you've got them.

by Heide Aungst, associate editor

Many golf courses, parks and institutions would be virtually paralyzed without their irrigation systems. So, for most, constant maintenance is simply a way of life.

For those with systems in the North or Midwest, the hardest work comes in late fall when the system must be "winterized." But if you tried to save time then by rushing through the process, chances are you'll lose time this spring repairing winter damage caused by negligence last fall.

"Most people do a good job winterizing, because they know what headaches there are in the spring," says Michael Bravo of Thompson Irrigation, Chino, Calif. "It can be a lot of trouble and money."

Winterizing refers to using an air compressor to blow out or evacuate all water from the system. The primary source of spring start-up problems is water left in the system piping over the winter. In any area where temperatures drop below freezing, water can freeze and expand, causing pipes or valves to burst.

Tony Altum, of Grounds Management Consultants, Indianapolis, Ind.,

says too many golf course superintendents treat winterizing systems like changing oil in a car. "Lack of concern is the biggest problem," he notes. The part of the system which needs to be replaced might not be costly in and of itself, but Altum stresses that it may take days to wait for the part to come in and labor costs can go through the roof.

Big bucks?

Although costs vary widely across the country, Don Cooper, manager of customer service for Weather-Matic in Garland, Texas, estimates it could cost about \$1000 to replace a 12-inch break in the main line of a large system.

By spring, there's little hope for systems which have not been properly winterized. Even carefully evacuated systems can suffer from freeze damage warns James Burkhardt, president of James Burkhardt Associates in Columbus, Ohio. Occasionally, melting snow will get into a sprinkler head and refreeze. But, Cooper says, if the system is turned back on carefully, further damage can be minimized.

"The key is to fill the system slowly," Cooper recommends. "Dumping water into an empty line creates a water hammer which causes more breakage." Cooper says that Ts and elbows will snap easily if a pressure surge is created.

Cooper says a residential irrigation system should be recharged starting at the valve farthest from the water supply. Open the valve to let the air and water out, then bring the water pressure up slowly. Continue this process at each valve through the system.

For large commercial and institutional systems, start by opening as many valves as possible. Manually restrict the water flow to the heads. Close the valve closest to the water source. Continue this process, keeping the air moving in front of you at all times. It is important to go through the system manually to make sure any problem is with a part and not the controller.

Crucial steps

Cooper says this process is even more crucial at golf courses because of the large footage and large diameter of the

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**Michael Bravo, Thompson
Irrigation, Chino, Calif.**

pipes. If the system has a multi-stage pump plan, use only the jockey pump to fill the system. Continue checking each zone through the course. "You must pay particular attention to the peaks and valleys in the system," Cooper warns. "It's the low points where most problems will occur."

As you manually check each zone, first check the master or gate valve to make sure it is working smoothly and freely. Next, check valves, lines and sprinkler heads. Valves and sprinkler heads could have cracked through freeze damage. Or, they could simply need to be cleaned. "There could be dirt on the nozzles," says Bravo. "You might have to take them apart and clean inside the sprinkler head. It's rare, but not uncommon. Out of a hundred you might have to do three or four."

Gary Panuzzi, customer service manager of Richdel Inc. in Carson City, Nev., says sometimes bugs can collect in sprinkler lines and clog them. He says to unscrew the sprinkler heads and let the water clear the lines out.

Heads can also be broken by snow plows hitting them over the winter, says Burkhart. Cooper stresses also to be careful of maintenance work, such as installing phone or power lines, which can damage valves or sprinkler heads.

Broken pipes

Broken pipes, however, present the biggest problems. Loss of pressure in a zone, indicated by heads not popping up properly, or water coming quickly to the surface, indicate pipe trouble.

Be certain to operate the system for a short time to make sure the problem is not a symptom of just being turned on. Also, water pressure changes at different times of the day, says Desi Williamson, district manager for Rain Bird. The best pressure is in the middle of the day when most people are at

work and not using water.

It is important to check areas near concrete, particularly in residential systems, because concrete transfers cold and can contribute to freeze damage.

Besides the cost and labor involved in replacing a pipe, the destruction of landscaping in the area of the broken pipe can be an even worse problem. Cooper says some breaks can literally shatter the ground when they come to the surface.

"You can get a lot of erosion and water waste before you get the system shut down and the problem corrected," Cooper says. "Not only that, but digging down to fix the pipe ruins the landscaping."

Doug Miller with Champion Brass in Los Angeles, Calif., says with new products on the market, most irrigation system owners can easily replace valves or sprinkler heads, and many times can even fix a section of a broken pipe.

Williamson says to not forget to check the backflow preventer, which is always located 12 inches above the highest point in the system. The device is designed to keep contaminated water out of the system.

The final step in the process is to check the controller. Again, run through the system zone by zone, checking the electrical signal to each area.

The controller can freeze over the winter. To avoid this, Altum recommends using a controller which can be kept inside over the winter. If this isn't possible, he says, be sure to heat the controller with a lightbulb or heat tape.

In the South...

Irrigation systems in the South which are kept hot in the winter, but not used as frequently, need only a walk-through operational check before going into full swing.

First, check to make sure the valves and sprinkler heads aren't clogged, and that the spray and rotary heads are working right. Finally, check the controller to make sure it is sending the message to the valves to open and close.

Problems in Sun Belt systems should be routine. For irrigation systems which are shut down over the winter, the spring start-up should also be a routine process, provided the system was properly winterized.

If you find yourself repairing a great deal of freeze damage this spring, remember your headaches in the fall when you winterize. Preventative maintenance is the key to a smooth-running system. **WT&T**