

Spring Maintenance and Start-Up of Irrigation Systems

The “Window of Opportunity” for opening an irrigation system is fairly short. Whether the irrigation (sprinkler) system is a golf course, a sports park, or just a residential system, the service and maintenance opportunities are the same, just on a different scale and value.

It is not advisable to open a system too early. Firstly, the system in Canada is usually not needed until the end of May—any earlier, is very exceptional. Secondly, opening and performing maintenance on the system is hard work and unpleasant when carried out too early. The valve boxes containing the valves and wire connections are usually the last to thaw, and ideally should be empty of water if possible. If you do have to dig to make repairs, a dry soil is easier to make a fast and quality pipe or wire repair.

When an irrigation system is closed (and empty) for the winter, usually the master (main) valve is shut off, but, all other isolation (manual) valves are left open. This is to ensure that any water that might find its way into the system does not back up against a closed valve and therefore break the pipe and usually the valve. Also, ball valves must remain open during freezing weather.

Before the system is filled with water, some precautions must be made because high pressure water and air mixed together can do a great deal of damage. All isolation valves must be closed. This is to ensure that when the master valve is opened slowly only a section of the system is filling with water. That area should be visibly checked for leaks. If any are found, get them repaired immediately, or if only minor, mark the place with a flag, and continue opening and checking.

It was mentioned earlier about opening the main valve slowly. This is to allow the main lines to fill gently. If the main valves are opened quickly, the water (under pressure) will thunder down the lines at very high speed and eventually when the water hits a stop or a 90 degree turn, it could blow the pipe fitting apart or dislodge the solvent weld of the pipe.

Once the system is charged with water under pressure, the following checks and procedures should be done.

- ✓ Check for leaks. Walk the site and allow a few hours for small leaks to show themselves in the ground.
 - ✓ Check inside the valve boxes for manifold leaks and any obvious wiring problems.
 - ✓ Check the back-flow-preventer which should be regularly checked by an authorized inspector.
 - ✓ Plug in the controller and re-set date and time.
 - ✓ Replace the battery (unless it is a rechargeable type).
 - ✓ Check all exposed wiring around the controller to ensure that winter damage or vandalism has not occurred.
 - ✓ Check to make sure that the programmes are still resident, day, time, duration, etc.
 - ✓ Turn on Zone One (only) at the controller and visibly check that zone carefully while it is running. The following zone checks should be done:
 - a) solenoid valve leaks
 - b) other valve box and line leaks
 - c) sprinkler heads - check they are perpendicular and level with the ground; undamaged, operating, and turning properly; and reversing at the correct setting.
- Note: Nozzle performance is the most important and vital part of the whole system. It must give the correct distribution and coverage. Poor individual nozzle performance usually means debris in the head or nozzle.*
- ✓ Turn on each zone and make the required checks, one zone at a time. If the controller is easy to change, it can be a good idea to put each zone on for perhaps 5 or 10 minutes and then while in the field, the zone changes will occur automatically. This will save walking back to the controller for every zone change.
 - ✓ Finally, it is a good idea to run the first programmed cycle of the system when someone can be in attendance to watch its progress.

A few tips about controller schedules

In Canada “over-watering” is a problem, especially with commercial landscapes. This is because most controllers are programmed for the hottest and driest period, August. If it is not changed for May, June, July, and September, it is often in an over-watering mode. Most controllers today are much lower priced and have more features than 8 - 10 years ago. One feature found on most controllers today is water budgeting.

The Water Budget feature allows the operator, usually with the touch of a button, to increase or decrease the programmed water times by a specific percentage without having to re-programme the controller.

Most sports turf requires about 1 1/4 inches of water per

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week, but this again depends upon the season, the weather, and the quality of turf. Two to three applications per week is best for the turf (depending on soil type). Watering a little every day only encourages shallow roots and this leads to other problems.

All sprinklers and their corresponding nozzles are rated for gallons per minute (or m³/L) and precipitation in inches per hour (or mm/hr).

If the reader requires to know more about his/her particular sprinklers rated performance, your supplier or manufacturer can provide this information.

The author has only described spring maintenance on the most basic type of system. As technology improves and water conservation becomes more and more important, there are many worthy features that are gaining acceptance because of the amount of money they can save in operational expenditures. For example:

- Moisture Sensing Devices
- Rain Sensing Devices
- Matched Precipitation Sprinklers

- Pressure Regulating Devices
- Cycle & Soak Control Feature
- Weather Stations
- Computerized Central Control Systems

After spring start-up, there needs to be a continuous commitment on behalf of the maintenance crew to perform routine maintenance.

An irrigation system is a sizeable investment—just like the grounds maintenance equipment, it needs regular check-up and care.

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WORKING UNDER THE SUN

A Health & Safety Issue

Outdoor workers are exposed to dangerous levels of ultraviolet radiation sun exposure which, over the years, can cause premature skin aging, skin cancer and cataracts in older people.

Personal Protection

Workers exposed to excessive U.V. radiation should use the following personal protective equipment:

1. Wear a broad brimmed hat.
2. Wear U.V. blocking safety glasses.
3. Wear tightly-woven clothing covering on as much of the body as practicable.
4. Wear sunscreen with a minimum SPF15 (Sun Protection Factor) and effective against UV-A, UV-B on all exposed skin.

NOTE: The use of UV-safety measures should not lead to other safety risks. The risk of head injuries from using hats with inadequate impact protection, for example, or the risk of heat stress from wearing heavy clothing in hot environments.

Sun screens must be applied at least 15 and preferably 30 minutes before going out into the sun. This allows the active ingredients to bind with the skin and achieve the protection level. This is especially important with water-proof sunscreens.

Blockage of U.V. rays solves only part of the problem. Anytime the skin is exposed to the sun, it also loses a tremendous amount of moisture. This moisture loss is a major cause of skin peeling and flakiness, regardless of the amount of "sunburn". Choose a sunscreen with a quality moisturizer and Vitamin E to rejuvenate the skin. Simple precautions by outdoor workers can certainly go a long way in reducing the occupational hazard of UV over-exposure to those who work under the sun

Courtesy John Marlatt, Solar Bear



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