



**RAINTREE**  
Irrigation & Outdoor Systems *(Since 1987)*

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## UNDERGROUND LAWN SPRINKLER SYSTEM

### OPERATION MANUAL

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## A. HOW & WHEN TO USE THE SYSTEM

Congratulations on the purchase of your new underground lawn irrigation system. An underground sprinkler system will enhance the landscape and improve the image of the property & buildings. However there are a number of negative effects of a sprinkler system connected with its use that one should be aware of. These are:

- 1) Overwatering; This is the most common misuse of sprinkler systems. Sprinklers rarely need to be used before mid May or after mid September. They need to be used more frequently and/or run longer during hot dry weather than during wet periods or cooler temperatures.
- 2) Underwatering; This is most common during periods of dry hot weather. Monitoring on an ongoing basis and running for longer periods can correct this problem.
- 3) Too frequent watering; Grass should be watered thoroughly and allowed to dry out before the next watering. This promotes deep root growth and a healthy lawn. Daily or frequent watering does not encourage roots to "go down" seeking water and consequently shallow root systems develop. Such plants are more susceptible to insect damage and should there be a lack of watering for any reason, these lawns suffer more than deep-rooted lawn systems.

Recommendations:

Responsibility for the system:

It is recommended that someone be assigned to make periodic adjustments to the sprinkler system to account for temperature & rainfall changes. Also, adjustments may be necessary to adjust individual zones that may be too wet or dry. If this is not possible, Raintree Irrigation can provide this service for the season.

Frequency of watering:

It is recommended that watering be done on an every other day basis during hot/dry periods and every third or fourth day during cooler periods.

Recommendations: (cont'd.)

How long each zone should run:

It is recommended that zones with "spray" or "mist" heads be run for approximately 10-30 minutes every other day or every third or fourth day. Rotor sprinklers should run from 40 - 120 minutes every 2nd, 3rd or 4th day. The amount of time for each zone will depend on soil conditions (sandy, which requires more watering or clay, which requires less watering), whether it is a shady or sunny area, the temperature and amount of rainfall.

The time of day that the system should run.

It is not recommended that the system run during the daylight hours because of wind and sun evaporation. In fact the effectiveness of the sprinkler heads is greatly reduced by wind and therefore it is recommended that the system run during the evening and morning hours with the system shutting off by 7:00 A.M. or in the case of residential systems before showers are taken in the household. The start time of the system can be calculated by taking the total of the run times of the various zones and backing up from the time you wish the system to stop running.

Please note that vandalism to the system may occur, especially to any sprinkler heads that are located near the street or public thoroughfares. To reduce the likelihood of vandalism, it is recommended that such sprinklers should not come on before 3:00 A.M. as most vandalism occurs between dusk and 3:00 A.M.

#### B. MANUAL USE OF THE CONTROLLER (TIMER)

The controller can be used manually to check coverage and ensure that all sprinklers are working properly. Only one zone should be turned on at a time. Otherwise damage to the controller may result. Manual use of the controller will be impossible after a significant rainfall if your system has a rain sensor. Some controllers are equipped with a rain sensor override switch, which will allow you to operate the system.

### C. USE OF THE RAIN SENSOR

A rain sensor can save a great deal of water and therefore reduce the cost of watering. In many municipalities, sewage costs are determined by the amount of water used and therefore there is a "double charge" for the water used. If your system has a rain sensor, it will override the controller after 1/8 inch of rain has fallen. The rain sensor will continue to override the controller until it "dries out". This usually corresponds to the ground drying out, Please note that the controller will not work manually when the rain sensor is "working" because of rainfall.

There is no maintenance required for rain sensors.

If your system does not have a rain sensor, a quotation can be provided to have one installed.

### D. CONTROLLER, SPRINKLER HEADS & VALVES

Controller:

For complete instructions on your controller please refer to the controller operations manual. The controller manual is left with the controller. If it is lost or misplaced please contact Raintree Irrigation for a replacement, or visit the website [www.raintree.on.ca](http://www.raintree.on.ca). The main difficulty that clients seem to have relates to start times of the system. Remember that a start time of 2:00 A.M. will start the first zone of the system and that zone will run for the amount of time that has been programmed into the controller eg; one hour. After that time, the second zone will automatically come on and run for its prescribed time after which the third zone will automatically come on, etc.

Unless otherwise noted, the controller has a battery backup, which holds the program in place should there be a loss of power. The battery will not run the solenoid valves but will ensure that the system runs on schedule when the power resumes.

During the winter, the controller can remain connected to the power source. If, however, it is unplugged from its power source, you may wish to disconnect the battery or otherwise a new battery will be required in the spring.

## CONTROLLER, SPRINKLER HEADS & VALVES (cont'd.)

### Sprinkler heads: Rotors

Directions for adjustment of the rotary sprinklers are included with this package. The main thing to avoid if adjustments are being made to the sprinkler is to not force the sprinkler head in a direction contrary to its normal movement. The sprinkler will turn freely within its arc (from one side of the arc to the other side and back again). Forcing it to go in another direction can break the sprinkler and void its warranty. Additional instructions are available on our Web site under Manuals.

### Sprinkler heads: Sprays

Spray heads require few adjustments. Different nozzles with different spray patterns can be screwed into the sprinkler head. Also the neck of the sprinkler ratchets if the spray pattern is not spraying in the right direction. To adjust, pull the neck up and out of the casing, grasp firmly at the base, and turn until the desired direction is reached. Additional instructions are available on our Web site under Manuals.

### Solenoid valves:

The solenoid valves require little maintenance except for fall winterization. If there is water in the valve box, it will not affect operation of the valve. However, if the valve box has water in it during dry periods, a small leak may be present which should be eventually repaired. It is not recommended that valve boxes be buried unless they are subject to possible vandalism. Buried valves can cause delays during service work on the valves and during winterization, which can add to the cost of performing this service.

## E. SPRING OPENING OF THE SYSTEM

Raintree irrigation can provide spring opening service for your sprinkler system. However, this can be done by the owner with instruction from Raintree personnel. It is essential that one valve for the zone furthest from the water source be opened before the water is turned on. This can be done with the controller. This allows air in the mainline to escape through the valve and out through the sprinkler heads. Otherwise the air is compressed and tremendous pressures can be built up in the line especially if the water pressure is high. This pressure can blow off fittings and cause leaks if the spring opening is not done properly.

The spring opening usually includes an inspection of the system to ensure that all sprinklers are working properly and any sprinklers that need straightening, lowering, or raising are dealt with accordingly. It is not always possible to check for coverage because of wind conditions. Usually, unless a sprinkler has been damaged by snowplows over the winter, the sprinkler will not need readjustment if it has worked properly in the previous

year.

#### F. WINTERIZATION OF THE SPRINKLER SYSTEM

The best way to ensure that your sprinkler is winterized properly and ensure that the life of the system is extended to the maximum, is to winterize it with a compressor using a minimum of 85 cfm (cubic feet per minute) for residential systems and 150 minimum for commercial systems. Raintree can provide this service for you.

Warranty of your Raintree Irrigation sprinkler system can be voided if the above equipment is not used for winterization.

#### G. MAINTENANCE OF THE SYSTEM

Little maintenance of the system is required except for winterization mentioned above. Over time (years), it may be necessary to move sprinkler heads because of growth of trees shrubs, etc. Also in bedding areas, extensions may have to be placed to raise sprinklers above foliage. These changes can be made to your Raintree system, usually with little difficulty.

#### H. REPAIRS TO THE SYSTEM

The most usual repair to the system involves damage to the pipes when changes to the landscape are being done. Raintree provides as-built plans, which provide an outline of where the pipes run. If damage is done to the pipes, it can be easily repaired by your Raintree service representative.

The major components (controller, valves and sprinklers), should provide many years of trouble-free service. However, if any do fail, they can be replaced or possibly repaired without major difficulty.

#### I. LAWN CUTTING & FERTILIZATION

Water is required for plants to grow. However, fertilizer and sunlight are also required in order that plants grow properly. Among our current clients, those with the greenest lawns, fertilize them with small amounts of slow release fertilizer on a frequent basis. They also do not cut their grass short which helps to develop deep-rooted grass plants. They actually have found that they can reduce the amount of watering and their lawns suffer least during hot/dry periods.

**PLEASE NOTE: THE INSTRUCTIONS FOR THE CONTROLLER ARE NOT CONTAINED IN THIS MANUAL. THE INSTRUCTIONS HAVE BEEN PLACED IN THE CONTROLLER ITSELF TO PROVIDE IMMEDIATE INFORMATION TO PERSONS OPERATING THE CONTROLLER.**

**IF THIS OPERATION MANUAL OR THE CONTROLLER MANUAL IS EVER LOST OR MISPLACED, AN ADDITIONAL COPY MAY BE OBTAINED BY CONTACTING RAIN TREE IRRIGATION & OUTDOOR SYSTEMS 877-545-1323 OR FROM OUR WEBSITE AT [WWW.RAIN TREE.ON.CA](http://WWW.RAIN TREE.ON.CA)**