HOME GROUNDS FACT SHEET

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Lawn Irrigation Systems

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An automatic lawn sprinkling system is not a luxury. Properly designed, installed and programmed, an automatic system will provide water to your lawn more efficiently, more economically and with less effort than any other method. Water, correctly applied, is as important to lawn care as motor oil is to an automobile engine.

The major components of a lawn sprinkling system are the heads used to distribute the water over the desired lawn areas, the valves that control the water flow to the heads, the controller (which is the brain that tells the valves when to open and close), and the pipe that carries the water throughout the system.

Sprinklers are available in three basic types: spray heads, rotary heads and impact heads. Spray heads *(see figure C)* disperse water through fixed orifices or nozzles that are made to cover the exact degree of the arc or circle to be watered. These heads are available in full, half and quarter circle types and they have no moving parts, are simple to maintain and are relatively inexpensive to replace.

Rotary sprinklers *(see figure A)* are used on light commercial and residential sites. This type of sprinkler head is made of heavy-duty plastic and has a unique quick-flush action to clean the pop-up stem that prevents sand and other debris from entering the head and causing excessive wear.

Impact sprinklers *(see figure B)* use a mechanical device to turn the sprinklers on. They may be driven by levers, gears, cams or balls. These sprinklers usually disperse water over larger diameters, allow less control over the distribution of the water and are more wasteful. They are also more likely to malfunction because of soil or sand getting in them and wearing out the mechanical parts.

All lawn and landscape sprinkling is subject to the Nassau County Sprinkling Regulations as follows:

- Odd-numbered homes may water on odd-numbered days.
- Even-numbered homes may water on even-numbered days.

There is no sprinkling allowed on any day of the week between the hours of 10 am and 4 pm.

Lawn areas with poor drainage are always a problem. These areas should be on a separate zone from the rest of the lawn, since they will need less water than well-drained areas. For specific information on watering lawns, see Home Grounds Fact Sheet C-1-33. When an irrigation system is installed you should make sure a rain sensor is included. A rain sensor is installed outside and is connected to the controller. Therefore, if it is raining, the sensor will send the controller a signal and the system will NOT go on, or if the system is on and it starts to rain, the water will automatically turn off. This will prevent damage to your lawn from overwatering plus it will also help conserve our precious water supply.

The length of the operating time for the system depends upon weather conditions. Therefore, one should never set a clock for 20 to 30 minutes a day and leave it for the entire season. Turfgrass needs deep and thorough waterings at frequencies of once to twice per week, depending on amounts of rainfall and soil types. Sandy soils require more frequent waterings than soil with a high clay content. Most turfgrass areas will do well with 1-2 inches of water per week. Only you can determine how long your system takes to deliver this amount of water. Place a few coffee cans in a row in the area covered by one sprinkler and see how long it takes to get the desired

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amount of water in the cans. If you get the desired amount in less than two hours, your system is delivering too much water too fast and much of the water may run off. Repeat cycles may be needed to deliver the necessary amount of water at subsequent times.

A pop-up spray head system allows for greater flexibility in timing cycles and proper application rates. While initial installation of a pop-up spray head system is more expensive, it is much more economical in the long run because of lower operational costs and the cost of replacement parts, plus there are fewer headaches. Water from a pop-up spray head system is more prone to be blown in another direction by winds than a rotary system.

If all this seems complicated and hard to do, it's really not. Choosing the right control clock will allow you to select many different programs and cycles that are changeable for proper irrigation and tailor them to your needs. The controller is the pulse of the system. Don't skimp when selecting this important item. Remember, as in all systems, the labor cost to install an inexpensive controller is the same as for a better quality product. There are many brands and styles of controllers in all price ranges. Probably the best available today is the micro-computer type utilizing all solid state components with no moving parts. They are more accurate, more reliable and as easy to operate as the new microwave ovens. They have no relays and switches that wear or burn out and cause expensive repairs.

If you feel that an automatic system is beyond your budget, consider a manual system. These valves must be turned on and off by hand and someone has to be available to operate the system. With an automatic system, the valves can be placed anywhere on the lawn, but with a manual system they should be located near a patio, sidewalk or porch so you can operate them and not get wet. The rest of the system should be designed exactly as an automatic system with regard to sprinkler spacing and coverage. A manual system can be changed to an automatic system by changing the valves, adding a controller and running wire from the controller to the valves. These are the most expensive parts of an automatic irrigation system.

A poorly designed or installed system is very difficult to remedy. In most cases, it is cheaper to forget it and start from scratch with a good system. The labor involved to repair a poor system is frequently more than it is worth. A proper system is a good investment that will pay for itself many times over through lower maintenance costs, more efficient use of water and energy and of course, a healthier lawn.

Good installation is of prime importance to the life and efficiency of a sprinkler system. The pipe should be buried deep enough so that any equipment (rototiller, dethatchers, aerators, etc.) will not come in contact with it and damage it. Control valves should be enclosed in valve boxes that are easily accessible for service and cleaning. Sprinkler heads must be level and flush with the ground so as not to interfere with lawn mowers. Provisions should be made to adequately drain the water out of the system for the winter. Electrical connections should be well spliced and waterproofed and buried cable should be UL listed underground feeder type. Pipes and fittings must be securely fastened or clamped and pressure tested for leaks before being enclosed.

In selecting a contractor, don't be afraid to request several references and call them. You can ask the contractor how long they've been in business and are they adequately staffed to give prompt service when needed. Ask to see samples of the equipment they intend to install and if possible a plan of your proposed system. Don't hesitate to contact the equipment manufacturer or local representative to ask for their suggestions. Secure a copy of the manufacturer's catalog to see the recommended spacings of sprinklers and operational data of the products. (See Home Grounds Fact Sheets D-1-35 and D-1-38.)

If you want to install your own system, most distributors can assist you. Many of the manufacturers have some type of literature and planning guide to help you select and design a good system.

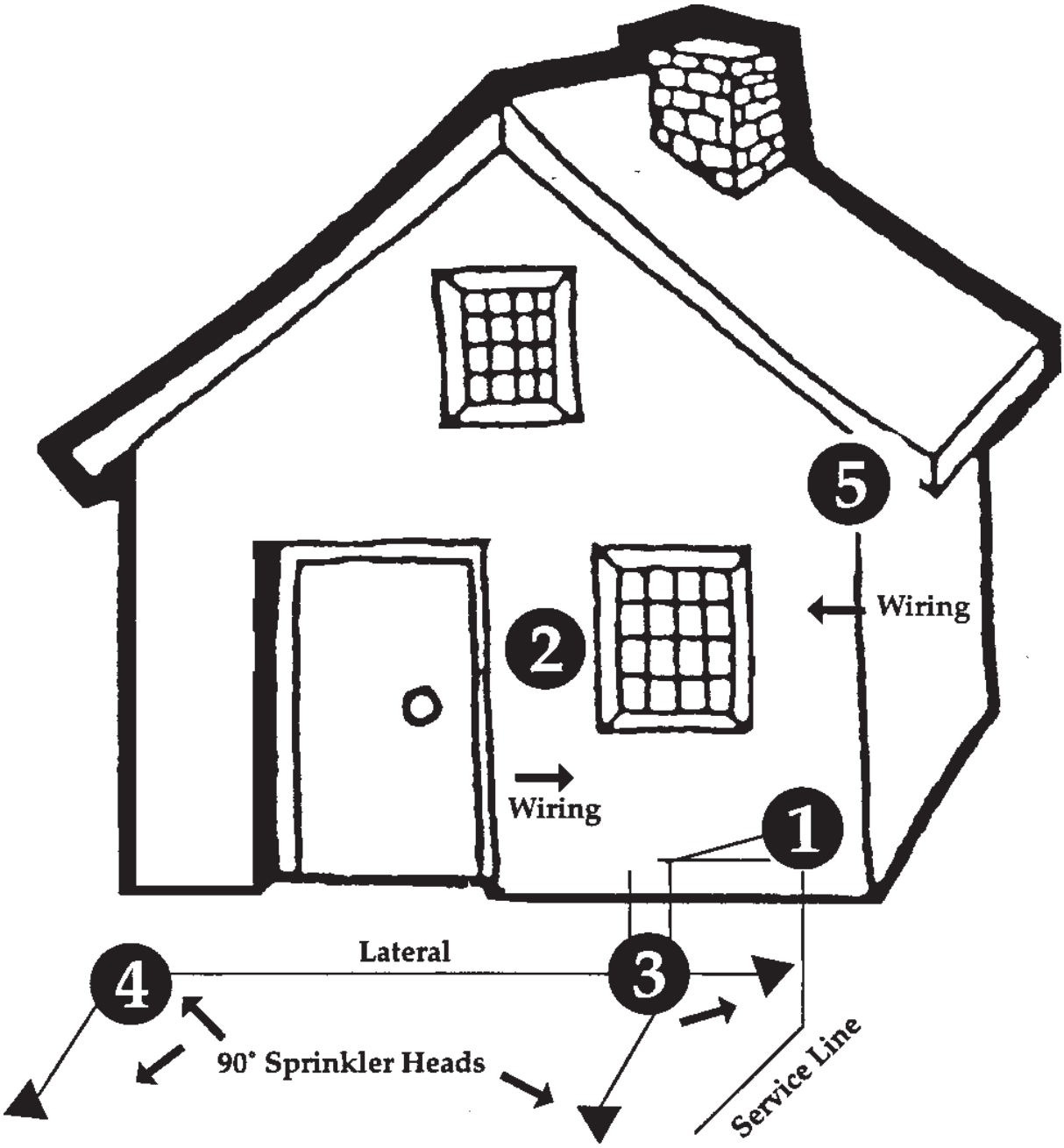
Shrubbery and flower beds require special treatment. These areas should **not** be watered by the same sprinklers serving the lawn. They should have their own zone or controller station so they may be watered independently.

Since trees and shrubs require less water than grasses, severe damage can result if they are irrigated the same as the lawn. Usually all they need is a deep watering once a week in hot, dry weather and a drip irrigation system is the best and most economical for landscape plants. A drip system can be connected to your automatic lawn irrigation system.

Don't buy blindly! Don't cut corners! A poor sprinkler system is worse than none at all. A sprinkler system is a capital improvement. If you are going to spend the capital - get the improvement.

Happy sprinkling!

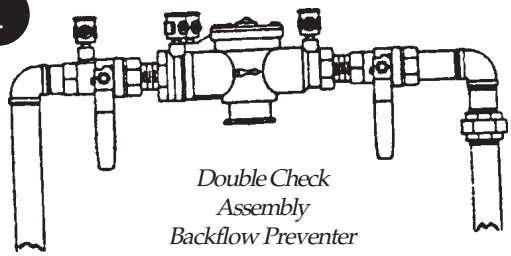
Single Zone Lawn Irrigation System



The above illustrates the elements of a single zone lawn irrigation system. Most homes, however, have more than one zone. Looking at the above picture, for example, this one zone system would only be sufficient to irrigate the lawn in the front of the house. If there were additional turf on the side or sides of the house, a second or third zone would be necessary. You would install additional valves in your valve box *(see no. 3)*, and put in the appropriate kind and number of sprinkler heads, depending on the size of the additional area to be irrigated, as well as your available water pressure. Don't forget the valve wires have to be connected to the correct zone in the controller.

Note: In different towns the code may vary, so you would have to check with the water district before you start anything. Also check on what the water regulations are in your county before setting the clock.

1

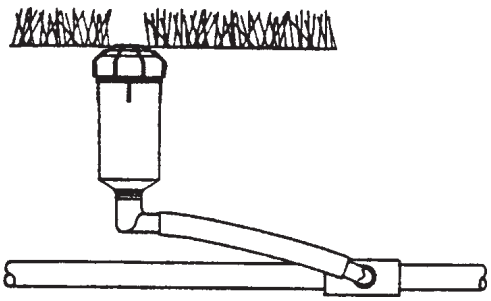


Double Check Assembly Backflow Preventer

Prevents lawn water (pesticides ext.) from contaminating drinking water.

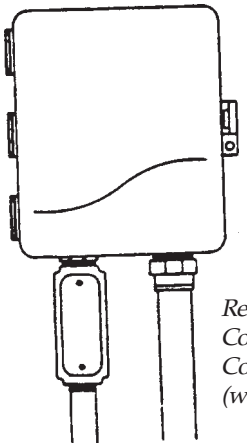
4

Rotor Pop-Up Sprinkler Head



Distributes water to lawn.

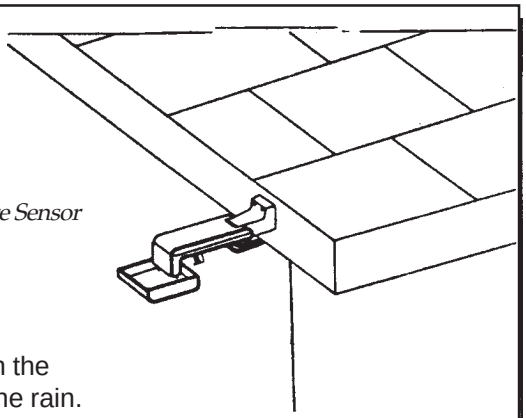
2



Residential Computer Controller (wall mounted)

Turns system on/off at specified times and days.

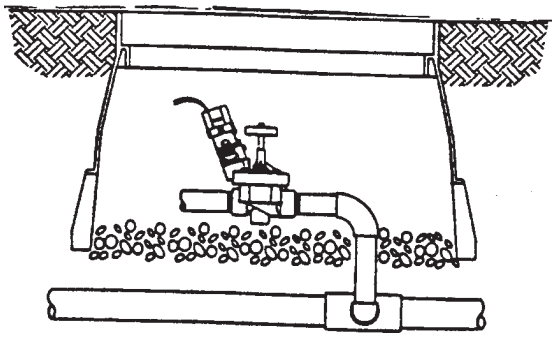
5



Rain Moisture Sensor

Shuts down the system in the rain.

3



Electric Plastic Remote Control Valve in Valve Box

The valve box protects and makes easy access to the valve. The valve is activated by the controller electronically.

Three Basic Sprinkler Types

Fig. A - Rotary Pop-Up Sprinkler Head

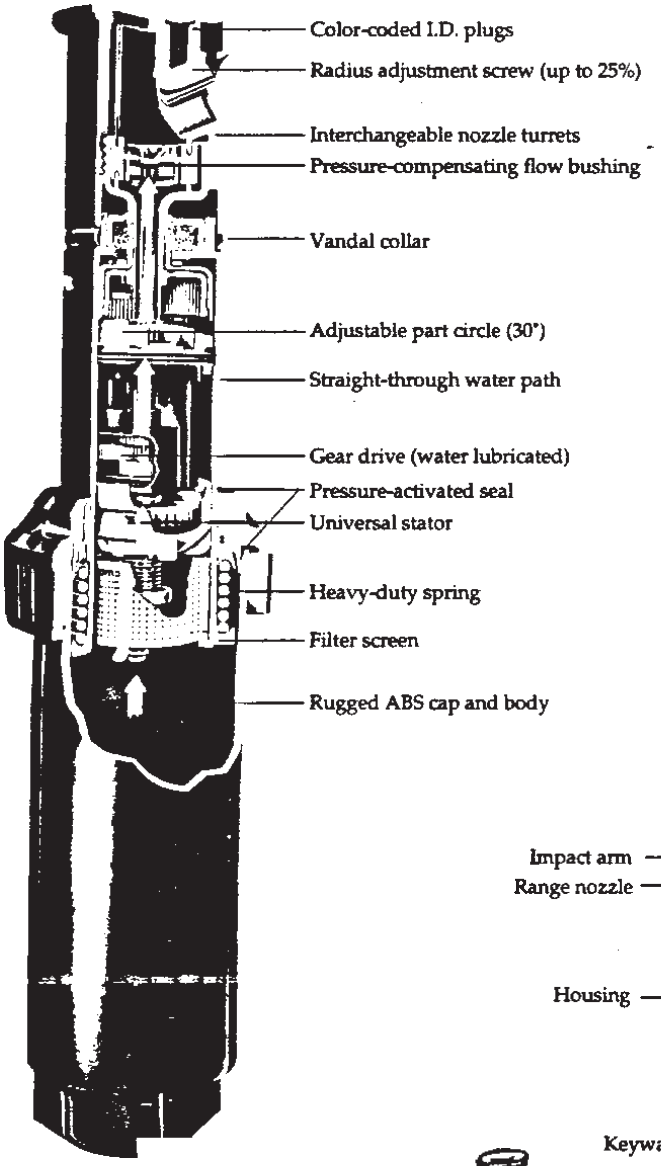
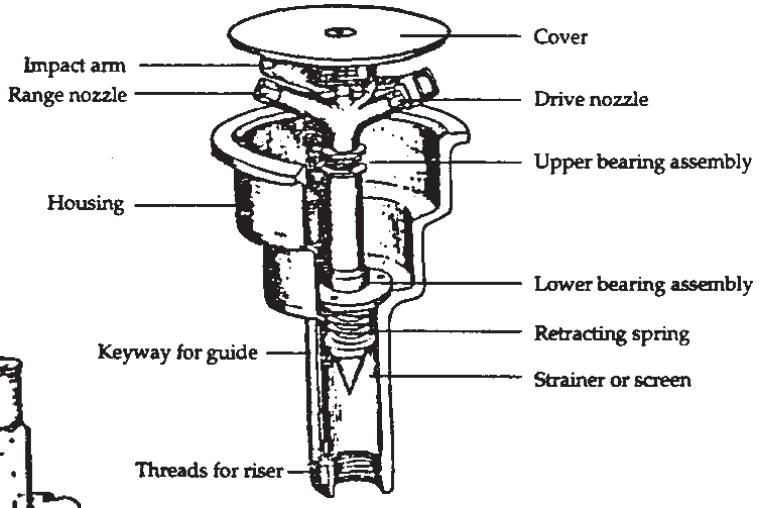


Fig. B

Impact Drive Rotary Pop-Up Head



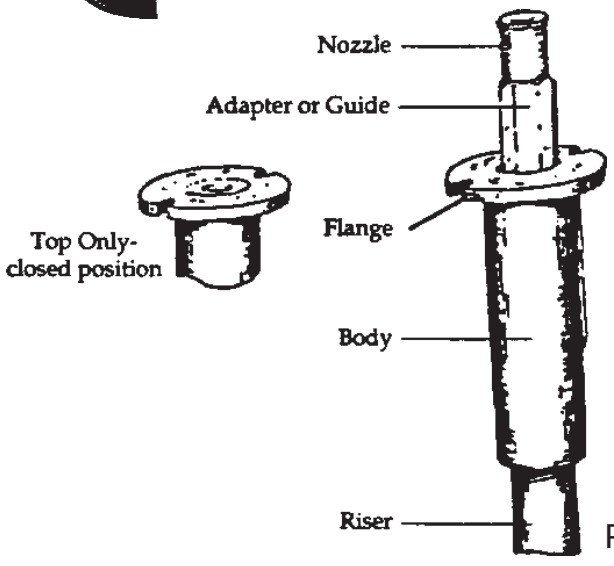


Fig. C

Pop-up Spray Head

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