Homeowners: Be sure and check your automatic sprinkler system before we get into the dog days of summer!
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As temperatures rise and days get longer, the time is right to check your automatic sprinkler system. Annual maintenance is an important part of an irrigation system. You can do this yourself, or you can arrange for an installation company or other qualified individual to do regular checkups. The use of the qualified professional frees up the homeowners time for other pursuits and insures an accurate check-up. Irrigation systems, like any other equipment, require routine maintenance. An irrigation system operating at top efficiency not only saves water, it is a critical part of integrated turfgrass management. Optimally growing turfgrass fights weed invasion better and is more tolerant of insects and disease.

Is everything working?

Charge your system by closing your vacuum breaker and turning the mechanical valve that supplies water to the system. The *control box or timer* determines when and how long each station runs. Look for bad connections, frayed wires, and unreadable indicators. If your controller is an older mechanical type, consider replacement with a more accurate digital model. Be sure your controller is sufficiently flexible to: allow for easy change in watering schedules, irrigate turf and shrubs separately (zone watering), and operate in short irrigation cycles to prevent runoff. Run the system and make a list of all of the stations and where they irrigate. Place it in the controller for future reference. Run each irrigation zone and look for broken sprinklers, low water pressure and water spraying where it is not needed (e.g., on streets, against the house, along the perimeter fence). Replace any broken sprinklers, correct water pressure if needed, and make adjustments so your system is supplying water only where you want it. A valve controls the flow of water through a pipe. In a sprinkler valve system, the solenoid valve is a coil of electrical wire that, when charged with an electrical current from the controller, creates a magnetic force and pulls up a small, metal plunger inside the valve. As the plunger rises, it dumps water from the chamber above the diaphragm to a lower (downstream) pressure area. A typical irrigation system valve will be either fully closed or fully open. Your kitchen sink's water faucet works the same way and like a kitchen sink, irrigation valves should not leak. If the area is excessively wet around the valve box, one or more of the valves may be leaking. Open the valve box and check for leaks and replace any defective solenoid valves. Conversely if the solenoid valve does not open when turned on by the control box, turn off the system and check wiring to insure you have a working connection. If you do and the valve still doesn't open, replace the solenoid valve. As mentioned earlier, you can do this yourself, or you can arrange for an installation company or other qualified professional to do it for you.

How long do I run each zone?

You've charged your system, replaced anything broken and you think you are ready to go. Not yet. You need to determine how long to run your system to deliver the amount of water needed. Irrigation clocks are not calibrated in inches per hour. You will need to run a test to determine your precipitation rate. Select flat-bottomed, straight-sided containers, such as empty tuna cans. Within each irrigation zone, space the cans in a grid pattern 10 to 15 feet apart for large rotor or impact heads and 5 to 8 feet apart for small area spray-sprinklers. Avoid placing cans on the outside edge of the zone because many systems use a triangle head spacing and the adjacent zones, from overlap, are providing overall system uniformity. Use a minimum of 20 cans. Irrigate, i.e., run your system, for at least 15 minutes and then

measure the depth of the water in each can. You can either use a ruler or you can mark the inside of the cans in 1/4" increments. To calculate the precipitation rate, average the depth of water in the catch cans after a set run time. For example, if the average depth of the 20 cans was 0.5 inches and we ran the zone for 20 minutes, our precipitation rate would be 1.5 inches per hour. You can use this same data to calculate irrigation uniformity. Calculating uniformity will tell you if you are applying water uniformly across the irrigation zone. To calculate uniformity take the average depth of the lowest 25 percent of cans (20 cans X 0.25 = 5) and divide by the overall average of all 20 cans. In our example the average of our five lowest measuring cans is 0.3 inches, divide 0.3 by 0.5 = 0.60 or 60 percent. Irrigation systems with lower than 60 percent uniformity should be adjusted for more uniform coverage. Don't set your uniformity expectations too high. It is rare in home systems for a uniformity above 80%. Be sure and rune the test aging if you adjust the spray patterns. Once you have calculated the precipitation rate for each zone, you can set the run times. For example, if your goal is to apply 0.5 inches in one irrigation cycle and the precipitation rate is 1.5 inches per hour, you would set the zone for 20 minutes. Efficient irrigation systems also include a way to reduce runoff. It is important to understand your soil's characteristics. Much of Nebraska has "heavy soils." That is, they include a high percentage of silt and clay particles. These types of soils often have infiltration rates of less than 1/2" per hour. You should adjust your system accordingly: usually not more than 1/2" per hour. If your landscape needs more water, add another 1/2" the next day.

For more information check these archived extension publications.

Evaluating Your Landscape Irrigation System https://digitalcommons.unl.edu/extensionhist/1059/

Checking the Performance of Your Landscape Irrigation System
https://digitalcommons.unl.edu/extensionhist/1210/

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