# Sprinkler System Checkup

When it comes to efficient sprinkler operation and maintenance, avoid using the "set it and forget it" approach. A sprinkler system checkup can help you find sneaky leaks and reduce water waste.

SqueezeEveryDrop.com



## Sprinkler System Checkup

### 1. Investigate Your Controller Settings

Use the provided sprinkler checkup form (p.5) to write down the number of zones, runtimes for each zone, and program start times. Make sure the date and time are correct, so your controller runs at the right time.

### 2. Inspect Each Sprinkler Zone

Use "test all stations" or "manual one station" to run through each zone. Typically, turning the system on for 3 to 5 minutes for each zone provides time to check each sprinkler head.

### 3. Identify Issues

**Walk around the yard and visually look for common issues, such as:**

- Broken sprinkler heads leaking at the base or not popping up
- Sprinkler heads spraying hardscapes – sidewalk, road, or driveway
- Excessive runoff
- Mist (high pressure)
- Sprinkler heads that are tilted or out of adjustment
- A mix of sprinkler heads on the same zone (sprays, rotors, drip)
- Rotors stuck in one position, failing to turn
- Dry areas due to low/high water pressure or clogged heads
- Grass, shrubs, or trees blocking sprinkler spray patterns
- Electrical issues, zones not coming on
- Water pooling, bubbling, or flowing
- Visibly low pressure

## Water Smart Tips

- **Oklahoma tough landscape.** A low-maintenance, water-smart landscape requires the right combination of plants, soil, sunlight, and water.
- **Switch to drip.** Use drip irrigation or soaker hoses for flowerbeds, trees, shrubs and vegetable gardens. Drip irrigation is the most efficient watering method, delivering water slowly and near the ground to reduce wasteful runoff and evaporation.
- **Install a soil moisture sensor.** Soil moisture sensors monitor the moisture available for plant root, promoting deeper, healthier root systems. Once the moisture threshold is met or exceeded, the sensor suspends all watering events until the soil dries out.

- **Mulch.** Organic mulches like bark, pecan hulls, and cottonseed hulls reduce evaporation, inhibit weeds, moderate soil temperature, and recycle nutrients.
- **Add compost.** Spread compost on the lawn to improve soil moisture and nutrient holding capacity.

**Learn more Water Smart Tips and find our Plant Database at SqueezeEveryDrop.com.**

## Basic Controller Features

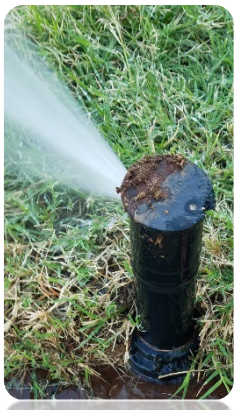
- **Stations** refer to the valves that turn on the water to irrigate **zones** in your landscape. Plants with similar water needs should be grouped together to maximize water efficiency.
- Consider the **start time**, which is the time when a specific valve will open to irrigate a zone. Watering early in the morning is best and using multiple start times will help reduce runoff from compacted or clay soils and slope. Using multiple start times is the "cycle and soak" method.
- The **runtime** is the number of minutes a specific valve will stay open to water a zone. Take note of the type of sprinkler head you have in each zone to help determine the runtime. Sprays deliver about 1.5 inches per hour while rotors use about 0.5 inch per hour.
- A **program** is a group of zones or stations that share the same start time. Typical controllers have three or four programs, A, B, C, and D. They allow you to run different valves on different days with separate run times. Small lawns and landscapes can easily be set up under one program.
- The **seasonal adjust** or **percentage adjust feature** automatically adjust the run times with the change of the season. For example, in July you'll set the seasonal adjust feature to 100 percent. As the weather cools, you decrease the percentage to reduce the run times without reprogramming the controller.
- The **off** position stops all programs from running. The programs will be saved and it's a great way to prevent irrigation during rainy or freezing conditions.

### How to Program your Controller

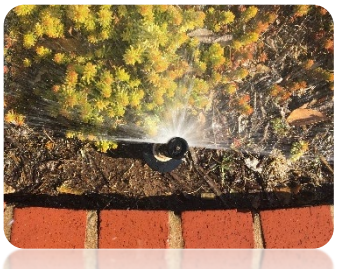
***Check out SqueezeEveryDrop.com and watch the Sprinkler Controller Programming video for help with this step.***

- First, turn the dial to date and time. Use the arrows and the +/- buttons to input the day, month, year and time. This step only needs to be done once.
- Next slide the program toggle or program select button to Program A.
- Move the dial to "start times" to set the time you want the irrigation system to come on. It's best to water early in the morning. Set multiple short start times to avoid runoff on clay, compacted soils, and sloped areas.
- After setting the start times, move the dial to set run times. Remember, if you set multiple start times, break up the total run time. If you have three start times and want to run a station for 12 minutes, set the run time for 4 minutes.
- Set your watering days under the "advanced watering cycles" or "set days" to water for odd or even based on your address.
- Repeat the first steps for Program B and C for other zones that require different watering frequencies, like turfgrass or flowerbeds.
- Set the dial to "autorun."

### Sprinkler Head Types

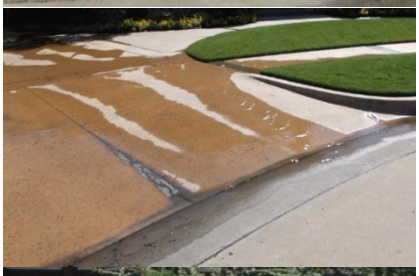


Rotors – Deliver water in a back and forth motion.
Typically, rotors apply about 0.5 inches of water per hour.



Sprays – Deliver water in a fixed pattern.
Usually, spray heads apply about 1.5 inches of water per hour but can vary depending on the type of sprinkler head and the pressure of the irrigation system.

## Common Issues and Solutions

| | | |
|---|---|---|
| **Misting** | Pressure is measured as pounds per square inch (PSI). Most spray heads operate best at 30 PSI and rotors at 45 PSI while the pressure at your home may be much higher.<br><br>If your sprinklers are producing a fine mist, your system's pressure is too high. Consider installing pop-up sprays with head pressure regulation or pressure regulation at the valve.<br><br>Video Guide: *High Water Pressure*<br>https://youtu.be/3YfACjE17B0 |  |
| **Broken or leaking heads** | A broken sprinkler head can waste up to 10 gallons per minute. That adds up to 150 gallons in a 15-minute zone run time. Just one leaking head can waste **25,000 gallons** of water during the summer. Check the nozzle and around the bottom of the head. If you see excessive water around the sprinkler head, it's probably leaking.<br><br>Fix or replace broken sprinkler heads. Take the broken irrigation head with you when buying a new one to ensure you get the right one.<br><br>Video Guide: *Repairing or Replacing Broken Spray Heads*<br>https://youtu.be/oPvtf5hthyc |  |
| **Sunken or tilted spray heads** | Over time, sprinkler heads can sink into the ground or vegetation can grow over and cover heads, reducing the effectiveness of the irrigation system. Lifting heads and fixing tilted spray heads so they operate efficiently will help you water less.<br><br>Video Guide: *Fixing Sunken or Tilted Spray Heads*<br>https://youtu.be/O-EHwp7Ot0A |  |
| **A mix of head types in the same zone** | A combination of sprinkler head types such as rotors and sprays apply water at different rates. Mixing head types in a zone will cause an uneven distribution of water and lead to waste. |  |
| **Sprinkler system schedules** | Excessive run times and poor scheduling can also cause high water use. Many times, sprinklers can be turned off from October through April and during rainy summer months. Watering deeply, but infrequently encourages healthy root growth and tough plants and lawns.<br><br>Video Guide: *Sprinkler System Water Audit*<br>https://youtu.be/xr2QVjk1rGQ |  |
| **Runoff and overspray onto the concrete** | Cycle and Soak method: The cycle-and-soak method allows water to seep into the soil were plants need it. Break up watering times into shorter start and stop times. Wait up to an hour between start times to allow for the last cycle of irrigation to soak into the soil. Watering too frequently produces shallow roots. |  |

## Watering Requirements of Your Lawn

| Month* | Average ET** | Average Precipitation | Average Irrigation Need*** |
|---|---|---|---|
| **Warm-Season Turfgrass[a]** | | | |
| | ---------- inches ---------- | | |
| **April** | 3.6 | 3.3 | 0.3 |
| **May** | 4.0 | 3.8 | 0.2 |
| **June** | 4.6 | 4.8 | 0.0 |
| **July** | 5.4 | 3.0 | 2.4 |
| **August** | 4.9 | 3.3 | 1.5 |
| **September** | 3.4 | 3.3 | 0.1 |
| **Cool-Season Turfgrass[a]** | | | |
| | ---------- inches ---------- | | |
| **April** | 4.7 | 3.3 | 1.5 |
| **May** | 5.3 | 3.8 | 1.5 |
| **June** | 6.1 | 4.8 | 1.3 |
| **July** | 7.2 | 3.0 | 4.1 |
| **August** | 6.5 | 3.3 | 3.1 |
| **September** | 4.5 | 3.3 | 1.2 |

*Oklahoma State University Leaflet L-434 *Irrigation*

### What is "ET"?**

*Evapotranspiration (ET) is the amount of water being evaporated from the soil and used by plants. Replacing the amount of water that's lost from ET is an effective way to irrigate your lawn without overwatering.*

How much water does your system apply?

1. Put rain gauges or empty tuna cans in a grid through the irrigated turfgrass areas in the lawn.
2. Turn on your sprinklers for 20 minutes on a relatively non-windy day.
3. After watering for 20 minutes, combine and measure the amount of water all the rain gauges, divide that by the number of catch cans, then multiply by 3. The answer is the amount of water applied by your system in an hour.
4. Use your number against what is required to maintain a healthy lawn as shown in Table 1 under "average irrigation need". Make sure to turn off the system if it's raining.

### Warm-season vs Cool-season[a]

Warm-season grasses like bermudagrass, buffalograss, and zoysiagrass grow best in full sun and have excellent heat tolerance. Bermudagrass is extremely drought-resistant and only requires supplemental watering during periods of dry or drought conditions.

Cool-season grasses like tall fescue and ryegrass grow best in partially shaded areas and require much more maintenance when grown in full sun areas. Cool-season grasses also have a much higher water requirement and are less tolerant of the heat when compared to warm-season grasses.

Keep this in mind when irrigating and only water when needed to encourage deep root growth.

### How much water is 1 inch? ***

Rainfall and irrigation rates are usually measured in inches of water, but your water bill is in thousand gallons. It takes 0.62 gallons to apply 1 inch of water per square foot. If your lawn is 11,200 $ft^2$, it takes about 6,944 gallons of water to equal one inch. If you apply 1 inch of water per week over the month, that's 27,776 gallons.

If you have a cool-season lawn that requires 2 inches of water per week on the same lawn, that's about 55,552 gallons of water a month.

Over the growing season, much of this water requirement is supplied by rainfall and sprinklers can be turned off. During dry or drought conditions irrigation may be needed to maintain turfgrass quality.

Use the catch can method to help you schedule your controller based on how much water your system applies.

## Controller Settings

**Controller Brand/Model:** _____

| Program | Start Time(s) | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| A | | | | |
| B | | | | |
| C | | | | |

| Watering days: | Odd | Even |
|---|---|---|
| Other: | | |

**Runtimes (Minutes/Cycle)**

| Station/Zone | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | | | | | | | | | | | | |
| B | | | | | | | | | | | | |
| C | | | | | | | | | | | | |

| Station | Head Type | Plant Type | Notes/Problems |
|---|---|---|---|
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |