Would you like to reduce your water bill, save water and still maintain a healthy lawn and garden?
With Rain Bird, it’s easy to do it all. Because Rain Bird offers the most diverse, durable and water-efficient components in the industry. By installing a new Rain Bird system or switching out a few key components from your existing system, you can easily save water and maintain a great-looking lawn and garden.

For current automatic sprinkler owners, significantly reducing your water usage might be as simple as having a certified contractor install pressure regulating devices or replace your current spray nozzles with more water-efficient nozzles.

For homeowners considering a new automatic sprinkler system, a certified contractor can design and install a system that provides precise and water-efficient coverage, using trusted Rain Bird components.

Either way, the cost is minimal compared to the time, money and water saved by a water-efficient system, not to mention the pride and enjoyment that come with a beautiful lawn and garden.

Read on to discover what makes Rain Bird components the highest-quality, longest-lasting and most water-efficient irrigation products you can buy.

www.rainbird.com
This residential design guide highlights Rain Bird product and technology solutions for a healthy landscape that uses less water.

### Anatomy of a Water-Efficient Residential System

- **Sprays**
  - **In-Stem Pressure Regulation (30 or 45 psi)**
  - Maintain optimal water pressure. Every 5 psi reduction in pressure reduces water usage by 6%–8%. A 7 psi system reduced to a recommended 30 psi for spray nozzles can provide more than 50% in water savings.
  - **High Efficiency Nozzles**
    - Provide a uniform distribution of water and eliminate overspray, which can result in 30%+ water savings. Rotary nozzles use 20%–30% less water than traditional spray heads because they operate with lower precipitation rates, greater uniformity of distribution, and a reduction in water use outside the home. An independent testing panel confirmed Rain Bird\’s MPR Series Rotors have documented 15%–45% water savings.

### Controllers and Sensors

- **Automatic Controllers with Water-Efficient Features**
  - Easily adjust watering cycles to adapt to diverse landscapes and weather/seasonal changes.
  - **Check Valve Devices**
    - Prevent water from draining out of the system at the lowest sprinkler, which eliminates erosion and runoff.
  - **High Efficiency Nozzles**
    - Provide a uniform distribution of water and eliminate overspray, which can result in 30%+ water savings.

### Landscape Drip

- **Direct-to-Plant Root Watering Devices**
  - Apply water slowly and directly to the roots of plants, using 30%–50% less water than sprinkler irrigation and eliminating overspray and runoff.

### Smart Technologies

- **Automatic Shut-Off Devices**
  - Automatically shut off the controller when rain is detected, resulting in water savings of 15%–20%.

### Controllers

- **Automatic Controllers with Water-Efficient Features**
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    - Prevent water from draining out of the system at the lowest sprinkler, which eliminates erosion and runoff.
  - **In-Stem Pressure Regulation (30 or 45 psi)**
  - **High Efficiency Nozzles**
    - Provide a uniform distribution of water and eliminate overspray, which can result in 30%+ water savings.

### Rotary Nozzles

- **Rotary Nozzles**
  - Require 60% less flow and offer up to 30% in water savings.
  - **In-Stem Pressure Regulation**
    - Prevent water loss caused by uneven water pressure. Every 5 psi reduction in pressure reduces water usage by 6%–8%.
  - **High Efficiency Nozzles**
    - Provides thick water droplets in a uniform, consistent pattern, eliminating overspray to deliver a uniform, consistent pattern in water savings.
U-Series Nozzles

Rain Bird® U-Series Nozzles are uniquely designed to provide even coverage throughout the spray pattern, ensuring uniform watering and leaving you with a beautiful lawn and garden.

Application:
U-Series Nozzles are designed to be used with Rain Bird® 1800® and UNI-Spray™ Series Spray Heads.

Outstanding Results:
• U-Series Nozzles are available in a variety of spray patterns to meet your lawn’s diverse watering needs.
• U-Series Nozzles deliver a second stream of water close-in around the sprinkler head, significantly reducing brown spots close to the spray head.
• U-Series Nozzles efficiently provide even coverage throughout the spray pattern, which reduces watering times, saving you water and money.

Rotary Nozzles

Rain Bird® Rotary Nozzles are an easy solution to meet many of your landscape’s diverse watering needs.

Application:
Rotary Nozzles are designed to fit on any Rain Bird® Spray Head and gently distribute water from 13 to 24 feet.

Outstanding Results:
• Rotary Nozzles deliver gentle, visually-appealing streams of water at a lower rate, allowing the water and nutrients to penetrate the soil, which helps you maintain a healthy landscape.
• Ideal for slopes and hillsides, Rotary Nozzles’ highly-efficient water delivery reduces soil erosion and runoff, saving water and money.
• Rotary Nozzles are the perfect solution if you experience brown spots close to the spray head.

SQ Nozzle (XPCN)

The SQ Nozzles are the most precise low-volume spray solution for irrigating small areas with dense plantings.

• The pressure compensating flow washer ensures consistent flow rates regardless of pressure fluctuation or run times, resulting in up to 65% water savings.*
• The nozzle easily adjusts throw distance from 2 ½ to 4’, which makes it ideal for smaller, narrow areas.
• The SQ Nozzle can be used with all 1800® Series and UNI-Spray™ Series spray heads, and Xeri-Pop micro sprays.

Rain Bird® 1800® and UNI-Spray™ Series Spray Heads

Rain Bird® 1800 Series Spray Heads are installed by more contractors than all other brands combined.

Application:
Ideal for smaller grassy areas around sidewalks and driveways, 1800 Series Sprays can also be used for watering flower beds or shrubs.

Outstanding Results:
• The 1800 Series Spray Head with the optional Pressure Regulating Stem (PRS) regulates incoming water pressure, eliminating misting or fogging at the top of the spray head, which can help save water.
• The wiper seal on 1800 Sprays significantly reduces the amount of water that may leak out when the sprinkler pops back down, saving you water and money.

Options:
• 4”, 6” and 12” pop-up heights for varying grass or shrub heights.
• Seal-A-Matic™ (SAM) check valves, which prevent the pooling of water at the base of slopes or hillsides.

Rain Bird® 5000 Plus PRS Series Rotors

Relax with the knowledge your landscape is being watered by reliable 5000 Plus PRS Series Rotors and industry-leading Rain Curtain™ Nozzle Technology.

Application:
Rain Bird® 5000 Plus PRS Series Rotors are ideal for medium- to large-size lawns and evenly distribute water from 25 to 50 feet.

Outstanding Results:
PRESSURE REGULATING STEM
• The optional Pressure Regulating Stem (PRS) regulates incoming water pressure, eliminating misting or fogging at the top of the rotor, which can help save water.

SUPERIOR DISTRIBUTION UNIFORMITY
The 5000 Plus PRS Series Rotors with Rain Curtain™ technology are engineered to deliver a uniform spray pattern, giving you a consistently green lawn throughout.

SUPERIOR WIND RESISTANCE
The larger water droplets produced by Rain Curtain™ technology prevent misting and airborne evaporation so the right amount of water is delivered to the right place, saving you water and money.

SUPERIOR CLOSE-IN WATERING
Gentle close-in watering eliminates dry spots around the rotor, prevents seed washout and allows the turf to grow healthy with no matting or bending.

Options:
• Seal-A-Matic™ (SAM) check valves, which prevent the pooling of water at the base of slopes or hillsides.
ESP-Modular Controller

Rain Bird® ESP-Modular Controllers are simple to program, making it easy to monitor and adjust watering schedules based on your landscape’s diverse watering needs.

**Application:**
The ESP-Modular is an indoor or outdoor controller that can expand to 13 stations and has three independent programs.

**Outstanding Results:**
- Multiple programs give you the flexibility to accommodate the diverse watering needs of different plants and those areas of your lawn and garden that get more sun or shade, saving you water and money.
- Each program can have multiple start times, allowing you the flexibility to run programs several times a day for shorter lengths of time, helping you maintain a healthier lawn and garden.
- The modular design makes it easy to expand the controller’s capabilities to 13 stations, should the watering needs of your landscape change in the future.
- The seasonal adjust feature allows you to easily increase or decrease watering schedules without re-programming, so you can easily manage your water budget.

ESP-SMT Smart Control System

The Rain Bird® ESP-SMT Smart Control System combines the intuitiveness of Rain Bird’s trusted Extra Simple Programming with the accuracy of a weather-based control to help you save even more time, money and water.

**Application:**
The ESP-SMT Smart Control System is ideal for residential or light commercial applications where water efficiency is a top priority.

**Outstanding Results:**
- The ESP-SMT is the only smart controller that delays irrigation based on the amount and intensity of rainfall. By measuring both accumulation and force, the ESP-SMT can adjust your watering schedule more accurately, preventing under- or over-watering.
- Based on the weather-based control systems that keep golf courses in perfect condition, the ESP-SMT can adjust your watering schedule more accurately.
- Everything from soil type to the slope of your lawn to the amount of sun exposure in different zones is calculated into the programming to help you maintain a lush, healthy lawn and landscape.
- The ESP-SMT panel is designed to fit any ESP-Modular chassis for quick and easy system upgrades.

ESP-LX Modular Controller

Rain Bird® ESP-LX Modular Controllers feature Extra Simple Programming to make setup a snap. You can also upgrade your ESP-LX Modular Controller with weather-smart controller technology or expand it up to 32 stations for large residential properties.

**Application:**
Perfect for large residential or light commercial sites, the ESP-LX Controller can be quickly expanded when your landscape needs change by adding extra modules and tapping into advanced programming features.

**Outstanding Results:**
- As you improve or change the landscaping around your home, you can easily expand the eight-station base model with up to 24 additional stations in 4- or 8-station increments without powering down.
- Multiple programming options mean you can customize watering to your entire property using Cycle+Soak™, programmable valve display, sensor override and master valve by station, calendar day off and more.
- Large easy-to-read display and Rain Bird’s Extra Simple Programming technology remove the complexity of programming this powerful controller.
- Seasonal adjust feature allows you to customize watering schedules without re-programming so you can manage your water budget more accurately.
- Optional Upgrade: The ET Manager Cartridge easily upgrades the ESP-LX Modular Controller to a weather-based smart controller. The cartridge makes real-time adjustments to the irrigation schedule based on hourly weather information fed directly to the cartridge.

ET Manager™

Rain Bird® ET Manager™ works with your irrigation controller to apply water only when your landscape needs it, resulting in a healthier landscape and significant water savings.

**Application:**
Working with any existing controller, ET Manager makes real-time adjustments to your watering schedule based on weather data received from local precision weather stations.

**Outstanding Results:**
- Weather station information feeds directly to ET Manager, eliminating programming hassles and ensuring your landscape receives only the moisture it needs.
- Hourly weather updates help you maintain an accurate watering schedule and a healthier landscape.
- The ET Manager also gives you the flexibility to interrupt irrigation based on your local water restrictions or individual lifestyle needs.
- On average, property owners and managers have realized a 20 to 50% reduction in their water bills after installing the ET Manager.*

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*The ET Manager™ ET Manager Cartridge is designed for weather-based programming of irrigation controllers. The ET Manager Cartridge provides real-time irrigation schedule adjustments based on hourly weather station information fed directly to the ET Manager Cartridge.
RSD Series Rain Sensor

The Rain Bird® RSD Series Rain Sensor automatically shuts off your sprinkler system when it rains, so you don’t have to worry when you’re home or away.

Application:
The RSD Series Rain Sensor easily connects to most irrigation system controllers.

Outstanding Results:
• The RSD Series Rain Sensor conserves water through automatic rain shut-off and other flexible, quick and easy rainfall settings.
• High-grade, UV-resistant body on an aluminum bracket easily resists the elements, ensuring hassle-free performance.
• An adjustable side vent ring allows the sensor to dry out once it collects water.

SMRT-Y Soil Moisture Sensor

The accurate and reliable Rain Bird® SMRT-Y Soil Moisture Sensor prevents you from over- or under-watering your landscape by automatically adjusting your sprinkler system’s timer based on the moisture level in your soil.

Application:
The SMRT-Y Soil Moisture Sensor is used in conjunction with the controller interface for residential or light commercial applications.

Outstanding Results:
• The SMRT-Y digital smart control makes your sprinkler system timer ‘water smart’ by precisely monitoring moisture levels, and suspending or allowing watering cycles in order to maintain optimum soil moisture.
• Unaffected by changing temperatures and fertilizer use, this digital device delivers water savings of 40% or more, enough, in many cases, to pay for itself within a year.
• The SMRT-Y sensor monitors your soil conditions every 10 minutes and provides a history on the last seven watering cycles to assure its effectiveness.
• Using advanced TDT™ technology (Time Domain Transmissometry), this digital sensor meets water conservation guidelines that call for ‘smart’ watering devices.
• Sturdy and corrosion-resistant, the SMRT-Y Soil Moisture Sensor has been extensively tested—proving years of reliable and long-lasting performance in all soils and climates.

WR2 Wireless Rain/Freeze Sensor

Don’t worry about over-watering or freeze damage, whether you’re home or away. Rain Bird’s WR2 Wireless Rain and Rain/Freeze Sensor automatically shuts off your sprinkler system when it rains or when temperatures fall below a pre-set point.

Application:
The WR2 Wireless Rain and Rain/Freeze Sensor easily connects to most irrigation system controllers.

Outstanding Results:
• The WR2 Rain and Rain/Freeze Sensor conserves water by automatically suspending the irrigation schedule during rainfall.
• The WR2 Rain/Freeze Sensor detects one of three temperature set points (41, 37 and 33) and suspends the irrigation schedule, protecting both your landscape and irrigation system.
• The sensor’s powerful signal strength allows it to be placed in the best possible location without interference from trees, sheds or walls.
• An internal antenna gives the WR2 Sensor a clean, attractive profile.

Drip Irrigation

Easy-to-use Rain Bird drip irrigation products deliver water directly to the individual plant, allowing you to customize watering based on each plant’s needs.

Application:
Drip irrigation is the most efficient way to water any non-grass area including flower beds, ground cover, street medians, vegetable gardens, hanging baskets and potted plants.

Outstanding Results:
• The lower water delivery rate of drip irrigation allows water to reach the roots of the plants, maximizing water and nutrient absorption, while eliminating run-off.
• Easily customize the amount of water delivered to each plant, including potted plants, for healthier and longer life.
• Drip irrigation is ideal for narrow planting beds, slopes or sparse planting areas because it eliminates water run-off, over-spray and over-watering.

Drip Irrigation Components:
There are five different categories of emission devices used in drip irrigation. Each has a specific use and controls how much water gets to the plant area.

- Misters
- Basic Drip Emitters
- Bubblers
- Micro Sprays
- Landscape Dripline

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PROBLEM: Smaller Yard
Smaller areas can be difficult to water. Often, sprinklers end up watering sidewalks, driveways or spraying against the house or garage.
RAIN BIRD SOLUTION:
• Low-volume SQ Nozzles (XPCN) precisely water in a square pattern, which results in superior distribution control and uniformity to eliminate over-watering and wasteful runoff.

PROBLEM: Variations in Exposure to the Sun
Over- or under-watering often occurs because not every part of your yard and garden requires the same amount of moisture due to exposure to the sun.
RAIN BIRD SOLUTIONS:
• The ESP-SMT Controller automatically customizes each zone’s irrigation schedule based on its unique watering requirements. The ESP-SMT’s controller engine optimizes the schedule to promote plant health and eliminate wasted water.
• Easy-to-set controllers with multiple, independent programs, like the ESP-Modular, allow additional watering times to be programmed for areas with more sun exposure.
• Low-volume drip allows the customization of precise water delivery to individual plants or groups of plants, based on specific watering needs and exposure to the sun.

PROBLEM: Different Plant Types
Shrubs, trees, flowers and grass all need different amounts of water. Delivering the same amount of water to every plant can cause the loss of plant life or you may simply be wasting water on plants that don’t need that much.
RAIN BIRD SOLUTION:
• Low-volume drip allows you to customize your water delivery to each plant’s individual watering needs.

PROBLEM: Sprinklers Turn On During Rainy Weather
Your system’s watering schedule starts when it is already raining.
RAIN BIRD SOLUTION:
• The RSD Rain Sensor and the WR2 Wireless Rain/Freeze Sensor automatically monitor weather conditions and efficiently signal the controller to turn the system off when it rains, saving you water and saving you money.

Landscape Problems. Rain Bird Solutions.
No two landscapes are alike. That’s why Rain Bird has the most diverse, durable and precise irrigation components in the industry. Whatever landscape problems you might have, be worry-free knowing Rain Bird has an efficient, hassle-free solution.
**PROBLEM: Compacted Soil**

Certain areas of your lawn might have compacted soil. This condition can cause water to run off onto sidewalks or driveways without giving it enough time to seep into the soil.

**RAIN BIRD SOLUTIONS:**
- Choose an easy-to-set controller with multiple programs and start times, or choose a controller with the Cycle+Soak™ option that allows the programming of multiple start times for shorter, precise periods of watering to eliminate runoff.
- Rotary Nozzles deliver water at a lower rate; this allows sufficient soak-in time to prevent runoff.
- Low-volume drip applies water at a slower rate, allowing the moisture to penetrate into the soil to prevent runoff.

**PROBLEM: Water Pressure**

High or fluctuating pressure can cause sprinklers to mist or fog. In this case, water is not delivered to your lawn and garden at the optimal rate. A low water pressure situation can inhibit the sprinklers’ performance, leading to areas that do not receive proper water coverage.

**RAIN BIRD SOLUTIONS:**
- High pressure can be efficiently controlled at the valve using a PRS Dial.
- At the point of distribution the problem can be controlled using 1800® Sprays and 5000 Plus Rotors with a Pressure Regulating Stem (PRS).
- For low-volume drip systems, install DV or ASVF Valves with a pressure regulator.
- In areas of the landscape where the pressure has dropped, install Rotary Nozzles.
At Rain Bird, we believe it is our responsibility to develop products and technologies that use water efficiently. Our commitment also extends to education, training and services for our industry and our communities.

The need to conserve water has never been greater. We want to do even more, and with your help, we can. Visit www.rainbird.com for more information about The Intelligent Use of Water™.