



The Root Watering Series (RWS) product consists of a perforated polyethylene cylinder with an integrated bubbler and optional check valve. It is an excellent point source irrigation device for both trees and shrubs. It easily connects to turf irrigation lateral lines; or can be installed with drip zones. The RWS promotes deep root growth and healthy tree development and is appropriate for installation in both residential and commercial irrigation systems.

- **Investment protection** — deep and broad roots yield transplantation survivability, stability in high winds and fast, healthy growth
- **Watering efficiency** — subsurface irrigation minimizes run-off and evaporation
- **Landscape aesthetics** — installs at grade and helps minimize damage to hardscapes

RWS Series

Application:

- Install RWS adjacent to the root zone and within the canopy of the tree. When connected to an irrigation zone, water and oxygen are directly transported to tree or shrub roots, without interference from compacted soil.
- RWS serves as a natural tree well, capturing natural rainwater, garden hose watering, or turf irrigation spray in the subsurface cylinder. Risks associated with the runoff of herbicides or fertilizers are reduced.
- Placing 2–3 RWS symmetrically around the root zone promotes developed and even root growth, securely anchoring the tree in lawns or cityscapes. For long-term growth considerations, install a second RWS perimeter (3-5 units) on a separate zone—run the inner zone for the first couple years to establish the trees and the outer zone in subsequent years for deeper and broader roots. A developed root zone means healthier and stronger trees, preventing uprooting in high winds and less foundation, sidewalk and soil disruption attributed to shallow root growth.

Landscape Design Considerations:

- Download design specifications from Rain Bird website into original irrigation design.
- RWS models support different applications. RWS is a 36" (91 cm) device used with both large and medium sized trees. The RWS-M is an 18" (46 cm) version, appropriate for small trees and large to medium shrubs. The RWS-S is 10" (25 cm) and most often used with small shrubs and row plantings. RWS units are compatible with drip irrigation (¼" drip tubing), regular bubblers (0.25–2.0 GPM) and reclaimed water. Optional check valves prevent low head drainage.
- An integrated locking tab secures the 4" (10 cm) grate atop the cylinder reducing the likelihood of vandalism.
- Optional cloth sock helps prevent sand or silt from penetrating unit, allowing water to flow evenly and without obstruction.
- RWS models come with a swing assembly for easy attachment to PVC fittings, or with spiral barb fittings for attachment to poly or PVC pipe.
- Units are installed flush to finish grade, complementing the landscape aesthetics.

Pre-installation Planning and Required Tools:

- No special tools needed — only a shovel and a sharp knife or pipe cutter to connect RWS to lateral line.

- RWS units are ideal for parking lot islands, boulevard median strips, and side strips between streets and sidewalks. Areas where root growth will be restricted due to hardscape (asphalt, concrete, footers, etc.) are areas where the RWS units are most effective. RWS promotes deeper root growth to help anchor the trees/shrubs. Deep roots greatly reduce likelihood of damage to surrounding concrete or asphalt reducing the potential for liability issues associated with heaving or breaking hardscape.
- Number of RWS recommended:
 - Newly transplanted tree — three RWS units — or if a second perimeter is required, another 3-5 RWS units
 - Shrubs — install one or two units per plant
 - Row plantings — RWS units placed evenly between plants
- RWS should be installed on a separate zone for better control of water utilization.
- If the tree or shrub is planted on a slope, locate the RWS uphill from the plant material to allow for the gravitational downhill pull of the water.
- Run poly pipe or PVC to the RWS locations in accordance with local installation practices. Connect the RWS swing-pipe to the PVC or the spiral barb adapter to the poly pipe. RWS should be installed on a separate valve zone for better control of water utilization.
- Install RWS level to finish grade so rain water can flow into the unit to augment irrigation watering. Ensure there is sufficient backfill around and under each RWS — up to several inches. This preparation of soil allows the water to be more easily absorbed. When in extremely hard or clay soils, consider adding $\frac{3}{4}$ " gravel under and around the unit to allow faster water infiltration and root penetration into this area. Consider adding pea gravel fill to the RWS canister to provide better top-to-bottom water dispersion and firmness against root compression. **Note: Optional RWS cloth sand socks prevent soil from penetrating the unit during the backfill process.**
- Add RWS units to existing trees or shrubs to promote faster growth. When installing units on existing plant materials, consider using a one or two man auger. This allows for a hole to be drilled easily where the units are needed, and sizes the holes slightly larger and deeper than the RWS unit for easier installation and backfilling of soil around the RWS.

Installation:

- Dig a hole that accommodates the root zone of the transplanted tree. Ensure sufficient room in this hole for three 4" diameter RWS devices. Triangulate the RWS locations adjacent to the root zone and within the tree canopy. Depth of hole will be based on root zone and the size of the RWS selected (36" or 18"). RWS material can be cut with a sharp knife and sized for hole depth.
- Dig a hole that accommodates the root zone of the transplanted shrub. Ensure sufficient room in this hole for one or two, 2"-4" diameter RWS devices (10" or 18"). Locate the RWS units across from each other to promote balanced/symmetrical root zone growth.

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