

# Installation of Subsurface Drip Irrigation on Teeing Areas

Island tees can easily be irrigated with subsurface drip irrigation. The benefits include a reduction in water use and potentially lower labor costs, less compaction, fewer irrigation maintenance needs, and fewer weeds and diseases.

1. **Planning:** Determine the appropriate size of the hydro-zone, drip line spacing, depth, and emitter flow rate.  
Typical recommendations:
  - Header/footer lines: 1-inch diameter allows for a zone of up to 1,200 square feet.
  - Spacing: 12 inches between the lines and between emitters (typical manufacturer specifications).
  - Depth: 4 to 6 inches is acceptable. Deeper installation may cause uniformity issues, depending on the soil type.
  - Emitter flow rate: between 0.5 and 0.6 GPH (gallons per hour).



Figure 1. Typical round, island tee with drip tubing 12-inches apart. Tubing was buried 6-inches deep and then sodded.

2. **Preparation:** The installation is best done when renovating a tee. The original sprinkler system is typically left in place for re-establishment and for post-application irrigation of fertilizers, pesticides, etc. Prepare the soil to receive the drip system, and keep in mind that no major cultural practices can be done after the lines are in the ground (such as tilling or deep tine aerification).
3. **Product selection:** Major irrigation manufacturers offer subsurface drip products for turfgrass. Ensure the drip tubing can be buried. Check for emitter filtration, pressure compensation, check-valves, and root-intrusion prevention.



Figure 2. Example of an electric valve and combination filter and pressure regulator connected to a pre-made header line (left) and mainline (right).

4. **Installation:** Lay the drip tubing onto the prepared subsurface (Figure 1) and backfill with a sand-peat mix. Alternatively, use a small disk trencher or hand-trench to fit the drip tubing. Quick recovery has been observed from removing and reinstalling sod before and after drip tube installation. Be aware that turfgrass will grow no more than 6 inches from drip tubing without another irrigation source. Place the first line of drip tubing in the middle of the tee and then place parallel lines every 12 inches in either direction. A good practice is to place a run of drip tubing above the header and footer lines. Use ground staples to hold the drip tube in place.
5. **Connection:** Once the drip lines are in the ground, connect each line with the header- and footer lines, and then connect the header line to the mainline with an electric valve, pressure regulator, and filter (Figure 2). Avoid the introduction of soil or debris to drip tubing. For oddly shaped or round tees, the last few rows of tubing do not have to be connected to the header. Instead, an extension loop can be made from the last header-connected drip line. Successive extensions are permissible.
6. **Connect all the required components**, such as air-release valves, automatic-flush valves, manual-flush valves, and any other components recommended by the manufacturer. Double-check manufacturer recommendations, as some newer products do not require air-release or automatic-flush valves.
7. **Flush the system:** Once everything has been connected, run water through the system for several minutes with the flush valve at the opposite side open. Ensure the flushed water runs clean of any soil particles that might have entered the system during installation.
8. **Pressure test the system and check for leaks:** Close the flush valve and charge the system. Let it run for several minutes and several cycles of pressurization and depressurization. Repair any leaks.
9. **Test for uniformity of the wetting front:** Rarely, some emitters can be clogged or damaged during the installation. It's important to observe the wetting pattern at this stage to allow for repairs before backfilling.
10. **Backfill:** Cover the drip system with a layer of soil (or backfill trenches), lightly recompact and level the surface, and install turfgrass sod.
11. **Check/monitor:** Check and clean filters monthly. This frequency could potentially be reduced if clogging has not been an issue. Monitor the tee for any issues.

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