

Toro Micro-Irrigation Quick-Start Guide



Count on it.

STARTING UP YOUR SYSTEM

Note: These steps should take place AFTER the system has been completely installed and BEFORE lateral lines have been connected to the submains

1. Flush, Pressurize, Test and Adjust the System

TIP: Pressure testing is essential, and automating the backflush function is highly recommended.

- Fill, flush and pressure-test mainlines to check for leaks, then make any necessary repairs and re-test. Repeat for submains.
- Adjust submain control valves so that downstream pressure will not exceed lateral line maximums.

2. Connect Lateral Lines to Submains

TIP: Don't over-pressurize or clog emission devices.

- Open the submain flush valves and the ends of all lateral lines.
- Connect the lateral lines to the submain and flush until clean.
- Close flush valves and allow the system to stabilize at operating pressure.
- Re-adjust all submain block valves as necessary to conform to design pressure specifications.

IMPORTANT: Laterals must be connected properly to the submains to prevent leaks, kinking or clogging.



3. Test System Operation and Backfill Trenches

- Make sure all underground components are working properly, then backfill carefully to prevent damage.

4. Establish Baseline Readings

- Record baseline readings from all pressure and flow gauges after the system pressure and flow have stabilized.
- Check flush water for clogging hazards.
- Use the flow meter reading to determine and/or verify the application rate.

BASIC SYSTEM OPERATION

5. Monitor Key Operating Parameters:

After the system has stabilized, routinely check for:

- Differences in system pressure and flow from initial system readings
- Changes in lateral flush water quality
- Evidence of mechanical damage

6. Schedule Irrigation

TIP: Proper scheduling maximizes profits and minimizes problems.

- Determine Theoretical Crop Water Use on a daily or weekly basis.
- Compare with Net System Application Rate and rainfall to calculate Run Time on a daily or weekly basis.

- Adjust according to management allowable depletion (MAD), soil properties, desired wetting pattern and crop status.
- Monitor soil and crop moisture status and adjust schedule as needed.
- Use spreadsheets or online calculators to help track and schedule irrigation.

TIP: Consider using closely spaced emitters to achieve superior wetting patterns quickly.

7. Fertigate and Chemigate

- Test water early for clogging, toxicity, salinity and infiltration hazards.
- Soil tests should be interpreted differently than soil solution tests.
- Old practices may no longer apply with drip irrigation, so stay open to change.
- Always conduct a jar test before applying chemicals to ensure compatibility.
- Chemical travel time must be considered in scheduling to ensure all emitters receive the same amount of chemical.
- Chlorine and acid should always be injected from separate tanks and should never be mixed together.

Take appropriate precautions and check with local regulatory agencies for the safe use of chemicals in conjunction with any irrigation system or water source.

8. Manage Salinity

Irrigation water often contains salts that are left in the soil after the water has been removed through evapotranspiration, and may require action:

- Operate the drip system during rain events until salts have been leached beyond the root zone.
- Select emitter spacing, emitter flowrate and bed configuration to optimize salinity management.
- Leach salts with irrigation if rainfall is not adequate.

9. Maintain the System

Routine system maintenance is critical for optimal performance:

- Apply chemicals to prevent clogging.
- Flush the system as often as needed to keep lines clean.
- Routinely monitor for and control pests to avoid damage.
- Thoroughly inspect and service all filters at least once a year.
- Periodically inspect and service accessory equipment.
- Winterize the system in climates where water freezes.
- Perform recommended startup procedures after any period of inactivity.

10. Evaluate the Path to Profitability

As the drip investment is evaluated, remember the many benefits including:

1. Increased Revenue

- Yield
- Improved quality/uniformity

2. Reduced Resource Use (costs)

- Water
- Fertilizer
- Energy
- Labor
- Chemicals
- Equipment
- Insurance

3. Improved Flexibility

- Field accessibility
- Irrigate odd-shaped fields

4. Enhanced Environmental Stewardship

- Reduced runoff and deep percolation
- Reduced evaporation and wind drift
- Improved wildlife habitat





Toro Irrigation Solutions

PRECISE. EFFICIENT. PRACTICAL.

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ALT180 03/10

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