

VERTI-GRO SYSTEM

PLUMBING INSTALLATION

The proper plumbing setup and installation is an important process for a successful vertical growing system.

The Verti-Gro feeding system is all overhead and the nutrient is supplied to the top pot only (except in high stacks). The emitter tubing is supplied because it is a special pressure compensated tubing. The flow rate is 4gph with the pressure range suggested at 40-60 psi. Normal use pressure is all that is needed to operate the injectors. They work on pressure and no electricity is required.

The timer plugs into two standard 110 V outlets and supplies a 24-volt output to energize the 24-volt automatic solenoid valves. That is all the electricity that is required. The timer supplied is a 6 station, 2-zone unit that is also available at your local Home Depot. Verti-Gro supplies the timer the first time, but if it should go out then it can be easily replaced locally. Do not plug in the timer until all 24 volt valves are connected and the 110 V lines are connected to the timer. Instructions are supplied with each timer and this timer was chosen because it is inexpensive, locally available and easy to program. Each zone has three watering times so two zones have a total of six watering times per day. For example: Zone 1 can have a 5 minute watering at 7am, 12N and 5pm while Zone 2 can have a 3 minute watering set for 10am and 2pm. All six watering times may only be required during the summer. If the timer stops, reset and reprogram. If the digital display is not on when it is unplugged, replace the battery and check again. If this does not work, check the fuse. It is a micro fuse and is a 0.5 amp slo-blow available at Radio Shack.

The solenoids are also local items from Home Depot, etc. Install a 1" solenoid valve for each zone or row you want to control individually. It is recommended to purchase the solenoids locally (a manual off and on switch is required). The 24-volt solenoid wire is not provided, but is also available locally. It is easier to use a three wire jacketed #18 or #22 bell wire. The timer can be a good distance away, if desired, because there is not much voltage drop in the 24-volt wire. Place the solenoid valves where they are easy to turn off and on or to replace. Put a PVC shutoff valve in live before the solenoid valves so that the nutrient and water can be shut off when repairs are needed.

The 1/2" poly pipe is a drip irrigation "blue line" grade. Commercial grade poly pipe or lawn sprinkler pipe is too stiff and too difficult to work with above ground. (1000' is \$89.95 when shipped within the continental U.S.) The pipe is used for drip irrigation, misting and frost protection. Attach the poly pipe to one of the plant support pipes with black electrical ties. Run the 1/8" dripper line to each stack of pots. One line is sufficient for two rows one staggered row.

The injector instructions are listed separately. The first one filters out sand, etc. and the second one filters out fertilizer sediment that might plug the dripper lines. A Dosmatic injector operates at 15-30 gpm. However, each cycle or zone of two rows or 7-10 stacks is only 7 gpm.

Two tanks are required when a fertilizer concentrate is used for any ratio feeder over 1:20. The Dosmatic injectors work in a range of 1 to 50 and up to 1:200. They are also adjustable in this range by turning a simple nut on the outside of the injector suction valve.