

Frequently Asked Questions.

1. How often do I add nutrient? What is "topping-off"?

Add nutrient every time you drain your system. "Topping-off" is a term that describes adding water to the system. "Topping-off" is a term that describes adding water to the system. Remember, during hot spells plants transpire excessive amounts of water leaving behind nutrient salts. These salts can cause ppm levels to sky-rocket creating a toxic environment for your plants. Keep your ppm at a lower level during these times of extreme transpiration.

2. How often should the water be changed?

That depends upon the growth (stage and rate) of your plants. When plants are seedlings every three weeks should suffice. Once the plants start to approach maturity it is best to change the nutrient mixture completely every two weeks, or even more often for better results. Between nutrient changes it is important to "top-up" the reservoir with fresh water. Add more nutrient only if the conductivity or ppm drops. Generally the conductivity (nutrient strength) should be maintained between 800 to 1,200 ppm (parts per million).

3. Should I invest in a ppm or conductivity meter?

Yes, a conductivity meter is an essential tool for measuring nutrient strength. By knowing the conductivity level for a specific variety of plant, the grower can adjust nutrient strength to meet specific crop needs.

4. When should I adjust the overflow tubes up or down?

When plants are small and their roots are not well developed, the overflow tubes should be at the maximum height to allow nutrient rich water to reach the bottoms of the net cups. Once the roots have grown in length and are immersed within the flowing stream of nutrient, the overflow tubes can be pushed down to increase oxygen within the nutrient and growing chamber.

5. Can I turn off my system for any length of time?

Generally it's best for the system to run 24 hours per day – always on. However, many people do put their AeroFlo² systems on a timer to save electricity. The AeroFlo stays on during the light cycle and turns off for the night cycle, except for an hour of spray in the middle of the night cycle.

6. What is the optimal temperature range for the nutrient solution?

Optimal temperature is generally between 65° and 75° F.

7. At what pH level should my system be maintained and why?

pH levels should be between 5.5 and 6.5 because at this pH level, nutrients are more readily available for the plant.

Ordering parts and supplies

To order Grow Cups, nutrients, Hydroton, or parts for your AeroFlo² system, see your General Hydroponics retailer, or call General Hydroponics, Inc. for listings.

1-800-374-9376 Monday thru Friday, 9 am to 4:30 pm, PST.



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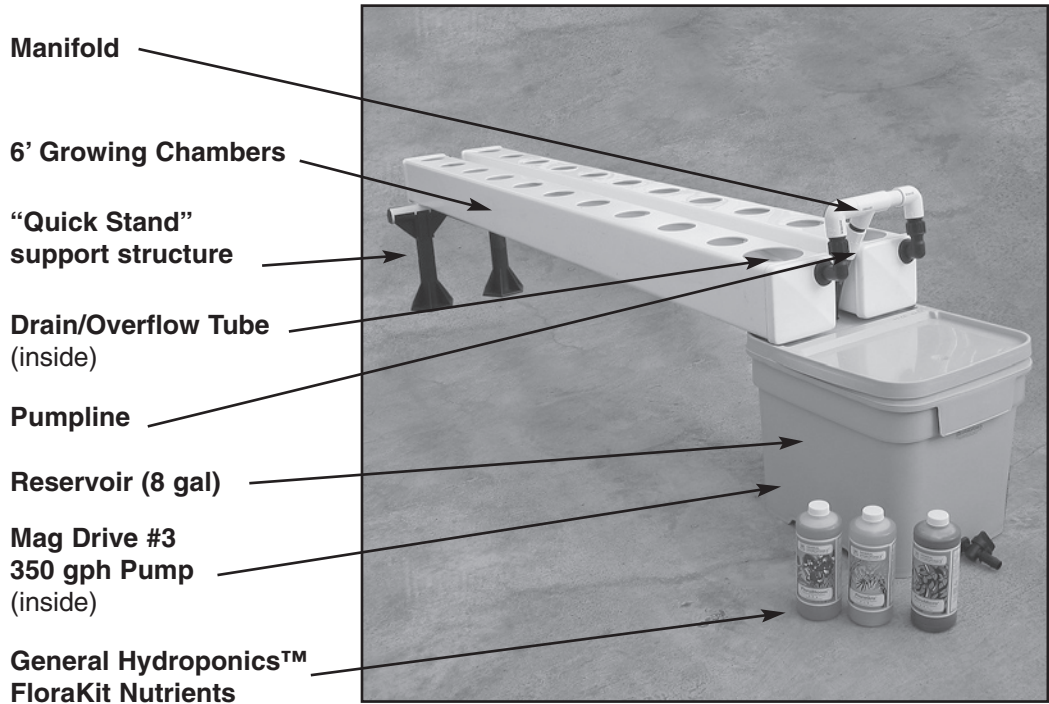
AeroFlo² 20™



Thank you for purchasing an AeroFlo²™ system. We look forward to your growing success and we welcome the opportunity to serve you during the coming years.

The AeroFlo²™ system represents state-of-the-art technology in hydroponics today. You will soon find that setting up and operating an AeroFlo²™ system is easy and fun. Plants grow superbly in both our smallest hobby systems as well as our largest commercial version.

AeroFlo2 Model 20



- Manifold
- 6' Growing Chambers
- "Quick Stand" support structure
- Drain/Overflow Tube (inside)
- Pumpline
- Reservoir (8 gal)
- Mag Drive #3 350 gph Pump (inside)
- General Hydroponics™ FloraKit Nutrients

Includes: Hydroton™
 Grow Cups with CocoTek™ Liner
 Drain Tube lubricant
 Drain Valve

Unpacking

See the diagram above and familiarize yourself with the parts.

Assembly

Plants can be grown almost anywhere using an AeroFlo² system. Greenhouses, patios, and even indoors under lights, make great locations. An AeroFlo² can be installed where there is warmth, light and fresh air. Choose a clean and level place to set up your system.

Cleaning between crops

Drain the whole system, brush out the growing chambers and, if necessary, unclog the spray holes in the beige spray lines mounted inside the growing chambers. Sponge off all parts to disinfect. You can use General Hydroponic's Flora Shield™ or another disinfectant. Rinse everything thoroughly. Refill it with water and run it for a few hours, then drain again before introducing a new crop. Clean filters frequently. Simply unplug pump and remove reusable filter. Rinse filter under warm water to clean.

Hydroton

We have had many years of excellent results working with Hydroton clay pellets for plant support. We recommend that you rinse new Hydroton thoroughly to remove the fine sand which builds up from abrasion during shipping. Between crops it is good to wash the Hydroton well, removing all organic debris. An effective method is to boil or steam used Hydroton in a large pot. This sterilizes and dissolves away any accumulated salts. Caution: Do Not rinse Hydroton with bleach (chlorine).

Nutrients

Nutrients are the lifeline to your plants. Since you are providing the plants with all their nutritional needs we recommend you feed them the best. General Hydroponics™ offers a wide variety of plant foods. We have had great success using our Flora series 3 part system (FloraGro™, FloraBloom™ and FloraMicro™).

1 Fill the reservoir with fresh water. If you are in an area with poor-quality water (over 200 ppm Total Dissolved Solids), we recommend that you use purified water (Reverse Osmosis and/or rain

water). General Hydroponics has a new **Hardwater FloraMicro™** nutrient formula available.

- 2** Add nutrients as per instructions on label. Stir in FloraMicro first then add FloraBloom, and FloraGro. Never pre-mix nutrient concentrates. This may cause nutrient "lock-out".
- 3** Adjust the nutrient solution pH between 5.0 and 7.0 (see instructions with the General Hydroponics pH Control Kit).

Notes

Nutrient mixes can be adjusted in both strength (conductivity) and "flavor" (ie: the ratios of Nitrogen, Phosphorus, Potassium, Calcium, Magnesium, Sulfur & Microelements). To adjust these factors mix different combinations of FloraGro, FloraBloom and FloraMicro with water.

- To enhance vegetative growth, use more FloraGro and less FloraBloom.
- To enhance flower growth use less FloraGro and more FloraBloom.
- To enhance fruit production use equal amounts of FloraGro, FloraBloom and FloraMicro.
- To provide more Calcium or Iron (for green, leafy vegetables), use slightly more FloraMicro.
- Many growers follow the 3-2-1 mix: **For vegetative growth:** 3 parts FloraGro (ie, teaspoons per gallon), 2 parts FloraMicro plus 1 part FloraBloom. **For flowering:** 1 part FloraGro plus 2 parts FloraMicro plus 3 parts FloraBloom. **For fruiting:** 2 parts FloraGro plus 2 parts FloraMicro plus 2 parts FloraBloom. These units are ratios, not absolute quantities, and are only a *suggested* starting point. Use a conductivity meter to determine total nutrient strength.

Draining the system

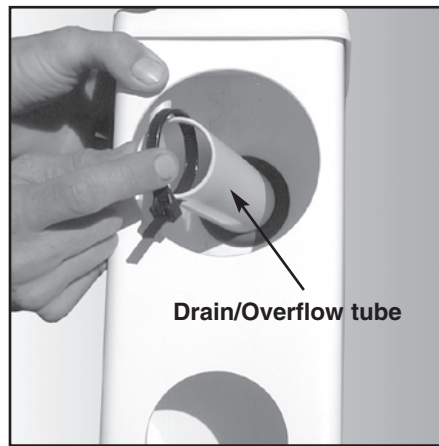
Turn pump off, unscrew the Pumpline which attaches the pump to the manifold. Connect a garden hose to the Pumpline and start the pump. As the reservoir is draining, remove the drain/overflow tubes from growing chambers sequentially while the reservoir level drops. Don't pull the tubes too fast or your reservoir may overflow. Once the water level has dropped to the level of the pump, shut pump off, and continue to drain by opening drain valve. Never run the pump dry.

Cleaning the filters

Unplug pump and remove filter. Clean by placing filter under warm water to remove all organic debris.

High level, low level

The growing chambers can be operated with a high nutrient level, which submerges the bottoms of the growing cups to moisten the Hydroton for new transplants, plants with underdeveloped root systems. As the plants grow and develop strong roots, press the drain/overflow tubes to the bottom position in the growing chambers to lower the nutrient level. This will create an "air gap" below the bottom of the growing cups. This process will increase the total amount of oxygen in the rooting zone and reduce the moisture in the Hydroton. Keep the reduced water capacity in mind when you mix nutrient.



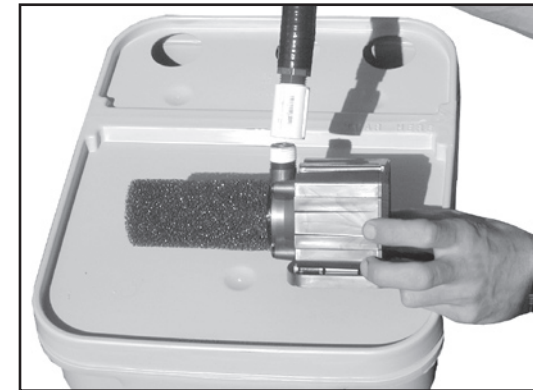
Step 1

Set up the reservoir. Note the position of the reservoir access lid and drain valve. Remove the lid tab.



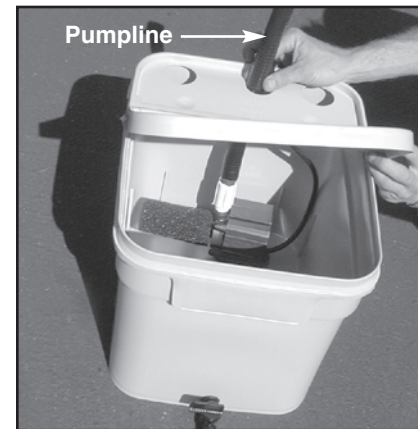
Step 2

Connect the Pumpline to the pump output, leaving the swivel hose fitting free to attach to the manifold.



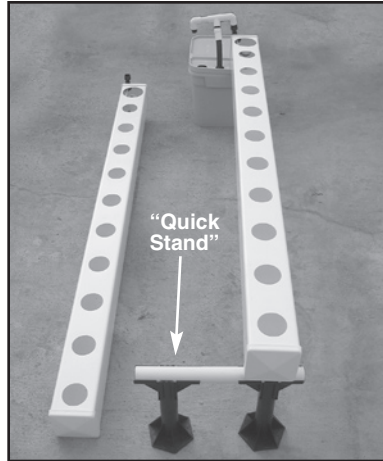
Step 3

Place the pump assembly into the reservoir so that the Pumpline emerges from the access hole in the lid.



Step 4

Assemble the "Quick Stand" support structure (see enclosed instructions). Arrange the growing chambers on top of the reservoir with the end of the chambers placed on the support structure. The growing chambers' drain fittings are centered over the drain/overflow holes in the reservoir lid.

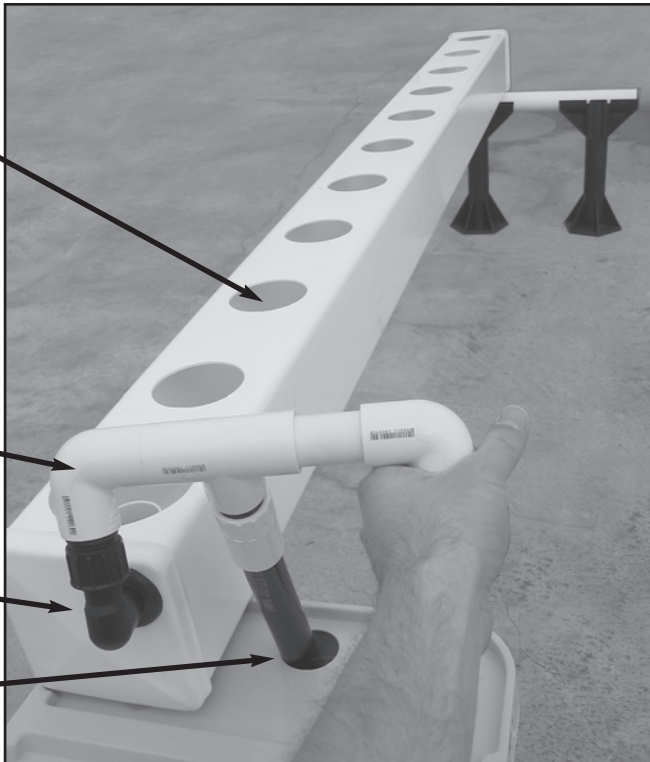


Sprayline (inside)

Manifold

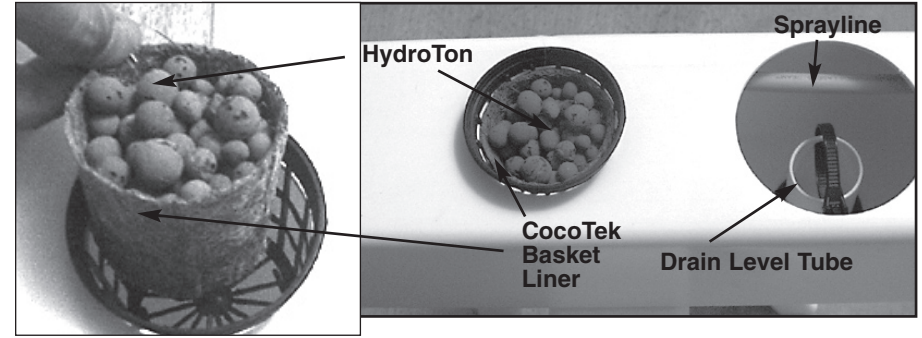
Sprayline Fitting

Pumpline



Step 5

Attach the flexible pumpline with the Swivel Hose Fitting to the Manifold. Install the manifold on the growing chambers by screwing the sprayline fitting onto the manifold.



Step 6

Apply a thin coat of lubricant (supplied) onto the drain tubes. Install the drain/overflow tubes into the growing chambers' drain holes. The overflow tubes are adjustable allowing for greater flexibility in water height.

Step 7

Rinse Hydroton to remove all debris. Insert the CocoTek Basket Liner and fill the growing cups with Hydroton. Insert them into the growing chambers. Your AeroFlo2 20 is now assembled. The next step will be to fill it with water and add nutrient. You're ready to plant!

Startup

Before filling your system with water it is essential that you understand the system capacity. The reservoir should be drained first before draining the growing chambers. This will prevent overfilling of the reservoir and possible flooding.

	Low stage 1 gallon	Flooded stage 4 gallons
Each Chamber	1 gallon	4 gallons
Reservoir capacity is 8 gallons. This means that the total system capacity is approximately 16 gallons in the flooded stage (overflow tubes set high), or 8 gallons in the low stage (overflow tubes pressed to the bottom). Fill the reservoir with water. Turn on the pump. The pump will drive water into the growing chambers. Note: It may be necessary to adjust the angle of the Laser Spraylines so that they are spraying at a 45° angle from the chamber bottom. When the growing chambers are full, fill the reservoir to about 3/4 full, do not overfill. If you choose to use a timer so that your pump runs in the daytime and is off at night or if there is a power failure, there must be sufficient reservoir capacity to capture the run-off from the chambers during the "off stage".		