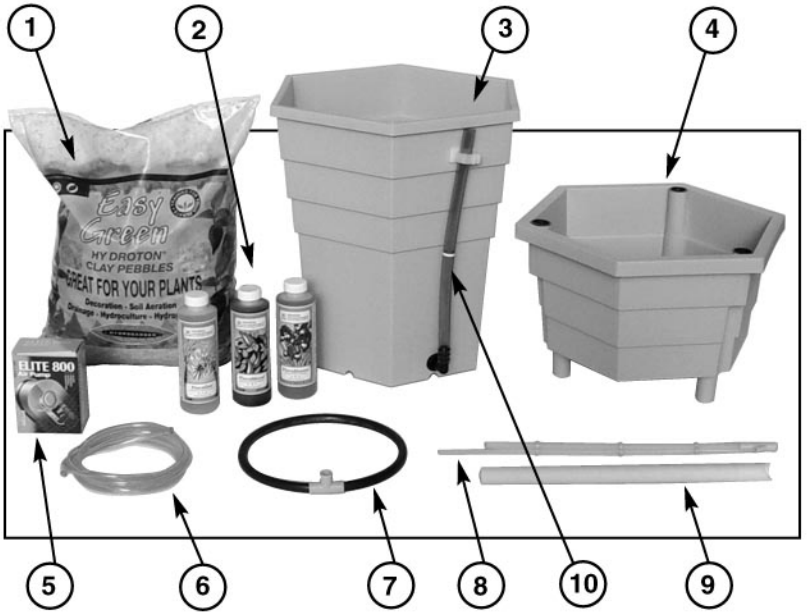
GENERAL HYDROPONICS®

Bringing Nature and Technology Together

PowerGrower Eco™

Assembly Guide

PowerGrower Eco™ Parts



1. CLAY PELLETS
(9 Liter bag)

2. FLORA SERIES NUTRIENTS
(8oz bottles)

3. RESERVOIR
(deep chamber for water)

4. GROWING CHAMBER
(shallow pot with perforated bottom)

5. ELITE 800 AIR PUMP

6. AIR LINE
(clear tubing)

7. DRIP RING
(circular plastic ring attached to tee)

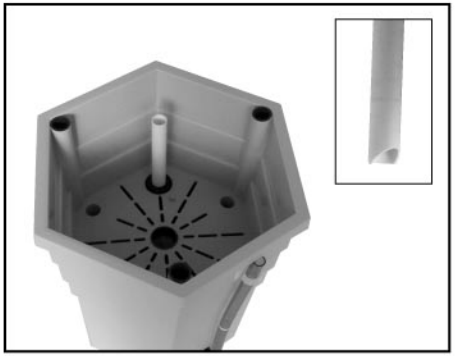
8. PUMPING COLUMN
(2-piece white tube with air inlet)

9. PUMPING COLUMN SUPPORT TUBE
(white PVC tube with bevel facing down)

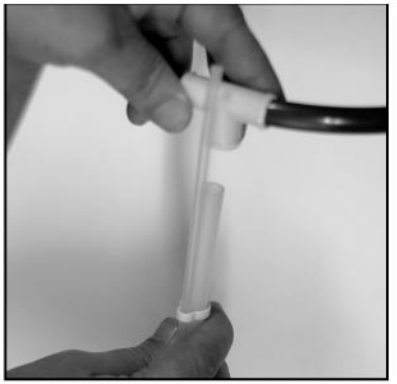
10. DRAIN LEVEL TUBE
(translucent blue tube fitted to black elbow)

Step #1.
Fill the reservoir to the white line marked on the blue drain/level tube (approx. 2.6 gallons) with tap water and mix the initial nutrient solution.

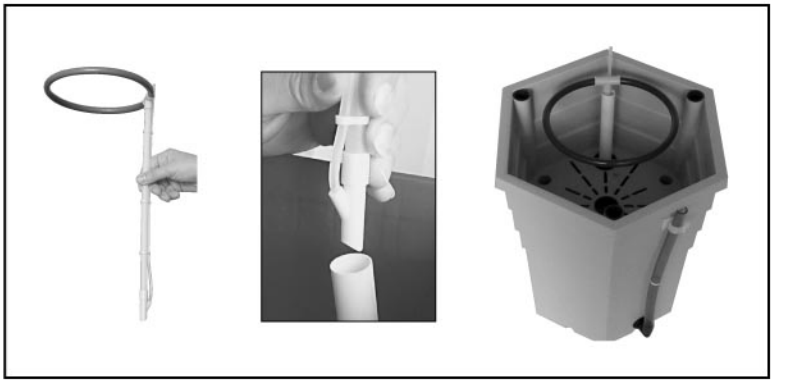
Step #2.
Place the growing chamber on the reservoir.



Step #3.
Push the bevelled end of the column support tube (white PVC pipe) into the large hole in the bottom of the growing chamber. Push the PVC pipe down until it barely touches the bottom of the reservoir.



Step #4.
Attach the circular drip ring to the open end of the pumping column assembly. Ensure that the holes in the ring itself are facing downwards.

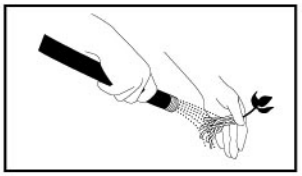


Step #5.
Push the entire drip ring assembly (which includes the drip ring, the T-fitting and the white tubes attached to the drip ring) down into the pumping tube. Being careful not to catch the tube clamps on the tube. Push the assembly into the tube until it barely touches the bottom of the reservoir.

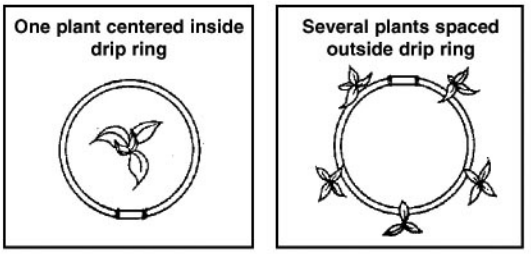
Step #6.
Move drip ring out of the way and pour the rinsed clay pellets into the growing chamber.

Step #7.
Securely attach the air tube (the thin, flexible clear tubing connected to the drip ring assembly) to the outlet nipple on the pump. Plug your PowerGrower Eco into any standard household electrical outlet. If you're using your PowerGrower Eco outside, use only extension cords and outlets designed for outdoor use.

Planting



To prepare a seedling or a plant for transplanting, remove all soil and/or organic material from around the roots. Plants must be sturdy with established roots before transplanting into the PowerGrower Eco. Choose seedlings because it's more difficult to successfully transplant older plants. If your plant has been growing in soil or peat moss, gently remove the plant from its pot and carefully rinse as much soil as possible from the roots before transplanting. Although this method of transplanting from soil to hydroponics is somewhat risky, (soil may contain diseased organisms that proliferate in the rich hydroponic solution), we have been very successful in implementing, particularly with culinary herbs and encourage you to try it. Or, you can avoid these problems by starting plants from cuttings in one of our **RainForest** Systems.



If you plan to grow several small plants in the PowerGrower Eco, place your plants just outside the drip ring, near the drip holes. If you prefer a single large plant, place it in the center of the drip ring. Gently add Hydroton around the plant roots until thoroughly covered.

Placement

Abundant light, proper temperature and adequate ventilation are crucial for fast growth, healthy plants and higher yields. Place the PowerGrower Eco in a warm, well-lit, well-ventilated location, such as an outdoor garden, sunlit window, patio or greenhouse. Keep your PowerGrower Eco away from areas where the inevitable dripping that occurs during filling, draining and pH adjustment could cause water damage.

Operation

For moisture-loving plants, operate your PowerGrower Eco pump continuously. Plants preferring drier conditions grow best when the pump runs for 1/2 hour on and 1 hour off during daylight hours; off at night (a simple timer will turn the pump on and off for you automatically).

Use mild to normal strength nutrient solution and avoid strong or aggressive nutrient. As your plants consume nutrient solution, the level in the reservoir will drop. Top off with half strength solution or plain water (the pump is more efficient when the reservoir is full). It is necessary to change the water and nutrients every two to three weeks depending upon the size of your plants and their rate of growth; with bigger plants change more often. Simply empty the reservoir by **rotating the blue drain/level tube 90 degrees** so water drains on the ground, or indoors in a pail. When changing or topping off solution, pour directly over the Hydroton (rather than into the reservoir itself) to flush out excess salts.

Preparation for Replanting

After harvesting and before replanting your PowerGrower Eco, dismantle the system and clean all parts with hot water. Rinse Hydroton in very hot water and soak overnight. Unlike Rockwool, Hydroton is reusable. It is a good idea to dis-assemble and wash the drip ring assembly and pumping tube from time to time in hot water.

Troubleshooting

If white salt deposits form on the Hydroton:

1. Try using a milder nutrient solution and topping off with plain water only.
2. Occasionally drain your system, refill with plain water and run the pump overnight. After the overnight rinse, empty reservoir and refill with fresh nutrient.

If Plants are not growing well and you suspect "hard" water:

1. Use FloraMicro Hardwater in place of FloraMicro.
2. Try distilled or purified water. You should see a significant improvement in plant health and growth within one week.
3. Collect rainwater for use in your PowerGrower Eco.

If nutrient solution stops flowing from the drip ring:

1. Check to ensure that pump is plugged in and reservoir is filled with nutrient solution.
2. Disconnect air line from the air inlet and check whether the air is coming through (put end under water and look for bubbles if you are not sure). No air flow could mean that the pump is broken and must be replaced or that the air line is loose or blocked. Try cutting an inch off each end of the line to provide a tighter fit.
3. Blow into the air inlet to check whether it is clogged, and rinse the pumping column in hot water. This type of clogging is usually an indication that you have hard water or too strong a nutrient solution.
4. Check whether emitter holes in the drip ring are clogged. To clear, dis-assemble drip ring by pulling it apart at the tee, rinse drip ring and tee in hot water and clear the holes with a toothpick.

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