



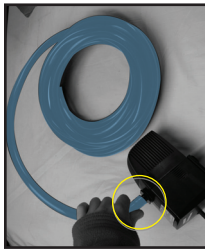
Description	Qty.
A. 55 Gallon Drum	1
B. 5 gallon felt grow pots	6
C. Bucket lid w/ pour spout	1
D. 5 Gallon Site Buckets	6
E. 5 Gallon Controller Bucket	1
F. Float Valve	1
G. 3/4" Elbow	6
H. 3/4" Straight Connector	6
I. 1/2" Straight Connector	2
J. 3/4" Grommet	12
K. 1/2" 25ft Black Tube	1
L. 3/4" 25ft Black Tube	1
M. 160gph Pump	1
N. 400gph Pump	1
O. Digital Timer	2
P. Drain Screens	6



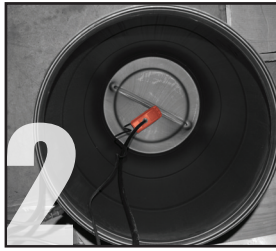
RESERVOIR ASSEMBLY



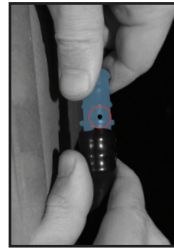
STEP 1: Open the large water pump and screw the 1/2" barbed attachment into the top of the pump.



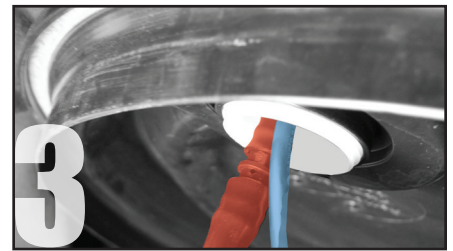
STEP 1: Cut a piece of the 1/2" tubing to 37" inches, and attach the 1/2" tubing to the barb on the pump.



STEP 2: Set the pump in the bottom of 55 gallon drum.



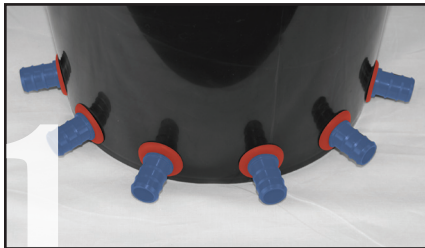
STEP 2: Insert one of the 1/2" straight connectors in the other end of the 37" tube from the previous step. DO NOT COVER THE HOLE in the connector. This is the "FILL" line which fills your controller bucket.



STEP 3: Run the 1/2" tube up through the hole in the white cap on the drum lid.

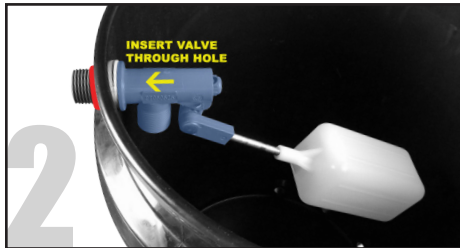
STEP 3: Run the power cord from the pump up through the hole in the white cap on the drum lid as well. The reservoir is ready.

CONTROLLER BUCKET ASSEMBLY



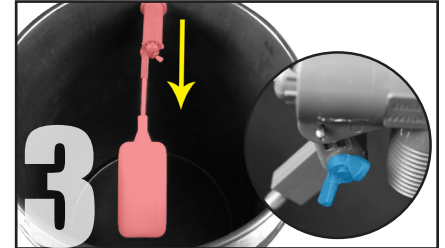
STEP 1: Open the Grommet bag and insert 6 grommets in 6 holes at the bottom of the 5 gallon Controller bucket. These can be a little tricky.

STEP 1: Insert the 3/4" straight connectors half way through the grommets into the 6 holes at the bottom of controller the bucket. A small bit of rubbing alcohol can be used to lubricate



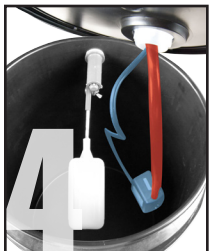
STEP 2: Take the 1/2" float valve, unscrew the retainer nut.

STEP 2: Insert the threaded end of the valve into the hole at the top of the bucket from the inside of the bucket, so that it sticks out the side of the bucket and re-thread the retainer nut to lock the valve into place.

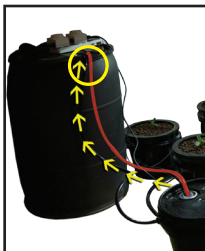


STEP 3: Make sure the valve hinge is aligned perpendicular to the bucket wall so it can freely move up and down with the water level.

NOTE: The valve float arm is adjustable by loosening the wing nut and moving the float arm to the appropriate position then tightening the wing nut to lock into place.



STEP 4: Take the 160 GPH pump and make sure the 1/2" connector is attached to the top of it. Set the pump in the bottom of the bucket off to one side. Run the power cord out of the pour spout on top of the 5 gallon bucket.



STEP 4: Attach a piece of 1/2" inch tubing to the pump. Make sure the tubing is long enough to run back to the 55 gallon drum. Run the tubing from the pump out the side of the pour spout on top of the bucket and back to the 55 gallon drum.

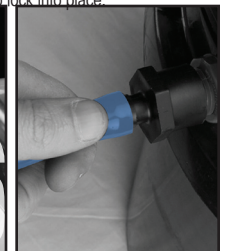


STEP 5: Run the tubing coming from the pump in the controller bucket back to the 55 gallon drum and through the white cap on the drum lid. Connect to 1/2 inch connector.

STEP 5: Connect the tube to the other 1/2" connector with hole. The other end of the connector should connect to the remaining piece of tubing that will run to the bottom of the 55 gallon drum.



STEP 6: Screw the barbed adapter to the threaded end of the valve sticking out the side of the controller bucket.



STEP 6: Attach your fill line from the reservoir assembly to the barbed attachment you just threaded onto the valve.

6 GROW POT ASSEMBLY - *IMPORTANT MAKE SURE THE SETUP IS PLACED ON A LEVEL FLOOR



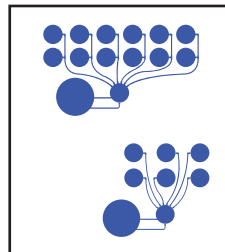
STEP 1: Insert 1 grommet into the bottom hole on each of the 5 gallon site buckets. Slide the elbow connectors directly through the grommets to create a seal. A bit of rubbing alcohol can be used to lubricate.



STEP 1: On the inside of each bucket attach a drain screen to the back side of each elbow connector. You will need to cut 4 inch pieces of tubing to attach to the drain screen.



STEP 2: Attach hoses to the elbow connectors that are sticking out of the grow site pots, and run these hoses back to the controller bucket. Hose lengths will vary depending on preference of arrangement.



STEP 2: Use these diagrams as well as the ones on the next page to get an idea of how to arrange the grow site. 25 feet of tubing is provided so make sure to divide the tubing up accordingly.



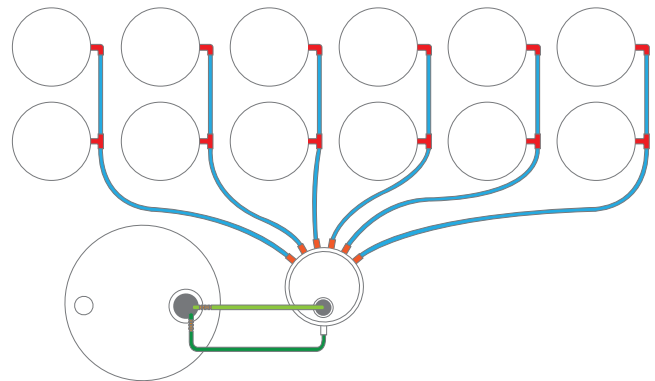
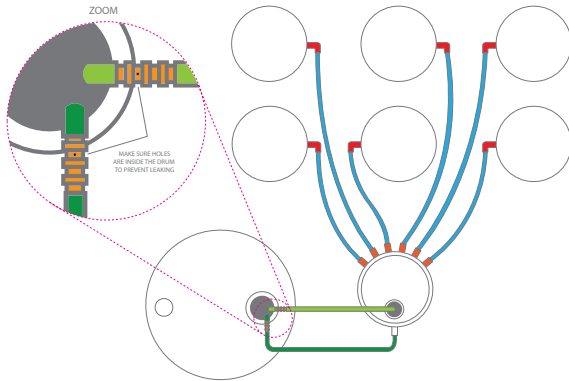
STEP 3: Insert the 6 grow pots into the 5 gallon site buckets. fold the edges of the pots over the lips of the buckets if desired.



STEP 3: Fill each of the six site buckets with hydrostone or another applicable grow medium such as perlite or rockwool. Leave about an inch and a half space at the top of the bucket to prevent overflow of the grow medium when the system ebbs & flows.

6 & 12 POT SETUPS

*Pieces of the system are not actually colored. They are colored in the diagrams for descriptive purposes only.



1/2 CONNECTORS

The 1/2 inch straight connectors are used to connect the fill line and the drain line. Make sure not to cover the hole on these when connecting your hoses.

FILL LINE

The fill line runs from the larger pump within the 55 gallon drum up to a straight connector, and from the straight connector it runs to the barbed attachment on the float valve of the controller bucket.

DRAIN LINE

The drain line runs from the smaller pump within the controller bucket to a straight connector and from that straight connector a 3/4 inch hose runs down into the bottom of the 55 gallon drum.

ELBOWS & T'S

The elbow connectors connect each 3.5 gallon grow bucket to the feeder lines, which are coming directly from the control bucket.

3/4 CONNECTORS

The 3/4 connectors attach the feeder lines to the 5 gallon control bucket. They are pushed through the grommets to form a tight seal.

FEEDER LINES

The feeder lines deliver the plants the vital nutrients needed for rapid hydroponic growth. They come directly from the control bucket and feed each grow bucket in the setup.



FILL LINE EXAMPLE:

Plug the "FILL" pump in to the "FILL" timer.
12hr light cycle from 12am to 12pm
ON Time 1: 12:00am
OFF Time 1: 12:20am

ON Time 2: 4:00am
OFF Time 2: 4:20am

ON Time 3: 8:00am
OFF Time 3: 8:20am



DRAIN LINE EXAMPLE:

Plug the "DRAIN" pump in to the "DRAIN" timer.
12hr light cycle from 12am to 12pm
ON Time 1: 12:20am
OFF Time 1: 1:00am

ON Time 2: 4:20am
OFF Time 2: 5:00am

ON Time 3: 8:20am
OFF Time 3: 9:00am



TIMER SET UP

STEP 1: Synchronize the two timers. An example on how to do this: Lets say its 3:30. Set one timer to 3:29. Set the other timer to 3:29. Then press the min button on each timer at the same time to set them both to exactly 3:30.

STEP 2: Once timers are in synch select one timer to be your "FILL" timer. Set this timer to run for roughly 20mins each time. Depending on plant size and plant type, frequency of water times may vary. Rule of thumb is every 3-4 hours and only when the lights are on. This could vary depending on how many sites are used.

STEP 3: Use the other timer to be your "DRAIN" timer. Set this timer to run for roughly 40mins each time. This timing could vary depending on how many sites are used.

WATER LEVELS

Once the system is built you will need to set your water level and test your system for any leaks.

STEP 1: Fill your reservoir about 3/4 of the way full and turn on your "FILL" pump.

STEP 2: Lift the lid on your controller bucket to see your float valve and to verify your getting water in the controller.

STEP 3: As the system is filling check for any leaks.

STEP 4: Turn off the "FILL" pump and turn on the "DRAIN" pump. The water will then drain back in to the reservoir.

FINAL TEST

STEP 1: Add a grow medium and run a test cycle. - HTG's Hydrostone works great -

STEP 2: Once the water is approaching the desired level. (About 1-2" below the top of the 10" lids) Locate the wing nut on the float valve, this will allow you to adjust the valve. Once you have set the optimal level then tighten the wing nut to lock the valve arm into place.

STEP 3: Check for leaks and make sure you're flooding to the desired level. Also make sure you're "DRAIN" pump is draining all but about an inch of water in the bottom.

STEP 4: You are now ready to add plants and nutrients.

HYDRO TIPS

1. Most hydroponic systems should have a PH kept between 5.2-6.0, check the nutrient companies recommendations for best results.
2. It is a good idea to drain and replace the water in your system at least every 2 weeks.
3. Top off reservoir with plain water in between flushes.
4. If using rockwool as a grow medium, one should presoak the rockwool for 12 hours in a 5.5 PH solution to correct the PH before planting in it.
5. Water temperatures above 75 degrees decreases the amount of oxygen water can hold. This will allow for bad bacteria to grow in the water, leading to potential root rot.
6. In between plant cycles the hydro system should be cleaned and sterilized. This will prevent any pathogens spreading from crop to crop.