

Hydro Flow® DIY Hydroponic Systems

Flo-n-Gro® Ebb & Flow System - 12 Site

Controlled by the Titan Controls® Oceanus® 1 Controller

Simple assembly and operation. A 24-hour dial sets your watering period(s), bringing oxygen rich nutrients to the root zone by flowing in through the bottom of the 360° mesh inserts. Use with your choice of lighting, grow media and nutrients, depending on the needs of the plant species you are growing.

4
Gallon
Plant
Sites



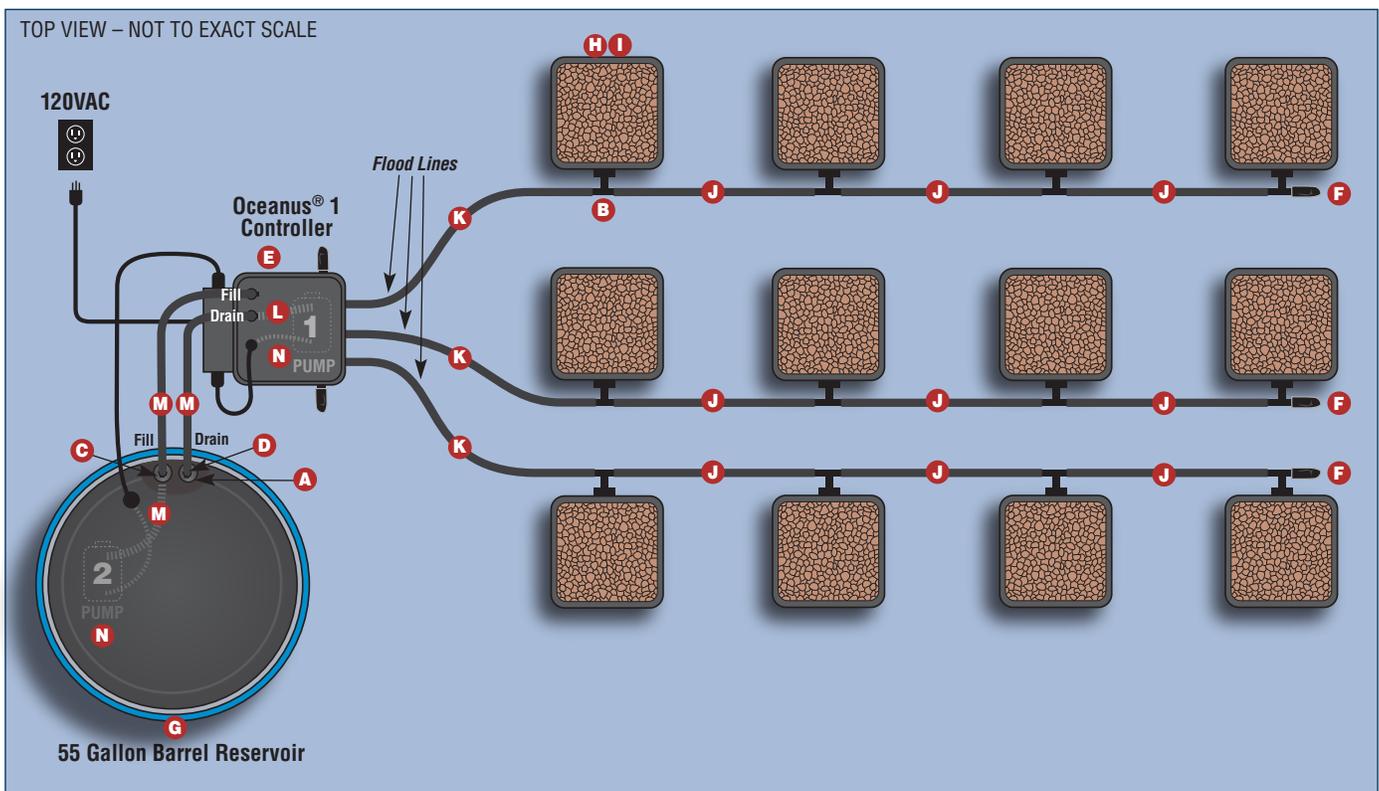
Parts List

QTY	DESCRIPTION	PART #
A 2	1/2" Rubber Grommet	10/Bag: 747064 Bulk Ea: 708378
B 12	3/4" Tub Outlet Tee Fittings w/2 Gaskets	1/Bag: 747186 Bulk Ea: 742265
C 8	1/2" Nylon Hose Clamp	10/Bag: 747062 Bulk Ea: 708006
D 2	1/2" Barbed Elbow	10/Bag: 747048 Bulk Ea: 742070
E 1	Titan Controls Oceanus® 1 Controller (Includes F 3/4" EZ Pull End Caps)	702780
G 1	55 Gallon Barrel Reservoir w/Lid (Food Grade)	707168
H 12	Flo-n-Gro 4 Gallon Blue Grow Buckets	707635
I 12	Flo-n-Gro 3 Gallon Mesh Grow Bucket Inserts	707640
1	Black Vinyl Tubing (3/4" I.D. / 1" O.D.) 100' Roll Cut Pieces: J 9@2' K 3@Desired Length	708245
1	Black Vinyl Tubing (1/2" I.D. / 5/8" O.D.) 100' Roll Cut Pieces: L 1@9.5" M 3@Desired Length	708265
N 2	EcoPlus Convertible Bottom Draw Pump 265 GPH	727800

Before You Begin . . .

- Plan your grow area BEFORE cutting any tubing! Arrange buckets to match your grow light's footprint (usually in 3 rows of 4 buckets, equally spaced about 2' apart).
- Important: Grow buckets must be at the same level as the Oceanus® 1 for the Ebb & Flow System to function properly.
- Consider locating close to a drain or available method of properly disposing of exhausted nutrient solutions.

System Diagram

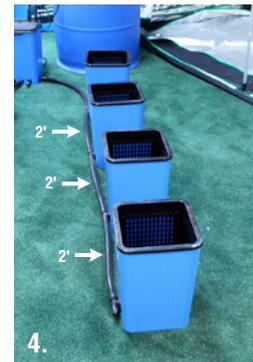
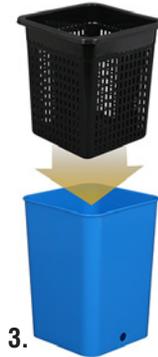


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Assembly Instructions

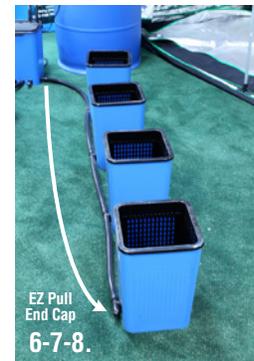
Assemble Flood Lines

1. Install 1 Tub Outlet Tee in each bucket in the pre-drilled hole about 3/4" from the bottom (make sure there's a washer on both inside and outside).
2. Arrange buckets to match the lighting footprint of your garden.
3. Snap the mesh inserts in place into the top of the buckets.
4. Cut 2' sections of 3/4" I.D. tubing and connect buckets together via the Tub Outlet Tees. These will be your 3 "Flood Lines."



Connect Oceanus® 1 Controller to the Flood Lines

5. Cut a length of 3/4" I.D. tubing matching the desired distance between the Oceanus® 1, and the first Flood Line.
6. Remove one of the black 3/4" EZ Pull end caps from one Oceanus® 1 output fitting (located at the bottom of the unit). Slide the first end of the cut 3/4" fully onto the now exposed output fitting of the Oceanus® 1.
7. Slide the second end of the cut tubing onto the tee fitting on the first Flood Line. Slide connect the EZ Pull end cap you removed from the Oceanus® 1 over the last tee fitting at the other end of the Flood Line.
8. Repeat for remaining 2 Flood Lines. **IMPORTANT: EZ Pull end caps provide expansion/contraction options for your system and are necessary to prevent flooding – do not discard. Flooding will occur if you fail to cap the end of each Flood Line! Also, you don't need hose clamps on the three 3/4" low pressure Flood Lines.**



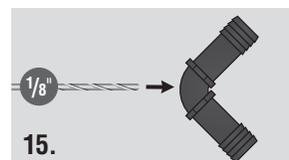
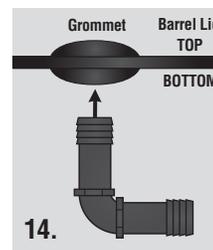
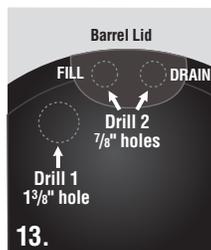
Connect Pump 1 inside Oceanus® 1 Controller

9. Cut about a 9 1/2" section of black 1/2" I.D. tubing and attach it to Pump 1's outlet, securing with a 1/2" nylon hose clamp.
10. Use suction cups to secure Pump 1 to the bottom of the Oceanus® 1 under the 'DRAIN' and 'FILL' fittings (make sure pump or power cord isn't touching the 2 float valves).
11. Attach the other end of the 9 1/2" section to the 'DRAIN' fitting under the controller lid, securing with a 1/2" nylon hose clamp.
12. Pull the power cord for Pump 1 through the hole in the top lid of the Oceanus® 1 and plug it into the 'DRAIN OUTPUT' power outlet on the side of Oceanus® 1 control box.



Prepare 55 Gal. Barrel Reservoir and Install Pump 2

13. Drill two 7/8" and one 1 3/8" hole(s) into the barrel lid.
14. Insert 1/2" grommets into the two 7/8" holes (1 3/8" hole is for the pump cord). Insert elbows into the 1/2" grommets from the bottom.
15. **IMPORTANT: A 1/8" anti-siphon hole must be drilled into the corner of each elbow to prevent flooding.**
16. Cut a piece of 1/2" I.D. tubing that is long enough to reach from the 1/2" elbow fittings you installed in the barrel lid to the bottom of the reservoir (approx. 42"). Connect first end of the 1/2" tubing to Pump 2's outlet and secure with 1/2" hose clamp. Lower Pump 2 into the bottom of the Reservoir. Connect the other end of the 1/2" cut tubing to the 1/2" 'FILL' elbow fitting at the top of the Reservoir, and secure with 1/2" hose clamp.



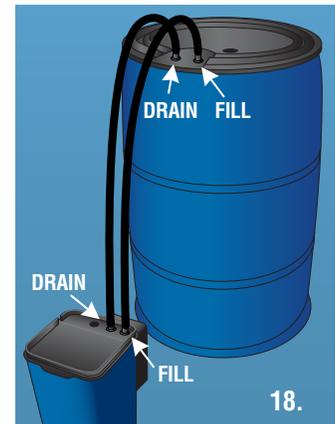
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Assembly Instructions (cont.)

Connect Reservoir to the Oceanus® 1

17. Run the power cord from Pump 2 inside the reservoir through the 1³/₈" hole in the lid and plug it into the 'FILL OUTPUT' power outlet on the side of the Oceanus® 1 control box.

18. Cut 2 pieces of 1/2" I.D. tubing long enough to reach from the elbow fittings installed in the reservoir lid to the 1/2" straight connectors located at the top of the Oceanus® 1. Attach the first end of one piece of 1/2" tubing to the 'DRAIN' elbow fitting in the reservoir lid and secure with a 1/2" nylon hose clamp. Attach the second end to the 'DRAIN' fitting on the top of the Oceanus® 1. Then, attach the first end of the other piece of 1/2" tubing to the 'FILL' elbow fitting in the reservoir lid (the one with the reservoir pump attached to it), and secure with a 1/2" nylon hose clamp. Attach the second end to the 'FILL' fitting on the top of the Oceanus® 1.



Operating Instructions

Pre-Test the System Before Use!

1. Double check each fitting connection for secure fit to prevent leaks!
2. Fill Reservoir with warm water only, which will relax the tubing.
 - Do not put your growing media in the mesh pots yet, as you need to watch the water levels.
 - Do not put your valuable nutrients in, you may have to drain and fix something.
3. Plug the Oceanus® 1 into the wall outlet.
4. Turn the 24 hour timer clockwise just until the 'FILL' cycle is initiated.
 - a. You should hear the 2nd Pump in the Reservoir run.
 - b. You should see a green blinking 'FILL' light on the face of the Oceanus® 1 controller.
 - c. You should see the buckets fill with water until the upper float switch within the Oceanus® 1 has floated up for five seconds.
 - d. After five seconds, the 2nd Pump should shut off.
 - e. You should see a solid green 'FILL' light indicating the 'Fill' cycle is complete.
5. Turn the 24 hour timer clockwise until the 'DRAIN' cycle initiates.
 - a. You should hear the 1st Pump in the Oceanus® 1 come on.
 - b. You should see a red blinking 'DRAIN' light on the face of the Oceanus® 1 controller.
 - c. You should see the water being pumped out of the buckets and back into the Reservoir.
 - d. A proprietary controller "Brain Drain" feature will manage the 1st pump through a few extra cycles to pump out the exact amount of water leaving enough in the buckets to maintain the seals at the tees, keep the 1st Pump primed, and to safeguard your plants in the event of a power outage.
 - e. After the "Brain Drain" cycle, you should see a solid red 'DRAIN' light on the face of the Oceanus® 1.
 - f. There should be a small amount of reserve water in each bucket.

If you have successfully conducted the Pre-Use Test, you can now proceed to Operating The System.

Operating The System

1. Unplug the Oceanus® 1 power cord from wall socket.
2. Fill up to 2" from the top of each mesh bucket insert with your choice of hydroponic growing media.
3. When transplanting, place the top of the transplant cube or plug approximately 2" under the surface of the grow media to prevent 'floating' the transplant during 'FILL' cycles.
4. Fill the reservoir with your choice of balanced hydroponic nutrient

solution. For longer periods between maintenance, fill the reservoir completely.

5. Each time tripper represents a 15 minute segment. The time switch is programmed by pushing the captive trippers to the inner ring position for the entire time period the pumps are to 'FILL'. When the time trippers are pushed to the outer ring, the pumps will 'DRAIN'.
6. To set the current time of day, turn the minute hand clockwise. DO NOT set the time by rotating the "outer" dial. To set time of day at 10:30 AM for 24 hour dial, turn the minute hand clockwise until 10:30 AM is aligned with the triangle on the inner dial. The hour and the minute dial will show exactly 10:30 AM. Each bucket will take approximately 1 minute to FILL, so one 15 minute setting should fill all 12 buckets.
7. There are 'FILL' and 'DRAIN' lights on the front of the Oceanus® 1.
 - a. The green 'FILL' light will blink slowly to begin with and then faster as the system continues to fill.
 - b. After the system is full of water, the green 'FILL' light will be a solid green.
 - c. When the 'DRAIN' function begins, the red 'DRAIN' light will begin to blink slowly, and then faster as the system drains the water out.
 - d. After the 'DRAIN' function has completed, the red 'DRAIN' light will be solid.
8. After you have set the 'FILL' cycles, plug the Oceanus® 1 into a confirmed 120 Volt power source. The System will now begin to function based on your custom settings.
9. If both the 'FILL' and 'DRAIN' lights blink back and forth, unplug the Oceanus® 1, count to five, and plug it back into the 120 Volt power source. Sync timer with cycle function. This will reset the controller.

Maintenance

Change nutrient solution every 7 - 14 days based on your plants' requirements. In between changes, you can 'top off' your reservoir by adding water or a reduced strength nutrient solution.

To insure proper function:

- Clean the drain filters on both pumps;
- Check the tubing for any cracks or kinks;
- Verify that the float switches in the Oceanus® 1 are clean and clear of obstructions;
- Inspect anti-siphon holes in fittings on the top of the reservoir to make sure there is no build up or clogging;
- Occasionally wipe down the inside of the Oceanus® 1 and the reservoir with a soft cloth to remove debris.