



The Aqua-Farm 3

Instructions for Assembly

Thank you for purchasing the Aqua-Farm 3 recirculating system. Whether you are new to the world of "aquaculture" or are a seasoned veteran, the Aqua-Farm 3 can be a valuable learning tool.

The use of recirculating systems is increasingly popular in the classroom. Biology, design/engineering, math, chemistry, business and physics are just some of the many important learning experiences that students can gain from the study of aquaculture.

About Your System

The Aqua-Farm 3 is a small scale recirculating system. This system has three main parts; 1) fish culture tank, 2) water pump, 3) filter system. The Aqua-Farm 3 has two 300 gallon fish culture tanks. These tanks are flat bottomed and do not require any additional stands or support. The water pump that's used in a recirculating system must be reliable! If the water pump fails, the entire system shuts down and a fish loss is likely! We have chosen a reliable, continuous duty pump for this system. This pump is energy efficient and very dependable. For the filter system a bio-tube filter is used. These filters are the finest method of filtration currently available on the market. This system comes with all the necessary items needed for assembly except for some PVC pipe and teflon tape. All fittings and valves are included. The filter has its own assembly instructions and should be assembled first.

Aqua-Farm 3 Parts List

Quantity	Description
2	300 gallon culture tanks - these tanks are shipped from the manufacturer to you by truck, not UPS
1	Water pump
1	Bio-tube filter
2	Water intake screens - labeled part #1, these go inside the culture tank
1	Self leveling pipe - labeled part #1B, this pipe connects the two tanks and keeps the water level the same in both
1	Tank to tee with valve - labeled part #2, connects tank to 1 1/2" PVC tee
1	Male adapter to rubber coupling - labeled part #3, connects pump to PVC tee
1	Outlet assembly - labeled part #4, connects outlet side of pump to filter
1	Filter outlet to valves - labeled part #5, splits discharge water from filter into two lines
2	Return water lines - labeled part #6, returns water to each tank



Assembly Instructions

Step 1:

Open filter box, following the enclosed instructions - assemble the filter. Attach all three unions to inlet/outlet ports on filter (inlet, outlet and backflush).

Step 2:

You will need to drill two holes in each tank. The first hole is for the pump intake line. This hole needs to be 1³/₄" in diameter and should be centered 7¹/₂" up from the bottom on the outside wall of the tank. The second hole is for the self leveling line that runs from one tank to the other. It is nearly impossible to pump the exact same amount of water from each tank so without this line connecting the two tanks one tank would start to overfill. This line can go anywhere in the tank as long as it is below the waterline. Most often the hole is drilled right next to the pump intake hole. This hole needs to be 1³/₈" in diameter. You will have two 1" bulkhead fittings in your kit. Insert one in each of the larger holes making sure that the bulkhead and the rubber gasket are installed from the inside and the nut is tightened from the outside. Tighten the nuts good and firm but do not overtighten and crack the plastic. You will also have a bag with two smaller bulkhead fittings as well as the rest of the overflow fittings. Install the bulkheads the same as above. The water intake screens can be installed inside the tanks into the larger bulkhead fittings. These fittings should not be glued! Adjust the angle of the bottom intake screen so the holes in the screen are facing into the planned current or rotation of the water in the tank.

Step 3:

Position the two fish culture tanks approximately 30" apart with the bulkheads facing each other. Set the pump in between the tanks and install part #3 into the inlet of the pump. Apply teflon tape to the threads of the male adapter before connecting to pump. Attach part #2 into part #3 and tighten the clamp on the rubber coupling (see photo at right). Part #2 is the assembly that connects the two tanks to the pump. You will need to use PVC glue to attach each end of part #2 into the larger bulkhead fitting on the tanks. There is a union on each side of the assembly that can be disconnected if needed later on. There is also a gate valve that can be adjusted or closed if one tank is not being used. Next, connect the rest of the self leveling line. Glue the PVC pipe with adapters into each of the small bulkhead fittings in the tanks. It does not matter which tank the valve side is located on. This valve allows you to isolate one tank if it is not needed. The black vinyl tubing can be cut shorter if needed. This completes the inlet plumbing.



Step 4:

Attach the pump outlet assembly (part #4) to the discharge side of the pump. Apply teflon tape to the threads of the male adapter before screwing it onto the pump. The opposite end of the assembly will glue onto the filter port labeled "pump". There is a valve in this assembly. If you need to slow down the flow of the pump do so by restricting this valve. It will not hurt your pump to reduce the flow by up to 50% as long as it is done with this valve. Do not restrict the pump flow by closing either of the gate valves on the inlet side of the pump.

Step 5:

Glue the smooth end of part #5 into the union on the filter labeled "return". This assembly goes through a tee which splits the water back to both tanks. Again a valve is included on each side to control water flow or to isolate one tank.

Step 6:

Attach one of part #6 to each side of the valve on part #5 (see photo at right). This assembly brings the water back into the tank. A 45° degree elbow is on each end. This fitting should not be glued. You can adjust this fitting as needed to control the direction and speed of the water flow in the tank. The water current should be strong enough to rotate the water in a circular motion but not so strong that the current forces the fish to swim hard. By adjusting the 45° degree elbow you can regulate the speed of the current. **Note:** the height of the filter discharge should be just high enough to allow part #6 to be installed over the top edge of the tank. If your floor is uneven or for whatever reason part #6 will not fit above the top edge of the tank you can either set your filter on a couple of 2 x 4's to raise it up or you can cut a groove in the top lip of the tank. Either way will allow part #6 to get into the tank.



Finishing Up

Your Aqua-Farm system should be complete. You can now fill the system with water. Once full, run the pump and test the system. If fish are going to be introduced right away, you will need to “seed” your filter with bacteria. Bacteria will occur naturally in three to four weeks but needs to be added if fish are added before that. Ideally a few fish (five to ten) would be added after one week, then left for two weeks before adding more fish. Also be sure to use dechlorinator if tanks are filled with city water!

Check out our full line of EasyPro brand Water Treatments.



