



Volume

1

MODIWALL (PTY) LTD

Modular Vertical Garden System

Installation Guide and General Instructions

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Features

Listed here are all the features built into the Modinwall system

- Easy swopping of plant pots
- Swivel of 15 degrees of panels for curved walls
- The use of wicks and capillary action to draw moisture from the panels into the soil for optimal soil moisture
- Pots can accommodate soil & hydroponic mediums, depending on the requirements of the planted system
- Containment of moisture inside the system
- Recycled plastic used for manufacturing
- Indoor and outdoor use
- Panels can be suspended from one another (hanging from top down) thus not necessary for a supporting wall
- The front panel (grid) has easy knock out holes, so the user can choose the layout of pots
- The pots have easy knock-out holes at the bottom, if the user prefers the moisture to drain out from below (for outdoor installations)
- The front panels (grid) seals around the edges when fastened to the back panel
- Male and female parts easily slide into one another
- There is an indentation to securely hold an 8mm nut in the back panel, thus allowing the front and back panels to be fastened to one another without the need of a supporting structure
- The inside channel ribs of the panels are independently sealed from one another on the inside
- An alignment clip, so panels are perfectly aligned when drilling holes

Plants

It is a good idea to speak to your local nursery before purchasing the plants. Find out what kind of plants grow well in the area. As well is what kind of conditions they prefer, depending on the location of your Vertical Garden (Full-sun, or shade). Also try to pick plants that grow fast and lush, that way your system will look fabulous in no time.

Important: Purchase plants that will fit into the Modiwall pots

- 6 deep packs
- 10 cm potted plants
- 12 cm potted plants
- 1litre plants that can be split in two
- Seedlings
- Seeds

Included in the package: Modiwall kit

Feeder pipe - 46 microjets per meter
LDPE pipe 20mm
Full Flow 20mm elbow
Full Flow 20mm Tee
Waterproofing sheet
Fastener - Countersunk screw and Nut
Fastener - Screw and Plug
Wick - 8mm Polypropylene
Panel
Grid
Pot
Pump
8 on/off Digital programmable timer model
Reservoir - 500 rectangular

Tools you will need

You will need the following tools to complete this installation:

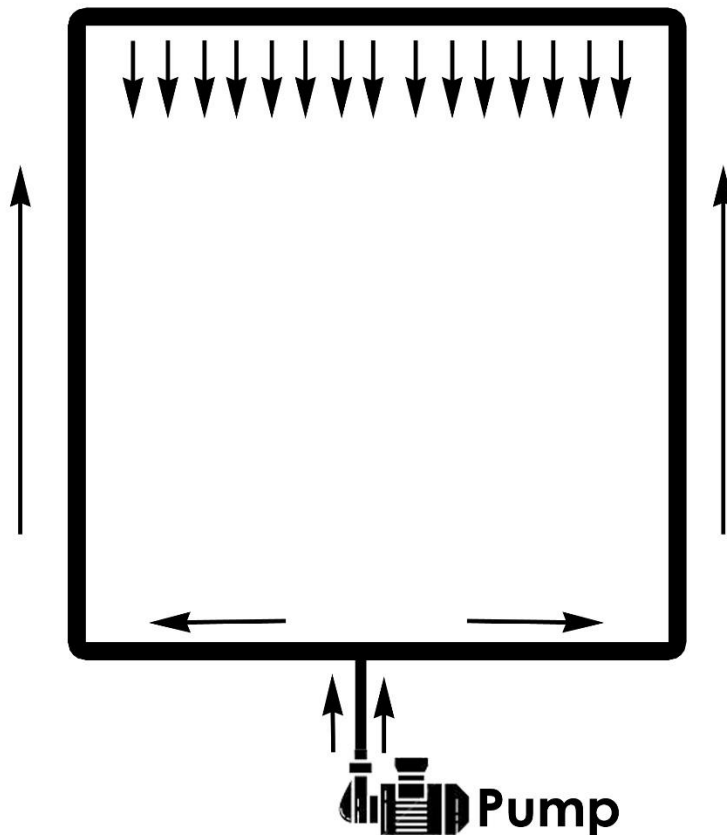
- A Drill with hammer action
- 10mm concrete drill bit
- Star point screw driver
- Flat screw driver
- Hammer
- Level
- Tape measure
- Scissors
- Hack saw
- Double sided tape/small nails/ glue gun (Recommended: glue gun)
- Silicone - Plastic bonding silicone/glue

Installation guide

There are a few things you may want to keep in mind when it comes to finding a location for your system. For some this may not be an issue, but others might only have one place it can go. If you have some choices as to location, one of the first things to consider is sunlight. You need at least 4-6 hours of good sunlight a day for your plants to grow well. Access to power is very important. You will need to pump water and this needs power to run so you need to be able to run your power lead to a power point.

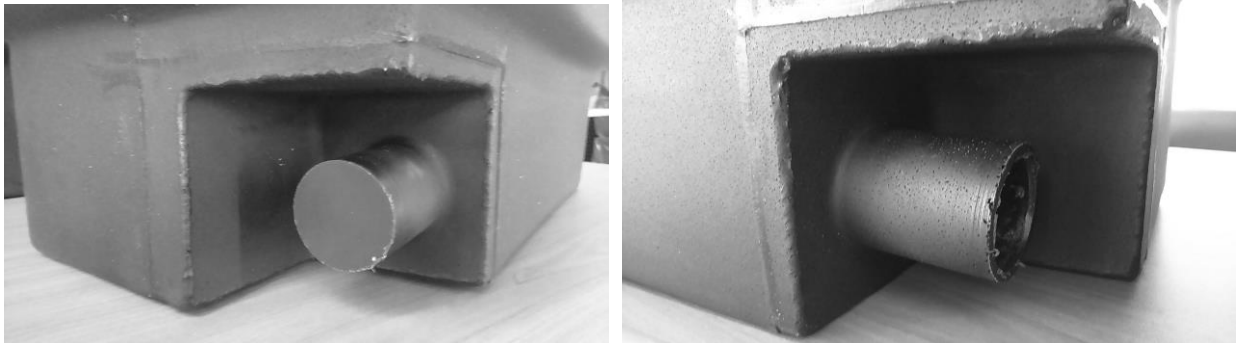
Whichever way you choose to install the irrigation, it is quite important to have a ring system. The pressure going through the top pipe needs to be equal from both sides, thus allowing for even distribution of water through the jets and into the panels.

Basic irrigation layout:

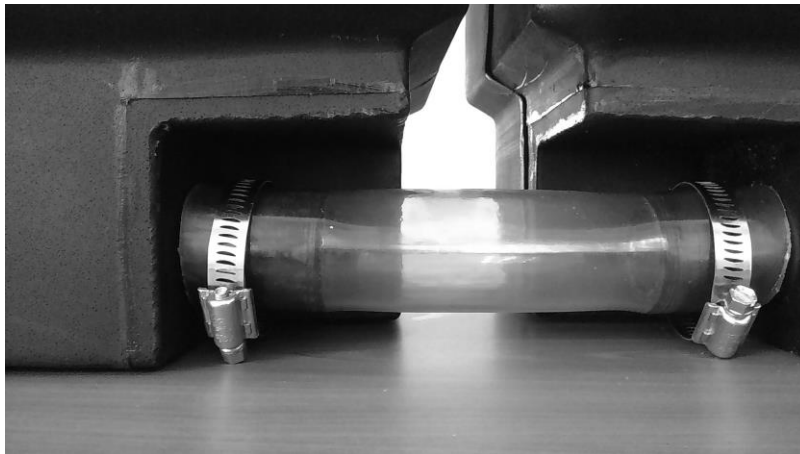


For the reservoirs

Step 1. Cut the end of the opening off with a hack saw where the pipes are going to join the tanks



Step 2. Place the rubber hose over the openings, and fasten clamps tightly

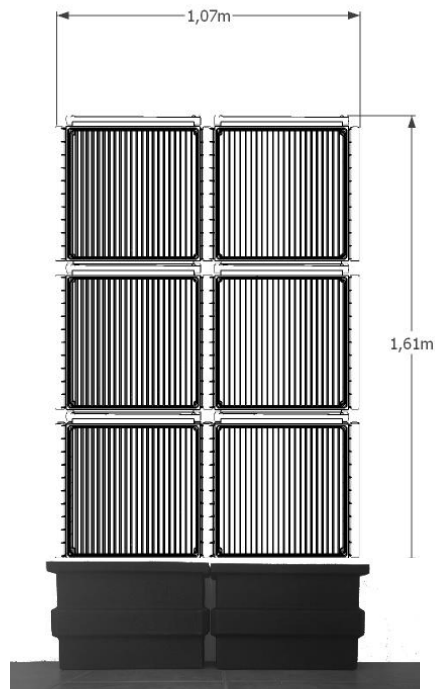


For the Modiwall System

Step 1. Place/Build the reservoir on the floor where you plan to install your Vertical Garden. Make sure that the floor is level

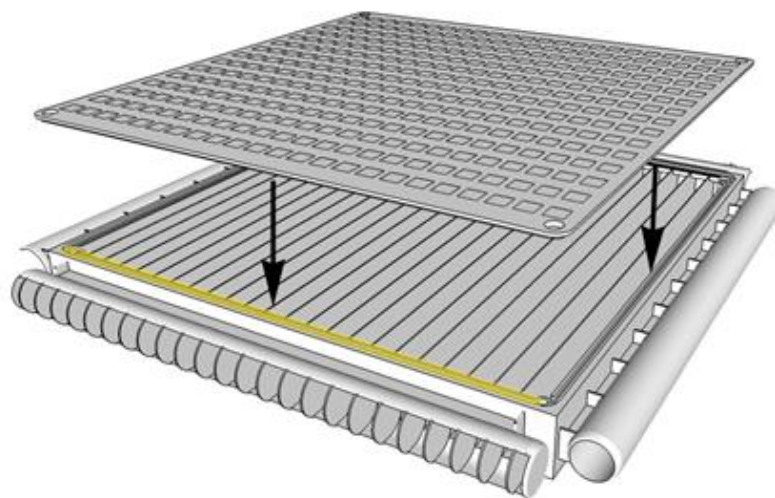



Step 2. Measure and plan where the Modiwall system will be installed, for example:



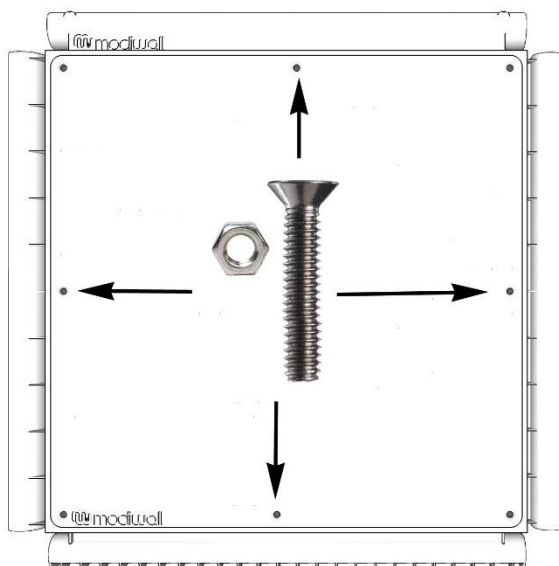
Step 3. Fasten the plastic waterproofing sheet to wall. You can use small nails, double sided tape or a glue gun depending on the type of wall (glue gun usually works best). The fasteners used for the panels will hold the waterproofing sheet tightly to the wall.

- Step 4. Place all the front panels (grids) onto the main panels, they should easily clip in and remain in place

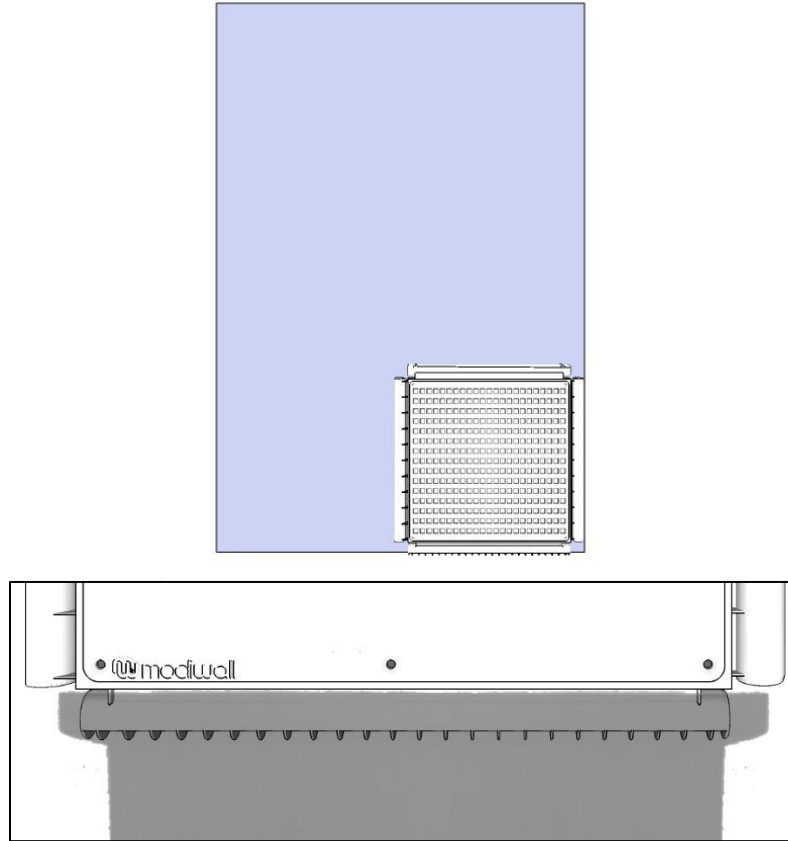


 Recommended Tip: Use silicone around the bottom edge before fastening the grid onto the panel, as seen along the yellow line above. This is to ensure water stays inside the panels, but isn't essential

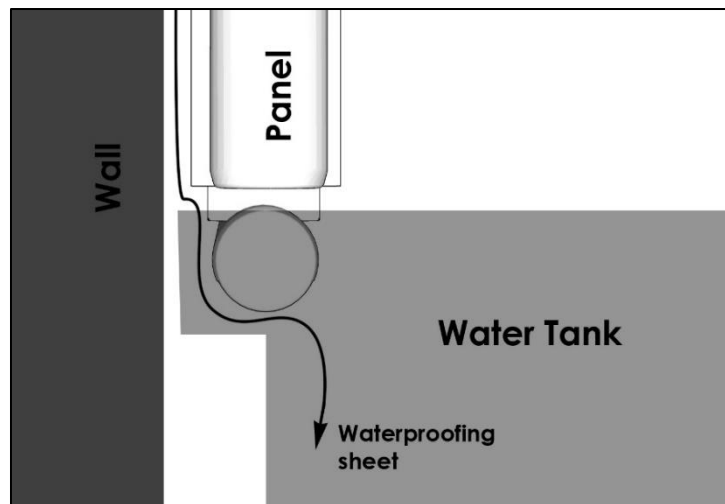
- Step 5. Fasten the screw and bolts on the sides to keep the grid and the panel together



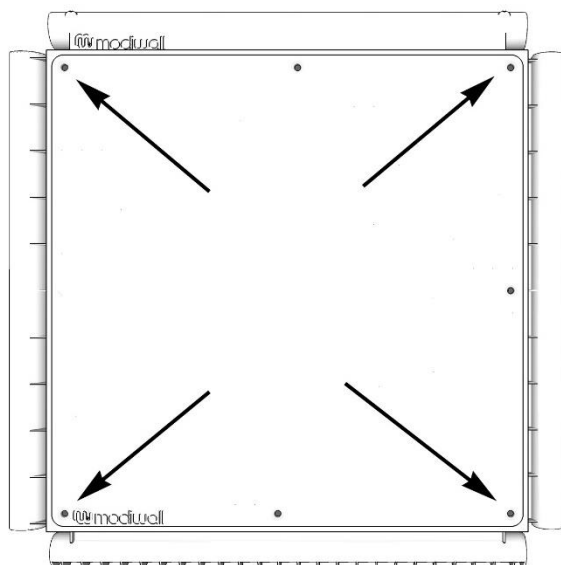
- Step 6. Place panel on Bottom, Right most position of the demarcated area. **Make sure that it is level using a level.** Ensure that the bottom of the panel hangs inside the water tank, and that there is some space to maneuver the water tank in and out. (Or the whatever reservoir solution you choose to use)



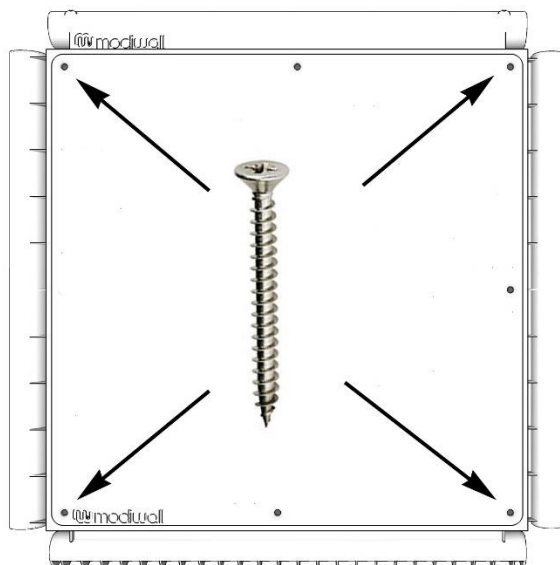
- Step 7. !NB! Be sure to tuck the waterproofing sheet into the water tank, this is to prevent water dripping out behind the tank. Cut waterproofing sheet to size where needed.



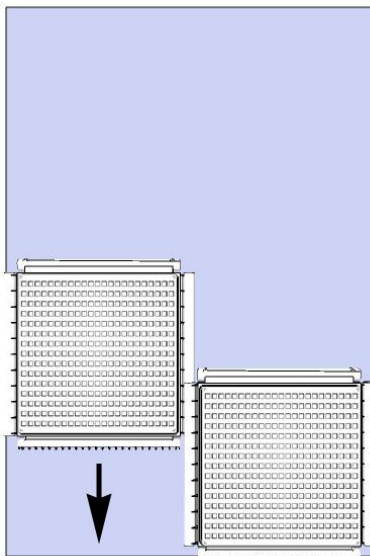
- Step 8. Mark the 4 drill holes on the wall in the corners of the panel by placing a star pointed screw driver in the holes, and then knocking it hard with a hammer



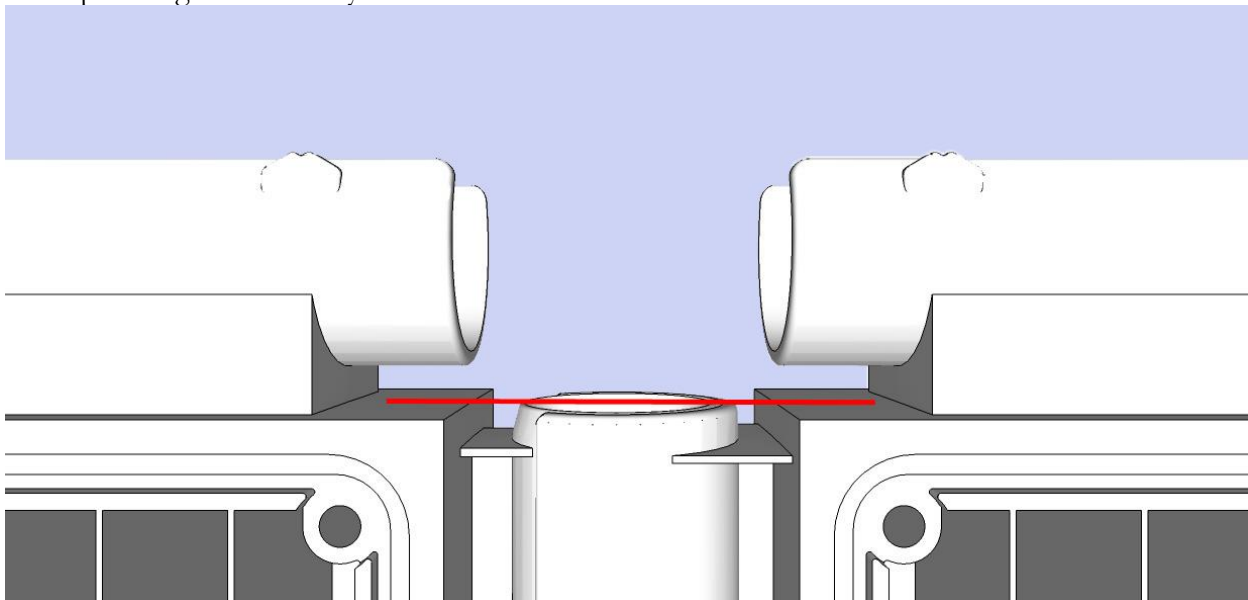
- Step 9. Remove panel and drill 10mm holes
- Step 10. Insert plugs into drilled holes
- Step 11. Replace the panel over the holes
- Step 12. Insert screws through both the front and back panels into the plugs and fasten



Step 13. Slide in next panel on the left of the installed panel



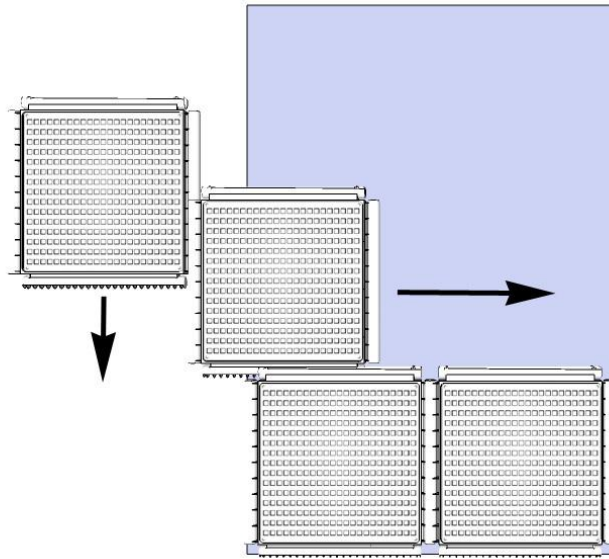
Step 14. Line up the edges horizontally



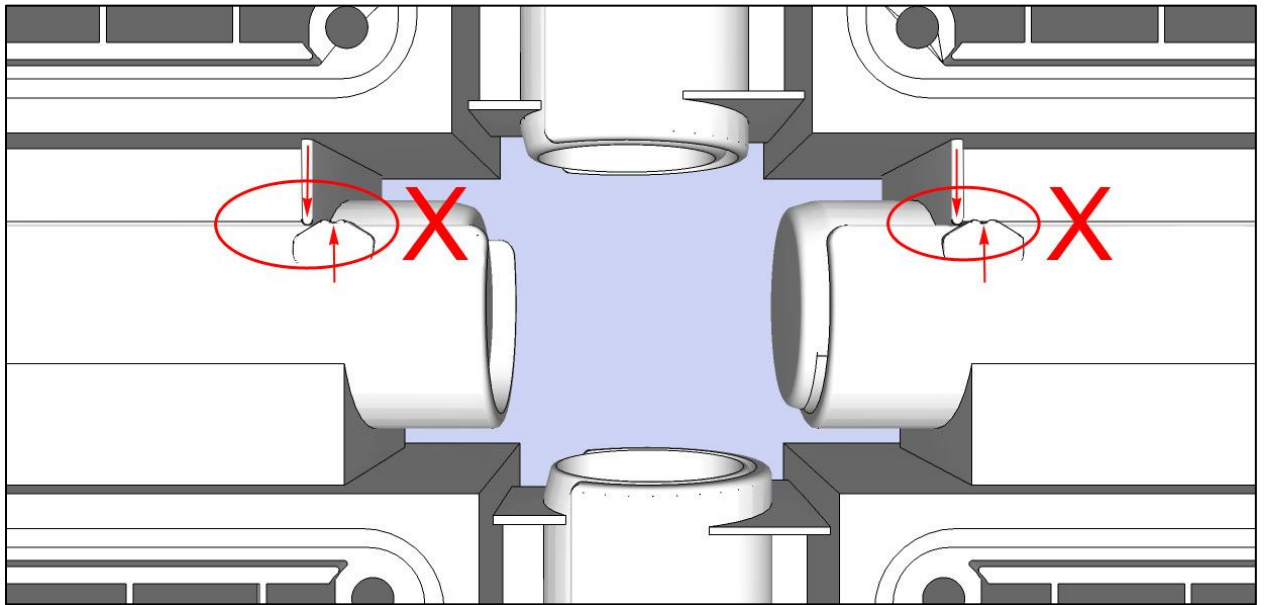
Step 15. Mark the 4 drill holes

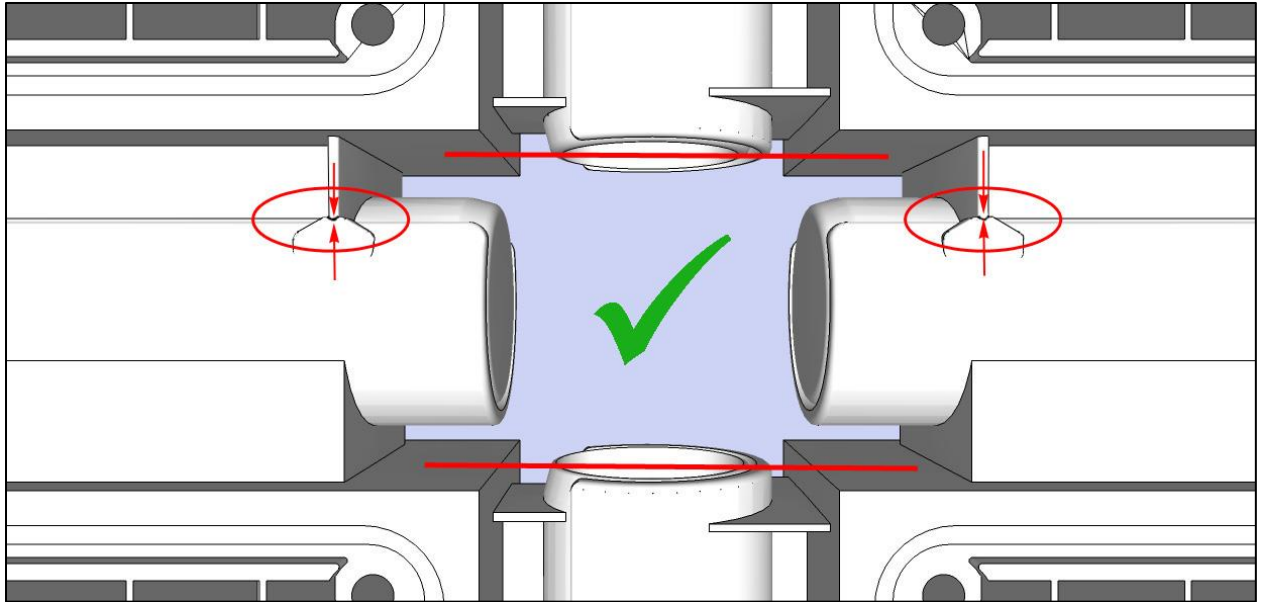
Step 16. Repeat steps 9 - 13

Step 17. Once the bottom two panes are installed, slide the next two above in place



Step 18. Make sure the alignment clips are in place

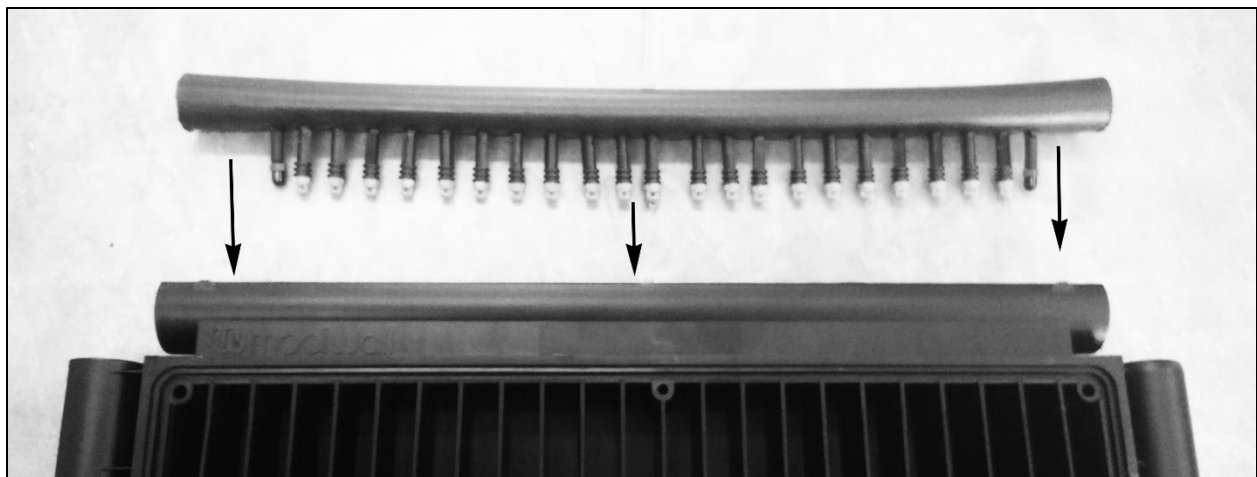




Step 19. Mark the drill holes

Step 20. Repeat steps 9-13

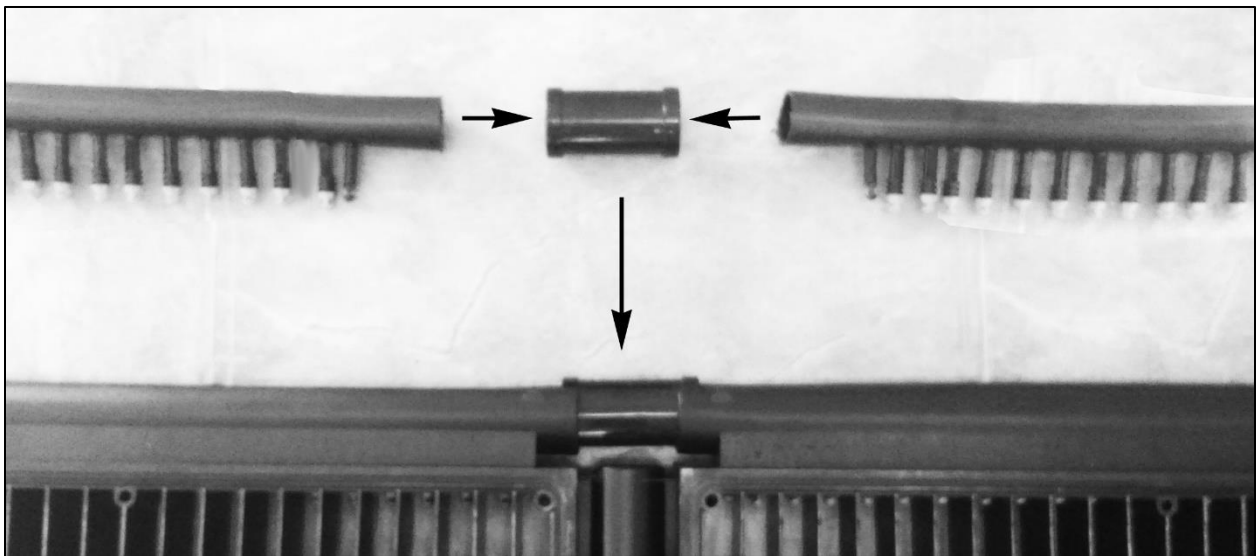
Step 21. Insert the feeder pipes (the pipes with sprayer nozzles) into the top two panels



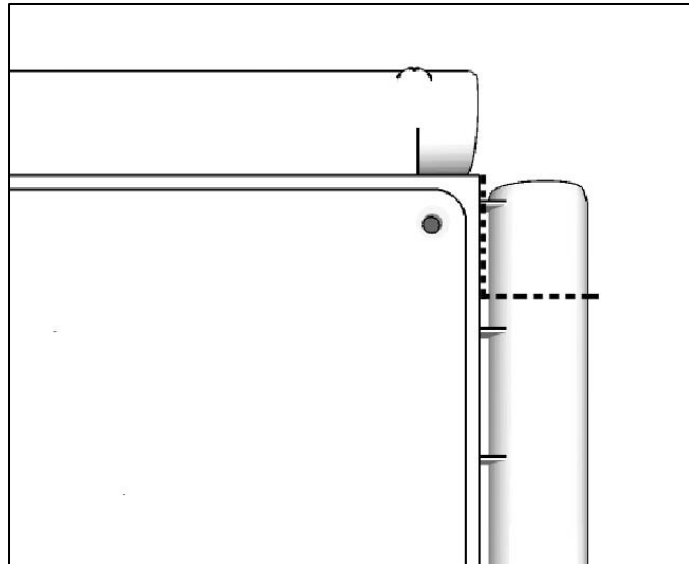
Make sure the nozzles are lined-up with the holes



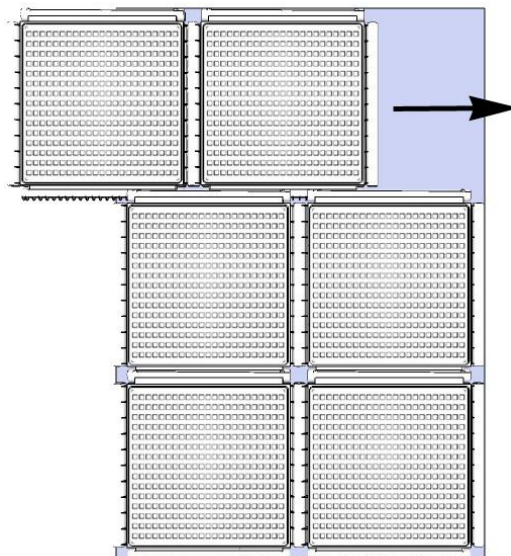
Step 22. Join the pipes with the full-flow/insert coupling



- Step 23. Before fastening the top panels, use a hacksaw to cut a small piece of the top right hand corner. This is to make space for the elbow so that it will look neat at the end



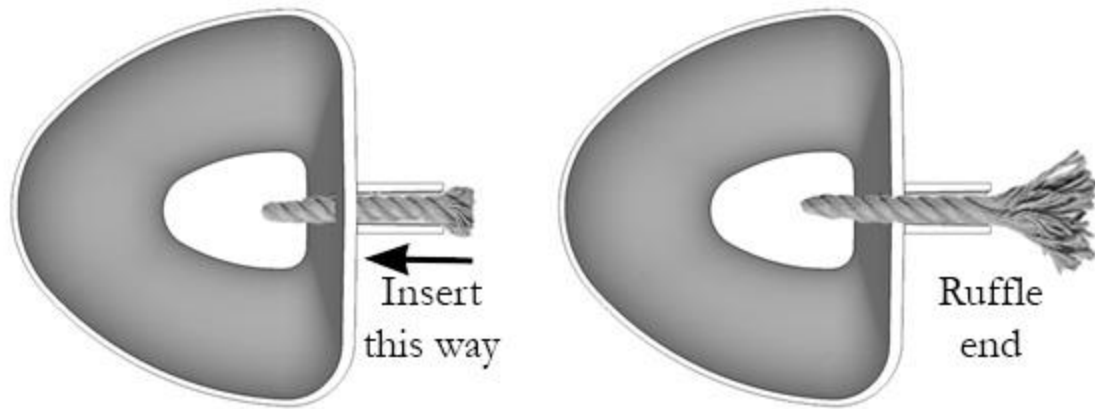
- Step 24. Slide in the last 2 panels



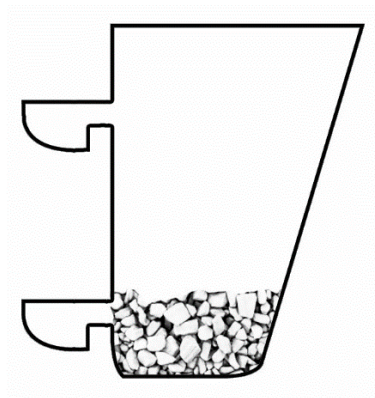
- Step 25. Repeat steps 9 – 13

- Step 26. Cut the provided rope into 10-12cm strips. Remove the white inside and discard

- Step 27. Insert the 'wicks' into the pots before the plants are inserted. It must protrude at least 2cm out from the pot clip. Ruffle up the end for better water absorption

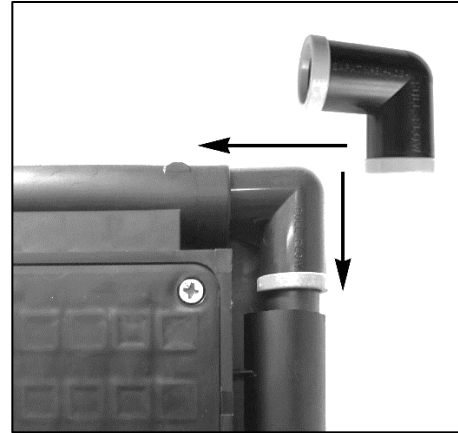
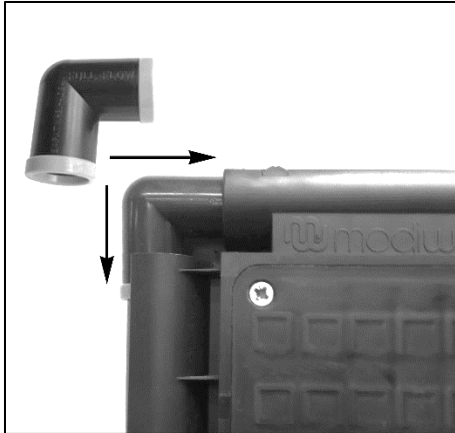


- Step 28. Optional: Use a star point screw driver to pop out the hole in the bottom of the pot. This is to ensure proper drainage and water will drip into the other pots rather than go back into the system. Recommended for outdoor installations
- Step 29. Add a few small stones to the bottom of the pot up to the level of bottom hole of pot for better drainage



- Step 30. Plant the plants – If you bought pre planted plants, don't remove the soil they are in. Plant them as is. Leave some space in the rim of the pot for water to accumulate and seep into the soil

Step 31. Now connect the full-flow elbows to the top feeder pipe, pointing down



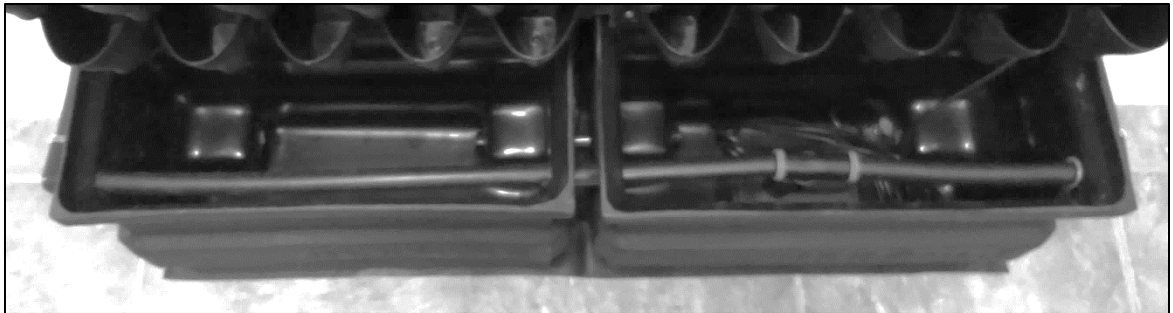
Step 32. Connect the two down pipes to the elbows, making sure they are hidden inside the male and female parts of the panels

Step 33. Connect elbows to the bottom of the down pipes, pointing them inward toward the water reservoir and then another toward the pump in the water tanks

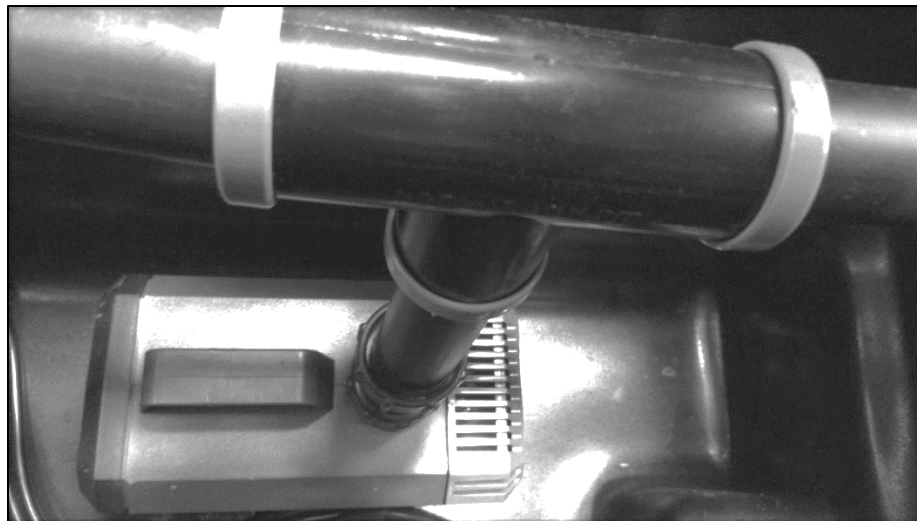




Step 34. Connect the T-full flow connector in the middle of the water tank, pointing the T downwards



Step 35. Connect the final piece of pipe to the pump



Step 36. Fill up the water reservoir

Step 37. Plug pump into the timer

Step 38. Set timer according to manufacturer's instruction

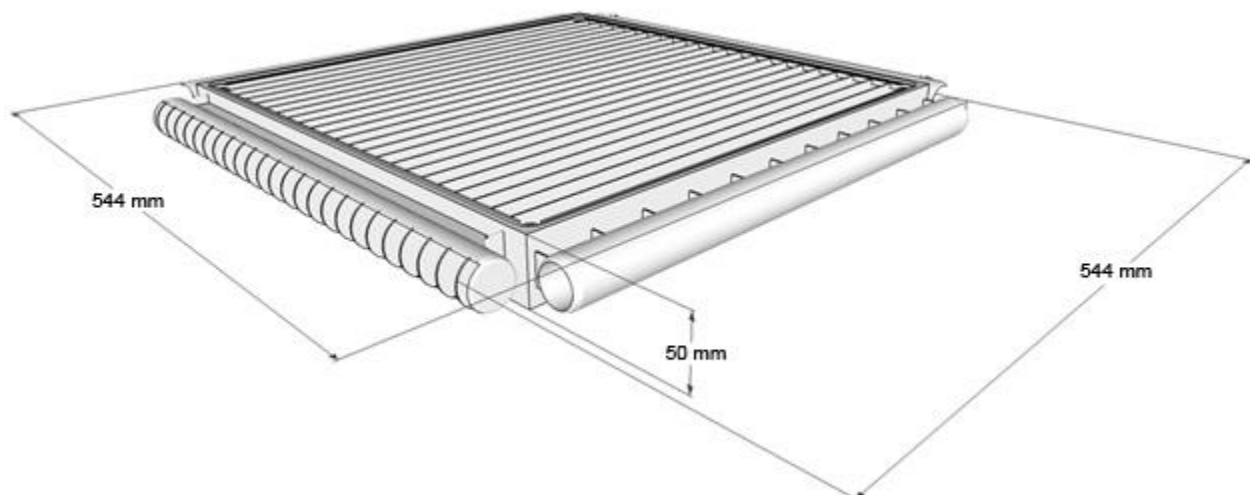
- The amount of water your system will need will vary
- In the summer it is recommended to switch on the water flow twice a day for about 5-10 minutes (if outdoors), and 2-5 minutes indoors
- In the winter set the timer to every second day, 5-15 minutes
- It is important to check that all the plants get sufficient water. And also that they have sufficient time to breathe in between watering (let the soil become moist, but never completely dry)
- If you find certain pots get too saturated, remove plant and add a few small stones to the pot for better drainage



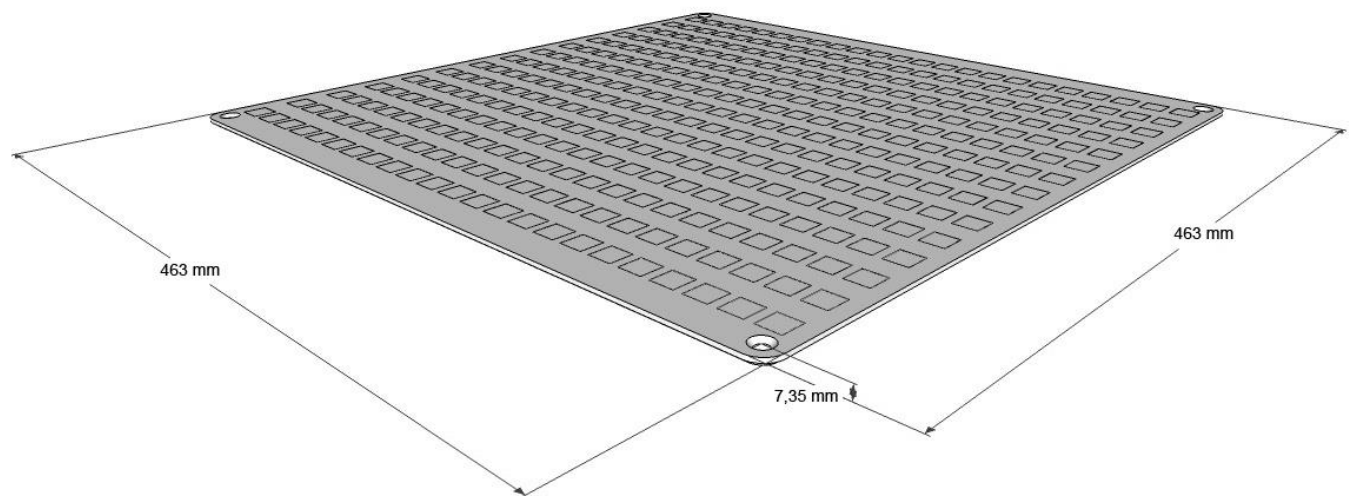
Tip: If using pre-planted plants, insert the pots starting at the top row, and working your way down from there

Technical specifications

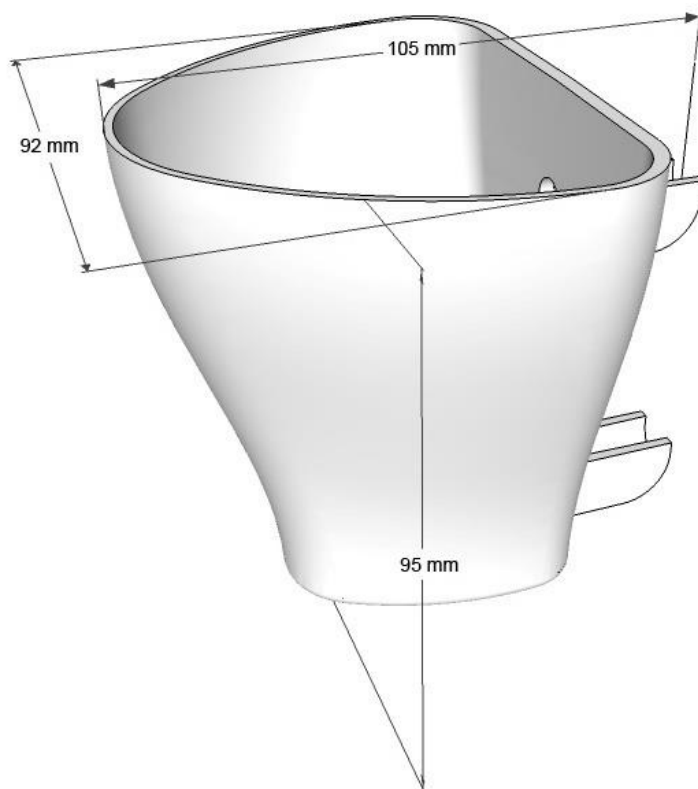
Panel dimensions



Front panel dimensions

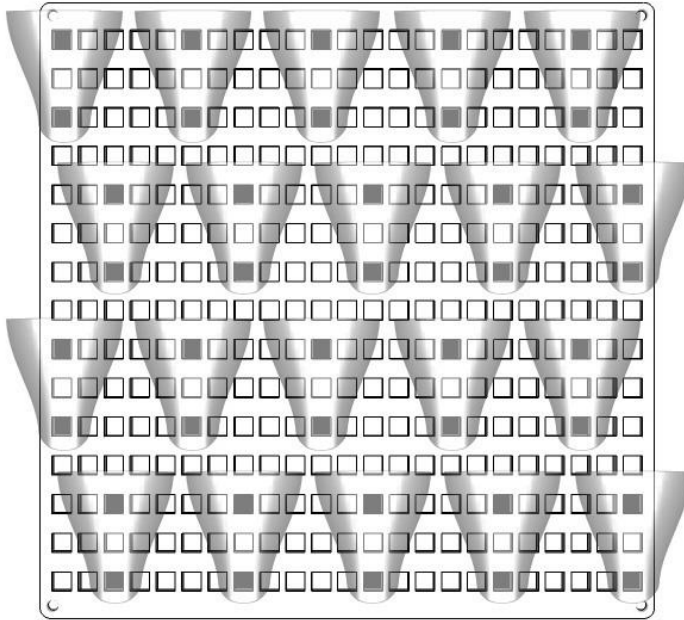


Clip pot dimensions



Ideal layout, for maximum amount of pots/plants (20 per panel)

5 Pots horizontally, 4 Pots vertically



Maintenance

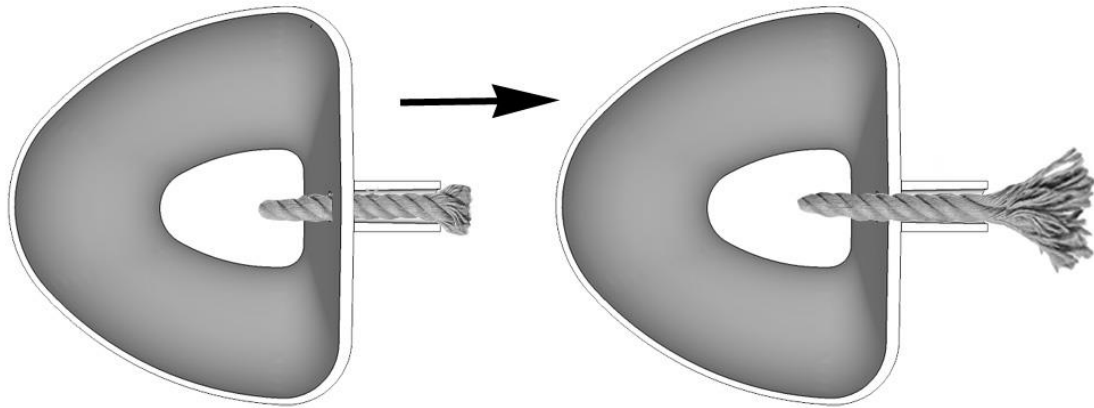
These are general instructions for the maintenance of the Modivall system

- For the first few days to 2 weeks, it is very important to monitor the system and plants on a daily basis. Look that the soil of all the pots are all moist. If not, see the Trouble Shooting section. Look if the type of soil is being sufficiently watered. Once you have established that all the pots get watered, and the plants are happy, you will have a stress-free system for some time to come
- It is vital to keep the water tank levels the same. Check every day to see what kind of a loss of water occurs, and fill up accordingly. Failure to do so might lead to pump seizure and dead plants
- The pump cannot and should not run without water pumping through it
- Flush out all the water at least once a month, and replace with fresh water. Clean the empty tank from any debris or algae that might have accumulated. This is to keep the plants healthy. One sick plant can affect all the rest if water is not kept fresh
- Fertilize water regularly with water soluble fertilizer, not normal fertilizer. This will keep your plants growing healthily. Speak to your local nursery to find out which will work best with the type of plants you want to grow in your system

Troubleshooting

These are solutions to possible problems that might occur with the Modinall system

- If a plant pot becomes dry and does not get sufficient moisture, remove the pot and pull out the wick a bit more. Unravel and ruffle it up for more surface area inside the panel until the pot gets sufficient moisture



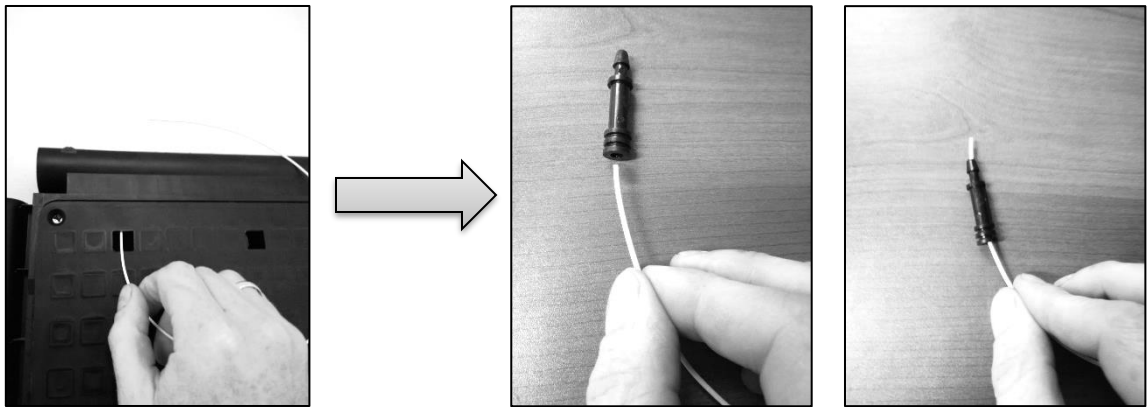
- If the pot gets too saturated and runs over the top, thus dripping out instead of running back into the panel, or dripping out the bottom to the next pot, use a piece of wire and stick it into the bottom hole and wiggle it around. This will loosen the soil allowing for better drainage. You can also add a few small stones to the bottom of the pot to allow for better drainage
- The Feeder Pipe doesn't want to fit: The nozzle of the feeder pipe doesn't seem to want to go in the top holes of the panel. Turn them around a bit until their sides are horizontal with the panel channels. Also, the holes in the top of the panel are narrower to the back, and broader to the front. Insert the nozzle more to the front of the hole and it should slip right in
- If you suspect that one of the nozzles is blocked (The pot in the top or second row is dry), remove the pot, and check if there is water flowing while the pump is running. You can pop your finger in the hole and see if it gets wet. If there is no water the nozzle might need unblocking.

Continued on the next page..

View of the nozzle through the hole



Use a piece of wire and clear the blockage in the nozzle, through the hole in the panel. Below is a picture of what the nozzle looks like, and how deep the wire needs to go to unclog the nozzle



Alternatively, the whole feeder pipe can be lifted up and blockages can be cleared this way.

