

NFT, 3 Tray, Cable Kit

User Manual v2.0

Items/Parts Included in the Kit

Item	Description	Qty
1	Trays	3
2	Bolts and Cables Kit	1
3	Submersible pump	1
4	Piping Kit & Connectors	1
5	Net Pots	30
6	Air pump	1
7	Air Stone	1
8	Silicone Tubing	1
9	Reservoir	1
10	LECA 4 kg	1
11	User Manual	1
13	Bio Balls 2kg	1
14	Cable ties pack	1
15	Wall Bracket Assembly	1

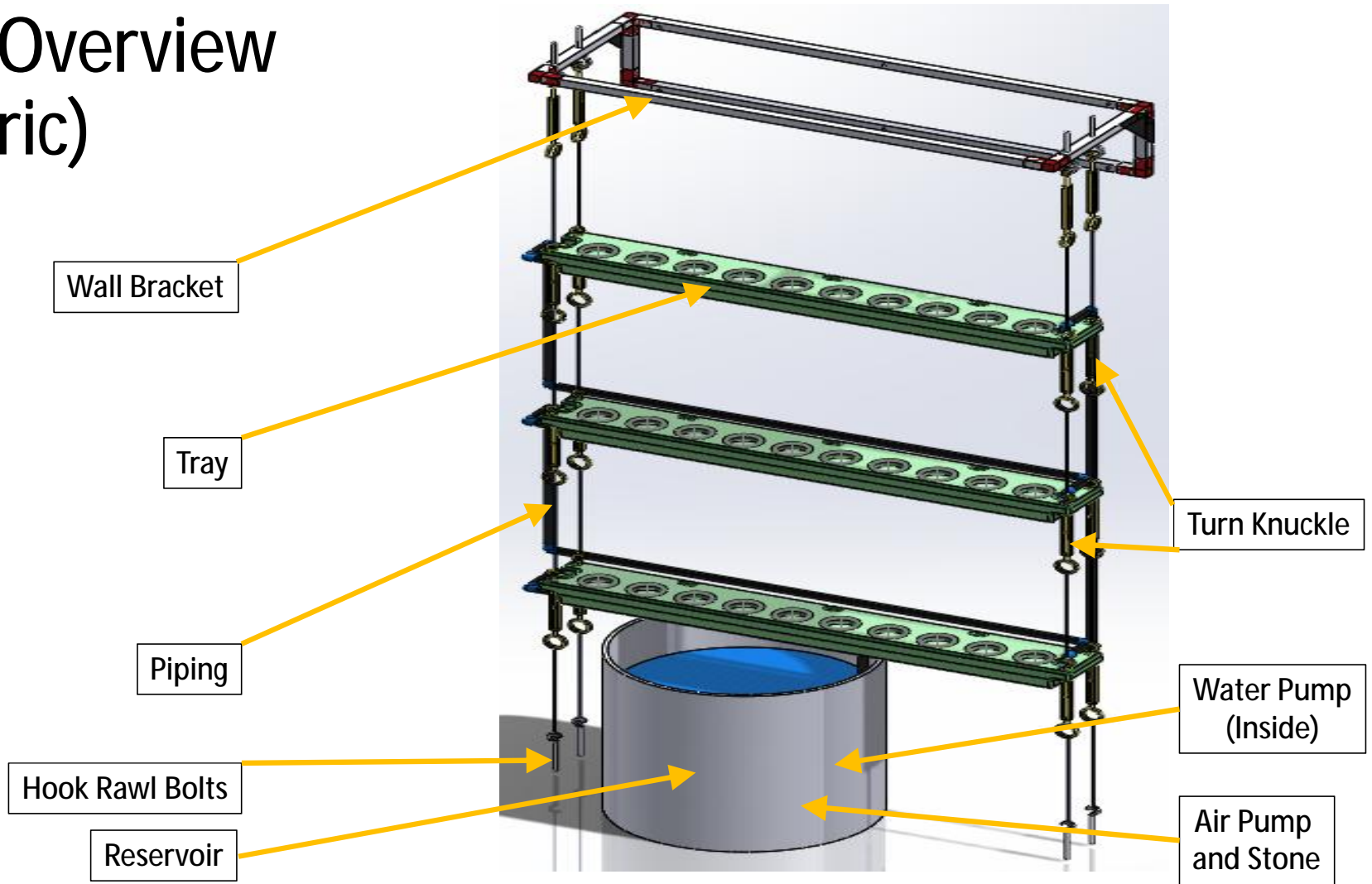
Bolts and Cables Kit

Item	Description	Qty
1	Cable 2.5m 3mm PVC Coated	1
2	Tension Knuckle m8	16
3	Nuts m8	16
4	Washers m8 30mm 2mm	32
5	Eye Bolts m8	4
6	Kabel lock ties	8
7	Hilties 8 mm	6
8	Hook Rawl Bolts m8	4

Pipe and Connectors Kit

Item	Description	Size	Qty
1	Pipe Roll 10m	20mm ID	1
2	T-piece	20mm	1
3	Flow control	20mm	1
4	Elbow (screw)	20mm	3
5	Straight connector (screw)	12mm	3
6	Elbow	20mm	15

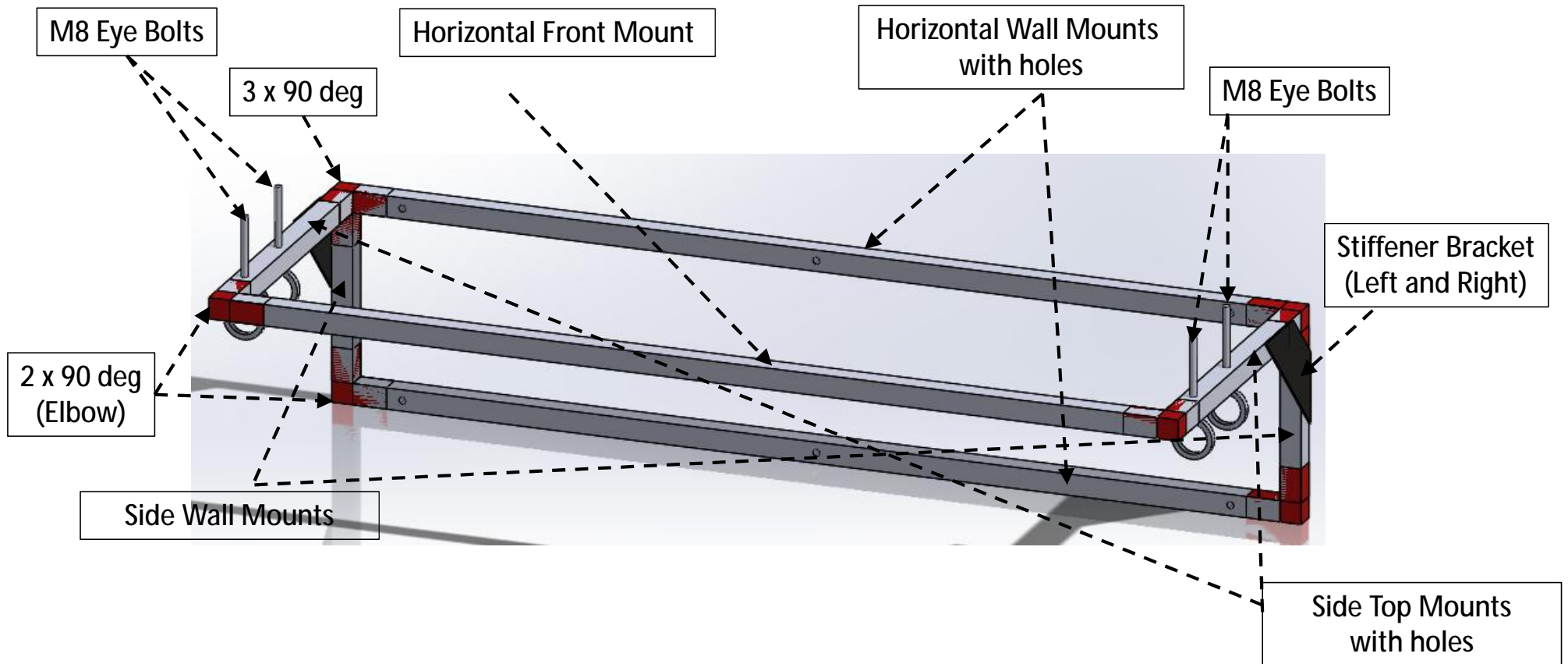
System Overview (Isometric)



Installation Steps

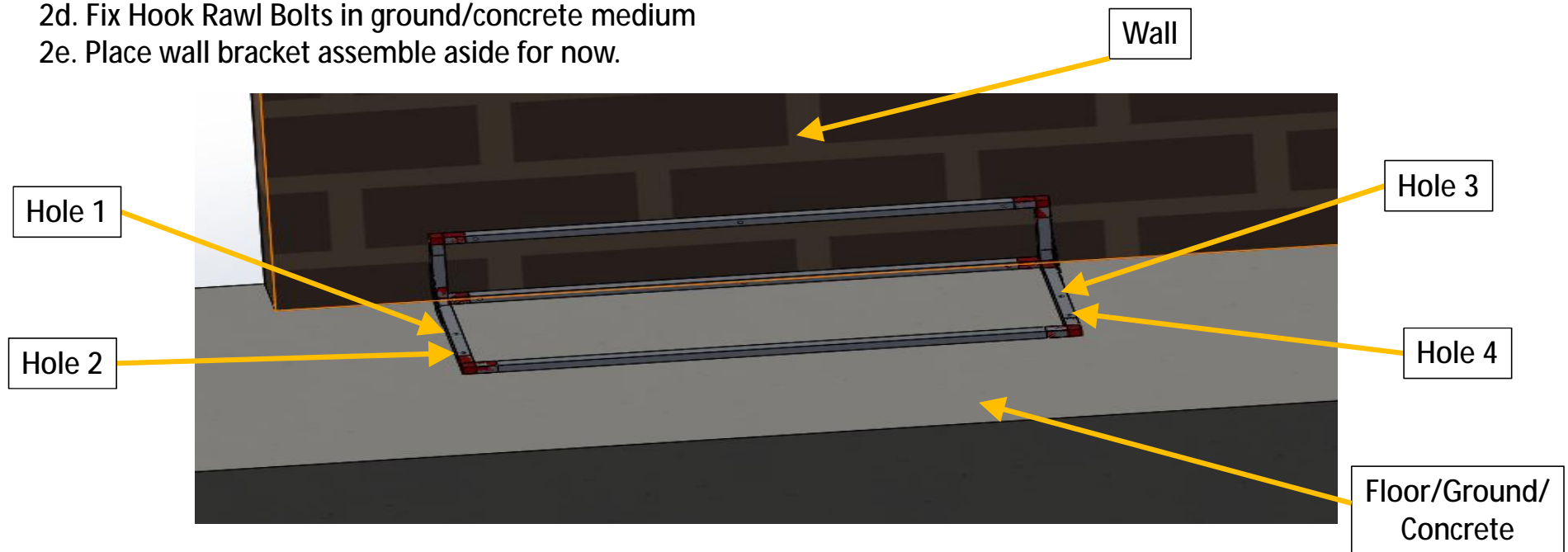
- Step 1 - Wall Bracket
- Step 2 - Ground Positioning
- Step 3 - Tray Stacking
- Step 4 - Fixture of Wall Bracket
- Step 5 - Hanging System and Levelling
- Step 6 - Piping
- Step 7 - Pumps

Step 1 : Wall Bracket (Isometric)



Step 2 : Ground Assembly/Preparation

- 2a. Place Wall bracket upside down against the floor and wall (No spaces between bracket or floor/ground)
- 2b. Mark positions on ground through existing holes to drill holes for Hook Rawl Bolts
(Shown with Yellow arrows)
- 2c. Drill 4 holes as deep as Hook Rawl Bolt requires.
- 2d. Fix Hook Rawl Bolts in ground/concrete medium
- 2e. Place wall bracket assemble aside for now.



Step 3a : Tray Stacking

3a. Identify the following items



4 x Tension Knuckle
Long Cables
(± 600mm)



X 8 Tension Knuckle
Shorter Cables
(± 300mm)

Other:

- M8 Washers
- M8 Nuts
- Trays

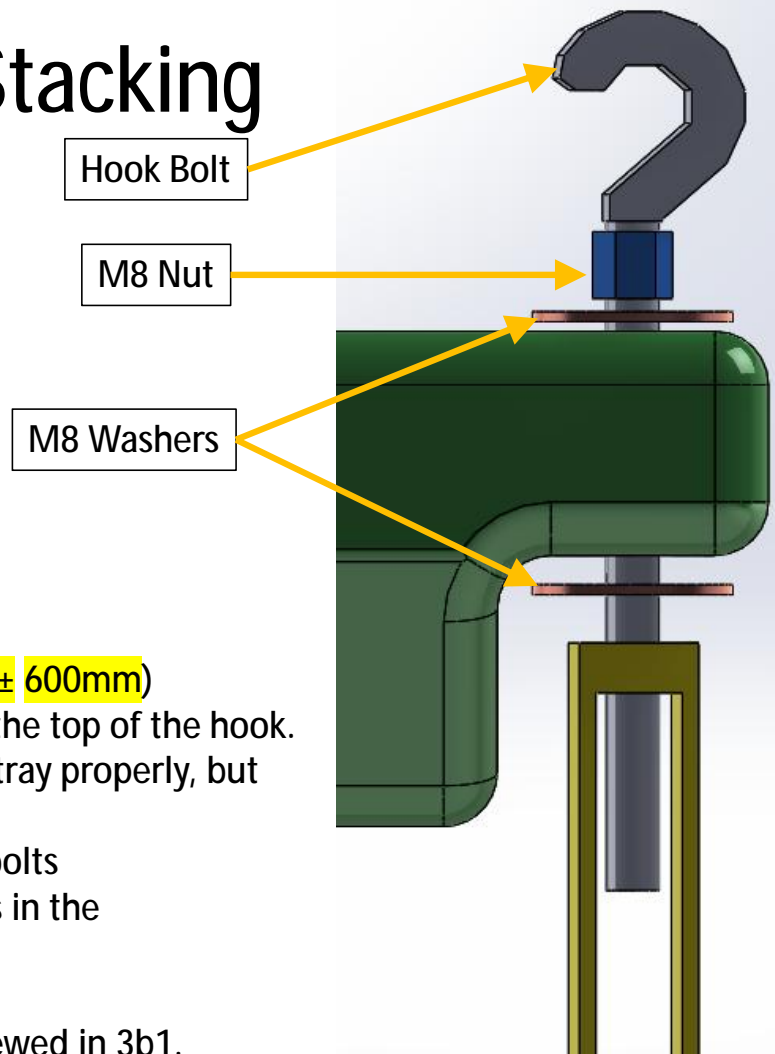
Step 3b : Tray Stacking

Required Items :

4 x Tension Knuckle
Long Cables
(± 600mm)

Other:

- 8 x M8 Washers
- 4 x M8 Nuts



3b. Assemble Bottom Tray

3b1. Unscrew the hook bolt of the 4 tension knuckles cable assembly (± 600mm)

3b2. Screw in a M8 nut into each hook bolt to the top until it reaches the top of the hook.
(After levelling this nut can be screwed down to clamp down the tray properly, but only after levelling of the total system in step 5)

3b3. Place a M8 washer into a hook bolt below the nut for all 4 hook bolts

3b4. Place the 4 hook bolt assemblies through the tray assembly holes in the 4 corners of the tray

3b5. Place a washer below the tray onto each hook bolt assembly.

3b6. Screw in the remaining tension knuckle assembly that was unscrewed in 3b1.

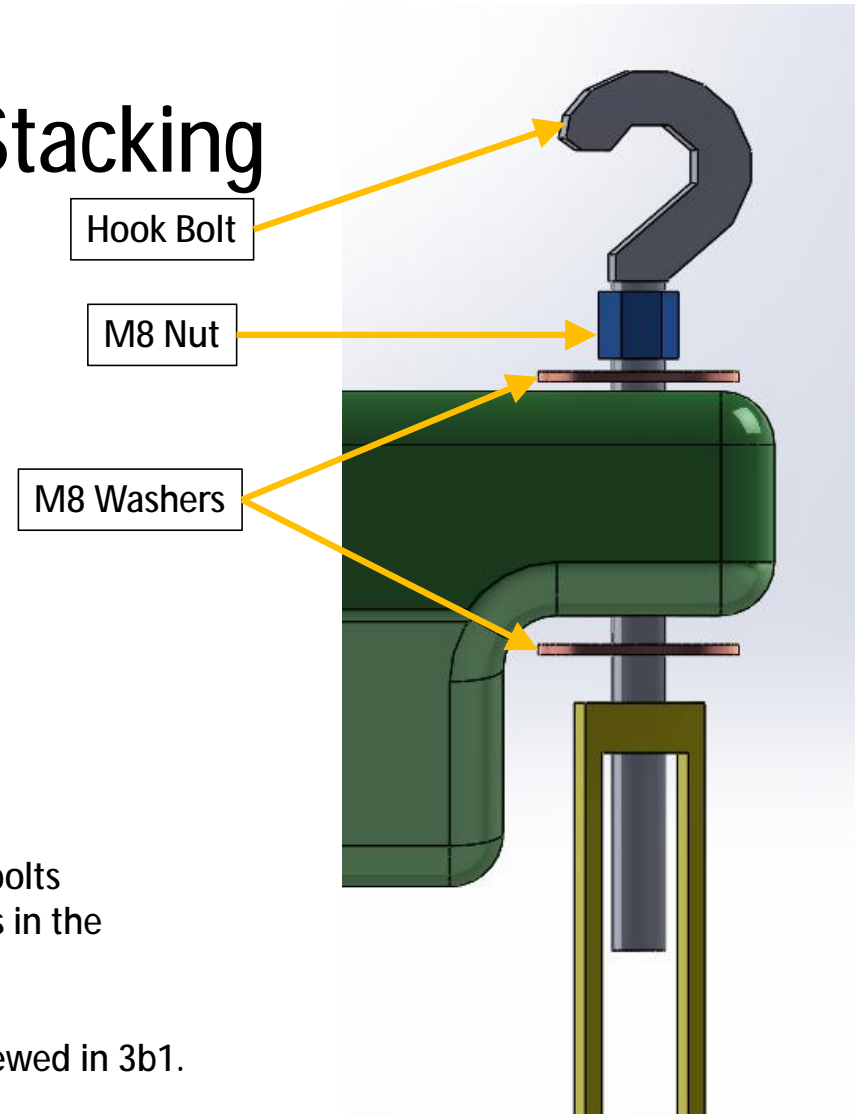
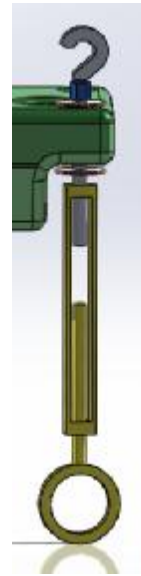
Step 3c : Tray Stacking

Required Items :

X 8 Tension Knuckle
Shorter Cables
(± 300mm)

Other:

- 16 x M8 Washers
- 8 x M8 Nuts



3c. Assemble Middle and Top Tray (Explained per tray)

(The only difference to step 3b is the length of the cable)

3c1. Unscrew the hook bolt of the 4 tension knuckles

3c2. Screw in a M8 nut into each hook bolt

3c3. Place a M8 washer into a hook bolt below the nut for all 4 hook bolts

3c4. Place the 4 hook bolt assemblies through the tray assembly holes in the 4 corners of the tray

3c5. Place a washer below the tray onto each hook bolt assembly.

3c6. Screw in the remaining tension knuckle assembly that was unscrewed in 3b1.

3c7. Do steps 3c1 to 3c6 again for remaining tray

Step 3c : Tray Stacking

Required Items :

Other:

- Assembled trays with turn knuckles and cables as done in previous steps

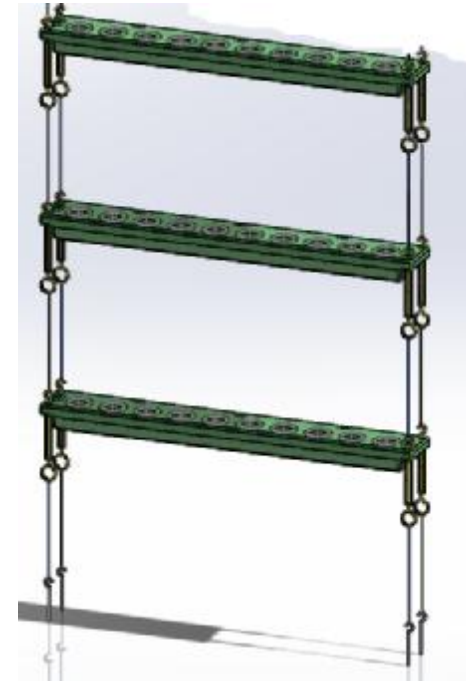
3d. Assemble all trays in one cable assembly

3d1. Take the bottom tray with **±600mm** cable assembly and hook the bottom of the cables with eye loop into the respective hook rawl bolts already installed in step 2

3d2. Take the middle tray and hook the cables eye loops into the respective hook bolts of the bottom tray.

3d3. Take the top tray and hook the cables eye loops into the respective hook bolts of the middle tray.

3d3. Place the assembly on the ground for now as we still need to connect the cables fixing to the wall mount bracket.



Step 4a : Fixture of Wall Bracket

4a. Identify the following items



X 4

Other:

- M8 Washers
- M8 Nuts
- 4 x Eye Bolts
- 8 x Cable Clamps
- Cable Roll
- Wall Bracket Assembly
- Tray Stack
- 6 Wall Bolts (Hilties/Fischers/Plugs)

Step 4b : Fixture of Wall Bracket

Required Items :



X 4

Other:

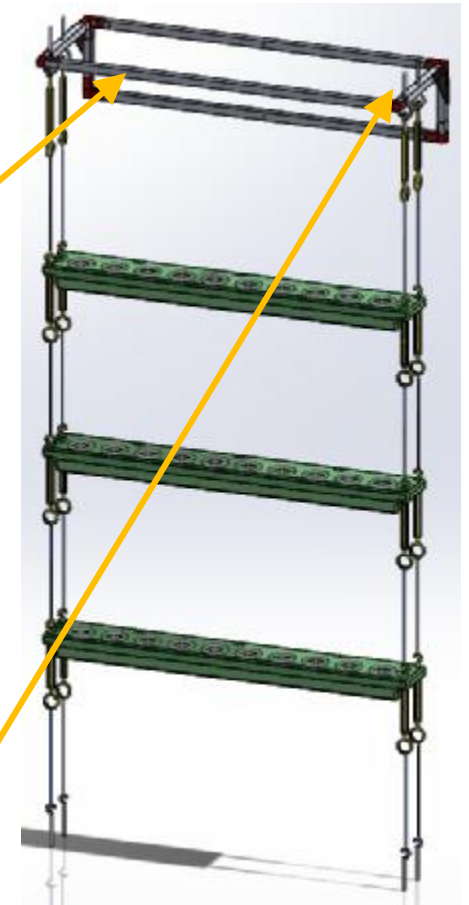
- 8 x M8 Washers
- 4 x M8 Nuts
- 4 x Eye Bolts
- 8 x Cable Clamps
- Cable Roll
- Wall Bracket Assembly
- Tray Stack
- 6 Wall Bolts (Hilties/Fischers/Plugs)

4b. Connecting the Tray Assembly with the Wall Bracket Assembly

4b1. Estimate a desirable height to fix the wall bracket to the wall, keeping in mind that the last connection will be a 4 cable connection between the top tray and the wall bracket as shown in the sketch. Also estimate the height based on the length of the cable roll supplied. (Leave some space for the tension knuckles to be twisted)

4b2. Fix the wall bracket to the wall, making sure that the wall bracket holes are in line with the holes made in step 2. If these holes are not vertically aligned the assembly will hang skew which is not desirable.

4b3. Screw in the 4 x M8 eye bolts into the wall bracket assembly with nuts and washers as is desirable.



Step 4b : Fixture of Wall Bracket

4b4. Take the 4 x M8 tension knuckles (without cables attached to them) and hang them on the eye bolts installed in step 4b3.

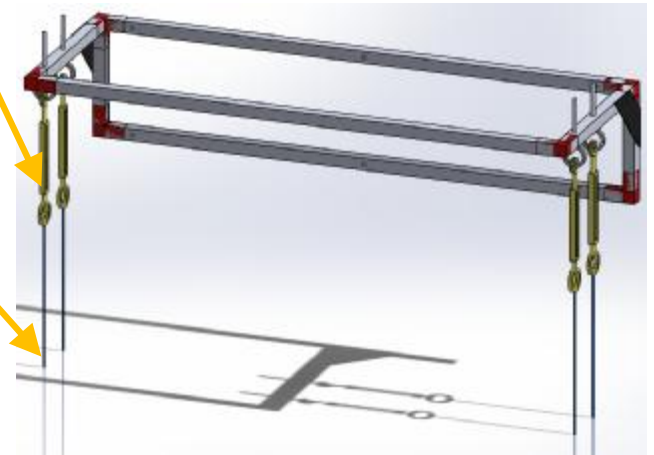
4b5. Take the cable roll and cut 4 equal length cables from the cable roll based on the estimation you made earlier with regards to the wall bracket assembly fixture height in step 4b1.

4b6. Repeat this step 4 times for each cable.

Take a cable clamp and place one cable through it and through one eye bolt part of one turn knuckle that was hanged in step 4b4. Loop it through and return the cable through the cable clamp and tighten the clamp. Now do the other 3 as well.

4b7. Repeat this step 4 times for each cable.

Now take the opposite side of the 4 cut cables you just worked on and loop the end with a cable clamp. Make sure you work as accurate as possible as you want the 4 cables to be as equal as possible length wise, after the loop. (If you don't get it equal the first time, you can adjust it again after the total assembly is hung, it is as easy as that)



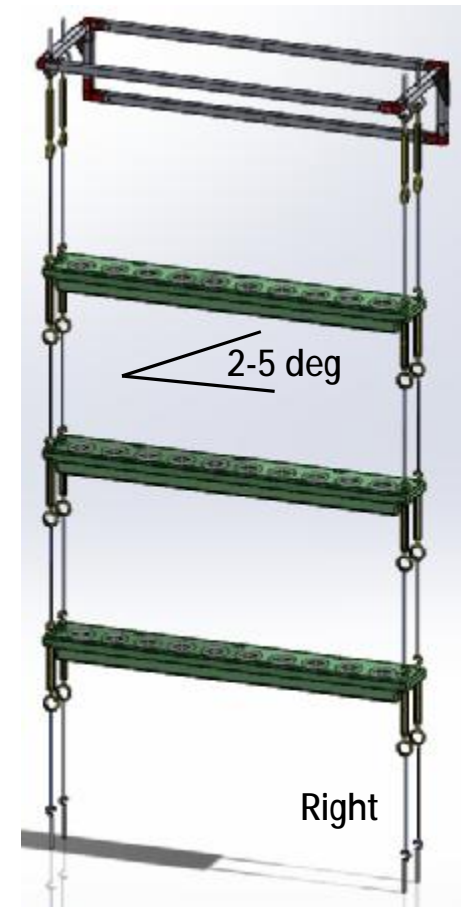
Step 5 : Hanging System Completed and Levelling

5a Take the Tray Stack Assembly and use the top tray hook bolts and hook them onto the loops created in step 4b7.

5b This part assumes that you have assembled the wall bracket assembly level, by either using a spirit level or like some other people with exceptional eye coordination.

5c. Start by tensioning all the turn knuckles in an equal displacement distance as far as is possible for your setup. PLEASE DO NOT TENSION THE CABLES AS IF YOU ARE A POWER LIFTER. A gentle amount of positive tension is required and is enough.

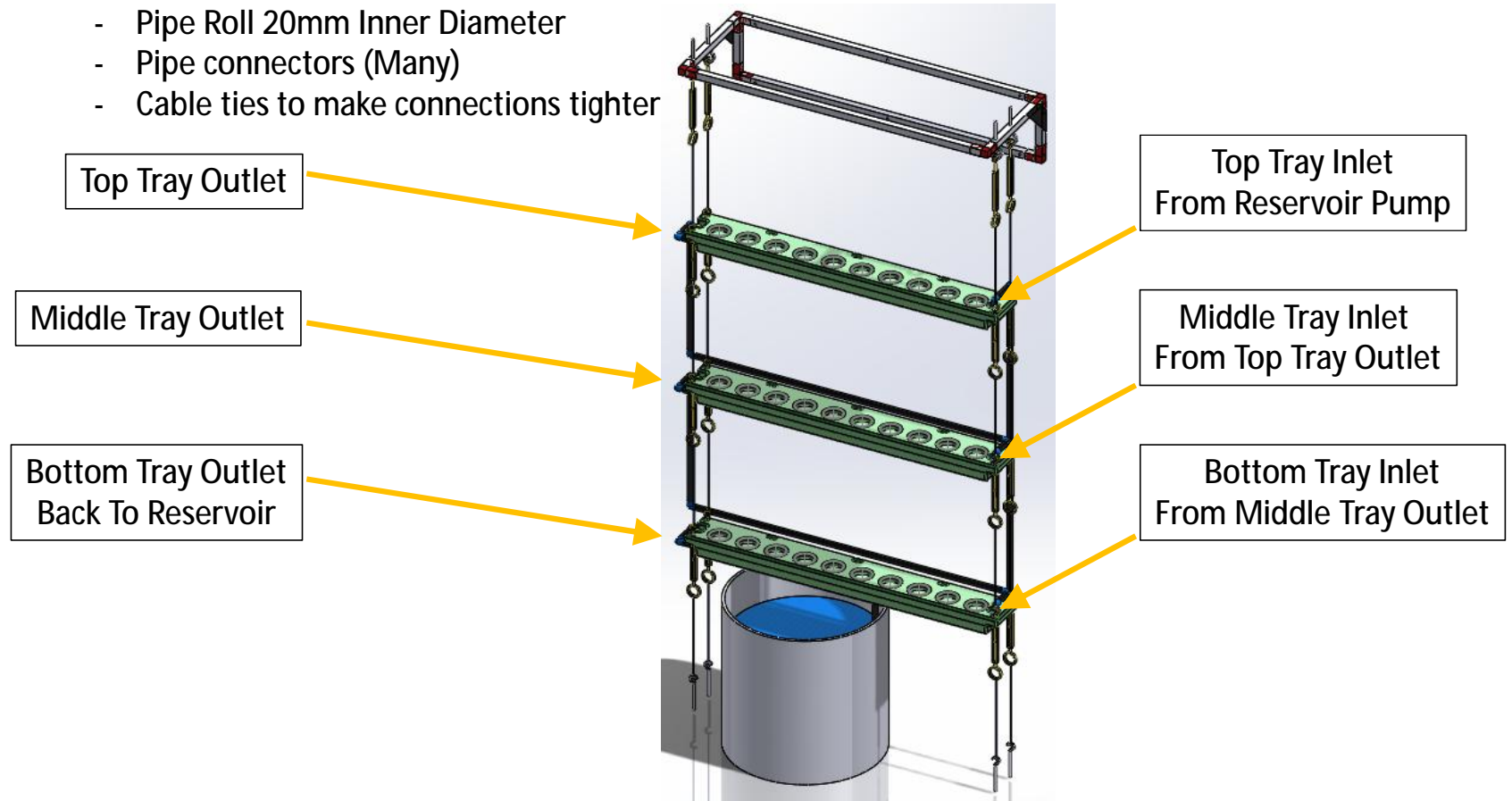
5d. This system uses NFT (Nutrient Film Technique) which focus on constant flow of water using gravity. Therefore the trays need to be aligned with a slight angle from right to left. The right side has the inlet and the left side has the outlet. With the individual turn knuckles it is possible to achieve levelling for each individual tray. Start at the top tray and setup an angle of about 2-5deg from right to left. It is recommended to first level all trays laterally (width wise) before levelling longitudinally (length wise). After the top tray, setup the middle tray and then the bottom tray.



Step 6a : General Piping

Required Items : Other:

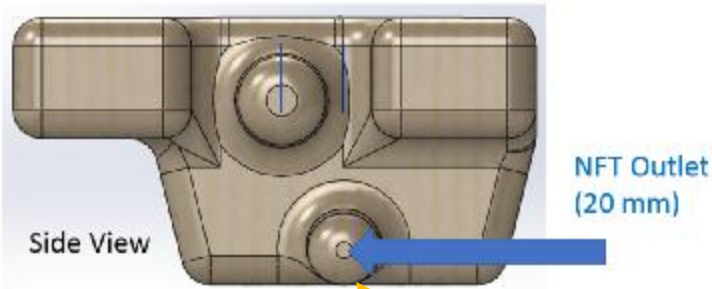
- Pipe Roll 20mm Inner Diameter
- Pipe connectors (Many)
- Cable ties to make connections tighter



Step 6b : Outlet/Inlet Piping

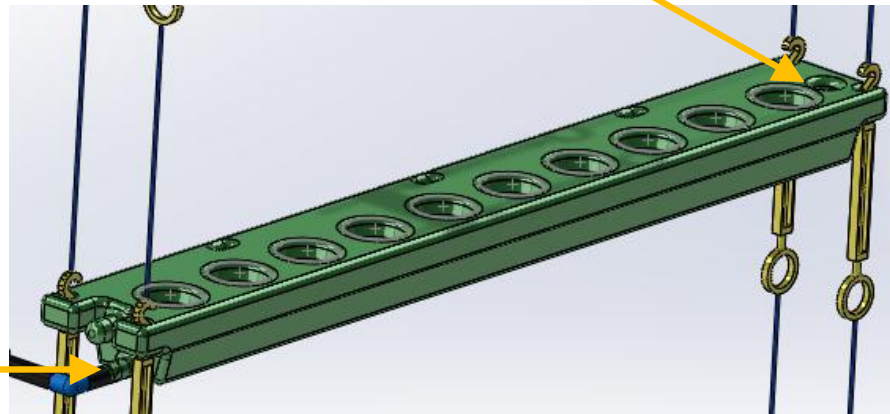
Required Items :

Other:



Tray Outlet

NFT Tray Inlet
Special Customised 90 Deg Connector
(Included in Kit)
Identifiable by a 20mm elbow with screw end
And a second part straight screw in 10mm nozzle

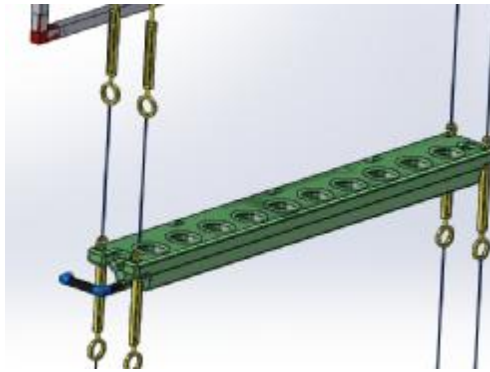


Step 6c : General Piping First Steps

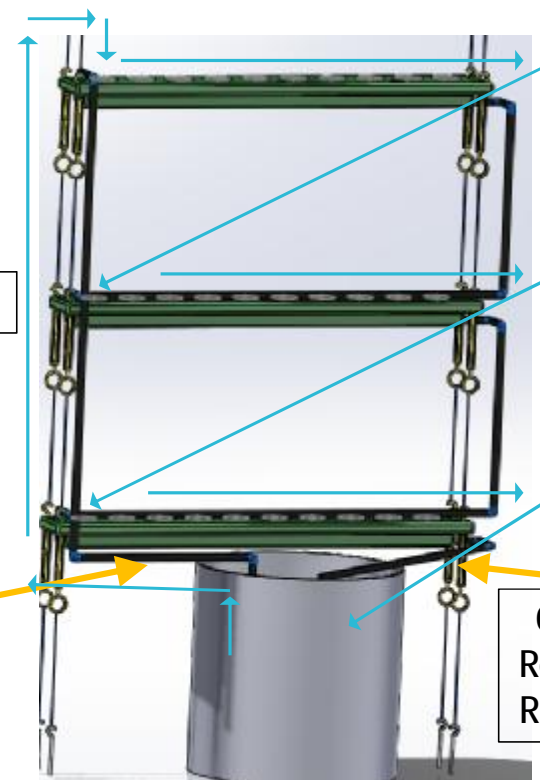
Connection 1



Connection 2



Back View Of Assembly For Piping



Special Back To Reservoir Pipe Connection



Connections

Inlet/Feeding Pipe Directly to Top Tray Inlet

Outlet/Return to Reservoir

Step 7 : Pumps

7a. Identify the following items

Other:

- Submersible Pump
- Air Pump and Air Stone
- Silicone Tubing for Air Pump
- Pipe Roll 20mm Inner Diameter (ID)
(Left over from piping general)
- 20mm T-piece connector
- 20mm Flow Control connector

7a Air Pump, Air Stone and Silicone Air Tube is a straight forward connection.
Make the relevant connections and place the air stone in the reservoir.

7b Cut a short length of 20mm ID pipe from the roll of length 75mm to 150mm at your own preference. Cut another piece of plus minus the same length. Assemble these pieces as in the sketch.

7c. Place the submersible pump in the reservoir. Connect the inlet of the assembly to the pump outlet. Connect the assembly outlet to the system inlet pipe that goes all the way to the inlet of the top tray.

7d. Adjust the pump settings according to your preferences. (hourly flow, level of water in tray ... etc). Also use the Flow Control Valve to make adjustments.

