

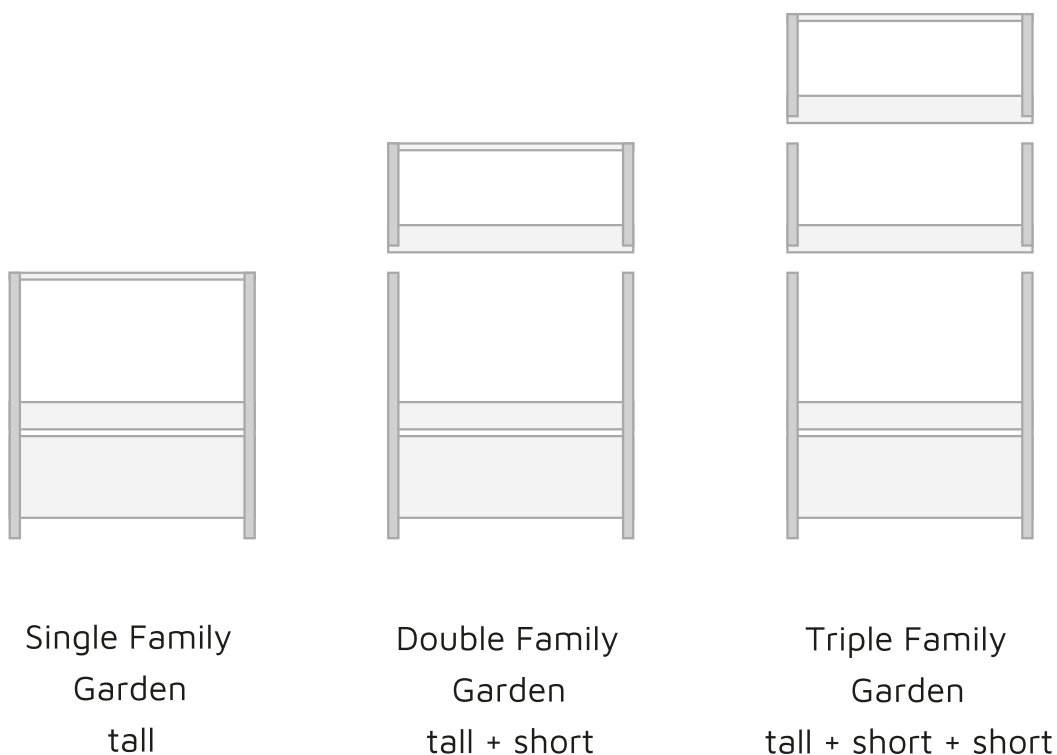
FAMILY GARDEN

User manual
V8
(1, 2 & 3 levels)

Welcome to the Rise Family!

Rise Gardens is committed to providing the right indoor garden for your space and gardening ambitions. Our modular and versatile system provides a wide range of configurations. You can choose to build your garden (or later grow your garden) as a one-level, two-level, or three-level garden by combining the base garden with extension modules.

Your bottom level, which is taller than each additional level, is best for growing large plants like Tomatoes and Peppers. Your additional levels are closer to the lights and are best for Herbs and Greens.



WARNING: Never add a fourth level to your Garden as it will become unstable and risk tipping.

Table of contents

1. Intro

1. Know your Garden
2. What's in my box?

4. Assembly Manual

4. Before You Begin
5. Assemble Structure
12. Connect Electronics
15. Assemble Plumbing
21. Power On!

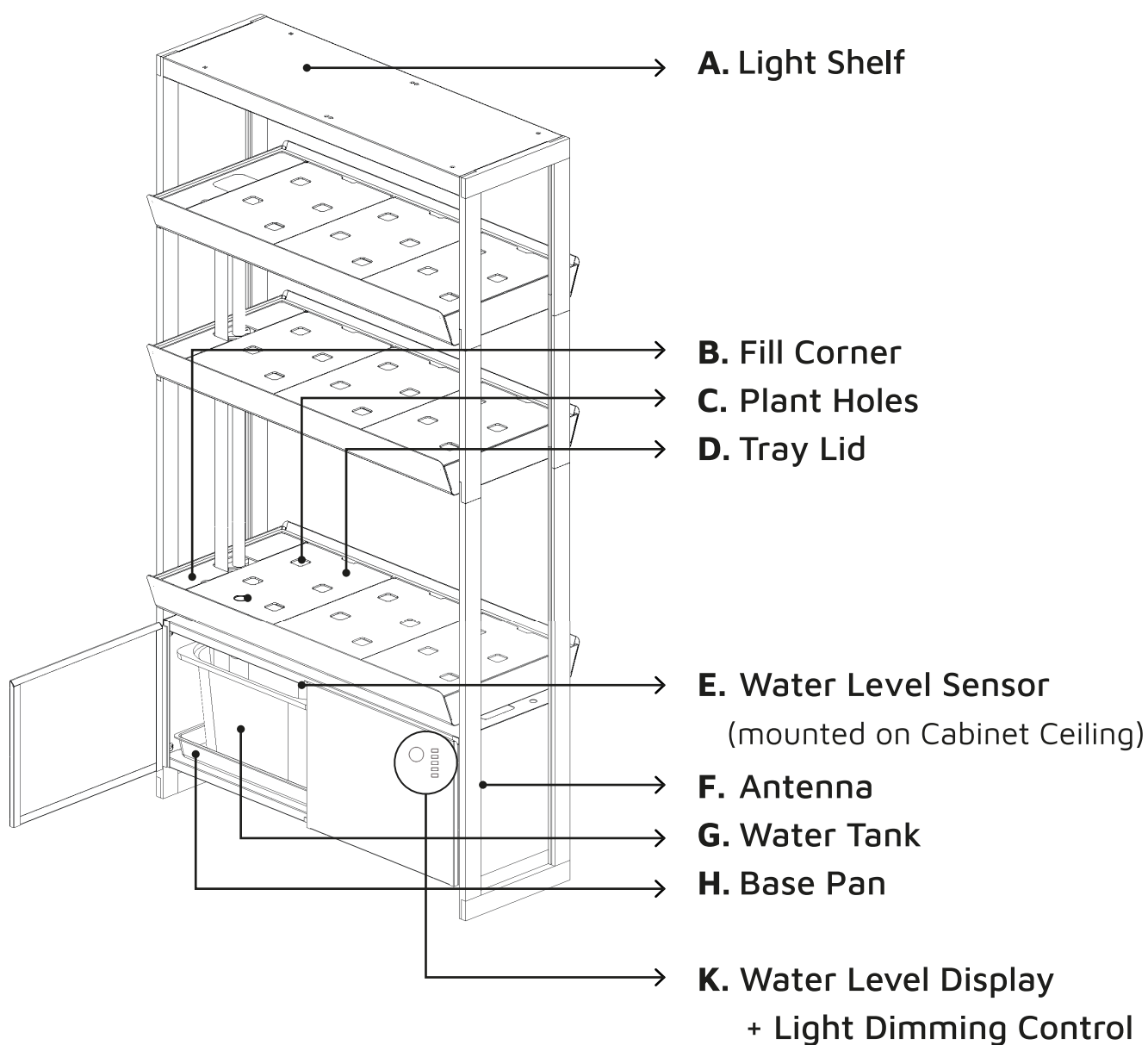
24. Quick Start

25. Application
26. WiFi Troubleshooting
27. Quick Start Timeline
28. Plant Pods
28. Nutrients
29. The Nursery
29. Plant Growth

32. Learn More

33. Plant Spacing Guide
34. Nutrients
36. Hydroponics vs Soil
37. Water Quality for Hydroponics
39. Lights
40. Transplanting into Soil

Know your Garden



What is in my box?

BASE BOX

(largest box)

Components

- 1 Metal Cabinet
- 2 Wooden Base Upright Bottom
- 1 Metal Tray (White) Top Metal
- 1 Light Shelf
- 3 Plastic Tray Lids
- 1 Service Door
- 1 Power Supply
- 1 Small White and Gold Antenna
- 1 Water Pitcher

Plumbing

- 1 Water Tank
- 1 Water Pump Assembly with Cable
- 1 Plastic Base Pan
- 1 Plastic Water Tray (Black)
- 1 Supply Conduit (Clear, Rigid / Flexible)
- 1 Drain Conduit (Clear, Rigid / Flexible)
- 1 Flexible Supply Line with 90° Bend (28" long)

Extension Plumbing

ONLY USE IF YOU ARE BUILDING A 2 LEVEL GARDEN

1 TALL PLUMBING SET

- 1 Drain Pipe with 90° Elbow (Black)
- 1 Supply Pipe (Black)
- 1 Flexible Supply Line with Barb (20°)

1 SHORT PLUMBING SET

- 1 Drain Pipe with 90° Elbow (Black)
- 1 Supply Pipe (Black)
- 1 Flexible Supply Line with Barb (13°)

USE BOTH PLUMBING SETS IF YOU ARE BUILDING A 3 LEVEL GARDEN

Hardware

- 21 Screws
- 1 Allen Wrench
- 4 Woodgrain Light Cable Stickers

Extras

- 6 Hole Covers

What is in my box?

EXTENSION BOXES

(only if you purchased a 2 or 3 level Garden)

Hardware

- 9** Screws
- 1** Allen Wrench
- 4** Woodgrain Light Cable Stickers
- 1** Extra Supply Line Barb (only to add levels to your existing Garden)

Components

- 1** Metal Tray (White) with LED light panels
- 3** Plastic Tray Lids
- 1** Service Door with Cutout
- 4** Wooden Extensions
- 1** Plastic Water Tray (Black)

Extras

- 6** Hole Covers

STARTER KIT

Small boxes found inside your base and extension boxes that contain the following.

Accessories

- 16** Seed Pods
- 18** Net Cups
- 1** Nursery Kit
- 1** Sprout - Starter Nutrient
- 1** Thrive - Starter Nutrient
- 1** Starter pH
- 2** Water Hardness Test Strip

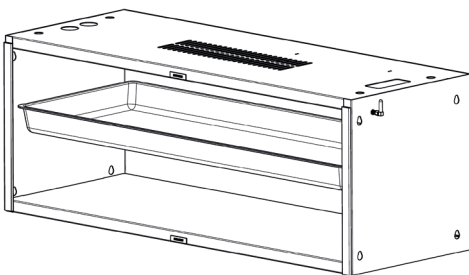
Before you begin!

- A** Remove all components from all boxes (Base & Extension) and confirm contents.
- B** **NOTE:** Be gentle when removing the items from inside your cabinet and water tank as there are electronics inside the cabinet.
- C** **NOTE:** If you are building a SINGLE FAMILY Garden, you will not use your Extension Plumbing. Save in case you wish to purchase an additional level in the future.
- D** **DO NOT PLUG IN GARDEN UNTIL ASSEMBLY IS COMPLETE!**

1. Remove base pan from cabinet

PARTS: CABINET, BASE PAN

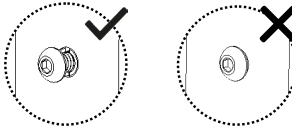
- A.** Remove the black plastic Base Pan from the top of the cabinet.



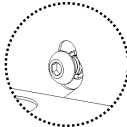
2. Attach Uprights to Cabinet

PARTS: CABINET, BASE UPRIGHTS, SCREWS (8)

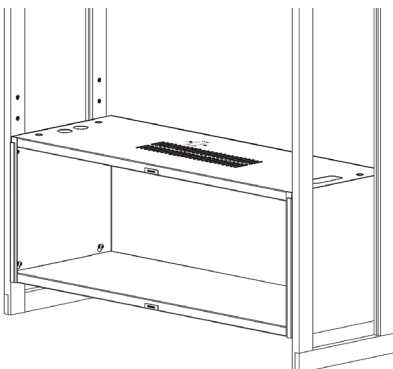
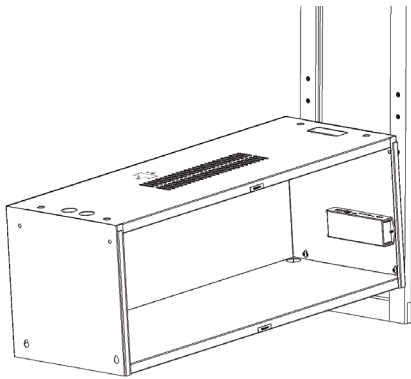
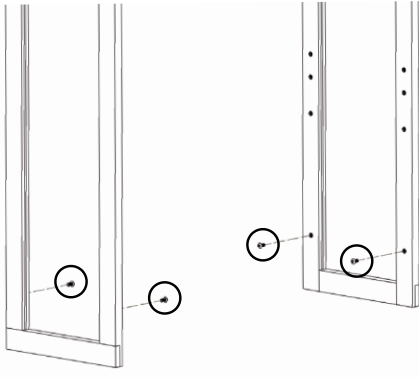
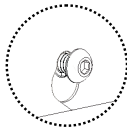
- A.** Insert the 2 bottom screws into the Base Uprights (2-3 turns), leaving a gap as shown. Make sure to hand-tighten before using Allen wrench.

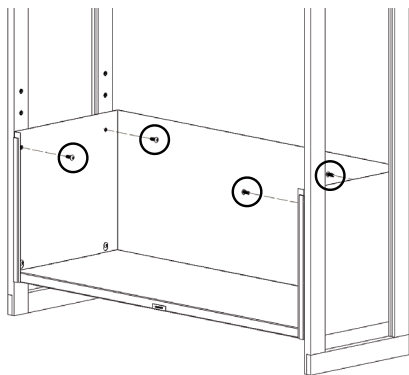


- B.** Using the large openings on the top of the cabinet, lift one side of the cabinet up a few inches, place Upright so that the 2 screw heads engage with keyholes, and lower cabinet into place (Doors hidden for clarity).

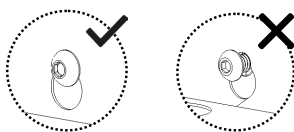


- C.** Repeat on the other side to attach second Upright.



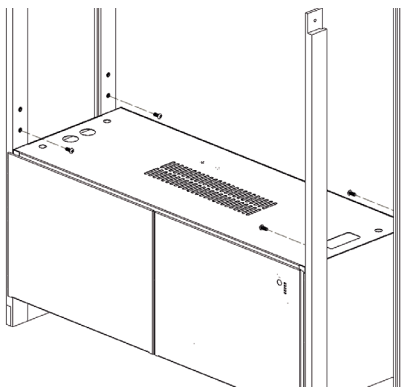


- D.** Insert an additional 4 screws from inside of the Cabinet, and tighten all 8 screws with the included Allen wrench. Make sure to hand-tighten before using Allen wrench. (Doors and top hidden for clarity.)

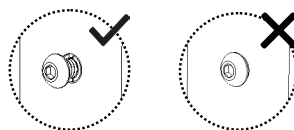


3. Install Metal Tray

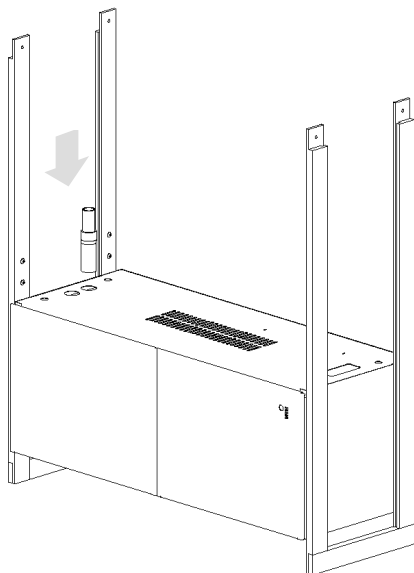
PARTS: METAL TRAY (WHITE), SCREWS (8)

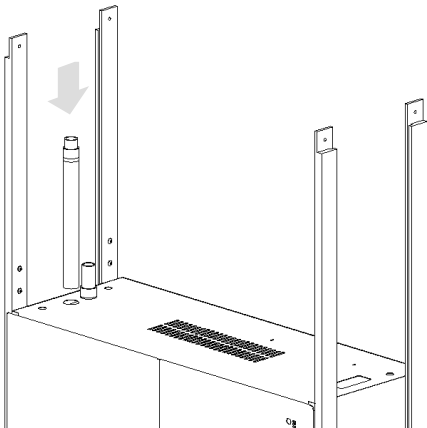


- A.** Insert 4 lower screws (one in each leg) partially (2-3 turns) into the Base Uprights, leaving a gap. Make sure to hand-tighten before using Allen wrench.

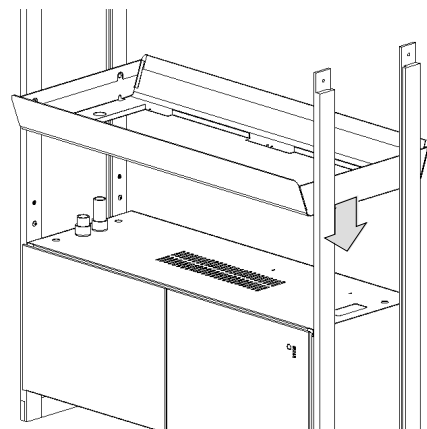


- B.** Insert the flexible end of Supply Conduit (short, clear, rigid / flexible) into the rear hole in Metal Tray. Push Supply Conduit until the pipe is seated in the metal tray.



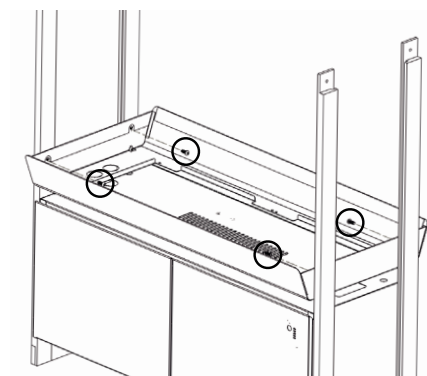
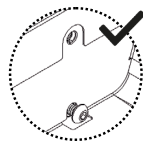


- C.** Repeat for Drain Conduit (long, clear, rigid / flexible) using the front hole in Metal Tray.

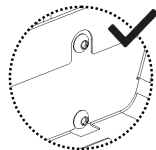


- D.** Place the Metal Tray (with plumbing holes on left, matching the base), making sure that the 4 keyholes engage with the partially installed screws.

NOTE: Make sure to use the Metal Tray with no lights installed. Other Trays have thin LED panels with a plastic grid over them.



- E.** Insert a screw into each of the four upper holes in the Metal Tray, and tighten all 8 screws. Make sure to hand-tighten before using Allen wrench

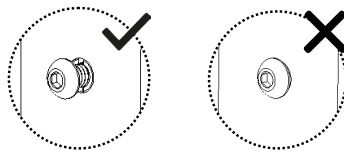
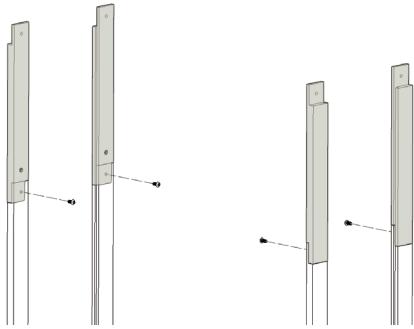


—————> **If building a SINGLE FAMILY Garden, jump to page 10**

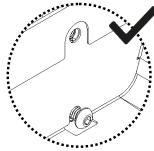
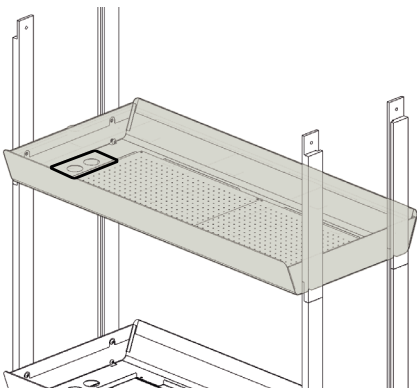
4. Install Second Level

PARTS: METAL TRAY W/ LIGHTS, UPRIGHT EXTENSIONS (4), SCREWS (8)

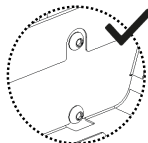
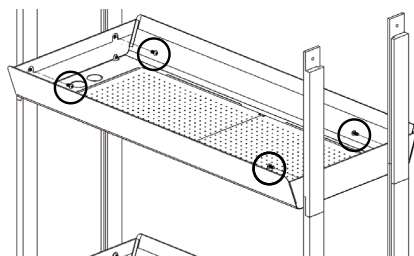
- A.** Attach the Upright Extensions to the Base Uprights at the lap joint. Insert the four lower screws partially (1-2 turns) leaving a gap.



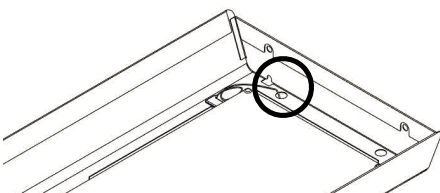
- B.** Place the Metal Tray with Lights (with plumbing holes on left, matching the level below), making sure that the 4 keyholes engage with the partially installed screws.



- C.** Insert a screw into each of the four upper holes in the Metal Tray, and tighten all 8 screws.



- D.** Thread the black light cord down the hole closest to your wooden legs on the RIGHT so that it will travel down the wooden channel and reach your control board.



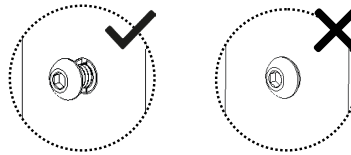
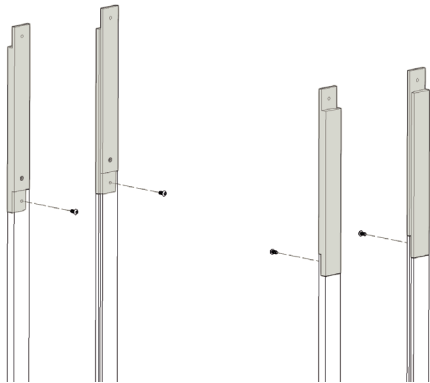


If building a DOUBLE FAMILY Garden, jump to page 10

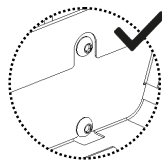
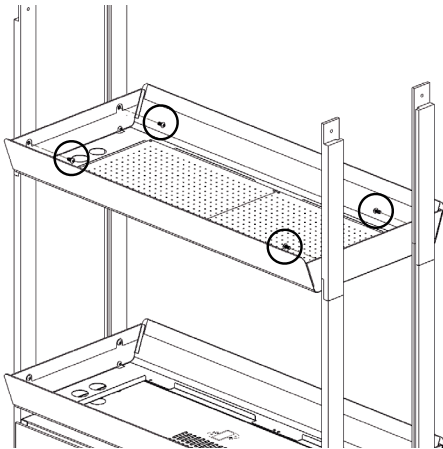
5. Install Third Level

PARTS: METAL TRAY W/ LIGHTS, UPRIGHT EXTENSIONS (4), SCREWS (8)

- A.** Attach the Upright Extensions to the Base Uprights at the lap joint. Insert the four lower screws partially (1-2 turns) leaving a gap.



- B.** Place the next Metal Tray with Lights (with plumbing holes on left, matching the level below), making sure that the 4 keyholes engage with the partially installed screws. Lastly, insert a screw into each of the four upper holes in the Metal Tray, and tighten all 8 screws.

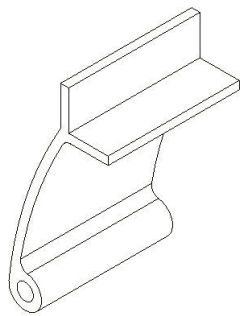


- C.** Thread the black light cord down the hole closest to your wooden legs on the RIGHT so that it will travel down the wooden channel and reach your control board.

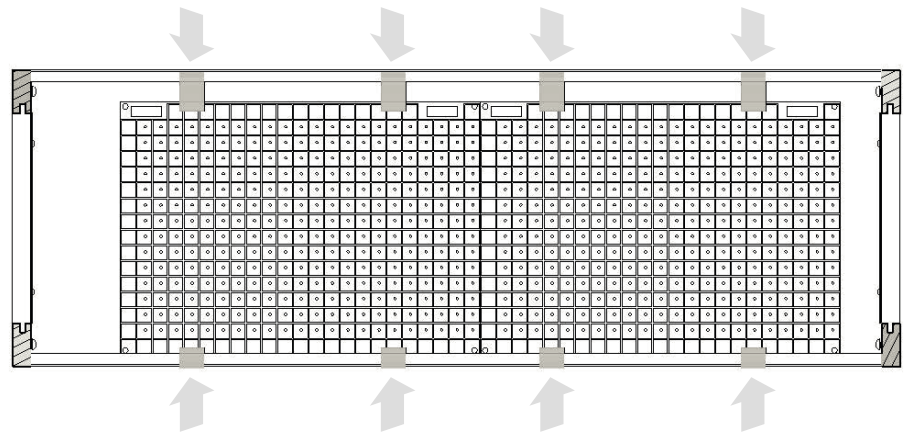
6. Attach Light Shelf

PARTS: LIGHT SHELF, LIGHT CLIPS, SCREWS (4)

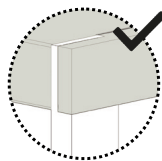
- A.** Orient the Light Shelf with the lights facing you. Make sure all of your Light Clips are in the correct position. If they are not, gently slide them until they match the picture below.



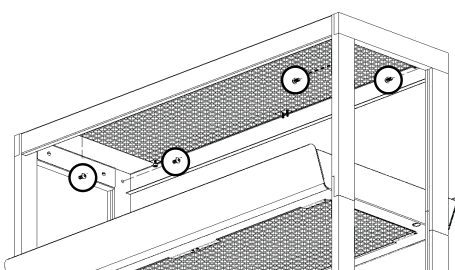
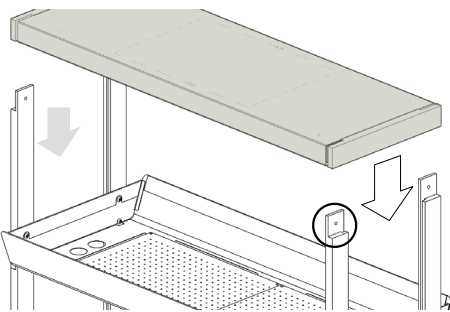
Light-Clip



- B.** Orient the Light Shelf with the power connector on the right side, opposite the plumbing holes on the metal tray. While gently bending the wood on the Light Shelf, slide it onto the lap joints of the two uprights.

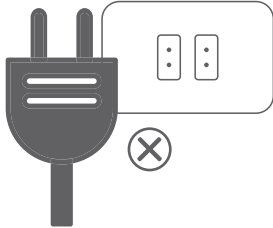


- C.** Insert 4 screws from the inside of each of these joints, then tighten all 4 screws.

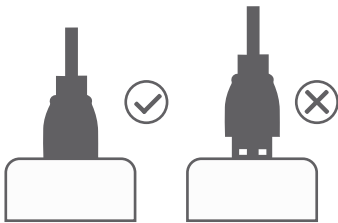


Electrical Assembly

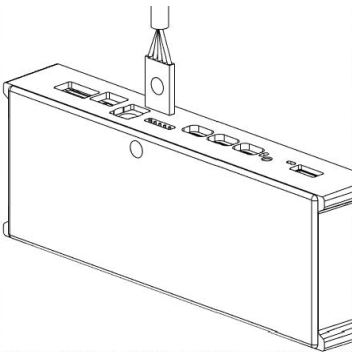
WARNING: Before continuing on, please review our notes on safety to avoid any failure of your electronic components.



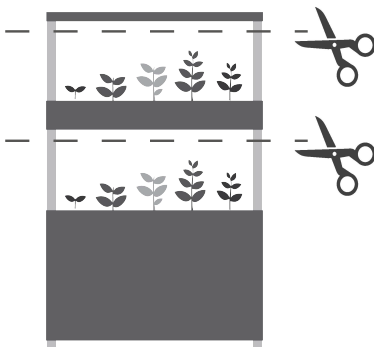
1. Make sure your Garden is unplugged from the wall before connecting or disconnecting ANY electronic components.



2. Make sure each cable is fully connected inside its port before plugging your Garden into the wall.



3. When installing your ultrasonic cable, the locating dot stickers must match up. (See page 13 for details).



4. Prune your plants' leaves and stems so they do not grow into the LED Light panel. This can create heat and moisture which may lead to a malfunction of the panel.

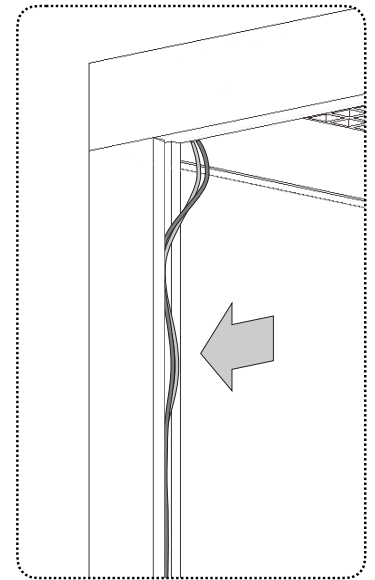
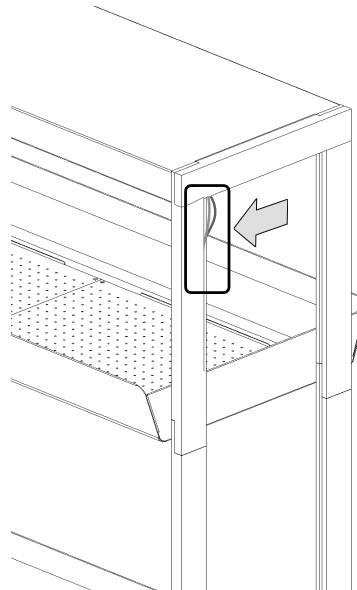


5. Do not allow water to drip onto the control board. Always use dry hands when touching.

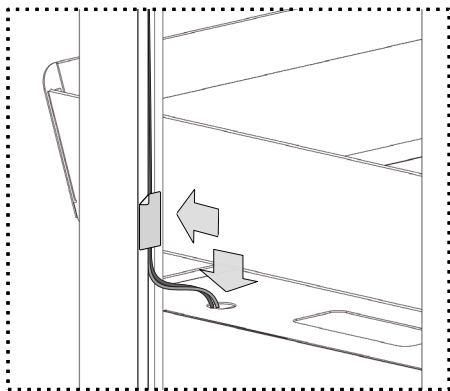
7. Electrical Assembly

PARTS: WOODGRAIN CABLE STICKERS (4)

- A.** Insert Light Cables into channel in front right leg of Uprights.

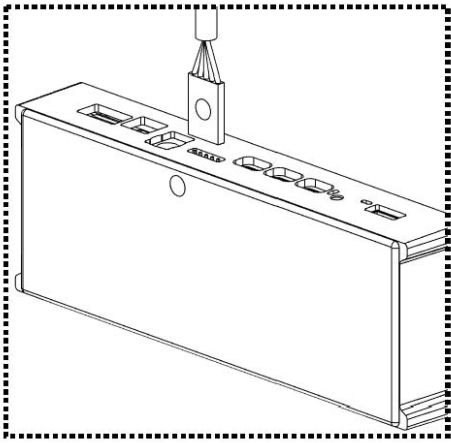


- B.** Run through the hole in Cabinet top and secure with Woodgrain Cable Stickers at top and bottom.
If you are building a Single Family or Double Family Garden, complete this step for the lower light cables in the opposite channel and thread through the opposite hole in the cabinet.

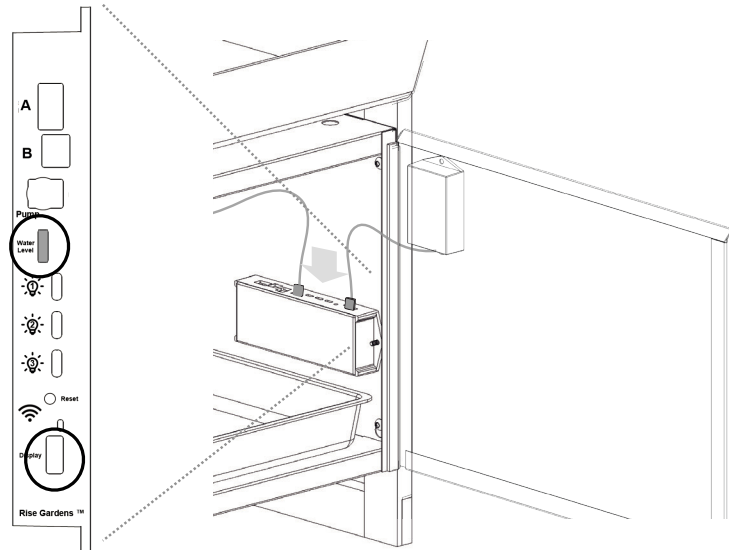


- C.** Inside of the Cabinet, plug the Display Cable connected to the black box on the right hand cabinet door (directly behind your Water Level Display) into Display on the Control Box.

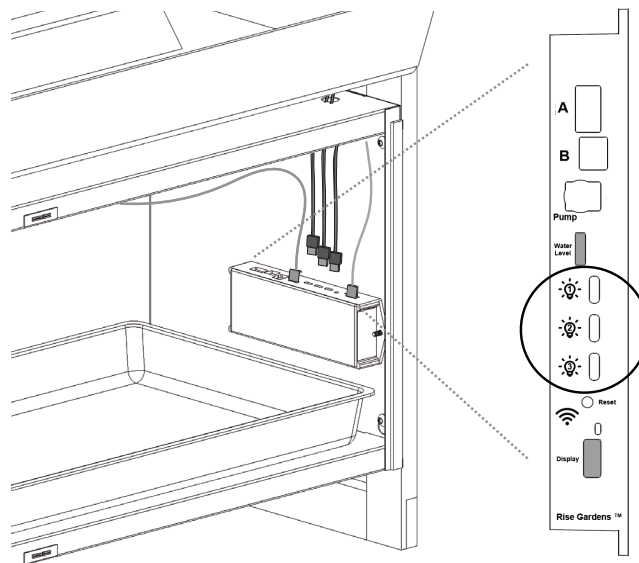
Plug the grey Water Level Cable into the socket labeled Water Level on your control box. Orientation is important!



Match the dot on your **Control Box** with the dot on your cable and press until secure.

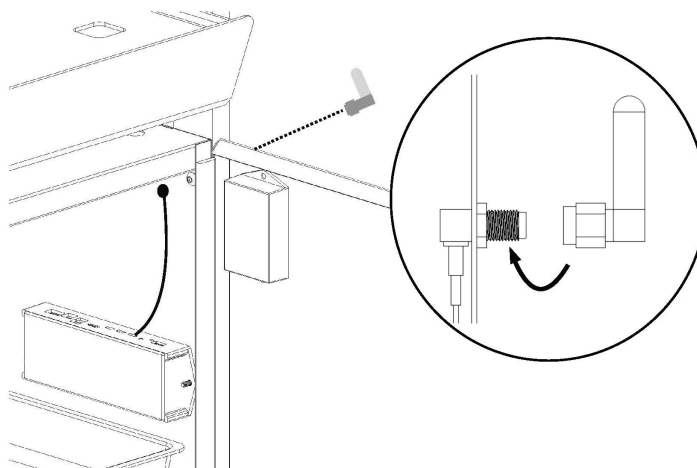


- D.** Inside of the Cabinet, plug each light cable into the Control Box Holes with the light bulb icon. There is one cable per level.



NOTE: Must hear a Click when plugging in lights. If they are not fully plugged in, your light dimming button will not work.

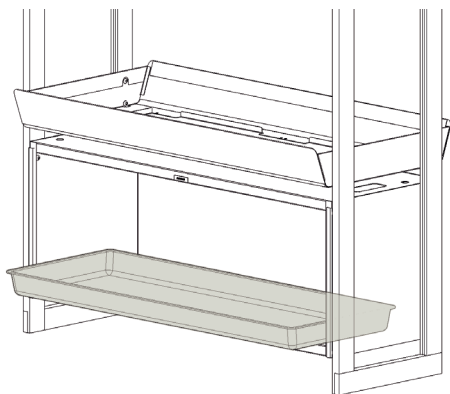
- E.** Locate your small White and Gold Elbow Antenna and carefully screw it onto the adapter poking out of the right side of your cabinet. This allows your system to be connected to WIFI.



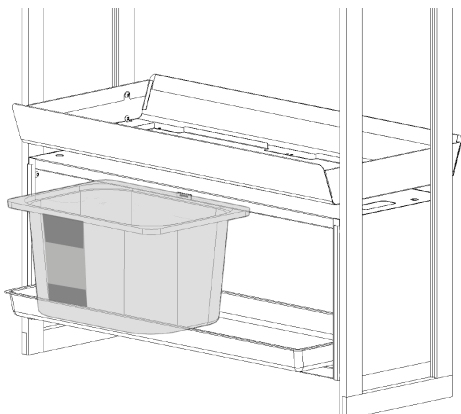
1. Install Water Tank and Water Conduits

PARTS: BASE PAN, WATER TANK, SUPPLY CONDUIT, DRAIN CONDUIT

- A.** Slide Base Pan out a few inches.

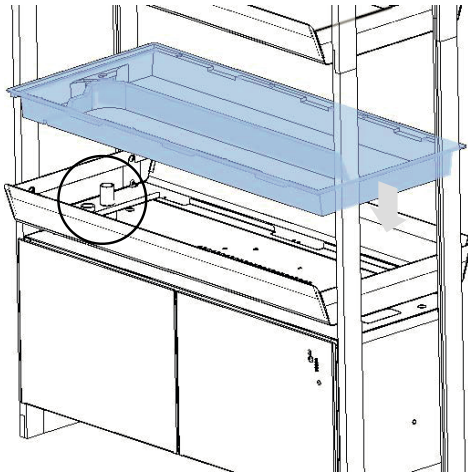


- B.** Remove Water Tank Lid and insert Water Tank into Base Pan. Slide the tank all the way to the left. Make sure both drain pipes are inside the water tank, otherwise you will spill water!



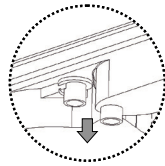
2. Install Plastic Water Tray

PARTS: PLASTIC WATER TRAY (BLACK)



- A.** Place Plastic Water Tray within Metal Tray, ensuring both downspouts are located within the Drain Pipe and Supply Pipe, and confirm Water Tray is fully seated on the bottom of Metal Tray.

IMPORTANT: If the Water Tray is not seated into Drain and Supply Pipes your Garden may leak.



Bottom-view

—————> **If Building a Single Family Garden, jump to page 19**

3. Pick Out Correct Size Plumbing

PARTS: DRAIN PIPE & SUPPLY PIPE

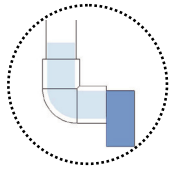


TALL
plumbing



SHORT
plumbing

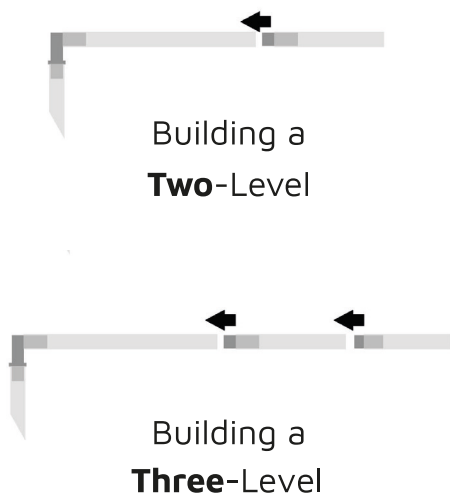
- A.** Pick out the correct pipe length from the extra plumbing you got in your Base Garden.
- B.** If you are building a Double Family Garden, use the tall plumbing. If you are building a Triple Family Garden, use both plumbing sets (tall with your bottom level, and short with your middle level).
- C.** Remember to keep your unused plumbing in case you add a level in the future.



NOTE: Do not remove your Extension Plumbing Filter. It helps to keep debris out of your Water Tank as well as reduce splashing and sound coming from your plumbing.

4. Connect Supply Line

**PARTS: 1/4" LONG FLEXIBLE SUPPLY LINE (90° BEND)
1/4" FLEXIBLE SUPPLY LINE EXTENSIONS**

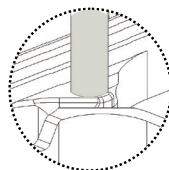
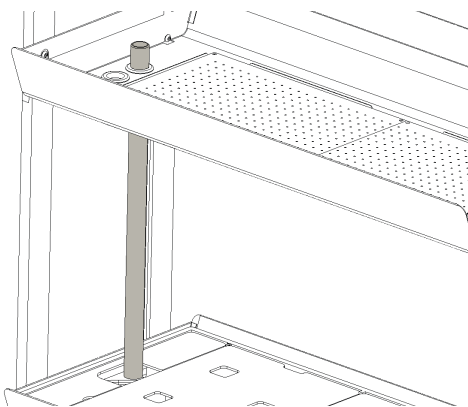


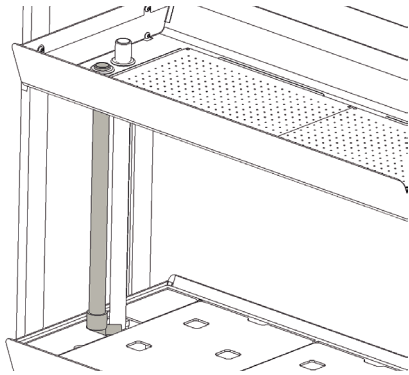
- A.** Locate your two 1/4" Flexible Supply Line Extensions with straight barb (one for each level you are adding) and your Supply line with 90° Bend (28").
- B.** Wet your 1/4" barb so it is easier to insert into the supply lines. Connect your 1/4" Flexible Supply Line Extensions to the end of your Supply Line with 90° Bend.
- C.** Set aside for step 9.

5. Connecting Supply and Drain Pipe to Second Level

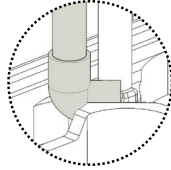
PARTS: DRAIN PIPE, SUPPLY PIPE.

- A.** Push your Tall Drain Pipe up through the back hole in the metal tray so the bottom (smaller end) nests inside the plastic tray below.





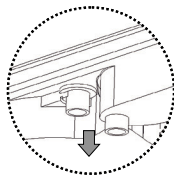
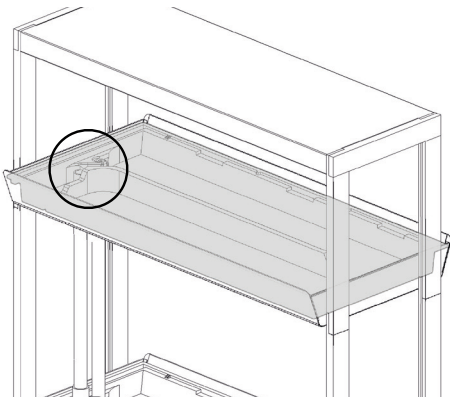
- B.** Push your Drain Pipe with 90° Connector up through the first hole in the metal tray until the bottom (90° bend) is seated in the plastic tray below.



6. Install Second Level Plastic Water Tray

PARTS: PLASTIC WATER TRAY (BLACK)

- A.** Place Plastic Water Tray within Metal Tray, ensuring both downspouts are located within the Drain Pipe and Supply Pipe, and confirm Water Tray is fully seated on the bottom of Metal Tray.



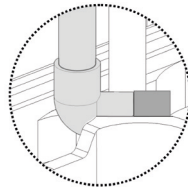
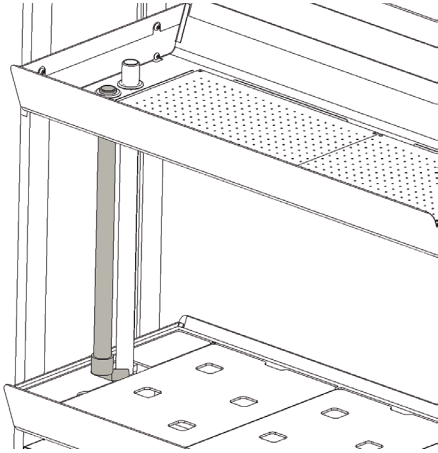
Bottom-view

—————> **If building a DOUBLE FAMILY Garden, jump to page 19**

7. Connecting Supply and Drain Line to Third Level

PARTS: DRAIN PIPE, SUPPLY PIPE

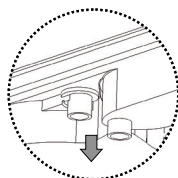
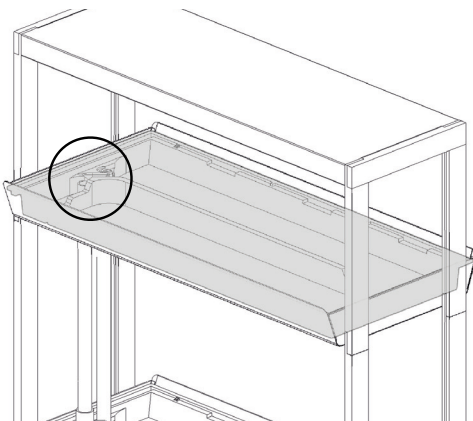
- A.** Push your Supply Line & Drain Pipe with 90° Connector up through your metal holes just as you did for your previous level. Make sure both pipes are seated into the plastic tray below.



8. Install Third Level Plastic Water Tray

PARTS: PLASTIC WATER TRAY (BLACK)

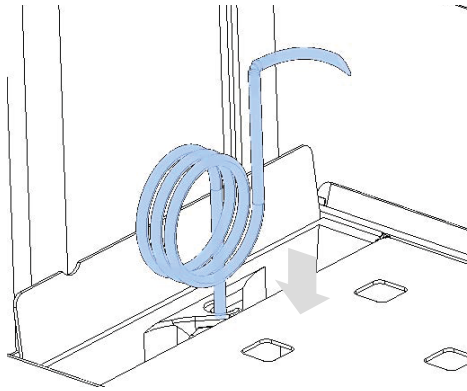
- A.** Place Plastic Water Tray within Metal Tray, ensuring both downspouts are located within the Drain Pipe and Supply Pipe, and confirm Water Tray is fully seated on the bottom of Metal Tray.



Bottom-view

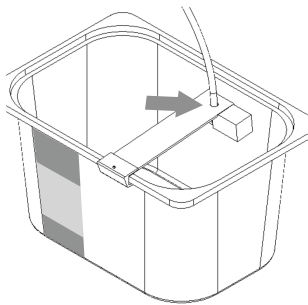
9. Connect Pump Assembly

PARTS: WATER TANK LID, PUMP ASSEMBLY



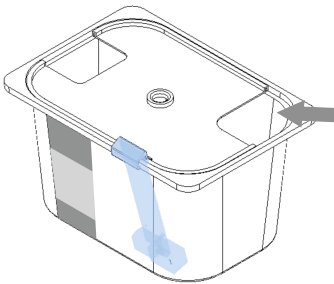
- A. Feed 1/4" Long Flexible Supply Line into rear hole of top Water Tray (through the Supply Conduit) until Right-Angle Connector is resting on Inner Tray directed toward water channel.

NOTE: If the Supply Line gets stuck, try twisting it back and forth as you thread it down your plumbing).



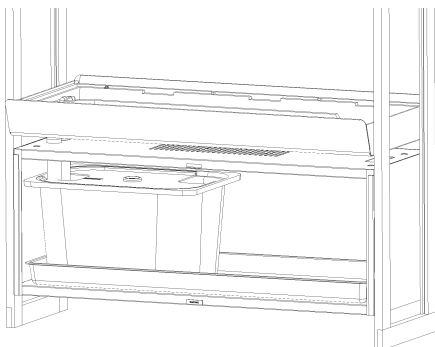
- B. Replace the Pump Assembly inside the Water Tank and connect 1/4" Flexible Supply Line to the 90°barb on your pump.

NOTE: If you wet the tube it will slide on much easier.



- C. Fold the Pump Assembly down into the Water Tank. Slide your Water Tank Link onto your Water Tank so that your Pump Assembly fits into the notch around it.

NOTE: Make sure your lid is on correctly so that the corner notch is on the back right side of the water tank. Otherwise your Ultrasonic Sensor will be blocked.

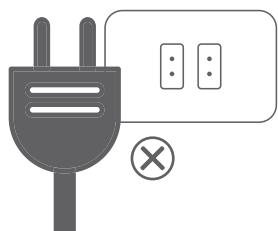


- D. Slide Base Pan to rear of Cabinet, and slide Water Tank to left side.

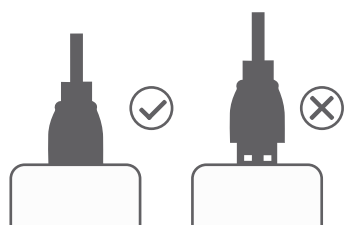
IMPORTANT: If your Water Tank is not pushed all the way to the far back left corner, with all tubing inside, you may experience leaking and incorrect water level readings.

Electrical Assembly

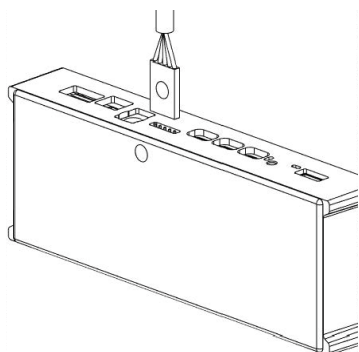
WARNING: Before continuing on, please review our notes on safety to avoid any failure of your electronic components.



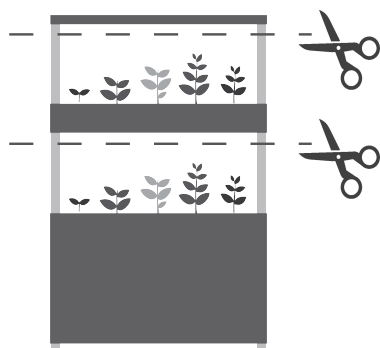
1. Make sure your Garden is unplugged from the wall before connecting or disconnecting ANY electronic components.



2. Make sure each cable is fully connected inside its port before plugging your Garden into the wall.



3. When installing your ultrasonic cable, the locating dot stickers must match up. (See page 13 for details).



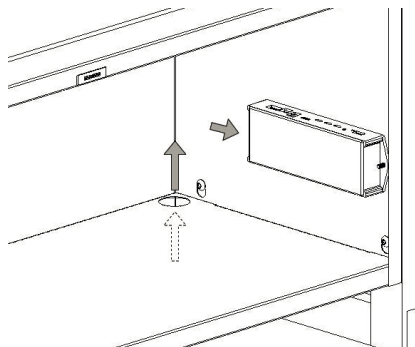
4. Prune your plants' leaves and stems so they do not grow into the LED Light panel. This can create heat and moisture which may lead to a malfunction of the panel.



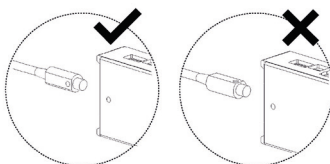
5. Do not allow water to drip onto the control board. Always use dry hands when touching.

10. Power on your Garden

PARTS: POWER SUPPLY



- A.** Thread the end of your power cord (non-wall outlet end) through the bottom of your cabinet and through the hole in the far back right corner. Leave the large power brick outside of the cabinet - **keeping your brick inside will increase the risk of overheating.**
- B.** Plug your power cord into the back of your control board and line up the dot on your cord with the dot on the back of the control box.



- C.** Plug your wall outlet cord into the back of your power supply brick and then plug your power cord into the wall. Test that your **lights turn on** (starts on a 16 hour cycle), your water level display has **1 red light**, and your WiFi Status Light on your control board is **solid red**. Pushing your light dimming button once should **dim your lights**, and again will **turn them off**. If any of this is not the case, adjust your water tank, check all electrical connections and then unplug your Garden for **50 seconds** and plug it back into the wall.

11. System Startup

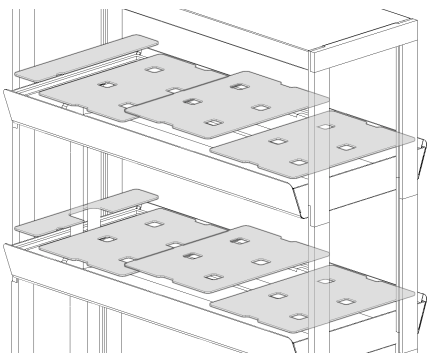
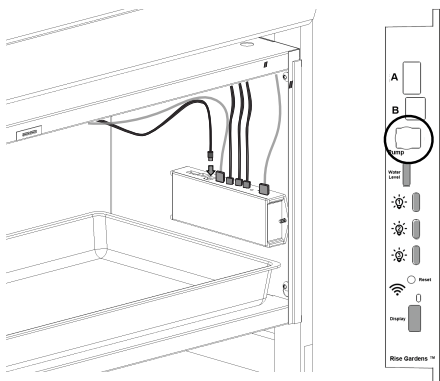
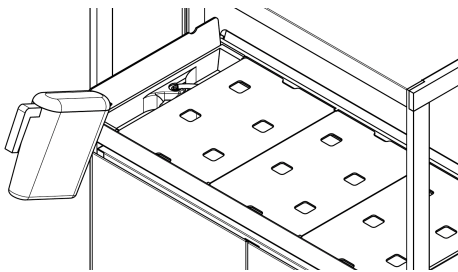
PARTS: WATERING CAN

IMPORTANT: Make sure your Garden is level before moving on. If your Garden is tilted, some of your plants will not get enough water and your water will not flow properly.

- A.** Use Watering Can to add 1 gallon of cold tap water to each water tray.
- B.** Inspect each water tray and make sure there are no leaks. If there are, review instructions to verify that correct plumbing was used, and your water tray is seated inside the pipes below it.
- C.** Add water to the bottom level Fill Corner until your Water Level Display reads 5 blue.
- D.** Plug Pump Assembly cable into Pump Connector on Control Box and start water flowing.

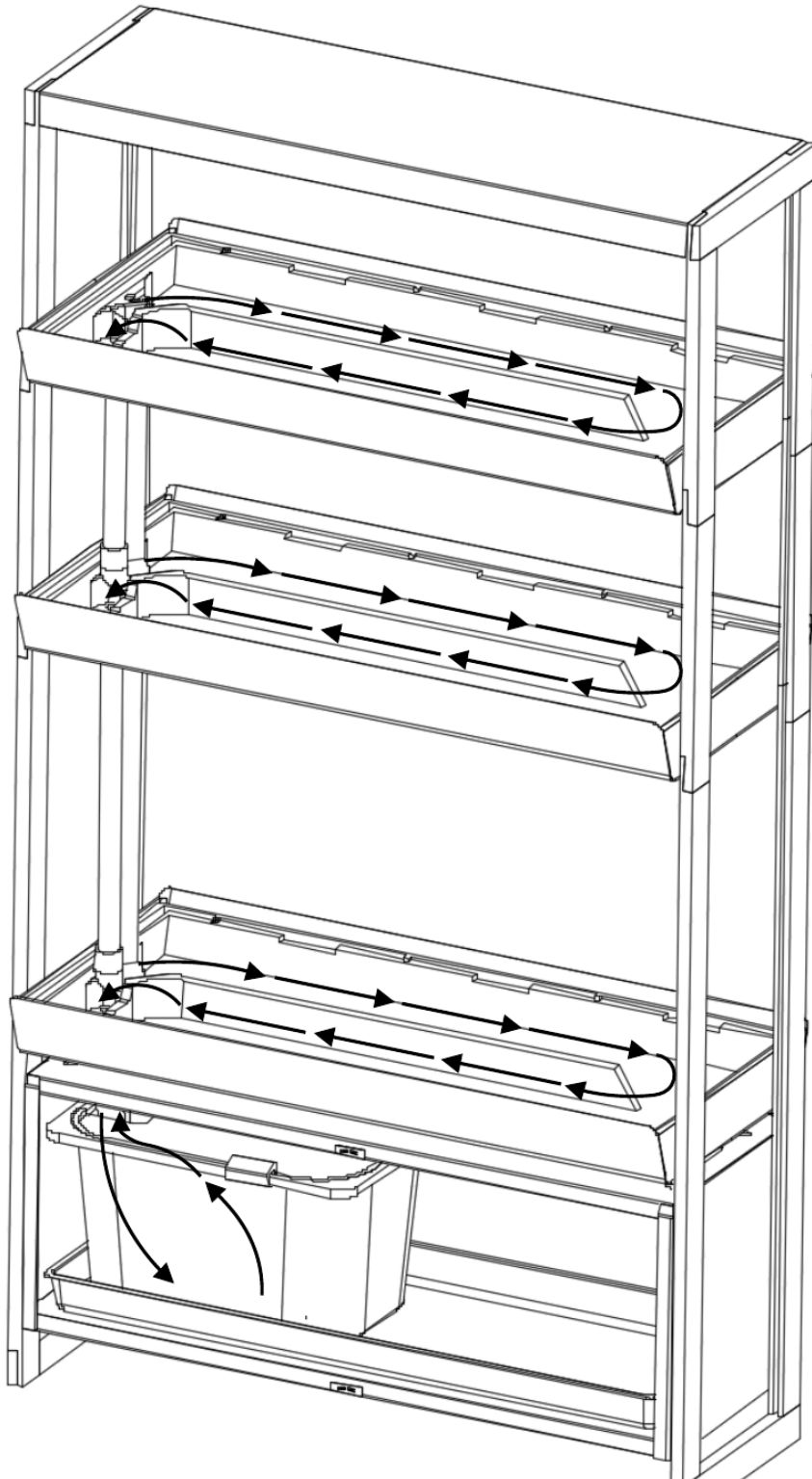
IMPORTANT: Do not spill any water onto your control board! Spilling water onto ports can harm electrical components. Always operate with dry hands.

- E.** Let your system run for 10 minutes. Water Trays will fill with water and flow into the drain. Confirm that water is flowing properly and there are no leaks.
- F.** Attach Tray Lids and Service Doors.



System Flow Diagram

From the moment your Garden is powered on, your pump will run for 24 hours a day, and your lights start a 16 hour light cycle.



Quick Start

Using your App



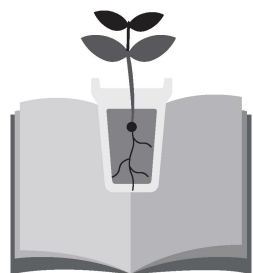
- Download the Rise Gardens app from the App Store or the Google Play Store. Search for "Rise Gardens."
- Create an account and add your Family Garden and your Nurseries.
- Connect your Garden to WiFi.
- Read below for all of the features and functions of our app!



How to calculate your nutrients with Smart Care

In order to calculate your nutrients, our app needs to know:

1. Your water quality data.
2. Which plants are currently growing (plants in your app's Nurseries do not contribute to your nutrient profile.)
3. How many of those plants you are growing.
4. How old your plants are.



Know your plants

By adding all your plants to your Garden you can:

1. See what's currently in your Garden and keep track as you move them around.
2. Click on each of your plants to see their specific profiles to know what to do during every stage of growth.
3. Know when your plants are ready to harvest!

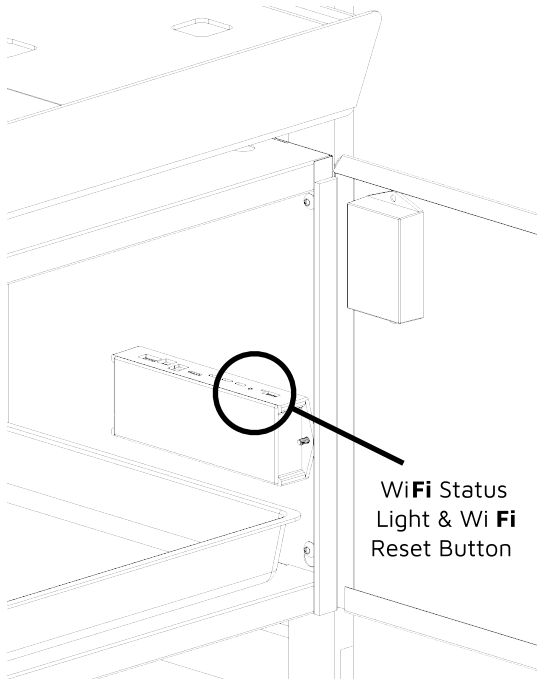


WiFi-based Smart Garden

Your app can also control your Garden's smart features:

1. Lights can be turned off from your phone.
2. Low water level notifications.
3. Care notifications to add nutrients when your plants are hungry.
4. Automatic install of all future updates to your Garden's software.

Troubleshooting WiFi Guide

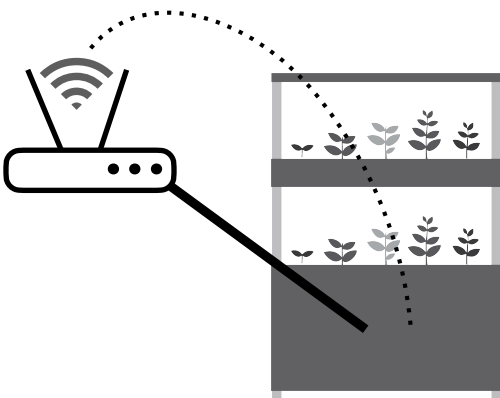
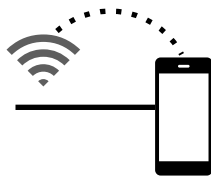
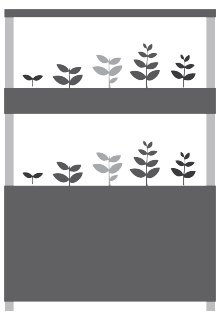


WiFi Status Light	WiFi Connection	What It Means
Solid Green	Online	Your garden is successfully connected to your home WiFi network. No action needed.
Solid Green	Offline	Your device has connected to the wireless network successfully but is unable to communicate with Rise Gardens servers. This is likely due to wireless security restrictions or a firewall. Rise Gardens communicates to its servers via UDP over port 8883. Please refer to your wireless router settings to allow this communication.
Solid Green / Blinking Green	Online / Offline	If your online status and WiFi status light continue to change, you likely have a weak signal. To solve this you will need to have your garden closer to your wireless router or extender.
Blinking Green	Offline	Rise Gardens is unable to connect to your wireless network due to one of the following: <ul style="list-style-type: none"> Invalid WiFi name or Password. Garden too far from WiFi router. You are connecting to a 5G WiFi network. Issue with your specific WiFi router. Need to restart Garden (unplug from wall for 10 seconds).
Blinking Red	Offline	Rise Gardens is unable to connect to your wireless network due to an invalid password.
Solid Red	Offline	Rise Gardens is still waiting to be configured. Restart the wireless setup on the "Device Details" page.
Solid Red	Unable To Connect To Device	There is an issue with your phone connecting to the Garden's control board. Try unplugging the system and plugging it back in and repeating the process. Your phone may also suggest not connecting to the garden because it is not connected to the Internet. If so, dismiss the message and connect anyway.

How your Garden uses your phone to connect to WiFi

Inside your Garden you have a WiFi chip that allows your Garden to connect to the WiFi. In order to do so, your chip must know your WiFi network SSID (name you see when selecting your home WiFi) and password. In order to get this information, your Garden creates its own WiFi signal that your phone can connect to. Once connected, your phone sends your WiFi info to your Garden.

Once your Garden has the WiFi name and password, it stops giving off a signal and starts looking for your home WiFi. **Once your Garden finds your WiFi, it enters your network information and password to connect to the Internet!**



Quick Start Timeline



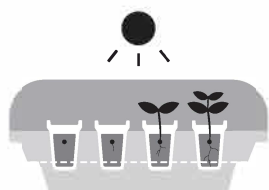
1

Start by picking out which **PLANT PODS** you wish to grow in your **GARDEN**. Add them to your app **inside your NURSERY** in order to track them. The pods that you are not growing should be stored in a **cool, dark place**.



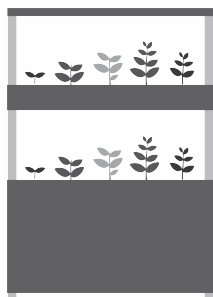
2

Once your plants are about two weeks old, check your app to see if it's time to add nutrients. Your app will tell you how much **SPROUT**, **THRIVE**, **BLOSSOM**, and **PH** to add. Your Starter Kit includes 1 month of starter nutrients to get you growing. After 1 month, head to our website to order more.



3

Check your plants every day to see if they have sprouted. Your plants will sprout in **1-2 weeks** and can be moved into your Garden when they have **2 sets of leaves**.



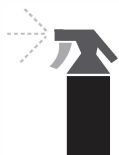
4

Grow your plants to maturity! Each plant has a **PLANT PROFILE** page that tells you how to care for that plant. Some plants will grow flowers that need to be **pollinated**, some need to be **supported** as they grow, and some just need time! As your plant grows it will shade other plants, so plan accordingly.



Enjoy!

Check your app to see when your plant is ready for **HARVEST!** Some plants can be harvested many times, so be sure to check the plant's profile for **tips** on Harvesting. If your plant stays in your **GARDEN** for too long, it may start to taste bitter or get too big for its neighbors and must be **removed**.



Clean

After every harvest be sure to **REMOVE** the plant (roots and all) and **clean** the tray and net cup. Record this in your app as well. After **4-5 months** of growing it is time to **deep clean**.



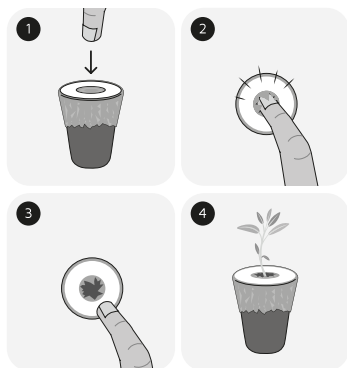
1

Plant Pods

Our plant pods are made from an organic peat moss and coco coir and provide the perfect blend of **air, organic matter, and water**. These are the 3 basic ingredients for germinating your seeds.

The pods are hand-wrapped in tinfoil, allowing plants to grow through while shading the top of the pod to prevent algae. They are labeled with our doughnut stickers so you never have to guess what is growing. Inside each plug are **hand-selected seeds** with enough extra to ensure they sprout every time. We do not use any harmful adhesives on our seeds, so be sure to keep your pods upright so the seeds do not fall out!

Our seeds are selected from a range of seed providers to give you the **best hydroponic growing experience possible**. Each new variety is tested in our lab for germination success, growth, and flavor. We also offer Seedless pods so that you can experiment with **your own seeds!**



2

Nutrients

In order to grow the best plants possible, we based our nutrients off of **professional hydroponic growing techniques**. This means we have a 3-part blend with an additional pH balancing solution.

SPROUT: This nutrient helps to grow the **leaves** and **stems** of your plant. Once your plant produces flowers, replace Sprout with Blossom.

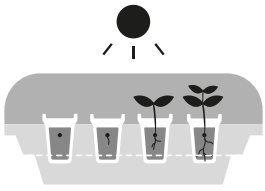
THRIVE: This nutrient contains all of the essential **micronutrients** for your plants and is needed during every stage of growth.

BLOSSOM: This nutrient supports the growth of **flowers** and **fruits** and is vital for maximizing yields of your fruiting plants.

pH BALANCE: This solution contains acids that lower your water's pH and allow your plants to absorb nutrients.

Because your nutrients are concentrated they must be **mixed with water** in order to properly dissolve. To do this, **ALLOW FOR 10 MINUTES OF MIXING TIME** in between each nutrient.

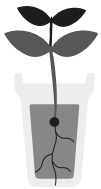




3

The Nursery

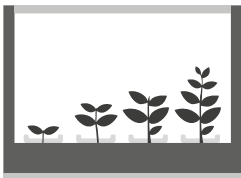
When a seed is first growing, it needs a **warm and humid environment** for germination. Our Nursery **protects your seed** while it is young to provide the healthiest seedling possible for you to add to your Garden. Seedlings cannot absorb nutrients, so once you add nutrients to your **GARDEN** you must start any new pod in your **NURSERY**.



When using the Nursery, make sure to do the following in order to succeed:

1. Never add nutrients to your Nursery.
2. Always keep your water level below the max fill line.
3. Never let your Nursery run out of water.
4. Keep your Nursery under the lights of your Garden.
5. Keep your Lid on while the plants grow to increase temperature and humidity.
6. Check your Nursery every day for sprouts
7. Empty and refill with fresh water once a week..

Your plants are ready to be moved into the Garden when they sprout their **SECOND** set of leaves. These are the '**True Leaves**' and signal that your plant can absorb nutrients. If you wait more than 2 days past the growth of your True Leaves, your plant may become leggy and tall and may grow slower than normal.



4

Plant Growth

As your plant grows it will transition through **STAGES OF GROWTH**.

GERMINATION: Your plant will **sprout** out of the pod. The length of this stage varies greatly from plant to plant. Most herbs take 1-2 weeks but lettuce should only take 3-5 days.

INITIAL GROWTH: This stage marks when the plant has grown its **second set** of leaves and is ready to be moved into the Garden.

MID-GROWTH: This marks the plant's **half-way** point and is mainly used to mark an increase in nutrient need.

FLOWER: This stage occurs for every plant, but most plants should be eaten before they reach the **Flower stage**. For example, if your basil produces flowers it is past Harvest and ready to be removed. During the Flower stage, you should switch from using Sprout to using Blossom.

FRUIT: This stage marks when your first 3 fruits appear. It also marks an increase in nutrient need.

HARVEST: This stage is when you can **eat the plant**. In plants like lettuce, this means the leaves are big enough. In plants like tomato, the fruit is ripe and is a uniform color.

PAST HARVEST: This stage marks when the plant should be **removed** from the Garden because it is past its best flavor, or because it is too large and may shade other plants or grow roots into the pump.

Enjoy!



Harvest

When your plant becomes **MATURE** it is **ready to harvest!** Your app will tell you when your plants are ready to harvest. Each plant is unique and may take more or less time to mature depending on its environment.

How do I tell if Greens are ready to harvest?

- If your lettuce plant has **10-15 leaves** that look full and healthy, you can begin to harvest up to 20% of your plant at a time, or you can wait until your app says it's time to harvest and cut the whole plant at once.
- If your kale or Swiss chard has **5-10 leaves** that are full and healthy, you can cut the leaves at the base of their stem, starting with the bottom leaves.

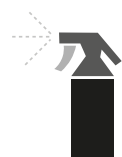
How to tell if Herbs are ready to harvest?

- All herbs will be ready to harvest when they have at least 3 stems and are around **6" tall**.

How to tell if Fruiting plants are ready to harvest?

- There will be at least **5 sets** of flowers and your fruit will be the same color on top as on bottom. When you harvest your plants make sure that you leave enough of the plant remaining to **keep it growing**.

Clean

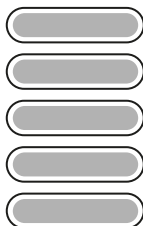
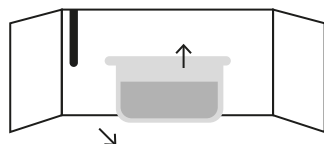
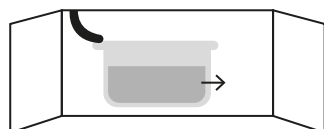
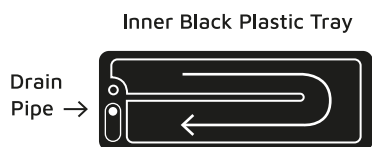
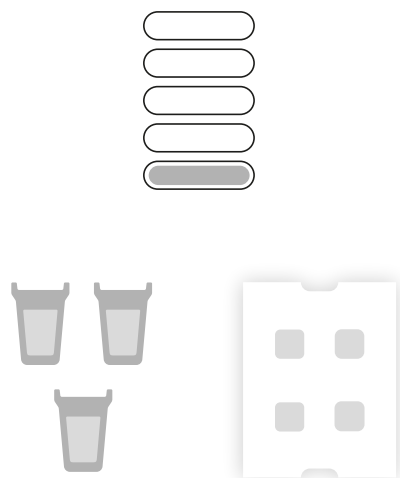


Cleaning

After Harvest Cleaning:

1. Cut your plant at the base and compost all non-edible plant material.
2. Carefully remove net cup and separate roots of nearby plants. Compost plant pod and roots.
3. Sterilize Net Cup with white vinegar, or add to top shelf of dishwasher, and wipe down empty plant space before replacing.
4. Sterilize your Nursery with white vinegar.

Four-Five Month Cleaning



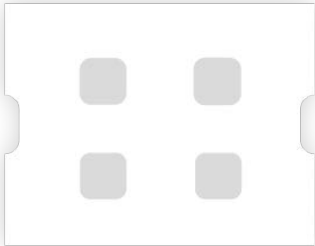
1. Wait until you have 1 blue bar on your Water Level to make cleaning easier.
2. Harvest all plants. We recommend that you only keep plants that are small enough to be pulled out of your Tray Lid holes. Plants that need to be cut in order to be removed are too big to keep after a cleaning.
3. Select the **CLEAN GARDEN** button on your app dashboard in order to reset your nutrient profile, as well as see a cleaning wizard.
4. Wipe down and sterilize Tray Lids, Plumbing Covers, and Net Cups.
5. Add one cup of cleaning (white) vinegar to your Garden for every level of growth.
6. Let your Garden cycle for 15 minutes while you scrub the inside of your trays.
7. With dry hands, unplug your pump from your control board. Then, using a wide sponge, push the water in your top tray down the drain and into the tray below.
8. **NOTE:** All of this water will eventually end up in your Water Tank, so plan accordingly before moving on to your next tray.
9. Once all your water has been pushed down into your Water Tank, open your cabinet and carefully remove the tank:
 - a. Remove your pump assembly from the wall of your tank and rest on the side.
 - b. Slide your Water Tank to the right until it is free of all plumbing.
 - c. Carefully lift your Water Tank up over the lip of the Base Pan, and then out towards you so that it is completely out of the cabinet.
 - d. Pour out all water and scrub clean.
10. Unplug your Supply Line tube from your pump and pull it out of your top tray. Rinse this tube and sterilize if there is buildup. Bending the tube back and forth in your hands will dislodge any buildup.
11. Clean your pump and soak in vinegar to remove buildup.
12. Remove your black PVC Drain Pipe and Supply Pipe from your first and second level:
 - a. Carefully lift your inner plastic tray.
 - b. Pull Pipes out from bottom.
13. Clean pipes and replace the same way you removed them (See page 15 for details). They must be fully connected to your plastic inner tray with the spout inserted into the pipes. Your plastic tray will sit below your outer metal tray when assembled correctly.
14. Thread your Supply Line back down your Supply Pipe and re-attach to your pump.
15. Replace your Water Tank according to step 8, and make sure it is seated all the way into the back left corner of your cabinet. If you do not, your water level sensor will not work properly.
16. Add 2 gallons of water to your top level in order to make sure all plumbing is seated correctly.
17. Continue to add water until your Garden is full. Plug in your pump and you are done!
18. Remember to click the 'CLEAN GARDEN' button on your dashboard if you have not in order to reset your nutrient profile. Then, in your app, update the plants in your Garden, and run Care in order to get your Garden back to the desired nutrient level.

Learn More

Plant Spacing Guide

Zero Shade Group:

These crops can be placed right next to each other without worrying about leaving extra space for growth.



- Amaranth
- Arugula
- Basil (Lime)
- Beets
- Chives
- Cilantro
- Dandelion
- Dill
- Endive
- Fennel
- Lavender
- Lemongrass
- Lettuce
- Marjoram
- Mustard
- Oregano
- Pac Choi
- Parsley
- Rosemary
- Sage
- Sorrel
- Stevia
- Thyme

Single Shade Group:

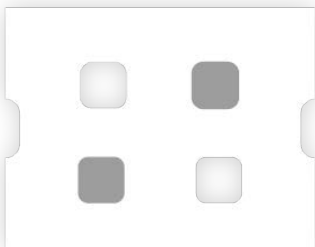
These crops should only be placed next to crops from Zero Shade group. If they are placed next to another group, they can become too stringy and light deficient.



- Basil
- Bean
- Borage
- Catnip
- Chamomile
- Lemon Balm
- Mint
- Pak Choi
- Pea
- Shiso
- Tarragon
- Tatsoi

Double Shade Group:

These crops can grow very wide and need an empty spot next to them in order to get enough light.



- Cabbage
- Celery
- Collards
- Cucumber
- Eggplant
- Kale
- Pepper
- Swiss Chard
- Sunflower
- Tomato

Spacing tips:

1. Plants in the Double Shade Group can be grown next to other groups as long as they are moved before they get too big (day 30-45). This means that you could potentially get an entire harvest of lettuce around your tomato plants while they grow! Or you can start them together and then space them out.
2. When you are planning out your Garden, be sure to avoid putting any Single or Double Shade Group plants in the spots next to your plumbing. If you do, you risk their large roots systems growing into the drain.

Hydroponic Nutrients

Key Takeaways

- Always **add water** in between adding nutrients!
- Add your plants to your **app** when you start them in your Nursery so their growth timer starts.
- Your app needs to know how old your plants are and what type of plants are in your Garden in order to calculate nutrients!

Once your **STARTER NUTRIENTS** run out, remember to **order more**. If you are growing any plants with fruits or flowers remember to order **Blossom**.

Why should you add water between nutrients?

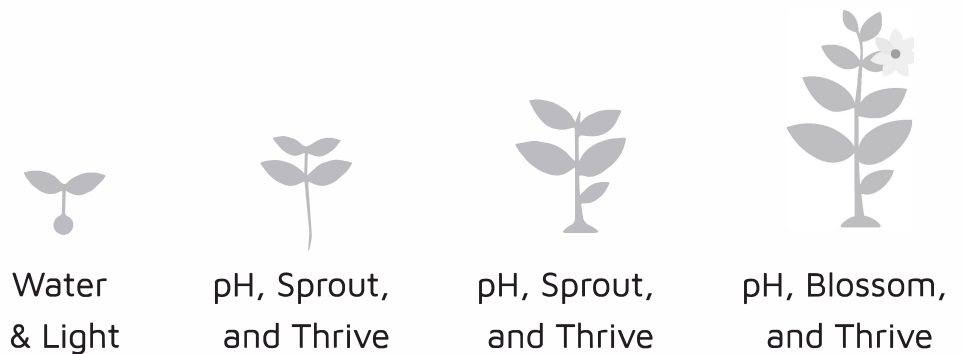
Our nutrients are separated into **3 PARTS** for a reason. They are concentrated in order to lower the shipping cost and decrease our carbon footprint. However, if **Thrive and Spout (or Blossom)** touch in their concentrated form, they will make a solid called a **PRECIPITATE** that the plant cannot take up. These solids can also clog your pump!



In order to stop this from happening, you just need to **DILUTE the nutrients** when you add them to your garden. By following the app, you will add pH Balance, add water, add Sprout or Blossom, add water, add Thrive, then (if there is still room) you top off your Water Tank until it's full. By adding water in between nutrients, you'll dilute the nutrients and keep your Garden **clean of solids!**



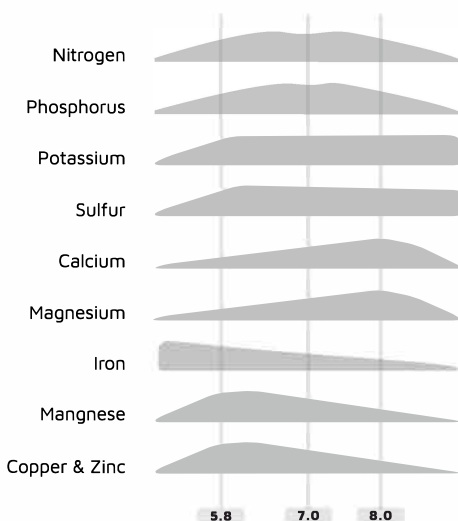
Plants need different levels of nutrients at each stage of growth. When plants are just germinating, they only need water and light to grow. This is why you use your Nursery! As they grow, plants need different amounts of **micronutrients and macronutrients**. This is why you have a Sprout and a Blossom nutrient. **Sprout** has the right macronutrients for early growth, while **Blossom** has the right macronutrients for flower and fruit production. **Thrive** has all of the micronutrients plants need and so you will use it throughout your plant's growth.



What is pH and how does it impact plants?

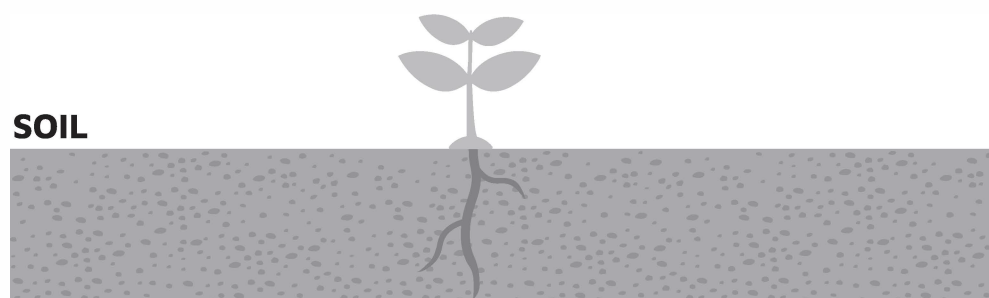
pH is a measurement of how acidic or basic your water is. Nutrients can only be absorbed by plants in a specific range of pH, and every nutrient is different. For Hydroponics the sweet spot is between **5.8 and 7.0**. At this pH, the plants are able to absorb the greatest amount of nutrients. In order to achieve this, you must **add 2 squirts of pH Balance for every gallon of water** you add to your Garden.

Your **pH Balance** is made from acids that help to lower your pH. Your tap water has a high pH and therefore you must add pH Balance **every time you add water**. Tap water can range in quality which impacts how much pH Balance you need to add per gallon of water. For more details, see 'Water Quality For Hydroponics' on page 38.

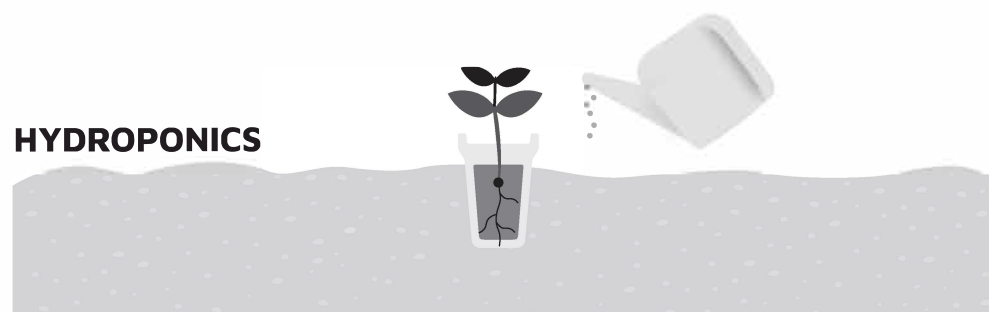


What's the difference between soil and hydroponics?

IN SOIL, microorganisms break down organic matter (old roots, manure, leaves, etc.) into its **basic nutrients**. Plants take in these basic nutrients and break them down further into elements that they turn into leaves, stems, flowers, fruits, and roots. Soil can run out of **key nutrients** over time as plants use up the nutrients and then are removed from the soil before they can break down. This is why farmers have to **add fertilizers** to their fields. Organic fertilizers are made from things like manure, compost, bloodworm, and other sources of living biological waste. Inorganic fertilizers are made by humans and can consist of things like Epsom Salt and Iron dust.



IN HYDROPONICS, there is no soil to house those microorganisms, so **fertilizer must be added in order to grow plants**. In most cases, using organic fertilizer in hydroponics would cause a lot of filtration issues and may lead to unintended bacterial growth if not oxygenated properly. This is why we use inorganic nutrients in our system. Our nutrients **dissolve** into the water and are immediately ready to be absorbed by the plant because it does not have to wait for the nutrients to be broken down. This is how you are able to grow your plants **without soil!**



Water Quality for Hydroponics

Starter Kit Test Strips

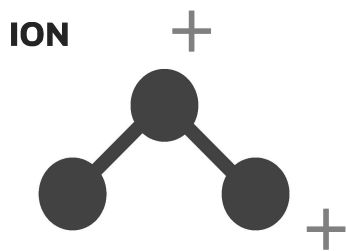


Your Starter Kit comes with two test strips for measuring water hardness. Upon startup, your app will prompt you to fill out your water quality info using test strips as well as answering some basic questions about your water source. This info will let your app know how much pH Balance to add for every gallon of water. You can also follow the rules below as you top off your Garden.

Very Hard Water = 3 squirts (3mL) pH Balance per gallon

Hard Water = 2 squirts (2mL) pH Balance per gallon

Soft Water = 1 squirt (1mL) pH Balance per gallon



What is an ion?

Ions are ATOMS and MOLECULES that give off a positive or negative charge. In hydroponics this is important because we use ions to figure out the amount of nutrients to add so your plants are happy.

Hard Water

In most cases, your tap water comes from a municipal waste water treatment plant. The water is cleaned, and minerals are added to protect pipes and keep things out of your water. During this process things like **Calcium and Magnesium may be added to your water**. When these minerals are abundant, your water is considered **HARD**. These extra minerals can make it hard to lower your pH. If you have very hard water, you will need to **add 3 squirts of pH Balance per gallon**.

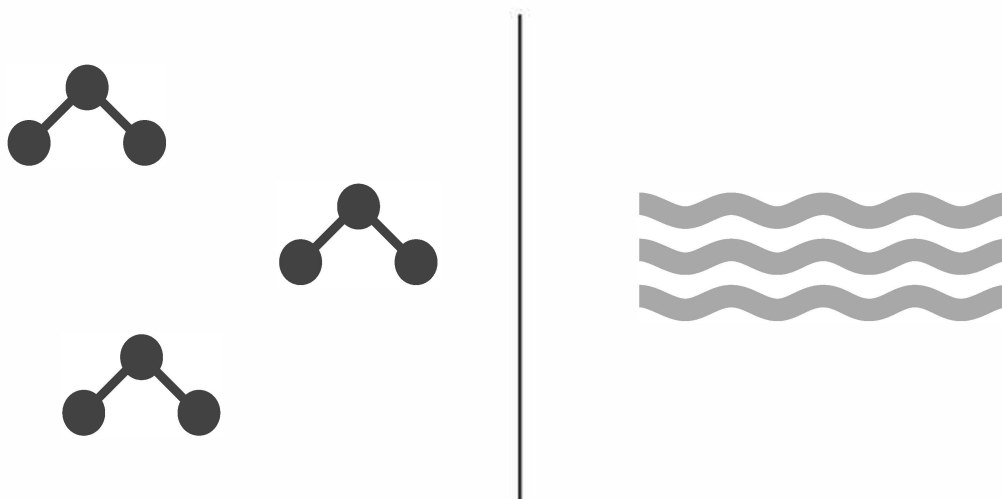


Soft Water

Most tap water is soft and low in Calcium and Magnesium. If you have soft water your pH will be easier to lower and so you only have to **add 1 squirt per gallon of tap water**. Some homes may use a water softener to deal with hard water. Water softeners work by **replacing ions** (like calcium and magnesium) with a **SALT ION**. Most softeners use either Potassium Chloride or Sodium Chloride ions as replacements. Although **Potassium** is a nutrient for plants, its presence in your water can throw off your nutrient balance because our nutrient mixes also supply Potassium. **Sodium** can be damaging for your plants as it can block necessary nutrients from getting to the plant (essentially using salt water to water your plants).

Best Type of Water for Hydroponics

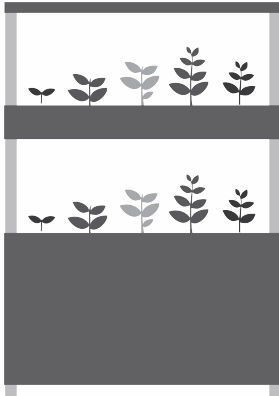
The best water to use for your Garden is **RO (Reverse Osmosis)** water, which uses a membrane to keep out unwanted ions, or distilled water which uses evaporation to keep out ions. If you have a water softener you may see growing issues with your plants and may need to consider using another water source if your plants start to fail.



Hydroponic Water Filter Chart

TYPE OF FILTERING	OKAY FOR HYDRO?
RO water / Distilled Water	Great!
Unfiltered Tap Water	Good
Softened Water (Potassium Filter)	Not Good
Hard Water	Bad
Softened Water (Sodium Filter)	Really Bad

How lights impact your Plant's Growth



Light Specifications

Our customized **LED** grow lights are made up of **3 types of lights**: Red, Blue and White.

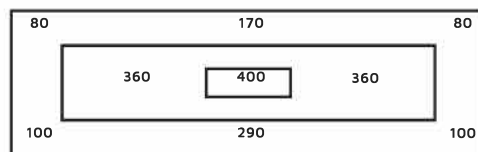
Red LED: 660 nm, 2.15v, 250mA.

Blue LED: 450 nm, 3v/120A, view angle: 130 deg.

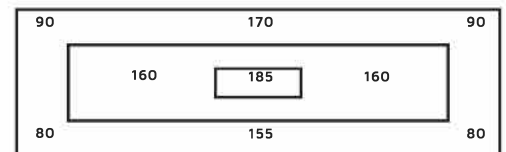
White LED: 4000k , 3.1v 60mA.

Light Intensity Map PPF

($\mu\text{mol}/\text{m}^2/\text{s}$)



6 inches from the lights

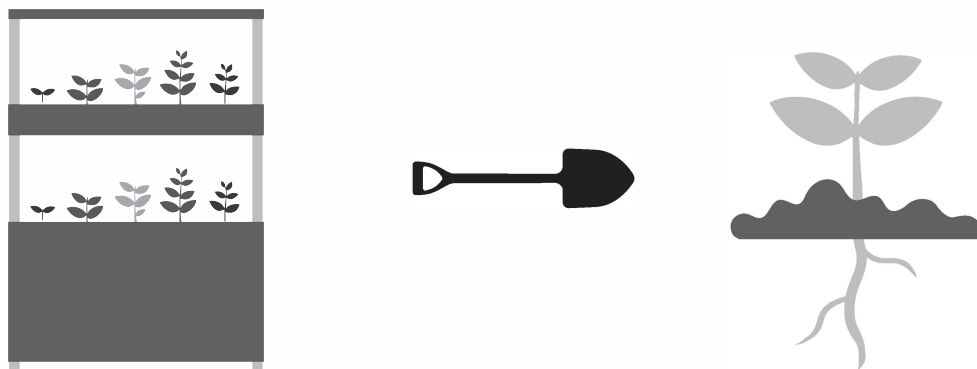


12 inches from the lights

How much light does my plant need?

	Day 7	Day 21	Day 90	Day 120
Lettuce	80	300		
Kale / Swiss Chard	80	300	300	300
Basil	80	200	200	250
Thyme / Oregano	80	200	200	
Chamomile	80	200	200	
Tomato	80	300	350	400
Pepper	80	300	300	400

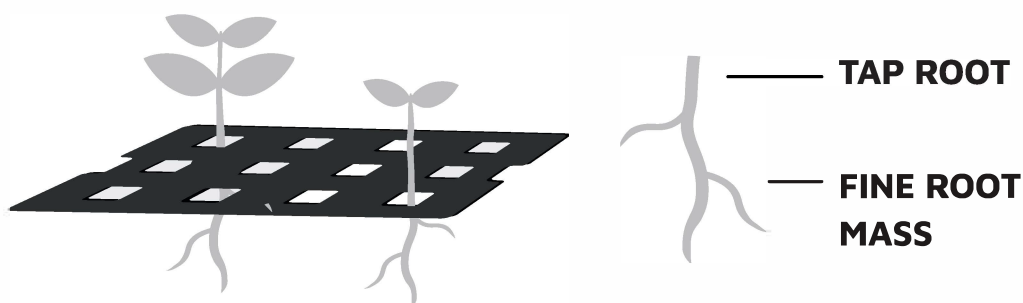
Transplanting Plants into Soil



Step 1

REMOVE your plant from its tray by carefully untangling the roots from close-by plants.

This can be tedious so be careful to break as few roots as possible.



An important step in separating roots is to identify the **TAP ROOT**, which is the main root coming down from your plant. It will be thicker than all other roots and is vital to the plant's water uptake.

The other roots surrounding the tap root make up the **FINE ROOT MASS**. You can break **20%** of your fine root mass and your plant will be perfectly healthy. Breaking your **TAP ROOT** however, can cause plant health issues.

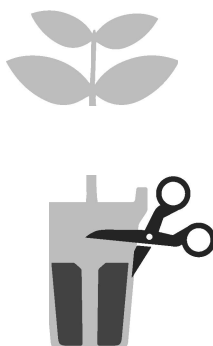
Step 2

Once your plant is safely removed from the tray, you can make a decision about your **NET CUP**: Do I leave it on the plant and dig it up later? Do I cut it off the plant?



Why should you **BURY** the Net Cup?

- Your plant roots have grown around your Net Cup.
- You will remember to dig up and re-use your Net Cup after it's been planted.



Why should you **CUT** the Net Cup?

- You are unable to pull your roots through the Net Cup holes and you don't want to dig up your Net Cup.

A note on burying plastic

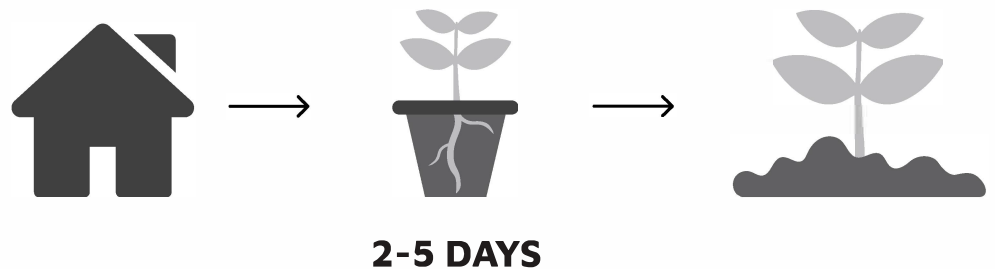
Our Net Cup is made from **ABS PLASTIC** and therefore **is not biodegradable**, so if you plant your Net Cup into your outdoor garden, you can leave it in the soil and pull it out when you harvest your plant.

ABS will not de-stabilize and leach chemicals into soil and would require heating to 400°C in order to do so. This means that it is completely safe to bury your Net Cup as long as you remember to remove it when you harvest your plant!

Read more here: <https://tinyurl.com/ybrr43vp>

Step 3

In order to keep your plant from experiencing shock upon transplanting outside, you must **HARDEN OFF** your plant. This means putting your plant into an environment that is at a halfway point in **temperature / humidity** between your house and your garden.



The best way to **harden off** a plant is to place it in a pot with soil and leave it in a sunny area, like a porch or a shaded spot outside, for at least **2 days**. This will acclimate the plant to a **SOIL ENVIRONMENT** and you can control the moisture level better. It is important to water the plant immediately upon transplanting to keep the roots alive as the plant has not developed its water root system due to being in a hydroponic environment.

It is perfectly natural for your plant to **flop** during this process as a result of moving and killing root mass. Make sure to **water your plant** if you see this happening.

Once your plant has acclimated to soil, you can keep it growing in its pot outside, or you can transfer it into your soil bed.