

Vertefarm Home Garden User Manual

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INTRODUCTION

Congratulations on your purchase and welcome to Vertefarm!

The Vertefarm Home Garden utilizes vertical surface planting and root drip irrigation technologies to perfectly blend aesthetic and practical values.

With Vertefarm, you can plant and harvest in your home, allowing for convenient and immediate consumption of fresh and safe vegetables, while showcasing the natural beauty and life journey of plants!

ASSEMBLY

Please refer to the included "Assembly Guide" for instructions.

§ 15.19 Labelling requirements.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

§ 15.21 Information to user.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

§ 15.105 Information to the user.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is

connected. -Consult the dealer or an experienced radio/TV technician for help.

*RF warning for Mobile device:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

SAFETY WARNING

Please read these warnings and all instructions before use. It's important to remember that when using electrical products, safety precautions should always be followed, including the following:

- The power source should use an independent outlet, and the grounding terminal in the socket must be reliably grounded.
- Do not unplug the device's plug by pulling on the power cord. When unplugging, pull on the insulated casing of the power plug.
- Ensure that the power has overload protection mechanisms, such as fuses. Wires and sockets should be able to withstand electrical currents of 10 amps or more.
- Avoid exposing the Vertefarm power supply to water.
- Handle nutrient solutions with personal protective equipment to prevent contact with skin and eyes. The nutrient solution is not edible, so keep away from children. In case of ingestion, seek medical attention immediately.
- The grow lights on Vertefarm generate heat during operation. Avoid touching with bare hands and keep the grow light out of the reach of children. to prevent burns.
- To prevent the Vertefarm from tipping over, do not pull or tug on the grow lights.
- When moving the Vertefarm, hold the upper and lower parts evenly and move it slowly to avoid tipping over.
- After unpacking, keep packaging materials away from children to avoid unnecessary hazards.
- The operating environment of the machine is between 50°F /10°C and 104°F / 40°C. Do not use the machine below 0°C to prevent freezing and damaging the water tank. If the ambient temperature falls below 0°C, please empty the water tank and stop using the machine.
- The machine is not designed for outdoor or open-air use.

QUICK START

> Quick Start Your Planting Journey

Before leaving the factory, Vertefarm is already set with efficient default growing parameters to control the lighting and watering process. After powering your Vertefarm on, it will operate based on these default settings. Follow the steps below to get started your planting journey with Vertefarm.

1 Assemble the Vertefarm following the instructions in the "Assembly Guide"

2 Add water and nutrient solution through the water injection port of the machine.

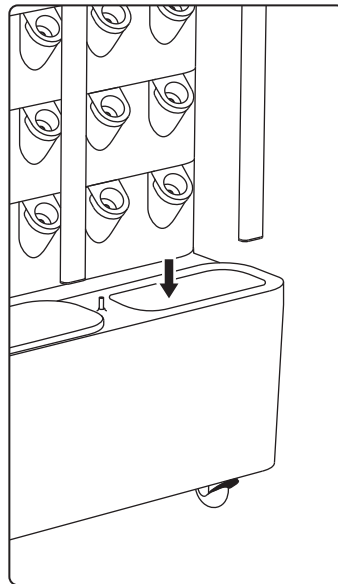
a) Add 8 gallons or more accurately, 30 liters of water. Observe the float rod while adding water. When the green segment of the float rod is completely exposed, and the red segment is about to be exposed, that indicates that the water in the tank is approximately 30 liters.

i. Generally, tap water is suitable.

ii. However, if the pH value of your tap water is above 8.0 or below 6.0, you should add pH adjuster to adjust the pH value to around 7.0 to maximize your harvest.

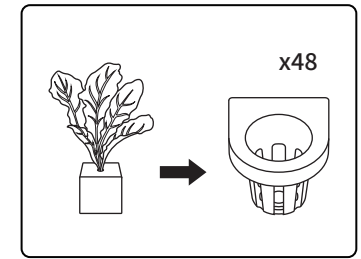
b) Add 150ml of Nutrient Solution A and mix well.

c) Add 150ml of Nutrient Solution B and mix well.

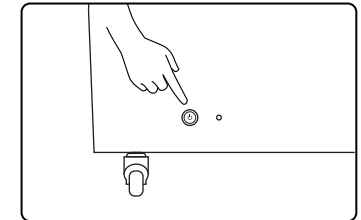


3 Place your seedlings into the planting cups, ensuring that the growing medium (rock wool or sponge) is in close contact with the bottom of the planting cups. This ensures that water will reach your seedling.

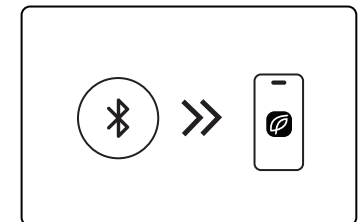
Be careful not to damage the seedlings because they are delicate at this stage, especially the main stems and roots.



4 Press the power switch to start the Vertefarm.



5 Connect to and configure the Vertefarm parameters using the mobile app.



QUICK START

> Quick Configuration for New Machines

If you wish to customize the working parameters of your Vertefarm, such as the lighting and irrigation schedule, follow these steps for quick configuration.

- 1 Assemble your Vertefarm according to the instructions in the "Assembly Guide". Then add the correct amount of water, nutrient solution, and last but not least, your seedlings to the planting openings according to the "Planting Manual." Then turn on the power switch of the machine.
- 2 Download and install the Vertefarm app from the download page on our website or on your mobile app store.
- 3 Launch the app and select the menu: "My Vertefarm" > "+ New Devices."
- 4 Click on the newly detected Vertefarm machine.
 - a) Your initial password will be the last six characters of the device's serial number. Enter that to access the configuration interface.
 - b) Your device's serial number can be found on the label on the side of the machine, or you can find it in the mobile app as the last part of the device name.
- 5 Synchronize the device's time with your mobile phone.
- 6 Set the device's working hours.
- 7 You have the option of setting a nickname and access password for the device.
- 8 Save the settings.

Once any new user preferences are saved as settings, your Vertefarm will operate based on your new parameters.

If you wish to explore further app usage, please refer to the "App Usage Guide."

For a deeper understanding of the planting machine's automation of plant growing and planting knowledge, please refer to the "Planting Guide."

PLANTING GUIDE

> Preparation

Now that your Vertefarm is up and running, you will need:

- Seedlings. Typically, planted in your Vertefarm after 14 or more days for growing fresh, leafy vegetables.
 - Nutrient solution, it's recommended you use nutrient solution suitable for leafy vegetables as included with your Vertefarm.
 - Electrical Conductivity (EC) meter and pH test strips.
 - pH adjuster, such as citric acid, which is also included with your Vertefarm.
- For newly purchased Vertefarm machines, the EC meter, pH test strips, nutrient solution, and pH adjuster are also included.

> Environment Configuration

To start your machine, turn on the power supply by pressing the power switch at the bottom of the machine.

After your machine is powered on, it will operate based on the default settings. The default settings are as follows:

- Lighting time: 08:00 — 21:00
- Rest time: 21:00 — 08:00
- Water circulation: Vertefarm utilizes cyclic drip irrigation technology. The water pump supplies water every half hour during the lighting time and every two hours during the rest time.

Users can modify these settings through the Vertefarm app. Please refer to section 4.2 for more information on how to configure your Vertefarm.

> Seedling Transplantation

- Transplant the seedlings along with the attached growing medium (rock wool) from the seedling tray into the planting cups, and then place the planting cups into the machine.
- During the transplantation process, make sure you gently push the growing medium along with the seedling roots to the bottom of the planting cups. This ensures that the plant roots can receive the drip irrigation more consistently and better absorb water.

⚠ Be careful not to damage the main roots and stems of the plants as they are delicate at this stage.

PLANTING GUIDE

> Using Nutrient Solution

Introduction to Nutrient Solution

The nutrient solution used in Vertefarm is suitable for hydroponic and leafy plants and contains the necessary macro and micronutrients for their growth. This is similar to most nutrients included in a typical potting soil, but unlike most potting soil, Vertefarm doesn't use pesticides or fungicides in order to grow "tasty and robust plants".

- Macro elements: Nitrogen, Phosphorus, Potassium, Sulfur, Calcium, Magnesium.
- Micro elements: Iron, Manganese, Molybdenum, Nickel, Chlorine, Boron, Zinc, Copper.

These nutrients do not contain any harmful substances for neither plants nor humans.

The nutrient solution used in Vertefarm is divided into Solution A and Solution B. The solution is 200 times concentrated. When diluted with water in a 1:200 ratio, it results in a diluted nutrient solution with a desired EC value of 2.0 mS/cm.

EC refers to Electrical Conductivity, which is a simple way to measure the concentration of nutrients in a solution. What this boils down to, is that EC measures how effectively the salts in your water conduct low currents of electricity.

Nutrient Solution Requirements

Create Perfect Conditions for Plentiful Harvests

During the growth period, the water in your tank should meet the following requirements after adding nutrient solution:

- **EC value:** 1.5~2.2 mS/cm (recommended value 2.0)
- **pH value:** 5.5~6.5

During vegetable growth, the suitable EC value ranges between 1.5 and 2.2 mS/cm. Please use the provided EC meter to measure the nutrient concentration in the water.

Insufficient nutrient concentration may lead to diminished vegetable growth, such as tip burn and leaf spots. Excessive nutrient concentration may also result in diminished growth, like wilting.

First Nutrient Solution Addition

① Add 30 liters of clean water into your planting machine's water tank. While adding water, be sure to observe the float rod. When the green segment of the float rod is fully visible and the red segment is about to be visible, the water level in the tank is approximately 30 liters. That means it is ready for solution.

② Add 150ml of Nutrient Solution A first, and mix well. The Vertefarm float rod is also designed as a mixer, so you can use that if you wish. By twisting the float rod, it will cause the water to move around and evenly distribute the nutrients. Please do this for a 10-second count to ensure a well-mixed solution.

③ Add 150ml of Nutrient Solution B next, and mix as described above.

④ You can test the EC value by using an EC meter to confirm that it falls between 1.5 and 2.2 mS/cm.

Nutrient Concentration Changes and Replenishment

- During the planting process, you may need to add the nutrient solution each time you add water to your Vertefarm. It is recommended that you add 50ml of Nutrient Solution A and 50ml of Nutrient Solution B for every 10 liters / 2.6 gallons of added water. Please refer to the instructions on the nutrient solution bottles for more information on proper nutrient to water ratios.
- Additionally, considering that vegetables continuously release water through respiration, which contributes 2 liters of pure water vapor to your home each day, the nutrient concentration in your water tank may increase due to sedimentation. Sedimentation occurs when nutrients sink to the bottom and become more concentrated.

Plant growth also consumes nutrients, leading to changes in nutrient concentration. Therefore, please test the EC value of the water every two weeks and add the water or nutrient solution as needed to maintain the best possible nutrient concentration for optimized harvests and vegetable yields.

⚠ Precautions

- Please avoid mixing Solution A and Solution B before adding them to the water, as this could lead to sediment formation, which can affect your plant's absorption of nutrients.
- Store nutrients in a shaded, cool, and dry place. Avoid direct sunlight exposure.
- The nutrient solution is not edible. Keep this product out of the reach of children and pets. In case of accidental ingestion, seek medical attention immediately.
- Shake nutrients well before using to ensure maximum effectiveness. Please do not be alarmed if sediment forms into the concentrated nutrients during storage. This is normal.

> Adjusting Water pH

When planting vegetables, the ideal pH range for water is between 5.5 and 6.5 after adding the nutrient solution.

In most cases, tap water from many cities or regions should meet this requirement after adding nutrient solution.

However, in areas with different water quality, you might need to adjust the water's pH Level. pH adjustment can be done either before or after adding the nutrient solution.

If the tap water's pH is above 8.0 or below 6.0 before adding the nutrient solution, adjust it to around 7.0. Please refer to later instructions in this guide on how to raise and lower pH values of your water, if needed.

After adding the nutrient solution, ensure that you check and adjust the water's pH to be between 5.5 and 6.5 for optimal growing conditions.

Your Vertefarm includes a pH adjuster and pH test paper. You can also buy the necessary pH adjuster and pH test paper from our online store.

During the plant growth process, it's recommended that you monitor any change in water's pH level. This is especially important in the early stages of planting, so we recommend that you test the water's pH after each watering. If the pH deviates significantly, adjust it using pH adjustment solution to maintain a pH range between 5.5 and 6.5. It's a good habit to check your pH at least once every two weeks to ensure maximum plant growth and bountiful harvests.

> Abnormal Vegetable Growth and Responses Plant Troubleshooting

Yellow Spots on Leaves and Tip Burn

The appearance of yellow spots on leaves and tip burn on your leaves is often the result of a deficiency in certain nutrients, such as potassium or calcium. But don't worry – it can be quickly reversed!

The nutrient solution we provide includes all the necessary nutrients for vegetable growth, so typically adding sufficient nutrient solution should resolve the issue.

If adding nutrient solution doesn't resolve the problem, you might need to test the water quality you're using. You might also want to consider visiting the Vertefarm website or seeking assistance from other professionals.

Of course, don't hesitate to contact us! We pride ourselves on Customer Service! You can find us on Instagram and YouTube, and we are always available to answer questions by email. You can also call us directly at 646-578-8858.

Pests and Diseases

To prevent the occurrence of pests and diseases, you should:

- Avoid soil. Soil contains many pests' eggs and pathogenic microorganisms. Keep your Vertefarm and seedlings away from soil. After touching soil, please wash your hands before working with your Vertefarm.
- Use only clean water.
- Avoid leaving doors and windows open; use screens to keep out flying insects.
- Use sticky traps near your Vertefarm to capture insects and minimize any contact they might have with your plants during the times of the year when pests cannot be avoided.

If your Vertefarm has already been exposed to pests and is exhibiting signs of damage, promptly remove any affected parts of the plant. If necessary, remove the entire plant altogether. If you observe a bad leaf or stem, it's okay to cut it off to avoid it spoiling its neighbors. But you want to do this sooner, rather than later. Catching it early could save your plant from complete decay.

If water has been contaminated by soil or other factors, clean the water tank and replace the water with clean water.

Wilted Stems and Leaves

Wilted stems or leaves are signs that the vegetables lack water. Please follow these steps to check your water supply:

- Make sure the lower water tank has enough water. If it's low, add water.
- Inspect the filter fabric and drip holes of the Upper Water Tank for any blockages. If necessary, clean the Filter Fabric and unclog the Drip Holes. Depending on your water quality, there may be a buildup of deposits in your machine. If your water quality is lower than average, the regular maintenance of your machine's filter fabric and drip holes are important for maximizing your harvest quality.
- Check the planting holes above for any wilted vegetables with remaining roots or debris that might be blocking the drip holes. If necessary, clear any blockages.

Vertefarm planting machines utilize circulating drip irrigation and silent design to prevent waterway blockages. However, the following situations can still cause blockages, which will need to be resolved through regular cleaning and maintenance:

- Hard water quality. This is prone to deposit build-up over time, which can clog the drip irrigation channels.
- Plant root growth or detachment. Over time, this can plug up the irrigation channels. If you ever notice loud water sounds while the Upper Water Tank is being filled, this could indicate sediment buildup in the Upper Water Tank's Filter Fabric, which can block the drip holes. If this is the case, please clean or replace the filter fabric and unclog any Drip Holes to ensure even flow of water and the quiet operation of your Vertefarm.

> Harvesting Vegetables

Most leafy vegetables can be harvested multiple times. It's recommended that you replace them with new seedlings after 2 to 3 harvest cycles.

Harvest Method 1

Cut the vegetables neatly about 2cm to 3cm above the root. The harvested leaves can be consumed, while the roots can continue to grow. Each lettuce can be harvested twice, after which new seedlings should be planted.

Harvest Method 2

Harvest from the outside-in, picking the tall, mature leaves from the perimeter first while letting the central, younger leaves continue to grow. Once the preserved inner leaves grow larger, then you can harvest them. New, young leaves will sprout from within, allowing for a cyclical harvest.

APP USAGE GUIDE

> Download and Installation

For Android users, you can download and install the Vertefarm app using the following methods:

- Visit our website www.vertefarm.com to download the app.
 - Alternatively, you can use your phone to scan the QR code on Vertefarm to access the app download page.
 - Alternatively, you can also download the Vertefarm app from the Google Play Store.
- For iPhone users, please visit the Apple App Store to download and install the Vertefarm app.

- Through the Vertefarm app, you can access the Vertefarm online store to purchase additional materials, such as seedlings, nutrient solutions, and related accessories. You can also participate in our user community discussions, where you can exchange planting experiences, get access to various services and receive support.
- With the Vertefarm app, you can also configure your Vertefarm to work according to your preferences. For example, if you work nights you may want to reverse the growing schedule; or, if you have specific varieties of plants, they may require more or less light during different stages of their growth.

> Accessing the Vertefarm Electronic Store

- Launch the app and click on "Online Store" to enter the Vertefarm Electronic Store.
- In the Vertefarm Electronic Store, you can purchase seedlings, nutrient solutions, and related accessories, participate in user community discussions, exchange planting experiences, and get services and support.
- If you are using a PC or other devices, you can directly visit our website www.vertefarm.com to access the Vertefarm E-Store.

User Account

- When you purchase a Vertefarm device, a personalized User Account will be automatically generated based on the phone number or email you provided at purchase. Your initial access password is "123456" (Note: This password is for the website account, not the Vertefarm machine).
- After your initial login to the Vertefarm website, you will be prompted to change the password to a personalized one.

Coupons

- With the purchase of a Vertefarm machine you will receive coupons in your account information!
- There are two types of coupons offered to promote Vertefarm: Vertefarm Purchase Discount Coupons (referred to as "Vertefarm Coupons") and Seedling Purchase Discount Coupons (referred to as "Seedling Coupons"). With Vertefarm coupons, you receive a discount on the purchase of the Vertefarm machine. Seedling Coupons can be used to purchase seedlings, nutrient solutions, etc.

When purchasing Vertefarm machine, you can use a Vertefarm Coupon to get discount. Vertefarm Coupons can be obtained from friends who have already purchased Vertefarm or from our promotional activities. After purchasing Vertefarm, you will receive several Vertefarm Coupons that you can share with your friends to help them get a discount on their Vertefarm if they also want to grow their own indoor plants. Whenever your friend uses a Vertefarm Coupon you shared with them, they will receive a discount, and you, in turn, will receive several Seedling Coupons.

Please follow Vertefarm on social media or contact us anytime to learn how to obtain and use coupons.

Machine Repairs and Services

You can contact us for repairs and other services in the "Technical Support" section of the Vertefarm website or within the App.

Learning and Exchanging Planting Experiences

There are several ways for you to learn about additional planting knowledge and exchange experiences with other Vertefarm community users.

1. You can read blog articles or participate in discussions on the user forum.
2. Stay tuned to our YouTube, Instagram and online postings for ongoing content!

> Managing Vertefarm

You can view the status of your Vertefarm machine(s) on the App. To do so, start the app and select "My Vertefarm." You can also add additional Vertefarm products to your account.

Existing Vertefarm Machines

If you have previously purchased Vertefarm machines, the app will display a list of the Vertefarm machines you have added to your account, along with their status information. The status information includes water level, pH value, EC value, etc. Your machine's water level is automatically read by the device, and the pH and EC values need to be entered manually (measurement methods can be found in the "Planting Guide") and entered here. When the app detects abnormal water level, pH, or EC values, they will be displayed in red text. Please refer to the "Planting Guide" for troubleshooting or follow the recommendations provided by the app.

You can also have the option of selecting a Vertefarm machine on the app and reconfiguring its settings, should you wish to customize it.

Adding Vertefarms

On your "My Vertefarm" page, click "+ Add Devices," select the new Vertefarm machine on the scan list, and enter the access password to configure the device. The initial access password will be the last six characters of the device's serial number. The device's serial number is located on a label on the side of the Vertefarm machine. If you have purchased multiple Vertefarm machines, please add and configure them individually.

If the ID of the new device is not on the scan list, please check if it is powered on, or if your phone is too far away from the device.

Vertefarm Configuration

Vertefarm configuration includes the following functions:

1. Time synchronization: Synchronize the device's clock with the phone's clock.
2. You can set the device's daily working hours, including when it starts working and when it rests. During working hours, the water pump will water the plants every 30 minutes. Outside of working hours, the water pump will water every two hours. The grow lights will be turned on during working hours and off outside of working hours. It is recommended that you set your machine's daily working hours to be 12 to 16 hours, for example, from 6 AM to 10 PM.
3. Set your device's nickname and password: to distinguish between different devices, the factory-assigned names can be long. You can give your device a nickname to easily identify your Vertefarm machine in the app.
4. Save your settings.

SERVICE GUIDE

> Cleaning and Maintenance

- It is recommended you clean your Vertefarm's Filter Fabric in the Upper Water Tank once a month to prevent clogs in the drip irrigation system.
- Depending on the water quality in your area, please clean the lower water tank on a regular basis as needed. In areas with hard water, it is recommended you clean the Lower Water Tank every month, while in areas with standard water quality, cleaning every 3 months is recommended.
- For all users, it is recommended that you perform a deep cleaning of your machine every six months. Please visit our website www.vertefarm.com for assistance.

> Machine failure Diagnosis

Please visit our website www.vertefarm.com and contact us for troubleshooting and repair.

> Specifications

Item	Specification	Item	Specification
Name	Vertefarm Home Garden	Input Power	110-220V 50-60Hz
Model	VFA-230108	Rated Power	100W
Dimensions	1668*769*355(Without Light) 1668*769*509(With Light)	Power Consumption	0.075 kWh/hour
Net Weight	24kg/53Lbs	Working Temperature	10°C-40°C
Water Tank Capacity	40L/10.57 gallons		

> After-Sales Services

Contact Us

Please visit our website www.vertefarm.com and contact us to get services and support. You can also reach a customer support representative at 646-578-8858.

WARRANTY

Warranty Terms

1. The product is warranted for one year from the date of sale.
2. During the warranty period, in cases of malfunction caused by equipment processes, materials, quality issues, etc., under normal use and maintenance, the company will provide free repairs and part replacements.
3. During the warranty period, the company reserves the right to charge for materials, repairs, and service in cases of the following:
 - a) Inability to provide valid purchase proof.
 - b) Damage and malfunction by users not adhering to usage guidelines.
 - c) Damage caused by abnormal external forces.
 - d) Damage caused by unauthorized repair or disassembly by parties other than our company.
 - e) Malfunction and damage caused by natural disasters and force majeure.
4. All rights reserved to interpret the warranty terms by Vkansee Inc.

Product Warranty Card

Product Information

Product Name _____ Product Model _____

Product Number _____ Date of Sale _____

Dealer Name _____ Dealer Phone Number _____

User Information

Name _____ Phone Number _____

Address _____

We highly recommend you register your device on www.vertefarm.com. We will create an account based on your information to provide you with after-sales services.