



Hydroponic, Self-Watering, Seeds starter, Robert Planters



Estudio Aditivo

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Summary

My own creation of the Robert planters, this version has an insert for a hydroponic/self-watering/seed starter technique

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Easy to Print, Easy to Use, Easy to Care

If you're like me and forget to water the plants or overwater them having as a consequence the bad shape of your plants, here is one solution.

I researched which hydroponic method could be easier for beginners like me and found that the wick and the Kratky methods were the ones to follow. Then to challenge myself in the design it, I decided to follow Kratky's method.

People say a Kratky system is a “**set it and forget it**” method. Plants are allowed to do their things until they are big enough. That’s somewhat true. It is because Kratky is a **completely passive system**. There is no electricity used as well as no pumps and wick needed, also don’t have to change nutrients in the reservoir as often as other systems.

So theoretically, Kratky is a **low-maintenance system** that can work on its own for weeks (depending on the size you print the Model).

For the model of the planters, my inspiration came when I saw the popular Robert planters a long time ago, then I designed my models as I wanted to have control of every part and the insert itself.

Parts

Vase: Inspired by the popular Robert Planters from Estudiofloga, but in poses that will be only achieved by 3D Printing.

Insert: Specially designed to follow the hydroponic Krafty method, so aeration and watering are consistently given to the plant as it requires.

How to use it

There are **4 ways** you could use these planters, as a regular planter, as a self-watering planter, or as a hydroponic mini garden.

For a **regular planter**, just print the vase and use it with plants that require low water such as **Cactaceae** or **Succulents**.

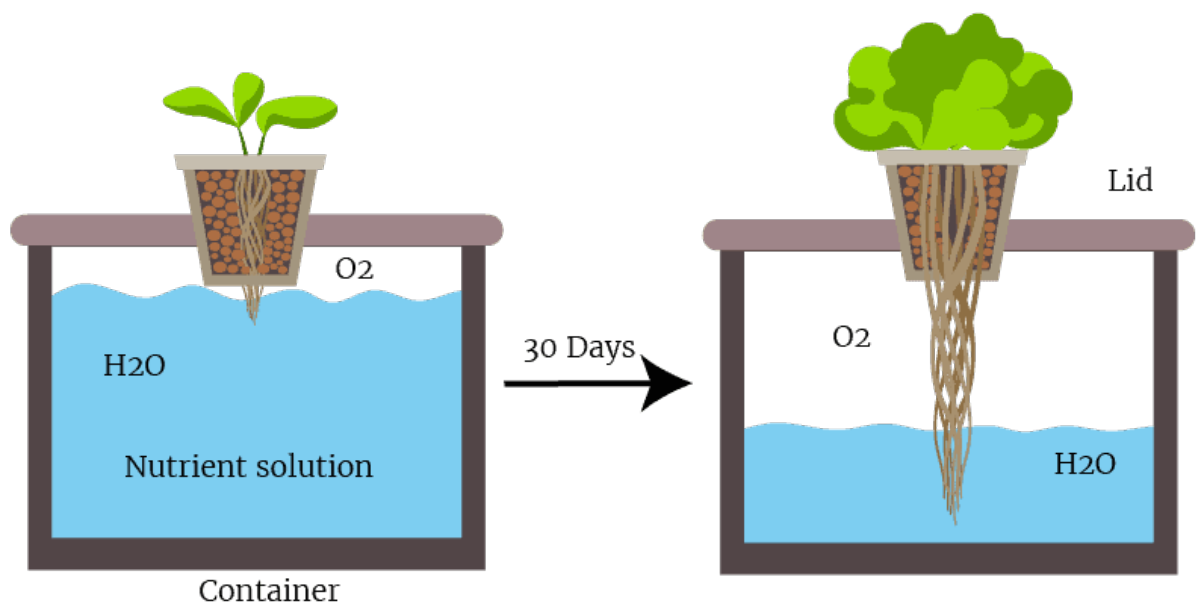
For **self-watering**, you only need to put the normal dirt in the insert and the water on the head.

For **seed starter**, is the same as self-watering but put a plastic glass on the top after you put the seed, the seed will germinate as the planter will keep it moistured when germinated just take off the glass and **let it grow**, no need to transplant it, just set it and forget it.



For a **hydroponic mini garden**, you need to replace the dirt with a **Growing medium**. I prefer a mix of 50% cocohusk and 50% perlite as it is easy to work with, pH neutral, and have good aeration. Also, you have to add Nutrients to the water before pouring it into the head of the planter. Again just set it and forget it :)

How does the Kratky method work?



The insert has holes in the top for the roots to have enough oxygen and can grow healthy. Plant roots are partly submerged in the water and some roots will go for the upper holes and be exposed to the air.



The bottom part of the insert is for the roots to grow and absorb as much water (with nutrients) as they could need. As the plants grow, the water level will decline as plants absorb the water in the system, leaving a gap in the roots exposed to the air. The “air gap” is essential because it is where the plants respire.

So that means at times, plants are still able to take up sufficient nutrients, water, and oxygen.

Printing Tips

Use a layer height of **0.16 (THIS IS IMPORTANT so you won't have a line in the bottom of the head)**, plus **5 bottom and top layers** you won't need any supports in Vase_01, Vase_02, Vase_04, Vase_05, and the Insert, Vase_03, and Vase_06 require just a bit of supports at 60 degrees.

According to the latest feedback, at **130% scale**, the size is more suitable for regular 4.25" plants.

I recommend at least **3 line walls** plus **polyurethane paint** for the watertight finishing.

License

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<https://cults3d.com/en/users/EstudioAditivo/creations>

Model files



robert_vase_06.stl

📄 HOLDING CHILD



robert_vase_05.stl

📄 PRAYING



robert_vase_04.stl

📄 SEE NO EVIL



robert_vase_03.stl

📄 YOGA



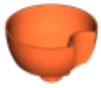
robert_vase_02.stl

📄 HEAR NO EVIL



robert_vase_01.stl

📄 INNOCENT



insert.stl

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