



SPRING SYSTEM OWNER'S MANUAL



CONGRATULATIONS!

We here at Bright Agrotech are so happy that you chose our product. We're a small family-owned business in Laramie, Wyoming, and it is our goal to give you the best product possible. We love the equipment that we've developed, and we hope that you will too.

Thanks for buying our products and supporting American Agriculture, and, if you're ever in the area of Laramie, Wyoming, give us a holler.

Sincerely,
The Bright Agrotech Team



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For the purposes of this instructional guide, the Spring™ system shown is white. Your Spring™ will likely be of a different color



PLEASE READ ENTIRE USER'S MANUAL BEFORE YOU USE OR OPERATE THE SPRING™

1. OVERVIEW

SYSTEM OVERVIEW

The Spring™ system consists of a ZipGrow™ tower, the Spring basin and lid, as well as an irrigation system. Using patented ZipGrow™ towers, the Spring™ is a little vertical farm, allowing users to grow vertical, hydroponic crops right out of the box.

The ZipGrow™ tower is held in place by the specially designed Spring™ basin and Spring™ lid. The system is weighted with the nutrient solution.

A pump in the basin pumps this solution up through an irrigation line to the top of the tower, where it trickles down through the special Matrix Medium and plant roots.

The system can be run constantly or on a timer, and needs minimal maintenance.

The Spring™ is a product designed to help everyone garden, regardless of experience or ability.

Please read through this manual completely to better understand how the Spring operates.



2. ABOUT BRIGHT AGROTECH



Bright Agrotech is a small business founded on the high plains of Laramie, Wyoming. A family owned and operated business, Bright Agrotech has been farming aquaponically (organic hydroponics combining aquaculture and hydroponics) using ZipGrow™ towers for seven of years, and recently decided to present ZipGrow™ towers to the masses in the form of The Spring™.

The Spring™ represents years of farming experience and scientific research, as well as our own blood, sweat, and tears.

It's also made possible by incredible support of our family, friends and surrounding community.

Bright Agrotech has always felt that the future of farming rests in the hands of small, local farmers serving local markets.

Developing this product is one step closer to the future we want to see.

Thanks for supporting Bright Agrotech and the future of farming!

3. BOX CONTENTS

WHAT'S IN THE BOX?

Your Spring™ system comes in two boxes - one containing the ZipGrow™ tower, and the other containing the Spring™ basin, lid and other components.

ZipGrow™ Tower Box:

The ZipGrow™ tower consists of three components:

1. The Tower Housing

This is the white plastic housing that squeezes the black Matrix Medium. It is made from safe, durable plastic. The housing has a hole at the top of it in the rear of the housing, for anchoring the tower during planting. The side of the tower with the gap is the front.



2. The Matrix Medium

This is the coarse black fiber inside the housing. It typically comes in two pieces per tower, although it can be cut into smaller pieces and folded to use in the tower.

2.



3. The Wicking Strip

This is the gray felt strip in the top of the tower. These strips are designed to be placed between the folded halves of the Matrix Medium. These strips wick nutrient solution to the plant roots, and are very helpful when you are first getting started.

Matrix Media: Sustainable and Productive

Bright Agrotech's Matrix Media is a spun fiber produced from recycled PET-1 plastic water bottles. This lightweight fiber media provides ample amounts of biological surface area which, in addition to providing a strong anchor for your plants to hold on to, it also ensures excellent solids filtration and maximum yields from your favorite crops.

Spring™ System Box:

This box contains several components:



1. The Basin: The basin is composed of a basin and a lid. The basin's sturdy design holds water/nutrient solution and supports the bottom of the ZipGrow™ Tower. The lid has an inverted design to return any dripping water to the basin, with a central hole and supports to support the ZipGrow™ Tower. It is made of safe, durable LDPE plastic. The back of the Spring™ basin has a plug placed at the bottom rear of the basin. The front of the Spring™ basin lid has the "Spring" label on it.

2. The Pump: The pump is made to fit in the rear of the Spring™ basin. The bottom of the pump has suction cups on it to help it stick to the bottom of the Spring™ basin. It comes with a number of fittings that are unnecessary for setting up the Spring™ system, but may be useful should you choose to get creative with your Spring™ system down the road.

3. The Compression Fitting and 1/2" to 3/4" Threaded Fitting: The 1/2" to 3/4" fitting threads into the top of the pump, and the Compression Fitting threads onto that. These two pieces allow the irrigation tube to be attached to the pump.

4. ZipGrow™ Pulling Hook: This is a tool used to pull medium into and out of the ZipGrow™ Tower.

5. Nutrient Solution: This is a bottle of starter solution for your Spring™ system.

6. The Irrigation Tube: One end of this tubing is forced into the top of the compression fitting. The irrigation weight will fit in the other end. This tubing will be pulled through the hold in the lid of the Spring™ basin and run up to the top of the tower.

7. Irrigation Weight (Not Pictured): This is a special zinc weight that pushes into the end of the irrigation tubing. It is used to weight the end of the tubing so that it will be secure when pushed into the medium at the top of the ZipGrow™

4. GETTING STARTED

1. Once you take your Spring™ system and ZipGrow™ Tower out of the boxes, emptying all components, thread stopper plug into basin of the Spring™ system.

SETTING UP THE PUMP

2. After you've taken the pump out of the box, take the ½ to ¾ inch fitting and thread the ½ inch (smaller) end into the top of the pump.

3. Push the rubber gasket provided with the compression fitting into the threaded portion of the compression fitting.

4. Thread the compression fitting onto the top of the ½ to ¾ inch fitting.

5. With the black irrigation tubing, push one end of the tubing into the small end of the compression fitting. This can be difficult, but push until you've fit at least ¼ inch of the tubing into the fitting.

6. Push the metal irrigation weight into the other end of the irrigation tubing. This will fit into the top of the tower.

7. Press the pump down against the bottom of the Spring™ basin near the plug at the rear.

8. Pull the pump cord through the hole in the back of the Spring™ basin.



Water and Electricity don't mix! Make sure you do not over fill the Spring™ System and keep water away from electrical outlets.



The Benefits of Growing Your Own Food:

Growing the food you eat gets you several benefits:

More nutrients: The moment produce is cut, it immediately starts losing important phytonutrients. Eating fresh produce is good for you and your family!

More flavor: Food from your own garden always tastes better, and for good reason. Freshness and flavor go hand-in-hand!

4

Grow a Spring™ garden for your health and happiness!

9



ADDING THE NUTRIENT SOLUTION

9. Using a tablespoon, measure out six tablespoons of the supplied fertilizer in the Spring™ box.

10. Fill the Spring™ basin with water to the top of the pillar that holds the base of the tower.

10



11. Pull the irrigation tube through the hole in the lid of the Spring™ system, then put the lid tightly on the basin.

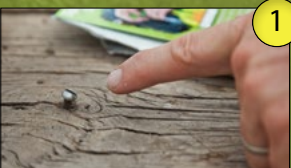
Now it's time to plant your ZipGrow™ tower.

11



5. PLANTING A ZIPGROW™ TOWER

1



1. Drive a screw into the top of your planting bench with a head that is 3/8" or smaller.

2



2. Place your ZipGrow™ Tower on the bench, with the anchor hole in the back of the ZipGrow™ Tower over the screw.

3



3. Take the pulling hook and pull the two medium halves out of the housing by pushing the "hook" of the pulling hook into the gap near the bottom of the tower. Pull the medium out. Repeat to pull out the piece of medium above it.

Find out why ZipGrow™ Towers are so productive!



Check out our blog!
www.verticalfoodblog.com

Planting a ZipGrow™ Tower (Continued...)

4. Place the folded medium halves on the bench above the top of the tower with the crook facing the top of the tower, and place a wicking strip between the folded halves so that a small amount of wicking strip is sticking out of the bottom of the folded media (the side facing the planting bench). *You do not want the wicking strip to stick out of the front side of the medium insert.*

5. Put the pulling hook in the crook of the first folded medium half, and pull it a few inches into the top of the tower. At this point it is time to start planting.

6. As you pull the medium strip into the tower, place seedlings between the two medium halves with the stem of the seedling extending from the tower housing.

Note To plant your Spring™ system, you can use seed, but we recommend starting seeds in Jiffy peat pellets or plug trays and then transplanting the seedlings. You can also use bare-root plants (like strawberries) or plants in 6-packs that you buy at your local garden store.

If you choose to plant your own seeds, you can use any commercial seed starting product including coconut coir, peat, potting mixes, Jiffy pellets (#7s), rockwool cubes, vermicompost, etc.

7. Space the seedlings however you like (we recommend standard row spacing for most crops) as you pull the medium piece into the tower. Pull the medium strip all the way down to within 1" of the bottom of the tower housing. Repeat procedure with the second strip, pulling it down until it butts against the first strip.

The tower is now planted, and ready to place in the Spring™.



Spring™ systems can be knocked over in heavy winds, if leaned upon or if the basin is not kept full of water. Protect your system from the wind, and do not lean upon the tower to prevent accidents. Keep the basin topped off to ensure that the tower is supported.



Matrix Media is durable but rough. Use gloves when planting and pulling the media into and out of the tower.

6

4



5



6



7





INSTALLING THE TOWER INTO THE SPRING™

1. Pick the tower up off of the planting bench. Place the bottom of the tower in the hole in the lid of the Spring™. The tower should easily slip into the hole until it comes to rest on the pillar inside of the Spring™ basin. At this point, push the tower lightly towards the rear of the Spring and force the base of the tower down until it seats in the indentation in the Spring™ pillar. You should feel it push into the hole in the pillar. It's a tight fit, but it should hold the base of the tower tightly.



2. At this point, the tower should be seated in the Spring™, with the irrigation tubing rising out of the indentation in the rear riser on the lid of the Spring™. Pull the irrigation tubing up to the top of the tower, and push the weight through the anchor hole in the back of the Tower. Using your fingers, force the irrigation weight between the folded halves of Matrix Medium so that it is pressed against the top of the Wicking strip between the folded medium halves.

3. Use the suction cup provided with the Spring™ system to secure the irrigation tubing to the back of the tower.



4. Take the cord from the pump that is threaded through the plug-hole in the back of the Spring™ System, and plug it in.



Your Spring™ system is now running.

For Assembly instructions for Spring™ system light stands, please see the instructional sheet shipped with that product.



Spring™ systems can be knocked over in heavy winds, if leaned upon or if the basin is not kept full of water. Protect your system from the wind, and do not lean upon the tower to prevent accidents. Keep the basin topped off to ensure that the tower is supported.

6. RUNNING & MAINTAINING THE SYSTEM

Your Spring™ system can be used for many years without replacing any of the major parts. We believe in producing durable products that will be useful in the long term. However, there is some general maintenance that must be done to keep the system in good health.

Topping Off: Every few days check the water level in the Spring™ system. To do this, turn off the pump and remove the irrigation tube and weight from the ZipGrow™ tower. Then remove the tower from the Spring™. Place it on the ground or lean it against a wall while you check the basin. If the water level has fallen below the top of the support pillar, use some pre-mixed solution to top the system off, or fill it to the top of the pillar. Then replace the tower and irrigation tube, and turn the pump back on.

Mixing Solution for “topping off:” To mix the solution for topping off your Spring™, simply mix 1 tsp of the supplied fertilizer per gallon of water. Mixed solution can be stored for several months.

Solution Replacement: Every two weeks, it is recommended that you drain the solution and replace it with freshly mixed solution. To do this, either take the irrigation line out of the top of the tower and place it in a drain or receptacle for the solution, or if you're growing in a place where it's possible, simply remove the drain plug in the back of the Spring and

allow the solution to drain onto your lawn or garden. Remove the pump from the basin and remove the filter and filter housing. Rinse the pump filter out to remove any accumulated solids.

Refill the basin as per the instructions for filling your Spring system for the first time.



This solution can be a great fertilizer for your lawn or garden—simply pour the solution around the base of the plants you wish to fertilize.

Overview:

Fill with solution mixed at 2 tsp fertilizer/gallon of water (6 Tbs/basin).

Top off with solution mixed at 1 tsp fertilizer/gallon of water. Drain the system every two weeks and replace the solution.

Maintenance:

Every month, give your Spring™ system a good rinse. If solids or algae are accumulating in the basin, scrub it and rinse it with clean water. Clean your pump filter by rinsing in clean water. Make sure your system is leak and clog free.

Cleaning the Matrix Medium: Every few growth cycles it is recommended that you clean your Matrix Media (unless you're growing aquaponically). Simply hang the medium on a clothes line, or some other place to dry. Once the medium is dried, flex it to break up the organic matter inside of it. After flexing it for a while, spray it out with a hose and replant.

7. CROP VARIETIES

WHAT CAN YOU GROW?

Just about everything will grow in a Spring™ system, however, some crops grow better than others. Try to stick to the crops that traditionally have their produce above the soil.

Greens:

- Lettuces
- Kales
- Chards
- Mustard Greens
- Collard Greens
- Bok Choy
- Etc.

Herbs:

- Basils
- Chives
- Rosemary
- Oregano
- Mint
- Cilantro
- Etc.

Fruiting Plants:*

- Strawberries
- Tomatoes
- Cucumbers
- Melons
- Eggplant
- Etc.

* Growing fruiting plants requires a different nutrient solution.

Larger vining crops like tomatoes will require some extra support as they reach maturity.

WHAT WON'T GROW AS WELL

Root crops are just about the only thing that won't grow very well in the Spring™ system because of the way the Matrix Media is designed. We would recommend not growing:

- Carrots
- Potatoes
- Onions
- Beets
- Turnips
- Parsnips

Dr. Storey after harvesting two huge heads of lettuce from ZipGrow™ Towers.



IT'S HARVEST TIME! ARE YOU READY?

Once your Spring™ system is up and running, you'll be growing a lot of amazing, fresh food. Make sure you've got what you need to harvest your Spring™!

You'll find a great pair of Precision Pruners, the same pruners we use in our commercial greenhouse on our website!

Simply scan the QR code or visit www.ziprow.com for more!



Redeem our special "Thank You" coupon code for 15% off an amazing pair of pruners and harvest away!



Be safe! Please use gloves when harvesting!



8. REPLANTING

Some crops can be grown for a very long time while being harvested from often. However, some crops must be replaced after each harvest. In either case, the tower will have to be replanted eventually.

1. To replant, simply remove the insert, and pull apart the folded medium.
2. The “root ball” should be stuck to one side of the insert. Grab the root ball and pull it off of the medium. There will always be remnants of roots left in the medium, and this is fine. These roots will break down over time and can be removed later.

If you’re using organic methods such as aquaponics or vermiponics, it is not necessary to remove these roots at all. In these instances, redworms and bacteria can be used to remove the root matter.

3. Once the root ball is removed, place the medium halves back together with the wicking strip between them, and plant the insert using the same methods as you originally used to plant the tower.

It is helpful to many users to flip the insert so that the portion of the insert facing the front of the tower in the previous cycle faces the rear of the tower when it is replanted.

9. TROUBLESHOOTING

If you run into trouble with your Spring™ System, head over to our website for a complete FAQ and troubleshooting guide.

www.zipgrow.com

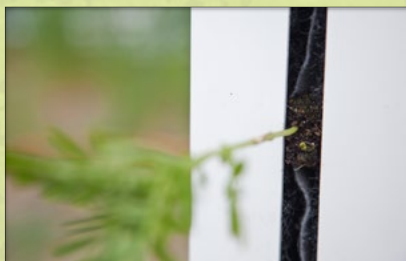


10. ADDITIONAL APPLICATIONS

OTHER FUN THINGS TO DO WITH A SPRING™ SYSTEM

1. Grow flowers! Flowers grow very well in Spring™ systems, and often form beautiful pillars of color that make great displays.

2. Go aquaponic! Ditch the nutrient solution and use fish as your nutrient source. Spring™ systems were designed so that they could function as small aquaponic systems or be daisy-chained together to form a sump system for established aquaponic systems.



3. Sell produce! Spring™ systems were designed not just for folks interested in starting a hydroponic garden, but also for producers interested in selling live produce at market. Take your ZipGrow™ tower and Spring™ system to your local market and sell the produce that you grow!

4. Go organic! ZipGrow™ towers are designed to handle solids, unlike most other hydroponic systems. This means you can use nutrient sources with high solids content. Using ZipGrow™ towers you can use aquarium effluent, compost teas, vermicompost teas, as well as other high-solids nutrient sources. Experiment and have fun! *Note* Using high solids solutions can lead to increased clogging in the irrigation line, so be prepared to trouble shoot more often.



Mint growing in a Spring™ system!

5. Play around! Spring™ systems and ZipGrow™ towers are being used around the world as an inexpensive way to grow vertically. Build a living wall, or a green privacy screen. Build a biofilter for your pond or your graywater, or use towers to cool your house passively.

There are few limits to what can be done simply and easily with ZipGrow™ towers, Spring™ systems and support hardware. We want to support you in your endeavor, so let us know if you have any questions on any of these applications!

The sky's the limit!



OTHER IDEAS

For more creative ideas check out our videos on YouTube!

www.youtube.com/user/BrightAgrotechLLC