

THE ZIPGROW™ FARM WALL™ MANUAL



This manual provides guidance for operating and troubleshooting the operation of a ZipGrow™ Farm Wall™. Feel free to reach out to our skilled team of growers with questions at any time. Happy growing!

— The ZipGrow team



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download the electronic version of this manual.

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Overview

Purpose Of This Guide

This manual was created to walk Farm Wall™ owners through the installation and growing process of their hydroponic systems. This manual will provide you with the tools you need to install and operate your Farm Wall™ effectively. If you have questions about anything covered (or not covered) in this guide, feel free to reach out to our team via email at hello@zipgrow.com or call 855-ZIPGROW.

About Small-Scale Growing

The first reported soilless horticulture techniques were published in the late 1600s. Since then, the science and techniques associated with hydroponics have exploded, making growing plants without soil sustainable and easily much more accessible. The same is true for vertical growing technology—what you see in the design of our Farm Wall™ is many centuries of work in the making.

That said, more than ever it is easy to oversimplify growing plants in soilless environments. Small-scale systems like the Farm Wall™ can be tricky to manage since fluctuations in air quality and water quality can have a greater effect. Now that you're about to embark on this endeavor know that there will be times growing is really simple and everything is perfect, but there will also be times where it won't be as easy.

We encourage you to take challenges as learning opportunities! There will be times when your plants aren't growing the way you want or expect, and that's okay, as long as you have the right outlook. Any time something might not go according to plan, this is a chance for you to master the art of growing in this exceptional way.

We are thrilled to help you troubleshoot and get to a place where growing without soil becomes second-nature. That's why we've created guides like this! This manual is littered with links and resources you can use to your advantage—keep your eye out for those and use them. And as always, if you have questions don't hesitate to reach out!



Assembly

Components List

EIGHT TOWER

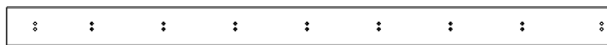
Top Gutter



Front View



Back View



Top View



Bottom View

Bottom Gutter



FOUR TOWER

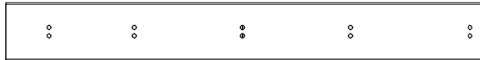
Top Gutter



Front View



Back View



Top View



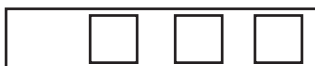
Bottom View

Bottom Gutter



TWO TOWER

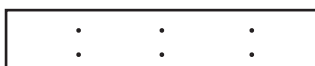
Top Gutter



Front View



Back View

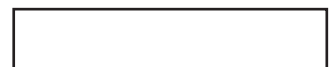


Top View

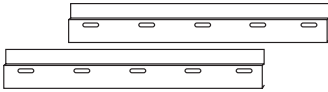
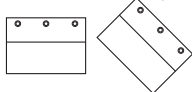
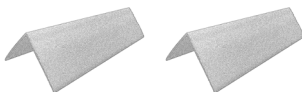



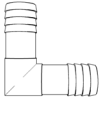


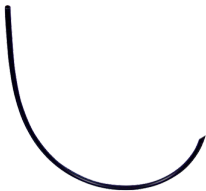



Bottom View

Bottom Gutter



COMPONENTS

<p>Wall Channel</p> <p>2-Tower (2) 4-Tower (2) 8-Tower (4)</p> 	<p>S-Clips</p> <p>2-Tower (4) 4-Tower (5) 8-Tower (6) (INSTALLED)</p> 	<p>Tower Support Wedges</p> <p>2-Tower (1) 4-Tower (2) 8-Tower (4) (INSTALLED)</p> 	<p>Drip Emitters</p> <p>2-Tower (2) 4-Tower (4) 8-Tower (8) (INSTALLED)</p> 
<p>Top Gutter</p> <p>End Caps (2)</p> 	<p>Bottom Gutter End Caps</p> <p>(2) (Pre-Assembled & Pre-Glued)</p> 	<p>1/2" Diameter 90° Elbow Joint</p> <p>(1)</p> 	<p>Pump</p> <p>2-Tower (1-400gph) 4-Tower (1-400gph) 8-Tower (1-530gph)</p> 
<p>Lock Nuts, Bolts, & Washers (for S-Clips)</p> <p>2-Tower (12ea) 4-Tower (15) 8-Tower (18) (INSTALLED)</p> 	<p>Tubing</p> <p>1/2" Diameter (2)</p>  <p>(Dripline Installed)</p>	<p>Pulling Hook</p> <p>(1)</p> 	

Farm Wall™ Specifications			
	5-Foot Farm Walls		
	2-Towers	4-Towers	8-Towers
Approx. Size	23" (w) x 67" (h)	42" (w) x 67" (h)	80" (w) x 67" (h)
Area Needed (ft ²)	10.7	19.5	37.3
Bottom Gutter Capacity (Gal/L)	1.7 / 6.5	3.0 / 11.0	5.7 / 21.7

Structural Assembly

1. Tower Support (V's) Installation

4-Tower Farm Walls include two Tower Supports. 8-Tower Farm Walls include four Tower Supports. Tower Supports must be oriented correctly inside the bottom gutter to ensure proper function of your ZipGrow Farm Wall. The diagram below shows the correct position of support wedges.

Figure A

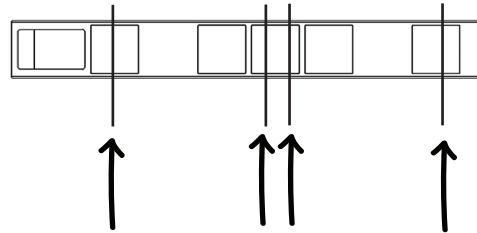
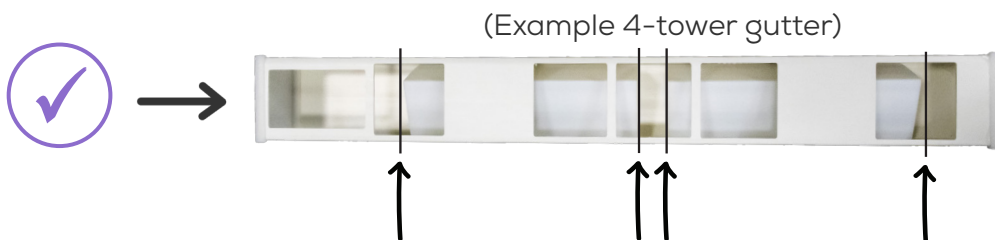
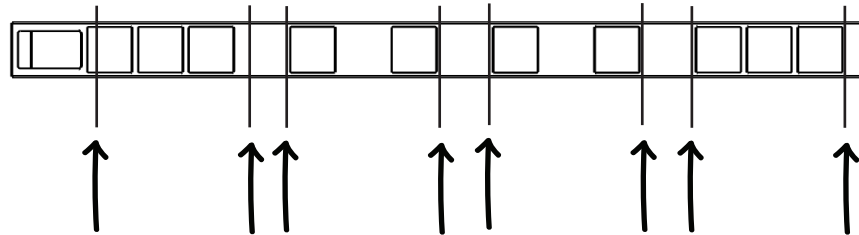


Figure B

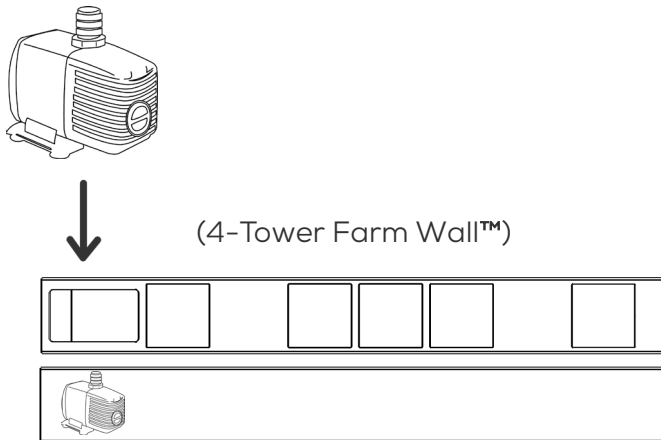


Note: We highly recommend using gloves when installing the gutter clips to avoid any potential cuts.

Irrigation Assembly

1. Pump Installation

Place the pump in the bottom gutter using the pump hole located on the left side of the gutter. Orient the pump so the intake faces into the gutter (see illustration below).



Note: When plants grow, they lose water (transpire) as they let O₂ out and allow CO₂ in. Therefore, it is important to regularly monitor the water level of the ZipGrow™ Farm Wall™. If the water level falls below the cover of the pump, the pump will burn up and fail. How much water your Farm Wall uses varies depending on the type of crop, crop maturity, and the temperature of your growing area.

2. Mount Header & Gutter Assemblies

Place the top and bottom gutters on corresponding wall channels.

3. Trim Feed Line

Measure and trim the second piece of poly tubing so that it fits (with space to attach to the fittings) between the pump and elbow. For 5-foot Farm Walls, trimming may not be necessary.

4. Header End-Cap Installation

To finish assembly simply push the end caps into place on the top gutter (no sealant required).

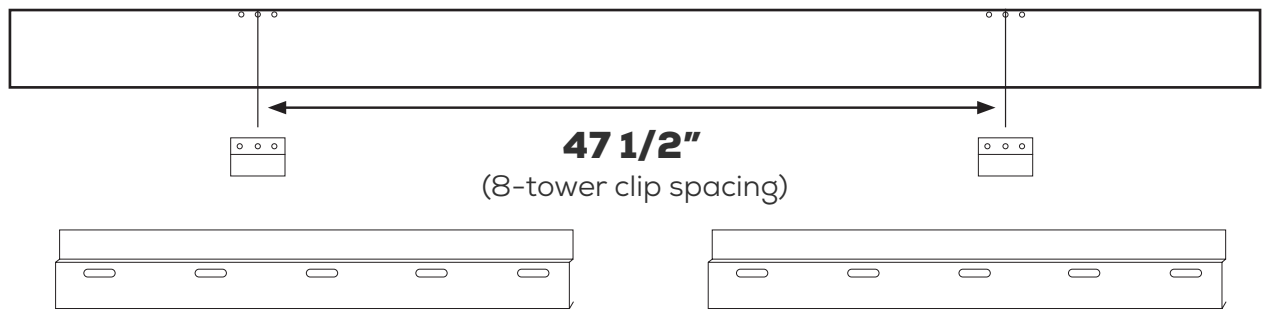
Note: To aid with connecting tube fitting you can soak the ends of the poly tubing in hot water.

Wall Channel Mounting

Warning: ZipGrow™ Farm Walls can weigh up to 230+lbs depending on how many towers and crop. Because the Farm Wall™ can become very heavy each wall channel must be properly fastened securely to brick or studs within the wall. If you have not mounted similar equipment before, please consult a professional.

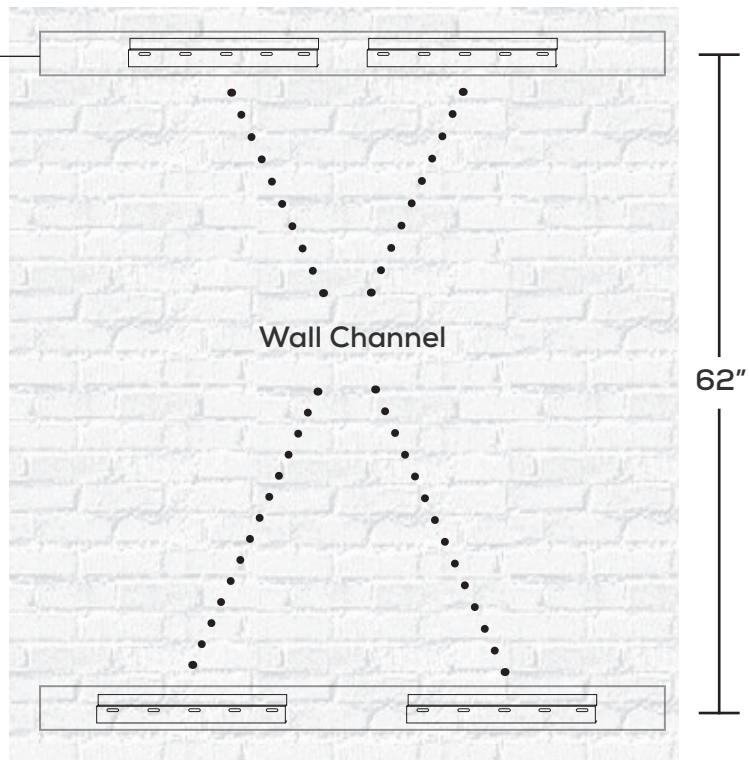
EIGHT TOWER SPACING

Mount the wall channels level so each gutter clip rests entirely on each channel.



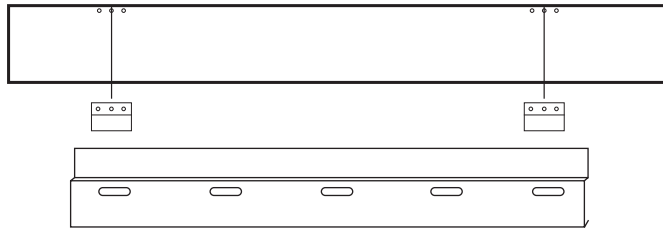
Wall channel configurations for 5 foot 8-tower Farm Wall

(Gutter shown for illustration)

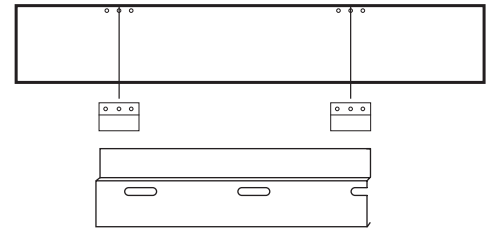


The distance between the top and bottom gutter wall channels is 62" for 5' Farm Walls.

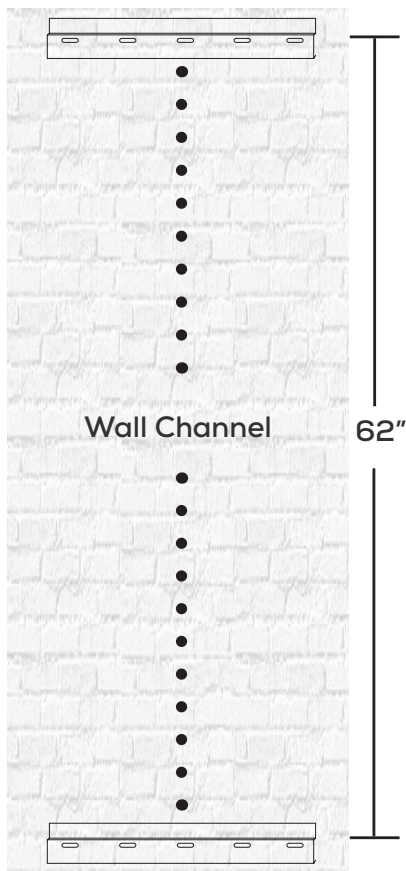
FOUR TOWER SPACING



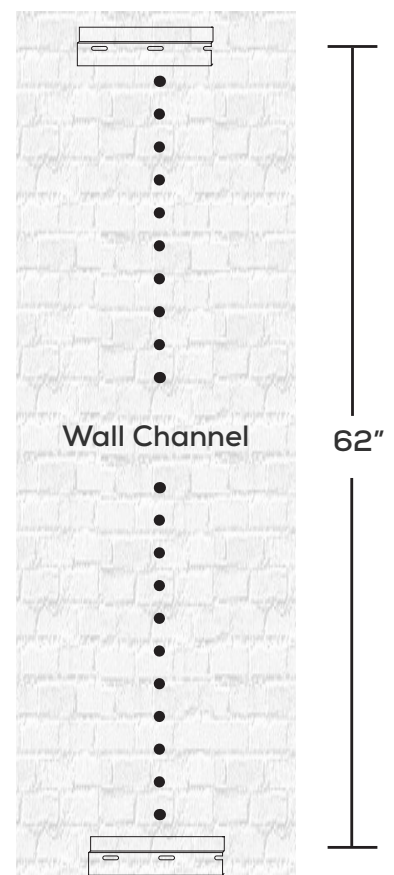
TWO TOWER SPACING



Wall channel configurations for 5 foot 4-tower Farm Wall™



Wall channel configurations for 5 foot 2-tower Farm Wall™



Mount the wall channels level so each gutter clip rests entirely on each channel.

For more instruction, check out [this tutorial video on mounting a 4 or 2-tower Farm Wall](#).

Note: to open the links provided on the manual, please download the electronic version at www.ZipGrow.com/FarmWallManual

Operation

Farm Wall™ Placement

When installing the ZipGrow™ Farm Wall™ there are three major considerations:

1.) Lighting

If not using the Farm Wall™ Light Kit, place your Farm Wall™ in a location that receives ample light for your crops. If growing in the northern hemisphere, a south-facing wall is ideal to access the maximum amount of sunlight.

2.) Accessibility to Water

It is recommended to place a Farm Wall™ near a spigot or sink to make the process of adding water easier.

3.) Structural Support

When mounting the ZipGrow™ Farm Wall™ onto a wall, be sure to anchor the mounting channel into a structurally sound surface. Only attach the mounting channel to studs, brick, or cement.

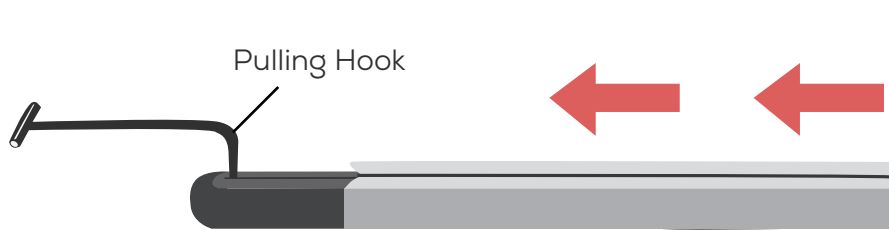
Note: Drywall alone will not support a ZipGrow™ Farm Wall™

Safety Warning Do not place a ZipGrow Farm Wall™ above or immediately near to an electrical outlet.



Planting ZipGrow™

Now that your ZipGrow Farm Wall is completely assembled It's time to plant your ZipGrow™ towers and start growing.

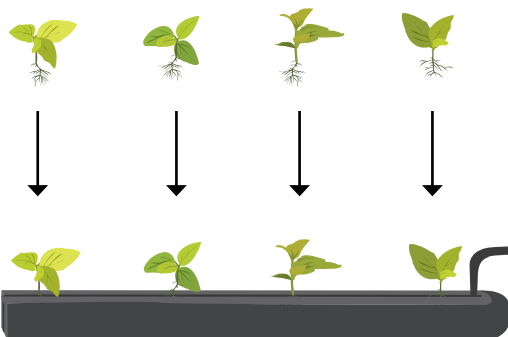
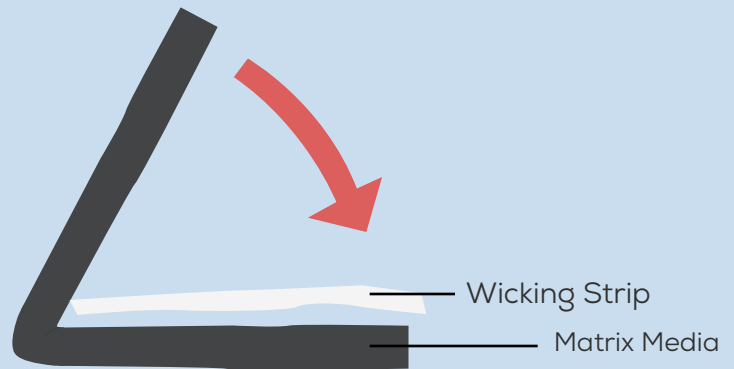


1

Remove the Matrix Media™ from the Tower with a pulling hook

2

Line the media with the wicking strip, which should not protrude from the media. It should be ½ inch from the edge of the media.



3

As you "zip" the media back into the Tower, sandwich the seedlings in the fold of the media.



Not sure what to grow? Here's our free [Best Crops For Hydroponics Guide!](#)

Need more information on how to grow? Learn more about planting, growing, and selling crops at [Upstart University](#), the online training platform.

Note: to open the links provided on the manual, please download the electronic version at www.ZipGrow.com/FarmWallManual

Water Quality Management

Fill the gutter to the top of the Tower Support with water and nutrient solution. When filled to the top of the Tower Support. We recommend pre-mixed solutions like Dyna-Gro or Canna nutrient solutions, be sure to follow the dosing and mixing instructions of the fertilizer you choose to use. Depending on crop size, intensity of lighting, and outside temperature, the Farm Wall™ may need to be refilled several times per week.

ZipGrow™ Farm Walls come with pre-mixed nutrient solutions, either CANNA or DYNA-GRO (country- dependant). The nutrients we provide are specially formulated one-part nutrients for all hydroponic growing systems. For more information on CANNA and DYNA-GRO products, contents, associated hazards or personal protection requirements (MSDS) is available online at cannagardening.com. and dyna-gro.com (respectively). Be sure to read and follow the directions of the fertilizer. For additional information on choosing a nutrient mix, read [this blog post](#) on the topic.

In addition to nutrients, an essential component of proper water quality is managing pH. Most crops like pH to be between 6.2 and 6.8. Typcially most hydroponic systems will run more basic (higher in number) as a by-product of plant growth, however, sometimes hydroponic systems can also run more acidic (lower in number). To combat these fluctuations and to achieve pH values that are within a plant's normal growth range we recommend using pH stabilizers (as shown below).

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Troubleshooting

Problem: Plant show signs of deficiency

Plants with yellowing, brown spots, or necrosis (dead leaves) may have a deficiency of one or multiple nutrients.

Fix: Make sure that you are applying fertilizers properly (instructions above). To learn more about nutrient deficiencies, [watch this video](#).

Problem: Pests and diseases on Farm Wall™

Insect pests like aphids, thrips, and whiteflies, and diseases like powdery mildew and botrytis occur on Farm Wall™ crops just like other crops.

Fix: You can use most conventional pest controls with these pests.

Problem: Drip emitters are clogging

Sometimes, drip emitters will become clogged with salt build-up or debris particles, cutting the water off from plants.

Fix: Clean out the drip emitter by unscrewing the bottom of the dripper, cleaning out the membrane inside, or by taking out the membrane altogether. Soaking the emitter in hot water and hydrogen peroxide can also be beneficial.

Problem: Algae build up in gutter

Algae can cause daily fluctuations in pH and compete with plants for nutrients if there is too much. (Some algae won't hurt.)

Fix: Algae is best controlled by shading. ZipGrow™ Towers are shaded by the Tower housing and by the black media inside, but the gutter may receive more sun/light. Shade the gutter by using something to cover any areas allowing light to hit the water.

Problem: Towers are leaking out the front

If irrigation solution leaks from the front of the Towers, plants can get wet and grow diseased, or drip onto the floor and create a mess. This happens when the stream of water is diverted from the back of the Tower over the foliage or wicking strip.

Fix #1: Check the wicking strip placement. Wicking strips should be folded into the media with no white showing from the front. The edge of the strip should be half an inch from the face of the media.

Fix #2: Check the angle and planting depth of the plants. Plants angled down or horizontally will typically leak water out the front of the tower, especially if they are not planted deep enough into the tower. Be sure to plant at a slightly upwards angle deep enough in the media that no part of your plug is showing out the front of the tower.

Fix #3: Check the plant. With large woody herbs like matured basil or other large plants, the base of the stem can grow thick and bulky, interrupting water flow and giving it only one place to go: forward. This rarely happens. If it does, reposition the Tower. You may need to replant if the crops are this large.



About ZipGrow

The Purpose Behind What We Do

Our Vision

ZipGrow's vision of a better future looks like: a global attitude of people wanting to participate and contribute—and have equal access—to the highest quality, environmentally and economically sustainable produce possible.

Our Mission

ZipGrow's mission is to design and manufacture the most economically viable, resource-efficient, and productive hydroponic equipment possible for people who believe in smarter, local food sources and want to participate in changing how people think about and access food.



Thank You!

Whether you're a farmer, hobbyist, or anything between, by reading this document you're taking steps towards being part of a better food system and for that we are truly grateful. We also realize that there are many great resources out there that are at your disposal and we want to thank you for using us as a tool to help you be more effective in your pursuit of local and sustainable food.

We hope this guide has been useful to you and if you have any feedback we would love to hear from you! We believe that the success of local and urban farmers is the success of the food system, so we make it our mission to help new farmers and growers everywhere see success in their efforts. If you can't be successful then neither can we so if you have additional needs or questions outside the scope of this manual, please contact us!



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