JED Ozone Generator

Setup & Owner's Guide

for your

Cold Plunge

by John Richter

Disclaimer

This guide is based on personal experience and feedback from thousands of cold plungers around the world. It is provided for educational and entertainment purposes only.

While we strive to keep all information accurate and up to date, we make no guarantees or warranties—express or implied—about the accuracy, safety, or effectiveness of any method, product, or recommendation included. Use at your own risk.

Modifying a chest freezer or using ozone with a commercially built cold plunge may void warranties or damage equipment. Ozone use and cold plunging can be powerful tools for health and well-being, but may also pose serious risks or be life-threatening if used improperly.

By using this guide and installing or operating any of the products offered, you accept full responsibility for your choices and agree to release the author, his company, and heirs from all liability.

Affiliate links to Amazon and other sources may be included in this guide. When you click the link and buy the product I earn a small commission. These products are included for reference. You can, of course, find another suitable product.

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First Things First

Congratulations on your purchase of a JED ozone generator! Ozone is one of the most efficient ways to sanitize the water in your cold plunge. The JED ozone generators are the only ones on the market specifically designed and built for use with cold plunges. Kitchen ozone generators are too weak and will not keep your water clean for long- if at all. Spa models are too strong and can damage your equipment and your health. You've made an excellent investment!

Before you read through these instructions, be sure to read the instructions that come with your JED ozone generator.

What's in the Box

	JED 303	**JED 003**
Case	Weather Resistant	Standard
Tubing	✓	✓
Check valve	✓	✓
Airstone	✓	-
Instructions	✓	✓

Additional Items Needed

	JED 303	**JED 003**
Timer or Smart Plug	Yes	Yes
Venturi Injector	No	Yes
Mounting hardware	Yes	Yes

Recommended Equipment

Digital Timer: https://amzn.to/3T3yG4v

Smart plug: https://amzn.to/4f7kxfq

Venturi Injectors

Be sure to get one made of ozone compatible materials. Venturis for agricultural use will not hold up with ozone.

Here is an inexpensive option from Amazon: https://amzn.to/42cPk7G

The highest quality injectors come from Mazzei. You'll need to buy one from a distributor. I've found Ryan Herco Flow Solutions to be a good source. Here their website:

https://www.rhfs.com

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Introduction

I've been cold plunging at home since 2017. One of my biggest struggles was keeping my water clean. The JED 303 solved that problem for me. I authored "The Ultimate Chest Freezer Cold Plunge DIY Guide" and have helped thousands of people worldwide build, buy, and maintain cold plunges. Whether you have a DIY or professionally built cold plunge, the JED will be a great addition to your setup. Please read this guide. If you have any questions that are not covered here, reach out to me via email. I'm happy to help.

Notice of Use

Your JED ozone generator is sold strictly for water treatment applications, which in this case includes only cold plunges and small hot tubs under 400 gallons. Do not use this ozone generator for air purification or any other use outside of water sanitation.

Ozone Safety

Breathing high ozone concentrations or over extended periods can irritate or damage your throat and lungs. This product should only be used for water treatment and should be used outdoors or in a well-ventilated area.

Additional Equipment Needed

Why Mounting Hardware, Timers, and Venturi Injectors Aren't Included

Our mission is to help you keep your cold plunge water clean with less hassle- so you can enjoy the benefits of regular cold water immersion without constant maintenance or frequent water changes that come with low-quality gear.

We offer high-quality ozone generators built specifically for water sanitation- not cheap knockoffs or misused kitchen units or air purifiers. That means they're more effective, more durable, and built for serious results. But just like cold plunges, **every setup is different**.

Whether your system is indoors, outdoors, in a garage, gym, patio, or backyard, the details of how you install and run your ozone system will vary. That's why we don't include mounting hardware or other equipment- we want you to have the right parts for *your* setup.

Here's a quick breakdown:

JED 003: For systems with a pump and venturi injector
This model injects ozone into your water using suction from a venturi injector (which must be connected inline with your plumbing, pump, and filter).

- **You'll need a venturi injector** to make this unit work.
- Suction strength depends on your pump's flow rate, water pressure, plumbing length, fittings, and tank volume.
- Since there's no one-size-fits-all solution, we don't include a venturi- but we **do provide recommendations** to help you choose the right one.

JED 303 – For simple ozonation setups without complex plumbing
The JED 303 has been the gold standard for chest freezer cold plunges since 2019. This unit diffuses ozone directly into the water above with an airstone.

- No venturi needed—just mount it securely and plug it in.

Timers (for both units)
Ozone should be run for short periods at regular intervals. Most people use a **programmable digital timer** or a **smart plug** connected to their smart home system.

- Some users are happy with a basic mechanical timer, while others want full control with a digital model.
- We don't include a timer because **everyone has a different preference-** but we're happy to share our recommended options.

Mounting Hardware
Some mount on concrete walls, some on wood, some on metal enclosures. Both units need to be vertically in order to work correctly.

- Because of all the variations, we leave hardware selection up to you- but it's easy to find what you need at your local hardware store.

Accessory Options

See the First Things First section – the second page in this guide, for specific product recommendations.

Where to Place Your JED

Your JED ozone generator must be mounted in an ***upright*** position. Install it ***above the water line.*** While it will work installed below the water line, there is an increased risk of damage due to moisture getting into the unit via the tubing.

You can place your JED on a project board, attach it to the wall, or secure it to a wired shelf with zip ties.

Because your JED ozone generator requires fresh air to make ozone, never place it inside another box or container. The JED 303 case is weather resistant and will protect the equipment inside from direct sun, rain, and snow.

The 003 should be installed in such a way that it is protected from direct sunlight and rain. If you put it inside of an equipment box, especially if there is a chiller close by exhausting heat, ensure that there is adequate ventilation.

Here are pictures of various installations.

Screws on project board

Wall anchor and screw into sheetrock

Magnetic hooks

Zip ties

Screws attached to custom-made wood shelf

Ambient Operating Temperature

Your JED will work great when the air temperature is between 40F – 100F (4C – 37C). If it is hotter than that, the motor will work harder. If it is colder than that, it might not work well.

If it drops below 40F (4C), install a heat lamp with a temperature controller near the weatherproof case. Put the temperature sensor inside the case to turn on the heat lamp when the temperature gets close to 40F (4C), and turn off the heat lamp when it reaches 45F (7C).

If it drops below freezing, the unit is susceptible to damage. It should be winterized along with your other cold plunge equipment.

Dimensions

Here are the dimensions to lay out your project board.

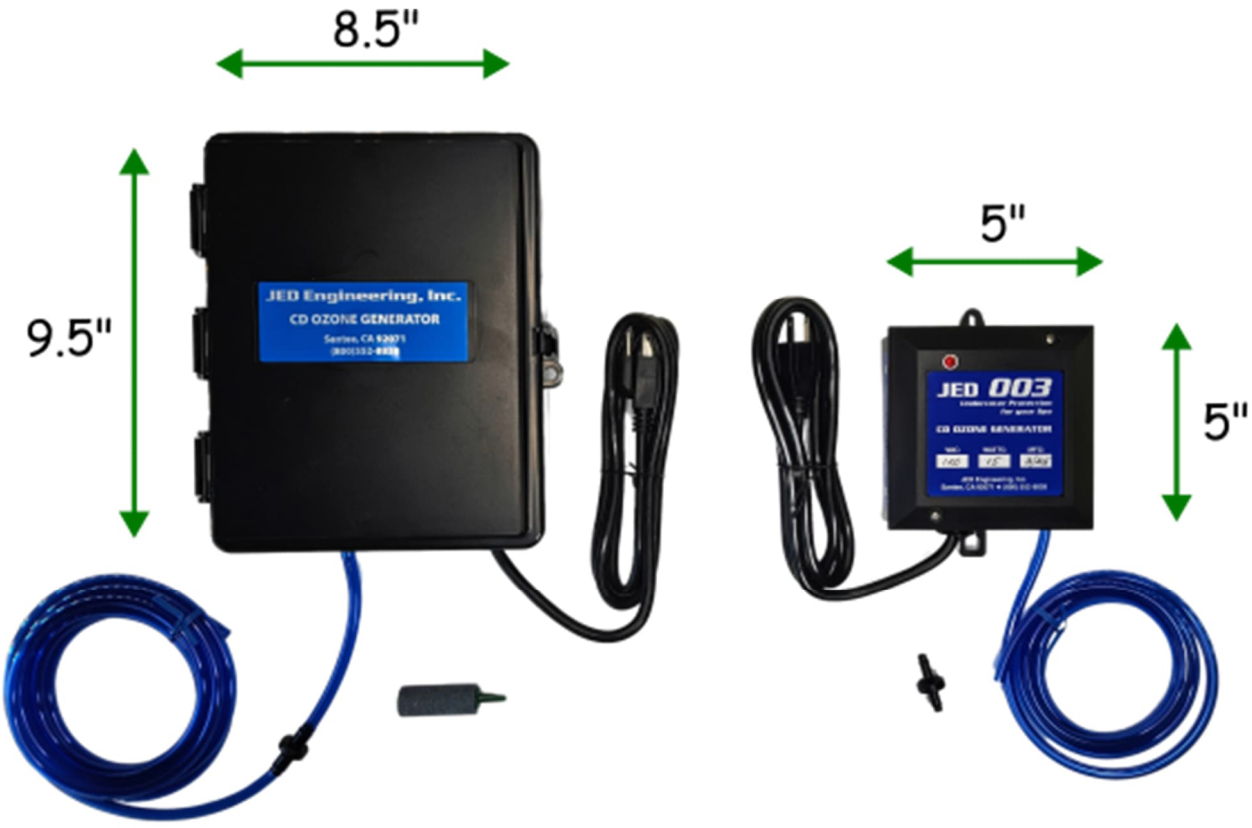
Be sure to allow space for other equipment:

- Temperature controller
- Timer
- Power strip
- A hook for your Hartford loop
- A hook to hold the key

Leave at least 4 - 6" beneath the bottom to allow space for the tubing and power cord.

Front to back the 303 case measures 4.5".

Front to back the 003 case measures 2.5".

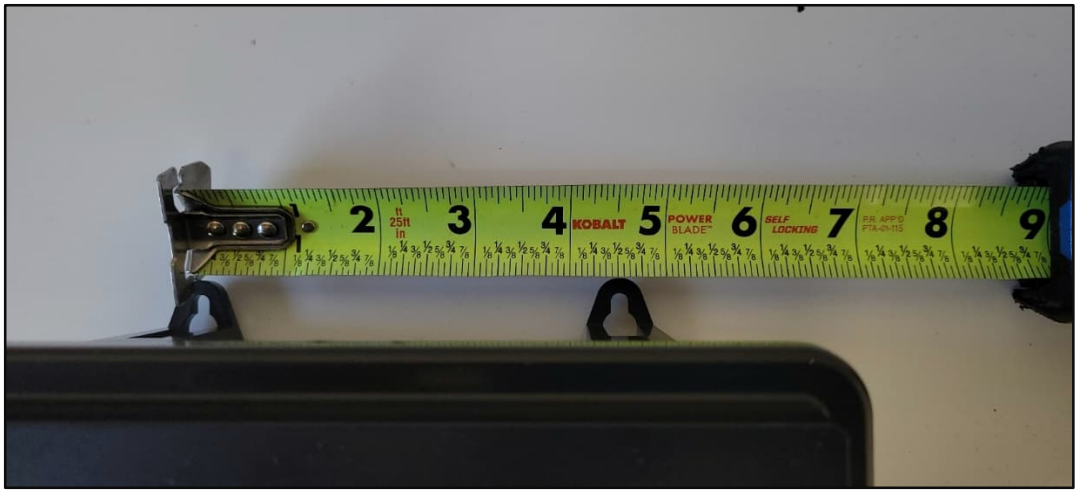


How Far Apart to Drill the Mounting Holes for the 303

Your JED ozone generator must be mounted vertically in a well-ventilated area because fresh air is needed to make ozone. Your JED delivers ozone to the water through the included blue tube, so ensure it is close enough to your cold plunge for the tube to reach. The 303 airstone should sit on floor of your cold plunge. The 003 tube connects to the venturi

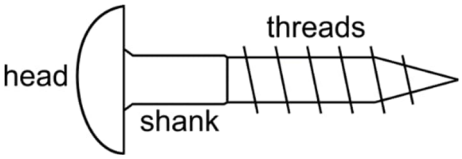
Place two screws to hang your JED 303. Use a #8 wood screw with a shank, and ensure the back of the head is flat, not tapered. If you can only find a tapered screw, that will be OK. I like Phillips heads better than flat heads but use what you can find.

The holes should be 4-1/2 inches (114 mm) apart, but measure your JED to double-check before drilling.



Measuring for the mounting screws

I like to use a screw with a shank so that the threads will not wear on the plastic. You can use a screw of your choice.



This is a great screw to use to mount the JED 303

If you can't find this screw locally, and you are in the US, you might be able to order them from Home Depot at this link:

https://www.homedepot.com/p/Everbilt-8-x-3-4-in-Phillips-Round-Head-Zinc-Plated-Wood-Screw-6-Pack-08911/204283341#overlay

Power & Plug Requirements

120v

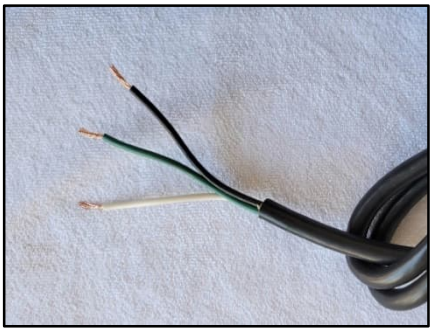
If you live in the USA, Canada, Mexico, Puerto Rico, or other countries with 120 outlets in your home, your JED will already have the correct 3-prong plug connected to the power cord. No extra work is needed.

Skip to the next section, “Hartford Loop.”

240v

If you live in Australia, the UK, Israel, New Zealand, or most other countries outside the US, your JED will come with pigtails, which means three bare wires.

1. Green: ground/earth
2. White: 120v
3. Black: 120v

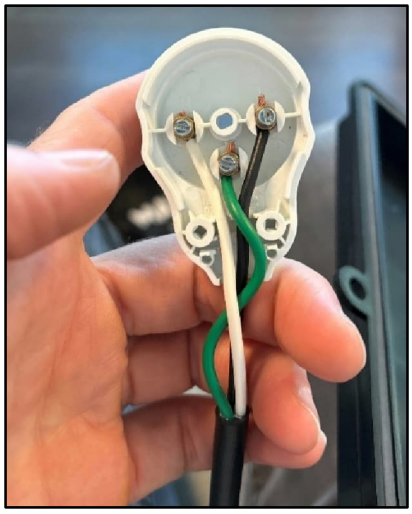


Pigtails

You will need to purchase a grounded (3-wire) power plug. They typically have three screws inside.

Label on the Plug’s Screw	Attach this JED Wire
"Ground" or "Earth"	green
"Hot" or "Active"	black or white wire (120v)
"Neutral"	remaining black or white wire (120v)

Connect the green JED wire to the ground/earth. The black and white wires from the JED are both 120v, and it should not matter which of the other two connectors in the plug you attach them to. Connect either one to the Hot/Active and Neutral screws. If you are uncertain, consult a local electrician.

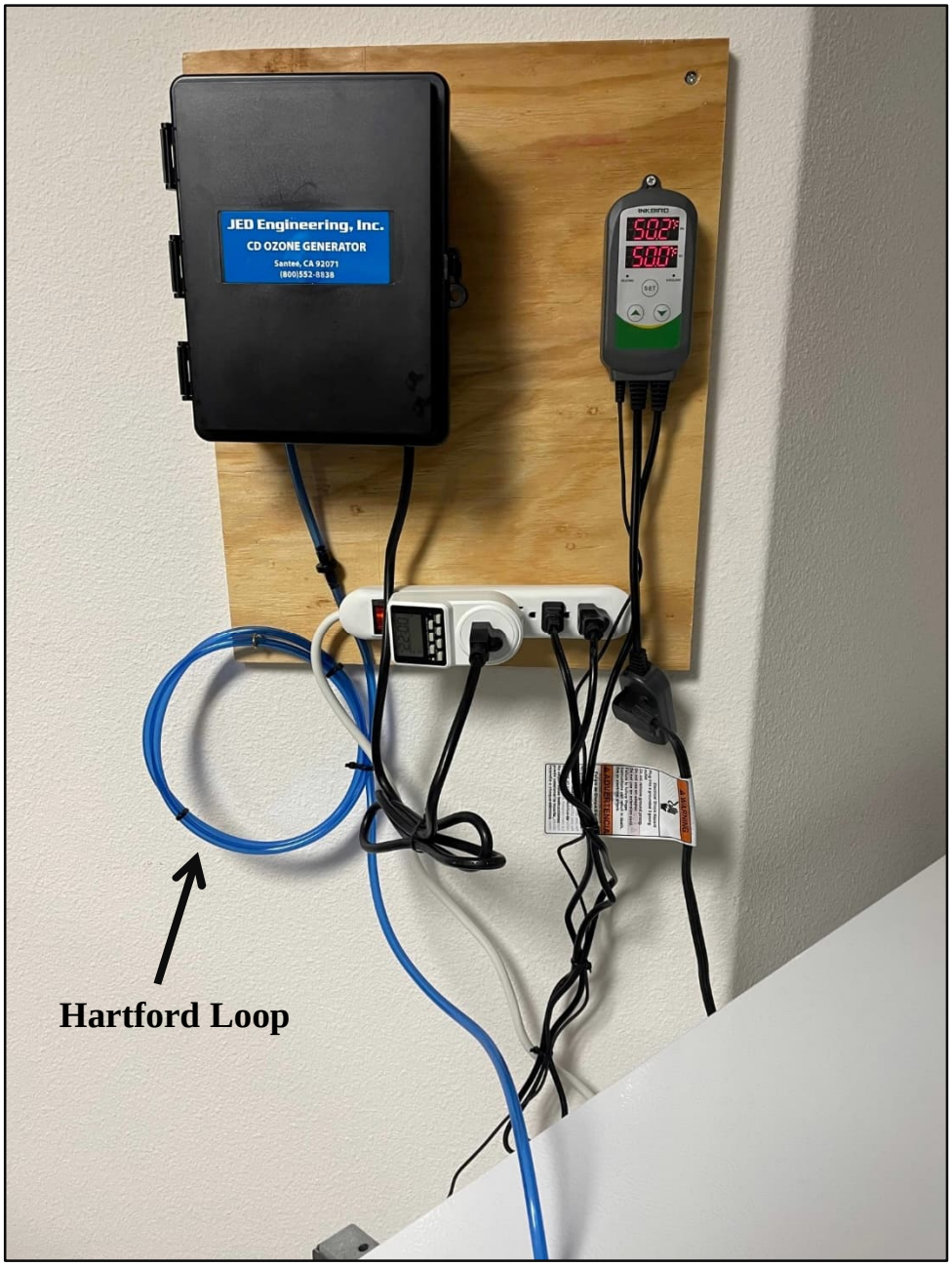


Grounded plug with wires attached

Hartford Loop

Your JED comes with a 1-way check valve to prevent moisture from getting back into the unit. Mounting it above the water line also reduces the risk of moisture. Putting a double loop in the tube between the ozone generator and the airstone is one more step to help prevent moisture from causing damage to the unit.

The technical name for the double loop is a "Hartford Loop," but it is also commonly known as a “drip loop.”



The Hartford Loop, also known as a drip loop.

Options for Placing the Blue Ozone Tube

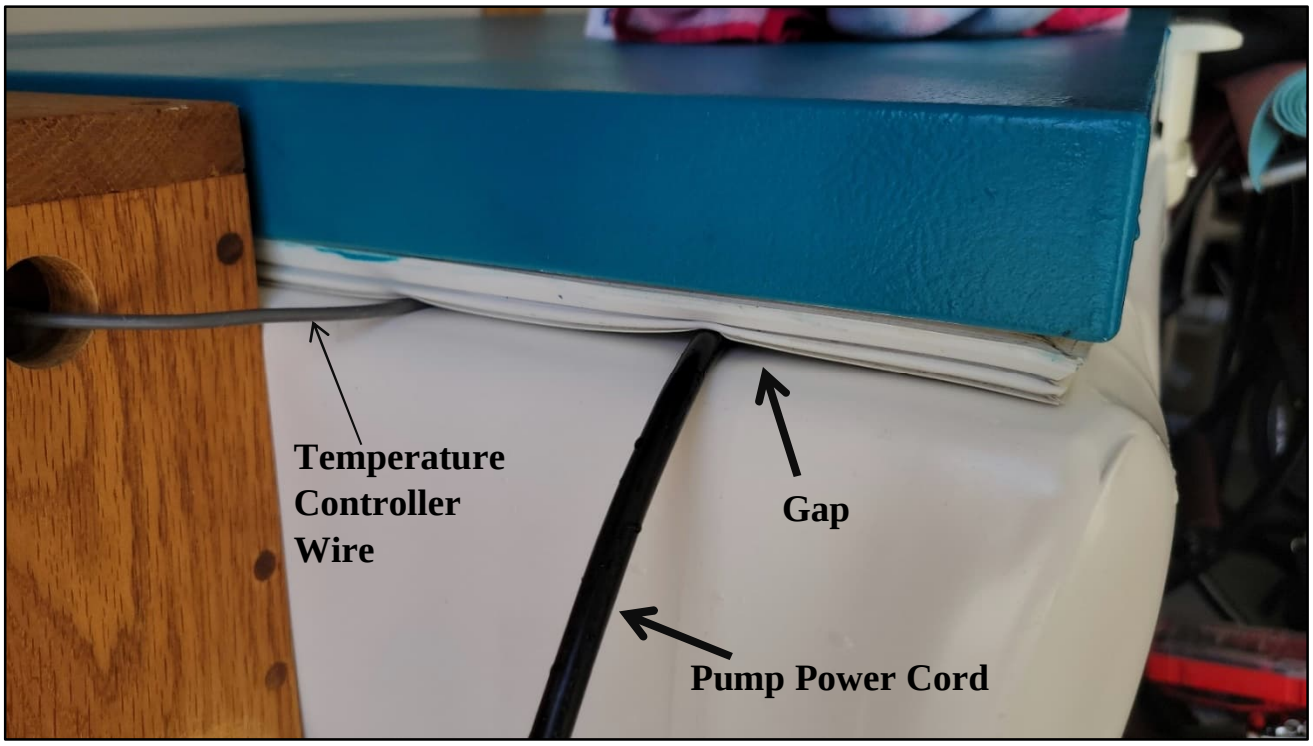
There are several ways to get the blue tube from your JED into your cold plunge. What you choose depends on your setup, preferences, and available tools.

Over the Edge

The simplest option is to place the power cord over the top trim and close the lid around it. Putting the power cord closer to the front of the chest freezer will make this easier. However, if you place the power cord closer to the back, where the hinges are, there will be a larger gap between the lid gasket and the top trim.

You can cut pipe insulation or weather stripping to fill in the gap. However, the problem is that the lower part of the chest freezer lid can still push down or crimp the ozone tube, which can reduce ozone flow and cause the tube to wear out prematurely.

***WARNING:* This option can crimp the blue tube and prevent ozone flow.**



Pump power cord between the top trim and lid gasket

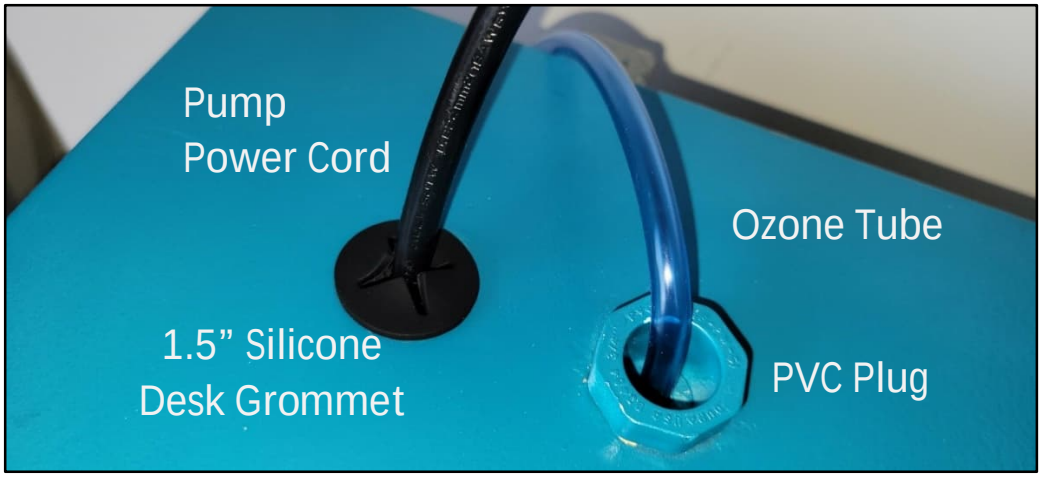
Hole in the Lid with Desk Grommet or PVC Plug

The second option is to drill a hole in the lid of your chest freezer and run the tube through the chest freezer lid. Some people prefer this because it looks neat and keeps a good seal.

This method is similar to the one shown in the installation video. However, it uses two desk grommets instead of two PVC plugs. Use grommets made of ozone-compatible material Silicone and ABS are fine. Do not use material (ex. nylon) incompatible with ozone. Here are Amazon affiliate links for 1-inch (2.54 cm) and 2-inch (5 cm) desk grommets.

https://amzn.to/3P568n9 https://amzn.to/3uLBfQz

It is possible to fit the JED tube, pump power cord, and temperature sensor wire through a single 1-inch desk grommet. If you do this, you only need to make one hole. A 1-inch (2.54 cm) desk grommet can be a tight fit for 3-prong plugs on some pump power cords. For an easier fit, you can use a inch or 2-inch (3.8 – 5 cm) desk grommet.



Silicone desk grommet and PVC plug

If you choose to go this route, you will need some additional tools and parts:

1. Drill
2. Hole saw (match the diameter of the desk grommet)
3. Two desk grommets that match the diameter of the hole saw
4. Foam pipe insulation (or other flexible foam insulation).

Closeup of cable desk grommet

Sizing the Hole

A 1-inch (2.54 cm) desk grommet will fit into a hole made by a 1-inch (2.54 cm) hole saw.

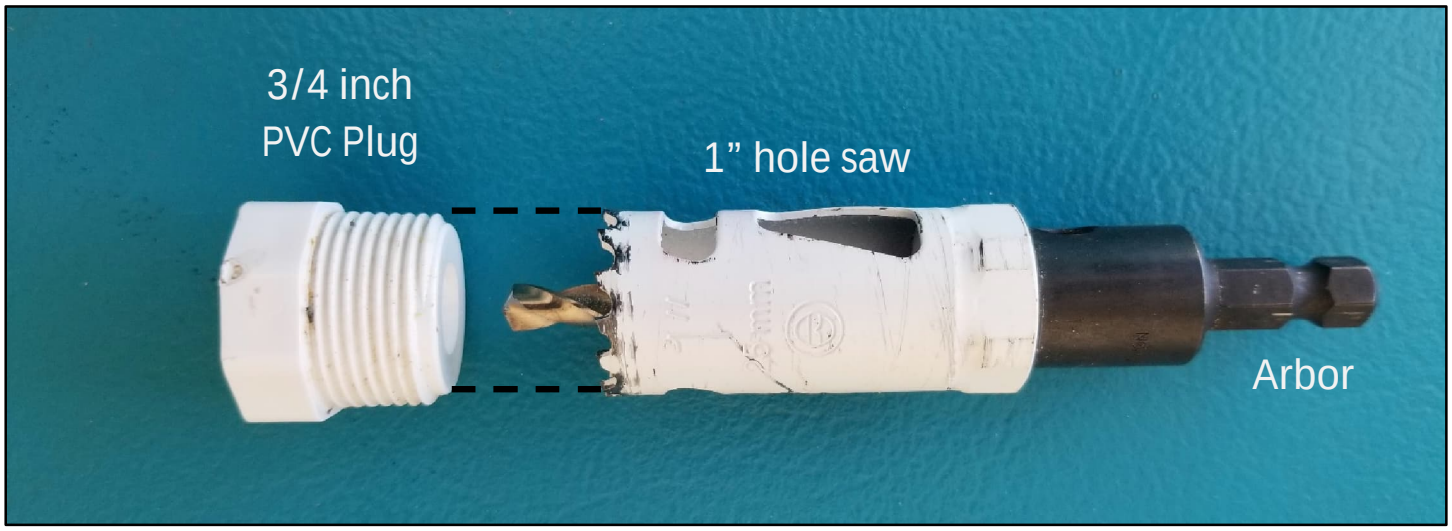
NOTE: A 3/4 INCH PVC plug will fit into the hole made by a ONE INCH hole saw.

If you live outside of the US and use metric measurements, you might need to verify these measurements: 3/4-inch = 6.98 cm.

Is that confusing? I understand! PVC fittings are measured by their INTERNAL diameter (ID). So a 3/4 inch PVC pipe has an inside opening of 3/4 inches.

However, the threaded pipe has to make room for the threads. So, while a 3/4-inch non-threaded plug will fit perfectly into a 3/4-inch non-threaded pipe, the threads are different.

The threads add 1/8 inch on both sides (a total of 1/4 inch). So that 1/4 inch of threads plus the 3/4-inch pipe = 1-inch.



Hole saw and threaded PVC plug

Here is an Amazon affiliate link for the hole-saw with an arbor. FIY the arbor is the part that attaches to your drill. If you do not already have an arbor designed explicitly for a hole saw, be sure to order the hole saw *with* the arbor.

https://amzn.to/3v6gXym

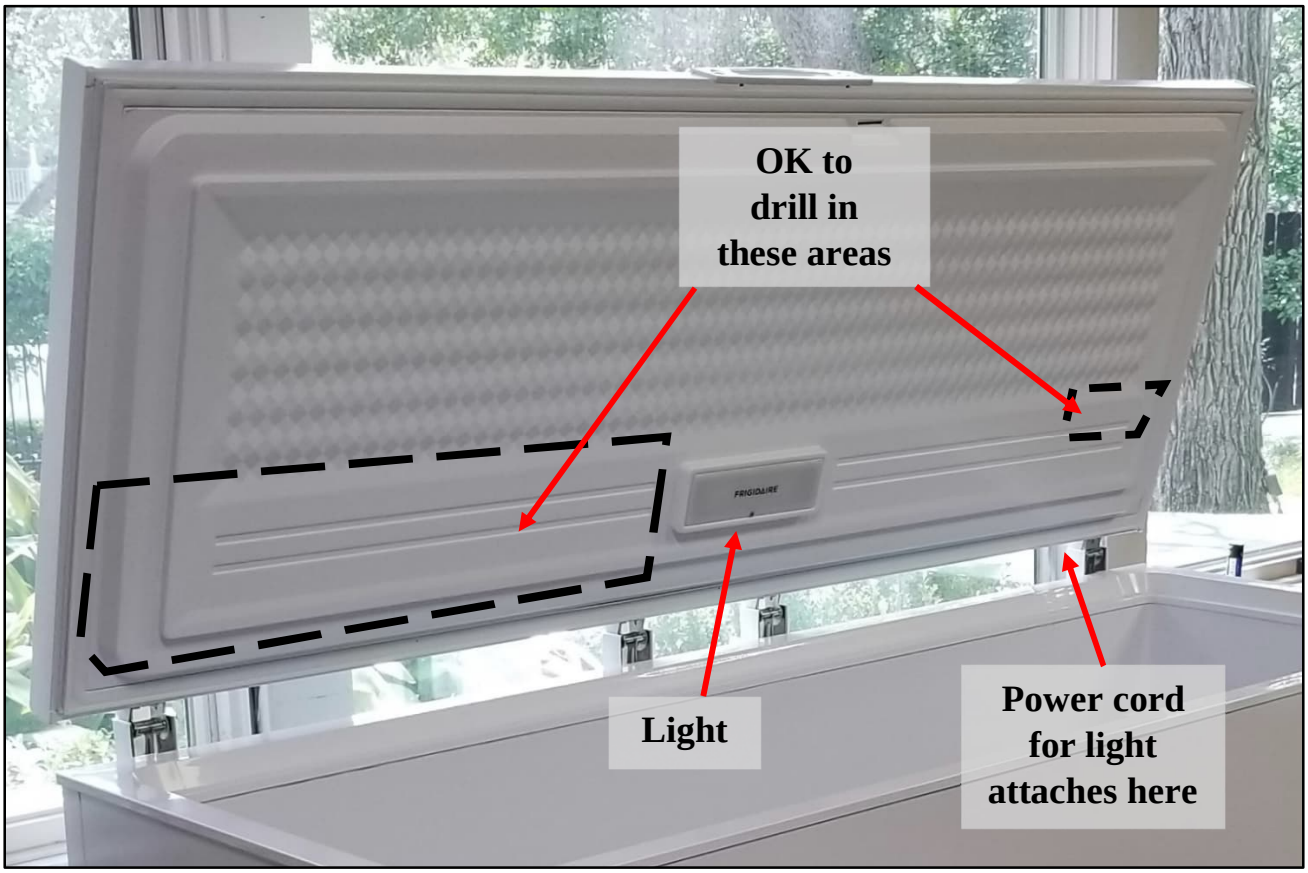
You must drill a hole through the plug for the tubing to fit. The outer diameter (OD) of the blue tube is 5/16" (7.95 mm), so use a drill bit of that size. It will be a tight fit, which will help keep it in place. See the installation video for details.

Where to Make the Hole

There are four things to keep in mind before you drill the hole:

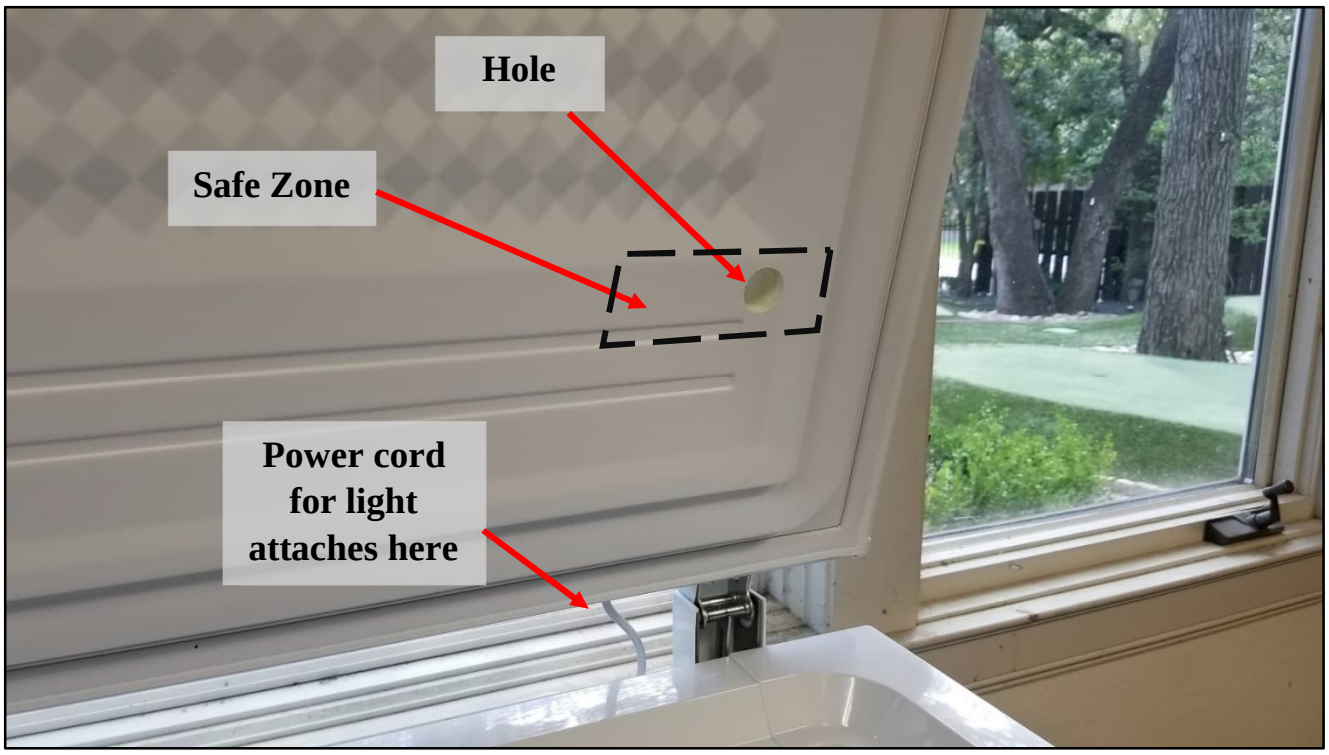
1. If there is a light on the inside of your lid, keep the hole away from where the power cord is or could be located.
2. Place the hole on a smooth part of the interior surface. Avoid ridges and texture.
3. Put the hole on the side of the lid closest to the hinges (back of the chest freezer).
4. Be sure the hole opens away from where the closed lid meets the trim.

In the picture below, the areas within the black dashed lines are generally safe places to create a hole in most chest freezer lids. The model is a Frigidaire. I prefer to keep the hole closer to the left or right side rather than near the middle.



Good places to drill a hole in the lid.

On the Frigidaire chest freezer pictured below, I drilled the hole on the right side, which was outside of where the power cord was attached to the lid. The hole is on a smooth part of the lid, avoiding the grooves and textured surfaces.



Hole placement on a Frigidaire chest freezer.

NOTE: The safe zone shown here is higher than the light. Many people have drilled here with no issues. However, one person hit the light power cord. This indicates that there is no set path for that wire; its placement can move when the lid is filled with insulation.

If you choose to drill a hose on this side, proceed cautiously.

If you damage the power cord to the light, there is no easy way to fix it. However, this is not a catastrophic mistake. The solution is to detach the power cord from the chest freezer to the light. It might be attached with friction or two screws on the outside. On the inside, if there is a quick disconnect, pull it apart. If there is no quick disconnect, you can leave it in place or cut the wire. If you cut the wire, wrap the end with electrical tape or a wire nut.

Drilling the Hole Option 1: From the Outside

Here are a few steps and tips for drilling the hole. I prefer Option 2 because it allows for more accurate hole placement.

1. Find where you want the center of the hole to be on the inside of the lid and measure the distance from the side and back edges. Mark that spot on the outside.
2. Keep the drill and hole saw at a right angle to the lid.
3. Start drilling with the lid closed
4. Drill in short bursts, backing off a bit as needed. Let the drill do the work.
5. After breaking through the exterior metal, remove the circle of metal from the hole saw.
6. Continue drilling through the insulation.
7. When you reach halfway through the lid, stop drilling and remove the insulation inside the hole saw.
8. When you reach the plastic inside the lid, stop drilling and remove the foam from the hole saw.
9. When the drill meets the plastic on the inside, go slowly, backing off as needed. Let the drill do the work. If you push it too hard, the plastic might crack or pull away from the lid. If you do break the plastic, it can be repaired with silicone or 2-part epoxy putty (ex. JB Water Weld).

Starting to drill the hole in the lid.

Drilling the Hole Option 2: From the Inside

This option helps ensure you get the hole exactly where you need it.

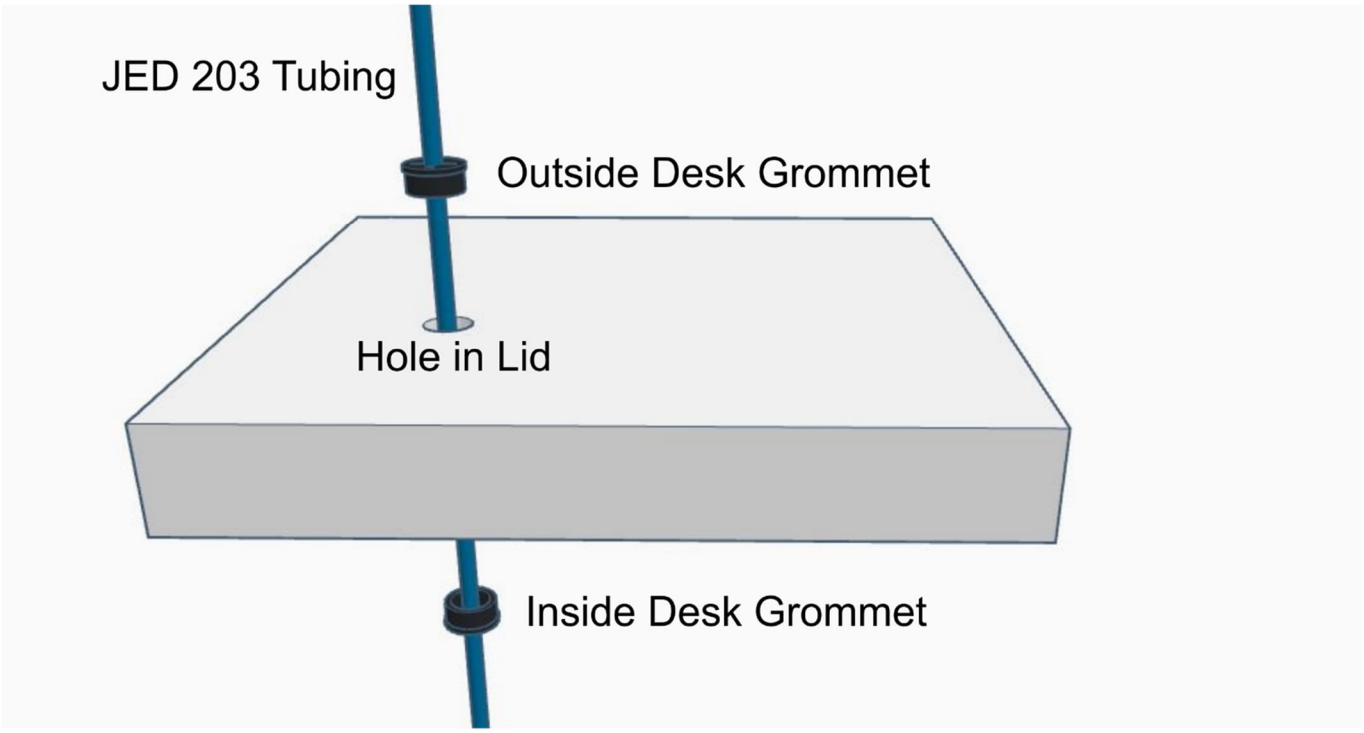
It's best to have a friend who can help you.

1. Open the chest freezer lid.
2. Mark the spot where you want the hole to be placed.
3. Have your friend steady the lid, so it does not move or push back on the hinges while you drill.
4. MAKE SURE YOUR FRIEND'S FINGERS AND BODY ARE AWAY FROM WHERE THE HOLE SAW WILL COME THROUGH THE TOP OF THE LID!!
5. Keep the drill and hole saw at a right angle to the lid.
6. Drill in short bursts, backing off a bit as needed. Let the drill do the work.
7. Going through plastic is very easy.
8. After the top of the hole saw (closest to the drill) goes into the insulation, check the hole saw to see if any insulation is stuck inside it. If there is, remove it.
9. There is likely to be insulation inside the hole you are making. Use a flathead screwdriver to scrape it out.
10. After scraping out the insulation, continue with the hole saw until you drill through all the insulation and reach the metal at the lid.
11. Check to see if any foam insulation needs to be removed from the hole saw.
12. Drill through the lid (still from inside), following the directions in Option 1 on the previous page.

Placing the Cord and Desk Grommets

1. Start on the lid's inside, run the tube through the top of the inside grommet.
2. Bring the tube through the hole in the lid.
3. Push the tube through the bottom of the outside grommet.

Closeup of grommets



Blue tube and grommet placement through a hole in the lid.

4. Cut and place foam insulation in the hole around the tubing. Make sure it is packed in all around the tubing and the sides of the hole so that no dust, dirt, or air can get in or out.
5. Place the silicone cable grommets into the outside and inside holes. Ensure that the foam insulation is trimmed enough to allow them to go in all the way.
6. Make any adjustments to the tube. Ensure there is enough slack for the lid to open without pulling on the tube that attaches to the ozone generator.

Insulating the Hole

The chest freezer lid is typical 2 – 4 inches thick. After you create a hole through the lid, the space between the inside and outside grommets will need to be filled with insulation.

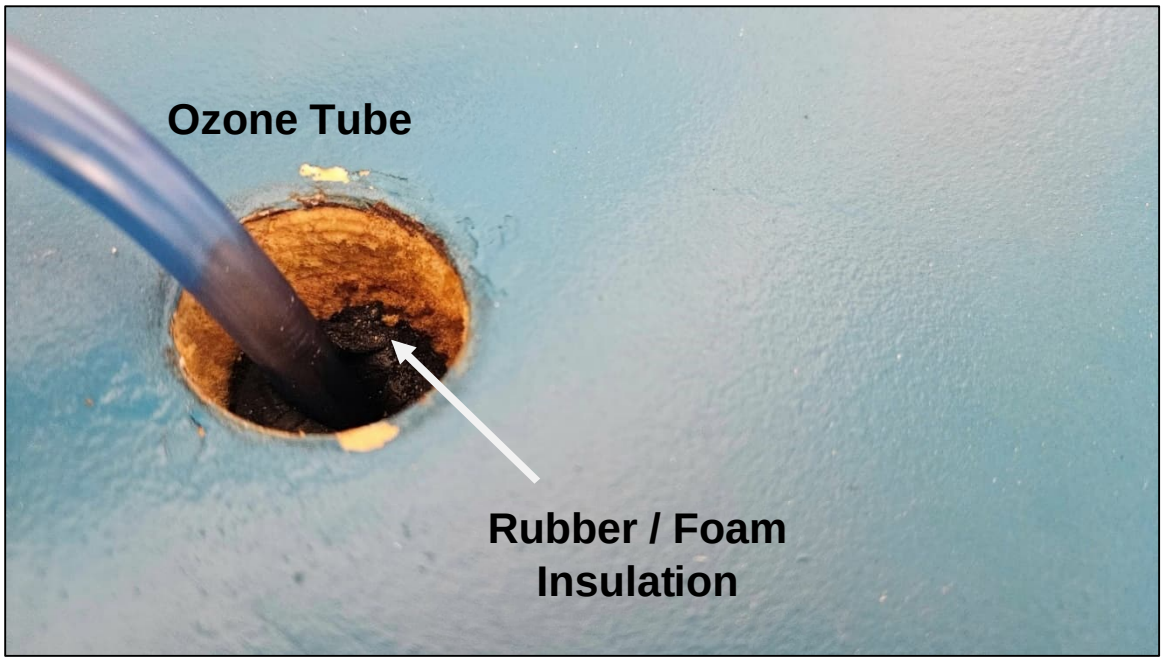
Any type of soft spongy foam will work.

I use 1 in. x 6 ft. Rubber Self-Seal Pipe Wrap InsulationHome Depot. It is more than you need, but is not expensive.

https://www.homedepot.com/p/Everbilt-1-in-x-6-ft-Foam-Pipe-Insulation-ORP11812/204760805

Foam pipe insulation

Cut one or two small pieces to wrap around the tube and ensure that as much of the space is filled as possible. Leave enough room for the desk grommet to fit snugly.



Closeup of foam insulation around the tube in the hole in the lid

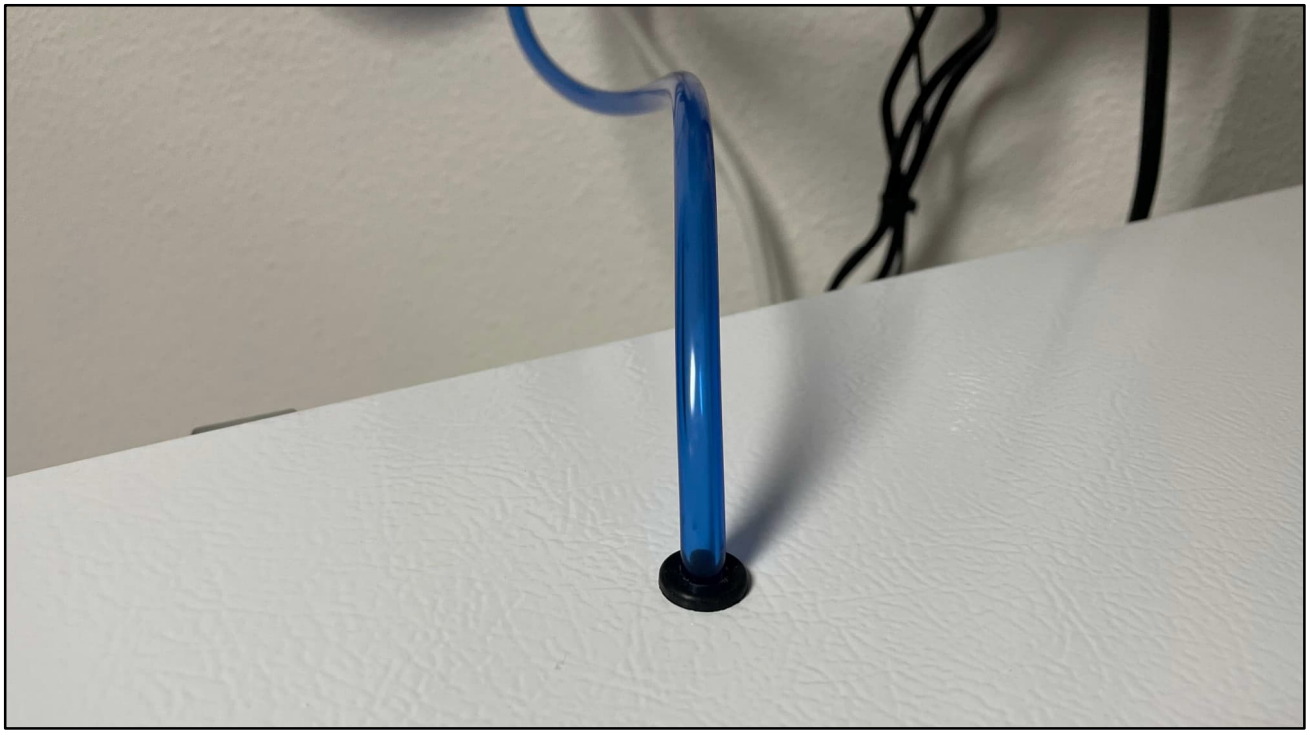
Making a Hole in the Lid with a Drill

You can use a single drill bit to make one very close to the exact size hole in the lid. Because of slight variations in manufacturing, it is best to size the drill bit to the tube you have. However, it should be either a 1/4 inch or a 5/16 inch bit. (metrics: 6 mm or 8 mm).

The potential problem with placing the tube directly through a hole with a drill bit is that the metal on the top outside of the lid and the plastic inside the lid can wear down the tube over time.

You could use electrical tape around the soft edges or push a grommet into place. Grommets are designed to seal around both sides of an edge and may not be ideal. However, the pic of this installation below shows that it is possible.

Make sure the outer diameter of the grommet is as close as possible to the size of the drill bit.



Top Hat grommet placed in a hole drilled through the lid.

If you use a grommet, the hole will need to be large enough so that the grommet fits. In the example shown on the previous page, a 5/8-inch (~16 mm) bit was used to fit the grommets shown below.

Warning: ozone will deteriorate rubber. I could not find grommets made from an ozone-compatible material. However, the silicone desk grommet and the PVC plugs are compatible with ozone.

Top Hat Grommet

If you prefer not to use a hole saw, you can use a standard drill and a top hat grommet. Find a grommet that fits a 1/4-inch inner diameter tube.

The outer diameter will determine the size of the drill bit to use.

Here is an Amazon affiliate link for the top hat grommets:

https://amzn.to/4ieiIPq

Waterproof Cable Glands

Some people use cable glands. They help relieve stress in the cable. However, be careful if you do this because I've only seen them made of nylon, which is not compatible with ozone.

Cable gland setup

Closeup of cable gland on the inside lid

Hole Through the Trim

While it is possible to make a hole in the top plastic trim (or wall) of your chest freezer, doing so carries with it a significant risk of puncturing one of the condenser or evaporator coils that run inside the walls and allow the chest freezer to do his job of chilling your water.

Because of the risk involved, I do not recommend this method unless you know what you are doing. Watch my YouTube channel for more info:

https://youtu.be/ZZHF7MYUWEA

Tube through the plastic trim

Closeup of tube through the trim

WARNING: This method carries a risk of permanently damaging your chest freezer!

A hole in the top plastic trim for the JED tubing, sensor wire, and pump power cord

Sealing the Insulation in the Hole

If you make a large hole through any insulated surface, it is a good idea to coat the exposed insulation with a water resistant sealant. 3M 5200 Marine Adhesive (fast cure) is one product that has been used with success.

Barrels and Tanks

If you have an Ice Barrel 400 or 300, the JED tube will fit through the indention for the handle of the lid and go right inside with no issues. It will still be loose.

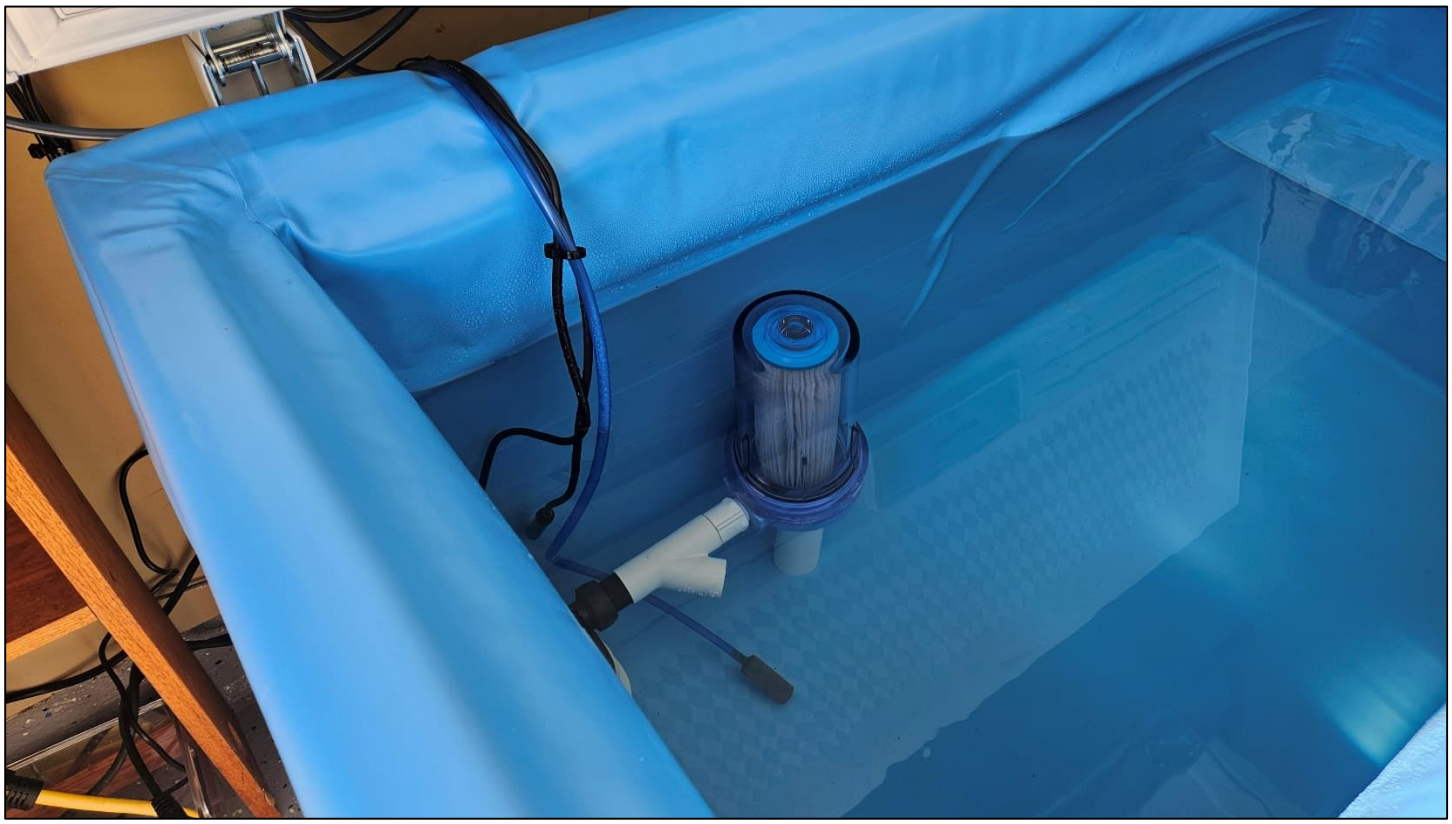
If you have an Ice Barrel 500, the handle slot on the lid is too tight for the tube to fit through without being crimped. One option is drill a hole near the top of the all and install a top hat grommet or waterproof cable gland. This will void your warranty, and potentially cause leaks and water damage to the internal insulation in the walls. Proceed with caution if you choose to do this, and definitely seal the hole with a waterproof sealant.

A second option for the Ice Barrel 500 is to buy silicone weather proofing and add two rows under the lid. Leave a notch for the tube, centered on the back over the bulkhead fittings. This will also help keep out debris.

Where to Place the Airstone

The airstone can be placed on the floor of your cold plunge near the output of the pump or directly in front of your pump's return (out).

Do not place the ozone near the pump intake. Ozone might damage the materials inside the pump, filter canister, or filter media.



Airstone on the inside floor of a DIY chest freezer cold plunge with a custom liner

Note: The blue liner pictured above is in my Frigidaire chest freezer cold plunge (2025). If you have a chest freezer cold plunge and want an excellent option for waterproofing it visit my website to learn more about the custom liners that I offer. I designed the first one for my original Whirlpool chest freezer back in 2018. It was in use and still working great when the chest freezer was damaged in a move in 2024. We have happy customer around the world who love their liner!

www.ChestFreezerColdPlunge.com

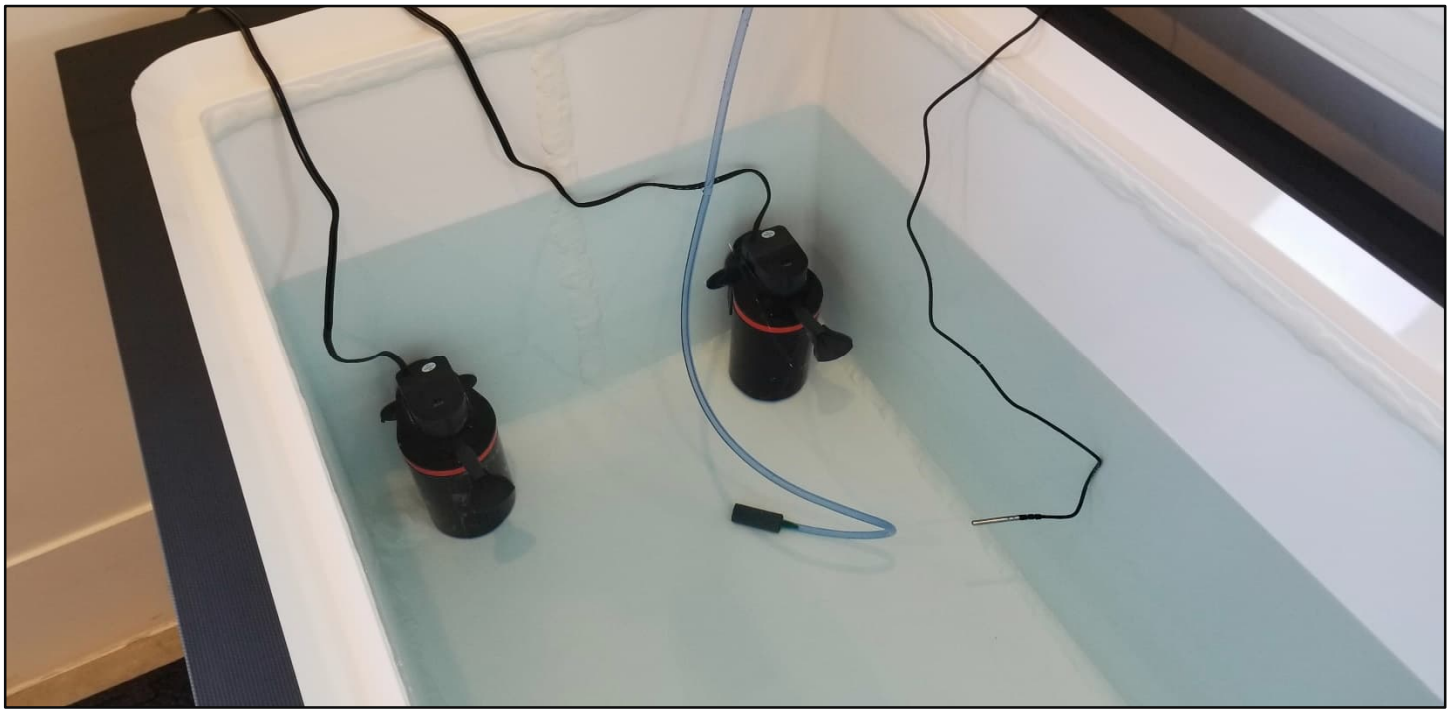
Your Circulation Pump & Filter

Ozone is only one part of a clean water plan. For the JED to work correctly, you also need a circulation pump and sediment filter.

While your JED has a built-in pump to push ozone into your water, a separate pump will be needed to circulate the water so that all microbes are ozonated.

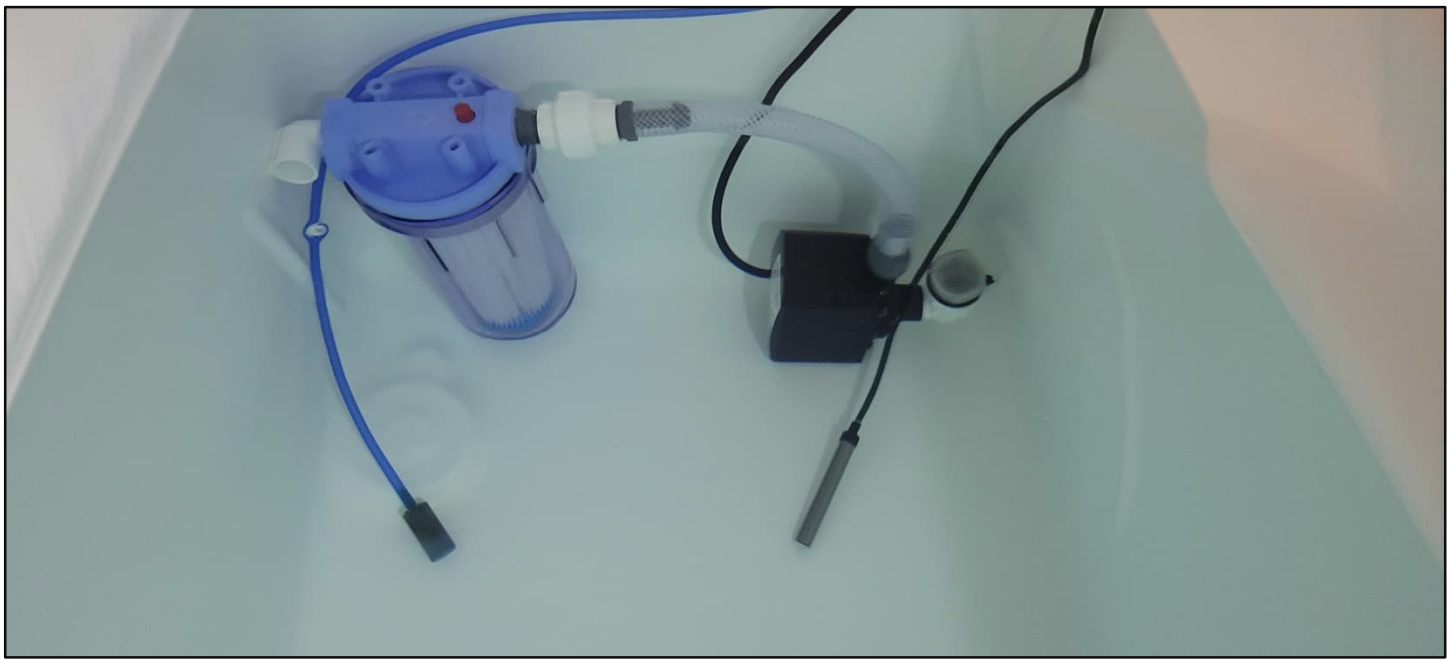
When sediment or microbes are ozonated, they tend to clump together. Therefore, if these clumps of ozonated material are not removed, the water will become cloudy. This is where the filter comes in.

You can use an aquarium pump with a polishing filter, such as the MarineLand magnum polishing pump and filter, or build one. If your chest freezer is smaller than 15 cu. ft (400 L), you typically only need one MarineLand pump. If your chest freezer is larger than 15 cu ft (400L), two MarineLand pumps should be used.



Two MarineLand pumps

If you want a more robust pump/filter or live outside of the US and cannot find a MarineLand pump and filter, you can make a pump/filter from parts found at a local hardware store.



DIY pump and filter

This project is relatively simple, and if you want to learn a few options and help me support the global cold plunge community, you can buy the plans on my website under the products link on the main menu.

www.chestfreezercoldplunge.com/product/diy-pump-and-filter/

How often to change the filter

Change the filter as needed every 1 – 4 weeks.

Never go more than four weeks without changing the filter because algae can begin growing inside the housing.

Be careful about oversizing your pump with a chest freezer setup. A powerful enough AC pump can put out enough heat to fight or overpower your chest freezer compressor. Consider using a lower-powered pump that runs on DC power.

How Long to Run Your JED

There is no need to run the JED 24/7, and doing so will shorten its life span.

Plug the JED into a timer. Any timer will do, but I prefer digital to analog because they keep the time you unplug everything before getting into the water.

Smart plugs are an excellent option if you are already using other smart home devices.

Start by running your JED for 30 minutes once per day. Some people like to run it twice per day. Play around with it and find out what works best for your setup.

If running it once per day keeps your water clean, that will extend the life of the motor in the pump because most wear on the motor is when it starts.

A JED plugged into a digital timer

If your water does not stay clean, increase the run time by 30 minutes to one hour.

Keep an eye on it for a week. If your water is still not clean, continue to increase in 30-minute increments once per week for up to two hours.

If you need to run it for more than two hours to keep your water clean, there is likely another problem that needs to be addressed.

When to Run Your JED

Your JED should only run when no people or animals are in the area. Some people like to run it immediately after they get out of the cold plunge, which reduces the amount of time any microbes have to begin multiplying.

Others will run it during the night. But, based on hundreds of reports, it doesn't seem to make much difference.

The best practice is to run it at least 6 – 8 hours before people or pets are in the area.

If you smell any ozone when you open the lid, leave the room and let it air out for a few minutes.

Running Your JED for the First Time

The first time you run your JED ozone generator, we want to ensure it works correctly.

1. Ensure no pets or people will be in the area for the next 30 minutes.
2. Open the lid to your chest freezer.
3. Turn on your digital timer for 30 minutes, so the JED starts running.
4. Make sure tiny bubbles are coming out of the airstone. If there are, close the lid and leave the area. If there are no bubbles, refer to the Troubleshooting section.
5. After 26 -27 minutes, return to the area, slowly approaching your chest freezer. Notice if you detect any ozone. It has a very distinct odor that you can't miss.
6. If you don't smell ozone, continue until you reach your chest freezer. Then, walk all the way around while the JED is still running. Again, if you do not smell any ozone, everything is good.
7. If you smell ozone, the hole in the lid for the blue ozone tube may not be sealed correctly, or the lid gasket on the chest freezer is not closing or sealing all the way to the top plastic trim.

   Ensure that the hole in the lid for the blue tube is fully sealed with insulation and that the lid gasket is closing and sealing correctly.

Chiller Based Cold Plunges

Many chiller-based cold plunges have external plumbing. You can use either a JED 303 or a 003.

If you use a JED 303 do not connect it to a venturi injector because the back pressure could damage the unit. Instead, a hole can be drilled to place the tube through your tank or tub wall, or the airstone can be placed over the side.

All other instructions are the same.

JED attached to the outside of an Ice Barrel with the tubing going through the wall

If you have the JED 003, it will use the venturi injector to mix ozone with your water. Connect the tube of the JED 003 to the 1/4-inch barb on the venturi. Usually a hose clamp is not needed, but if you detect ozone, a hose-clamp may be necessary.

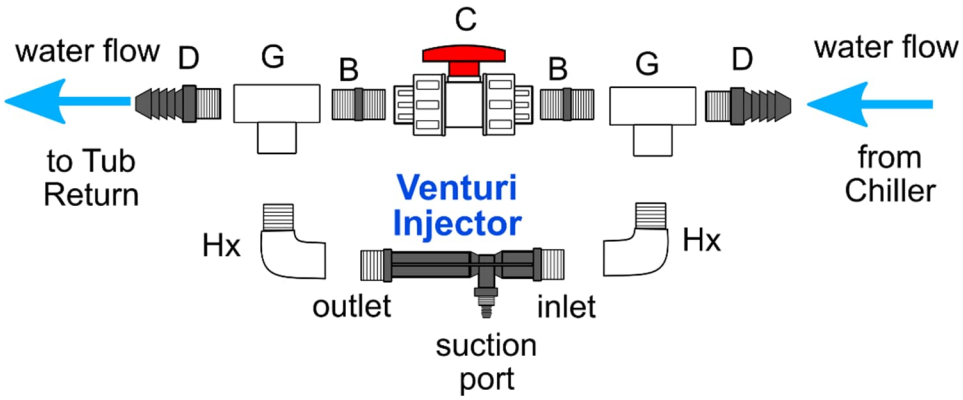
If the tube is difficult to place over the barb, use a hair dryer to soften it. The end of the tube can also be softened by placing into hot water. Bring water to a simmer in a small pan and place the end of the tube in the water for 30-60 seconds. Wear gloves to prevent burns.

JED 003

The JED 003 requires a venturi injector to mix ozone with your water.

Here is a diagram of a venturi injector and bypass assembly. This one uses tee fittings and 90-degree elbows. Wye fittings and 45-degre elbows can also be used to increase the flow rate, but take up more space.

Venturi injectors can have fittings to attach to standard PVC or barb fittings for flexible tubing. If you have tubing instead of rigid PVC pipe, be sure to install a hose clamp on the tubing over the injector's inlet and outlet. Do not over-tighten.



The main flow of water should always go straight through. The venturi injector should be installed with tee or wye fittings on a bypass.

In most setups, the bypass assembly is installed horizontally. It can be installed vertically, as long as the OUTLET is facing up. The injector suction port can be oriented in any position.

Understanding Venturi Injectors

Venturi injectors are a popular way to introduce ozone into your cold plunge system—but they rely on your plumbing setup to work correctly. Here's what you need to know to get the best results.

How It Works

A venturi injector uses the pressure difference between the inlet and outlet to create suction. This suction pulls ozone into your water line and mixes it into the flow.

However, the injector itself **doesn't create** this pressure differential—it's your system that does. Things like pumps, filters, nozzles, and valves all affect how much pressure and flow the injector receives.

Will It Restrict My Flow Rate?

A common question is whether Mazzei or other high-quality injectors restrict flow. The short answer: **they can**, depending on your system.

To work properly, an injector needs a certain **flow rate and inlet pressure**. That's why many people install their injector on a **bypass loop** rather than directly inline. A bypass gives you more control and makes it easier to dial in the ideal pressure and flow without compromising your main circulation.

Can I Just Use a Valve to Increase Pressure?

You can- but it's not always the best option.

Some users have had success installing the injector inline and then adding a **ball valve upstream** to increase inlet pressure by partially closing the valve. This can work, but it may also put extra strain on your pump or reduce overall flow in the system.

A more reliable solution is to place the injector on a **dedicated bypass loop** and use a **valve on the mainline** (parallel to the bypass). By adjusting that valve, you can reduce flow through the mainline, which increases flow and pressure through the injector loop- creating the suction needed to pull ozone.

Key Factors That Affect Injector Performance

- Inlet pressure
- Flow rate through the injector
- Outlet pressure
- Suction rate (how much ozone is pulled in)

If you're not getting any ozone into your water, double-check these variables and consider using a bypass setup for better control.

WARNING: Too low of a flow rate can result in inconsistent water temperature, reduce the effectiveness of your sanitation, and cause damage to your chiller.

Here are two pictures of a DIY chiller-based setup with a venturi.

DIY cold plunge with chiller, inflatable tub, pump, filter, and JED 003

Closeup venturi injector and bypass assembly

Maintenance

Wipe down the walls and floor of your chest freezer at least once every 1 to 4 weeks. Also, wipe down the ozone tube, pump power cord, and temperature sensor wire. Ozone (along with other sanitizers such as chlorine or H2O2) will clean the water but does not clean surfaces. If the surface becomes slippery, that is a sign that algae are growing. If you have too much, you might need to drain your chest freezer and clean the walls with H2O2, a general-purpose organic cleaner, or a 1:10 bleach-to-water solution.

The filter housing and pump motor should also be cleaned regularly as needed.

The sediment filter that goes with your circulation pump should be changed/cleaned as needed – once every one to four weeks. Never go longer than four weeks without cleaning or replacing the filter.

Replace the airstone if it becomes dirty or clogged up. This will need to be done once every one to three years. Any airstone suitable for ozone will work if it fits into the JED tubing.

Replace the tubing when it becomes discolored or very soft. This will need to be done once every one to three years.

Once every 6 - 12 months, open the weatherproof case and clean out any cobwebs. Ensure that the inside looks clean and is not oxidized.

Troubleshooting

General Guidelines

If your water is cloudy, has turned a strange color, or has an odor, what I usually recommend is this:

First, start with clean water. The little amount of water in the chest freezer cold plunge (in my opinion) is not worth trying to salvage, and it is so much easier to start with clean water.

Drain the water and clean the interior with white vinegar, mild dish soap, or your preferred cleaner.

Wipe with a damp cloth and refill.

Start running your JED for 30 minutes per day.

If your water does not stay clean, increase it to 60 minutes and run it daily for a week.

If it is not clean after that, add 30 more minutes and run for a week, repeating that for up to two hours.

Two hours a day is the typical "too much" point. If it needs to run for more than 2 hours a day and your water is still not clean, then there is something else going on that we need to figure out.

Questions to Ask

If your water does not stay clean, there are several troubleshooting questions to ask:

1. What material is on the inside of your chest freezer?

Ensure all material inside your chest freezer is compatible with ozone. For example, bare metal interiors, floor mats, floating ducks, and thermometers can degrade from ozone and cause the water to get cloudy. If this happens, drain the water, clean your tub and filter, remove the items, and refill with new water.

2. Where did you run the ozone tube?
Is it placed between the lid and the top wall, or did you drill a hole for it? If the tube is placed under the lid, it might be crimped, which can reduce or prevent ozone flow.

3. What pump/filter are you using?

If you do not have sufficient water flow or circulation, your water might not get ozonated.

4. How frequently do you change/clean the filter?

Don't go more than four weeks without changing or replacing the filter.

5. When was the last time it was changed?
Has it been more than four weeks? See #4 above.

6. How long did you run everything before the water turned cloudy?

Has it been more than four weeks? Have you cleaned the filter? Has anything else changed?

7. Do you have a mat inside the chest freeze?
If yes, what material is it made of? Is it compatible with ozone?

8. What is your hygiene practice before getting into the cold plunge?

Showering before you get in can help. Ozone will interact with oil and particles from your skin, lotions, gels, and other

9. How many people are using the cold plunge, and how often?
If many people are using your cold plunge – that's great! However, you might need to have them rinse off first, wipe their feet, or increase the ozone run time beyond the standard 2-hour recommendation. More frequent filter changes can help. A secondary sanitizer such as chlorine may also be needed.

10. What is your schedule for running your JED (every day, every other day, etc.)?
If you are running it for less than 30 minutes and not running it daily – even if you are not using the cold plunge – go back to the recommended schedule.

11. How long are you running your JED each day?

In most cases, the JED should run between 30 minutes to 2 hours each day.

12. Are tiny bubbles coming out of the air stone?

Large or no bubbles may indicate that the airstone needs to be replaced.

13. Is the blue tube securely connected to the black connector from the black case?

If the tube is loose, ozone may not get to the airstone.

14. Is the blue tube connected to the equipment inside the case?

It is rare for this to come loose, but it does happen. So be sure to check it.

15. If the ozone generator makes bubbles in the water, can you get a slight whiff/smell of ozone?
A slight whiff of ozone in the small amount produced by the JED will not harm you. However, getting someone else to do this for you is a good idea if you are chemically sensitive.

Warranty & Service

Your JED ozone generator has a 1-year warranty from the manufacturer.

Warranty Service

It is extremely rare to have any issues during that time, but if it does, you only need to call JED Engineering to initiate the warranty repair process. You can find their contact information on the instructions that came with your JED and on their website at

www.JEDEngineering.com

You only need to pay to ship the defective unit to JED Engineering. Include the tubing, air stone, and a note describing the symptoms and that you purchased it from Cold Plunge Connection. They will cover the cost of all parts, labor, and return shipping. I recommend ensuring the item and shipping with a tracking number.

JED Engineering, Inc.
Repairs/Warranty Attn: Jim
8614 Argent Street, Suite H
Santee, CA 92071
800-552-8838

Out-of-Warranty Service

If your JED is out of warranty, contact Cold Plunge Connection to initiate the repair. You will send your ozone generator to JED for diagnosis. They will inspect the unit and determine what needs to be fixed. Cold Plunge Connection will give you a price for the parts and return shipping. JED does not charge for labor on out of warranty repairs. You will receive a 1-year warranty on the replacement parts that will be installed.

Email me to start the process. Call if you have any questions.

John@ColdPlungeConnection.com 512-843-2196

Reviews, Pictures & Stories

Let me know if you have any feedback to share with me on how I've helped or what I can do to improve.

Also, I love to see pictures of your cold plunge and hear what benefits you have received from your regular practice.

You can reach me at:

john@ChestFreezerColdPlunge.com