GRAND DIVE VERTICAL



Congratulations on choosing one of the most innovative and safe hyperbaric chambers.

In addition to this manual we have an easy to follow instructional video available

https://www.summit-to-sea.com/instructions

Scroll down to Instruction Videos and click on "Grand Dive Vertical"

Our patented designs are like no other on the market.

Now that you have all the equipment to begin your treatments it is extremely important to watch this entire video and read the manual that was included on a thumb drive in your packet before operating your chamber.

Safety is one of our main priorities at Summit to Sea. It is our policy and practice to extensively test all of our chambers to ensure that Summit to Sea chambers have the highest quality, comfort, and safety.

We have implemented **4 safety features** that are unique to Summit to Sea chambers.

- Dual compressor system
- Two pressure relief valves and one safety back up valve
- Zipper stress relief system
- Failed Circuit Alarm

Dual Compressor System

For safety Summit to Sea has multiple redundant systems and components. One of these is the dual compressor system. In the event one of the compressors fails you would still receive ample fresh air delivered into the chamber allowing you to deflate the chamber and safely exit.

Summit to Sea uses these two independent compressor systems which attach to the chamber independently offering safety and comfort.



VERY IMPORTANT: All compressors need to be running during treatment.

Pressure Relief Valves

Your chamber also has **dual air relief valves**. When you are at full pressure air will release from the blue valves. Your gauge needle should be in the blue range. The yellow valve is a safety back up valve set at a slightly higher pressure which acts as a safety backup valve.







Zipper stress relief system (buckles)

It is very important that when operating the chamber all belts are buckled and both zippers are completely closed.

The belts reduce stress on the zippers extending their life.



Failed Circuit Alarm

Summit to Sea is the only company in the mild hyperbaric industry whose chamber system will alert you to a power outage. In the event that there is a power outage which would prevent the compressors from supplying fresh air into the chamber the user would be alerted with a loud alarm.



COMPLIANCE

Our hyperbaric chambers are Class II medical devices cleared by the FDA requiring a prescription.

As we are constantly developing new technology to improve our chambers, there may be a photo or video footage that doesn't quite match your chamber.

WHAT IS INCLUDED

- Chamber with carry bag and two cradles
- In the OPEN ME FIRST BOX
 - Silicone and Zipper cleaner
 - Auxiliary Valve
 - Thumb drive with set up instructions
 - Failed Circuit Alarm
- Frame
- Floor system
- Carpet
- 2 Compressors

ONLINE MANUAL

If you ever misplace this thumb drive you can log on to:

www.summit-to-sea.com/instructions to find you chamber's manual.

OVERVIEW

- 1. Connecting the compressors
- 2. Use of Summit to Sea's unique zipper system
- 3. Connecting the chamber to the floor
- 4. Frame installation
- 5. Carpet installation
- 6. Inserting chair or other furniture

Now it is time to connect the compressors to the electrical outlet

Please note that some wall sockets are configured so that one of the outlets is connected to a light switch.

If so, make sure the failed circuit alarm is not plugged into the socket controlled by the light switch.

If it is the alarm will sound when the light switch is turned off.

The following diagrams will describe several options for connecting your compressors to the electric wall outlet.

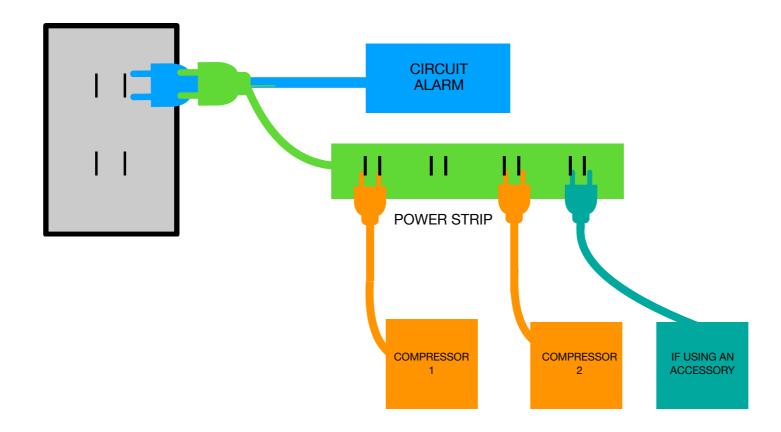
- Using a power strip
- Using a remote switch
- Using both the power strip and remote switch
- Directly connecting the compressors to the wall outlets

USING A POWER STRIP

Plug the circuit alarm into the wall outlet.

Next plug the power strip into the back of the circuit alarm plug.

Now you can plug your compressors into the power strip.

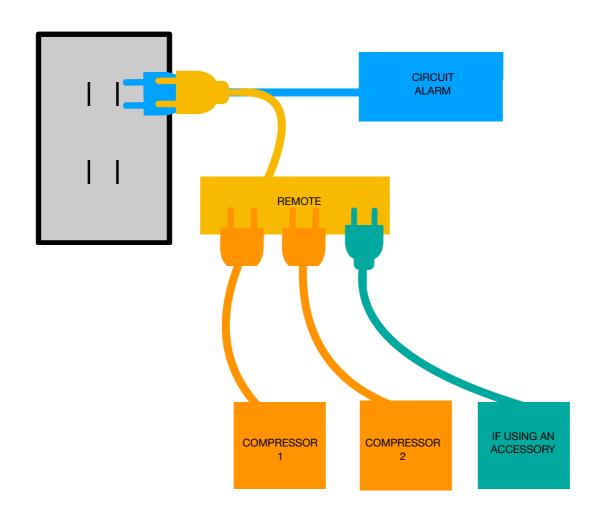


USING A REMOTE SWITCH

Plug the circuit alarm into the wall outlet.

Next plug the remote into the back of the circuit alarm plug.

Now you can plug your compressors into the remote.

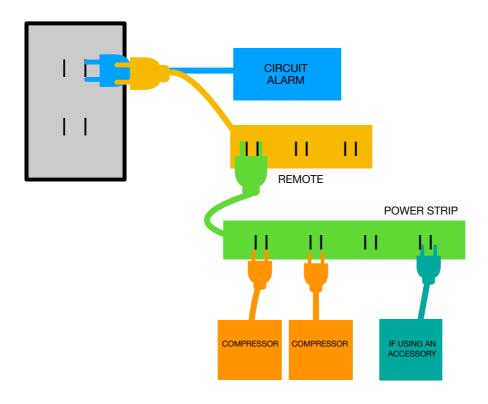


USING BOTH THE POWER STRIP AND REMOTE SWITCH

Plug the circuit alarm into the wall outlet.

Next plug the remote into the back of the circuit alarm plug.

Now you can plug your compressors into the remote.

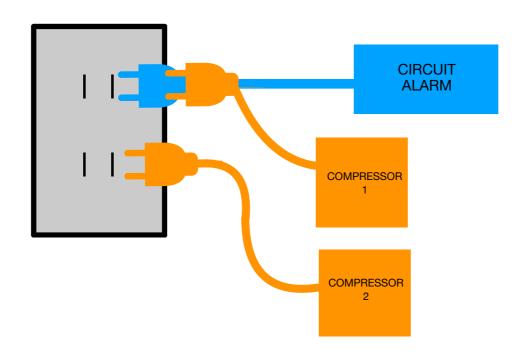


COMPRESSORS CONNECTED TO THE WALL OUTLET

Plug the circuit alarm into the wall outlet.

Next plug one of the compressors into the back of the circuit alarm plug.

Then plug the second compressor into the other wall outlet.



Now you will connect the floor to the chamber. The first thing you will do is to check to make sure all the velcro pieces attached to the floor cover are securely fastened to the stabilizer ring.

Then place the floor on the ground with the "This Side Up" facing up.

You will notice there are 8 buckles on the floor cover. Make sure they are extended out.





Next you will remove the chamber from its carry bag and place it on top of the floor.



Now you will learn how to prepare the chamber for inflation. You will bring it to shape without anyone inside so you can connect the floor to the chamber.

We want to explain our unique zipper system. Summit to Sea is the only manufacturer that provides a two zipper combination, one internal air tight zipper and one external mechanical zipper. This allows for a fast and efficient means of closing and sealing the chamber.

To inflate the chamber to shape you will need to do the following:

- Close the internal and external zippers
- Close the red air release valve
- Connect the compressor hoses to the chamber and turn on the compressors

It is important that your buckles are connected when closing both internal and external zippers. This allows for each side of the zipper teeth to line up and makes it easier to zip. It also takes the stress off of the zipper teeth extending the life of your zipper.

Press the two sides of the buckle together until you hear the click. Be sure to align both sides of the zipper a section at a time while you are closing it. Do not put any stress on the zipper while closing it. If there is any resistance, back up 6", realign and then slowly continue to

close it.

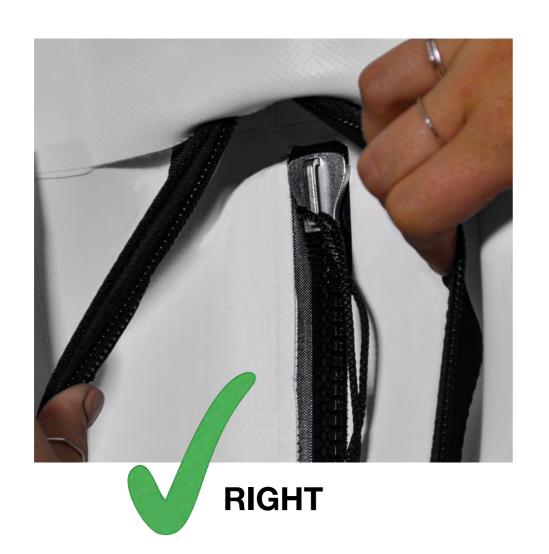
First close the internal zipper. Notice that the internal zipper has a dock at the top end. When you fully close the internal zipper into the dock an air tight seal is created.





The picture on the left shows the slider completely closed into the dock.

If it is not completely closed the chamber will not fully pressurize.

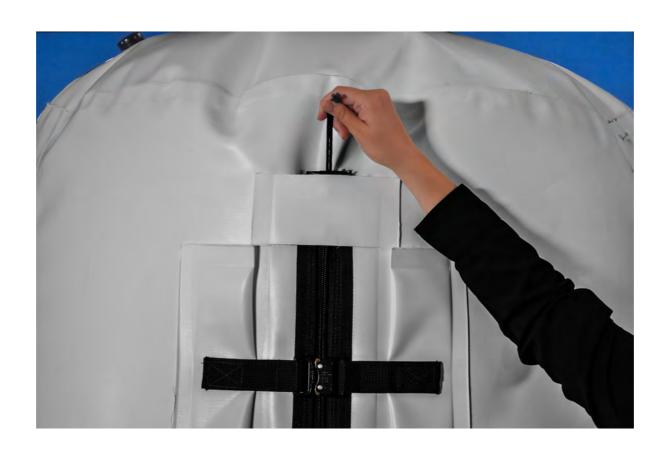




Next close the external zipper.

To be sure it is fully closed, pull the zipper string through the safety strap.

You will not see the slider when it is fully closed.



Now that you have both zippers completely closed make sure the red knob on the dump valve is in the closed position.







Connect the compressor hoses to the chamber. These fill valve connectors are located to the right of the zippers.

It is recommended to put a small dot of silicone lubricant on the O ring on the end of each fill valve connector.

Simply click the hose onto the fill valves.

Now turn on the power to the compressors and inflate the chamber to shape.

The sides will be soft.

Once the chamber is soft and to shape turn off the compressors so there is plenty of slack to buckle the belts. If the belts are too tight to connect open the red knob to release pressure. Buckle all 8 buckles at the base of the chamber.





Once you have the chamber centered on the floor and all the buckles connected turn the compressors on to inflate the chamber to full pressure.

Your chamber should look like this. If your chamber is tilting it is because it is not centered. Turn the red knob to partially deflate so that you can recenter the chamber.





Now that you have the floor connected to the chamber you will want to deflate the chamber so that you can build the frame inside. Turn off the compressors and turn the red knob to release the pressure.

When the gauge reads zero you can unzip the external and internal zippers. Then unbuckle the belts pushing the gold levers toward the opposite side.







BUILDING THE FRAME

It is a good idea to practice building the frame outside of the chamber first so you understand how it should look when inside the chamber.

It is best if someone gets inside the deflated chamber with the individual pieces which consists of 2 rings, 3 poles and the round carpet. Then inflate the chamber to shape by closing each buckle and then closing both zippers as previously described.

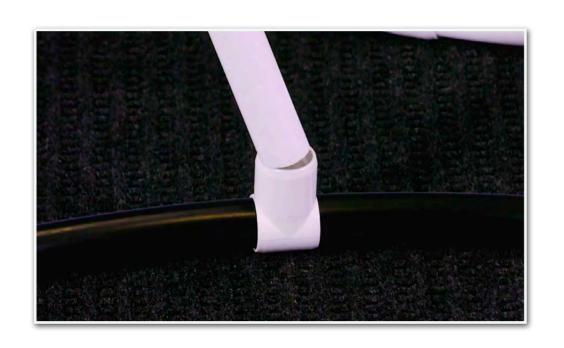
Inflating the chamber first will give you plenty of room to build the frame inside the chamber. The first thing you will need to do is lay the carpet down inside. Then build your frame on top of the carpet. Make sure you take a Phillips screwdriver inside with you to connect the bottom ring.



The frame consists of a white top ring, a black bottom ring and 3 poles.

Use the screwdriver included in your packet to connect the bottom ring.





Place each pole into the Ts on the black ring.



Place the top ring onto the three poles.

Your frame will look like this after it is built inside the chamber.

Someone will need to hand the chamber pieces to the person inside.
Once the chamber is inflated you will put the frame together.



Once the frame is built inside with the carpet you can turn the red knob to release the air and deflate the chamber. Again, do not open the zippers unless the gauge reads zero.





SET UP

Now that you have finished setting up the chamber you will want to chose a chair to be placed inside.

Please make sure that you do not damage the zippers when trying to get the chair inside.

Usually it is best to place the chair on its side and slide the bottom of the chair through the middle of the zipper at the widest opening. Then work the rest of the chair around to go through the zippers.

SET UP

Some suggestions for chairs are a comfortable office chair, a padded chair, or even a foldable camping chair with a cup holder.

If you have smaller children you might consider just putting a comfortable bean bag inside.

CONGRATULATIONS

Congratulations you have successfully set up your chamber.

Now we would like to give you a more detailed explanation of the individual components on your chamber and their function.

Pressure Relief Valves

There are two **pressure relief valves with blue circles**. These are designed and
factory calibrated to equalize the pressure
at 1.3 ATA or 4.4 PSI One is located on top
of the chamber and the other one is
located above the window.





Pressure Relief Valves

There is a safety backup pressure relief valve with a yellow circle which is set to open at a slightly higher pressure than the blue valves. There may be a slight venting of air which is normal.

This is on the top of your chamber.





Color coded gauge

Next you will see the color coded **gauge**. The needle will start at the bottom of the black area at zero. Once the chamber is fully pressurized air will be released out of the blue pressure relief valves and the needle will appear in the blue area. If the needle is anywhere within the blue area you are at full pressure. These gauges are accurate to plus or minus 5%. If the needle appears past the yellow area call your distributor.







Notice that the gauge is reading zero when you begin. It will then reach the **blue** section on the gauge which is 1.3 ATA. You will hear air being released from the **blue** pressure relief valves.

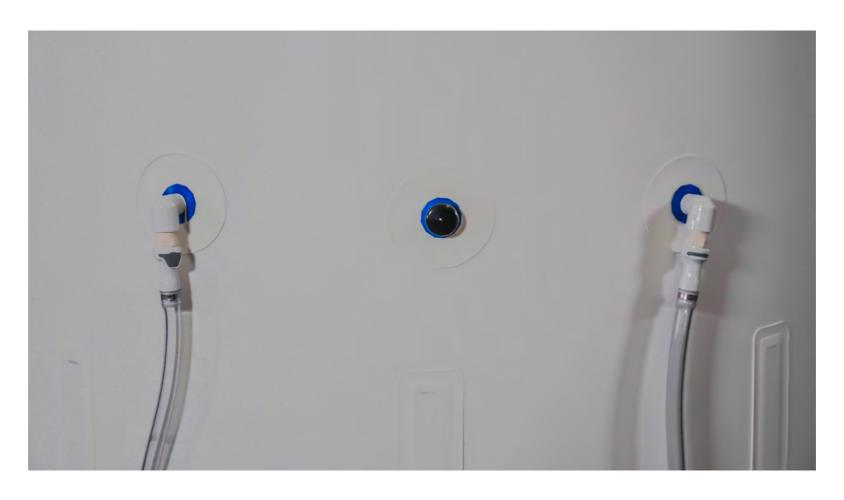
Internal Color coded gauge



There is also an internal gauge which operates similar to the exterior gauge. The only difference is the external gauge needle moves clockwise and the internal gauge needles moves counter clockwise.

Fill Valves

To the right of the zippers are two fill valves.



Auxiliary Valve

Next to the window is an auxiliary port where the auxiliary valve attaches.

This small auxiliary valve is located in your packet along with the zipper cleaner, zipper lubricant and thumb drive.



Red Dump Valve

The red knob is used to depressurize the chamber at the end of your treatment. It is designed to turn in either direction to release air from the chamber. As you turn the red knob you will notice that you have control of the speed of depressurization.

This knob can also be used during pressurization to customize the speed of inflation for greater comfort and to aid in the equalization of ear pressure. The patient inside the chamber should never experience ear pain.

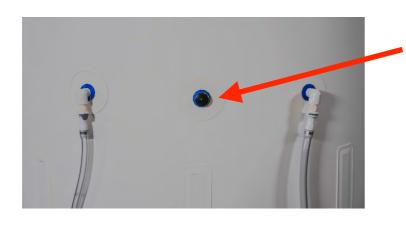


When inflating your chamber it is important that the red knob be in the closed position so no air will release.

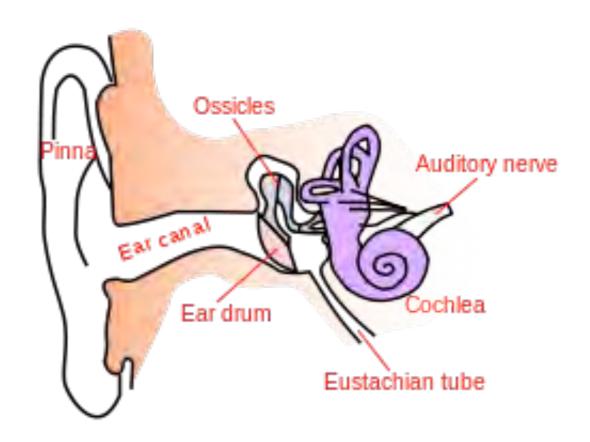


Accessory Ports

There is also two additional ports, one between the two fill valves and one on the top of the chamber with black protective covers over the blue plugs. These are for additional accessories such as a cooler to be connected.







As the chamber begins to inflate, you may notice added pressure on the ears. This feeling indicates the need to equalize the pressure. The pressure feeling is similar to that of landing in an airplane. This pressure is relieved through the Eustachian tube.

There are several methods for relieving this pressure.

The first, is the Valsavla maneuver. Pinch your nose, close your mouth and try gently blowing out your nose. Repeat every time you begin to feel that pressure



Drinking water



Yawning or opening your mouth wide will also help.



Lastly, chewing gum may help relieve this pressure.

If these suggestions do not resolve the ear pressure, open the red relief knob until the feeling of pressure is gone. Then close the red knob to continue to pressurize the chamber. The red relief knob will allow you to control the speed of pressurization to aid in equalizing the pressure on your ears.



WHAT TO WEAR

You may wear any type of clothing in the chamber; however, comfortable and soft clothing is typically used. Do not wear shoes inside the chamber.

WHAT TO BRING INTO THE CHAMBER

Feel free to bring food, drinks, books and personal computers, or any other form of entertainment into the chamber.

It may also be helpful to have your cell phone with you.

We ask that you refrain from bringing in sharp objects such as forks or knives.

We hope that this manual has been helpful for you to become more familiar and comfortable when operating your chamber.

It is very important to heed these few important reminders.

CAUTION

Make sure both the inside and the outside zippers are **completely closed** each time the chamber is in use. Failure to do this may result in inability to pressurize or damage the chamber.

CAUTION

If the relief valve **does not release** air when it is at full pressure, stop your treatment and call your distributor.

It is important that the relief valves are clear of all obstructions inside and out during your treatment.

CAUTION

The compressors must remain on for the entire treatment.

This ensures the circulation and exchange of fresh air to provide a safe and comfortable treatment.

CAUTION

Be sure both zippers are completely closed.

Do not open the zipper until the gauge reads zero.

Each belt must be **fastened** from the start of inflation to full deflation.

The blue relief valve must be **releasing air** when the chamber is at full pressure.

CONGRATULATIONS

Congratulations on completing your set up.

Summit to Sea believes that you have purchased one of the best chambers on the market and will be totally pleased with the ease of use and the quality of craftsmanship.

Summit to Sea also believes that we have the best customer service of any hyperbaric chamber company on the market. We will always try our best to be available and give you prompt service.

If you have any questions regarding your chamber please contact your distributor first.

If you have additional questions please call us at 1-877-PSI-DIVE (1-877-774-3483) or contact us at support@summit-to-sea.com

Filters

It is recommended that the compressor filters are changed approximately every 6 months.

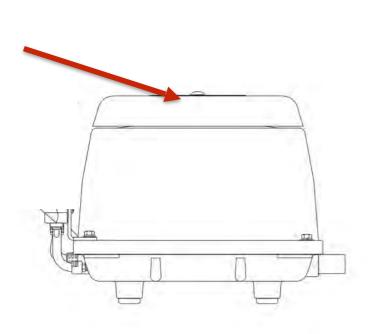
To learn how to change these filters go to www.summit-to-sea.com/filters

To order these replacement filters go to www.summit-to-sea.com/accessories

White Compressor Filter

To see a video on how to change the filters go to www.summit-to-sea.com/filters

There is a filter right under the top plate of the compressor. It is recommended that your replace the filter every 6 months.







The .003 Micron Filter

To see a video on how to change the filters go to www.summit-to-sea.com/filters

Follow these instructions to replace this filter It is recommended that you replace the filter every 6 months.



Lay the compressor on its side



Push the black bulb up and give it a quarter turn to unlatch then pull down



Unscrew the silver filter element.
Screw on the new silver filter

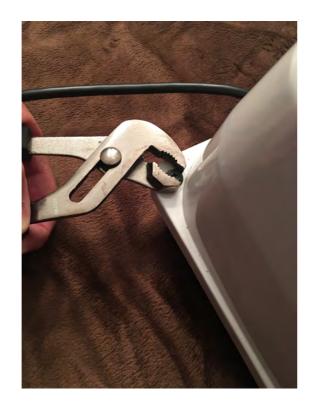


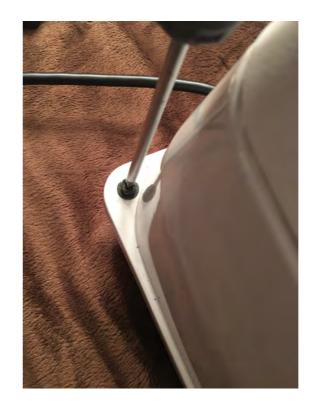
Put the black bulb back on pushing up and giving it a quarter turn to make sure it is securely connected.

Resetting the Safety Switch

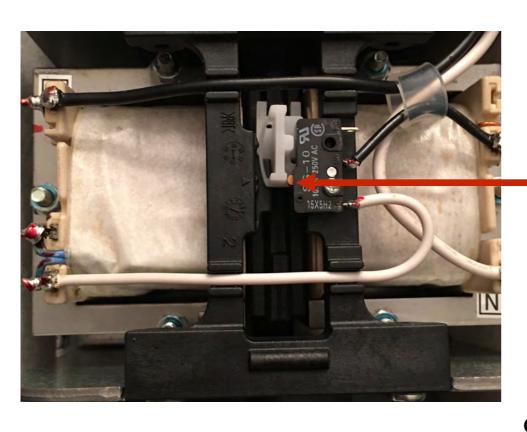
To see a video of how to reset the safety switch go to www.summit-to-sea.com/safetyswitch

First you will need to remove the compressor cover by loosening the 4 screws with a pair of pilers and then using a Philips screwdriver to remove the screws.





Resetting the Safety Switch



If the safety switch has been tripped you will see this little red button.

Move the white switch to the center of the compartment.









On occasion the inside airtight zipper requires Tzip silicone lubricant. The chamber comes with this Tzip silicone to lubricate the docks where the zipper triggers are secured. It is necessary to keep this dock lubricated. Squeeze a small amount of the silicone onto your finger and spread it out on the dock. You will need to do this when it becomes difficult to seat the zipper into the dock. It is not necessary to put this silicone on the zipper itself. Periodically, wipe the open inside zipper with a damp cloth.

ZIPPERS

The <u>outside zipper</u> requires very little maintenance.

A bottle of zipper cleaner lubricant has been included in your packet to use on a monthly basis.

Periodically, wipe the outside open zipper with a damp cloth.

CLEANING THE CHAMBER

There is no maintenance needed other than cleaning with a non-petroleum based household cleaner.

An anti-bacterial cloth has been included with your chamber. To order these cloths go to www.summit-to-sea.com/accessories

FITTINGS & HOSES

Regularly check the fittings and hoses for cracks or damage. If you see any damage, call your distributor for a replacement part.

STORAGE

Prior to storing the chamber, ensure that it has been cleaned inside and out by using a non-petroleum based household cleaner.

Carefully fold the chamber ensuring all gauges and fittings are protected with bubble wrap or a similar material.

Place the chamber in the carry case and store in a dry area between 40 and 80 degrees.

Upon first reuse, run the chamber for several hours to purge the chamber from any odors that may have collected during storage.

WARRANTY

Summit to Sea warrants our products and accessories against defect for two years from purchase. The warranty covers parts and labor to repair the Summit to Sea system. Summit to Sea, at our option and sole discretion, will repair or replace the warranty item. The warranty does not cover damage as a result of misuse or modification.

Shipping to and from Summit to Sea is the customer's responsibility.

Summit to Sea has always and will continue to cover all components on our chambers — including zipper, windows, seams, valves, hoses... in other words, if it came from Summit to Sea we will stand behind our product.

EXTENDED WARRANTY

Extended warranties are available for purchase anytime within the two year warranty period. The extended warranties also cover all components on the chamber — including zipper, windows, seams, valves, hoses, etc. Contact your distributor.

- 1 Year Extended warranty \$950
- 2 Year Extended warranty \$1,200
- 3 Year Extended warranty \$1,450

TROUBLESHOOTING

COMPRESSOR DOES NOT TURN ON

Try another appliance (i.e. lamp) in the same outlet If the appliance does not work use a different outlet or call an electrician.

If the appliance does work see a short video on resetting the safety switch

To order these replacement filters go to

www.summit-to-sea.com/filters

TROUBLESHOOTING

CHAMBER IS NOT GETTING TO PRESSURE

Double check the inside zipper to make sure both ends of the zipper are completely sealed and placed inside the dock.



If your chamber is not getting to full pressure check to see if the red knob is closed and no air is escaping.



TROUBLESHOOTING

It is highly recommended to watch the video several times. Also, anyone else who may be operating the chamber needs to watch this video. By doing this it will ensure a safe environment for all who will be benefiting from the use of the chamber.

Remember, if you have any questions regarding the operation of your chamber please do not hesitate to call your distributor.

Important Safety Considerations

You should NOT use this chamber without guidance and instruction from your health care provider.

Do NOT use the chamber if you have the following conditions:

- Common colds or flu-like symptoms
- Recent alcohol consumption
- Blocked ear canals
- Blocked sinuses
- Otic barotraumas
- Excessive CO2 exposure

CAUTIONS

CAUTION: Federal law requires this device for sale by or on the order of a physician.

CAUTION: Do not inflate the chamber with only pure oxygen; use the compressor provided. It is designed to work safely with the chamber.

CAUTION: Inspect all seams and fittings prior to use to ensure they are secure. Failure to do so could cause leaks reducing the performance of the chamber.

CAUTION: If any unusual noise or odor is detected, immediately discontinue use and contact the manufacturer. This may be an indication of a problem with the normal operation of the unit that needs to be addressed. In most situations, a simple call can resolve the issue.

WARNING: In the unlikely event that there is a rapid decompression, the individual inside the chamber must EXHALE. Please make sure that each individual receiving treatment understands this precaution.

WARNING: Do not replace the compressor with any other model. The chamber is designed to work specifically with the compressor provided. For added safety, the compressor will not exceed the test pressure for the chamber.

WARNING: Do not tamper with the pressure regulation valves. These are factory set and there are no user adjustments. Any sign of tampering with these valves will void the warranty.

WARNING: Do not use the chamber in a manner where the chamber could roll off the surface causing a fall. Always use on a surface large enough to prevent rolling off and causing a fall.

WARNING: Never take a treatment alone. Always have someone outside the chamber to assist you.

WARNING: Do not use the electric compressor in the rain or around running water as this could cause electric shock.

WARNING: Wear comfortable clothing and lay on a mat, towel or blanket while in the chamber to limit contact with the chamber surface and to improve comfort and safety.

Pressure Regulation Valves (Relief Valves)

Summit to Sea Chambers utilizes redundant pressure regulation valves. These are factory programmed to ensure a steady, constant pressure. During treatment, there will be a steady flow of fresh air through the chamber. For proper operation, the air compressor is to be running throughout the entire treatment. This is important to ensure that CO2 build up does not occur.

These valves exhaust the old air while maintaining the factory operating pressure. This pressure is set to 1.3 ATA (4.4 PSI) or 1.5 ATA (7.2 PSI)

WARNING: Do not tamper with the pressure regulation valves. These are factory programmed and have no user adjustments. Any sign of tampering with these valves will void the warranty.

Compressor- Ultra quiet compressors provide patented sound suppression which permits a restful and relaxing dive experience. These highly compact compressors are designed for continuous operation providing you with a long lasting solution to hyperbaric pressurization needs. This compressor is small and compact making it easy to transport. With its small carbon footprint, this compressor will easily integrate into your environment.

Oil-less 120 with a flow rate of 120 liters per minute. See compressor manual included in the compressor box.

CAUTION: Using any other compressor with the Hyperbaric Dive units will void the warranty and may cause injury to the occupant and/or the attendant.

Frame- We have designed this lightweight, highly durable frame. It is easily assembled and disassembled.

Mat-Our foldable, compact mat is made with an easy-to-clean surface. It is both comfortable and versatile.

Valves-The Grand Dive has three pressure release valves to ensure a safe and comfortable operation. This redundancy assures your safety. The Shallow and the Dive have two release valves.

Windows-The window has a five layer, one firm acrylic layer between four vinyl layers to ensure a long lasting, permanent seal.

Zipper- An airtight zipper securely seals the air pressure inside the chamber without the need to massage or manipulate the seal, along with a heavyduty zipper to ensure the integrity of the chamber.

With over thirty years of manufacturing experience of hyperbaric chambers, our group of experts have gained the experience and knowledge of hyperbaric chambers and have produced a high quality product that will meet your needs today, tomorrow, and additional products for your future.

USE CARE to avoid the use of any sharp objects that may penetrate the walls of the chamber.

WARNING: Never take a treatment alone. Always have someone outside the chamber to assist you.

CLEAN the inside of the chamber with a soft, damp microfiber cloth provided after each use.

INSPECT all hoses for leaks.

HUMIDITY - In humid climates, the chamber will create condensation. Simply dry with a soft towel.

EARS - Be sure to chew gum or swallow often during the pressurization.

ENJOY a beverage, read a book, or enjoy any other form of entertainment.

UNZIP the chamber and inspect for foreign objects.

ENSURE that all connections are tightly secured.

ENSURE the chamber is on a stable platform or on the floor.

ATTACH the compressor hose and any accessory hoses.

DURING TREATMENT - After entering the chamber, lie on the mat and get comfortable with your book, computer, etc.

INDIVIDUAL HELPER zips up the chamber.

AIR - Once the chamber is zipped tight, you will hear the air entering the chamber and see it start to inflate.

Be sure to swallow often during the pressurization process. If you cannot clear your ears, have the individual helping you temporarily stop the compressor until the pressure in your ears releases.

Once the chamber is at full pressure, you will hear the "hissing" of the exhaust valves. This is important as it will prevent CO2 build up.

It is important to relax. Sit back and let the chamber operate. Hyperbaric treatments usually last from 30-60 minutes or longer. Check with your medical provider for recommended duration.

Allow 5-10 minutes for the chamber to return to normal pressure.

As air is released, check with the occupant to ensure they are equalizing the pressure at the same speed it is being reduced. Once the sides are soft, unzip the chamber.

CAUTION: Do NOT inflate the chamber with only pure oxygen. Use the compressor provided. It is designed to work safely with the chamber.

WARNING: If, in the highly unlikely event that there is a rapid decompression, the person inside must EXHALE.

Please make sure that each person receiving a hyperbaric treatment understands this precaution.

FDA 510K CLEARANCE

Portable Mild Hyperbaric Chambers are Class II Medical Devices.

They meet the FDA 510(k) Specifications.

The chamber has been cleared by the FDA for the treatment of Acute High Altitude Sickness.

FDA WARNING

Increasing the percentages of oxygen content in the air delivery is considered the same as administering a drug under FDA regulations.

This device is intended for use with ambient air and is not to be inflated with enriched oxygen.

SUMMIT TO SEA

Important links to know:

To order additional: filters, zipper lubricant, zipper cleaner www.summit-to-sea.com/accessories

To learn how to change both filters www.summit-to-sea.com/filters

If you have questions or need technical support send an email to: support@summit-to-sea.com

SUMMIT TO SEA



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www.summit-to-sea.com

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