Package Contents

- Vacuum chamber
- Lid with vacuum breaker and gauge
- Hose with 1/4" MNPT hose barb
- NoFloat pressure fit submersion plate

Safety and Warnings

Stabilizing can be dangerous if safe and proper operating procedures are not followed. Using your chamber with respect and caution will considerably lessen the possibility of personal injury. This chamber was designed for certain applications only. TurnTex Woodworks strongly recommends that this chamber not be modified and/or used for any application other than that for which it was designed. If you have any questions relative to a particular application, DO NOT use the chamber until you have first contacted TurnTex Woodworks to determine if it can or should be performed.

WARNING: FAILURE TO FOLLOW THESE SAFETY RULES MAY RESULT IN SERIOUS PERSONAL INJURY

1. Read the instruction manual before operating chamber
2. Do not modify the chamber in any way
3. Always use safety equipment including glasses and nitrile gloves
4. Secure your chamber, do not allow it to fall, especially while under vacuum
5. Do not tap or beat on the chamber
6. Inspect chamber for damage prior to every use. If damage is suspected, discontinue use
7. Do not leave cure oven unattended where it can start a fire
8. Do not drink Cactus Juice!

Other Items Needed

Vacuum Pump

A rotary vane oil filled vacuum pump is recommended for best results. Pump should be capable of minimum 29" Hg or 100 microns vacuum. Do not worry about CFM ratings as this is irrelevant when stabilizing. Suggested pumps include Robinair 15310 (Amazon.com) or the 2 cfm at Harbor Freight.

Small Oven

A small oven is needed to cure your blanks after stabilizing. An inexpensive toaster oven will work fine and are frequently available at local thrift stores.

Oven Thermometer

An oven thermometer is not absolutely necessary but is highly recommended to make sure your oven is at the proper cure temperature.

Personal Protective Equipment

Nitrile gloves and eye protection are required while handling Cactus Juice or any other chemical.

Connecting to Your Vacuum Pump

Your new JuiceProof™ Stabilizing Chamber is complete and ready to use once you connect it to your vacuum pump. Due to variations in pump inlets, you may need to purchase an adapter to make the connection. If you purchased the Vacuum Pump Connector with Quick Connect (sold separately) then you have everything you need. If not, you will need a fitting to get from the male fitting on your pump to the male 1/4" NPT fitting at the end of the hose provided with your chamber. Once you have the required adapters, simply attach to your pump and you are ready to stabilize!

What to Stabilize

Pretty much any porous material that will not be affected by 200° F (93° C) heat can benefit from stabilizing. This includes wood, bone, antler, and even stone! Oily woods such as cocobolo and rosewoods should be avoided since the oil content can be pulled out during vacuum and affect the Cactus Juice chemistry, causing improper or incomplete cure. Stabilizing helps make wood harder, denser, and more resistant to moisture and changes in moisture content. Any size blank can be completely stabilized given enough time under vacuum and long enough post vacuum soak!

Quick Start Basics for Use

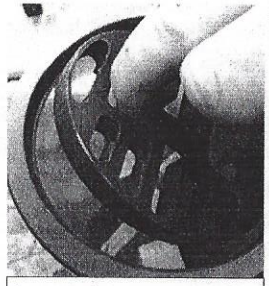
1. Prepare blanks
2. Place blanks in vacuum chamber and insert NoFloat
3. Add Cactus Juice to completely cover blanks plus 1" min
4. Slowly add vacuum until you reach full vacuum and keep your vacuum pump running until bubbles stop
5. Release vacuum and soak blanks for at least twice as long as you pulled vacuum
6. Drain and remove blanks
7. Wrap in foil
8. Cure at 200° F (93° C) for 2 hrs or more
9. Remove foil
10. Allow to cool at room temperature

Prepare Blanks

The first thing is to make sure your material is less than 10% moisture content and clean. Best results will be obtained if your material is oven dry (0%). An easy way to make sure your blanks are as dry as possible is to place them in your toaster oven at 215° F (101° C) for 24 hours. Then remove the blanks from the oven and immediately seal in a Ziploc bag and let cool to room temperature. The bag is necessary because a super dried, hot blank will start picking up moisture from the air as soon as it starts to cool down. Be sure to not skip the cool down step, though!

Load Chamber and Add Cactus Juice

Next, place your blanks in the stabilizing chamber and insert the NoFloat plate. The NoFloat plate is designed to be a friction fit and snap into place. 1. Find the smallest internal diameter of your chamber (PVC pipe is not perfectly round!) 2. Insert the plate at an angle until it touches your blanks. 3. Push down on the high side to wedge in place. 4. To remove, insert your finger in the square area towards the end and pull up. This plate also works well as a strainer to pour your excess Juice out without removing the blanks first!



Insert plate at an angle in narrowest part of chamber until it touches blanks

Push down on the high side to wedge in place

To remove, hook finger in the square area toward the ends and lift

The NoFloat plate is made from very durable PVC and should never crack, even if you drop it on the floor. The plate should be a nice, snug fit. If not, it can be easily adjusted by heating the end with a heat gun or hair dryer and stretching it outward slightly.

Add the necessary amount of Cactus Juice to the stabilizing chamber so that the blanks are completely submerged with 1"-2" (25-50 mm) of Juice covering the blanks. Make sure your chamber is in a secure, stable location where it can not be easily bumped or knocked over. A vacuum chamber under vacuum may implode if exposed to sudden shock such as hitting the floor!

Apply Vacuum

After the Cactus Juice has been added to the chamber, place the lid on the chamber and open the vacuum control valve on the lid. Turn on your vacuum pump and close the valve 1/8 of a turn to begin pulling vacuum. You may need to apply a little pressure on the lid to get the vacuum to start. When you initially start the vacuum, you will be pulling an extraordinary amount of air out of the blanks which will cause the Juice to foam up considerably. This is the reason the valve is only partially closed initially. Use the valve to control the foaming in the chamber and keep the level of foam away from the bottom of the lid. As the foam subsides, close the valve another 1/8 turn. Wait for the foam to subside and repeat until you have the valve completely closed, pulling full vacuum.

> If you happen to suck Juice into your pump, don't panic! Simply release vacuum and turn off your pump. Drain the oil per the pump directions and pull the hose off of the hose barb on the lid of the chamber. Pour some vacuum pump oil into a cup and turn on the pump while sticking the hose into the cup. Allow the pump to suck oil through the hose and into the pump. Drain the oil again and refill with new oil. Your pump has now been flushed and is ready for use!

Depending on the material you are stabilizing and the vacuum pump you are using, it could take anywhere from 30 minutes to a number of hours to fully evacuate the air and stabilize your blanks. If your wood contains any moisture at all, you will continue to get tiny bubbles for 20-24 hours, thus the reason for recommending drying your wood as above! Keep the vacuum going until you see very few bubbles coming from the blanks. Do not add a valve to isolate the chamber and hold vacuum. You need the pump running the entire time to keep the air flowing from your material at the maximum rate possible. Do not worry about your pump! They are designed to run for very long periods of time and will feel quite hot to the touch.

Some pumps will put out an oil mist while running. If yours is doing so, search YouTube for vacuum pump oil filter for direction on making a filter to stop the mist.

Release Vacuum

Once the bubbles stop, it is time to release the vacuum in your chamber and shut off the pump. ALWAYS release vacuum before shutting down the pump. If not, you will cause premature wear on your pump and your pump will spit oil the next time you use it. To release vacuum, first tip the chamber side to side to dislodge any bubbles that may be trapped around the blanks, then slowly open the vacuum control valve until it is fully open. Keep an eye on the Juice level and be prepared to add more if it looks like the blanks will no longer be submerged. If the blanks become unsubmerged, you will need to go through the vacuum process again. Keep an eye on the Juice level for the first hour or so as that is when the majority of resin uptake occurs.

Soaking Blanks

Make sure you soak your blanks after you release the vacuum. Skipping this step is the number one cause for poor penetration! The vast majority of Cactus Juice uptake occurs AFTER you release vacuum. The recommended soak time is twice as long as you had your vacuum pump running. Soaking longer will not hurt the blanks or the Cactus Juice. There is nothing in Cactus Juice to evaporate so no need to keep the chamber sealed. An easy way to make sure you soak long enough is to soak overnight.

Removing Blanks

To empty your chamber, first you need to pour out the unabsorbed Cactus Juice. The NoFloat plate is designed to work as a strainer, holding back the blanks. Simply pick up the chamber and pour the excess Juice into a container and save for future use. Excess Cactus Juice is reusable until it is gone. Ideal storage containers are quart paint mixing cups with plastic snap on lids available at your local hardware store. DO NOT STORE CACTUS JUICE IN SEALED GLASS JARS! Doing so will likely result in your Cactus Juice curing on its own! The storage container should NOT be air tight for best results.

Once the Juice has been poured from the chamber, remove the NoFloat plate by placing your finger in the wide slot towards the end of the plate and pull upwards. Now pour your blanks out into a pile for further processing.

Wrap in Foil

Some of the Cactus Juice will bleed out of the blanks as the temperature increases in the oven during curing. This is normal and is part of the process. As a result, it is a good practice to wrap your blanks in aluminum foil prior to placing in the oven to cure. This step is not mandatory but it will help contain the mess and keep some of the bleed out on the surface of the blank.

When you wrap your blanks in foil, be sure to wrap them individually. If you wrap them together, you will end up with a nice, solid block of glued together blanks once the Cactus Juice cures!

If you choose to not wrap your blanks, be sure to at least have a piece of foil under the blanks to catch any bleed out and keep your oven clean.

Curing

Cactus Juice Stabilizing Resin has a cure temperature of 185-200° F (85-93° C). Hotter temperature will NOT hurt the Cactus Juice but it will cause excess bleed out of the resin from the blank. The ideal cure temperature is 200° F (93° C). The best way to cure your blanks is with an inexpensive toaster oven. These are frequently available at your local thrift store for less than $20. DO NOT USE YOUR HOME OVEN! It is a bad idea to put any kind of chemical in the oven where you prepare your food!

Place the wrapped blanks in an oven pre-heated to 200° F (93° C). Be sure to check the actual temperature of you toaster oven with an oven thermometer. The dials on toaster ovens are notoriously inaccurate. Too hot will not harm the Juice but will cause more of it to "leak" out of the blank before it cures.

The internal temperature of the blank needs to reach 200° F (93° C) for a minimum of 10 minutes for the Juice to cure. This usually takes around 1-1.5 hours for the typical pen blank but may take longer for thicker material. Curing your blanks is a one shot process. If you take the blanks out and let them cool down before checking and find liquid, they are now ruined. You can not heat them back up again and get a proper cure! It is best to err on the side of caution and cure them longer until you get a better feel for the process. One way to be sure of a proper cure is to put on some good gloves and remove the blanks from the oven. Peel back some of the foil and if you see any liquid Cactus Juice, immediately wrap them back up and put them back in for another hour without allowing them to cool down.

It will NOT hurt the Cactus Juice at all to leave it in longer than necessary and will NOT cause more bleed out. Once Cactus Juice has cured, it is heat resistant to 400° F (204° C) so leaving them in a 200° F (93° C) oven past the cure time does not hurt a thing!

Once the blanks are cured, it is much easier to remove the foil and scrape off any excess bleed out while they are still hot. Then set aside and allow to cool to room temperature before use. If you prefer, you trim them with a saw as well. This step is not required but will help you see the finished blank better to determine how you want to use them. A belt sander also does a great job.

Clean Up

Your JuiceProof Chamber can be washed out with soap and water after use. It is not mandatory to do so but will help keep the chamber looking new for years to come. Be sure to wipe down the rubber o-ring with soap and water if you happen to get Cactus Juice on it. Allow your chamber to dry thoroughly before the next use.

Dying While Stabilizing

Cactus Juice can be dyed when you want to add some color to the wood. The best success will be obtained with Alumilite reactive dyes available from TurnTex.com or Alumilite.com. They are very concentrated and produce nice, vivid colors that mix and work well with the Cactus Juice. Some dyes such as Transtint can be used in small amounts but if you add too much, it can affect the way the Juice cures. Some powdered dyes can work as well but typically have a hard time dissolving thoroughly, leaving a residue in the bottom of the mixing container and on the blanks. Alumilite dyes will not affect the cure of the Juice since they are specifically made for use in plastic resins. Be sure to use more dye than you think you need!

There is no formula available to give consistent results from wood to wood. This is due to the way different species and even different pieces of wood within the same log take the Dyed Cactus Juice. It is all a matter of trial and error! Stabilizing itself is a science while dying and stabilizing is an art!

To mix your dyed Cactus Juice, you will need a container. Plastic quart paint mixing cups with snap on lids work very well. Keep one for each color you plan to do. Use your clear Cactus Juice that has been used a few times and started to darken to top them off and add more dye. When you first add dye, don't worry with counting drops, just squirt some in and stir it up. Keep adding dye until it is very dark. When doing blue, for example, make the dyed Cactus Juice look almost black from so much dye.

Then run a sample batch. After cured, cut in half lengthwise to see what the color inside looks like. If it is too dark, add clear Cactus Juice to your mix. If it is not dark enough, add more dye. Just keep in mind that it takes a LOT more dye than you think to get good color in most woods.

Hard woods will require more dye than soft punky woods. Wood color will also have an effect on the final product. A yellow toned

wood with blue dyed Cactus Juice will tend to end up green since blue and yellow make green!

Double Dying Techniques

To double dye your blanks, decide which color will be your primary and which will be your highlight. Then mix up some of the highlight color and pour it into a container large enough to hold your blanks. Drop the blanks in and allow them to soak. DO NOT USE VACUUM. You can let them float or weigh them down. The time to soak will vary based on the hardness of the wood. If it is really punky, you might try 15 minutes while hard woods may need an hour or more.

After soaking, place the blanks in the oven and cure as normal. THIS IS A VERY IMPORTANT STEP! Curing this color make it Impervious and unable to mix with the second color. After it has cured and cooled down, place it in your vacuum chamber with your primary color and stabilize as normal including curing as normal.

What happens is the more porous, less dense portions of the wood will pick up the highlight color through natural capillary action in various concentrations. Then when you cure that color, it becomes impervious and unable to mix with the second color. Then vacuum pulls the second color into the rest of the wood as well as into portions of the wood that got some of the first color but not to the point of saturation.

Your finished blank will have highlights of the first color, a good portion of the primary color, and a fair amount of mixed color. For example, if you do red and blue, you will get red streaks and spots with blue as the primary blank color with quite a bit of purple! The purple is where the first color did not completely saturate the blank and blue was allowed to get pulled in. The two colors did not physically mix in the wood but blue and red right next to each other appears purple from a distance!

Trouble Shooting

Your purchase includes free technical support for the life of the chamber! Technical support is not just limited to chamber operations! Give me a call even if you just need help perfecting your technique!

Contact: 512-738-0775 M-F Noon to Midnight Central Time

Problem	Cause and Solution
Chamber not developing vacuum	O-ring in lid may be slightly distorted. Press down on lid with valve closed and vacuum should start to develop.
Vacuum gauge inaccurate or reads more than 0 without vacuum	Gauge needs to be equalized. Remove and replace brass plug on top of gauge to equalize. Leave plug out if possible.
Not getting 29" vacuum	Please visit www.turntex.com/calc to determine your maximum theoretical vacuum for your elevation above sea level.
Not getting full vacuum for my area	Vacuum leak. Check to make sure the o-ring is fully seated. Check all connections for leaks by spraying with shaving cream.
Poor penetration	Insufficient soak time. Allow your blanks to soak at least twice as long as you pull vacuum, minimum.
Bubbles never seem to stop	Moisture in the wood. If you are seeing tiny bubbles, this is moisture boiling out of the wood due to vacuum. Dry your wood as suggested to eliminate this in the future.
Getting a lot of bleed out from wood	High temperature or high moisture content. Check the temperature in your oven to make sure it is 200° F(93° c). Also make sure your blanks are dry.
Foamy or crystal like cured Juice	Moisture in the wood. Moisture will cause the Cactus Juice to come out of the wood as foamy or crystal like. Dry your wood as recommended.

TurnTex Woodworks Limited One Year Warranty

Every TurnTex Woodworks JuiceProof™ Vacuum Stabilizing Chamber is meticulously hand crafted with quality materials and attention to detail. Each chamber is individually vacuum tested to 99% vacuum to check for leaks and proper operation before leaving the shop. It is guaranteed against defects or failure for 1 year from the date of original purchase and is fully transferrable. This includes leaks, structural failures, or component failures.

Should any covered issue arise during this one year period, please e-mail info@tTurnTex.com with a description of your issue or call 512-738-0775. You will then be given further instruction to complete the warranty process. TurnTex Woodworks will repair or replace your chamber (our choice) without any charge to you.

This warranty does not cover:

- Normal wear items such as gaskets
- Crazing, fogging, or distortion of the clarity of the PVC
- Damage due to misuse
- Damage due to use of solvents for cleaning
- Damage due to use of other resins

In no event shall TurnTex Woodworks be liable for any indirect, incidental, or consequential damages from the sale or use of this product. This disclaimer applies both during and after the term of this warranty.

TurnTex Woodworks disclaims liability for any implied warranties including implied warranties of merchantability and fitness for a specific purpose after the one year term of this warranty.

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