Compresstome® VF-800-0Z User Manual

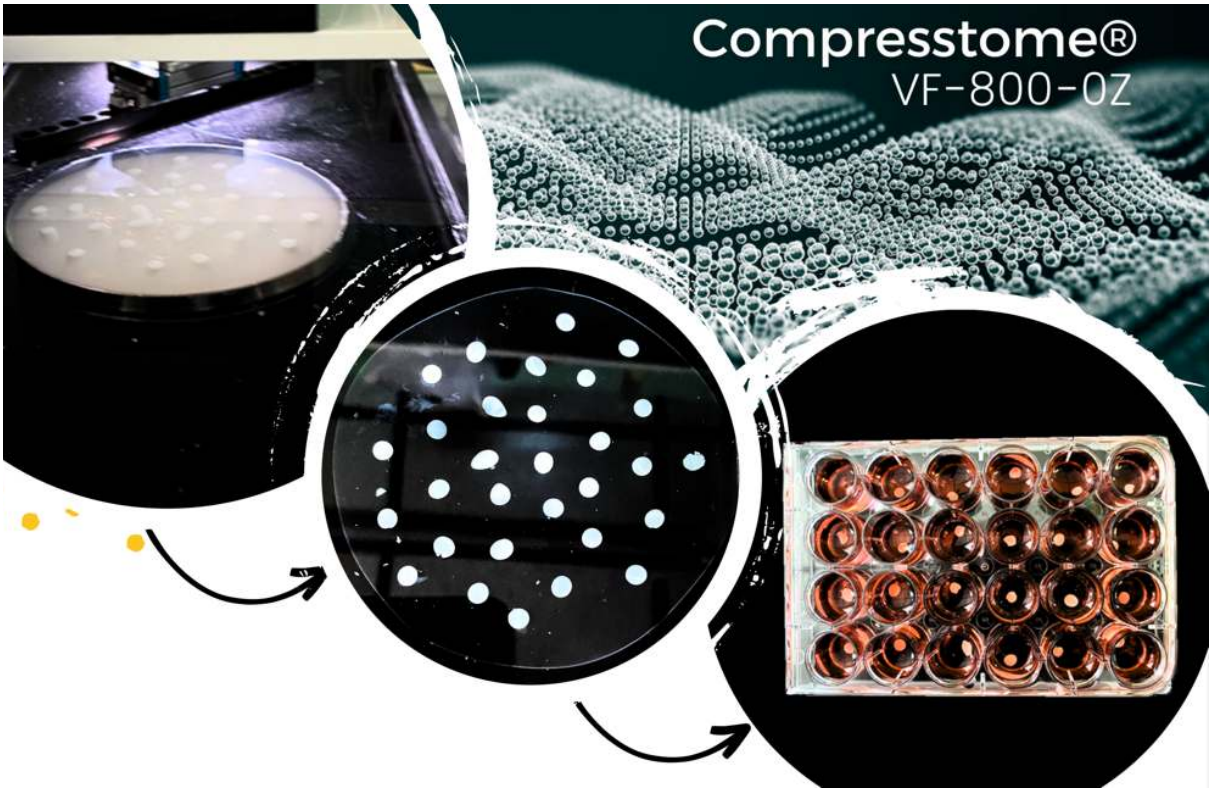


Table of Contents

Table of Contents 1

INTRODUCTION 2

Thank You 2
Model Description 2
Model Components 4
Control Box Anatomy 5
Accessories & Consumables 6
Safety Precautions 6
Technical Specifications 8

SETUP 9

Unpacking the Compresstome VF-800-0Z 9
Powering On and Off 11
Attaching the Gooseneck Lamp 11
Cutting Blades 12
Preparing Agarose for Embedding 13
Placing Agarose Solution in Hot Water Bath 14
Agarose Concentration Recommendation 15

OPERATION 16

Embedding Samples for Cutting 16
Sectioning Samples 18
Cutting Parameter Guidelines 19
Removing & Attaching the Blade Holder 20
Changing Blades on the Blade Holder 22

CLEANING AND MAINTENANCE 24

Cleaning the Compresstome VF-800-0Z 24
Tips & Tricks 26

WARRANTY INFORMATION 28

CONTACT INFORMATION 28

Introduction

Thank You

Thank you for choosing the Compresstome® VF-800-0Z!

At Precisionary Instruments, we are thrilled to help you get started with your new vibrating microtome, and we take great pride in quality customer service. Please read the following manual to help you get started with the Compresstome® VF-800-0Z.

Note

The information, numerical data, notes and value judgements contained in this manual represent the current state of scientific knowledge and state-of-the-art technology. We aim to update the present manual regularly according to the latest technical developments. Please contact us or visit our website to find the latest versions of this user manual.

Contact info@precisionary.com for updated information.
Website: www.precisionary.com

Model Description

The Compresstome VF-800-0Z Vibrating Microtome is a cutting-edge instrument engineered for precision sectioning of biological specimens. With its advanced features and versatile capabilities, it is suitable for a wide range of experimental applications in research and laboratory settings. The Compresstome VF-800-0Z utilizes high-frequency vibrations to achieve precise and consistent slicing of biological specimens.

Experimental Applications

The Compresstome VF-800-0Z Vibrating Microtome is suitable for various experimental applications, including but not limited to:

- ***Large Diameter Specimens:*** This vibratome is specially designed to handle large diameter specimens effectively.
- ***Immunohistochemistry:*** It is optimized for creating thin sections suitable for immunohistochemistry studies.
- ***High Throughput Sample Slicing:*** Capable of simultaneous slicing of 30 or more specimens, allowing for high-throughput experiments.
- ***Organotypic Culture Slices:*** The Compresstome VF-800-0Z is ideal for generating organotypic culture slices, facilitating in vitro studies of tissue organization and function.
- ***Tumor Tissue Sectioning:*** Researchers can confidently use this vibratome for precise tumor tissue sectioning, critical in oncology research.
- ***Precision Cut Tissue Slices:*** Achieve precision-cut tissue slices with reproducible results, ensuring consistency in your experiments.

Please refer to the specific sections of this user manual for detailed instructions on how to use the Compresstome VF-800-0Z for each of these applications. Additionally, we recommend consulting relevant scientific literature and your institution's guidelines for best practices in your specific research area.

Auto Zero-Z® Technology

Auto Zero-Z® is our latest breakthrough technology at Precisionary Instruments. This is a patented feature designed to allow the blade holder to operate in near zero Z-axis deflection without the need to optically align every single time. Please ensure that you follow the special instructions for blade mounting to ensure that Auto Zero-Z® works every time you slice. The advantages of the Auto Zero-Z® combined with Compresstome® techniques are:

- Healthier slices and better surface structure preservation.
- Thinner minimum slice thickness. By combining the Auto Zero-Z® and Compresstome® technology, it is now possible to achieve an unprecedented fixed brain slice thickness of 40 µm* without paraffin embedding or freezing.
- No vibration marks on the fixed brain slices. The result is a very smooth and flat slice surface which is optimal for histological processing.
- No optical alignment device is required for Auto Zero-Z® operation.
- No blade alignment procedure is required when changing to a new blade.

*Slice thickness minimum depends on tissue type and organ system.

Model Components

Figure Number	Compresstome Part	Function
1	Control Box	Adjusts speed, oscillation, slice thickness, and slice modes during the tissue sectioning process.
2	Blade Holder	Securely holds and stabilizes the cutting blade in place, ensuring precise and consistent slicing.
3	Buffer Tray	Provides a container to hold buffer or solutions needed for maintaining tissue integrity during slicing.
4	Buffer Tray Valve	Features an on/off knob to control the flow of solutions within the buffer tray, facilitating easy removal when necessary.
5	Specimen Tube Plunger	A 100 mm diameter stage designed to securely hold the tissue specimen for sectioning and embedding it in agarose for further processing.

All moving and electrical components of the Compresstome® tissue slicer must be kept dry, in particular the power supply unit.

Control Box Anatomy

Figure Number	Control Box Part Name	Control Box Function
1	Slice Thickness Display	Displays the desired slice thickness in micrometers (µm) to which the VF-800-0Z will cut the slices.
2	Oscillation Setting Knob	Controls the oscillation frequency of the blade holder, influencing its motion during the cutting process.
3	Speed Setting Knob	Adjusts the speed at which the vibration head travels along its cutting track, affecting slicing velocity.
4	Start Button for Sectioning	Initiates the sectioning process upon turning the machine on, activating the vibration head and blade holder movement.
5	Stop Button for Sectioning	Halts the movement of the vibration head and blade holder along the cutting track when pressed.
6	Up and Down Button for Specimen Plunger	Raises or lowers the specimen plunger, facilitating sample gluing and embedding.
7	Single and Continuous Cutting Modes	Allows for selecting between single and continuous sectioning modes based on the flip switch direction.
8	Blade Loading Position	Moves the blade backward to create additional space for loading samples into the machine.
9	Slice Thickness Setting Knob	Moves the tissue advancement plunger in reverse, retracting it into the control box to set slice thickness.

Accessories & Consumables

Contact us directly at info@precisionary.com and we will send you a quote. In addition, most of our Compresstome® consumables can be ordered online at: https://precisionary.com/e-store/

Consumable	Part Number	Description
Agarose Tablets	VF-AGT-VM-10	Low melting agarose designed for embedding tissue specimens with the Compresstome.
VF-800-0Z Cutting Blades	VF-800-0Z-TCB	Tungsten carbide blades specifically designed for use with the VF-800-0Z for precise tissue sectioning.
Pipettes (Transfer or Pasteur Pipettes)		Disposable plastic pipettes provided for effortless transfer of agarose into the specimen tubes during embedding.
Glue	VF-VM-GLUE	Used to securely attach cutting blades to the blade holder and to affix tissue specimens onto the specimen tube.
Forceps	VF-VM-FORCEPS	Small forceps designed for manual manipulation of tissue samples, offering precise control during handling.
Plastic Cleanup Razor	VF-BL-VM-PCR	Utilized for cleaning the edges of white plungers after sectioning with the Compresstome, ensuring smooth surfaces.
Tissue Handling Brushes		Fine tissue handling brushes that aid in transferring and moving sections created by the Compresstome, suitable for mounting sections onto glass slides.

Only use Precisionary supplied parts for Compresstome® operation; this includes only using the chilling block, blade holder, specimen tubes and buffer tray supplied with your Compresstome® tissue slicer. Do not use parts supplied from alternate suppliers for use with the Compresstome®.

Safety Precautions

Safety is of utmost importance when operating the Compresstome VF-800-0Z Vibrating Microtome, as it involves the use of sharp cutting blades and delicate biological specimens. To ensure your safety and the safety of others in the laboratory, please carefully follow these safety precautions:

1. **Training and Familiarization:** Before using the Compresstome VF-800-0Z, ensure that you have received proper training on its operation and maintenance. Familiarize yourself with the user manual and all safety guidelines provided by Precisionary Instruments.

2. **Personal Protective Equipment (PPE):** Always wear appropriate personal protective equipment, including lab coats, gloves, and safety goggles, when operating the microtome.
3. **Work Area:** Set up your work area in a clean, well-ventilated laboratory space designated for this type of equipment. Ensure adequate lighting to clearly see the specimen and instrument components.
4. **Blade Handling:** Handle the cutting blade with extreme caution. The blade is sharp and can cause injury. Always use blade handling tools or equipment provided to load and unload blades. Avoid touching the blade directly, and never try to adjust the blade while the instrument is in operation.
5. **Specimen Preparation:** Prepare your biological specimens following established laboratory protocols and safety guidelines. Ensure that specimens are securely mounted or embedded in the specimen holder to prevent movement during slicing.
6. **Instrument Operation:** Carefully follow the operating instructions provided in the user manual. Keep hands and other body parts away from the cutting area and moving parts while the instrument is in operation. Avoid distractions and maintain full concentration during microtome operation.
7. **Maintenance and Cleaning:** Regularly inspect the instrument for signs of wear, damage, or loose components. Turn off and unplug the microtome before performing maintenance or cleaning procedures. Use approved cleaning agents and methods as specified in the user manual.
8. **Electrical Safety:** Ensure that the instrument is properly grounded and connected to a stable power source. Avoid exposing the microtome to moisture or water to prevent electrical hazards.
9. **Chemical Hazards:** Be cautious when working with chemicals in the laboratory. Ensure that no chemicals come into contact with the instrument, as they may damage its components.
10. **Disposal:** Dispose of used blades and biological waste in accordance with local regulations and institutional guidelines.
11. **User Responsibility:** Ultimately, the user is responsible for ensuring that all safety precautions are followed during the operation of the Compresstome VF-800-0Z Vibrating Microtome.

Failure to adhere to these safety precautions may result in personal injury, damage to the instrument, or compromised experimental results. Always prioritize safety and exercise caution when operating the microtome. If you have any safety-related questions or concerns, consult with your laboratory's safety officer or the manufacturer, Precisionary Instruments.

Technical Specifications

Advance Speed	0-5 mm/s, adjustable
Return Speed	10 mm/s, fixed
Vibration Frequency	0-60 Hz, adjustable
Vibration Amplitude	1 mm, Fixed
Z-axis Vibration	<4 µm
Compatible Blades	Tungsten Carbide
Cutting Angle	20 degrees, fixed (standard)
Thickness Adjustment	Digital/automatic
Slice Thickness Resolution	1 µm
Specimen Tube Diameters	100 mm
Maximum Tissue Length	85 mm
Minimum Slice Thickness	40 µm*
Cutting Mode	Single or Continuous (selectable)
Cutting Bath	330 x 153 x 25 mm
Power Source 	AC 100-110V,200-240 V Only the original power supply unit (power cord) should be used with the Compresstome® VF-800-0Z model.
Power Consumption	18W
Dimension (L x W x H)	350 x 368 x 415 mm
Weight	17.6 kg

*Depends on tissue type and organ system.

Setup

Unpacking the Compresstome VF-800-0Z

Congratulations on your purchase of the Compresstome VF-800-0Z vibratome! To ensure a smooth setup process, follow the instructions below for unpacking your new instrument:

Unpacking the Compresstome VF-800-0Z

Procedure Step	Detailed Images
1. Your Compresstome VF-800-0Z will arrive in a sturdy thick-wall box to protect it during shipping. Carefully inspect the exterior of the box for any signs of damage during transit. If you notice any damage, please contact the shipping carrier or the manufacturer immediately. 2. Open the top of the box to reveal the interior contents. 3. In the box at the top, you will find the Accessories Box.	
4. Open the Accessories Box to reveal the contents of all consumables and parts you will need to help get started with using the Compresstome VF-800-0Z.	
5. Remove the top Accessories Box to reveal the foam-padded Compresstome VF-800-0Z.	

6. To lift out the Compresstome VF-800-0Z safely, it is recommended to have two people work together, although a single person can also lift up the unit. Using both hands, carefully grasp the instrument and lift it out of the box, taking care not to tilt it excessively.	
7. Once lifted out, set the Compresstome VF-800-0Z safely on a table such as a stable laboratory bench.	
8. The Compresstome VF-800-0Z will be packed securely with custom foam parts. The foam parts are held together by being interlocked together (red arrow). Simply remove the two foam pieces. 9. Next, remove the top cardboard covers protecting the buffer tray and the rest of the unit.	
10. The box bottom will have additional custom foam pieces. ***Please save all packaging materials!	

Unpacking the Accessories Box

Alongside the Compresstome VF-800-0Z, you will find an accessories box included with the unit. This box contains essential components and accessories for your instrument. Open the accessories box and carefully inspect its contents to ensure that all items are present and in good condition, as listed in the user manual.

Familiarize yourself with the accessories and their intended use. These accessories will play a crucial role in your tissue sectioning and experimentation.

With your Compresstome VF-800-0Z safely unpacked and placed on a suitable surface, and the accessories box opened and checked, you are now ready to proceed with the setup and operation of your vibratome. Refer to the subsequent sections of this user manual for detailed instructions on instrument setup, calibration, and operation.

Powering On and Off

In this section, we will guide you through the process of safely powering on and off your Compresstome VF-800-0Z tissue slicer.

Procedure Step	Detailed Images
Find the Compresstome VF-800-0Z Control Box on the left side of your instrument. Connect the provided power cord to the back of the Control Box. Plug the other end into a suitable electrical outlet that matches the voltage and current requirements in the user manual or on the Control Box. Locate the "On/Off" switch near the power cord input on the Control Box. Press the power switch to "On." To turn off the Compresstome VF-800-0Z, ensure all slicing and operations are complete.	

Attaching the Gooseneck Lamp

The Compresstome VF-800-0Z is equipped with a versatile gooseneck lamp that provides adjustable illumination for your workspace. Follow the steps below to set up and operate the gooseneck lamp effectively.

Connecting the Power Cord

1. Locate the included power cord. Check for a suitable outlet nearby, ensuring it meets voltage requirements.
2. Plug one end into the lamp's power input socket.
3. Plug the other end into the outlet.

Powering On and Off

1. Find the lamp's power switch on its base or cord.
2. Press the switch to "On" for illumination and "Off" to turn it off.

Attaching the Lamp

1. Use the lamp's strong magnet base.

2. Identify metal surfaces on the Compresstome VF-800-0Z for attachment.
3. Place the lamp's base on the chosen metal surface; it will securely attach.

Adjusting the Lamp

1. Bend and adjust the lamp's flexible neck for precise positioning.
2. It will maintain the adjusted position for tailored lighting.
3. Customize the angle, height, and direction for ideal illumination.

Cutting Blades

Precisionary Instruments offers custom-made cutting blades specifically designed for use with the Compresstome VF-800-0Z vibratome. These blades are engineered to provide optimal cutting performance and ensure high-quality tissue sections.

Recommended Cutting Blades

We recommend the following types of cutting blades for use with the Compresstome VF-800-0Z. These blades have been carefully selected to cater to different tissue characteristics and experimental needs. The choice of blade type may impact the quality of your tissue sections, so it's essential to select the most suitable blade for your specific application.

Blade Type	Description	Replacement Frequency
Tungsten 	A specialized blade designed for enhanced durability and precision when cutting hard or fibrous tissues. Appropriate for all tissue types.	Every 3-4 weeks

Preparing Agarose for Embedding

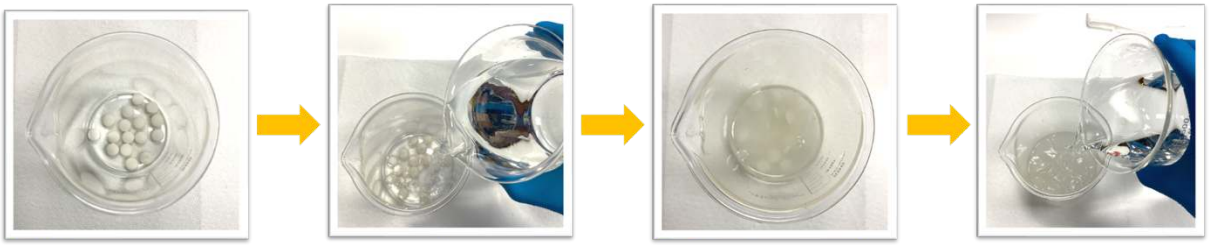
Agarose solution is a crucial component for embedding tissue samples to prepare them for sectioning on the Compresstome VF-800-0Z. Properly prepared agarose solution ensures the stability and integrity of your specimens during the slicing process. In this section, we will guide you through the steps to prepare agarose solution for your experiments.

Preparing Tools and Consumables

Procedure Step	Detailed Images
Before you begin, gather all the necessary tools and consumables for making agarose solution. Here's an example of prepped items: • Agarose tablets or agarose powder • Buffer solution (distilled water, PBS, or a specific cutting buffer solution) • 500 mL beakers • Stir bar or metal spatula • Hot water bath set to 40 degrees Celsius	

Making Agarose Solution

Follow these steps to make agarose solution:



1. Add agarose tablets *2. Pour in solution* *3. Dissolve agarose* *4. Pour rest of solution*

1. Place agarose tablets (or powder) into a 500 mL beaker. You will typically need at least 400 mL of agarose solution for each embedding and cutting experiment in terms of volume needed.
2. Add the specific buffer solution you would like to use. This can be distilled water, PBS, or a particular cutting solution tailored to your experiments.
3. Using a stir bar or metal spatula, stir the solution continuously until all agarose has completely dissolved. Ensure there are no visible agarose particles remaining.
4. Pour in the rest of your solution, and mix thoroughly.

1. Heat dissolved agarose solution in microwave

2. Beginning to boil

3. Final agarose solution MUST be clear

4. Cover completely

1. Place the beaker with the dissolved agarose and buffer solution into a microwave. Microwave on high for 1 minute. After 1 minute, use a spatula to stir the solution. Microwave the solution for an additional 2 minutes. Stir the solution again.
2. Microwave for 1 more minute while watching carefully. The solution should bubble vigorously but not spill over the sides of the beaker.
3. When the agarose solution is completely clear, with NO residue or agarose powder granules remaining, it is ready to be removed from the microwave.

Caution: The agarose solution will be very HOT. Cover the beaker with aluminum foil to prevent evaporation, ensuring that no edges are left open. Note that evaporation can affect the final agarose concentration and cause premature solidification of the agarose.

Placing Agarose Solution in Hot Water Bath

After preparing the agarose solution, maintain it at an optimal temperature until ready for embedding. Place the covered beaker in a 40°C hot water bath, using a thermometer to confirm the temperature. This keeps the agarose solution in a liquid state. Meanwhile, prepare your samples as it cools.

Place agarose solution into hot water bath (37-40°C)

Agarose Concentration Recommendation

To ensure optimal results when using our 0.5 g agarose tablets for embedding, it is essential to select the appropriate agarose concentration. The concentration of the agarose solution should align with the firmness of your tissue, as this will directly impact the quality of your experiments.

Recommended Agarose Concentration

We advise preparing agarose solutions with a concentration ranging from 2.0% to 3.0%. This concentration range is versatile and offers the flexibility to tailor the firmness of the agarose gel to match the specific characteristics of your tissue samples.

Matching Firmness

It is crucial to match the firmness of the agarose gel to the firmness of your tissue samples. A well-matched firmness ensures that your specimens remain stable during the slicing process, leading to precise and consistent results.

For further guidance on selecting the ideal agarose concentration for your experiments, please refer to the summary table below:

Agarose Concentration	**Recommended Use**
2.0% to 2.5%	Suitable for soft or delicate tissues.
2.5% to 3.0%	Ideal for moderately firm to firm tissues.

Selecting the appropriate agarose concentration is a critical step in achieving successful tissue embedding for sectioning on the Compresstome VF-800-0Z. By matching the firmness of the agarose gel to your tissue's firmness, you can enhance the quality and precision of your experiments.

Agarose %	**Number of agarose tablets (0.5g) needed for 500 mL of solution**
2.0%	20 tablets
2.5%	25 tablets
3.0%	30 tablets

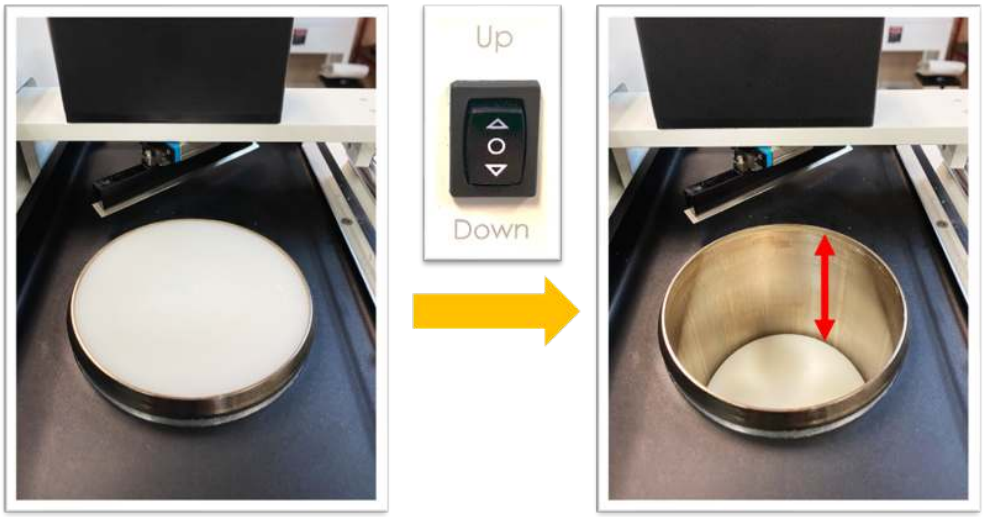
Operation

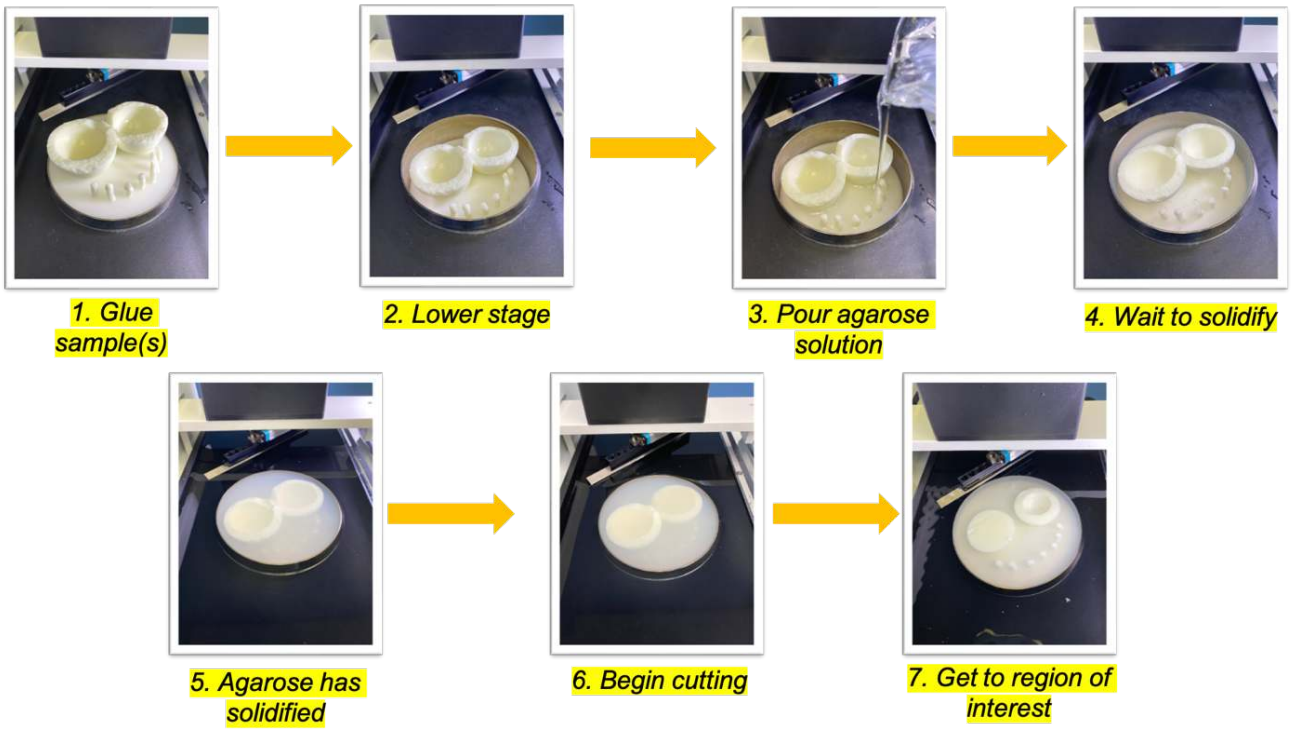
Embedding Samples for Cutting

Embedding your samples properly is a crucial step in preparing them for precise sectioning on the Compresstome VF-800-0Z. This process ensures the stability and integrity of your specimens during slicing. In this section, we will guide you through the steps for embedding samples effectively.

Move the blade holder to the loading position by pressing the blue "Load" button. This action allows the blade holder to move backward, creating more space for the embedding process.

Move the specimen tube plunger (tissue embedding stage) to the top position. While the plunger stage can be lowered significantly, it is recommended to keep it at the top position to facilitate embedding.





1. Apply a thin layer of glue to the surface of the plunger or stage. Ensure an even coating. Gently place your prepared samples to be cut onto the glued surface. Allow a brief moment for the glue to dry and secure the samples in place.
2. Lower the plunger or stage until the topmost edge of your sample is slightly below the top rim edge of the specimen tube. This positioning ensures that your samples are securely embedded and ready for slicing.
3. Carefully pour agarose solution into the specimen tube, ensuring that all samples are fully submerged.
4. Allow the agarose solution to completely solidify. You can expedite this process by pouring cutting solution (e.g., water, PBS, or a suitable buffer) into the buffer tray, filling it to the top edge of the specimen tube. Ensure that no solution comes into contact with the agarose solution, as it can alter the agarose concentration.
5. Once the agarose has solidified, pour cutting solution into the buffer tray until it reaches the top. Ensure that everything, including the blade holder, is fully submerged in the solution. You are now ready to commence slicing and collecting sections.

Following these steps will help you effectively embed your samples for cutting on the Compresstome VF-800-0Z, ensuring stable and precise sectioning results.

Sectioning Samples

Set the slice thickness, cutting speed, and oscillation frequency that best suit your experimental needs. It's important to note that you may need to fine-tune these parameters based on the specific tissue or sample types you are cutting. **We recommend starting with a slice thickness of 500 µm, cutting speed of 4, and an oscillation setting of 5.**

Description	Control Box
Press the green "Start" button to initiate the automatic sectioning process with the blade holder. Press the red "Stop" button to halt the advancement of the blade holder and its oscillation.	
To adjust your desired section thickness, turn the "Slice Thickness" knob.	
The LED screen "Current Slice Thickness (µm)" will display the selected section thickness in microns.	
Adjust the advancement speed and frequency of oscillation for cutting by turning the "Speed" and "Oscillation" knobs. Refer to the tables below for units used with the Compresstome VF-800-0Z.	
Use the "Up" or "Down" switch to manually move the specimen tube plunger up or down, as needed.	
The Compresstome VF-800-0Z offers two cutting modes: "Single" and "Continuous." In "Single" mode, the instrument will automatically cut one section after you press the green "Start" button. It will then return to its original position until you press "Start" again. In "Continuous" mode, the Compresstome will automatically advance the plunger by the specified set thickness and begin cutting the next section without requiring you to press "Start" for each section.	

Cutting Parameter Guidelines

When using your VF-800-0Z model for the first time or working with new tissue types, we encourage you to refer to these cutting parameters as a starting point. They provide valuable insights to help you initiate the sectioning process effectively.

It is essential to keep in mind that tissue characteristics can vary. As you gain experience and familiarity with your VF-800-0Z, you may find it necessary to make adjustments to the cutting parameters. Tailoring these parameters to match the specific requirements of your experiments can result in enhanced slicing precision and improved results. **We recommend starting with a slice thickness of 500 µm, cutting speed of 4, and an oscillation setting of 5.**

“Step-Down Procedure” for Best Sectioning

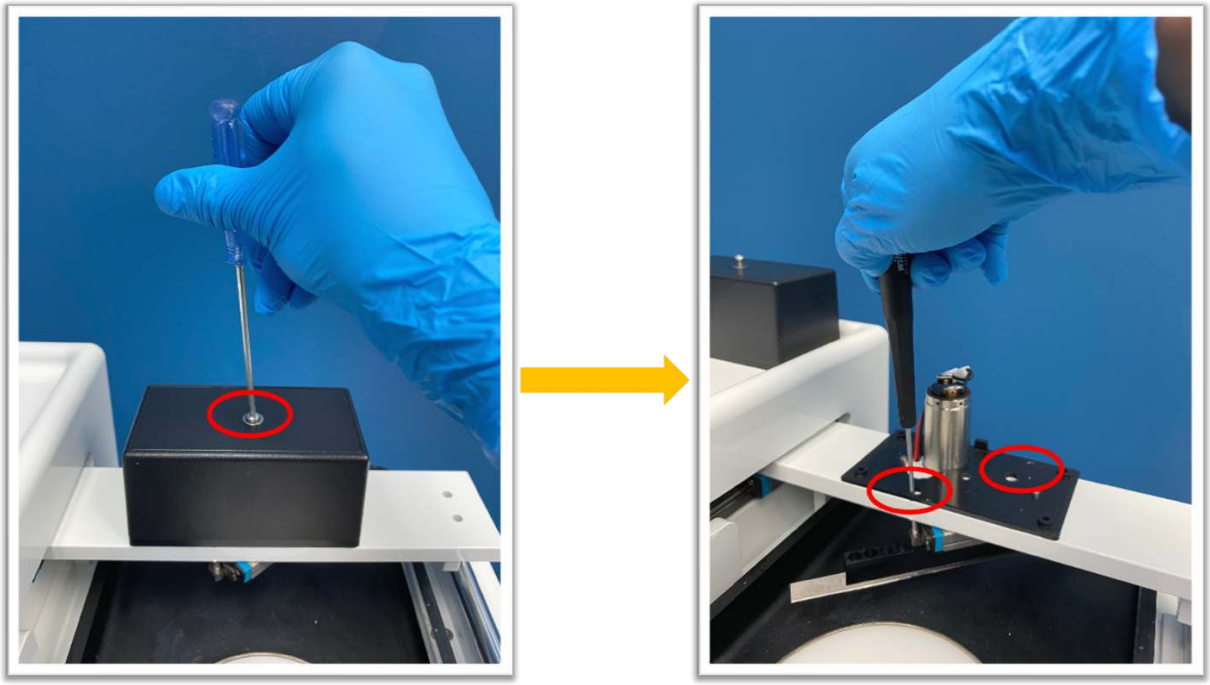
in order to produce full, accurate slices, we highly recommend the step-down cutting process. For instance, cutting thinner sections on the Compresstome® requires a greater stepping down process for obtaining thinner cuts.

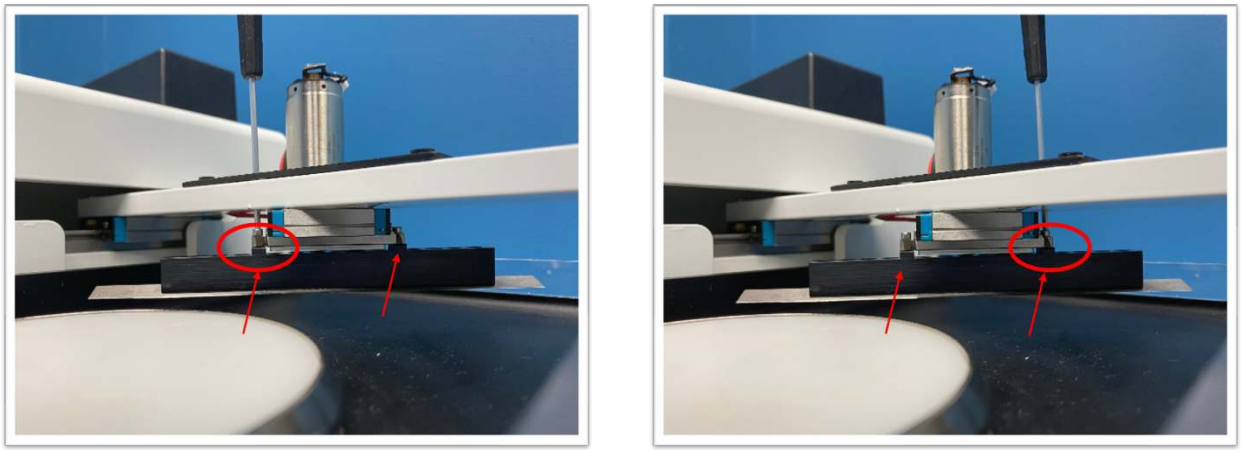
For thinner sections, especially less than 50 µm, it is best to begin at least 100 µm greater than your desired slice thickness and step down in units of 20 µm, until you get within 50 µm of your desired slice thickness, to then step-down in 10 µm increments. As you get even closer, within 20 µm, you will want to step-down in 5 µm increments until you reach your desired slice thickness.

In other words, start with cutting 500 µm sections. Then move to 400 µm, then 300 µm, 200 µm, 150 µm, 100 µm, 80 µm, 70 µm, 60 µm, 50µm, etc. until you reach your desired thickness.

Removing & Attaching the Blade Holder

Properly removing and attaching the blade holder on the Compresstome VF-800-0Z is an essential skill for maintenance and adjustment. This section provides step-by-step instructions to guide you through the process effectively.





1. To begin, remove the blade holder motor cover using a Philips head screwdriver. This cover protects the internal components of the blade holder.
2. Once the cover is removed, you will notice two small round openings at the top of the blade holder. To detach the blade holder, use a 5/64’ Allen wrench to carefully unscrew the two screws. Insert the Allen wrench through the top two holes and unscrew both

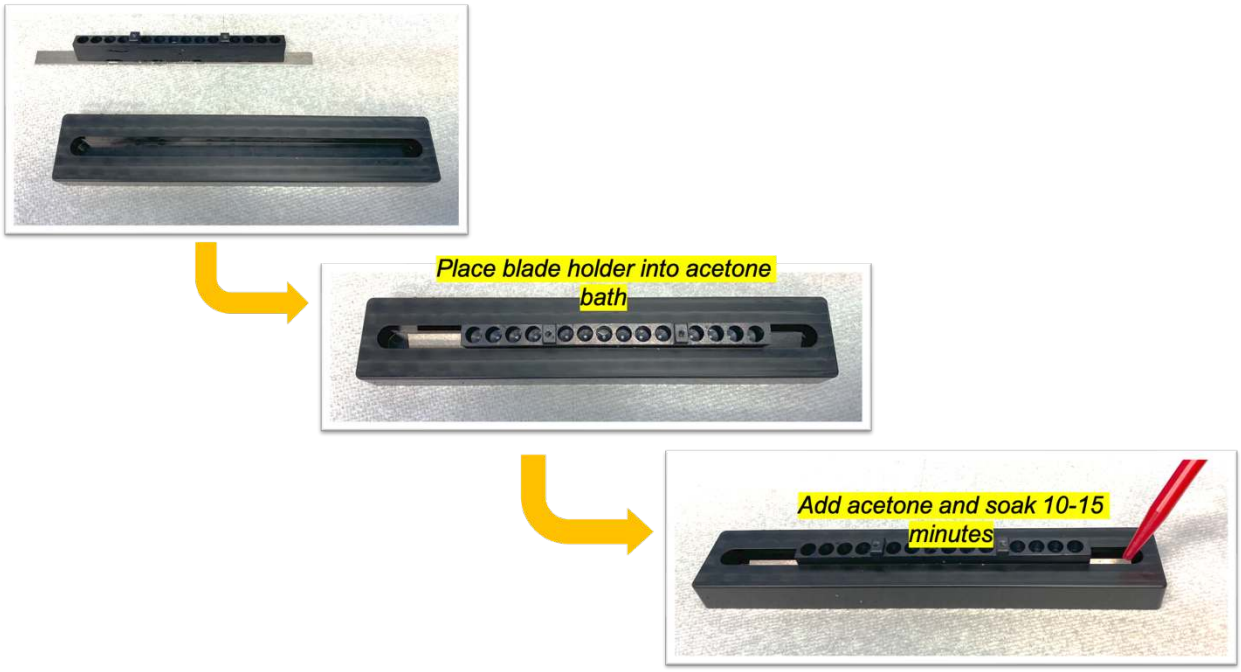
screws. This process requires delicate handling and precision. Unscrewing these screws will allow you to remove the blade holder from its position.

3. To reattach the blade holder, carefully hold it under the motor bar. Then, using the 5/64’ Allen wrench, reattach the screws. Insert the Allen wrench through the top two holes and securely tighten both screws in place. Ensure that the blade holder is firmly attached and properly aligned.
4. Reattach the blade holder motor cover using a Philips head screwdriver. This cover helps protect the internal components and ensures the blade holder is securely enclosed.

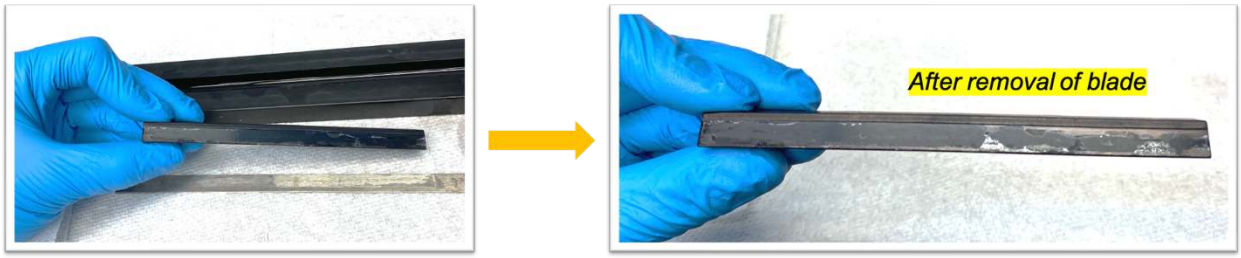
Note: Be cautious not to misplace the small screws during the removal or attachment process. If the screws accidentally fall out, use fine forceps to re-insert them into their respective slots.

Changing Blades on the Blade Holder

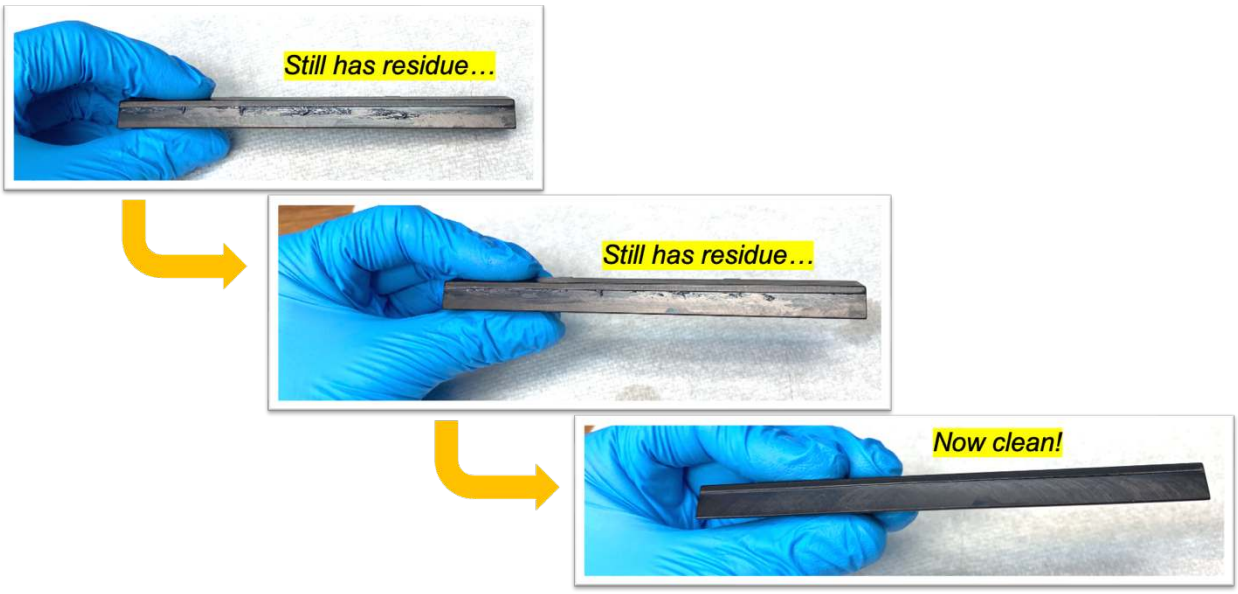
This section provides step-by-step instructions on how to safely remove and replace the cutting blade.



1. Once the blade holder is removed, place both the blade holder and cutting blade into an acetone bath. The acetone bath will help soften and dissolve any glue residue.
2. Allow the blade holder and blade to soak in the acetone bath for 10-15 minutes. This soaking period will facilitate the removal of the old blade and any remaining glue.



3. Gently pry off the old cutting blade and safely dispose of it in a sharps container. You may notice that there is still glue residue on the blade holder. It is crucial to remove all residue completely before attaching a new blade.



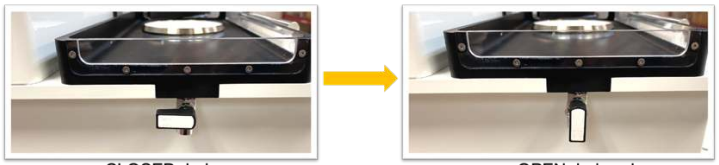
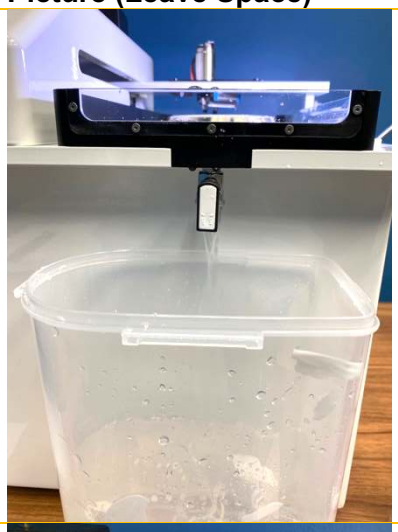
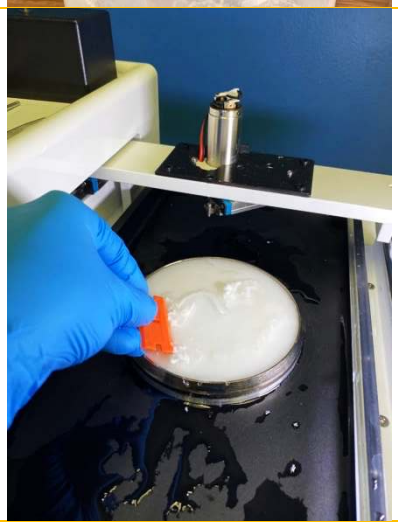
4. To remove any remaining glue residue, continue to soak the blade holder in acetone within the acetone bath. Every 2 minutes, you can use a Kimwipe or paper towel to wipe off the residue. Ensure that all residue is completely wiped off.
5. To attach a new cutting blade, add a small amount of glue to the underside of the blade holder. Position the new cutting blade in the middle and attach it to the glue. Allow the glue to dry completely.
6. With the new cutting blade securely in place, the blade holder can now be remounted and reattached to the Compresstome for further sectioning. Ensure that the blade is properly aligned for precise cutting.

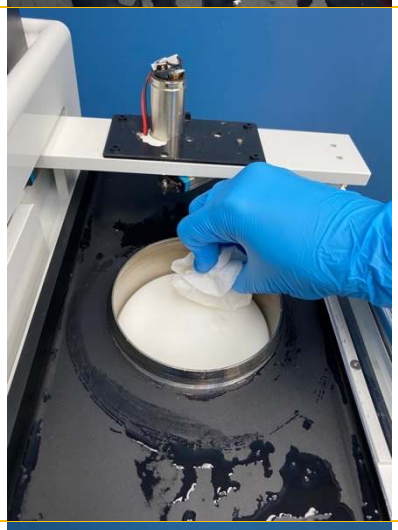
Properly maintaining and replacing the cutting blade is crucial for consistent and high-quality sectioning with the Compresstome VF-800-0Z. Follow these steps carefully to ensure the effective removal and attachment of the cutting blade for optimal performance.

Cleaning and Maintenance

Cleaning the Compresstome VF-800-0Z

Proper cleaning of your Compresstome VF-800-0Z is essential for maintaining its functionality and ensuring reliable performance. This section provides step-by-step instructions on how to clean the instrument effectively. Follow these steps to clean the Compresstome VF-800-0Z:

Description	Picture (Leave Space)
1. Open the buffer tray valve to drain all buffer solution. If the drain becomes clogged, use a small Allen wrench or a suitable tool to unclog it. Ensure that the valve is closed after draining is complete.  CLOSED drain valve OPEN drain valve	
2. Move the plunger or stage all the way up using the "Up" button. Carefully remove any remaining agarose and embedded samples and dispose of them properly. To remove residue, use a plastic cleanup razor to scrape the top of the stage or plunger, removing as much residue as possible.	

3. Move the plunger or stage down slightly (approximately 5mm). Add a thin layer of acetone to the specimen tube and let it sit for 5 minutes. Afterward, scrape away glue and other residue using a plastic cleanup razor. Repeat this process until all residue has been completely removed. **Note:** Do NOT use sharp razor blades or cutting blades to remove residue or glue, as this can damage the plunger or stage's surface.	
4. Wipe down the inside of the buffer tray or rinse it out with water to remove any remaining debris.	
5. For overall cleaning, use only a 70% ethanol or isopropyl alcohol solution to clean the buffer tray and the entire instrument. Avoid using acetone, as it can damage the buffer tray, and refrain from using bleach solutions, as they can cause corrosion to metal components. Spray the alcohol solution on the Compresstome and gently wipe the surfaces with a paper towel.	

If necessary, you can place the Compresstome VF-800-0Z inside a fume hood and expose it to UV light for additional disinfection. This step is optional and can provide further sterilization if needed.

Tips & Tricks

Here are some essential tips and tricks to enhance your experience with the Compresstome VF-800-0Z:

- **Avoid trapping any air bubbles in the agarose during embedding:** Proper embedding is critical for obtaining clean and precise sections. Be mindful of air bubbles, as they can affect the quality of your slices.
- **Handle the blade holder with care:** The blade holder is a pre-aligned and delicate component. Ensure that there is no glue residue on either side of the blade holder, as this can deteriorate slice quality. Maintain the blade holder in optimal condition for consistent results.
- **Prevent bubbling of buffer solutions:** When slicing with artificial cerebrospinal fluid (ACSF) or other buffer solutions, avoid bubbling to prevent contamination and damage to the linear bearing of the vibration head. This step is crucial for prolonging the machine's work life. If bubbling is necessary for your experiments, consider our Oxygenation Attachment, specifically designed for Compresstome® slicers.

How do I keep the buffer tray cold?

- There are many options to keep your buffer tray cold during sectioning! Customers typically pre-chill or semi-freeze the buffer solution, which keeps the temperature of the solution cold during the cutting process. One huge advantage of the Compresstome® is that the speed of tissue slicing is significantly faster than the speeds of other market slicers. So even without packing ice around the buffer tray, the Compresstome® can slice live tissue rapidly to preserve slice health!
- Lastly, another option is to place cold gel packs around the buffer tray to keep the entire unit cold. Using gel packs also makes clean up easy!

Is agarose safe to use for live tissue? For fixed tissue?

- Absolutely! Agarose is a soft embedding medium that is safe to use for embedding both live and fixed tissues. We have diligently performed experiments in the lab to test the effects of agarose on both live and fixed tissue. Our agarose tablets are “low gelling point” at 36°C, and it has been proven safe time and again because you can keep it from congealing in a warm water bath while below biological temperatures. Agarose does not harm the specimen in any case. For example, researchers at Allen Brain Institute have cut live slices of cortical tissue and performed patch-clamp electrophysiology experiments on layer I cortical neurons. The agarose helps to stabilize tissue so that cutting with the Compresstome® yields slices with smooth surfaces.

I am getting chatter marks on tissue slices. How do I get smoother slices?

- If you are getting vibration artifacts, please try the following diagnostic steps:
    1. Set the speed slightly lower (try an “Advance” setting of 1 to 1.5). Also set the oscillation frequency higher (try a setting of 5-7).

2. Make sure that you are using 2-3% agarose without any bubbles in the agarose surrounding the tissue.
3. Try changing the blade to start with a new cutting blade.
4. If you are working with tissue that has open cavities inside, please remember to inject the cavities with agarose to ensure that all air spaces have been filled up.
5. Finally, if you are still having chatter mark trouble, give us a call or email us! We are here to help.

I am getting uneven tissue slices. How do I fix this?

- Getting uneven thicknesses from slice to slice is unusual for the Compresstome®. But if you are getting uneven slices, it may be because the agarose density does not match the tissue density you are slicing. For instance, agarose that is too soft (<2%) will not provide enough stability for cutting with firmer tissue (such as cardiac or lymph node tissues, which are more fibrous). When this happens, use a higher concentration of agarose (3%). Also try decreasing the speed ("Advance") to 1 to 1.5 and increase the oscillation frequency to 5-7.

The agarose rim around the tissue does not fall off. How do I separate the agarose from the tissue after cutting?

- If you would like the agarose rim to fall off after each slice, try using a higher concentration of agarose, such as 3% to 3.5%. The firmer the agarose, the more likely that it will automatically fall off the tissue after each slice is cut.
- You can also try brushing the tissue with a 30% sucrose solution to coat it before embedding in agarose. This puts a layer around the tissue that allows the agarose rim to fall off easier after your slices fall into the buffer tray/solution.

By following these tips and tricks, you can enhance your sectioning experience with the Compresstome VF-800-0Z, ensuring consistent and high-quality results in your research or experiments.

Warranty Information

There is a one (1) year warranty for the VF-800-0Z Compresstome® vibrating microtome. Additional years of warranty are available for purchase. Consumables, shipping fees, handling costs, and training plans are non-returnable. Delivery is considered to be completed when items arrive to the customer. Shipping fees incurred from repairs for under-warranty service in the year under warranty will be paid by Precisionary Instruments. All shipping fees both to and from Precisionary Instruments following this period must be paid by the customer.

If repairs are required, the customer must contact Precisionary Instruments and provide proof of purchase.

Warranty Void Conditions

The warranty for the Compresstome® VF-800-0Z model becomes void under the following conditions: (1) Any unauthorized attempts to repair or tamper with the Compresstome®, including the control box, moving bar, oscillating head unit, or any associated parts (e.g., gooseneck lamp, specimen tubes, chilling block, buffer trays, etc.) without prior written confirmation from Precisionary Instruments during the one-year warranty period. (2) If a customer attempts to repair the Compresstome® within the one-year warranty period and the attempt is unsuccessful, the warranty is voided if the customer subsequently contacts Precisionary Instruments for repair services. In such cases, the customer is responsible for all shipping and repair costs, as the warranty is voided due to unauthorized tampering with the Compresstome® VF-800-0Z model.

Contact Information

Additional questions? Need assistance? We have multiple ways for you to contact us, including:

Email	Phone	Address
info@precisionary.com	Customer Service: (617) 682-0586 Technical Support: (508) 810-0219 (508) 810-0111 Fax: 1-866-424-2217	Precisionary Instruments 200 Butterfield Drive Unit E Ashland, MA 01721