PRECISIONARY

Compresstome® VF-310-0Z User Manual

Thank You

Thank you for choosing the Compresstome® VF-310-0Z!

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-310-0Z.

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

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Part 1: Introduction

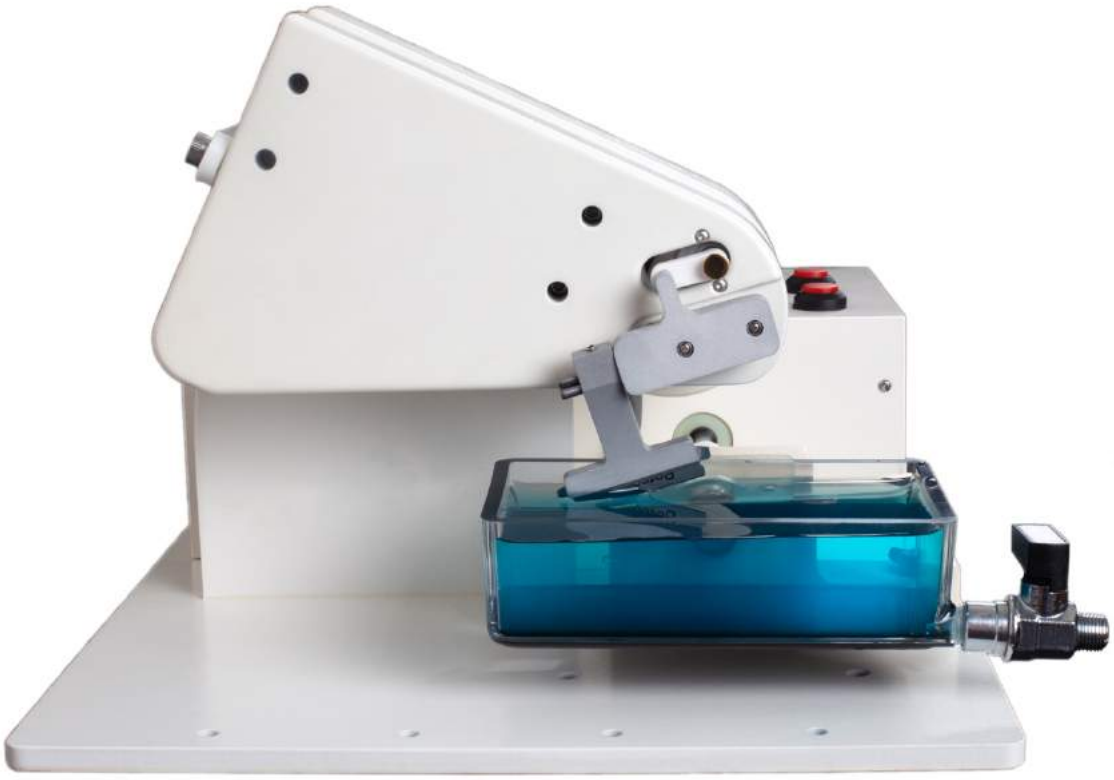
Safety

Dangers, warnings, and cautions appear in a box and are marked by the warning triangle.

Important information for the user, such as disclaimers, appear in a box and are marked by the information symbol.

Caution! Follow the accompanying documentation.

Model Description



The VF-310-0Z tissue slicer model is the latest version of our flagship product in the Compresstome® slicer family. With patented Auto Zero-Z® technology, the VF-310-0Z is fully automated to section both fixed and live tissues with a thickness range of 4 µm* to 1000 µm and an adjustable precision of 1 µm.

The Compresstome® VF-310-0Z excels at sectioning slices used for:

- Electrophysiology
- Immunohistochemistry
- Organotypic culture slices
- Precision cut tissue slices
- Sectioning of mature or older brain tissues
- And much more!

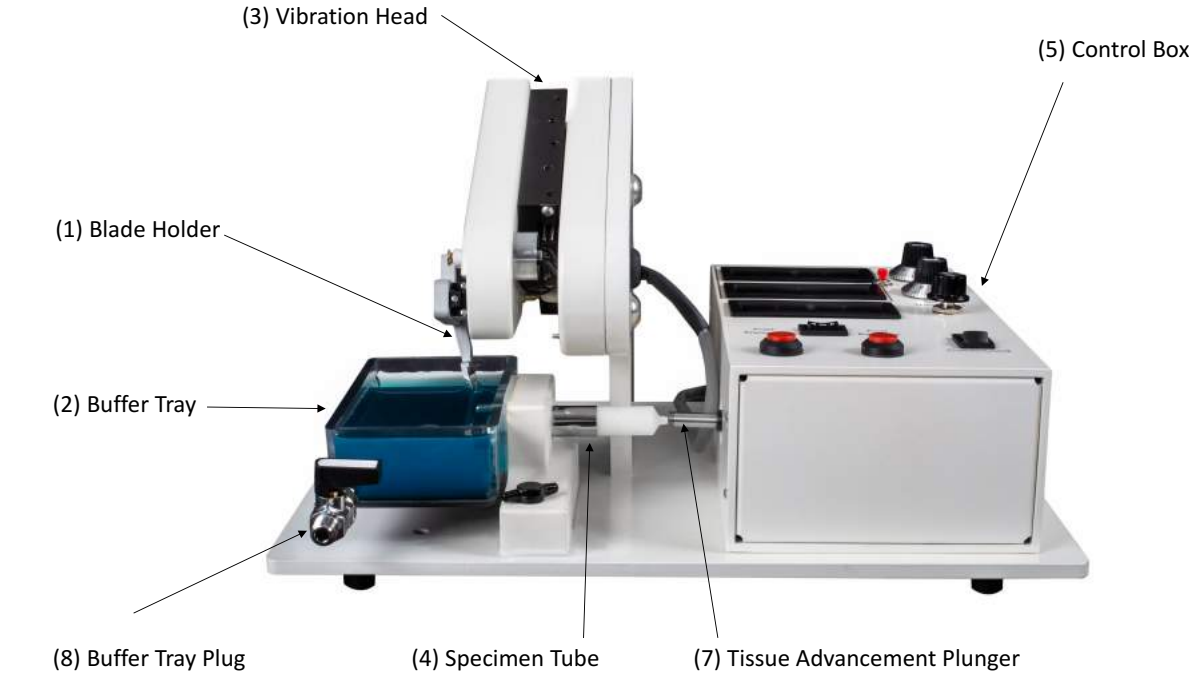
*Slice thickness minimum depends on tissue sample and organ system.

Technical Specifications

Advance Speed	0-20 mm/s, adjustable
Return Speed	20 mm/s
Vibration Frequency	0-45 Hz, adjustable
Vibration Amplitude	2 mm
Z-axis Vibration	~0 µm
Compatible Blades	Stainless Steel, Ceramic, Tungsten Carbide, Sapphire Diamond
Cutting Angle	15 degrees (no need for blade alignment)
Thickness Adjustment	Automatic
Micrometer Resolution	1 µm
Maximum Tissue Diameter	6.5mm (small), 12.5 mm (standard), 15.5 mm (large), 22mm (extra large)
Maximum Tissue Length	3 mm
Minimum Slice Thickness	4 µm*
Cutting Mode	Single or Continuous
Cutting Bath	140 x 60 x 30 mm
Power Source	120 V AC
Power Consumption	18 W
Dimension (L x W x H)	330 x 240 x 190 mm
Weight	5 kg

*Depends on tissue type and organ system.

Model Components



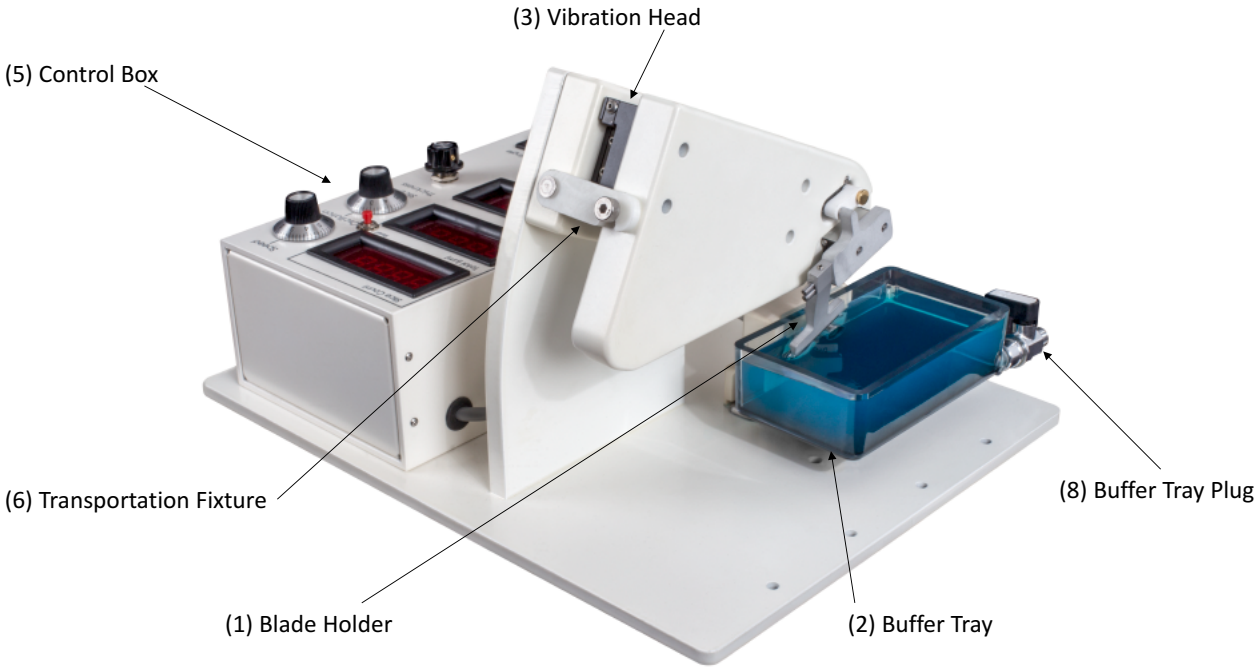


Figure Number	Compresstome Part	Part Number	Function
1	Blade Holder	VF-BH-VM-310-0Z-BOS	Holds and stabilizes the cutting blade
2	Buffer Tray	VF-BT-VM-LP-BOS	Holds buffer or solutions during sectioning
3	Vibration Head	VF-VHU-VM-310-0Z-BOS	Blade oscillation assembly, which includes a blade holder, and an oscillation motor
4	Specimen Tube	VF-SPS-VM-6.5-BOS VF-SPS-VM-12.5-BOS VF-SPS-VM-15.5-BOS VF-SPS-VM-22-BOS	Four different tube sizes (6.5, 12.5, 15.5, and 22 mm in diameter) that hold the specimen for sectioning and embedding tissue in agarose
5	Control Box	--	Controls for the cutting speed, oscillation frequency, and desired thickness in microns.
6	Transportation Fixture	--	Stabilizes vibration head for safe transport
7	Tissue Advancement Plunger	--	Pushes the specimen tube forward for sample to be cut
8	Buffer Tray Plug	VF-BT-PL-BOS	On/off knob to keep solution in buffer tray and easily remove solution when needed

Control Box Anatomy

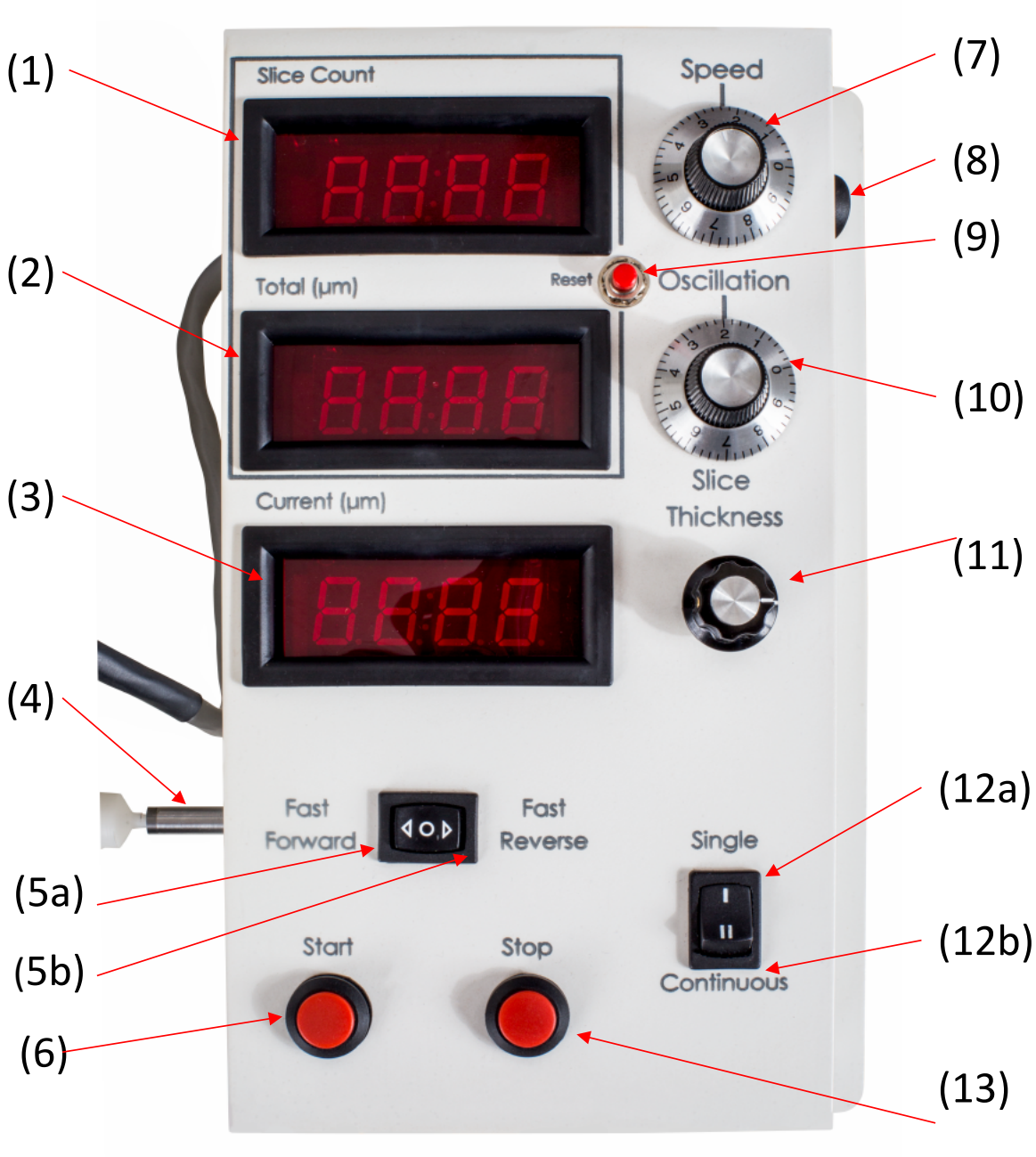


Figure Number	Control Box Part Name	Control Box Function
1	Slice Count Display Screen	Displays how many slices have been cut in a cutting cycle
2	Total Amount Sectioned (in µm)	Displays the total amount, in microns, of tissue that has been sectioned since you began to cut in a cycle
3	Current Slice Thickness (in µm)	Displays the thickness range your VF-310-0Z will cut slices to (in µm)
4	Tissue Advancement Plunger	Advances the specimen tube forward after each slice is made
5a	Fast Forward Function	Moves the tissue advancement plunger forward, towards the specimen tube. Use this function to get the tissue advancement plunger to touch the end of the specimen tube before you begin a cutting cycle
5b	Fast Reverse Function	Moves the tissue advancement plunger in reverse, for easy removal of the specimen tube from the buffer tank
6	Start Button for Sectioning	The button that will start your sectioning after turning the machine one and setting your settings
7	Knob that Controls Speed Setting	Knob that will control how fast the blade holder moves on the cutting track
8	On/Off Switch	Turns the VF-310-0Z on and off
9	Reset Button	This reset button is for resetting the total number of microns cut in a cutting cycle
10	Knob that Controls Oscillation Setting	Knob that will control the oscillation frequency of the blade holder as it cuts
11	Knob for Slice Thickness Setting	Use this knob to adjust your desired slice thickness for sectioning
12a	Single Cutting Mode	Single cutting mode will only section one slice at a time
12b	Continuous Cutting Mode	Continuous cutting mode will section continuous sections in a row
13	Stop Button for Sectioning	The button that will stop the vibrating head wherever it is along the cutting track

Accessories

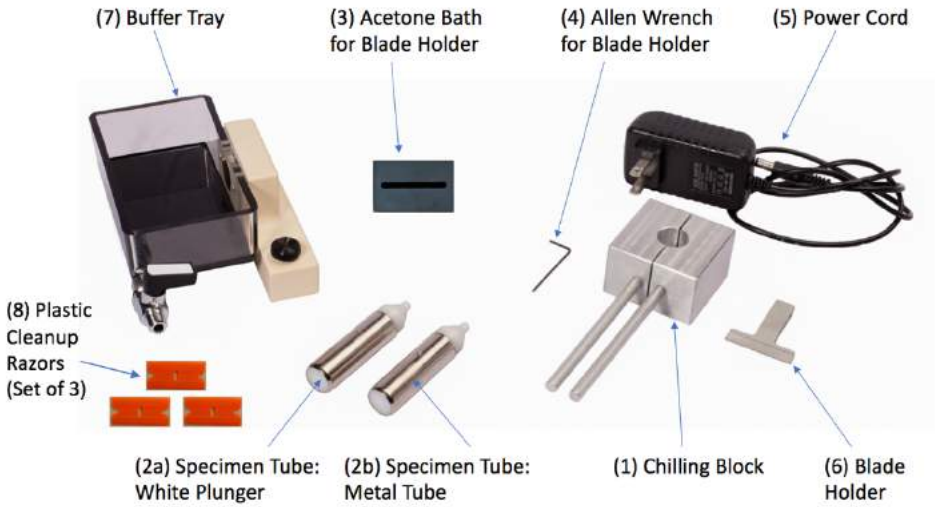


Figure Number	Compresstome Part	Part Number	Function
1	Chilling Block	VF-VM-CB-6.5-BOS VF-VM-CB-12.5-BOS VF-VM-CB-15.5-BOS VF-VM-CB-20-BOS	Rapidly chills agarose in specimen tube for sectioning with the Compresstome
2a	Specimen Tube: White Plunger	VF-SPS-VM-6.5-BOS VF-SPS-VM-12.5-BOS VF-SPS-VM-15.5-BOS VF-SPS-VM-22-BOS	Where tissue specimen is glued onto
2b	Specimen Tube: Metal Tube		End with tapered lip for compression technology- white plunger will move through the metal tube for sectioning
3	Acetone Bath for Blade Holder	VF-VM-AB	Use to remove glue from the blade holder before reapplying a new blade
4	Allen Wrench for Blade Holder	VF-BH-VM-AW	Use to remove and tighten the small screw on the blade holder when taking it on/off the machine
5	Power Cord	VF-VM-PC-BOS	Power cord for the VF-310-0Z model
6	Blade Holder	VF-VH-VM-310-0Z-BOS	Used to glue the blades onto and is easily attached to vibration head
7	Buffer Tray	VF-BT-VM-LP-BOS	Holds the buffer solution for the produced free-floating sections
8	Plastic Cleanup Razors	VF-BL-VM-PCR	Use to clean the edges of the white plungers after sectioning with the Compresstome

Starter Kit Components

Note: All of our Compresstome® consumables can be ordered online at:
http://precisionary.com/e-store/

Contact us directly at info@precisionary.com, and we will send you a quote.

Consumable	Part Number	Quantity	Description
Agarose Tablets	VF-AGT-VM-10	10	Low melting agarose for embedding tissue.
Blades	VF-BL-VM-SSB	10	Double-edged stainless-steel blades.
Pipettes	—	4	Plastic, disposable pipettes included for easy transfer of agarose into the specimen tubes for embedding.
Glue	VF-VM-GLUE	1	Used for securing blades to the blade holder and tissue specimens to the specimen tube.
Forceps	VF-VM-FORCEPS	2	Small forceps for easy manual manipulation of tissue sample.
Petroleum Jelly	VF-VM-PJ	4	Petroleum jelly recommended for application to the inside of the tube adapter to help prevent minor leaks for Compresstome slicer buffer trays (0.16 ounces each packet)

Part 2: Setup

IMPORTANT! Transportation Fixture Removal

Please remove the transportation fixture before your first-time use. This fixture will need to be securely mounted back to the machine before any future shipment.

Before using the Compresstome® slicer, you MUST remove the thumbscrew that holds the "transportation fixture" in place on the machine. This piece is screwed in at the back of the vibrating head and is there to help stabilize the Compresstome® during shipment. Failure to remove the transportation stabilization plate may result in damage to the vibrating head.

1. Remove thumbscrew that is on the right side of the transportation fixture. You do not need to remove anything on the left side (leave as is).

2. After removing the thumbscrew, the transportation fixture will fall shown in the picture above. Place the thumbscrew back into the machine so that it does not get lost and that you can reattach the transportation fixture for any future shipments.

Mounting the Cutting Blade to the Blade Holder

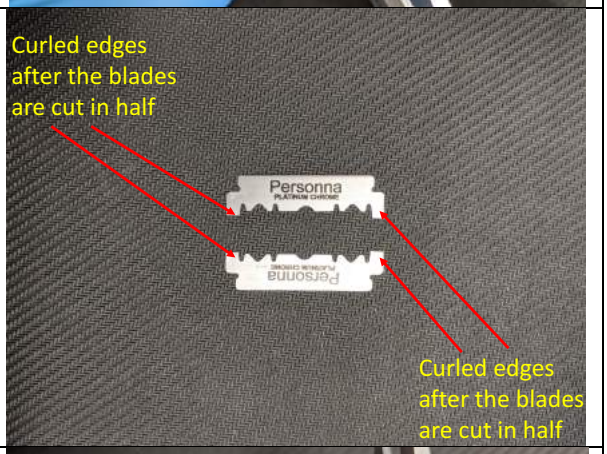
Double-edged razor blades and ceramic blades are ideal for this vibrating microtome. The Compresstome® Starter Kit includes either 10 double-edged razor blades or two ceramic blades to get you up and running with your Compresstome® purchase. The blades should be cleaned with acetone and ethanol before use.

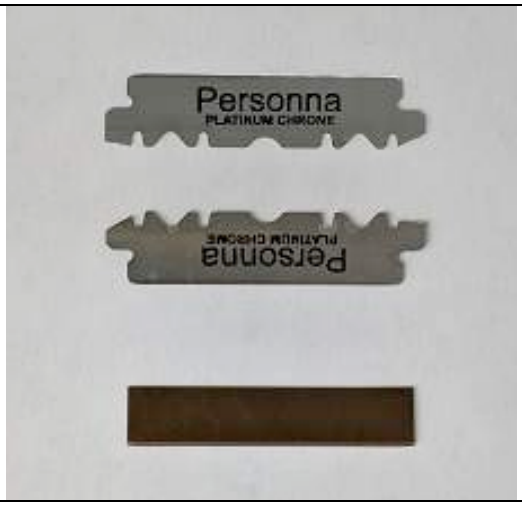
The sharpness of the blade can directly affect the quality of the slices. As seen in the table below, we recommend replacing blades periodically according to the razor and tissue type.

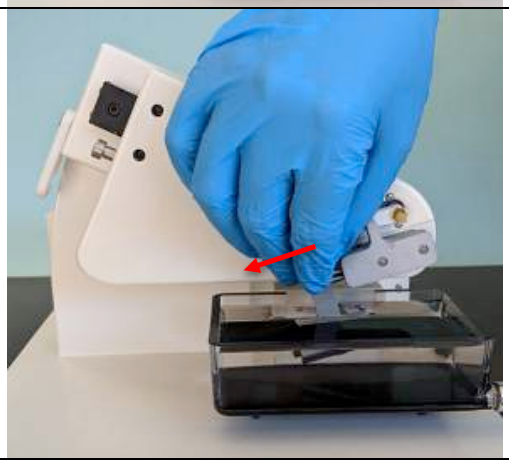
Razor Type	Tissue Type	Replacement Frequency
Double-edged	Standard (brain, lung, gastrointestinal, skin)	Every 3-5 samples
	Fibrous (lymph nodes, liver, spleen, kidney)	Every 1-2 samples
Ceramic	All	Every 3-4 weeks
Tungsten	All	Every 1-2 weeks

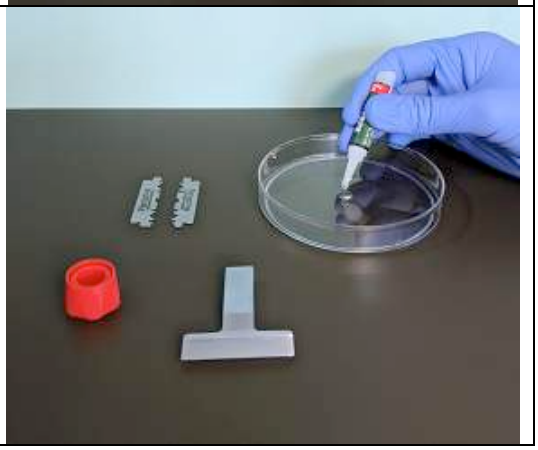
For each double-edged stainless steel blade, cut the blade horizontally to form two separate blades. You will only need one of the two resulting blades for each use. For ceramic and tungsten blades, remove one of the blades carefully from the pack.

Blade Type	Blade Picture
Stainless Steel Double-Edged Blades	
Ceramic Blade	
Tungsten Carbide Blade	

How to Properly Cut the Double Edged Blades		
Step #	Instruction	Picture
1	Cut the double-edged blades horizontally:	
2	Two separate blades will form:	
3	After the stainless steel blades are cut in half, trim the extra tabs (curled edges) on the ends of the blades so they don't stick out beyond the blade (pictured in step #2). If using a ceramic or tungsten blade, simply remove one carefully from pack.	

4	The blades will be ready to use and will look like this:	

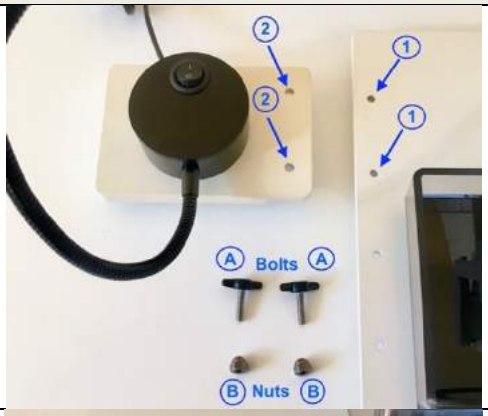
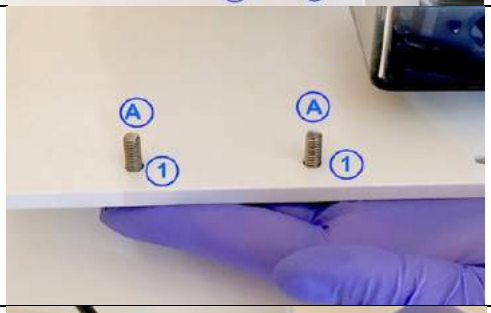
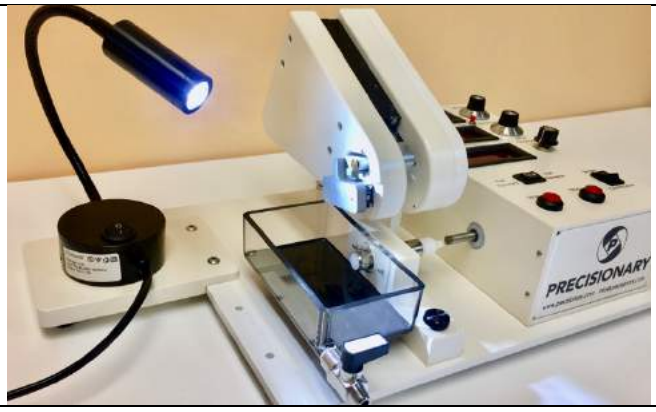
How to Properly Mount the Cutting Blade to the Blade Holder		
1	To remove the blade holder from the vibrating head unit, loosen the small screw on top of the blade holder with the included Allen wrench. **Always remove the blade holder BEFORE removing or inserting the buffer tray.**	
2	Slide the blade holder off the axial bar.	

3	Remove the old cutting blade. **Dispose of blade safely into a sharps container.**	
4	Soak the blade holder in the acetone bath for 5 minutes. Wipe off any residual glue on the blade holder using a paper towel. It is critical to ensure all glue residue is removed before attaching a new blade. ***DISCLAIMER:* Please only use acetone to clean the blade holder and specimen tube. The buffer tray is not made of acetone safe materials.**	
5	Squeeze a small amount of super glue onto a petri dish or other solid surface.	

6	Pipette 5 µL of the super glue along the full length of the blade holder.	
7	Position the cutting blade on the blade holder. The edge of the blade should touch the raised lip of the blade holder (see step #7a). Make sure the exposed surfaces of the blade are clean to prevent damage to tissue. Press firmly, then allow the glue to dry for one (1) minute before use. **Do NOT touch blade edge.**	
7a	You are ready to use your blade/blade holder when the cutting blade is positioned like this:	

7b	You do NOT want your cutting blade to be mounted like this: On the left side, the curled edge is on the raised lip of the blade holder, and the blade is off-centered. On the right side, you can see how the blade is off-centered towards the right. The curled edge was also not trimmed on this side.	
7c	This is another example of how you do NOT want to mount your cutting blade to the blade holder: Notice that the top edge of this blade is not touching the blade holder edge, and it is also not centered. There is also a buildup of glue on the blade holder, and this should be cleaned before mounting a new cutting blade.	

Attaching the Gooseneck Lamp to the Compresstome®

Step #	Instruction	Picture
1	Locate the following: 1. Holes in Compresstome 2. Holes in gooseneck lamp A. Bolts B. Nuts	
2	Insert the bolts (A) into the Compresstome® base holes (1) seen in the photo here: Please note that the base of the bolts (A) will be underneath the Compresstome® base.	
3	Place the holes of the Gooseneck Lamp (2) over the bolts (A). Place nuts (B) over the bolts (A) and turn them clockwise. Screw the bolts and nuts together until the Gooseneck Lamp base is securely fastened to the Compresstome® base.	
4	Your Gooseneck Lamp is now successfully attached to your Compresstome® model!	

Preparing Agarose for Embedding

All tissue specimens must be embedded in agarose for the Compresstome® to perform as designed. We recommend using our type-Ib agarose tablets. However, for larger quantities, type-Ib agarose powder can be purchased through Sigma Aldrich at:

http://www.sigmaaldrich.com/catalog/product/sial/a0576?lang=en&region=US

Please see Table 1 below for using our 0.5 g agarose tablets. We recommend using a 2.0% to 3.0% agarose solution. The "firmness" of the agarose gel should match the "firmness" of your tissue.

Solution volume needed to achieve % agarose (mL)			
Agarose %	1 tablet	2 tablets	3 tablets
1.5%	33	67	100
1.8%	28	56	83
2.0%	25	50	75
2.2%	23	45	68
2.5%	20	40	60
3.0%	17	33	50
3.2%	16	31	47
3.5%	14	29	43

Table 1

On Page 24, you will find Table 2 that displays the cutting parameters using the VF-310-0Z (and all Compresstome®) models. These guidelines are starting points for the speed, oscillation, and agarose concentration needed to section the specific tissue type. Please use these cutting parameters to start, and adjust as needed as you continue using your VF-310-0Z model.

Cutting Parameters Guideline

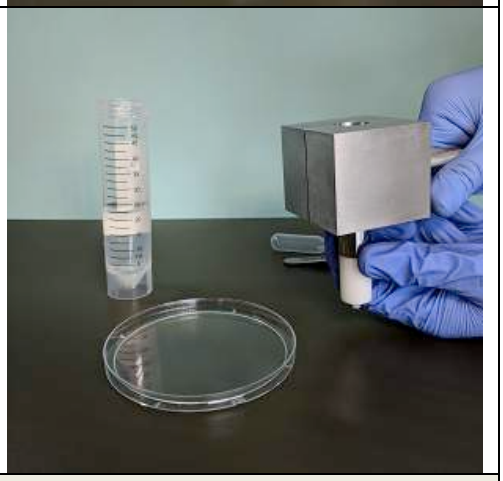
Tissue or Specimen	Advance (Speed)	Oscillation	Suggested Agarose %
Lung: • Precision-cut lung slices	3-4	4-6	2%
Any fixed tissues	1.5-2	5-7	2%
Brain: live • Electrophysiology • imaging	3-4	5-7	1.8-2%
Organotypic slices: Tumor research Brain culture slices	3-4	5-7	2%
Retina (fixed and acute slices) * Infuse with agarose or gelatin to replace vitreous humor	1.5-2	5-7	2.5%
Kidney (acute slices)	3-4	5-6	2.5%
Liver (acute slices)	3-4	5-6	2.5%
Cardiac (fixed and acute slices) * Infuse with agarose or gelatin to fill up atria/ventricles	1.5-2	5-6	2.5%
Gut (fixed and acute slices)	4-5	4-5	2.5%
Plants: Leaves	3-4	4-5	2%
Plants: Stems	3-4	4-5	2%
Plants: Seeds	6-8	2-3	2.5%
Skin (Epidermis)	2-3	5-6	2.5%
Muscle (fixed and acute slices)	2-3	4-6	2.5%
Adipose (fixed and acute slices)	4-5	5-6	1.8%
Lymph node (fixed and acute slices) * Use 3% agarose for more fibrous tissues	1.5-2	5-6	2.5%
Spleen (fixed and acute slices)	3-4	6-7	2%

Table 2

Step #	Instruction	Picture
1	Each tablet contains 0.5 g of low-melting point agarose. We recommend adding 20-25 mL of solution to each vial containing 1 agarose tablet. For alternative gel strengths, please see Table 1 on page 23 for the appropriate solution volume.	
2	Dissolve the agarose tablet for 2 minutes by swirling the vial.	
3	Heat the agarose as you normally would. If using a microwave, heat the agarose solution for 10 seconds, then shake to mix it up, and repeat until the solution has become clear. Heating the solution in 10 seconds bouts helps prevent the solution from overflowing. You may see a lot of bubbles in the solution, which is normal. The solution is complete when the graininess dissipates and the solution is clear. Allow it to cool for at least 5 minutes in a 37 °C bath. Keeping the prepared agarose solution in a warm water bath will keep it from congealing so that it is ready to use for specimen embedding.	 **Unscrew top of agarose vial when heating it in the microwave.**

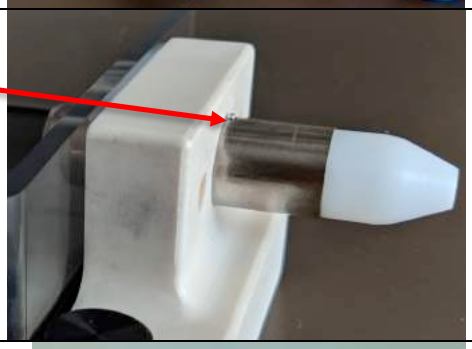
Embedding Tissue in Agarose

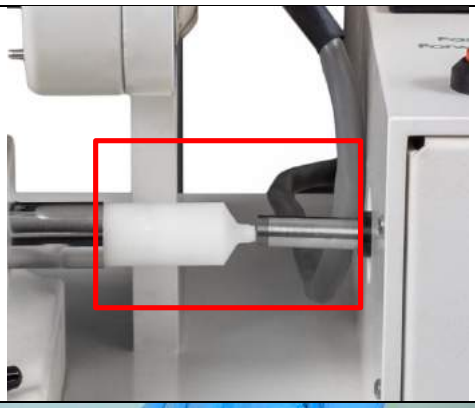
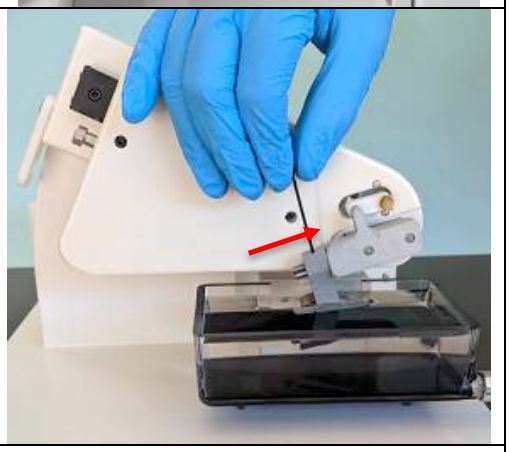
1	Place the chilling block into water and ice bath or a freezer to cool for at least 1 hour. The chilling block must be chilled pre-embedding your tissue sample.	
2	Prepare your tissue sample by cutting it so that the tissue fits inside the specimen tube. Squeeze a small amount of super glue onto the specimen tube base. The glue should cover the approximate area of your tissue sample. Take care not to let super glue leak down the sides of the plunger. If the metal casing gets stuck, you will need to soak the specimen tube in acetone to help dissolve the glue and detach it.	
3	Using forceps, position the tissue onto the specimen tube base and allow the glue to cure. For specific orientations, you may need to cut a flat surface into the tissue allowing for the tissue to be glued more securely to the specimen tube.	
4	Withdraw the specimen tube base downwards until the tissue sample fully enters the tube.	

5	Pipette in agarose to fully cover specimen. Make sure no bubbles remain around the sample. Tap the side of the tube to remove any that are present. Suctioning the bubbles out with the pipette can also help remove them.	
6	Place the chilling block (should be pre-chilled, see step 1) over the specimen tube to chill the entire sample and help the agarose solidify. This typically takes 30 seconds depending on the size of the sample.	
Once your tissue is embedded into agarose, you are ready for sectioning with the Compresstome® slicer!		

Part 3: Operation

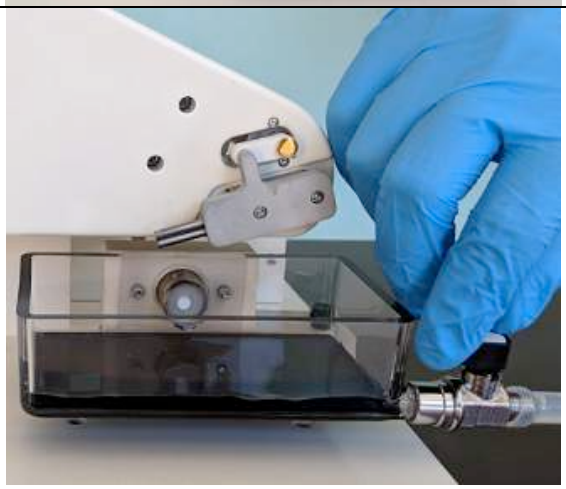
Sectioning with the Compresstome® Tissue Slicer

Step #	Instruction	Picture
1a	Insert the tapered end of the specimen tube into the removable buffer tray. **We recommend applying a small amount petroleum jelly to the specimen tube to ensure a good seal.**	
1b	Push the tube in fully such that the stopper knob hits the adapter. The adapter will stop the specimen tube from being inserted any further than it needs to be to begin sectioning.	
2	Slide the buffer tray onto the Compresstome® slicer and lock in place with the thumb screw. **Make sure to <u>ALWAYS</u> tighten the thumbscrew on the buffer tank before you begin to section!**	

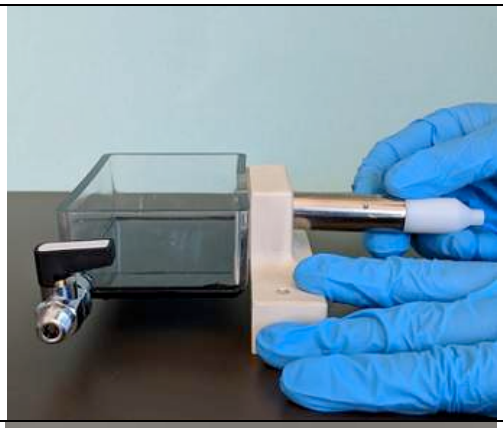
3	Make sure the micrometer is touching the back of your specimen tube before you begin sectioning. You can use the 'Fast Forward' and 'Fast Reverse' functions on the control box to move the micrometer forward or backwards.	
4	Slide the prepared blade holder onto the axial bar of the vibrating unit, and lock in place with the included Allen key. ⚠ **Make sure the buffer tray is already in place BEFORE sliding the prepared blade holder onto the machine.**	
5	Plug the one end of power cord into your VF-310-0Z machine, and the other into your standard power outlet. Turn the power on.	
6	Use the control box to set the slice thickness, sectioning speed, and frequency of oscillation to best suit your experimental needs. Please see Page 24 (Table 2) for specific cutting parameters.	
7	Do not set the control box immediately to your desired thickness. To produce the best slices with consistent thickness and accuracy, start sectioning ~30-50 microns higher than your desired thickness. Begin sectioning on continuous mode while reducing the thickness in smaller increments after each slice is produced. Once you reach your desired thickness level, you can continue slicing with the VF-310-0Z and adjust the sectioning speed and frequency oscillation as needed.	EXAMPLE: My desired thickness is a 10 µm thick slice, so I will begin sectioning at 40 µm, the next cut will be 30µm, → 25 µm, → 20 µm, → 15 µm, → 12 µm, → 10µm.

Part 4: General Information

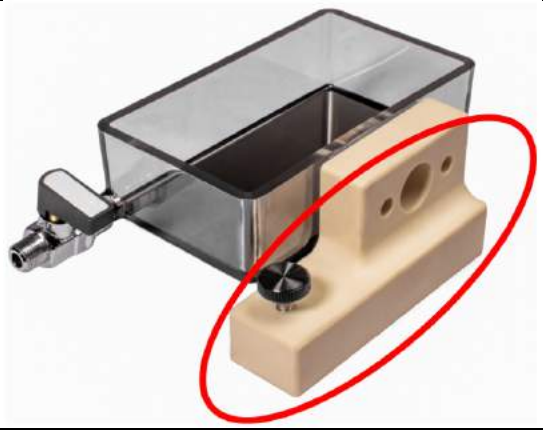
Cleaning and Maintenance

Step #	Instruction	Picture
1	Remove blade holder by loosening the small screw with the included Allen key and sliding it off the axial bar. If reusing the blade, set it aside. If changing the blade, follow the instructions on page 17.	
2a	Empty buffer from the buffer tank. This can be done by opening the ball valve directly into a sink, attaching a hose to the ball valve to drain it directly through the hose, or removing the buffer tank entirely (see step 2d). ***DISCLAIMER:*** **The buffer tray is not made of Acetone safe materials.** **We recommend using 70% ethanol solution, 70% isopropyl alcohol solution or 10% bleach solution to clean the buffer tray.**	

2b	If using the ball valve, please refer to these photos (2b + 2c) for opening and closing the ball valve. In this photo, the buffer tray valve is closed:	
2c	In this photo, the buffer tray valve is open: Open the buffer tray valve for removing the buffer solution and cleaning the buffer tray.	
2d	As an alternative method to empty the buffer tank, loosen the thumb screw and remove the full buffer tray.	

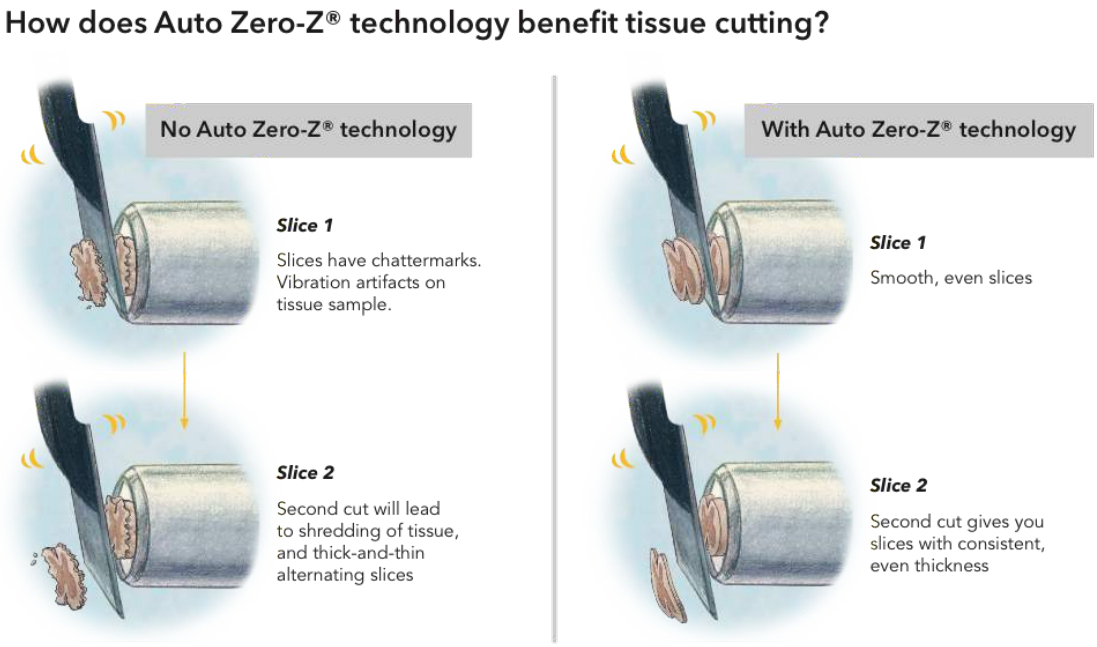
3	Remove the specimen tube from the base.	
4	Remove the plunger from the metal casing.	
5	Use the plastic cleanup razor to scrape residual glue from the front end of the plunger.	
6	Clean up any debris on the plunger and inside of the specimen tube with acetone swabs or soft brush. ***DISCLAIMER:* Please only use acetone to clean the blade holder and specimen tube. The buffer tray is not made of Acetone safe materials.**	

Buffer Tray Maintenance and Cleaning

Step #	Instruction	Picture
1	Unscrew buffer tray assembly. Slide tray off unit. **Make sure the blade holder is ALREADY removed before removing the buffer tray from the machine.**	
2	Clean with rubbing alcohol. ***DISCLAIMER:* Do not use acetone as it may damage the materials.**	
4	Be sure to also clean the underside of the specimen tube base- the piece of the buffer tray that attaches to the magnet on the base of the machine- with rubbing alcohol when cleaning the buffer tray.	

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 4 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.

Troubleshooting

- ❖ Avoid trapping any air bubbles in the agarose during embedding.

- ❖ The blade holder is a pre-aligned, delicate part. Glue residue on either side of the blade holder will deteriorate slice quality.

- ❖ Do not bubble artificial cerebrospinal fluid (ACSF) or other buffer solutions during slicing to avoid contaminating and damaging the linear bearing of the vibration head. This is the most critical step to increase the work life of the machine.

The vibrating head unit does not move when I begin to cut for the first time.

- When the Compresstome® tissue slicer is packaged and sent to you, the vibrating head is secured in place at the top by the transportation fixture (see photo on P. 14). This transportation fixture needs to be removed before turning the machine on and cutting. If the transportation fixture is not removed, the head unit will not move beyond its attached location.
- If the vibrating head unit does not move at all, and no noise is heard, the issue could be due to an electrical problem in the vibrating arm. If this occurs, please contact us. See page 39 for contact information.

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!
- Another great option is that with the VF-310-0Z, you can easily remove the buffer tray, pour ~1mm of buffer into the tray, and place the tray in the freezer so there is a nice frozen layer at the bottom of your buffer tray, underneath your standard buffer solution, for sectioning.
- 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!
- Lastly, a great, simple option to keep your buffer tray cold is to use our Compresstome Double-Walled Buffer Tank! Our Double-Walled Buffer Tank takes the place of your standard buffer tray. There is space in the 'double wall' to keep ice cubes in while you section, and the ice will not go into your buffer tray or interfere with cutting! It will keep your buffer tray and solution cold during sectioning, perfect for sectioning your live tissue slices!

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.

What are the best cutting parameters for cutting speed and oscillation?

- That's a great question, and our most commonly asked question too! The short answer is: try a cutting speed (the "Advance" knob) of 1 to 3, and an oscillation setting of 4-7. This is what we generally recommend for starting guidelines. Please see P. 22 for the full list of cutting parameters for specific tissue types.

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

- The Compresstome® is a unique patented tissue slicer that was designed to cut tissue quickly without chatter marks. 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 (see the bubble removal section for details instruction on that).
    3. Try changing the blade in case the cutting blade has nicks on the edge that interfere with cutting.
        (i) Stainless steel blades will only last a day or two.
        (ii) Ceramic blades will last 3-4 weeks depending on how much sectioning is done.
        (iii) Tungsten blades will last 1-2 weeks, depending on how much sectioning is done.
    4. If you are working with tissue that has open cavities inside, please remember to inject the cavities with gelatin 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.

The small screw on the blade holder is stripped and the Allen wrench won't remove it. What do I do?

- If the small screw is stripped, contact us for an immediate replacement. If you lost the Allen wrench, we will also replace it.

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.

How do I pack up Compresstome® for moving and shipping?

- Proper packing and stabilization of the Compresstome® is crucial for maintaining its cutting alignment and preserving the oscillating cutting arm. Failure to properly stabilize the Compresstome® can result in damage to the vibration arm, leading to poor cutting results. To pack a Compresstome® for moving and shipment, first reattach the "transportation fixture" that locks the vibration head and arm in place. Take the small thumbscrew on the back of the vibration head and unscrew it, realign the transportation fixture to be horizontal (see page 13, step 1 for how it needs to be attached), and screw on the thumbscrew. Tape the Compresstome® to a flat wooden base with foam padding on the bottom (the wooden base that was originally sent to you), place it inside the shipping box, and pack it completely with bubble wrap, packing peanuts, etc. The Compresstome® should not be freely mobile inside the box. Now you are ready to move or ship your Compresstome®!

Warranty Information

There is a one (1) year warranty for the VF-310-0Z 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 first year under warranty will be paid by Precisionary Instruments. All shipping fees both to and from Precisionary Instruments following this one year period must be paid by the customer.

Procedures for Obtaining Warranty Service
If repairs are required, the customer must contact Precisionary Instruments and provide proof of purchase. Should you have any problems with your Compresstome®, please follow these procedures to obtain the service:

1. If you have purchased our on-site warranty, please find your warranty number (the purchase order number from the transaction through which the warranted product was originally purchased) and contact Precisionary Instruments Customer Service at 617-682-0586.

2. If the Compresstome® must be repaired, please follow the instructions given by Precisionary Instruments technical support staff to ship your Compresstome®.

3. Pack the Compresstome® in its original box or a well-protected box. Precisionary Instruments will not be responsible for shipping damage/loss of any product outside the original 30-day Precisionary Instruments paid service period. Ship the Compresstome® with a copy of your bill of sale or other proof of purchase, your name, address, phone number and description of the problem(s) to Precisionary Instruments (see P. 38 for delivery address).

4. Upon receiving the Compresstome®, Precisionary Instruments will repair or replace your Compresstome® (at Precisionary Instruments discretion) and will ship it back to you within 2 weeks (dependent on parts availability) via FedEx carrier.

5. Precisionary Instruments will pay for shipping to and from the customer if the product is under warranty. Shipping costs for products outside of warranty are the sole responsibility of the customer. The customer also assumes full liability for losses or damages resulting from shipping as well as all responsibility to pursue remuneration for such issues with their selected carrier.

Contact Information

Additional questions? Need assistance?

We have multiple ways for you to contact us, including:

E-mail: info@precisionary.com

Phone:
Customer Service & Quotes: (617) 682-0586
Technical Support: (508) 810-0111

Fax: 1-866-424-2217

Mailing Address for Documents, Slicers, & Parts

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