

BIOLOGICAL IMAGING
DEVELOPMENT COLAB



Leica VT1000S
Vibratome

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1 Introduction

The Leica VT1000S Vibratome is a great tool for delicate tissue sectioning. Please always use caution when handling blades. Improper use of the instrument may lead to tissue damage.

2 Parts and Pieces

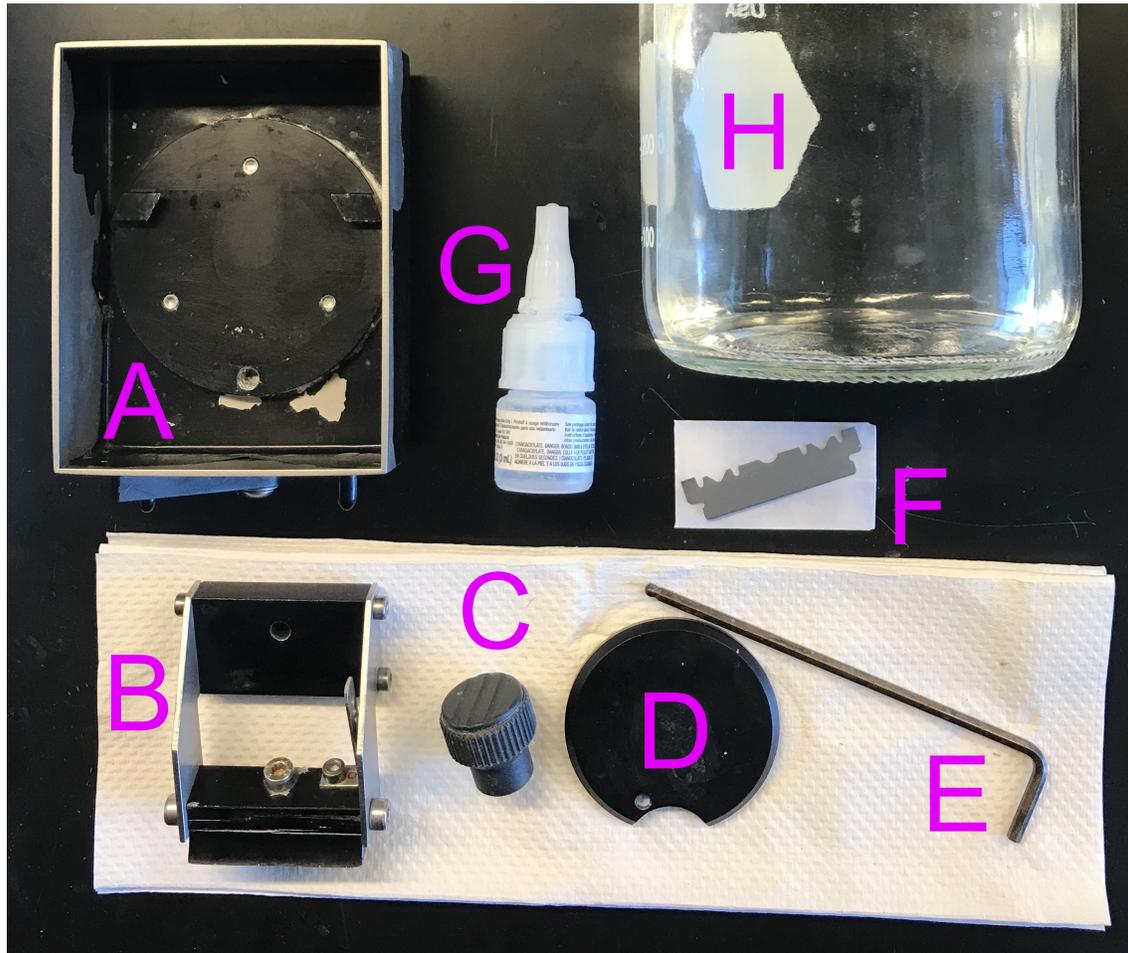


Figure 1: Leica Vibratome Parts

- A Specimen holding dish
- B Blade holder
- C Knob for blade holder
- D Sample plate
- E Hex wrench
- F 1/2 of double-edged blade
- G Tissue adhesive, such as Vetbond
- H PBS

3 Operation of Vibratome

1. Turn on the vibratome by turning on the switch located in the back left corner by the power cable
2. Take specimen holding dish and place it on the post in the vibratome basin. Tighten the dish on the post using the lever
3. Use scissors to cut the platinum coated double-edged blade in half. Insert 1/2 of the double-edged blade into the blade holder
4. Use provided hex wrench to tighten blade into blade holder (Use caution! Blade is extremely sharp!)

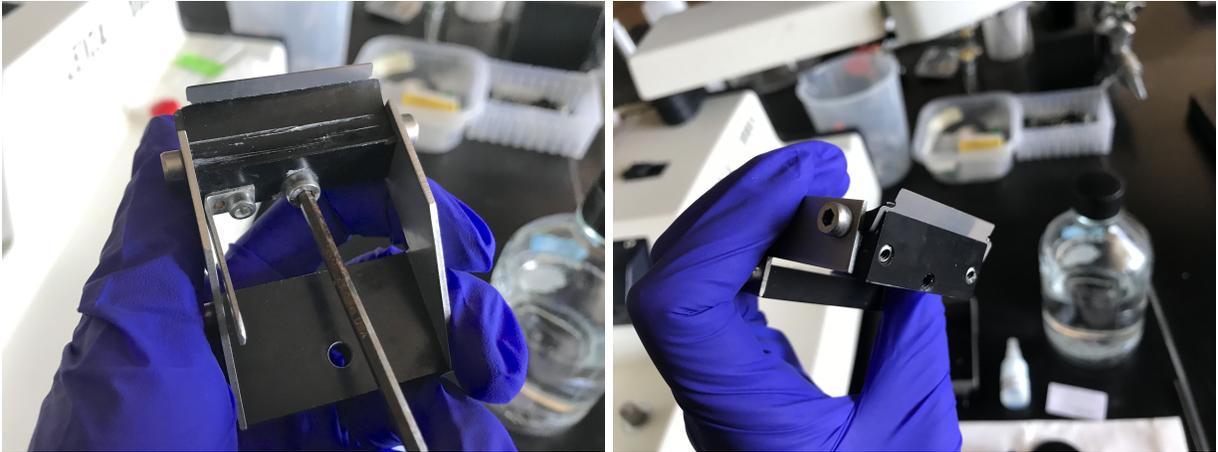


Figure 2: Using hex wrench provided to tighten blade into blade holder.

5. Use provided knob to tighten blade holder into place on vibratome arm
6. Place a very thin layer of tissue adhesive (ex: vetbond) onto sample plate
7. Place sample, in appropriate orientation, onto sample plate (applying a small amount of pressure while covering the sample in PBS sometimes adheres your tissue faster)
8. Push sample holder into the grooves of specimen holding dish, oriented with the crescent shaped notch in the 6 o'clock position.
9. Use cold PBS to fill specimen holding dish until the level of PBS is just above your sample (too much PBS will splash out of the dish, too little PBS will dry out your sample)
10. Set your speed to a setting you are comfortable with to set the sectioning window. **USE CAUTION WHEN SETTING SPEED TO HIGHEST SETTING TO AVOID SAMPLE DAMAGE.** Set the frequency to zero (0) while setting the sectioning window.
11. Use the directional switches located on the left hand side of the vibratome to move specimen holding dish down until blade is above the height of your sample
12. Use directional switches to move the blade to a position just before you would like to cut your sample.
13. Press the arrow key once to set the beginning of your sectioning window.
14. Use the directional switches to move the blade past your sample, using caution to not catch your sample with the blade. If your sample is too close to the blade, use the directional switches to move the specimen holding dish down farther.
15. Press the arrow key once more to set the end of your sectioning window.

16. Use the directional switches to move the blade back to the beginning of your sample.
17. Set speed to a low speed to start, somewhere between 2 and 4 until you are comfortable in your sectioning abilities. Set Frequency to the highest setting (10), or a setting you find appropriate for your sample type.
18. Use the - + button to set the feed in um, which will determine the section thickness of each cut. Changing the DISP button will allow you to display either microns per slice, or cumulative microns cut across a sample.
19. To start, choose a Single slice, not continuous. Please only use continuous slice mode when you are confident in your sectioning abilities and know your sample is fixed to the sample plate well.
20. Once you are content with the sectioning window and the cutting speed and frequency, use the START/STOP button to begin sectioning.
NOTE: *Stopping the section will stop it entirely – hitting Start again will reset the cut and section farther down your sample. Use the Pause button for pausing the sectioning.*
21. Continue sectioning until all desired sections are made.

4 Clean Up

1. Turn off vibratome before handling blade holder.
2. Use caution with platinum coated blades. Remove blade holder from vibratome arm. Remove blade from blade holder, and dispose of in nearest sharps container.
3. Use a razor blade to clean off leftover sample and tissue adhesive from sample plate.
4. Remove specimen holding dish and dispose of PBS and leftover floating tissue appropriately.
5. Use 70% EtOH (or bleach for human tissue) to clean sample plate, specimen holding dish, blade holder, and vibratome body.
6. Please clean any splattered PBS.
7. Contact the BIDC if something is missing, damaged, or needs attention.

Contact the BIDC

The BIDC office is located in Medical Sciences Building Room S1109.

The BIDC office phone number is 415-476-4550.

If you need immediate assistance and no one is available in the office, or it is after business hours, please call the **BIDC Hotline** at 415-745-2432.