Wood Bandsaw

This document provides a step by step walkthrough for using the wood bandsaw located in the Inworks prototyping lab. By following this walkthrough, you will become comfortable with the safety requirements and proper use of this tool. You will be required to demonstrate proficient use of the bandsaw to lab staff in order to receive the credentials necessary to use it.

Machine Function and Limits

Bandsaws are used for making irregular shaped cuts, and for resawing large pieces of material into smaller, workable pieces. Generally, you would use a bandsaw to cut curves or material that is too thick or large to cut with a miter saw or circular saw. This machine only cuts wood and foam. If you need to cut metal or plastic, use the metal bandsaw.

Workshop Content

- Bandsaw Safety Requirements
- Machine Anatomy
- Blade Tension
- Setting the Fence and Blade Guard
- Table Position
- Making a Cut
Bandsaw Safety Requirements

To use the bandsaw, you will need **safety glasses**, hair tied back (if long), close toed shoes, and you must not be wearing loose clothing. Ear plugs are available if you are using loud equipment. If you are creating a lot of sawdust, wear a dust mask.

Machine Anatomy

- Blade Guard
- Adjustment Knob
- E- Stop
- Blade Guard
- Fence
- Bandsaw Blade
- Miter Gauge Slot
- Miter Gauge
The blade tension should be adjusted to match the blade width. Our machine utilizes 3/8" wide blade. Make sure the blade tension is set to 3/8". Use the screw handle above the tension spring for fine tuning, if needed.

In order to ensure your cut will be as straight as possible, the blade should not have excessive back and forth play. If the blade has more than 1/8" of slack from side to side, you will need to re-adjust the blade tension.

The bandsaw blade should always be tensioned before use. Make sure the tension handle is in the upright position. Do not adjust the blade tension while the bandsaw is being operated.
Setting the Fence and Blade Guard

1. The fence can be used to set an absolute distance from the outside edge of your material to the blade. Make sure the fence is clamped down before using it to make a cut.

2. Once the fence is set in place, you can use it to make repeated cuts at a fixed distance from the blade.

3. The blade guard should have at least 1/2" of clearance from the top surface of your material. If you need to raise or lower the blade guard, turn the blade guard adjustment knob counter clockwise, then raise or lower the blade guard to its proper position. turn the adjustment knob clockwise to lock it in position, before operating the machine.

4. The picture to the right shows proper blade guard placement. If the blade guard position is too high, there will be excessive slop in the blade itself, which will result in an uneven cut or a broken blade!

Always adjust blade with the machine OFF
Table Position and Angled Cuts

The picture to the left shows the bandsaw table set up for perpendicular cuts, however the table can be adjusted to perform an angled cut along the Z plane.

2

Use the adjustment knob underneath the bandsaw table to change cutting angle by turning the knob counter clockwise. Use the angle gauge and indicator to set the table to your desired angle, then turn the adjustment knob clockwise to set the table position.

3

Make sure the fence is in the locked position while making angled cuts. If you are cutting long material, find a partner to help you feed the material through as it is being cut.

4

If you need to make an angled cut along the XY plane, you can use the miter gauge to set your angle and push the material through the blade.
Double check that the blade guard clearance is adequate before operating the machine. If you are using a fence, or have adjusted the cutting table angle, make sure both are locked in position. **Make sure to turn the machine on before your material makes contact with the blade.**

Double check - everything should be tensioned!

Use both hands to guide your material through the blade while cutting. Keep in mind the **kerf**, which is the width of material removed by the blade. Be sure to keep about 2” between your fingers and the blade.

If necessary, use clamps to secure your workpiece to the miter gauge to help guide the material through the blade.

You can also use a push stick to guide your material between the fence and the bandsaw blade, if the cut you’re trying to make is very small. **Make sure to turn off the machine after use by pressing the red stop button. Stand next to the machine until the blade stops spinning.** Sweep up any excessive sawdust you may have created.