Bandsaw
The Foundry

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BANDSAW

The bandsaw is used to make cuts in wood. It cuts more slowly than the miter saw, but can make more flexible cuts. The bandsaw can make straight cuts, but also curved cuts of a limited radius. The bandsaw at the Foundry has a ½” blade, which means it can make cuts with a curve radius of 2½” and higher.

SAFETY

For the Woodshop in general...

- **Shop Buddy:** You are not allowed to work alone in the Woodshop. A buddy is there to ensure your safety and to call for help if needed. Your buddy *does not have to be* Woodshop trained, but if untrained, they are not allowed to use the Woodshop equipment. If an untrained buddy uses the Woodshop equipment, your Woodshop access will be immediately and permanently revoked.

- **Eye Protection:** These machines can send sawdust, wood chips and other fragments flying – safety glasses protect your eyes from harmful material.

- **Close-Toed Shoes:** Tools, pieces of wood and other sharp objects can fall and close-toed shoes will protect your feet from cuts, bruises and even breaks.

- **Long Pants:** Long pants will protect your legs from cuts, bruises and splinters that might come from handling wood.

- **No Jewelry:** Rings, bracelets, dangling necklaces, watches, headphones and sweatshirt strings can all get caught in the spinning blades or bits, which can drag you into the machine.

- **Long Hair Secured:** Like jewelry, long hair can also get entangled in machines, and potentially drag you into the machine.

- **No Food or Drink:** Sawdust and woodchips, in addition to the glues and paints used on the wood, can get into your food or drink and be toxic. Residue from food or drink can also make the tools and machines messy.

- **No Metal:** Using metal on any of these machines will produce sparks, which can ignite sawdust, resulting in a fire or explosion.

For the Bandsaw specifically...

- **Wear Short Sleeves:** Gloves and long sleeves can be caught in the spinning blade, ensure that your hands and forearms are free from extra or loose fabric.

- **Adjust Blade Guide Bar:** Set the guide bar ½”-¼” higher than the highest point of your material. This reduces the amount of blade exposed while cutting, minimizing your risk of coming into contact with the blade.
- **Use a Push Stick:** Keep your fingers away from the blade. If your piece is too small to hold it outside of the no-fingers zone, you'll need to guide it through with a push stick instead of your hand.

**MACHINE ANATOMY**

**On/Off Button:** Turns the machine on and off.

**Blade Tension Adjustment:** Controls the tension on the blade, ask a Scout to adjust!

**Blade Guide Bar:** Keeps the blade in place and protects the user from the blade.

**Blade:** A serrated metal band that forms one continuous loop and moves downward to cut through material.

**Rip Fence:** Helps guide straight cuts, can be oriented vertically (for larger, thicker material) or horizontally (for thinner material).

**Fence Lock Knob:** Secures the rip fence into place.

**Miter Gauge:** Allows for material to be held at a specific angle while cutting.

**Table:** Provides a surface to hole your material while cutting.
OPERATING THE MACHINE

Adjusting the Blade Guide Bar
1. Make sure the machine is off and blade has come to a complete stop before adjusting the blade guide bar.
2. Loosen lock knob and raise or lower guide post using blade guide bar adjustment wheel.
3. Position blade guide bar approximately $\tfrac{1}{8}$-\tfrac{1}{4}$" above the highest point of your material.
4. Tighten lock knob.

Making a Straight Cut on Straight Stock
1. Make sure the machine is off and blade has come to a complete stop before beginning to adjust the saw.
2. Begin adjusting the rip fence by loosening the fence lock knob.
3. Slide fence until the distance between the fence and the blade is the desired width.
4. Tighten the fence lock knob.
5. Turn on the dust collection system.
6. Place the workpiece on the table and place it flush against the fence.
7. Adjust the blade guide bar following the steps outlined above.
8. Turn on the bandsaw.
9. Wait a few moments for the blade to speed up, then feed the workpiece through the saw, keeping fingers clear of the blade. Thinner material can be pushed through faster than thicker material, but a feed rate of an inch every few seconds is considered reasonable.
10. When the cut is complete, turn off the bandsaw and wait for the blade to come to a complete stop before removing your workpiece.

Making a Curved Cut on Flat Bottomed Stock
1. Make sure the machine is off and blade has come to a complete stop before loosening the fence lock knob.
2. Slide fence until you have enough room to allow your piece to move freely around the blade. This may require sliding the fence off the table completely.
3. Tighten the fence lock knob if fence is still engaged with the table.
4. Check the chart to see if the blade on the saw allows for the radii you want to cut. In the Foundry we have a ½” blade which means that the absolute minimum curve radius is 2 ½” although we suggest using a curve radius of no less than 3”.

5. Turn on the dust collection system.

6. Place the workpiece on the table and place it flush against the fence.

7. Adjust the blade guide bar following the steps outlined above.

8. Turn on the bandsaw.

9. Wait a few moments for the blade to speed up, then feed the workpiece through the saw, keeping fingers clear of the blade. Feed the workpiece saw along the curved path you desire keeping fingers well clear of the blade.

10. Thinner material can be pushed through faster than thicker material, but a feed rate of an inch every few seconds is considered reasonable.

11. When the cut is complete, turn off the bandsaw and wait for the blade to come to a complete stop before removing your workpiece.

**TIPS & TROUBLESHOOTING**

**Relief Cuts**

- A relief cut is a cut that lies perpendicular to the curve of your desired cut, and edges right up against it.
- Relief cuts provide flexibility in cutting curves with a bandsaw: you are less likely to break the blade when the wood capturing the blade is allowed to escape.
- You can still break a blade by trying to cut a too-tight curve!
- A properly executed relief cut can greatly improve the quality of your bandsaw cut.
- The tighter the radius of the curve, the closer together your relief cuts should be.
Transition Points

● As you can see in the image above, transition points between types of curves are important to note.
● As you reach a transition point, it can be helpful to stop, reevaluate, and figure out the best angle of approach for your next cut.
● Use the transition points as a way to take off excess material, if you have not done so already.
● Avoid backtracking whenever possible. While backtracking is occasionally necessary, you can plan for it and avoid it by using relief cuts and cutting away waste material as you go.