Wood Shop

Saws, sanders, routers and dust collection.

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Overview

What the area is for, equipment at a glance and who the Area Champion is.

Wood Shop Overview

The Wood Shop is home to the saws, sanders, routers and dust collection. It is where most furniture, cabinetry, carpentry and general woodworking projects happen.

Equipment at a glance

The current list of Wood Shop equipment, with locations and which tools need training, is in **Atlas**: https://atlas.waukeshamakers.com. We link there instead of listing tools here so the list never goes stale.

Tools with an SOP page in this book:

- **Wood Shop: Radial Arm Saw**

Before you work here

- **Every corded tool requires training** before you use it. See **Training and Certification: How Certification Works**, and check your certifications in Journeyman at https://journeyman.waukeshamakers.com.
- **Inspect each tool before use.** Our tools may be modified. See **Training and Certification: Pre-Use Inspection**.
- **Eye and hearing protection** at a minimum. See **Shop Safety: Personal Protective Equipment**.
- **Use the dust collection.** See **Shop Safety: Air Quality**.
- **Clean up** sawdust and offcuts when you are done. Dust is a fire and slip hazard.

Area Champion

> To be confirmed: who the Wood Shop Area Champion is and how to reach them. See **Volunteer Runbooks: Area Champions** for what Area Champions do.

Questions about the Wood Shop can also go to **#general** on Discord.

Equipment SOPs

One page per tool. Reading an SOP does not replace training or certification.

Radial Arm Saw

> Reading this page does not replace training. You must be checked off on this tool before using it.

The radial arm saw is a Craftsman. It is a versatile tool for crosscuts, miters, bevels, rips and dados, and it is great for rough carpentry. It needs extra care for fine finish work. The manufacturer's manual, with calibration instructions, is kept in the saw's tool box.

> The original member-written guide includes numbered photos of every lock and adjustment. Those photos will be added to this page.

Certification required

Yes. This is a corded tool and needs a check-off. See **Training and Certification: How Certification Works**.

Why this saw is different

On a table saw the blade stays put and you move the wood. On a radial arm saw **the blade and motor move**. If the saw moves when you do not expect it to, the result is never good. Keep your head in the game the whole time.

The saw does **not** have flesh-sensing (SawStop-style) protection. If your hand meets the blade, the blade keeps running.

The three golden rules

1. **Always keep a hand on the saw carriage while the motor is running.** The only exception is ripping, and only with every lock set.
2. **Know where every lock is, and use them.** See the locks checklist below.
3. **The only adjustment you may make with the saw running is raising or lowering it** with the depth crank, and only with all locks engaged.

These rules protect you, the saw, your workpiece and everyone nearby.

PPE

- Eye protection (goggles keep sawdust out of your eyes)
- Hearing protection
- Keep your hands and other body parts out of the blade's path

Locks checklist (every cut)

Go through this for every cut, not just the first one.

Lock	Where	Locked when
Key	Key switch on the arm	The saw will not run without it. Remove it whenever you are not about to cut. It is small and easy to lose; set it on top of the arm, not on the floor. It is beveled and only goes in one way; never force it.
Arm lock	Handle on top of the arm	Pushed toward the rear. You feel a "clunk". It clamps on rubber bushings, with no detents at 0 or 45 degrees. Never force the arm sideways while locked; it damages the mechanism.
Carriage lock	Black knob on the right side of the arm	Turned clockwise. Locks the carriage along the arm.
Yoke lock and yoke pivot (swivel) latch	Yoke lock on the right side of the yoke; swivel latch on the left side of the carriage	Both engaged. Together these hold the yoke in crosscut or rip position.
Bevel lock lever and bevel latch	Next to the bevel scale	Bevel lever latched and bevel lock lever locked.
Table board clamps	Two clamping screws that hold the movable table boards	Tight, so the fence and table boards cannot shift during a cut.

Pre-use checks

- Do the general checks in **Training and Certification: Pre-Use Inspection**.
- All locks set (checklist above).

- **Nothing touching the blade.** The saw must not start with the blade touching the table, fence, workpiece or anything else. Loose objects get thrown; fixed ones stall and can burn out the motor.
- Table and fence brushed clear of sawdust, chips, pencils and scraps.
- **Blade rotation is correct.** The blade guard is stamped with the direction of rotation, and the guard only fits one way, so it is always right. Match the arrow on the blade to the guard.
- Guard and anti-kickback pawls set for the cut you are about to make (see below).

Table setup

The table is made of a fixed front table board (bolted down, not adjustable) and three movable boards behind it. Call them A, B and C from rear to front; B is the tall fence board your work rides against.

- **A, B, C** (rear to front): the most common setup for ripping.
- **C, B, A**: the most common setup for crosscutting. If the fence is too far back there may not be room to start the saw without touching the work.
- **C, A, B**: another crosscut option.
- **B, A, C**: fence at the very back, only for ripping very wide stock.

Tighten both clamping screws after rearranging.

Setting the depth of cut

The blade comes down from above and must cut slightly into the table to get through the work. Keep the damage to the table as small as possible: about 1/32 inch into the table, or drop into an existing kerf if you are cutting along one.

1. Set every lock, especially the carriage lock, and make sure the blade is clear of everything.
2. Stand with your head to one side of the blade line when you start the saw, in case something gets thrown.
3. Insert the key and pull the red start tab toward you.
4. Turn the crank under the front of the table (clockwise raises, counterclockwise lowers) until you just hear the blade touch the table, or see it sit in the existing kerf.
5. Stop the saw and remove the key before positioning your work.

Set the depth **before** you set the guard and anti-kickback pawls.

Setting the guard and anti-kickback pawls

Do this with the saw off and the key removed.

- **Crosscuts and miters:** raise the anti-kickback pawls all the way up into the guard housing. Set the guard level or tipped slightly forward.
- **Ripping:** place the workpiece next to the blade. Loosen (do not remove) the guard clamp screw, rotate the guard so its end sits about 1/4 inch above the workpiece, and tighten it. Then loosen the anti-kickback screw, let the pawl assembly drop, set the round spreader disk to just touch the workpiece, and tighten the hold-down screw.

Crosscut

1. Set depth, then guard and pawls for crosscutting.
2. Confirm all locks are set.
3. Hold the carriage handle and start the saw.
4. Release the carriage lock and pull the saw forward through the cut.
5. Return the saw all the way to the rear, turn it off, and lock the carriage.

Keep a hand on the carriage handle the entire time the saw is running.

Miter

1. Raise the blade so it clears the table.
2. Pull back the arm lock handle, swing the arm to the angle on the scale at the pivot, and push the handle back to lock it.
3. Set depth, guard and pawls as for a crosscut.
4. Check that the carriage travel will carry the blade all the way through the workpiece. Rearrange the table boards for wider stock if needed.
5. Confirm all locks, then cut exactly as for a crosscut.

Bevel (and compound miter)

1. Raise the saw well above the table.
2. Holding the yoke handle, release the bevel lock and the bevel lever, tilt to the angle on the bevel scale, then re-latch the lever and lock the bevel lock.

3. Confirm all locks. Start the saw, lower it to just touch the table or enter an existing kerf, then stop it.
4. Position the work and cut as for a crosscut.

For a beveled rip, follow the ripping steps. You may only get one anti-kickback pawl to engage, and the spreader disk may need to sit slightly above the workpiece.

Ripping

Ripping is where kickback happens. Kickback can occur if a long board shifts sideways and binds the blade, if the board lifts off the table, or if you feed in the wrong direction.

1. Saw off, key out. Raise the blade slightly above the table.
2. Release the yoke lock (right side) and the swivel latch (left side), rotate the yoke until the blade is parallel to the fence, then engage the latch and the yoke lock.
3. **Check the feed direction.** The yoke can turn either way: blade between fence and motor (in-rip) or motor between fence and blade (out-rip). This reverses the direction you feed the stock. The labels on the blade guard show the correct feed direction.
4. Loosen the carriage lock, slide the carriage to your rip width, and lock it. Use the scale on the arm for relative adjustments only, and check it again after tightening; the carriage tends to creep as you lock it.
5. Confirm all locks. Start the saw and lower it to just touch the table. Stop the saw.
6. Set the guard and anti-kickback pawls for ripping.
7. Have a push stick ready for the last few inches.
8. For boards longer than about 3 feet, set up infeed and outfeed support at table height, or have a helper.
9. Brush the table and fence clear.
10. Feed with the board tight to the fence and flat on the table. The board may only move along its length, never sideways or up.

If something goes wrong mid-rip, do not pull the board back out. Stop the saw first, then remove the board.

Dado

A dado set can replace the regular blade.

- **Width** is set by twisting the two halves of the dado against each other (like opening a sandwich cookie); a scale and index mark show the width. It is stiff and the teeth are sharp, so mind your knuckles. The rotation arrow on the dado shows running direction, not which way to twist for width.

- The dado is a three-piece cam assembly. If it ever comes apart, make sure the cam pieces are properly engaged when you reassemble it, or it can be dangerously unstable at speed.
- **Install:** remove the blade and washers, put the **dado bushing** on the motor shaft, then the dado (no washers), then the nut.
- **Guard:** the dado uses its own guard. Its guide bar fits the same slot as the regular guard, and its clamp screw is at the rear.
- Take shallow passes. The dado removes a lot of material fast and will try to pull the saw toward you, so hold the carriage firmly.
- The dado makes a deep thrumming sound instead of a whine; that is normal. **If the whole saw vibrates, shut it down**: a lock is not set or the dado is not seated.

Changing the blade

1. Saw off, key removed.
2. Loosen (do not remove) the guard clamp screw, lift the guard up and over the blade, and set it aside.
3. Use the two wrenches from the saw's tool box: open-end wrench on the inside of the blade, box-end wrench on the outside. Bracing one wrench against the table makes this easier.
4. **The arbor has left-hand threads.** "Righty tighty, lefty loosey" is backwards here.
5. Put the washers back exactly as they came off.
6. Install the new blade with its rotation arrow matching the guard. A backward blade burns the wood instead of cutting.

Auxiliary shaft

The opposite end of the motor has an auxiliary shaft (marked with a red label) that can take a drill chuck for drilling, sanding drums or routing. All saw blades and guards must be removed first. Get guidance from someone experienced on this saw before using it.

Accuracy tips

- Do not trust the scales for exact distances or angles. Make test cuts on scrap until the setup is right, then cut your good piece.
- The rip scale is useful for relative moves (for example, "3/8 inch wider") after a test cut.
- Cut into existing kerfs in the table where you can; it makes the table last much longer.

When you are done

- Return the saw to the rear of the arm and lock the carriage.
- Remove the key and return it to where it is kept.

> To be confirmed: where the saw's key is kept between uses.

- Put the wrenches, dado and other accessories back in the tool box.
- Clean up sawdust and offcuts.

Consumables and accessories

Kept with the saw in its tool box: the blade wrenches, dado set, dado bushing and dado guard, and the manufacturer's manual. Report dull or damaged blades; see **Shop Safety: Tagging a Tool Out of Service and Reporting It**.

Maintenance

Routine maintenance procedures and checklists.