

# **AUX. WOODSHOP MANUAL**

**Equipment Policies & Procedures**



# About this Manual

This manual provides information about the School of Art Auxillary Woodshop (room 127) at the University of Tennessee, Knoxville. It is required reading for all who have been approved to use the shop. This manual is not an exhaustive resource, but is instead designed to provide basic information and policies that encourage a culture of safety in the sculpture facilities. This handbook is written and maintained by the 3D Shop Technician.

*This copy was last updated: Spring 2020 by Casey Fletcher*

## Safety

The Auxillary Woodshop is a supplementary wood fabrication facility. Every tool and machine carries its own inherent dangers and it is imperative that you are aware of the safety hazards involved with each process. Knowing this helps to protect yourself and those working around you. Momentary lapses of attention or reason can affect you or your classmates for life, so please: Pay attention, be alert, follow instructions, ask for help. Follow these guidelines to help UTK Sculpture maintain the safest creative environment possible:

- Know the locations of emergency exits, fire extinguishers, first aid kits and sinks.

In case of emergency follow these steps:

- Move away from any danger.
- Call 911 or University Police at (865)974-3111
- If possible, stay in a safe area to provide information to emergency personnel when they arrive.
- Notify shop technician, professor or office staff as soon as possible.

## Shop Attire

From the time you enter the shop you should be wearing proper Personal Protective Equipment (PPE) and appropriate shop attire. Each individual tool has its own requirements and restrictions, so begin with these general guidelines:

- Eye protection: Required when using machinery in the shop.
- Face Shield: Required for many processes involving cutting or grinding.
- Ear Protection: Required for most cutting and grinding processes, highly recommended when you or others are working.
- Shoes: Closed-toe shoes are required for shop entry. Stronger boots are highly recommended to prevent injury from falling heavy objects.
- Clothes: No synthetic fibers are allowed while working in the shop. Denim, leather or other non-synthetic pants are required. Shorts, skirts and leggings are not allowed. Shirts with long sleeves must be able to be rolled up securely. Remember **Cotton burns off, synthetic melts on.**

**AUX WOODSHOP POLICIES**

# General Shop Safety and Etiquette

- Report all respiratory and/or health issues to your professor at the beginning of the semester.
- Do not use the shop if you are under the influence of any substance or medication that might impair your abilities or if you feel overly tired or emotionally distressed.
- Be mindful of those working around you. Warn them if you are going to be welding or using a loud tool. Never distract someone who is using a power tool. Offer a helping hand if you see a student struggling.
- Keep your workspace organized and free from debris/tripping hazards/flammable materials.
- Do not remove machine guards and do not tamper with the safety gear, or the lock mechanism of the tools and machinery.
- Do not attempt to make any repairs to equipment or tools. Report all defects to the shop tech, monitor on duty or your professor.
- Always unplug tools when changing out blades, discs, bits, etc.
- Never hesitate to ask for help if you are unsure of a process, tool, machine etc. It is always better to ask!

# Shop Access

Only students who are currently enrolled in a sculpture class are allowed access to A+A 127. These students must complete safety training on the equipment they wish to use. Undergraduate sculpture majors only have access to the shop during posted open studio hours unless arrangements have been made with shop technician. Sculpture graduate students have 24 hour access to the metal shop **as long as there are two (2) or more graduate students working together in the shop.**

Project proposal forms may be filled out by students outside of the sculpture area who wish to use the shop equipment. Projects like these will be approved at the discretion of the shop technician.

# Cleanliness

The woodshop is a shared workspace and must be kept clean and organized. Part of maintaining a culture of safety is to keep the space *operationally clean*, this means that sharp edges, tripping hazards, toxic substances, and other hazards should be stored correctly. When cleaning up ask yourself: How would I prepare this space for a visit from a child?

Keeping the space *formally clean* is also important. Always clean up your area immediately after you finish working. Clean debris off of tools you have used and put them away in their proper places. Participation is required in the group clean up at the end of each semester.

# Storage

Storage in the shop is extremely limited. Storage is first reserved for any sculpture class that is currently doing a project involving the metal shop. Some storage is provided for longer boards and sheet goods. Any raw materials stored in the shop must have your name and the date clearly visible. In-progress project storage must be approved by the shop technician. Projects are expected to be removed no later than 1 week after critique date unless otherwise specified.

# Tool Checkout

Certain tools may be checked out by sculpture students, majors and graduate students for a maximum of 48 hours. See the shop technician or monitor to fill out the tool checkout form.

# Compound Mitre Saw

**Required PPE: Safety Glasses, Ear Protection (NO GLOVES)**

## Before You Begin

- Ensure that the area is clear of cords, tools, trip hazards. Your work area should be well-lit and organized.
- Check wood to be cut for any stray nails, staples, or other metal/non-wood pieces, these can destroy the machine and can cause materials to be launched at high speed
- Visually inspect the machine for any missing, loose or defective parts (notify shop tech if anything appears wrong)
- Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- Do not render the machine guarding ineffective in any way
- Never operate equipment under the influence of drugs, alcohol or heavy medication.



## Safe Use Procedure

- Put on the required PPE and check your work area.
- Mark the area to be cut. Take into consideration that the blade is 1/4" wide. Remember: measure twice, cut once!
- Set up a stop on the fence if you are doing repeated same-size cuts. Do not cut multiple stock at once!
- Material must be supported by and secured to the table and able to be held against the fence. If you are unsure about a certain stock, consult shop technician, monitor or instructor.

- Ensure that you are able to secure your stock to the table while keeping your hands and limbs out of the hazardous zones marked around the saw. You should have a comfortable and balanced stance. If anything about the cut feels awkward - it is probably unsafe and you should consult with tech, monitor or instructor.

- Line up your cut mark to the blade using the handle but WITHOUT placing your hand over the button (to avoid accidentally turning saw on before you are ready.)
- If cutting at an angle, ensure that the saw is not directed toward your supporting hand. Use a clamp if necessary for extra support.
- When you have fully considered the safety and accuracy of the cut, you are ready to begin.

# Compound Mitre Saw

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- Engage the button on the handle with the blade in it's fully up-right position. Listen to the tool to make sure it has reached maximum power before lowering it into the work. Once the blade contacts the workpiece, push it down gradually until it cuts all the way through. Think of it less as a chopping motion and more as smoothly guiding it through the material, without applying excess force, the blade will do the work.
- Once you are through, release the trigger on the handle, but leave the blade down in the work until it has completely stopped spinning. If the handle is raised while the blade is still rotating the cut off piece may become jammed against the blade and be sent flying.
- Always return the saw to its full upright position after each cut. Continued cutting can result in overheating, if the motor becomes hot, take a break for 10 minutes or so.
- Clean up your area when you are finished. This includes the table, floor, saw bed, and any other areas you may have worked in. Never reach for work or clean the machine while the blade is in motion.

**AUX WOODSHOP POLICIES**

# RIKON Band Saw

**Required PPE: Safety Glasses, Ear Protection (NO GLOVES)**

## Before You Begin

- Ensure that the area is clear of cords, tools, trip hazards. Your work area should be well-lit and organized.
- Check wood to be cut for any stray nails, staples, or other metal/non-wood pieces, these can destroy the machine and can cause materials to be launched at high speed
- Visually inspect the machine for any missing, loose or defective parts (notify shop tech if anything appears wrong)
- Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- Do not render the machine guarding ineffective in any way
- Never operate equipment under the influence of drugs, alcohol or heavy medication.



## Safe Use Procedure

- Put on the required PPE and check your work area.
- Mark the area to be cut (measure twice, cut once!) and lower the blade guard to the appropriate height for the cut you are making. Having extraneous blade exposed invites unnecessary hazard to your hands and limbs. Always lower the blade to 1/2" above your wood and make sure to re-tighten the knob afterward.
- Never attempt to cut work that is not supported by the table.

# RIKON Band Saw

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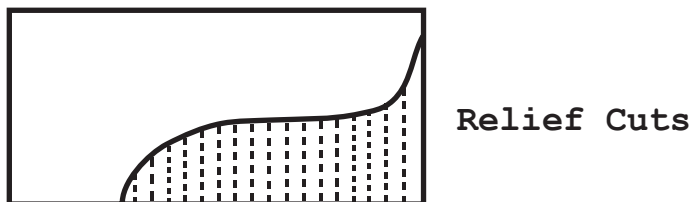
• Determine the proper guides to achieve a safe and accurate cut. The long rip fence is meant to guide accurate rip cuts through the material while the mitre guage is meant for cross-cuts:



• You may need to set up additional jigs to guide your work safely and accurately through the bandsaw. If you are unsure which guides are appropriate for your project consult the shop tech, monitor or instructor. Improper use of fence or mitre guage can result in broken blades, kickback, and other hazards. Always ask!

• Always have a push stick within easy reach to assist in your cut. Use the push stick at the end of each cut to prevent contact with the blade.

• If you are making a curved cut you must make several relief cuts nomore than 1/4” apart to ensure that the blade does not twist. Twisting the blade, even a little bit, causes immense strain on the machine and you risk the blade breaking and opening a world of other safety hazards. DO NOT TWIST THE BLADE.



• Once you have fully considered the safety and accuracy of the cut turn on the bandsaw and allow the blade to reach maximum speed before beginning. If you need to make any adjustments, turn the bandsaw off and wait for the blade to completely stop.

• Do not force material through the blade, it will do the work, you are there to guide it through. If any material gets jammed, turn off the blade and wait for it to completely stop before correcting the problem.

• When you turn the bandsaw off the blade will continue running until it slows to a stop. Never attempt to stop the blade with your hand. Do not leave the blade unattended while it is still running.

• Thoroughly clean the machine and your working area when you are finished.

**AUX WOODSHOP POLICIES**



# Drill Press

**Required PPE: Safety Glasses, Ear Protection (NO GLOVES)**

## Before You Begin

- Ensure that the area is clear of cords, tools, trip hazards. Your work area should be well-lit and organized.
- Check wood (WOOD ONLY!) to be cut for any stray nails, staples, or other metal/non-wood pieces, these can destroy the machine and can cause materials to be launched at high speed
- Visually inspect the machine for any missing, loose or defective parts (notify shop tech if anything appears wrong)
- Do not conduct any maintenance or repairs on this equipment. In case of a defect, contact your technician.
- Do not render the machine guarding ineffective in any way
- Never operate equipment under the influence of drugs, alcohol or heavy medication.



## Safe Use Procedure

- Put on the required PPE and check your work area.
- Mark the area to be drilled. Select the correct drill bit size, the shaft should be no larger than 1/2"
- Insert the drill bit shank into the chuck and tighten with the chuck key (hanging on side of machine). Make sure the chuck key is removed from the chuck before using.
- Place a backing board beneath the work piece on the table to prevent splintering of the material/bit or table damage.

# Drill Press

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- Adjust the height of the table by loosening the pin on the shaft, turning the crank, and re-tightening the handle. Adjust the depth stop to the desired depth of the drill bit, i.e. if you only want to drill 1in. of the material.
- Use a clamp to secure the material to the table to prevent the work from spinning. NEVER WORK FREE HAND.
- The drill spins clockwise: Ensure that the longest dimension of the work piece is to the left of your body, so that if it comes loose it can be stopped from spinning by the drill column. If it hits the column first, it cant hit you.
- Lower the bit onto the desired area to check your alignment. If all looks correct, you're ready to begin.
- Press on, rotat the pilot wheel (lowering the drill bit) slowly. It is spring loaded to retract automatically.
- Drill a short distance then retract the drill to evacuate wood chips. Then repeat until you have passed through the material.
- Raise the bit with the pilot wheel slowly to its resting position and turn the machine off.
- Return the bit to storage, THE BIT WILL BE HOT
- Clean up your area.

**AUX WOODSHOP POLICIES**