# College of Architecture
# Woodshop Safety Manual

**Contents**



**Warning: Knowledge and understanding of rules and procedures are your responsibility. Woodshop supervisor holds all rights to change and/or modify at any time or for any specific situation. All policies are strictly enforced.**

## General

a. **Woodshop Use**
   - **College of Architecture Students, Faculty, and Staff**
     i. The Woodshop is available for class projects to all who have access.
   - **Woodshop Access**
     i. Privileges will be extended to students, faculty, and staff after the completion of the safety course.
   - **Equipment Access**
     i. Upon completion of the safety course, students, faculty, and staff have access to any machine or tool you are knowledgeable in.
     ii. If you do not know the correct way to use a tool or machine, ask for help from the Woodshop supervisor or student workers.
     iii. Misuse or abuse of a tool will result in suspension of access to the Woodshop.

b. **Procedures**
   - **Safety Course**
     i. Each person must watch the Woodshop safety video, complete the safety quizzes, and sign the User Safety Agreement.
     ii. All the items are available online through your eCampus.
     iii. The safety quizzes and User Safety Agreement must be submitted to the Woodshop Supervisor in order for the quiz grades to be verified. All quizzes must be completed and passed at 90% or greater. The User Safety Agreement must be signed by the Woodshop Supervisor, indicating the completion of all the requirements.
   - **Tool Check Out**
     i. Only certain tools can be checked out to individuals by the Woodshop Supervisor.
     ii. You will only be issued tools you are authorized to use.
     iii. Tools must be returned before new tools will be checked out.
   - **Clean Up**
     i. Your work area and the floor around it must be clean before you leave.
     ii. Put all tools used away after use.
     iii. Due to minimal storage space within the Woodshop, projects should be stored in your studio.
     iv. Keep walkways and exits free of obstructions at all times.
     v. Failure to properly clean your workspace may void Woodshop privileges.
   - **Check out**
     i. Any tool you have checked out must be returned to Woodshop personnel.
     ii. Any mess you have made must be cleaned up.

c. **Safety**

- **Accidents**
  i. Report everything! We need to know for your safety.
  ii. Inform the Woodshop Supervisor or student workers as soon as possible.
  iii. Minor incidents are important!
  iv. Accidents include any personal harm or any damage done to machine/tools.
- **Danger**
  i. Anything that appears to be an immediate or potential hazard should be dealt with immediately.
  ii. Damaged equipment should be reported immediately to Woodshop Supervisor.
  iii. If you are tired, stop, and rest.
  iv. Do not rush.
  v. If you are under the influence of alcohol or drugs, do not enter the Woodshop.
- **Electrical Hazards**
  i. Keep out of any electrical control boxes.
  ii. Use electrical equipment to perform tasks for which they are designed.
  iii. Be sure that tools are in the off position before plugging or unplugging them.
- **Moving Parts**
  i. Always keep your hands and other extremities away from moving parts.
- **Eye Protection**
  i. It is available and required when in the Woodshop.
  ii. Eye protection is imperative when working with or around any tools and machinery, even if you are not using the equipment.
  iii. Eye protection must be worn at ALL times when you are in the Woodshop. THIS IS THE LAW. THERE ARE NO EXCEPTIONS!
- **Face Shields**
  i. Required when using the lathe.
  ii. It is advised to utilize these for all machinery.
- **Ear Protection**
  i. Texas A&M University EHS mandates that hearing protection be worn at 80 dB or above.
  ii. It is available and required when machines are in use within the Woodshop.
- **Dusk Mask**
  i. They are available for all with access to the Woodshop.
  ii. Whenever working with wood, dust is produced and can be hazardous to your health. Certain woods contain harmful

chemicals. For example, western red cedar has been attributed to asthma and nasal cancer.

iii. Wear masks when creating high levels of sawdust and always keep work area clean.

- **Clothing**
  i. Long hair must be pulled back and secured.
  ii. No loose clothing may be worn.
  iii. Long sleeves should be rolled up and shirttails must be tucked in.
  iv. Full-length pants must be worn.
  v. Shoes must be rubber soled and close-toed. No sandals.
  vi. No jewelry can be worn, including watches or dangling earrings.
  vii. Backpacks and other belongings must be stored outside the Woodshop area
- **No Food, Drinks, Tobacco, Alcohol, or Drugs – Legal or otherwise**
  i. This and all A&M facilities are smoke-free.
  ii. If you are under the influence of alcohol or drugs, do not enter the Woodshop.
- **Respect your peers and faculty**
  i. Be considerate and helpful towards each other.
  ii. No running.
  iii. No yelling.
  iv. No horseplay.
- **Electronics**
  i. No headphones may be worn to play music.
  ii. No cellphones.

**d. Emergency**

- **Emergency Shut Down**
  i. For use only in an emergency.
  ii. These buttons cut power to all machines and outlets in the Woodshop.
  iii. There are shut down switches located on each of the four walls of the Woodshop.
- **Fire**
  i. Emergency pull is located to the right of the overhead door.
  ii. Fire extinguishers are located throughout the shop.
- **First Aid**
  i. A first aid kit is located next to the office door upon entering the Woodshop.
  ii. Have student workers or the Woodshop Supervisor assist you with all injuries.
- **Emergency Assistance**
  i. Dial 9-911 on campus phones

## Facilities

### a. Woodshop

- This area houses all the stationary tools that are connected to the sawdust vacuum collection system.
- Four worktables are equipped with electrical outlets for hand tools and quick release vises to secure projects.
- Chemical use is not allowed in this room. THIS IS A FIRE HAZARD.
- Supervision by trained personnel is required. This would include the Woodshop Supervisor or student workers.

## Stationary Tool Safety

### i. Rules

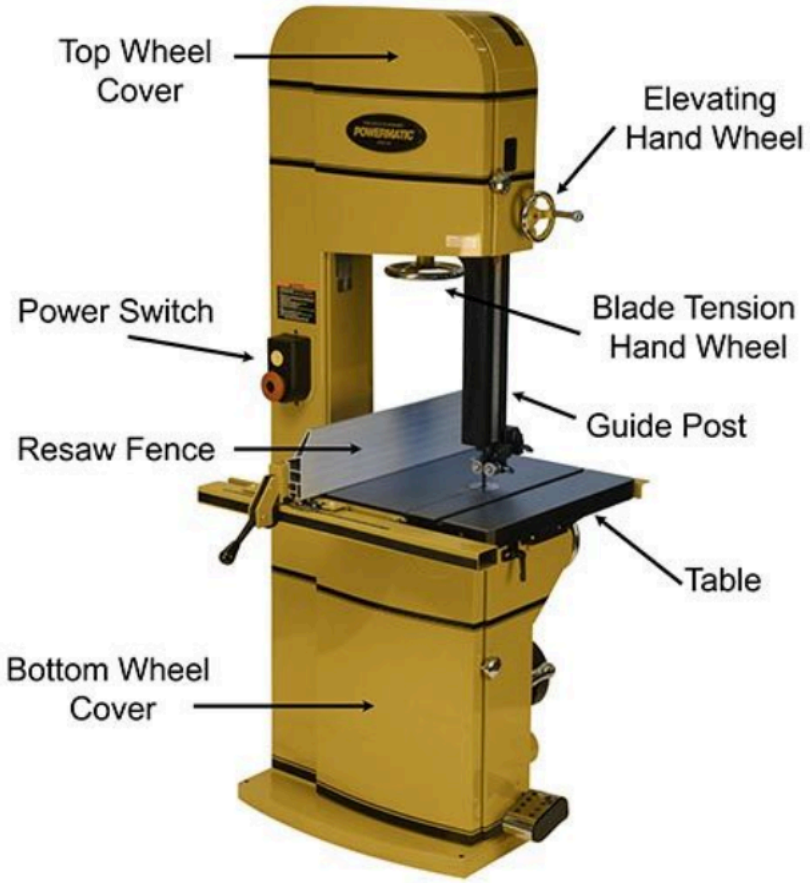
- Use machines only as intended. If in doubt, ask for assistance and/or refer to the user manual.
- You should be informed in operations and safety procedures. If you are not comfortable with a machine, do not use it. Ask for assistance.
- Focus on your work. Look. Listen. Be in control of what you are doing. Do not be distracted by or talk to others. Do not distract others.
- Avoid accidental starting.
- All safety guards and devices must be in place when operating machines.
- Do not overreach.
- Machine must be at rest before removing byproducts and turned off before leaving.
- Return adjustable parts to rest position. Machine should be clean and clear before, during, and after it is used.
- Make all adjustment with the power switched off.
- All adjustable parts should be secured before power is turned on. If adjustments need to be made to tools, ask the Woodshop Supervisor or any student workers available.
- Do not use force. The tool should do the work. If it does not perform as you expect, let the Woodshop Supervisor or student workers know. There may be a better way to complete the task.
- Stay within reach of a power switch at all times.
- Check for worn and damaged parts prior to use. Let the Woodshop Supervisor or student workers correct these problems. Do not attempt it yourself.
- Machinery should not be used to cut used lumber, plaster, or drywall.

**b. Tools**

i. **Band Saw** – A free-hand tool designed for cutting circles, curves, or irregular shapes. It can also be used to rip and crosscut relatively small pieces of wood.

**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating machinery.**

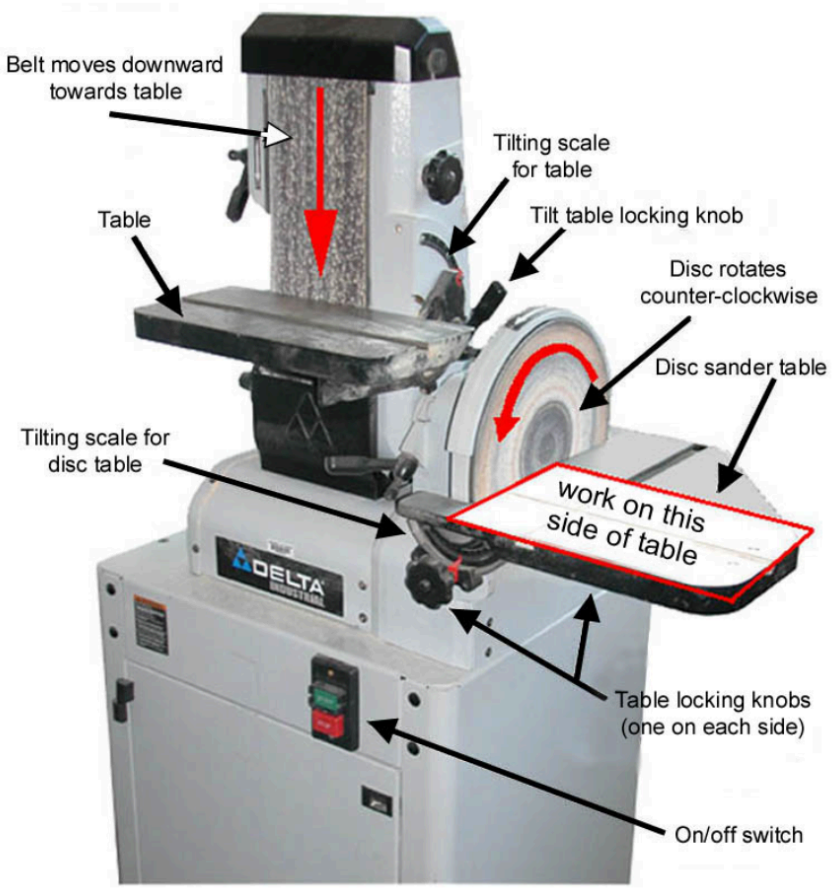
1. Always keep hands and fingers 3" away from the cutting edge.
2. Upper guide should be only 1/8" above material height.
3. Check the band for good tension.
4. Only use wood that has flat surfaces.
5. Hold wood firmly, feeding it into blade at a moderate speed.
6. Avoid backing wood out of an incomplete cut.
7. The blade inhibits tight turns that could twist and break the band.
8. Clicking while the blade is in motion indicates a hazard. Inform the Woodshop Supervisor or a student worker if you hear this sound.



ii. **Belt/Disc Sander** – A free-hand tool used for sanding, shaping and finishing small pieces of wood or other materials.

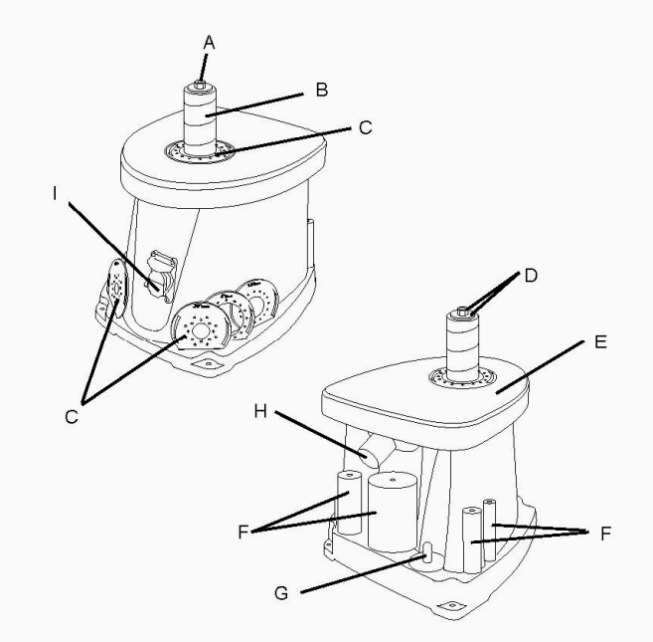
**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating machinery**.

1. Sand only in the direction of the wood grain on the downward stroke of the machine.
2. Do not apply excessive force.
3. Check sanding surfaces for tears or holes. Worn surfaces should be replaced by student workers or the Woodshop Supervisor.
4. Check belt traction while it is running.
5. Gloves should not be worn while using this machine.
6. Do not hold object with a rag when using the sander.



iii. **Spindle Sander** – This tool is used for sanding detailed or curved edges
**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating machinery**

1. The sanding spindle should be the appropriate size for the radius of the curve you need to sand.
2. Keep wood flat on table while sanding.
3. Do not apply excessive force.
4. Check sanding surfaces for tears or holes. Worn surfaces should be replaced by student workers or the Woodshop Supervisor.

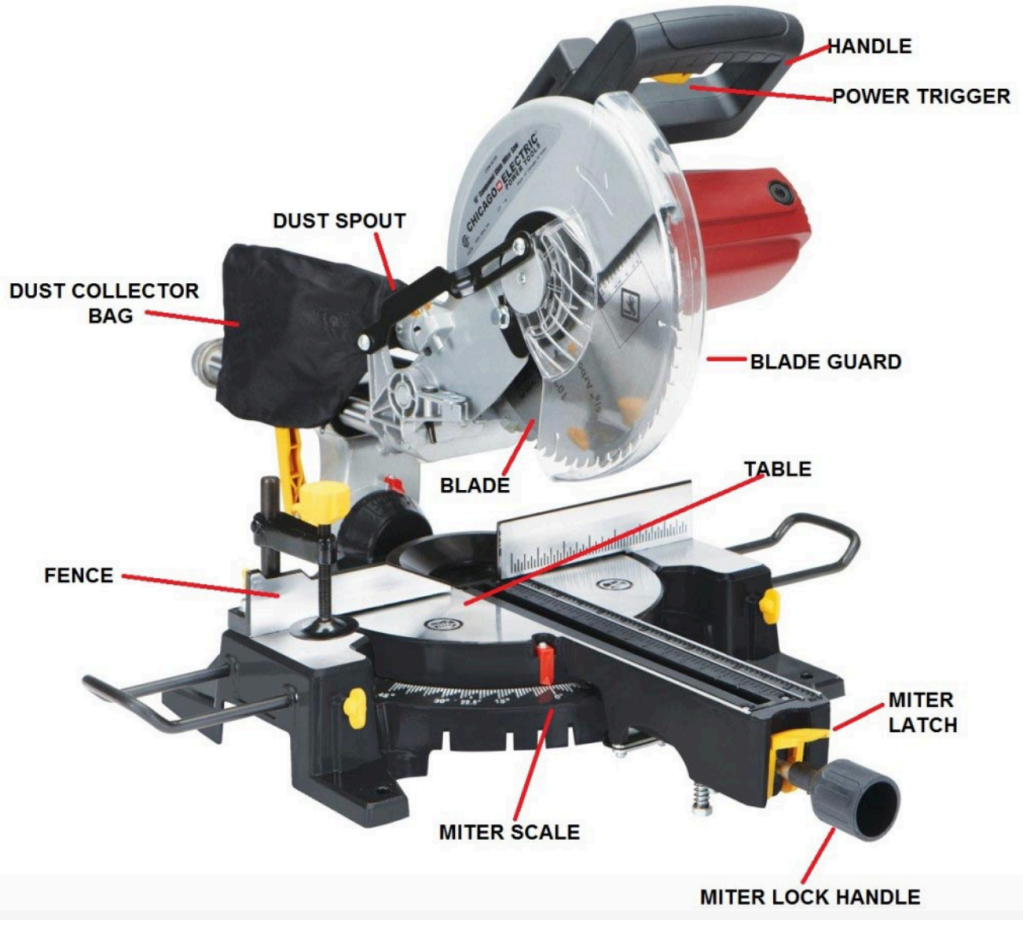



| | |
|---|---|
| A | Spindle |
| B | Sanding sleeves (6) |
| C | Throat plates (6) |
| D | Upper spindle washer and hex nut |
| E | Table top |
| F | Rubber sanding drums (5) |
| G | Sanding drum storage peg |
| H | Dust port |
| I | ON/OFF switch |

iv. **Compound Miter Saw** – 12” Compound Slide Miter Saw is used for crosscuts, miter, and compound miter jointing.

**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating machinery.**

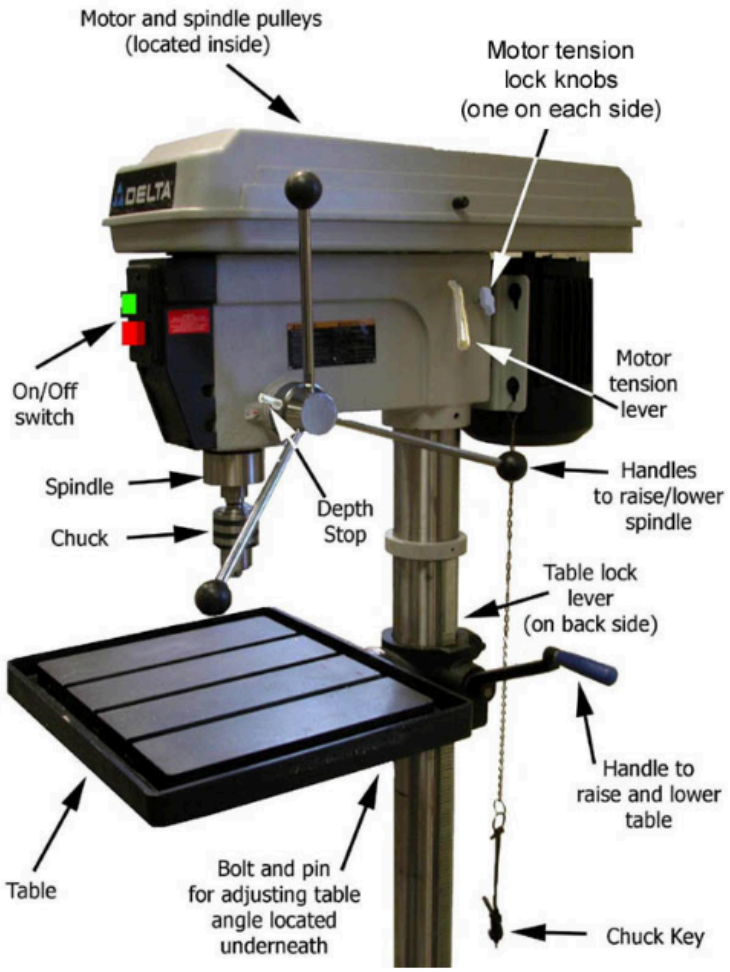
1. The blade should be sharp, run freely, and be free of vibrations.
2. Do not attempt to cut small pieces.
3. Do not handle the blade guard. It is designed to self retract.
4. Let the blade come up to full speed before beginning your cut.
5. Hold your material with your hand away from blade and keep your fingers and thumb together.
6. Do not cross yours arms over each other while using the saw.
7. Start the saw, allow it to come up to full speed, pull out, push down, and push back.
8. Allow blade to stop completely before lifting up.



v. **Drill Press** – 15” Variable Speed Drill Press is designed to make vertical holes or create mortises.

**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating machinery.**

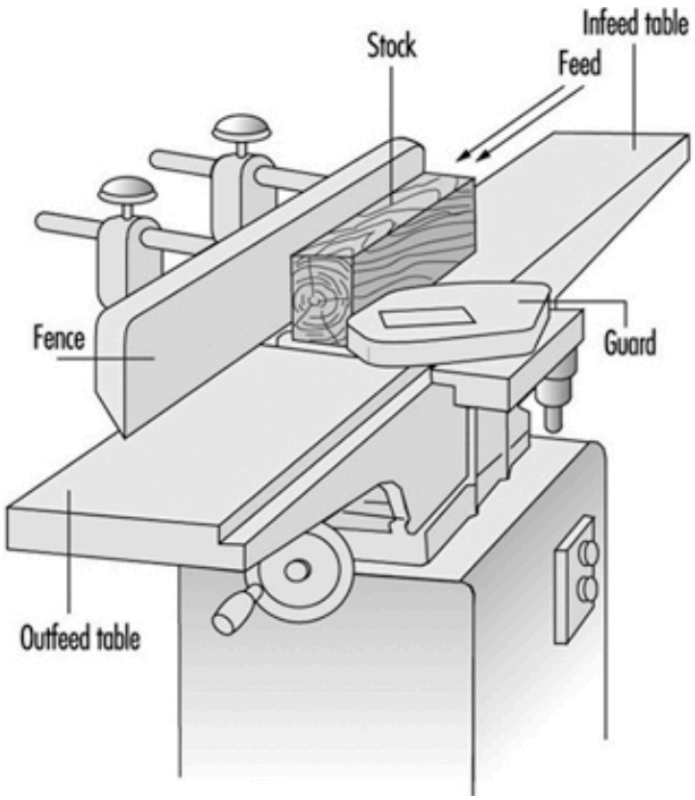
1. Larger bits should be used at slower speeds.
2. Adjust the speed with the motor running.
3. Place scrap stock underneath material to be cut in order to protect the table of the machine.
4. All material should be clamped to keep it in place while using the drill press.



vi. **Jointer** – 8” Long Bed is used for squaring and shaving along the edge grain.

**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating machinery.**

1. Use a push block whenever project goes over the cutting surface, keeping fingers 4” from the cutting knives
2. Wood should be more than 6” in length
3. Never adjust the outgoing table
4. Deed against blade rotation. Reverse direction can cause serious injury



vii. **Panel Saw** – It is used for ripping and crosscutting large sheets of material.

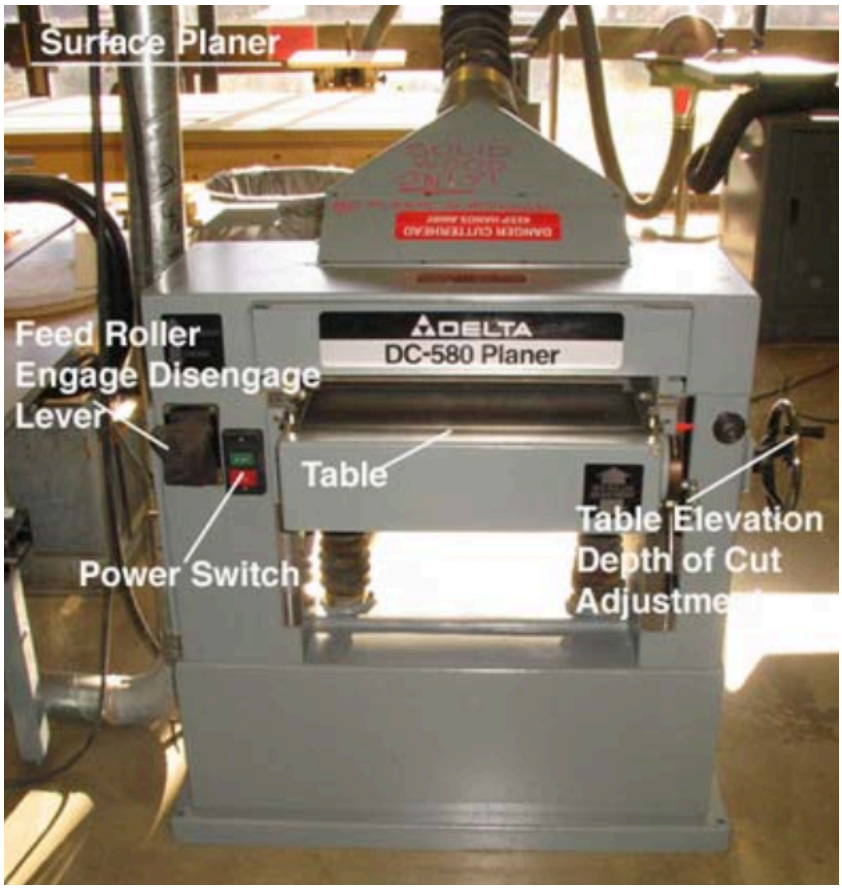
**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating machinery.**

1. The blade should come up to full speed before beginning cut.
2. Slowly return the saw to the top and tighten it down. Never let it go until it is secure.
3. Be away of the power cord so that it does not fall into the path of the blade critical when returning the blade to the top.
4. Be sure to use proper lifting form when utilizing the panel saw in order to avoid back injury.

viii. **Planer** – It is designed to plane stock to within designed thickness smoothly. This machine cannot straighten bows or warps.

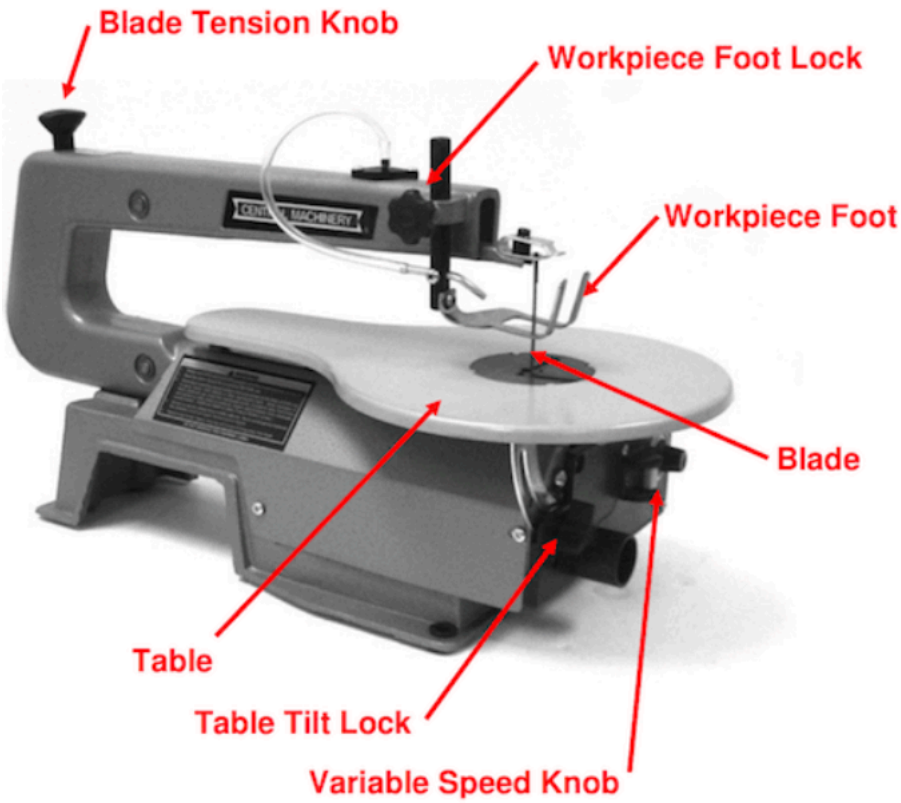
**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating machinery.**

1. Use only with personnel assistance.
2. Plane off only about 1/32" with each pass (about 1/2 a turn).
3. Keep others out of the line of input and output of the table
4. Plane only clean, clear wood. Any imperfections in the wood should be checked first.
5. Only insert one piece of wood at a time. Do not start a second piece of wood until the first is clear.
6. Do not stack pieces of wood on top of one another to go through the planer.
7. If a board starts moving, turn the power off immediately and lower the deck. Get a student worker or Woodshop supervisor to assist.
8. Clear dust and woodchips with a brush. Do not do this by hand.
9. Feed against blade rotation. Reverse direction can cause serious injury.



ix. **Scroll Saw** – A free-hand tool used for cutting fine-detailed designs.
**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating machinery.**

1. Be sure adjustment keys and wrenches have been removed.
2. Rotate motor once by hand before use.
3. Lower hold-down clamp against wood to secure it to table.
4. Only use ½" stock wood or smaller that has only a flat surface.
5. Hold wood firmly feeding it into blade at a moderate speed
6. Blades should only be changed by student workers or the Woodshop Supervisor, but always check band for good tension prior to use.
7. Stop the blade completely before backing wood out of an incomplete cut.
8. Make release cuts before making tight curves.

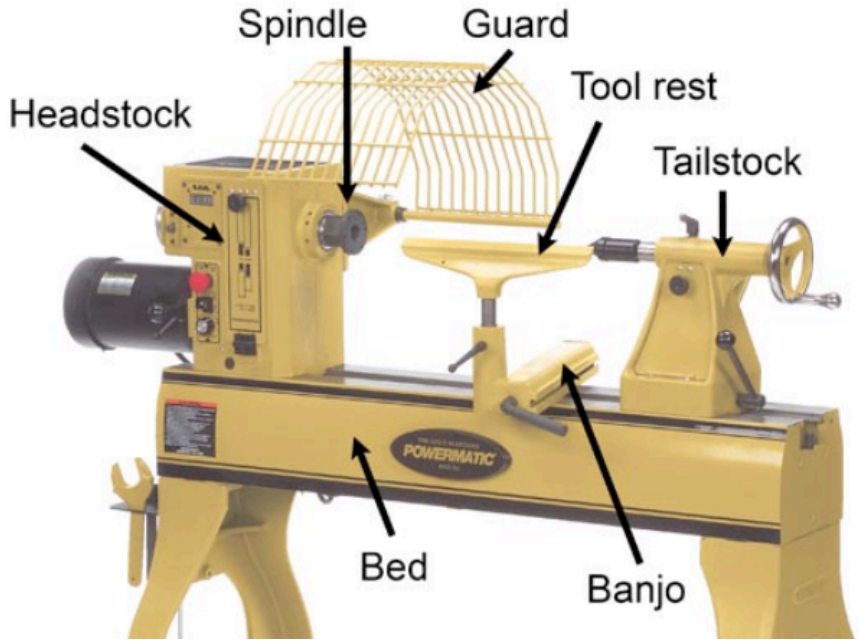


x. **Table Saw** – It is used for ripping and crosscutting stock.
**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating machinery.**

1. Use a push block whenever your project is going over the cutting surface.
2. Keep hands at least 4" away from the blade.
3. Stand to the side of the wood being ripped.
4. Stay within reach of the power switch.
5. Only use one fence or miter gauge.
6. Be sure adjustment wrenches or any other objects have been removed from table before use.
7. Hold wood firmly, feeding it into the blade at a moderate speed. Push the wood with a push stick until it clears the cutting blade.
8. This is not a free-hand machine. Always use a fence or miter gauge.
9. Feed against the rotation of the blade. The wrong way will accelerate the wood and cause damage.
10. No dead-cuts. You must continue ripping all the way through your board without stopping.
11. Only use wood that has flat surfaces.
12. Only one piece of wood should go through the table saw at a time. Do not start a second until the first is clear of the blade.

xi. **Wood Lathe** – It is used for milling original, symmetrical wood profiles.
**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating machinery.**

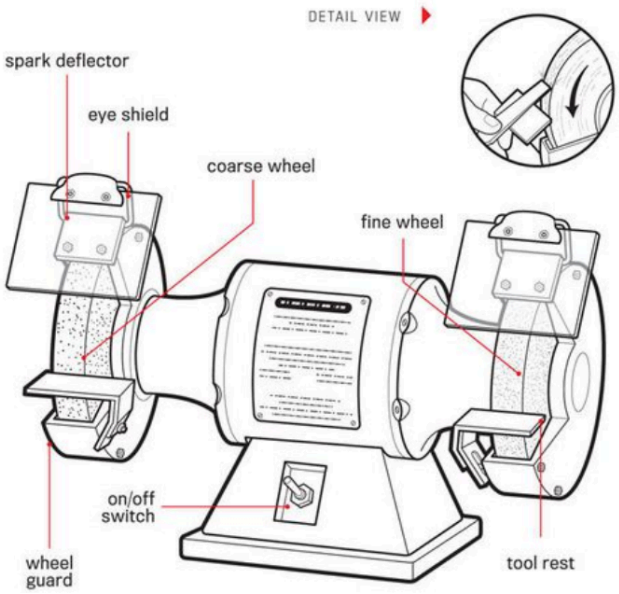
1. The tool rest should be at a proper height and as close to your work as possible.
2. Vary the speed with the motor running.
3. Only certain types of wood can be milled. Check the wood with the Woodshop Supervisor if you are unsure.
4. Check for clearance and balance before beginning.
5. Tailstock should be tight.
6. Turning tool rest should not interfere with your work.
7. Do not jam tool into work, especially during trough turning.
8. Disengage index pin before beginning.
9. Refer to chart to determine the speed to utilize.



xii. **Bench Grinder** – It is used to shape, sharpen, buff, polish or clean most metal objects.

**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating machinery**

1. Ensure all the guards are in place and secure before using the grinder.
2. Never adjust the rests while the wheels are moving. The rest should be within 1/8" of the wheel.
3. Tighten the nuts before turning on the grinder.
4. Make sure that the wheel spins freely before turning on.
5. Depending on the material, respiratory protection may need to be utilized. Please double check with the Woodshop Supervisor about your material.
6. Bring material to the wheel after it has reached operating speeds. Apply gradual and even pressure, no bumping.



xiii. **CNC Router** – Computer Numerical Control Machining is a process that uses computers to control machine tools.

**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating machinery.**

1. Do not place any body part within 6" to the cutting tool when it is moving.
2. Be sure to ask the Woodshop Supervisor or a student worker to set up your project.

xiv. **Drum Sander** – It is used to finish sander parallel surfaces.
**Safety – Eye protection is required by law. Do not be distracted by or talk to other when operating machinery.**

1. Do not put your hands between the moving parts of the sander.
2. Keep all loose clothes or dangling objects away from the entrance of the sander.
3. Beware of overheating the machine. It has the potential to burn materials.
4. Be sure to attach the dust collector to the machine to prevent dust exposure.
5. Sand off only about 1/128" with each pass.

xv. **Router Table** – It is used to hollow out an area or create edges to material.

**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating machinery.**

1. Keep your hands and fingers away from the bit when in use.
2. Hold your material with both hands. This tool is easy to lose control of.
3. Bits can be extremely hot after use.
4. Keep the base on a flat surface for smooth cuts.
5. Make progressive cuts to the desired depth.
6. Cut against the direction of bit rotation.
7. Do not "climb-cut." Cut outside edges counterclockwise and inside edges clockwise.

## Hand Tool Safety

### a. Rules

- Use hand tools only as intended. If in doubt, ask for assistance and/or refer to the user manuals.
- You should be informed in the operation and safety procedures. If you are not comfortable with a machine, do not use it. Ask student workers or the Woodshop Supervisor for assistance.
- Focus on your work. Look. Listen. Be in control of what you are doing. Do not be distracted by or talk to others. Do not distract others.
- All safety guards and devices must be in place when operating tools.
- Avoid accidental starting.
- Tools should be at rest before removing byproduct and laying it down.
- Unplug tools that are not being used.
- Unplug tools before changing parts and making adjustments.
- Be sure bits and blades are secure prior to use.
- Turn switch to "OFF" before plugging it into a socket.
- Return adjustable parts to the rest position.
- Machine should be clean and clear before, during, and after it is used.
- Do not use force. The tool should do the work. If it does not perform as you expect, let a student worker or the Woodshop Supervisor know. There may be a better way to perform task.
- Do not overreach.
- Extension cords must be 3-prong grounded or polarized. If a 2-prong cord will not fit flip it over.
- Pull plug out from the sockets by the grip, not by the cord.
- Use clamps and vises to hold down wood or material. This keeps your hands free to control the hand tool properly.
- Cords can be an electrocution hazard. Be sure they run behind you, out of the tools direction.
- Hold by insulated gripping for greater shock protection.
- Check for worn and damaged parts prior to using the tool. Let the Woodshop Supervisor or a student worker correct these problems. Do not attempt to do this yourself.
- Wood should be flat and clear of all foreign objects.

**Please note that hand tools may not be an exact representation of tools currently in use in the Woodshop at this time.**

**b. Tools**

i. **Belt Sander** – This tool is designed to smooth larger items, like rough boards, old finishes, and sometimes metal and plastic.
**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating.**

1. Hold your material with both hands. This tool makes it easy to lose control of your material.
2. Belt must be tracked properly before use.
3. The weight of the sander is sufficient. Leaning on the tool is bad for the motor and makes it less effective when using.

ii. **Circular Saw** – This is used for hand ripping and crosscutting stock.
**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating tools.**

1. Hold tool with both hands. This tool is easy to lose control of when using.
2. Do not touch the guard. The blade guard is designed to self-retract when using.


iii. **Detail Sander** – This tool provides the ability to sand in corners and in other detailed spaces.
**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating.**

1. A moderate grip on the sander is sufficient for use.
2. Excessive force is bad for the motor and is less efficient when using.

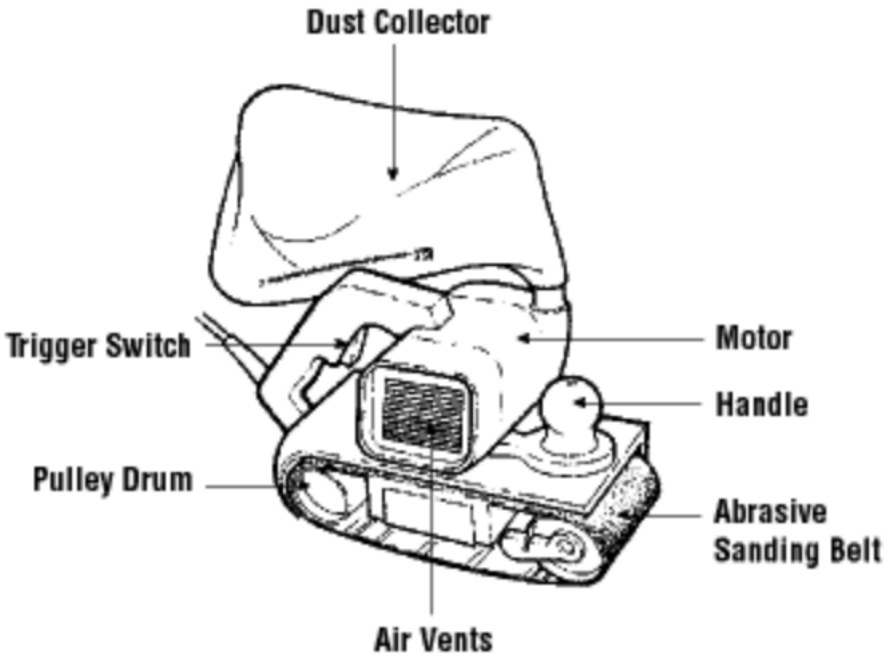
iv. **Drill** – This tool is designed to drill various-sized straight holes into wood or metal.

**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating.**

1. Drill straight in and pull straight out.
2. Twisting and wobbling the bit in the hole will damage the bit and can cause bodily harm.
3. Bits can be extremely hot after use.
4. Be sure to drill with the motor in the forward direction. Reverse direction will burn or can ignite the wood.
5. Pull bit out of deep holes in order to remove debris. Excess chips can be overheated.

v. **Finishing Sander** – Half and quarter sheet sanders that are used for finishing flat surfaces.
**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating.**

1. The weight of the sander is sufficient for use. Excess pressure on the tool is bad for the motor and makes it less effective when using.
2. Abrasive paper should be in place and secure before use.



vi. **Grinder** – This is a metal working tool for grinding and smoothing rough **edges.**

**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating.**

1. Hold the grinder with both hands. This tool is easy to lose control of when using.
2. Lay tool trigger and grinder side up.
3. Always position wheel guard between you and your work.

vii. **Jig Saw** – This tool is generally used for pattern cutting into materials with maximum thickness of 4 ¼" for wood and 1 ¼" for plastic and fiberglass. Refer to manual for metal thickness.

**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating.**

a. Find a clear area to work with before using this tool.
b. Secure the material to your workbench.
c. Keep the base on flat surface when in use.
d. Do not use the bend blade.

viii. **Oscillating Spindle Sander** – This tool is designed to sand edges and is ideal for inside cutouts and curves.

**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating.**

a. Hold the sander with both hands.
b. Moderate grip on the sander is sufficient. Excessive force is bad for the motor and makes it less efficient.
c. This tool is not for removing material. This tool is to be used ONLY FOR SANDING.

ix. **Plate Joiner** – This tool is designed specifically to cut slots in wood for biscuit joining. It will cut sizes "FF", "0", "10", and "20" at 5/32" thickness. **Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating.**

a. Hold the tool with both hands when using. This tool is easy to lose control of.
b. This is not a free-hand tool. Do not attempt to move tool when in place for a cut.
c. Release pressure slowly after the cut.

x. **Pneumatic Guns** – A tool used for fastening with brads, staples, finishing and framing nails.

**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating.**

a. The material must be sufficient enough to withstand the impact of the tool.
b. Never point this in the direction of another person.
c. No one should be in front of the operator in case of an error.
d. This tool is not to be used in any way other than in the manner of which it was intended.
e. Do not tamper with contract element.
f. The air hose is the power. Disconnect when reloading or adjusting any pneumatic gun.

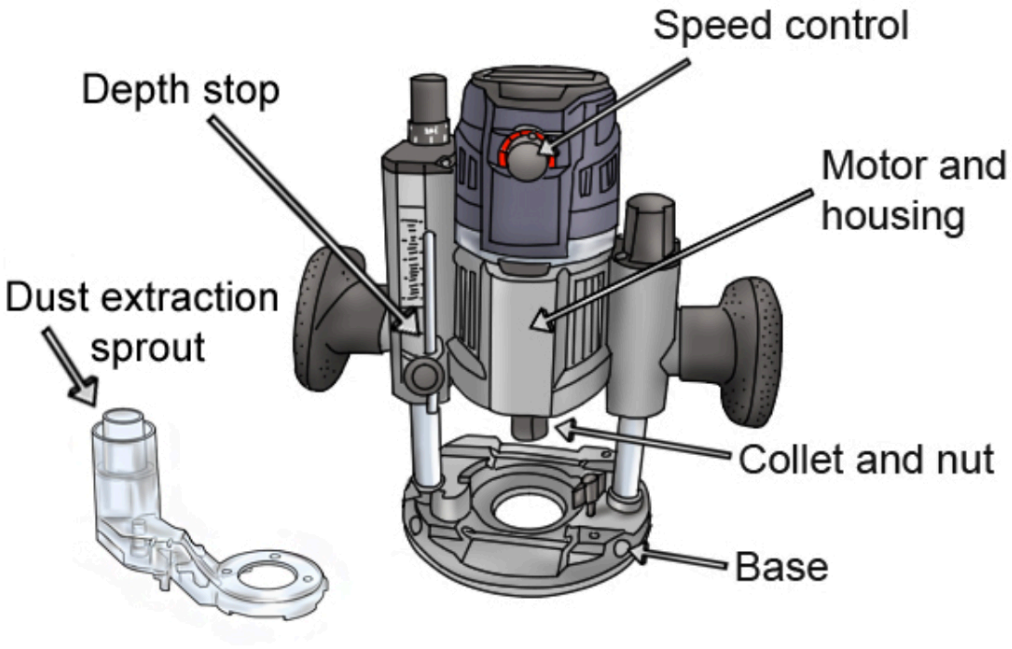
xi. **Random Orbital Sander** – This palm-sized sander removes material more rapidly than a finish sander.

**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating.**

a. A moderate grip on the sander is sufficient. Excessive force is bad for the motor and makes it less efficient.
b. Abrasive paper should be in place and secure before use.
c. This tool is capable of abrasions, unlike finishing sanders.

xii. **Routers** – Used for milling and shaping wood edges and free forms.
**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating.**

a. Hold the router with both hands. This tool is easy to lose control of when using.
b. Bits can be extremely hot after use.
c. Keep base on flat surface for smooth cuts.
d. Make progressive cuts to your desired depth.
e. Do not "climb-cut." Cut outside edges counterclockwise and inside edges clockwise.



xiii. **Oscillating Multi-tool** – This diverse tool allows you to saw, drill large holes, plunge cut, or undercut.

**Safety – Eye protection is required by law. Do not be distracted by or talk to others when operating.**

a. Take appropriate dust precautions when using this tool.
b. Be sure to check the blade prior to use. If the blade needs to be changed, please ask the Woodshop supervisor or a student worker to do so.
c. Disconnect from power sources when making adjustments to the tool.
d. Do not lick the cutting edge.
e. Keep your hands away from moving parts.
f. Wait for the blade to come to a complete stop before laying the tool down.

**Golden Rules of the Woodshop**

Because your mother isn't here!

If you open it… Close it
If you turn it on… Turn it off
If you unlock it… Lock it
If you check it out… You must check it back in
If you use it… Take care of it
If you break it… Report it
If you borrowed it… Return it
If you glued it… Tag it with date and time
If you make a mess… Clean it up
If it's in the way… Move it
If you moved it… Put it back
If you are confused… Ask for help
If you are unable to operate it… Leave it alone
If it does not concern you… It's none of your business