

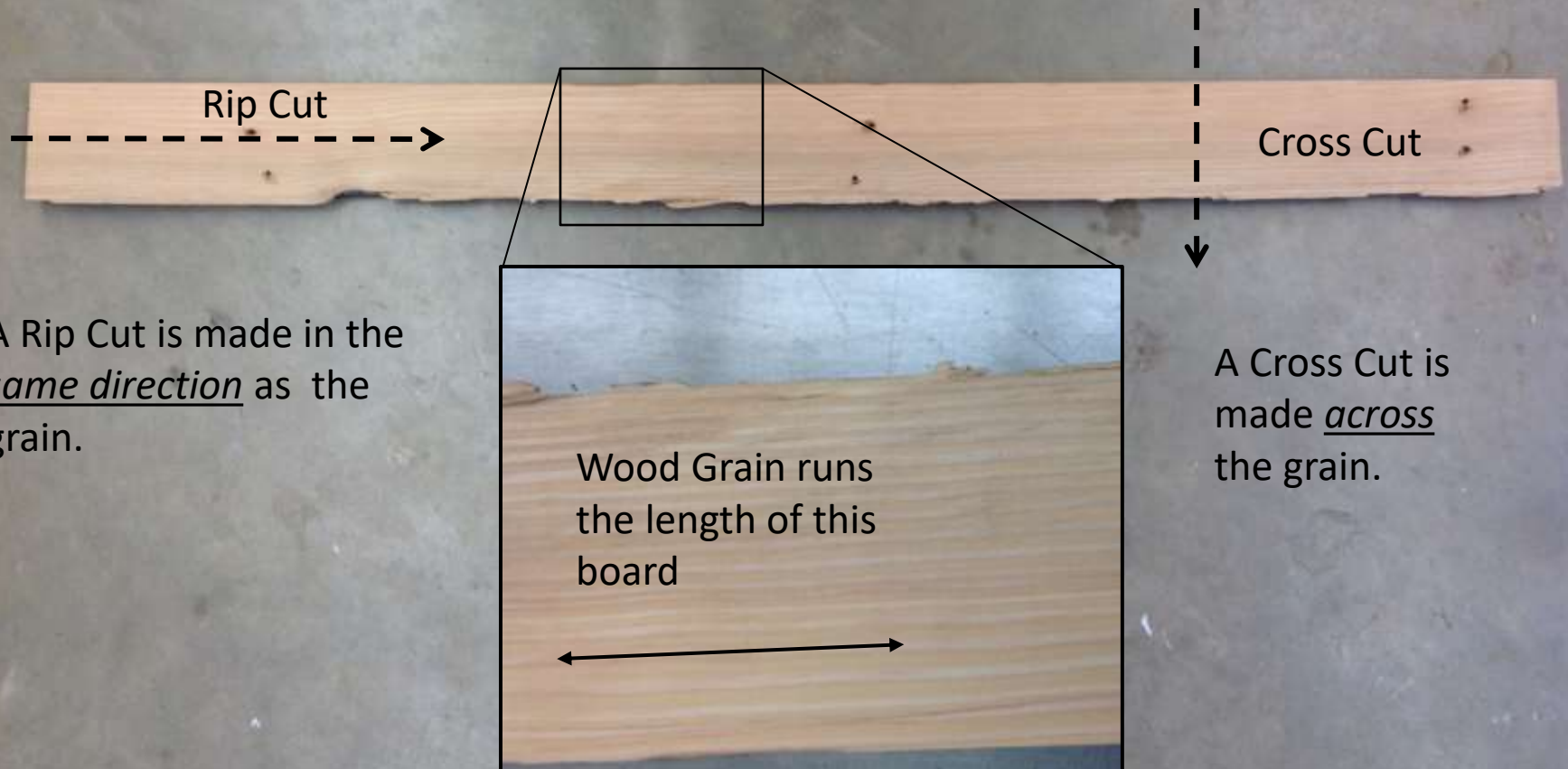
# Woodshop Safety and Operation

## Machines

Tie back long hair. No jewelry or loose clothing. Wear eye protection.

## Types of Cuts

Some tools are designed to make only cross cuts. Others make rip cuts. Some can handle both. It is extremely important to use the proper tool for the job.



A Rip Cut is made in the same direction as the grain.

A Cross Cut is made across the grain.

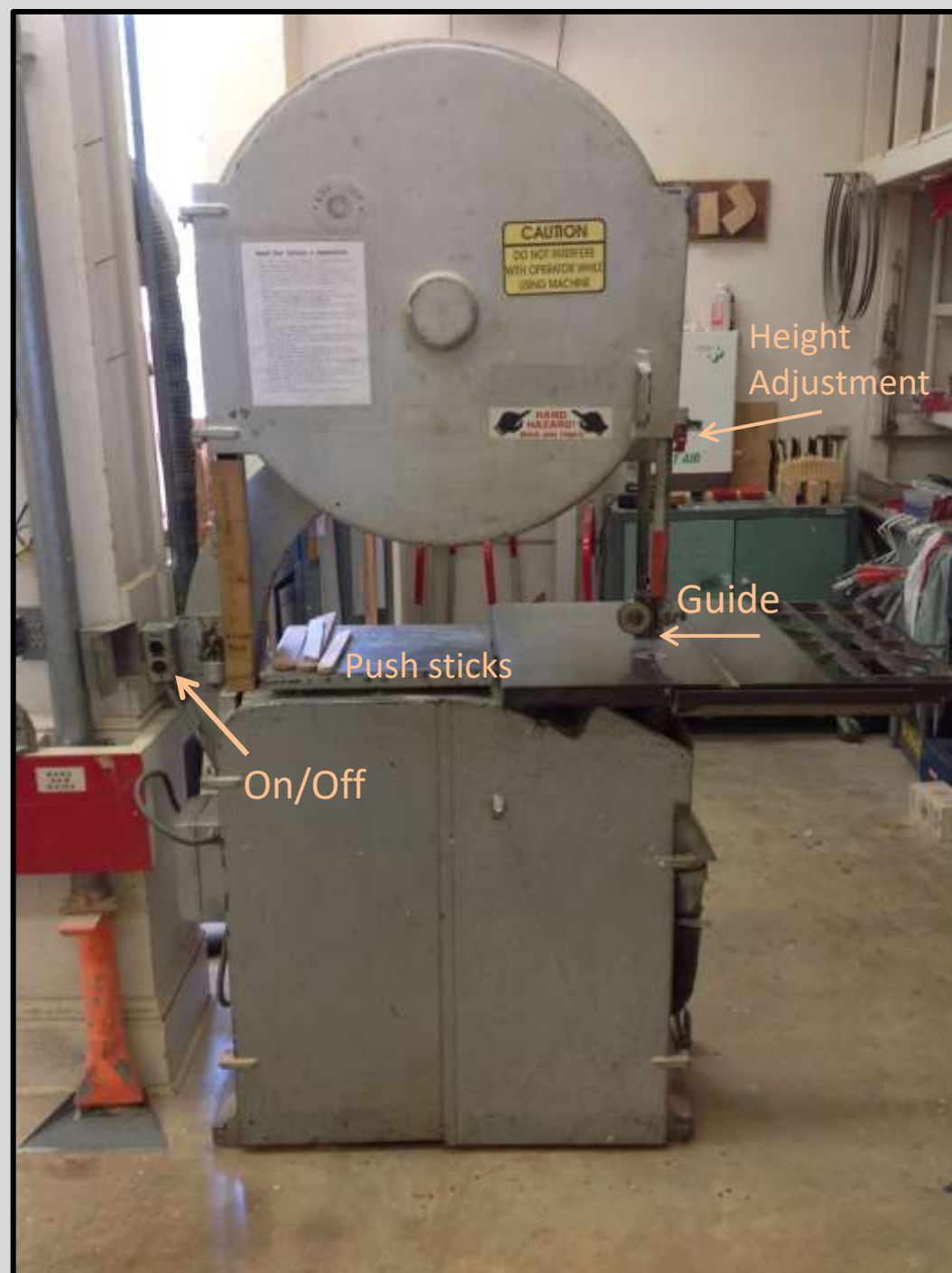
# Band Saw

For making rip cuts, cross cuts or contours. However, the blade is flexible and can leave an uneven edge. Leave room for sanding.

Material to be cut must have flat "foot." To cut round or cylindrical objects, place in piano clamp or build jig (or cut by hand).

Sweep area beforehand if necessary to ensure safe footing. ALWAYS SWEEP UP AFTERWARDS.

If a blade breaks, shut machine off and stand clear until everything stops moving. DO NOT LEAN OVER YOUR WORK. Stand straight up.



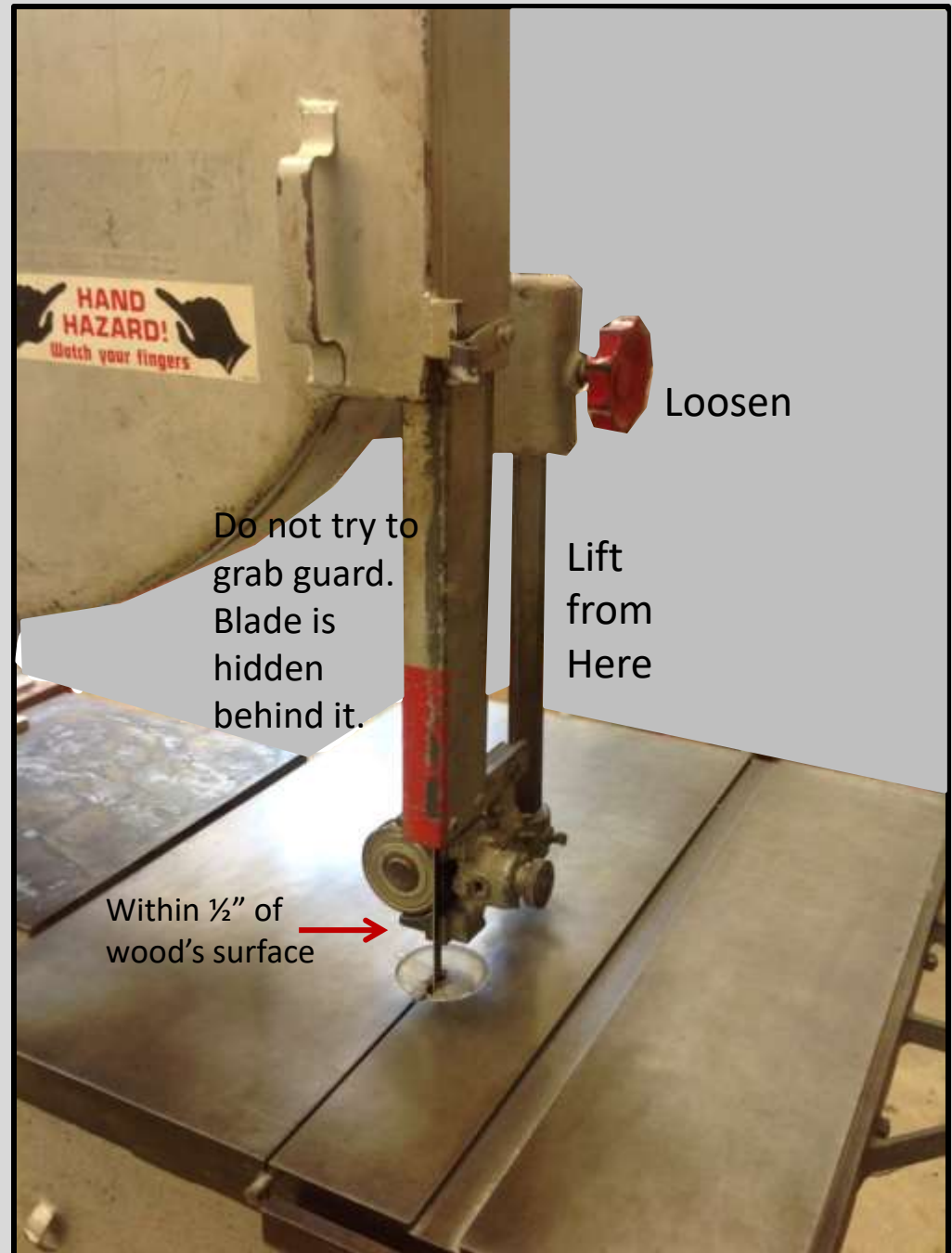
## Band Saw

Keep guide within  $\frac{1}{2}$ " of the top of material to be cut.

Check and adjust guard height while machine is off and not moving.

Adjust guard from behind table, holding hexagonal bar with one hand and loosening red knob with the other.

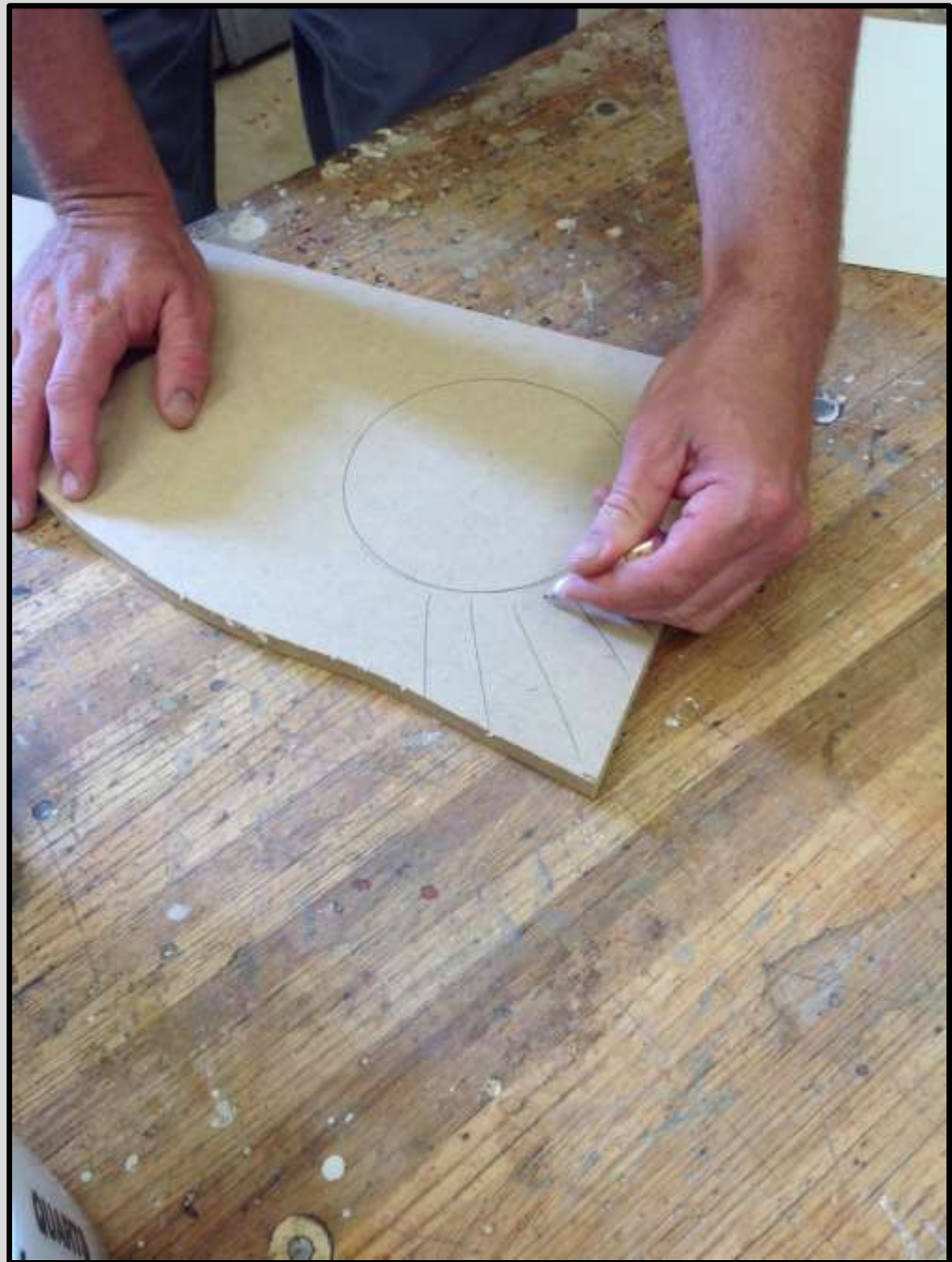
Do not grab front of the guard.



## BAND SAW

Draw out the shape or line you want to cut. In this case, the operator has traced out a circle.

He is also drawing lines for “relief cuts”. These are not part of the design of the finished product but will allow for easier cutting of the pattern. Relief cuts are helpful for most enclosed shapes, but necessary for patterns with tight curves or concave areas.



## BAND SAW

Hold stock down on table and move gently into the blade. Do not try to hold material in air, off of table.

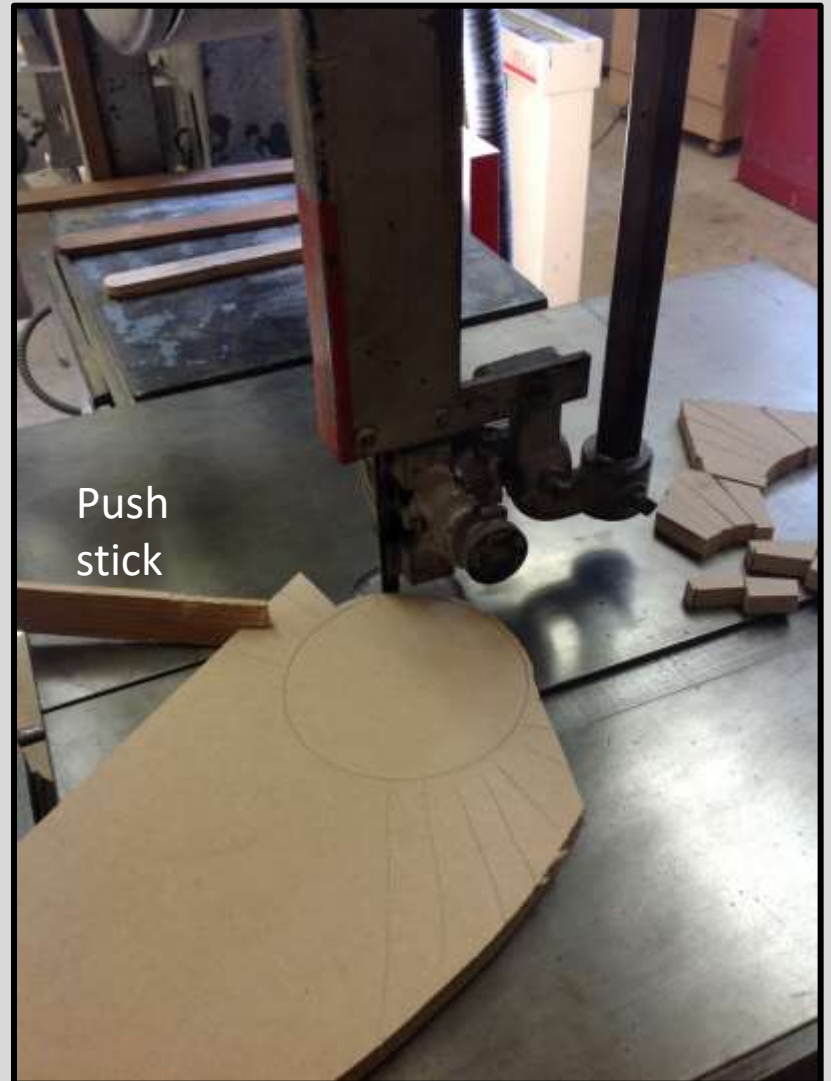
Keep fingers away from blade and its path. Use pushsticks if necessary.

Notice that the operator has made three relief cuts and backed directly out. Those reliefs cuts are straight lines. Never attempt to back out of a curved cut.



## BAND SAW

Now that plenty of relief cuts have been made, the operator makes a series of cuts to knock out large areas at a time. Again, these cuts need to be relatively straight to avoid twisting the blade.



## BAND SAW

If cutting long stock, get help to hold up weight on the outfeed side of table.

Make sure that the material to be cut is not too long or too wide to be cut on the Band Saw. If it is too big or cumbersome, you need to use the Jig Saw or Circular Saw.



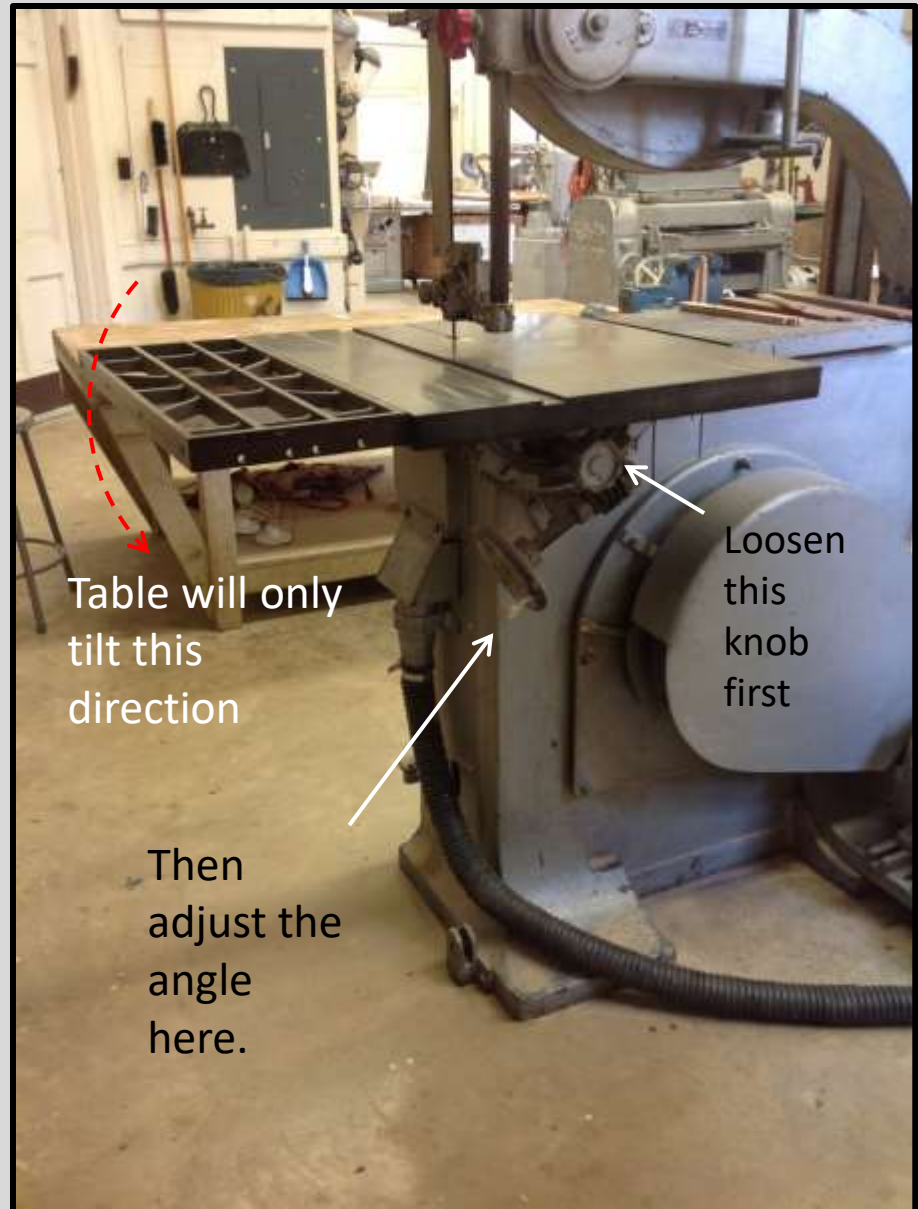


## Band Saw

The angle of the table can be adjusted in one direction.

Adjust table angle while machine is off and not moving. Loosen knob first. Clamp board to table to prevent your stock from sliding off.

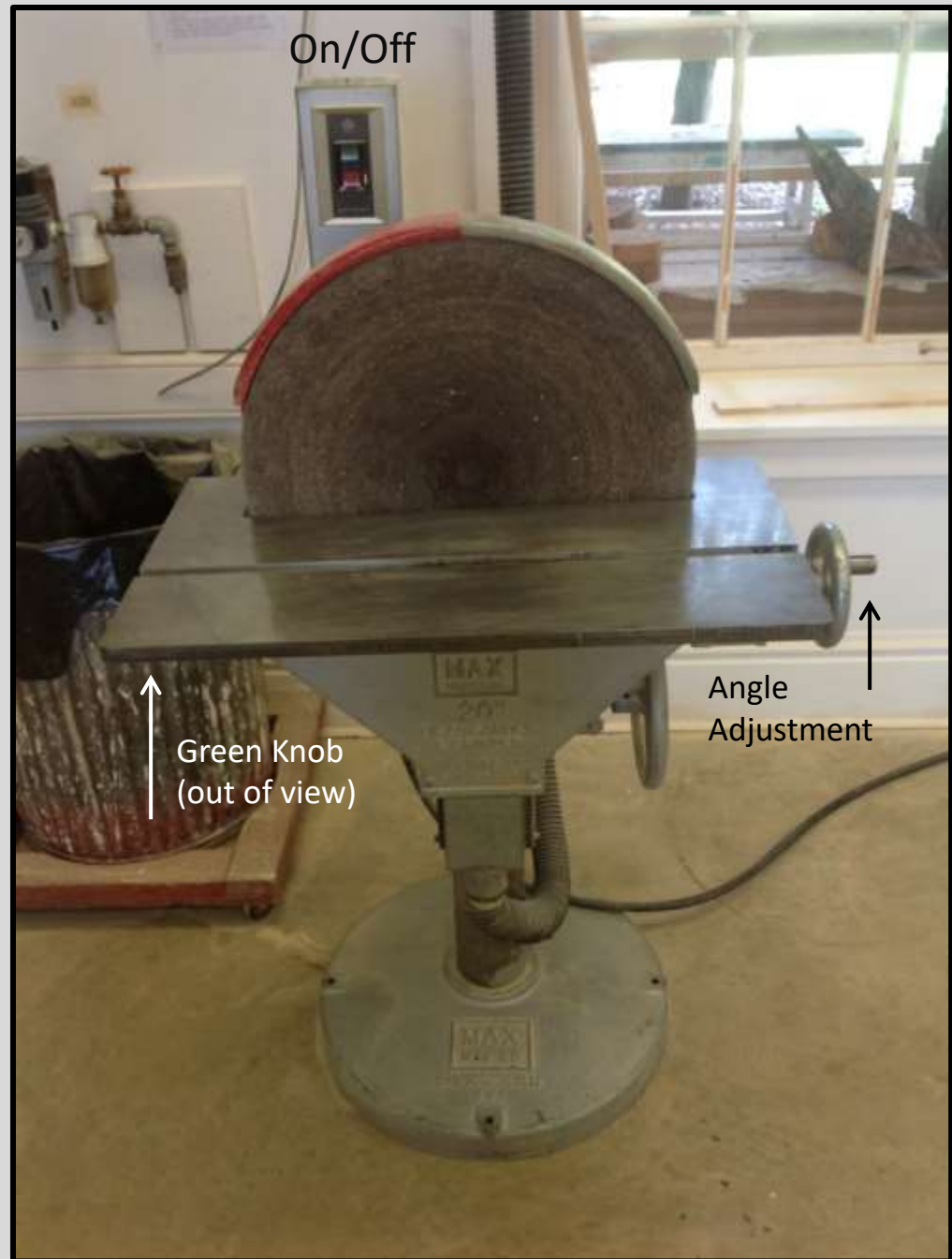
Set table back to 0° when you are finished.



## Disc Sander

Use for cleaning up edges, light shaping, mitering corners. Remove as much material as possible beforehand, using saws and grinders.

Angle of table can be adjusted for matching or sanding angles. Loosen green knob on left before attempting to adjust angle.



## Disc Sander

Run Dustkop during use.

Wear safety glasses. A dust mask may also be necessary for materials such as MDF, Styrofoam or exotic woods.

If necessary, sweep surrounding area before use to prevent slips and falls. ALWAYS SWEEP UP AFTERWARDS.

Make adjustments while machine is OFF and not moving.

This machine is for sanding and minor shaping, not grinding. Remove as much material as possible beforehand with a saw or grinder.



## Disc Sander

Check that material is not small enough to be pulled into gap between table and disc.

Keep fingers at least 3" from disc.

Keep work on downward rotation side of the table when sanding (the right side).

Keep work firmly on table or support. Do not hold above the table.

Do not push against disc with excessive force. The sander performs best and safest when it is allowed to remove material at the rate for which it was designed.

Never leave the work area without turning off the machine.



## Disc Sander

Small material can be sanded on the Disc Sander, but will require a backing board to be clamped to the table and close the existing gap.



## Disc Sander

When adjusting sanding angle,  
LOOSEN GREEN KNOB first.  
When done sanding, set angle  
back to "0".

Sanding causes surfaces to heat  
up quickly. Beware of burns  
when handling material.



## Belt Sander

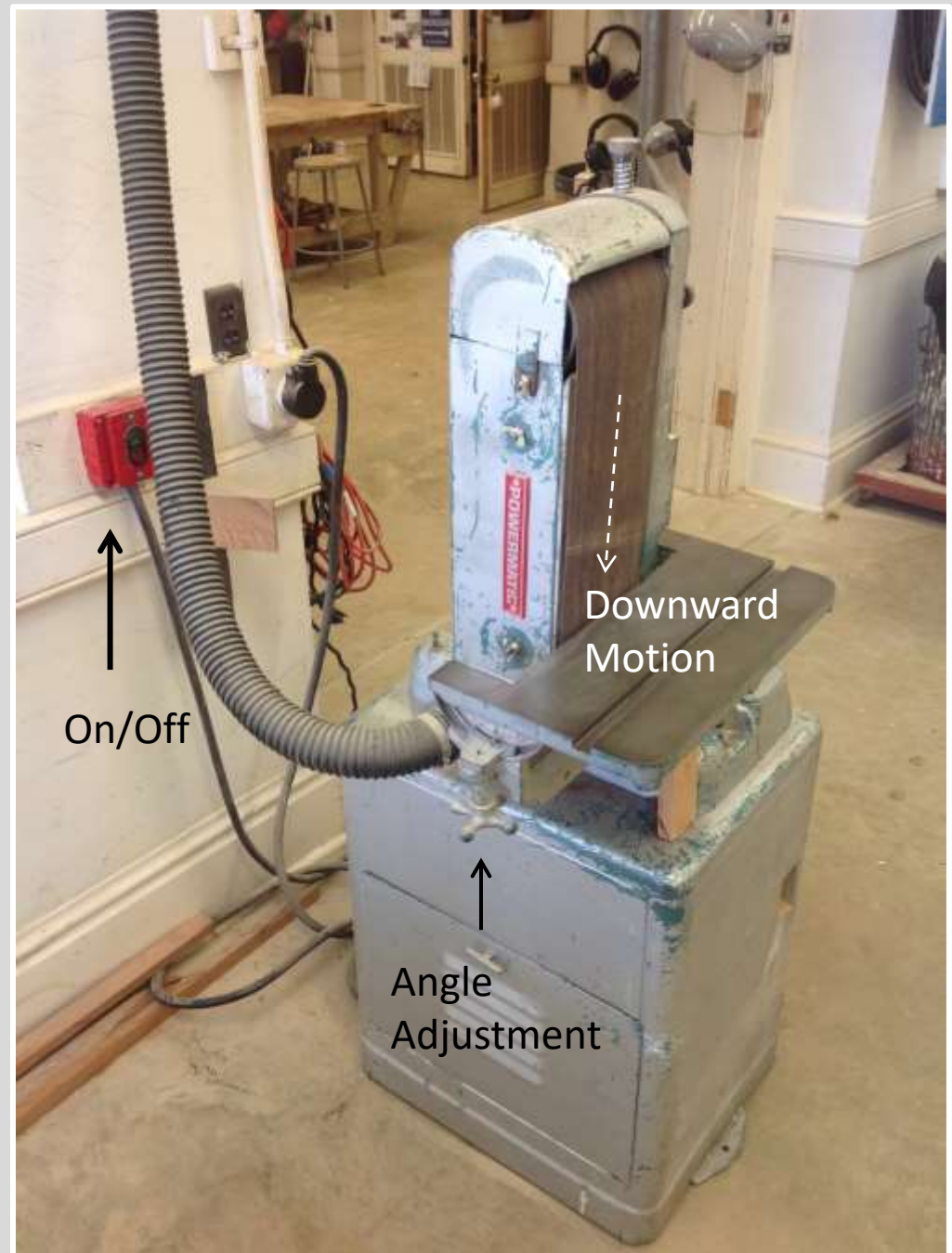
Similar to the Disc Sander, slightly less aggressive.

No loose clothing or jewelry. Tie back long hair.

Run Dustkop during use.

Wear safety glasses. A dust mask may also be necessary for materials such as MDF, Styrofoam or exotic woods.

When turning ON or OFF do not lean over machine to reach switch. Walk around and stand safely away from the belt.



## Belt Sander

If necessary, sweep surrounding area before use to prevent slips and falls. ALWAYS SWEEP UP AFTERWARDS.

This machine is for sanding and minor shaping, not grinding. Remove as much material as possible beforehand with a saw or grinder.

Make adjustments while machine is OFF and not moving.

Check that material is not small enough to be pulled into gap between table and belt.





## Belt Sander

Small material can be sanded on the Disc Sander, but will require a backing board to be clamped to the table and close the existing gap.



## Belt Sander

Keep fingers at least 3" from belt when sanding.

Keep work firmly on table or support. Do not hold above the table.

Do not push against the belt with excessive force. The sander performs best and safest when it is allowed to remove material at the rate for which it was designed.

Never leave the work area without turning off the machine.

Make sure table angle is back at 0 when you are done.

Sanding causes surfaces to heat up quickly. Beware of burns when handling material.



## PLANER

Use to clean rough-cut wood and to reduce thickness.

No loose clothing or jewelry. Tie back long hair.

Wear a face shield and hearing protection.

Keep fingers 3" from opening (front and back).

Run Dustkop during use.

No stock shorter than 24" in length.

Stand to the side of the machine to avoid kickback or shattering wood.

Check wood for foreign material. NO NAILS, SCREWS, OR LOOSE KNOTS.



## PLANER

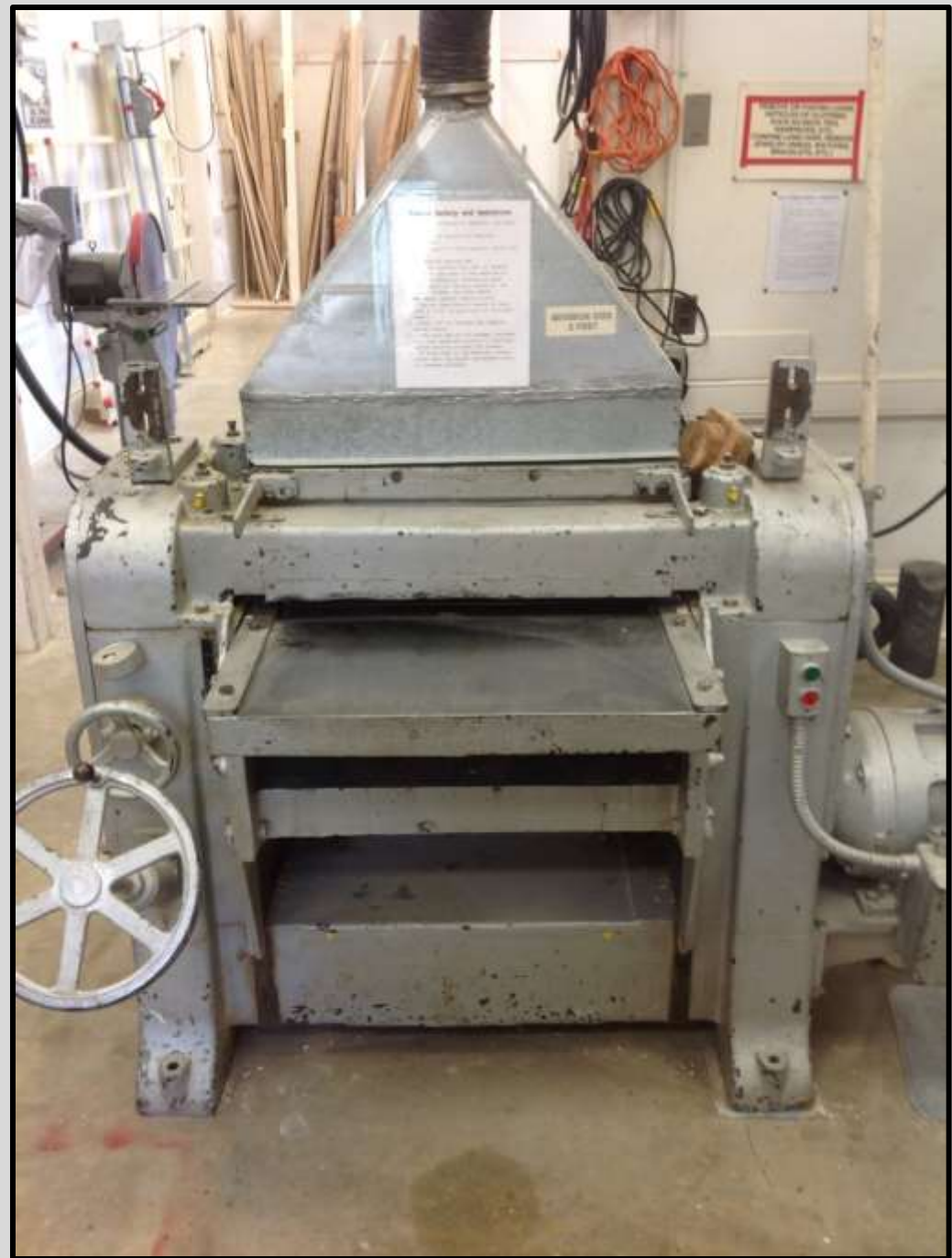
Set depth before feeding stock.

A typical pass should remove no more than a 1/16" (a half-turn of the hand wheel).

Stock 3/8" or thinner may require backer board.

Some wood may be too warped, twisted, etc. and require cutting or jointing before passing through the planer.

If wood jams in the machine, slowly crank open the height adjustment until it resumes progress.



## DRILL PRESS

No loose clothing or jewelry. Tie back long hair.

Wear safety glasses or a face mask.

Long stock should be drilled with the excess to the left of the operator. If the stock rotates it will hit the post, not the operator.

Never reach under or around a rotating drill bit.

Do not push faster than the machine can handle. Also, if smoke forms, proceed in small increments. Drill bit may need to be switched for a sharper one.

Clean up after yourself. Return drill bit to proper place once it has cooled down. Vacuum or sweep shavings and sawdust.



## DRILL PRESS

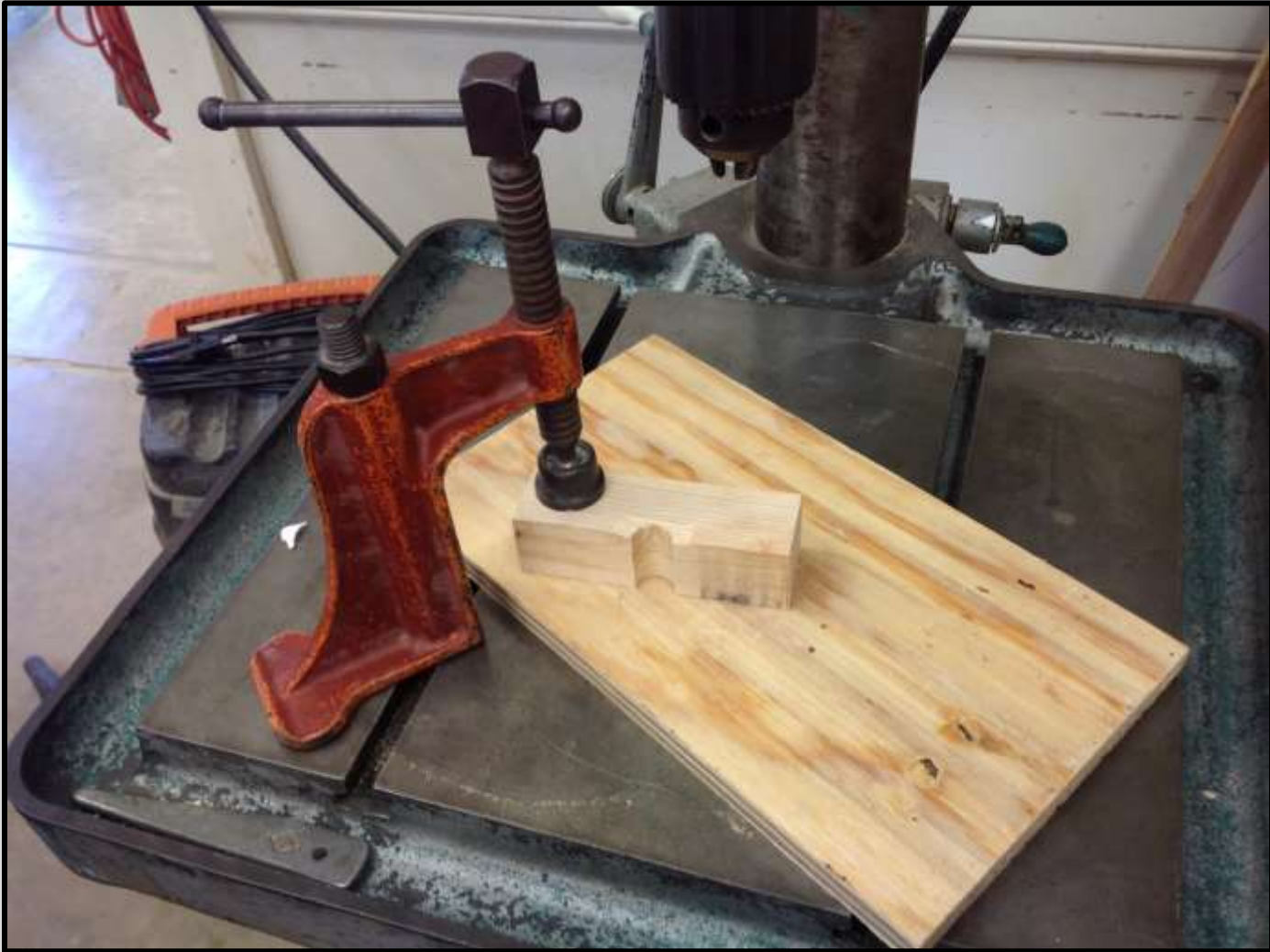
Always use clamps to hold workpiece – never use your hands.

Material should be secured in a clamp and then to the table (2 clamps may be necessary).



## Drill Press

If drilling completely through your piece, place expendable sheet of plywood or other material beneath it. Make sure this is secured to the table as well.



## DRILL PRESS

Tighten the chuck with chuck key to ensure that drill bit is secure. Remove chuck key before turning machine on.

Drilling causes heat. Do not grab drill bit, shavings, or touch the affected area of stock immediately after drilling.





## TABLE SAW

No loose clothing or jewelry. Tie back long hair.

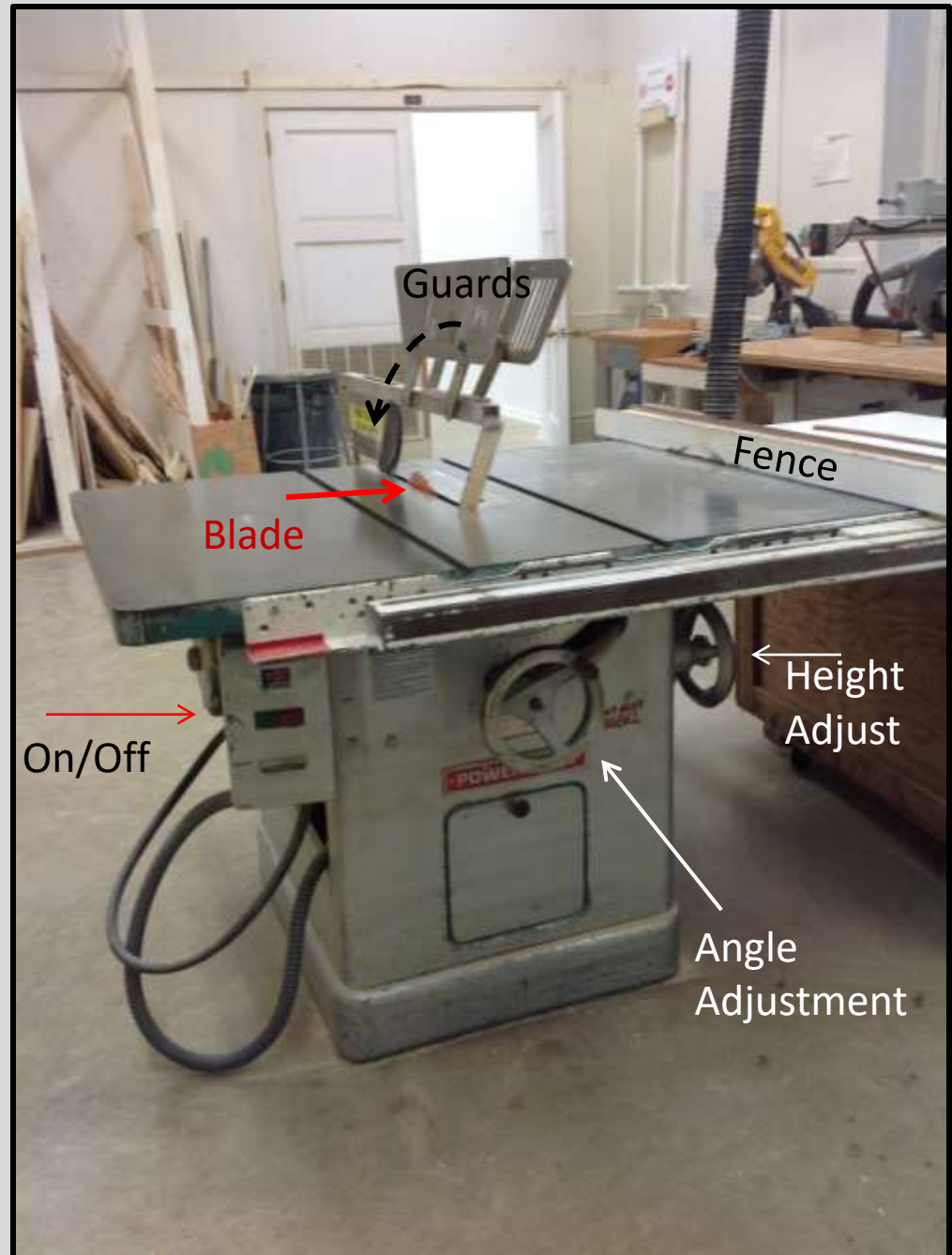
Wear a face shield.

Generally, the table saw is used for making RIP CUTS. However, cross cuts are possible with the right preparation and jigs.

Check that wood is flat and square enough to be run along fence without twisting blade. Clear all foreign objects.

If necessary, sweep surrounding area before use to prevent slips and falls.  
**ALWAYS SWEEP UP AFTERWARDS.**

Make adjustments while machine is OFF.



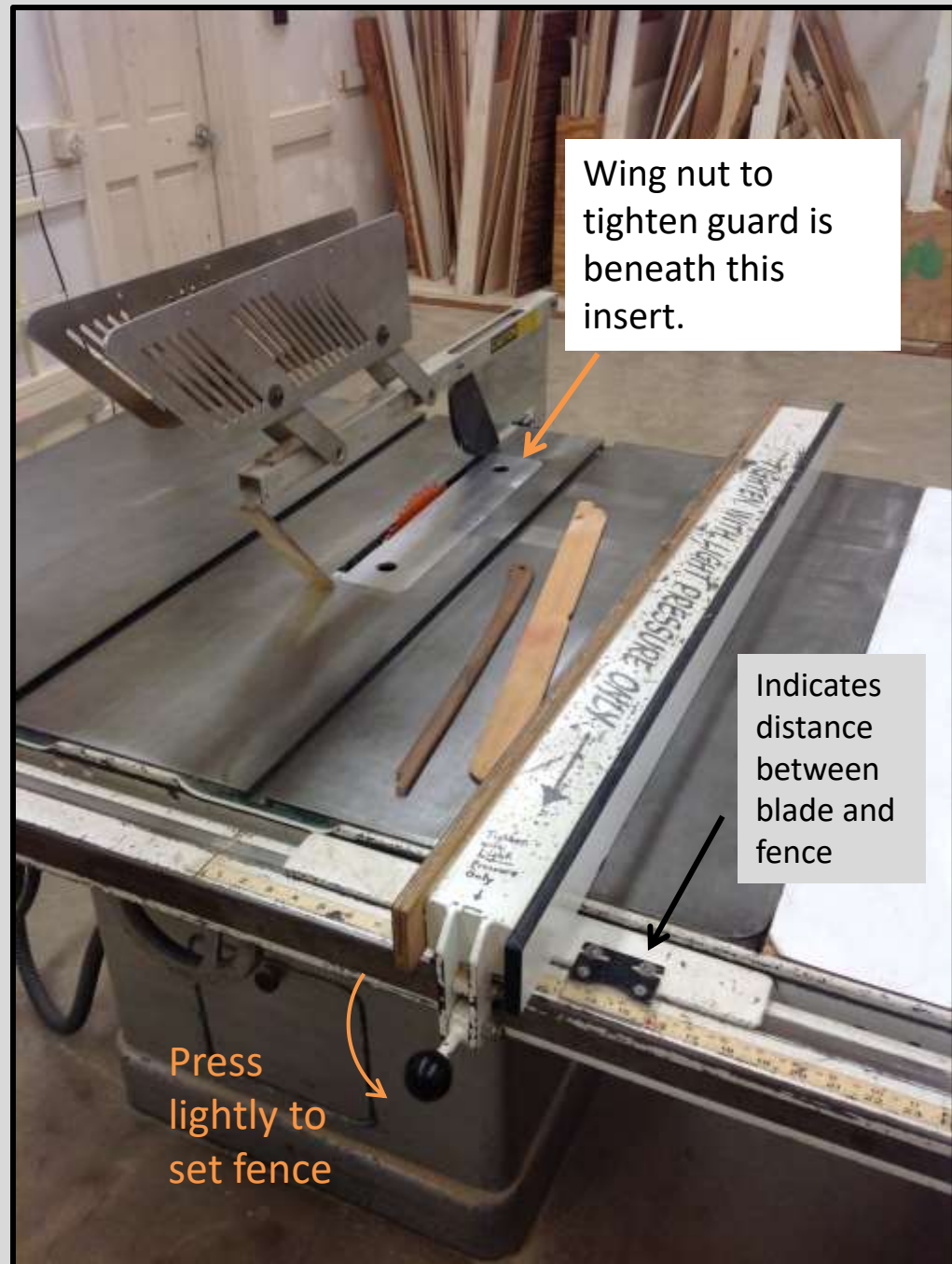
## TABLE SAW

Make sure the guard is in place and secure (check both sides and under plate insert).

Make sure wood is away from blade before turning on power.

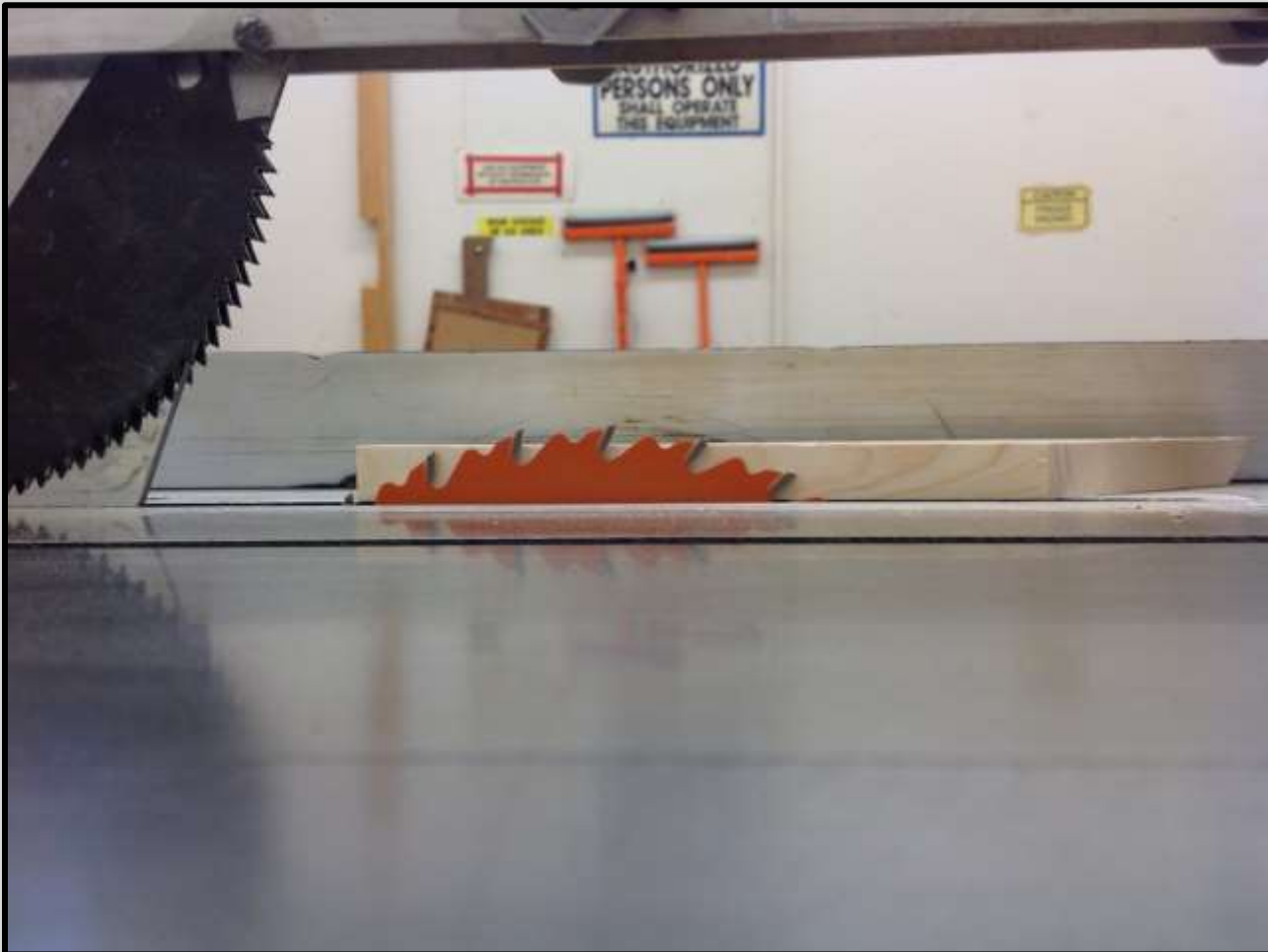
Set fence with light pressure. Press stock against table and fence while pushing across table. Do not attempt to make freehand cuts.

Never clear small pieces while blade is moving, not even with push sticks.



## TABLE SAW

Keep top of blade 1/8" to 1/4" above stock. Check and adjust while machine is OFF and blade is not moving.



## Table Saw

Keep fingers away from blade/blade area. USE PUSH STICKS.



## Table Saw

When ripping long stock, find assistance or use stands to support piece on outfeed side.

If assisting on outfeed side, do not pull. Support stock so it does not dip and lift off of the blade. You may also need to guide the two halves of stock past the back of the guard, where it could snag.

