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# Miter Saw Safety

Prof. Vicki V. May / January 2021

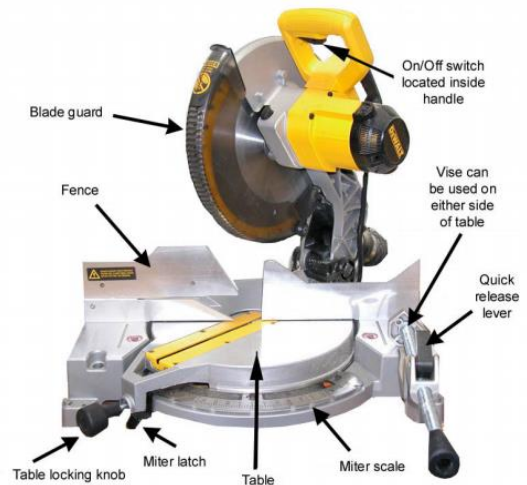
Adapted from material from Yale Environmental Health & Safety  
(<https://ehs.yale.edu/shop-tool-safety>) and from M-Shop

Instructor Lee Schuette



## Overview

A miter saw pivots from a single point to cut across a board. Typically, this saw is used to cut miters across the width of a board (<3" thick and <10-12" wide). Typically, boards are cut with the face of the board laid flat on the saw table and the edge tight against the fence. Miter saws are sometimes called 'chop saws.' Some miter saws are able to slide back and forth (sliding miter) and cut bevel/slanted cuts (compound miter).



<https://ehs.yale.edu/sites/default/files/files/wood-miter-saws.pdf>

**How to use a Sliding Miter Saw** (woodworkweb.com video; 6:33min):

<https://www.youtube.com/watch?v=yD2QicORIV8>

### Prior to use:

- Evaluate the work piece material type and appropriateness of the saw and saw blade.
- Inspect the material for nails, screws, or other foreign objects.
- Determine the location and angle(s) of cuts required.
- Determine the required fixturing/tooling/clamping/supports needed.
- Obtain personal protective equipment (safety glasses /shields) hearing protection and remove all loose clothing, jewelry and securely tie back all long hair/beards.

### At the miter saw:

- Turn on the dust collection system if available.
- With the tool off inspect the tool. Look for damage, missing guards, and blade condition.
- Inspect the work area and remove any obstructions and trip hazards.
- Adjust and set cutting angle(s) for work piece.
- Set up fixturing/supports and stops to make required cuts.
- With saw blade stationary move saw through entire range of motion to ensure that there is no interference with blade, machine parts or guards/fences.

- Ensure that if stops and clamps are used together that they are both on the same side of the blade cut so that the potential for jamming and kickback are minimized.

**Operation:**

- Locate work piece on saw. Ensure that it is placed firmly against the back fence of the saw.
- Be sure that any clamping of the work piece is on the same side of the cut as the stop so that potential for jamming /kickback against stop is minimized.
- Let the blade reach full speed before attempting the cut.
- It is usually good practice on the first setup to make a sacrificial cut in the work piece material to ensure that fixturing and angle setup is performing as expected and that the saw is capable of cutting thru the entire work piece.
- If trial cut is satisfactory – setup and make required cuts to work piece(s).
- Allow blade to come to a complete stop before releasing the handle and prior to adjusting/advancing work piece.

**Completion:**

- Allow blade to come to a complete stop before releasing the handle.
- Disengage dust collection system (if available).
- Clean up saw and work area for the next user.

**Safety Guidelines** (taken from M-Shop guidelines develop by Lee Schuette)

1. Wear eye protection, hearing protection, and proper clothing.
2. Do not wear loose fitting clothes, puffy or loose knit sleeved clothing.
3. Long hair must be tied back or managed in a net or hat.
4. Obtain permission from instructor to operate miter saw.
5. Use only sharp blades of the proper type for the job.
6. Be sure blade is correctly installed in the saw. Make certain power is off and properly disconnected before removing blade. To loosen arbor nut, turn wrench toward normal direction of travel holding blade with waste piece of wood.
7. Do not over tighten the arbor nut when replacing the blade.
8. Never hold the piece to be cut in a manner that causes your arms to cross. The majority of all cuts are made on the chop saw with the material held with the left hand on the left side of the saw while the right hand operates the machine.
9. Do not talk to anyone while using the saw. The operator should be the only person inside the safety zone.
10. Be sure the floor is clean and free from scraps and rubbish. Do not work on wet or slippery floors. Non-skid materials are recommended.
11. Study the adjustments and make sure they are understood before starting to work.
12. Before operating, ensure that all guards are in place and working.
13. Always use the saw guards.
14. Verify hands and fingers are out of the line of fire (path of the blade)
15. Don't try to cut stock that is too small – a serious injury could result.
16. Always maintain a 6" margin of safety between all body parts and the blade.

17. Use clamps or a vice to hold the short work-pieces in place.
18. Hold material against the rear fence when crosscutting.
19. Never saw freehand.
20. Never try to clean scraps off of the chop saw with your hands when the saw is running, wait until the saw has come to a full stop.
21. If you are apprehensive about using this machine, have the instructor assist you.
22. Do not place the hands over or in front or near the edge of the blade. Never reach near the blade.

**Competencies** (<https://ehs.yale.edu/sites/default/files/files/wood-miter-saws.pdf>)

	Demonstrated Independently	Demonstrated with Assistance	Did Not Demonstrate
<b>Performance Competency - Did the student...</b>			
Dress appropriately and wear appropriate personal protective equipment for the cutting operation (eye and hearing protection, hair pulled back or in a hat).			
Identify and describe all controls, adjustments, and functions of the miter saw.			
Correctly setup and adjust the miter saw for all types of required cuts.			
Apply good judgment in selecting clamping/securing method for work piece and accurately position work piece for cutting operation.			
Cut several pieces of wood (of different sizes) appropriately.			
Reset all saw functions to square, perpendicular cuts and clean up saw in preparation for next user.			