

Table Saw Safety Training

Table Saw Safety Training: MACHINE GUARDING

OSHA and Kitchen Cabinet Manufacturers Association (KCMA) Alliance, KCMA developed this power point presentation for informational purposes only. It does not necessarily reflect the official views of OSHA or the U.S. Department of Labor. Jan 2009



Why guard equipment?

- As you know, there are risks involved in everything you do. When operating machines, one way to reduce your risk of injury is to ensure all safety guards are in place.
- Some of the injuries associated with unguarded equipment may include (but are not limited to):
 - Crushed body parts
 - Amputated body parts
 - Blindness

What am I looking for?

- Chains and sprockets
- Rollers
- Flywheels
- Blade exposure
- Any moving part that could cause bodily injury



What if a guard was not provided with the equipment?

- Anticipate all possibilities, sometimes you have to design, build, and install additional guards



Typical guards and signs



PPE Requirements



Face Shield



Ear Plugs



Kick-back Apron



Safety Glasses

Table Saw Safety Training

SAW SAFETY

Table Saws

Table saws are used for straight sawing.

Depending on the blade, they cut either across (crosscut) or with (ripsaw) the grain of the wood.



Table Saw Safety

- Blade guard should rest on the wood.
- The blade should stick up no more than $\frac{1}{4}$ " above the wood.
- Make sure the rip fence is locked into place.
- Lockout the saw before changing the blade.
- Don't cut with a dull blade.



Power Tool Injury Statistics

- According to estimates made by the Consumer Product Safety Commission, more than 52,000 injuries involving table saws, band saws, miter saws, or radial arm saws, required medical attention in the United States in 2001. 83% of the injuries involved fingers. Almost all of the injuries were lacerations, amputations, fractures, or avulsions.

Operator Involvement

- Adjust the height and angle of the blade
- Push the stock into the blade
- Use the guide to maintain a straight cut
- Self-feed or power table saws are equipped with rollers or a conveyor system to hold the lumber and force-feed it into the saw blade.

Injury Causes

- Inexperienced operator
- Improper training
- Inadequate or missing guards
- Employee taking shortcuts / rushing
- Distracted operator
- Substance abuse

Point of Operation

Potential Hazard:

- Injuries can occur if an operator's hands slip while feeding the stock into the saw, or if the operator holds his or her hands too close to the blades while cutting. The operator can also be injured when removing scrap or finished pieces of stock from the table.

Point of Operation

Solutions:

- Enclose the portion of the rip saw and crosscut saw above the table with a self-adjusting guard as shown. The guard must adjust to the thickness of the material being cut and remain in contact with it [[1910.213 \(c\)\(1\)](#) and [\(d\)\(1\)](#)]. Hinge the guard so that the blades can be changed easily.



- Use a push stick for small pieces of wood and for pushing stock past the blade. [[1910.213\(s\)\(9\)](#)]



Point of Operation

Additional Safety Measures

- Keep hands out of the line of the cut.
- Attach a brake to the motor's arbor to stop the saw from coasting after the power has been cut off, or have the operator remain at the saw station after the motor is shut off, until the blade stops turning.

Other Moving Parts

Potential Hazard:

- Injuries can occur if the operator makes contact with the blade under the table or with the power transmission apparatus (if not enclosed).

Solution:

- Always guard the portion of the blade below the table. Protect operators from possible contact when reaching under the table. [\[1910.213\(a\)\(12\)\]](#)
- Always guard the power transmission apparatus (belts, pulleys, chains, sprockets, etc.). [\[1910.213\(a\)\(9\)\]](#)

Kickbacks

Potential Hazard:

Kickbacks occur when the blade catches the stock and throws it back toward the operator. Kickbacks can result if the blade height is not correct or if the blade is not maintained properly. Kickbacks are more likely to occur when ripping, rather than crosscutting. Kickbacks also can occur if safeguards are not used or if poor-quality lumber is cut.

- For ripsaws, use a spreader to prevent material from squeezing the saw or kicking back during ripping. [\[1910.213\(c\)\(2\)\]](#)
- Use anti-kickback fingers to hold the stock down in the event that the saw kicks back the material. [\[1910.213\(c\)\(3\)\]](#)
- Maintain and sharpen blade. [\[1910.213\(s\)\(2\)\]](#)
- Wear kickback apron.

Additional Safety Measures

- Use the proper blade for the cutting action. For example, do not use a crosscut blade for ripping.
- Operate the saw at the speed specified by the manufacturer.
- Leave sufficient clearance for stock.
- Stand to the side of the saw blade to avoid injury due to kick back.
- Guide the wood to be cut parallel to the rip fence to minimize the potential for kick back.
- Avoid crosscutting long boards on table saws. Considerable hand pressure is required close to the saw blade, and the boards create a safety hazard to other people.

Table saw with rip fence

- Use a filler piece between the fence and the saw blade when necessary such as when there is little clearance on the fence side.
- Properly support all pieces of stock, including the cut and uncut ends, scrap, and finished product.

Flying Particles

Potential Hazard:

- The cutting action of the blade may throw wood chips, splinters, and broken saw teeth.

Solution:

- Remove cracked saw blades from service.

[1910.213(s)(7)]

Additional Safety Measures

- Maintain sharp blades.
- Safety Glasses and Faceshield are required



Easiest Injury Prevention from Saws

- Avoid loose-fitting clothes
- Tie back long hair that might become entangled in a power tool
- Remove rings, watches, neck chains and other jewelry



Amputation -Unguarded

A worker was assembling parts of a cabinet when he noticed one of the parts needed another cut to fit. When he walked over to the operating side of the table saw, he noticed that the blade guard was lying on the floor under the saw. Without installing the guard, the worker proceeded to make the cut and then reached across behind the blade to remove the scrap piece. While dragging the scrap piece towards himself, the scrap caught on the blade and pulled his hand right into the unguarded rotating blade. This resulted in multiple finger amputations on his left hand.

Rip Saw finger amputation

A worker was ripping a wooden work piece with a dado on a manual-feed table rip saw. When the work piece began to bind, the worker attempted to move the work piece through by pushing hard on it in the normal direction of operation. The work piece subsequently broke free, exposing the circular saw blade underneath which caught the worker's fingers on his right hand. The worker suffered amputations of his index and little finger at the first knuckle, and middle and ring fingers at the second knuckle. The worker should have used a push stick to free the binding work piece instead of his right hand.

Lockout / Tagout

- Remove the energy source to the equipment so the equipment will not start-up accidentally.
- The table saw must be locked out:
 - during lunch and at the end of each shift
 - if the table-saw is not used consistently throughout the day
 - when changing the blade
 - when maintenance is conducted on the saw

What is next?

- Watch and discuss DVD
- Go over Table Saw Commandments – each Team Mate must sign and turn in.
- Take written test – must make a minimum score of 75% to be eligible for certification.
- Take hands-on test