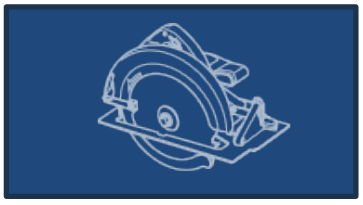
CIRCULAR SAWS

Power tools require operator respect in specific ways. They must be used carefully and kept in safe operating condition, whether they are in the hands of a professional tradesman, an amateur do-it-yourselfer, or a vocational student. *The demands of safety apply to all*. The material presented here is a compilation of carefully selected safe use precautions as they relate to specific electric power tool CAUTIONS, WARNINGS and DANGERS. The purpose is to highlight the safe use of specific tools that have a potential of causing injury if ignored. The warnings and instructions on the power tool and in its operator's manual provide the best source of safety information for the tool. Read and understand the contents and follow the advisements of operator's manuals on each specific power tool and all related accessories. This is considered essential to the safe operation of any power tool. Review PTI's *Safety is Specific* publication for general power tool safety.



Among professional tradesmen, on the farm, around the house and in the vocational shop, the circular saw is probably the most commonly used power saw and perhaps the most commonly abused. Familiarity should not lead to carelessness. The following are specific safety 'musts' when using any portable circular saw. Failure to follow these safety rules can result in serious injury.

Good Personal Safety is a Must

Following good safety practices when using circular saws is a must. Make a habit of including safety in all your activities. In addition to the instructions in the General Safety section of *Safety is Specific*:

- Check for proper blade guard operation before each cut. Never use a tool with a guard missing. The guards should return to their normal position quickly. If a guard seems slow to return or "hangs up", repair or adjust it immediately. Never alter or defeat the guard.

Choose the Right Tool and Blade

Choosing the correct tool and the proper saw blade for your application can help to reduce the risk of serious injury. When used according to the manufacturer's instructions, the proper tool and accessory will make the job safer and faster.

- Do not use a circular saw that is too heavy for you to easily control.
- Use sharp blades. Damaged or dull blades could throw teeth, posing a serious injury risk. A sharp blade will tend to cut its way out of a pinching condition.
- Use the correct blade for your tool. Check this carefully: Does it have the proper size and shape arbor hole?
- Make sure the speed rating marked on the blade is at least as high as the no load speed marked on the tool.
- Use clean saw blades. A buildup of pitch or sap on the surface of the saw blade increases blade thickness and also increases blade friction and the likelihood of kickback.

Know your Workpiece

Take time to review your work and make sure that all necessary precautions have been taken before making a cut. Circular saws are used to cut a variety of materials, each having its own specific setup requirements.

- Know what is behind a workpiece before you do the job. Do not cut into existing walls or other blind areas where electrical wiring, water, or gas pipes may exist. If this situation is unavoidable, disconnect all fuses/circuit breakers, and shut off any water and gas lines feeding this work site.
- Support large panels (as illustrated) so they will not pinch the blade, potentially causing a kickback.

- Use a straight edge or rip fence as a guide for ripping.
- Avoid cutting small workpieces that can't be properly secured, and workpieces on which the base of the saw (shoe) cannot properly rest. Injury could result from small pieces being thrown back at the operator if the blade pinches and binds.
- Portable circular saws are not designed for cutting logs, roots, trimming trees or shrubs.
- Be very cautious of stock which has knots, is warped, or has visible pitch (e.g. sap). These are most likely to create pinching conditions and possible kickback.

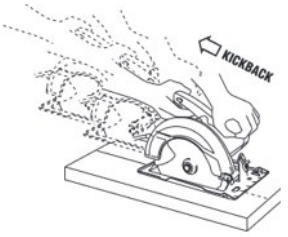
Before Cutting...

Before working with a circular saw, make sure the tool and its accessories are in proper working order. Failure to do so can increase your risk of injury and result in blade pinching, binding or stalling, kickback and loss of control. These situations can cause the saw to jump back at the operator and result in a serious injury. Be sure the tool switch works properly. Do not use a tool if the switch does not turn it off when returned to the off position.

- Check blades carefully before each use for proper alignment and possible defects. Never use a bent, broken or warped saw blade.
- Make sure the blade has adequate blade set. Blade set provides clearance between the sides of the blade and the workpiece, thus minimizing the probability of binding. Some saw blades have hollow ground sides instead of blade set to provide clearance.
- Be sure the blade, blade flanges (washers) or bolt are correctly assembled on the shaft and installed in accordance with the tool manufacturer's instructions.
- Check for proper blade guard operation before each cut. Never use a tool with a guard missing. The guards should return to their normal position quickly. If a guard seems slow to return or "hangs up", repair or adjust it immediately. Never alter or defeat the guard (e.g., tying back or removing the guard).
- The lower guard should be pulled back manually only for special cuts such as "Plunge Cuts" and some "Compound Cuts". First, Adjust the cutting depth to the thickness of the workpiece. As blade starts cutting the material, release the lower guard immediately. When the foot rests flat on the surface being cut, proceed cutting in forward direction to end of cut.
- Tighten depth and bevel levers securely.

While Cutting …

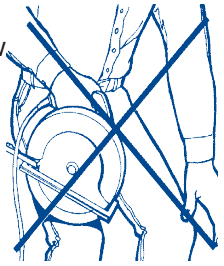
Concentrate on what you are doing and be aware of kickback (a sudden reaction to a pinched, bound or misaligned blade). Kickback can cause an uncontrolled tool to lift up and out of the workpiece toward the operator and is the result of tool misuse and/or incorrect operating procedures or conditions. Take these specific precautions to help prevent kickback when using any type of circular saw:



- Before starting a circular saw, be sure the power cord and extension cord are out of the blade path and are long enough to freely complete the cut. A sudden jerk or pull on the cord can cause loss of control of the saw and a serious accident.
- Clamp workpieces securely. Check frequently to be sure clamps remain secure. A moving workpiece can cause loss of control and result in injury.
- Always have both hands on the saw, never hold a workpiece in your hand or across your leg when sawing.
- NEVER overreach! Always hold the saw firmly with both hands after securing the workpiece.
- Keep hands and body away from and to the side of the blade. Contact with blade will result in serious injury.
- Set blade depth to no more than 1/8 in. to 1/4 in. greater than the thickness of the material being cut. Less than a full tooth should be visible below the workpiece.

- Minimize blade pinching by placing the saw shoe on the clamped, supported portion of the workpiece, and allowing the cut off piece to fall away freely.
- When you start your saw allow the blade to reach full speed before contacting the workpiece.

  Be alert to the possibility of the blade binding and kickback occurring. Hold the saw with two hands and position your arms to resist kickback. If a fence or guide board is used, be certain the blade is kept parallel with it.
- Never remove the saw from a cut while the blade is rotating. When making a partial cut, or if power is interrupted, release the switch immediately and don't remove the saw from the workpiece until the blade has come to a complete stop. Removing the saw with a rotating blade could result in a saw tooth grabbing the work- piece, causing loss of control.



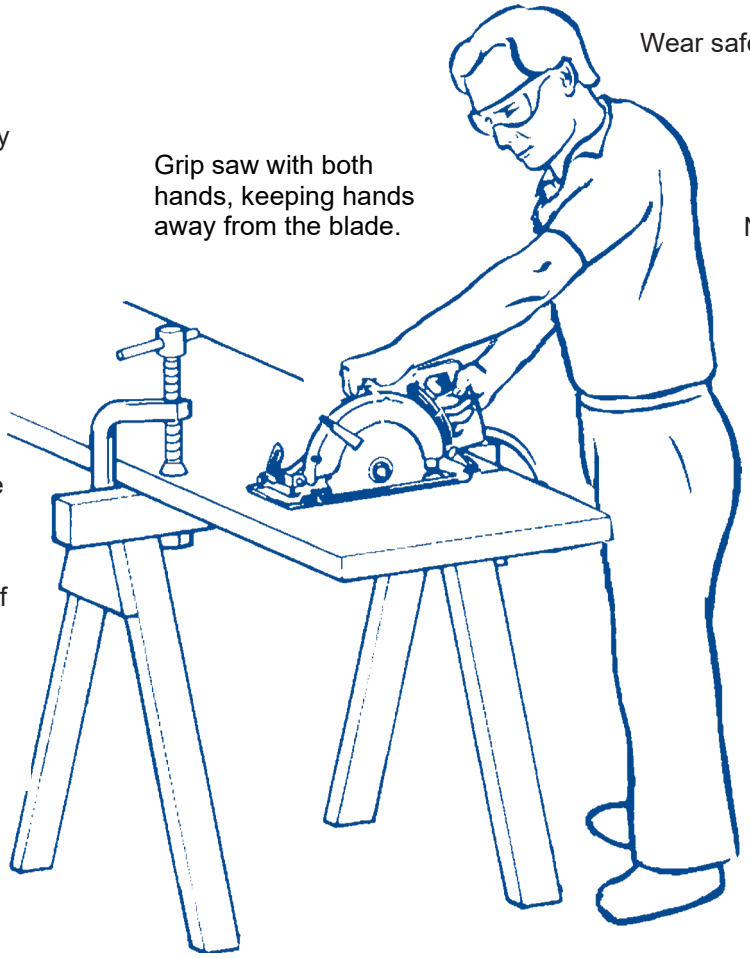
- Never reach under the saw or workpiece. The blade is exposed under the workpiece and the saw guard cannot protect your body here.
- Release the switch immediately if the blade binds or the saw stalls.
- When restarting a saw in the workpiece, center the saw blade in the kerf and check that saw teeth are not touching the material when the saw is turned on.
- Turn off the tool after a cut is completed and keep the saw away from your body until the blade stops. The blade may coast for a time, posing the risk of serious cuts.

- Overheating a saw blade can cause it to warp and result in kickback. Buildup of sap on the blades, insufficient blade set, dullness, and unguided cuts, can all cause an overheated blade and kickback.

When done

Unplug or remove the battery pack, clean and store the tool in a safe, dry place after use.

Always Remember…



Wear safety glasses

Tighten depth levers securely

Grip saw with both hands, keeping hands away from the blade.

No loose clothing or jewelry.

Set the depth of cut 1/8” to 1/4” greater than the thickness of the stock

If your saw is corded, keep the cord away from the blade and kerf. If cordless, make sure the battery pack does not interfere with smooth feed action of the saw.

Secure the workpiece to sturdy supports

Always rest the larger portion of the saw’s baseplate on the supported portion of the workpiece. Allow the unsupported portion to fall away.

Firm footing in a clean area

NOTICE

The contents are not meant to be, nor should they be considered, an absolute or complete presentation of the safety measures and procedures that relate to using the power tools covered. Obviously every possible application cannot be foreseen. This brochure’s purpose is to highlight only some important safety and safety related information compiled from the experience of Institute members and other reliable safety oriented sources. Individual manufacturers’ tool operator’s manuals, shipped with tools and accessories, are recommended as a final source for proper procedures for specific tool usage.