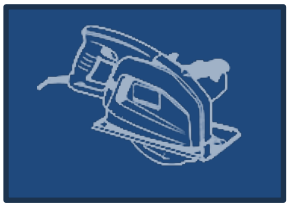
METAL CUTTING SAWS (PORTABLE)

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.



Hand-held metal cutting saws take chips or shavings out of metal workpieces. Metal cutting saws are not recommended for all types of metals and metal thicknesses. Refer to the saw's operator's manual for specific recommended applications.

Good Personal Safety is a Must

Following good safety practices when using metal cutting 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*:

- Wear gloves when handling the workpiece after the cut. The workpiece may be hot and have sharp edges.
- Dress right. Do not wear loose clothes or jewelry. Contain long hair. Do not wear gloves of a material that can roll up or get caught in the tool, such as cotton, wool or cloth. Loose clothes, jewelry, or long hair can be caught in moving parts.

Choose the Right Tool and Blade

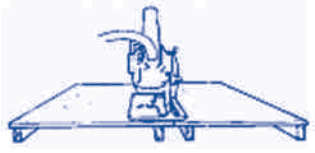
Choosing the correct tool and the proper accessory for your application can help to reduce the risk of serious injury. When used according to the manufacturer's instructions for use, the proper tool and accessory will do the job safer and faster.

- Do not use a metal cutting 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 marked on the blade is at least as high as the no load RPM marked on the tool.
- Never use damaged or incorrect blade flanges or bolts.
- Do not use any type of abrasive cut-off wheel or dry diamond cutting blades. Always use the saw blade intended for cutting the material you are going to cut.

Know your Workpiece

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

- Support large panels (as illustrated) so they will not pinch the blade.
- 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.



- Do not use cutting oils or lubricants. Liquids can damage the saw, causing an electrical hazard.
- 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.

Before Cutting...

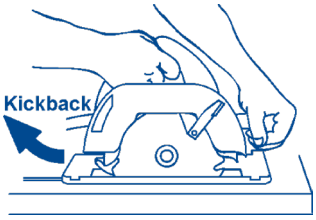
Before cutting with a metal cutting saw, make sure the tool and its accessories are in proper working order. Failure to do so may increase your risk of injury and may result in kickback, blade pinching, binding, or stalling, and loss of control. These situations may cause the saw to jump back at the operator and can result in a serious injury.

- 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.
- Be sure the blade flanges (washers) are correctly assembled on the shaft and that the blade is properly supported.
- Check for proper blade guard operation before each cut. 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).
- 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.
- Tighten depth levers securely.
- The lower guard should be pulled back manually only for special cuts such as “Pocket Cuts” and “Compound Cuts”. Raise the lower guard using the lower guard lever. As soon as blade enters the material, release the lower guard.

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 metal cutting saw:

- Before starting a metal cutting 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.
- Never hold a workpiece in your hand or across your leg when sawing.
- Do not use cutting oil. The use of cutting oil may cause a fire.
- Keep hands away from cutting area and blade. Keep your second hand on other saw handle or motor housing. If both hands are holding the saw, they cannot be cut by the blade.
- NEVER overreach! For maximum control, hold the saw firmly with both hands after securing the workpiece.

- Set blade depth to no more than 1/8 in. to 1/4 in. greater than the thickness of the material being cut.
- 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 the workpiece is contacted.
- Be alert to the possibility of the blade binding and kickback occurring.
- 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. A saw tooth could grab the workpiece, 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.
- 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. Insufficient blade set, dullness, and unguided cuts, can all cause an overheated blade and kickback.

When Done...

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

- Some metal cutting saws have chip or shaving collectors that must be emptied. Chips and shavings will be hot immediately after being cut. Wear gloves when handling. Always unplug the saw or remove the battery before emptying the container. Do not dispose of chips and shavings in receptacles containing flammable materials such as paper or wood. NEVER operate saw when guards and chip container are not installed. Serious injury may occur.